## The United States miller. Vol. 131882

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# TIIE NTEVEN ROLLER VILLS 

Remove all Germs without Breaking or Crushing them, and Hull the Black Cockle and Remove the Hulls, Clean Bran thoroughly,

## OVER 2000 PAIRS NOW IN USE!

## Having Secured the BEST BELT MOVEMENT ever offered

We are prepared to furnish mills to be run entirely by belt, obtaining the nearest approach to a Positive Motion Without Gears.

## Celebrated Cosgrove Concentrated Mill

Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.

Messrs. John T. Noye \& Sons, Buffalo, New York-
Brooklyn, New York, February 20, 1882.
Gentlemen: We take pleasure in addressing you in regard to the introduction of the "Cosgrove Roller System" in our Mills at Brooklyn. By removing four pairs of our Millstones and putting in their place the two sets of the Cosgrove System, purchased from you, we find that with our former bolting and purifying arrangements, we can turn out flour, all roller ground, in quality from 50 to 75 cents per barrel superior to that made from the same wheat by Millstones. We are now grinding no wheat with stones. In making the change, our Mill was shut down but $4 \frac{1}{2}$ days to make connections with Elevators, Conveyors, etc. We drive the Cosgrove Machines from the same shaft that we formerly drove the Millstones. The work of the change was done by our own Millwrights, everything being so favorably located. The advantages that we find are principally, viz. : Saving from $\frac{1}{t}$ to $\frac{1}{3}$ power required to make the same amount of flour by stones; uniformity of work of the Rolls, and the ease with which they are managed, one man being fully able to give proper attention to two or more sets if we had them ; the separations made by the cylinders are perfect; any miller can quickly adjust them exactly to suit the wheat he wishes to grind and the work required ; the capacity of our machines we find fully 50 per cent. above the amount you guaranteed ( 200 barrels). In conclusion, we will say, that the result generally of the system is entirely satisfactory to us for the best of reasons, our customers are thoroughly pleased and satisfied with our flour. Yours truly,

Among Recent Orders We Name the Following from Prominent Miliers:
Lexington Mill Co., Lexington, O., 12 pairs, E. O. Stanard \& Co., St. Louis, Mo., 28 pairs, E. T. Archibald \& Co., Dundas, Minn., 12 pairs, Pollock \& Co., Vincennes, Ind., 12 pairs, $\quad$ Penfield, Lyon \& Co.. Oswego, N. Y., 2 Cosgroves., Crocker, Fisk \& Co., Minneapolis, Minn., 54 pair ames Norris, St. Catherines, Ont., 28 pairs, McNeil \& Baldwin, Akron, O., Cosgrove and 10 pairs
Jno. T. Noye Manufacturing Company, Buffalo, N. Y. [Please mention the United States Miller when you write to us.]

# OD패L'S ROLLTR 꽆․ 

 An Stadidime SumanWe invite particular attention to the following

## POLNTS OF SUPERIORITY,

possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a positive differential motion, which can not be had with short belts.
2. It is the only Roller Mill in market which can bs instantly stopped without throwing off the driving belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.

3. It is the only Roller Mill in which one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.
4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings without disturbing the ten-sion-spring.
5. Our corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

WE USE NONE BUT THE BEST
Amsonia Rolls!

References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines. Among recent orders we mention the following:

Geo. Priest \& Co., Decatur, Ills., 36 Pairs M. S. Rexford, Norman, Dak., 10 Pairs M. M. Wright, Danville, Ills., - 28 " Warder \& Barnett, Springfield, O., 22 " C. Seeley, Crete, Neb., . . 8 . Barrett \& Son, Spring Valley, O., 10 "
J. Mathers \& Son, Greenville, Pa. 12 Pairs L. Payne, Franklin, Ind., 0 " Brown\&Watkins, Crawfordsville,Ind. 8 " Franklin Mills Co., Appleton, Wis. 11 "


## CORRUGATED CHILLED IRON ROLLS.

CORRUGATIONS CUT OF ALL DESCRIPTIONS.

## 

These Machines require little power, are perfectly noiseless, being driven entirely by belt; are simple in construction; strong and durable; perfect in every adjustment; adapted to both soft and hard wheats.

We refer to the following prominent millers who are each using from 50 to 150 of these machines:

Winona Mill Co.. Winona, Minn.
C. A. Pillsbury \& Co., Minneapolis, Minn
C. C. Washburn.

Washburn, Crosby \& Co..
W. D. Washburn \& Co.

Sidle, Fletcher, Holmes \& Co.. "
E. V. White \& Co.

John Glenn, Glasgow, Scotland. Jones \& Co., New York City.
Geo. V. Heoker, New York City.
Beoker \& Underwood, Dixon, Ill.
Sohurmeier \& Smith, St. Paul, Minn.
E. T. Archibald \& Co.. Dundas, Minn.

Jesse Ames' Sons, Northfield, Minn.
J. B. A. Kern, Milwaukee, Wis

Edw. Sanderson
Daisy Roller Mill " "
C. E. Manegold \& Sons, Milwaukee, Wis. Commins \& Allen, Akron, Ohio.
L. H. Gibson \& Co., Indianapolis, Ind.
L. H. Lanier \& Co., Nashville, Tenn.

LaGrange Mill Co., Red Wing, Minn.
Waggoner \& Gates, Independence, Mo.
Horace Davis \& Co., San Francisco, Cal.
And Hundreds of others.

ADDRESS :
To all parties purchasing our Rolls we give full information regarding the system of Roller Milling.

## EDW. P. ALLIS \& CO.,



[Written for the United States Miller.] Plain Talks About Milling.

## by r. birkholz, m. e.

"Percentage" is the hobby of the manu facturers of milling machinery and the mil builders of our times. A nervous pursuit o methods economizing the use of raw material and simplifying the process of manufacture is eagerly sustained by managers of our different manufacturing business branches. The ambition to anticipate others in the use of new economical process, thereby augmenting the profits, before imitations of such improved process cuts into the profits by competitionalso the search after still better methods, cause energetic business managers and own ers many sleepless nights. Besides this, the workmen pencil or chalk out thousands of sketches, in feverish haste, to secure new and patentable devices having a saving tendency which they can bless (?) the manufacturer with. Having, (in their mind) struck some thing, they manage to find some manufacturer whom they are able to cause to think there is something in it and then trials are madegenerally at the expense of the manufacturer. Should the results prove good, then the patentee holds up his hat for a large share o regrets, and expresses himself extremely sorry that the clever manufacturer had spent so much money.
As far as flour-milling is concerned-it a pears that every miller and milling expert ha roller-milling on the brain. They do say that the United States Patent Office will have to be closed for the next six months and the entire force of all the departments will in the meantime be put to work investigating the applications for patents for roller-mills and on file. Shocking
Mill-men everywhere are going around "half-cocked" full of grand ideas and all that bothers them is to pick out the best ones for the market. The quality, not the quantity of ideas insure the most profits, the trade de-
manding a different rule from that of the manding a different rule from that of the
Hebrew dealer in clothing who stoutly claimed "It is the quantity that fetches the trade.
A droll story is told here, about a mill-man that was "full af ideas"-a man with a decidedly inventive turn of mind. He was visiting a friend and made himself noticeable during the whole afternoon by his extreme taciturnity. Everybody could readily see by his abstracted appearance that he was brood-
ing over some new machinery. While seated ing over some new machinery. While seated at the supper table he suddenly laid down his knife and fork, placed his napkin by the side of his plate-glanced at the ceiling with a a grave tone of voice "A piece of paper please," He shoved back his chair, shut "a piece of paper." He jumped up from the table, drew his pencil from his pocke hastily and started through the kitchen door, and meeting the "hired girl," asked hurriedly for a piece of paper. Bridget blushed and uttered an exclamation of surprise, but she was equal to the occasion, and quickly placing a piece of old newspaper in his hand, opened the back door and pointed to that little house the like of which may generally be found in our back yards, pushed him gently out, and shut the door. He did not come back, but bolted directly for down town. Doubtless another great invention has been lost to the world.

Many millers go wandering about with eyes and ears wide open, taking in stories unscru pulously told by interested or disinterested, informed or uninformed parties. They hear frequently here and there about " 96 per cent. Patent-no low grade"--". bran so large and light that it will float in the air and must be gath-

## ered with butterfly from 4 bushels of from 4 bushels of tions are excited, <br>  and sharp

## be

 later the work was translated and published in the English language and purchased eagery by the roll turners mentioned, who unhesitatingly admitted that they had learned many things from it of real value to them. Now the books that I wanted to mention a being indespensable to millers who desire to amplify their mental and mechanical horizon without calling for the assistance of the Cory phees of Modern Milling, or of the mill buil ng establishments of Allis, Noye, Stillwell \& Bierce, Downton, Chisholm, etc., etc., are"Pappenheim's Modern Milling" and "Prof Kick's Flour Manufacture," both of which ar published in Germany, and are at present unfortunately, only published in the German he work of translation of both these book is now being accomplished. I know of many German American, and American millers who now have these books in their libraries, them read and translated to them by some German friend
Both these authors speak highly of, and recommend the "Ganz sharp, saw-tooth corthat they produce the maximum quantity of coarse middlings even from the softest wheat, and the minimum quantity of break flour. They both advocate the re-sharpening of the corrugations when they begin to be too dull must be looked for in from 3 to 10 years after they have been put to work, according to the been taxed. I will not dwell any longer upon this subject of dispute at present, excepting merely to state to the millers of the United States, that here only is a discussion now gations. The millers on the continent of Europe discussed this question, tried and discarded the dull corrugations long ago, and the matter is now well-nigh forgotten there My aim in this article is to entertain millers with a description of the many ways of making percentage of saving
I have often found millers who seemed to regard their prime movers with almost abso lute disregard. They were content to bothe along with a waterwheel, drawing an enormous quantity of water or with an engine that required an immense quantity of fuel to keep it in motion. Millers often spend thousands of dollars in improving their mills with a view of saving fuel and raw material, when buying a new machine, they make care ful inquiries as to the amount of power quired to drive it and give preference to the easiest running machine, but upon what
amount of power their prime movers (water amount of power their prime movers (water
wheels, or engines) waste, they do not stop to estimate. There are water-wheels employe in some mills which yield only 60 per cent. of the full power of the head, and a good whee ought to yield 80 , giving thus one-third more power. Boilers are sometimes used, of such construction, that the fuel consumed beneath them does not develop anywhere near the power that it should. They are often allowed by careless-boiler tenders to amass so much scale as to greatly hinder the penetration of the heat to the water. A thickness of a six teenth of an inch of scale necessitates 15 pe cent.more fuel and the heating of the iron 15 per cent hotter, and when the scale is from $\frac{8}{8}$ to $\frac{1}{2}$ inch thick, the shell iron exposed to the flame is endangered by getting red hot and the boilers will bulge in lucky, or will explode in unluck cases.
And the engines! How many of them dra long a miserable existence, running like fury to give the power, overworked by steam pres $=-\sin$ threatening to run away whenever a stone, a roll or a smutter is stopped. These

These books can be furnished, if desired, by the editor
of the UNITED STATES MILLEB
engines are generally of the old slide-valve ype, working non-expansively but expensively indeed. The coal pile is the tell-tale. But the miller will improve his mill, he will employ light-running machinery and his team engine may still rattle on. He wants percentage in his mill but does not care about bothering with saving "percentage" in his engine-room, and yet any Corliss engine will save at least $\frac{1}{3}$ of the fuel and run as steady as a clock whether all the machinery in the mill is being driven or none at all with the hrottle-valve wide open. The ReynoldsCorliss engine (built by Edw. P. Allis \& C Milwaukee, Wis.) will save up to 50 per cent. of fuel over a slide valve engine. Mr. John miller told me ther, We, a well-known contract with E. P. Allis \& Co. to the effect that he was to only stop his mill ten days during which time they were to take out his old engine and replace it with a ReynoldsCorliss engine and start it up and for the new engine they were to have the old one and the year by the change. After the new engine had been run or two months he came to Milwaukee and quap up the new engine paying a handHe bonus not desiring any longer time. with a a good slide-valve engine equipped was indeed cut off but not at the right pleam in the steampipe and not just before entering he cylinder. It is said that Schuette saved bout 45 per cent: of fuel which in his case maivalent to $\$ 3000$ per year. A common slide-valve engine is cheaper in the first any kind, is generally dear in the long run. Americans are skeptical and cannot be easily cheated. Dealers in machinery have to gain and maintain a reputation; they have to work themselves into confidence with buyers and as Americans publish, print and read more than any other nation, the mistakes of manufacturers must be expected to be related and criticised publicly in some of the many technical papers circulated so extensively through he country
Dealers will sell cheaply such machinery as they can produce at slight expense of time, material and labor, but that which requires a large outlay of skill, labor and material must always be in the first instance, clear. earnestly advise buyers to purchase the best that can be obtained or not to buy at all. The half-way method of doing things has ruined more men than is generally acknowl edged.
The percentage of saving under the boiler as well as of the boiler itself is directly pro portionate to the regularity of firing and the cleanliness of the inside. Boilers must be cleaned frequently and the scale picked and scraped off. No oil should be allowed to accumulate within the boiler. More or less of the cylinder unguent is evaporated and carried along with the exhaust steam into the condenser or into such feed-water heaters in which the exhaust steam is brought into direct contact with sprayed feed-water. Th oil vapors liquefied by condensation will float on the overflow water in case of using a directontact heater. Both of the appurtenances generally so constructed that fatty par icles pass off without getting to the suction of the boiler feedpump but owing to the tur bulency of the overflow and the rapid use of the feed-water from a contact heater of too small a size, some oil bubbles will not have a chance to rise to the top of the water and they will get within reach of the boiler feedpump and thus into the boiler
Experiments have shown conclusively that organic, $i$. e. animal or vegetable oils wil easily form a film of fat-acids in the boiler aving a tendency to destroy or corrode the ron. Mineral oils will not get rancid and acrid so easily and as they are specifically
lighter and more limpid than organic oils they
will be more. readily carried off on the sur-
face of the overflow face of the overfow etc.
The percentage in saving of steam itself depends upon the perfection of the jacketing of the boiler, steampipes and cylinder. These
parts ought to be well surrounded by nonparts ought to be well surrounded by non-
heat-conducting substances. The Corliss cylinder is furnished by manufacturers with jacketing consisting of felt, dead-air, and a wooden encasement.
The percentage of saving in engine is proportionate to the care spent in keeping it in complete order. No thumping or "pounding" must be allowed and mineral oils mus be used to preserve the inside of the cylinder.
I suppose the secret of saving with the Corliss engine is too well known to need extended comment, but I will barely mention the three cardinal reasons; First, the cutting off of the steam in the early part of the stroke and letting the balance of the work be done by expansion of the steam on the Piston, the results of
valve gear. Second, the full initial boiler pressure on the piston on and after its beginning a stroke, imparting a great amount of power on the crank-pin immediately after having passed one of the dead-centres, also result of valve gear. Third, the possible minimum of
waste room in steam-ways, the valve ports and cylinder ports coincident results of construction. The Corliss type of engine will give a greater regularity of speed in a mil
than any other. They have been extensively introduced in sawmills which are the most difficult of any in which to preserve regularity of motion for, for a few seconds they demand perhaps the entire power of the engine and then none at all. They can readily dispose of their spare fuel, sawdust,
manufacturing concerns.
manufacturing concerns
some localities for firingous coal is used but the observer has noticed that its price has advanced. The proper difference between the price of lump and slag coal has not yet
reached its level but it will sooner or later. Even slag coal saved, means money earned, cheap to use the Corliss type of engine.
Put in a feed-water heater to save fuel and choose such a heater for this purpose that which the boiler can be kept free from greasy in a condenser; it will save at least one-fifth of the fuel or about 7200 pounds of coal per horsepower per year at a running time of 24
hours per day. It will pay for itself in ten months if you use an engine having 75 horse power capacity. The Reynold condenser is You can drive them by belt from engine or any other shaft. These condensers are rigged with a feed pump which throws a portion of into the boiler. Three of the largest flouring mills in Milwaukee are driven by ReynoldsCorliss compound condensing engines with feed-water heaters connected. These mills use less than one ton of coal per 110 barrels
of flour produced and the engineers are stantly on the watch to make a saving in fuel. Steam engines will give the most economical results when running at high steampressure and with from 500 to 600 feet pistonwith more than 100 Hb pressure and when engines are of short stroke the piston-speed must crank-pin and other parts becom jerking on structive at the necessary high number of revolution required. Corliss engines are adapted for great piston-speed.
I desire to mention here, that many object to the taking off the power from the engine by a belt over the fly-wheel. They think that thereby impaired. They prefer to either put on an extra pulley on the engine shaft from which the power is transmitted by a belt, or to take the power by the shaft direct and by
gearing. If the fly-wheel is of the proper weight it will do its work whether the powe is taken from the rim or from engine shaft as its accumulated inertia accelerates or retards able motion of the engine caused by the favorthe keys holding it fast to the shaft. If the power is taken off this shaft it is held back by the belt and pulley or the gear on it and the flywheel has to accelerate or retard directly the shaft, and indirectly the machinery attached to it, by its keys. It will accelerate or retard the machinery directly when the power
is taken off by a belt over its rim. A belt is is taken off by a belt over its rim. A belt is of the engine. The belt serves to certain extent, as an equalizer, having a similar effect
o the well-known "Hafner spring," which, in case of transmitting the power by gears,
is driven by the engine shaft, itself driving the gear.
The percentage of saving in machinery depends much upon the skill and care of the millwright when putting up the shafting and gearing. If the shafts are not laid straight and in line, much power is wasted in the bending of the same. If gear-posts and bridge-trees are badly secured, of too light construction, the gears not set in mesh on pitch-line, power is lost in unnecessary fric-
tion in the cogs. The constant bending of the shafts thereby straining all its fibres with every revolution, soon crystalizes the iron and then breakage must be expected. The constan jarring in the teeth of wheels held in mesh
by weak bridge tree-work will soon wea away the strongest teeth.

A new mill should be watched with great the building will year, for the setling of shafts, etc. Good millwrights will save the millowners much expense in first cost and in fuel subsequently, by planning the mill with as few short shafts as possible.
Another saving enjoyed by thoughtful mechanics is caused by the use of good lubri cants for their machinery. Good lubricant should possess lasting qualities, reduce the
friction and guard the bearings from heat and riction and guard the bearings from heat and
wear. For slow-running and heavy shafts, or for shafts running under heavy pressure, use animal oils-good winter-strained unadulteraed lard oil or tallow.
A very nice, economical and reliable oiler York City. It consists of a J. Faul, of New nipple which fits, and is entered into a hole drilled through the box cap. Within this tallow candle inches in diameter, is placed ipple and touches the shaft. It is pressed against the shaft by a small cast-iron "acorn" fitting over the upper end of the candle. A cap slipped over the cup closes up the lubri-
cator. These tallow candles are specially pepared of different degrees of specially and selected for use according to the nece ities of the case. They are about 3 of necesthick and 3 to four inches long. I have known some of them to last 3 weeks on a $2 \frac{1}{2}$ inch shaft running 80 revolutions per mi
This is, undoubtedly, a good invention.
Light fast running shafts need lighter oils nch as cotton-seed oil, or lard oil mixed with, or made limpid by mineral oil. There are some mineral oils prepared from crude pe roleum oils which are well adapted for oiling used provided with feeders, the cap ought解 they ought to be supported by small tripods or perforated tubes, so that the feeding can be inspected drop by drop. The common oil up with a small outlet is not economical, a the oil escapes too rapidly, and is therefor wasted. Common boxes with oil reservoir on caps can be most economically oiled if cotton waste is put into reservoir, part of which must be pushed through the oil-holes until it touches the shaft. The best oiling i effected, however, when the oil reservoir is placed below the bearing and round wick the babbit on to the shaft. Thus the most economical and coolest boxes are obtained, for nothing but pure oil reache the shaft from the cup by capillary attraction. The oil mixed with the worn babbit meta gradually works to the bearing ends, where on account of the construction of the box, it works back into the reservoir, thickening the oil, but the dust cannot get up to the bearing again. These boxes must be occasionally cleaned out and a screw plug is provided for being removed, leaves an opening for empty ing and cleaning.

## (To be ontinued.)

## visitors.

During the past month the United States Miller has been favored with calls from the ollowing gentlemen connected with, the A. B
A. B. Crowders, St. Louis, Mo

William Cordes, St. Louis, Mo
J. E. Lcomis, St. Louis, Mo.

## W. C. Edgar, business manager of Northwestern Miller, Minneapolis, Minn.

G. M. Marshall, Esq., Kilbourn City, Wis J. Schleissinger, of the Cockle Separator Mfg. Co., Milwaukee, Wis.
Secretary S. H. Seamans, Milwaukee.
Harmon F. Notbohm, Esq., Janesville
Wis.

United States Miller. PUBLISHED MONTHLY

We have devoted considerable space in this number of the United States Miller to the subject of grain speculation. The question of the legality of these trades, and of notes and mortgages given in payment, or to secure payment of margins is now in a fair way to final settlement before the United States Supreme Court to which the case of Smith \& Lightner, brokers and members of the Chicago Board of Trade against J. H. Rountree, of Platteville, Wis., has been ap-
pealed for final ajuddication. The decision pealed for final ajuddication. The decision will be awaited with interest.

## Market Review,

ared expressly for the "United States Miller," of Milwaukee, Wis.
APRIL 29, 1882.-The Wheat Market during the past month has been under the control of a combination, both here and at Chicago, and a large short interest has existed at the latter market for this month's delivery, which has kept prices of the speculative grade from five to eight cents higher there than here. An ctive milling demand for local use and for shipment into the interior prevailed here dur ing the first half of the month, which has abated, however, during the latter part, unde general feeling of weakness in the marke The cash Wheat here has been held wholly by the "Clique," who have steadily advanced prices on it from $\$ 1.30$ to $\$ 1.35$ free of storage and have held it firm at the latter figure for the past ten days, nothwithstanding the de cline in the general market, at which price moderate quantities have been taken from day to day for milling.
The market for May delivery as well more distant futures, has tended steadil lownward since 20th inst., when May reache $\$ 1.34$, and during the past two or three day has declmed sharply under a prevailing apprehension that the "Clique" would delive out the Cash Wheat on 1st May, it being the supposition that it has been sold for May delivery, and the price receded to $\$ 1.29$ esterday, rallying at the close, however to 1.30 . To-day the market is rregular, but a stronger feeling prevails, clos
ing on noon Change at $\$ 1.30$ for May, $\$ 1.31$ ing on noon Change at $\$ 1.30$ for
June, $\$ 1.30 \frac{1}{d}$ July, $\$ 1.20 \frac{1}{4}$ August.

The "visible supply" of Wheat in this ountry, comprising stocks in store at Lake nd Sea-board ports and in transit, shows a re duction during the past four weeks of $1,752,000$ bushels and is nine million bushels less than at the corresponding date last year. The re duction in the stock in store at this mark during the past four weeks is 486,000 bushel the present stock being $1,180,000$ bushels.
Reports of the growing Winter Wheat generally very favorably, but our recen advices from St. Louis state that the chinch ugs are making their appearance to an alarm ing extent in portions of Missouri, Kansa and Illinois. The first new wheat arrived in t. Louis to-day from Southern Arkansas, fair quality, and sold at $\$ 4.50$ per bushel, being bought no doubt for advertising purposes
Closing quotations: $\$ 1.30$ for May; $\$ 1.31$ for June; $\$ 1.30 \frac{1}{8}$ for July; $\$ 1.20 \frac{1}{2}$ for August.

Recent Milling Patents.

## April 4, 1882.

Grain weighing and measuring machin William H. Allen, New York City
Grain-separator, Barnard and Leas Mf' Co., Moline, Ill
Grinding-mill, John J. and B. Clark, Elgin II.

Cooling mechanism for grinding mills, ohn Fitzgerald, Brooklyn, N. Y
Roller mills, Noah W. Holt, assignor to John T. Noy
Buffalo, N. Y.
Millstone, Rufus Moody, North Monmouth Mill
Me.

Grain disintegrating machine and process or manufacturing flour, Francis Taggart Brooklyn, N. Y., assignor to C. R. Knicke bocker, Jackson, Mich.

April 11, 1882
Oatmeal machine, William Eberhard and R. Turner, Akron, O ,

Grain-transporting device-Thomas F. Ho ea, Cleveland, $O$
Machine for cutting grooves in rolls-Joh R. Reynolds, assignor to Pratt \& Whitney Co Hartford, Ct.
Grain-elevator, Elias Roberts, E. Bauman April 18, 1882.
Roller Mill, Richard Birkholz, Milwaukee, Wis. Cockle separator, William E. Gorton, Eau Millstone driver, Joab H. Wooster, Stryk-
he Varions Processes of Grinding.
PROM EMERICH PEKAR'S REPORT TO THE HUNGAR-
(Translated from the Ungarische Muehlen Zei tung of Vienna, sustria, for The Miller, (London.)
In order to fully understand on its merits he competition of other countries, now opposed to the largest and most important in
dustry of Budapest and Hungary, I conside it necessary to examine briefly the systems in use in the different countries of the world in the production of flour, the chief factor in our food supply. This notice of the Hungarour food supply. This notice of the Hungar-
ian, as well as the Austrian, Bohemian, Gerian, as well as the Austrian, Bohemian, Ger-
man, Swiss, French, English and Scotch processes is based on personal experience obtained on the spot, while the further data
respecting the flour industry of the United respecting the flour industry of the United
States are given from various sources and direct communications.
The words-of both ancient and modern date-fine, sifted, royal, or white flour express essentially, although unconsciously, an idea
which can perhaps be best conveyed in the which can perhaps be best conveyed
term "relatively branless flour." In the production of flour free from bran seven of the component parts of the wheat berry are re-
moved, viz, the exterior skin, the outer and inner coating of the berry, and the perisperm and germ, for notwithstanding their nourishing properties, a quality absent only in the germ, they are unsuitable for the nutriment intestines are not capable of dissolving them and therefore cannot assimilate them. Although it has only been in modern times,
with the help of physiology and chemistry, that the value of these parts and their appointed role, for food purposes have been
established (concerning which many pervertestablished (concerning which many pervert-
ed views exist even now), still the production of flour free from bran has, since the most ancient times, been an object towards which man unconsciously strove. The custom practiced at the present day, of the domestic sit-
ing or dressing wheat passed once through stones in low grinding serves as an inlustration of this statement. The group of six coatings,
together with the germ, being tougher and more elastic than the albumen, the real flourproducing material, they remain, in flat grinding, in larger pieces than the mass forming the white flour, and consequently they can be separated according to size. But the cut
ting and crushing and pounding action of the stones, while tearing the bran into such large pieces, detaches from its surface such minute particles of bran that they are of no larger
bulk than the flour particles and pass through with them in the dressing. Flat ground flour dressed twice is comparatively free from bran
and fine middlings, still, although it appears outwardly whiter and more regular than ordinary meal, it contains in reality an extraordinary number of bran particles.
We can say of the two chief varieties of material in the manufacture of flour, the tri-
ticum sativum vel vulgare and the triticum turgidum, that the soil, according to the climate, exerts various influences on the berry, ob-
servable in two essentially different forms. Under the influence of a damp and sunless climate, or one damp and tempered by surrounding seas, the wheat berry assumes a plump. Its color is usually brighter, the outer coatings are tougher and more elastic, the endosperm is floury, white, with a crumbling, powdery break, and easy to grind. The per-
centage of gluten it contains is small in proportion to its nutritive properties. The same variety of wheat will develop totally uifferent properties, and be of different formation, if grown in a climate where it is exposed to a
hot and intense sunshine, and dryness at the period of ripening, the more so if sown in a strong or even virgin soil. The outer coatings are then dry, friable, and brittle, the en-
dosperm is homogeneous, with the so-called steely break, shiny on the surface where cut, and seldom showing any dark-coloured fine spots. Its percentage of gluten, and consequently its nutritive value, is greater than the first-named variety of wheat.
According as a district possesses one or the
other variety of wheat, it develops the corother variety of wheat, it develops the cor-
responding system of grinding. We know from history how man adopted whatever by its nature gave him the least difficulty to overleast expenditure of labor, this leading to grrdual improvement. In grinding the soft wheats aiready referred to, the stone rubbed
less off the bran, which fell off in large flakes, less off the bran, which fell off in large flakes,
consequently there was less bran in the flour
and although it slill contained some bran, the simple process of grinding gave the best results on this kind of wheat. If, however, we grind hard steely wheat in this manner, a large portion of the bran is rubbed to powder, making the flour five to six numbers darker, according to our mode of reckoning, although tronger and more nutritious than that made from sof wheats. After the introauction of this
process for the grinding of soft wheats, which was based on the elasticity of the bran, it followed that when a stronger sunshine prevailed and ripened the berry harder, such wheat had to be damped to produce a whiter
flour, in the first place to toughen the bran and thus make it less friable. This proces was then adopted where hard wheats exclusively had to be ground; they were damped or sometimes even regularly soaked, so as to be able to grind them in one operation without injuring the bran. Wheat treated in this manner is produced in a large part of Ger-
many and France, in all England, Scotland and Ireland, where fifteen or twenty years ago low grinding prevailed in all the mills, with the exception of a few hundred, the
wheat being reduced in one operation; at the present time flour, as a rule, is made there in this manner.
As we have seen, this mode of grinding is based on the physical property of the wheat, and is extremely simple; the presence of
these properties is not arbitrary, but is given these properties is not arbitrary, but is given
by nature to the wheat. Low grinding, the process of reduction in one operation, spread over the whole world. The damped wheat
was mostly ground at once between sandstones to flour, and, as is often still to be seen in the country districts, was sifted or dressed
well or badly through a bolter. This continued so until the second half of last century, when the American War of Independence and the French Revolution destroyed the power of the guilds, then crippling all propromotor of unfettered trade, provided the promotor of unfettered trade, provided the
whole industry, and therefore also the flour trade, industry, and unlimited powerer, which, unlike
there water-power, could be produced where re quired.
Although the art of grinding, based on physical properties of soft wheat or whea
oftened by damping, did not materially alter et the process and the results obtained altered, in which respect extraordinary changes took place since the end of las America were the first in the path of progress. The astonishing contrast by which ed homainst the foreign trade, while the most
ontry the thion was prote unrestricted competition prevailed at home -a contrast that still exists-has borne it ginning of the previous one, there were mills at work in Pennsylvania and even on the Mississippi far surpassing anything then in quality of flour as pure as possible, avoiding the making of inferior sorts, was attained by he mode of low grinding called the American system. The wheat was carefully cleane
before being ground, the hardest and best millstones, even as at the present day, were
employed (Suesswasser quartz, such as form employed (Suesswasser quartz, such as form
the riches of our Hegyalja and Barser disricts), instead of the old bolter, cylindrical dressing machines clothed with silk, wer used; elevators, worms, and an automatic art
rangement of the machines as far as practicable, to save labor, were introduced. Thomas Ellicottand Oliver Evans, the most celebrated founders of this system, established it i 1742. They were the first to introduce the centralization of the motive power, the water-
wheel, and its subsequent distribution. In 1781 the English knew but little of the pro gress of the A mericans, for in the same year
Smeaton, by means of an atmospheric engine built on Newcomer's system, raised wate into a reservoir, utilizing the fall to drive the overshot wheel of the mill at Deptford. Smeaton did not make any use of the Ame-
rican improvements. But even in England low grinding improved enormously with Watt's steam engine after 1786, under Boulon and Watts, and afterwards under Rennie Moudslay, Murray, ahd Fairbairn, whose xecution of details was unexceptionable.
In France special attention was paid to milling, still they did not equal the Americans. Their "mouture a la grosse" was a simple low grinding, the meal being sifted at home, and only 16 per cent. to 18 per cent. of the bran extracted from it. The "mougrades of bolting. The bolter with the finest meshes gave the flour for the rich man, the
last one the flour for the poor man. The "mouture economique," contains in reality
the elements of middlings milling in several operations. It originated in the sixteenth century, when a miller named Pigeault, of Senlis, produced by it a whiter flour than usual. The " mouture Lyonnaise " is a simiar variation of this process, another branch of which, the "mouture a gruaux blancs" o mouture ronde," is at present a very immiddlings flour is produced out of the hard wheats in making the semolinas required for maccaroni manufacture. The French, partly on account of the Revolution, and partly on account of their conservative nature, did not
adopt until 1818 the improvement brought from America, and then it was with machines imported from England. They did not delay in placing the stones centrally, introducing turbines, preliminary crushing rollers and improved dressing machines, and especially at the time of the building of Surville and Darblay mills at Corbeil, adopting and $p^{\wedge} r$ fecting the most rational system of low grinding.
In Germany the improved system of low
grinding was introduced about 1825 in a mill in Magdebtrg, built by an Englishman named Murray, of Leeds. The towns of Berlin and Messrs, Genzel and Wulf, whe wan system.

## study the process, returned about 1827 to

cellent results. In 1828 the Bavarià Go
ernment offered a premium of $£ 250$ to any-
one who would erect for his own use a three
pair mill on the American system; and abou
the same time the Wurtemburg Government
erected a model mill on the same system.
American system at Plauen, near Dresden. In Austria its introduction commenced in
Vienna, in 1840 , with the buidding of "Schuettel" mill, which is aiding of property of a company, Roman, Uhl \& Co
Limited. But this system did not satisfy the
requirements there, for which reason the
mill began, as happened partially in Saxony
and Bohemia, to produce on the system then
grinding of the middlings, the white extrac or finest flour, which the American system was incapable of producing. At this period Sulzberger appeared with his rollers, as we shall see later on. In Hungary the first steam mill was built at Oedenburg, and in his respect our land bears the palm from mill on the Anglo-American low grinding sysem was the one erected in Fiume, Hungary with 18 pairs of stones, the "Stabilimento Commerciale di Farina," which exists to the
present day, but naturally now arranged for middlings milling. In the last century, and up to 1830 or 1840 , the countries producing soft wheat made a nicer and whiter flou han both Hungary and South Russia especially, and in general than those three districts of Europe which grew hard steely or half hard wheats. This was natural, for we have with their brittle bran coatings, if treated on the system then customary and renowned in the West of Europe, make an extraordinary dark flour, because not alone are the inner flour-producing portions of the berry reduced but also a great portion of the brittle bran, which passes through the sieves with the flour, and cannot afterwards be removed, thus deteriorating the quality. This prcperty tritive matter, was known in Western Europe, in so far that the French and English millers pay, even to the present day, higher prices or the good soon wheat, than, for instance or the valauble Russian sorts, with toug
bran, and up to 1850 the English millers would bran, and up to 1850 the English millers would
hardly buy steely Russian wheats at all, until a miller in Durham began secretly to clean these hard varieties carefully and to damp them very much. This was done to make the bran coatings like those of the native wheats, and thus to be able to grind them at one operation without injuring the bran. The alteration of the natural property of the wheat was a success, and the miller in question enriched himself, for he could buy Rus. sian wheats without exception at considerably lower prices than English or American
The adoption of these means could lead to to seek in Hungary, and therefore we had berry from its coating of bran. In this way from small beginnings, the pro-
cess of grinding the wheat by gradual breakings, following one upon an
other, came into extraordinary favor. Middlings milling, or rather the Hungarian system par excellence, consists therein, that the carefully cleaned, unirjured wheat is in the first operation (on the stones) in general broken into two pieces only, from which the flour, the middlings, and the products for further reduction, the half grains, separated according to size, are removed. The core particles are separated according to size and specific gravity by the aid of a current of air, which also removes the particles of bran knocked off and loosened from the inner parts in the first break. The secret of this process consists in the bran separation ob-
tained in the middlings grinding, the berry beingoperated upon five or six times, until not quite reduced to middlings, the operation being continued on these, so that little by little the bran is entirely separated from the middlings made from the inner parts of the wheat berry, so far of course as lies within

The great care and patience required in his process led the French to term it appropriately "mouture en infini," but its re-
sults are so splendid that the more ancient sults are so splendid that the more ancient
system cannot produce nearly so fine flour as that obtained in middlings milling.
In our next we shall give details of this process, of such moment to us, which formerly
excited the astonishment of the world, and

## and gave rise to so many imitations.

## An Anecdote of Two Judges.

Judge Whiting was Chief Justice of Wisconsin about forty years ago. Judge Woodle
was an Associate Justice. Judge Whiting was not considered a very brilliant man, but, though his perceptions were sluggish, his

Judge Whiting and Judge Woodle were traveling together, hearing appeals from nisi prius terms. They traveled on horseback,
and on one occasion occupied a room to
gether.
Judge Whiting had a very shapely foot (a fact which he was suspected of knowing as
well as anybody). Judge Woodle had club feet (as to which he was suspected of being very sensitive). On the occasion I speak of,
Judge Whiting was lying on the only bed there was in the room, with one of his shapely feet extending out of the bed. He looked up and saw Judge Woodle looking at the foot "Wh hiting.
are you looking at?" said Judge At your foot, Whiting," said Woodle And, do you know, if I had your feet I
ould be almost willing to have your head."

## The Germ and Seam Impurities,

## The first step towards making the "highest

 grades" of flour is to remove the "sproutgro grain, and the "seam impurities" found between the lobes of the berry,

## dlings.

Every miller has encountered the germ or "chit" of the wheat berry, and there are probably few who have not sought to devise
some means of keeping it out of the flour. some means of keeping it out of the flour.
The chit or germ is an essential part of the wheat, for without it the wheat could not reproduce itself; but its career of usefulness ends by the time it reaches the hopper of the mill. The demand of the present day is for white flour. Millers have learned how to make a strong flour, and the aim is now to improve the color and still preserve the strength.
It is a well known fact that white flour with but a well known fact that white flour with sells readily in the markets, and often brings a higher price than stronger and better flour. Now the germ is, in a measure, nutritious. It does not contain much albumen, but is rich in oily matter. Its nutritious character,
however, is more than neutralized by the dishowever, is more than neutralized by the dismajority of millers would gladly dispense with it, for the reason just cited, that good flour is nutritious enough without the germ, and people want white flour.
There is a "bluish dirt" secreted in the seam or crease of the berry that neither brush machine nor smutter can reach or remove, and millers should not lose sight of the fact that incorporating this dirt in the wheat flour does not do away with its existence. Therefore its removal at the first stage of reduction is an imperative pre-requisite of a high-grade wheat or break flour.-From Chisholm Bros. w catalogue.

Ths recent great fire at Lake City, Minn., $\$ 12.000$. It was partially insured.

# United States Miller. E. HARRISON CAWKER, Editor. 

PUBLISHED MONTHLY
Officg, No. 118 Grand Avenue, Milwauker, Wis.
EUpecriftion price.-Per Year, in advance.


Fimeman

MILWAUKEE, MAY, 1832.
We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement
was scen in the United States Miluer- You will thereby oblige not only this paper, but the advertisers.

## Flour Mill Directory.

Cawier's ambrican Flour Mill Directory for
was completed, ready for delivery February i, 1882. was completed, ready for delivery February i, 1882 .
It shows that there are in the United States 21,366 fil mills and in the Dominion of Canada 1,438 .
the United States are distributed as follows: the United States are distributed as follows:
Alabama, 388; Arizona, 17; Arkansas, 234, California,
209; Colorado, 52; Conneetictut,
903; Dakkota, 44, Delaware,
96; District of Columbia, 7; Florida, 81; Georgia, 514; 96; District of Columbia, 7; Florida, 81; Georgia, 514 ;
Inaho, 18; Ilinoins, 1258; Indiana, 1163; Indian Ter-
ritory, 3; Iowa, 872 I Kansas, 437; Kentucky, 42 , Louisi-
ana, 41; Maine, 220; Maryland, 349; Massachusetts, 363 ana, 41; Maine, 220; Maryland, 39; Massachusetts, 363
Michigan, , 83; ; Minnesota, , 772 2 Mississippi, 297; Missouri;
42; Montana, 20; Nebraska, 20; Nevada, michigan, 831; Minnesota, 472; Mississippi, 297; Missouri;
M2; Montana, $20 ;$ Nebraska, $205 ;$ Nevada, $10 ;$ New
Hampshire, $202 ;$ New Jersey, 445 ; New Mexico, 28; New
York, 1922; North Carolina, 566; Ohio York, 192\%; North Carolina, 556; Ohio, 1462; Oregon, 129;
ennsylvania, 2786; Rhode Island, 47; South Carolina,
205; Tennesee, 620; Texas, 548; Utah, 129; Vermont, 231; Virginia, 689; Washington Territory, 45; West Virginia, ; Wisconsin, 780 ; Wyoming, 3 ; Total, $21,356$. .
The directory is printed from new Burgeois
heavy tinted paper and is substantially bound. It makes a book of 200 large pages. The post offices are alphabeticname of the mill, the kind of power used and the capacity of barrels of flour per day of 24 hours are given
wherever obtained which is in thousands of instances This work is indispensible to all business men desiring each the American Milling Trade.
Yrice Ten Dollars per copy on receipt of which it will be
sent post paid to any address. Remit by registered ent post paid to any address. Remit ty registered letter,
post-office money order or draft on Chicago or New York made payable to the order of E. Harrison Cawker, pub-
lisher of THE UnITED STATES MILLER, Milwaukee, Wis.

Samuel Carey of 17 Broadway, New York has just issued a neat catalogue of milling machinery

The St. Louis Miller thinks the best preservative for highways is wide-tired whe ls on all heavy wagons.

The Hungarian Miller's Journal says that those millers who discontinue their milling papers generally are heard of in the bankruptcy court, within two years of the perpe-
tration of such a diabolical act. Serves 'em tration of such a diabolical act. Serves 'em right too, say we.
George T. Smith of Smith Middlings Purifier fame, after a long sojourn in Europe, has again returned to the United States to settle down. Mr. Smith has spent much of the past year in traveling. Among other places he visited Pompeii and examined the old time mills unearthed from the ashes of that ill-fated city
65,234 immigrants arrived in the United States during the month of March. Of this total number of immigrants, there arrived
from England and Wales, 4,840; Ireland, from England and Wales, 4,840; Ireland,
5,221 ; Scotland, 1,301; Austria, 1,437; Bel5,221; Scotland, 1,301; Austria, 1,437; Bel-
gium, 139, Denmark, 1,367; France 541; Germany, 23,251 ; Hungary, 1,071 ; Italy, 4,213; Netherlands, 995; Norway, 607; Poland, 660; Russia, 900; Sweden, 2,689; Switzerland, 1,216; Dominion of Canada, 10,797; China 3,792; and from all other countries, 197.
The New York Tribune' in an article about employment of the patients in the Ward's Island Insane Hospital says that the engine and boilers, some of the largest in the city are managed entirely by insane patients. The Superintendent does however think it hardly safe to employ the patients as bar-
bers. It seems to us as if the superintendent was about as "cranky" as any of his patients to permit them to have entire charge of a steam engine and boilers.

American Competition in Germany.-In a report to the Society for the Advancement of Trade, Mr. Wyngaert, the President, of the German Miller's Association, remarked that the raising of the duty on flour from 2 s .6 d .
to $3 \mathrm{~s} . \mathrm{L} 6 \mathrm{~d}$. a sack has been of advantage to to 3 s . 6 d . a sack has been of advantage to German millers, because it caused a diminu-
tion in the imports from Austria-Hungary,

Russia and America. Still the American flour pressed heavily on the German trade all
last year, on account of the heavy stocks carried forward from 1880 and the cheap wate transport up the Rhine. He then proceeds to state "that the imports of American flour would still further decrease were a practice in America of adulterating it with maize flou abolished." The Miller. (London.)
Wyng are willing to wager Mr. Van de Wyngaert the price of a Cincinnati telephone that he cannot show a single barrel of American flour in Germany, direct from the
American manufacturer that is adulterated with maize flour
Minneapolis Milling. The present actua milling capacity of Minneapolis is placed by a recent writer at 21,100 barrels per day of
twenty-four hours. To keep these mills run-twenty-four hours. To keep these mills run-
ning at their full capacity on full time would require about 100,000 bushels of wheat per day or $31,200,000$ for a working year of 312 days. The Minneapolis mills alone are therefore capable of grinding a greater crop than Minnesota produced last year, without the
help of the other 460 flouring mills in the state.

We Welcome to our exchange table the Turf, Field and Farm published at 39 and 41 Park Row, New York. For sixteen years
this paper has been the favorite journal of thousands of gentlemen throughout the country, fond of agricultural, breeding and sporting pursuits. The office of Turf, Field and Farm with its valuable library was destroyed by fire January 31st, but the enterprising managers did not fail to bring their paper out on time. Their new and commo dious offices are now occupied and business goes on unin
them again.
Early Roller-Mills in Europe.-About the first practical attempt made to use roller for making flour, was made by Herr Helfenberg at Rorschach, Switzerland in the year
1821. The rollers were made of 1821. The rollers were made of cast iron Experiments were continually made until they were considered successful when Sulzberger erected a roller mill in Zurich in 1834 The first roller mill in Budapest, Hungary was built in 1839 by the "Josef Roller-Mil Stock Company." It met with much ridicule and opposition but was finally successful and its example was followed by many milling firms in Hungary, Austria and Germany Since that time roller mills have been built in great numbers in every country in Europe.

## Fortunate Mill-Builders.

Two gentlemen prominently connected with the mill-building industry were fortunate in the last local political campaign. Mr.
James M. Stowell of the Cream City Iron Works was elected Mayor and Mr. Henry Smith of the millwright firm of Birge \& Smith (formerly Smith Bros.) Comptroller of the City of Milwaukee. These gentlemen will doubtless merit the high esteem of their fellow-citizens by the creditable manner in which they will perform their respective
duties. duties.

## Communication from Budapest.

## Editor of the United States Miller.

I read in No. 5 of your paper, page 70 that the celebrated Borsig Mill in Berlin making very nice rye flour on rolls" and I must pray of you in order "to give honor to whom honor is due," to mention in your
valuable paper at an early date that this rye-grinding is done by Ganz roller-mills with their peculiar sharp dressed rolls. Also I beg you to state that the grinding of rye by rolls has only been commenced in Europe during this last year and is done with Ganz roller-mills, especially constructed to suit the requirements. The Borsig Mill uses 14 fourroller mills No. VIII, and 2 No. XXII. Respectfully

Prof. Max Grienbaym,
Ganz \& Company, Budapest, AustriaHungary.
Translated from the Hungarian Miling Journal for the
UNTYED STATES MILLER.)
March 26. the stockholders of the above named company held their general meeting of which the following is a brief resume
The prices of our manufactured articles advanced with the price of raw material The unfavorable condition of last year's harvest as might be expected had an unfavor able effect on the department of our establishment for manufacturing roller-mills. The
orders for mills from Austria-Hungary were considerably less than during the previous
year but this was fully made up by increased oreign demand and on this account our sales are but a trifle less than during the previous year. The smaller mills are now generally contemplating the making of improvements and this is a favorable sign for the coming year, This, and the world-wide reputation of our roller mills leads us to believe that the oller mill branch of our business will be profitable for a long time. Our works have
been run to their full capacity, and have been run to their full capacity, and have
warranted the employment of 800 additional workmen. The buildings of several depart ments have also been enlarged.

## Recent Publications.

Indianapolis Chamber of Commerce Reort for the Year 1881.-This report shows very gratifying increase in nearly every more complete than any we have yet received from Indianapolis and speaks well for the ability of secretary Henry C. Wilson.
Report of Department; of Agriculture U.S. A. contains valuable papers on Sorg hum, Swine Plague, Grasses, Cattle Disease etc. These reports are of value to the highly educated, "gentleman farmer" but are too atterly technical for service to the ordinary ranger. A little less Latin, and more plain erms of easy comprehension to the averag would make these reports more desirable As it now is, too many of these reports soon find their way to the paper-mill.
Harper's Magazine for May, 1882 . Published by Har-
per $\begin{aligned} & \text { \& } \\ & \text { year. }\end{aligned}$ Brothers, N. Y. Subscription price $\$ 1.00$ per
The Crntury Macazing. The Century Co., New York, Pub
lishers. Subscription $\$ 4,00$ per year. T. NichoLAs por ApRiL. Published by
New Yori. Subseription price, 83.00 .

Henderson's Directory of Manitoba and N. W. Territory for 1882. Published at Winnipeg, Manitoba. Price $\$ 4.00$
The above is a very complete directory, much larger that the former one and it will prove of great benefit to all desiring to extend
their trade in the rich field north of us. We their trade in the rich field north of us. We
unhesitatingly can recommend the work to usiness men in need of such a work.
The Knowles Steam Pump Works of 86 Liberty street, New York, have just issued the handsomest machinery catalogue we have and engraving is all of the very best quality The cover design is excellent. The company report a large and flourishing business.
Chisholm Bros. Catalogue for 1882, by Millers Bros., 64 S. Clinton st., Chicago, Ill Millers will do well to apply early for a copy
of this valuable catalogue, which is a credit to the compilers.

## Missouri Millers Association

The regular annual meeting of the Mis souri Millers Association took place in St.
Louis, April 15th. The attendance owing to Louis, April 15th. The
An election for officers resulted as follows President, J. F. Lawton of Carrollton, Mo. first vice-president, Frank Hill of Cowgill \& Hill, Carthage, Mo.; second vice-president Gustavus Sessinghaus of St. Louis; treasurer Geo. J. Plant of Geo. P. Plant \& Co,, St.
Louis; secretary, David B. Kirk of D. B. Kirk \& Co., St. Louis.
Alex. H. Smith of the Empire Milling company, St. Louis, was elected a member of the national executive committee.
The following were chosen members of the state executive committee; E. Goddard o Kraff of the Cons. Louis, chairman; C. L Louis; Wm. Waggoner of Will company, St Independence, Mo.; Wm. Anderson of An derson, Henderson \& Co., Columbus, Mo., and C. W. Sombart of the Sombart Milling com pany, Boonville.
The report of the secretary showed the The liabilit be entirely free from debt. since, the had been settled some time was in a more properous condition than ever before.

## Foreign Items.

The British and Irish Millers Association have concluded not to have any exhibition of milling machinery this year.
The Millers' Mutual Fire Insurance Company, of London has discontinued business. Several heavy losses disheartened some of the stockholders and they concluded to settle up and quit business. Non-mutual
companies are rejoicing and saying: "I told companies are rejoicing and saying: "I told you it would be so.
THE Stevens roller system will be exhi don, May next by Mr. Frederick Nell.

Messrs. GANZ \& Co., of Budapest, AustriaHungary up to the close of the year 1881 had sold 6,340 sets of rolls. During the year 1880 hey sold 1,326 sets many of them going to foreign countries.
The Metropolitan Mills Co. (Limited) has een organized at Shad-Thames, London, with capital of $\$ 1,000,000$.
Another Millers' School has been established in Saxony. The tuition fees are about $\$ 15.00$ per year. The cost of comfortable board and lodging is placed at about $\$ 150$ per

## Flour and Grain Trade Notes.

The average profits of the leading eight flouring mills at Budapest, Hungary, the greatest milling center in Europe, for the past year was 15 per cent, averaging all the way from 26.5 per cent to 5.3 per cent.
Recently 150,000 bushels of corn were sold in Logan County, Ill., for 76 cents per bushel, to be shipped to Southern States.
The initiation fee for membership in the St. Louis Merchants Exchange has been raised to $\$ 2500$. In Milwaukee it is placed at $\$ 1000$, and in Chicago at $\$ 5000$.
The total amount of breadstuffs exported during March, 1882 were of the value of $\$ 12$,404,735 against $\$ 22,301,161$ during March 1881. The total for nine months ending March 31,
1882 were of the value of $\$ 147,701,367$ 1882 were of the value of $\$ 147,701,367$,
against $\$ 204,729,787$ during the period ending March 31, 1881.
In his recent valuable work of "The World's progress," Michael G. Mulhall, an eminent English statistician, estimates the wheat ands of the world at $105,000,000$ acres, yielding 15 bushels per acre and hestates the crop,
consumption, surplus and deficit of each consumption, surp
country as follows:


These figures represent the distribution of supply and consumption at the nearest obtainable dates to 1879, and may be regarded s affording a fair approximation to the facts f the case, says the New York Bulletin. It may be necessary, however to make some allowance for the circumstance that, at the period chosen for comparison, the crops of Europe were exceptionally light, while that of the United States was exceptionally large; it may therefore be open to question whether the distribution here exhibited is an entirely normal one. The exceptional conditions alluded to, gave to this country an ascendancy in the trade never before reached; and it is a problem which the future alone must determine how far that relative position can be maintained.
Many of the millers of Great Britain are very skillful in mixing wheats. Wheats from all parts of the world as well as home grown wheat are received at their mills, and the experienced mixer carefully examines each kind and mixes them in the proportion which he thinks will give the best results. American millers, fortunately, are not obliged to mix various foreign wheats, but the mixing of our native wheats is a good subject for them to study.
The Ohio State Board of Agriculsure estimates the coming wheat crop of that State at $35,612,190$ bushels as against $37,581,094$ for ast year,
The Illinois Department of Agriculture has reports for April on the condition of the wheat crop from 500 points, which give promise of more than an average yield per acre throughout the state, the northern division being 2 per cent. above the usual condition.
The foreign trade figures of the port of New York, for March, bear testimony to the depressing influence of speculation and corners." With ocean freights way down,
and vessel agents in some cases paying for the privilege of carrying grain as ballast, exports exclusive of specie, were more than $\$ 10,000$,000 behind those of the same month last year.
The value of exports (including $\$ 4,339,698$ The value of exports (including $\$ 4,339,698$ specie) was $\$ 29,928,501$, and of imports $\$ 45$, 383,384 - of which less than half a million
was specie. Speculation has put, and holds. grain and cotton up to figures at which they cannot be exported, The foreign demand for these staples is supplied from other sources,
and the United States is paying for its exports and the United States is paying for its expor
in gold and keeping its abundant products.

# COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE. GENERAL MLLL FURNISHERS 

 Improved COCKLEE SEPARATORSSend for llustrated from wheat but te separate it WITHO N WASCHES OF MONEY in a mill. There is NO MACHINE IN THE MARKET which can stand comparison with ours.
Carbondale, II., Dec. 2, 1881. $\mid$ Hixton, Jackson Co., Wis., Dec. 3o,'s1 Min Minneapolis, Minn. Aug. 2i2, 1881. |time with very satisfactory results. I

 favor, would say that we can cheerfully the 28th inst., I would say that the lees's wheat cleaners, a scourer and to run it. Yours truly,
 doing all that you claim for it we summer, works this tion. Respectfully yours, time and know whereof We speaik. We Der. W. PRICE, p. per hour through them, one third more Cockle Separator Mfg. Co. would not think of doing without it, per D. G. THOMAS. per hour that capacity, and are not using Gentlemen:-The Beardslee's ; Grain having tried it once, and can conscien-
tiously vouch for its good work.
tiously vouch for its good work. Yours respectfully, $\quad \begin{aligned} & \text { twenty-seven years, but never } \\ & \text { seen anything that will equal yours in }\end{aligned}$

BROWN \& WVFREY. Perrysville, Ind., Nov. 24, 1881. Cockle Separator Mfg. Co., Milwaukee. irs:-The combined machine i bought screenings and separate the cockle from of you has been running about three it without wasting any of the small for it, and is the most perfect Separator United States ought to have one, and if that 1 have any knowledge of.

I were to build a mill I would have no
 HOWES, BABCOCK \& EWELL, Mstablished 1856. Silfer Creek, Chautauqua County, Now York, T. S. A. Istablished 1856. MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECLALTIES HEREWITH ILLUSTRATED

upies but litle space, , opes stas work in an
fual manner. 18 also ouilt for $w e$ in


kee Mills give us the best of satisfacekion. Experienced millers having seen the work done by the machine agree withus, that it cannot be beat, You are at iberty to use our names as a refCAHILL, FLETCHER \& CO La Crosse, Wis., July 30, 1881. ckle Separator Mfg. Co., Milwaukee. Gentlemen: - The Beardslee Grain we will be pleased to show the machine Gleaner sent me about the middle of in operation, Yours truly, Cleaner sent me about the midde of
June has been in operation since that


The Eureka Smut and Separating A combined \&Smut and Separating Machine,


Eureka Brush Finishing Machine
Recognized as the leading one of this Recoknized as the leading onachine of thi
class of machines. Universally recom class of machines. Universally recom
mended for finishing the process of


Silver Creek Flour Packer. Will pack whole and half barrels, tana barrel sacks. Progided with labor-sav
ing barrel sacks. Provided with labor-san-
ing patent creveling steel cois spring
regulating the packing to perfection. cleaning. WAYS ON HAND, MADE UP BY THE AID OF OUR
TED ATTACHMNETS, IN A SUPERIOR MANNER.
nies \& New Zealand, THOS. TYSON, MELBOURNE, VICTORIA.

Abernethey's New Book. PRACTICAL HINTS

## Min Buinding

The Latest, Best and Only Exclusively Flour Mill Work in Print
Bvery Miller, Millwright and Milwrights Apprentice should have a copy.
 UNITED STATES MILLER, мillwaukee, Wis.

## The Miller's Daughter.

## by alfred tennyson.

I see the wealthy miller yet
His double chin, his portly size And who that knew him could forget The busy wrinkles round his eyes? The slow wise smile that, round about His dusty forehead dryly curl'd, Seem'd half-within and half-without, And full of dealings with the world?

In yonder chair I see him sit, Three fingers round the old silver cup; I see his gray eyes twinkle yet At his own jest-gray eyes lit up With summer lightnings of a soul So full of summer warmth, so glad, So healthy, sound, and clear and whole,
His memory scarce can make me sad

Yet fill my glass: give me one kiss: My own sweet Alice, we must die; There's somewhat in this world amiss Shall be unriddled by and by.
There's somewhat flows to us in life, But more is taken quite away.
ray, Alice, pray, my darling wife, Pray, Alice, pray, my darling wife,
That we may die the self-same day Have I not found a happy earth? I least should breathe a thought of pain Would God renew me from my birth I'd almost live my life again. So sweet it seems with thee to walk, And once again to woo thee mineIt seems in after-dinner talk Across the walnuts and the wine-
To be the long and listless boy Late-left an orphan of the squire, Where this old mansion mounted high Looks down upon the village spire: For even here, where I and you Have lived and loved alone so long, Each morn my sleep was bro ken thro
By some wild skylark's matin song

And oft I heard the tender dove
In firry woodlands making moan; But ere I saw your eyes, my love, For scarce my life with fancy play'd Before I dream'd that pleasant dream Still hither, thither idly sway'd
Like those long mosses in the stream.
Or from the bridge I lean'd to hear The milldam rushing down with noise, And see the minnows everywhere
In crystal eddies glance and poise, The tall flag-flowers when they sprung Below the range of stepping-stones, Or those three chestnuts near that hung In masses thick with milky cones.

But, Alice, what an hour was that, When after roving in the woods (Twas April then), I came and sat Below the chestnuts, when their bud Were glistening to the breezy blue; And on the slope, an absent fool, I cast me down, nor thought of you,
But angled in the higher pool.

A love-song I had somewhere read, An echo from a measured strain
Beat time to nothing in my head From some odd corner of the brain It haunted me, the morning long, With weary sameness in the rhymes, The phantom of a silent song, That went and came a thousand times

Then leapt a trout. In lazy mood I watch'd the little circles die They past into the level flood, And there a vision caught my eye; The reflex of a beauteous form, A glowing arm, a gleaming neck,
As when a sunbeam wavers warm Within the dark and dimpled beck.
For you remember, you had set, That morning, on the casement's edge A long green box of mignonette, And you were leaning from the ledge: And when I raised my eyes, above They met with two so full and brightSuch eyes! I swear to you, my love, That these have never lost their light.
I loved, and love dispell'd the fear That I should die an early death; For love possess'd the atmosphere, And fill'd the breast with purer breath. My mother thought, What ails the boy? For I was altered and began To move about the house with joy,

I loved the brimming wave that swam
Taro' quiet meadows round the mill,

The sleepy pool above the dam,
The pool beneath it never still. The pool beneath it never still. The meal-sacks on the whiten'd floor, The dark round of the dripping wheel, The very air about the door
Made misty with the floating-meal.
And oft tin ramblings on the wold, When April nights began to blow, And April's crescent glimmer'd cold, I saw the village lights below I knew your taper far away, And full at heart of trembling hope, From off the wold I came, and lay
Upon the freshly-flower'd slope

The deep brook groan'd beneath the mill: And "by that lamp," I thought, "she sits!" The white chalk-quarry from the hill Gleam'd to the flying moon by fits. O that I were beside her now O will she answer if I call?
would she give me vow for vow,
Sweet Alice if I told her all?"
Sometimes I saw you sit and spin; And, in the pauses of the wind, Sometimes I heard you sing within; Sometimes your shadow cross'd the blind. At last you rose and moved the light, And the long shadow of the chair Flitted across into the night, And all the casement darken'd there.

## But when at last I dared to speak,

The lanes, you know, were white with May, Flush'd like the coming of the day; And so it was-half-sly, half-shy, You would, and would not little one? Although I pleaded tenderly
And you and I were all alone.
And slowly was my mother brought
To yield consent to my desire:
She wish'd me happy, but she thought
I might have looked a little higher;
And I was young-to young to wed:
" Yet must I love her for your sake; Go fetch your Alice here," she said: Her eyelid quiver'd as she spake.
And down I went to fetch my bride;
But, Alice, you were ill at ease;
This dress and that by turns you tried, Too fearful that you should not please I loved you better for your fears,
I knew you could not look but well;
And dews, that would have fall'n in tear
And dews, that would have fall'n in tears,
I kiss'd away before they fell.
watch'd the little flutterings,
The doubt my mother would not see;
She spoke at large of many things,
And at the last she spoke of me;
And turning look'd upon your face,
As near this door you sat apart,
And rose, and with a silent grace
Ah, well-but sing the foolish song
I gave you, Alice, on the day
When, arm in arm, we went along,
A pensive pair, and you were gay
With bridal flowers-that I may seem
As in the nights of old, to lie
Beside the millwheel in the stream,
While those full chestnuts whisper by.

## Sixth annual meeting of the Wisconsin Millers Association.

The Wisconsin State Millers Association met Tuesday, April 11, in the Newhall House, Milwaukee, with the following members present: Edward Sanderson, Milwaukee; J. A. E. W. Arndt, De Pere; B. F. Heald, Sheboygan; W. S. Green, Milford; O. Puhlman, Ply mouth; Wm. Gerlach, Milwaukee; H. B Sanderson, Milwaukee; S. H. Seamans, Mil-
waukee; E. Schraudenbach, Oconomowos waukee; E. Schraudenbach, Oconomowoc
Jas. Norris, Stoughton; S. P. K. Lewis, Beaver Dam; John May, Watertown; Wm. Albrecht \& Co., Newburgh; J. Fliegler, Manitowoc; J. R. Davis, Jr., Neenah; Gilbert \& Barber Geneva, the representative of ThI Unied States Miller and others.

President Sanderson, in calling the meeting to order, said that they had assembled together to talk over matters which had come
up during the year; to discuss any new quesup during the year; to discuss any new ques-
tions which might be suggested, and to select a delegate to the National Convention of millers.
Treasurer Seamans then made a statement of the financial condition of the association which showed cash on hand at last report
$\$ 701.66$. Receipts during the year, $\$ 4,143$; $\$ 701.66$. Receipts during the year, $\$ 4,143$;
total $\$ 4,846.66$. Disbursements to the amount of $\$ 3,987.65 \mathrm{had}$ been made, leaving a balance on hand of $\$ 859.01$. The finances of the assooiation were well in hand, no licenses having
been issued except to members who had fully paid up.
The secretary's report was then called for and Mr. Seamans presented the following succinct and interesting resume of the labors of the association for the past year, suggesting at
the same time the best course for the organithe same time the best course for the ors
zation to pursue for the ensuing year.

## Mr. President

Since our last meeting one year ago, we have only added
one name to our list of membership. 78 firms are fully paid on the 1880 assessment, 76 have made the August 8 for 1881.
The new rating of capacity adopted at the last meeting
of the National Association making 35 barrels of the output equivalent to a run of stone has, in many instances reduced the basis for assessment. Upon the old basis, our
present paid up memberkhip would equal 400 runs, while upon the present basis it is 380 runs. From present indications it will not be necessary to levy: any assessment
this year, and probably not next, and any future assessment will be very light.
In June last the dele
In June last the delegates from the various state asso-
ciations held a national convention in Chicago. ciations held a national convention in Chicago. The
principal business before that convention was discussing principal business before that convention was discussing
and arranging for the esttlementof the "Cochrane fraud."
As your delegate to that convention, I opposed that settle As your delegate to that convention, 1 opposed that settle
ment on the ground "that a fraud under no circumstances should be compromised," but the majority favored the
settlement on the ground of expediency and economy, settlement on the ground of expediency and economy,
thinking no doubt it was the wisest course to pursue with
what had been a very costly and vexatious suit. On the what had been a very costly and vexatious suit. On the
15th of November following, the sub-executive committee of the National association, met in St. Louis, with the re
presentative of the Cochrane case claims, when the cas presentative of the Cochrane case claims, when the case
was settled according to the terms agreed upon in con-
vention, for the members of the association who were full paid. All others must make the best terms they can.
In 1877 this great "fraud" loomed up before us wi In 1877 this great "fraud" loomed up before us with to their own estimates, for about thirty-six millions doll-
ars, or a settlement on the basis of $\$ 6,000$ per run of stone capacity (which was modified, after our organization to
coun per run). Backed by a decision of the United $\$ 1000$ per run). Backed by a decision of the United Statee Supreme Court they considered their position impreg
nable-but combined effort, with determination, and goo nabe-bilty, has enabled us, at a small expense, to each
legal ability
individual miller, to get a decision of the United States supreme court-so far as it affected us-set aside-and
claims that were considered very strong, by some of the highest legal talent in the United States, " melted away like dew before the morning sun." With this experience
before us, the necessity for keeping before us, the necess
tion is very apparent.
The Denchfield cases are still.on the docket. Although the suits begun in Wisconsin and Minnesota are supposed
to be killed by the late decisions of the supreme court, the New York cases will have to be contested, as they do no
come under the terms of those decisions: come under the terms of those decisions: The sub-execu-
tive committee of the National Association met with the tive committee of the National Association met with the
Denchfield claimants at Chicago for the purpose of effect ing a settlement of those claims, but their demands were so exorbitant that nothing was accomplished. This was
before the late decision of the Supreme Court. We think now, they might be willing to modify their demand some-
what, if they had an opportunity offered for settlement. With this case off our hands we will be entirely free from
litigation, and I trust we may remain so and efforts of the association turned into channels that will protect us from other impositions, equally damaging and more costly to the business than patent frauds,
Front and foremost among these is the present mania for Front and foremost among these is the present mania for
gambling in grain. The past season has been fruitful of gambling in grain. The past season has been fruitful of
disasters to the milling fraternity in this direction. I disasters
understand full well, the cry and accepted belief that
"und "nothing can be done to prevent it," "there is no use
trying," "it is useless to haps this is all so, but $I$, for one, believe that with the
courts in courts in our favor, with laws behind us, much may be accomplished by united and persistent effort We wer
told, "Oh, you can't beat the "Cochrane ring, they hav got a d," but this did not save their gambling scheme from
them defeat. A long pull, a strong pull and a pull altogether I have no plan to propose or suggestion to offer, but call
your attention to the subiect your attention to the subject as a fit one for the associa-
tion to wrestle with. Much may be accomplished by also call your attention to the unfinished unganization a fire insurance company. This matter has lain dormant since our meeting in April, 1880.
Last year I issued, under the
Last year I issued, under the auspices of the National
Association, a monthly crop report, which was sent to all Association, a monthly crop report, which was sent to all
members of the association. I would like to know from the members present their opinion as to the advisabil S. H. Seamans, Sec'y

The question of organizing a system of mutual insurance among millers came before the meeting for consideration. The secretary stated that nine incorporators were necessary to organize a company under the
charter obtained by the committee on insurance from the state legislature. Mr. Schuette, of Manitowoc, chairman of the committee on insurance not being present, no report was received. A resolution was offered and adopted directing the secretary to correspond with Mr. Schuette and find out what had been done by the committee and report to the executive committee of the association, and it was further resolved that they take such action as they may deem advisable to complete the organization of the company.
President Sanderson then called attention to the reference in Mr. Seamans' report to the subject of gambling in grain. He favored action, as a means of protection to millers. He regarded all dealings in options simply gambling. The persons engaged in trading in options might as well introduce faro and other devices for gambling upon the floors of our chamber of commerce, and test their fortunes in that direction. There is no question that a large majority of the dealings at present are by a class of people who do not
or do not ca. to hold a bushel of wheat, but
simply settle differences. Recent decisions of the courts are pretty uniformly against the legality of dealings in options, and he had no doubt that these decisions will soon be universally sustained. He thought a resolu tion asking the National Association to take cognizance of the question should be adopted. Mr. J. R. Davis, jr., of Neenah, suggested the propriety of securing the passage of a state law to prohibit dealing in options. Mr Otto Puhlmann, of Plymouth, stated that the trouble was not with the law or the courts, as there had been a decision of the supreme court declaring all option dealing illegal The trouble was that the Board of Trade, an institution chartered by the state, considered itself above the law. The only way he could see to remedy this state of things was that a new law should be enacted in Wisconsin to bring the Board of Trade within the law, or else declare the same a public gambling house.
Presid
President Sanderson offered a resolution to submit the whole matter to the National Association for them to take action upon. Mr . Seamans opposed any movement tending to shift the responsibility from where it belonged. He said that the National Association wanted the support and backing of the state associations, and it was their duty to bear their share of the responsibility. He did not believe in whipping the devil around the stump-we must take the bull by the horns ourselves, and take prompt action upon that which is of such vital importance to us Let our voice be heard in this matter. If the Chamber of Commerce is an illegal body let $t$ be abolished.
Mr. Puhlman, of Plymouth, offered the following resolution :
Rasolved, That a committee of five be 'appointed, of which the secretary of this association shall be chairman,
whose duty it shall be, with such legal may require, to draft a bill for presentation at the next neeting of the legislature providing for the suppression
Mr. Seamans offered the foll
substitute, which was accepted by Mr. Puhlman, and adopted in the following form:
Resolved, That a committee of five be appointed by the
president, who shall take into consideration what course president, who shall take into consideration what course
is necessary to be taken looking toward the suppression is necessary to be taken looking toward the suppression
of gambling or dealing in options in grain that of gambling or dealing in options in grain; that they consult with such legal talent as they may deem necessary,
and that they report to the executive committee the result of such investigation for their action.
Resolved, That the executive committee be instructed to
carry out the report of said committee if in their judgent deemed advisable.
Mr. Schraudenbach moved that Mr. Seamans be added to the committee and act in the capacity of chairman, which was aceepted without a vote. Whereupon the president named the committee as follows: S. H. Seamans, chairman; Otto Puhlman, C. Manegold, . B. A. Kern, J. L. Clement, A. Syme.
Mr. Kimberly, of Neenah, remarked that we had just got through with one big law suit and the Lord only knows what kind of a law suit this will get us into. Mr. Puhlman further stated that there are men on the Milwaukee board of trade who buy and sell millions of bushels of wheat and cannot pay for a thousand if called upon-being perhaps only able to put up margins sufficient for a thouhe heard a man say on 'change a few days ago, that he had sold half a million bushels of wheat and never owned a single bushel. There is No. 2 wheat in Chicago elevators toMr . Mr. Clement, of Neenah, said that the deale mentioned by Mr. Sanderson was just the sort of man the association should get hold of They are within the operation of the penal laws of the state, and should be put through.
The next business in The next business in order was the nomination and election of officers.
Mr. E. W. Arndt, of De Pere, offered a resolution which was adopted, that a committee of three be appointed by the president to nominate officers for the ensuing year. The president appointed E. W. Arndt, B. F. Heald and Jas. Norris such a committee. The com
mittee 1 eported the following nominations: President, E. Sanderson, Milwaukee; first vice presiden nan, Plymouth; secretary and treasurer, s, H, Otto Puhl

> The report was unanimously adopted.

The president nominated as executive com mittee-J. A. Kimberly, Neenah; W. S Green, Milford; J. B. A. Kern and Chas. Manegold, Milwaukee. Mr. S. H. Seamans was nominated and unanimously elected to represent the state association in the National convention. Mr. Sanderson requested the views of the members with regard to the secretary continuing the publication of his monthly report of the crops, same as furnished last year. The members were unanimously in favor of continuing the publication. Many

## The Story of Joseph as Applied to

Our brilliant and esteemed contemporary, the Cincinnati Commercial comes to the defense of the "bull" speculators in food suplies who are so noted in that city, with formidable precedent from Old Testament fistory. Only a constant and ingenious student of the Bible would have thought of the familiar and fascinating story of Joseph as affording an illustration of the most success ful and beneficent "bull" speculations in corn on record, or could have transposed that story into the dialect of the Cincinnati and Chicago speculators of to-day, without losin its substantial accuracy and its interest.
That we do not unduly compliment our Cincinnati contemporary we will prove by giving a portion of its Westernized version o Scripture stories, viz:
Foreseeing a series of years of scarcity and famine in Egypt, and, as is claimed for him illuminated by divine revelation, Joseph pro ceeded to buy up and store in the King's elevators, anciently called granaries, all the surplus wheat produced on the fat lands of the Nile Valley.
He adhered to this policy during seven years of unusual fruitfulness, and drew at will on the King's treasury for the money with hich to control the market hat was offered cheerfully, and ransacked the kingdom for every spare bushel of grain Then came the seven years of scarcity and
famine. The Egyptians, having exhausted famine. The Egyptians, having exhausted Joseph took advantage of their necessiies and turned them to his own and th King's best account.
While our esteemed contemporary is en titled to credit for bringing at least one porion of the Bible within the easy comprehension of the Cincinnati speculators, we ar orry to be compelled to say that the Com mercial's "improvement" of its Scripture is one of the most palpable non sequitur
record. For it improvidently observes: The only difference between the ancien and modern speculators is that now there is not an absolute monopoly of the business f them have the advantage of a supernatura illumination as to futures in wheat, hence heir frequent mistakes and the penalties they often pay in shipwreck of fortune. But hen they are railed at and abused, as en gaged in disreputable business, and at th cost of the consumer, they can point. with pride to the example of the wonderful young man whose adventures on the road to fortune
were not surpassed by those of Aladdin with his surprising lamp.
Now we are obliged to remark in regard to and false dedawn from so ably stated portant to the interests of legitimate trade and business morality, to insist:
1st: That Joseph was not an example of the grain speculators of the present day, in any degree or to any extent. He, like the late Commodore Vanderbilt, paid for what he bought, "took it out of the market arried it without the help of any loans city of corn, but bought the surplus only, and thêreby "sustained prices" for the Egyptian farmers
8d: The statement that when the famine came he "sold his supplies at the highest rates and doubtless at an enormous advanc on the original cost" requires substantiation but, at all events, he sold the corn that kep an improvident people alive and did not take their farms for the "differences" and keep the corn.
4th: There is no part of the Bible which the modern "bull" speculators in food sup plies may read to greater moral advantage than that which the Commercial has so kindly adapted to their comprehension. Joseph's immense speculations in corn did not creat an artificial scarcity of the necessities of life, but saved a whole people from starvation It was a bona fide and honest operation. He did not buy imaginary corn, but the real article. If the Chicago and Cincinnati speculators would study and follow his great and good example, it would be infinitely bette for the country, and, in the end, for themselves. Perhaps Mr. Halstead, who is a humorist, and who may be unwilling to face a gang of infuriated speculators in "futures," thought that the moral of the story of Joseph woudd ve irresistable and that his non sequitur would be easily discovered to be a fine piece of irony,-New York Mail.

Prehistoric Mining in Michigan.
The Lake Superior mines have the advantage of producing metal free from any alloy of antimony or nickel or arsenic. In many of the mines great masses of native metal re found so large that they must be cut in place with chisels.
All the more important mines are situated on the ancient workings of a prehistoric race They seem to have been ignorant of the fac hat copper could be melted, for they left be hind them the fragments too small to use and he masses too heavy to lift. Every day they subjected it to a temperature nearly high enough, without making a discovery which would have lifted them out of the Stone Age into the Bronze Age, and perhaps have enbled them to survive the struggle in which they perished. They must have been very numerous, and have reached the point development wher
In Isle, Royale, near the Minong Mine, their pits, excavated to a depth of from ten to twenty feet in the solid rock, cover an area
of from three to four hundred feet wide and more than a mile and a half in length. Th labor expended here cannot have been much short of that involved in building a Pyramid Isle Royale is ten miles from the nearest land nd is incapable of producing food, so that all upplies except fish must have been brough rom some distant point. Their excavation ould of course never go below the point a which water would accumulate. Their ham mers, frequently to the number of several
thousand, are found in heaps where they were evidently placed at the end of the season. As no graves or evidences of habita tions are found, we can hardly doubt that the ancient miners lived south of the greal lakes, and made yearly journeyings with leets of canoes to the copper mines. The carried off must have been very great, and it has, I believe, been generally thought that the opper implements of the ancient Mexican came from this source. M. Charnay in ecent number of the North American seems o think that the Mexicans reduced copper from its ores. A chemical analysis of their
hatchets would solve the question, for Lake uperior copper is so free from alloys as be unmistakable.
The superintendent of the old Caledonia Mine in Ontonagon County kindly took me o the top of a cliff where three Cornish "tri or a share of working not for wages but one of the ancient pits in the outcrop of the vein. They had brought out a quantity of copper, and had just uncovered a large mas which would weigh certainly not less than even tons. Many battered stone hammer ay around the mouth of the pit. The active little Englishmen, belonging to a race of ereditary miners perhaps as old as th the world from the east to finish the work of he departed Asiatic race who reached her from the west at a time to which no date can
be assigned. Not far away another party had ut down a dead cedar to make props fo their tunnel. As they were putting the log in position, from its center dropped a smal but perfectly formed stone hammer which had never been used. It was made from stone found, I believe, only on the north wo hundred and fifty years old; but as cedar is almost indestructible in this climate, it aay have been dead several hundred years he axeman said that he had found sever ammers in the centre of cedars. It would eem barely possible that this hammer ha been placed in a cleft of the three, when it
was a sapling, that the wood might grow round the groove and serve as a handle. At all events, this one, which I have, was certainly placed where it was-about thirty inches from the ground-by human hands, unoubtedly by the ancient miner himself wen the tree was a twig.-F. Johnson, Jr., Harper's Magazine for May.

## Some Mississippi Overflows.

The history of the Mississippi Delta is istory of repeated overflows.

## Francois Xavier Ma rdinary rise in 1718.

rdinary rise in 1718
Gayerre states that in 1735 the waters were 0 high that many levees were broken and ew Orleans was inundated
A great flood is recorded by Gov. Sargen as occurring in 1770, of which few particu lars are given.
In 1782 the whole districts of Attakapas and Opelousas were inundated.

Another overflow occured in 1785, anothe in 1791, others in 1796 and 1799, and 1800 according to Gov. Sargent; the resultin devastation was so great that the people
magined the Northern lakes had broken magined the Northern lakes
through a channel to the river
hrough a channel to the river
In 1811 and 1813 the river again brok hrough the levees, inundating the entire Teche Country, and in 1815 "a very grea flood" occurred, in which the Ohio Rive ecorded,
Again in 1816, 1823 and 1824 portions of the untry was overflowed.
Between 1824 and 1860 seven "great Be res respely in 1828,1844 $1849,1850,1851,1858$ and 1859. All thes were marked with great destruction of pro perty, but that of 1850 was by far the worst, St. Francis, Tensas, and Yazoo Bottoms bein entirely submerged. The principal breaks in the levee were above the Louisiana line at Bayou Macon, at Point Lookout, at Island
No. 102, at New Carthage and Rodney. The waters during this overflow rose steadily until March 15, then declined slowly until early i May when they attained until the middle of May when they attained their highest point,
and then rapidly subsided, resulting in the lmost entire destruction of the crops.-St. Louis Miller.

## Ancient Engineering

The ancients, when all is said and done be in favor of modern prowess and progress, knew a few things that we modern celebrated work on architecture, the author says that not only is it impossible to duplicate the great temples of Athens, but it is The samable how they pyramids of Egypt. The Roman roads were superior to any constructed in modern times Their very remains are stupendous. Th ncient canals of India and her immens water reservoirs, including their sites, are
incapable of being improved upon. In fact he very ruins of the ancient are "tremen-
dous." One of the latest discoveries of the wonderful engineering ability of these an cients is the fact that, in preparing to cut been brought to light that the Roman Nero the arts, sciences and literature, had engineers pon the same spot; and more, that the route elected by them has been selected by the ngineers now having charge of the modern ndertaking. But Nero was preceded by Alexander the Great in the attempt to carry tances, the engineers showed themselves to have thoroughly mastered the conditions equired for the inception of the work.

## Splendid Joke on His Wife.

Dave Goudy is one of the dryest jokers in
he world, and he had just as soon play a joke Dave, member of his own family as not ubject to his jokes. She hates Indians, and lways locks the doors when she sees th beggars who camp aroundBeaver Dam coming oward the house. Dave knew this, so he ired an Indian to go up to the house and get in, with a pass key, and beg a pair of would gladly give to get rid of him, and the offered the Indian 50 cents if he would go right into the parlor and put the pants on Dave thought it would be a splendid joke on is wife, and he got a drug store man named Griffis to go with him and watch the fun from distance. The Indian got into the house nd when he asked for a pair of old pants the ood lady saw through the joke and she gave him Dave's Suuday pants, and he went into he parlor and was going to put them on kitchen and got a dipper of hot water. body knows exactly what occurred, but Dave and Griffis suddenly saw an Indian come out of the front door, with one leg in a pair o black doeskin pants and the other pantleg though he was in pain, and he pulled out for he camp up the lake about six miles. As h passed the two gentlemen the Indian said "Squaw heap spunky. Ugh! Hot water," and he was gone. Dave went home and asked what the news was, and found that he was out of a pair of Sunday pants in the pocket of which was $\$ 12$ in money, and his up to the nouse for any more pants to do so,
by all means. She will be at home. Beaver Dam (Wis.) Argus.

BEST IN THE WORLD." WHERT PRISHII


Gathmann's patent "inclined bristles revents all clogging when the brushes are

## ONLY DOUBLE BRUSH

## can be set up close so that it wil

 Thoroughly Brush Wheat. Guaranteed to LilipROVE COLOR of the PLOUR. It don't break or scratch the grain. Reooves all the dust. Very light running. Send for circular and prices.
## Prices Reduced! Improved Garden City

 Hirilings Prifirict

With Travelling Cloth Cleaners
Our improved Purifier has every device equisite to make it perfect, and every one use is giving the greatest satisfaction to

The Cloth Cleaners are guaraneed to clean the cloth better than is done n any other purifier. Send for our new

Over 4000 Garden City Purifiers in use, nearly 500 of which are the Improved The Best and now the Cheapest. Write for circulars and price list.
We are agents for the
BODMER
Bolting Cloth!
Which has long been acknowledged as the best made, and which has lately been further improved, making it now beyond competition. We make it up in the best style at short notice. Send for prices and samples.
Garden City Mill Furnishing Company,
CHICAGO, ILL

## Legality of Grain Contracts.

 RTVIEW OF THE DECISION OF THE SUPREME COURT of the state of wisconsin, upon grain CONTRACIS, BY GEO. B. GOODWIN, ATTORNEOF MILWAUKEE CHAMBER OF COMMERCE.

The case of Barnard vs. Backhause, upon the subject of grain contracts, just decided in our Supreme Court, published in The Legal News on the 23 d of July, although involving no particular new theory upon that subject, is
of much importance to the public, as it inof much importance to the public, as it in-
volves methods of trade connected with commission men and the Chamber of Commerce.
The action was brought upon a prommissory The action was brought upon a prommissory
note, given in settiement of a contract for the purchase of wheat and the Supreme Court reversed the decision of the County
Court holding that the note was tainted with a gambling debt and was therefore void.
The Court in this opinion says: "There can be no doubt that a contract in writing for the
sale and delivery of wheat, at a future day, for a stipulated price, which is made with a bona fide intention on the one hand of delivering the property and on the other of receiving
and paying for it, is perfectly valid." Again the court says: "Persons may and do purchase wheat in advance because they believe there will be a rise of price in the markets o
the world in consequence of scarcity or som unusual demand; they may and do speculate in regard to future prices, exhibiting great forecast and ability, and, so long as these ention that the subject matter of the contrac shall be delivered and received in good faith, approvingly cites Justice Agnew 72, Pa., S as follows:
party, claiming rights under such contract, to make it satisfactorily and affirmatively appear
that the contract was made with an actua view to the delivery and receipt of grain."
The result reached seems to be that make such contracts valid, there must be an
intent to receive and an intent to deliver the Wheat, and that this intention must be shown to a written contract; that the onus probandi contract, and that such contracts become gambling unless the subject matter of the good faith. While the rise in price is the object of the speculation, yet the court trea the subject as if the receipt or delivery of
the actual grain were the speculative object and, in the opinion of the court, the legitilawful whenever the profits and not the subject that produces the profits is sought. The grain must be intended to be actually delivered faith. This good faith is resolved by the court into an intent to receive and an intent to deliver, the intent resting in the mind of
each party to the contract. The party who agrees to deliver, may have the intent to do so, but if the party to receive at the end of notwithstanding his written contract, was no to receive, he can thus escape liability.
In a gambling contract, which the statute prohibits, there must be at least two partie nounced unlawful if only one of the parties to the contract had an intent either not to dewritten contract is. By the decision, to make a valid contract, both elements must exist; therefore if one of the parties swears and tended to receive the wheat, no matter how strongly the other party avers and proves that his intention was to deliver, the contract tend to deliver and receive respectively. then comes to this, that a commission ma may bind himself in writing to deliver the
wheat, and intend to deliver it, yet he cannot recover, but must go a step further and prove that the resisting party intended to receive it. The repudiator may swear to his intention falsely, no indictment for perjury will lie. He is only stating on oath his concealed and undiscoverable mental condition, at the time of ty had no wheat on hand to deliver, and it may be replied that he was ready and willing to deliver, and yet the intent not to receive, in the mind of a repudiator will render willingness to deliver of no avail. To the
vicious evil of repudiation is thus added an inducement to falsehood, and to the taking of unpunishable oaths.

If such is the law it certainly ought not to
This decision also puts the burden of proof, as to the bona fides of the transaction upon
the claimant. He must not only show his written contract, containing the terms and conditions of the sale, but he must support it with proof that it was not only his intent to deliver the wheat, but also the intent of the other party to receive it.
The contract has no force, its language i construed into a cover for gambling, and the party must show its hands to be clean, befor they are proven to be dirty. How a person
seeking to recover on such a contract should how what the repudiating party's intentions vere, I cannot see, and certainly a defense interposed would be the anticipation of suc cess to the defendant. Other courts have placed the proof of this defense on the de western district of Wisconsin. Certainly that much should be rigorously required in an un conscionable defense. The written contract
should be prima facie lawful, and the defendant at least should be forced to show clearl gambling agreement, or fail. This, of course ing a fact, and not upon the fact, yet it quite material as to who shall take the labory the in such an action. The rule laid down erent from the rule in other cases. The presumption that holds in every other kind of he contract comes into court worse than riminal, without a presumption in favor is legality.
single illustration will show how easily person may repudiate by taking advantage ing his own intentions. A contract for future ale of grain may pass through twenty hands efore maturity. When a purchase is made and entered by the commission house, it
may do service in setting it off against other outstanding contracts, and large amounts pas from hand to hand in the line of trade before
delivery; and again, the owner of the contract anticipating a changing market, may sell the wheat which has been bought for him at a present price, and fill his last convract with loss, even pocket a gain, and although he nake a little more by finally insisting that he as a gambler and never intended to receiv the' wheat, although he ordered his broker to nd has traded freely on the credit of it. An according to this decision, if he can establish his intent, he must, succeed. A legitiintended by our court, will be to give th hield of the law to a dishonest loser, and open the door to unfortunate ones to come in
and offer defences supported by evidence egative intents.
Why should the intent existing in the mind one of the parties have any weight a why should not the defendant be required to prove that both parties had the gambling in ent? And why should not the burden o roof be upon the contestant?
Suppose a purchase of wheat is made fo future delivery, upon the expectation on the
part of the buyer, that some calamity will unettle the government and both parties bas their calculations of gain or loss upon this ion. The buyer, there will be no such calamity, and like a prudent business man, he gets out of his conract by at once paying the damage or differ nce, anticipating the same. His written de cision would be legal, and no court would back the difference.
Suppose again, without anticipation of Suppose again, without anticipation of a
alamity, but from a study of markets, ter calamity, but from a study of markers, ter person concludes that wheat next September will be worth ten cents per bushel more than now, and he orders a million of bushels. He concludes, before September that conditions re better and that wheat will be two cents ome one else, covering his anticipated to o a certa extent, What in morals or in law, whether the wheat is to be actually delivered in September? He ha raded in and out on his contract. He has had credit on the strength of it; and some parties have received, and all, I think, should receive the legitimate results of their forecast. is delivered? Would the law be any better
pleased to let A under obligations to deliver B 100,000 bushels of wheat at $\$ 1.10$, actually deliver it to B at $\$ 1.10$ and $B$ at once sell it back to A and deliver it at once at $\$ 1.05$, thus giving B five cents on a bushel? Why not
each keep his own wheat and pay the differeach keep his own wheat and pay the differbring back a car load or two, when a balanc and check would settle it? Delivery is no element in the transaction. Any commission house having a responsible purchaser can deiver at any time; but it would be merely put ing property down with the left hand and taking it up with the right. If there were no
fixed daily market price, the case might be different. Every executory contract is formed on probabilities. Every speculation is the child of hope; and every breach of a contriact
is measured in damages, by differences in is measured in damages, by differences in The difference between a gambling and specu lative contract is close but well defined. In gambling contract, an arbitrary sum, withou consideration, is put up as a forfeit on some event. The wage is measured by no value It is neither increased nor diminished by any natural law. It is the backing of en opinion
resting on chance. Such contracts are obresting on chance. Such contracts are ob-
viously demoralizing and run against public policy. The loss of the wage is total, without he intervention of wit, risk or credit. A time wheat contract does not have this element It is based upon the future, but inevitable price of wheat is fixed and determined by the aws of trade, supply and demand. The event way or the other is measured by the market,
whertain; just as the amount of damages for a breac of such contracts is fixed in the law by the narket.
You may bet a million of dollars that it will rain to-morrow. There is no limit to the mount that may be bet, and it has no relaion the event. The happening of the This is far different from making a contract to ell wheat. In such contracts, margins are part of the purchase money, the marke xes the amount you must pay if you fail receive or fail to deliver. Nothing is forfeited, you fail to deliver and are sued, the cour will give you in damage, the difference beween the contract price and the marke
price on the day of fulfillment. me that the error is, in considering the wheat elivery, in form and not its equivalent, as al mportant. Under this decision it is estab-
ished that the contract is void, even though he broker, pursuant to his written contract enders the wheat. Why should not the ten der of the wheat to the purchaser make the contract solid? What gambling arrangemen an be conceived where a fulfilment of the thing. It seems to me that the courts confuse margins with wagers or bet money. They are not. They are pare not wage money any more than the art of the purchase money of a piece of and may be said to be a wager, which may
be lost. The purehaser may conclude that he land is too dear, or land may have fallen in the market, and the purchaser may prefer o let it go and loose what he has paid nd pay the damages. If the mar gambling arise? Can it be said that the wage money is the difference in market prices? learly not , because that is only the amoun hat the court would compel you to pay,

## ou did not fulfil your agreement.

A knowledge of the extent of wheat exchange is of benefit in considering the quesdaily, and almost hourly, receive orders from all parts of the country and from Europe by mail and telegraph for the purchase or sale wheat, by the thousands of bushels. These dealings continue, until mutual obligations o sell or deliver may be very extensive Trade, consulting shortest methods as the best, has a sort of exchange, setting off one contract against another, just as banks have heir clearing houses. To deprive commission men of this right of exchange would almost top business. So too, the single purchase has agreed to buy 10,000 bushels on a fixed date. Instead of receiving 10,000 bushels and selling it immediately and paying or receiving the difference, he exchanges the subject matter. Our Supreme court, however, o make this exchange, and pay the difference when the contract is made, the contrac would be void. The effect of the decision eems then to be, to make whent trad
moral, by making them difficult, or by giving dishonest men a chance to repudiate their In itten contracts.
In conclusion I call attention to the fact hat the Legislature of this state has sanctioned the contracts pronounced by this decision to be illegal. The Chamber of Commerce has authority under its charter to $\operatorname{expc}$ ( a member and deprive him of valuable rights and privileges if he does not fulfil the kind of contracts in this decision pronounced void. The legislature knew the methods of business of this corporation, the courts have rec ognized its authority and its deciplinary rights. So have the legislatures, in nearly every state, chartered like institutions with like power. The court, however, says that a peria thay have his property forfeited for repuillegg a contract which the court pronounce legal, and that contracts, the making which the Legislature has sanctioned by chartering an institution
ness, are illegal and void.

## Infant Food.

There are about twenty European prepara tions styled infant foods, beginning with that of Vestle, and at least twice as many American, utrition which profess to furnish a complete nonths of its existence while yet the conver sion of starch into dextrine and sugar is beond the capacity of the untrained digestive function. The examination of these with a microscope, assisted by such simple tests as odine, which turns starch cells blue, and gluten (or albuminous) granules yellow, has engaged the careful attention of Dr. Ephraim Cutter, of Cambridge, and his re-
sults will startle sults will startle most mothers who have rethe con the extravagant pretenses set forth Donough, who preceded Dr. Cutter in this field, has been in a measure discredited.; but appears that her assertion-that the starch far from being transformed into dextrine, was not sufficiently altered to render the recgnition of its source difficult, whether from wheat, corn, rye or barley-was strictly true,
and that these pretentious foods are, without xception, nearly valueless for dietetic purposes. All of them consist of baked flour mainly, either alone or mixed with sugar, milk or salts. In some cases the baking has been very inadequatelys performed, and the doctor found one that consisted merely of wheat and oats whose starch cells were proximately in their natural condition. The general result of Dr. Cutter's examination may
be stated in brief terms as follows : There was scarcely a single one of the so-called inant foods that contained a quantity of gluten $s$ large as that contained in ordinary wheat lour. That is to say, a well compounded wheat gruel is superior to any of them, ticularly when broiled with a little milk, parmothers are in error who place the slightest mothers are in error who place the slightest
dependance upon them. As respects one dependance upon them. As respects one
very expensive article, professing to possess 270 parts in every 1,000 of phosphatic salts in connection with gluten, Dr Cutter was unable to find any gluten at all. The thing was nearly pure starch sold at an exorbitant price as a nerve and brain food, and a great remedy for rickets. So all through the list. ometimes a trace of gluten was present. more frequently none at all. In one case there were ninety parts of starch to ten of gluten; but this was exceptional, and the majority were less valuable, ounce for ounce, than ordinary wheat flour. Considering the semi-philanthropic pretensions that have been put forth by the manufacturers of these oods, some of them sustained by the certificates of eminent physicians, the report of Dr. Cutter is one of the dreariest comments upon human nature that has recently fallen under the notice of the journalist. But if the revelation he has made of fraud and pretense on the part of manufacturers in this field shall serve to protect mothers from further betrayal, and to rescue infant life from quack articles of nutriment, his work, though giving tremendous shock to our sensibilities and o our faith in medical certificates, will not have been done in vain.-New York Times.

A Grrman correspondent of Die Muehle, published at Liepsig, Germany, thinks that the late great depression in the milling business is caused principally by the increased capacity for production and by grain speculation.

Quite a number of heavy failures have野 announced in Europe during the past ing and grain trades.

## NEWS. <br> Everybody Reads This.

tTEMS GATHERED FROM CORRESPONDENTS, TEL GRAATS AND EXCHANGKS.

## Watertown, Dak., will soon have a new roller

 mill. dead.J. D. Chubs is building a mill at Silver Creek, Burned, E. \& G. Folton's mill at Acton, On tario.
S. Rexford is building a mill at Norman Dakota
Burned-Gowen Bros'. mill at North Chester Vermont.
H. Wolborn has sold his mill at Carey, O., to J. C. Shaler

Emil Spieler, of Creole, Ark., is building ustom mill.
Ebenezer Wheeler has sold his mill at St ohnsbury, Vt
A NEW mill is being built at Huntsville, Ala.
for Wm . Hussey, for Wm. Hussey
J. F. \& J. L. Shields have sold their flour mill
J. R. Roberts is building a custom mill a
S. G. Cook has purchased the mill at Maguire Minn., for $\$ 75,000$
Stevens \& Babker, of Chicago, Ill., have dis solved partnership.
Anthony Benning \& Sons are building a mill at Frankfort, Minn.
Whititington \& Frazee, of Calhoun, Ill., remodeling their mill.
Mrs. J. B. McDougal mill at Stirling, Ontario
Burned-Krutz \& Washburne's at Junction City, Oregon
Perry Hutchinson is building the largest mil in Kansas, at Marysville.
Shellenger \& Huffman, at Healdsburgh Cal., have sold their mill.
The Pillsbury A mill at Minneapolis is lighted
. ectricity
Cascade mill to a roller mill.
W. S. Gilbert's mill at Staun'on, Ind., is be ing enlarged and remodeled.
The Anchor Milling Co., of St. Louis, are put ting in 10 pair of Gray Rolls.
Jordan Bros. mill, at Lower Verde, Arizona was recently destroyed by fire.
Sheazley \& Son, of Osnaburgh, 0., have
old out to George Leibtag \& Co.
James Harvey, of the milling firm Mann \&
Harvey, at Wilber, Neb., is dead. Harvey, at Wilber, Neb., is dead. Linn \& Cooper are building an 80
Rector \& Son, of Nebraska City, sold their mill to John F. Kennedy.
J. J. Melvin \& Son, of Comstock, sold their mill to Francis H. Beard.
D. H. Morss succeeded Morse \& Hazen i the milling business at Hartford, Vt.
C. H. Nutter \& Co., of Brighton, Ill., have ordered a full line of the Gray Rolls. The Star City Hominy \& Flour Co name of the new firm at Lafayette, Ind
Stratton \& Powell succeed J. K. P. Walke in the milling business at Corning, Ark G. W. Bird \& Co., succeed Eikerman \& Bird in the milling business at Oswego, Kan.
Thornton \& Chester's new roller mill Lockport, N. Y., is to be completed by July 1st. J. S. Wright \& Co., Blue Rapids, Kan., are succe
Co.
Horace Davis \& Co's new 1000 barrel roller mill in San Francisco, is now running on full time
Wilson \& Clough, of Chesaning, Mich., are \& B .
E. J. Sheldon, of Manchester, N. Y., is put ting in the Gray Reduction and Separating Ma chines.
The Kehlor Milling Co., of St. Louis, have or dered a $28 \times 48$ Reynolds Corliss Engine, for thei new mill.
The New Era Mills, of Milwaukee, are largely ncreasing their capacity and putting in th tray Rolls.
Ward \& Tyson, millers at Limerick, Pa., have dissolved partnership; J. \& C. Ward continue the business.
Chas. Troupe, of Watseka, Ill., is about commencing the erection of a three run new process flouring mill.
A "Kansas Zephyr" recently badly demora
ized the Woodbine Flour Mill and moved from its foundations.

The milling firm of Damp \& Drayton, at Ash tinued by John Damp.
The Indianapolis flouring mills have a capac ity of 2000 barrels per day. The product for 1881 was 249,367 barrels.
Harrington \& Moorrhouse, of Jefferson,
Iowa, are improving their mill and putting in Iowa, are improving their m
the Gray Rolls and System.
Styles \& Johnson, millers at Monroe, Mich., have dissolved partnership. Each will continue in the milling business.
April 2, Sperry \& Co's mill and warehouse at Stockton, Cal., was burned. Loss $\$ 200.000$, with an insurance of $\$ 80.000$.
A cyclone destroyed several business houses at Chase, Kan., A pril 7th and killed J. E. Reid, The high proprietor at that place.
The high water in Coon River recently undermined Bert \& Demeer's mill at Grant City, Ia., and nearly destroyed the mill.
A. H. Sibley's grist mill at Baltimore, was recently destroyed by a boiler explosion. Several persons were killed and many injured.
The "City Mills," Toronto, Canada, were damaged by fire, March 31, to the ext
about $\$ 4000$. The mill was unoccupied.
The John T. Noye Mfg. Co., of Buffalo, N. The John T. Noye Mfg. Co., of Buffalo, N. Y.,
have purchased the patent for England covering the Cosgrove Concentrated Roller Mill. Messrs. Trow \& Co., have completed their new mill at Madison, Ind. It is to be hoped
that the fire fiend will now cease pursuing that t
them.
Kimball \& Beedy, millers at Forest City, Minn., have made an assignment to H. Stevens. Liabilities are placed at $\$ 30,000$. Secured claims $\$ 15,000$.
All owners of mill-dams in Kansas have been notified by State Fish Commissioner Long
to have fish-ways placed in their dams by May 1st.
Messrs. Geo. Priest \& Co., of Decatur, Ill., are putting in 36 pairs of the Odell Roller-mills manufactured by the Stilwell \& Bierce Mf'g Co., of Dayton, Ohio
April 17th the Milwaukee millers purchased of Peter McGeoch, 225,000 bushels of wheat. Mr. McGeoch owns nearly all the wheat in tore in Milwaukee.
The Franklin Mill Co. now building a mill at Appleton, Wis., are putting in 11 Odell rollerMfg. Co., of Dayton, 0.
The niece of Mr. Andrew Hunter, the Chicago manufacturer of middlings purifiers, was recently married at the British Embassy, London, to Sir Sidney Waterlow.
Page, Norton \& Co., of North Topeka, Kan are improving their mill by the addition of six pairs of Gray Corrugated Rolls and four pairs of Wegmann's Patent Porcelain Rolls.
Smith Bros., of Canandaigua, N. Y., are put ting in the Gray Rolls; using the new Combined Reduction and Separating Machine. Edw. P.
Allis \& Co., of Milwaukee, have the contract.
Burned.-April 20th the flouring mills Peoria, Ill., owned by Geo. H. Cox. Loss $\$ 40$, 000 . Insurance $\$ 17,000$. The fire originated in the smut room in the upper story of the mill. The "Monmouth Merchant Mills," at Monmouth, Ill., have contracted with R. L. Down roller mill of the highest grade of manufacture The flouring mill at Wrightstown, near Neillsville, Wis., was burned recently. The mill was owned by C. Blakeslee, of Neillsville, whose $\$ 4,000$.
If the majority vote in the New York legisla ture indicate the feeling of the citizens of tha state, free canals will soon be open to the pubNovember
The large Eufaula Mills at Eufaula, which was built in 1877, by Nordyke \& Marmon Co of Indianapolis, Ind., are adding three run of buhrs, which
inal builders.
On March 28,the Eclipse Milling Co., of St. Paul Minn., tiled articles of incorporation to do a gen eral milling and clovator buiness, with a cap tal stock of $\$ 75,000$, and privilege of increasing
it to $\$ 150,000$.
The King's County Flour Mills of Brooklyn N. Y., Messrs. Tonjes, Moller \& Co., Prop's, are
changing to the roller system. They have ordered of Edw. P. Allis \& Co., 36 pairs of Gray and Wegmann Rolls.
M. L. Ayer \& Son, of Burlington, Wis., have placed the order for their changing of their mil to the full roller system with Edw. P. Allis \&
Co., Milwaukee. They will use Gray's Patent Noiseless Roller Mills.
E. M. Beach \& Sons, of Osborne City, Kan., re erecting an addition $30 \times 30$ feet to their fouring mill at that place. It is to be used for he white magnesian stone found in that vicin ity, and is both handsome and capacious. It
water power is said to be steady and to afford sufficient power at all times. During the past two months the . bushels of wheat. They report that the scarcity of good wheat has not been an obstacle tothem
and that they have kept their mill running at and capacity all winter.
The milling firm of Clement \& Stevens, Neenah, Wis., is dissolved. Jackson L. Clement will continue the milling business. Mr. Stevens' attention is occupied with the Stev Roller Mills and other milling inventions.
The Elizabethport Flouring Mills Co., Elizabethport, N. J., are increasing the capacity of the mill, and adding four run of stones, which with additional fixtures are being furnished by Nordyke \& Marmon Co., of Indianapolis, Ind.
Keely, of motor fame, has been ordered by one of the Philadelphia courts to divulge his secret. He has spent $\$ 150,000$ of other people's money to no purpose, except to prove that there are fools in the world, and his fools are getting Messbs, Nord
Messrs. Nordyke \& Marmon Co., of Indian apolis, Ind., are remodeling all the four mills situated within the town of Pendleton, Ind. Potts \& Parker and B. F. Aimen's mills are un-
dergoing extensive alterations which will place dergoing extensive alterations wh
them on a footing with the best.
Messrs. I. Q. Halteman \& Co., of St. Louis, are rebuilding Engelke \& Feiner's "Southern Mills," and will furnish them with a ten run of 4 foot buhrs. They are also supplying the engine, a line of rolls and new bolting chests. The Goodlander Mill and Elevator Co., Fort Scott, Kansas, are increasing their capacity and changing to the full roller system. They will make 350 barrels per day. They will use the Gray Rolls and System, and porcelain rolls on middlings. Edw. P. Allis \& Co., of Milwau-
kee, have contract.
The "Patapsco B" mill just completed at Baltimore, Md., by the C. A. Gambrill Manufacturing Co., has a capacity of 500 barrels per day and the machinery is driven by a 200 horse power Corliss engine. The mill contains 23 double sets of Dawson Bros'. rolls. The mill has a grain storage capacity of 125,000 bushels The April freshets carried out the dam at Janesville, Wis., and all the flouring mills and several other manufacturing establishments will be compelled to lie idle until the new dam is completed, on which work has been com-
menced. Some of the flour mills will probably menced. Some of the
put in steam engines.
The sewer known as the Mile Creek sewer in St. Louis, burst during the recent rains and did a great amount of damage. Among the losses were injuries to the United States Mill owned by E. Goddard \& Sons. Considerable of their stock of flour was ruined. The total losses to all property owners along t
is placed at about $\$ 200,100$.
A gradual reduction rollér mill of 100 barrels capacity is being built at Marion, Ill., for Wm Aikman. The reductions are to be made on Gray rolls. The shafting pulleys and machin Works, at Indianapolis, Ind., while Richards Butler of same place do the millwright work.
The new San Francisco Grain Exchange wa formally organized on March 14, in the San Francisco Stock Board building. Geo. T. Mayre, F. Coffin was elected temporary secretary. The F. Coffin was elected temporary secretary. The permanent organization and to receive applications for membership: Messrs. Homer S. King
J. M. Shotwell, Joseph Marks, H. H. Noble, S. J. M. Shotwell, Joseph Marks, H. H. Noble, S
B. Wakefield, S. C. Boswell and J. Greenbaum A Leffel water wheel of fifteen and a quarter inches diameter is being made by James Leffel \& Co., Springfield, O., to give 296 horse power said to be by far the largest power ever obtained from so small a wheel. The same firm are building also one of their Leffel wheels, of forty-four inches diameter, to give 325 horse
power; and are building two eighty-seven inch water wheels for a party at Appleton, Wis., for a new mill; besides a wheel for driving the electric light in San Lorenzo, Mexico.
R. L. Downton has contracted for overhaul ing and remodeling H. Human \& Co's Mill a Highland, 11 . This mill is to be of from three to anteed to make as good flour as the Alton Mill f E. O. Stannard \& Co., recently built by B L. Downton, which mill has so clearly shown L. Downton, which mill has so clearly shown
the advantages of Downton's system of milling the advantages of Downton's system of milling
over other systems. Downton using the "Cran-son-Dawson" Corrugated Rolls for reducin wheat to middlings and the "Downton" Smooth Rolls for reducing middlings to flour
The det
go on with the erection of their mill is an nounced. They will begin operations at once on the plans prepared by Mr. Pye, with the Pray Mfg. Co.' and hope to have the mill ready for operation by the time the fall crop comes in. The mill will be 60x70 foet on the ground and
six stories high. The plans will be but slightly
changed from those prepared about two months ago, which were calculated to make the new Minneapolis one of the best mills on the Falls.
Work on the foundation of the new Work on the foundation of the new Excelsior is in progress, and the walls of the new Zeidler, Zimmermann \& Co. mill are up to the first story and raising every day. This completes the list, and next fall will see Minneapolis in the field with a largely increased grinding ca-
pacity.-N. W. Miller, Minneapolis.
H. D. Carlisle, flour inspector at Kansas City, in his report dated April 1st, says: "This being the little end of a short and poor crop of milling wheat, most mills have had to run on half time. Our flour trade has also just begun under a system of inspection, hence, while
trade is not what we would have liked to have seen there has been a healthy movement. With a good crop of milling wheat this year a marked improvement may be looked for in our flour business. Realizing the importance of this interest and its future promise, a number of storehouses have been erected and other facilities provided for the better handling of flour here. Our commission men are taking nore interest in the trade and working for its development. The inspections for the quarter ending April 1st were: Whole sacks, 4,064 ; half sacks, 24,083; barrels, 60.
April 15, : bout three o'clock in the morning, R. W. Stubbs, Mayor of Polk City, Ia., was killed by a burglar. At that hour Mrs. Stubbs was awakened by the flash of a bright light on her face. She called her husband, who was sleep"Be still," which startled her, and she again called her husband, who quickly arose in bed, and said "Get out of here," whereupon Mr. Stubbs sprang out of bed toward the door, when the light from a dark lantern was thrown him, and at the same instant he was shot, the ball passing through his heart. He staggered forward, fell at the top of the stairway and rolled down the stairs. The deceased was a deservedly popular man, and without enemies. The supposition is that the object was robbery, as the flouring mill of deceased was entered a few weeks since, and the safe blown open.
Friday evening it was entered again, as also vere several residas entered again, as also Mr. Stubbs usually had in his possession quite large sums of money. The murderer escaped. Suspicion rests upon three or four persons who have recently been lounging about. The vigiwill be a neck-tie sociable, without judge or

Flour mill fur, ishing goods have rently een furnished to the following parties by C. rmstrongs, Ohio, wheat cleaning Dalbot, bolting-cloth, belting, elevator cups, conver, flights, etc.; Messrs. House \& Dawson, Mt Gilead, Ohio, middlings purifier, bran duster flour packer, bolting cloth and other materials; Thos. W. Shearer, Plimpton, Ohio, bolting cloth; Heabler Bros., Attica, Ohio, a middlingpurifier, mill stones, mill curbs, bolting-cloths and other goods; M. Kiser, Clarks, Ohio , miths and other goods; M. Kiser, Clarks, Ohio, a mid-
dlings purifier, bolting-cloth, belting, etc. son \& Wherry, Cardington, Ohic, brush mawbolting cloth, etc.; R. B. Kline, bolting-cloth; Morris Bros., New Lisbon, O., middlings purifier, brush, middlings purifier, brush, smutter, bolting iddlings mill, etc., a complete new flights, uather Myers, Mitchell's Mills, Pa new outfit; ather Myers, Mitchell's Mills, Pa., a smutter, elting, etc.; Endslow \& Heabler, New Washgton, Ohio, bolting cloth; Higbee \& Co., Belvue, O., several roller mill machines; John P Hollar, Carrollton, O., bolting-cloth; Sebold \& Voelm, Sandyville, O., corn-sheller, bolting loth, etc.; D. Boor \& Son, Defiance, O., bolt eel shafts, reel arms, reel ribs, mill curbs, Tripod Silent Feeders and other goods; D. H Rowland, Richwood, O., a middlings purifier nd middlings mill; McLaughlin \& Watson Granville, O., flour packer, shafting, gearing, more, Pancoastburg, O., bolting-cloth, belting, ore, Pancoastburg, O., bolting-cloth, belting, everal reels of bolting-cloth; Messrs. Holl Cook, Akron, 0 ., middlings mill, Hall purifier, brush finishing mill, middlings purifier, brush finishing machine, bolting loth, proof staff, paint staff and other goods Henry Mer. J. B Miller \& Co, wheat cleaning large large lo boling cloth, wheat cleaning ma

## Grain Gambling.

## communication from s. h. seamans, secr

 tary of the millers' national association.What are you going to do about it? is a ques-
ion more frequently asked, perhaps, than any other, of the committee appointed at the late meeting of the Wisconsin State Millers Association. The resolution under which that committee was appointed, which reads : "A committee of five shall be appointed, who shall take into consideration what course is necessary to be taken looking towards the suppression of gambling or dealing in options in grain" etc., partly answers the question.
The very general terms of this resolution The very general terms of this resolution
gives the committee a wide range, and unlimited time for investigation. They have as yet
had no formal meeting, but its individual had no formal meeting, but its individual
members have not been idle. As one of that committee, I can only speak personally at this time upon the question, and give only my dead earnest,and "mean business." I need only dead earnest, and "mean business. I need only members to substantiate. The action of the
meeting has been the means of awakening pubmeeting has been the means of awakening pub-
lic attention to this growing evil, and the feeling is extending that possibly something may be
done to do away with it. I believe a done to do away with it. I believe a
remedy can, and will be found to sup-
press it in a great measure if not entirely, press it in a great measure if not entirely,
but it must be by and through laws and influences of a general character, not lo that if the matter was a local one the remedy could be quickly found and administered,
but to be effectual, as well as beneficial to all, but to be effectual, as well as beneficial to all,
and oppressive to none, but the gamblers, the remedy must be a national one. To this end,
the committee will exert themselves. The New York legislature is now . wrestling with
this "barnacle" and at the suggestion of the writer, the Secretary of the New York State Association, visited Albany, Wednesday of
this week to urge upon that committee the necessity of devising a remedy and its adoption by the legislature. In the course of my
individual investigations I find some of the individual investigations I find some of the
states have already laws, that only need enforcing to accomplish the result desired. When all the states are thus provided, the National Association can then exert its power.
I understand that Tennessee has a law which is very stringent. Under it, a recent case was
tried, whereby the plaintiff sought to recover a debt, the result of speculation in option cotton, the defendant plead the law declaring such deals, gambling, (where no intent to deliver tained the plea, whereupon the parties were arrested for gambling, a penal offense against the laws, were found guilty and sentenced to we can achieve such results, may we hope the end is near. I have written for a copy of the law, the trial and the decision, which
trust will give our committee some light upon the legal and legislative aspect of the case. ject has caused considerable discussion upon being greatly surprised, at the large number even among those doing a large brokerage business in options, who are desirous to have that part of the business done away with
One prominent firm made use of this language: "We have had a large option trade but for the past six months have been work-
ing out of it as much as possible, for the reason that all the losses we have made have been on this part of our business, and the fur-
ther reason that we are liable to make a loss for our customers, in which case we know i a customer is so disposed, he can bring suit
against us, and collect every dollar he may have lost through our house. I believe this to be strictly true, under the present laws of Wis-
consin and when the fact becomes generally known, I look to see a large number of suits brought to recover money lost. This fact alone
when fully established, will do very much towards suppressing this nefarious business made possible now by the fact that a few re-
sponsible houses, carry as it were, on their backs, a host of irresponsible brokers, and firms who never receive or pay for a bushel of wheat or other grain, but deal exclusively "they gamble by proxy" and the legitima receivers give it respectability,
Much rash talk has been indulged in by the wounded suzzards" on change, to the effect
that our object is to interefere with "time contracts" and speculation; that fere in some way with legitimate prices
"bull" it on flour, or try to do some preposter ous thing or other that will interfere with the legitimate laws of trade. I trust that rational business men will not attribute to our efforts any such fallacy. Legitimate time contracts, made in good faith with intent of fulfillment are a necessity, and required by all the laws of trade. Some healthy speculation supply and demand is a necessary requisite to protect the rights of all producers, manufacturers and consumers.
Higher prices based upon the same law e absolutely beneficial alike to producer and manufacturer and in no wise detrimental to the consumer. But, high prices, produced by a manipulation of the markets of the
world, after the production is gathered and under the control of a few persons, and in addition thereto, three to ten times the entire product, is contracted and sold by parthes who have no intention of delivery, but hope to settle by paying differences, whereby
the parties controlling the "deal" are enabled to put a fictitious price upon the food proby the law of supply and demand, in any market in the world is not legitimate, is no benefit to the producer, is death to the manu facturer, and very detrimental to the con-
sumer. What we shall seek to accomplish is uniformity of legislation in the enactment of such laws as will effectually
and the enforcement of the same, by and through the efforts of the several state asso the auspices of the National Association. While the feasability of the course may be questioned, its ultimate success, if persist
ently and judiciously managed is beyond doubt. On the success of this or some similar scheme, depends the welfare of the immense
milling interest of the country. The past season was one in which the milling industry of the country should have met with great prosperity. Our crop would have been placed
in foeeign markets at fair, if not very high prices, profitably alike to the producer, manufacturer and shipper, but the insane mania it known as "over-trading" forced prices above a point where our millers could manufacture and dispose of their product in any market
in the world. Our natural customers, Great in the world. Our natural customers, would
Britain and the European Continent wo not and could not pay the prices demanded by our manipulating speculator, consequently looked elsewhere to supply their wants, an mills and by mixing the various grades of wheat, which they heretofore have been un ing a flour suitable for the trade, at a price with which our own mills could not compete While our elevators remained gorged with
nearly the entire crop and controlled by a few parties, to be used as a basis for illegitimate speculation, and which is operated a times as a power to force down prices, when required, to such an extent that panics were
imminent, enabling a combination during excitement to buy not only all the cash whea of the country, but ten to twenty millions o mythical stuff, that never had an existence
During all these recontres the milling indus tries of the country must remain idle, dis charge their men, and wait patiently "like a bump on a log," for the advent of the
"gambler settlement day" to equalize prices in order that they may start their machinery with any prospect of success. In the mean me their business has become demoralize supply their wants, and yet such transaction are allowed "it cannot be prevented." If this i are told "it cannot be prevented." If this enlightened nineteeth century. One thing i very certain, our committee propose to
"wrestle" with it, if earnest, perseverin effort on their part will succeed, preventing his nefarious traffic, it will be accomplished.
S. H. Seamans.

## gambling in options.

S. H. Seamans Esq., the Secretary of the Millers National Association in a recent lette says; in order that you, Mr. Editor, and the
public at large may have a better idea of the beauties, and the extent to which the gamb ling in options, (to which the millers, as an
association, complain,) may be carried on association, complain,) may be carried on
the floor of the Chamber of Commerce, make this statement of facts. The party can be produced, with the books to prove it, under oath if necessary. The figures here given are under the amounts given to me
but they more than substantiate the remarks uttered in convention by one milling
friend from Neenah, who is neither a "wooden friend from Neenah, who is neithe
head nor a "wooden shoe man.
The party to whom I have reference put into the hands of his broker $\$ 20$ for margins with which to operate. In the course of trading he bought (?) 360,000 bushels of wheat and sold (?) the same amount, making a deal of 720,000 bushels. He then operated through another broker, putting up with this broker $\$ 30$. His purchases (?) and sales (? were each 650,000 bushels-a deal of $1,300,000$
bushels and a total deal of over $2,000,000$ bushels and a total deal of over $2,000,000$
bushels of wheat. The total margins did not exceed $\$ 50$, estimated commissions to broker $\$ 1,250$, profit to operator, "List to the mocking bird 1 Yet this is a "legitimate
business." I hardly believe that for such was our Chamber of Commerce organized Here is a party dealing in over $2,000,000$ bushels on a capital of $\$ 50$. Well, how much of this immense amount of wheat do or delivered, expected to receive or deliver, paid for, or received pay for, or handled in any manner? Not one bushel. Yet a cap-
ital of $\$ 50^{\circ}$ assisted in making prices on 2,000 ,000 bushels of wheat! And this is a "legiti mate" business by which the "poor farmer" out for the poor farmer, that he doesn't get robbed,) is to be made rich, and the consumer is to eat "cheap bread." For the benefit o of dealing, I would direct attention to the case of the "victim" who came on to the the possessor of many broad acres well cultivated and cared for, flocks and herds o great size, houses and lots of much value
money in plenty, a good business wel established, but becoming infatuated w the mania (that is ruining more men and women too, than all the gambling hells in ability) bought and sold, continued to buy and sell, paying and settling differences until all, or nearly all, his property had vanished. $\$ 200,000$ had disappeared to him and his family. He was a rich farmer. It seem "the boys" look out for the rich as well as limited amounts. No whe deals in very through his hands, or those of his broker on his account. Yet he is doing a legitimate prospects are fair, the "gang" howl seller down below any reasonable figure and keep pounding it down-all for the benefit of the "poor farmer"-until the bulk of the crop is
delivered, when the "legitimate" dealers wake up some fine morning and find tha capital has stepped in and bought perhaps double the crop that has been grown on "wrangle" begins ficticious prices the crop, until "settlement day," to the detri ment of all classes of business either directly loaf before buying more bread, knowing fust well that corner prices exist, and that busi ness which has many millions of dollar invested, giving employment to many
thousand men, must sit idly by without thousand men, must sit idly by without a "What are you going to do about it?" Th question will be sometime answered.

Speculative "Corners" and their Cure.
The appointment of a legislative committee o investigate "corners" in grain and provis ons has been derided in some quarters as shere waste of public money. Yet there is scarcely any other subject that better deserves
legislative examination. Regarding the expediency of some legislation to regulate spec ulation in the prime necessaries of life, there is not much difference of opinion, provided affectislation of that character can be mad Thective without doing more harm than good. past year, and suffered seriously in all its great interests, because of the excessive specu lation in products. Nobody denies the fact,
while it is urged that speculation, within its proper limits, has its beneficial uses, there are very few who will deny that its excess has done great mischief. The endeavor to ascertain whether it can be wisely and safely estrained by law does not deserve contempt, ut is eminently proper and praiseworthy. Thainst the success of legislation in that diection. The experiment has been tried rection. The experiment has been tried
many times. It has never resulted in any
public benefit. In no other state has the evi of improper speculation in products been more keenly felt, or its nature more clearly understood, than in Illinois, and it might have been supposed that the legislation of that state would reach the difficulty, if any could, But the Illinois law has only served to cause barren legislation. Generally acts passed have been such that public opinion has not sustained them, and in the face of public opinion their enforcement has been imprac ticable. In most instances, the law-making power has failed to distinguish between tha speculation which is sometimes useful and that which is always and necessarily harmful. If the committee divests itself of the can and prejudice of the street, it will find that a corner" is always and necessarily the fault of the seller. Any man has a right to buy all the wheat in the country if he can. Be cause that is always impossible, the attempt is pretty sure to result in disaster, and i made, can do not much harm except to him who makes it. But the instant that some body sells something that does not
belong to him, the situation changes He is at the mercy of those who
owns what he has sold. If agreed, they can make him pay the last cent he has in th world, and it would serve him right. He had no business to be selling the property of other people. But blundering laws and commer cial customs and rules framed on purpose to promote gambling, have taken just the oppo site view of the matter. They treated the
man who had sold the property of others as an innocent victim, and the owners who re fuse to part with their property as a band of thieves. Public instinct never sustains laws that are at the bottom unjust. Hence legislation of this sort has never been found effec man has a right to sell what does not belong to him.

The Illinois legislature erred in the opposite direction. It went on the theory that any
and all contracts for future delivery were and all contracts for future delivery were
wrong. But there is not the slightest harm to any person on earth to in an agreement by a man who owns property to transfer that property to somebody else at a future time, On tae contrary, such contracts have been on manufa greatest public utility. The cotdeliver his cotton as the mill may need it, and hus place thousands of operatives beyond he reach of disaster in consequence of fluc uations in the market. The miller can mak similar contracts for grain, and the packe for hogs, and the railroad builder for iron or steel rails and locomotives. But the whole case changes when the man who sells does not own the property sold, but takes hi Such a contract, instead of protecting indus y against risk, exposes it to new and extra rdinary perils
The root of the whole matter is in the sale of property by men who do not own it. Persons who want a thing have the right to buy it, either on the spot or deliverable in the fuure. They have a right to buy all they can get, and, if anybody pleases to sell what he oes not own, a "corner" necessarily comes, hough the buyers may know nothing of it Whether they do or not, their right to buy annot be denied; the question is whether an man has a right to sell what he does not own It is true the customs of commerce, are suc that no deceit or fraud is necessarily involved in such a sale; but the root of the whole mat ter is the question whether the customs of commerce ought to tolerate a sale by one man of property which belongs to another man. And the question for the legislature is whether, without prejudice to legitimate business, people can be legally prevented rom selling what does not belong to them If that is done, "corners" can never aris nd speculation will be confined within com paratively safe limits; but unless it is practic ble and wise to prevent sales of this precis character, it is sheer folly to meddle with th ncidental evils of speculation which flow rom them. Corners are simply inevitable if people sell what does not belong to them all the other evils and pernicious consequences of speculation in products are utterly beyond the power of legislation, if the law permits a man to sell what does not belong to him.-From the New York Tribune.
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OHILLED IRON can be cut with steel.
PORCELAIN can ONLY be cut by the best black diamonds. CHILLED IRON ROLLS requite great power to reduce middlings to the proper fineness on account of their smooth surface.
PORCELAIN ROLLS will do the same amount of work, on account of the slight pressure required, and the gritty nature of the Porcelain, with one-half the power. The flour produced by Porcelain Rolls is sharper, whiter, stronger and more even than that produced by Iron Rolls.
No remarks need be made as to the superiority of Porcelain Rollers over Millstones, as it is a recognized fact by all. Porcelain Rollers are the only Rollers that will entirely supercede Millstones and Metal Rollers.

## THESE MACHINES RECEIVED the FIRST PREMIUMS!

At the late Millers' International Exhibition, Cincinnati.
Gold Medals at Nuremburg, 1876; Paris Tniernational Exhibition, 1878 ;
Lille International Concours, 1879; First Gold Medal of the State, Berlin Tnternational Exhibition of the German Millers' Association, July 1879; and Gold Medal Le Mans, 1880.


Built only by the MURRAY IRON WORKS CO., BURLINGTON, IOWA. buidders of all kinds of emgines and maohingry

## 

Leffel Turbine Water Wheel
Machine Molded Mill Gearing
 Mixers and General Outfit for Fertilizer Works.

POOLE \& HUNT, Baltimore, Md.

## James Leffel's Improved

## Stout, Mills \& Temple, DAYTON, <br> OHIO.

manufacturers of the

American Turbine Water Wheel, Best Quality French burr millstones. Sole Agents in Dayton for the sale of
DU FOUR \& CO'S CELEBRATED BOLTINr. CLOTHS
 GENERAL MILL FURNISHINGS The Ambrican Turbise, as recently improved, is unequaled in the
Wer utilized from a given quantity of water, and is decidedly the BSst art gate" Water Wheel ever known. It has also been otherwise greatly improved. Large Illustrated Catalogue Sent Free on Application. [Mention this paper when you write us.]


Circular Saw Mills, Shafting, Pulleys, Hangers © General Mill Machinery,
stating Particulars of Stream, \&o. ( Address: T. C. ALCOTT \& SON, Holly, N

The Perfect Feed Box


It insures a perfectly even distribution of the middlings
over the entire widthof the cloth. Every miller will ap. CASE. MANUFACTURING CO. columbus, ohio. w. e. catlin \& co., 68 lake st., chicago, ill. [Please mention this paper when you write us.]


## RICHMOND MANUFACTURING CO.,

## LOCKPORT, N. Y.,

RICHMOND'S CELEBRATED Smut Machines,

Brush Machines,
Grain Separators, and Bran Dusters.
Nearly Two Hundred of these Machines are now in oper atiou in the city of Minneapolis, Minn., alone, and more than sively used in many other sections, both on Winter and Spring Wheat.
~OS SEND FOR DESCRIPTIVE CATALOGUE.
[Mention this paper when you write.]


## A PURIFIFR

That fils all the demands of modern miling,
That gives double the capacity of any other in the same floor space.
That has the best patented devices ever ued bedar, and each
That has the most thorough control of the blast.
That has the most thorough control of the blast.
That has absolutely the best cloth cleaner (patented) in use.
That has the perfection of cloth tighteners used while runnin
That has the perfection of cloth tighteners used while running.
That carries 25 to 90 square feet of bolting surface, against 13 to 45 in others.
That costs no more, nors mueh as others with haif the capacity.
That has its bearing booes detached from the wooden frame.
That renders them fire-proof. These are reeent and important attachments.
That dooes its work not absolutely without waste" BUT WELL.
That has no scew conve abo
That has no screw conveyor or gear wheols to absorb powwer, but
That has many new and important devices, convenient and simple.
That does not infrimgeany patent, (can convince any one of this).
That is not an experiment

These are some of the things we have to say about the Case Purifier, and if one jot or title or them is found to be
true, we will take the machine back and pay all expenses, including freight both ways. Can fill orders promptly. [Mention this paper when you write] CASE MANUFACTURING CO., Columbus, Ohio.

## CAWKKR'S

AMERICAN FLOUR MILL DIRECTORY FOR 1882: Is Now Ready for Delivery.

Of Flour Mill Owners in the UNITED STATES and CANADA. Mill Furnishers, Flour Brokers, WILL FIND THIS WORK SIMPLY INVALUABLE. PRICE, TEN DOLLARS PER COPY.
Address THE UNITED STATES MILLER, Milwaukee, Wis.
JOEN C EICATNS
Northwestern Mill Bucket Manufactory

## Mill Picks,

No. 169 W. Kinzie Street, CHICAGO,


## MILL PICKS!

 MILWAUKEE, WIS.
## I have had twenty-two years experience in the manu- facture and dressing of MMill Picks, and can and do make

 as fine Mill Picks as can be made by anybody anywhere.I use olly the best imported steel for the purpose.
My work is lnown by miler My work is knowu by morter stiteol for the purposes.
and is pronounced to be first class by the coutry
jud tes judges.
We have hundreds of the most gratifying testinonials
from nearly all the states. We solicit your orders and guarantee satisfaction. Address as above.
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PATENTS

 weekly paper, 83.20 a year, shows the Progress of science
is very interesting, and has anenormous
id



RUMESEY \&C CO., SEngea Falls, N. y.
GANZ \& CO.,
Budapest, Austria-Hungary

 above,
[Mention this paper when you write un.]


MIIWAUKEE. JUNE, 1882.


# TIIE STEVENS ROLLUIR VILLS 

Remove all Germs without Breaking or Crushing them, and Hull the Black Cockle and Remove the Hulls, Clean Bran thoroughly
and make a Higher Grade of Flour than any other Mill known.

## OVER 2000 PAIRS NOW IN USE!

## Having Secured the BEST BELT MOVEMENT ever offered

We are prepared to furnish mills to be run entirely by belt, obtaining the nearest approach to a Positive Motion Without Gears. Celebrated Cosgrove Concentrated Mill

Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.



#### Abstract

Messrs. John T. Noye \& Sons, Buffalo, New York-


Gentlemen: We take pleasure in addressing you in regard to the introduction of the "Cosgrove Roller System" in our Mills at Brooklyn. By removing four pairs of our Millstones and putting in their place the two sets of the Cosgrove system, purchased from you, we find that with our former bolting and purifying arrangements, we can turn out flour, all roller ground, in quality from 50 to 70 cents per barrel superior to that made from the same wheat by Millstones. We are now grinding no wheat with stones. In making the change, our Mill was shut down but $4 \frac{1}{2}$ days to make connections with Elevators, Conveyors, etc. We drive the Cosgrove Machines from the same shaft that we formerly drove the Millstones. The work of the change was done by our own Millwrights, everything being so favorably located. The ease with which they are managed, one man being fully able to give proper attention to two or more sets if we had them ; the separations made by the cylinders are perfect ; any miller can quickly adjust them exactly to suit the wheat he wishes to grind and the work required; the capacity of our machines we find fully 50 per cent. perfect ; any miner you guaranteed ( 200 barrels). In conclusion, we will say, that the result generally of the system is entirely satisfactory to us for the best of reasons, our customers are thoroughly pleased and satisfied with our flour. Yours truly, F. SMITH \& CO.

## - Among Recent Orders We Name, the Following from Prominent Millers:

## Jno. T. Noye Manufacturing Company, Buffalo, N. Y.

E. W. PRIDE, Agent, Neenah, Wis.

# OdELL'S ROLLER <br> MILLL 

## 

We invite particular attention to the following
POINTS OF SUPERIORITY, possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a positive differential motion, which can not be had with short belts.
2. It is the only Roller Mill in market which can be instantly stopped without throwing off the driving belt, or that has adequate tightener devioes for taking up the stretch of the driving-belts.

3. It is the only Roller Mill in which one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.
4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bear ings without disturbing the ten-sion-spring.
5. Our corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

WE USE NONE BUT THE BEST Amsaria Rolls!

[^0]Circular and Prices on Application to Sole Manufacturer
[ $W$ ention thls Paper when you write to us.]
STILWELL \& BIERCE MANUFACTURING CO., DAYTON, OHIO, D.S. A.


## And WEEMANN'S PATENT PORCELAIN ROLLS

## MANUFACTURED EXCLUSIVELY BY

## 거V, BュATTTS \& CO.

## MIIT, WNAUERER, WTIS.

## TO MILLERS USING NOISELESS ROLLS WITH POSITIVE BELT DRIVE.

We have at great expense obtained valuable Letters Patent known as the Gray Patents, being Nos. 222,895, 228,525, 235,761, 238,6\%'7, 251,217, of dates Dec. 23, '79, June 8, '80, Dec. 21, '80, March 8, '81, Dec. 20, '81, and which fully cover and protect our noiseless Belt Drive Roller Mill. We have with no little patience been aware that certain manufacturers have been infringing one or all of these patents, and inducing the Millers.to purchase Rollers from them.

Now we are determined to bring suits against all users of such Rollers unless they will acknowledge the validity of our patents and pay us a royalty for using them.

While we may seriously regret to take such a course, yet all can easily understand that in order to protect our rights we must declare and enforce them.

We have instructed our attorney to institute suits against infringers, and before another month we expect that suits will be begun. If any Miller desires to settle before suit we will be liberal with him.

Our desire is to furnish the best Noiseless Roller Mill made, and we claim that we do.
Our patents are the foundation patents. A hint to the wise is sufficient.

E. markishon odverr.\{ Vol. I3, No. 2.\}

MILW AUKEE, JUNE, 1882.


The Urban Roller Mills, Buffalo, N. Y
We have the pleasure of presenting to our readers an illustration of the new Urban Roller Milis, erected by the John T. Noye Manufacturing Co. of Buffalo, N. Y for Messrs. Urban \& Son, the well-known manufacturers, exporters and dealers in flour at Buffalo, N. Y., at a cost of $\$ 75,000$.
The mill, which is situated on Ellicott street, near Genesee, is six stories high, in-
cluding the basement. It is $40 \times 96$ feet on the ground, built of brick, and well lighted and

On the first floor are four Eureka packers, built by Barnard \& Leas, and a hopper scale. On this floor the flour is prepared for the market, marked and shipped.
On the second floor are 14 stands of Stevens oller mills, each containing two pairs of rolls, and also the flour-bins.
These roller mills are all driven by belt, being supplied with Holt's Belt Movement, and are also provided with a device for throwing the rolls apart, simultaneously, without interfering with the adjustment.
could be easily flooded. There are thousands of feet of belts and hundreds of pulleys in the mill. There are also about 200 spouts and 30 elevators in the mill. Grain is taken from the receiving bins and elevated to the receiving separator on the fifth floor. Here it is cleaned of the coarser impurities and then run to the stock bins, from which it is taken
as it is needed. The grain as it leaves the separator is under the control of a man on the first floor, who by moving a hand on a dial
inue to heat until finally a larger contact surface is ground out, large enough to admit ubricants. It often takes considerable time to effect this wearing and millers often lose heir patience and swear. Often when the teps get in good running order, a settling of the building or a retramming will get them of order and the steps will heat again. E. P. Allis \& Co. have invented and patented tram-step, which they warrant never heat. This step contains a square heat. This step contains a square
teel button which cannot steel button which cannot rotate. Its
upper side is faced perfectly straight.

cross section
hosgitcdinan sectional elevation.
The Urban Roller Mills, Bufpalo, n
entilated. The main building stands back the bolting chests and purifiers; each floor the walls are painted white. From 20 to 25 some distance from the street, leaving a vacant space 40x80 in which teams may stand without obstructing the street. In the rear of the main building is a boiler-house $25 \times 30$ feet with an iron roof. This building is separated from the main building by a fire-proof wall and contains the boilers, coal bunkers, and a bath room for the use of the millers. The boilers, which are two in number, were built by Riter Bros., of Buffalo, N. Y. They are made of steel, and are 14 feet long and 66 inches in diameter. Between the main building and the boiler-room is a fire-proof oilroom. The boiler-room is level with the basement, with which it is connected by an iron door.
In the basement of the main building are the receiving bins, the engine and the flywheel, the latter weighing 20,000 pounds The engine is a 200 -horse power ReynoldsCorliss, built by E. P. Allis \& Co., Milwaukee Wis. The cylinder has a 22 -inch bore, and he stroke is 48 inches. This engine is of the plainest possible character, no attempt at ornamentation being made, yet in steadiness and power of motion, it is of the highest character, working absolutely noiselessly, and being remarkable for the quickness and certainty with which it is governed. In the Berrymon is also a Worthington pump and a Berryman heater. having three four-reel chests, and five Smith
purifiers, the latter blowing into Kirk \& Fender's Dust Catchers.
On the fifth floor there are five scalping eels, two bran-dusters, one "Fir" centrifugal eel, from Messrs. Fiechter \& Pruss, Minneapo is, and one Smith purifier. In the rear part of the main building and separated from the flouring machinery described, are the grain,
bran and feed bins, and the cleaning machinbran and feed bins, and the cleaning machin Barnard \& Leas receiving-separator, one Rich mond milling separator, one Kurth cockle eparator, two Richmond brush-machines and one Howes, Babcock \& Ewell magnetic eparator.
The building on the grinding floor is con nected by a tram-way with a three-story brick building which Messrs Urban \& Son are now putting up on Oak street. This building is $0 \times 90$ feet, and will be used as a store Howard elevators operated by steam will be
placed in both the main building and the tore. A covered drive-way 10 feet wide ex ends from Ellicott to Oak Street on the north side, allowing flour and grain to be asily handled, and coal to be dumped directly in front of the boilers. A standing op, to bottom, with connections for hose on each floor, so that in case of fire the mill $\left\lvert\, \begin{aligned} & \text { so tightly that no film of oil intervenes-the } \\ & \text { heating undable. The steps will con- }\end{aligned}\right.$
its lower side is turned a calotte, like a section of a sphere. The button is placed in the bot tom of the pot, laying upon a faced plane above this square button are placed one more round buttons, faced straight on both sides. The bottom face of steel point is als plane. A hole is drilled diagonally through the square button and in the centre a hole drilled from the top-face down until it meet the diagonal hole. From this hole radialls four grooves are filed in the face with a round file, deepest near the centre and gradually ranishing about half way between the centre and sides of the square. Both round buttons are also provided with center holeand radial furrows on the upper faces. The ratation of the point carries along the button - upper one fastest, the mosion ional surfaces being thus gradually reduce When the shaft makes less than 100 rewolt tions per minute, one round button only laid on. By the rotation of point and buttons the oil is thrown out centrifugally and a nev supply is obtained by the suction through the center hole. The whole combination work like a centrifugal pump. It is plain that this sep will always keep cool as it is constantly well oiled. It has a large surface and any variation caused by settling of steps is equal ized automatically by the rolling of the -quare button to suit. The point is guarded

## THE UNITED STATES MILLER.

United States Miller.


## ANNOUNCEMENT:

 land are author
STATES MILLER.

## MILWAUKEE, JUNE, 1882.

We send out monthly a large number of sample copies of the UNITED sTATES MILLER to
millers who are not subscribers. We wish them
 stamp, and wo will send THE UNITED STATES

## MILERS' NATIONAL ASSOCIATION.

## president, <br>  8. H. BExanses, Miluauke, 1. Flecthe CTING ExEOCOTVIV Consurter,       <br> .. C. H. Seybt High-  <br>   

The United States Consuls in various parts of the world who receive this paper, will please
oblige the pubbishers and manuffacturers advertising therein, by placing it in their offices where it can be seen by those parties seeking such inforrat-
tion as it may contuin. We shall be highly gratified to receive communications for publication
from Consuls or Consular Agents everywhere, and we believe that such letters will be read with inter est, and will be highly appreciated.
K. H. Stone, Esq., of The St. Louis Miller, paid our office a brief visit during the month.
M. T. Bourr, Esq., of the Riverside Mill Co., of
month. Appleton, Wis., called during the

Seven miluion dollars worth of property in the United States was destroyed by fire
during the month of April.

The total shipments of flour from San Francisco to foreign countries during the month of April were 90,413 barrels, valued $\$ 460,545.45$.
May 2, the steamer Gaelic sailed from San Francisco with 5,203 barrels of flour, invoiced
at $\$ 25,204.40$, for China, and 1,260 bbls for at $\$ 25,204.40$, for China,

The grain trade of Russia is said to be badly demoralized. This is a direct result of
Russian persecution of the Jews who conRussian persecution of tred the trade to a great extent.
trolled
We have received O. J. Bollinger's Water Wheel Catalogue for 1881, York, Pa. It is a handsome catalogue, full of information fo write to him for a copy.

The Australian wheat crop is very short. Cargoes have been purchased from California for Melbourne and Adelaide, ind there seems
to be a robability that there will be a conto be a robability that there will be a con-
siderable demand for American wheat in Australia.

The first new wheat of the crop of 1882 was received and sold in St. Louis, April 29. for $\$ 4.50$ per bushel. It came from Johnson County, Arkansas,

Eight electric light companies including the Edison Company have consolidated under the style of the Gramme Electrical Company Now if this electrical company "pools its
issues" with the gas companies and the Standard Oil Co., poor folks will have to fall back on the old tallow dip, or go to 1 ed in the dark.
The Anti-Chinese bill has become a law The bill prohibits immigration of Chinese to this
must go.

This subject has attracted much attention and provoked much discussion, and it seems
as if it was all unnecessary. The Chinese came in the first place because there was a demand for their labor and they continued to come for the same reason. The citizens of the Pacific coast might have readily settled refusing to employ them or to purchase goods of their manufacture. If this plan had been for the "Flowery Kingdom" would soon have been crowded with homeward bound Chinamen. We doubt very much if the law now passed will give entire satisfaction.

Milwaukee is now one of the greatest manufacturing centres of milling machinery in the world. Among the widely know Reliance Works of Messrs. Edw. P. Allis \& Co.; The Cream City Iron Works of Filer facturing Co.;Messrs. Birge \& Smith, mill-buil ders, etc.; The Milwaukee Dust Machin Company and Messrs Weisel \& Vhters, En gine builders, etc. The most extensive mill building and furnishing establishment prob ably in this country $i$ : the one first named, but all of the others are doing an extensive and profitable business. Milwaukee has great advantages which will certainly make the country. To those about to embark in the manufacturing business we would say that they will do well to examine Milwaukee advantages before locating elsewher

Mr. Joseph Nimmo, jr., of the Bureau of Statistics, reports that the exports of domestic breadstuffs during March amounted to $\$ 12,404,735$, against $\$ 22,301,161$ for the same month in 1881, or a decrease of over 45 pe cent. The total values for the exports during the three months ended March 31 of each of he years named were respectively $\$ 35,557,45$ and $\$ 51,149,613$, a loss of about 30 per cent For the nine months ended March 31, last, the value of the exports of domestic breadstuffs was $\$ 147,701,367$, against $\$ 204,729,78$ for a like period in the preceding fiscal year a lass of about 25 per cent. The exports of
tall provisions fell off about 50 per cent in March, 1882, as comparid with March, 1881, and about $33 \frac{1}{3}$ per cent during the three months ended March 31, last, as ive months ended March 31, these expor fell off nearly 25 per cent, and for eleven about 22 per cent.

## Bashful millers.

We have been present at many meetings of millers at their state and national meetings and have often regretted that so few This ought not to be the case. As a general hing, so far as our observations have extended, three or four gentlemen had to run the meeting, do the speaking, make the motions, etc., during the sitting of the convention, bu the moment the convention was adjourned every miller in the room would turn sociably to his neighbor and enter into cheerful conversation conveying to each other in this way many beneficial ideas which ought to have More than ther attend a meeting and after it was all over say that "two or three fellows run tiie machine ust as they wanted to." We asked him why he did not pitch in and help run it. "Oh ! don't know" he replied, and changed the subject. Every flour mill owner in each state should become an active working member the state association, should be present at th
regular annual meeting and be prepared to say something "for the good of the order"
when those annual meetings were held Just think of it, what a grand and influential association the state of Wisconsin could have if every one of the 780 mills were represenif every one of the 780 mills were represen bengfit to every individual mill in the state, great or small and the expense of it to each niller would be trifling compared to the bene fits that might be obtained.

## Death of Ex-Governor Cadwallader

 C. Washburn.Sunday, May 14, 1882, Gen. C. C. Washlurn breathed his last at Eureka Springs, Irk., whither he had gone in the vain hope of regaining his health. He was born in Livermore, Me., in 1818. There he grew to manhood, lut emigrated to Wisconsin, then
a territory, in 1841 and commenced the banking business at Mineral Point. He re moved fiom there to LaCrosse and was eleced to Congress in 1854, where he remained until the war broke out in 1861, when he re gned and entered the army at the head of a erving four years he returned home a Major eneral and was immediately again elected Congress, where he remained until 1871 This was tho last public office he held, his erm as Governor expiring in 1873.
Gen. Washburn's name was known in milling circles throughout the world as owner of the reat Washburn flouring mills in Minneapois. From his various investments it is estimated that he left at his death an estate orth more than $\$ 2,000,000$. Among his eat gifts to Wisconsin is the Washburn ob ervatory at Madison which cost upwards of 100,000. He also presented his magnificent to be used as a reform school for girls. He was a great-hearted, charitable, honorabl man and his country mourns to lose him.

## Cornell University and Mechanic Arts

In 1870. Hon. Hiram Sibley, of Rochester . Y., provided for the erection of a suitable building for $t$ e epartment of Mechanica
He also gave ten thousand dollars for in easing its equipment of tools, machines tc., and has since made a further gift thirty thousand dollars for the endowment of he professorship of Practical Mechanics and Machine Construction. Still later he provi ded means for erecting ind fitting up a bras
and iron foundry, and a blacksmith shop. and iron foundry, and a blacksmith shop. Closely connected with the lecture-rooms are the rooms for freehand and mechanica drawing, the designing of machinery, and pattern-making, and the machine shop. use of all hand tools and the machines em ployed in the ordinary machine shops.
Each student in the department is require to devote two hours a day to work in the shop but such students as have, before entering. cquired sufficient practical knowledge, ar admitted to advanced standing. Attendance is required upon ten lectures or recitations a week, or their equivalent, in addition to two work, and the passing of the examination a the close of each term. The complete cours ccupies four years.
The machine shop is used for the sole pur ose of giving instruction in practical work It is supplied with lathes of various kinds, planers, grinding machinery, drilling ma chines, shaping machines, a universal milling machine fitted for cutting plane, bevel, and spiral gears, spiral cutters, twist drills, with additional tools and attachments for graduating scales and circles, and for working vari us forms and shapes.
In addition to the hand and lathe tools of the usual kind there are tools of the greatesi ccuracy, consisting of standard surface plates, straight edges, and squares of variou izes, a standard measuring machine, meas uring from zero to twelve inches by the ten
thousandth of an inch, a universal grindin mausandth of an inch, a universal grinding machine for producing true cylindrical and
conical forms, and a set of Bett's standard gauges.
In the iron and brass foundry and the blacksmith shop, instruction is given in nolding, casting, and forging. The cupol used is one of Colliau's improved, with capacity of of melting one ton of iron per hour.
For the purpose of instruction in exper mental work there is a twenty-ton Riehle testing machine, arranged for testing the
strength of materials by tension, compression' and transverse strain; Richard's and Thompson's steam-engine indicators, and Amsler's planometer; Schaeffer \& Budenberg's revolu. tion counter, steam-guages, injector, inspirator, pop-valve, steam pump; Baldwin's link and valve motion, experimental valve motion, together with a large collection of brass, iron, and wooden modelṣ instructive and mechanical principles.

The course of instruction in mechanical drawing is progressive, from a geometrical drawing to the designing of machines and the making of complete working drawings.
The appliances for instruction consist of several hundred drawings selected from those of technical schools abroad, and from representative American steam-engine makers and others; of photographs, models, and machines and of apparatus used in copying by the "blue print process."

## The Codfish.

This tropical bird very seldom wings his ay so far west as Wyoming. He loyes th ea breeze and humid atmosphere of the Atlantic ocean, and when isolated in this mountain clime pines for his native home. The codfish cannot sing, but is prized for his beautiful plumage and seductive odor. The codfish of commerce is devoid of diges ve apparatus, and is more or less permea ed with salt.
Codfish on toast is not as expensive as quail toast.
The codfish ball is made of the shattered emains of the adult codfish mixed with the ropical Irish potato of commerce.
The codfish has a great wealth of glad un ettered smile. When he laughs at anything e has that same wide waste of mirth and back teeth that Mr. Talmage has. The Wy oming codfish is generally dead. Death i most cases is the result of exposure and loss f appetite. No one can look at the codfish commerce and not shed a tear. Far from home with his system filled with salt, while his internal economy is gone, there is an ai of sadness and homesickness and briny hope
lessness about him that no one can see un lessness
moved.
It is in our home life, however that the codfish makes himself felt and remembered. When he enters our household, we feel h prevading presence, like the perfum vooden violets, or the
ead mouse in a piano
Friends may visit us and go away to be for cotten with the advent of a new face, but the cold, calm, silent corpse of the codfish can not be forgotten. Its chastened influence pe meates the entire ranch. It steals into the parlor like an unbidden guest and flavors th costly curtains and high-priced lambrequin. It enters the dark closet and dallies lovingl with our swallow-tailed coat. It goes int your sleeping apartment and ma its ho your glove box and handkerchief case
That is why we say it is a solemn thing ake the life of a codfish. We would not d it. We would pass him by a thousand times, han take his life, haunted by his unholy presence.-Laram Boomerang.

## Items of News.

A 125 -barrel roller mill using rolls for reduc ion purposes and for flouring middlings an fnishing low grade (rolls exclusively) is bein built at Chattanooga, Tenn., for C. C. Shelton proprietor of the well-known "Citico Mills, furnish the entire machinery.
Louisville, Ky., is about to redeem its repu tation for good flouring mills, in the enterpris Mt. Sterling $K_{Y}$ who is a bout to build a Mt. Stering, K., who is about build a lou laced his order for the entire outfit with N dyke \& Marmon Co., of Indianapolis, Ind
The plans for the new Excelsior Flouri Mill at Minneapolis, Minn., havę been com pleted. The building will be of stone, $40 \times 105$ eet, and six stories and basement in height The motive power will be supplied by a thirty five inch Victor wheel under thirty-five feet head, which will yield about 400 -horse powe The daily capacity will be 800 barrels.
Hicks, Brown \& Co., of Mansfield, Ohio re increasing their capacity to 400 barrel nd changing to the full roller system. They will use the Gray Patent Noiseless Roller Machines, with sharp cutting rolls on the wheat reductions, and 16 pairs of Wegmann' Patent Porcelain Rolls on the middlings Edw. P. Allis \& Co., of Milwaukee, have the order.

## The Positive Adjustment and Auto

## matic Middlings Mill

We illustrate this month a new and novel middlings mill. New to the world at large although it has been thoroughly tested for Ne S. P. Walling, a practical miller and mill Mr. S. P. Walling, a practical miller and mill-
wright, has put in operation a large number wright, has put in operation a large number
of them and with the best results. He has of them and with the best results. He has
taken out several patents on it and thoroughly perfected its various points, so that in offer ing it to the public the manufacturers state that it will be guaranteed not only to equal but to excel other mills now in the market, as it contains many valuable points which the milling fraternity have long felt the need of. In this mill the temper screw is applied direct to the top of the spindle which fix he distance between the buhr and renders should the feed stop and the buhrs run empty, though set to a close flouring point. The runner or under buhr is rigged upon the spindle, although easily removed to dress, and it is held to the upper buhr by a lever can be had to hold it to its work. At the same time should any iron or any foreign substance come between the buhrs they will open and let itthrough and after it has passed come back to exactly the same point an continue their work. Should the material they will open enough to save clogging or throwing off the belt. There is a perfect set ting device at each end of the spindle, bu the set at the step or lower end of the spindie is automatic in its adjustment to the upper set. The spindle at both top and bottom is furnished with adjustable side bearing boxes, so the strain of the driving belt is upon steel plug in the lower end of the spindle This steel plug simply carries the weight and t subject to no side the welumnt and cast solid with the curb and base and coupled together in the center as shown in the cut so they have no side sway or tremble as is no ticeable in other portable mills which have a joint at each end of the columns, so that the heating or warming of the spindle and the expansion of the iron does not close the buhr together as in other portable mills. The upper buhr rests on rubber cushions so that The curb is furnished with three openings at equal points to make examination easy when tramming or setting the cap stone with the runner. The oil pot in the step holds nearly a pint of oil and the wearing plate in the step
is two inches above the bottom of the oil cup is two inches above the bottom of the oil cup
so that the sediment can settle below the wearing surface. These mills are more easily taken apart and put together than any other, as the cap stone rests at three points on rubder cushions so that one point can be raised or four points, when must move the point opposite. The curbs are turned out and the cap that holds the upper stone is turned to fit so the joint moves easily and does not bind. These mills are built strongly with large bearing surfaces, and for grinding middlings, wheat, buck wheat, corn, feed, plaster, paint, coal facing and all kinds of minerals usually ground in buhr stones, the manufacturers claim that they have no equal, as they run to a positive self protecting, self oiling, self adjusting and in perfect balance. They are claimed to be simple, durable, and economical. Our readers will undoubtedly recognize this firm as the manufacturers of the well known Brewster buckwheat refiner, which received the highest award of merit at the millers' international exposition at Cincinnati, in 1880 Their reputation for thorough and careful workmanship is unquestioned, and they express a determination to keep their work up to the high standard which has been attained in years past. Further particulars regarding the middlings mill or buckwheat refiner will be cheerfully furnished by the manufacturers,
Messes. Brewster Bros. \& Co., Unadilla, N. Y The Brewster Buck-Wheat Refiner

While the mechanism for the various processes of wheat-flour manufacture have been the subjects of much inventive thought and messed marvelous and radical changes therein the manufacture of other cereal food products (especially buck-wheat flour), have not ducts (especially buck-wheat flour), have not
been considered of so much importance until been considered of so much importance until
of late years. Now, buck-wheat flour is known of late years. Now, buck-wheat flour is known
to he a healthy and nourishing food, when
properly made, and the Brewster process said to be by far the best for its manufacture Since buck-wheat flour was made by the Brewster process, it has become well known and highly valued as a pleasant, healthy and nutritious food throughout the civilized world, and the fact shows well the merits of the could only see the method of grandfather wheat flour now, and the great excellence of he flour as now made, they would indeed wonder that they had not set their minds to work on the matter long years ago and have enabled their own generation to know what good buck-wheat flour was.
We have the
pleasure of arepleasure of pere-
denting on this page, an illustraion of Brewster's Celebrated Buck Wheat Refiner
 the manufacture

## speciality

branch
business
machines. These
mare furnished French
tones nd hull crack and the buck long experience i has been found can be done better in
this, than in any other way. It is claimed that 50 , 000 bushels of uck-wheat may ween the stones before it is neces them. The buhr eighth of an inch
apart, thus hulling and leaving a large portion of the meats of the buck-wheat kernels whole. The buhr are adjusted by a single touch when running, thereby always doing good work. The products from the buhr are divided into five grades, four of which are weight) and each blast of air is controlled independent from the others. The product $f$ the upper screen is composed of hulls and little whole grain. The hulls are removed
by an air current and the whole kernels re-


## BREWSTER'S CELEBRATED BUCK.WHEAT REFINER.

turned to the buhrs, thus preventing waste of any buck-wheat, wet or dry. The manner in which the buhrs are set, controls the amount of returns at any time, but it is better to have some to return constantly as then no waste occurs from the aspiration, whether the grain is wet or dry, and yet it leaves it much coarser, and the coarser the better on count of shrinkage.
The next grade of products are the coarsest meats which are expose to another separate air current, while spread out on the sieve where they are easily purified without waste. arch grade is treated in a similar manner with its separate blast of air, and the reader will readily perceive that the work is done
illustrations will at the same time be of value as showing the magnitude of our own coal trade.
It is only when the mind can fairly grasp he magnitude of our coal consumption that the importance of its economy can be fully realized. The statistics of the coal trade show that during the year 1881 the quantity of coal raised in Great Britain was no less than $154,184,300$ tons. When the eye passes over these nine figures, it does not leave on the mind a very vivid picture of the realityit does not say much for the twelve months of incessant toil of the 495,000 men who are employed in this vast industry; hence I have
pictorial form to convey to
perfectly and without waste. The bran drawn
from the different grades is repurified, and
anything worth saving is returned to the buhls.
The machines are furnished with tight and bose drive pulleys, counter-balance screens, tee madril fan and a perfect feeding device o that one can stop and start with the grain in the refiner, obviating all danger of clogging and they occupy but little space, and require but little attention. These machines require but little power; they are strongly and substan tally built of selected materials being conmints of especial reference to the require
form. These Re fines are manyMesses. Brewrter Bros. \& Co. of a firm well known to most millers to be rapidly growing into favor
with many millfurnishers. They answer all correspondence addressed to them machinery, and especially about
machinery for the manufacture of
buck-wheat flour All Europe is coming over Or
will, if the present rate of immigration continues. By and wy the question
we, What shall we do with all
these people? or, rather, what will
they do with

## Chis ago Journal.

 Or rather, what will they doA Popular Illustration of the Manitude of England's Annual Production of Coal.

Sir Henry Bessemer, the famous inventor, has addressed to the youths of England, Trough the medium of the London Times, a letter in which hestrives to convey to them
an idea of the quantity of coal annually produce in England. As our own country pro-
daces fully one-half the quantity, his popular duces fully one-half the quantity, his popular
the mind's eye of my young friends some thing like the true meaning of those figures for mere magnitude to the youthful mind has always an absorbing interest, and the gigantic works of the ancients, fortunately supply us with a ready means of comparison with our own. Let us take, as an example, the great pyramid of Gheezeh, a work of human labor which has excited the admiration of the world for thousands of years. Though in it elf inaccessible to my young friends, we for unately have its base clearly marked out in the metropolis.
When Inigo Jones laid out Lincoln's-innfields, he placed the houses on opposite sides of the square just so far from each other as enclose a space between them of precisely the same dimensions as the base of the great pyramid. Measuring up to the front wa ls of the houses, this space is just equal to eleven acres and four poles. Now if my young friend will maine in imagine $\mathrm{sl}$. . a flagstaff 95 feet in height standing up above the top of the cross, we shall have attained an altitude of 499 feet, which is precisely equal to that of the great pyramid. Further let us imagine that four ropes are made each from the top of this flag-staff, four one terminating at one of the front walls of the houses. We shall the have a perfect outline of the pyramid of ex actly the same size as the original. The whole space enclosed with the original. The whole equal to $79,881,417$ cubic feet, and if occupied by one solid mass ot coal it would weigh 2 , 781,581 tons-a mass less than one fifty-fifth part of the coal raised last year in Great
Britain.. In fact the coal trade could supply such a mass as this every week, and at the end of the year have more than nine million tons

Higher up the Nile, Thebes presents us with another example of what may be accomphished by human labor. The great temple columns of 12 feet in diameter, and hundred columns of 12 feet in diameter, and over 100 the imagination of all, who deeply impress eye, can realize of all, who in their mind's It may be interesting to ascertain what size of column and what extent of colonnade we could construct with the coal we laboriously sculpture from its solid bed in every year. Let us imagine a plain, cylindrical column of 50 feet in diameter and 500 feet in height, our one year's production of coal would suffice to make no less than 4511 of these gigantic columns, which, if placed only at their own diameter apart, would form a colonnade which would extend in a straight line to a distance of no less than 85 miles and 750 yards-in fact we dig in every working day throughout the year a little more than enough to form 14 of these tall and massive columns, which if placed upon each other, would reach an alitide of 7,000 feet.
But there is yet another great work of antiquity which our boys will not fail to remembet as offering itself for comparison; they have all heard of the Great Wall of China, which was erected more than 2,000 years ago to exclude the Tartars from the Chinese empire. This great wall extends to a distance of 1400 miles, and is 20 feet in height, and 24 feet in thickness, and hence contains no less than $3,548,160,000$ cubic feet of solid matter Now our last years production of coal was $4,427,586,820$ cubic feet, and is sufficient in bulk to build a wall around London of 200 miles in length, 100 feet high, and 41 feet 11 inches in thickness; a mass not only equal to the whole cubic contents of the Great Wall of China, but sufficient to add another 346 miles to its length.
These imaginary coal structures can scarcely fail to impress the mind of youth with the enormous consumption of coal; and when they are told that in many of its applications the useful effect obtained is not one-fifth of its theoretic capabilities, they will be enabled to form some idea of the vast importance of the economic problem which calls so loudly for solution.

Mazers. Hulbert \& Paige have recently issued the following circular, which explains itself:

Painesville, O. May, 1, 1882.
On and after this date the firm of Hubert \& Paige will be known, and the business conducted under the name of The Paige Manyacturing Company. Please note the same on your books. Soliciting your good will and ontinued patronage for the Company, we remain Yours Very Respectfully, HULBERT \& PAIGE.

## THE UNITED STATES MILLER.

## (Continued from front page.)

 sideways by four adjustable babbit boxes. In the bottom of the pot, opposite the diagonal hole in the square button is placed a plugged drain-pipe by means of which the babbit grit and gummy oil can be removed at any time. The cogs of the core wheels ought to be kept tight and must be doped once a week with a mixture of beeswax, tallow and plumbago. Treated in this manner they willwork with little friction and will last a great length of time.
Transmission of power ought to be effected Transmission of power ought to be effected
wherever possible by belts. The "old-fashioned upright," driving upper mill machinery ought to be replaced by a belt. In this I agree perfectly with Mr. Abernethy, the author of
"Practical Hints on Mill Building." Even when core-wheels are employed to stop the noise of the gearing connected with such upright, power in friction is lost as the friction between iron and wood, well lubricated, is about a third greater than between iron and
iron under similar conditions. Remember that this holds good also in roller-mills in which the mate roll is driven by corespur. Owing to the great friction the loose
roll will be crowded off severely by each cog. roll will be crowded off severely by each cog.
The power lost in overcoming the belt stiffness is about equal to the power lost where
core-wheels are used to do the same work. core-wheels are used to do the same work.
I do not favor double belts, and always pre fer to use fast-running single belts over large pulleys-in order to reduce the loss of power
produced by bending the stiff double belts, and also in order to save on first cost. I do a mile per minute. Belt-tighteners ought to be avoided wherever possible, as they are destructive to the , belts,
and increase the loss of power. They are generally pulleys with short curvatures, and
increase the power-loss enormously, especially when applied to double belts.
On upright belts, tighteners must be used to press the belt against the lower.pulley. Slow-
rurning shafts, such as elevator shafts, shafts rurning shafts, such as elevator shafts, shafts
driving the bolting chest uprights, etc., cannot well be driven by belts without using very large pulleys and belts which is not advisable. to diminish the loss of power resulting from belt-stiffeners, they should be oiled once a week
with castor-oil or glycerine. A little glycerine on dry belts frequently "works wonders."
They will hug the pulley better and need not be so tight, and will then save frictional loss in the bearings, and also the consumption of lubricators.

About two years ago rawhide belts were introduced into flour mills. They were used Those machines generally have small pulleys -not larger than 30 inches, nor smaller than 12 inches in diameter, and pliable belts are
especially desirable for driving such machines as Gray's roller mills. The driving belts of right along, and the thicker and the stiffe the belts, the more power is lost by bending pulleys over which they pass. Rawhide belt would be well adapted for roller mills if they would not stretch so much when new, and get
stiff, unmangeable and covered with flour-dust after running a year or less. A great many millers used and liked them very much while
new, as they would do the work required of them even when comparatively slack. The miller would patiently re-tighten them until
the belts had lost about half an inch in width. When the belts became too stiff and actually brittle, oiling was resorted to, but the oil coat which had grown on or into the belt. So rawhide belting was gradually r
strong, single oak-tanned belting.
strong, single oak-tanned belting.
In modern mills the wheat is divided into many different components, which must al be treated separately, and consequently a
great number of elevators become necessary. great number of elevators become necessary.
If the wheat elevator, sending the wheat into the mill as fast as it can be taken care of by the machinery, has a seven inch belt, and we assume that the partly finished and finishe stuff is elevated four times, besides the spouting and conveying, then the sum of the widths of all other elevator belts ought to be 12 times 7, or 84 inches.
Now, I cannot plan a mill with less than 22 elevators, and frequently my mill plans have from 25 to 28 elevators-average width of belt
is 4 inches; thus a mill with 27 elevators will is 4 inches; thus a mill with 27 elevators will contain say one 7 inch belt wheat elevator, spouting, equal to 104 inches in width.
The surplus of belting for handling stuff in the course of being finished, and finished
stuff comes from the necessity of employing belts at least 3 inches wide, also from the work provided with wider belts than absolutely necessary to carry up a given weight This is done to prevent "choke ups." The wider belts will carry even if they are a trifle slack, and it is better for a mill to be fed in sufficiently than to be prevented from de livering the manufactured product. There are too many elevators to be looked after in a modern mill and one cannot afford to em ploy too narrow belts. The belts being wider than actually necessary in order to carry along the stuff easily, and therefor having but little tendency to stretch, it is advisable to use
cotton belts for middlings,' flour and bran elevators. The friction between cotton and iron is greater than between leather and iron. The adhering flour-dust also increases the grip on the pulley, and cotton belts being pliable hug the pulley well, and they are also cheaper than the poor light leather belts generally selected for elevators. For wheat and "break" elevators it is advisable to use
good leather belting, as cotton wears rapidly when brought in contract with the sharp broken wheat kernels.
Elevator cups ought to be banded around the opening, for the wear takes place at the front edge of the cups. The Salem cup, other-
wise a strong and substantial cup, will soon get as sharp as a knife, and wear down at the front edge, losing capacity. A good strong cup is made by L. J. Mueller at Milwaukee, a cup showing unquestionable good work manship, which he sells at a reasonable figure H is Northw
and will last.
to be perpendicular with head and boot pulleys of the same diameter. It is advisable to make those
pulleys 20 inches in diameter, and better yet, 24 inches. One can thus easily pass between the legs of a whole row of elevators, a feature which cannot be too highly esteemed.
Never put an elevator boot on the grinding floor, as it will obstruct the passage needed; put the boot intended to stand on the grinding floor in the basement below the joists. You boot (the ascending side) as into the back and sides of the boot; in the latter case the mill wright must be careful to enter the boot high enough, so that the cups will scrape away
the discharge from the spout; if the spout enters too low down, it will inevitably clog. I have found that elevators carrying wheat are often run so fast that they "carry back" perience, made the following table of my ex at which the elevators will discharge well The cups are assumed to be 16 inches from underside to underside.

## aneter of pulley. $\begin{gathered}\text { Maximum } \\ \text { Revolutions. }\end{gathered} \begin{gathered}\text { Maximum } \\ \text { speed in fe }\end{gathered}$

The larger the pulley, the better chance will
the cups have for discharging. Middlings and flour being more bulky and lighter than wheat, will not be discharged so readily as if 20 . Middlings, fluur and bran elevators if 20 inches in diameter, ought not to run
faster than 42 revolutions; if 24 inches in difaster than 42 revolutions; if 24 inches in di-
ameter, they should not be run faster than 40 ameter, they should not be run faster than 40
revolutions. The shafts for elevators ough to be made extra-heavy and boxes placed 5 or 6 feet apart; there is considerable weight
suspended on the shaft and the torsional strength, generally taken into account in shaft ing, must be but little regarded when the thickness of the elevator shafts are calculated. The lateral strength of the shatt, is taxed far more than the torsional.
For the benefit of the millwrights reading this, I will give a reliable list of shafting theo retically and practically tried. I computed and made it short and easy
 or less than 100 revolutions can be easily pro portioned.

Example: A 31 inch shaft makes 150 revo lutions per minute, how much power will it transmit?
A 37 inch shaft at 100 revolutions as seen in the table above, transmits 40 horsepower; then $\frac{1}{2}$ at $150=40$ plus $\frac{1}{2}$ of $40=60$ horsepower Example: A 4 inch shaft running 40 revolations per minute, will trans mit how many horse power?
A 4 inch shaft at 100 revolutions transmite 60 horse power, at 40 it will transmit fortyonehundredths, or four-tenths of $60=$ to 2 orsepower.
For elevator shafts figure as follows-The ne runs 40 feet, twenty eight elevators, with belts averaging 4 inches in width, are on the ine. Estimate 4 elevators to one horsepowe and altogether the 28 elevators require 7 horse-
power. Double this, and the question to be power. Double this, and the question to be
nswered is, how thick must the first length f shaft be to drive 14 horse power at 40 revolutions per minute? The answer is; a shaft running 40 revolutions and driving 14 orse power will drive $2 \frac{1}{2}$ as many, or 35 horse power if revolving $2 \downarrow$ inches; that is the
ute. Our table gives us $3 \ddagger$ diameter of the first length. Towards the other end, this'diameter can be decreased to $2 \frac{1}{2}$ inches. No elevator shaft ought to be less than $2 \frac{1}{2}$ inches in diameter.
Up to a few y ears ago, flour mills contained either wood-rimmed or solid wood pulleys; maple boxes were also used on most of the hafts. Now, owing to higher wages and of selecting light shafts and small pulleys to run at high speed, the inducement to use wooden pulleys and maple boxes has gradually decreased, so much so indeed, that no more wood-rimmed pulleys are made for
flour mills, and maple boxes for shafting are but very seldom used. For shafting runnin less than 75 revolutions per minute, maple boxes may be used, but the insurance com panies encourage the use of babbit boxes for slow shafts, so that the better mills of to-day un their elevator shafts, driving bolt-uprights, c., in babbit boxes which cost but little mor (To be continued.)
United States Miller.
E. HARRISON CAWKER, Editor.

Office, No. 118 Grand Avenue, Milwaukee, Wis. scbecriftion price.-Pre Year, in advance.




MILWAUKEE, JUNE, 1852.
We respectfully request our readers when they write to persons or firms advertising in wors seen in the United States Miller- You will thereby
advertisers

## Flour Mill Directory.

Cawker's american Flour Mill Dirgctory for 1882,
was completed, ready for delivery February i, 1882 . was completed, ready for delivery February i, 188,
It shows that there are in the United States 21,3 mil s and in the Dominion of Canaded 1,488 . The mills in
the United States are distributed as follows: Alabieama, states are distributed as follows: Arizona, 17; Arkansas, 234, California
209; Colorado, 52; Couneeticticut, 209; Colorado, 52; Connecticut, 309; Dakota, 44; Delaware,
96; District of Columbia, 7; Florida, 81; Georgia, 514;
Idaho, 18; Illious, 1258; Indiana, 1163; Indian Ter-
ritory, 8; Iowa, 872; Kansas, 437; Kentucky, 642; Louisi-
ana, 41; Maine, 220; Maryland, 349; Massachusetts, 363 Idaho, 18; Ilinois, 1258; Indiana, 1163; Indian Ter-
ritory, 8; Iowa, 872; Kansas, 437; Kentucky, 642; Louisi-
ana, ,11; Maine, 220; Maryland, 349 , Massachusetts, 363
Michigan, 831; Minnesota, 472; Mississippi, 297; Missourl; Mic
$92 ;$
Ham
Yol York, 1912; North Carolina, 556; Ohio, 1462; Oregon, 129
Pennyylvania, 2786. Rhode Island, 47 , South Carolin
 The Wisconsin, 780; Wyoming, 3 ; Total, 21,356.
Thectory is printed from new Burg
heary tinted paper and is substantially bound. It makes
a book of 200 large pages. The a book of 200 large pages. The post offices are alphabetic
ally arrangeddin each state, territory or province. Th name of the mill, the kind of power used and the a pacity of barrels of flour per day of 24 hours are given
wherever obtanned which is in thousands of instances
This work is indispensible to all business men desiring to reach the American Milling Trade.
Yrice Ten Dollars per copy on receipt of which it will be ent post paid to any address. Remit by registered letter
post-office money order or draft on Chicago or New Yor post-office money order or draft on Chicago or New Yorl
made payable to the order of E. Harrison Cawker, pub
lisher of The Usired The leading millers in Spain are com mencing to introduce roller mills and quite a $\overline{\text { ropean and American manufacturers. }}$

Most of the flour mills in the northwest re still either ide, or running just enough to keep from being idle. All, however, antici pate a big boom when the harvest comes in.

Geo. T. Smith, of middlings purifier fame has returned to his native home and has al ready taken out another patent for an im provement of value to the Smith Middling Purifier.

WE call the attention of our readers to the new advertisement of the Centrifugal Flour Dressing Machine, manufactured by the Geo. T. Smith Middlings Purifier Co., of Jackson Mich. These machines are giving great satisfaction whenever introduced. We hope to be able to give an illustrated description of them next month.

Messrs. Banks \& Smith, rice dealers, at Orangeburg, N. C., writes us as follows:
"We wish a grain table of 44 pounds to the bushe
howiug the weight of from 1 pound up and from 50 pe
sushelto either one, two or three dollars. Do mou ushe to either one, two or three dollarr. Do you know
where we can find a work of the kind? if so, co inform
ons.
If any of our readers know of such a table eing published, we hope they will inform us or the firm above named.

One hundred and fifty of the leading mill furnishers and flour brokers in the United States and foreign countries have already purchased Cawker's American Flour Mill Directory for 1882 . It is the most com lete flour tradedirectory ever published and indespensible to any mill-furnishing dealer. The work can be obtained at the office of the Untted States Miller. Price $\$ 10.00$ post paid to any address.

Market Review

Prepared expressly for the "United States Miller," by Messrr. E. P. Bacon
of Milwaukee, Wis.

Our market has ruled comparatively steady on wheat during the past month, ranging
from $\$ 1.29$ to $\$ 1.33$ for No. 2 Spring, in store; but an unsettled feeling has prevailed, arising from continued manipulation of the marke on one hand and disturbing influences at Chicago from proposed change in Rules of the Chamber of Commerce affecting deliveries together with pending arbitration in regard to the settlement of defaulted contracts fo April delivery in that market. The result on both of these subjects has been unfavorabl o the "bull" interest. The Rules at Chicago have been so modified, that on and after June 1st, contracts for wheat for future delivery are understood to comprise both No. 2 Spring and No. 2 Red Winter, or higher grades o either, unless otherwise specified. Quota tions from that date will consequently be based upon the inferior of the two kinds of Wheat in market price. No change, how tracts and quotations will be for No. 2 Spring as heretofore.
The arbitration Committee to whom wa referred the determining of the true value o No. 2 Spring Wheat at Chicago on the last day of April, upon which defaulted contracts should be settled, rendered their decision on the 26th day of May, at $\$ 1.31$, greatly to the surprise of the trade generally, the expecta tion being from $\$ 1.35$ to $\$ 1.38$. This is r garded as removing the principal restrain from short-sellers and putting the marke argely in their hands, buyers being denied he right of holding sellers to their contract in that market. Here, however, sellers wil e held to the strictest accountability as here tofore.
A steady milling demand has prevailed through the month, which has been more marked at Chicago than here, from the fac ower there have ruled from 4 to c . shows a reduction of 270,000 bushels for the month, being now 800,000 bushels, against $1,800,000$ bushels,at the corresponding date last year.
The market to-day experienced a sharp e-action-from the decline of a few days sinc or cash and early future deliveries, closing on noon 'Change at $\$ 1.30 \frac{1}{2}$ for cash or June delivery, and $\$ 1.29 \frac{1}{2}$ for July. Later deliver les, however, receded still further, closing a $\$ 1.14$ for August. Crop prospects in the winter wheat sections continue highly favorable and now promise a larger yield than the emarkable crop of 1880. In the sprin wheat section a largely reduced acreage ha been sown, probably not to exceed 75 pe
cent. of last years area.

## NOTICE!

All matters which have been in litigation between our companies have been adjusted on terms which are mutually satisfactory.

The firm of Huntley, Holcomb \& Heine, sell and assign all their patents relating to Purifiers and Dust Collectors, both in the United States and foreign countries, together with the good will of their purifier business, to the Geo. T. Smith and Consolidated Middlings Purifier Companies, receiving license to use all machines heretofore sold by said firm, and also license for a limited number of machines to be manufactured. With the patents, the Consolidated Middlings Purifier Company also acquires all rights of action which may have accrued under any of said patents.

It is intended in this settlement to protect and perfect the rights of all purchasers from either Company in the use of their machines as they exist.

## (Signed)

> Consolidated Middlings Purifier Co.,
> Geo. T. Smith Middlings Purifier Co.,
> Huntley, Holcomb \& Heine.

New York City, May 9th, 1882.

From Emerich Pekar's Report to the Hun garlan Government.
(Translated from the Ungarische Muehlı $n$ Zei tung of Vienna, Austria, for The Miller, London.)
Continued from April Number.
The break with the low-grinding system, or rather the first deviation from it, occurred, as already pointed out, in the beginning of the present century in the French "mouture
ceonomique" and in the "mouture ronde," practiced in Saxony, Bohemia, and more especially in the Vienna district, where, in grinding the hard Hungarian wheats, this century from insignificant or accidental circumstances, when Pauer began to purify the middlings in a machine instead of on a hand-
sieve, and consequently obtained thereby more middlings. In Austria and Bohemia the system of middlings milling was continued up to and past 1850, the wheat being damped to toughen the bran. The task of introducing the process of gradual and con-
secutive breaking of the wheat in order to make middlings, and from them flour, wa reserved for Hungary. In 1821 Helfenburg, of Rorschach, Switzerland, attempted to surpersede the cutting and pounding action of
the stones by the pressure of revolving iron rollers, an idea further developed by various other parties, but only brought into practical working operations when the Swiss engineer,
Sulzberger of Zurich, constructed his roller Sulzberger of Zurich, constructed his roller
mill. Count Stefan Szechenyi, whose foresight, as it now appears, grasped the future established in 1839 the Josefs Roller Mill Company in Budapest, which met with the most bitter opposition and loss from the Miller's Guilds and the mistrust of the public. In this mill the Sulzberger rollers were used, and these very rolls are at the present time at work in the old mill of this still flourishing concern, the "Pester Walmuehlen" Com-
pany. In several places abroad mills were built on Sulzberger's system, but gradually disappeared. Most of the rollers were bought up by the Budapest mill, and with these rolls the above-mentioned gradual reduction and
making of middling previously referred to
were commenced. The cause of the adopof our wheats, ripened by the hot sun of our
of rich Alfold district. Shortly afterwards, in 1842, the Josefs Walzmuehle, of Budapest, was followed by the establishment of the "Istvan" Roller Mill in Debreczin, which after overcoming many difficulties, became a most flourishing concern under the untiring care and able management of Emerich Kom
lossy and Josef Csanak. The employment of lossy and Josef Csanak. The employment of
rollers thus showed the way of removing the bran from the steely wheats. An important step now followed in Austria, Bohemia,
Switzerland, and chiefly in Hungary, where Switzerland, and chiefly in Hungary, where the roller process continued more and more o supplant the stones. The Hungarian this progressive movement, followed by Heinrich Haggenmacher, at that time foreman in Barber and Klusemann's mill (now the Louise), and who later on became prorietor of a mill. On the basis of this proces numerous large mills were estabished in of the decade from 1860. The process thus created was further developed. Already, in 1873, Ganz's works in Budapest turned ou roller mills based on Wegmann's fundamenta dea, and further extraordinarily developed by Mr. Mechwart. Karl Haggenmacher in vented a middlings purifier superior to any thing known until then in respect to the perfection of its work and capacity, and he rought the arrangements of the mill to a more organized system. George Rieger was
the pioneer of the new roller mill arrangements, which he introduced under grea responsibility, but with brilliant success. The late Josef Ullmann was also a pioneer in the sense that he opened up a market for our
lours in distant foreign ccuntries. This resulted in the development of the manufacture of the necessary machinery, and where, in 1860, and even at the beginning of 1870, we were compelled to go to Austria, or even urther, for our machinery, we now produce our own, and export besides a considerab
quantity, for wherever our flour appears it xcellence and freedom from bran testifies $t$ the superiority of our system and its arrange nents.
Leaving the minor and less important arrangements out of the question the numer-
ous processes of manufacturing flour prac-
ticed in the different countries may in reality be divided into two chief processes and a third one branching from them. The counthird one branching from them. The coun-
tries which orginally grew soft floury wheats tries which orginally grew soft foury wheats
developed and perfected at an early date the system of a single reduction, further necessitated by the damping of the grain. At the
most the small quantity of fine middlings most the small quantity of fine middlings made in this process had to be reground. This practice was universal in the West of
Europe, in fact it may be said in the whole world, and at the present day it is still re tained. The results intended to be got by the single reduction were one grade of finished flour of from 70 to 72 per cent. from
100 lbs . of wheat. The famous "Eight Marks" flour of Paris is produced on this system, and the French flrm of millers, Darblay, who are reckoned among the largest in
the world, make at present one grade of flour about 69 to 70 lbs . of flour out of 109 lbs . of wheat. The six pounds produced beyond his divided into two other grades cannot be onsidered as a commercial article,
eficient both in quality and quantity. In Great Britain efforts were made to In Great Britain efforts were made to
xtract a larger percentage of flour from the heat. The native wheats there are compaatively poor in gluten, the flour is weak, and, consequent on the system of grinding, they The second
The second principal system, a slow grinding one, as necessitated by the nature of the perm, in the countries adopting it, was the middlings milling, high or Hungarian sysiem of grinding, which was only developed at a ater period on account of the difficulty in roducing flour free from bran, but in its unexpected manner. The products of this fterwa or of four to five afterwards of seven to eight, and at present
of eleven grades of flour, all differing materially from one another, as regards their free dom from bran and other properties. The is the finest in the world, rich in all the essential components, gas, gluten, and salts; and the flour, apart from the absence of bran in strongest and most nutritive.
The third process is of more modern date and is termed half-high or half-middlings grindings. In the development of this system, the quality of the wheat and the character of
the demand from the consuming centres, were modifying influences, both of which are apparent in the system as now developed. In some states of the North American Union, where a hard steely wheat similar to the Hungarian was grown, the price of this fine variety was continually lower than that of the
soft wheats, because the flour was account of the brittle bran. The same was likewise the case in greater or smaller districts of other states. When the Hungarian flours, made from similar wheats, were shown in the markets and exibitions of the world, the attention of interested parties was drawn to
them, and our system of grinding was adopted them, and our system of grinding was adopted
in its entirety in Russia and Galicia, while in in its entirety in Russia and Galicia, while in States of the the central poino, the imitation of our process of gradual reduction began just after 1865. They call it sometimes patent process, or Hungarian process and by the importation of our roller mills they made half middlings milling, which originated in Budapest, has been introduced to a greate or less extent in all quarters of the world The flour thus obtained does not equal in quantity that obtained in low grinding, but it is a fact that our system of middlings milling has spread over the whole world, and at present is being used in part on soft wheats with excellent results. I call this system half-high or half- middlings grinding for this reason, that neither in Germany, England, or America especially, has our exhaustive and costly process been adopted in its entirety To indicate only one country as an example the United States could not adopt our system because there is no sale there for the dark
flours, represented by our numbers, $7,8,81$ and 88, for the rich and the poor alike are accustomed to a white bread, and the flour is intended to supply the requirements for white bread and not for pastry. This demand is satisfied by the production of three grades, as is now the case in Minneapolis, for example and in them partially darker grades are sometimes mixed, though not to any great extent. Another reason why middlings millings flourished there only to a certain degree, is the fact that the public, influenced by the quality of the wheat, have been accus-
therefore this custom had to be taken into account, as of the greatest importance in producing this grade of flour by another system. From local reasons, it is consequently not to be supposed that the A mericans will make e supposed that the Americans will make many grades of flour as we do, but, unfor unately, it is only a question of a very short time for their flour to equal ours in purity and excellence. To the third or half-high system of grinding, the old French system of reduction by several operations may be said o belong, by which the semolina for the manufacture of macaroni, is produced from hard wheat, and forms a specially flourishing branch of industry in France.

## $\frac{\text { (To be continued.) }}{\text { Grain Speculation }}$

Correspondence Between a Nebraska Lad [From the Chtcago Trbbune.] $^{\text {Neb., }}$
Lincoln, Neb., April, 1882.-My Dear Uncle John: I have not forgotten your visit to us last fall, when you came to look after the stock on your ranch. Hope I shall be home when you come again. I have wanted to talk with you about a very particular mater, and concluded to write. You remember my sorrel colt that Pa gave me to raise? Well last month I sold him for $\$ 100$, and have got the money. The man who bought him has his perfect mate, and would not take $\$ 125$ for him. I want to make money; and you said once, it takes money to make money; and so I sold him, though Pa said I would do better to keep him. I know where I can get two young colts for $\$ 100-$ or eight nice and Pa says I ca: keep them free if I will go and Pa says I ca: keep them free if I will go out to the farm twice a week to look after the
stock. But it seems a long time for colts and calves to grow up, and I want to make money quick-like young Mr. Drake who comes out here from Chicago. They say he makes $\$ 200$ or $\$ 300$ in a day sometimes, specalatin' in grain. That's a long sight better than putting out $\$ 100$ a whole year for $\$ 6$ or $\$ 8$ interest. I know you deal in grain some way, and Ma says you have made money in that business.
Now, I thought it would be the best thing for me if I could get you to take my $\$ 100$ and spekelate for me. I think by what Ma said Ashley be olde than me, whe the boy round here-he says they don't pay all p for the grain, but only a margin, say five cents a bushel; and that my $\$ 100$ would buy 2,000 bushels of grain; and that if it went u p five cents a bushel, I would make $\$ 100$. He arithmetic all for me, just netimes goes up 10 cents a bushel, and that would be $\$ 200$. I havn't said nothing to Pa about this, because he talks against spekelatin'-says it's like gambling.
which is best to buy-wheat or corn. I tried by mixing some on a board, and scraped off some with my eyes shut to ostall was anead. My luck was on corn
Steve says you don't have to take the grain you buy-only settle when the time is up and take the profit. I think that is the neatest business I ever heard of, and mean to follow it when I am a man. I want to send the money now; but Ma says, wait till I get your

I'mo
I'most forgot to tell you, the boys all play the new game you taught me. Most of the boys play marbles for "keeps" on the sly, because teacher don't allow it. I lost all mine last week, and don't play any more, because I don't think it's. right.
Hoping to hear soon, I am your affectionpephew. James Burns, Jr. P. S.-Steve says young Drake has lost money lately spekelatin, because he bought too high and sold too quick. I don't think it was very smart to do that. I wouldn't do it, you know.
Сhicago, April, 1882.-James Burns Jr, Lincoln, Neb.-My Dear Nephew: This is my first opportunity for answering your ineresting letter, which came several day ago. I am much interested by it, and will endeavor to answer it faithfully. So you have sold that fine sorrel colt, and have $\$ 100$, and want me to advise you, or help you to use it. Now, your modern business-man prides himself on being able to say No, in such way as to please almost as much as if he aid Yes. To do this with you may require long letter. There may be forty reason why I should not grant your request. First, your chance to loose is greater than to make, If you should loose while I was your broker my next visit would not be so pleasant.

## THE UNITED STATES MILLER.

It is true I am in the grain business, but $\mid$ commodation of ladies who wish to specunot in a gambling way. I send agents and late in grain privately. I presume he would money to country towns to buy grain and ship ithere, where it goes into one of those great elevators to be loaded on vessels for the great elevators to be loaded on vessels for the
East. All this is properly business, and as necessary to be done as to raise grain on
farms. But to sell what you don't possess and don't expect to receive, is not necessary, or useful in any sense.

## I will try to show you the difference betwee

 the two ways of trading.We will say, for example, that the crop of corn in the country is $10,000,000$ bushels, and
that the market price is 50 cents per bushel total value $\$ 5,000,000$; but that, before any of it was used or shipped abroad, the price rose to 75 cents a bushel. The aggregate ee $\$ 2,500,000$; which is a legitimate gain in money to the country. If this advance i the price was caused by general short crops nd much other commodities as $\$ 5,000,000 \mathrm{had}$ lone the former year, then, though an apparent gain, is in reality a loss to the country ndividuals of harder times, though some advance from 50 to 75 cents. Advance i prices does not always bring better times. I think you are bright enough to see that bushels of corn amounts to just $\$ 2,500,000$, and cannot by any honest figuring be made any thing else; but I know many men who condyencel on $10,000,000$ bushels of corn may be made to amount to $\$ 10,000,000$, or even $\$ 40,000,000$ or $\$ 50,000,000$. will try to show you how they do it. They do not do it by buying and selling grain, bu by pretending to buy and sell grain-some of
them selling what they don't possess and cannot get, and some buying what they know cannot be delivered and what they do not expect to recive.

You can see in the case suppose that $\$ 2$, 500,000 is an actual gain in money to the ountry, and all the actual gain there can be on the $10,000,000$ bushels at 25 cents a bushel.
Every dollar of gain beyond that on the crop of that grain is not made out of the grain, but out of each other-that is, all that one man $y$ some other man or set way must be los exactly the case in all kinds of gamblingall the gains of one player must be losses to another. It is like playing marbles for keeps ou understand that.
In these fictitious deals in phantom grain, he gainer and looser do not trade togethe directly; if they did, each would know who
gained what he lost, or lost what he gained, nd future meeting on the street would not be so pleasant. But the trades are made hrough a broker, so that the parties who ose and gain do not know each other. Broers call this kind of trade dealing in options which means that the seller has the option to deliver the grain, or settle the loss or gain, and that the buyer has the same option. It eal grain in the business.
This is the kind of trading you wish for, ou may say. It is wrong for one to sell what you wish to buy what you don't want to take, ou must buy of one who dosn't want to de liver. One is as bad as the other, and both I attended a church-society meeting a few years ago, when the pastor advised a few of his leading men to "take a venture in wheat on the Board of Trade" for the benefit of the
church; and some of them seriously thought of doing it. Wheat had been going up; some thought it would go higher-some thought it would decline. Now, suppose that six of these men had agreed to try their luck for the benefit of the church in an equal amount "on options"; and that three had sold 10,000 bushels each, believing it would go down, and three had bought 10,000 bushels each, believ-
ing it would go up. At the end of the month wheat had gone down 10 cents a bushel, and the three sellers were entitled to $\$ 1,000$ each, while the three buyers had lost $\$ 1,000$ each. The three winners had the credit of giving $\$ 3,000$ to the church; but the money came from the three losers. If they had all
bought they would have lost $\$ 6,000$ and if bought they would have lost $\$ 6,000$, and if
they had all sold, they would have gained (not made) $\$ 6,000$-but they would have gained it from the poor fellows they pretended Soult
I know a broker who is assistant manager in our Sunday-School. He advertises that he has fitted up his rooms especially for the ac
us not to feel deeply thankful to the good eltizens of our metropolis for their many acts of kindness extended
to us. Louisville, the pride of our State, I must be al
owe owed to say, I am proud of her, ond I think every hear
will throb in unison with mine when reading the histor will throb in unison with mine when reading the histor
of her, and then witnessing what she is to-day. I have
been here when the population was only ten thousand been here when the population was only ten thousand.
I saw beech trees grubbed up where our beautiful
Broadway now is, with its many handsome residences, or,
Ish

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 crops; the buyer expects to make a proftfor his trouble and money; the miller, starchfor his trouble and money; the miller, starch-
factory, and glucose-factory expect to make a profit on their skill and labor, and so on.
If you will come to Chicago with your $\$ 100$ you can have a choice of several ways to
make or lose money quickly. You can buy tickets in lotteries; or you can bet it on games of chance; or you can find "bucketshops," where you can bet what the price of any kind of grain will be next month or next Any one of such games or "deals" is just as moral and harmless to yourself and your neighbor as the other. All you may make in either some one must lose. Or, if you shops, you can find a respectable broker in a nice office, who will conduct your "bucketshop trade" on the great Board of Trade. A better, more wholesome, moral sentiment begins to appear on this subject. Some of
the states have always protected gambling and lotteries by law. all such schemes are excluded from the
mails. Many states have tried to prevent commercial gambling," but so far without uccess. But the world moves, and efficient laws to correct these evils will be made and enforced, so that transactions now engaged in by christian men will sometimes be punished. Already shrewd business men who indulge in
these speculations will not excuse it in others. Your father is right. If he speculated in the way you want to, and 'wholesale merchants here with whom he trades knew it, they would not give him credit for a day. There could keep his place if it was known he peculated in grain. My advice is: Invest will gain more to let the lambs gambol on the prairie than to turn lamb yourself and amble on the Board of Trade.
Faithfully, Your Uncle John.

## Kentucky Millers' Association.

The Kentucky Millers' Association held heir regular annual meeting in Louisville, Ky., May 4. The meeting was held in an partment furnished by the Louisville Board of Trade. The following officers of the Asso-
ciation were present: W. M. Potts, Richciation were present: W. M. Potts, Rich:
mond, President; John E. Miles, Frankfort; Wm. Shaw, Paris; S. C, Kerr, Winchester dents, and W. G. Proctor, of Danville, Secre tary and Treasurer.

The members of the Association were entertained with a brief address of welcome by
Mr. Chas. Ballard, which was appropriately responded to by Mr. W. E. Grubbs, of Shelby City, Ky.
The roll was then called and the following Grubbs, Shelby City, W. N. Potts, Richm. E W. G. Proctor, Danville; J. W. Gilbert, Owensboro; J. W. Hackett, Louisville; C. C Marble, Eminence, William Watts, Jessa-
mine county; Lewis Rose, Hamilton, O.; C. T. Spillman, Paint Lick, Ky.; J. H. Spemenwarter, Laurel, Ky.; B. Collins, Elizabethtown; E. O. Marnott, Long Grove, Ky.; A.
Weisenberg, Payne's Depot; W. H. George Dayton, O. J. W, Zaring, Shelbyville; H. P Edward, Hamilton, O.; D. H. Ranck, editor Millstone, Indianapolis, Ind.; C. F. Hall, editor Grain Cleaner, Moline, Ill.; John Dish mar, Bowling Green, Ky.; J. E. Miles,
Greenville, Ky.; A. W. Robinson, Grahamton, Ky.; Jas. Colt, Henderson, Ky.; Geo. W Mullen, Whitesville, Ky.; W. H. Wherritt, Lancaster, Ky.; Jno. T. Rabbeth, Hopkinsville, Ky.; R. A. Gordon, Louisville, Ky.; S. Frankfort, Ky.; J. D. Combs, Memphis, Ind. Chas. A. Winn, Indianapolis, Ind.; F.
Compton, Frankfort, Ky.; I. R. Eubank, Frankfort, Ky.
The minutes of the last meeting were then read and approved, and the President delivered his annual address as follows:
Gentlimen op the Kentucky Millizs' Assoclation: Altur anomer trear year has passed and gone, with all its vicis-
it returning gratitude to the, Ruler of the Universe for pertting us to again meete under so favorable cer pecum.
nces. And then I feel and think every member of this
dent. Mr. Grubbs seconded the nomination nd he was declared elected by acclamation He took his seat at once and thanked the society in a few words for the honor conferred upon him, a new member. The next officers o be elected were four Vice Presidents. The following four gentlemen were elected by ac clamation: First Vice President, W. C
Smith, Louisville; second Vice President, Smith, Louisville; second Vice President, dent, W. S. Giltner Eminence; fourth Vice President, J. N. Meyers, Frankfort.
Mr. Smith then nominated Mr. Proctor or re-election as Secretary and Treasurer but that gentleman declined to serve, and
nominated W.H. Whirritt, of Lexington, who nominated W. H. Whirritt,
was unahimously elected.
Upon report of the committee some ammendments were made to the constitution and by-laws.
Louisville was selected as the place of holding the next annual meeting on May 6 1883.

A rambling discussion about wheats, milling machinery and processes was then en
gaged in of interest to all present. The tanding committees on Freight, Milling wheat, Systems of Milling, and Insu

## In the

In the evening a banquet was given the visiting millers and mill-furnishers at Phoenix Hill which was much enjoyed by all present.
It seems to be the opinion of all present that he Kentucky Millers' Association will now enjoy a "regular boom"-that the milling interests of the state are roused and that a prosperous and well attended meeting will be

## The Squirrel Problem

"A squirrel is up a tree and a man on the ground with a gun is trying to shoot it; but he squirrel persists in keeping on the oppo ite side of the tree from the man. The man walks clear around the tree to the place of starting, the squirrel going about in the same
direction and keeping the tree all the time direction and keeping the tree all the time between itself and the man. Now the problem is, 'Has the man been around the the squirrel on it, but has he been around the the squirr
The Express invited answers to this probem , and received twenty-seven of which fifteen say yes, the man does go around the squirrel, and twelve say no, he does not. A figures demonstrating the problem. The following answers are printed:

1. Of course the man goes around the quirrel. He goes around the tree and verything on it

Should the squirrel have the start I am of the opinion that the man goes around it.
3. Not by a darn sight does the hunter 3. Not by a darn sight
walk around the squirrel.
4. The man does not go around the squirrel. Might as well claim that-by having a horse attached at A and another at B, each describing the same circle, keeping circle-the horse at A would at every time going around the ring go around the inside half of $B$ and that $B$ re turned the compliment $\qquad$ $\xrightarrow[\text { aply be }]{\text { ( }}$
to $A$ in the same manner simply because the outside of one described a larger circle than the inside of the other. In other words a man or horse in describing any circle goes around one-half of himself.
5. The man goes around the squirrel. It just like a wheel within a wheel
6. The man does not go around the squirrel. I have tried it and had I got around the squirrel I would have shot it.
7. If there was no tree there and the squirrel was running around in a circle on the ground and the man was going in a larger circle I should say the man went around the squirrel. But when you put a tree there it is different. The man does not go around the squirrel on the tree.
8. The man Coesn't go around the squirrel any more than the squirrel goes around the man.
9. Of course the man doesn't go around the squirrel. If I am standing on the nigh side of a horse and start to walk around him, and the horse keeps turning as I go, I am on the nigh side of him all the time, am I not? And I don't go around him if I am on the nigh side all the time, do I? The case is precisely similar to this of the squirrel on the tree.-
Buffalo Express.

Eighty-six looms and 3,376 spindles are in otion at the jute works of the Dolphin Mfg. o., Paterson, New Jersey, and the finished product aggregates $4,144,748$ pounds per annum.

## Items of Interest.

New Orleans newspapers are inferring great things for the future of that city as a port of export, owing to the completion of a contract recently for shipping 300,000 bushels of grain ( 700 carloads) from San Francisco to Europe via the Texas Pacific Railway and New Orleans. It is inferred by the Picayune that this "is only a foretaste of what may be ex-trans-continental route become lubricated.' An Extraordinary Spring.-In a mine near the busy centre of St. Etienne, a French mining engineer, in boring at a depth of $1,500 \mathrm{ft}$., is reported to have come upon a hot spring, whose waters rushed forth in a column to a height of nearly 80 ft . above the surface of the earth. It is similar in height and heat to the so-called Stracke Geyser, and is strongly impregnated with carbonic acid. The French Ácademy of Sciences have determined to send a deputation to examine minutely into the peculiarities of this phenomenon.
Water Power. - The town of Saint Etienne, in France, is supplied by a torrent called the Furens, the waters of which are barred by two dams. It is now proposed by M. ConteGranchamps to utilise the water-power to drive small Fourneyron turbines, actuating directly some dynamo-electric machines, with a view
to providing Saint Etienne, about 8 kilomet res distant (say 5 miles), with both motor force and light. The fall is about 133 ft ., and the daily supply is such as to give theoretically some 617 horse-power, of which a well-
arranged turbine would receive two-thirds, or 400 effective horsepower. Allowing for loss by conductors, it is estimated that about 200
effective horse-power would be utilized at Saint Etienne.
An Imfrovement on the Faure secondary battery, recently announced, has almost rendered the former's invention useless. The two metals used in the Faure battery were separated by felt strips, which it was found the acidulated water rotted. In the improved device the outer plate is done away with, and the metal is let into perforations in the other, which is found to give better results and last longer without attention. Mr. Faure is now doubtless sorry that he refused $£ 250,000$ for his invention. There is a general agreement between electricians that a successful seconin the practical adaptation of electricity to supply power, light, etc., but as a regulator of the current
A gigantic scheme is on foot, said to origcarried out, will abolish all the cotton ware houses in the South. It is claimed to be the purpose of the company of which Mr. Atkinginneries at every accessible point to and on ginneries at every accessible point to and
all railroad lines, purchase the planters' all railroad lines, purchase the planters' cot
ton in the seed, gin it, and with the use of the Dederic press, press it into bales of 125 pounds, and sell direct to the factories. It is further stated that it is the purpose of the
company to secure space in Oglethorpe Park company to secure space in Oglethorpe Park for the erection of gins and presses to manipulate all the cotton coming into the Atlanta lution will be wrought in the handling of the cotton crop.
Beliting.-It is economy to put on a wide belt rather than make a narrow one too tight. Vertical belts should be drawn moderately tight.
Prof. J. Bauschinger publishes the result of a series of tests of the tensile strength of different sorts of belting made in the Mechanoa echnical Laboratory at Munich. In making setting the loads per square inch on a horizontal line and erecting verticals correspond ing to the elongations at the different loads the curves thus obtained show considerable difference for leather, india rubber, and cot-
ton belts. All these materials stretch ton belts. All these materials stretch more at first, with light loads, than afterward. The lines, therefore, are more curved at the beginstraight line. But with leather belts the approximation to a straight line begins at once, and is more pronounced than with india rubber or cotton belts, showing that they stretch in the beginning more in proportion to the load, and possess a high degree of elasticity. The conclusion drawn from the lests by Prof. Bauschinger is that india rubber and cotton belts are inferior to leather, not only as regards elasticity, but also as regards consile strength, for the same section, and only attain in strength that of medium or inferior sorts of leather. By cementing and
sewing the ends leather straps lose one-quarter to one third of their strength, if the joints

Eastern exchange, such as are in common use in the construction of cotton and woolen
mills, have lately been made at the instance of Mr. Atkinson, President of the Boston Manufacturers' Mutual Fire Insurance Co. The tests were made with the testing machine at the Watertown Arsenal. The formulas in use for computing the strength of wooden
columns are based on tests applied to columns of about two inches on a side and four or five feet long. The new tests were made with columns of pine and oak of the size and length
used in actual construction. All but two used in actual construction. All but two
were round, hollow columns, of from eight to were round, hollow columns, of from eight to
eleven inches in diameter, the two being about nine inches square. The greatest amount of pressure exerted in any case was about 265,000 pounds. The tests have disclosed frequent instances of defective boring in the colums. The object in boring is to open an air passage through the heart of the stick for the prevention of dry rot after it is in position in the building. It is essential of course, that the bore should extend from end
to end, but this has not always been effected. to end, but this has not always been effected.
The sticks were bored first from one end and The sticks were bored first from one end and
then from the other, and the borings have sometimes failed to meet in the middle of the stick. The tests also show that to taper the sticks is a mistake, inasmuch as it weakens
the column more than has heretofore been estimated. Reasons for exercising more caution in other respects in the construction and adjustment of wooden columns in build-, ings have also been disclosed.

The San Francisco Journal of Commerce says We exported in 1881 over $30,000,000$ bushels of wheat, most of it from San Francisco,
some from San Diego and Wilmington, which are becoming important outlets for the pro duct of Southern California. The total is as nearly double the 1880 export as possible,
while it is $2 \frac{1}{2}$-fold that of 1878 This shows that the doubling up of our export to Great Britain did not seriously affect our prospects in that market, though the eastern shipments
increased at the same time. It did, however interfere with Russian exports, which have been smaller, showing conclusively that our the backward cheap labor of Russia in the markets of the world. But Russia will not consent to be thus shouldered out even if th
prices of wheat should have to go lower. Th prices of wheat should have to go lower. Th
result would be not only lower prices, but in creased consumption as well, so that the in-
creased production of this coast would o waste. We make about $1,700,000$ batrel of flour a year, most of which is consumed here and in the Pacific States surrounding us, Colorado. Last year we exported nearly 800,000 barrels, leaving about a million barrels for consumption at home and in the telritories. As our population increases we sha consume a correspondingly larger proportion Southern Pacific and the opening up of the nections with Texas insures us a market with Mexico and Gulf generally for our flour, which will doubtless be quite important, though it remains for the future to say what the extent of that will be.

An important feature of the general export movement from America, revealed by th last official accounts, is the tremendous de-
cline in the flour exports from Atlantic ports. Although the American crop was so shor last season, $42,000,000$ bushels of wheat were nevertheless shipped out of those ports in the first eight months of the crop year, thus showing a very considerable surplus notwithstanding the shortage, but during these same eight months the exports of flour were 2,100,000 barrels, or $1,560,000$ barrels less than for the corresponding period in the previous season, when the extent of the milling capacity of the country was probably not as great as in the present, while there has been foreigner. This seas wheat to spare to the foreigner. This season, from Atlantic ports there has been sent abroad from the same
source some 75 per cent less of flour, than last year. A decrease to this enormous extent while the milling capacity is being steadily enlarged and there is plenty of wheat for exportation, is a very bad sign for Ameri, can millers, whose trade has, no doubt, been one of the worst for some years. Meanwhile English millers are determined, if possible to keep foreign flour at a distance, and to maintain the ground thus won partly by fortuitous circumstances; but we have yet to see whether the effect of another good and
full American crop, with the formidable full American crop, with the formidable
array of merchant mills in that country, will
not be again felt as heavily as not be again
"BEST IN THE WORLD."
GARDEN CITY WHETP PRISHII 513

Gathmann's patent "inclined bristles" prevents all clogging when the brushes are

## ONLY DOUBLE BRUSH

Which can be set up close so that it will Thoroughly Brush Wheat. Guaranteed to IIIPROVR color of the rlour. It don't break or scratch the grain. Removes all the dust. Very light running. Send for circular and prices.

## Prices Reduced!

 Improved Garden City Wiidlingy Purifierl

With Travelling Cloth Cleaners
Our improved Purifier has every device equisite to make it perfect, and every one in use is giving the greatest satisfaction to the users. The Cloth Cleaners are guaranteed to clean the cloth better than is done on any other purifier. Send for our new circular.
Over 4000 Garden City Purifiers in use, nearly 500 of which are the Improved Machine.
The Best and now the Cheapest. Write for irculars and price list.
Wouro gesent ofr tho

## BODMER <br> Bolting Cloth!

## Which has long been acknowledged as the

 best made, and which has lately been further improved, making it now beyond competition. We make it up in the best style at hort notice. Send for prices and samples.Garden City Mill Furnishing Company, CHICAGO, ILL.

## COCKLE SEPARATOR MANUFACTURING COMPANY, MLLWAUKEE,


plain cockle machine.
Perforated Zinc at Bottom Figures.
WE GUARANTEE GREAT CAPACITY combined with GOOD OUALITY OF WORT Any
WE GUARANTE from wheat but to separate it WITHOUT WASTE is the GREATEST FEATURE of our Machine. A WASTEFUL ma
LOSS OF MONEY in a mill. There is NO MACHINE iN THE MARKET which can stand comparison with ours.

Carbondale, III., Dec. 2. 1881. |Hixton, Jackson Co., Wis., Dec. 30,'81 Minneapolis, Minn. Aug. 22, 1881. |time with very satisfactory results.
 Gentlemen:-Replying to your late Gents:-In answer to your inguiry of
Ge have been using two of Beards-
requires an unusual amount of power tavor, would say that we can cheerfally the 28th inst.. I would say that the les's wheat cleaners, a scourer and to run it. Yours truly, recommend your Cockle separator hs combined machine bought yor you last inisher, for nearly two years, and are
time and know whereot we speak. We
would not think of doing without it, would not think of doing without it, having tried it once, and can conscien iously vouch for its good wor

Curs respectrully
BROWN \& WINFREY.
Perrysville, Ind., Nov. 24,1881 . Cockle Separator MIG. Co., Milw waukee. Sirs:-The combined machine I bough weeks. It certaiuly does all you claim weeks. it certainy does all yo
for it the most perfect that I have any knowledge of.

I were to build a mill I would have no
Yours respectully,
B. O. CARPENTER. cleaning wheat.
cleaning wheat.
As anoat Separator it is No. 1, and apolis.
for Cockle it cannot be beat. I can take
have tested ours throughly by this summ. Respectfuliy yours, tion. passing one hundred and fifty bushels per hour through them, one third more Cockle Separator Mfg. Co. 23, 1881. P. per D. G. THOMAs. per rated capacity, and are not using Gentlemen:-The Bea. twenty-seven years, hut never have I any other cleaners, and consider our Cleaners which we haven's Grain seen anything that will equal yours in wheat as well cleaned as any in Minne-

Yours trul
CAHILL, FLETCHER \& CO. La Crosse, Wis., July 30, 1881. Coclle Separator Mfy. Co., Milwaukee.
Gentlemen: -The Beardslee Grai Gentlemen: - The Beardslee Grain from you for our New have purchased kee Mills give us the Era and Milwauion E gie us the best of satisfac the workerienced millers having seen with us, that it cannot be beat. You are at liberty to use our names as a are erence, and to any party calling on us we will be pleased to show the machine June has been in operation since that


## HOWES, BABCOCK \& EWELL,

Istablished 1856. Silver Creek, Chautauqua County, New Yorls, O. S. A. listablished 1856. man ufacturers of the world-renowned eureka grain cleaning machinery and speclalities herewith illustrated



 GENUINE DUFOUR AND ANCHOR BRAND BOLTI


Silver Creek Flour Packer. Vill pack whole and half barrels, ano
alf, ana
quarter, eighth and sixteenth iIf, quarter, eighth and sixtenth
arrel sacks, Provided with labor-sav
patent ereveling steel coll Ys On HAND MADE TING CLOTHS.

## Abernethey's New Book.

 PRACTICAL HINTS
## Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.
Every Miller, Millwright and Millwright's Apprentice THR Untrep Strate Mrliser for one year and a copy or
this book will be sent for 8.00 , Address, UNITED STATES MILLER,

EUREKA MANUFACTURING CO.,

## BECKER BRUSH,

Galt's Combined Smut and Brush Machine. The Only Praetical Cone-Shaped Machines in the Market, and for that

AJUSTABLE WHILE IN MOTION.
Nearly 1,000 of these Machines in Use.


eureka manf'g Co., Rock Falls, Ill., U. S. A. [Mention this paperi;when youłwrite.]

## HARRIS-CORLISS ENGINE.

-BUILT BY-
WM. A. HARRIS, Providence, R. I.
Built under their original patents until their expiration. Improvements since added: "STOP MOTION ON REGULATOR," prevents engine from running away; "SELF-PACKING VALVE STEMS" (two patents), dispenses with tour stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying a troublesome defect in other Corliss Engines, "BABBITT \& HARRIS' PISTON PACKING" (two patents). "DRIP COLLECTING DEVICES" (one patent). Also in "General Construction" and "Superior Workmanship."

The BEST and MOST WORKMANLIKE form of the Corliss Engine now in the market, sub. stantially built, of the best materials, and in both Coudensing and Non-Condensing forms.

The Condensing Engine will save from 25 to 35 per cent. of fuel, or add a like amount to the
 NO OTHER engine builider has anthority to statet that he hean furnigh this engine parties being lioensed.
outad

## A NEW PROCESS ROLLER MILL!

## FORE EATEIE:

In the City of Milwaukee, known as the "City Mills." Capacity, 250 to 300 bar rels per day. Has an established City and Shipping Trade. Mill now running. For further particulars, address,

ESTATE OF WII. C. DURANT,
"OMFY myITME,"
[Mention this Paper when you write.]
MILWAUKEE, WIS.

## FROM 1-4 to 10,000 LBS. WEIGHT.

 True to pattern, sound and tolld, of unequaled atrength, toughneas and An In diratuability sibastlute for forgings or cast fron requirling threefold Gearing of till kitase, Shoes, Dies, Hammer-Heads, Croses-Heades, for Looo15,000 motrives, ,etai and 10,000 Gear. Wheels of this steel now runnitis

CHESTER STEEL CASTINGS CO.,

## TRADE NOTES

Hurst Bros., Salem, Oregon, have pur chased of E. P. Allis \& Co.. Milwaukee, four pair of Gray's Noiseless Roller Mills.
E. P. Allis \& Co., Milwaukee, have sold T. M. Shirk \& Co., of Mt. Carroll, Ill., 4 pair of Gray's Pat. Noiseless Roller Mills.
E. P. Alusis \&Co., of Milwaukee, are building a $50 \times 60$ Reynolds-Corliss cylinder fo compounding Edw. Sanderson's engine.
Capitol City Milis, of Salem, Oregon, ordered of E. P. Allis \& Co., of Milwaukee, 6 pair of Gray's Pat. Noiseless Roller Mills. The 4 pairs of Gray's Noiseless Roller Mills bought by Schinger \& Schauble, Mascoutah IIl., were from E. P. Allis \& Co., Milwaukee. J. J. Knokppler \& Co.,of Milwaukee,ordered
E. P. Allis \& Co., to improve their present engine by putting on a $20 \times 36$ Reynolds-Cor lis Cylinder.
Johnson \& Cunningham, of Centralia, Ill., have just purchased of E. P. Allis \& Co., o Milwaukee, 6 pairs of Gray's Pat. Noiseless Roller Mills.
James K. Hurin, of Cincinnati, has lately ordered of E. P. Allis \& Co.,Milwaukee, 4 pair of Wegmann Patent Porcelain Rolls for middlings.
E. P. Allis \& Co., of Milwaukee, have an order from Hanley, Fuller \& Co., of LaFayette, Ind., for 6 pair of Gray's Pat. Noisoles Roller Mills,
Grisson \& Co., Indianapolis, in repairing their mill ordered 6 pair of Gray's Patent Noiseless Roller Mills of E. P. Allis \& Co, Milwaukee.
E. P. Allis \& Co., Milwaukee, have lately received an order from Chisholm Bros., of Chicago, for 14 pair of Gray's Pat. Noiseless Roller Mills.
E. P. Aluss \& Co., have just received an order from the Salem Mill Co., of Salem, Rolls for middlings.
Chisholm Bros., Chicago, Ill., have ordered two pairs of Gray's Patent Noiseless Rolle Mills, from E. P. Allis \& Co., of Milwaukee to be sent to London.
D. L. Wing \& Co., of St. Louis, say they have ordered 18 pair of Gray's Pat. Noiseless Roller Mills of the extensive mill furnishers E. P. Allis \& Co., Milwaukee.

Edw. Sanderson \& Co., of Milwaukee, will put in 12 more pair of the Gray Pat. Noise less Roller Mills. E. P. Allis \& Co., of Milwaukee will furnish the machines.
Wm. Ansesser, of Ottawa, Ohio, have or dered of E. P. Allis \& Co., of Milwaukee, pair of sharp cutting iron rolls and two pair of Wegmann Patent Porcelain Rolls.
The 10 pair of Gray's Patent Noiseless Roller Mills to be used in the mill of Geo, Fortune, of River Falls, Wis., are to be furnished by E. P. Allis \& Co., Milwaukee.
E. P. Aluis \& Co., of Milwaukee, have sold T. W. Kelly, of Elgin, Ill., 3 pair of sharp corrugated iron rolls for wheat, and 1 pair of Wegmann Pat. Porcelain Rolls for middlings.
The power used to run the new roller mills being built for Walsh, DeRoo \& Co., Holland, Mich., by E. P. Allis \& Co., of MilwauRee will be a $14 \times 42$ Corliss engine from the same firm.
E. P. Aluls \& Co. have the order of J. S. Wheeler, Murfreesboro, Tenn., for 5 pairs of sharp corrugated iron rolls for wheat and one pair of Wegmann Patent Porcelain Rolls for middlings.
Harrington \& Morehouse, of Jefferson, Iowa, have decided to adopt the roller system and placed an order with E. P. Allis \& Co., of Milwaukee, for 14 pair of Gray's Patent Noiseless Roller Mills.
E. P. Aluis \& Co., of Milwaukee are chang ing over the mill of Johnson \& Co., Franklin Pa. 9 pair of sharp cutting rolls for whea and 3 pairs of Wegmann Pat. Porcelain Rolls for middlings will be used.
J. Miller \& Co., of Racine, with their ac customed enterprise have ordered E. P. Allis $\&$ Co., of Milwaukee, to replace their $8 \times 24$ Reynolds-Corliss Engine destroyed with their shops, at Racine by the recent fire.
'Upham Son \& Co., of Blue Rapids, Kan. are changing over their mills to the roller system. They have bought 16 pair of Gray's Patent Noiseless Roller Mills and all neces sary machinery of E. P. Allis \& Co., Milwau kee.
Hicks, Brown \& Co., of Mansfield, O., are making extensive repairs in their mill, increasing the capacity to 400 barrels, and usin: 25 pair of sharp cutting iron rolls for wheat

## A NTHW DHPARTURE

We are the Sole and Exclusive Licensees for this Country under the MORERTMZ MIARTIIN PATERNTES CENTRFIFUGAL FLOUR DRESSING REELS
and we are now prepared to fill orders for machines with latest improvements, which include OUR NEW DOUBLE CONVEYORS

NEW CLOTH FIXING AND STRETCHING DEVICE, NEW AND SIMPLIFIED MANNER OF DRIVING.

## an finish on stock that cannot be treated in the common reel without loss, no matter how much sills it is passed over.

IT IS SPEETALLLY ADAPTED to handin qoft, reground material, full of light impurities, whether from rouls or stone. ty of the low grade flour at the same time it makes the offal cleaner gran reth
ITM MAES ACLEAN SEPARATIONon caked and flaky meal from smooth rolls, which no other style of reel can do.


## ○ver One IFuncined sold in Eix vveelze.

 REFERENCE TO LFADING MILLERS IN THE UNITEB STATES.
## GEO. T. SMITH MIDDLINGS PURIFIER CO., - Jackson, Michigan

and 15 pair of Wegmann Pat. Porcelain Rolls for middlings. The rolls will run in Gray's pat. noiseless frame with belt movement E. P. A
work.

A steam boiler must burst before an ex plosion takes place, but the interval between he bursting and the explosion is of a shor duration as that between the breaking of gun cap and the discharge of the gun.
Dillon, Bowers \& Stock, of Rock Falls, Ills., have placed an order with E. P Allis \& Co., Milwaukee, for 7 pair of sharp corrugated iron rolls for wheat and two pair of Wegmann Pat. Porcelain Rolls for mid dlings.
. T. Hayt, of Corning, N. Y., ordered of E. P. Allis \& Co., Milwaukee, 11 pair of sharp outting iron rolls for wheat and 1 pairo Wegmann Pat. Porcelain Rolls for middlings all with Gray's pat. noiseless frame and belt movement.
Thos. J. Cox, Bloomington, Ill., is changing his mill, and has ordered of E. P. Allis \& Co 2 pairs of Gray's Pat. Noiseless Roller Mills, 1 pairs of sharp corrugated iron rolls fo wheat, and one pair of Wegmann Pat. Porce lain Rolls for middlings.
The new roller mill being built by E. P Allis \& Co. for Walsh, De Roo \& Co., Holland, Mich., will use 13 pair of sharp cutting iron rolls for wheat and three pair of Wegmann Patent Porcelain Rolls for middlings, all in Gray's Patent Noiseless Frame, with be ovement.
Dunlap \& McCance, of Richmond, Va., ar making a complete change in their mill, E P. Allis \& Co. having contracted to furnish hem 30 pair of sharp cutting iron rolls for wheat and 18 pair of Wegmann Pat. Porcelain Rolls for middlings, all in Gray's Pat. Noise ess Frame with belt movement, and all th machinery necessary for a 600 barrel mill. Smur in wheat is a plant, and like th mushroom is propagated by its own seeds, which are so small, that they are absorbed by he wheat plant with the ;water taken from the soil and conveyed with the sap to the wheat kernel, where it finds proper element or its development, turning the whole in terior of the kernel to one mass of smut.
J. H. Redfield, of Salem, Ind., writes tha he prospects for the mill furnisher and mill ers are very good, so far as his observatio goes. He says "I have now under contrac and am building new mills as follows: one 3 run mill for H. Matthews, at Tunnelton, Ind. one three run mill for Jonathan Turley, Mitchell, Ind., one 4 run mill for H. L. Giers, at.Otterville, Ill., I am overhauling and furnishing new machinery for $0 . \mathrm{H}$. Merritt, Jonesville, Ind.; F. M. Lemmons, Leesville Ind.; Gwartney \& Watson, Mauckport, Ind and others. My sales for purifiers during th past few weeks are as follows: Louis Jeffries, Rochester, Ill.; Phillip Crackman, Saulsbury Ind.; Thos. Bradford \& Co., Cincinnati, O S. M. Smith, York, Pa.; Johnson \& Melloy Scottsburgh, Ind.; H. W. Clark, Knoxville, Tenn.; Wanner \& Hoag, Marlette, Mich. saac Shepherdson, Riverton, Neb;; W, R. Russell, Concord, Tenn.; N. C. Durham,

Melan, Ind.; Michael Robert, East Berlin Pa.; F. M. Lemonds, Leesville, Ind.; Bailey Bros., St. Paul, Ind.; J. D. Hammond, Ham monds.Mills, Ga.; Col. Schultz, Blanchard Iowa; H, W. Blark, Knoxville, Tenn.; Gregs y \& Gresgsby, West Baden, Ind.; Josiah Peeling, York, Pa.; James Davenport, Ab byville, O.; Jonathan Turley, Nutchell, Ind. and others.
The following millers have lately placed orders with E. P. Allis \& Co., of Milwaukee or Gray's Patent Noiseless Roller Mills: Wi Fenton, Mo.; Engelke \& Feiner, Temple Mo.; D. B. Merrill \& Co., Plainsville, Mich. Ellis Faber, Rich Hill, Mo.; Teusher \& Co. St. Louis, Mo.; Whitmyre, Brungard \& Co Pittsburgh, Pa.: Geo. Hasler, Salt Lake City,
Utah; Wood Maude Milling Co. St, Louis, Mo.; Little Piney Mills, Rolla, Mo.; Alonzo George, North Aurora, Ill.; N. Long \& Co Russellville, Ky.; J. B. King \& Co., New Brighton, Staten Island; McQueen \& Sanbrook, La Barge, Mich.: A. Henshaw \& Co. Marcus Iowa; Swarting \& Co., Wolcott, Iowa; Jos. Kratochwill, Dayton, O.; Mt. Leonard Mill Co,, Mt. Leonard, Mo.; Geo. A. Mix Oregon Ill.; Wm. Steigley, Kingsbury, nd.; Hobson \& Hartsock, Nokomis, Ill John Hurd, Marshall,Mich.; Wm. Wells,Hillsboro, Ill.; D. B. Pocock, Nayorre, O.; L. W
Taylor \& Co., Mt. Pleasant, Iowa.; Chamber Smiler, Hegensville, Mo.; Ardinger, Pipe \& Co., Carrollton, Ill.; Park Bros., Ada, O Holliday \& Duncan, Cobden, Ill.; Page, Norton \& Co., North Topeka, Kan.; Oatley \& Hargrave, Boonville, Ind.; Hood \& Bradley, Belmont, N. Y.; Wacker \& Ash, Niantic, Ill. . K. Mulley \& Co., Denver, Col.; Kidde Bros., Terre Haute, Ind.; H. B. Powell, Shawneestown, Ill.; F. W. Stock, Hillsdale Mich.; Week, Funger \& Co., Marissa, Ill W. G. Gage \& Co., Fulton, N. 'Y.; Capre County Mills, Jackson, Mo.; Wm. Abbot Hillsburg, Ill.; Dillon, Brown \& Stock, Rock Falls, Ill.; McMahon \& Co., Greggsville, Ill. F. L. Johnson \& Co., St. Louis, Mo.; Dartch \& Munford, Clarksville, Tenn.; Williams, Tall \& Co., Whalan, Minn.

## NEW ZEALAND.

Christchurch, 1st March, 1882.-In our last monthly circular we made reference to the vast amount of damage done to the stand ing crops of ripe corn by the blighting north west winds which prevailed during the las week in January, and we regret to say tha the extent of that damage is being more fully realized now that harvest operations are further advanced. Fortunately the acreage under wheat in this district is greater than in he previous year, and will, in some measure compensate for the reduced yield, but even with the increased acreage the total supplies vailable for export will fall considerably below the figures of last season. The quality of the wheat this year is dry and sound, but owing to the continuance of dry weather the berry is not so plump as last year. Tonnage -the tonnage engagements for the United Kingdom are slightly over 80,000 tons capacity, and it is questionable if sufficient wheat will be forthcoming to complete the vessels
which are already fixed. We cleared the Firth of Lorne yesterday, with the first cargo of this season's wheat; extensive shipments Wh be made during the current month. Wh eat.-to-day's prices are equal to 49s. per 480 lbs . c. f. and i. to Europe, or 4 s 7 d . to 4 s .
8 d . per bushel. f.o.b., for standard samples of 8d. per bushel. f.o.b., for standard samples of
average quality, whilst Tuscan is selling at 4s. average quality, whilst Tuscan is selling at 4s.
9 d . to 4s. 10d. f.o.b., with a fair demand. 9 d. to 4 s .10 d . f.o.b., with a fair demand.
Flour is dull, and to-days quotation is $£ 10$ per ton f.o.b., with a weak market.-The New Zealand Grain Agency and Mercantile Company, Limited.
RECENT MILLING PATENTS.

## April 25, 1882.

Middlings purifier, Anton Besser, Vienna, ustria.
Feeder for roller mills, Ohas. B. Campbell, assignor to John T. Noye M'fg. Co., Buffalo,

Buckwheat huller, G. S. Cranson, assignor o R. L. Downton, St. Louis, Mo.
Mill-pick, Lawrence Lafayette Suncock N. H.

Wheat-heater, Nordyke \& Marmon Co., Indianapolis, Ind.
Grain-dryer and heater, L. C. Porter, Winona, Minn.
Grinding-mill, C. H. Morse, Chicago Ill.
Grain-dryer and cooler, Stanley E. Warrell Hannibal, Mo.

$$
\text { MAY } 2,1882 .
$$

Grain-Cleaner, Isaac Snare, Richwood
Rice-polisher, Henry B. Stevens, Buffalo
Automatic grain-weighing machine, Simp on \& Gault, Cincinnati, $\mathbf{O}$.
May 9, 1882.
Grinding-roll, Richard Birkholz, Milwaukee, Wis.
Grinding-mill, James M. Collier, Gadsden, Mill
Millstone-dress, John M. Speer, jr., Fort Branch, Ind.

May 16,1882
Centrifugal separator, Albert D. Bellinger, Minneapolis Minn.
Roller-mill, John R. Davis, jr., Neenah, Wis.

Grain-conveyer, Robert Dunbar, Buffalo,
Grain-elevator, Frank J. Firth, Philadelhia, Pa .
Hominy-mill apparatus, James Goodyear, Yonkers, N. Y.
Dust-collecter, Francis H. McElfrish, Terre Haute, Ind.
Middlings-purifier, Geo. T. Smith, Jackson, Mich.
Millstone-driver, Lewis P. Weaver, New Harmony, Ind.

## May 23, 1882.

Grain-decorticating apparatus, Wilson Ager, Washington, D. C.

Reports from Texas say that the crop outlook there was never better. So far every thing looks encouraging for a bounteous harvest in the southwest.

## 

## By FRANK b. GOLLEY, M. D., of Milwaukee, Wie

Among the many diseases to which the hu man family is liable, probably but one or per haps two, should excite more alarm, or appeal more definitely to the patient and friends fur prompt relief, than the series of lung affec to m. Their insidiousness seejity of case it does so. As introductory to the special diseases to be considered, and in order that a clearer and more comprehensive idea of the special conditions in question may be obtained, let us first inquire into the ordinary causes of cough. 1st; we may have a cough
from an irritable condition of the lining membrane, of the throat and larynx. That the membranes are very sensative and easily irritated, causing cough. 2nd; cough may in the throat or bronchial tubes, such es in haling very cold air, irritating gasses, or particles. 3rd; a person may cough from an unhealthy condition of the blood, influencing gouty individuals, also in malarial poisoning. We may have cough from direct nervous disturbance in cases of diseased brain, and from hysteria, but these need not detain us here
4th: a vast number of cases of cough are from reflex irritation. The irritation may be in the lungs, from the heart, liver, or from acter of cough is unhappily too familiar to people in general, and certainly needs no time al my dust for a sufficient length of time, are sooner
or later affected with throat, bronchial, and lung troubles, often of a severe nature; especi-
ally do we find this the case with men working in metal, stone, cotton, coal mines or flour mills cough, usually being a prominent symptom. The minute particles of the substances enter the lungs with the inspired air, producing for a sufficient quantity has come in contet with the now irritated surfaces, the effect is disas trous in the extreme. Nature has provide admirably, but not in all cases adequately for these conditions. So long as the particles are in the bronchial tubes, the peculiar structure of the membrane is such, that they are con tinually carried toward the throat, and may,
in moderate quantities be thown off. After they have passed the tubes, and come in contact with the delicate lung membranes they can in no way be thrown off except by breath. After what has been said it will be apparent to the most casual observer that too particular precautions cannot be taken in
these cases. In all authorities on throat and lung diseases we find as one of the prominent causes of bronchitis and consumption the following words: "the inhalation of irritating particles." The reader will now easily under the continual application of minute, but irregular sharp pointed pieces of metal or any can do untold injury. After these condition have existed for a length of time, a slight irritation ensues, with congestion and in
creased secretion. Soon an inflammation ensues which, with the often poorly ventilated working apartments paves the way for that disease which prevails in every quarter of he of people die annually with this disease. It also occasions a larger proportion of deaths demic. What has been said in regard to men working in metals or stone is applicable to those employed in coal mines. Here we not
only have the irritating qualities and poor air, but the lungs may become so saturated with the coal dust, that they are discolored and as is the case with those already mentioned, the breathing capacity is severely compromised. We now come after a brief comparison of the same conditions in allied occupations to the In Millers we have a m formb ficiently annoying condition. Here we have to deal with an organic substance, easily decomposed, but of itself containing some decidedly irritating ingredients. Wheat when
analyzed is found to consist principally of analyzed is found to consist principally of starch crystals ( 60 per cent.) which are insoluble in water, and about equal parts of glue ten, (the sticky tough part of flour when wet,) and dextrin (10 per cent.) together with some mineral, oily and wrody substances. It might be well to add that wheat contains 12 per cent. water. Now in order that the effect of the
dust on the lungs may be more readily under-
stood, with the readers permission, I will briefly show the conduct of flour under similar circumstances outside the body. Afterward how exactly we may have these same proces-
ses going on in the lungs. When flour is ses going on in the lungs. When flour is
moistened with a little water, it, as is well known putrefies very easily; this is caused by the gluten which is composed of several substances, viz: sulphur, carbon, nitrogen, hy drogen, \&c. By tie means of the putrefying gluten, fermentation in the sugar and starch is produced with the formation of acitic and lactic acids. Both are quite powerful acids Again if a slightly alpaline solution be added to flour, the gluten is dissolved and the starch crystals are thrown down. Luckily these crystals are of a more rounded form, and not so irregular as those of stone or coal. Right here allow me one digression, and that is, that raw tarch is very difficult of digestion, passing the body undigested. The chewing or eating of wheat is a prolific cause of dyspepsia, and as as been before mentioned, dyspepsia may cause cough. From what has thus far been hown, we may with confidence deduce the following conditions regarding millers ough. 1st; we have fourteen hundred squar eet of meml $\mathbf{r}$ neous surface in the average lung, with which particles of dust are continu-
ally coming in contact, and as I have already ally coming in contact, and as I have already shown may become decomposed; for here we membrane secreting an alkaline fluid, readil mixing with the dust, and its subsequent de composition is separated from the blood by a membrane on an inch in thickness. That is a narrow
of an sace, but in a healthy man who has lived his hree score years and ten not one drop of litod ever escapes. experienced from these

## onditions.

This state of affairs continuing for year with but little if any intermission, produces the inflamed conditions recognized by many ong engaged in flouring mills. This eventuates in a chronic catarrhal condition of the whole membraneous surfaces, often being an exension downwards from the bronchial tubes ining the tubes after a time renders the nerves in.these parts hyper-sensative, producin spasms of the muscular fibers of the tubes inducing that excessively annoying of find a asthma. It is quite the tubes un associated with its twin affection bronchiti In treating a case of asthma the remedies are often directed to the bronchitis, as the primhave existed for a length of time, with but litle if any improvement, it merges into chronic catarrhal pneumonia, with excessive cel proliferation, which may be so abundant as
to stop up the alveoli of the lungs, or in the next place, it may in connection with th last, progress into chronic interstilial pneumonia (that is a chronic inflamation of the tis sue between the lung spaces) which is neither more nor less than a variety of consumption. undefined; but in an individual exposed to the inhalation of metal, stone, cotton, or graindust, who has dragging pains in the sides, hort breath, irritable and ineffectual cough gradual loss of strength, and perchance nightsweat, be cautious of him, and use eve effort for his relief, for fear of the result.
The more prominent conditions of millers' cough have been touched upon, and considered; we have also acquainted ourselves with a number of its characteristics; this being done, we are now in a position.to inOrdintly suggest some means for its relief. Ordinarily, if we wish to rid ourselves of any disagreeable condition, we look after the cause, and if possible, remove it. The prime
cause in this case is irritation, caused by inhalation of dust. Good advice would be to avoid the dust and breathe pure air for a time, but as this is out of the question, we must It
It has seemed to be impracticable to wear some form of shield to keep the dust from he lungs, or it would have been more generally adopted by millers. I would sug. gest, however, (I believe some are in use now) that if a practical instrument of this kind could be satisfactorily adopted, it would be of great service in many cases.
We have now disposed of the mechanical appliances at our command, and as a last expedient will turn our attention to the selection of those agents likely to be the most serviceable after the disease is fully established. Should there be a decidedly catarrhal condition confined particularly to the throat, the following preparation would be useful It will be noticed, by the way, that we may
bave the causes of cough as enumerated the beginning of this article, but
ject to dust as the exieting cause.

## Recipe.

yr. Senigne, half ande, touce
 Syr. Tolu, add enough to make four ouncen Sig: Take
imes a day.
Should the trouble be further down in th chest, with asthma and considerable expec
on, use the tollowing

$$
\begin{aligned}
& \text { on, use } \\
& \text { Rectipe. }
\end{aligned}
$$

ecipe.
Tnnet. Beluadonna, three drams,
Syr. Ipiceac, tour drams, Tinct. opii Camphorata, one ounce,
Pulv, Ammon Chloride, thirty graing Syr, Tolu, sufficient to make tour ounce
Sig: Use a tea-spoonful three to five times day as required; use after meals and on etiring.
If the cough occurs in a nervous person with but little expectoration, and no conumption, try the following:
 Syr. Simple, sufficient to make three ouncees. Sig: Tal n retiring.
The various forms of dyspepsia causing cough are so numerous, and depend upon so many conditions, that it is impossible to give any one or two prescriptions applicable to al he cases, nevertheless I will give as a tonic where the lungs have a tendency to inflama ion, the following.
 Add Tinct. Auranti, sufficient to make four ounces.
Sig: Take a tea-spoonful three times a day a tonic at meal time.
As a stomach bitter and tonic where no
cid is needed, try the following:
Recipe.
Thect. Cinchona comp, one ounce,
Tinct. Gentian comp, one ounce,
Tinct. Gentiun comp., one ounce,
Syr. Limouns (U. S.), two ounces.
Sig: Take a tea-spoonful three times a day in a little
preferred).
Hoping some of the above suggestions may The United States Mileer, I am,
Therve

Yours respectfully,
F. B. Golley, M. D.

## NEWS.

## Everybody Reads This.

tems gathered from correspondent,

## telegrams and exchanges

Burned-J. B. Syke's mill at Harber, Mo.
Geo. Dow is renovating his mill thoroughly, Cambridge, Wis
Wiliams \& Kleenck are building a mill at Oakland City, Ind.
saxtox \& Mililial
nodeling their mill.
A two-Run water mill is being built at Salem, Ga,, for J. D. Langhorn.
M. Grofr has purchased Miller Bros. \& Co.' nill at West Caro, Ohio
J. M. Woops of Knightstown, Ind., has sold his flour mill to J. Holland.
Nelson Munson will build a 100 barrel roller mill at Warren, Minn., this year.
The Minneapolis millwright firm of Gunn Cross \& Co. has dissolved partnership. The great flour mills at Cardiff, Wales, we
destro
Hscock's flour mills were burned recently at Chaska, Minn. Loss $\$ 20,000$. Insurance $\$ 5,000$. F. W. Aldridoe is said to have purchased
Roberts \& Perkins' mill at Fargo, Dak. He will Roberts \& Perkins' mill at Fargo, Dak. He will
make extensive improvements and increase make ex
capacity.
The Throop Grain Cleaner Co. now of Auburn,
N. Y., will, it is said, soon remove to Buffalo New York.
Crockrr, Fisk \& Co.'s new mill at Minneapolis, Minn., will
barrels per day.
Thi Eureka Mfg. Co. of Rock Falls, III., have sold a Becker B
Nashville, Tenn.
The business men of Stromsburg, Neb, have
raised a bonus of $\$ 2,000$ towards the erection of a grist mill at that place.
A NEW process four-run flouring mill using rolls for finishing, is being built at Union Mills, Md., for E. F. Shriver \& Co.
L. C. Porter, of the Porter Milling Co. of Winona, Minn., will, with his family, go to Europe to spend the summer.
Col. A. W. Woodrord, of Weston, W. Va Alouring coill anmence the erection of a fine lar

The flouring mill at Tail, Ia.. was struck by lightning and set on fire, but the flames wer extinguished before much damage was done.
$W_{\text {Wabrburn, Cobsby }}$ \& Co., of Minneapolis, will put in one of Stout, Mills \& Temples ter whe The Southern States have during the past season purchased $\$ 177,000,000$ worth of breadtuffs and provisions from the Northern States Mkssrs. W. \& F. Livingston, importers of boiting cloths and millstones, have remove rom Broad way to Greenwich street, New York
May 16, the engine house and grist mill on Gov. Smith's farm at St. Albans Bay, Vt., was burned, the loss being $\$ 2,500$, partially insured
A workman in Owen Clarke's new mill at Stevens point, Wis, fell a distance of eighteen eet one day last week, receiving fatal injurie A large grain elevator and flouring mill is being built at Athens, Ga., for the Athens Com
press and Mill Co., to be driven by a Cummer agine.
Todd Muls at Dallas, Texas, are putting in a new brush machine, and lhave bought the "Becker" of the Eureka Mfg. Co. of Rock Falls, Illinois.
E. A Thomas has commenced the erection of first-class new process flouring mill, to be driven by an automatic engine, at Straumsburg Jebraska.
Wa. Schafer of Lancaster, Mo., wants th best brush made, and after looking around ha bought the "Becker made by the Eureka Mfg. o. of Rock Falls Ill

A 200 -barrel gradual reduction mill using onathan Mills reduction mills for reducin purposes, rolls for inishing is being built a Charleston, III., for F. F. Randolph.
Herzog \& Roberts' flour mill in Racine, Wis., was burned down recently. Loss $\$ 20,000$. In. iately on the latest and most improved plan.
Hoprr Bros., of Moundsville and Powhattan, bined stone and roller mill of Nordye comnon Co which will be rected P Pelt
W. A. Sktric of Clarkswell, Tenn., wants Becker Brush, and no other one. He knows that the work it does can't be beat and orders
one from the Eureka Mfg. Co. of Rock Falls, Ill. Frazier M as accepted the offer of the citizens of Pipe stone, Minn., who agreed to pay a bonus to him
in case a four-run new process mill was built in case
there.
Johs McFarland of Watsontown, Pa., has heard what the Becker is doing for other mills, and don't intend to be behind. He has sent an
order for one to the Eureka Mg. Co of Kock Falls, Ills.
J. H. Towsshesd \& Co. have purchased Isaac Staples' mill at Stillwater, Minn. Townshend Co.s two mills in Stillwater have a capacity of 550 barrels per day. Their old mill will soon ve its cap
Davis \& Taylos of Lawrence, Mass., (the largest millers in the state) upon investigation
have concluded the Becker was what they have concluded the Becker was what they wanted, and have ordered one of the Eureka Mfg. Co. of Rock Falls, IIl.
John Lean \& Co., Whitewater, Wis., telegraphed for a Becker Brush to come quick. It
will improve the grade of his flour. The Eureka Mfg. Co. of Rock Falls, Ill., sent him one by telegraph time the same day.
Cooley, Whrelock \& Remd, of Murfreesboro, Teni., are overhauling their mill, and find they want a Becker Brush to properly clean their wheat and have ordered one through their con-

G. A. Webser, a first-class millwright and mill furnisher of Nashville, Tenn., is overhauling a number of mills in the Sou'hern States, and has put in Becker Brushes in them,
and says his customers can't find anything to suit them so well as the Becker.
C. S. Ansis of Atlanta, Ga.., who took an active part at the Atlanta Exposition in the mill furnishing line, writes us that he is crowded with applications to overhaul old style Southern mills, and so far they all want the Becker Brush to thoroughly clean the wheat.
The mill property at Menomonee Falls, Wis. belonging to J. B. Nehs, has lately been sold to Fred. Lepper, of Milwaukee, and Peter Schlafer, of Germantown, Wis., who will hereto be an old first-class mill hand, and it is expected that under his supervision the mill will be greatly improved.
alpred H. Cary, a former mill owner, died May 16, at Grand Rapids, Mich., aged 71. In 1854 he bought the Buena Vista mills, at Bear Creek, in Plainfield, Mich., which he operated, in company with R. M. Collins, for about fifteen years. In 1869 he purchased an interest in the Valley City Mills, which were operated by A. H. Cary \& Co. till about five years ago. He was H. Cary a Co. till about ve years ago. Hes and did much towards building up the eity which was his home.

# E. P. Bacon \& Co., L. Everingham \& Co., Room 23 Chamber of Commerce. GRAIN, SEEDS, PROVISIONS, ETC. 

 <br> <br> MIIUNAUERER. <br> <br> MIIUNAUERER. <br> <br> COMMISSION MERCHANTS!} <br> <br> COMMISSION MERCHANTS!
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We have an experienced man in attendance at each elevator constantly, to see to the inspection of grain when loaded into cars for shipment, and the interests of parties ordering through us will be carefully protected in every way.

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 Mention this paper when you write us.] Parties corresponding will please state where they saw this advertisement] HAND.

Irvin \& Callan of Washington, Ga., are completely overhauling their mill, and added a Becker Brush to their cleaning machinery. C. S. Annis, the well-known millwright of Atlanta,
Ga., is contractor and superintendent of the work. It is to be a first-class mill in every $\underset{\text { THE }}{\text { respect. }}$
in the changed the channe in the White River, Ind., recently and left the water-power flour mill at Whitehall high and
dry a long distance from the new channel. The proprietor of the mill thinks it will be easier to put in a steam engine than to move the river back again.
Rebuilis.-The Southern Mills, which are
awned by Engelke \& Feiner, and which were owned by Engelke \& Feiner, and which were
partially destroyed by fire last Christmas, have partially destroyed by fire last Christmas, have been rebuilt and, with increased capacity, are mills are situated on Fifth Street, near Gratiot, St. Louis. The owners are to be congratulated upon so speedy a resumption of active operations.
The following well-known mill furnishing houses have ordered Becker Brushes for their years, and tell us their customers are suited every time: Sinker, Davis \& Co., Indianapolis, Ind.; Barney \& Kilby, Sandusky, Ohio; Richmond City Mill Works, Richmond, Ind.; Nordyke \& Marmon Co., Indianapolis, Ind.; Uscar Oexle, \& Co., Germany.
Oexle, \& Co., Germany.
Is Mayer's mill, Bloomington, Ill., Peter Ronic, aged about 18, met with a terrible accident a few days ago. His clothing caught in the cogs, and he was drawn into the machinery. He was terribly mangled, his lered The flesh on both broken limbs was fearfully mangled. The arm must be amputated, but i is said the leg can be saved.
Among the new enterprises which Independence, Kas., has secured this spring, the large flouring mill of Mr. Bowen of Ottumwa, Iowa, is one of the most important. He is an old milter and wheat buyer, and to manage the business to its full extent The excavations for the basement has com menced, and work on the three upper stories menced, and work on the three upper stories
will be hurried forward, in order to be able to will be hurried forward, ine thew wheat crop.
handle the new wheat crop.
The Kehlor Milling Co., of St. Louis, have closed a contract with the John T. Noye Mfg. $C_{0 .}$, for furnishing the machinery for their new Co., for furnishing the machinery for $36 \frac{1}{2} \times 80$ feet,
mill in that city. The building is and five stories high, and will have capacity for turning out 800 barrels of flour in 24 hours. turning out 800 barrels of flour in 24 hours.
This mill is to be fitted up on the Stevens roller This mill is to be fitted up on the Stevens roller
system complete, containing twenty-two double system complete, containing twenty-two double
Stevens roller mills. The machinery will be devens roller mills. The machinery will be
driven by a $28 \times 48$ Corliss engine. Cleaning machinery, purifiers, bolting, etc., will be the same as that usually used in such mills. The rolls will be driven by belts entirely, and exhaust from same taken by two Sturtevant fans, All iron work, bolting chests, aspirators, ete., are to be made by the contractors in Buffalo, and the Richmond Mfg. Co., by special contract with Mr. Kehlor, will furnish the cleaning machinery.

The Victor flouring mill at Ottawa, Ill., Cot ton, Dowell \& Hamilton, proprietors, completed ow two months since, is a fine new building is situated Illinois rivers at their junction, from which it draws its power. There is 23 feet head and fall, with water constant and abundant. They drive en sets of Hungarian rollers, and one run of buhrs. The capacity of the mill is 250 barrels per day. It is running on winter wheat exclusively, and the larger part of its product is taken by the home market.
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The Best, Cheapest, and Most Durable Rubber in the
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FLOUR BRANDS For two dollars and upwards. Also RUBBER STAMPS
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Steam Flouring Mill For Sale.
On account of owner's death. Four acres of land with
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 renty of grain raised in the vicinity with large demand
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> Write for Descriptive Circular and Price List to
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1. It is because they do better work.
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## 4:PLEASE READ THIS UNSOLICITED LETTER. $\%$ *

## WILLIAMSBURG; PA., MAY 20, 1882.

CASE MFG. CO., COLUMBUS; OHIO
Gents: We herewith enclose you draft for $\$$-for feed boxes we ordered for our Smith and Ohio machines. They work like a charm. doing excellently. If you want them back, you will have to buy the machines to which they are attached. We have a strong opinion in their favor, and know that they are just what millers want who are using purifiers.

> Very Truly,
$\qquad$ DAVID SNIVELY \& SONS.
This Box does not flour the middlings in feeding them, but pives an even and constant distribution over the entire width of the cloth. It stops and starts with the mill, and when once set requires no more attention. It cannot choke or fail to work. It can be secured in a few moments to any Purifier. We have never heard a complaint of this Feed Box or the Price. Address,

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Mill Irons, Belting, Mill Picks, Iron Proof Staffs, Smut Machines, Elevator Oups, and
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The only Self-Adjusting Sheller in use that will SHELL MIXED CORN, FAST AND WELL,
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## That fils all the demands of modern milling.

That is subject to the most complete control possible.
That gives double the eapacity of any other in the same floor space.
That has two screens, ach with its own Feed Bar, and each tails off.
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That has its bearing boxes detached from the wooden frame. That has its bearing boxes detached from the wooden framae.
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That does its work fire-proof These are reeent and important atachments. That has no screw conveyor or gear wheers waste" BUT WEELL
That has many new and important devices, convenient and simple That does not infringe any patent, (cances, convince any one of of this). That is not an experiment, but has been tried and tested by hundreds.
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That not one of which has ever been returned by any miller,
These are some of the things we have to say about the Case Purifier, and if one jot or title of them is found to be
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It ingures a perfectly even distribution of the middilings
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## Celebrated Cosgrove Concentrated Mill

## Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.


Messrs. John T. Noye \& Sons, Buffalo, New York- Brooklyn, New York, February $20,1882$. Gentlemen: We take pleasure in addressing you in regard to the introduction of the "Cosgrove Roller System" in our Mills at Brooklyn. By removing four pairs of our Millstones and putting in their place the two sets of the Cosgrove System, purchased from you, we find that with our former bolting and purifying arrangements, we can turn out flour, all roller ground, in quality from 50 to 75 cents per barrel superior to that made from the same wheat by Millstones. We are now grinding no wheat with stones. In making the change, our Mill was shut down but $4 \frac{1}{2}$ days to make connections with Elevators, Conveyors, etc. Wo daverably located. Th advantages that we find are frinciplly drove the Millstones. to work required to make the same amount of flour by stones ; uniformity of work of the Rolls, and the ease with which they are managed, one man being fully able to give proper attention to two or more sets if we had them ; the separations made by the cylinders are perfect any miller can quickly adjust them exactly to suit the wheat he wishes to grind and the work required ; the capacity of our machines we find fully 50 per cent. above the amount you guaranteed ( 200 barrels). In conclusion, we will say, that the result generally of the system is entirely eatisfactory to us for the best of reasons, our customers are thoroughly pleased and satisfied with our flour. Yours truly,

Among Recent Orders We Name the Following from Prominent Millers:


#### Abstract

Lexington Mill Co., Lexington, O., 12 pairs E. O. Stanard \& Co., St. Louis, Mo., 28 pairs, E. T. Archibald \& Co., Dundas, Minn., 12 pairs, Pollock \& Co., Vincennes, Ind., 12 pairs,

Penfield, Lyon \& Co.. Oswego, N. Y., 2 Cosgrove Crocker, Fisk \& Co., Minneapolis, Minn., 54 pairs.


## Jno. T. Noye Manufacturing Company. Buffalo, N. Y.

 [Please mention the United States Miller when you write to us.]E. W. PRIDE, Agent, Neenah, Wis.

## ODBLI'S <br> ROLTTR

 An Sabilited Sumem
## We invite particular attention to the

 followingPOINTS OF SUPERIORITY,
possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a positive difforential motion, which can not be had with short belts.
2. It is the only Roller Mill in market which can bs instantly stopped without throwing off the driving belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.


## MITI.

3. It is the only Roller Mill in which one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.
4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bear ings without disturbing the ten-sion-spring.
5. Our corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

WE USE NONE BUT THE BEST
Amsmia Rolls!
References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines.


## And WEEMANNS PATENT PORCELAIN ROLLS.

## ㅁDVVBMATMTS \& OO.

## MIIGVAUEXFEF, WTS.

TO MILLERS USING NOISELESS ROLLS WITH POSITIVE BELT DRIVE.
We have at great expense obtained valuable Letters Patent known as the Gray Patents, being Nos. 222,895, 228,525, 235,761, 238,677, 251,217, of dates Dec. 23, '99, June 8, '80, Dec. 21, '80, March 8, '81, Dec. 20, '81, and which fully cover and protect our noiseless Belt Drive Roller Mill. We have with no little patience been aware that certain manufacturers have been infringing one or all of these patents, and inducing the Millers to purchase Rollers from them.

Now we are determined to bring suits against all users of such Rollers unless they will acknowledge the validity of our patents and pay us a royalty for using them.

While we may seriously regret to take such a course, yet all can easily understand that in order to protect our rights we must declare and enforce them.

We have instructed our attorney to institute suits against infringers, and before another month we expect that suits will be begun. If any Miller desires to settle before suit we will be liberal with him.

Our desire is to furnish the best Noiseless Roller Mill made, and we claim that we do.
Our patents are the foundation patents. A hint to the wise is sufficient.




MILWAUKEE. JULY, 1882.


## Automatic Cut-Off Engine.

Our engraving is a side view of an automatic cut-off engine, one of a series of sizes built by the above firm. In its construction the new ideas of engineering have been adopted, making it light, compact, strong where strength is needed, doing away with the old ideas and superfluous metal, and adopting the new ideas and practice in which is embodied that of high speed. The engine is now speed. The engine is now
being used largely for elecbeing used largely for elec-
tric lighting, to which it is tric lighting, to which it is especially adapted, as well as for any other purpose
requiring the highest degree of economy and uniformity of speed, by its construction, adjustments and the finish. It is built upon what is usually known as the truss or girder frame, which has been so modified which has bring the bases and as to bying the bases and holding down bolts in a di-
rect line, enabling the enrect ine, enabling the en-
gine to be set upon a gine to be set upon a
straight foundation, and also to catch the drips, as oil and water, collecting them suitably for ready removal. The cylinder ports are dropped sufficiently to drain from the bottom of the cylinder, carrying off the water of condensation and obviating the necessity of using condense cocks in the cylinder. The main valve is driven by an eccentric on the main shaft through the intervention "of a rockerarm, and the cut-off valve by an independent eccentric. The cut-off eccentric rod connects with the slide working in the bracket by means of a ball and socket joint, which allows the valve to rotate in its seat more or less according to the requirements of the load and the pressure of the steam. The rotation, which never exceeds one-quarter of a revolution of the valve, is accomplished by a segment on the cut-off valve slide working into a rack attached to the governor spindle, which places the cut-off at all times under complete control of the governor. The construction of the main and cui-off valves is shown in Figs. 2 and 3.
Fig. 2 shows a horizontal section through the center of the main valve. It will be seen that the distribution of the steam (admission and exhaust) is accomplished by an ordinary double " D " slide valve, and is no more liable to leakage or derangement than that on the common slide valve engine, and if the cut-off valve was left open and detached from the parts which actuate it, the whole would work the same as an ordinary slide valve.
Fig. 3 exhibits a vertical section through the cut-off valve. This valve works in a small cylinder attached to the main valve, and cast in the same piece with it. The valve is a cylindrical one, having ports directly opposite, and thereby perfectly balanced. This valve has diagonal admission edges with ports to correspond, so that by turning or rolling it slightly in its seat, it is made to cut off longer or shorter, as the case requires, the range being from zero (or nothing) to three-quarters stroke,
This rolling movement is under control of the governor, and, combined as it is with the sliding of the valve in its seat, it offers but very slight resistance, being even less than that of an ordinary throttling governor valve. Particular attention is called to the fact that there are but two valves, each consisting of one single piece of casting, and that these,
the parts of the valve works inside of the steam chest. All the other parts connected
with the valves and valve geving are outside where they can be seen at all times. The where they can be seen at all times. The
arms of the governor extend across the cenarms of the governor extend across the cen-
tre, and have their point of suspension on the opposite side from the ball. This makes a very sensitive governor, having a large range of movement within a small variation speed. It is provided with a dash pot.
One of the most valuable features pre-
sented in these encines is

It is claimed that this cut-off combines the following advantages: Simplicity of construction and non-liability to derangements of the parts. Positive and certain motion, it having no trip (or catch and let go) movement whatever. Freedom from violent shocks of any quired speed as well as an ordinary slide valve. Cutting off the steam sharply when the requtsite point is reached, owing to its long and rapid travel, and lapping well be-

the roots, but he could not discover the cause. On Saturday morning his search was rewarded by finding a small reddish brown worm, about half an inch long and about twice as thick as a fruit stem, which was eating the wheat plant. After coming to town he took the worm to the Le Sueur flour mill, where the miller gave him two larger and perhaps full grown of the same kind, which he said were often seen in wheat when brought to the mill, and which were also in the bran and shorts. The miller also showed a hardened light-colored worm, much shorter and thicker than the others, which he said was the last condition of the wheat-eating worm before emerging into a full fledged fly. In confirmation of Mr. Barnes' theory, that this worm is destroying the wheat in parts of many fields, Daniel Dougal, who lives in the timber near Cleveland, says that the wheat on at least two acres of a fifteen acre field on his farm has been destroyed by the same worm, and that he has seen hundreds of them at work. On inquiry we find that the wheat in a great many fields is simila rly affected, although farmers have not examined closely enough to know whether it is from the same cause or some other. This same worm partially destroyed the wheat on some farms last year, and did much injury to Mr. Barnes' crop then. It does not cut down all the wheat where it works, nor does it work all over the same field. It is believed to work most on the soils impoverished by continuous wheat croppings, and as far as learned is not at work on land cropped with corn last year. Whether this new enemy of the wheat crop lives thronghout the year in the soil, or whether it winters in wheat bins, is yet an unsolved problem.-Le Sueur (Minn.) Sentinel.

## The Cause of Dew.

If dew fell it would fall for the same reason that rain falls; but dew does not fall. It is imply a deposit, moisture always contained in the air to a greater or less degree, and which, when there is enough of it, will always form on any cold body exposed to the moist air, in precisely the same way that a cold bottle or stone, taken from a cold cellar and suddenly exposed in the shade to the moist, warm summer air, will become wet. This is not sweating, nor does this moisture come out of the bottle or stone as many people believe, but from the air. It is for the same reason that moisture will condense against the win-dow-panes when the air is cold outside and moist inside, the moisture slowly freezing while its deposits form crystal ice which we so often admire in winter. When the weather is cold enough the moisture will even freeze plants and grass, and then we call it hoar frost; if it does not freeze it is simply dew. The only point left to be explained is why does the ground become so cool during the night, so much cooler than the air above, as to cause the latter to deposit its moisture, This was for many years a vexed problem till Wells first suggested the radiation of obscure heat, which takes place from the surface of the earth through the clear atmosphere into the space above, and so causes the surface to become much cooler than the air
itself. He demonstrated this by itself. He demonstrated this by means of
thermometers placed at different heights, and also by the fact that dew is only deposited on cloudless nights. When there are clouds they reflect the heat or prevent it from escaping. The surface of the earth thus being kept from cooling, no dew is deposited.

United States Miller.
 MILWAUKEE, JULY, 1882.

## Market Review.

Prepared expressly for the "United States Miller,"
by Messrs. E. P. Bacon \& Co.,
of Milwaukee. Wis.
Wheat has ruled comparatively steady during the pas Wheat has ruled comparatively steady during the past
month for presen and July delivery, the range in pricee
on No. 2 having been between si.30 and 81.44 in store. The etock remains concentrated in the hands of one con
eern. who ocontinue to take nll that is offered for July
delivery. The same concerul holds the entire stock a dellivery. The same conceru holds the entire stock at
Chltago also, which has been reaceed during the month
$1,250,000$ bus. by shipments East which it is in understood 1,250,000 obus. by shipments East which it is understood
have been made for the ecount of the "llquene, the stock
in store there now being only $1,366,000$ bushels. The in store there now being only $1,366,000$ bushels. The
stock in store here has not undergone any material
ohange during the month, being now won, ,00 bushels. The
 ment for the month amounts to $2,450,000$ bushels, agains Harvesting in the Winter Wheat quite general south of and including Kansas, Missour and Southern Hllinois, but is being retarded seriously by
wet weather which has done considerable damage to
wheat in the ginning to arrive freely at St. Louis, the receipt bushels, which, however, is largely short of what ha
been expected, aud short-sellers have consequently had to fill their contracts for
from 10 to 15 cents per bushel.
The market to-day receded $1-11 /$ cent on No. 2 for im
mediate and July delivery, closing at $\$ 1.32$. Arrival on its own merits, at prices ranging from 3 cents over milling varying noccording to sound ness, condition and
mariety of whent rariety of wheat. Straight No. 3, which consists wholly
of what the "mixers" put into the elevators of this grade is steady at 81.07 in store.
Milvaukee, June 30,188 .
We call the attention of steam users to $^{\text {a }}$ the new advertisement of Corliss and im
proved slide-valve engines, manufactured by Messrs. Weisel \& Vilter, of Milwaukee. These engines are in many of the largest manufac very high reputation for power and economy Parties intending to purchase engines will do well to call on, or write to them.
The Case Manufacturing Co., of Columbus, Ohio, presents to the milling publi paper the merits of the Case Break Machine These machines have been already quite extensively introduced, and their success
seems to be unquestionably assured. The machines have been operating for several
months in the Empire Mills of Milwaukee, and proprietors and operatives speak in the highest terms concerning them. We trust merits. The Case Manufacturing Co , are well known to the trade, and their efforts to appreciated.

## The Milwaukee Dust Collector Mtg

We respectfully call the attention of our readers, to the announcement in a full pag This company has been organized and charsin, and the members of the company are from amongst the prominent and wealthy citizens of Milwaukee. The Company has Dust Collector Machine manufactured by them, and its members are entirely satisfied pany has ample capital and will place thi machine before the millers of the country will meet with the warmest approbation of the trade. No Miller should fail to write to them for their descriptive circular

## The Millers' Mutual Insuran

The above named company has been duly organized; the following gentlemen constitute he board of directors: J. L. Clement, Nee ler, Manitowoc; S. C. Wiley, Appleton; W. S. Green, Milford; II. Truman, Manitowoc; E. W. Arndt, Depere; S. H. Seamans, Milwaukee; John Schuette, Manitowoc.
Mr. John Schuette, of Manitowoc, the chairman of the Committee on Insurance,
has addressed a circular to Wisconsin millers explaining the affairs of the company and soliciting patronage. We are informed that from all appearances at this early date the company will prove successful. Wisconsin
help it along, for it is a matter of direct importance to every flour mill owner in the state. Mr. John Schuette, of Manitowoc, wil answer any
this subject.

The Boston Journal of Commerce has as sumed a magazine form, put on a new dress and is as handsome as can be. It is now in its twentieth volume and is a welcome visitor
to manufacturers and work-shops everywhere.

## Not Too Cool.

An Austrian miller claims that absolutely cool grinding is as injurious to flour as too the matter for a long time. He thinks many roller mills should grind more rapidly than hey do, so as to produce a certain amount of ermentation while the grain is being ground f warmth during cased lavor to the flour that is very desirable.

## Indiana State Millers' Association.

The Indiana State Millers' Association met in annual convention at the Grand Hotel, In dianapolis, on the 8th. The meeting wa alled to order by J. R. Callender, president he secretary, Richard Thomas, presented ship comprises 26 members, representing 107 uns. As treasurer, Mr. Thomas reported re ceipts $\$ 763$, disbursements, $\$ 402$; balance in
treasury, $\$ 361$. By resolution it was deter reasury, $\$ 361$. By resolution it was deter
mined to assess each member $\$ 7$ per run to meet the assessment of the National Asso ciation. Officers were elected as follows President, John R. Callender; secretary and treasurer, Nicholas Elles; vice-president, John A. Thompson. The secretary was voted Pollock, Trow and Paddock were appointed n executive committee.

Aikens \& Bro., of Atlanta, Ga., have ordered Mfg Co., of Columbus, 0 .
The Victoria Mill Co., of St. Louis, Mo., have just put in Case's Little Giant Reduction per hour.
Alex. Ault, of Bellair, O., has ordered the Case 4th and 5th breaks to displace those he is now
Mill.
D. B. Sears' Sons, Rock Island, Ill., are putting in a full line of the Case Reduction
Machines. They have been using the Case First Break for some time past.
The Imperial Mill Co., of Clocksville,Mo.,have just put in a lot of machinery furnished by the
Case Mfg. Co., Columbus, O., among which is heir Purifier, Break Machine, etc.
Messes. Root \& Co., Cincinnati, O., are puthg in more of thning the first break, and are now adding them for some of the other breaks.
Jos. A. Gebhart \& Sons, of Dayton, O., hav ust placed their order with the Case Mfg. Co.
Columbus, $O$., for a full line of their breaks an olls. They will have a full fledged Gradual Reduction Mill on the Case system.

## MILWAUKEE ITEMS.

W. SChmid \& Co., wanting to use porcellain rolls for
niddlings, ordered 4 pair of E. P. Allis \& Co., Milwaukee,
all in Gray's Patent Noiseless Frame.
E. P. AlLis \& Co, of Milwaukee, are changing over the mill of Andrew Bowling, of staunton, Va.,
system, and will put in 8 pair of sharp cutti
wheat and 2 pair of porcelain for middlings. The Great Western Mfg. Co., of Leavenworth, Kas.,
have just placed an order with E. P. Allis \& Co, MMil.
waukee, for a pair of iron rolls in Gray's Patent Noiseless Frame with belt movement.
J. L. ALLARD, of Paducan, N. Y., has given E. P. Allis
\& Co a contract to change over his mill to the roller $\&$ Co. a contract to change over his mill to the roller
system. 4 pairs of sharp cutting rolls for wheat and 2
pairs of porcellain rolls for middiings will be used all being in Gray's Patent Noiseless Frame with belt move-
ment. E. P. AlLis \& Co., Milwaukee, have just received an
order from the Salem Flour Mill, of Salem, Oregon, for 4 pair of iron rolls and 3 pair of porcelain roll
Patent Noiseless Frame with belt movement. Pan N. ALLis \& Co , of Milwaukee, sre changing the mill
Ef John Black, of Sycamore, Il., to the roller system; the rolls used will be in Gray's Patent Noiseless Frame. MURRAY \& BRADLEY or Marquand, Mo., have ordered
E. P. Allis \& Co., of Milwaukee, 2 pair of sharp cutting
rolls for wheat and a pair of Wegmann Patent Porcelain Rolls for middlings. These rolls will be placed in Gray's
Patent Noiseless Frame with belt movement. Frank Clabk, of Hamilton, Mo., is changing over his mill to the roller system. E.P. Allis \& Co, of Milwaukee,
are doing the work and will put in 10 pair of sharp cutting and smooth iron rolls, and 4 pair
Noiseless Frame with belt movement.

E. P. ALLis \& $C_{0}$, of Milwaukee, are changing over
the mill of Keines \& Williams, of Logan Ohio, and will put in 10 pair of iron and 8 pair of Wegmann Patent
 barrel mill on the roller system for C. Sperry \& Co., iron rolls and 6 pair of Wegmann Patent Porcelain rolls These rolls will be in Gray's Patent Noiseless Frame with belr movemen.
E. P AlLis \& Co , of Milwaukee, in changing over the mill of Johnson \& Jarrett, of Des Moines, Iowa, will pu
ta 8 pair of Gray's Patent Noiseless Roller Mills with belt in 8 pair of G
movement.
D. D WING \& Co., of St. Louls, Mo., have placed an
order with E P. Allis \& Co of Milwaukee, for 12 pair of D.er with E P. Allis \& Co, of Miwa
colls in Gray's Patent Notseless Frame.
E. P. Allirs \& Co., of Milwaukee, are in receipt of an
der from the Cockle Sep. Mfg. Co. of Milwaukee, for air of rolls in Gray's Patent Noiseless Frame.
E. P ALLis \& Co , of Milwaukee, have recently shipped
prominent millers in London, England, 10 pair of rolle Gray's Patent Noiseless Frame, and 6 of Gray's Puri
8. r. Cross, of San Francisco. Cal., has just ordered of
P. Allis \& Co. 6 pair of rolls in Gray's Patent Notseless rame with belt movement.
E. P. Allis \& Co., of Milwaukee, are in receipt of an
rder to ship 10 pair of rolls to J. H. Townsend \& Co Stillwater, Minn, the rolls to
Frame with belt movement
Chisholm Bros \& GunN, of Chicago, have placed
orders with E. P. Allis \& Co. for 10 pair of iron and two㲘 Hoppman \& Blelingl, of Milwaukee have lately placed ngines to be built for the new Madison water works; linders $14 \times 36$ and $18 \times 43$.
The Philip Best Brewing Co., of Milwaukee, ordered of
P. Allis \& Co of of Milwaukee, an $18 x 20$ Reynolds Corliss Engine for their new malt house
J. H. Kerrick \& Co, of Minneapolis, Minn, have
dered of E P. Allis \& Co., of Milwaukee, two of Reyolds Improved Corliss
$4 \times 42$ and the other $12 \times 36$.
E. P. Aluss \& Co., of Milwaukee, are in receipt of an
rder from E. Bradford, of Sparta Center, Mich., for a 4x36 Corliss Engine.
J. E. Ellwood \& Co., of De Kalb, Ill, have recently olds Corliss Engine with Reynolds Improved Heater. E. P. ALLL \& Co., of Milwaukee, have the contract fo
ncreasing the capacity of the mill of The Goodlande yill \& Elev. Co., of Fort Scott, Kas. They will use 20 pair
of iron and 12 pair of porcelain rolls in Gray's Paten oiseless Frame, The power to run this mill will be
Reynold's Corliss Engine 20x48 which is being built by E Reynold's Cor
P. Allis \& Co
The Minneapolis Harvester Works, Minneapolis, Minn.,
ave placed an order with E. P. Allis \& Co. ior an $18 \times 48$ eynold's Corliss Engine.

## Wardell

Lyon, Mich., 6 pair of rolls in Gray's
re p.
T. R. Grabill \& Bro., Mille
Patent No.seless Roller Mill

Johnson \& CUNNingham, of Centralia, Ill., are changing ver their mill to the roller system, they will use two pair
of sharp cutting rolls in Gray's Gradual Reduction Frame nd 2 pair in Gray's Patent Noiseless Belt Frame. E. P.
the milwaukee dust Collector Mfg. Co. report an order from the New Era Milling Co., Milwaukee, to fur-
nish them machines enough for all their puritiers, etc.
This mill will hereafter dispense entirely with the oldfashonend dust-room. This is the first mill in the United ThX most important machine for mills nowadays is a good dust collector, The machine manufactured by the
Milwaukee Dust Collector Mfg. Co. is without any question success having proved so in mills in Minneapolis and
Milwaukee, where machines have been in constant use

## From California.

Letter from W. D. Gray, Milwaukee's Favorite Milling Engineer.
A california branch of e. p. ALLIS \& co. Es-
TABLished.
San Francisco, June 1st, 1882.
Editor United States Miller:
Before leaving Milwaukee, I promised to
write to you soon after my arrival in the
Golden State and I will now try to redeem
that promise. I arrived here about eight
days since. The journey from Chicago occu-
pied just five days and nights of continuous
railroad travel. During much of that time
we passed over treeless prairies, deserts and
mountains. It has been said that nothing
has been made in vain, but I have not yet
decided in my own mind just what much of
that country is intended for. It may be that
it is unfinished and that when it is completed
ages hence, it may become the garden of
America. I have not seen much of the
country yet, and thus far I have only visited
Stockton, San Jose and Sacramento. From
my short experience I should judge that
San Francisco, in regard to climate, is some-
what unfortunate. We get here the cold
winds and fogs from the bay. I have worn
my overcoat nearly every day since my ar-
rival here. If you go inland, however, a
short distance and a little south, you cometo
a country of fruits and flowers and "fit for the
gods to dwell in."
I am busy figuring on a 1,000 barrel mill,
and when I get through with that I intend to
see a little more of the country. I find our
old friend George Smith, formerly of Mil-
waukee, established here in the mill-building
business and he is doing a good business, He
has changed several mills here over to the roller system with good results. of course it
could not be otherwise, as he is a good millcould not be otherwise, as he is a good mill-
wright and is using the best roller in the wright and is using the best roller in the
world. He is now engaged in building a new world. He is now engaged in building a new
30.1 barrel roller mill in this city, known as Famosemite Mills and owned by Splirall \& mill and the rolls to be used are Gray's Patent Noiseless Roller Mills, which, by the way,

## ured.

Hon. Horace Davis, of San Francisco has ust got his mill started since changing it over oller machines, no stones; is turning out ,000 barrels per day and is doing good work, The mo it is reported.
The millers the
The millers of the Pacific coast are just er system and are convinced that something must be done, but they do not like to throw away their millstones and it will take someas it yet to get them thoroughly converted
aillers at home, but the time will come soon when they will see and fully rn improvements and will adopt them.
Most of the mills on this coast are small ranging in capacity from 50 to 200 barrels per day. With a few exceptions they are not only small but crude in construction, but hey rattle away and most of them are mak-
ng money. Put these same mills in Mil ng money. Put these same mills in Mil-
waukee or Minneapolis and they would not pay to run a day. You might ask-why on is plain. They have better and cheaper wheat. Not long ago wheat was shipped fom here to Minneapolis and sold there at rom five to ten cents per bushel cheaper than here is cheap and I think better. It is not hat will weigh from 65 to 68 pounds to the bushel and these mills take five bushels and ver to make one barrel of flour and still they What a difference between this wheat and waukee during the past winter-in the Dis Roller Mill for instance! It would weigh ten ounds per bushel less, and poor samples less till, and yet we made a good yield and excellent flour. To do this, however, it is nec machinery. I find the tendency here is, with miller Itting in the roller system, to try to mak used, and consequently these mills do not give the best results but are agreat improve ment on the stone mills, which they have upplanted. This is bound to become a great ew mills will do well to look at this country With cheap wheat and all water freight to Curope, it looks to me as if a good mill here
has decidedly the advantage of one in an Eastern state.
I grieve to read the announcement of the death of Gov. Washburn. Who, of all connected with the milling industry does not
mourn the event. We feel as if we could ot spare him, but as it has pleased our grea Greator to take him away we must submit.
Peace be to his ashes. He lived a noble lif nd left the world better than he found it What more can man accomplish than to benefit the world by living in it.
Gov. Washbuin has done more
ing industry than any man of the mill was his mill and his money that introduced the middlings purifier into this country. It was Gov. Washburn who caused the first t to be a success. It will be long before the trade will see his like again. The millers of erect a monument to his memory, though without any shaft of marble to mark hi esting place, we may well believe that his
name and the results of his enterprise and labor will never die.

Yours truly,
P. S., June 8th, 1882.-I have just returned from Stockton by river. It is about 90 miles
from here to Stockton by rail and about 150 by river, the river being very crooked. As I enjoy a pleasant evening on the steamer, I route. Stockton is where Mr. Sperry's mill
is located. It was destroyed by fire April 2 , which we have just taken the contract. It
will be a 1,000 barrel mill using Gray rollers hroughout, except five pair of millstones for ne middlings. They are not yet quite satis fied to rely on rollers entirely, but they will
no doubt, soon be so. Mr. Sperry's no doubt, soon be so. Mr. Sperry's mill
will be 100 feet long, 90 on the ground and ive stories in height. It will have heavy it a very imposing appearance. I I think it
will be the finest millhouse on this coast and expect the inside machinery and arrangements to be second to none elther here or in and there is no doubt but that with the mil we will build for him, he will make money. here under the directions of J. R. Cross and myself. Mr. Cross-will remain in this state
and run a branch of E. P. Allis \& Co's busi ness of which he will be manager and I building business of the Pacific States. I hen start for home, where I hope to find all things well. I am,

Yours truly,
truly,

# GLAD TIDINGSOT GREAT JOY 

TO MILL OWNERS WITH DUSTY MILLS AND CLOUDY BROWS.

# An Imporatal Problem Solved a L Last 

Taking care of the dust laden air from Middlings Purifiers and other machines, using air to carry off the dust, has been thoroughly met and conquered in the highest degree by the

# PRIINZ DUST COLLECTOR. 

After years of study and experiment success has orowned the labor of F. PRINZ. He produced a machine, that will give satisfaction in such a manner that no miller would ask for anything better.
Simplicity is a Leading Feature in this machine.


The dead air chamber, which has been a source of much trouble in other machines by wearing out and allowing the air to get in, thereby injuring the power of the cleaning mechanism on the cloth, which results in the cloth filling up, is entirely overcome in this machine, as it has NO DEAD AIR CHAMBER.

## LEAN POW゚ER IN UNED

with this machine than any other as there is no back pressure on the fan; the motion of the fan has to be reduced whenever this machine is applied.

It does away with the cumbersome dusty, dirty old-fashioned dust room entirely and the numerous spouts leading to them, which fill up the Mill, leaving no room to get around.

IT RETAINS THE DUST IN THE MILL,
thus allowing no waste of stock by being blown out into the air as is the case with the old fashioned dust-room.

It does away with the liability of dust explosions as the air coming from the machine is entirely free from dust, which is not the case with the air coming from any other Dust Collector offered to the milling public heretofore.

We the undersigned manufacturers

## GUARANTEE ENTIRE SATISFACTION

in the use of this machine.
Our machine does not infringe on any patent, which we fully guarantee; on the other hand we caution parties against purchasing infringing machines.

> LOW PRIGFS FOR WXCFLLTNT MACHINGS.

THE UNITED STATES MILLER.

United States Miller.

## E. HARRISON CAWKER, Editor.

## PURLIBHED MONTHLY.

 ELEECRIFTIO PRICE.-PER YEaR, in Advance,


Bilis for advertis
For agreed upon,
For estimates fo
[Entereq at
class matter.]
MILWAUKEE, JULY, 1882.
We respectfully request our readers when they write to persons or firms advertising in
this paper, to mention that their advertisement was scen in the Unired Stares Miller. You
will thereby oblige not only this paper, but the advertisers.

## Flour Mill Directory

## Ca wrer's Axrrican Flour Mils Dirgctory for 1882 , was completed, ready for delivery February 1 , 1882 .  mills and in the Dominion of Canada 1,48s. ${ }^{\text {T }}$, the United States are distributed as follows:      The directory is printed from new Burgeois type on heany tited paper and is substantiluly bound. It makes a book of 200 large pages. Thit post offices are alphabetically arranged in eecha state, territiory or province. The name the mill, the kind of power used and the ca- pacity of barrels of flour per day of 24 hours are given Wherever obtained which is in thousands of instance This work is indispensible to all business men desiring to reach the American Milling Trade. rrice Ten Dollars per copy on receipt of which it will be sent post paid to any address. Remit thy registeren letter. postorifiee monee order or rof raf on chicago or made made

 $W_{E}$ call the especial attention of our readers to the "Important Letter to Millers" from the Stilwell \&A Boston writer predicts that wind-mills will, in the near future, be used extensively
for the purpose of generating and storing for the purpose of generati
electricity for use as desired.

Ourreaders whoare about to purchase bolting cloth, will do well to read the new announcement of Messrs. Howes, Babcock \& Ewell, of Silver Creek, N. Y., printed on another page.
Purchasers of this firm may rest assured that they will get goods exactly as represented.
The immigrants that landed in last year came from the different countries as follows: Germany, 199,000; Ireland, 64,-
000; England, 39,000 ; Sweden 000; England, 39,000 ; Sweden and Norway,
50,000 ; Italy, 18,000 ; Switzerland, 12,000 ; 50,000 ; Italy, 18,000 ; Switzerland, 12,000 ;
Scotland, 11,$000 ;$ Russia, 11,000 ; Bohemia, 10,000 .

If anyone doubts that the Southern States are not rapidly developing their manufacturing and agricultural interests let him take a copy of The Tradesman, published at Chatta-
nooga, Tenn., and glance through its advertising and reading pages. Our word for it, he will be converted. The South is rapidly developing its wonderful resources and is attracting the attention of enterprising observ-
ers everywhere. Long may her present prosperity continue and increase.
The President of the United States has appointed the following committee to revise the tariff: John L. Hayes, of Mass., (chairman); Henry W. Oliver, Jr., of Pa.; Austin M. Garland, of III.; Jacob A. Ambler, of Ohio; Robert P. Porter, of the District of Columbia;
John W. H. Underwood, of Ga.; Duncan F. Kenner. of La.; Alexander R. Boteler, of W. Va.; William H. McMahon, of N. Y. The
majority of the members are strongly in majority of the members are st
favor of a strong protectiveatariff.

The Phenix Foundry and Machine Works, of Terre Haute, Ind., have recently enlarged their capital, shops, and general manufacturing facilities and are better than ever prepared to turn out large quantities of
known the world over as an inventor of flour mill machinery, and designer and builder of four mills, assumes the position of general manager. Among the machines manufactured by this establishment are the Jonathan Mills Centrifugal Bolting Reeis and im proved Roller Mills. The Company wil also make a specialty of furnishing Mills' Gradual Reduction Machines and will also do a general mill-furnishing and mill-building
business. The Phenix Foundry and Machine Works have a fine reputation amongst millers and now they are better prepared heir many wants.

Death of Samuel Babcock.
Mr. Samuel Babcock of Silver Creek, N Y., father of Mr. Babcock, of the firm of
Howes, Babcock \& Ewell of that place, while taking a walk on the afternoon of June 11th, was struck by a passing freight train ond in-
stantly killed. "Uncle Samuel," as he was ondly called by his fellow citizens, was universally beloved for his kind and genial ways, The large force of workmen in the Eureka Smut Machine Works, which he often used to visit, passed resolutions of condolence and attended his funeral in a body. Mr. Babcock was in his 90 th year when he was so sud-
denly summoned to that better land beyond. We extend our h
family and friends.

## Plain Talks About Milling.

## By richard birkholz, m. e.

An indirect saving can be made by alway buying good machinery. Many millers wil buy from the lowest bidder and mill furnish-
ers aiming to sell only the best machinery cannot compete in price with those wh slight work in order to make a margin on a the same; they all desire to make money. believe it will pay any miller to buy of such mill furnishers as have gained, and are ambitious to maintain, a reputation by manufacturing good, well-finished machinery. The resuits of cheap contracts are unround, badly turned shafts; shafts which are of uneven
diameters; shafts which will let a pulley or gear slide on loosely at one end and have to be filed towards the middle to admit it to it place of destination; couplings which eing drive-fit, which after being keyed are not square on the shafts and which, after he bolts have been put in and tightened, will "spring" the shafts, causing them to wabble around, wearing and loosening the eys on them in all directions. A well-made coupling requires time, skill and absolute cor ectness of workmanship. Poor fitting pulleys are another result of cheap work; they will oo on too loosely and after screw is tightened they will run untrue and out of balance, shaking the entire mill-floors Then badly fitted gearing, which will no run on the pitchline, on account of being bored cheap work. Such gears cause an intermitting noise whether they are of iron or core and iron, Among other cheap things I will mention core-wheels, badty trimmed pinion teeth cheap and nasty babbit, poor belting and elevator cups, leaky bolting chests with loose oints, green lumber, conveyor shafts of boxes. Poorly fitted up and cutting convey oxes. Poorly thereby carusing breakages and delays. I would therefore advise millers to make their purchases from manufacturers or dealers of
whom they are well convinced that they will npply only good machinery
Many millers are inclined
millwright as one seeking to despoil the heir cherished wealth, but if they are aoo correct advisers, they should be esteemed as their best friends. The millwright must millowner have he entire condence of the furnisher by whom he is employed and sent to the mill-owner. His salary in a mill-furnishing establishment is proportionate to his capability as shown in his dealings with millers. good and faithful millwright has the prosperity of the miller employing his services constantly in view. It is to his interest to economize for the m
The millwright visits a mill, and is asked
use his best judgment in effecting a change embodying the latest improvements. He examines the building; he finds low and few tories and feels somewhat discouraged; he eels still worse when he finds a cupola roo contracted upper story with waste-room un der the main roof.
When the miller consents upon his advice take away the roofs and carry up the building full size, making high stories of such gained room and putting on a flat roof, the millwright begins to "take some heart into his work." Then he feels cheerful and as ould accomplish something desirable A new process mill must have high storiesbuilding with basement and four to five stories above. I do not say that a new pro-
cess mill cannot be made out of a cupola topped building with few floors-oh, no-but surplus of elevators, shafting and gearing must be resorted to. Elevators will be pressometimes in rebuilding such mills with an unfavorable building than the changing of the building would cost and besides this great deal of power is lost in extra gearing. If millers would only make it a point to go and visit good mills before they change their own, they would see how little room is wasted by so many elevators, all standing in line, adnitting passage between their legs, all plumb and on one shaft. They would see how necessary it is for driving and spouting to the direction relative to the rolls. Having seen these things so necessary, they would more readily consent to follow the suggestions of the faithful millwright-make a clean sweep and place the machinery as it ought to stand eorly all sake. They can re-utilize nearly all of the old shafting, pulleys and ears, all belts, elevator boots, etc.
Remember that a good millwright does not simply care for placing a few rolls; he is ambitious to see the miller do the best possible work therewith in conjunction with the rest of the machinery. He will draw up a diaence, decide upon the cloth to be used and how the stuff must be handled. In this manner he differs vastly from the agents, who will "talk the head off" of a miller to sell his own unaided endeavors to make his in vestment pay.
Unscrupulous agents try to "get on the ight side" of the miller by telling him that a
mall outlay will do wonders; will enable him with his poorly constructed mill to rival the best mills in the country. This class of agents are ready to stone the faithful millwright, who, by conscientious advice, as cirumstances may justify, recommends the miller to "gut his mill." Excuse me for this denunciation of "cheap John" millwright (?) agents, who are doing much to injure the
fair milling prospects of this glorious country I dare say many millers understand the usefulness of the designing millwright almost too well, for mill building establishments are requently overrun with millers wanting exdrawings and plans. The millwright is often compelled to lay aside jobs already ordered and attend to the wants of speculative millers. He will consult with them, make meas-
urements of their mills, make drawings pecifications, estimates, and finally draw us, the contract. When this point is reached, the enthusiastic owners frequently come to a dead stop, like Old Grandfather's Clock. They conclude they do not want to build or that they want to ask some other builder, trying to get a cheaper (and nastier) job. The millwright will then reach out his hor and remuneration for his lost time, and thenowner refused to pay
If contracts are signed, the millwright's time must be paid for, for in this country nothing runs without it is greased; "every hen must have her kernel of corn;" and in some shape the miller must pay. And why should not the millwright be paid for his work in planning and designing mills, when architects call for and obtain for their templet building? building? A millwright's duty is more
tedious and requires more skill than the architects.
In the old bolting chests where "returning" was followed, the reels generally pitched in different directions. It is profitable in any case to lay reels all one way even if it is necessary to rebuild the chest. Conveyors are thus saved and that means improved mill products. Conveying of middlings and products of rolls ought to be done away with as ducts of rolls ought to be done away with as
much as possible. Middlings going to puri-
fiers must never be conveyed, as they will make dust on the way which will be blown into the dust room and either clog the cloth or penetrate and get back into the mill or be blown out of the mill and wasted. Middlings from the purifiers ought not to be conveyed to exceed 10 feet, for a fine, soft, atomized flour dust will be produced, impairing the absorbing and baking capacity of the rest of he flour with which it is mixed.
Flour may be conveyed without harm for he molecules are so far reduced that they will not powder by the action of a conveyor. Breaks and products of smooth rolls ought not be conveyed to exceed 6 feet, on account of producing flour dust; if such are conveyed or a short distance, the flights of the convey. ors must be iron in order to shove along the tuff without stirring it up.
The roller bodies running about 580 feet per minute, throw off centrifugally a great portion of dust which will crowd out through the crevices of the hopper, etc., tend to make the grinding floor dusty
E. P. Allis \& Co. put on iron flighted conveyors below the line of rolls from which the air is gently exhausted by a fan, which dein separate cloth dust room (Kirk \& Fender). The conveyors are placed below the joist but are spacious in size ove flights, serving as a dust trunk, and between the joists or just below them cross trunks are placed communicating with space over the conveyor and with the fan. This arrangement accounts for the dustless floors found in mills constructed by this firm. Conveying is not aimed at-the meal is simply gathered into the conveyors to discharge out of one pout into the elevator. The meal is not d over five feet.
The loss of dust through slatted windows of old-fashioned dust rooms is calculated to be
about $\frac{3}{4}$ of one per cent. of wheat ground; his would be in a 1000 barrel mill 2100 lbs , per 24 hours. We will calculate three-fourths of this to bring the price of shorts-about nine dollars, and the rest rbout $2 \frac{1}{2}$ barrels of stuff considered to be low grade, amounts to about ten dollars; thus a wasting of nineteen dollars per day is suffered by a poor dustrom in 1000 barrel mill or Besides that a great amount of coal is lost account of the warm air of the mill bein sent out of the building. Here a saving may be effected by even the smallest mill owner
It has been satisfactorily proved by experiis and long practice that millstones require more power to accomplish certain results than rolls. The heavier the mass the more power is required to keep it revolving. This is an old theory in mechanics. Stones ave a greater working surface than rolls, hence they consume more power. It is advisable to substitute rolls with suitable grinding surfaces, for millstones, for working on any kind of millstuffs, even when taking into consideration only, the gain of power. The reakest gain of power yet observed by doing work with rolls that was formerly done with stones, is in that of the granulation of corn. Rolls with dull corrugations require more power than sharp dressed rolls, for the reduc tion of wheat by bruising or squeezing requires greater pressure. In case of sharp dressed rolls the power lost by friction in bearings, is as great as the power required for grinding. This pressure, respectively loss of power, is far more annoying where the rolls are provided with dull dress. The dull rolls, moreover, have to run at greater velocity than sharp dressed rolls to granulate the same amount of wheat, hence the bearings are more liable to heat.
Wheat cleaning machines, especially the mutters, consume a great deal of power. I have indicated a 600 bushel receiving separator in one case and found it to consume $6 \frac{1}{2}$ horse powers. A 100 bushel smutter in an other case consumed 16 horse power! In buying cleaning machines be careful to purchase only light running machines able to give good results. Do not buy smutters or decorticators which will overdo the requirements and act too severely on the bran. The thicker the bran is left by the smutter, the larger it will be when finished and the less it will pulverize in the breaks. The main duty of the smutter is to scour off the fuzz on the end of the wheat berry. The dirt in the crease can only be removed partly by a
brush and entirely by a brush and first break rolls.

A well-planned mill with as few gears, shafts, elevators, belts and conveyors as possible; with good and substantial furnishings, built by careful and correct millwrights will also greatly contribute towards the economization of power.
(To be Contimued.)

## A New Mechanical Dictionary.

Since the completion of Knight's Amer can Meghanical Dictionary, in 1877, the progress made in the development of the mechanic arts is unprecedented in the history of the world. Not only in such striking and wonderful achievements as relate to the telephone, phonograph and electric light, toward which popular attention is naturally drawn, but in every department of applied mechanics, there has been developed a fertil ity of resource in the adaption of means to ends quite as marvelous and equally impor tant in practical results. Achievement has outrun the most sanguine expectation, and with such rapidity that even the most recent ecords are found to be very deficient in supplying information most desired
The hearty approval which Knight's American Mechanical Dictionary has received in all parts of the world has encouraged the publishers to issue an entirely new volume, thus continuing the record from the date at which the former work went to press, but carefully avoiding repetition, and aiming to furnish not only a satisfactory supplement to the original work, but a book which shall have an indiwidual and separate value as a complete record of half a decade in the history of invention. From this fact it is evident that this volume forms an indispensible supplement to all works of reference upon der "built up" as applied to the subject unmechanics now extant, as none of them
cover the period mentioned.
The same method has been adopted in ject matter in both works. First, each article appears in its proper alphabetical
place, thus fulfilling place, thus fulfilling
the function of a dictionary, in affording direct response to inquiry. Second, the items of information thus distribated throughout the work are classified in Special Indexes in the Art, Profession of Manufacture to which they pertain. The book thus fills the function of a Cyctoprdia, which is a co The value of work of references its index. When one has a question to ask of an ordinary cyclo

hammer can fashion each piece to near the required shape, where but a small portion of the tough material has to be removed, an where the risks are a great deal less. All of hese requirements are met by the built-up system, which has also the additional advantage of furnishing to the forge such shape as can be more easily made with the fibres of the material running in the proper direction.
With castings the evils resulting from crowd ing too much into one piece are of an anala gous character. We will take a bed-plate to illustrate this. Two patterns, each consisting of one fore and aft and two ath wartship members have to be made and the mold for each built up in loam.
It is quite likely that the molding of one will have to follow the other on account of a limited amount of room in the foundry, eithe on the floor or in the oven. In the machin shop the largest planing machine is called into play, and that, quite possible, not able to plane more than one piece at a time. Fach piece will also have to be set twice
Here the evil is not so much from the weakness of the structure as from the adoption of a slow and expensive system. This system will doubtless have to give place to the built-up, by making each member of the bed separate, where but one pattern is $r$ quired for the athwartship, and another for
the direct line of what he has set out for quite as much for the exercise of all the facalties of the mind as there is in, any othe direction in the world. In other words, he should start out to learn something quite different from the commonly accepted idea of a rade-something to which the skill of his hands is only secondary. Not by any means hat the acquirement of the highest degree of manual dexterity should not be striven for but that from the beginning he should fully appreciate that that is only incident to the eal business he is to learn
The young man who is destined for one of the professions is fitted by a course of study, not educated for the profession, but fitted so aat when he comes to the practical part of it he shall be in a condition to educate himself. It is considered in his case, and rightly enough. that a system of training is absolutey essential to success, and so some years are devoted to the task of learning how to learn In the case of the prospective mechanic it is not thought that any preliminary training is at best more than a convenience. The difficulty however, is not entirely, nor mainly, hat the prevailing idea combats the theory that a young man who is to follow mechanical pursuits should be taught to reason system-
tically by some sort of previous eeucational raining. but that the sentiment is not imand but that the sentiment is not impressed as it sh ould be that as he learns to
use his hands he should just as systematiclly learn to use his higher faculties. In aword, the popular idea of a trade needs o be vastly enlarged, and made to comprehend what really contitutes a mechanic. In this way a young man may be able to understand in the beinning what it sometimes takes him years to learn-takes him so long to learn what o do, that he never begins to do it.
It would be foolish o call a man a surgeon who knows how o cut, but not when or where. It is equally foolish to call a
mana mechanic who knows how, but not when or why to do a thing.
Another fallacy, nuch to which has tering the belief that t is not worth while o interest anything but muscle in the case of the mechanic,
pedia it is frequently
very difficult to determine under which title or heading to look.
The author has invented a system of what he terms "Specific Indexes," by the use of which the inquirer is guided straight to the information he is in quest of, even though he be entirely ignorant of the name of a thing, and have but the most vague and general nogrouping under the general title of each science, Art, Trade, or Profession, a list or "Specific Index" of every article in the book bearing any relation to the subject in question. The titles of these Indexes are in turn grouped at the beginning of the book, so that by a glance one may determine which clew to follow.
Beside the use above mentioned, these specific indexes afford the reader an excellent opportunity for investigating thoroughly all that pertains directly or indirectly to any special subject, by using the index under the title of that subject as a sort of head-center, and following out its various branches through all their ramifications.
Special attention is called to a new and valuable feature in the work, by means of which exhaustive information on any subjeet is placed within easy reach. The author has made a complete index to technical literature, covering a period of five years, and embracing all English and American technical journals published from 1876 to 1880 inclusive. Under title of each subject may be found a complete list of every article which has appeared, during this period, in the columns of these periodicals and as every subject of importance has been thoroughly discussed therein, it is evident that the whole range of recent investigation is thus placed ta easy command. This Index cannot fail to
formed by the union of several simple members, these members or pieces being such as can be most conveniently, quickly and economically made to give the required strength. Some object to this form of construction from mistaken ideas of economy, others from a false interpretation of beauty, but the argest class from extreme conservatism The advantages can be better understood by considering how a few of the forgings and castings, shown in the accompanying illustrations, entering into the construction of a compound marine propellor engine, are made.
The following extract from a letter in Ennote of the subject: "The fact will doubtless have its influence for all time coming when he shafts for gigantic steamers are to be ordered, as it is absolutely impossible to insure that a forging skall be perfectly sound and destitute of flaws if, when it leaves the hammer, it is such an immense and ponderous mass as to weigh fully thirty tons, as did the one fitted into the Servia, being eventually finished, however, at about eighteen tons in weight. All such shafts in future will doubtless be built."
The same argument applies to the solid forked connecting rod, which requires about 50 per cent. of its weight to be taken off after leaving the hammer, with the attendant risk of not discovering the flaw until near the completion of the work. The impossibility of insuring soundness in forgings which require 40 to 50 per cent. of their weight to be taken off after leaving the hammer to bring them to the proper finished shape should certainly cause the abandonment of a practice with so much uncertainty hanging over
it , and lead to the adoption of one where the
allows you to make the castings.in green sand. All of the athwartship pieces can be planed
together at one setting, as well as the fore and together at one setting, as well as the fore and system
This subject could be elaborated, but I think enough has been said to call attention o and furnish food for reflection upon a very mportant part of steam engine construction

## Mechanical and <br> $\underset{\text { tion }}{ }$

It would appear to be the general belief that it requires talent of a different and higher order to insure success in other of the affairs of life than it does to succeed as a me chanic. This is one of the commonly accept ed fallacies, which, without foundation in fact or reason, has been productive of a great deal of harm. Acting from these considerations, a boy who is thought to be too dull to get along in any of these so-called learned professions is believed, without any preliminary preparation, to be as sure of
mechanical direction as any one.
Probably the foundation of this fallacy would be found as far back as the time when there was supposed to be no occasion for a man who worked with his hands to make any particular use of his head. However this may be, this fallacy, handed down through hundreds of years, clings to the present time hike many another false idea that
have disappeared generations ago.
The young man who
mo looks to mechanical ursuits for a vocation should in the beginning divest himself-and in this he should be assisted by those of greater experience-of
the idea that the great end and aim of his life is to become an adept in the use of the tools of some trade, or that there is not in
is that there is not so much ahead of the mechanic as there is ahead of the profession-
al man This. notwithstanding it is contrary to all facts, is the prevailing op inion.
If from 200 boys 100 are taken, indiscrimmately, for any of the professions, and the other 100 are devoted to mechanical pursuits, giving each equal alvantages in the way of preparation and education, each with the special object in view, in the end the average condition of the mechanic will be the best. Not only this, but the probability of some of their number reaching a position of emi-
nence before the world is also better. There will be more absolute failures amongst the professional class than amongst the otherthat is, failur's to make a I espectable living, because that part of the business done with the hands alone will be worth more to the mechanic than to the other.
Nothing is more essential to the mechanic han an appreciation of the fact that, quite as much as the professional man, he needs an education other than that of the hands; in other words, that becoming a skilled workman is only one of the means to an end.American Machinist.

IT is not many years since, that the number of cotton mills in Canada could be counted on the fingers, and when the number of spindles was less than 50,000 . A recent collection shows us twenty-one cotton factories, aggregating nearly 400,000 spindles, and more are now projected. It is a somewhat curious fact that the larger proportion of the quantity of machinery for the whole 370,000 spindles has been supplied by the one firm of Howard \& Bullough, of Accrington, England, Nearly if not quite, two-thirds of this machinery came from this one shop.

The Cuckoo Song.
or, how the miler won her.
 Tables of Velocities, Rotations, Etc

It often happens that the practical man requires to make calculations to determine the lineal velocity of belts or of band saws in feet per minute, on pulleys of given diameters, with various rotation speeds; or to determine the number of rotations per minute desired with pulleys or saws of different diameters. To help in this matter, we have had prepared tables enabling such details to be run through more quickly and with less likelihood of being wrong than if they were hastily done with a pencil or a piece of chalk, upon the shop door or mill floor.
We will suppose that it is desired to find the velocity of a belt, in order to calculate roughly its horse power. If it run upon a 58 ence to the first table will show that its speed (not allowing for slipping) is 5314 feet per minute. This table is especially convenient because the pulley diameters are expressed
in inches and the belt speeds in feet. We in inches and the belt speeds in feet. We
give also the factors which will enable anyone to make these calculations more rapidly than where the circumference is determined first in inches and then reduced to feet.
A further application of this table will be in the case of a band saw, where the velocity of the blade must be in a certain proportion to the rate of feed of the stuff. If, for example, a band-sawing machine have pulleys 60 inches in diameter(and the larger they are the better), and the feed must be one one-hundreth the blade velocity, the table will show that the blade has a velocity of 4712; and in this case the feed should be 47 feet per min-

The rough rule for horse power of single ute gives one horse power for every inch of belt width; thus a 6 inch belt traveling 2000 feet would have 12 horse power.
If, now, a 52 inch pulley runs 400 revolutions, a 10 inch belt upon this pulley would would be, according to the table, 5445 feet of belt passing per minute; this would give 5.445 horse power for every inch wide the belt was and as the belt was 10 inches wide its horse
power would be 54.45 . It is proper to re mark in this connection that this rough rule rough and that there is a very wide margin owing to the capacity of the belt for transowing to the capacity of the belt for trans-
mission depending so largely upon the tension, the arc of contact, the condition of the belt and of the pulley, the diameter of th pulley, etc.
The second table is a proper companion to the first. It is intended to show how many revolutions per minute will be requisite to give a required number of feet per minute of
rim speed, with pulleys or saws of various diameters.
If, for example, it be desired to run a circular saw 12,000 feet per minute, and the saw be 72 inches in diameter, the table shows that
the saw must run about 637 turns. If this the saw must run about 637 turns. If this
saw be worn down by filing, to 66 inches diameter and the same rim speed be desired then it nust haye about 695 turns.
By the aid of the two tables there may be solved without any trouble many of the questions in transmission by belts or by wire ropes, which come up so often to the practical man.
Thus, in considering the advisability of running a wire rope 9,000 feet or 13,000 feet to carry a certain horse power; in the first case there would be required a 60 inch pulley at
about 573 turns per minute, and in the second the same pulley at 752 rotations. If now, these pulleys were considered to be too
small for the high speed, the same rope speed would begot, with much less liability to break the rope by sudden turns by employing a 72 inch pulley 477 turns
for 9,000 feet or 690 turns for 13,000 feet. Or if it were desired to take off power from a wire rope running 670 turns upon 72 turns, the last column in the table will show the figure 801 opposite 62 , and this would show that a 62 inch pulley would give 801 turns with 13,000 feet rim speed.
These tables were calculated by one of our contributors to meet his own demands for
such aids, and as they have proved useful to such aids, and as they have proved usefu
him, we present them to our readers.
Rule. To find lineal velocity of a band saw or a belt in feet per minute, multiply diameter in inches by 3.1416 and divide the product

TABLE OF LINEAL VELOCITY OF BELTS OR OF BAND-SAWS, (GIVEN IN FEET PER MINUTE), ON
PULLEYS OF GIVEN DIAMETERS, PULLEYS
SPEEDS.


Rule. To find the number of revolutions per minute of circular saws, pulleys or wheels
of various diameters corresponding to a given of various diameters corresponding to a given
rim speed: Multiply the diameter in inches by 3.1416 and divide the product into twelve times the rim speed in feet; or divide the
liameter in inches into 382 times the spee!
Less
accurately; divide 11 times the diameter i
feet.
taet. Ious rim speeds.


Jonathan Mills has left the firm of Chisholm Brothers, and has accepted a position Works, at Terre Haute, Ind.

## Centrifugal Bolting Reels.

The centrifugal reel was originally introduced by Naegel \& Kaemp, of Hamburg, Germany, who are very important engineers and employ a large staff. The machine was ound to be exceedingly useful, having a very space. The diameter of the original machine was much smaller than that of the machines was much smaller than that of the machines
which have recently become so popular in England; but the quality of the work perormed by Naegel \& Kaemp's centrifugal has never been questioned. Very large numbers of the machines were introduced in the mills of Germany and Austria-Hungary, but it was long time before English millers could be nduced to adopt the reels.
When once the reputation of Nagel \& Kaemp's centrifugal had been established, umerous modifications were introduced by ther inventors, such as Martin, Fiestel, \&c. nd at present almost every Continental millfurnisher manufactures a special machine of
his own. Nagel \& Kaemp's centrifugal has n outer drum consisting of a sectional fram work of wood, on the inside of which the ilk gauze is fastened. The beaters are of ron, curved in such a manner as to throw he meal in a regular stream against the silk hile the pitch of the beater has been calcuforward the material being operated upon as ast as necessary. In roller mills the centriugal was found to be especially useful, as the eaters assisted in separating any flaky ma erial.
H. J. Sanderson, of Manchester, (now Sanerson \& Gillespie, of London), worked hard English mille before he could induce many ent. Samuel Fitton, of Macclesfield, wa ne of the first to accept the innovation.
Hoerde \& Co., of Vienna, put Martin's Cen trifugal upon the British market and the ma hine met with some success.
But the introduction of Sutcliffe's Centri fugal, invented by Abraham Crabtree, fore man of Sutcliffe \& Sons' mill, caused quite a stir. This machine has a drum of very much larger diameter than the original machine and the silk covering is put on the outside o the drum. A revolving brush placed longi tudinally beneath the reel, keeps the meshes of the silk free and open, greatly increasing chines of this make were soon in operation A generál acceptance of the centrifugal fol lowed; many of the machines differing little from those mentioned.
Bedford, of Leeds, added rotating vanes at the head end of his reel to assist in detach ing the caked material from chilled iron rolls; Elison, of Leeds, serrated the edges of the for the same purpose, while Carter added a brush detacher. Various minor differences exist in the several machines in the manne
of driving, etc. Now that enterprising American firms have chines, millers in the United States will have an opportunity of judging of their merits, but under any circumstances it is safe to say that the centrifugal is sure to find favor for grading middlings, handling the breaks from roll ers, and
nal.

## Puts, Calls, and Straddles.

"I believe you have gambled in Wall street, Mr. Breezy," said Mrs. Breezy, helping her lord and master to a cup of coffee.
"I have speculated a little in stocks, dear, if that's what you me
unfolding his napkin
"Same thi napkin
Same thing," said Mrs. Breezy; "you can call it speculation; I know it's gambling. How do they do it anyway? I read about
puts and calls and straddles, and buy a three's puts and calls and straddles, and buy a three's
but I can never make any head or tail out of but I can never make any head or tail out of
it. I suppose it's some horrid slang you men have invented."
"Well, no, dear," said Mr. Breezy, helping his better two-thirds to a chop. "It isn't exactly slang. You see, for instance, I buy a hundred short-"
"You do what?" cried Mrs. Breezy
"I buy a hundred short," repeated Mr, Breezy.
"Well, what in the name of common sense do you mean by that?" asked Mrs. Breezy. "Why don't you talk United States-I mean English? You buy a hundred short, and what has short got to do with it ?"
"If you will give me time I will explain, my dear," said Mr. Breezy. "You see if a man is long on stock he is-
"Long on stock ?" said Mrs. Breezy: "Now
what are you getting to? First you are short and then you are long. What does a man want to get long on stock for, anyway ?"
"My dear, if you will allow me-"
"To be sure. Go ahead. Tell me something about Wall street, but don't talk nonsense," said Mrs. Breezy.
"Well, my dear, we'll suppose that I have "put" on Wabash, and-"
"There you go again," said Mrs. Breezy Will you or will you not talk in a language I an understand? What is Wabash, anyway I suppose it is another slang term?"
"No, that's a stock "said Mr. Breezy; "you see, dear, if I have a "call" on Wabash or orthwestern-
"If you call on the Northwest?" cried Mrs. Breezy; "are you really going mad, Mr. Breezy? Well, I mightt expect as much from the life you have led recently. What with lubs and politics, you are going headlong to ome terrible fate,"
"My dear, it will be impossible for me to explain anything unless you will give me five minutes to do it in," said Mr. Breezy, with musual warmth. "Now, at the beginning o this week Omaha preferred started at $106 \frac{1}{2}$ and 105-"
"Omaha preferred?" asked Mrs. Breezy. Why is it preferred? Who preferred it? What has Omaha got to do with New York and Wall street, anyway, and what do you mean by $106 \frac{1}{2}$ ?"
"I shall have to give it up," said Mr. Breezy n a despairing voice.
"No, Mr. Breezy. I have started out to know something about Wall street, and I won't allow you to get out of it in that way,"
said Mrs. Breezy, setting herself more firmly in her chair. "Now, Mr. Breezy, you will please drop slang and come to something can understand. For instance, what is a bull bear?"
"Ho, ha, ha-oh!" laughed Mr. Breezy
"What do you mean by laughing at me Mr. Breezy? I'm sure I-
"Ho, ho, ha-oh!" and Mr. Breezy fairl doubled up with laughter
'Mr. Breezy, you haven't the manners of a savage," cried Mrs. Breezy, pushing back her hair, "and I don't believe you know any more about Wall street than a two weeks' old baby," and Mrs. Breezy made Hazael time to -Brooklyn Eagle.

## Be Careful How You Talk.

Many years ago, in Milwaukee, there was large grocery house, where there was a alesman employed (now a wholesale grocer in this city) who adopted and used all the slang phrases as they came along.
One day a man went into the store, and taking out a long list of groceries needed asked of the salesman, "have you got any good sugar?" Salesman said: "We haven't got anything else;" (the slang phrase then in vogue.) The man bought and paid for five barrels of sugar, and went outsaying he would be in again and take them.
In about an hour he drove up, and meeting the salesman, who noticed several chests of tea, etc., on his wagon, was asked, "Why didn't you let me sell you, your tea?'
-Why," said the man, "when I asked you if you'd got good sugar, you said you "hadn't anything else," and I supposed that sugar was Slang phras
Slang phrases have not been in favor with hat grocer since that time.
This reminds us of another grocer, at Fox Lake, whose "front name" was Peter. While atanding at his door he was accosted by a farmer, "Have you got any salt, Peter?"
"No," said the grocer.
Along towards night the granger was seen driving by with several barrels of salt on his wagon, when the grocer asked, "Why didn't "I asked you if you
I asked you if you had any," said the granger, "and you said no, and I drove over to Beaver Dam to get it."
"Confound it," said the grocer, "I thought "Cosked me if I had any saltpetre."
A Chattanooga letter says: Already there is invested here over $\$ 3,000,000$ in manufact:ring enterprises,over $\$ 2,000,000$ of which is in iron interests. One company alone, the Roane
Iron Company, has a paid up capital of $\$ 1,000,000$, and I understand money is every day seeking investment here. To give an idea how much values have incréased here, in 1871 there was $\$ 3,600,000$ worth of prop-
erty and in 1881 it swelled to $\$ 6,500,000$, or about 100 per cent. In 1882 the assessed value will be over $\$ 7,000,000$. In the manu-
factories there are employed over 3,000 hands, the Roane Iron Company paying one-

## A Legal Decision.

Millers who were engaged in manufacturing flour, mixing for the purpose red and white wheat, and who had wheat in store for the purpose, and were receiving wheat in store for others and issuing warehouse re ceipts therefor, applied to a bank for a loan and were allowed the loan on condition of their giving a warehouse receipt for 18,00 red, the same or an equivalent in flour to be held for the bank as security forithe paymen held for the bank as security forithe payment
of a note of $\$ 20,000$. The millers subseof a note of $\$$ inently failed in business, having put a fraudulent mortgagee in possession and the bank replevied from him such wheat as was found in store- $-3,000$ bushels No. 1 white 'winter-and took flour manufactured from these facts the Supreme Court of Michigan held: 1. That a warehouse-man could make a valid pledge of grain in store by issuing a receipt therefor, without the ceremony of making actual delivery of the grain.
the pledge in this case was not invalid be the pledge in this case was not invalid be-
cause of its specifying two kinds of wheat, cause of its specifying two kinds of wheat,
but that the pledge was entitled to take an equal amount of each kind. 3. That, no finding the requisite amount of wheat, the bank might legally tak the flour, as they did.

## Items of Interest.

Washington County, Pennsylvania, is said to be largest wool-growing county in the Union, and to produce anrually $2,500,000$ to $3,000,000$ pounds of wool, worth in cash
$\$ 1,000,000$.
The Northern Pacific is now built through Oregon into Idaho, and nearly 300 miles west of Bismarck, leaving a gap of 600 miles to complete the road. The company have used
up $\$ 20,000,000$, and called another $\$ 1,000,000$ from their subscribers.
Strikes are not, as a rule, successful. The statistics reported by the Bureau of 'Labor of Massachusetts, show that, out of 159 strikes, only 18 were entirely successful; 109 were un-
successful; 16 were compromised and 6 were successful; 16 were compromised
declared to be partly successful.
Columbus, Ga., has now in operation seven cotton mills, containing 2,000 looms and 60,000 spindles, employing 3,000 hands, consuming
20,000 bales of cotton, with 20,000 bales of cotton, with a capital of $\$ 1,983,500$, annually producing $\$ 2,181,850$. As
a consequence, Columbus is growing rapidly and is one of the most thrifty inland cities in the South.
The New Zealanders are seriously exor cised because of the myriads of rabbits which are eating up colony farm products and found to be their most effective destroyers and are trained and used by the professional rabbiters, but the supply is limited, there being but few available ones.
The enlargement of the Welland Canal, commenced in 1872, is very nearly completed. It is a work of great magnitude and
vast usefulness, and when finished will have cost thirteen million dollars. All that yet remains is the finishing of the aqueduct which is being constructed over the Chippewa, at Welland, at a cost of one million. Prior to the enlargement, the capacity of the canal was for vessels not exceeding five hundred tons; it will now have a capacity for those of one thousand tons. The twenty-six locks connecting Lakes Ontario and Erie are each two hundred and seventy-five feet long and forty-five feet wide with lifts of fourteen

Edward Willis, a Sudbury (Mass.) miller, has at the present time a seven-toed cat, which is rearing two seven-toed kittens of her n, three red or ferre squirrels, and a regularly nurses the entire lot, manifesting just as much affection and anxiety the weldoes for squirrels and the squire she does for her own offspring. The squirrels, Which are about five weeks old, regularly
leave the cat and go to the edge of the woodleave the cat and go to the edge of the woodland to frolic, and as regularly return to the house of Mr. Willis to go to sleep with the cat. The family is a happy one and is perfectly at home with strangers who call to see it. In a recent lecture in Berlin, Dr. Werner Siemens expressed a wish that in all technical schools in Germany, chairs of "Electrotechnik" might be instituted for instruction of youth in electricity and its applioations. This has now been realized in the Technical High School at Stuttgart. One term will be devoted to theoretical principles, the most devoted to theoretical principles, the mosi
important measuring instruments and meas
urement,,electrolysis, illumination and transmission of force, and a second to telegraphy (including railway signaling and telephone matters). Practical exercises will follow up the lectures. In 1876 a professor of tele graphy was appointed in the Dresden Polyechnikum
Sly Old Horse.-Anent "The Blues," have heard a charming story, illustrative of the wonderful intelligence of some horses. One evening the officer on guard hat a horse must have got loose. H therefore went with a corporal of the guard, and, looking through a keyhole, saw an old troop-horse lifting up the lid of he corn bin and munching away at the oats. Id charger instantly coock by mistake. The old charger instantly cocked his ears, stole
back to his stall, artfully slipped his head ack into his halter, and awaited events as i nothing had happened. Seeing this, the officer and corporal, pretending to be deceived,
fter looking around the stables, went out gain. So soon, however, as the horse hear the lock turned upon them, he slipped his halter and attacked the corn bin again. this the crafty old warrior was firmly secured -London Figaro.

## Things Worth Knowing.

Graphite paint has lately been put to a
tect it against the corrosive action of the sul phurous acid fumes which are so destructive in metallurgical works. The result of the gated iron roofs of the Colorado Smelting Works in Denver have been coated with it. A weatithy land owner in the Tyrol has made an application of the microphone to
the detection of subterranean springs. He fixed the microphones at the spots where he supposed water might exist, each being con-
nected with its telephone and battery. Then at night, he puts his ear to bery. the in struments and listened for the murmuring of waters-and in several cases heard it. BLachanu now be manufacture very cheaply. One part of walnut peel ex-
tract is mixed with six parts of water, and the wood is coated with the solution. When the material is about half dry a solution of n it, and then your walnut is ready. Furni ture dealers have been known to make excellent walnut from very poor pine, but the dif ference was slightly perceptible; ho
this method is said to defy detection.
A Mode of Hulling Wheat.-A Swis process of removing the bran of wheat with out loss of nutritive matter, consists in moist-
ening the wheat before grinding with a solution of caustic soda in water. The solution is prepared by dissolving six and two-thirds pounds of caustic soda in one hundred and thirty-eight pounds of water. The steeping may be from fifteen to twenty minutes, and may be done in vats similar to those used by brewers. The caustic solution swells and loosens the hul proper, so that it may be re-
moved by the slightest friction, leaving the gluten with the body of the grain.
Impermeable Leather.-The following pro cess for rendering leather impermeable, say the Manchester Mechanical World, is given by Mr. Jacques, of Hemning, near Sarrebourg, It depends on the property of soap solution being decomposed by acids, and being trans ormed into fatty acids which are insoluble in water. The leather is dipped before using in solution containing from $2 \frac{2}{2}$ to 5 per cent more soap dissolved in water. The tannic acid contained in the leather, more or less,
according to the method of tanning, transaccording to the method of tanning, trans-
forms the soap solution into insoluble fatty acids, and renders the leather perfectly im permeable.
Many work-shops contain a dirty wash eather, which is thrown aside and wasted for the want of knowing how to clean it. Make solution of weak soda and warm water;ru plenty ef soap into the leather, and allow it to remain in soak for two hours; then rub it
well until it is quite clean. Afterwards rinse it well in a weak solution composed of warm water, soda and yellow soap. It must not be insed in water only, for then it would be so hard when dry as to be unfit for use. It is he small quantity of soap left in the leather that allows the finer particles of the leather o separate and become soft like silk. After rinsing, wring it well in a rough towel and dry guickly; then pull it about and brush it well, nd it will become softer and better than most new leathers. In using a rough leather oo touch up highly-polished surfaces, it is fre quently observed to scratch the work; this is
caused by particles of dust, and even hard rouge, that are left in the leather, and if removed by a clear rouge brush it will then give the brightest and best finish, which all good workmen like to see on their work.
To Evict Rats.-A writer in the Scientific American says: "We clean our premises of
the detestable vermin, rats, by making whitewash yellow with copperas and covering the stone and rafters with it. In every crevice in pin a rat may go we put the crystals of the loor. The result was s perfect stampede ats and mice. Since that time not a footfall of either rats or mice has been heard around he house. Every spring a coat of yellow wash is given the cellar as a purifier, as a rat fever attacks the family. Many persons de liberately attract all the rats in the neighborhood by leaving the fruits and vegetables uncovered in the cellar, and sometimes even the soap is left open for their regalement.
pantry, and you will in the cellar and in the pantry, and you will soon starve them out
These precautions, joined to the services of a good cat, will prove as good a rat exterminallow rats to be poisoned in our dwelling.

## Fireproof Paint.-Some experiments,say

ere recently shown at the offices of the Un ted Asbestos Co., in the presence of the Lord prepared as a paint, with which wood, canvas, and gauze net were coated, and various pecimens were submitted ire and strong flame, but in no case was igni piece of light pine wood, about six inches
ping other experiments, a ong by four inches square, painted with five oats, was placed for upwards of half an hour ood within was reduced to charcoal the was no blaze whatever emitted during th
charring. In the yard of the premises sprinkled with turpentine and set light to gnited, and the who nd the wood framing all painted withe and the wood framing all painted with Asbesfire to, but the thin scenes were only partial ly charred at the lower ends with the turpentine flames, while the timbering was not even ignited. Similar experiments were made with two models of large size and with similar results. The process is now being applied stage of the Crystal Palace. Consúmption of Boxes in California.-It looks, says the Reno Gazette, as if the con-
sumption of boxes on the Pacific coast would ontinue to increase and the manufacture them become one of the greatest industries in the country. There is already a vas crease rapidly for many years, for the re sources of the coast are not one-tenth par California producer of grapes, apples, pears California producer of grapes, apples, pear
and small fruits, while the whole world is drawing on her for salmon, canned goods, borax and other staples. Nevada, Utah, Colorada, Wyoming, Arizona, New Mexico and Texas send for greens and vegetables every day in the year nearly, and they all thave to
be boxed. All this time great vineyards are being planted to grapes, the foothills are be ing cleared and orchards set out, the rivers borax beds are being opened up in Nevada, soda is being shipped to San Francisco by the car-load, to be refined and canned, the sugar trade is growing, manufactures are in-
creasing; and they are all shipped in wood. The outlook is a grand one, and it should stimulate the manufacturers to make preparations for working cheaply and to advantage The present way of turning out boxes is very

## Foreign Items.

During the year 1881 there were granted in Germany, 4,399 patents.
An English and Canadian syndicate, o which the Duke of Manchester is the head as purchased of the Canada Pacific Rail oad 5,000,000 acres of land of sections running from Brandon to the eastern boundary of British Columbia, with an interest in all the wn sites laid out by the railway company The price is $\$ 2.70$ per acre. The scheme will be called the Canadian Northwest Land Company; capital, $\$ 15,000,000$.

GARDEN CITY
WHEAT BRISHI


Gathmann's patent "inclined bristles" prevents all clogging when the brushes are

ONLY DOUBLE BRUSH

Thoroughly Brush Wheat.
Guaranteed to IIIPROVE cOLOR of the FLOUR.
It don't break or scratch the grain. Removes all the dust. Very light running. Send for circular and prices.

## Prices Reduced!

Improved Garden City


With Travelling Cloth Cleaners
Our improved Purifier has every device requisite to make it perfect, and every one in use is giving the greatest satisfaction to the users. The Cloth Cleaners are guaranteed to clean the cloth better than is done on any other purifier. Send for our new circular.

Over 4000 Garden City Purifiers in use, nearly 500 of which are the Improved fachine.
The Best and now the Cheapest. Write for circulars and price list.

## BODMMFR <br> Bolting Cloth!

Which has long been acknowledged as the best made, and which has lately been further improved, making it now beyond competition. We make it up in the best style at short notice. Send for prices and samples.

Garden City Mill Furnishing Company, CHICAGO, ILL.

## COCKLE SEPARATOR <br> MANUFACTURING COMPANY <br> MILWAUKEE. <br> GENERAL MILL FURNISHERS

 Improved COCKLE separators

Richardson's Dustless Wheat Separators!
Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.
We will contract to furnish entire Wheat Cleaning Machinery for mills, and guarantee
Perforated Zinc at Bottom Figures. the best results.
plain cockle machine
Send for Illustrated Catalogue.
beardslees wheat cleaner.
WE GUARANTEE GREAT CAPACITY combined with GOOD QUALITY OF WORK, Any common Sieve will separate the cockle from wheat but to separate it WITHOUT WASTE is the GREATEST FEATURE of our Machine. A WASTEFUL Machine is $\boldsymbol{A}$ DAILY LOSS OF MONEY in a mill. There is NO MACHINE IN THE MARKET which can stand comparison with ours.
 Gentlemen:- Replying to your late Gents:-In answer to your inquiry of
tavor, would say that we can cheerfully the 28 inst., I would say that the favor, woud say that we can cheerfuly the 28 th inst., recommend your cockle separator as combine machs trong truly, doing ail that you claim for it we summer, works to my entre satisfo- finisher, for nearly two years, and are
 would not think of doing wihout it, per D. G. THOMAS. per hour through them, one third more Cockle Separator Mfg. Co.
having tried it once, and can conscienhaving tried it once, and can conscien- P. S-I have been milling now for than rated capacity, and are not using Gentlemen:-The Beardslee's Grain BROWN \& WINFREY seen anything that will equal yours in wheat as well cleaned as any in Minne- from

BROWN \& WINFREY.
Perrysville, Ind., Nov. 24, 1881. Cockle Separator Mfg. Co., Milwarkee. Sirs:-The combined machine I bought for cockle it cannot be beat. I can take
of you has been running about three it withond separate the cockle from of you has been running about three it without wasting any of the small
weeks. It certainly does all you claim wheat. In my opinion every mill in the for it, and is the most perfect separator United States ought to have one, and if Cor for it, and is the most perfect separator United states ought io have ore, and ille Separator Mfg. Co., Milwaukee. that I have any knowledge of. I were to build a mill I would have no Gentlemen: - The Beardslee Grain

Yours respectully, $\quad$ B. CAREESER. I remain $\quad$ Iours, etc. G. THOMAS. June has been in operation since that from you for our New Era purchased NEW ERA MILLING CO


## HOWES, BABCOCK \& EWELL,

Mstablished 1856. Silver Creek, Chautauqua County, New Zorls, T. S. A. Mstablished 1856.
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Flour Mill Work in Print.
Every Miller, Millwright and Millwright's Apprentice should have a copy.
Thr United STATEs MilLer for one year and a copy
this book will be sent for $\$ 400$, Address,
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## BECKER BRUSH.

Galt's Combined Smut and Brush Machine.
The Only Practical Cone-Shaped Machines in the Market, and for that Reason the Best.
ADJUSTABLE WHILE IN MOTION.
Nearly 1,000 of these Machines in Use. In the United States and foreign countries, and so far as we know all that use them are
pleased. Millers, millwrights, and milimg experts claim the Cone SSape oilid Cylinder
Brush is the true principle to properly clean grain. All machines sent on trif dhe Brush is the true principle to properly clean grain. All machines sent on triaj, the
users to be the judges of the work. For price and terms apply to
eUREKA MANF'G CO., Rock Falls, Ill., U. S. A.
[Mention this paper when you write.]

## HARRIS-CORLISS ENGINE.

-BUILT BY-
WM. A. HARRIS, Providence, R. I.
Built under their original patents until their expiration. Improvements since added: "STOP MOTION ON REGULATOR," prevents engine from running away ; "SELF-PACKING VALVE STEMS" (two patents), dispenses with tour stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying a troublesome defect in other Corliss Engines, "BABBITT \& HARRIS' PISTON PACKING" (two patents). "DRIP COLLECTING DEVICES" (one patent). Also in "General Construction" and "Superior Workmanship."

The BEST and MOST WORKMANLIKE form of the Corliss Engine now in the market, sub stantially built, of the best materials, and in both Coudensing and Non-Condensing forms. The Condensing Engine will save from 25 to 35 per cent. of fuel, or add a like amount to the
ower and consume no more fuel. Small parts are made in quantities and inter-changeable, and kept in stook, for the convenience of repairs and to be placed on new work ordered at short notice. NO OTHER engine bnilder has authority to state that he can furnish this engine. parties being lioensed.

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A NEW PROCESS R0LLER MILL! FOR BATEE:

In the City of Milwaukee, known as the "City Mills." Capacity, 250 to 300 barrels per day. Has an established City and Shipping Trade. Mill now running For further particulars, address,

ESTATE OF WII. C. DURANT,
"OMPY mixtice"
[Mention this Paper when you write.]
MILWAUKEE, WIS.

FROM 1-4 to 10,000 LBS. WEIGHT.
True to pattern sound and solid, of unequaled strength, toughness and An invaluabibe suibsttute for forgings or cast fron requiring threefold Gearing of eill kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Loco15,000 Crankese bitis and 10,000 Gear. Wheels of this steel now runing


CHESTER STEEL CASTINGS CO., 407 LIBERTY BT.. PHILADELPHIA, U. B.A.

## NEWS.

Gro. H. Coruss, of Providence, R. I., has re cently furnished pumping engines for that city. Burnkd.-B. E. Smith's mill, at Pott's Grove, Pa. Loss, 814,000 .
Burned.-Henry Rodee's mill, at Ogdensburg, N. Y. Loss, $\$ 85,000$. Insurance, $\$ 43,000$. Scort, Penrose \& Co., have dissolved partnership. D. Scott continues the business.
Frederick H. Perry, of Whitney's Point, is dead.
Klumer \& Voars, of Evansville, Ind., dissolved; Fred. Voges continues.
Mrs. J. A. Elus, of Grafton, Neb., has sold out her milling business to Welch \& Price.
The mill of Messrs. Hole \& Fanger, at Celina, 0 ., burned out. No insurance.
Craik \& Kroll, Hawley, Minn., dissolved; Kroll continues.
Harvey \& Son's mill at Marion, Ind,, which our readers will remember as being recently destroyed by fire is about to be rebuilt. The maMarmon Co., of Indianapolis, Ind.


The firm of Barrett \& Oglesby, of Dalton, Ga. is dissolved. The business will be carried on by Barrett, Denton \& Lynn.
Ter Home City Mills, at Toledo, O., owned by Vogel \& Son, were entirely destroyed by fire June 23. Loss, $\$ 37,500$. Insurance, $\$ 22.600$.
The Star Mills, owned by Messrs. Wells Bros. Perkins, at Coffeyville, Kan., was burned June 8. Loss, 86,000 . Ins urance, $\$ 1,200$.
Trat jolly miller, Sam. Robinson, of Sandersville, Ga., recently caught with his hook alid line, in his mill pond, a cat-fish weighing fortyfive pounds.
Dos'r throw away your old flour barrels. They are useful. It has been found that an ordinary flour barrel will hold 678,900 silver dollars.
Messss. Walsi, De Roo \& Co.. have commenced the erection of a 175 barrel roller mill at Holland, Mich. It is furnished with a Rey-nolds-Corliss engine and the Gray Roller Mills. L. R. Brows \& Co., formerly of Stevensville,
Mich., have found a desirable location at Spring Mich., have found a desirable location at Spring Station, Ind., and will transfer their business to the latter place. The machinery for the new
flouriug mill is of the Nordyke \& Marmon Co's flouriug mill is of the Nordyke \& Marmon Co's
make, at Indianapolis, Ind.


Slide Valve Engines, with Latest Improvements
WEISEL \& VILTER, milwankioo, Wis.


 'SdWnd yIV ONV WVEIS
$\boldsymbol{F} O \boldsymbol{R} \quad \boldsymbol{A} \boldsymbol{L} \boldsymbol{E}$ ${ }_{\text {Rolis }} \mathrm{F}_{\mathrm{o}}$ Four-run Mill at Troy, Doniphan Co., Kan aning in good order for making firstc-chass $\begin{aligned} & \text { and } \\ & \text { flour. Very. } \\ & \text { For }\end{aligned}$ $\xrightarrow{\text { parriculars address. PARKER, Troy, Doniphan Co., Kan. }}$ $\therefore \quad A \quad \boldsymbol{H} C \boldsymbol{T}$
II sell my flour in competition with the bent St. Louis prontit since the harvedt of 1881, of nearly 50 per cent.
over the cost of the MII.

AN OPINION If could not afford to do without the Slater Reels if 1
had to pay twentefive dollars a month for the privilege


## SLATER'S REELS.

## B. SLATER \& CO.

Gents,-Since putting in your Chest my business has increased one-third A Car of Flour shipped to St. Louis last week graded next to the highest.

Respectfully yours,

## R. H. Ross.

Mr. Ross' Flour being a straight grade puts it away ahead of lots of Patents and Roller Mill Fleur. No other change was made in the Mill. Correspondence solicited.

Respectfully yours
C. B. SLATER \& CO.

BOLTNG CLOTH!
胞Don't order your Cloth until you have conferred with us; it will pay you both in point of quality and price. We are prepared
with special facilities for this work. Write with special facilities for this work. Write
CASE MFG. CO..
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## BIRGE \& : GMITH, PRACTICAL H|NWH|SH|No

PLANS, SPECIFICATIONS \& ESTIMATES MILLWORK, MACHINERY, ETC. Flour, Sawmill, Tannorss and Browors' Maohinory, and Goneral sall Furnishors,
Corner of East Water and Knapp Sts.;
MILWAUKEE,


Let it not be forgotten that we keep a very large stock of the genuine Dufour Bolting Cloth always on hand, and those who order that brand from us will always be sure to get the genuine article. In addition to this we keep constantly on hand a large stock of Dutch Anchor Cloth, which we import direct from the manufacturers, in Switzerland, and is not sold by any other dealers in Bolting Cloths in this country. This we warrant to be equal to, and even superior, to any other brand in the market, except Dufour. We know what we say in this regard. Cloths made up ready for the reel in the best manner possible, by the use of our Patent Attachments, using the best of Ticking and Silk Twist. Please write us for prices, discounts, and samples of cloth and making, before purchasing elsewhere. Address,

HOWES, BABCOCK \& EWELL.
silver Creek, N. Y.

We wish to call your attention to a few facts in regard to the

## ODELL ROLLER MILL.

FIRST. This Mill is driven by an entirely new noiseless belt drive, (using no counter shafts), and being so arranged as to be instantly started and stopped without throwing off the belt. It differs entirely from any other rive, infringes nobody's patent, and is the invention of Mr. U. H. Odell. IT IS COVERED BY BOTTOM PATENTS, AND CAN BE USED ON NO OTHER MACHINE.

SECOND. Our device for spreading the rolls apart is superior to all thers, and we were the first manufacturers to connect the feed gates with the roll spreading mechanism. Our patents broadly cover devices for spreading the rolls and simultaneousiy shutting off the feed.

THIRD. We are aware that some manufacturers, recognizing the great value of these devices, are striving to copy them, and adopt them on their mills, and WE HEREBY WARN MHLLERS AT THIS EARLY DAY, THAT ANY MILL WHICH HAS LEVER OR GEAR DEVICES FOR SPREADING THE ROLLS, AND AT THE SAME TIME SHUTTING OFF THE FEED, IS INFRINGING OUR PATENTS. The same is TRUE WITH REGARD TO OUR TIGHTENERS FOR STARTING AND STOPPING THE MILL WITHOUT THROWING OFF THE BELT. NOW WE HAVE THE SOLE RIGHT TO MANUFACTURE AND USE THESE DEVICES, AND WE INTEND TO FULLY PROTECT OURSELVES; AND WE TAKE THIS OPPORTUNITY TO PUT MILLERS ON THEIR GUAKD AGAINST BUYING MACHINES WITH THESE ADJUSTMENTS OF ANY BODY, UNLESS THE MACHINEA ARE THE ODBL ROLIRR MTIS, MANUFACTURED BY US.

We are prepared to fill orders for these Mills promptly, and guarantee them to be of the very best material and workmanship.

Millers buying the Odell Rolls are SECURE FROM ANY INFRINGEMENT. On the front page of this paper is a cut of this Mill, which please examine carefully.

Very Respectfully yours,
STILWELL \& BIERCE MF'G. CO.,

## The Case Break Machines.



SINGLE MACHINE. Capacity, 5 to 60 Bushels per hour.

> CASE MANUFACTURING CO., Columbus, Milw about three months we are highly pleased with their work their capactr, of small amount of power required to drive them. It these Machines capacity, and on the other breaks as upon the first, they will prove a great acquisition to the list of Improved Milling Machinery.

> Very Truly,
> S, H. SEAMANS \& Co.
> (Mr. S. is Secretary of the Millers' Nationàl Association.) Marietta, Ga., April 1, 1881 THE CASE MANUFACTURING CO., Columbus, O.: Dear Sirs,-I find in my travels the "Little Giant" is the best Machine for 1st, 2nd and 3rd break reductions of any Rolls or Disk Machines I saw on the market, and I have determined to adopt them. Please quote me prices, and also on your No. 3 Double Purifier. The Little Giant is ahead of them all, and no mistake.

Yours Truly,
T. H. CHEEK, Supt., Kenesaw Mill Co.


Double Machine-Capacity, I20 Bushels per hour

## THE LITTLE GIANT

 STEPES TO THEE FRONTI.It has been running successfully for more than a year in some of the best Mills, doing better work than the Rolls or any other system. It produces more Middlings, less Break Flour, and runs with less power than any Break Machine in use. We have a number of mills now running on our entire system with splendid results. MANY ROLLER MILLS ARE PUTTING OUR FIRST BREAK AHEAD OF THEIR ROLLS. The "Little Giant" splits almost every grain through the seam, and makes ONLY ONE BARREL OF BREAK FLOUR IN THREE HUNDRED BARRELS.

## TO ROLLER MILL MEN WE WOULD SAY:

Write us for particulars and OUR VERY LOW PRICE LIST as compared with Rolls. Below we name a few of the many that are using our Machines:

ROOTS \& CO., Cincinnati, Ohio.
KENESAW MILL COMPANY, Marietta, Georgia. WM. BROWंNLEE, Irvington, Illinois. D. B. SEARS' SONS, Rock Island. Illinois. GOLDEN AGE MILL CO., San Francisco, California LOS GATOS MANUFACTURING CO., Los Gatos, Caliiornia. TEXAS STAR MILLS, Galveston, Texas.

We are also manufacturing CORRUGATED ROLLS tor the Fourth, Fifth and Sixth Breaks. Our Combined system being superior to anything now in use. We also make a splendid SMOOTH Roli for germ and sizing. All our Rolls have an Automatic Feed, and many other valuable points.

## THE



## STANDS TO-DAY WITHOUT A RIVAL, <br> Doing more and better work than any other, giving Double the Capacity, costing less, and runs without jar or moise. It is

 the ONLY DOUBLE PURIFIER, and has many new and valuable points, which we have covered with Patents.
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And we are now prepared to fill orders for machines with latest improvements, which include OUR NEW DOUBLE COVEYORS,

NEW CLOTH FIXING AND STRETCHING DEVICE, NEW AND SIMPLIFIED MANNER OF DRIVING.
THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will mae clear flour and lean finish on stock that cannot be treated in the common reel without loss, no matter how much sil it is passed over. IT IS INDISPENSABLE to a CLOSE FINISH in any system of gradual reduction milling, and will improve the qualiy of the low grade flour at the same time it makes the offa cleane
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Over one Erundred soldin six wreelze.
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bolting cloth of the Best Brands at Importers' Prices. Water Wheels, Puriflers, Cleaning Machinery, Reels, Belting,
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Are more simple in construt
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contact with the sieve choke up, as soft substances in middlings are not permitted to come
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${ }_{8}$ Last, but not least, by any means thers.
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By a Miller of long experience; Situation in a large City mill preferred.
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A practical and useful Hand Book, on Mill Engines, Transmission, Grain Cleaning, Wheat Drying and Heating, Granulation and Grinding Buhr Stone, Mounting Buhrs, Various Mill'
stone Dresses, Buhr Dressing, Rollers, Purifiers, Reels and Chests, Elevating, Spouting Branding and Storing, Changing and Altering Mills, Millwrighting Tools and Operations, Composition and structure of the Wheat-
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Free by Mail on receipt of $\$ 6.00$. Address ali
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PUSHER ${ }^{\text {E }}$ Mention this paper when you write us.]

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FLOUR BRANDS
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# EDW. P. ALLIS \& CO. MILWAUKEF, WISCONSIN, <br> ImL blubrins in prinishrrs, <br>  <br> ROLLERMLIS <br> <br> CORRUGATED AND SMOOTH CHILLED IRON ROLLS, <br> <br> CORRUGATED AND SMOOTH CHILLED IRON ROLLS, <br> <br> WEGMANN'S PATENT PORCELAIN ROLLS. 

 <br> <br> WEGMANN'S PATENT PORCELAIN ROLLS.}

We shall be Pleased to hear from Millers contemplating an improvement in their Mills, or Building new ones, and can furnish Estimates and Plans of our system of GRADUAL REDUCTION ROLLER MILLING. We have built and Changed over hundreds of Mills, in all parts of the Country, and using all classes of wheat, BOTH HARD AND SOFT, and can furnish Reterences on application. The Largest and Best Mills of this Country are using our System and Roller Machines. Messrs. C. A. Pillsbury \& Co., of Minneapolis, have over 400 PAIRS OF OUR ROLLS AND HAVE RECENTLY PLACED AN ORDER WITH US FOR ABOUT ONE HUNDRED AND TWENTY MORE. We have had a longer and larger experience in Roller Mill Building than any other manufacturers of this country. There is no EXPERIMENT ABOUT OUR SYSTEM and rolls, so expensive to millers, and when the mills that we build or change over are ready to start, THEY DO SO AND WITH PERFECT SUCCESS, and there is no further changing, additions, stopping or expense. We manufactured and sold during the year 1881 over TWO THOUSAND FIVE HUNDRED pairs of rolls.

We can send competent men to consult with any millers who contemplate an improvement, and whom they can depend upon as being RELIABLE AND THOROUGHLY COMPETENT to advise them as to the number and kind of machines required, best method of placing them and the change required, if any, in the bolting and purifying system. WE DO NOT URGE A GENERAL CLEANING OUT OF ALL OLD MACHINERY Unless we clearly see such would be the ONLY COURSE TO PURSUE to make a SATISFACTORY AND RELIABLE MILL. In nearly all instances we can use all the Old Machinery, leaving it in its original position, or with as slight a change as possible. We aim to make the Improvement so that it will be a Profitable one to the Miller, and at the least expense possible.

Our System is THOROUGH and RELIABLE, and our Roller Machine Perfected by Long Experience, and the Miller Takes no Chances in using them, as HE DOES with the New Fangled Notions of Drive and Adjustment on many other machines now TRYING TO FOLLOW OUR IMPROVEMENTS and still avoid our Patents, in BOTH of which THEY FAIL. We were the first to advocate the Entire Belt Drive, and were opposed by every other maker, who claimed it was not positive, etc., etc., and now that our Belt Drive is an ACKNOWLEDGED SUCCESS, and will SUPERSEDE EVERY OTHER STYLE, these advocates of Gear Drive ha e suddenly learned that Belts are the Thing. The same may be said of our Spreading Device, Feed Gates, and Adjustable Swing Boxes. Other Makers are now copying these. ALL these Features, including BELT DRIVE with ADJUSTABLE COUNTERSHAFT and TIGHTENER, the SPREADING DEVICE, FEED GATES, Adjustable Swing Boxes and Leveling Devices, Self-Oiling Boxes, etc., are secured to us by several Strong Patents, and we CAUTION MILLERS in regard to these Infringements of Our Patents and Rights, for we shall look to THEM for Redress. The matter is in the hands of our Attorneys, who will soon take VIGOROUS ACTION against the Makers and USERS OF MACHINES infringing Our Patents.

Several machines are already on the market which Broadly Infringe, and we are informed that other makers are now changing their Old Style Machines, and adopting in a large measure Our Improvements. BEWARE OF THEM,

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 The＂OLD RELLABLE＂with Improvements，making it the Most Perfoct Tur－ine now in Use comprising the Largest and the Smailest Wheels，under bot
 or 1881 and 1882 sent tree to those using water power．

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## Stout，Mills \＆Temple，

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celain Rolls
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The American Turbine as recentings． wer utilized from a given quantity of water，and is decidedly the bhe
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1uynsures a perfectly even distribution of the middlings
over the entire width of the cloth．Every miller will ap－ CASE MANUFACTURING CO．， columbus，ohio．
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AGETIS．
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RICHMOND MANUFACTURING CO．．

## LOCKRORT，N．Y．，

RICHMOND＇S CELEBRATED Smut Machines，

Brush Machines，
Grain Separators，
and Bran Dusters．
Nearly Two Hundred of these Machines are now in oper－ ation in the eity of Minneapolis，Minn．，alone，and more than
Ixty in the city of Milwaukee，Wis．They are also exten－ sively used in many other sections，both on Winter and Spring Wheat


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## A PURTPIFR

That fils all the demands of modern miling，
That gives double the capacity of any othtrot posinsible． the same floor space．
That has two screens，each with its own Feed Bar，and each till of
That has two sereens，each with its own Feed Bar，and each tills ofr．
That has the most thorough control of the biasest．
That has absolutely the best cloth cleaner（patented）in use．
That has the perfection of cloth tighteners used while running，

That costs no more，nor as much as others with half the capacit
That renders them fire－proof．These are recent and important attachments
That does its work＂
That has no screw conveyor or gear wheens to absorb pow well．but
That has many new and important devices，convenient and simple
That has many new and important devices，convenient and simple．
That ioes not infringe any patent，（can convince any one of this）．
That is not an experiment，buth has been tried and tested by hundireds．
That in in use from Long Island to San Francisco，from Dakotato Thes．
That is in use from Long Issland to San Francisco．from Dakiota to Texas．
That not one of which has ever been returned by any miller，
These are some of the things we have to say about the Case Purifier，and if one jot or tittle of them is found to be
untrue，we will take the machine back and pay all expenses，including freight both ways．Can fill orders promptly． ［Mention this paper when you write］CASE MANUFACTURING CO．，Columbus，Ohio．

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 MILWAUKEE，WIS．I have had twenty－two years experience in the manu
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from nearly all the states．We soltity trom neatis atisfaction Addreses as above．
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Is furnishing Mills and Elevators in all parts of the They are UNEQUALED for their SHAPE，STRENGTH and Leather，Rubber，Canvas Belting and Bolts at lowesi
 liberal discounts．Send for sample order．
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We are the first introducers of the Chilled Iron Rollers




# TIIE NTEVEUS ROLLER IILLS 

Remove all Germs without Breaking or Crushing them, and Hull the Black Cockle and Remove the Hulls, Clean Bran thoroughly,

## OVER 2000 PAIRS NOW IN USE!

## Having Secured the BEST BELT MOVEMENT ever offered

We are prepared to furnish mills to be run entirely by belt, obtaining the nearest approach to a Positive Motion Without Gears

## Celebrated Cosgrove Concentrated Mill

Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.


Lexington Mill Co., Lexington, O., 12 pairs,
E. O. Stanard \& Co., St. Louis, Mo., 28 pairs,
E. T. Archibald \& Co., Dundas, Minn., 12 pairs, Pollock \& Co., Vincennes, Ind., 12 pairs, $\quad$ Penfield, Lyon \& Co.. Oswego, N. Y., 2 Cosgroves.,

## Jno. T. Noye Manufacturing Company, Buffalo, N. Y.

E. W. PRIDE, Agent, Neenah, Wis.

## ODTILI

We invite particular attention to the following

## POINTS OF SUPERIORITY,

possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a positive differential motion, which can not be had with short belts.
2. It is the only Roller Mill in market which can be instantly stopped without throwing off the driving belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.

[^3]
## Facis Worth Remembering

## Millers who desire to avoid troublesome litigation, will do well to remember the following facts:

That Gray's Patent Noiseless Roller Mill, of which we are the sole manufacturers, was the First Positive Drive Belted Roller Mill invented and placed upon the market in this country or Europe.

That the construction of these Celebrated Roller Mills is Fully Covered by the Foundation Patents issued to W. D. Gray, and of which we have sole control. These patents are Nos. 222,895; 228,525; 235,761; 238,677; 251,217; dated December 23d, 1879; June 8th, 1880; December 21st, 1880; March 8th, i88ı; December 20th, 188 r . From the dates it will be seen that these patents are the earliest ones issued for improvements in Roller Mills, and a careful investigation will convince any miller that they cover every feature of value in a belted Roller Mill.

That several belted Roller Mills lately put upon the market by other manufacturers are simply imitations of Gray's Patent Noiseless Roller Mills, imitations in every way inferior to the original, in merit and design, and Palpable Infringements of our patents.

That we are fully determined to Protect our Rights, and have taken action to begin suits against infringers. While we regret the necessity of this step, it has been forced upon us by the unscrupulous conduct of other manufacturers.

We are thus explicit, in order that millers may have fair warning, and that they need not, by Purchasing Infringing Machines, involve themselves in Troublesome and Expensive Litigation, which must eventually result adversely to them. We have no disposition to deal harshly or unjustly, and only ask for a fair and candid investigation of our claims. Millers who are using Roller Mills which infringe our patents and who wish to avoid trouble by settling with us before incurring the expense of a suit, will be liberally dealt with, as it is not our design to oppress millers, but rather to force infringers to respect our rights.

## Gray's Patent Iloiseless Roller Mills

Are fully protected by foundation patents; they infringe no other patents, and they are the Best and Most Successful Roller Mills in the market, there being more of them in use than all other makes together. Millers Run no Risk in buying these Machines, and in purchasing of us will get the Best Machine, without any expensive accompaniments in the shape of suits for infringements.

## EDW. P. ALLIS \& CO.,

Sole Manufacturers of Gray's Patent Noiseless Roller Mills,

## The Unite States

## Pullat diver \{ Vol. I3, No. 4.

## Decortication.

Decortication of wheat is the act of strip ping off the covering of the wheat berry Many inventors have striven to invent a ma chine which would effectually accomplish
this, but heretofore they have not succeeded in doing so. The most recent invention for decorticating grain has been made and just been patented by Wilson Ager, of Washing-
ton, D. C. In reference to it, a late issue of ton, D. C. In reference to it,
the Minneapolis Tribune says:
"A series of important experiments in wheat cleaning processes, has during the past few months, engaged the attention of millers, and now that the invention is practically and suc-
cessfully completed, we are enabled to give the cessfully completed, we are enabled to give the
following facts. Wilson Ager of the Trades following facts.
mill, has perfected an invention which prom ises to be in great demand among millers every-
where. It is a grain decorticating apparatus, the process through which the grain passes completely removing the cuticle of the wheat
berry, and enables the miller to realize a much berry, and enables the miller to realize a much
higher t ercentage of high grade flour than hitherto. Mr. Ager claims that his process will secure to millers an additional profit of from $\$ 90$ to $\$ 100$ on every 100 barrels. The apparatus consists of a set of gray Derbyshire stone revolving on a hub, within a cylindrical case which revolves in an opposite direction. The grain is placed in the cylinder, and the stone blades revolving rapidly through the mass, be-
tween a row of steel teeth, remove both the germ and cuticle, which are carried away by a current of air, and subsequently mixed with the bran and shorts. The grain thus operaws,
upon produces, after passing through the burss 90 per cent. of middlings, and when ground by rollers gives 92 per cent. Without this process of cleaning grain, the best results seldom ex ceed 60 per cent. hy rollers, and about 45 by buhrs. When milled by either of the old processes, is demanded for the purpose of mixing with the low grade, or break flour, amounting to about one-third of the product of the mill,in ers' flour. This bakers' flour thus compounded sells at from $\$ 1.50$ to $\$ 2.50$ per barrel less than the fancy brand.

By a recent experiment made in the Trades mill, the following result was obtained on a set of six breaks on the Gray roll; Weighing one ever break flour and middlings so taken from said break is deducted from the second break. and so on to the third, fourth, fifth and sixth breaks. By pursuing the above course there is found $1211-16$ eunces of middlings, $2 \frac{1}{d}$ ounces of break flour, one ounce of bran; loss by handof beak flour, one ounce. This would show an
ling 1-16 of an average of about 90 per cent. of middlings and 10 per cent. of break flour of a sharp and white, worth
break flour. It is safe to say that by this method of cleaning, about 85 per cent. of the best patent or fancy flour, 10 per cent. of firstclass bakers' and 5 per cent. of low grade or "red dog," can be obtained either by the roller or burr system. The entire production of the fancy grade, or 85 per cent. of every 100 barrels grades in the market as first-class fancy flour, the 10 per cent. being equal to any straight grade on the market. The test mentioned
above was made on wheat cleaned by Mr. Ager's process, and gronnd by both the roller Ager's brocees, and process of grinding. The bran produced is found superior to bran ade whout the clcaning process, being larger athoroader
than can be made by any other method, a rethan can be made by arsed millers, who have in
sult which has surprise variably contended that the bran would be pulverized so fine hs to become mixed writh
flour, thus lowering and injuring the grade. flour, thus lowering and injuring the grade.
"This invention is protected by three Am "This invention is protected by three Amer-
ican patents on the mechanism, and one on ican patents on the mechanism, and one in
the process. The invention is also patented in England, Canada, Austria, Hungary and Germany. The millers of this city and from all parts of the United States have been anxiously watching the progress of these experiments. The machine gives equal satisfaction with spring or winter wheat, and can be used on
buckwheat, rye, or for pearling barley or rice.

The process will be immediately introduced in the leading mills of the country, and will return a handsome compensation for Mr. Ager's long years of patient experiment and study. Arrangements are being made to have the ma-
chinery inanufactured in the state of New York, in Washington, D. C., and in Minneap. olis. Mr .
r. Ager has been engaged during the past forty years in the invention of machines for cleaning cereals. Some of his inventions have proved exceedingly remunerative. He spent seven years in Etarope and other parts of the
world giving instructions in the milling business. He secured the first patents issued in ness. He secured the first patents issued in
America for the manufacture of white buckwheat flour. It will be admitted that he is no tyro in the milling business, having taken out fifty-four patents in different pats of the world and this last invention promises to eclipse all the others."
The Latest Statistics of Australasian
Milling.
Now that science, in its many practica forms, is abridging time and space in a very real and significant manner, it behooves the to be up and seeing what their industries are doing, even when those competitors may be thousands of miles away. Ocean, like land transport, is being so cheapened and simplified that distance no longer yields that "natural protection," it formerly did but very often a complete knowledge of what is being done in distant places, in the way of certain productive matters, does become of great value and eminent service to those who are working on the same lines, and who cannot remain in ignorance of their rivals' movements without eventually suffering thence. At present it is needless to say that the American is the great rival of the British miller, but it may be as well to remember that even in Australia great and strenuous efforts are now mak-
ing to substitute, as far as practicable, the export of flour for that of wheat, and espe cially is this so in Victoria and South Aus tralia, to say nothing of New Zealand. In the present instance we shall confine ourselves chiefly to the great colony of Victoria, as we return of the milling statistics for that colony, some account of which will be certainly in esting and instructive to many of our read

The flour mills, it appears then, num bered at the end of 1880 no less than 145, of which 136 were actuated by steam, and nine
only by water. The estimated horse-power of these mills was 2,742 , and the number of pairs of stones running, 454; employing 793 persons. As to the wheat operated upon, the quantity ground for the year in question was ,281,053 bushels, producing 157,784 tons of flour. The quantity of other grain operated on is given at 742,126 bushels. Coming to he approximate value of the grain operated n, we find the flour and meal produced valued at $£ 1,651,351$, while the estimated value of the machinery and plant is put as high as $£ 227,643$; to this must be added the
sum of $£ 181,122$ on account of buildings and improvements.
The mills are pretty fairly dispersed over the area of the colony; adopting the alphabetical order we find that Ararat had 2, Ballaret 4, Echuca 2, Heathcote 2, Melbourne 7 Stawell 2, St. Arnaud 3, Sandhurst 3, Talbot 2, Wargaratta 3, Warrnambool 2. These aro the mills of the cities and towns. Taking shires we find that Avoca has 3, Benalla 4,
Chiltern 2, Dunmunkle 3, Dundas 2, Echuca 2, Glenlyon 2, Goulburn 2, Glenelg 4, Huntly 2, Kyneton 4, Korong 3, Maffra 2, Marong 2, Omeo 2, Oxley 2, Seymour 2, Shepparton Swan Hill 3, St. Arnaud 3, Towring 2, Wim mera 3, Warranga 4, and Yarrawonga 2 mills. It is a curious fact that only one mill driven toria, seems to have ever existed in Vic

Considering that these 145 flour mills grind ing flour out to the value of something like of a community-vast, by the way, judged by Australian standards-numbering onl 860,000 persons, it is evident that export cor-
siderations entel largely into the industrial calculations of Australian millers. The are doubtless the more encouraged to perseerable export trade from the fact that, owing to the late improvements in railway comnow easy and cheap almost anywhere; and then again the Austillers can secure of which is, it must be confessed, of good quality. To give some idea how wheat
ture has steadily advanced in Victoria may mention that the quantity of wheat raised in bushels in 1839 was just 12,600 . In the folhad grown to 234,734 . In another decade had reached the sum of $1,148,011$ bushel and in 1862 it stood at $3,008,487$. In 1877 was returned at $7,018,257$ and in the year under notice it appears at the great total for such a population of $9,727,369$ bushels.
Although these statistics, so well arranged by Mr. Hayter,, the Victoria Government
statist, do not give us the flour mills returns for the other members of the group, we have been enabled through other sources to ascertain no less than 150 flour mills of 2,659 horse power, driving 347 pairs of stones, and of these 140 were driven by steam. In South Australia there were at the same period 88 steam flour mills having an aggregate of ,056-horse power, and 304 pairs of stones while in New Zealand there were no less than
102 flour mills. As a net result, we find that the grand total for the Australasian Colonie was at least 500 flour mills, while we learn many of the existing mills being fully renov ated and equipped on the latest plan of scientific milling, but new mills were being projected, and all reports unite in predicting that before long Australasian milling will altogether lift the industry out of those proportions to which the word "Colonial" can be slightingly applied.

In Australia proper, the millstone still continues to be the chief factor in the granulaton of wheat, although in not a few mills used in the softening of middlings and semolina into flour. In New Zealand there is at least one mill which works on the gradual mills will, no doubt, speedily find their way into the adjacent colonies.-The Miller, (London.)

## Amending the Patent Laws.

Apropos of our remarks in our last issue on the effort made by the enemies of the existing patent laws of the country to so amend them as to emasculate them of every element of protection for the inventor, we have
had the opportunity of hearing a verbal report from the committee appointed by the Franklin Institute to proceed to Washington and lay before the Senate Committee on Patents, the protest of the Institute against the proposed amendment. From this report which contained many interesting points, it appears that the strongest opposition to the patent system emanates from two powerfu organizations, known as the Western Rail road Association and the Millers' Association both of which avow their open hostility. When it is considered how much the business represented by these organizations has profited and benefited by the numberless

duced from time to time, their attitude ts wards the inventors of the country is not one which speaks highly for their fairness or honesty of purpose
Again, it was pointed out that there was a strong opposition to the patent system among
the farmers of the West, among whom the the farmers of the West, among whom the
foreign element is largely represented. These men have somehow become possessed of the rotion that the patent system operates to their detriment, and many of them, through ignorance, are opposed to the system of pattency of such stupid prejudice were forcibly tency of such stupid prejudice were forcibly
shown in the report, when the spokesman of the committee remarked that no class of our population owed so much of their prosperity the patent system of the country as these very farmers of the West, who, without, the aid of the numberless patented inventions in agricultural machinery, and in devices and machinery for faciltating and cheapening transportation, could neither sow their seed, reap their crops, nor send their grain to mar-

Another member of the committee made the announcement that the strength of the opposition to the patent system in Congress was greatly underestimated. He affirmed noxious and destructive amendment had passed the House of Representatives, was not, as many have charitably supposed, cast hastily and without due understanding of its crushing effects upon the inventor class, but expressed the deliberate convictions of most of those who voted in its favor. He added to this that he was satisfied, from personal knowledge gained by his intercourse with members of Congress, that it was only a for tunate accident that prevented this destruc tive measure from having been put through the Senate with perhaps as large a majority as it had commanded in the House. This accident was the fact that a majority of the Senate Committee oa Patents happened most fortunately, to be composed of mem ers who were favorably disposed towards These statements stem. d warning to the inventor The facts brought out by this committee show the existence of several powerful or their disposal, and prepared to money a means at their command to break down the protection which the patent laws give to the inventor; they show a widespread opposition among the farmer element, the last it would be supposed, to be found in the ranks of the opposition; and, most dangerous of all, they how that the sentiment Thestrength of this opposition is so for midable, that it would be a grave error to
ignore or undervalue it. Though defeated by a fortunate chance at this session of Congress, the enemies of the patent system will make a fresh onslaught at the next session and it behooves the inventors and manufacturers who are jointly interested in the maintenance of the patent system of the country to see to their imperilled shall be boldly and strongly defended.-Manufacturer and Builder, ( $\boldsymbol{N}, \boldsymbol{Y}$
Stout, Mills \& Temple, Dayton, O., employ 200 hands, and make the American turbine Their corrugated and smooth chilled rolls, of which they are the patentees, are regarded as
unexcelled in desirable qualities. Trade conunexcelled in demable qualities. Trade con-

There are in Ireland, according to official es timate $4,500,000$ acres of waste mountain and imate $, 50,000$ acres of waste mountain and reclaiming, and these nearly all bog so situated that the water could be easily and naturally drained from them.

United States Miller.

## PUBLISHED MONTHL



## MILWAUKEE, AUGUST, 1882.

The Milwaukee Dust Collector ComPANY have received a great number of orders for their machine during the past month and the works will
utmost capacity

Hon. J. B. A. Kern, owner of the Eagle Mills, Milwaukee, is the largest individual
flour mill owner in the world. He is now flour mill owner in the world. He is now
making some very large additions to his making some very large additions to hi
already great mill here, of which we will giv a description in a future number, when the work shall have been completed.

The Miller's Review, of Philadelphia, Pa. the latest venture in the field of milling journalism, has just issued its sixth number and it must be confessed a very handsome paper,
and is ably conducted. The subscription price is one dollar per year. We cordially commend it to the milling fraternity
The Miller (London), in its July number prints an extended biography of the late extrait. In opening its sketch The Miller says: As a man, Mr. Washburn was fairly entitled to the term
great, not perhaps, in the esesin ein which the term is used
to designate those ereat deeds which tigure most great, not perhaps, in the sense in which he term is use.
to designate those reat doeds which tigure most prom.
inently in history, or those works of an intellectual inenty in history, or those works or an ther authors
stamp which lve through anl lages and give thetr
an imperishabe fame. Mr Washburn is entitled to the term because he wase. nowed with gifs which not only
enriched his life with the opportunites been
greatest play, would heve resulted in deeds which would have inched
eharacters.

A rail for common roads has been introduced in France. It is embedded in con-
crete and is flush at the edges with the roadway. From the sides it slopes down to the centre, so as to enable the wheels of vehicles to retain their place up
cost is about $\$ 2$ a yard.
We think it would be well for this country if our inventors would turn their efforts and genius to the subject of improving the wagon
roads of the country. The wear and tear on roads of the country. The wear and tear on
horses, harnesses and vehicles on many roads would soon pay for putting them in excellent order.
Mr. George B. Dixwell, of Boston, Mass., is the author of three of the ablest tariff documents ever written-" Premises of Free Trade Examined," "Review of Bastiat,"
"The Review of Hrofessor Perry" and "The Farmer Question." These pamplets, which have been widely circulated by John W. Hinton, of the North-western Tariff Bureau, henslvely written, and admirably adapted to all students and readers on the tariff question.

## Personal.

C. M. Palmer, Esq., the genial editor of The Northwestern Miller, made us a very month. We were gratified to see that our friend was enjoying good health. He spoke loudly in praise of Minneapolis milling interests, but cheerfully admits that Milwaukee is not such a great ways behind.

## The Barrel

No single article of wooden ware is of more importance to the miller than the barrel. The invention of the barrel, made of strips
of wood and rendered tight and strong by hoops, finds in history no notice of origin or inventor. Pliny attributes it to the Gauls of good reason to believe that the barrel was in use before the Gauls reached Italy, perhaps before their existence as a people. In one of the inscriptions copied by Wilkinson from Egyptian monuments may be seen two slaves emptying grain from a wooden-hooped
vessel, while a scribe keeps tally and sweeper stands by to sweep up the kernels. Close by a poor victim is undergoing the bastinado, for short measure or petty theft The measure is barrel-shaped, precisely like the kaye of modern Egypt, and would ap-
parently hold about a peck. The age of this inscription is not indicated. Such measures would seem to have been in use very early in Egypt, not for liquids, for which skins and mate would at first thought seem to make it unsuited to the use of hooped vessels.

## Insurance.

The directors of the Wisconsin Millers Mutual Insurance Company met at the Newhall House, Milwaukee, July 25 . and adopted by-laws and discussed the prospects of the Association. Their charter requires that 10 per cent. cash of the amount of insurance
taken by any miller shall be paid in for the expenses of the Company, and that notes shal be given for the balance running for five years. When a loss occurs assessments are made on the notes. It is lewiul insurace experience that the cost of mutual sher stock
on mills is about one-half the cost of stock insurance, and the company expect to make great saving. The following officers were lected:
President-E. W. Arndt, De Pere. Vice-President-J. S. Clement, Neenah. Treasurer-S. H. Seamans, Milwaukee. Secretary-John Schuette, Manitowoc. The office of the Company will be at Man itowoc, Wis. The object of the Association
is to insure flouring mills, and they are now ready to take risks, having about 100 applica tions on hand.
The Wisconsin Millers' Mutual Insurance Company start out in business under the most favorable auspices and there seems to be but little doubt but that it will be a success and in cash for insurance. Wisconsin millers should lose no time in writing to the Secretary, as above, for full information.

## Notes on Water Power.

## from james emerson.

"Efficiency," "Useful Effect," or "Percentage," are terms used to denote the
economy of a wheel in its use of water, or the number of gallons it will pumb back into the pond for each one hundred gallons drawn therefrom to drive the wheel. There are wheels that for each one hundred gallons return fifty, while medium wheels return seventy-five, and a better class eighty to
eighty-five ; the very highest, under favorable eighty-five ; the very highest, under favorable
circumstances, will return something over ninety per cent., and of course, other merits being equal, are by far the most desirable.
What is the real working head? The term "head," as used in connection with water power, means the difference in height from the surface of water in wheel-pit to the sur-
face in penstock above, when the wheel is running.

A square inch of water means a stream exactly an inch square ; its length depending upon the head from which it issues. For a head of four feet, it means a stream an inch square, 16.04 feet in length per second ; for head of a hundred feet, a stream an inch
square, 80.35 feet in length per second. To turn this into cubic feet, multiply by 12 , then divide by 1728.
Pressure of water on dams depends on the depth, and is the same whether the pon Turbines of any make are not perceptibly affected by backwater, except through loss of head. I think a slight difference was found by a commission appointed by the French government to experiment with the
Fourneyron wheels. I have in two or thre Fourneyron wheels. I have in two or three
cases, when long draft-tubes were used, thought the loss greater than should occur from the loss of head, but have had no chanc
test.
Many builders insist that it is essential that a turbine should discharge under water; but
it is doubtful for the same head whether it makes any difference, if the wheel is properly made, though it prevents trouble from ice, and generally extra head is gained by submerging the lower part of wheel.
If a draft tube for any considerable proportion of the head is used, its lower end should be submerged to such a depth as to
render its immersion constant, otherwise when first starting up only the head above the level will be available until the discharge has exhausted the air from the tube ; then when it does take hold, unless the gate of the wheel works very quick, the speed is wild for a short time. When there is backwater some length of time a short draft tube renders it convenient to get at the wheel in case it is necessary to do so ; but in most cases I should prefer to have the lower part of a turbine stand in the tail water.

A turbine is no more a hydraulic motor than the harness of a horse is a horse motor. motor, or the power evolved from falling thus lines of goods which he has never had
an opportunity of handling, at least in such a way as to become their master. meaning with regard to milling. Take stoneman and put him at the spout, or vice versa, and he may find that he is in some degree a failure. Place him suddenly among the maze of seeming intricacies of a modern mill, and he will be very far from at home Take the same individual, after a fair experi ence in a custom mill of modest proportions, and place him in charge of one of somewhat greater capacity, and his natural aptitude will soon show itself in a thorough conception of the duties of his new position. This naturally leads to the inference that the miller who has had the running of the smallest and most antique mill, may become the most expert and successful manager when called upon to lay out and manage the arrangements for tie latest and most complete character of milling. We will probably be borne out by the testimony of others, in our assertion that the old fashioned grist miller generally makes the most successful merchant-miller. As the owners of mills not infrequently leave the running arrangement entirely to some one else, that responsibility from which thorough capability usually springs, falls upon the miller in charge, and he, in reality, becomes the generalissimo of all the forces about the establishment.

## Recent Mill ng Patents.

May 30.
Grinding Mill-Geo. K. Smith, Freeport Ills. Middilin
Louis, Mo
Mwil Packer Register-Geo. L. Williams, Edwardsville, Ills.

Westcott, Buffalo, N. Y., June 6.
Dust Collector-Samuel L. Bean, Washing-

## On, D. C. Roller Grinding Mill-Samuel L. Bean, Washington, D. C.

Millstone Dress-Edinboro Cyrus, Augusta, Ohio.
Manufacture of Flour-John Hollinsworth,
New York, N. Y.

## Bolting Reel-Monroe Ingraham, Dade-

Machin
Grinding Rolls-Edwin Reynolds, Milwaukee, Wis.

June 13.
Process of Decorticating Grain-Wilson
Ayer, Washington, D. C. Ayer, Washington, D. C.
Grain Reduction Machine-John M. Case, Columbus, O .
Feed Regulator for Grinding Mills-Melvin B. Church, Grand Rapids, Mich.

Grinding Mill--Melvin B. Church, Grand
Device for Tightening Bolting Cloth-Milford Harmon, Jackson, Mich

## Grain Conveyor-Henry Harrison, Bur-

## lington, Iowa.

## Hawes, Port Richmond, N. Y.

Minn
Buckwheat Hulling and Separating MaRoller Mill-Noah W. Holt, Buff io
Machine for Collecting Dust-Alvah H
Kirk, Minneapolis, Minn.
Roller Mill (re-issue)-Udolpho H. Odell, Dayton,
Grain
Grain Register-Wesley Stringer, Port Dover, Ontario, Canada
Middlings Purifier
Middlings Purifier-Augustus Wolf, Allen-
town, Pa. machinery be introduced into a mill whether it be a new or an old one, if the brains or the training necessary to manage
all tine details of the programming of the mill be wanting; it matters little what amount of money be laid out, or what pains be taken that the machinery be adapted to the work required, or what kind of salaries be paid the miller and his assistants, or whether the owner runs his own mill. Firs
of all, whoever directs the operations of the mill must know how to run $a$ mill ; next, he must know how to run that mill. Now whether a man is likely to thoroughly master he trade by serving an apprenticeship in large mill is a question that may often be answered in the negative. It is generally youth who starts out in a small house usually makes the most successful merchant, the reason given being that in the smaller establishment he is obliged to take a hand a everything about the place, and thus, in a comparatively short space of time, becomes familiar with all the details of the business; while if placed in a larger concern, he would be put through a lengthy probation in the basement, where his time would all be given oo one character of duties ; after passing several years, perhaps, in making a very slow
advance-and long before advance-and long before entering those departments requiring the most skill and judgment-he is sent out to seek trade in some particular line of goods. There are

## June 27

Grain Separator-Holman A. Barnard, Rock Island, Ills
Dust Collector-Milford Harmon, Jackson, Mich.
Friction Gearing for Roller Mills-Chas. B Campbell, Buffalo, $\mathbf{N} . \mathbf{Y}$.
Roller Grinding Mill-James Dawson, Clear Grit, Minn.
Flour Dressing Machine-Wm. D. Gray Milwaukee, Wis
Apparatus
Apparatus for Drying Gr
Hawkenson, Littehfield, Minn.
Roller Mill-Udolpho H. Odell, Dayton, Ohio.

July 11.
Method of, and Apparatus for, Degermin-
ating Wheat-Chas. L. Gratiot, St. Louis,
Roller Mill-Noah W. Holt, Buffalo, N. Y.
Dust Catcher for
Dust Catcher for Mill Stones-George Kiefer, Stuttgart, Wurtemburg, Germany. Wilhelm Kruger, Kalk near Cologne, Germany.
Grinding Disk-William Lehman, Mil-
Wheat and Middlings Reducing Mill-
Wames Pye-Minneapolis, Minn. July 18.
Apparatus for Separating Cockle and Seeds
Whom and other Grain-Ebenezer Winchester, Rochester, Minn.
Dust Arrester
Dust Arrester-Chas. M. Hardenbergh
Finneapolis, Minn.

## New Stive Room.

In the discussion on the report to the Home Secretary on the Macclesfield flour mill explosion, read at the meeting of the National Association of British and Irish Millers on the 13th of February, 1882, Mr. Stansfield referred to a stive room which was being erected by his firm for the dust which was blown from the stones and rollers in the mill. Among the advantages claimed for this dust room are: 1. All the air must pass through cloth, canvas, or bunting. 2. An arrangement in which the largest area of canvas is placed in the least space. 3. An arrangement in which the wind in its course over the canvas travels downward, so that the dust dropping off the canvas is not driven up again by the incoming current of air. The least possible amount of woodwor The least possible cost. 6. Simplicity. distance from the mill, on the reservoir attached to the latter, and as the water
could not be conveniently taken out, four pieces of an old boiler flue were each driven into the bottom of the reservoir and clayed round, the water being subsequently pumped out. Inside the caisson thus formed, 12 inches were excavated from the dam bottom fixed vertically in the center of each the tubes were filled up with Portland to the bottom. Across the top of the foundation pillars two thicknesses of 11 in . planks were placed, which were covered by 2 in. boards, which are held down by four large castings, secured by the bolts already men tioned. The joists of the room are made
fast to these castings, to prevent the fabric from being blown over. The room is 6 fee square by 30 feet high at the sides. The frame work is substantial, but covered with boarding of only 1 in . thickness, and at the top of the building is the stive box, 6 feet
square and 2 feet high. The air from the fan square and 2 feet high. The air from tharged through a 20 in . pipe, upward in the stive box, through an opening. The bottom
of the box is composed of lattice work, with openings 3 inches square and $5 \ddagger$ inch centers. In each of these openings is fixed a canvas or bunting pipe, having a circumpipes hanging down into the room, and pipes hanging down into the room, and
their lower ends are stopped by tying loose knot on each. The large opening in the bottom of the stive box is useful
as manhole, in order to get to fasten the pipes in the openings in the lattice work The area of a pipe 12 in . in circumference and $7 \frac{1}{2}$ yards long, is $2 \frac{1}{2}$ square yards, which multiplied by $160=400$ superficial yards Only 140 tubes are placed in the stive room
so as to leave an opening on two sides of the pipes, which is convenient for allowing man to go once or twice a week and shak them a little before or after emptying them For this purpose an open floor is fixed 8 o 9 feet below the bottom of the stive bnx, acinside the room. In cleaning out the pipes, the man generally shakes them at the top then opens a few lets the dust out, either into a sack held un-
der, or on to the floor below, the quantity which escapes during the operation being trifling.

The dust room, which receives the air from nine large middllngs purifiers and several other machines, and is bolted against the by 8 feet 6 inches inside measure, and 42 feet high. It contains 1,000 superficial feet of canvas, and at one time the stive from the millstones was blown into it. Since the explosion in the Messrs. Fitton's mill, however, Mr. Stansfield resolved to provide a special compartment for the latter; hence the erection of the independent stive room we have described above, and in which means a very large body of air at comparatively little cost. -The Miller, (London)

The Flour Mill of the Future.
Whether the roller system or dise system of wheat reduction will finalty achieve supremacy matters little for the purpose of this article-gradual reduction as a process has demonstrated its value so palpably that a return to low or flat grinding need not be apprehended for years to come. There are hundreds of millers, who, during the past
decade, have spared no effort or expense to decade, have spared no effort or expense to
keep in the van of improvement, while hundreds more have given up the efforts to do so, apparently convinced that improvements
radical in their nature, would be forthcom-
ing, so long as millers could be found to adopt them.
Looking back over the years that are passed, one can now easily determine that it has been but a transitorial era in the ristory of American milling. No valuable radical changes in systems of procedure are
ever the result of a single step, but are brought about little by little, and when thoroughly established, one hardly realizes the devious paths trodden in the attempt to reach a better, more economical, or more profit able manner of reaching results. It is, perhaps, well that we do not realize how far of perfection may be, when we enter upon system of improvement, as, in all probabi
ity, few would be willing to burden them selves with the anxiety and expense neces sary to its attainment could they compre-
hend the magnitude of the undertaking, as a conseqence improvements would lan guish, if indeed attempts in that direction were not altogether abandoned.
Every step taken in the right direction however, compensates the one taking it, in
some measure, and there is a certain degree of satisfaction, to the progressive man, in the fact that his efforts have not been altogether
fruitless. He is encouraged to go still further, and, so long as every step taken result in his favor, so long will he continue to im-

The men who have the nerve to in augurate improvements, and by inaugurat
ing we mean adopting, are entitled to grati ing we mean adopting, are entitled to grati
tude for their enterprise, as the results their efforts in this direction serve as guides for others in the trade. If an improvement
is of value it is so demonstrated by them and its adoption by others can be safely undertaken, but, if valueless, others are saved the xpense and annoyance of testing
The past ten years have been, as we said transitional era in the history of American milling. Systems and methods of procedure
have been adopted, tested and abandoned, have been adopted, tested and abandone
until, within a short time, mechanical a pliances appear to have reached such a degree of pertection as to almost warrant the belief that the day of radical changes has come to be recognized as preferable to any other, and, while opinions as to the relative merits of mechanisms for the performanc of the reductions differ, the system itself dmittedly correct.
The flour mill of the future will be a very en different establishment from that of tidy establishment, performing its offices lmost wholly automatically ; relieved in great measure of its forests of spouts and elevator legs ; having a pure, wholesome at-
mosphere, almost wholly devoid of dust, and its bolting facilities of a perfect character readily comprehended, easily adjusted, and reduced in space occupied very materially from the present style. Much has been accomplished in this direction during the past two years ; much still remains to be accom-
plished, but not, we believe, in the direction of radical changes in systems or appliances These we have in abundance, giving mos excellent and satisfactory results, but there tion of them. Improvements and changes will, of course, be made in the machines hat go to make up the equipment of the mill, but it is not unlikely these changes
and improvements will be simply matters of detail. We believe the day of radical change Milling World.

## Gradual Reduction Milling

## m a paper read before the Farmers' Institute nd Co., Ohio, by Mr. C. A. Aurrows, book-ke. for Hicks, Brown \& Co., Mansfield, Ohio.

Until forty years ago the method of mill ing was seemingly to grind the grain as quicky as possible, regardless of the chemical ef fect on the product by friction and heat; it
was truly chopped, bolted and bagged on short notice, and within the memory of many besides the oldest inhabitant a large portion of the offal was scattered to the winds or dumped below the dam. A better acquaintance of scientific matters, and the observa tion of practical minds, called attention to the constituent elements of the wheat berry
and with the discussions of Drs. Graham and and with the discussions of Drs. Graham and the principal components of the wheat grain are gluten, starch, albumen and minerals of various character, according to conditions of were gen climate. Until these properties were generally known, the bolting process of milling seemed to have obtained special at-
tention, the growing fashion being for fine tention, the growing fashion being for fin
white flour, regardless of any other condition
untilthe microscope was necessary to deter-
mine the number of meshes per square inch in the silken bolting cloth in use, bread re form doctors to the contrary notwithstanding. The day is dawning, however. Twenty ears ago emigration swarmed toward the Northwest, which seemed to invite the wheat aiser especially, by its long clear summer ays and dry atmosphere, and its specal daptness of conditions for the growth of the ard spring wheats, requiring scarcely the period or proceeds of a four months' promsory note to put in seed, harvest, thres declared that these hardy wheats contained a large percentage of that flesh and bone element known as gluten, but from some cause hen unknown, but attributed to milling, the lour from spring wheat did not make as
factory a loaf of bread as was desired. estigation discovered the same weaknes in bread from winter wheat flour. Necessity once again began invention, and ten years go the new Gradual Reduction process of Middlings Purifier, declared himself the autocrat of the milling world. A new era in food products is the result. The astounding revela tion is made that for centuries, the horse, ion of the wheat berry, fattened with so called white middlings, and man had eked out an existence on the dry water element there was not in the United States any other mode of reducing wheat grain to flour than the old familiar circulating b
its epitaph is being written.
As the direct object of this writing is to in duce farmers to cultivate the hard, flinty varieties of wheat, we beg leave to submit briefly the reason for so doing. As before noted, knowledge of the constituent proper ies of human food is now a matter not solel the property of the chemist; he has given it is not from the miller, it is from the bread eater; he will be satisfied only with the best and all there is of it in the wheat berry. Th elatively very high price which strictly pat commanded, plainly indicates that merit wil e appreciated. It may not be out of place o suggest that that flour is not manufacture
in the ordinary use of the word. It is a
creature of divine wisdom, pure and simple Under the outer coatings of the berry, which have been termed bran, the infinitesima granules of the various elements are found requiring only more or less pressure or rub ming to disintegrate them, ander the hands of the baker, soon to
mula be transformed into food. This superb ar ticle of flour cannot, in its purity, be obtained from soft wheat, nor wheat that contains an the wheat may be in proper condition, it has been found difficult to obtain satisfactory re sults in reducing with millstones. Indeed the inevitable has tradspired, the stone bur is buried, and the fittest wheat only will sur ive the ordeal of the roll and purifier.
To those who may have witnessed the oper-
ations of the roller mill, it will not be neces ations of the roller mill, it will not be necesrectly convey the idea of the action of the wheat berry. It is not crushed or flattened out as might be supposed, but is passed sevrun at differential speeds, and break or rub run at differential speeds, and break or rub
apart the coalesced granules. In its first passage, the grain is broken into two, possibly
three pieces, which are scalped or bolted through coarse wire cloth, removing the germ and impurities found in the crease of the berry, and again passed through another pair ble, again scalped, portions of the bran moved, and so on through as many as six or seven reductions or "breaks," technically termed. At each break small quantities flour are made, which is passed to the purifiers, the revolutionist above referred to, a valuable machine, in which are recognized the laws of pneumatics and gravitation, pro grits from the break flour. Tuese purified middlings, and plenty of them, are the game of this interesting chase. They are the glutinous elements so much desired; and now after passing through forty or more reductions and separations are finally finished on porcelain rolls or stones specially designed or that purpose. The product is complete. No more too much bran in the flour and too much flour in the bran; a perfect separation is secured, more and much better quality of flour is obtained, giving the miller a better
margin for his investment, risk and labor, and
enabling him to offer relatively better prices for prime wheat than heretofore, and with greater assurance can warrant the
make good, light, nutritious bread

## Flour and Grain Trade Notes

The total value of exports of breadstuffs or the eleven months ending May 31, 1882, was $\$ 167,653,532$ against $\$ 245,955,413$ for the
eleven months ending May 31,1881 , a falling. eleven months end
off of $\$ 77,301,781$.
Preparations are making for the shipment of grain from California to Europe via New Orleans. Messrs. Geerge Hart and John A. McNeil, of Stockton, Cal., have been here for
some days examining terminal facilities and some days examining terminal facilities and completing arrangements for furnish the necessary transportation from the Pacific slope.

The prospect of the wheat crop in Califor nia is exceedingly flattering. From July 1,
1879 to July 1, 1881-two crop years-California produced $93,000,000$ bushels of wheat, for which some $\$ 85,000,000$ were realized, or nearly $\$ 100$ for each of its inhabitants-and the indications are that the crop of the pres-
ent year will be the largest ever harvested in ent year will
the state.

A San Francisco journal claims that, from present prospects, India this year will have
as large a quantity as $69,000,000$ bushels of wheat to spare for export. This would be nearly double what was sent to England last year, according to the Calcutta correspondtons being $22,400,000$ bushels of sixty pounds each.
The experience of the Georgia farmers has variety which originated in Lincoln County, ieorgia, many years ago, but not brought prominently to notice until within the last ve years. It is a full, plump-grained, am-er-colored wheat, tolerably early, with tall, stiff straw, and is very hardy to resist dis
ease, especially rust. Seed may be had in ease, especially rust. Seed may be had in
eason, of Mark W. Johnson \& Co., of Atlanta,

The Age of Steel, (St. Louis), draws a rather gloomy picture for its readers. In a recent
number it says, whilst considering the influence of crops on business: "From present
indications, therefore, it looks as if the demand for American wheat will be exceedingy small, compared with last year's demand,
and if we cannot dispose of our surplus
grain abroad the fact is patent that large hargrain abroad the fact is patent that large har-
vests would be of little or no benefit-in fact might be the very reverse of beneficial. Add o this the awful certainty that gold is flowing out of the country in a constantly increasing tream, and the situation is not a pleasant one to contemplate. The balance of trade is
largely against us, and the outflow of gold, if largely against us, and the outflow of gold, if
continued for any considerable length of time, will leave us as po
bird called "Job's turkey.
We do not think that
eed as yet sound the note of aporary crops are large our people can live more cheaply than heretofore which we think all will consider a blessing, especially that por-
tion of the people who are bread consumers True our gold is going out to a moderate ex tent, but an unknown quantity of gold is coming into the country in the pockets of hrifty immigrants which does not $m$ ke its ppearance in the statistical records. It has een estimated that the number of immi grants who would come to this country to
make their homes during the year 1882 exceed 800,000 . This addition beside the natural increase of our population, will make our h
fore.
If the cost of living had not increased so greatly of late, we should have heard little or nothing about strikes. We confidently look forward to an immense harvest, a fair for-
eign demand, remunerative prices to the producer, and altogether a year's business at the end of which we can say we have had much to be thankful for.
J. B. Mrluer \& Co., of Ashley, Deleware Co.
have just started up again, having put in a ful ine R just started up aga, Rolls, Purifiers, furnished by the Case Mfg. Co., Columbus, 0 They have only been running about three weeks, but are so pleased with the new system hat they have settled for it in full. Mr. Miller says the women in the neighborhood are conbread from his new flour and complimenting him on it and make him feel good.

Fredenhagen, St. Charles, Ill., visited Milwaukee a few days since and left his order with E. P. Allis \& Co. for two pairs of their porcelain rolls in Gray's Noiseless Frame, also one pair of their sharp corrugated rolls in Gray's Frame.

THE UNITED STATES MILLER.

United States Miller.

## E. Harrison cawker, Editor.

PUblished monthly.
Office, No. 118 Grand ayenue, Milwauker, Wis.
 ,

## MILWAUKEE, AUGUST, 1882.

We respect fully request our readers when
they write to persons or firms advertising in this paper, to mention that their advertisement wus seen in the United States Mmler. You
will thereby oblige not only this paper, but the advertisers.

## Flour Mill Directury. 

The total value of the export of bread-
stuffs for the six months ending June 30 stuffs for the six months ending June 30 ,
1882 , was $\$ 64,833,581$ against $\$ 111,980,917$ during the corresponding period in 1881 .
Av item has been going the rounds of the
milling papers lately, announcing the immimilling papers lately, announcing the immigration of one hundred millers from Ham-
burg, May 31. These immigrants we are informed were sille millers and not flour millers.
The Millers' National Insurance Co., of
Chicago,intheir report dated July 1, 1882 show, Chicago, in their report dated July 1,1882 show,
total assets $\$ 685,024.53$. They have no unpaid losses and no contested claims. The total amount of losses paid since organization aggregate $\$ 160,402.14$. Col. W. L. Barnum, tary of the company.

The United States Senate has passed a bill appropriating money to pay for surveying
the line of the proposed Hennepin canal. The people of Illinois will be called upon this fall to vote upon the question as to
whether or not they will cede to the United States, the Illinois and Michigan canal. It is expected that this will be done; if not, it is not probable that the U.S.
undertake the enterprise.

The business failures for the six months ended June 30th, as reported by the mercan-
tile agency of R. G. Dun \& Co., were 3,597, with liabilities of $\$ 5,000,000$. The failures for the first six months of 1881 were 2,862,
with liabilities aggregating $\$ 40,000,000$. The increase for the first half of the present year is, therefore, in number and amount, about ponding period of 1881 .
We have received from the publisher, Mr. York, a copy of "The Miller, Milhuright and Millfurnisher," by Robert Grimshaw, C. E. This is a handsome work of about 550 pages,
illustrated by 400 engravings. The work is illustrated by 400 engravings. The work is a
valuable compilation of almost everything valuable compilation of almost everything
pertaining to modern milling, and any millowner, millwright, or miller will find it of great use to him and should have it in his library. The book shows the results of much labor and research and is carefully indexed 0 as to make its information easily available per copy, post paid to any address. We pre diet for the the book a handsome sale.

Mr. J. F. Graham, a veteran miller of Rockford, Ia., does not believe that rolls are better than stones for making flour, and in a recent letter to us, says:
country throwing away their splene millers all over the miserable roller mills and spending millions for an article that is nothing but a bill of expense, when the very roller mills or any other iron device that has ever been
made. I can satisfy the most skeptical miller in a short time, if he will visit my mill, of the superiority of stones or any other necessar
flour economically.
WE have received from the United States Department of Agriculture a 100 page pam phlet entitled "Florida; its Climate, Soil, Productions and Agricultural Capabilities." This work is an excellent advertisement for Florida, and it seems to us as if it had ought to have been printed and paid for by that this. We understand that 864,000 copies of this pamphlet have been printed the cost of
which could not possibly have been less than 50,000 . If Florida ha $\$ 50,000$. If Florida has the right to be adver-
tised so enormously at the expense of the U. S. Government we see no reason why other states should not also have a feed out of the public advertising crib.
On the 15 th of July, Mr. S. H. Seamans, Secretary of the Millers' National Association, published his report of the condition of crops, received in answer to 2,000 circular in-
quiries sent out to the millers and others in quiries sent out to the millers and others in
every section of the country. After giving his report
as follows
A careful perusal of the foregoing will contirm the
opinion that that the erop of 1882 will prove an excep-
ional one, in quantity and quality in fact the outlo tional one, in quantity and quality, in proce the outcop-
indicates the largest wheat crop ever raised in the United States. If the yield of 1881 is correctly estimated, on the
basis of 488 millions, the crop of 1882 will exceed 500 nilions, providing the spring wheat meets with no
nisfortuue. Not only is the quantity immense, but quality promises, or is equal to any crop of former year
We look to see our millers in position to make flou Which will enable them to compete, both in quality and
price, with any market in the
In answer to the question, "What is the amount in mills and warehouses in Wiscon"Very tine circular says:
"Very little outside of Milwaukee; 700,000 in store in
Milwaukee, held by "Ring Grippers," the quality of
which is unsatisfactory to the millers, 'and can only be used to advantage for making choice flour by adding a
large percentage of the hard varieties. Sample wheat
selling in the Milwaukee market to-day at st selling in the Milwaukee market to-day at $\$ 1.45$ to os..50
per bushel. So long as the present rules of inspection
remain, which allow the grade to be governed by the veight test admitting scoured wheat into No. 2 and highe
grades, so long will our "grade" wheat be inferior for

## The Suez Canal

Should the Egyptian war be the cause of closing the Suez Canal the commerce between Europe and the Orient would be very seriously interfered with. It seems probable that but few shipments of wheat from India will be made if the war continues. If the carried on via Cape Horn or via the Pacific steamers, railroad across the United States and then again by steamer to Europe.
The Suez Canal was opened for traffic Nov. 17 th, 1869 . It cost about $\$ 60,000,000$ and is owned principally by British capitalists. It has caused a great increase in traffic between Europe and Oriental countries, and the British public has congratulated itself on being well supplied with cheap wheat from British lieve that Indian wheat will soon very important figure in the European trade with the canal open and unobstructed. If Arabi Bey should blockade the canal now it will strike a blow to the Indian grain trade from which it will not soon recover

Important to Millers and Grain Ship-pers-How to Send Samples of Flour or Grain to Europe.

To any seeking a European market where in many instances it is absolutely necessary to send samples, it may prove desirable to know that the most complete arrangedelivery of such packages promptly and delivery of such packages promptly and
at very moderate prices, by Theo. Baldwin's European Express, 53 Broadway, New York. This express has agents in the principal points West, who will at once take charge of such packages and send them weighing from 2 lbs to 20 lbs are most desir able when quick delivery is important. The weight should not exceed 20 lbs , although much heavier are carried. Price of expressage would be from $\$ 1.00$ to $\$ 3.50$ from New York. Shippers will receive any information desired upon application to Wm. G. Tay lor, P. O. Box, 354, Milwaukee; G. A. Carring-
ton, No. 8 North 3d St., Minneapolis ; John Peterson, Adams Express Co., Chicago; L. H.
Abrams, Jr., Adams Express Co., St. Louis, Abrams, Jr., Adams Express Co., St. Louis,
H. B. Storr, Adams Express Co., Cincinnati; H. B. Storr, Adams Express Co., Cincinnati;
or at the Head Office in New York Cit, Heavy expense has been incurred to mak this sample service (now a specialty) as effec tive as possible. Many thousands of such packages are forwarded annually and they are now delivered almost as rapidly as the

## at remote points.

## Another Patent Suit.

We are reliably informed that a party who claims to have patented the use of magnets for removing metalic substances from coffee, spices and other substances has announced his intention of demanding royalties from users of magnetic grain separators and in case his demands are not submitted to will bring suit for infringement of patents against such users.
The Millers' National Association has already received notification of the patentees'
intentions. His claims will be thoroughly intentions. His claims will be thoroughly examined and if not found to be justifiable,
they will, as a matter of course, he resisted ey will, as a matter of course,
Two Hungarian Opinions About American Flour.
Mr. Emerich Pekar, the eminent Hungarian milling expert, in his recent report to his overnment, said:
"The United States could not adopt our sysem, because there is no sale for the dark flours, represented by our numbers, $7,8,8 \frac{1}{2}$ and 8 , for the rich and the poor alike are accus-
tomed to a white bread, and the flour is inended to supply the requirements for white bread and not for pastry. This demand is satistied by the production of three grades, as is now the case in Minneapolis, for example and in them, darker grades are sometimes mixed though not to any great extent. Another rea-
son why middlings milling flourished there only to a certain degree, is the fact that the public, influenced by the quality of the wheat, have been accustomed to one straight grade of flour, and therefore this custom had to be taken into account, as of the greatest importance in producing this grade of flour by another sys-
tem. From local reasons, it is consequently not to be supposed that the Americans will make as many grades of flour as we do, but, unfortunately, it is on y a question of a very short
time for their flour to equal ours in purity and excellence.
And now comes the Ungarische Muehler Zeitung, wh
tract, says:
Wract, says:
We beg leave to express a contrary opinwhich our flour is celebrated is to be found in any of the American brands. * **** Of
twenty-six brands of American flour examned, two had no gluten at all and in two others was very deficient. Of thirteen Hun-
garian samples tested all were found to garian samples tested all were found to be not got the wheat to make a flour equal Hungarian flour. We recently examined with great care, a sample of American "finest patent process" flour, sent to us from
London. Under the microscope this flour London. Under the microscope this flour
appeared to be mixed with small, flattened appeared to be mixed with small, flattened
particles of a yellowish color. Evidently his sample of flour was made from a mixure of American and Hungarian flour, the latter ground on smooth rolls. Upon doughing up and baking samples of this flour and of Hungarian flour No. 3 from the Ofen-Pest
Mills, Budapest, the American sample wa ound to be greatly deficient in water absorb ing qualities and did not rise as well

## Personal.

Clifford F. Hall, editor of The Grain Cleaner, Moline, Ill., called during the past
month. month
Geo. T. Smith, of world wide purifier fame, has been visiting Minneapolis during the past month.
Mr. Geo. B. Heckel, one of the Chicago representatives of the Lockwood Press, of New York, called on us while making a flying visit to Milwaukee.
Mr. Prinz, the inventor of the Prinz Dust Collector, called on us. He informs us that his machine is meeting with the most gratifying success.
Lindsay Atkinson, Esq., of Shell Rock Neb., call on us July 28th. Mr. Atkinson will accept a position in the Daisy Roller Mill, of Milwaukee
Herman F. Notbohm, Esq., of Janesville Wis., called on us during the month. He has closed out his entire interest in milling property in Janesville and expresses his intention of going abroad for a year or more for the sake of pleasure and health.
July 22d we were favored with a call from

Tower Hill, London, Eng. Mr. Thomex one of the most extensive flour buyers Great Britain. He is now on a trip through this country partly for pleasure and partly for business.
W. C. Edgar, of the Northwestern Miller made us a pleasant call on his way East to visit friends. The N. W. Miller is prospering and it is safe to say will continue to do so in the hands of such able gentleman as Messix Palmer and Edgar
Mr. J. E. Mann, of the Geo. T. Smith Mid dlings Purifier Co., made us a brief visit The calls upon his time from customers are so frequent that he is kept in motion about eight days in the week" so to say. He says he will try to satisfy all demands if th wather keeps cool.
John Kelner, Esq., head miller for C. L. Colman, at Winnebago City, Minn., paid us a brief call. He reports the milling businesdull just now on account of scarcity of wheat Mr. Kelner's host of Milwaukee friends are glad to see him again.
Mr. S. S. Chisholm, of the firm of Chis holm Bros. \& Gunn, Chicago, Ill., and formerly one of the proprietors of The Amer ican Miller, was married June 22, to an American lady at St. Pancras, England. We wish him and his bride a long and happy life.
Robt. Williams, Esq., the handsome head miller of the Empire Mills, of Milwaukee has just closed his engagement with that mill and is taking a brief vacation. He thinks some of moving away from Milwaukee but we hope he will change his mind and bide with us yet a while.
Mr. C. C. Rogerman, editor of the Miller and Millwright, of Cincinnati, O., called on us recently on his way to the Northwest. Bro, Rogerman recently entered into the holy bonds of matrimony with Miss Lizzie Schraer, daughter of Hon. George Schraer, of Cincin nati. We congratulate him on his good fortune and wish the young couple a life of happiness.
D. Narracong, Esq., of Reedsburg, Wis., called on us recently and showed us a handsome model of his recently invented waterwheel governor. This governor is simple in construction and costs but little to build and An alarm bell in connection with it gives warning immediately whenever there is a change of speed.

## Foreign Items.

Fifty Spanish bakers were recently arested, tried and fined,
bread short in weight.
The import duty on breadstuffs, in Morocco, has beell reduced by the Sultan
L. C. Porter, of Winona, Minn., has ar rived safely in London and is now enjoying himself in Paris.
Ir is said that out of a total of $2,000,000,0<0$ acres of land in Australia fit for tillage but bout $9,000,{ }^{\prime \prime} 00$ have been brought under it.
Milling Trade of Germany.-At a meeting of millers at Erfurt, Mr. Wyngaert said there was a positive crisis in the milling trade of Germany. In spite of the protective
duties many millers had failed, and the effecive phalia, for matl that was formerly et at $£ 180$ only brought $£ 110$ now; one purchased for $£ 5,150$ was sold for $£ 2,510$, and another was offered for $£ 3,500$, the bare cost of the building. These and similar cases were to be found in all Germany, particularly in he west. What was the cause of this? It could not be denied that the improved systems were to blame for it, for instead of their being used to improve the production, they were frequently only used to prodnce the largest qnantity possible, resulting in overproduction. The credit system was another curse of the trade. They had brought things so far as to give a baker credit without kno $v$ ing within what period they would get their money, and although many millers granted nominally only three months' credit, this term was often lengthened to retain the customer. He should like to know how many thousands of bakers there were who were carrying on other business with the millers' capital. He considered the system an evil one and urged them to follow the example of the Nuremburg millers, and restrict the credit to two months at the utmost, and abolishing forward sales. He remarked how easy it was for a baker to start in business. All he had to do was to rent a shop, get an oven built on credit, and the miller would at once furnish him with capital, $i$. e., with flour, congratulating himself on having secured a cus
tomer. gratulat
tomer.
"BEST IN THE WORLD."
GARDEN CITY WWEIT PRISHI


Gathmann's patent "inclined bristles prevents all clogging when the brushes art

## ONLY DOUBLE BRUSH

Thoroughly Brush Wheat. Guaranteed to IIIPROVE color of the FLOUR. It don't break or scratch the grain. Re moves all the dust. Very light running Send for circular and prices.

## Prices Reduced! Improved Garden City <br> Wirliligs Pulifel



With Travelling Cloth Cleaners
Our improved Purifier has every device requisite to make it perfect, and every one in use is giving the greatest satisfaction to the users. The Cloth Cleaners are guaranteed to clean the cloth better than is done on any other purifier. Send for our new circular.
Over 4000 Garden City Purifiers in use, nearly 500 of which are the Improved Machine.

The Best and now the Cheapest. Write for circulars and price list.
We are agents for the

## BODIKHR

Bolting Cloth!
Which has long been acknowledged as the best made, and which has lately been further improved, making it now beyond com petition. We make it up in the best style at short notice. Send for prices and samples.
Garden City Mill Furnishing Company, CHICAGO, ILL.

## True angless, true anglers, for many miles 'round, Wherever Tre sought them, good fellows I've found, And let them be neighbors or let them be brothers, To me a true bobber's more welcome than others, To mee a true bobber's more welcome than other With my rod while I roam, or my tackle put up, Each weary piscator shall share my ale cup. Then fill Then fill up each glass, and be blithe while you may, To-morrow let's fish, but be merry to-day. <br> [Written for the United States Miluer.] Plain Talks About Milling.

An Angler's Greeting

By richard birkhor.z, m. e.
In regard to obtaining th best possible grinding results, yields and separations, I once mo
stones.
For granulating wheat, the rolls give far better results than millstones. The bran is not pulverized so much by a series of reduc-
tions on rolls as it is by a single grinding with millstones.
Corrugated rolls of any dress, dull or sharp, will yield a larger percentage of middlings than can be obtained by stones, and what the
millers of to-day care for principally are middlings; middlings of such a shape that they will admit of easy and perfect purification. As the wheat is handled from five to
seven times on corrugated rolls, it becomes an absolute necessity to avoid the over-pro-
duction of first flour, and it is evident that duction of first flour, and it is evident that
the sharper the corrugations of the rolls are, the less flour will be produced. Extreme sharpness of the rolls however may not be
desirable, for when new and the corrugations "knife-sharp," the bran is cut up smaller than it should be and to some extent it is pulverized at the same
instant and mixed with whatever small amount of first flour is produced. This un-
due sharpness, however, very quickly disappears. Three or four weeks are sufficient to remove this keen edge. Dull dressed rolls will produce far more first flour, and consequently less and smaller middlings than sharp rolls. They will not produce sharp, square midlings and espe-
cially not the amount of coarse middlings, from 000 to 0 , obtained by sharp rolls, even from the softest wheat.
The over production of first flour and fine middlings by dull dressed rolls is quite evi-
dent when the speed of the roller surfaces is taken into consideration. Dull rolls must run at least fifty per cent. faster than sharp
rolls, in order to granulate the same amount rolls, in order to granulate the same amount of wheat. The grinding resembles a pound-
ing or hammering on the wheat kernels and results in an unwished for yield of finest flour dust, depreciating the first flour and this result is still increased by the centrifugal
force, increasing in proportion to the square of the velocity, by which much more dust is thrown off than by sharp rolls. This dust
will, to a certain extent, escape through the crevices of the roller mill enclosures and contaminate the air breathed by the operatives, which is unquestionably prejudicial to health. economically with dull dressed rolls. This seems to be an universally acknowledged fact. For grinding corn with rolls, they must be
provided with sharp corrugations. I have provided with sharp corrugations. I have
tried it and have found the corn would flatten and leave the rolls caked, flattened ready to crumble apart. I also became a ware of
the greater power needed for $I$ could scarcely turn the hand roll with which I made my experiments. Coarse middlings must not be ground, they must be crushed, therefore a millstone will never do for reducing coarse middlings. Smooth chilled iron rollers are best adapted for sizing or crushing coarse
middlings. The oily germs will become flat middlings. The oily germs will become flat tened and pass over the tails of suitably
clothed reels. Middlings up to No. 6 cloth clothed reels. Middlings up to No. 6 cloth
may becrushed on smooth iron rolls, although may be crushed on smooth iron rolls, alhough
porcelain rolls will flour better on those middlings and produce less dust middlings-returns, to be contended with.
Fine middlings (from No. 6 to No. 9 cloth),
and dust middlings, (from No. 9 cloth to flou cloth), are best ground on porcelain rolls, not so well on stones, and poorly on smooth iron rolls. The advantage gained by grinding on porcelain rolls is cool grinding; the flour feels porcelain rolls is cool grinding; the flour feels
sharper and looks richer than flour ground on stones from the same stock. Porcelain rolls can be used right along while stones must lay idle every fifth day to be re-sharpened. In new process mills we cannot afford
to have any tools idle, hindering the carrying on of the various things necessary to be done in regular rotation and automatically. In
order to suit the American automatical system of milling, which we have worked so hard to learn and establish, a spare stone
ought to be provided for, if one stone or more comes in extra capital invested and the comes in extra capital invested and the
salary of the stone dressers, the readers will understand, and,-here comes in a little story about porcelain rolls-
Some millers near Milwaukee bought single Wegmann porcelain roller mill for sec ond dust middlings. They were well satisfied with the work but not with the capacity to suit their requirements. The machine was sent back and a double one ordered. During a few days they ground the stock on a spare every bag of bakers flour was returned to the mill. When the double porcelain roll arrived the differ
cheerfully noticed.
One day the proprietors found the head miller and second miller standing at the roll
cursing and swearing, and not mildly either. cursing and swearing, and not mildy either
The air was full of blasphemy. "Let us send back this roll," was the cry
ler, "it is not worth a continental!" The proprietors found it did not grind. They lefi me place in disgust and held a council to deter
mine what the matter was. Soon they proached the roll again and saw the second miller looking pleased. He explained; the source of his delight was that the rolls were "Well, I turned ber
and at onee I ential motion." Reason: The back-belts hai become slack and the mill was "on a strike" it flattened the stock but did not grind it The proprietors told me about this and said that a stone was an indiscriminating worke grinding whatever was entered, caring nothcertain instinct, they would "strike" when badly cared for, but they would never spoi the flour as the stone did some little time
Scratched rolls will never perform the work of porcelain rolls. They will soon become
dull and worthless. Porcelain rolls will stay sharp; they will work better than iron rolls on soft middlings, fine tailings and low grade stock.
To
manufeapen the roller machines some
bodied rolls. A resoll to the use of long than 9 inches in diameter and 18 inches long; thus they are heavy enough for handling and self-adjustable enough for grinding. The stream of feed will become uneven some-
times, and a short roll will obey the unevenness more readily than a long one; a long feed gate is also hard to control.
the rolls have to be pressed together per incl
of length with 100 lbs; then the bearing of the 18 inch roll is pressed with 900 the
of the 36 inch roll with 1800 . The leas the pressure instantaneously increased, the sudden blow will be on a 36 inch roll increased to double the amount of the increase of pres sure on an 18 inch roll. So much harder
As more middlings are made by new pro-
cess milling, more purifiers become neces sary. The best rolls cannot mate a good yield if they are not helped by the purifiers. Also the breaks must be aspirated in purifier fashion to remove light bran, otherwise the bran will be liable to be cut up and powdered to some extent by the next granulating roll; the first flour will thus become more or less specky. The rolls must be aspirated, for the
first soft flour dust sucked away does more good in the low grade flour bag than in the miller's lungs; the better flours also will pre sent a sharper touch if the soft dust is eliminated. Dust catchers add to yield as shown above and are necessary in any good mill. Centrifugal reels are indispensible for bolt ing the light and soft low grades.
The meal has not gravity enough to bol well and would require several hexagona reels for perfect separation, where one small
centrifugal reel is sufficient. The beaters throw the meal gently against the revolving cloth, thus increasing the gravity of it artificially. But the centrifugal reel has another virtue. It works as a fan, sucking in air at the head end and working it towards the tail, the fine fuzz in the meal, stuff which would dash through the silk of an ordinary reel, is suspended in the air and carried over the tail into the feed. Elevator bolts or dash reels, the old French "Chasseurs" can never do the work of centrifugal reels; these elevator bolts, such as have been brought
upon the market of late, consist of a upon the market of late, consist of a
winged spider and a cloth frame, the cloth standing slanting after the fashion of boli gathers. The meal is thrown against the the meal is throwa against the
noisy, as the cloth frames must be knocked frequently by a certain apparatus, also the cloth wears out very quickly. They do for bolt ing fourth and fifth middlings, provided those are attempted to be ground on iron rolls and leave the rolls caked. The elevator bolts will detach, this is indisputable, but they will not carry off low grade fuzz as they throw the meal with too much force against the cloth.
Business and trade is ruled and regulated by honest competition. One man succeeds by assiduity and perseverance in climbing up the pole that leads to success against great opposition. When up on top, pausing to enjoy a re muneration for his pluck and energy, hun-
dreds of others well dreds of others, well aware that there are "mil-
lions in it" try to climb up the same pole with the view of pushing off the one ahead. They do the climbing, so to speak, with such irons on their feet as the telegraph men use; climbing is made easy for them. Iam aware they even dade Uncle Sam to issue patof what has been in use foot-rigging in spite tell the world that their tools work better for theire of the man on top; if it was not every .ounded ill luck, they themselves, on top. They resort to misrepresentations often against their own persuasion, but mun inus vult decipi / in plain English, "the millers open and use your common sense. Honest competition at first laughed at the introduction of rolls, produced stoncs all the way down to six inches in diameter; all claimed to be better than rolls of course. When this claim had to be surrendered they got up rolls would never dull dress rolls. "Sharp came clamorous for noiseles be competition struck the key-note by affronting the millers with the assertion that belts were never positive, gears were "the thing." Alas,
they could not hold this point; they let go and adopted the belts, and at once honest competition pledged its honesty by advertis ing that belts were all right. Honest compenition now cowhides its own rolls, for at first it claimed dull rolls made 95 per cent. of patadvocates 7 reductions in tions and now it still better yield and a proportion of the 95 per cent. of patent, a still better patent
flour. The dull roll's work, like a woman's work, is never done. Honest competition first enccuraged the millers seeking cheap work, by telling theni that but few middlings were made; all that was necessary was to place 5 dull dress rolls and keep the stones for the middlings. Not any more pame honest reels were wanted, etc. Now the middlings were made by dull rolls than sharp ones. Funny, sharp rolls were used in Hundull. Whago and orery sharp tool becomes dull. What would you do if you found your knife worked better when it was dull? Would you re-sharpen it?
I must say that I am greatly pleased when Iming of important inventions made by fel tire nation will eventually be benefited by the credit granted to the shrewd inventor and we can, as fellow citizens, be proud of our success. But our inventions of dull, centrifugal and scratched rolls and rolls with surfaces impregnated, impressed with corundum flour, have yet to be proved more econcmi-
cal and practical than the foreign inventions of sharp corrugated and of porcelain rolls. I am afraid in this direction we stand but little show for laurels.

The Nation (N. Y.) tersely says: "Not one man in a thousand can be induced to econo. mize merely for the public good. Whatever he desires, or the party in power in his do mestic administration demands, that he will have if he has the cash or credit to procure Whether the objective matter be a summer tour, a champagne supper or a a sealkin sacque, he will determine the feasibility of obtaining it by consulting, not the comarative statement of imports and exports or the nine months last preceding, but the ondition of his own pocketbook or the fig ares of his bank account. If the result of his examination is clearly adverse to his wishes, he will probably, being a a prudent and just man, deny himself the coveted indulgence. If there is a sufficient balance in his favor, he will delight his soul, pamper his palite and propitiate his wife and daughters, though another Black Friday should loom in he dim mists of the future, and the whole abric of commerce be preparing to tumble

## Technical Education.

Technical education is a subject that is just now attracting a good deal of attention in this country, not only among the teachers, whose special business it is to look after the training
of the young, but among that larger and more of the young, but among that larger and more
numerous class of persons who are interested in the rising generation, as parents, philanthropists and reformers. Three things conspire just now to make this question promi-
nent: (1) the necessity that is acknowledged to exist in the United States for training boy to become skilled workmen; (2) the selfish and stubborn disposition among the leaders of the different trade-unions to allow but a comparative few boys the privilege of apprenticing themselves to learn a trade, and (3) the
influx of the immense number of foreign influx of the immense number of foreign
immigrants now flocking to our shore from the Old World, many of whom are skillful and experienced artisans and perfect masters
of their pursuits, who are crowding the new of their pursuits, who are
beginners out of position.
These are the three branches of the question. The resident portion of our popu-
lation who would like to see their children engaged in agricultural pursuits, begin to entertain well-grounded fears, if this large and ever-increasing volume of immigration
continues, that there will soon be no good land to be obtained at a cheap rate, and certainly none in a few years to be had at Government
price. So they are obliged to look about for price. So they are obliged to look about for
other occupation for their boys beside the honorable, healthful and honest one of
farming. They find all the so-called learned professions already full and rumning over, the supply far exceeding the demand, and
yet all the colleges and universities contain thousands of others who are preparing to beman would like to have his boys learn trades, he is confronted with opposition at the start.
not from the proprietors of the manufacturing establishments, but from their workmen, whose societies limit the number
apprentices, and from their arbitrary cision there is no appeal. Hence it is that in sheer despair the American parent turns the public schools for relief, and asks if that
beneficient institution, which has done so much for his children already, camnot be made to help him in this emergency also,
and establish a department for the techucal and establish a department for the techmical
education of his boys and girls at the taxpayers' expense.
The original intention of the common the State, free of cost, with the opportunity of obtaining the rudiments of a good English education, and nothing beyond that. The old
"saw" expressed the idea exactly, with the three R's-"Reading', 'Ritin' and 'Rithmetic." After a little there was an innovation, and
the higher branches began to be taught in the common school. Still later, the High School system grafted upon the parent stalk, with its
normal departments for training teachers, and its classical courses men to enter college. All this advancement has been strenuously resisted by some taxthat it is done in violation of the fundamental principles upon which ce common school
system of this country rests. The most of the money that is raised for the support of the public schools comes from the pockets
of the wealthy classes of the community, who do not send their own children to the where on schools, but educate them elsethe fund that defrays the expense of educat ing their neighbor's children. But these men should see the duty and propriety of helping afford to contribute of their wealth for the amelioration and elevation of the condition of the masses, for the general good and with a view to ultimate public economy.
Resistance to the proposed establishment will be mical departments in the public schools who oppose the High School and the teaching of the higher branches in the district schools. But technical education and the proper training of the young of both sexes,
are undoubtedly among the most important and really necessary undertakings that now confront the present generation. Knowledge is power, and morality and intelligence go
hand in hand. It would be a great thing if hand in hand. It would be a great thing if
all our boys could be taught the use of tools and the arts of mechanism, as well as literature and science; and the claim of the girls, to be taught something relating to cooking and housekeeping, or to be trained in a way that will aid them in obtaining an honest and
independent living, is as imperative and
ought to be heeded with as much respect as one of the boys in a sympathetic voice.
is paid to the demand of their brothers. The opponents of the education of our girls and boys in the practical arts and mechanical rades at public expense reason from a superficial standpoint and from a mistaken notion cconomy. The best economy, as far a hat which educates the masses in knowledge and trains them to self-supporting industry No proposition in social or political economy is more
Journal.

## The Food Speculation.

While hundreds of thousands of working nen throughout this country are on "strike" because their wages, though nominally large than those of corresponding laborers in othe countries, yet are practically smaller, because their purchasing power is less in relation to ocial needs, the Chicago market reports re and provisions" yesterday-"the more remarkable in view of the existing high
prices." For the details we refer readers to our market columns. "Corn," they say, "struck the highest price for years," and exraordinary speculative
When Wall street stock speculators win of lose we have no words either of congratula-
tion for winners or pity for losers. That is n acknowledged gambling forum. But when indred methods of speculation are applied o the necessaries of human life the effect of rise imperils the home comfort of millions innocent families and endangers the pubtuffs are adding what it is by no means impossible may be the last element needful to consolidate the discontent of workingmen
into a political demonstration capable of con fusing all the calculations of these party or the coming political campare preparing fashioned humdrum way.-New York Herald, July 8,_1882.

## An Old Man's Fancies.

It is remarkable how the habits of life cling to a person, even during his last mom-
ents. The boys in the Inter-Ocean office hardly expected to find the old man at his case when they came to work in the morn-
ing, for when he had gone home the night be tore they had noticed his steps were very fee irst For over forty years he has held a case, weekly, and then on a religious monthly. His hand was steady yet, despite his sixty odd years, and very few of his " $\mathrm{a}^{\prime}$ ' $"$ got into
his " r " box. This bright sunshiny morning he came in and greeted his fellow-ty pos with a pleasant "good morning." The boys no-
ticed his hand trembled somewhat, and that his vo:ce was husky and uncertain, but they paid no particular attention to these things; for the man had been acting rather strangely these failings to a gradually weakening constitution. He stood at his case for almost an hall his matter, when of a sudden and without
and any previous warning, his composing stick fell from his hand to the floor, and he himself tottered and would have fallen had not the boys sprung to his side and supported dropped forward on his breast, and his breathing became more and more rapid. The pressman ran for a glass of water, and touched his parched tongue a spasm of pain shot across his face, and his frame was con-
vulsed with agony. With an effort which seemed almost superhuman, he dashed the glass upon the floor, and it was splintered in-
to a thousand pieces. This eflort seemed to arouse him somewhat, and he gazed about him with a bewildering stare.
"Boys," he said, "boys, are the cases all foreman, in mind wanders," whispered the forenan, in a roice, and then said aloud fellow, everything is thrown in."
"That's it, that's it," exclaimed the feeble old man, "there is nothing like having the galleys and stones all cleaned off," and he seemed to brighten up considerably, and side-stick, which the boys used as a poker. "I've run short on em quads boys, and haven't enough to space out this poetry," he said, and his faltering fingers went through the motion of travelling over the case in search of the requisite metal.
"That's all right, Diek, we'll throw in som
"Ah, Charley," said the old man, "that reminds me of the old Caseyville Herald days, when we used to drop out a dead "ad," and with up the planer in the forms to fimes our with. Fat times those," he continued;"they
will never come back to the old man," and he leaned his head on both hands and swayed to and fro. The boys gathered around him more closely to prevent his falling.
One of the boys, in coming to the old man's side, stumbled over a chase which was leaning against a composing stand, and it fell o the floor with a loud crash. The old man sprang to his feet, and it was all the boys could do to restrain him. "You've pied the form," he shouted, "and it is time to go to
press. What shall we do, what shall we do?" "Sit down, Dick, old fellow; it's nothing but an empty chase," and he gently placed the old man in the chair.
You can't deceive me, Mac," and the tear: pied and we veteran's eyes. The form hour ago. The folios are all wrong, Mac See, here is page 102, backing up page 27, and the old man snatched a proof from the revise hook, and began folding to in a helpate," he gasped. "The press waits." Here his head sunk again upon his breast, and his
breathing was thick and fast. "Yes, boys, ock up the forms and look out-look out for

The boys stood silently around the old mpositor, and the scene was an impressive ne in the extreme.
"The pages are all proved up, everthing all "Now," he murmured in broken accents. Now, then, careful boys, lift off the form you start up the press-let us-jeff for the rinks
He fell with a heavy thud to the floor, and he foreman, with the aid of the pressman, lifted him up and laid him tenderly on a pile of mail bags, under the cutter, and one by
one the boys returned to their cases and left him to-sober up.-Denver Inter-Ocean.

## Capacity of Dry Grain for Moisture.

The claim that grain absorbs moisture nough or a sea voyage to pay the freight charges has been verified by some test ex-
periments made at the California Agricult ural College, Various kinds of grain were placed in a moist atmosphere and the increase in weight was noted.
The greatest increase was during the first wenty-four hours, absorption being nearly 33 per cent. of the total absorbed during the fifteen days' exposure. The following table shows the figures.

## 

From the results obtained it was computed that perfectly dry grain at 64 degrees Fah. would absorb as follows: Oats, 29.08 per cent. barley, 28.17 per cent.; wheat, 25.02 per
cent. Under ordinary conditions the percentage is perhaps not so high, 15 to 16 per cent. probably being the average.

## Utilizing Wave Power

La Nature describes an apparatus to utilize the force of waves. It is an invention of M. Gauchez. It has a float weighing from thirty-five to ninety-five tons, as, may be required, connected with a bell-shaped compressor by means of ropes or chains which pass over suitably arranged pulleys. The of the waves. When the float falls it raises the bell, which had been previously below the surface of the water, and as it empties itself of water the air rushes into it through
openings in the top. As the float rises again the bell sinks, the water rises in it and, compressing the air, drives it out into pipes which conduct it to reservoirs on shore, where it can be distributed as required. There seems to be a very general effort at the present time to utilize all sources of mechanical power. The discovery of the Faure accumulator has done much to stimulate this. There is no doubt that soon there will be many better at tempts than this of Gauchez's to capture

Spreading of rails under high temperature is a source of danger of the magnitude of which travellers know little. When the ends of the rails are too close, as they are very thumb way in cold weather, they are rule of to press against each other and bulge out the
mer. Spikes will not cure the difficulty. deed, the less strain placed upon spikes the for sprea everybody. Here is the remedy was about to put into practical shape and patent, but which may be here given free: No track for a railroad boure given free No track for a railroad should be laid with eter and the application of gauges properly regulated for temperature. That is the general idea, the force of which will at once be seen by every railroad engineer. Inventors may tind in this hint something valuable. reliance on spikes against spreading might had rew to be nonsense by a little boy who of bodies. The inst lesson in expansio may show that the rails had spread and that the inspection was negligent.-New York Times.
Few of the young mechanics of the present time appreciate the many advantages by which they are surrounded, making comparison with the situation as it was a generation ago. The young mechanic, who thinks it is harder to take the front rank at the present time than it was for his father to achieve excellence in the same pursuit in his time, should be reminded of the many advantages he enjoys that his father knew nothing about. In his fathers time there were no technical schools. Text books on mechanical subjects pers almost unknown. No mechanical papers were published. Mechanical diction-
aries were unheard-of things; large factories never dreamed of maintaining circulating libraries for the benefit of the mechanics em-
ployed. Popular lectures on mechanical ployed. Popular lectures on mechanical
topics were not thought of. Free night schoorls for instruction in drawing had never been attempted. And these are only a few of the many advantages that surround the young mechanic of the present time, the intelligent success. It is with him, however, as with children who have too many toys; they soon learn to think so little of them as to fail to appreciate their actual value. So many advantages are crowded upon the young man
of the present day as to leave him little opportunity of considering their value, or of learning to appreciate their worth. It is for mechanics who are surrounded with of the tional advantages reach eminence in their des. A qualification that the mechanics of 40 or 50 yons and which is sadly lacking in the youth of the present day is self-reliance and enterprise. Our boys have prepared for them, both in the public schools and in other departments of our educational system, that they acquire the habit of abject dependence. They fail to acquire the habit of asserting themselves and investigating uron heir own account. To this difference is
to be ascribed, in many cases, the failure of the mechanics of the present day to profit by the unusual opportunities by which they are surrounded.-The Artisan.

## Southern Waterpower

The Santee river is the largest and most important of the southern streams, and its tributaries offer an enormous amount of excellent available power. On the Wateree horse power available. The Catawba river has the most remarkable power in the south, and at its great falls there is not less than 24, 000 horse power, mostly available. The total power of the four falls of the Catawba river amount to 40,000 horse. At Columbia, S. C.
the Congaree river has between 6,000 and 7,000 horse power available. The estimates of the power given refer only to the gross power available continuously, day and night, and in the driest seasons. For comparison, it may be added that the power at Lowell, Lawrence and Holyoke, Mass., is 10,000 horse at each place; at Manchester, N. H., it is also 10,000 ; at Paterson, N. J., it is only 1,100 ; and at Cohoes, N. Y., 14,000 horse power. The time cannot be very distant when many of these great natural forces of the south will be turning the busy wheels which will develop ficently endowed by nature.

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## Electric Lighting in Mills.

by a. hempel, manager of haczeur's flotr

## [Translated from the "Ungarischen Muhle

Every miller will acknowledge that fires in mills are extraordinarily frequent. The high premiums asked by good insurance companies proves this, besides which it is often difficult to save anything, the mill being full
of easily inflammable material. There are of easily inflammable material. There are
two causes from which fires often spring first, the empty running of the stones and the ignition of the flour dust; secondly, in the means by which a mill is lighted, such as flame comes in contact with an inflammable body there is always danger, which can be reduced by precaution or limitation of the flames, but never quite prevented. The mill managed by me used to be a "stone" mill. pecially as after $6 \mathrm{p} . \mathrm{m}$. neither ston?men mill; but few oil lamps were therefore in the cient.
The introduction of rollers, and with them the increase of machinery for cleaning, sifting and purifying, made a more extended
lighting of the mill necessary. Oil and ga ing far outside the town, besides being, like cheap petroleum, dangerous. Many recent Itherefore adopted the electric "glow" light. lamps mostly give the violet-white light, dazzles the eye and throws deep shadows, and therefore cannot be used in a mill. where it
is necessary to light up all machinery and is not stronger than that of a large petroleum burner, and has just the color and steadiness of petroleum or gas. The lighting substance $1 \mathrm{~m} . \mathrm{m}$. broad, in the form of a horseshoe or It is enclosed
tight glass ball of 50 to $60 \mathrm{~m} . \mathrm{m}$. diameter. It can be put on any stand at the wall of the electric current. The following is the plan pursued in our mill. The electric current is produced by a dynamo-electric machine, 1,200 revolutions and 4 h . p. The lamps are must be as equal as possible; lamps of 55 to must be as equal as possible; lamps of 55 to
60 or 70 ohm must not be used, otherwise hey will "red," because the quickness of the with unequal lamps, would be just as irreguar and inefficacious as a stream of water running through continually widening and narpal current, which is branched off through medium wires, and then is led to the lamps through still thinner wires. The cursent trength. Wherever the workmen have to have a limited duration, I fix to each a current interruptor, in order to burn it as long
only as necessary. When well applied, a Gramme machine is sufficient for 30 Maxim amps of 70 ohm resistance. I now put half of the lamps, that is those which burn uninter-
rupted, from the night till the morning, upon ne sery, the latter are included the grain stores, the offices, and my dwelling rooms. The lamps burn about 1,000 hours, cost 10 fr . each, and cannot be repaired. Therefore they should hem has gone down, which will probably be the case shortly. With a more general in-
troduction of this system of lighting these amps could very well be supplied for 2 marks. Even now the electric light does not cost much more than petroleum. The establishing of this light, including 50 lamps with the ( $£ 125)$; 25 lamps, which would burn on an
average 12 hours daily, would cost about 800 marks ( $£ 40$ ) per year. The other charges may be calculated by the above items, not ing its own interest into consideration will al low. The security against fire is absolute;
the lamps are air-tight, therefore hermetically closed, and can be used in the most dangerous parts of the mill-that is, in the mixing and stive rooms. They do not get very hot, and if by accident the glass should
be broken, the oxygen will consume at once the thin piece of carbon and the light goes out. mill lightiug, and think that shortly they will be generally introduced. As soon as they can be produced cheaper, which the larger consumption must soon bring about, this
manner of lighting will vanquish all other methods. There remains only to remark that another great advantage of these lamps is ting in order. The belt of the dynamo-elecric machine is simply put on, and the whole entirely done away with. New lamps can be put on with the same ease as a simple those of Siemen's Halske, Berlin, are buil in different sizes, therefore with a larger ma
chine than the above named a larger numchine than the above named
ber of lamps could be used.

## Creased Rolls.

Messrs. R. G. Shuler \& Co., of Minneap"Wis, in a recent communication say
"We are using all creased rolls. This w find gives the best results in all cases. The possibility of the extraction of the germ familiar with the process, but corrugated rolls will extract the germ equally as well as smooth, and leave the flour in a better granufinal result. The sizing of the middlings is as important in its place as any other step.
This the creased rolls perform with better results than the smooth. Now while we are advocating the creased roll it must be well ained without good results can not be ob adjustments. On corrugations depend sevral points that are important. In reducing middlings to flour it is quite essential that the rolls should be held with absolute accur-
acy and solidity, as no oscillating movement can granulate evenly. This point is largely embodied in the adjusting arrangement that when the material is shut off the such will not run together while in motion. This proves the condition of the rolls while oper-
ating on the middlings, showing that their revolutions are accurate and without an oscillatory movement. Impurities contained in middlings going to the rolls to reduce to
flour can be separated from the flour better han middlings in the same condition reduce with rolls should be different from that used with stones. Mills of a capacity of one hun-
dred barrels per day can be built with a sum that will warrant the expense. Light pow-
ers that have been valueless with stones can be made profitable with rolls, as they take
much less power. The durability of these much less power.
rolls will not stand The durability of thes

## NEWS

Jones \& Son, Alton, Mich., have sold out,

## W. Perciv

Wм. Jounso
Penn., is dead
Peter Mann,
o J. M. Haines.
J. M. Haines.
Renner \& Reed, Altamont, Kansas dissolved

Rogers \& Bicknell, Colusa Cal., has dis
Corl \& RANk, Canton, Ohio, burnt out. Loss
$\$ 15000$; insurance, $\$ 3,000$.
Vogel \& Son, Toledo, Ohio, burnt out. Loss,
$* 37,500$; insurance, $\$ 22,600$.
Geo. T. Chester \& Co., Lockport, N. Y.; firm
McApes \& McConneil, Canton, Ga., burnt
out. Loss, $\$ 7,000$. No insurance.
Moopy \& Bro., San Jose, Cal., have dissolved
D. B. Moody continues.
W. Moody continues
out to Thompson \& Barnhart. Oregon, has sold
E. Brigis \& Co., Ruodhouse,
solved. Ellis Briggs continues.

McFarland \& Erickson, Genesee, Id
have dissolved. W. A. McFarland retires.
Palmer, House \& Co., Lockland. O., have
dissolved. G. G. Palmer and J. W. Dunn rem
dissolved
tire.
pairs of
Frames.
Paducah, Ky., has put in six
in Gray's Noiseless Belt Roller L. Sc
L. Scramling, of Victor, N. Y., has ordere
of E. P. Allis \& Co., one of theirgradual reduc
tion machines with sharp Jones, Ballard \& Ballard, Louisville, have put in two pairs of 9x24 smooth rolls in
Gray's Patent Noiseless Roller Frane
 dered 4 pairs of porcelain rolls in Giray's Patent dered 4 pairs of porcelaing
Noiseless Roller Frame.
Messrs. E. P. Allis \& Co.. have recently mill at Stockton, Cal.
J. L. Allard, Paducah, Ky., has put in three
pairs of Wegmann rolls from the works of E. Allis \& Co., Milwaukee, Wis
Johnson \& Jarreetr, Des Moines, Iowa, have
rdered from E. P. Allis \& Co., 8 pairs of rolls ordered from E. P. Allis \& Co., 8
in Gray's Patent Noiseless Frame.
Messrs. Harris Bros., Mt. Pleasant, Mich.,
have put in a double set of Allis Rolls in Gray's Noiseless Frame.
R. Stelling, Port Washington, Wis., has o dered from E. P. Allis \& Co., eight pairs of
rolls in Gray's Patent Noiseless Roller Frames. Messrs. Edw. P. Allis \& Co., are having a in Gray's Patent Noiseless Frames.
Smiri \& Giddings, Danville, Ill., are putting
a line of smooth and porcelain rolls in Gray's Noiseless Belt Roller Frames
At Dallas City, Ill, F. J. Mauck is putting in
ix pairs of Allis Rolls in Gray's Patent Noise six pairs of
less Frames.
The Topeka Mill Co., Topeka, Kan., are putting in twenty-six pairs of rolls from Edw. P
Allis \& Co., fitted in Gray's Noiseless Belt Rolle

## Frames.

F. J. Mauck, Dallas City, Ill., has put in a full
line of Allis Rolls, including two pairs of porcelain rolls in Gray's Patent Noiseless Roller Chisholm Bros. \& Gunn, have recently placed
orders with Messrs. E. P. Allis \& Co for rolls orders with Messrs. E. P. Alls \& Go.,
aggregating thirty pairs to run in Gray's Noise-
less Roller Frames.
Messns. EnW. P. AlLIs \& Co., Milwaukee,
Wis., have just received an order for a 125
horse-power Reyyolds-Corliss Engine for the
new mill of T, J.Cox, Bloomington, Ill.

Robert S. Williams, late head miller of the
Empire Mills, Milwaukee, has gone to Michigan to start ap a ne
A. Roberts, Fargo, D. T., has recently or
d from E. P. Allis \& Co., 12 pairs of rolls in Messps F P. Aess \& Coller Frames. Messrs. E. P. Allis \& Co., have shipped E. Midleton \& Son, Greenville, Mich. have ordered from E. P. Allis \& Co, a pair of Weg
mann porcelain rolls in Gray's Patent Noise mann porc
less frame.
Messrs. Iglehart Bros., and the Melrose
Milling Co., both of Evansville Ind dered Allis Rolls in Gray's Patent Noiseless
Messrs. E. P. Allis \& Co, Milwaukee, Wis. gon, with a full line of porcelain roll Patent Frame.
The new mill of the Goodlander Mill and Elevator Co, at Fort scott, Kan., will have a
full line of the Allis Porcelain Rolls in Gray's
Noiseless Roller Frames. M
Messrs. Keynes \& Willman, Logan, O., have
put in a full line of Allis Rolls in Gray's Patent

## L. M

L. M. Kellogg, of Missouri Valley, Iowa,
has recently ordered from Messrs E. P. Allis \& Co., two of their gradual reduction machi
each making two breaks and separations.
The Camp Spring Mill Co., St. Louis, have
added to their equipment 12 pairs of rolls in
Gray's Noiseless Belt Roller Frames from Edw. Gray's Noiseless Belt
P. Allis \& Co's works.
Messss. J. C Hofrmayer \& Co., Council
Bluffs, Iowa, have given Messrs. Edw. P. Allis
Gray, their order for fourteen pairs of rolls in
During the first half Belt Roller Frames.
D882, track was During the first half of 1882, track was laid
in this country on nearly 4,500 miles of new
$\underset{\text { Mixty }}{\text { Mess. Enw. P. Allis \& Co., have shipped }}$ sixty pairs of rolls in Gray's Patent Noiseless
Roller Frames for Sperry \& Co's mill at Stock-
ton, Cal.
 Grays Noiseless Frames, thus making
mill a full gradual reduction roller mill.
Johnson \& Co., Franklin, Penn.. have ordered
from Edw. P. Allis \& Co., three of their gradual reduction machines, each making two breaks
and separations, and six pairs of porcelain rolls Messks. Ordway \& Son, of Beaver Dam, Wis.
have just ordered of E, P. Allis \& Co, pairs of rolls for the inill at Columbus, Wis.,
and eight pairs for the mill at Mayville, Wis., Messes. D. L. Wing \& Co., of St. Louis, Mo.,
have recently put in 12 pairs of Allis Rolls in
Gray's Noiseless Belt Roller Frame furnished Gray's Noiseless Belt Roller Frame furnished
by Edw. P. Allis \& Co., Reliance Works. Mil-
waukee, Wis.
 Reliance Work
Milwaukee, W
The Great Western Manufacturing Co.,
Leavenworth, Kan., have recently Leavenworth, Kan., have recently
from E. P. Allis \& Co., Milwaukee, pairs of smooth rollers in Gray's Patent Noise-
less Roller Mill Frames. less Roller Mill Frames.
 Allis \& Co., Reliance Works, Milwaukee, W will contain 36 pairs of Allis Rolls in Gray's
Patent Noiseless Roller. Messes. E. P. Allis \& Co., have the contract
for remodeling the mill at Independence, Iowa,
owned by the Independence Nill Co completed, the mill will have a full outfit of sharp corrugated, smooth and porcelain rolls,
running in Gray's Patent Noiseless Belt Roller Frames.
Messis
Messss E. P. Allis \& Co., are overhauling the
mill at Canton, O., owned by Corl \& Rank; the work is in charge of M. Shook, and is being
pushed with his accustomed energy. The mill
will contain 11 pairs of Allis rolls in Gray's will contain 11 pa
Noiseless Frame.
Messrs. Edw. P. Allis \& Co., of Milwaukee,
have recently sold Andrew Bowling, of Staun have Va.ent 10 pairs of rolls in Gray's Patent
ton, Va.s.
Noiseless Belt Roller Frames and also two of Noiseless Belt Roller Frames and also two of
Gray's Gradual Reduction Machines, each makMessbs. Herzog \& Roberts, of Racine, Wis. Whose some time since, have contracted with
fire,
Messrs. Edw. P. Allis \& Co., Reliance Works, Messrs. Edw. F . Ats. to build them a 150 barrel
Milwaukee, Wis.,
roller mill. Twenty pairs of rolls in Gray's roller mill. Twenty pairs
Noiseless Belts will be used.
Messrs. E. P. Allis \& Co., Reliance Works
Milwaukee. Wis., have just taken the contret to change the mill owned by the Centennial Mill Co., Avoca, Iowa, to the roller system
When finsshed, the mill will be of 150 barrels daily capacity and will contain 12 pairs of rolls, corrugated, sinooth and
Patent Noiseless Frame.
The change in opinion among millers is becelain rolls for use where smooth and scrateh
oolls have been employed. Messrs. Edw. P rolls have been employed. Messrs. Edw. P
Allis \& Co., who are the sole manufacturers o
porcelain rolls in this country under the We porcelain rolls in this country under the Weg-
mann patents, have so far this year sold a large
number of their rolls in Gray's Frames and the orders are coming in faster al

The new Pheenix mill at Davenport, started up for the first time a couple of weeks ago, to
give the machinery a trial. A few necessary inanges have yet to be made, before everything is in smooth running order. The new mill is a
beauty, and it is fully worth anybody's time to
look through it. None of Davenport's busines prietors of the Phenix, and we sincerely hope hey have met ard conquered their last misfor
C. R. Knickerbocker, Esq., President of the
Geo. T. Smith Middlings Purifier Co of Geo. T. Smith Middlings Purifier Co., of
Jackson, Mich., has purchased the fine mill Jackson, Mich., has purchased the fine mill
property at Albion, Mich. His son Wm. B. Postmaster McKay, of Cedar Bluffs, Kan.,
lesiring to build up his town, has together with desiring to build up his town, has, together with
Mr. Jenkins, commenced the erection of a Mr.
three-run flouring mill, the machinery for same
being furnished by Nordyke \& Marmon Co., of
Idianapolis, Ind. ndianapolis, Ind
There is a project on foot to build a $\$ 50,000$
louring mill in Abilene. It is expected to be flouring mill in Abilene. It is expected to be
run by water, and for that purpose the feasability of putting in a dam at Sand Springs and
running 2 waterway or ditch down to the city is being considered.
Bacon \& Einsel, of Tiffin, O., have just started Bacon \& Einsel, of Thffin, O., have just started
up their new mill on the Case Gradual Reduc-
tion System. Their mill is full of machinery tion System. Their mill is full of machinery
made by the Case Co. E. Corbett, head mill-
wright of the Case Mg Co., planned the job. Mr. Knickerbocker does not by any means
withdraw from active servica with the Puriwithdraw from active servica with the Puri-
fier Company, but will endeavor, if possible,
to oltain a little more rest and relaxation to obtain a little more rest and relaxation
than he has been able to enjoy in past years. Messes. Eidw. P. Allis \& Co., Reliance Works,
Milwaukee, Wis., have the order for one hun-
 aime


 \&wawizw wix spring wheat may in part account for the de-
creased acreage from year to year. which is less
this season than for some years past.
 -awaw waw

 known Cone Shape Becker Wheat Brush in the
past few days, made by the Eureka Manufac-
turing Co. of Rock
 aizin wix

 their-mill at that place, making it into a com-
plete roller mill of from 250 to 275 barrels capacity. Messrs. Edw. P. Allis \& Co., Reliance
Works, Milwaukee, Wis., have the contract and will fit the mill with a complete line of their Gray s Patent Noiseless Belt Roller Frames.
The mill will hie ready to start in about sixty
days. The mill will be driven by an 18x24
Reynolds-Corliss Engine manufactured by
Great excitement was produced in St. Louis recently by the announcement that the board
of trade of East St. Louis had appointed a grain of trade of East St. Louis had appointed a grain
inspector with the instructions to inspect all
grain that arrives by railroad in East St. Louis, III., and all that goes out by barges from eleva-
tors. Heretofore, all grain that has arrived on
either side of the Mississippi river has been eitspected, by inspectors appointed has been mer-
chants on 'Change in this city, chants on Change in this city, and the inspec-
tors have been uniform and according to St.
Louis standards; but should the new order of thiugs prevail, grain arrivalsat St. Louis will be inspected ly Chicago standards. En dless con-
fusion will ensue, and great damage be done to
the grain trade of St. Louis. In the suit recently derided between Ganz \& Co., of Buda Pest and the firm of L. Nemelka,
of Vienna, original manufacturer of the round
corrugated roll. (in use since 1871), and who corrugated roll (in use since 1871), and who has
been of late infringing upon th. Ganz patents
for a sharp cuttlng roll, an injunction was for a sharp cuttlng roll, an injunction was
granted against Nemelka who will return to
the manufacture of the non-cutting rell patent of Ganz \& Co., issued in 1875 is a a verv
broad one, claiming the use of chilled cast
iron iron as a material for the con truction of rolls,
the spiral grooving of the same, and the differ-
ential motion. R. H. Knox, an old Minnesota miller, died re cently of consumption, aged 71 . He went to
Minn 2 sota in 185 , and built a flouring mill for
James M. Winslow, on Trout Brook, near St.
Paul. In 1856 he buil. the Oronoco Mill in Knstead County; in 1857 he built for $R$. C.
Knox the first flouring mill built in Cannon
Falls ; and in 1858 he was elected a member of the Second Minnesota Legislature. He had
charge of the Spring Creek Mills for a number
of years, while uwned by W. W. Phelps, after of years, while owned by W. W. Phelps, after
which he returned to Cannon Fals where he
had resided for six years past. He was highly Ar the breaking out of the war there were no
flouring mills in Nashville, Tenn; now there flouring mills in Nashville, Tenn; now there
are eight. Noel'. Mill and Elevator Company
have two large mills, at which 75,000 barrels of
flour 500,000 bushels of corn. 200,000 bushels of flour 500,000 bushels of corn 200,000 bushels of
oats, 200,000 bushels of wheat, 1,000 tons of hay
are handled annually besides all the wheat used at the Jackson Mills amounting to 375,000
bushels. The Riverside tlouring mill a large
brick structure, with a capacity of 130 barrels of flour per day, or 30, 00 per year, employs twelve operation. The New Era Mill Company do a
business estimated at $\$ 400,000$ and employ thirty-five men. They have connected with
their mill a large warehouse. Lanier's Mill,
with a capacity of 400 barrels of flour per day capacity of $1 \% 00,000$. The City Mills have a
fifteen hands, and carry a stock valued at at $\$ 1$ iy, 000 . The Shamrock Mills have a capacity of

Crop Report for July, 1882.

 cens. or fully 2,500, ,u00 acres. In Ohio, Indiana
and Illinois there has been a loss of acreage,
and but in all other states of any prominence in
conr-growing theree is some incrense. In the
Gulf States the advance has been heavy, in
obedince to the instinct of self-preservation. Obed useal result of high price of a crop, an ini-
The usiate extension of its breadth of cultivation,
median was prevented in the Ohio Valley only by ex-
cessive rains and $a$ tem perature that made early planting impossible.
The tates and Territories reporting a de-
creased area are; Maine, 1 per cent.; Ohio,Cal1creased area are: Maine, 1 per cent.; Ohio, Call-
fornia, Utah, $2 ;$ Nevada,
$2 ;$ Indiana, 3 , Illinoios,
2, Whington, 9 . New York, Rlode Island and Wregon report the same area as lasty yar.
New Hamphire, 'Pennsylvania and Delawe
make 1 per cent. increase; Vermont, New Jer-

 Texas, 17 ; Minnesota, 26 ; Dakota, 46 Though
the percentage of Minesota seems large, the
corn area of that state has until recently been corn area of that state has until recently been
less than that of two counties of Ilinios.
The condition of corn is marked low rom late planting, cold and wet weather, and re-
planting after floods, but has beeni inproving
juring June, ind is generally in tair vigor and
active growth, promising far better condition in active growth, promising far better condtion
August, hhould the season continue as tavorable
as at this date. The geneal average is 8 合,
against 90 in July last year, betore the disasagainst 1 in ins set in. It is above lin in all the
trous drought
sea-coast states from South Carolina to Texas, in Tennessee, Kansas and Kentucky; Oregon
and Nevada stand at 1100; Arkansas, ${ }^{\text {anc }}$, New
Hampshire, Connecticut, New Mexico, 96 Hampshire, Connecticut, New Mexico, 96;
North Carolina, California, Utah, $95 ;$ Maryland,
Virginia, Colorado, 94 ; Massachusetts, Missouri, Jersey, Delaware, Nebraska, Washington, ${ }^{9}$ ';
Maine, New York, Michigan, 86; Ohio, 84; Min--
nesota, 83 ; Pennsylania, 82; Rhode Island, Wisnesota, 83 ; Pennsylania, $82 ;$ Rhode Island,
consin, 80 ; Indiana, $79 ;$ Iowa, $72 ; 1$ Ilinois, 68 .
The State of largest acreage stands lowest of ali Wheat.-The condition of winter wheat
Werages 104, which is a higher figure than at averages 104, which is a higher figure than at
any previous July since 1874 . In that year
spring wheat averaged 96 in July, but before
harvest condition was much reduced by drought, harvest condition was much reduced by drought,
grasshoppers and chinches, so that the average was little above the average. or 12.3 bushels
per acre. In 1877 and 1878 the winter wheat average was 103 , and the yield, with a better
season prior to harvesting and a better condi-
tion of spring wheat, was 13.9 bushels in 1877 breadth at 100 , with a favorable season until
harvest, the yield ought to average 13 bushels,
probably, 13.5 at least, whi h would give a crop growth of straw be deceptive, and pected at the
in thrashing be less than is expere
time of harvesting, there might be some falling off from such an aggregate; and should the con-
dition of spring wheat be reduced before the contingencies should occur together, the yield
would not probably be reduced below 12 bush-
els, which is about the usual average els, which is about the usual average for any
consecutive series of years, and this would give
a crop of about $450,000,000$ bushels, or nearly as much as in the census year, the year of the
largest aggregate production, with one except
In July, 1881, the average for winter wheat
was 80, and of winter wheat 89, and the result as estimated was $11-1$ bushels per acre, the low
est yield ever reported by the department. The
next lowest was 10.4 bushels in 1876 , when the July condition of winter wheat was 94 and of
spring only 81 , a worse failure of this variety
than in 1881 on account of grasshoppers and injured by unfavorable weather and insect rav-
ages in July. No other season of the years has prodnced less than 111 bushest th pe
acre. The following is a statement of the crop
of the last of July condition and ultimate yield, modified
only by the various character of July and o
August upon spring wheat:

For the condition of winter and spring wheat
tathe present time reference is
tade to to

 The spring wheat Statee's averages are: Wis-

 the latitude of
completed
The local changes in condatition were generally favoratede during the month of June In New



|  |
| :--- | :--- |

## ATTENTION MILLERS:

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Gentlemen :-The United States Miller is now in its seventpenth year and is recognized by the trade everywhere as a valuable authority on mill ing subjects. Some of the ablest writers on milling and mechanical sub jects in general, residing in Europe as well as America, contribute to its columns. Yon will find it of value to you to take the paper regularly and o read it carefully. We want yon to subscribe now, and we hereby make to accept by return mail. For One Dollar we will send you the UNITED STATES MILLER for one year and

## Ten Valuable Books.

The books have just been printed in Pamphlet Shape, from clear type and on good paper. The following is a list of the ten books:

The Lady of the Lake, a romance in verse, by Sir Walter Scott; Grimm's Fairy Tales for the Young the best collection of fairy stories ever published;

David Hunt, a novel, by Mrs. Ann S. Stephens;
Reaping the Wirlwind, a novel, by Mary Cecil Hay
Dudley Carteon, a novel, by Miss M. E. Braddon;
Essica, or ehe Mystery of the Headlands, a novel, by Etta W. Pierce; A Golden Dawn, a novel, by the author of "Dora Thorne;
Valerie's Fate, a novel, by Mrs. Alexander;
9. Sister Rose. a novel, by Wilkie Collins;

Anne, a novel, bo Mrs. Henry Wood.
Remember, we will send all the above books by mail, post paid, and the UNITED STATES MILLER, regularly for one year, upou receipt of character to your trade, and eutertaining and instructive miscellaneous reading ficr yourself and family for a whole year

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"SITUATIONS WANTED" advertisements fifty cents each insertion; cush with order.
bam
gini
Car
sip ginia, 109; Delaware and Maryland, 110 ; South
 enemy of wheat in the South, put in an appear-
ance. In Montgomery, Virginia, it "blasted the best prospect in twenty years, and and its presence
is mentioned in North Carolina is mentioned in North Carolina, Tennessee,
West Virginia, Kentucky, Indiana, Hlininois and Nebraska, but almost invariably with
cation of serious damage to the grain.
The grain aphis is numerous. in some
of the Middle and Southern States. Insect in juries cannot be considered very serious in any
portion of the wheat breadth,
Rye.-

## Rye.-The condition of rye is very similar to that of wheat. Nearly all the States are rep- resented by an average not less than 100 . Only


zona Territory fall slightly below that figure.
The other States range trom 100 upwards.
OATs.-This crop is in high condition, repr

ceeded, her figures being 11,9 ; Iowa and Penn-
sylvania, 99 ; Minnesota, 94 ; Ohio, 76 . In the latter State the army-worm destroyed one-third cutting of thousands of acres in Warren and Montgomery. In Racine and Walworth coun
ties Wisconsin, it never looked better. From California, San Luis Obispo and Placer counties report an average crop. In Amador and Fresno,
cold and dry winds have done serious injury. rapidly improving condit
Madison county, New York.

## Additional Items.

Srough Bros. \& Mikisell, of Ponca, Neb.
are putting in a full line of the Stevens rolls. Frederick Stark \& Son, of Delevan, Ill., B. P. Barnes, of Middleport, N. Y., is put
ting in a full line of the Stevens roller mills. Day Bros. \& Co's mill, at Wampum, Pa.
burned July 14. Loss, $\$ 18,000$; insurance, $\$ 5,000$ Ironmonaer \& Tibbetz, of Mason City, Ill.,
have recently ordered a full line of the Stevens roller mills of the Noye Mfg. C
Messrs. S. H. Seamans \& Son, of Milwaukee,
are putting in two pairs of porcelain rolls are putting in two pairs of
nished by E. P. Allis \& Co
F. W. Srock, Hillsdale Mich., has ordered two pairs of Allis rolls,
Gray's Noiseless Frame.
John Hopfer, of Harrisburg, Pa., one o
Pennsylvania's most experienced millers, i putting in several Stevens rolls to gifind mid
Messrs. Dow, Grllman \& Hancook, Daven-
port, Iowa, will use Allis rolls exclusively in
their new mill, this will include eight pairs of porcelain rolls.
Mrssss. E. P. Aulis \& Co., of Milwaukee,
have now facilities for the manufacture of over 7,000 pairs of rolls per year and are workin
night and day to keep up with their orders.
The new 93-horse power Harris Corliss e gine at
Holyoke, Mass., has been successfully
and is likely to give good satisfaction
Geo. E. Harmon, of Menford, N. Y., has de through Mr. Joseph Cowles has placed an o der with the Noye Mg. Co. Ior a full line
Stevens rolls.
The Spalding mill, at Lockport, N. Y., is be
ing rapidly rebuilt under the personal super vision of Geo. Chester. It will contain twenty seven pairs of the Stevens rols, as well as a
the recent advanced ideas in milling. The Edward Harrison Estate, manufacturers been finally closed and the business will hereafter be enlarged and continued under the style
of The Edward Harrison Mill Co
of The Edward Harrison Mill Co.
The roller mill trade is now very brisk, judg
ing from the Nordyke \& Marmon Co's who state that they are making rapid progress Who state that they are making rapid progress
with the machinery for the following mills:
500-barrel mill at Portland, Oregon; 200-barrel
barrel mill at Charleston, IIl.; 75-barrel mill a Wusaw, Ill; ; 100-barrel mill at Bozeman, Mon. 125 -barrel mill at Lafayette, Ind, besides
large number of orders calling for from one $t$ large number of orders
three 4-roller machines.
The Atlanta, (Georgia) Constitution says mor wheat reapers have been purchased in Georgia
this year than the entire cotton belt. possessed one year ago. This means more grain and
cotton, and is a step in the right direction.
George Barnes a prominent miller and suc


July 24, at the age of 64 . He lived in to Jane
kee from 1842 to 1843 , and then went
ville ville, and was an extensive contractor and
builder for thirty years. Since 1873 he had been engaged in milling, and oper
the largest flour mills in Janesville.
A water wheel has been invented by Mir.
S. Holder, of Macon, which, it is claimed
revolutionize water wheels. It can be plac
in a river and will run as well twenty feet $u$
der water as only half wa
Capt. E. W. Pride, state agent for the Joh T. Noye M If. Co., has the order for a complet
Cosgrove Stevens Roller Mill, from Messt
May, Webber \& Co., of Watertown, Wis.
The Captain has also contracted with th Oconomoce Milling Co., for a full and comple
line of Stevens rolls that will be placed in tl mills of this firm in time for the coming The Atlas Engin Works, of Indianapoli Ind., are to furnish the steam power for ru
ning the machinery at the Jouisville Industri ning the machinery at the Jouisville Industr
Exposition; also for the National State Fair, Ex held at Jackson, Mich. For the Lowisv Corliss engines and for the Michigan State Fai
Among the orders on the books of the At Engine Works of Indianapolis, Ind., are th
building of an $18 \times 24$ engine with three $54 \times 16$
tubular boilers with tubular boilers with complete accessories.
$142 \mathrm{~m}_{1}$, engine with boilers and complete out for the Ashland Mfg . Co., of Ashland, Wis
Muddrum Fire Front and complete trimming Muddrum new shops connected with the Ros
for the
Polechnical Institute, Terre Haute, Ind., al Polytechnical Onstitute, Terre Haute, Ind., also
a 75-hhrse power Locomotive Boiler for the
Cincinnati Gas Light and Coke Co., Cincin nati, 0 .
The once handsome 4 -story brick mill situ-
ated on the banks of the River at Pendleton, Ind., was recently visited by the fire fiend. now viewed from the windows of passing cars
on the Bee Line railway nothing is seen but a mass of ashes and dismantled walls The mill had but recently been altered to manufactur
flour on the latest principles, With their acteristic enterprise, the proprietors, Messr
Potts \& Parker, had visited their mill furnis ers, Nordyke \& Marmon Co.. Indianapolis, Ind.,
before the ruins had ceased smoking, and or dered
mill.


## nold's Corliss Engine

E. P. Allis \& Co., of Milwaukee, are in receipt of ain
order from Wilford \& Northway; of Minneapolis, for
pair of rolls in Gray's Patent Noiseless Frame.
THE following millers have recently placed orders
Gray's Patent Noiseless Roller Mills with E P. Allis \&
F. Thedeman \& Co., St. Louis, Mo.; C. B. Slater \& Blanchester, Ohio; Richard \& Butler, Indianapolis, Ind
R. Gent \& Co., Columbus, Ohio; John Getty \& Co., Ell
. Miun.; B. F. Gump, Chicago, Il.; Jesse Ames \& S
Northfield, Minn.; Iglehardt Bros., Evansville, I Northfield, Minn.; Iglehardt Bros., Evansville, In
Melrose, Milling Co., Evansville, Ind.; Reamer \& II
liams, Chetopa, Kas.; H. W. Merrill, Richmond, Utu
$\qquad$ Burrough \& Pierson, Flint, Mich.; The Bradford Mill Co
Cincinaai, Ohio, J. irk, Ohio; Black Bros., Beatrice, N
Globe \& Bro., Dunkirk,
Kichmond City Mill Works, Richmond, Ind. Ho
Baldwin, Youngstown, Ohio; The. Hudnuts, Pekin,
Williams \& Orton Mfg. Co., Sterling, Il.; Williams \& Libertyville, Mo.; Henry Meyers, West Salem, Oreg
Wood Maude Milling Co., St. Louis, Mo.; E. Middletor Son, Greenville, Mich
Another Ring.-In view of the probable s pension of many of the factories througho rese date the numerous factories. This will limi he supply, reduce the expenses, and admi of better profits from better prices.

Useful Solder.-A soft alloy, which
dhere so firmly to metallic, glass, and porcelain surface that it can be used as older, and which is invaluable when the arthey cannot bear a high degree of temperaure, consists of finely pulverized copper or copper dust, and is obtained by precipitation
from sulphate of copper solution by means of metallic zinc. Twenty, thirty or thirty-six parts of this copper dust, according to the porcelain-lined mortar, and well mixed with some sulphuric acid having a specific gravity of 1.85 . Add to the paste thus formed seventy parts (by weight) of mercury, constantly stirring. When thoroughly mixed the amal gam must be carefully rinsed in warm wate cool. In ten or twelve hours it will be hard enough to scratch tin. When it is to be used degrees C., when it becomes soft as wax by kneading it in an iron mortar. In this duc tile state it can be spread upon any surface,
to which, as it cools and hardens, it adheres tenaciously

# GLAD TIDINGS OF GREAT JOY! 

 AN IMPORTANT PROBLEM SOLVED AT LAST!Taking care of the dust laden air from Middlings Purifiers and other machines, using air to carry off the dust, has been PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of F. Prinz. He produced a machine, that will give satisfaction in such a manner that no miller would ask for anything better.
Simplicity is a Leading Feature in this Machine.
No Dead Air Chamber.-The dead air chamber, which has been a source of much trouble in oiher machines by wearing out and allowing the air to get in, thereby injuring the power of the cleaning mechanism on the cloth, which results in the cloth filling up, is entirely overcome in this machine, as it has NO DEAD AIR CHAMBERS.
Less Power is used with this machine than any other as there is no back press-

ure on the fan; the motion of the fan has to be reduced whenever this machine is applied.
It does away with the cumbersome dusty, dirty old-fashioned dust room, entirely and the numerous spouts leading to them, which fill up the Mill, leaving no room to get around.
It Retains the Dust in the Mill, thus allowing no waste of stock by being blown outinto the air as is the case with the old-fashioned dust room.
It does away with the liability of dust explosions as the air coming from the machine is entirely free from dust, which is not the case with the air coming from any other Dust Collector offered to the milling public heretofore.

## We the undersigned manufacturers CUARANTEE ENTIRE SATISFACTION in the use of this machine.

Onr machine does not infringe on any patent, which we fully guarantee; on the other hand we caution parties in purchasing infringing machines. LOW PRICES FOR EXCELLENT MACHINES.

HEESTIMOOINIATE.


Milwaukee Dust Collector Mfg. Co.
[Please mention the United States Miller when you write to us.]

| THE Case Mfg. Co., of Columbus, O, are fur- |
| :--- |
| nishing Messrs. Frank \& Bentzin, of New Ulur, | The Case Mig. Co., of Columbus, $O$, are fur-

nishing Messrs. Frank \& Bentrin, of New Ulur,
Minn., with a lot of machinery. Minn., with a lot of machinery.
THE Independence Mill Co., of Independence, Ia., have ordered from the Case Mfg. Co., of Columbus, 0 ., some gradual reduction ma-
chinery. They intend to break three sizes of chinery. They intend to breal
graded wheat on the machine.
THE last half of the Pillsbury " A " Mill starte ap July 17 and it is reported that all the mawork gives satisfaction. Manitoba wheat will be used principally for the next few weeks. D. $\mathrm{De}^{\mathrm{W}} \mathrm{WAR}_{\mathrm{AR}}$ \& Co... of Kansas City, Mo., are
putting in rolls of the Case Mfg. Co's pattern. J. B. Fickuin, of Fredericksburg Va , is put ting in some of the Little Giant break ma-
chines, of the Case Mfg. Co.. of Columbus, O hines, of the Case Mfg. Co.. of Columbus, 0 . Messrs. Dirrcks \& Co., of Marietta, 0 ., are just about starting up on the gradual reduction
system of the Case Mfg. Co., of Columbus, 0 . system of the Case Mfg. Co., of Columbus, O .
They will have a complete mill when all is They ${ }^{\text {ready. }}$,
The first miller to adopt the roller system in Pennsylvania was H. Julius Klinger, of Butler, Pa. A short time ago he put in a Case break machine to go in front of his rolls. He was so well pleased with it that he has just ordered a
machine for his second break from the Case Mfg. Co., of Columbus, 0 .
A. G. Mowbray, Superintendent of the Wiana Mill Co., of Winona, Minn,., has ordered
first break machine of the Case Mfg. Co., for his mill at Stockton, Minn.
I. C. Mansprikld, of Athens, Tenn., has or-
dered a first break machine of the Case Mfg. Co., of Columbus, $O$.
Messrs. Voisenger \& Co., of Elkhart, Ind. havessers. Vored a full gradual reduction minl of
the Case Mfg. Co. The machinery will all be the Case Mfy. Co. The machinery will all be
runnig inside of two weeks. unning inside of two weeks.
Nordyere \& Marmon Co., of Indianapolis,
Ind. are manufacturing a Ind., are manufacturing a forouring mill outfit
or French \& Nye, of Beloit, Kan Hunh Me, Bran.
Hinron \& Bro., of Marco, Ind., are remodel-
ing their mill to the new process.
A vew three run flouring mill is being built
at Bridgeport, W. Va., for Jas. B. Sandusky. Bridgeport, W. Va., for Jas. B. Sandusky. W. A. \& C. S. SchorieLD, of Indianapolis, Ind., are remodeling their mill to operate on
the gradual reduction system. Nordyke \& Marmon Co., of the same place, furnish the neces. sary machinery.
A custom mill outfit is being built at New Maysville, Ind., for Noah Bateman \& Bro. A three-run mill is being built at Oak, Neb. Jor Jas, Moore \& Co.
Bovahnkr \& Talley, of Gaylord, Kan., are process mill. the erection of a three-run new
ponel

## A NTW DTFPARTURE

We are the sole and Exclusive Licensees for this Country under the

## MORETME MIARTIN PATEINTES

## 

And we are now prepared to fill orders for machines with latest improvements, which include OUR NEW DOUBLE CONVEYORS,

NEW CLOTH FIXING AND STRETCHING DEVICE,
NEW AND SIMPLIFIED MANNER OF DRIVINC.
THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will mae clear flour and an finish on stock that cannot be treated in the common reel without loss, no matter how much sil it is passed over. IT IS SPECIALLY ADAPTEED to hamdling sofi, reground material, full of light impurities, whether from rouls or stone. tiy of the tow grade flour at the same time it makes the offal cleaner

Then tran smooth rolls, which no other style of reel can do
TTIS VASTLY SUPERIOR to the common reel for dusting middings.
Over one Exundred sold in six weeks. REFERENCE TO LEADING MILLERS IN THE UNITED STATES.
Write for descriptive circular and price list to
GEO. T. SMITH MIDDLINGS PURIFIER CO., - Jaokson, Miohigan.
[Mention the United States Miller when you write.]

Harvey \& Soo's mill, at Marion, Ind., which
our readers will remer rem as being recently our readers wilr remember as being
destroyed by fire is about to be rebuiti.
Nordyke \& Marmon Co., of Indianapolis, Ind, received a cablegram from south Aus
tralia, ordering an outfit of rolls for manufac turing patent roller flour. The capacity of the mill is one thousand barrels of flour per day.
WARD \&
contracted
with
Nor, of Gardner, Kan., have contracted with Nordke \& Marmon Cor, of In-
dianapolis, Ind. for a new process flouring mil outfit which will be operated in connection with the elevator now owned by the first-named

Poormaster MoKay, of Cedar Bluffs, Kan.
desiring to desiring to build up his town has, together
with Mr. Jenkins, commenced the erection of a three-run flouring mill.
L. R. Brown \& Co., formerly of Stevensville,
Mich. have found adesirable Mich, have found a desirable location at Spring
Station, Ind., and will transfer their business to the latter place. The machinery for the new flouring mollise. of the Nordyke \& Co's make, at
Indianapolis Ind. Indianapolis Ind.
A 125 -barrel gradual reduction mill is being uilt by Helmer \& Cook, of Fond du Lac, Wis. Buate motive power will be a Cummer automatic
engine.
P. O. Henry's mill, at Vandalia, Ill.. is being remodeled to the new process system, using rolls for finishing up.
Chandler \& Co ., Bushnell, Ill, have recently
ordered from E P Allis \& C , ordered from E. P. Allis \& Co.. one pair of por-
celain and one pair of sharp corrugated rolls in Gray's Noiseless Frame.
Mrsses, ALLss \& Co, have received an order from John Damp, Ashland, , , fort two pairs of
porcelain rolls in Gray's Noiseles Fro porcelain rolls in Gray's Noiseless Frame.
BaLard, Isom \& Co., Albany, Oregon, have
recently ordered from E. P. Allis \& Co., one recently, ordered from E. P. Allis \&Co., one
pair of porcelain and one pair of she. pair of porcelain and one pair of sharp corru-
gated rolls in Gray's Noiseless Frame.

## The Little Giant Break Machines.

 bushels per hour.

Are now on the market and winning golden opinions from all quarters. Roller Mills, everywhere, are putting them in front of their Rolls, and New and Old Mills are adopting them for full reductions.


Double Machine capacity, $\mathbf{1 2 0}$ bushels

## THE CASE MIDDLINGS PURIFIER,

STANDS TO-DAY WITHOUT A RIVAL, doing More and Better Work than any other, giving double the ca pacity; each Riddle on No. 3 Machine is 14 feet in length, 90 square feet of cloth, costing less and runs without jar or noise. Warranted equal in capacity to any two Machines made.
A-The Fan spuar, is reversible and
can be made to blow toward
either end of Purifier.
The Fan can be placed on top or
end of Purifier-when on end
it increases the lenghth 39 inches,
and diminishes the height 22
inches.
B-Air-valve upper Riddle.
C-Cut-off for upper Riddle, sliding
one-half the length of Riddle.
D-Air-valve, lower Riddle.
E-Upper Riddle tails off here.
F-Lower Riddle tails off here.
G-Cut-off for lower Riddle, slid-


H-Feed Box for upper Riddle. I-Bolting Cloth for upper Riddle. K-Purified Middlings from upper M-Feed Bor Riddle. or lower Riddle. - Boiting Cloth for lower Riddle. O-Purified Middlings from lower
Riddle. P—Cut-off from lower Riddle.

The upper and lower halves are each complete machine, and can be ru.

## Address OFFICE AND FACTORY, 5th Street, North of Naughten. OASE MANULAOTURING OOMPANY, COLUMBUS, OHIO.

## BOLTING CLOTE



Let it not be forgotten that we keep a very large stock of the genuine Dufour Bolting Cloth always on hand, and those who order that brand from us will always be sure to get the genuine article. In addition to this we keep constantly on hand a large stock of Dutch Anchor Cloth, which we import direct from the manufacturers, in Switzerland, and is not sold by any other dealers in Bolting Cloths in this country. This we warrant to be equal to, and even superior, to any other brand in the market, except Dufour. We know what we say in this regard. Cloths made up ready for the reel in the best manner possible, by the use of our Patent Attachments, using the best of Ticking and Silk Twist. Please write us for prices, discounts, and samples of cloth and making, before purchasing elsewhere.

Address,
HOWES, BABCOCK \& EWELL.

silver Creek, .N $\mathbf{Y}$.
FROM $1-4$ to 10,000 LBS. WEIGHT,
True to pattern, sound and solid, of unequaled strength, toughness and
durability.
An invaluability substitute for forgings or cast fron requiring threefold
Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Loco15,000 Crank shafts and 10,000 Gear Wheels of this steel now running prove its superlority over all other steel castinge
CRANK BHAFT8, CROBS HEADS and GEARING, spectalties.

CHESTER STEEL CASTINGS CO.,
407 LIBERTY ST. PHILAL ELPHIA, U. S. A


BOTTLERS' SUPPLIES CONSTANTLY ON
[Parties corresponding will please state where they saw this advertisement.]

JOhn FI. Miller,
MILLER'S COMPOSITION

sbotional purrow gadgrs and spafp.
petersburgh, huntingdon co., pa. The Best, Cheapest, and Most Durable Rubber in the
Markeet, USED DRY. Will outwear any Rubber made
in the world, and retain its cutting qualitites until entirely


 Prisk and Red Staff will leave the face and Furtrows in the
fiest possible condition for making good work. For
besi best possibie condition for making good work. For
cleansing the face of Glazing ithas no equal, Try
be convinced. Money eonvinced. Money refunded if not satisfactory
for Mention U. S. Miller when you write to me.
Do You Want a Head Miller. I offer my services to any millowner desiring to employ a miller to take charge of a New Process Mill-Roller Mill preferred. Can furnish the best of references from some of the best Mills in the country, having occupied the position of Head Miller for twelve years.
Address for further correspondence: X Y Z. Care of United States Miller,

BIRGE \& BMITH, PRACTICAL IIILIUMRHINTS.

PLANS, SPECIFICATIONS \& ESTIMATES made for all kinds or
MILLWORK, MACHINERY, ETC. Flour, Sawmill, Tanners' and Byowers' MaChinery, and Goneral Mdil Furnishers,
Corner of East Water and Knapp Sts,
MILWAUKEE,
WISCONSIN.
[Mention this paper when you write to us ]
Nituation Wanted. A practical Miller of large experience and acquainted
with new process milling either roller or stones is desirous of obtaining a situation. Parties desiring a miller either
in the city or country will please address MILLER, No 368 First Avenue,
C. F. MILLER,

MANSFIELD, OEIO.
Materials and Plans for Stone or Roller Mills. Roller Mills on the Stevens System a Specialty. The Cosgrove System just the ihing for small mills. Plans and Speoifications furnished of any desired capacity. Genuine Zurich Silk Bolting Cloths direet from the Manufacturers. Warranted Best Quality.

Milwaukee, Wis. [Mention U. 8. Miller when you write to us ]

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| :---: | :---: |</table-markdown></div> <br>  <br> <br> CORRUGATED AND SMOOTH CHILLED IRON ROLLS, <br> <br> CORRUGATED AND SMOOTH CHILLED IRON ROLLS, <br> <br> WEGMANN'S PATENT PORCELAIN ROLLS. 

 <br> <br> WEGMANN'S PATENT PORCELAIN ROLLS.}

We shall be Pleased to hear from Millers contemplating an improvement in their Mills, or Building new ones, and can furnish Estimates and Plans of our system of GRADUAL REDUCTION ROLLER MILLING. We have built and Changed over hundreds of Mills, in all parts of the Country, and using all classes of wheat, BOTH HARD AND SOFT, and can furnish References on application. The Largest and Best Mills of this Country are using our System and Roller Machines. Messrs. C. A. Pillsbury \& Co., of Minneapolis, have over 400 PAIRS OF OUR ROLLS AND HAVE RECENTLY PLACED AN ORDER WITH US FOR ABOUT ONE HUNDRED AND TWENTY MORE. We have had a longer and larger experience in Roller Mill Building than any other manufacturers of this country. There is no EXPERIMENT ABOUT OUR SYSTEM and rolls, so expensive to millers, and when the mills that we build or change over are ready to start, THEY DO SO AND WITH PERFECT SUCCESS, and there is no further changing, additions, stopping or expense. We manufactured and sold during the year 1881 over TWO THOUSAND FIVE HUNDRED pairs of rolls.

We can send competent men to consult with any millers who contemplate an improvement, and whom they can depend upon as being RELIABLE AND THOROUGHLY COMPETENT to advise them as to the number and kind of machines required, best method of placing them and the change required, if any, in the bolting and purifying system. WE DO NOT URGE A GENERAL CLEANING OUT OF ALL OLD MACHINERY unless we clearly see such would be the ONLY COURSE TO PURSUE to make a SATISFACTORY AND RELIABLE MILL. In nearly all instances we can use all the Old Machinery, leaving it in its original position, or with as slight a change as possible. We aim to make the Improvement so that it will be a Profitable one to the Miller, and at the least expense possible.

Our System is THOROUGH and RELIABLE, and our Roller Machine Perfected by Long Experience, and the Miller Takes no Chances in using them, as HE DOES with the New Fangled Notions of Drive and Adjustment on many other machines now TRYING TO FOLLOW OUR IMPROVEMENTS and still avoid our Patents, in BOTH of which THEY FAIL. We were the first to advocate the Entire Belt Drive, and were opposed by every other maker, who claimed it was not positive, etc., etc., and now that our Belt Drive is an ACKNOWLEDGED SUCCESS, and will SUPERSEDE EVERY OTHER STYLE, these advocaten of Gear Drive have suddenly learned that Belts are the Thing. The same may be said of our Spreading Device, Feed Gates, and Adjustable Swing Boxes. Other Makers are now copying these. ALL these Features, including BELT DRIVE with ADJUSTABLE COUNTERSHAFT and TIGHTENER, the SPREADING DEVICE, FEED GATES, Adjustable Swing Boxes and Leveling Devices, Self-Oiling Boxes, etc., are secured to us by several Strong Patents, and we CAUTION MILLERS in regard to these Infringements of Our Patents and Rights, for we shall look to THEM for Redress. The matter is in the hands of our Attorneys, who will soon take VIGOROUS ACTION against the Makers and USERS OF MACHINES infringing Our Patents.

Several machines are already on the market which Broadly Infringe, and we are informed that other makers are now changing their Old Style Machines, and adopting in a large measure Our Improvements. BEWARE OF THEM.

Send for New Illustrated Catalogue, Giving full Information, to

[^5]"HOWARD" AUTOMATIC CUT-OFF ENGINE.


Built only by the MURRAY IRON WORKS CO., BuRLingrov, Iowa, bUILDERS of all kinds of engines and machinery.
Hention mis paper wenge witio we?



## HARRIS-CORLISS ENGINE.

-BUILT BY-

WM. A. HARRIS, Providence, R. I.

Built under their original patents until their expiration. Improvements since added: "STOP MOTION ON REGULATOR," prevents engine from runaing away ; "SELF-PACKING VALVE STEMS" (two patents), dispenses with tour stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying a troublesome defect in other Corliss $\mathrm{E}_{7}$ gines, "BABHITT \& HARRIS' PISTON PACKING" (two patents). "DRIP COLLECTING DEVICES" (one patent). Also in "General Construction" and "Superior Workmanship."

The BEST and MOST WORKMANLIKE form of the Corliss Engine now in the market, su tantially built, of the best materials, and in both Condensing and Non-Condensing forms. The Condensing Engine will save from 25 to 35 per cent. of fuel, or add a like amount to the power and consume no more fuel. Small parts are made in quantities and inter-changeable, a
kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice. sept in stock, for the convenience of repairs and to be placed on new work oraered at
NO OTHER engine bnilder has authority to state that he can furnish this engine

NO OTHER engine bnilder has authority to state that he can furnish this engine.
The ONLY WORKS where this engine can be obtained are at PROVIDENCE, R. I.,no outsi parties being licensed.
[Mèntion this paper when you write to us.]


## Improved COCKL_E SEPARATORS

 Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER. We will contract to furnish entire Wheat CleaningMachinery for mills, and guarantee
Send for Illustrated Catalogue.
Perforated Zinc at Bottom Figures. OU OUALITY OF WORK. Any common Sieve will separate the cockle
 from wheat but to separate it WITHOUT WASTE IS the GREAE MARKET which can stand comparison with ours. LOSS OF MONEY in a mill. There is NO MACHINE IN THE MARKET Which can sug. 22, 1881. |time with very satisfactory results. We
 Gentlemen:-Replying to your late Gents:-In answer to your inquiry of We have been using two of Beards- requires an unusual amount of powe favor, would say that we can cheerfully the "28th inst. 1 would say that the lees's wheat cleaners, a scourer and to run it. Yours truly,
 have tested ours throughly by this tion. Respectfuliy yours', W. PRCE, passing one hundred and re third more Cockle Separator Mfg. Co.
would not think of doing without it having tried it once, and can conscientiously vouch tor its good work.

Yours respecttully
BROWN $\&$ WINFREY.
Perrysville, Ind., Nov. 24, 1881. Cockle Separator Mfg. Co., Milwaukee sirs:-The combined machine Ibought yeeks. It bertainly does all yout three it without wasting any of the small for it, and is the most perfect Separator United States ought to have one, and if hat I have any know perfect Separator United states ought a mill I would have no

Yours respectully, $\quad$ B. CARPENTER. other. I remain $\quad$ Yours, etc. D. G. THOMAS.
$\qquad$ P. S.-I have been miling now for 1 seen anything that will equal yours in cleaning wheat.
As an and Separator it is No. 1 , and apolis.
than rated capacity, and are not using and consider our wheat
apolis.

## Yours traly,

Gentemen:-The Beardslee's Grain from you for our we have purchas kee Mills give us the best of satisfaction. Experienced millers having seen the work done by the machine agree with us, that it cannot be beat. You are CAHILL, FLETCHER \& CO.
La Crosse, Wis., July 30, 1881. ockle Separator Mfg. Co., Milwaukee. Gentlemen: - The Beardslee Grain Cleaner sent me about the middie of
at liberty to use our names as a ref-
erence, and to any party calling on us erence, and to any party calling on we wieration, pleased to show the
in operats truly,


## HOWES, BABCOCK \& EWELL,

Mstablished 1856. Silver Creek, Chautauqua County, New York, ర. S. A. Mstablished 1856. fned eurek grain cleaning machinery and specialities herewith illustrate b





Eureka Magnetic Automatic Separator.,




Silver Creek Flour Packer. ill pack whole and half barrels,
alf, quarter, eighth and sixteel


Abernethey's New Book.
PRACTICAL HINTS

## Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.
Every Miller, Millwright and Millwright's Apprentice should have a copy.

UNITED STATES MILLER,

EUREKA MANUFACTURING CO.,

## BECKER BRUSH,

Galt's Combined Smut and Brush Machine.
The Only Practical Cone-Shaped Machines in the Market, and for that ADJUSTABLE WHILE IN MOTION.
Nearly 1,000 of these Machines in Use.


eureka manf'g co., Rock Falls, Ill., U. S. A.


## The United Blates

# TILE STEVENS ROLLER VILLS 

Remove all Germs without Breaking or Crushing them, and Hull the Black Cockle and Remove the Hulls, Clean Bran thoroughly,

## OVER 2000 PAIRS NOW IN USE!

## Having Secured the BEST BELT MOVEMENT ever offered

We are prepared to furnish mills to be run entirely by belt, obtaining the nearest approach to a Positive Motion Without Gears.

## Celebrated Cosgrove Concentrated Mill <br> \section*{Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.}



## Jno T. Noye Manufacturing Company, Buffalo, N. Y.

## ODIFLLS ROLLIER <br> MIIL.


cWe invite particular attention to the following.
POINTS OF STPFRIORITY,
possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a positive differential motion, which can not be had with short belts,
2. It is the only Roller Mill in market which can be instantly stopped without throwing off the driving belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.

3. It is the only Roller Mill in which one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.
4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings without disturbing the ten-sion-spring.
5. Our corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

WE USE MONE bUT the best
Lameminall

References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines.

Circular and Prices on Application to Sole Manufacturer,

## STILWELL \& BIERCE MANUFACTURING CO..

# Facts Worth Remembering 

## Millers who desire to avoid troublesome litigation, will do well to remember the following facts :

That Gray's Patent Noiseless Roller Mill, of which we are the sole manufacturers, was the First Positive Drive Belted Roller Mill invented and placed upon the market in this country or Europe.

That the construction of these Celebrated Roller Mills is Fully Covered by the Foundation Patents issued to W. D. Gray, and of which we have sole control. These patents are Nos. 222,895; 228,525;235,761; 238,677; 251,217; dated December 23d, 1879; June 8th, 1880: December 2 Ist, 1880 ; March 8th, 1881 ; December 20th, 188 I. From the dates it will be seen that these patents are the earliest ones issued for improvements in Roller Mills, and a careful investigation will convince any miller that they cover every feature of value in a belted Roller Mill

That several belted Roller Mills lately put upon the market by other manufacturers are simply imitations of Gray's Patent Noiseless Roller Mills, imitations in every way inferior to the original, in merit and design, and Palpable Infringements of our patents.

That we are fully determined to Protect our Rights, and have taken action to begin suits against infringers. While we regret the necessity of this step, it has been forced upon us by the unscrupulous conduct of other manufacturers.

We are thus explicit, in order that millers may have fair warning, and that they need not, by Purchasing Infringing Machines, involve themselves in Troublesome and Expensive Litigation, which must eventually result adversely to them. We have no disposition to deal harshly or unjustly, and only ask for a fair and candid investigation of our claims. Millers who are using Roller Mills which infringe our patents and who wish to avoid trouble by settling with us before incurring the expense of a suit, will be liberally dealt with, as it is not our design to oppress millers, but rather to force infringers to respect our rights.

## Graj’s Patent Moiseless Roller Mills

Are fully protected by foundation patents; they infringe no other patents, and they are the Best and Most Successful Roller Mills in the market, there being more of them in use than of all other makes together. Millers Run no Risk in buying these Machines, and in purchasing of us will get the Best Machine, without any expensive accompaniments in the shape of suits for infringements.

## EDW. P. ALLIS \& CO.,

Sole Manufacturers of Gray's Patent Noiseless Roller Mills,


What Sam. Chisholm has to say about Milling.
No cereal is so intimately associated with the history of civilisation as wheat. At the very dawn of historical times the plant is found in cultivation in the far eastern lands and the berry itself held in the highest esteem as food. It is a noteworthy fact that all nations of the world that have distinguished themselves as intellectually great and progressive have been large consumers of wheat.
The extent to which races have consumed wheat may be taken as a measure of their civilisation. In Egypt, Greece and Rome, the three lights of antiquiti, wheat was the chief staple of consumption. The islard of Sicily and the countries around the Black Sea were partial sources of supply to Rome and Athens, and the expenditure of treasure
and blood in order to obtain and hold possession of these provinces never lacked for justification in the eyes of the people, for the wheat supply then was of as much importance as it is now in modern Europe. What is true of
the anicent world is true of the world of today. A brief review of the peoples of the globe will demonstrate that the wheat-eating nations are the strong and mighty nations. Compare, if you please, the wheat-eating races of Great Britain, France, and the United States with the rice-eating inhabitants of India and China. Of course such a comparison does not prove that the consumption of wheat is productive of civilisation, but it does show conclusively that the higher the type of ci-
vilisation the greater the estimation with which wheat is regarded as a food staple. We may very properly pass without consideration the much discussed question where wheat originat nese records speak of its cultivation in the Flowery Kingdom 2,700 years B.C., and it was certainly known to the Egyptains 4,00 years ago.
An enumeration of the different varieties or kinds of wheat would be almost impossible. One French experimenter, Ibelieve,succeeded in producing over 300 varieties. For general purposes the subdivisions into winter and spring wheat, coupled with the attributes "hard" and "so
A grain of wheat is not a seed, as might be supposed at first sight, but a fruit, perfect in itself and berring within itself its own seed, which is the germ. Beginning on the outside of the wheat berry, we find first three fruit coats, which are known as the first, second, and third fruit coats. Next comes two seed
coats, which are called the first and second seed coats. These five coatings altogether have a thickness of abouth one-four-hundredth part of an inch. Next comes a single coat or layer as thick as the outer five together and containing nitrogenoussubstances(gluten) technically called perisperm. The interior portion of the berry comes next, consisting principally of starch, \&c., endosperm, and lasty , the germ or embryo at the base of the kernel.
What is known as "bran" in milling, comprises the first six of these layers, and to free these and the germ from the perisperm and endosperm is the aim of scientific milling. From the standpoint of the scientist, the
perisperm, or the single layer of gluten cells which lies directly inside the bran, is the most valuable part of the wheat, and the flour will be stronger or weaker as it conlains more or less of this layer of gluten cells. "Well cleaned bran" is therefore not only desirable from an economic point of view but also from motives of giving strength and nutritious element to the flour. One point in the construction of the wheat berry which should be remarked here, and which contains
a hint towards the best methods of reducing
the wheat, is that the cells of the bran coatings
have their gratest length with that of the have their gratest length with that of the
berry, and that the gluten and starch cells are disposed in such a manner that they are least listurbed by breaking the kernel lengthwise, and are disintegrated most easily by breaking at an angle to the crease. This disposition of the cells of the bran, and those of the inerior of the wheat grain, points out a rational method of procedure in separating the flour particles from the bran and germ, to which I hall allude further on.
Essentially the constituents of the wheat berry may be said to be gluten, starch, water and woody fibre. It need hardly be remarked here that wheat or flour is more valuable ust in proportion to the quantity of gluten it ontains. In some varieties of wheat the gluten is more elastic, as well as more abundant than in others. The germ consists principally of oil and starch, and the bestscientists as well as the best millers, are now agreed that it should have no place in the flour, as its yell wish cast not only discolors the flour, but the oil it contains is a hindrance to breadmaking. To this, however, I will call your ttention in another connection,
The relative proportion in which the constituents above mentioned are contained in wheat varies greatly with locality, season, weather, \&c. Wheat ordinarily contains from 12 to 15 per cent. of water. The proportion of gluten varies even more greatly, unning as low as $7 \frac{1}{2}$ per cent. in some wheats, and as high as 22 per cent, in others.
Hard wheats have uniformly more gluten Hard wheats have uniformly more gluten
than soft wheats. Damaged wheat contains less gluten than that in a sound condition, and the gluten is generally of a less elastic nature. We might also remark that wheat grown on new soil generally has more gluten than that grown on exhausted soils. Owing to the fact that it is not possible to separate the perisperm
entirely from the bran, "straight flour, conentirely from the bran, "straight flour, con-
tains usually a larger proportion of starch compared with the gluten than would be shown by an analysis of the wheat from which it was made. Having briefly examined the raw material with which the miller ha
deal, we will pass on to note some of the

## Systems of Reduction

Milling at the present time presents so many complex and varied forms, that anything more than general classification of the systems now used would be tedious as well as profitless. For all practical purposes we may reduce the various processes, so far as he reduction of the wheat is concerned, to Milling; 2nd, New Process Milling; 3rd, HalfHigh Grinding; and 4th, Gradual reduction Milling. By low or flat grinding is understood the old style of milling, in which the wheat is sent to the millstones, ground close, and the chop bolted; in short, the system universally followed in most countries up to within a dozen years, and still largely in vogue in this country, France, and many parts of America, particularly in custom mills. New Process Milling consists in grinding high with burrs, so as to make as much semolina or middlings as possible, and as little flour; separating the middlings and flour thus made, purifying the middlings and regrinding them; bolting this prodnct, and so obtaining "patent" or "new process" flour. Half-High-Grinding may be described as a modification of the new process by the introduction of other steps, such as splitting the wheat, then grinding very high, regrinding he bran, breaking down the coarse middlings, vc. Half-High Milling is therefore a rather elastic and convenient designation of the process of milling, intermediate between the New Process and Gradual Reduction. This last and, to this country and America, newest system consists, as the name implies, in a systematic reduction of the wheat berry into
smaller particles, the operations by which this is effected being attended with various and systematic separations of the products (flour, middlings, bran, \&c.,) the purification of the middlings, and the final reduction of the middlings to flour, \&c. The number of reductions employed may vary greatly according as the system is more or less elaborated and also according to the means employed In the reduction of wheat proper, from five
$t$, seven reductions are generally employed. though with the Jonathan Mills machines the first two reductions are hardly such, but a more properly wheat-cleaning operations. While this classification of systems may seem more or less arbitrary, and merely groups together differences, in practice you
will observe that a progressive elaboration has been going on by which the simple milling of a few years ago has become transformed into the more complex process of the present day. The change in America, however, has been gradual. American millers have not experience and economic necessities have led to one modification and another, until, to-day Gradual Reduction is pre-eminently the American system of milling. It is the to which I shall direct your attention. As I have just stated, Gradual Reduction Milling was, and is, a development, a growth in America. It was not an importation from abroad will but trace the steps which the scientific, commercial, and practical views of milling have gradually compelled millers to take,
you will have the best practical knowledge of what the true principles of gradual reduction are; and this knowledge will be of great assistance to you in determining the all imbest for this purpose? Let me be fully understood. What I intend to convey is that a careful consideration of all the requirements
of milling at the present time-scientific, of milling at the present time-scientific commercial, and practical-will form the best data for judging of the merits of the different systems of Gradual Reduction Milling. In other words, let your reasoning be from the requirements of milling to the system, and not endeavor to make the necessities of
milling fit some preconceived system. It is certainly a rational method first to find out what we want to do and then examine the means and appliances which are offered for accomplishing it, instead of selecting machinery haphazard and then attempting to discover what we can do with it. The first method has the merit of being not only the most logical, but the least expensive also.

Development of Gradual Reduction.
It would be most interesting, if our limited time would permit, to trace the gradual development of the art. Gradual Reduction is : system that has been forced upon millers rather than reasoned out by them. Men have not sat serenely down and made all this improvement by a simple process of reason ing. The first step cf progress has been taken as a rule, first from necessity, and once taken other improvements have suggested them selves, or else forced themselves to be adopted, History does not go back so far but that we find men employing some means of reducing wheat to meal flour. Even in the time of Abraham wheat was reduced to meal before being eaten, and from the passage where the visit of the strangers is recounted it is evident that there were at least two ways of preparing the wheat for use, showing that even at that early date some improvement over the universal primitive fashion of pounding the grain in a mortar had been made
It is hardly necessary, in this connection to mention in detail all the various means which have been employed by mankind in different ages of the world, and in diverse
stages of civilisation. The whole history o early milling may be summed up by stating that for ages the pestle and mortar, the quern and the conical millstones, formed the means of reducing wheat. The chief point to be noticed, and one form which an important fact may be learned is, that even in the earliest times men sought to separate the bran entirely and obtain as white a flour as possible. The Ronans and the Greeks must have attained to some considerable perfection in this matter, for it is certain that they had the means of making five or six kinds of flour from wheat, the difference between the grades consisting, in all probability, chiefly in the extent to which the separations were carried y means of their hair and linen bolting cloths Although much skill in milling, as in most other arts, was lost by the irruption of the northern barbarians, it was not long before men again sought to devise means to make white and better flour.
In the sixteenth and seventeenth centuries everal grindings and boltings were resolted $o$ in France and Germany with this purpose in view, resulting finally in the famous mouture mouture Lyonnaise.
These systems, or rather this system (for the Lyonnaise milling was only the mouture conomiqu: long drawn out), is chiefly notable ecause it was an attempt not only to increase he quantity but also the quality of the flour -a rather ambitious aim, considering the crude appliances of those times ; for it
would be wrong to look for improvements in process while the mechanical appliances of the mills were still in so primitive a condition. To us who received automatic mills as a bequest from our fathers, it seems strange hat no greater advances were made in the methods of milling through all the past ages But we forget how very primitive were the means of milling until the mechanical revival iI the last century
There was so much room for progress in verything that improvements in process naurally came last.
This is why we find little or no change for he better in milling methods until what is omparatively a recent date. So long as a rumbling millstone, propelled by unsteady power, and with little or no dress, and absoutely no balance, ground the grain, and a hand-sieve performed the bolting, it would be folly to expect elaborated systems to be llowed.
Progress naturally took the obvious line of mechanical improvement, resulting in the automatic mill of Oliver Evans, and the wonderful ińprovements in mill machinery made in his and more recent times. Besides the mouture economique in France, the fir: tattempt made in the Austro-Hungarian Empire. Milling had advanced to just that point where economy in the use of material had become a necessity. The Hungarian wheats of eighty years ago were hard and flinty, as they are
to-day. So long as the public were not o-day. So long as the public were not fastidious in the matter of their bread the reduction of this wheat to flour was a matter of no special difficulty. But the taste of the consuming public has been growing more and more refined, and the Austro-Hungarian millers found themselves obliged to grind very high, in order to make a white flour; and though they attempted economy in the use of material by working up the products of this high grinding as well as they knew how and the means at their disposal would permit, the problem of profitable milling with high grinding was not solved until Paur invented his air purifier. Thence the gradual reduction system has been developed in Austrian and Hungarian mills with astonishing rapidity, and carried out with an elaboration of detail which is amazing. Though the
gradual reduction practised by American
millers is sometimes called the Hungarian system, it is called so erroneousiy. out the scheme of milling practised in Hun garian mills. No American mill could afford to do it. The number of reductions and separations is infinite, and any American mill that adopted this system would be obliged to curtail its capacity at least one-half. Besides, a rigid adherence to this method results in the production of a large percentage of low grade flour, which would not be saleable in any markets at their command. visely taken the kernel of the gradual reduction system and left the husk. Tris, in truth, they were obliged to

Hungarian milling
cause all of the flour, profitable only be be sold, and because the three highest of the nine or ten grades fetch a price which is out
of all proportion to the price of standard flour.

Twelve years ago Low Grinding in Ame rica was the only possible system, because
any attempt to grind otherwise was neces sarily accompanied with the production of a
still larger amount of the then almost worthless middlings.
The shrewd miller of those days attempted the profitable disposition of them was the pre-eminent problem in the milling of tha ceived them, and the miller aimed to put as little valuable material in these unprofitable
places as he could, consistently with the colour of his flour. The invention and intro duction of the purifier changed this. It betroubled with a nightmare, as to the disposition to be made of the middlings. It not miller to make a whiter flour by grinding higher.
required but a short time for the mille to discover that is was profitable to make
middlings even if he did not clean the bran as the "patent" or middlings flour sold a such high prices that he could afford to ignore of flour. Of course such a state of affairs could not continue long. Every miller who
had a purifier launched into making middlings flour, regardless of close yields, and the "came the deluge." The price of paten close yields forced itself upon the miller' attention. It was here that the New Process as the new system was called, was found to
be inherently weak. It could in no way re concile a close yield with a good percentage
of "patent." Besides all this, the growing public taste demanded a good article of wheat obliged to sacrifice a portion of his percentag of patent.

Then came the modifications of the New Process, which we have previousiy classed as
Half-High Milling. Millers ground high, and ground the rich bran on millstones, or cleaned
on bran machines. Two reductions of the wheat were resorted to, with results which showed possibilities rather than actual result. in modifying the new process show by their results that the limits of progress in that system
are narrow, and that the only practical method of reducing the wheat and obtaining reduce the wheat berry gradually. Those modify it to half-high milling, and the millers uniformity into gradual reduction. It is only a question of a shorter or longer experience
with either of the first-named systems. Soon er or later the conviction furces itself upon
the miller that the most money can be got out of the wheat only by adopting gradual reduction. Every step taken in advance on gradual reduction.

The question of accounting for the wonderful strides which
the system of gradual reduction has made, and the vast number of mills which have been refitted, especially in the United States, than on this very supposition. That the in-
troduction of this system has not always been attended with the happiest results has no bearing on the main argument. Many millers have gone into the movement hastily,
withouth fully understanding their own needs. Many have been too prone to believe that whatever calls itself Hungarian, or comes to them with a foreign precedent, must be all right. The error is obvious. What may be adapted to the slow and endless millings pro-
esses of Hungary, is not, in my opinion suited to English wants and English markets. A careful study of what is needed in an English gradual reduction mill will save vou
from drawing hasty conclusions, and reaping the results in leisurely repentance, as man already done
Principles of Gradual Reduction Primarily the aim of milling is to get the most money possible from the wheat. Any
system of milling must propose this end in order to find adherents among millers. Dis cussions, therefore, of the relative merits of different systems from scientific and sanitary they have no real bearing on the question It matters little to the miller whether his flour is a scientific and healthful flour or not, so long as it meets the popular taste and th public pays the highest price for it. He need not therefore stop to discuss the comparative
merits of different kinds of flours from hygienic standpoint; it is only sufficient ask what the public demands and will pay he most for.
The answer to such a question rises at once the lips of every one at all acquainted with our markets. The popular demand is for
white, strong flours, and these command the highest price irrespective of their sanitary merits. Fortunately, however, public taste in accord with science. All the latest of scientific men on this subject have proved that white, strong flour from which every particle of bran and germ has been removed, is the best and most nutritious
for man's use. This point has been so well established that it does not need enlarging upon. It may be remarked, however, that at fersor Vogl congratulated his hearers that mprovements in milling have enabled millers to produce an article of flour more or
less free from bran and germ. So popular taste proves, as it so often does, to have its
source in science. The production of strong, white flours, such as the public requires, is scientific milling, and it is as well the most profitable kind of milling, as recent ex everywhere are bending their energies to nlarge their percentage of such flour, and market quotations furnish proof that in seek-
ing for a profitable system of milling we can safely ignore all processes which do not aim oo make the largest amount possible o. strong, white flour with a minimum of low grade. or this reason alone, if there were no others English millers may ignore the Hungarian A French writer, Mr. Felix Hardoun, recently wrote a pamphlet to prove that the Hungarian ystem was not adapted to the mills of France country for only two or three grades of flour and these neither the best nor the worst ; but a golden mean between them. The writer making fewer grades of flour-was the only one appropriate for republican France, basing his argument solely on the public demand in hat country for flour, and reasoning therefrom system of milling.
opriety, be urged in the case of English millers. You need not enquire how foreign brethren of the craft reduce their wheat, bu
equire and then see by what processes and means this public demand may be satisfied or success in every department of life con-
ists in meeting some demand, moral, or intellectual, of the world about us First, let us analyse what the flour is that th public seeks and will pay the most for. The
first qualification which this flour mus possess is whiteness; the absence of all dis discolorations arise from three causes First, from fuzz and extraneous matter whic outside and is not removed before the wheat is ground. Second, from the pulverising o comminution of the bran-coating in the pro
cess of reducing the wheat; and, third, from the germ or chit which, when ground up, give a saffron cast to the flour
The strength of flour, the second qualification, depends first upon the quality and quantity of the gluten ; and, second, upon It is often, though very erroneously, supposed that the strength of flour is wholly dependent upon the first-named characteristic. It has every particle of bran and germ takes just so much strength from the flour. As a case in point we may cite Graham flour, which con
tains a much larger quantity and ordinarily better quality of gluten than white flour nd which nevertheless rises with difficulty nd heavy bread. Consideration of the strength, therefore, furnish an ad-
ditional argument why the flour should be as free as possible from germ, dust and bran.
The system of milling employed has no influence upon the quantity of gluten which the flour contains, but affects, in a very ecided manner, its quaity. stroy, in a large measure, their power o absorbing water-the only measure of strength in bread-making. This is a point of the
utmost importance, and while care is taken tmost impora flour's strength by removin all bran and germ particles, it must not be forgotten that its strength may be seriously mpaired by bringing to bear upon the middlings a degree of pressure so great as to de stroy the delicate organization of the gluten cells. No miller who wishes his flour to be as white and strong as mechanical means will make it, can afford to slight or overlook the importance of any of the points named Each of them, has its effect upon the charac er of the mill'd product
The best flour is that from which the im purities have been most completely separated and which has not been injured in reduction and as the observance of each of the point given will approximate the product to a per so much from its high quality. It will not do for instance, to ignore the fact that all wheat is there, and no smutter or brush is there, and no smutter or brush can remove
it. Yet if the wheat is ground up before this dust is removed in some way, every mille knows that it cannot be taken out by bolting This dust, which is undeniably present in all wheat to a greater or less extent, is therefore incorporated in the flour, and adds so muc from the strength. When the importance of removing the crease dust was first pressed upon the milling public in America by ou firm, interested parties attempted to pooh pooh it ; but the attempt was not successful a proper breaking of the wheat to releas this dirt showed both the quantity of the
Ing wality
loring matter present and its quality
As to the desirability of removing the germ, there is, I believe, but one opinion now; but
in regard to the nature of the bran and the in regard to the nature of the bran and the
steps which should be taken to guard against pulverising it, some false views are still maintained. The bran is very thin compared with the diameter of the wheat kernel. It is also brittle and easily broken up, particularly the outer coatings. How to so treat the wheat that the bran will not become so weakened as to break up and become pulverized in the reducing operations is one of the problems of milling. The fuzz and adhering dust must be taken off surely, for otherwise they would sadly discolor the flour; but how can this be done without weakening the bran coatings which are already too weak and brittle. It will not do to weaken the bran coverings so as to render them liable to be puiverised when the wheat is reduced; the bran must be kept the berry is in the course of reduction. solve this problem satisfactorily, many millers will be obliged to reconstruct some of their preconceived notions of wheat cleaning. The
action of the wheat scourer, while effectual in removing the fuzz and adhering dust, is so harsh as to impair the strength of the bran coats. Any one who will examine wheat bran with a microscope will see this at glance ; indeed, it is not necessary to use a microscope to see the scratches which a courer of any kind makes upon the bran No treatment for an article so brittle as bran could be worse than that which it receives
from a smutter or scourer ; for, having its strength already impaired by the operation, the moment reduction is attempted the crease breaks up, and the fine, filmy pieces, already scrubbed thin, are soon pulverised by the reducing apparatus, whatever the latter may be. Millers who have given the attention to the matter which its importance
deserves, have discarded all smutters, scourers, and ending stones, and now rely entirely upon brush machines, retaining separators, of coure, to take out impurities not adhering to or forming part of the wheat like the fuzz: The action of brush machines is gentle, injuring the bran in no way, and a the same time it is effectial enough to rid the wheat of the class of impurities I have
mentioned.
On the subject of bolting and purifying I have not now the time to dwell. The impor
more than many other operations in milling
and I shall therefore confine myself to the reduction of the wheat only. Suffice it to say that in every system of gradual reduction the bolting or separating should follow each step in the reduction before the product is step in the reduction before the product is
next reduced; but such operations should not and need not be so hopelessly complicated as an attempt to follow the Hungarian system leads to. The object of making proper separations in bolting and purifying is twofold; and if this object is not lost sight of they need not occasion any embarrassment; first, to remove impurities as fast as they are made, and, second, to classify or grade the products, so that this work may be automatic. We have, then, as a rational system of gradual reduction:, one which embraces the following points:-
1st. The cleaning of the wheat in such a manner as to remove from, the exterior of the wheat berry the fuzz and ${ }^{\prime}$ adhering dust or mpurities, and yet in such' a way as not to eaken or abrade the brittle bran coatings. 2nd. The removal of th $\oint$ impurities lodged in the crease between the lobes of the berry, which no cleaning machinery, as the term is ordinarily used, can reach.
3rd. The removal of the germ at the base of the berry, which cannot be scoured off except from an infinitesimally small proportion of the wheat, and even then cannot be
done without inflicting irreparable injury on the bran coatings
4th. The gradual reduction of the wheat in such a way as not to abrade or pulverise he bran, and so incorporate these minute bran impurities in the "break" or "clear four," and also in such a manner as to pro-
duce the largest possible quantity of middlings in the best condition for purification
5th. The final purification of the middlings and their reduction to flour, by such means that the strength or life of the latter is not impaired. These would be the points em braced in a rational system of gradual reduc tion designed to make the best quality of flour possible; in other words, they embrace points relating to quality alone. Subsidiary to them, and giving the economic side of the question, we may add:-
6th. The production of the largest profitable amount of middlings, or "patent flour." 7th. The minimum quantity of low grade; ${ }^{2}$
th. The most thorough working up of all the by-products, such as bran, etc.
It may not always be politic for the miller o pack out the largest possible yield of "patent" flour, since beyond a certain point quantity in the "patent" is obtained at thc expense of quality in the other grades; but a perfect system of gradual reduction woul have an elasticity in this matter which woul allow a miller to guage this production and sack them according to the market demand and quotations. We may add here that the break or wheat flour made under all the conditions I have given would naturally be excellent quality, and equal, if
to the ordinary "straight grade."
Having these self-evident axi
fuides, we can now proceed to for ou detail the apparatus at the disposal for millers for gradual reduction purposes, and, keeping in view the ends to be attained by a gradua reduction system, we can intelligently judge of their merits and demerits.

The Milistone.
We may first enquire has the millstone outlived its usefulness, and must it give plac to newer and more modern machines? Per haps no question is directing itself to English millers with greater force than this. Surel no question possesses more vital importance to them than what disposition is to be made in the milling of the future, of the old familia millstone. For it is not habit, not experience alone that causes millers to cling somewha too tenaciously to the burr. It must be re membered that the majority of your ten twelve thousand mills have been constructed with the millstone as a basis. In these mills it has done all kinds of work, good, bad, and indifferent ; and now that it is apparent that gradual reduction is to be the system milling, the question naturally arises, "What will we do with it?
Some ultra advocates from Hungarian idea have openly counselled the utter ejection of the millstone as unsuited to the requiremen immense loss which the throwing out of the burrs would entail upon the milling industry the suggestion itself smacks altogether to much of the impulsive zeal of the new con-
vert, which repudiates too much on one side vert, which repudiates too much on one side
and extenuates too much on the other. The millstone has been entirely displaced in only
a limited number of mills, either in Europe the largest and best which have been built in the past year have either included millstones in their equipment, or made provision for them. I do not believe the mind of the milling public has become reconciled to part with the millstone for good ; and the public place in this as in most other cases, has substantial reasons for its course. It is very much worn but a very true statement as well, that millstone save always been abused in practice, and
that we do not really understand their capabilities. While this is true, there must be some reason to account for the growing disaffection on the part of millers from the exclusive use of the millstone. Just as there is a widespread conviction on the part of
millers, that the millstone has not been millers, that the milstone has not been makes millers cling to it, so there must be some good reason why the millstone has
been displaced so largely as it has been. If we will but examine the work of the millstone candidly, in the light of the principles of milling just enumerated, we will easily discover the cause of its displacement as well as its retention in our milling, and we will also be able to ascertain its rightful
correct gradual reduction system
With the grindual reduction system
With the grinding, biting or abrading action of millstones all are acquainted. It was this quality which gave burrstone precedence over other kinds of stone for milling purposes
in the past, when such a grinding action was exactly what millers wanted. For the purpose of getting the most flour out of the wheat at a single grinding, nothing cou
can be, found better than French burr. the aims of milling have charged. It is no now sought so grind the wheat; the desire is to granulate it and grind only the middlings. Is the stone, which was so well suited or grinding, suitable also for granulating wheat, in which it is so desirable to avoid
grinding? This could hardly be the case; for grinding? This could hardy be the case, for so perfectly adapted to the old style of milling would militate just so much against it under our present system. Let us look at the matter a little closer. The points to be oberved in granulating the germ and the tated, the removal of the germ and the impurities in the crease, and the reduction of
the grain in such a manner that the bran shall not be comminuted, abraded, or pulverized. To accomplish the first of these objects the miller with the millstone is helpess. There is but one way to remove the that is by splitting the berry lengthwise along he crease and then separating the dust by means of a wire cy linder. That a millstone might crack the wheat in this manner, to some extent, I will not stop to argue or deny It is very certain, however, that shose who have attempted to break the wheat in this instrumentality than the millstone. In cracking the wheat lengthwise the germ is usually released, and granting this might be done on a millstone, at least a partial grinding or reduction of the germ by the biting and abrading action of the burr is unavoidable. Here is the secret of the whole difficulty with millstones. Strive as we will to destroy their grinding action, it still remains in the stone ;
as this gritty nature was, and is, its highest as this gritty nature was, and is, its highes
recommendation for grinding, it is also the greatest objection to its use for granulating purposes ; for, clumsy as the millstone is, or rather would be, as a machine for breaking wheat in order to release the dirt and germ, the most serious obstacle in the way of using it to granulate wheat is the very fact that it is grinding machine. And being such it cannot help grinding off the bran into powdery impurities which cannot be bolted out of the
flour. Gradual reduction as a system is founded on a knowledge of the fact that the wheat berry must be treated gently, and that to prevent the incorporation of minute bran particles in the flour several reductions must ee employed. Now anyone knows that even one reduction of the wheat on the millstone and grinding high at that will yield a wheat flour full of this pulverised bran. This being the case, three, four, and five reductions on the millstone are not to be thought of, as each reduction would reinforce the amount of this discolouring matter already in the wheat flour.
Nor must it be overlooked that the very fact of the millstone being a grinding instead of a granulating machine, operates not only to produce impurities, but also to make a large percentage of break or wheat flour. This, we believe, has been the experience of every miller that has attempted gradual
eduction with millstones. The "patent has heen only moderate in quantity though excellent in quality, and the percentage
wheat flour" and low grade large and ery mediocre quality
Another thing must be borne in mind Those who believe in the capability of the millstone to adjust itself to the needs of gradual reduction assume that the millstone is a perfect machine. Everybody knows that this assumption is entirely gratuitous. With all the care and study that has been bestowed
upon it, the burr is far from being a perfe machine in its operations. It is true in som few instances, where really first-class millers are at the helm, the millstone may approach Liniform action, but in the majority of instances it does not ; and every imperfection
of hanging, balancing, and operating, makes it still more unsuited for the purposes of granulation, as they make its grinding action more pronounced. It is true that these im perfections may in time be obtained, but the millstone can never be used to reduce whea to middlings until it is stripped of its gritty get rid of the millstone itself. Perhaps you may ask whether the conclusion of the
foregoing is that the place of the millstone in gradual reduction is outside the mill? By no means. The millstone can be very properly and profitably used for reducing middlings into flour. The very qualities which render it varse than uscising the middin rende it valuable for grinding the middlings afte
they have been produced and thorougly purified. On the produced and thorougly a quick reduction, is exactly what the midd lings need to produce a live, strong flour Our American millers have quite generally perceived this fact, and even in many mills where attempts as possible to the Hungarian system millstones are yet retained for grinding midd lings, and it is exceedingly unlikely that any
device will ever entirely supplant them in that function; and here is where the mill stone finds its proper place in gradual re

Rolls and Roller Milling.
I will next call your attention to rolls and roller milling, which I assure you deserv more than a passing notice. As to the date
of their invention it is well known to those of their invention it is well known to those
who have looked into the matter, thet experi ments were made with rolls as far back as 1820. Whether they were a French, Swiss, or German invention cannot be conclusively
proved now. In the year named, over 60 years ago, three mills were built-one at Vienna, one at Paris, and one in Switzerland
-in which rolls were chiefly used in place of millstones. An eminent French engineer M. Touaillon, states that Cambray was the inventor of rolls, while other authorities refer their invention to Collier, a Frenchman, and three of these first roller mills proved failures of a decided kind; but experiments with rolls continueed, and ten years later a Mr sulzberger, of Frauenfeld, announced that he had built a roller machine which avoided all the objectionable features of the earlier ones. An extraordinary furore machine. Large roller mills were erected throughout Germany, Italy and Austria Everyone believed that the day of millstone was over. The mechanical publications of
fifty years ago were lavish in their praise the roll, just as they are to day, and looked upon the complete success of the roller system as a foregone conclusion; and, in fact, there was something to justify all these
anticipations. The rolls made good flour, and the mills prospered; and yet, with one solitary exception, before the year 1840 every one of these roller mills had thrown out the rolls and put back the millstones. The revocontinued to but it was thirty years before anyone ventured to build another roller 'mill

Many explanations of these earlier failures of the roller system have been given, the chief of which is that the machines were not well constructed. Facts, however, disprove roller mill was, to say the least, equal, if no superior, to some of the types of roller mills now in use. Another explanation, which is nearer the truth, is that the roller system was found to be so complex that it could no be handled intellectually or economically Oscar Oexle, who has given much time to the subject of roller mills and gradual reduction, and is a consistent advocate of rolls under of the failure of roller mills was the reckless
application of the roller system to all kinds of wheat. Mr. Oexle holds that only very
hard wheats can be treated by a system of all hard wheats can be treated by a system of all medium wheats rolls can only be used for certain operations with advantage.
These explanations have more or less force, and to them may be added another which has often been urged with great force as the true reason why rolls sank almost out of sight for thirty years after the fiasco of $1830-33$ That is, that the application of the rolls in hese earlier mills was too extensive. They ried to use them for everything, and failed They attributed the failure, very naturally only a question of time when the millstone displaced the rolls. It may be noted here that every attempt hitherto to invent a
machine to perform all the reducing
operations of milling has proved abortive If cand:d and thorough investigation had preceded these attempts, it would have been structed so as to satisfy all the requirements f a gradual reduction of wheat to flour ; bu inventors have gone on attempting to com-
prise in one appliance principles of operation essential antagonistic, and the result has been disastrous in every case. Anyone who brings an unbiassed judgment to bear upon the matter can hardly fail to see that in milling, The candid miller cannot close his eyes to he merits of bur the principle embodied in roller mills, certain operations in milling; but just so
soon as the attempt is made to exclude everything but rolls, failure must eventually result. If the early roller millers, instead o discarding rolls entirely and going back to for a part of the reducing process, and had used bnth in conjunction, striving to remedy by new appliances the radical defects of both
for certain operations in milling, rolls would not have fallen into such complete obscurity or so long a time.
The revival which rolls and roller milling as experienced in the past few years has perpetuated in some forms the fatal mistake
which led to the abondonment of rolls forty years ago. And there is the same reason for
t. When Collier and Sulzberger introduced their roller systems, it was with the convic-
tion that the millstone was not fitted to reduce wheat to flour.
they had not made the fatal error of supposand some other machine could be constructed which would do everything, all would have been well. In the same manner millers of
late years, both in Europe and America have found that the millstone could not be used for all operations of gradual reduction. hat, therefore, the millstone wastily assumed have hailed the rolls because they were claimed by the vendors to do everything that millstones could do, and do it better. The
same error of a generation ago is being committed by many millers of to-day, who are adopting rolls for every purpose in milling and for all kinds of wheat. Ultimate failure can be the only outcome of this refusal to
profit by experience. Because the millstone is not fitted for reducing wheat, it does not fo'w that it cannot reduce middlings; nor doe
follow that because rolls can do some
hings better than the millstones, they should supplant millstones entirely. The attempt to make a coachman act as cook coachman. Rolls are good enough in their place, but their legitimate place is not to aborb all functions of reduction.
On exceedingly hard wheats like those of Minnesota and Hungary, a complete roller system, employing rolls for all reducing pur millstones only were used. With millers who use such hard and uniform wheat exclusively the error of using rolls for breaking their wheat is not so serious a one ; it is only a question whether they could not obtain better results by other instrumentalities ; but with
the miller who uses soft or medium wheats, or mixed wheat, the mistake of using rolls to reduce it is a serious one. The opinions of expert and practical men is not wanting in support of this statement. Mr. Oexle, the gentleman before quoted, who was himsel could not (in wisdom) be used for reducing anything but hard wheats, and experience seems to bear him out.
It would hardly be fair not to judge the millstone. It would be tedious to define the
difference in rolls occasioned liy the use of gear or belt for driving purposes, or to define
the differences of action between rolls of smooth and corrugated face, and the differences of work when the corrugation is sharp and smooth. The theoretical action of the rolls modified by the differential speed, hough the extent of this modification is overestimated by interested parties. The differential speed to rolls are merely tempts to disguise in a measure merely which all rolls must have.
The claims made by advocates of roller mills for the reduction of wheat, that they require a third less power than millstones and do not, as millstones, require dressing at frequent intervals, may be granted without the admission settling the matter by any means. Because rolls are superior to burr stones in some respects, does not establish for reducing wheat; for if we examine the action of rolls we shall find them deficient in many important particular, so far as the reduction of wheat to middlings is concerned, and this is, after all, the chief question in gradual reduction, to which all other considerations are subordinate.
If anyone will reflect a moment, or, what is better, test the matter in a practical way, racter of the rolls' corrugation may be, it is impossible that a pair of rolls should split a grain of wheat through the crease. When
I say impossible, I do not mean to imply that a wheat kernel is never so split by rolls, but simply to assert that every such instance is the result of an accidental relative position of the wheat berry to the corrugations. No
roll has been, or probably ever will be, devised which can split the berry in the manner described with anything like regularity All rolls now in use break the wheat not in the manner which has been shown to be desirable, but in a hap-hazard manner, the only result of which is to reduce the size of the particles to be handled, and not to take out the discolouring dust when it is fuund in the
crease.
If you will examine minutely the product of a tirst break on rolls, you will fail to observe ing the wheat beyond reducing the size of the particles to be handled as mentioned before You will find the wheat broken in every con ceivable shape, and only in a tew instances broken longitudinally. Of course this is a step towards gradual reduction, as the size of the material is thus reduced; but no good end is subserved farther than this, for the dirt of
the crease is still in the particles of wheat. That this is literally true, is shown by the fact that the break flour of the first reduction with rolls is quite white and clear That the action of fluted rollers is less injurious than the millstone, and comminutes the bran in less degree is an undeniable fact but that they are not perfectly or even well adapted to the gradual reduction of wheat is proved by the no less undeniable fact, that the "break flour" produced by each su
sive reduction grows poorer and poorer.
Nor can it be denied that the breaking of the wheat into ragged, irregular shapes by a first recuction on corrugated rolls, facilitates
the comminution of the bran sequent reductions. This, coupled with the incorporation of the dirt with the break flour, will account for the inferior color of the break flour produced by roller mills. Somef mills, it is true, do not show an inferior article of what is cafled wheat or break flour, but it will be found that these same "patent" or semolina flour, for at a certain point it is politic to sacrifice a percentage of the "patent" in order to be mixed with marketable grade. And four up to a good. added that the reports of the pere here of "patent flours" obtained by roller systems of reduction are generally pleasant fictions. Satisfactory proof of roller mills and roller systems making a large percentage of "pa-
tent," and a good article of clear flour, with close yields, as their every-day work, is lamentable deficient. Few if any roller millers that make great claims will afford any opp ortunity of verifying their assertions in this particular.

What I have said of the action of corrugated rolls in comminuting the bran is measurably true of the germ, the importance of removing which is now universally conceded. Nature points out, in the very location of the chit or germ, the manner it should be removed. The only effectual
(Continued on page 75 .)

United States Miller.
E. HARRISON CAWKER, Editor.
published monthly.

## subscription price.-Per Year, in advance.

 All Drafts and Postofice Mone Biils for advertis
For agreed upon,
For estimates for

MILWAUKEE, SEPTEMBER 1882. We respect fully request our readers when they write to persons or firms advertising in
this paper, to mention that their advertisement was scen in the United States Miluer. You will thereby oblige not only this paper, but the advertisers.

## Flour Mill Directory.

Cawker's American Flour Mill Directory for 1882,
Was completed, ready for delivery February i, 1882. Was completed, ready for delivery February i, 1882.
It shows that there are in the United States 21,346 flour
mills and in the Dominion of Canada 1,488. The mills in
minder mills and in the Dominion of Canada 1,488. The mills in
the United States are distributed as follows:
Alabama, 388; Arizona, 17; Arkansas, 234, California
 96; Distriet of Columbia, 7; Florida, 81; Georgia, 514;
Idaho, 18; Illinois, 1258; Indiana, 1163; Indian Ter-
ritory, 3; Iowa, 872; Kansas, 437; Kentucky, 642 LLeuisi-
ana, 14; Maie, 200; Maryland, 349; Massachusetss, 363
Michigan, 831; Minnesota, 472; Mississippi, 297; Missouri; 942; Montana, 20; Nebraska, 205; Nevada, 10; New
Hampshire, 202; New Jersey, 445; New Mexico, 28; New
York, 1922 ; North Caroina, 565 ; Ohio, 1462; Oregon, 129 ; Pennnsylvania, 2786; Rhode Island, 47; South Carolina,
205; Tennese, 260 ; Texas, 54; Utan, 129 ; Vermont, 221;
Virginia, 689; Washington Territory, 45; West Virginia, The directory is printed from new Burgeois type on
heavy tinted paper and is substantially bound. It makes ally arranged in each state, territory or province. The
name of the mill, the kind of power used and pacity of barrels of flour per day of 24 hours are given
wherever obtained which is in thousands of instances This work is indispensible to all bu
reach the American Milling Trade.
Price Ten Dollars per copy on receipt of which it will be
sent post paid to any address. Remit by registered letter, post-office money order or draft on Chicago or New York
made payable to the order of E. Harrison Cawker, pub-

The Dominion Millers Association met Aug. 7, at Toronto, Canada, and considered
matters of especial interest to Canadian millers.

Hungary reports the best harvest for
wenty years. The estimated yield for 1882 twenty years. The estimated yield for 1882
is, of wheat $125,000,000$ bushels; rye 45,000 ,000 ; corn $110,000,000$; barley $40,000,000$.

Minneapolis millers say that they will grind $20,000,000$ bushels of wheat in the
coming year. Milwaukee millers will grind $12,000,000$, and St. Louis millers about $15,000,000$ bushels.
There was never such a time for building grain elevators. At almost every railroad station in the West new elevators are being
built, or old ones enlarged. The bounteous harrest will give the elevator mena " boom."

The bottlers of mineral waters, beer, etc. have an official newspaper styled The National Bottlers Gazette. It is published by W. B.
Keller, in New York, is handsome in appearance, and the subscription price is $\$ 2.00$ pe

We welcome to our table The Roller Mill monthly Journal, published at Buffalo N. Y., by A. B. Kellogg. Subscription price,
$\$ 2.00$ per year. Buffalo is the only city in this country that can boast of two milling papers published in the English language.

## Personal.

Mr. M. Walsh, President of the Min neapolis City Common Council and manager of the Cataract Mills, has re
visit to Ireland, his old home.
We recently had a call from Caleb Harrison C. E., who lately graduated at the Wisconsin State University at Madison with high honors. Mr. Harrison has accepted a position
with the engineering corps of the Milwaukee \& St. Paul Railway.
Col. Collins, of the Garden City Mill Furnishing Co., of Chicago, is now on a visit to Colorado, to look after his extensive mining interests.

Halcyon Days for Wisconsin Editors.

## A trip to the "Land of the Dakotas."

In accordance with the custom of the ed itors in the State of Wisconsin they me August 8th to observe their twenty-sixth anniversary in the beautiful city of Hudson on the picturesque banks of the river St. Croix. The reception committee appointed by the good citizens of Hudson met our party numbering not far from 200 gentleman and ladies and escorted them in carriages to their hotels and elegant dwellings and provided for their comfort and amusement in a most hospitable manner during our stay of twenty-four hours. The routine business of the Association was
speedily completed and the President, Leut. Gov. Sam. Fifield of Ashland and Secretary Hon. Ed. Coe of Whitewater, were re-elected to fill the same positions during the ensuing year After this business was transacted the party sequently treated to a steamboat excursion on Lake St. Croix. On the morning of the 9th the party started by special train on the Chicago, St. Paul, Minneapolis \& Omaha R. R and St. Paul, Minneapolis \& Manitoba R. R. to Lake Minnetonka, where the day was spent in serene enjoyment on board the magnificent passenger steamer, the Belle of Minnetonka The scenery that can be viewed during a days excursion on this boat is positively bewitching. It is worth going thousands of miles to see, and no American should spend time and money in going to Europe to view natures beauties until he has first seen this one at least of the gems of the Great Northwest. It is easily accessible from St. Paul or Minneapolis by After taking supper and spending a couple of hours at the Hotel La Fayette, which is a fine hotel and would be deserving of great patronage if its charges were more reasonable the party left on the St. Paul, Minneapolis \& Manitoba for the West.
We reached Moorhead Minn., early the following morning and the morning daily papers were placed in our hands, which amongst many other good things told us that
250 spring chickens had been slaughtered 250 spring chickens had been slaughtered for our breakfast. Upon investigation at the local scribe had simply told the unvarnished truth.

The Grand Pacific Hotel at Moorhead is wonder considering that the country out there time. The people of Western Minnesota and Dakota, call their country "Wonder-land" and it is indeed appropriate, for wonders met our eyes every where as we passed crossed over to Fargo, in Dakota and after some very interesting exercises including speeches, and music, both instrumental and
vocal we drove out to see the city and then out into the country a few miles to inspect the wheat fields.
Gaze where you would, it was wheat, wheat, Wheat. ro
No. 1, hard.
That is what they claim and the writer be ieves that this year they will in many secTne backbone of that whole country is hard spring wheat, and so long as good crops are secured and reasonable prices can be obtained that country is bound to develop more rapidly than any other land ever has done. It is perfectly wonderful to see such thriving cities as Moorhead, Fargo and Grand Forks in a land which a decade ago was almost unknown. This great wheat section is rapidly filling up with a sturdy enterprising class of citizens
from all parts of the world. It is claimed that wheat can be raised there at a cost of only 36 cents per bushel. Flouring mills on the most modern systems, of large capacity which have a home market at good prices for a very large share of their produce.
At Grand Forks the citizens met us with
bands of music and escorted us in carriages to the City Hall, where the ladies of the city spread before us a royal banquet and waited upon us with their own fair and willing hands and we must confess we enjoyed the hospitalities of the citizens of Grand Forks immensely. Had we space to spare we would tell of the
many good things said on this occasion, things long to be remembered, but we will only further record that as our train rolled away from their depot our hearty cheers for the
enterprising Grand Forks people rose high enterprising Grand Forks people rose high of Dakota. We returned from Grand Forks to St. Paul via Fergus Falls \& Lake Osakis.
In conclusion we beg leave to return thanks

St. Paul Railway; the Chicago \& North-Western R R. Co the St. Paul, Minnespolis \& Manitoba R. R. Co; the Chicago and St. Paul, Minneapolis \& Omaha Railway Co; to the Captain and owners of the steamer Belle of
Minnetonka and to citizens of Hudson, MoorMinnetonka and to citizens
head, Fargo \& Grand Forks,
We would further say to the business men of Milwaukee, Chicago and nll points further East, that if they have not been out to see can Great Northwestern wheat field, that they can not imagine what a country it is until they visit it. They may read, and read and half
believe what the read, but they must SEE it to realize its immensity. We have seen it. "Go then and do Likewise"

## Fires.

Fennimore \& Cooper's mill at Palmerston Ont., burned July 29th. Loss, $\$ 20,000$. Insurance
$\$ 10,000$ $\$ 10,000$.
Minn., burned recently. Loss, $\$, 8000$. Insuranch, 86,000.
Burned-V. W. Dorwin's mill at Durand,
Wis. Loss, $\$ 10,000$. Insurance, $\$ 5,000$.
Gko. V. Hecker \& Co.'s Cherry Street Mills in New York City, were destroyed by fire July 31. Two men were killed. Loss $\$ 400,000$ on
mill, fairly well covered by insurance. The mill will be rebuilt at once.
Burned-Aug. 4, J. G. Mold \& Co.'s flour mill at Sunrise City, Minn. Two men perished in he flames. Their names were John Lock an John Holmquest. Loss on mill, \$10,000.
Burned, Aug. 18, Smith \& Burleson's elevator ance, 25,000 .
Burned, Aug. 19, Cole \& Beeler's flour mill near Jeffersonville, Ind. There were stored in the mill 3,000 bushels of wheat which were

How Boys May Learn the Trades.-Th New York Herald says that its recent article on the "Scarcity of good workmen," elicits considerable commendation: One writer attri butes the lack of opportunities for apprentice to the subdivision of labor which has been
brought about by the introduction of machinery and the tendency to do almost all kind of mazufacturing on a large scale. Anothe
insists that the trades unions protect th apprentices, although they limit the number he also makes the excellent suggestion that the unions should insist that every apprentice shall at the simpler kinds of work, in which
kept ander instead of being boys can be most profitable to their employ ers. Two others complain that as soon as
boys learn anough to make them of any value they desert their employers in search of higher wages. In answer to these last we need only say that apprentices are neve taken haphazard from among boys, and thal an employer and a boy's parents or guardian can be enforced by law. The change means and methods in some trades is un
doubtedly disadvantageous to boys who wish o learn these trades, particularly in large cities; but there still remains a wide range for young men with a taste for mechanics. For might wo boy who would be a cabinet-make might work seven years in a large factory
without learning much. If, on the other hand, he were to spend only three or four years with a repairer who has only a little shop, he would learn so much about construction, materials, styles and finish that, if he had any taste, he could in a small shop of his might at a handsome profit whaleve h might design and make, for the revolt against
machine-made furniture increases as time goes on. Thousands of boys want to learn the printing business, believing it a stepping-stone of a newspaper, but in New York they cannot do it, even by paying for the privilege, for no single establishment, however large, covers the business in all particulars. The boy only method is to become a good typesetter,
and then go to a country office where, hy sacrificing a portion of his time, he may slowly acquire the other details of the profession. No large machine shop is the prope place for a bright hoy; he can learn more in a village blacksmith shop, were many kinds of machinery are brought for repairs. We have already suggested the only way in which boys can become competent builders, and the method outlined, like those indicated above
hints at the only proper way to study any comprehensive mechanical business at the present day. Success depends more upon
the spirit of the boy than that of the employer. The boy who cares only to earn large pay, and do it quickly, cannot succeed in learning a trade; but he who wants to learn
and is willing to waive immediate large returns for the sake of good chances to learn, will in the end become a competent journeyman, and, what is more, an expert of the class rom which come all the foremen, "bosses," designers and inventors.

## The Wheat Tester.

by s. c. barton, preston, minn.
Is not, as is often supposed, intended to defraund the farmer, but to ascertain the specific value largely depends, thereby to its commercial and exact justice to both buyer and seller. It is used in all large commercial transactions between dealers throughout the country, without the slightest protest, or thought, that it is an instrument of fraud. It does not, in any degree determine the actual value of the wheat, egree determine the actual value of the wheat,
but only its relative value. It detects at once any defects not readily apparent to casual observation, such as moisture, imperfection in the berry, improper cleaning, etc. Now these are all proper objects of search in the buyer, to which it would seem that no reasonable honest seller could object, but such is the prejudice existing against this innocent instrument that is use is quite often objected to, the mean obection being that the buyer is so very careful in the filling. Now upon this very care depends he uniformity of the test, and consequent utility of the instrument. A reasonable expedition in the filling is expected, and if each buyer is equally careful, almost exact uniformity is attained, which is the object sought. I venture the opinion that if a sample of reasonable clean wheat be tested here by a competent person, a uniform humidity, it may besent successively to all the large commercial wheat centers in the country there to be retested without the variaion of one-fourth of a pound in the test. Now I ask could this be done were the lest careless-
ness tolerated in filling the tester? I may add that, as a rule, the poorer the quality of the wheat the more strenuous the objection to the use of the tester, no objection being made when
the crop is uniformly good. To illustrate: Say it requires four bushels and fifty pounds of No. wheat to make a barrel of flour of a certain grade, according to the present and universally accepted method of testing. Now is it not plain that if we fill the tester more compacity to suit which views of the seller, that the same wheat No. 2 before tested No. 2 will now test above lest No. 2, so that we cannot make a barrel of flour of four bushels and fifty pounds of wheat according to the latter test, but that it will take say five bushels, and even with that amount at we consider that the mill is the Now which all wheat of every grade whethert 0 to the miller or to the shipper must pltimately the miller or to the shipper, must ultimately be subjected, also that the flour and feed are or this flour and and that the price obtainable or this four and feed, less the cost of manufac uring, must regulate both the price and grade of the wheat bought, it follows, therefore, that neither the farmer or seller can hope to contravene the laws of trade, which are as unchangeable as the laws of the Medes and Persians, by making an unwarrantable war upon the use of the tester. It is true our legislators have interdicted its use. They might with equal propriety have made it penal to put on glasses when examining goods for purchase, lest they reveal latent defects, or prohibit the probing of a jar of butter or a barrel of flour, lest the seller hereby lose a sale. But we may tolerate them bering that wherelittle is given, little is required,

## Wanted an Understanding.

An Illinois merchant who was taking baking powder in bulk from a Chicago firm, called at headquarters the other day to say that there was something wrong with the goods.
"I don't think so, was the reply; we make "I think we ought to he wet,
derstanding," continued the more perfect understan you, adulterate the dealer. "Now, then I adulterate before I ship, then the retailer adulterates before he sells, and the consumer can't be blamed for growling. I wanted to see if we couldn't agree on some schedule to be "ollowed."
What do you mean?"
"Why, suppose you put in 10 per cent. of chalk, then I put in 20 per cent. of whiting, then the retailer puts in $3^{n}$ per cent. of flour; that gives the consumer 40 per cent. of baking powder, and unless he's a born hog he'll be perfectly satisfied. You see, if you adulterate 50 per cent. on the start, and I adulterate as much more, and the retailer adulterates as
much as both together, it's mighty hard for the consumer to tell whether he's investing in baking powder or putty; we must give him something for his money, if it's only chalk.

The large brick works at Deconshire, EngTurbine, manufactured the celebrated

BEST IN THE WORLD."
GARDEN CITY
WHEAP PRISHII


Gathmann's patent "inclined bristles" prevents all clogging when the brushes are

## ONLY DOUBLE BRUSH

Which can be set up close so that it will
Thoroughly Brush Wheal. Gnaranteed to IIIPROVE COLOR of the FLOUR. It don't break or scratch the grain. Removes all the dust. Very light running. Send for circular and prices.

## Prices Reduced! Improved Garden City vility Priflel



With Travelling Cloth Cleaners
Our improved Purifier has every device requisite to make it perfect, and every one in use is giving the greatest satisfaction to the users. The Cloth Cleaners are guaranteed to clean the cloth better than is done on any other purifier. Send for our new circular.
Over 4000 Garden City Purifiers in use nearly 500 of which are the Improved Machine.
The Best and now the Cheapest. Write for circulars and price list.
We are agents for the
BODMER
Bolting Cloth!
Which has long been acknowledged as the best made, and which has lately been further improved, making it now beyond com. petition. We make it up in the best style at short notice. Send for prices and samples.
Garden City Mill Fuyillshing Company.
CHICAGO, ILL.

The Electric Light in Flour Mills.
Mr K. W. Kunis, editor of Die Muehle, writes as follows concerning the article on the above subject which appeared in our August number
"The article of Mr. Haempel, recently published in the Ungarische Muehlen Zeitung, has excited much interest. Having been occupied for a considerable time with the question of the electric lighting of mills and having studied the exhibition at Paris, I have to say that for
the present there exists no particular system which can be recommended without hesitation, but that unquestionably the electric light will be adopted for mills some time in the future. The incandescent light is indeed less rational than other systems, which give more light at a lower price, but it is preferable in so far as it enables the application in mills of a much greater, and so to say unlimited number of separate lamps within a given
electric current. For it is the small divisibility of the electric current which is against the application in mills of the other systems. This drawback is happily avoided by the incandescent light. Concerning the creation of the electric current a letter from Messrs. Siemens
\& Halske, in Berlin, of the March 71 this year, remarks as follows:-"For electric lighting a motor is required, having a regular and equa action, which sets the electric machines i
motion. These machines are always used in pairs; the smaller, or primary machine ducted into the larger or secondary machine, and creates in the latter powerful electro magnetical effects. Between these electro
magnets of the secondary machine, a ring magnets of the secondary machine, a ring,
fitted with wire coils, rotates, in which strong electric currents are induced, which are conducted to the lamp". Now in those lamp current is conducted to thin carbon sticks whose points are at a certain distance from each other, and here the sparks dart from
one point to the other and thus create the electric arc. The differential electric lamps means of the current the distance of by carbons, and thus caluse the electric light to be in a high degree equable and quiet
Messrs. Siemens \& Halske apply the light Messrs. Siemens \& Halske apply the lights
in three degrees of strength of say about 15 ,
35 and 120 gas flames, each equal to ten sperm 35 and 120 gas flames, each equal to ten sperm
candle lights. By surrounding the light with one or more opaque glass globes it is properyubdued, so as not to dazzle too much and the installation amounts on the average, with moderate lights (equal to 15 gas flames each)
with 8 lamps, to 5,100 marks ( 255 ) with 8 lamps, to 5,100 marks ( $£ 255$ ), with ten
lamps to 5,900 marks ( $£ 295$ ), with 12 lamps 7,300 marks (£365), with 14 lamps 8,100 marks ( $£ 405$ ), with 16 lamps 9,200 marks ( $£ 460$ ), with 20 lamps 10,800 marks ( $£ 540$ ), including a total length of conducting wire of 50 meters for each lamp and 1,000 metres for connection with the motor. The carbons
burn five hours, after which they must be renewed. The pow
$0.75-\mathrm{h} . \mathrm{p}$. indicated.
The incandesent lights are lamps in which a piece of wire, or a carbon filament, is heated be sufficiently known thus gives light. It may when it goes through a metallic conductor, warms this conductor. When the electric current goes from a large conductor to a
small one it becomes contracted or compressed and there arises a considerable friction with in the conductor, and the warmth is increased to such a degree that the thin conductor quickly attains a temperature of $1,500,1,800$
and 2,000 deg. $C$, and thus spreads a strong light (the incandescent light). This light is less dazzing than that produced between two
carbon points. As the oxygen of the air would very quickly consume the white glowing wire of the carbon filament, it must be enclosed in air-tight evacuated globes, and would require no renewal if the action of the electric streum did not gradually dissolve in-
finitely small particles of the carbon. This finitely small particles of the carbon. This
dissolution of the wire or carbon filament, occurs slower or quicker according to the
substance employed, and, therefore, this substance, and the shape of the filament, whether horseshoe, or loop, etc., constitutes the main differences of the various electric lighting systems. The incandescent light is nothing new, but it had, on the contrary, long been
contemplated to utilise it for lighting, but it was held to be disadvantageous because the electric are gives light at a smaller expense; in practice, however, it had been generally overlooked that it is more important to have the light distributed in different places, than to have an extroordinary mass developed in to have an extraordinary mass developed in
one point only, and as the former desideratum
occurs much more frequently than the second, the incandescent light which fulfils the first of these requirements may probably in future be found the best for most purposes, unless the divisibility of the electric current should succeed much better than hitherto. With egard to the special lighting of mills by lectric light, the incandescent light appears o be far more adapted than the arc light, in
onsequence of the many objects in mills which throw shadows. The power required for incandescent lamps will probably b nearly equal to the amount named above fo arc lights, and as a motor with equable action is necessary, the views expressed by some orrespondents that the installation of electric ight in a mill hardly costs anything, is to optimistic. Not every mill has the necessary
power for driving a dynamo-electric machine power for driving a dynamo-electric machine,
and not every mill is so arranged that its driving gear can be easily disengaged whilst the motor continues in action. Generally the suspension of the work is effected by the topping of the motor, and Mr. Van den yyngaert has already explained in his paper what then happens with the electric lighting. Electric lighting in a mill either requires an independent motor or an independent driving gear; and at the same time an arrangement for stopping the mill while its motor continue work. Therefore, in the latter case it also requires a suitable governor for regulating he great difference of power required afte From
From these short explanations it follows
that the electric light, no doubt, merits that increasing attention from millers, which
have devoted to it for some years, but it has not yet reached a stage at which it can be unreservedy recommended to millers; as
however, daily progress is made in electric lighting it is very probable that in a shor time it will be rendered free from the above
named imperfections. Cold or Warm Grinding
A Buda Pesth miller wrote recently to the Ungarische Muehlen Zeitung, as follows in a
known bakers of the capital, informed me
recently that some lots of flour, in spite of the great reputation, yielded a bread which pcssessed a kind of tastelessness which no addition of salt could remove. If he had such flour he added to the dough a small quantity f solution of sugar, which remedied this fault. He also advanced the opinion that it was caused by reduction on rolls. I had had attributed it to the baker and the faults in his process, but now the fault was laid at the door of roller mills. I determined to inestigate for myself, and did so with satisfac
ory results.
I allowed part of a lot of middlings o be floured by a roller mill and part betwee The baker was right; the roller flour fare test. well-known tasteless bread, while that from the stones did not possess this bad quality. was confronted by a fact the explanation of Which took meseveral days. Then 1 measured
off exactly equal quantities of the flours. Weighing showed that from the stones was heavier than the other. My conclusion was
then confirmed-a conclusion based upon this reasoning :-
If the stone grinds hot it consumes a large part of the "fermentability" of the flour, besides the difficulty of bolting properly. If it only grinds warm, as opposed to cold, then there arises in the flour, under the action of
the air, a kind of fermentation, or rather oxidation, and it must therefore be heavier
than that which grinds absolutely cool. This same reason shows that the cause of the fermentation of the flour.
The baker had noticed this tastelessness only occasionally, but in my mill the reduction had been carried on for several years by rolls, These, therefure, could not be the cause of
the trouble. I rigged up an exhauster which had long since been thrown aside and connected it with a run of buhrs. On the other side the rollers were set to run fister. The flour products thus obtained gave bread of equally good taste. The stone could not grind cool enough, in spite of the exhauster, although arising in the flour, while the rollers, although running swifter than before, produced just the equisite temperature for this fermentation, and no more. A lesson follows from this, which we were unable to learn under the sole rule of the millstone-that absolutely cold
grinding is as injurious to the quality of four
on rolls. Accordingly in times of business depression, when work is not pressing, one should rather use fewer rolls, run rapidly, than all, run slowly. As regards the diference in specific gravity between fermented and unfermented flour, an exact investigation would be very interesting. I can not explain it, but I believe after the matter is agitated, it a solution will be found.
If, now,
If, now, complaints are mace about the too warm grinding of roller mills and machines are sought which will grind cooler, this is simply an error. The roller mill cannot grind too warm, and the temperature which is obtained by rapid motion, is just that which is ecessary to set up that sweet fermentation in the flour which gives bread its peculiar nutty flavour, and which is wanting in flour, that, owing to slow grinding, does not reach the necessary temperature for the transformation of any of its elements into sugar Another question touches the probable greater durability of the unfermented flour
still, this is only of theor still, this is only of theoretic interest, as dry
flour made upon stones has proved to be of excellent keeping qualities, and does not spoil easily. Finally a chemical examination of
fermented and unfermented flour would be productive of interesting results. It seenss unquestionable, that in the further processes formentation the dough must differ in the two cases, and produce a difflerent result.
To the superficial observer this difference would only become evident in the taste of the bread, but scientifc investigation would cer-
tainly disclose much that is new, and night give many valuable hints for the treatment of flour made on rollers.

## Duties of an Engineer

Above all other things the boiler should be kept clean; the manner of doing this will
depend on the construction and kind of boiler used. Before blowing out the water to clean the boiler, see that there is not over ten pounds of steam, and that the fire has all died out in the furnace. After blowing out, hole and with a force pump and the hand out all the loose mud. It may then be move th take the scaling tools and rea good idea to raise the safety valve while filling the boiler, as it provides a way for the air to escape while the water is going in. Before firing up in the morning, or at any
other time, see that there is plenty of other time, see that there is plenty of water
in the boiler: if it is low, fill up before placing. the fire in the furnace. To kindle your fire, put a thin layer of coal over the grates, then place the kindling and wood on this; after the fire has commenced to burn, put in another layer of coal, and you soon will have a bright fire. Do not fire up too fast when the boiler has stood a few days, as forced firing is injurious to both the boiler and masonry.
Keeping the water at the proper height is of considerable importance to easy firing. The practice of turning on the water and letting it run up, and then shutting it off and allowing it to run down, is a poor one. Feed the water just fast enough to supply the demandOil the engine before starting it and keep the oil wiped off where it is not needed. Spend a few minutes every day in cleaning up the
engine, removing all extra oil, wiping off the dust and dirt, and see that everything is in good working order. Always open the cyl-
inder and drain cocks when you stop your engine, and ciose them after the engine has
started. In oiling the cylinder do not admit the tallow till the engine is und r way and the cylinder drain cocks are closed. Do not start your engine too fast but let it come up to speed gradually. Be sure that you keep Wood and Iron. (Minneapolis.)

## A Sight Rarely Seen.

Moorhead News, Dakota: Looking south from the windows of the Grand Pacific hotel nowa-
days it is possible to see a sight that no part of the civilized world can equal. Stretching away into the horizon is a boundless field of grain. It extends fully thirty-five miles; it is mostly wheat and partly oats and barley. In all that distance which can easily be seen over the level prairie there is not a single rod of fence to obstruct the way, and a harvester might be started on the farm of the millionaire farmer, E. C. Sprague, and journey nearly two days without meeting such a thing as a fence. In all that extent of country, horses and cattle are picketed or watched by herders, and the farmer saves the incalculable cost of building fences. This is a grand country with its prodigal soil, but it is grander still in he intelligence and thrift of its level-headed settlers.

## THE UNITED STATES MILLER.

Increasing Demand for Machinerv.
The Machinist remarks that a few weeks ago the press of orders for machinery and focturers were apprehensive of actual dull
fand ness before the opening of fall trade in other branches of business. Those who had steadily been refusing orders were many of them will-
ing to re-open correspondence with prospecing to re-open correspondence with prospec-
tive purchasers, and in some cases extreme prices were moderately shaded to secure a few desirable customers. The past three weeks have shown a decided change in the
situation. Purchasers who were awaiting events are becoming anxious, and are hastening to place their orders for fulfillment at the earliest practicable moment. Reports that
reach us from different quarters, both East and West, as well as our own observations among the shops, agree that a renewed activ-
ity has sprung up this month, which was hardly to have been expected in midsummer. If we look for causes, we can, perhaps, discover accelerated movement than the prospect of bountiful crops, especially of breadstuffs, which are likely to be in good demand abroad.
The activity in railroad building and equipment will be greatly strengthened by the now almost certain prospect of good crops; and
upon the railroad industry more than any other single business depends the demand for in railroad construction could be desired than already exists. All that is needed to sustain
and push forward the work on so large a scale portation business can be obtained to make both new and old lines pay expenses. Profits are usually left to the developmests or he
future. Several railroad enterprises are undoultedly in advance of public requirements, but the rapid growth of the country-more
rapid than ever before-will in time render the lines valuable that are now unnecessary.
Locomotive building has not experienced any such check as was reported in daily papers a few weeks ago, and
fur months come.

## Overloading Safety Valves.

## The practice, which prevails extensively,

 of loading the safety valves of steam boilersbeyond the proper limit, is a most dangerous one, and cannot be too strongly condemned. Cases are very frequent where, by this means,
old boilers, worn and thinned by corrosion, are regularly worked at a much higher
pressure than they were originally intended for when new. There can be but one result
of such a course, and that points unerringly toward disaster. The wear and tear of a boiler so overloaded and overworked is vast-
ly increased, so that little if any economy results from the practice. It is true, that, in
times of great business prosperity, when every department of a manufacturer's estab-
lishment is driven to its utmosis capacity, the temptation to overwork a steam boiler is very
strong; still the practice is, under any circumstances, wholly inexcusable. With most kinds simply the failure of the machinery and the boilers the case is different. Here the damage, in case of accident, is not confined to the boiler but human lives are almost invariably sacri-
ficed. We think every one will agree with us when we say under no circumstances is
the imperilment of people's lives justifiable. Everything should be done that human knowle.ge renders possible
steam perfectly safe.

## Dalrymple's Great Farn

Bismarck Tribune, Dakota: Dalrymple, the great bonanza farmer, is cropping this
year 57,000 acres of land. This vast tract is divided intu farms of 6,000 acres each. Over each of these is placed a superintendent.
These farms are subdivided into the divisions of two thousand acres each, which are in the charge of a foreman. Each subdivision of comprising boarding houses, stables, granary, machinery hall and blacksmith shop, and are connected with the superintendent's headquarters by telephone. Each 5,000 acres has its superintendent, bookkeeper storehouse for supplies, from which goods are taken on requisition to the different divisions. Wages for the past year have been $\$ 20$ a month until a month for fall plowing. The best hands get $\$ 20$ and inferior ones $\$ 25$ for fall work. The farmer has the choice of two outlets for The farmer has the choice of two outlets for
marketing his grain: one the immense milling
demand of Minneapolis, the other, Buffalo and New York markets by way of Duluth. Wheat can be raised and delivered at the railroad in ordinary seasons for about 36 cents a busuel,
and it costs from 25 to 27 cents a bushel to ship it to New York. The average yield is wenty bushels.

## Items of Interest.

Yeast mixed with about one-eighth of pure glycerine will keep well for a long time i placed in a cool cellar or camber.
The Supreme Court of Michigan, in a receht decision, held that damages for the nen-performance of a contract to deliver mill machinery can not be measured by pro-
spective profits, unless the same can be estimated with absolute certainty.
The question of industrial teaching in the public schools is not yet a settled one, in spite of many loud proclamations. It may well anything to the already crowded course of instruction. It is hardly wise to promote superficiality. Special technical schools, New York Tribune.

Belgian engineer is said to have invented a process by which he can weld steel at a red
neat. He keeps an essential portion of his he carefully polishes the surfaces to be united, smears them over with some sort of liquid, raises the temperature of the metal to redness, and hen joins the pieces. After se-
vere tests, bars welded in this way were in no instance broken at the point of juncture. loating sawmill has been built on the river at Nashville, Tenn., for operation on the upper Cumberland. The design of its projectors is oo buy pine, cedar and walnut timber on the ber for market on the vessel, at the rate of several thousand feet per day. The vessel is a novel structure, 100 feet in length and
twenty-two feet wide, and has a full sawmill equipment.
Maori Millers.-An instance, says an Auckland (New Zealand) correspondent, of
he advancement of the native race at Raglan the advancement of the native race at Raglan,
is to be found in their enterprise in milling. A second flour mill is to be erected for Hone to One, at Pauwewe, Kawhia. It will be
built by subscriptions raised among the Maoris living in Kaphia and Aotea, and a boat is also to be built for them to transport the flour to the various settlements on the shores of Nails.-
Nails.-Many persons are puzzled to undertenpenny, mean as applied to nails. Fourpenny means four pounds to the thousand nails, sixpenny six pounds to the thousand nails, and so on. It is an old English term, meaning at first tenpound nails (the thousand
being understood); but the old Englishman clipped it to tenpenny, and from that it de generated until penny was substituted for pounds. So when you ask for fourpenny nowadays you want those which will weigh less than a pound they are called tacks, etc and are reckoned by ounces.
The great Gothard tunnel, which was pened on the 1st of January of the current In the construction of "this wonderful hole through the mountains," an average of 2,347 men was engaged per diem, and work was
carried on day and night. During the entire period of the construction about 1,000 tons of dynamite were used for blasting, and 1,700 tons of oil for illuminating purposes. The
entire amount of rock removed in making the tunnel was about $1,200,000$ cubic yards, and the lining of the inside, which has an area of 258,000 square yards, took up about age cost of building the tunnel per lineal foot was about $\$ 73.85$. The time occupied at
Leatheroid is a new article which is being made of paper. It consists of a number of thicknesses of cotton paper wound one upon nother over a cylinder. The remarkable are derived from a chemical bath, through which the paper is drawn on its way to the cylinder. The effect of the chemical bath on the paper is said to be wonderful. Leathof about 20 thickneses it now serves, consists upon or around molds, while wet, into the form it is to represent, and will hold that form perpetually when dry. When dried,
it is as difficult as rawhide to cut with a knife.

A company has been formed at Kennebunk, Me., for the manufacture of this article, and will at once build a large mill there for that purpose. This company is making, for introduction into the mills, roving cans, boxes, etc., to take the place of tin cans and wooden boxes. Cans made from this material are about one-fourth the weight of tin cans of
equal size; while tin cans are liable to get bent, cans made from leatheroid are entirely free from this objection. They have the elasticity of thin steel, and no amount of kicking or hauling will break them. Orders
have already been received from several large mills for their roving cans and boxes, which are made seamless. This substance is also making one of the smoothest and most lasting coverings which can be obtained.

Wheat and corn statement for nine years.-S. W. Talmage, of Milwaukee, sends the following statement of the wheat and corn production in this country from 1872 to 1881 nclusive, also the average annual produ
and the estimated production for 1872:


Two months ago Mr. Keely, the inventor of the celebrated Keely motor, began, by secret of his invention. After seven weeks constant revelation, Mr. Boekel declares that he does not yet understand it, and is inclined
to think that "recognized mechanical sciences othink that "recognized mechanical sciences disappointing not only to the stockholders, but to Mr. Keely himself, who has announced his intention of taking out a patent. It would obviously be impossibold notent a process
or invention which could not be explained or described, for the law requires description for the purpose of identification. Mr. Keely may raise the point that the constitution of
Mr. Boekel's mind makes successful revelation to him impossible, and might insist on the appointment of some new person as the depositary of the secret. But the probability is that the Keely secret will long remain one of the mysteries of science.
Wooden Bolits in House Building.-The Exeter, England, Flying Post offers the following: "Why do you make so lavish a use of to the exclusion of the honest old oaken pin? Pull down any building, if it be merely a barn, of more than 200 years old, and you will not find a single nail in the original work; rafters and joists were all bolted together so stoutly as almost to defy the tools of the
destroyer. Many an old manor barn, when pulled down of late years-as unfortunately only too many of them have been-has shown itself to have been better built than most palaces are now. There are arguments in favor of the use of nails in house building, but they are as nothing compared with the solid advantages of using wooden bolts. The
iron nails in time canker and rot rafters and floors, but bolts hold them together 'like grim death,' and render a house practically indestructible.

Almost Perpetual Motion.-A New York paper reports that there is on exhibition in a
small apartment in Chambers street, what is claimed to be the nearest approach to a perpetual motion ever devised. The contrivance consists of two wheels, nearly concentric, which are rotated by means of nine four pound balls, which run in the grooved radie four of the balls are placed inchine is at rest, four of the balls are placed in the grooves of four grooves, there being seven in all. To give motion to the machine a ninth ball is placed in a vacant groove. The equilibrium being disturbed, the first wheel begins to revolve, and the movement of its xis, which is cogged with the axis of the ther, and sets that in mollo. On reaching a certain point the odd ball instead of con-
tinuing its motion from the center of the wheel to the circumference, rolls through an opening into a groove belonging to the companion wheel and imparts additional motion to that one, the loss of force in the first being soon made up by the return of the odd ball The reaching a given point on the other side. power, but it certainly develops enough by
simple gravitation to give motion to itself until the material of which it is made is worn out. It is the invention of Albert Pietrowski a Polish engineer, who labored for more than eighteen years before he succeeded in perfecting a model that would satisfactorily demonstrate the theory which had been the dream of his life.
Measurements of the Great Lakes.-The following measurements of the great lakes have been taken by government surveyors The grentest length of Lake Superior is 335 miles; its greatest breadth is 160 miles; mean depth, 688 feet; elevation, 827 feet; area 82,000 square miles. The greatest length of Lake Michigan is 300 miles; its gratest breadth, 108 miles; mean depth, 690 feet; elevation, 506 feet; area, 23,000 square miles. The greatest length of Lake Huron is 300 miles its greatest breadth is 60 miles; mean depth 600 feet; elevation, 274 feet; area, 20,00 square miles. The greatest length of Lake Erie is 250 miles; its greatest breadth is 80 miles; its mean depth is 84 feet; elevation, 261 feet; area, 6,000 square miles. The greatest length of Lake Ontario is 180 miles its greatest breadth is 65 miles; its mea depth is 500 feet; elevation, 261 feet; area,
6,000 square miles. The total of all five is, 6,000 square miles. The total of all five is
1,265 miles, covering an area of upward of 135,000 square miles.
"Coal by Wire."-An article is going the rounds of the press with the very taking title of "Coal by Wire." It is an outgrowth of
speculation upon the possibilities of the dynamo of the future. The gist of the article is this: That, by utilizing the immense wate oowers of various parts of the globe in driving dynamos, the power may be sent as electricity ver comparatively small copper conductor to any point where it is desired to use it. This of course, will do away with the necessity fo he transportation of coal. It would also be possible to utilize the coal at the mines in driving engines, the profit, in that case, com ing from cheap coal and the saving in its transportation. The possibilities of new com binations which the dynamo presents are so great, and our knowledge of its limitations so comparatively small, that the imagination i prone to run riot. At present we must wait
for improved forms of dynamos, for there is too great a percentage of loss to allow us to introduce them, into any and every situation where transmission of power may be desirable
a Broken Shaft.-There was a loud report at 11 A. m. on August 13, the top story of one of the New York Central railway grain eleva tors at the foot of West sixty-fifth street, New York City. The building shook to its found ations, and fire flew from the floors at the holes through which the big belt that runs the machinery passes. The elevator is the one known as A. It is 350 feet long and 145 feet high. Two powerful engines in the base ment turn a large driving wheel, over which passes a rubber belt that also passes around
a shafting wheel in the top story nearly 150 a shafting wheel in the top story nearly 15
feet above. The belt is 350 feet long, and weighs three tons. The shafting wheel which it turns weighs four tons, and connects with a horizontal shaft of cast steel, seven inches in diameter, that runs from one end of the big building to the other. It was the snapping of this shaft that caused the commotion of Tues

The shaft broke off at the hub of the shafting wheel, which was thrown off its
center with a violence that nade the building center with a violence that made the building tremble. The shaft itself nearly all along its length was bent and twisted. Fortunately, the belt slipped from the displaced wheel belt remained in place the wheel would have been torn off, in which case it would have crushed through the floors to the basement. The great velocity with which the machinery was moving is shown by the fact that when the snapping of the shaft caused the belt to touch the side of the opening in the several floors through which it passed, the friction produced hame. Had the heavy wheel fallen
through the building, great loss of life would have resulted, in addition to the damage to property. As it was, it will require an ex pense of several thousands of dollars and fortnight time, which means the loss thousands more, to repair the shaft.
The branch office of the Link Belt Machinorder from the South St pany; \$80u
 a large crder from the Anchor Miling Com pany, and one foin Company for 800,000 ,eet of belting. The Link Belt Machinery Company" Bince the irst intro duction of their belting to the public, have sold, all told, between $28,000,000$ and $30,000,000$
feet of it. feet of it.

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$$
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$$

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The Geo. T. Smith Middlings Purifier.

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I am prepared to till all orders., not only at the towest
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NEW CORN SHELLER.


The ouly Self-Adjusting Sheller in use tha: will SHELL MIXED CORN, FAST AND WELL,
And that will clean it THOROUGHLY. Easy of access to all parts liable to clog. Thoroughly
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Jonval Turbine Water Wheel, etc. Kilbourn City, Wis. [Mention this paper when you write to us.]

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FLOUR BRANDS



## WOODBURY, BOOTH \& PYYOR

ROOCIESTERE, N. Y.,

asanufacturexs or
Automatic Cut-0ff, Fixed Cut-Off, and Slide Valve

## Steam Engines, Tubular Boilers,

[Mention this paper when you write.]

THE UNITED STATES MILLER.
(Continued from page 69.)
method is to split the berry through the crease, which action therefore performs the double function of freeing the dust and loosening the germ. As we have shown, rols cannot be made to break the wheat in
this desirable manner, but that their action in the first reduction breaks it into pieces of irregular shape, thus permitting the germ to adhere to much of these groats or kerne pieces. The result is that the germ is liable, like the bran, to be partially comminuted, and to make its appearance among the middlings and break flour at every stage of the reduction instead of being removed at the start, as it should be. There is no better or safer principle to be followed in milling than
that impurities should be removed as quickly as possible. The reason for such a principle is simple enough and need not be dwelt upon; and it is certain that this principle will ever be a guiding one to thoughtful millers until some better means than bolting cloth for separating impurities is discovered. So long of particles, and no means exist of removing dust or impurities of the same size as the flour particles, just so long must the miller prevent, as far as possible, the reduction of
impurities and their mingling with the flour. On this ground it is safe to reject rolls entirely for the reduction of the wheat. Their action interferes with principles in milling which are recognized as sound. It was not denied until recently but that rollers could not remove the dust in the crease. One firm of
roll-makers in America went so far as to deny that there was dirt in the crease at all. This denial, so utterly at variance with what every miller knew to be the case, met with such a reception that these same rollmakers soon after claimed that their rolls
would take out the dirt whose existence they had firmly denied.
The very nature of the roll's action which renders it objectionable as a means of reducing wheat to niddlings, renders it invaluable for another purpose. The squeezing action of the smooth roll is the best means that has yet been discovered of flattening the germ in middlings. So, too, rolls may be appropria-
tely used for breaking down coarse middlings, tely used for breaking down coarse middlings,
and for cleaning bran a finely corrugated roll is one of the best means yet devised. Nor
are rolls of porcelain objectionable for grinding coarse of medium middlings, though the millstone, properly dressed and driven, is claimed by many to be better for this purpose than either porcelain or chilled iron rolls Still, it is not so great a mistake to use rolls
for reducing middlings as it is to employ them for reducing wheat. Properly used, and applied with reference to its true capabilities, the roll is a valuable accession to the machinery of the modern mill; but a true perception of its character as a machine would never apply corrugated rolls to the reduction of wheat. One of your most prominent and
experienced milling engineers, and a strong advocate of roller mills for reducing wheat, stated publicly a few evenings since, that "the
breaking of wheat by fluted rollers is not breaking of wheat by fluted rollers is not
yet done perfectly." And why, let me ask after being in use for so many years, are they not made to do perfect work? Surely there can be but one answer, and that is that they It has been repeatedly
It has been repeatedly urged that a mill running on a complete roller system can
never "finish up;" and it must be confessed that the objection is a valid and true one. There is always a residuum of material or tailings, "ueberschlag," as the Germans call it, made by the corrugated rolls themselves, which the miller barely knows what to do
with. The perplexity in which he finds himself leads him, as a rule, to expand his "system," adding more breaks and reductions,
in the hope of finishing up better. In the in the hope of finishing up better. In the
end the miller generally resorts to some of his disused millstones for the finer stuff, and possibly wishes that there was some apparent finishing point in a system of reduction by rollers alone.
And now, gentlemen, I will call your attention specifically to
The Jonathan Mills Reduction System,
which is pre-eminently an American invensimple founded on scientific principles, and Degerminator and Reduction Machine, invented by Mr. Jonathan Mills, are of all gradual reduction appliances yet brought out, the only machines which were designed for a single specific purpose.
While millstones and rolls have been applied promiscuously for every purpose in
Gradual Reduction Milling, these machines
were designed specially to reduce wheat to
middlings, with the further purpose of accom-
plishing this without incorporating eitherseage
pumbers. The parned are $\$ 9,000,000$ in round
coast for plishing this without incorporating eitherea impurities, germ or pulverised bran in the I think it must flour made in the operation I think it must be acknowledged that this is
an ample amount of work for one class of machines to do. The inventor might, by certain modifications, have adapted his machines to flour and cleansing the bran; least he might have employed them for further purposes with as much success and or millstones are used alone for these three widely different objects. But he did not make any such attempt, contenting himsel with adapting his machines to the specific
purpose of reducing when purpose of reducing wheat to middlings. This fact renders a judgment as to the merits mattere machines a comparatively easy adaptability of the means to one end, instead of half a dozen.
We have already seen that the objects be sought in reducing wheat to middlings are substantially: First. The largest possible of seam impurities and the germ at the earliest possible stage in the operation so that they will not discolor the break flour and, 3rd. The avoidance of pulverising the forming of the wheat into middlings.
We have seen that if these conditions are
complied with, the when flour sarily be of a high whality flour must necesferior to the " patent" quality, and but ittle in which can make a large percentage of middlings and at the same time keep all the crease-dust, germ and fine particles of bran the machine or system which meets all the requirements of the case. It may be noted in this connection that a machine which will not grind up or comminute the bran and germ must, from the very nature of the largest percentage of middlings ; for the very qualities in the machine which would reduce
bran and germ would also reduce the interio p rt of the wheat kernel to flour
(To be continued.)

## Prepared Foods.

The following facts are taken from a recent number of Bradstreet's Journal: The use
prepared foods has become universal century condensed foods may be broadly classified thus: 1. Hermetically sealed, or canned cooked condensed foods. 4. Extracts of beef, mutton, vegetables and fruits-or concentrate foods. This grouping also indicates the relative
consumption, beginning with canned goods as consumption, beginning with canned goods as
the highest. Practically, all things edible in the an. and vegelabe kingdoms are now tanned. Des and fricated and artificially-dried vege tables and fruits are in great variety, and em-
brace equally the products of temperate and brace equally the products of temperate and it for table use, and milk, eggs, coffee and chocolate. Extracts of beef and mutton, oftentimes in combination with fruits, are principally used in hospitals and by invalids, although well-known extract of beef is largely used in It will restaurants for making choice soups. value of the preperasions contained in the four classes named is very great.
The United States, with its vast productive ness, is foremost as the world's supplier of pre pared foods, and goods of American origin may be found at the remotest points of the two the Pacific coast the trade in canned goods is enormous. The bulk of the food supply of a flour or canned goode the later ceeding in value the two former. The trade in prepared foods with the Pacific coast is an exchangeable one, there being several extensive canneries there, and great quantities of canned
fruits and salmon are shipped from there. The home supply on the Pacific coast is lacking in oysters, fowls, condensed milk, pineapples, meats and oups. Peaches, tomatoes and other lines fall short at times.
Unfortunately no reliable statistics exist, nor can a just approximation be made of goods in the United Staate8. Taking as examples four of the most notable products canned, and of attainable, an idea may be formed of the immensity of the trade. Over $8,500,000$ bushels of oysters are annually canned. Of this, $5,000,000$ bushels are packed raw, and $3,500,000$ bushels cooked and hermetically sealed. There are 176 oysters in a bushel, and at the rate given there are canned each year 30 oysters for every 0,500 vessels the United States. This requires otal amount of capital invested is $\$ 10,100,000$,
pounds.
The annual pack of tomatoes is a large one reaching a total in the United States of $1,500,000$ The table below gives the pack by States:

## 

There is a large trade in corn, and the yearly
pack quite curiously is estimated at the same The profit to the or $1,500,000$ cases.
The profit to the packer for putting up and marketing his goods is from three cents to five
cents a can ; the grocer has a fair margin of profit, yet the consumer can buy canned goods ready for the table as cheaply as he can buy raw and prepare them. Therefore it may be said that the industry is in only the first throes fits expansion. $\qquad$
ooked by steam and by subjecting to great pressure, or by evaporating, feed from all traces of water, are yet in the era of development. industry state that in the near future all kinds of watery foods will be sold in a condensed form, and to a great extent supersede other preparations. Eggs and milk have already
been successfully reduced to a powder, and the different cereals to a minimum bulk. By simply adding hot water to condensed foods, they are ready for use in cooking or for the table. In the transportation and storage of these goods, he reduction in bulk caused by condensation of great advantage and profit to the dealer. heir advantage to the housekeeper are ob-
vious. That in time a family's provisions for a vious. That in time a family's provisions for a
week may be carried in a bandbox is not an wek may be carried
xtravagant prediction.
The commercial value of concentrated foods largely depends upon their value to pharmaco-
logy. Valentine's meat juice and the various English meat juices are extracted by pressure no chemi al manipulation being used. Their components are: Ninety parts water, seven organic salts, soluble and insoluble. Borden's beef preparation is extracted by super-
heated steam and evaporated to It contains all the elements of beef tissue. It shows fifty-five parts water, thirty parts animal gelatine, ten parts albumen and its compounds, five parts organic salts, soluble and insoluble.
The above extracts are classed as nutriments. cid, musculin, osurazome contains inosin, inosinic sald, musculin, ombracing commone and various organic sals, embracing common salt, a trace; potas-
sium, a trace, left by using potash for macerasiom, a trace, left by using potash for macera-
tiond magnesia in combination with phosphoric acid. Its components are sixty parts water, thirty-six parts organic and soluble matter, and four parts insoluble matter. It is ex-
tracted by chemical manipulation in tracted by chemical manipul
and is classed as a stimulant.
From an economical view, the use of prepared foods is a saviug to the farmer, merchant and consumer. It enables the former to dispose of his entire crop at one deal and at a fair price, thus preventing the loss of produce and time which accrues when crops are handled and room, freightage, packing and clerk hire store consumer saves time, fuel and help. The refuse of meats, vegetables and fruits is all utilized at the canneries, even to the cherry-pits; families, the refuse would have been wasted in the ash-heaps. And this saving costs the mer chant and consumer nothing, because the mering of produce and the work of preparation be done cheaper by well- of preparation can binations than by individuals. Old cans are even turned into use; the trunk manufactures pay a good price for them, and stamp them int ornaments for their wares. - Manufacturer'

## The Horse Power of Turbines.

The power of water is its weight multiplied by the velocity, and in order to illustrate we will
suppose a turbine wheel, working under 15 feet suppose a turbine wheel, working under 15 feet head, will discharge 3,168 cubic feet of water power of the water. Multiply the cubic feet discharged per minute by $62 \frac{1}{3}$, which is the number of pounds each cubic foot of water weighs at the average temperature, and this product by height of head under which the wheels are working, and that product divided by 33,000 pounds, this number of pounds raised one foot high in one minute being one horse power, which will give the full horse power of and as no wheel will produce 100 per feet head; and as no wheel will produce 100 per cent., the percentage the wheel in question is known to
produce or utilize, must be taken as the actual
horse power, as in the example here given: and


It will be seen that the effective horse power 80 pr cent. of the full value of the water is only utilize will now suppose the wheel had only utilized 60 per cent., then multiply the full
value, 89.76 , by 60 , and the horse powe value, 89.76 , by 60 , and the horse power would
be 54.55 . If the wheel would utilize 75 prent the effective horse power would be 67.32 prom the effective horse power would be 67.32. From
the explanation and example given it can easily the explanation and example given it can easily be ascertained what number of horse power
any weeel will produce, with a given number of cubic feet of water per minute, of cubic feet of water per minute, on any head, provided the percentage the wheel in question
will utilize is known. ill utilize is known.

## Late Items.

Frank M. Luckhart, of Xenia, Ohio, is putting
L. Meeker, Evansville, Minn., has ordered a 25 inch Victor Turbine.
The Mauline Paper Co., of Mauline
e now using the Victor Turbine.
The Andrew Coggin Pulp Co., of Portland Maine, have ordered a 25 inch Victor Turbine. The Mt. Holly Paper Co., of Mt. Holly prings, Pa., have just put in a Vietor Turbine The S. \& B. Mfg. Co. are building two 44-inch Victor Turbines for Sidney Brown, Ogdensburg, N.
Ackley Stone \& Parks have just ordered two large Victors
mowoc, Wis.
A 10-inch Victor Turbine furnishes the entire
W. H. \& D. F. Peuse, Germantown, Ky., have ordered a 35 inch Victor Water Wheel of the S. \& B. Mfg. C

The S. \& B. Mfg. Co., Dayton, O., are building Co., Ashton, D. T.
The new water works at Appleton, Wis., will be furnished power by the Victor Turbine 25 and 30 inches in diameter
The Victor Turbine and a full line of Odell Rolls are to be placed in the mill of Coombs \& Greenwald, Coldwater, Mich.
The S. \& B. Mfg. Co, have orders for 5 Victor Turbines to go into the new paper mills of the Patten Paper Co., at Neenah, Wis.
W. H. Dorwin, Durand. Wis., has placed his order with the Stilwell \& Bierce Mfg. Co. for a The Spin Od
The Springdale Paper Co., Springfield, Mass. are putting in Victor Turbine 10 inches in diameter, which is to give 100 horse-power.
The Ottawa File Works, at Ottawa, Ill., are so well pleased with the Victor Turbine they are now using, that they have just ordered nother.
The S. \& B. Mfg. Co., of Dayton, Ohio, are now building 3 of their largest sized Victor Tur bines, to drive the pulp mill of A. W. Priest, Kaukauka, Wis,
The S. \& B. Mfg. Co. have just shipped a 30 inch Victor Turbine to John Russell, Valley
City, Dakota. The mill of Hiram O. Walker of the same place, is driven by the Victor.
The Merreton Cotton Mill Co., of Merretton, Ont., desiring to get the best, have placed their order with the S. \& B. Mfg. Co., Dayton, O., for 3 larg
mill.
The Sebago Wood Board Co., of Portland, Maine, have 5 Victor Turbines now in use, and ordered 5 more of the builders, Stilwell \& Bierce ordered 5 more of the bu
Mfg. Co., Dayton, Ohio.
The Victor Turbine is in successfull operation in many foreign countries, and its fame is preading. The makers, Stilwell \& Bierce Mfg. England, France, New Zealand and other countries.
Among the recent orders for the celebrated Turbine Water Wheels are the following, viz. The Wiley Construction Co., Greenfield, Mass. Fred. Nell, London, England; Richmond City Mill Works, Richmond, Ind.; Alfred Dodge Dodgeville. N. Y.; Aron Mg. Co., Lewiston, Madgeville, N. Y.; Aron Mig. Co., Le wiston,
Ma., John T. Noye Co., Buffalo, N. Y. Maine; The. John T. Noye Co., Buffalo, N. Y., Mills Co., New York City; Pelham Mills Co. Greenvilie, S . C., J. S. Graham © Co., Rochester N. Y.; Hanover Mfg. Co., Hanover, IIl.; Har-

A very common and cheap mode of setting horizontal, externally ared cylinder boilers em
ploys straight walls only at the end, the back end having a horizontal cast-iron plate or the rear wall of the brick setting. The plate arrangement is better than arching over the
rear ends, as in the case of tubular boilers the rear ends of the tubes are quickly and readily accessible and seen under good light for exam.
nation of repairs. Still the arch offers the best passage for the gases of combustion. Bricks are
better than stone for fcundations. Brick walls are much better holluw (that is, of two single thicknesses with an air space between them)
than solid. The walls are carried up straight to the level of the top of the shell, and filled in
with some good non-conducting material, either solid or filled with air spaces, the latter being far preferable. A mixture of sawdust, coa
ashes (not wood) and plaster of Paris, makes good insultator. It sh uld not touch the iron cooden lagging, made by kerfing out strips an inch thick, four inches wide, and long enough cumference of the shell, and building up the arch (by narrow board strips) laid on these
arches which latter are about three or four feet apart, and hold the boards off from the shell
and leave an air space. It would, perhaps, be about as well to cut these longitudinal strips into lengths equal to the distance between
centres of the arched bearers, so that sections lagging may be removed at will. Every pre valuable and desirable. To carry out this idea more completely, the writer has devised a mod
of making the non-conducting covering oo plaster, in readily removable secti ns. This "grouting" with the plaster, some lengths wire which hug the lagging closely, their ends coming up at the sides, so that when the plaste into blocks, any one of which may be removed
without disturbing the others. All the lengthwise wire may be laid down first, and then all
the cross wires; they being removed in the reverse order. Sand should never be used,
either wholly or in part, for this filing. It is which will prevent the percolation of water through the joints and consequent rusting of arch is used, it should not be allowed to touch
the boiler shell, especially if the joints be made with lime mortar. But the use of lime mortar demned. In the furnace proper, fire-clay should here necessary. Some shells the first brick cast-iron lugs rivited to the shell at its medium urve of the shell, and be of suitable braced shape in order that they may not crack or give
way. In a twelve-foot boiler four are necessary, wo on each side, they should be placed three expansion and contraction in length, the rea end is left to be supported on rollers, instead of would be attained by setting a plate in the brick work under each rear lug and putting should extend a little further back than the each end to keep the roller in place. A crop excellent roller. It must be remembered tha less allowed for (no earthly arrangement wi ny setting. When a muddrum is used (and is generally desirable to have one, say one-thir with a man-hole as well as with blow-offs), may extend either across the under side of th may run length wise and its head project through o are for supporting the shell. There others built across to form furnace and ash pit which is from the front end is the bridge wall the fierce heat playing aroutid it. It should be of special thickness (preferably hollow), and walls should be brought up to the water line bridge wall plate, and on a bearing inch in the in the fire brick. They are generally slightly the lowest at the rear end, to facilitate stoking As regards distance from the under side of the kind of fuel. Many a time a new lot of good coal has been unjustly condemned as poor for adapted for the grate, or the fire-box too high or too low-generally too high. For hard anthra cite, eighteen inches is sufficient fire-box height,
twenty-four inches for semi-bituminous, hirty inches for bituminous coal proper. In
twelve-foot boiler, forty-eight inches in diame
ter, good usage sanctions the following dimen ter, good usage sanct
sious and distances :

##  <br> 



The boiler should be slightly inclined (say one inch in ten feet) toward the blow-off pipe
at the back end, and this should be so placed as to drain the boiler dry if needed. Long
boilers should not be hung from three points ; or, as they are heated more at the bottom than bottom than on the top, and the ends will be hrown up, thus putting most of the weight
pon the middle support.- 'iller, Millioright and Millfurnisher.

## NEWS.

The mill at Iuka, Ill., owned by Collins Bros.

## A $25,0 t 0$ bushel elevator is being built at La

A new mill is being erected
Ind., by Soffel \& Bartholemew.
A three-run water mill is being built
Athens, Ala., for James Owens.
A flouring mill is being built on Kent Island,
off the coast of Maryland, for John Phillips. The Minneapolis Board of Trade have selected a site and will erect at once a $\$ 150,000$ building. S. A. Ellis, of Grafton, Neb., is commencing
the erection of a 125 -barrel gradual reduction
mill. Messers. E. P. Allis \& Co. have the order for
rolls from Messrs. Bierbauer \& Co., Fillmore, inn.
Isaac Johnson, of Randolph, Iowa, is remodel
ng his mill so as to embace late improvement in milling.
Messs. Griggs, McCormick \& Grosvenor have
just completed their new roller mill at Grand
Forks, Dak.
Dr. Baretr, of Harrisonville, Mo., is altering
is mill to the reller system. The capacity wil

for L. J. Hiu, by Nordyke \& Marmon Co., o
Indianapolis, Ind.
C. A. Hege, of Salem, N. C., has ordered a C. A. Hege, of Salem, N. C. has ordered a
wo-run mill of Nordyke \& Marmon Co., of
ndianapolis, Ind.
Me sRs. Plank Bros., Wooster, O. have ordered doub e roller mill with Gray's Patent Frame
f Edw. P. Allis \& Co.

## C. A. Sinith, Lebanon, Mo. has ordered a ouble Gray's Patent Roller Mill of E. P. Allis

Stephen Appel, Theilmanton, Minn., is putting
in a line of rolls and other machinery from E
Perry Hutchinson's new mill at Marysville,
Kas., has started up on the new crop. It is one f the best mills in Kansas.
A 200-barrel mill intended for the manufacture of hominy, prarl grits
Messes. Edw. P. dllis \& Co. have recently shipped one of Gray's double rolle
B. Sears \& Son, Rock Island, Ills.
John Kull, of Stanton, Ill., is repairing hi
mill and has bought a Becker Wheat Brush o the Eureka Mfg. Co., of Rock Falls, Ill.
Hanzel \& Novak, of Schuyler, Neb., are wel pleased with the Becker Brush bought of the
Eureka Mfg. Co., of Rock Falls, Ill. E. F. Porter \& Bro., of Table Grove, Ill., just sent in their order to the Eureka
Rock Falls, Ill., for a Becker Brush.
D. S. Lowe, of Sullivan, Ill., has just placed
his orders for a Becker Wheat Brush made by the Eureka Mfg. Co., of Rock Falls, Ill.
The Yeager Mill Co., of Kane, Ill., are The Yeager Mill Co., of Kane, Ill., are
putting in a first and second reduction of the
Case Little Giant Break Machines. Currie \& Watson, Ada. Mich., have put in one of Gray's Noiseless Beited Roller Mills, manufac
tured by E. P. Allis \& Co., Milwaukee, Wis. Messses. Lukens \& North, Atchison, Kas., are
nithed in a doble porcelain roller mill fur
nished E. P. Allis \& Co., Milwaukee, Wis.
A. M. Robinson, of Fillmore, Ind., is building Nordyke \& Mormon Co., of Indianapolis, Ind.
Valentine Miller, Iowa City, Iowa, has recently
added to his milling outfit one of Gray's Patent Belted Noiseless Roller Mills with two pairs of Messrs. Chisholm Bros. \& Gunn, Chicago, have teen pairs of Allis Rolls in Gray's Noiseless
Belted Frames.

Messes. Wilford \& Northway, Minneapolis,
have placed their orders with Messrs, E. P. Allis
\& Co. for 4 pairs of Allis Rolls in Gray's Patent $\&$ Co. for 4 pairs of Allis Rolls in Gray's Patent
Belted Frames.
The Brass Foundry \& Machine Works, For
Wayne, Ind, are placing a large number o Wayne, Ind, are placing a large number of
Gray's Patent Belted Roller Mills, furnished by
E. P. Allis \& Co.
Messrs. Stratton, Merrill \& Co., Concord, N. H. have ordered nine pairs of Porcelain Rolls in
Gray's Patent Noiseless Frames for their new mill at Fisherville.
Licking, Mo., will soon be furnished with Campbell of that place. after visiting various establishments, have contracted with Nordyke


Messrs. Smith, Stratton, Gifford \& Co., Nash-
ville, Tenn, are putting in a full line of rolls in ville, Tenn, are putting in a full line of rolls in
Gray's Patent'Frames of Messrs. Edw. P. Allis Henry Darnell, of Masonville, N. J., wanted a
Becker Brush so badly that he sends cash with the order, and says he wants a Becker Brush or May, Weber \& Co., Watertown, Wis., have Gray's Patent Belted Frame of Messrs. Edw. P A. G. Mowbray, Supt. of the Union Mill Co.
Winona, Miun., has ordered the second break machine of the


Mrssss. J hn Stolz \& Co., Pekin, Ills., will re
model their mill to the roller system an । hav placed their order for rolls, ete., with Messrs. E.
P. Allis \& Co.. Milwaukee, Wis. Messrs. E. P. Allis \& Co. have the order for all the special machinery including rolls, bolting
chests. etc., for remodeling the mill of Messrs. Coons \& Co., at Winchester, Ills.
Scott \& Haskell, of Jacksonville, Ill., want to
make as white flour as they can; and ordered make as white flour as they can, and ordered
Becker Brush from the Eureka Mfg. Co.,
Rock Falls, Ill,, and it suits them. Mr. A. Syme, the well known miller of Me
nasha, Wis., has ordered two pairs of porcelai nasha, W is., has ordered two pairs of porcelain
and two pairs of iron rolls in Grays Patent
Be ted Frames from E. P. Allis \& Co
M. W. Jarboe, of Carrolton, Mo., is putting up first-class mill, and has just placed his order
 PYeTt \& Evans are erecting a mill at Tahle-
quah, Ind., containing four-run of buhrs. The contract for machinery has been awarded N
Thurston \& Sons will erect a new flouring mill in which machinery made by Nordyke \& Mar
inon Co., of Indianapolis, Ind., will be used. B. Savage \& Son, of Forreston, Ill., have
ordered a full line of reduction machines of the
Case Mfg. Co., of Columbus Case Mfg. Co., of Columbus, O., to be put in
their new milt they are building in Nebraska. Noel Mill \& Elevator Co., of Nashville, Tenn.
send draft for Beeker Brush made by the Eureka
Mfg. Co., of Rock Falls, IIl Mfy. Co., of Rock Falls, IIl., and sav well pleased,
"it works beautifully nothing could do better." John Marshall \& Co. are commencing the
erection of a three-run merchant mill at Sand
Lake, Mich., in which machitery manufar Lake, Mich., in which machi:ery manufactured
by Nordyke \& Marmon Co., of Indianapolis,
Ind., will be used. M. \& J. Pollock, of Wheeling, W. Va., are
overhauling their mill, and have added
Becker Brush to their cleaning machinery Becker Brush to their cleaning machinery
made by the Eureka Mfg. Co., of Rock Falls,
Illinois. Kentucky milers hear how the Becker Brush Louis, of Elkton, Ky., and many others have sent in their orders to the E
Rock Falls, Ill., for machines.
Loreg \& Weber, of La Porte, Ind., are putting
in two pairs of double rolls, made by the Case Mfg . Co., of Columbus, $O$., preparation for following uis with the rest of the
duction System being made.
Messes. Hoover \& Weimer, West Milton, seeing the excellent work done by the Case
Breaks and Rolls in the mill of Jos. Gebhard \& Son, Dayton, have ordered a set for their mill.
NEW flouring mills are being built in West Virginia at the following places: Philippi
Weston, Flamington and Hampton cheston, Flamington and Hampton. The ma
 In remodelling their mill, the Independence
owa, Mill Company will use ten pairs of Allis Rolls including a double porcelain roller mill,
all in Gray's Patent Noiveless Belted Frames. MessRs. E. P. Allis \& Co. have the contract for
remodelling the mill of Messrs. Hinman \& Ward Battle Creek, Mich., making it a complete rolle
mill. Messrs. E. P. Allis \& Co. furnish a full lin of iron and porc lain rolls, purifiers, bolt chests,
ete.
E. P. ALLIs \& Co. are rebuilding Stratton,
Merrill \& Co.'s mill at Fisherville, Merrill \& Co.'s mill at Fisherville, N. H. near
Concord. The mill, when completed, will be of
250 barrels daily capacity, and will 250 barrels daily capacity, and will use twenty-
four pairs of Allis' Rolls in Gray's Patent Noise our pairs of
ess Frames.
E. E. WIsNer, of Lowell, Mich., who is putting
in a full line of the Case Mfg Co.'s Breaks and Rolls, will have his mill running in about ten
days more. This is very rapid work. The
machinery was furnished promptly, and the machinery was furnished promptly, and the
change made in an unusually short space of
time. Messes. Huntington \& Koch. of Barton, Wis.,
anve introduced the Case Break Roller System have introduced the Case Break Roller System
nto their mills and are highly pleased with the results obtained. They think that the Case System cannot be beaten by any other. The
ocal paper in speaking of the innovation, is very enthusiastic and claims as great a yield with as
good a quality as is ontained in the best Miland Minneapolis mills.
$\underset{\text { Mr }}{\text { Mas been }}$. Lightcap, of Hazel Green, Wis., who years, visited Milwaukee one day recently and
left his order with Edw. P. Allis \& Co. for a ful line of the Gray's Combined Roller and separat-
ing machines and Gray's Belted Roller Mills,
He is and ing machines and Gray's Belted Roller Mills
He is about to remodel his mill to the complete roller system, and wisely placed his order with che firm which has had by far the mose
sive experieuce in building roller mills.

W. M. SHDOK,

Millwright and Contractor Dealer in all kinds of Mill Furnishings.
RACTICAL ROLLER MILL BUILDE CANTON, OHIO.

## W ALKER BROS. \& CO.

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Commission Merchants
London, E. C., ${ }^{\text {- }}$.

WILLIAM MITCHELL,
Flour and Grain Merchant,
Londonderry, Ireland.
Consignments and offers solicited.

## OASS. B.SUMTR COD . <br> SLATER REEL,

Mill Builders and Furnishers,
BLANCHEBTER, - OHIO

## A Question for Experts !

We have in our shop a chest with one reel 32 inch diameter and without any have a head on each end of this reel; we

put an equal quantity of material, either flour or chop, into each end. The cloth not a seam in it except where it is joined to the ticking. In munning this reel we find that one-half of it bolts sixty pounds while the other half bolts only forty-six and fourteen oz., making Now if ance of 28 per cent. in capacity. od by anybody can suggest any methwe will follow their suggestion and pubish the result for the benefit of the Very Respectfully,
B. SLATER \& CO.

## A. PLOUVIER,

Agent for Flour,

ANTWERP, (Belgium.)

Advances on Consignments.
BIRGE \& BMITH, PRACTICAL IIILIUIIIIIUIITIS.

MILLWORK, MACHINERY, ETC. Flour, Sawmill, Tanners' and Browers' Machinery, and Genoral Mcill Furnishors,
Corner of East Water and Knapp sts milwaukee,

WISCONSIN

## GLAD TIDINGS OF GREAT JOY!

## AN IMPORTANT PROBLEM SOLVED AT LAST!

Taking care of the dust laden air from Middlings Purifiers and other machines, using air to carry off the dust, has been

## PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of $\boldsymbol{F}$. Prinz. He produced a machine, that will give satisfaction in such a manner that no miller would ask for anything better.
Simplicity is a Leading Feature in this Machine.
No Dead Air Chamber.-The dead air chamber, which has been a source of much trouble in other machines by wearing out and allowing the air to get in, thereby injuring the power of the cleaning mechanism on the cloth, which results in the cloth filling up, is entirely overcome in this machine, as it has no DEAD AIR CHAMBERS.
Less Power is used with this machine than any other as there is no back press-

ure on the fan; the motion of the tan has to be rednced whenever this machine is applied.
It roes ruway with the cumbersome dust!, dirty old-fushioned dust room, entirel, and the numerousspouts leading to them, which fill up the nill, leaving no room to get around.
It Retains the Dust in the Mill, thus allowing no waste of stock by being blown out into the air as is the case with the odd-fashioned dust reom.
It does rway with the liability of dust explosions, as the air coming from the machine is entirely free from dust, which is not the case with the air coming from any other Dust Collector offered to the milling public heretofore.

We the uudersigned manufacturers CUARANTEE ENTIRE SATISFACTION in the use of this machine. LOW PRICES FOR EXCELLENT MACHINES.

milwaikee dust collector mfg. coDear Sirs:-In reply to your inquiry with rekard to the working of the ..Prinz Dust Col-
ootor," put into our mill, would sany We have had it in operation





Milwaukee, Jui.e 18th, 1882
satisfaction as :- Then Dust Collector you have put in on trial in our Mill is giving the same
 adopt your machine for all our Purifers, hoiler Exhausts and Cle
please make as many Machines for us as are ne cessay, Yours truly, new era milling co. More tetino

# THE CASE MIDDLINGS PURIFIER, 

A-The Fan opuar, is reversible and
can be made to blow toward
either end of Purifier.
The Fan can be placed on top or
end of Purifier-when on cod
it increases the length 39 inches,
and diminishes the height 22
inches.

STANDS TO-DAY WITHOUT A RIVAL, doing More and Better Work than any other: giving double capacity; costing less and runs without jar or noise. Our No. 3 Machine has 90 square feet of Bolting Surface. Address

CASE MANUFACTURING CO.,
OFFICE AND FACTORY: 5:h Street, North of Naughter,
OOIUIMEUE, OFIIO.
(Please mention the United States Miller when you write to us.)


## The Little Giant Break Machines.



Single Break Machine, capacity 5 to 60 bushels per hour.

The rapid increase of our orders and wide inquiry for our Machines prove that the Case Reduction Machines are fast becoming the favorite system of Milling.

It is not an experiment.
the case manufacturing Co., Columbus, Oho:
Ashley, Ohio, July 24th, 1882. GENTY:- We have been running your full system of Gradual Reduction for 90 days, and the result
bas an has such an extent that we are now way behind our orders. The Little Giant runs with little attention, and a better break can't be made from wheat. No fluff and but little break flour and a very eren
quality of middlings. We have made three tests on three different kinds of wheat. On Lancaster 10 quality of middlings. We have made three tests on three different kinds of wheat. On Lancaster
wheat we made a barrel of flour out of $420-60$ on Fultz and White wheat we used $430-60$. Were we to fit up another mill we would certainly buy the Little Giant.

J. B. MILLER \& CO.

OASF MAANUE"AOTURING OFFICE AND FACTORY, 5th Street, North of Naughten.
 per hour.

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STATES MILLER for one year and

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The books have just been printed in Pamphlet Shape, from clear type and on good paper. The following is a list of the ten books:

1. The Lady of the Lake, a romance in verse, by Sir Walter Scott;
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Let it not be forgotten that we keep a very large stock of the genuine Dufour Bolting Cloth always on hand, and those who order that brand from us will always be sure to get the genuine article. In addition to this we keep constantly on hand a large stock of Dutch Anchor Cloth, which we import direct from the manufacturers, in Switzerland, and is not sold by any other dealers in Bolting Cloths in this country. This we warrant to be equal to, and even superior, to any other brand in the market, except Dufour. We know what we say in this regard. Cloths made up ready for the reel in the best manner possible, by the use of our Patent Attachments, using the best of Ticking and Silk Twist. Please write us for prices, discounts, and samples of cloth and making, before purchasing elsewhere.

Address,
HOWES, BABCOCK \& EWELL.
[Pease mention the United states siller, when you write to uas] Silver Creek, .N Y.

## OO., COLUMBUS, OHIO.

# EDW. P. ALLIS \& CO. MILWAUKEE, WISCONSIN. 




CORRUGATED AND SMOOTH CHILED IRON ROLLS, Wegmann's patent porcelain roller.

We shall be Pleased to hear from Millers contemplating an improvement in their Mills, or Building new ones, and can furnish Estimates and Plans of our system of GRADUAL REDUCTION ROLLER MILLING. We have built and Changed over hundreds of Mills, in all parts of the Country, and using all classes of wheat, BOTH HARD AND SOFT, and can furnish References on application. The Largest and Best Mills of this Country are using our System and Roller Machines. Messrs. C. A. Pillsbury \& Co., of Minneapolis, have over 400 PAIRS OF OUR ROLLS AND HAVE RECENTLY PLACED AN ORDER WITH US FOR ABOUT ONE HUNDRED AND TWENTY MORE. We have had a longer and larger experience in Roller Mill Building than any other manufacturers of this country. There is no EXPERIMENT ABOUT OUR SYSTEM and rolls, so expensive to millers, and when the mills that we build or change over are ready to start, THEY DO SO AND WITH PERFECT SUCCESS, and there is no further changing, additions, stopping or expense. We manufactured and sold during the year 1881 over TWO THOUSAND FIVE HUNDRED pairs of rolls.

We can send competent men to consult with any millers who contemplate an improvement, and whom they can depend upon as being RELIABLE AND THOROUGHLY COMPETENT to advise them as to the number and kind of machines required, best method of placing them and the change required, if any, in the bolting and purifying system. WE DO NOT URGE A GENERAL CLEANING OUT OF ALL OLD MACHINERY unless we clearly see such would be the ONLY COURSE TO PURSUE to make a SATISFACTORY AND RELIABLE MILL. In nearly all instances we can use all the Old Machinery, leaving it in its original position, or with as slight a change as possible. We aim to make the Improvement so that it will be a Profitable one to the Miller, and at the least expense possible.

Our System is THOROUGH and RELIABLE, and our Roller Machine Perfected by Long Experience, and the Miller Takes no chances in using them, as HE DOES with the New Fangled Notions of Drive and Adjustment on many other machines now TRYING TO FOLLOW OUR IMPROVEMENTS and still avoid our Patents, in BOTH of which THEY FAIL. We were the first to advocate the Entire Belt Drive, and were opposed by every other maker, who elaimed it was not positive, etc., etc., and now that our Belt Drive is an ACKNOWLEDGED SUCCESS, and will SUPERSEDE EVERY OTHER STYLE, these advocates of Gear Drive have suddenly learned that Belts are the Thing. The same may be said of our Spreading Device, Feed Gates, and Adjustable Swing Boxes. Other Makers are now copying these. ALL these Features, including BELT DRIVE with ADJUSTABLE COUNTERSHAFT and TIGHTENER, the SPREADING DEVICE, FEED GATES, Adjustable Swing Boxes and Leveling Devices, Self-Oiling Boxes, etc., are secured to us by several Strong Patents, and we CAUTION MILLERS in regard to these Infringements of Our Patents and Rights, for we shall look to THEM for Redress. The matter is in the hands of our Attorneys, who will soon take VIGORIOUS ACTON against the Makers and USERS OF MACHINES infringing Our Patents.

Several machines are already on the market which Broadly Infringe, and we are informed that other makers are now changing their Old Style Machines, and adopting in a large measure Our Improvements. BEWARE OF THEM.

Send for New Illustrated Catalogue, Giving full Information, to Branch Office 318 Pine Street, Benson Block, SAN FRANCISCO, CAL.
"HOWARD" AUTOMATIC CUT-OFF BNGINE.


Built only by the MURRAY IRON WORKS CO., BURLINGTON, IOWA builders of all kinds of engines and machinery.

## 



## HARRIS-CORLISS ENGINE.

BUILT

WM. A. HARRIS, Providence, R. I.
Built under their original patents until their expiration. Improvements vince added: "STOP MOTION ON REGULATOR," prevents engine from runuing away; "SELF-PACKING VALVE STEMS" (two patents), dispenses with tour stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying a troublesome defect in other Corliss Engines, "BABBITT \& HARRIS' PISTON PACKING" (two patents). "DRIP COLLECTING DEVICES" (one patent). Also in "General Construction" and "Superior Workmanship."

The BEST and MOST WORKMANLIKE form of the Corliss Engine now in the market, sub stantially built, of the best materials, and in both Condensing and Non-Condensing forms The Condensing Engine will save from 25 to 35 per cent. of fuel, or add a like amount to the power and consume no more fuel. Small parts are made in quantities and inter-changeable, and pt in stook, for the convenience of repairs and athority to state that he can furnigh this engine
NO OTHER engine bnilder has authe The ONLY WORKS where this engine can be obtained are at PROVIDENCE, R. I., no outsid $r$ ties being livensed.
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Perforated Zinc at Bottom Figures. Genveral mili purnishers IIMPRoved COCKLE SEPARATORS

## Richardson's Dustless Wheat Separators!

 Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.Bottom Figures.
ire Wheat Cleanin
Send for Illustrated Catalogue.
WE GUARANTEE G fron wheat, but to separate it WITHOUT WASTE is the GREATEST FEATURE of our hachine. Aarison with ours.
LOSS OF MONEY in mill There is NO MACHINE IN Carbondale, III., Dec. 1881 Hixton, Jackson Co., Wis., Dec. 30, '81 Minneapolis, Minn. Aug. 22, 1881. Time with very satisfactory resuls. We
 Gentlemen:-Replying to your late Gents:-In answer to your inguiry we have been using two or Bearas- wequi it. Yours truly tavor, would say that we can cheerfuly the zsed machine I bought of you last lees's wheat cleaners, a scous and


time and know whereot we speak. We
would not think of doing without it, D. G. THOMAS. per hour through them, one third more
than rated capacity, and are not using Gentlemen:-The Beardslee's Grain would not think of doing without it, P. S-I have been milling now for than rated capacity, and are not using Geaners which we have purchased having tried it once, its good work.
ours respectully,
BROWN \& Wiver
Perrysville, Ind., Nov. 24, 1881. Perrysville, Ind., Nov. 24, 1881.
 . of you has been running about three it without wasting any of the smaan
weeks. It certainly does all you claim wheat. In my opinion every mill in the weeks. It certainly does all you claim wheat. In my opimion every min ind in Yor it, and is the most perfect Separator United tates oughtion I m would have no
that I have any knowledge of.
I were to bild a mill Gentlemen:- The Beardslee Grain kee Mills give us the best of satisfaccleaning wheat.

CAHII Yours truly
YL, FLETCHER \& CO.
B. B. CARPENTER. other. Yours, etc D. G. THOMAS. June has been in operation since that tion. Experienced millers having seen the work done by the machine agree at liberty to use our names as a reference, and to any party calling on us Pott's Patent Automatic Feeder The best device tor regulating the FEED oN ROLLER vin

## HOWES, BABCOCK \& EWELL,

Rstablishel 1856. Silver Creek, Chautauqua County, New Zork, ర. S. A. Mstablished 1856. MANUTACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING

Abernethey's New Book. PRACTICAL HINTS

## Mill Building.

The Latest, Best and Only Exelusively Flour Mill Work in Print.
Every Miller. Millwright and Millwright's Apprentice

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## BECKER BRUSH,

Galt's Combined Smut and Brush Machine. The Only Practical Cone-Shaped Machines in the Market, and for that ADJUSTABLE WHILE IN MOTION.
Nearly 1,000 of these Machines in Use.
 Berased is the true prinecple to properly clean grain. All machines sent on trall, the eureka manf'g co., Rock Falis, Ill., U. S. A.
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# TIIE STEVENS ROLLER UILLS 

Remove all Germs without Breaking or Crushing them, and Hull the Black Cockle and Remove the Hulls, Clean Bran thoroughly, and make a Higher Grade of Flour than any other Mill known.

## over 2000 PAIRS NOW IN USE!

## Having Secured the BEST BELT MOVEMENT ever offered

We are prepared to furnish mills to be run entirely by belt, obtaining the nearest approach to a Positive Motion Without Gears.

## Celebrated Cosgrove Concentrated Mill <br> Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.

## 


#### Abstract

Messrs. John T. Noye \& Sons, Buffalo, New York- - Brooklyn, New York, February 20,1882 Gentlemen: We take pleasure in addressing you in regard to the introduction of the "Cosgrove Roller System" in our Mills at Brooklyn. By removing four pairs of our Millstones and putting in their place the two sets of the Cosgrove System, purchased from you, we find that with our former bolting and purifying arrangements, we can turn out flour, all roller ground, in quality from 50 to 75 cents per barrel superior to that made from the same wheat by Millstones. We are now grinding no wheat with stones. In making the change, our Millstones. The work of the change was done by our own Millwrights, everything being so favorably located. The from the same shaft that we formerry advantages that we find are principally, viz. Saving from $\ddagger$ to $\frac{\xi}{f}$ power required to make the same amount of flour by stones; uniformity of work of the Rolls, and the advantages that we find are principaly, vize baing fully able to give proper attention to two or more sets if we had them ; the separations made by the cylinders are ease with which they are managed, one man being fully abie to give proper attention grind and the work required ; the capacity of our machines we find fully 50 per cent. perfect, any miller can quickly adjust them exactly to suit the wheat he wishes to grind and the work required; the capacity of our machines we find fully 50 per cent. above the amount you guaranteed ( 200 barrels). In conclusion, we will say, that the result generally of the system is entirely satisfactory to us for the best of reasons, our customers are thoroughly pleased and satisfied with our flour. Yours truly, F. E. SMITH \& CO.

\section*{Among Recent Orders We Name the Following from Prominent Millers:}

Lexington Mill Co., Lexington, O., 12 pairs, E. O. Stanard \& Co., St. Louis, Mo., 28 pairs, E. T. Archibald \& Co., Dundas, Minn., 12 pairs,

Pollock \& Co., Vincennes, Ind., 12 pairs, Penfield, Lyon \& Co.. Oswego, N. Y., 2 Cosgroves., Crocker, Fisk \& Co., Minneapolis, Minn., 54 pairs.


Jno. T. Noye Manufacturing Company, Buffalo, N. Y.
Please mention the United States Miller when you write to us.]
E. W. PRIDE, Agent, Neenah, Wis.

## (0)패TIS

ㄹOTTER An Fisadilised Sucems.

We invite particular attention to the following
POINTS OF SUPERIORITY,
possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any, other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a positive differential motion, which can not be had with short belts.
2. It is the only Roller Mill in market which can be instantly stopped without throwing off the driving belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.

MIII.
3. It is the only Roller Mill in which one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.
4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings without disturbing the ten-sion-spring.
5. Our corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran letter.

WE USE NONE BUT THE BEST Amsmia Rolls!

References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines.

Circular and Prices on Application to Sole Manufacturer,

## STILWELL \& BIERCE MANUFACTURING CO."

# Eow.P.ALLIS \&CO.Propk'. 



MILWAUKEE. WIS. U. S. A.

## SOLE MANUFACTURERS OF

 Gray's Patent Noiseless Belt ROLLER MIILS

Unexcelled for reducing Middlings to Flour.
Far ahead of Smooth Iron or Scratch Kolls and entirely superceding the omill Stones for this purpose.

## Read the F"ollowing Ietters.

Terre Haute, Ind., Aug 22nd, 1882.
E. P. Allis \& Co., Milwaukee, Wis.

Gentlemen :-We are very much pleased with the whole int ef ain Rolls you put in our Mill. The two double set sent us soon after storting up our mill last fall, we put in place of two run of stones for grinding our coarse Middlings.

We find the Flour from the Porcelain Rolls much more evenly granulated and much sharper and cleaner than that we got from the stones, besides the second fine Middlings are much better, being almost entirely free from germs and not as specky.

KIDDER BROS.

Messrs E. P. Alus \& Co. Kings County Flour Mills, Brooklyn, N. Y., Aug. 15th, 1882.
Gentlemen:-You ask how I like the Porcelain Rolls as compared with Mill Stones. a long time ago that Mill Stones could not produce as gatifactory years and became convinced 1 an now operating your Improved Machine of increased size with nice adjustments, working without noise with Gray's Patent Belt Drive. The Flour it produces is beautifully grainy and strong and its capacity two or three times more than the old Gear Machine.
It runs splendidly, gives no trouble, consumes less power than Mail Sto with costly stone dressing and for reducing Middlings and soft branny resid stones, dispenses is unequaled by any Machine, Iron or stone, at least this is my opinion after five years of Yours truly, JOHN HARVEY,
Head Miller Kings Co. Mills, Brooklyn, E. D

ALSO SOLE MANUPACTURERS OF THE CELEBRATED

# ReyNolds 

## ¢ Cookliss meenes

## Over Three Hundred of these Engines in use.



These Engines are especially adapted for use in Flouring Mills-being unsurpassed in Simplicity, Durability and ECONOMY OF FUEL, and far ahead of any other

Automatic Cur-off Engines.

Send for catalogues of Roller Mills, Flour Mill Machinery, Saw Mill Machinery, Reynolds' Corliss Engines, etc., etc., address

Edw. P. Allis \& Co.. mildeaukee, wis

The following is a partial list of Flouring Mill owners who are using the Reynolds' Corliss Engines.
J. B. A. Kern


The Phoenix Foundry and Machine Works at Terre Haute, Indiana

A Model Mill-bullding Establishment.
The engraving which we herewith present for the inspection of our readers, represents the Phgentx Foundry and Machine Works, Manufacturers and Mill-builders of Terre Haute, Indiana.
The works of this company are located near the center of the city, and in close proximity to the Union Depot, and are connected by track with nine railroads centering there. In 1865 Mr . McElfresh, who is the President of the Company, founded what is now known as the Phonix Foundry and Machine Works.
cupolas, and large travelling cranes, capable of handling the largest castings used in the business. The core-oven stock-house and rattler-rooms are conveniently situated outside of the foundry. The offices are conveniently arranged and fitted up for the transaction of business and entertainment of customers. The draughting room, occupying the second story of the offices is splendidly lighted and equipped, making it the most complete and convenient in the country.
The men employed in every branch of the business are mechanics-and it reaches from the draughtsman who makes the plan to the millwright who puts up the work-through foundry, machine-shop and work-shop. The

The company, in addition to mill building will continue their established general machine business. The engines and general iron work for mill purposes, made by the company for the past seventeen years, have a reputation second to none in their line, for finish, pattern and economical construction.
All the persons who are connected with the company are men of business experience and are wide awake and go ahead, and with all these special machines, with their extensive shops in which they have mechanics who cannot be excelled in their respective trades they intend to make their institution occupy the front rank among the best mill-building establishments of the country.
but many millers are beginning to express the opinion that they can make better flour and more money with good winter wheat than they can with such spring wheat as they have have been using during late years. With the modern system of milling, nearly if not quite as good results can be obtained from winter as from spring wheat, both as regards to qual ity and quantity. This may be considered a

Economy of Steam Engines.
Editor U. S. Miller
Will you kindly inform me what is the best record of performance of an automatic cut-off steam engine. Also how
they compare with common slide


Phoenix foundry and machine works, terre haute, ind., u. s.

In 1879 the Company was incorparated. The man who works each tool is a mechanic in the present officers, F. H. McElfresh, President; largest sense, and unexcelled Jonathan Mills, General Manager; Edward Gilbert, Vice President; H. C. Gilbert, Secretary; and John W. Davis, Treasurer. Their business growing and by experience learning, they concluded to enter extensively into the mill building business-that branch of industry having grown to great proportions and demanding something of the kind. In this the Phœenix Foundry and Machine Works have succeeded. From the small beginning made by Mr. Elfresh they have reached out until they have their present substantial and extensive shops as shown in the cut. The
machine shop is $52 \times 156$ feet, with boiler and engine room in basement, the building being two stories high. The wood-working shop is $50 \times 156$ feet, two stories high. The foundry is $50 \times 140$ feet, and an office $30 \times 48$ feet. The machine shop, as well as foundry and wood-working shop, is equipped with the best iron and wood-working machinery that can be purchased. It consists of all the newest patterns in iron and wood working machinery, such as planers, engine lathes pulley lathes, drills and radial-drills, screwcutters, shapers of every variety and style, universal wood-workers, planes, sufacers, band-saws, jig-saws, cut-off-saws, rip-saws, mortising and boring machines; and all these fitted with a thousand-and-one attachments and connections necessary to carry on the business to the greatest advantage. The
foundry is thoroughly equipped with two foundry is thoroughly equipped with two

They have associated with them Mr. Jona han Mills, who is well known by the miller all over the country as one who has devoted himself to the wants of the milling trade, and to whom the millers are indebted for many nventions which have lightened their labors and filled their pockets.
Mr. Mills has now three new machines which the company are manufacturing-a new sixbreak reduction machine, with scalping reel combined, which will be built in one frame and is intended to meet the wants of smal mills. This machine, it is believed, will enable the small mills to produce as good results as the largest mill in the country, and at a cost in proportion to the capacity; a new roller mill which exceeds in simplicity of construction all cther machines, and which we think, if one can judge from a picture, and we have a photograph before us, will certainly be a favorite mill machine as far as roller machines go; a "centrifugal bolting reel," triple, double and single, which is claimed to be far ahead of anything ever put on the market in these days of centrifugal bolting machines.
With these three machines, and the arrang ments the company have made with Mr Mills for the handling of his "Disc Reduction Machine," which has an established reputation by its use in some of the largest mills in the country, the company will have the advantage of three different and complete systems on which to build mills.

It is the object in presenting this cut to call the attention of the millers who do or may stand in need of anything in the way of improvements, or who contemplate building, to the fact that this company is now fully equipped, and propose to be able to compare favorably with and not be behind any in first class work and machinery, and to keep up with the progressive spirit of the age. They solicit correspondence, and advise all who have the main chance in view, that they will consult their own interests by consulting them

## Winter vs. Spring Wheat for Flour.

The observing miller will not have failed to notice that a change of public taste ha been taking place during the past year or two, favorable to winter wheat. The original cause of this, undoubtedly may be laid to the farmers in the Northwest, who persistently sowed soft varieties of spring wheat, and also to the unfavorable quality of most of the spring wheat during late years in Wisconsin, Minne sota and portions of Dakota. To-day some of the best mills in Milwaukee are running on Kansas winter wheat, and the flour produced therefrom sells at a most desirable price. The steward of one of the finest hotels in the West after repeated tests, has given his order for a considerable quantity of Winter Wheat Patent to take the place of Spring Wheat Patent used heretofore. If millers could always obtain No. 1, Hard Spring Wheat for milling pur poses, at a reasonable price, there is little doubt but that they would greatly prefer it;
engines in point of economy and cost of epairs.
Answer:-There are numerous designs of automatic cut-off engines. The Corliss type, although among the first, if not the first, to be put in successful use, is still conceded by engineers to be superior to all others in the point mentioned. We do not know about the best recorded performance of engines of this class, but in his report on the trial of an $8^{\prime \prime} \times 4^{\prime \prime}$ Reynolds' Corliss engine, (manufactured by E. P. Allis \& Co.,) Mr. Jno. W. Hill, an acknowledged authority on steam engineer ing, says: "this economy of $2 \frac{1}{3}$ pounds of coal per indicated horse-power per hour, in an 8 unjacketed engine has to my knowledge never been equalled." This is for a small engine It may be noted that the Daisy Roller Mills, in Milwaukee, using a compound Reynolds-Cor liss engine has repeatedly made a barrel of flour with less than 25 tbs . of coal, and in sever al instances with less than 20 tbs . If any other engines have a better record than his we shall be pleased to publish it. The comparative economy of slide-valve and automatic cut-off engines depends largely upon the efficiency of the slide-valve engine. If it is in good order and properly designed for its work, a slide-valve engine will give about hree-fourths the power from the same expenditure offuel, or, in other words, an auto matic cut-off engine will save about one-third the fuel used by the slide-valve engine. But many if not in most instances it will save one half, or even more.

THE UNITED STATES MILLER.

United States Miller.


## MILWAUKEE, OCTOBER, 1882.

The Milwaukee Industrial Exposition opened September 25 , and will close Oct. 21. The display is large and excellently arranged. The number of visitors so far has been much
larger than last year. All persons visiting larger than last year. All persons visining a point to visit the Exposition. The display of steam engines by Edw. P. Allis \& Co., and
Weisel \& Vilter, is fine. Roller Mills are exhibited by Edw. P. Allis \& Co., and Centrifugal Flour. Dressing Machines by the Geo. T. Smith Middlings Purifier Co., of Jackson, Mich., and F. Andree \& Co, of Chicago, Ill

## Wages in the United States.

The advance sheets of the census of 1880 present many facts that are new even to the
best informed persons. One which touches on the labor question as regards wages, giyes the average amount of wages earned per year by each individual laborer (including all ages
and both sexes) in 20 of the leading cities of the United States. The highest average is in Washington, $\$ 547$, and the lowest in Milwaukee, 8321. Next to Washington stands San
Francisco, $\$ 536$, and next to the latter Brooklyn,\$466. Notwithstanding the fact that Wash ington stands at the head of the list for liberal wages paid, it should be remembered in the
many of the workers in that city are in the employ of the government at high remunerative wages, while the second city on the list-
San Francisco-has very few citizens in government employ. From this it is plain that wages are higher in San Francisco than in any government employes and their wages from government em
our calculation.

## Edward P. Allis on the Tariff

How it Benefits American Mechanics, \&o

## Letter Written Eleven Years Ago. <br>  Editor United States Mille

A few days since, while riding in the street Edward P. Allis on the subject now uppermost in the public mind, viz: A Tariff for Protection of American Labor.
Mr. Allis said: "I tell my men, if they will waid in Europe for like services, I would not ask for protection under a tariff:" I noticed a sneer on the faces of two or Mr. A., and one said that the assertion was then made because the tariff question was
now agitated.
The injustice of the criticism will be fully apparent after perusing the annexed letter,
written by Mr. Allis upwards of eleven years since, and published in the Milwaukee Daily News at that time.
eading and publishing on the tariff question and I trust I may say, some knowledge on of more interest to the Working Classes of Milwaukee, particularly at this time, than the one appended, and because of the tariff, I ask you to publish it as thcse interests are plainly I am, very respectfully, Yours,

Rellance Works, Milwaukee, May 17, 1871 The Editor of The Daily Neus.
lecture at Bay View, and also your hagerman's upon it. It is not necessary for me to attempt o defend Mr. H. in his positions, as he is fully time to do so. Neither am I able nor willing to naintain an argument with you, and I shall being purely in the inte est of manufacturers, to which class I belong, there is one fact, or bear in mind in your discussion with Mr. Hagerman or others. Manufacturers must exist somewhere, elher here in Europe. If you abor for for their building up there extent you labor for their building up there. the er and more powerful than the same in richer and more powerfal and I question inpatriotism of adding to their already fall grown trength at the expense of our still infant industry.

Our country is large, comparatively sparsely and, uncult heve vast tracts of agricuitural silver, copper, iron, coal, etc., etc.., still undeveloped. It is the acknowledged policy of our government arrd people to induce immigradeveloping our agricultural, mineral and other resources, and we, therefore, hold out inducements for their people to come to us. We offer to all a free government and a voice in its conduct, and hold out to them hopes of bettering their conditions to an extent impossible in their own countries. To the agriculturist we offer land almost without cost, a market for his surplus products, and the means of transporting them to the principal points of demand. To the manufacturer we offer abundant water products, and ask him to come with his money and artisans and improve his opportunities
here. To the mechanic and artisan we offer here. To the mechanic and artisan we offer consequent ability for him or his children to consequent abselves proprietors.
The tariff is simply a means by which we carry out these promises. Without it we might possibly carry out the promises to the farmer and the manufacturer, but cannot to the artisan, and it is in his interest that the tariff is
especially valuable. The ordinary manufacturers of this country are largely made up of skilled laborers, and it is not possible for a manufacturer to pay his artisans the ruling wages of this Europe. As a Republican and a citizen of our democratic government, I should always prolow scale of wages which prevails abroad, and low scale of wages which prevails abroad, and
think the perpetuity of our republican institutions depends greatly upon having our artisans and laborers better paid than the same class
abroad; but this does not influence me as a manufacturer. If American manufacturers can
have mechanics and laborers at the same of wages as is paid them in Europe, measured by the samestandard of food and clothing, and have
the same market for their products, they will need no protection as manufacturers; and it you
will procure for them this cheap labor, etc., I, for one, will cease to advocate protection
manufacturer, and only advocate it as a of perpetuating our republican institutions by

## Flour and Grain Trade Notes.

The San Francisco Journal of Commerce give the following report of exports of
flour during the month of August:
WHEA. - The total exports of wheat for the
month of August were 1,295,729 ctls, valued at month of August were $1,295,729$ ctls, valued at
$\$ 2,240,167$, against 871,20 cots for the month of
July, valued at $\$ 1,495,773$. $\begin{aligned} & \text { of the shipments }\end{aligned}$
 or Central America; 2,028 ctls for Sydney; 204
ctls for the Hawaiian Islands; and 154 ctis for Bri ish Coiumbia

## Fiour. - The total exports of flour by sea du- ing the month of August were 97,325 bbls, val-

 ied at $\$ 501,23450 ;$ against 73,832 bbls, valued at$\$ 32,02000$ for the month of July -an incerase
of 23,493 bbls, valued ats $\$ 119,21150$ Destination of the August exports: 32,853 bbls went to China
25,973 bbl to EngIand 19,1900 bbls to Ireland
8,653 bbls to Central A Corica 3.390 bbls to
 83 bbls to Mexico; 118 bbls to South Amer
55 bbls to Tahiti; and 25 bbls to Manilla.
San Francisco is slightly agitated by the
fear that New Orleans will ultimately become
great export market for Southern California wheat. The Southern Pacific Railroad is charged with working in the interests of New Orleans, and the charge does not appear with-
out foundation. This road charges only $\$ 20$ ton for carrying breadstuffs from Californi o New Orleans, a very low rate indeed.
IT is rare to find in the United States number one article of barley. It has bee grown, however, in Colorado, and is grown to left for Burleigh and Kidder counties, North Dakota, to produce the finest crop of this grain ever known in this country. It is so pronounced by John F. Betz, the Philadelphia brewer and millionaire, who is now in Burleigh county for the purpose of buying lands and opening farms for its culture on a Dalrymple scale. The barley on Geo. Elder's arm yielded 54 bushels to the acre, the grain and bright, and is not discolored in the slightest degree. On the steele farm the yield of barlegree. On the steele farm that of Mr. Elder's; ey is even greater than on that or Mr. Elder's;
it will surely prove to be 60 bushels per acre, and it is estimated at even more than that. about Wheat.-1. The best soil for whea is rich clay loam. 2. Wheat likes a good, deep, soft bed. 3. Clover turned under makes just such a bed. 4. The best seed is oily, heavy, plump and clean: 5. About two inches drill puts in depth for sowing the seed. 6. The drill puts in the seed better and cheaper than
broadcasting. 7. From the middle of September to the last of October is the best time for owing. 8. Drilled, one bushel per acre; if sown broadcast, two bushels per acre. 9. One heavy rolling after sowing does much goo
10. For flour cut when the grain begins 10. For flour cut when the grain begins
harden; for seed, not until it has hardened.

The result of what
lose accordance with theat harvest is in August repance with the indications of the yield above an average. The general condition of winter and spring wheat, when harvested is represented by 100 , an average rarely attain ed. In parts of the winter wheat region, es pecially in Michigan and Indiana, some mil lions of bushels have been lost by sprouting in
the stack. There has also been some loss of spring wheat from the same cause in Wisconsin and other States.
The Ohio Valley has nearly as large a pro duct as in 1879. Ohio, Indiana and Illinois
have apparently secured about $142,000,000$ bushels. The South has increased both her acreage and yield per acre. The aggregate of winter wheat, as indicated by the September returns, is about $380,000,000$ bushels; of spring
about $140,000,000$, or $520,000,000$ in all. thrashing test may slightly modify these figures. The first thrashing generally exceeded expectations; the latter thrashing has in many sections per disappointing. It is $q 4$ will not be quite so large as in 1879 or 1880 .
Wheat growers and consumers may rest assured that the reports of $600,000,000$ bushels and $30,000,000$ surplus are gross exaggerations. The
surplus cannot much exceed 200,000,000, and one-sixth of that will be required to restore to average fullness the local stocks and farmer's surplus, which were reduced at the close of the loss by holding for higher prices; they are still more likely to lose by accepting prices founded en a belief that 6') per cent. of the crop can be exported,
be spared.
The Ohi
The Ohio statistical agent says that returns of wheat thrashed from 424,417 acres, making the average yield per acre $16 \frac{1}{2}$ bushels. He reports the area of wheat in Ohio at $2,745,507$ the State to be $45,143,546$ bushels.
the kuropean harvest.
The English harvest was quite as early as usual, and was facilitated by the use of "string
binding reapers." Harvesting machinery was binding reapers. Harvesting machinery wa
employed more extensively than formerly. B the middle of August a considerable area i Southern and Middle England had been cut. The English harvest had been completed, except in the north, and in generally good condition, notwithstanding the rainy weather of the latter half of August. Home barns are coming more in favor for housing unthrashed grain. As yet here is little sprouting of exposed stack ittle mildew is reported in the lands. arms in high cultivation 40 bushels per acre is
reported. In Scotland the harvest will not be complete till the 20 th of September. A fair crop of good quality is expected. The Irish crop is
not soo good as last year, though it will not be seriously short. The total wheat crop in
Britain is estimated at $93,579,400$ bushels. Kufeke's Circular, bearing date Liverpo Sept. 13,1882 , says: The weather during the
past week has been all that can be desired, and
enabled farmers to carry a great bulk of the enabled farmers to carry a great bulk of the
wheat crop in comparatively fair condition.
Farmers have been free sellers of their new wheats, and millers have been able to buy at last week amount to the important total of about
$169,000 \mathrm{qrs}$., at the average price of 45 s .9 d 169,000 qrs., at the average price of 45 s . 9 d .,
against 54 s . 5 d . at the same time last year. There has been but a poor demand for foreign
flour during the last week, and values must be quoted 1 s . per 280 lbs. lower on the week.
Though weare now at a moderate level of prices, buyers continue to hold off, apparently expect-
ing still lower prices later on in the season. For
ble at the moment.
Wheal also experienced a further decline
Wheal also experienced a further decline of
3 d . to 4 d . per cental on new red winter, and 1d. to 2 d . on white descriptions.
Of American Oatmeal our stocks in first hands
The above estimate,from a buyer's standpoint, may possibly be too high. It is probable, with prices not too high, that theBritish demand will considerably exceed $100,000,000$; that France will require from $40,000,000$ to $50,000,000$; Spain erland are always purchasers
The complaints of delay of the German harvest by rain and a deterioration of quality as thrashing progresses have given a decided firmness to prices, leading to the convi
The storms of August were very severe. T
damage in Wurtemburg by hail-storms (not to crops alone, but in breakage of glass, injury to trees, \&c.) is estimated at $£ 600,000$.
The crops of Holland have been injured by cent rains.
From Russia there is little that is new regardbut in and southern ports the shipments of wheat have
fallen off and are now quite moderate. In the west the harvest is good; but the extreme heat the Black Sh, and from Odessa to Taganrog, along Kieff, reduced the yield very heavily. In Central Russia the yield is better.

A full average is understood to have been harvested in Roumania, Servia, Bulgaria and European 'furkey.
From India the shipments are proceeding on comparatively small scale, the total quantity n passage being 145,709 quarters against 284,033 quarters last year.
grown wheat for seed.
A letter from Michigan suggests that "grown" wheat may be used advantageously for seed. While it is a safe rule to use the most mature, suggestion is presented for consideration.
Take the very worst samples you can pick out
of a crop of wheat and thoroughly dry it, then sow it in your garden, and you will note, with perhaps some surprise, but far more pleasure,
that the previous growth of the kernel will not interfere with a second, third, or fourth germinintion. The theory upon which this depends is
ation
this: that a wheat kernel contains, instead of a this: that a wheat kernel contains, instead of a
germ, a nucleus of them. This we can see at a single kernel. First we will notice a sing blade or leaf, resembling grass, though heavier. which soon produce a "stool of wheat," as it is being proved to the satisfaction of wheat growers,
and there is no loss at all on the wheat used for

## Recent Milling Patents.

Machine for purifying midalings-Francis M. Brown.
Hion City, Tenn. Grinding apparatus-Thomas Lowry, st. Louis, Mo.

s.pring for midd ingss mahaeres--Thomas M. Wisoon, In.

Blast yovernor
Onoxvile,
nenn.
Machine for cleaning grain--Augustus B. Kellogy, Buz

## Elevator bucket atachment-George L. Lord, Waupa



## 

Millstone driver-5 Packer, Rock Falls, 11.
Millstone paint-staff--Thomas E. Davis, Range, Ohio. Apparatus for dressing flour, middilings, ece--Thos.
Hind and K . Lund, Preston, Couny of Lanceashire, Eug. Flour bolting machine--Ammi R. Smith, Marola, ill.
Grinding mill--Turner Strobrides , New Grinding mill--Turner Strobridge,
Grain cleaning apparatus--Daniel Best Albany, Orego Grain separator and cleaner-Daniel Best, Alb
Oatmeal cutter-Joseph F. Fahs, Akron, Ohio.
Tluen

## Flour bolt or dresser-Louis B. Fiechter, Minneapolis hinn.

Bolting reel-John M. Finch, assignor to Geo. T. Smith
Midaling Purifier Co, Jackson, Mich.
Tees-thate for roller grindung-mills--Wm. D. Gray,
vuaked, Wis.
Grinding mill---Joseph E. Holmes, Washington D.
Grinding mill-Joseph E. Holmes, Washington D. C.
Roller reducing and separating mill---Udolpho H. Odell,
Dayton, O.

## Advantages of Rolls over Millstones.

## by U. h. odell.

s demonstrated in actual practice

1. The millstone or any other device working on that principle, necessarily retains the wheat is discharged, whiche for some time before it making a chop composed of a large amount of flour and a small quantity of middlings; whereas the rolls do not retain the grain under pressure but for an instant, and if properly orrugated, do not pulverize it, but make chop composed principally of middlings in
proper shape and condition for being easily separated and purified, and a small quantity of flour.
2. The millstone, if grinding close enough plinters the bran reasonably well, breaks or many fine particles of bran which are ground in with the flour, and cannot afterwards be eparated again from the flour, thus lowering its color and grade. This is not true of the work of properly corrugated rolls.
3. If very high milling is done, and the bran is reground on a millstone, the product is a very low grade of flour; while properly corrugated rolls clean the bran more perfectly and make a higher grade of flour from thillstone or any other known device. Even where no other changes in a "millstone" mill are made, the use of smooth rolls on tailings, and fine corrugated rolls on bran are indispensable to even tolerably economical milling.
4. Rolls entirely dispense with the expense
and annoyance of stone-dressing.
5. Rolls will do at least one-third more work than millstones will with the same power.
6. Rolls make a very much larger amount of "patent" and much less "red-dog," or low grade flour, than millstones.

## THEE CASER

## PURTFIGR

## 

## Reduction Machines and Rolls.

## READ WHAT MILLERS SAY OF THEM! PURTMLERS.

Chamberlin \& Finly, Higginsville, Mo., write: "We thought if your Purifier was half as good as your circulars made it out to be it would be the one we wanted, but gentlemen you have not half stated the merits of your own machine. It is to-day without a rival in this country; it is far ahead of all others on the market and it gives us pleasure to tell you of it," etc., etc.

Morman \& Co., Shelbyville, Tenn., write: "We are ecstatic over the results. We do not believe there is a Purifier in the whole domain of America that can surpass it. You are a success."
H. Watters, Mechanical Engineer, St. Paul, Minn., writes: "I am well satisfied with the results and working of the machine in all its details. It will do more work for the room it occupies than any machine I know of."

Geo. H. Bennett, Allegan, Mich., writes: "We like your Purifier extremely well ; it is a much better machine than the Smith Purifier, we can govern it perfectly and the feed and shaking device cannot be surpassed."

Many Others write: "It is a daisy." "Sorry we did not put it in long ago." "It is just our kind-large capacity; easily governed; runs light; no noise or jar; does splendid work." "I would not give the one we have for seven Purifiers."
David Snively \& Son, Wiliamsburg, Pa., write: "The Feed Boxes ordered for our Smith machines work like a charm, doing excellent work. If you want them back you will have to buy the machines to which they are attached.'

## BREAKS AND ROLLS.

J. B. Miller \& Co., Ashley, O., write: "During a long experience in milling we have often seen the time when we had to hunt up customers for our flour, put since we but in your system of Breaks and Rolls we have never been able to keep up with our orders. Send any one you please to see your system in our mill; we will give it a good name for it deserves it."
W. Mellon \& Sons, Beaver Falls, Pa., write: They have equipped their entire new mill with our line of Reduction Machines, Rolls, Purifiers, Reels, etc., and say "They are all right, can't be any better. We have made a thorough investigation of the different Roller systems but have not as yet seen any for which we would make an even exchange."
W. S. Bacon, Tiffin, O., writes: "The machines are working beautifully. My flour is good and I am making 49 bbls. of flour out of 200 bushels and 18 lbs . of wheat. I am answering numerous letters of inquiry about your system; send any to us or tell them to write, and we will do you lots o' good."
G. De War \& Co., Kansas City, Mo., write: "We must say your Rolls are doing splendid work and are no trouble to run at all, they have saved us already $\$$ rooo, we estimate."
$\mathrm{M}_{\mathrm{any}}$ Others write : "I do not believe a more perfect Break could be made." "They will beat any Roll made." "They have raised our flour \$1.00 per bbl." "We are glad you have come to the relief of the Custom Miller." etc., etc.

Millers wanting a Purifier, Single Roll Break Machine, or full Reduction Mill, will do well to confer with us before ordering.
Case Manufacturing Co.,

## United States Miller.

## E. HARRISON CAWKER, Editor.

Published monthly.
Opfice, No. 118 Grand anenue, Mhlwauke, Wis.

 Bills for advertis Yor est
MLL.BR.

## [lass matered at the

## MILWAUKEE, OCTOBER, 1832.

We respectfully request our readers when
this paper, to mention that their advertisement was scen in the United States Milier. will therely oblige not only this paper, but the advertisers.

## Flour Mill Directory.



The new Russian tariff imposes an import duty of 24 cents per hundred weight on flour. $W_{E}$ cordially invite manufacturers of flour milling machinery, millers and mill-furnishers this journal. We make no charge for publishing

The Pennsylvania Millers Association will meet at the Lochiel House, in Harrisburg, Pa.,
at 10 a. m., Tuesday, October 10. All Pennat 10 a . m., Tuesday, October 10. All Penn-
sylvania millers are urgently requested to be present at that time.
Messrs. Howes, Babcock \& Ewell of Silver Creek, N. Y. have recently been making
an extensive addition to their machine shops and with a large number of additional work men will be able to meet
mand for their specialties.

We have just received a handsome new catalogue from the Stilwell \& Bierce Manu-
facturing Co., of Dayton, O ., which describes and illustrates completely the Odeli Roller Mill manufactured by the company. Any miller contemplating changing to the roller system, should write for a copy immediately A subscriber residing at Akyab, India
writes us requesting to learn something about our machinery and methods for milling rice in the United States. If any of our subscribers among American rice millers will favor us with a description of our most approved pr
pecial favor.

Frog Husting.-Mr. Albert Hoppin, late publisher of the Northwestern Miller, but now a peaceful and quiet citizen of Milwaukee,
recently went out to Delafield Lake for the purpose of fishing and frog hunting. Before going he sent to the Great Western gun works and purchased a small parlor riffe, with 1000 cartridges of the smallest size, the bullets being about the size of a duck shot. He went over to Buck's millpond frog hunting, and found a very large frog of the masculine gender sitting on a stump just above the water. He shot 27 times at him, when his frogship lost his balance and dropped over into shallow
water. Upon taking the frog out it was found that he had swallowed 26 of the bullets, catching them in his mouth, supposing them to be flies. When he went to move the weight of the lead carried him overboard, and when taken out he was not dead, but awfully sullen

The Prairie Farmer, of Chicago, Ill., one of he oldest and most valuable agricultural journals in the United States has recently changed its title to the Illustrated Peoples Weekly and Prairie Farmer. It is under new manage ment, has a new form, is handsomely illustrated, able edited and of more value than before to its hosts of readers. this journal, an era of good fortune

One of the effects of a great crop of wheat and consequently good and cheap flour will
be that the laboring classes of Europe will be that the laboring classes of Europe will
quickly learn the pleasant qualities of good, white, wheat flour. Having once acquired of its nutritious qualities, they will no longe be contented to put up with the miserable low grades that have been so long their chief sustenance. They will, like the America laboring man demand good flour and a greate supply than ever before will be called for from American flour millers.
Bradstreet's estimates the wheat yield of the United States for 1882 at $526,400,000$ bushels, and places the estimate fo
various states and territories as follows:



The Herald says the railway situation is rapidly becoming interesting for Los Angeles and Southern California. A few days since the long deferred connection between the California Southern and the Southern Pacific was chronicled at Colton. Just now only a gap
of twelve hours staging intervenes between the of twelve hours staging intervenes between the overland connections of the Southern Pacific,
building eastward, and the sunset route, building from New Orleans. In other words, we ought very early in September to have through rail route between New Orleans and Los Angeles and San Francisco, under one management. It has long been the declared intention of the controllers of the Southern Pacific to put on a line of steamers between
New Orleans and one or more European ports as an incident of their sunset route, with the double purpose of carrying wheat in bulk to Europe via New Orleans and of bringing as a part of return cargo immigrants from the old country to this Coast at a very and Pacific Railway is being pushed to the Colorado river, at the "Needles," while an equal expedition is being shown in building
the branch of the Southern Pacific eastward the branch of the Southern Pacific eastward
from Mojave, to meet the Atlantic \& Pacific at that point.

Technical School for Millers. Anyone, who is tolerably well posted in milling matters, after glancing through the "Question and Answer" columns of milling papers and propounded will readily concede two things First, that many of the questioners do not understand even the rudiments of the trade, and second, that there ought to be a place where these men if they intend to follow the
trade may go to school and learn how the trade may go to school and
business should be conducted.
Either the Millers' Nationa
should take up this matter and solicit funds for the establishment of such a place of instruction or influential millers should bring their influence to bear on some well established institution of learning to add such a department.
Funds could readily be raised from the wenty odd thousand mill owners of this country to establish such a shool but it will ever be done until some organization goes We believe the most appropriate manner to get the school organized would be for the Millers' National Association to appoint a commitee to solicit subscriptions, make plans for the enterprise and see that they were faithfully carried out.

## Personal.

The United States Miller acknowledged calls during the past months from the following entlemen connected with the trade
P. Kastler, representing the Andree Cenrifugal Flour Dressing Machine, Chicngo, IIl. W. D. Gray, M. E. of Edw. P. Allis \& Co. C. A. Wenborne, publisher of The Milling World, Buffalo, N.
C. M. Gilbert, representing The Richmond Manufacturing Co., of Lockport, N. Y
Mr. Sessinghaus, of Sessinghaus Bros.; St Mr. Sess
Louis, Mo.
Charles Booth, of Red Wing, Minn.
The Question of Change in Small Mills.
In the every-day experience of every milling engineer, especially if by his energy and skill he has earned something more than a local reputation, inquiries like the following are more than frequent, the never-ending repetition having just enough variety in details to ren der it necessary to fit the answer to each paricular case. One man writes: "My mill has" [such and such machinery.] "What will I,
need in addition to make it a first-class mill?" need in addition to make it a first-class mill?
Another says : "I am crowded for power and want to make as much flour as possible What machinery will make the most flour with the least power ?" Another more briefly my mill into a first-class roller mill with a capacity of 100 barrels daily?" forgetting to give the first item of information regarding the present condition of his mill, or the con-
ditions under which it must work. It is imditions under which it must work. It is im-
possible to frame any general answer which will suit all the various queries which are continually being made. Millers, as a rule are a thinking class of men, but are too prone to ely on the advice of those whom they consider better posted than themselves, without
considering that mills are a good deal like men -ach one has its individuality of charac ter, and its owner should of all men be
the one who is best posted as to its immediate the one who is best posted as to its immediate
requirements. He must know, as a matter of course, the conditions under which it must be operated, the wheat it has to grind, the market it is working for, the machinery it has to
work with, and the means which are available to increase its equipment. If he cannot tell what he needs, it is manifestly next to a impossibility for one to tell, who has never
seen his mill and who is given but the most meager information on which to base his reasoning and form his judgment.
Among the larger mills the uncertainty as will do, does not exist to such an extent as among the smaller mills, which are now being forced by close competition into the adoption
of new systems. Such may well plead the constantly recurring changes of the last te years, as valid reasons for their being unsettled as to what they really require, and how they can best go about the improvements which can no longer be delayed. Fortunately the experience of the last few years has de monstrated some few points, such as that rolls are much superior to millstones; that they
will make more flour with an equal expenditure of power; that they enable a miller to make a closer yield with a better resulting grade of flour; that sharp corrugated rolls are best for making the reductions; that smooth rolls have their appointed place; and that porcelain rolls are unexcelled for the flour-
ing process. These are conceded facts among the best milling engineers of this country and Europe, however much some furnishers, for particular methods and machinery. Right here it may be pertinent to remark that the milling engineer, when applied to for information, can almost invariably tel: whether his
querist has been for any length of time a careful reader of the best milling papers. Such as are, are well posted and know what facts have been demonstrated, and how few the steps are which have been taken to make milling an exact science, and how impossible it is for the best engineer to tell what is best to be done in any particular case without the fullest information as to the facts bearing
The roller system, has supplanted the "Ne
Process" much more quickly and completely than the latter did the old style of milling. But comparatively few new process mills now remain without at least a partial addition of rolls, and these latter are being changed to the complete roller system as fast as the means of their owners will allow. It may seem strange, but it is a fact, that by far the largest number of inquiries about rolls and cost of adopting them, are now coming from the one and two run custom mills, many of
which are destitute even of that necessary part of a modern mill, the purifier. And most of these inquiries are made in good faith, and not merely out of curiosity. To those who are giving this matter thoughtful study, it may be said that, it is not necessary for them to make the complete change at once, although if it can be afforded, such a change would undoubtedly make a profitable return on the investment much sooner than if rolls are adopted gradually. Considering the case of the smallest.
mill, and presuming that the owner has already found out the advantage of the purifier, and has one in his mill and knows something of its use, he can adopt rolls to his benefit and pecuniary well being, first to clean bran and crush the coarse germy middlings and tailings from the purifier. If he is able to go still farther in the system, he can put
in porcelain rolls for reducing the finer middlings to flour. Still further, he can put in rolls on the successive breaks or reductions of the wheat. By using rolls on the bran he can grind higher with the millstones and thus obtain a whiter and clearer flour; by using rolls on the tailings and germy middlingsof which he will have more the higher he grinds the wheat between the stones-he wilt save a good deal of flour which would otherwise be lost, and what he saves will be of the best flour. By using rolls for the breaks he will make many more middlings, susceptible of purification, thus improving the color and quality of flour. He will need more purifying capacity, more bolting surface, and from one step to another he will find that it will lead to the complete changing of his mill. It will cost less to make this change all at once,
but if the miller goes only as fast as he able o master the theory and practice upon which his mill should be operated, he will lose nothing by mistakes. Of one thing he should beware, and that is the ill-informed, self-sufficient and generally ignorant millwright, who ells him he can make as good flour with out modern machinery as with it. There may be locations in sparsely settled districts and on the extreme frontier, where the custom naturally tributary will not now, and may never pay for putting in anything beyond the simplest out-fit, but in any locality where the mill, no matter how small it is, has to compete with larger rivals for its home trade, it will not pay to make it any less than complete. If the owner has the means to make the change he will gain nothing by delay, and he will gain much if he consults only the best milling engineers he can find, even if he does rouble pay something for the privilege. The of the larger mills has kept all the larger of the larger mills has kept all the larger
mill-furnishing establishments busy to the practical exclusion of the custom mill. This is now changed, and there is no reason
why the latter should not coumand all that the experience and skill of the best mill builders can suggest. To this end the owner of the small mill should give as full information as possible regarding what he wishes to do, what he has to work with, what results he must obtain, how good flour he must make, etc His inquiries will then be to some purpose. The cost of changing a mill, whether large or small, depends so much upon the condition it is in and the work it has to do, and these conditions vary so widely that no one, no mater how extensive his experience, can give an nfallible answer, or one which in the major ty of instances will be even approximately correct. There has grown up an evil, for
which mill-furnishers as well as millers are responsible, which works greatly to the detriment of the mill owner who really wishes to have a good mill. This is the bidding on each little job, without reference to the machinery to be put in, or the results to be attained. In recent case a mill owner who had received a very low bid for the remodeling of his mill, was asked what guaranty of results he had and replied that he had nothing excepta verbal assurance that it would be all right. What cheap bid be accerted, as it most likely will, a cheap mill will be built, and the owner will find when he puts his flour on the market, that he has paid dearly for his economy. A cheap mill is like a cheap anything else, no matter how showy it may be or how well it
may promise, it will show its cheapness as soon as it is put to actual use. It will cost more at first without question to have a firstclass mill, but if it is first-class it will pay in the end. And one thing is certain, a first-class mill cannot be had for a second-class price. Fortunately for the owner of the small mill he can now obtain good machinery of responsible furnishers, and can have his mill well planned and built, if he is willing to pay fair-and not an exorbitant-price for it.
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## Roller Milling.

by G. Meissner.
anslated from the "Austro-Hungarian Miller," for the

## Purpose and Advantage of Roller

 The proper purpose of roller milling con sists in gaining as much fine white flour as possible out of a given quantity of wheat. As is well known, millstones used in the general way, do not produce so large a quantity of white flour (in comparison with the amount of such flour contained in the grain, because the bran (the outer tough coating o the wheat berry) has been rubbed partially into a fine powder between the stones, and has in consequence of its brown particles,imparted to the flour a more or less dark

These brown bran-particles cannot be separated from the flour, because they are of the same size as the flour particles, and have also nearly the same specific weight. A separa-
tion of these two particles by means of wind is therefore, for such small size, no longer possible. In larger pieces the bran is indeed specifcally lighter than the flour particles o the middlings, and the former can therefore easily be separated by means of suction o blast. The separation of the fine pulverized
bran from the flour itself is however im bran fro
possible
In order to avoid the pulverization of bran
moisten the grain before grinding, because
the hard brittle bran becomes more tough by taking up moisture, and it therefore keeps also causes the resulting flour to be moist this latt $r$ therefore does not keep and must be used up quickly, or else it will turn gre
The distinguishing feature of roller milling now consists in working the thoroughly dry grain in such a manner that the grain is not of the grain is obtained free or nearly free from bran.
In eriencequence, as is proved by practical experience, from eight to ten per cent more
white grades of flour are obtained (there are white grades of flour are obtained (there are
about ten distinct grades in Austria and Germany, ) and generally much finer and whiter
flour is produced than can be made by mill flour is produced than can be made by mill-
stones.
There are millers who believe that in roller milling so-called dead flours (crushed to impalpable powder) are obtained
This idea is based on a faulty knowledge of the mode of grinding which is used in roller milling.
We shall find later on that roller mill flours are just as granular as those made by mill tones.
Indeed it is even possible to make more granular flour by means of roller mills than oy stones, if the proper attention is bestowed ingly.
II. The national Economical Valee of Roller Miliing
It might appear from superficial examina ion of the subject, that it is economically wrong to produce so much white flour (free from bran) because bran contains so much more, ) like gluten, etc., than the other part of the wheat berry
However, these nutritious parts of the tough bran are contained in such a form that they reat difficulty, digested and assimilated with ilate these nutritious parts in the blood.
The value af an article of food does not merely depend on its contents of nutritive parts, but it depends essentially on the state or form in which it contains this matter, whether it suits our human organism, that is whether our stomach can easily digest and assimilate it.
This latter is not the case with the bran and it is therefore certainly better to feed the cattle with our bran (they have stronger digestive organs, and for them bran is good food, and afterwards to eat the meat and the milk of these animals, thereby receiving the nutritious parts of the bran in another form which is specially adapted for our organism. A national economical disadvantage is not therefore combined with roller milling; this would only be the case if the bran were entirely thrown away, which is nowhere he case.
It cannot be denied that bread made from white flour, although it may contain less nutritious parts, is far better adapted for the digestive apparatus of the human organism than bread from dark flour.

This may be accounted for, in addition to reductions, but only to divide the grain into the above mentioned reasons, by the fact mall pieces (middlings) and to separate the that white bread remains spongy when in- bran.
contact with water, whereas the brown (dark) This property of the fluted rolls, to pro bread forms dough-balls, and in this state duce not flour but middlings, forms their without taking account of the bran) it is ery indigestible
It is a fact that not only rich people like white bread, but that particularly the hard working lower classes prefer it to the brown bread.
A national economical disadvantage $c$ not therefore be found in roller milling It is another fact that everybody would refer to take a quantity of white bread than similar quantity of brown bread, provided he could get it for the same money. It ought thercfore to be the aim of every miller to produce as much white flour as possible from a given quantity of grain. The best means for this purpose is roller milling.
It must not however be thought that it is ufficient to put merely roller mills in the place of millstones; the mode of grinding must be arranged according to quite another
ystem if the introduction of roller mills is intended to be really useful.

## III. The Grinding System of Roller

If grain is passed between fluted iro rollers it is not so much torn to pieces, but
rather crushed into several pieces, whereby at the same time the bran is detached in flakes without being rubbed into powder. These detached bran flakes can then easily be separated from the other parts of the grain bran when not pulverized, is specifically In order to make this separation of bran perfect it is only necessary to take care that
the bran is never rubbed into powder, but that it always forms pieces of not too small a size. The separation of the bran will be so much easier accomplished, the more gradual he reduction of the grain takes place, where coating of the grain severs its conne
This is the working method of roller mil
ing. The grain is first passed, in a perfectly ary state, through a pair of coarse fluted rolls set at such a distance that the grains are

## ose its integrity

The inside of the grain, which is more or less brittle, is thereby of course divided into pieces of different size which will fall out of
The less broken particles of the reduced grains are then separated in wire dressing cylinders from the finer particles. The still larger particles (containing the bran) are then passed through a second pair of rollers, set a little closer and fluted a little finer, which will reduce the broken grains into somewhat smaller particles, without however re-
ducing the bran much.

After the finer particles have again been separated in a wire cylinder, the coarser parts are passed through a third pair of rollers, set closer and fluted finer, which continues the reduction without reducing the bran. The inner parts of the grain are thereby separated from the coating, so that after the through the rolls, in the described manner between rolls set successively closer and fluted finer, the whole coutents of the grain have been detached from the coating, which
remains as a soft spongy mass.
By separating from these broken grain particles (which have been so to say picked out of the coating) the small detached bran flakes, and then grinding them, a fine white flour, free from bran, is obtained. In reality however, the separating process does not progress so undisturbed as here described. During the passage through the rollers many bran particles are detached, but as long as they are not too fine they can be easily parts of the grain

Special care must be taken not to allow the clean bran particles, which have already been detached, to pass between the succeeding rollers, because they would there only be further reduced. This is the reason why it is necessary to dress the meal after each passage through the rolls, to separate the finer particles from the coarser ones in order to submit only these latter to a further duction in the succeeding rollers
A certain number of different stages of re duction is therefore unavoidable, because that which remains as bran after the different passages through the rollers, only forms the offal of the main product.
As will be seen from the above, it is not intended to make flour during the described essential advantage, without which they would be nearly valueless.
Of course some flour is produced during the described operations, but only very little; the bulk of the products are different sorts of middlings and bran.
IV. The Difference in the Working Mode

Roller mill and Milstones.
Rol mills not only have the advantage morking in a better manner than milldifferent mat also treat the grain after quite a

## Millstones mod.

Millstones are undoubtedly excellently adaphis is not intended to a fine powder, but rain, we done, in grinding , argest As of it) has been separated from the meal. bran soon, however, as the separation of the manner, the pure part of the perfect very well ground on millstones, because a pulverization of bran cannot in this case tak place. Indeed millstones are probably much better for such a grinding process than the ollers themselves. For if pure middlings strongly they may be pressed together, there will always be after such passage through the ollers, a larger amount of unreduced tailings
 . Chilled Iron Rolls and Porcelain Rolls.
It must be mentioned that rollers working inder great pressure, require much motive power, whereas on the other hand the ordina

## y fluted rollers require but little power to

As a natural consequence the entire pulerization of a grain requires a certain mount of working surface, which roller hills do not possess, although in millstones sufficient surface is available for such pur

From this it follows that the preparatory reatment of the grain, the so-called granula ion, that is the reduction of the grain into small piece ${ }^{5}$, without thereby pulverizing the bran, can best be achieved by means of fluted chilled iron rollers, or fluted rollers of any ther material of great resistance, whereas the grinding of the purified (freed from bran) middlings and semolina can best be treated by means of millstones
Rollers should not be used for everything, or millstones have very many advantages or grinding middlings into flour, whereas on he other hand rollers have an inestimable value for granulating and reducing middlings. Rollers and millstones are not in opposition to each other, but they complete each

The practice has throughly confirmed this fact, for in all newly erected mills-for in stance, Buda Pesth and other places-the granulation and the reduction of middlings is done by fluted chilled iron rollers, whereas - final reduction of middlings and semolina
flour is done without exception on mill tones.
orcelain holl oller milling entlon all been正 solved but only further complicated.
放
whether the man or the woman is more use-
simple one, if not looked at through partial spectacles.
If grain is passed between the smooth rollers, made from any material, it will there by be crushed, but the crushed mass is not divided into pieces. In order to obtain the latter effect it is necessary that one of the rollers moves quicker than the other one If both rollers in this operation are perfectly smooth and if they are set close together they will not draw in the grain intended to be passed through them
In order to accomplish this drawing in, it is necessary for the treatment of whole grains and large pieces of the same, to flute the rollers. It is not important, for this object, whether the flutes are straight (parallel with he axis) or whether they form an angle with the axis, but the shape of the flutes has an essential influence on the facility and certainty with which the drawing in of the grinding material (whole grains or breaks) between the rollers is effected.
Those flutes, which are arranged so that one rolier advances before the other one, have proved themselves to be most efficient. The rollers, the flutes of which are shaped
like the teeth of a saw, then cut so to say,
igainst each other, that is as if the one roller where standing still and the other roller moved against it. These flutes are also better adapted for wear than the symmetrical flutes. For even if the sharp edges of these flutes have been worn away, they will still draw in well and indeed better than the straight flutes.
It is self-evident that these fluted rollers must be made from a hard material of great resistance, and that porcelain is unsuitable for this purpose, that is for fluted rollers, need hardly be mentioned.
Porcelain, of the proper quality used for mooth rollers, may be excellent, but they cannot be fluted, and they cannot therefore
be used with advantage for granulating and reducing coarse middlings.
Steel and chilled iron have proved themselves most suitable for fluted rollers; the latter is cast iron which has been converted into steel by reducing its surplus contents of roller milling for more than twenty years, and they have proved superior to all other experimentally tried materials, and there
is indeed no other material but steel and chilled iron which is bard and at the same time tough. This is why in engineering where resistance and durability are of the reatest importance.
Nobody would be foolish enough to make drill, a chisel, a roller mill and similar things from any other material but steel and
chilled iron, and therefore, it is also undoubtdly the best material for fluted roller mills.
Experience has proved this to be true. It must not, however, be understood from this, ously in milling, but as fluted rollers, which are necessary for the granulation of grain, they cannot be employed. Very userul on
the other hand are porcelain rolls for reducing middlings and for finishing the reduced middlings and semolina. For in the best
arranged mills the middlings which have been produced by fluted rollers are not at once ground to flour, but before finishing them, they are in from two to five passages further reduced, not into flour but into small pieces, to semolina-called "Dunst" in Aus-
ria and Germany.
The middlings produced during the granulating or breaking process, contain still a large
amount of pieces broken from the grain to which parts of the bran coating are still adhering, so that it is not possible to separate the latter by means of blast or suction. If it is adhering small hran particles, as is necessary comes necessary to reduce these middlings still further, that is to divide them into finer middlings and then to purify them by means
of blast or suction, that is to separate the of blast or suction, that is to separate the flour. In smaller mills middlings are reduced once or twice; in larger mills from two to mills up to five times. These fine reductions This reduction-"Dunst."
This reduction of coarse middlings into finer middlings and semolina must be done already too small for fluted rollers, which they would pass without being reduced.
For the first reduction of coarse middlings use, very fine fluted rollers can be used with dvantage; for all subsequent reductions, however, smooth rollers are required.
Porcelain rollers may be employed with great advantage for this purpose, although well by means of smooth chilled iron rollers. The porcelain rolls draw in a little easier ine natural grit of their surface althe experience also shows the chilled iron to have its advantages. It is really very difficult to decide which is the most advantageous
for this purpose, and probably both are of equal value.
The manufacturers of porcelain rollers of course claim superior advantages for the philled iron rolls for chilled iron.
It is however, true that in porcelain, roller mills the rollers will sometimes burst, and also that sometimes small pieces break from
their surface; such mishaps do not occur with chilled iron, and as it is necessary to use chilled iron for granulating, it seems only natural to give the preference also for reductions to chilled iron.
It may be further mentioned that all grea Austrian mills, and especially the Buda Pesth
mills, use chilled iron without excption.
With regard to grinding or finishing the purified middlings and the semolina to flour, such cannot be recommended. Of course by means of rollers, but millstones are undoubtedly much better adapted for this purpose. The working surface of rollers is too
small, and even if the rollers are very strongy pressed against each other, be they of porcelain or chilled iron, there is always a propprtion of middlings and semolina in the tailings which must at last be treated on millstone.

As already mentioned, however, the grinding can be forcibly accomplished by means of rollers alone, although with an amount of
power quite out of proportion. This point has also been decided by experience, and all well-equipped mills in Switzerland and Austria (in Buda Pesth without exception), finish by means of millstones.
Should it, however, be intended to finish by means of rollers, it would be preferable, for this purpose, to use porcelain instead of chilled iron, because the former is better adapted
for grinding, on account of its fine grain and the natural roughness of its surface. It would produce more flour and not so much semoli-na-"Dunst"-and tailings.
For in the finishing process it is intended 10 grind and rub the material into fine pow der (flour) and not
into smaller pieces.
Therefore, if the
Therefore, if the porcelain rolls are more advantageous for the finishing or grinding
process, they are less advantageous for the reduction of middlings and semolina, because during those reductions the production four is not yet desired.
During the reduction of middlings it is not intended to produce flour, but to produce very fine middlings or semolina, from which the
bran can be separated on special purifiers by means of blast or suction.
One and the same roller mill cannot therefore possibly be used for both processes,
because it cannot be equally well adapted for reducing as it is for grinding. That which is desired in the first ope. ation must be avoided in the second.
A firm which makes only porcelain roller mills occupies a peculiar position in regard
to these facts, because their manufacture is unsuitable for granulating.
These firms therefore, in order not to make room for chilled rollers for granulating, try as possible which gralating process as much ti:ll and easily to be accomplished by milltones.
This manner of advancing their interests is, of course favorable for their own prospects,
but the milling interest is not much benefited thereby, because the granulating process is the backbone of modern milling, it is a most important process, and what is spoiled in this, the beginning of the whole milli
cannot afterwards be remedied
Vi. The Conversion of Old Mills and the

## arrangement of New Mills for

 Roller Milining.It will therefore be found advisable, when planning a new mill, not to be wholly influ-
enced by the prospectus of milling machinery manufacturers and their agents, but to take regard of the lessons which experience has taught about the main principles. That is, to adopt a similar arrangement to that which has been found to answer best in the larger mills, especially in Austria-Hungary and Ger-many-particularly in Buda Pesth.
This arrangement consists of the following

## main fe

roducing) process he granulating (mod chille iron rollers.

2. To reduce the middlings by means of smooth chilled iron rollers or porcelain roll| er8. |
| :---: |
| 3. |
3. To grind or finish the purified middlings
did purified semolina by means of millstones or porcelain rollers.
This milling method is specially suitable for the conversion of existing mills to the roller milling system, because the whole existing plant can be incorporated with a few slight
alterations. It is only necessary to erect the required number of breaks and reducing rollers in a suitable place, available in most mills. The conversion of an existing mill becomes would be if it were attempted to accomplish also the grinding or finishing process by means of rollers, in which latter case it would
become necessary to remove nearly all the entire existing arrangement of millstones and
their appurtenances.

This modification of the installation of
oller milling with the retention of existing oller milling with the retention of existing of old mills into modern milling plants, because, besides this, in these latter, a larger number of dressing machines, elevators and worms are required than old millers are ccustoned to see
There are very many millers who are strongy prejudiced against conveying apparatuses, because they know from experience that worms and elevators are the chief causes of undesirable stoppages in the regular working of a mill. But it must not be omitted to state that in the newer milling plants fewer stoppages take place, notwithstanding their greater complication, than in the older mills, and
and mainly because much more care is bestowed on the construction and driving of conveying apparatus than was gencrally formerly the case. Therefore in modern rolle arefully avoided, although, of course, their number is
What Sam. Chishorm has to say about Milling.

Mr. Jonathan Mills, the inventor of the machines which bear his name, had a full
knowledge of the difficulties in the way of using either millstones or rolls for reducing wheat to middlings, and he has combined in his invention the qualities of both burrs and rolls which were suitable for the purpose,
and avoided those qualities which were disand avoided those qualites which were dis-
advantageous. For instance, the objection to the use of the ordinary millstones for the reduction of wheat is threefold $:-1$ st, the
inherent quality of the burrstone itself which necessarily comminutes or abrades the bran ; 2d, the unwieldy size of the ordin ary millstone ; and 3 d , the impossibility of perfect and exact adjustment-a matter of the supremest importance in the delicate
operation of splitting the wheat, and in the operation of splitting the wheat, and in the equally and uniformly at each stage. Of course the size and adjustment may be overcome at large expense and with great care but the number of mills where the millstone to be taken into account. The advantages of the millstone for gradual reduction, on the other hand, providing its abrasive quality could be overcome, are 1st, its form and simplicity of mechanism, and 2d, its motion, or rather the motion which it imparts to the material which is conducive to the end in
view, viz: the disintegration of the material into its component round middlings particles without, their pulverization into flour
The disadvantage of rolls for reducing wheat of middlings consists chiefly in the principle ble for them to split the wheat as before described, and the unavoidable comminution of the bran; besides, I might mention the large number of bearings, the difficulty of
adjusting the rolls and keeping them true to each other, in order to accomplish regular and even work.
In employing a chilled iron disc of small diameter ( 16 inches), and capable of positive and perfect adjustment, the inventor combined all the desirable qualities of both milltones and rolls, and at the same time avoided the disadvantages of hoth. The features of bly familiar to some of my hearers; but a some may not be acquainted with their dis-
tinguishing characteristics, a resume of those points which make them pre-eminently the best appliances for gradual reduction that have yet appeared, will not be out of place. The degerminator is but a modification of discs, and so these two machines may be discs, and so the
treated as one.
In general appearance the Mills machine is that of a splendidly constructed portable mill of medium size. It is made wholly of iron and steel, and the working parts consist essentially of two discs, each sixteen inches in diameter, with rounded, margined corruga tions, having perfectly smooth faces. Both
discs are depressed in the face from the cenre to within about four inches of the periphery, so as to lenve space for the pessage of dise is stationary, while the lower dise runs. The entire surface of both these dises is pol ished perfectly smooth, and all sharp or cut ting angles are rounded off. The skirt of the disc is divided into ridges or corrugations which, like the rest of the face, are smooth,
and their angles rounded off. Each of the ridges is about five-eighths of an inch wide at
the periphery of the disc, and their inner ends slope with a gentle inclination to the level of the depressed bosom before mentioned. $\mathbf{A}$ ridges or corrugaters the material out to the machine is done. In mechanical construction the machine is perfect in all its details.
By the united action of centrifugal force and the bosom furrows or leaders, grain fed to the machine is gradually led into the depressions between the ridges, where, by reason of the shallowness of these de-
pressions, it is received in a horizontal pressions, it is received in a horizontal
position. In this attitude it is made to rise the easy incline of the ridges by the motion of the surface on which it rests, and in rising it is rotated on its own axis until it
bears with its creased side on one or the other of the opposite disc-faces. Since the smallest transverse diameter of the berry lies through the crease, the kernel is held in this relation to the proximating surfaces of the corrugations, and is thereafter slid along one or the other, or both, of these surfaces, until split apart and allowed to escape in half-kernels from the machine.
That a slight pressure, applied by opposite smooth surfaces to a kernel in this positionthat is to to say, in a position such that one smooth surface bears on the grain at the central point of the arch opposite the crease, and the other surface bears upon the two points of prominence separated by the crease-will
serve to force the lobes apart, or to split the berry longitudinally through the crease, is
It is also obvious that it is necessary both to the slipping movement of the grain upon the disc-surfaces, and to the spreading action upon the disc-surfaces upon the lobes of the grain, that said surfaces shall be extremely smooth; for otherwise they would, in the first
instance, rotate the grain out of the position instance, rotate the grain out of the position
required and described; and in the second, even if that position were accidentally assumed by the berry at the instant of rupture, the
lobes would be held together, and the rupture lobes would be held together, and the rupture
would be parallel with the disc-surfaces, instead of vertical thereto, as in the operation described. It is still further plain that neither in the slipping or gliding movement of the grain upon the polished disc-surfaces, nor in the
pressing action by which the berry is longitudinally split, can there be any comminution of the bran.
But little of the interior grain substance is dislodged in the operation of degerminating by splitting through the crease, as described, for the reason that each half of the berry so sphell, and also for the reason that only slight
shen pressure,from which disintegration can result, need be applied to the berry to effect the splitting.
Such, in brief, is the operation of the break" of a degerminator, or upon the first thus liberating the germ and dust at the very outset of the operation, the Jonathan Mills ystem conforms to what we have seen to be one of the principal requirements of scientific milling, and at the very outset removes a class of impurities which are left to be contended
against in future reductions when rolls or against in future reductions when rolls or millstones are used.
The second reduction by this system is a sort of repetition of the degerming process, and only slightly reduces the split wheat, loosening the germs from any kernels which
were not affected by the first operation. The first two reductions are essentially cleaning operations, although a little flour and middlings are scalped out by a wire reel after each of them. Their purpose is not so much to reduce the wheat as to clear it of impurities and put it in a good condition for reduction. At the end of the second reduction, after the broken wheat has been sent to a short scalping reel for separation, and the coarse
middlings and germs sent to smooth rolls to flatten out the latter, there remains what might properly be called a quantity of coarse groats, perfectly clean and only needing the separation of the bran. These coarse groats will be found to have been made by breaking he wheat to a very large extent in the direction in which the cells of the bran coatings
have their greatest length, and therefore their greatest strength, while the gluten and starch cells have been disturbed in a very slight degree, as is evidenced by the very small amount of flour that has been detached and mixed with the seam impurities.
With such material to work on, we have found three additional reductions sufficient 0 complete the reduction of the wheat to middlings, although a greater number of
reductions could be employed were it found (Continued on page 91.)
 Leffel Turbine Water Wheel

Machine Molded Mill Cearing
 Mixers and General Outfit for Fertilizer Works. - Shipping Facilities the Best in all Directions.

POOLE \& HUNT, Baltimore, Md. [Mention this Paper when you write to us.]


James Leffel's Improved WATER WHEEL.

New Price list for 1881 ,



JAMES LEFFEL \& CO., springield, ohto.
nd 109 Liberty street N.



Stout, Mills \& Temple,

DATTON,

OHIO.

"PART GATE" Water Womanufacturers of the
American Turbine Water Wheel, Best Quality French burr millstones. Flour and Paper Mill Machinery, Best Chilled or Po
celain Rolls for Crushing Wheat GENERAL MILL FURNISHINGS. The American Turbing, as recently improved,
wer utilized from a given quantity of water, and Large Illustrated Catalogue Sent Free on Application.


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It ingures a perfectly even distribution of the middilings
over the entire widat of the cloth Every miller will apCASE MANUFACTURING CO., columbus, онio.



IMPORTANT NOTICE TO MILLERS The RICHMOND MILL WoRKS, and RICHMOND Indianapoisis, Ind,, with all the former patter removed tools, and




RICHMOND MANUFACTURING C0.
LOCKPORT, N. Y.,

RICHMOND'S CELEBRATED Smut Machines,

Brush Machines,
Grain Separators,
and Bran Dusters.
Nearly Two Hundred of these Machines are now in oper-
ation in the city of Minneapolis, Mand sixty in the city of Milwankee, Wis. They and more than sively used in many other sections, wis. They are also exten Wheat.
[Mention this paper when you write.]


## AMERICAN FLOUR MILL DIRECTORY FOR 1882: <br> Is Now Ready for Delivery.

 Mill Furnishers, Flour Brokers, And Every one Desiring to Reach the Trade,
WILL FIND THIS WORK SIMPLY INVALUABLE. PRICE, TEN DOLLARS PER COPY.
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## Mill Picks,

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Northwestern Mill Bucket Manufactory


18 furnishing Mills and Elevators in all parts of the
country with their superior BUCKETs. They are UNREVALED for their SHAPR, STrevath and


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London Quarreety Reriecu. The Book is an ever-present and relia-
ble sehool master to the whole famG. \& C.merkilaia \& Co., Puburs, Springfield, Mass

GANZ \& CO.,
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 [Mention this paper when you write to us,]

## BOLTING CLOTH! <br> onferred wither your Cloth until you have point of quality and price. Wey you both in with special facilities for this work. Write with special facilities for this wo us before you order. Address,

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Licensed Under all Patents
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For the more complete protection of our cusomers, and to put an end at once and forever have recently been annoyed. we have purchased ALL PATENTE, rclating to Purifiers, lately owned by Huntley, Holcomb \& Heine,
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use it unmolested and unchallenged, and in this right we have, can and shall protect them. Intending purchasers should give this notice attenti
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FOURTEEN SIZES
Single, Double and Special Machines.

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$\qquad$ IS POSITIVELY SELF-ADJUSTING AND RELIABLE. LIST AND CIRCULAR TO
GEO. T. SMITH MIDDLINGS PURIFIER CO., Jackson, Michigan.


Parties corresponding will please state where they saw this advertisement.]


FROM 1-4 to 10,000 LBS. WEIGHT.
True to pattern, sound and solid, of unequaled strength, toughness and
durability.
$\begin{gathered}\text { durability. } \\ \text { An } \\ \text { struangenth substitute for forgings or cast iron requiring threefold }\end{gathered}$ Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Loco15,000 Crank Shafts and 10,000 Gear Wheels of this steel now running prove its superiority, over all other steel castings.
CRANK SHAFTS, CROSS.HEADS and GEARING, specialties. CHESTER STEEL CASTINGS CO.,
Wrks, CHESTER, PA. us. 1 407 LIBERTY ST.. PHILAL ELPHIA, U. S. A.


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## Steam Engines, Tubular Boilers. <br> [Mention this paper when you write.]

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 bOLTING CLOTHS, Mill Irons, Belting, Mill Picks, Iron Proof Staffs, Smut Muchines, Elevator Cups, and Mill Furnishings in General. Mo - Having been engaged in the manufacture of Eso-PUS MILSTONES, CHASER, \&c., for the past 30 years, I am prepared ot, fill all orders, not or one past the lowest
price, but the best qualities for the purpose intended. (Mention this paper when you write.)

TRIUMPH POWER CORN SHELLER.


Shells and Cleans 2,000 Bushels Ears per Day The Cheapest, Best, and most Simple Power Corn Sheller
in use. Send for Circular and Price List. Manufacturers of Steam Engines, Mill Builder
and Mill Furnishers. THE PAIGE MFG. CO., Pain
[Mention this paper when you write us.]
MARSEALI'S
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## 

For two dollars and upwards, Also RUBBER STAMPs,
BURNNG BRANDS BEALS, STEEL NAME STAMPS,
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Brokers Factors
IN FLOUR,
BRISTOL, ENGLAND.
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BUDGETT, JAMES \& BRANTH,

## Flour Merchants,

BRISTOL, ENGLAND.
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Orobio de Castro \& Co.,
AMSTERDAM (Holland), Europe, Telegrams, OROBIO, Amsterdam, FLOUR ${ }^{\text {AGexss }}$ fon

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Consignments Aceepted

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WILLIAM BRYCE \& CO., LONDON (England.) GLASGOW (Scotland.)

BRYCE, London or Glasgow. CONSIGNMENTS OF FLOUŔ SOLICITED.
sTIEL CAR Made entirely of STEEL.
ONE MAN with it eat easily move a loaded car.
Will not slip on ice or grease.
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London, E. o., $\quad$ England.
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FLOUR BRANDS Flour and Grain Merchant,


## (Continued from page 88.)

desirable. But these reductions have been found sufficient in practice, aud these are accomplished in machines essentially similar to the degerminator. The broken wheat from the scalping reel of the second reduction machine, freed from impurities as above
stated, goes succeedingly through the three stated, goes succeedingly through the three
machines, the flour and middlings being taken out after each reduction by a scalper, and the residuum being sent to the next machine. The flour and middlings from these three reductions are sent to an ordinary bolting chest, and the middlings and bran obtained from the reductions are treated in any manhave carefully considered my remarks on millstones and rolls, cannot but see the wisdom of thus confining a machine to a single class of work, instead of forcing it to perform work
kind.
In being able to successfully degerm the wheat and remove the seam impurities, the Jonathan Mills machine performs what we have seen millstones and rolls cannot do. sorts of shapes, as rolls and millstones invariably do, the degerminator splits it in a rational manner, by breaking it through its weakest part. By thus liberating these impurities
before the real work of reduction commences, one of the principal sources of inferior break flour is avoided. That these machines
are superior to fluted rollers for reducing wheat is proved beyond the possibility of successful contradiction, by the f ct, that while they make as large a percentage of middlings flour" produced becomes better and better at each successive reduction. It is a fact well known in the markets that the "clear flour"
or "break flour" made by the Mills system is exceptionally white and strong, and this fact bears out what could readily be inferred from
the construction and operation of his reduction machines.
The smooth surfaces and rounded edges of Mr. Mills' discs carry out to perfection another function of scientific milling besides splitting the wheat through the crease in reducing the lobes of the berry. Their nature effectually prevents the pulverizing or comminution of the bran, and this is another and obvious reason
for the superiority of the break flour made in this system. Surfaces so smooth and edges rounded off so perfectly do not cut up or rasp
off the bran as millstones or rolls do, but preserve it intact, broken only in such a man ner as is necessary to free the middlings and flour from its company.
fair comparison of the actual work of the three means most commonly used for reducing wheat, viz., the millstone, the roll, and the Jonathan Mills machine, gives the
palm to the latter. One reason of this superiority is that the inventor designed his machine for the reduction of wheat alone, and studied most successfully the application of
the means to the end. Both the millstone and the means to the end. Both the millstone and the principles of scientific milling were clearly understood, while the Jonathan Mills disc machine was invented expressly to carry out one of the acknowledged purposes of advanc
ed milling. For the gradual reduction ed milling. For the gradual reduction of
wheat to middlings the use of the roll and millstone is but an adaptation of old and unsuitable means, a makeshift, as it were,
instead of being the result of a study of the ends sought, as the disc machine is. It is therefore, that while making as large a percentage of middlings as any system can make, unexampled whiteness and strength. Nature always rewards with the best results those who follow in the path which science points out. In conforming to scientific principles, the Jonathan Mills system naturally obtain the highest and best results in practice. The End.

## Transmission of Power.

From Williams \& Orton Manufacturing Company, Sterling, Illinois, we have a treatise upon the subject of transmission of power by wire rope, which we recommend to alt having need of using power at some distan
its source. We quote the following : its source. We quote the following:
The distance to which wire rope tr
The distance to which wire rope transmissions can be applied ranges from 50 or 60 feet up to miles. "As a magnificent example of long transmission, we would mention that of Schaffhausen in Switzerland, at the Falls of the Rhine. Here 800 -horse power is carried diagonally across the Rhine, and extended for
a distance of two miles, and distributed among fifty different manufactories, situated in every imaginable position, and embrac-
ing all the varied arrangements of changing directions."
Wire rope transmission comes into use at a point where a belt or line of shafting becomes too long to be used profitably, and in point of economy ith much cheaper than.
lent in either shafting or belting.
This method has been largely introduced, with great success, in Europe, for several
years past, and is now receiving a rapid development in this country
Power can, by this method, be transmitted in any desired direction, up or down hill, across rivers, aror:nd buildings or obstructions of any kind, and thus make available many sources of power which are now useless. The ropes hang free in air, and require no protection from the weather, excepting an occasional
coat of warm, coal tar, which can be applied coat of warm, coaltar, which can be applied
to the rope by pouring from a can into the groove of the wheel while running; or raw linseed oil can be swabbed on the rope to keep it from rusting, and thereby preserve it. less on vulcanized rubber fillings, and are not affected in the least by wet or cold, snow or ice.

In almost every manufacturing establish ment it would be convenient at times to transtare power to some isolated building at a dis-
a wire rope transmission affords the ready means which commends itself on account of its cheapness, its economy of main-
tenance, and its perfect reliability under all ircumstances.
We now refer the reader to a few of the many permanent applications of wire rope nd then proced in Germany and stances where it can be applied with perfect eliability and economy, leaving a long list of applications that may be fitted out as they
become suggested to practical thinking men. "In the neighborhood of Frankfort-on-the Main, in Germany, the power of a 100 -horse
power turbine is conveyed for a distance 3,200 feet, by means of a wire rope trans mission, to a cotton factory, located in the proper place for such a building; wheels of 2, size of rope $\frac{5}{8}$ inch. A nearer site for only way in which the power could be made vailable for that purpose.'
Hundreds of cases similar to the above might be referred to in Europe, where per manent rope transmissions are numbered by thousands. We have a wire rope transmis-
ion in connection with our works, where power is carried a distance of only 60 feet This distance is about the limit for short transmission. However, by this short transmission fully 10 -horse power is conveyed from our machine shop building across to our foundry, unning a large blower and the machinery onnected with our foundry department i The most reliable and satisfactory manner.
This transmission is made on five-foot diameter sheaves, running at 90 revolutions pe minute, and $\frac{1}{2}$ inch diameter rope.
At a large distillery in this city may be ions. Here, in the first instance, two slender ropes are seen issuing through the casing of the attic window of the main building, an unning high in the air to the cupola of the malt house, some 200 feet distant.
asual observer the motion or use of these wo small ropes would not be detected ; but on a closer inspection, they are found to be
constantly running the elevators and machine y of the large malt and storehouse. In the second instance, power is transmitted to cooper shop, some 400 feet distant.
A mazufacturer of this city is carrying 20horse power a distance of 250 feet from water wheel to factory, running saws, planers, hapers, etc., by 7 foot sheaves and 4 rope sheaves running at 80 revolutions per minute.
Double above power can be carried if desired. andtransmission has been running eight years. The rope runs over the race, the adjoining property and a street, and were it put up right would te a pretty exhibition of this plan; cut sheaves are not true on shafts, and are out of line, so that the rope and filling wear away rapidly, a new rope being necesary every fifteen months or so. It ticks continually on side of flange, and instead of wearing a groove into rubber, it saws it off very apidly.
We mention these transmissions in cur ity as they come under our daily observaion, and at the end of this treatise can be found testimonials and letters that cover
nearly every kind and phase of this rapid nearly every kind and phase of this
eveloping means of carrying power.
In many localities where a good and reliable water power can be obtained, steep or uneven
banks forbid the erection of buildings in the immediate vicinity. Now in such cases rope transmission furnishes a complete remedy The power can be conveyed by this medium up stream or down, up an ascent or down a hill as well,or in many cases across the stream. In the latter case, where the stream is to wide to span without, an artificial foundation
for an intermediate station can be put in, and for an intermediate station can be
carrying sheaves be put on same.
In streams that are subject to heavy running ice in spring, a stone pier, similar in construction to an ordinary bridge pier, can be put in
mission.

## mission.

In streams that are not subject to heavy ice, a dirt embankment or artificial island can be filled in and "rip-rapped" with loose stone On this embankment may be erected a wood-
en fra ne work for an intermediate station.
On the ther hand, there are many valuable water powers on streams that are subject to extreme high water, and where the banks in the vicinity of the power are too low and at such times covered with water. Here the wire rope comes into play, as the factory or
mill can be placed higher up or lower down the stream, or out on the high table land in the distance. As shown by some table land in the distance. As shown by some of the testimo-
nials, the better health and comfort of the millers, and cheapness and preservation of mill are obtained by setting the mill away
Take another case: Your neighbor a few blocks away, or perchance across the street, or working by hand. Now this latent powe of your neighbor's would be of great value to ou if, by some application, it could be brought into your building with but little
trouble or expense, and with no detriment or trouble or expense, and with no detriment or
interference to any one. You ascertain that by making your own application, this powe may be rented for a nominal sum. You now wooden panes in a window, or slits in th window casing, you can rum your wire the high over the heads of the passers-by to yo utmost satisfaction and profit.
It can be profitably employed in pumping wheel pits, coffer-dams, stone quarries, and or building operations. A current whee may be put in a swift place in the stream, and machinery at a distance.
This plan of carrying power is very prof.t
ably used in cotton-ginning, hay-pressing,
and other cases where it is desirable to
set the engine and boiler at a safe distanc
away to prevent danger from fire. In
any establishment using steam power, the
besides the fact that a total loss can never be fully covered by insurance, and the delay of business and lying idle of capital while rebuild ing. We are furnishing transmissions for
above purposes, setting the mills, etc., away above purposes, setting
from engine and boilers.
In short, wire rope transmission can be applied with great profit and economy in almost every instance where the distance exceeds 100 feet, and in many cases where edistance is as short as 50 or 60 feet. The mission is distance, and the longer the line he better it will work.

## Ship-building in Maine.

The Lewiston Journal in speaking of the
ship-building industries of Bath, Me., states that last year that city built fifty-five vessels, of a tonnage of $36,334.13$ tons, or three-fifths
of all the tonnage built in New England during the year. The value of these fifty-five vessels is nearly $\$ 2,000,000$. It is expected
hat nearly seventy-five vessels will be built in Bath this year. Nearly 2000 men are mployed in the shipyards.
The Journal gives an interesting picture of Maine shipyard. It says: There is no place or a drone in shipyards. Three is no more ively place in the world. There or four hundred brawny men, with their tools, in the open air make a harmony of workmenlike noises which fall cheerfully on the ear. It i greatful hubbub and a methodical hurly burly. An observer gets the impression of from the ccenes around him thoroughness ters are hewing chips upon chips with their sharp, broad-axes; a dozen broad-backed ellows have a heavy timber on their shoul ers and are carrying it across the yard, the joiners are busily plying their planes; strongarmed men are tirelessly swinging glittering adzes-one of them told us he had done nothing but swing an adze for eight years; mallets platting chisels and mallets driving
trunnels keep up a steady, machine-like clicking; round-shouldered men are carrying pails of pitch; the caulkers are a noisy set of fellows and play an accompaniment to the sledges and anvils of the blacksmiths; sleek oxen are laboriously pulling or lifting with tackles; a cloud of steam from the puffing steam mill where the planks and knees are sawed, floats over all. A great many of the men in the yards are veterans and have
swung the broad-axe till they are stoop-shouldered.
The first process in ship-building is laying the keel. The keel is made of oak, maple or some such unyielding timber. The timbers
in the keel are firmly bound together with iron. The next thing is to set the freme, the huge ribs of the vessel. The frame is then sealed-planked inside. It is then decked, Then it is planked outside, and is ready for the caulking, the painting and the general finishing. The masts are generally set and The vessel rigged after she has been launched. planks, etc., of the largely in the keels, ginia, chiefly. The yellow pine used in the deck comes from Georgia and Florida. The hackmetack for the vessels knees is cut in our own woods and so are many of the spars.
The masts are cut in tall-treed Oregon. Every part of the vessel's sides between the keel and the deck is filled with Liverpool comes into Bath by the shipload for this pur pose. The sealing is fastened to the frame cured with is fastened with copper spikes, bolts and trunnels of locust wood. The caulking is done with pitch and oakum. All the work on a vessel is sub-let to master-carpenters, master-joiners, etc. All the carpentering, joinering, roning, caulking, rigging, etc., are orkmen, who hire men by the day and have full sway over them. The master work-man This method simplifies husiness for the building firm.

Good master-workmen are paid s.) per day Carpenters and joiners are paid $\$ 2.50$ to $\$ 3$ a day, according to their intelligence and skill. Not so many young men are learning the of service is necessary to acquire long a term the ship-carpenter", asks the reporter. "Some men can never learn it; others will become of ships. Caulkers are paid hardly so high wages. Professionel riggers are paid about $\$ 2$ per day. They are not numerous and a The models for nearly all the ships built in Bath are made by William Pettee. Generations of Pettees have made ship models since ime out of mind. One may find in Mr. Petships and shouse many cords of miniature launched in Bath in the last half-century. T. Donnel \& Co. carry on in Bath the only ope-walk in Maine, and employ fifty hands, The anchors for the vessels are forged chiefly
in Camden. The sails are made in New Bedford.
The amount and value of the tonnage owned in Bath are enormous, although they represent a small part of the wealth of that city; 315 vessels, of a total burden of 169, 717.54 tons, are owned by the Bath citizens, The value of this shipping, averaged at $\$ 22$ hese vessels 769 officers and $234^{\circ}$ sailorsotal of 3112 men-are employed. By Bath's hipping interests and the numerous indusries which branch from it, employment is given to 6000 or more able-bodied men, on

## Items of Interest.

Ax elevator bucket attachment invented y George L. Lord, Waupaca, Wis., consists two nuts which are firmly secured to the inner surface of the bucket, and two flat-
headed bolts which pass through the belt and engage with the nut
Last August the Kinzua Viaduct, the highest railway bridge in the world, was completed, a year from the time it was commenced. It is situated in McKean Couny Pa., about four miles from Alton, and its construction was ordered by the New York Lake Erie \& Western Railway Company, According to an article in the Scientific American, this bridge is 2051 feet long and 301 feet high. It has twenty spans sixty-one feet long, one 62 feet long alternating with the lower pans, which are 38 I feet each. The truss, being high and ten feet wide, and continuous from six feet one end to the other, is supported by col-
umns one foot thick, which increase in length toward the middle of the bridge. They spread out with a batter of two inches to the foot columns of the highest bents at the bottom The two longest bents rest on two long piers, with pedestals built on each side of the stream each containing about 500 yards of masonry All the other columns rest on piers contain ing from twenty to 125 yards of masonry The bridge contains $4,000,000$ pounds of about $\$ 300,000$.
Treatment of Diphtheria.-The Medical Press says that Dr. Deuker, who, during 24 years of very extensive practice in the Chil-
dren's Hospital, St. Petersburg, has treated upward of two thousand cases of diphtheria and tried all the remedies, both internal and external, employed in this affection, has obtained the best results from the following method, which he has employed for the las ten years. As soon as the white spots appear on the tonsils he gives a laxative mainly com-
posed of senna, which produces an abundant evacuation. When the purgative effect has ceased he gives cold drinks, acidulated with hydrochloric acid, and every two hours a gargle composed of lime water and hot milk in equal parts. Dr. Deuker affirms that when this treatment is commenced
erally and rapidly successful.

Krupp's steel works at Essen, Germany ore founded by the father of the present proprietor in 1810. The present proprietor took the work on his own account in 1848 , the not more than 74. In 1880 the number had reached 8679 , and is at present 10,600 . The mines and ironworks had in 1880 an additional number of workmen, numbering 7103; the number employed by all Krupp's works present higher. In the steel works there are 1542 furnaces of different kinds, 294 gener of steam, 82 steam-hammers of two hundredweight to 50 tons; 310 steam power, with a total of 12,000 -horse power; 1622 machine tools of different kinds. Including the steamers and the metallurgical works, the average daily consumption of the 13,000 cubic meters of water, 17,300 cubic meters of gas for lighting (obtained from the gasworks belonging to the establishment.) munication is facilitated by $63 \downarrow$ kilometer of railway, 23 locomotives, 767 wagons, 50 horses, 206 cars, 65 kilometers of telegraph wire and 35 telegraph stations. The works
also possess a chemical laboratory, a photographic and lithographic office, a printing office with three steam-presses and five handpresses, and a fire-brigade of 63 men . There ing 600 tons of iron in 24 hours. The mines are: Four coal mines, 547 iron mines, in Germany, and some in the north of Spain, he average daily production being shich 1200 tons are raised in Germany. The ore is brought from Spain by five steamers

Cheap and Simple Remedy for Rheuma both effectual and inexpensive is something which will be sure to earn for its discoverer he gratitude of mankind. The Canada $M e$ ical Record is authority for the statemen Wood, Professor of Chemistry, in Montreal, reports a number of cases in which acute articular rheumatism was cured by o case was it necessary to fast more than en days. Less positive results were obtained in cases of chronic rheumatism. The pawater, or lemonade in moderate quantities of they preferred. No medicines were given Dr. Wood says that from the quick and al most invariably good results obtained by forty cases in his own practice, he is inclined to believe that rheumatism is, after all, only a phase of indigestion, to be cured by giving omplete and continued rest to all the viscera Propelling Street Cars by Steel Springs. Philadelphia have proved that it is possible to propel street cars smoothly and rapidly by the expansion of powerful steel springs the difficulty of giving a uniform and perfect emper to the metal having been overcome The company controlling the patents make the following claims: The motor consists of ix springs coiled upon a cylinder. Each spring will be made of a flat bar of steel, 300
feet long, 6 inches wide and + inch thick.

These springs are tempered by the new process so uniformly and so delicately that first being coiled so that their diameter is 18 feet, they are tempered and then wound up until the diameter is $7 \frac{1}{2}$ feet. In this condi tion they are placed upon the motor truck and the appliance of the patents adjusted. A stationary engine at the terminus of the road then winds the springs to a diameter of 40 inches, and it has been demonstrated that the power of the expansion of the six springs, from 40 inches to $7 \frac{1}{2}$ feet, in diameter is' sufficient to drive an ordinary street car full of people, five miles on any track in Phil adelphia. The springs are so entirely undér the control of the brakeman that he can use the power of all of them at once or limit the power to one, or in going down a steep grade he can shut them all off. A check prevents than nine miles an hour.

## NEWS

A grist mill is soon to be erected at Kiel, Wis Burnt out. Crow Bros \& Co's mill, at Paris, Burnt out. W. R. Evan's mill, Jefferson Whipple \& Harker, of Deerfield, Ind., have James W
dissolved.
Pollaches flour mill at B uffton, Wis., burned
The flour mill is nearly ready for work at Burnt out. Miller \& Henderson's mill at Russell, Dailer \& Co., Crestline, Ohio, have Graber \& Co., of
build a two-run mill.

## L. W. Tubrs, Ernerso the Emerson Milling Co

Van Valkenburg \& Co., are building a grain
vator at Cedarburg, Wis.
Burnt out. Seth P. H. Hale's mill at Hubbardstown, Mass. Insured

## Newton \& Orton, Lane, ceeded by Newton \& Alward.

Ch
ene sold out to V. C. Dixon.
Davis Bros., of Minerva, O., have ordered
A new four-run mill will be built at Clearfield, P by R. McPherson.

## C. C. White, of Valparaiso, upon further enlarging his mill.

## Burnt out. The mill of Moir, ford, Nova Scotia; partly insured.

Burned-Sept. 12, the CrescentMill and Eleva-
Burned out. W B. Dodge's 200 barrel flour

The office of the St. Louis Miller recently
arrowly escaped destruction by fire.
H. C. Evans \& Co. are progressing finely with
heir new flour mill at Chattanooga, Tenn. Hbnry L. Valburg \& Coo, of Ingle Station,
nd., has ordered an Odell Ruller Mill for bran. WM. \& JNo. HAYTER are commencing the erectio
Neb.
Burn

Burnt out. John. W. Carr \& Son's flour
nill at Hamilton, Ohio. Loss $\$ 18,000$, insured for $\$ 8,000$.
Will Shea's mill at Newbern, Ind., is having
important additions, necessitated by his grow-
ing trade. dissoly
ceeds.
The firm name of Geo. W. Adams, Rochester,
Mich., has been changed to Geo. W. Adams \& Son.
Jones, Ballard \& Ballard's mill, at Louisville, Kentuck
$\$ 5,000$.
The firm name of Max well Bros. of Millers-
W. G. Beev, of Hampton, Iowa, has ordered
of the Case Mfg. Co. first break machines and of the
scalpers
Henry Vahlburg, Evansville, Ind., has pur-
hased some machinery of the Case Mfg. Co., Columbus, Ohio.
Wm. Brenner, of Atlanta, Ga., has ordered the
Little Giant Break Machines from the Case Mfg. Little Giant Break M
The Midland (Mich.) Milling Co., a new organization, have cons.
A. A. Pearse, of Bakers Mill, $O_{\text {. }}$, is putting in
lot of machinery furnished by the Case Mfg. o., Culumbus, Ohio.

The Case Mfg. Co., Columbus, $O$., are furnishing L. C. Prunty,
Banks \& Sweny, of Blackburn, Mo., are put-
ting in new machines furnished by the Case Mfg. Co., Columbus, O .
A. Smitr, of Lebanon, Mo., has ordered a
double $9 \times 18$ Rolls from E. P. Allis \& Co. of Milwaukee, Wis.
Two pairs of $9 \times 24$ Rolls have been order-
drom E. P. Allis \& Co. of Mulwaukee, Wis, by the Hudnut's, Pekin, ill.
The Stilwell \& Bierce Mfg. Co., of Dayton
Ohio, have taken the order for a full line of
the Odell rolls for the mill of E , $G$ Brook
Birdsboro, Pa. The diagram for the mill is to
be furnished by Mr. Odell.
J. T. Halteman \& Co., of St.T.ouis, Mo., order-
d two pairs of $9 \times 18$ Rolls, from E. P. Allis \& A. of Milwaukee, Wis.
A.

A Chattanooga, Tenn., grain dealer has pur-
hased 160,000 bushels of wheal for shipment to Chicago and Milwaukee.
Mr. Issac Jones retires from the milling firm Gates \& Jones, Rose
J. Criteser is admitted.
Treman \& Moss, Mecklenburgh, N. Y., have
issolved partnership. The business will be dissolved partnership. The
continued by F. W. Treman.
L. N. Crill \& Co., of Richland, Dakota, are putting in new machinery fing.
Case Mfg. Co., Columbus, Ohio.
Adam G. Gropf of Lancaster, Pa., has placed
his order with the Case Mfg.'Co., Columbus Ohio, for a set of smooth rolls.
Thus far, this year, 5,782 miles of new railroad have been built, against 3,180

## ding time in 188

Plank Bros., of Wooster, Ohio, have ordered
Double Roller machine, $9 \times 18$, from E. P. E. P Co., of Milwaukee Wis. E. P. Allis \& Co. of Milwaukee, Wis., have
he order for two pairs of Rolls, $9 \times 18$, from Coons \&Co., Winchester, Ill.
G. W. Woodrurf of Columbus, Ga., has
ordered two pairs of $9 \times 18$ Rolls from E. P.
Allis \&C., of Milwaukee, Wis. Allıs \& Co., of Milwaukee, Wis. J. T. Walters of Easton, Pa., has ordered a
Double $9 \times 18$ Roller Machine, from E. P. A'lis
E. P. Allis \& Co, of Milwaukee, Wis, have
just received order from O. F. Barber, Golden, ust received order from
Col., for 2 pairs $9 \times 18$ Rolls.
J. L. Allard, Paducah, Ky, recently ordered
one double $9 \times 24$ Roller machine, from E P. Allis \& Co., of Milwaukee, Wis.
Two pairs of $9 \times 18$ Rolls have been ordered
from E $P$ Allis \& Co of Milwaukee, Wis, by Grom E. P Allis \& Co, of Milwa
Geo. A Klinger, St. Charles, Mo
D. J. Lew, Rushford, Minn., has ordered recently 2 double $9 \times 18$ Roller machines from E.
P. Allis \& Co., of Milwaukee, Wis. W. Younger, of Catasauqua, Pa, has ordered
from E. P. Allis \& Co., of Milwak ee, Wis one double Roller, $9 \times 18$ machine
E. P. Allis \& Co., of Milwaukee, Wis., received
the order for two pairs of $9 \times 18$ Rulls from nochel Bros., Belleville, III.
Chisholm Bros. \& Gunn, Minneapolis, Minn
ave sent order for two pairs of $9 \times 18$ Rolls to E have sent order for two pairs of 9x
P. Allis \& Co., of Milwaukee, Wis.
The Case Mfg. Co., Columbus, Ohio, are fnr-
nishing Geo. G. Smith, San Francisco, Cal., nishing Geo. G. Smith, San Francisco, Cal.,
C. B. Slater \& Co., of Blanchester, O., have furnished Messrs. Tate \& Trollinger at'Me
ville, N. C. with two of the Slater Reels.
Two pairs of $9 \times 14$ Rolls, have been ordered
rom E. P. Allis \& Co., of Milwaukee, Wis., rom E. P. Allis \& Co, of Milwaukee,
Stephen Apper, Theilmantown, Minn.
Jos. Kratochwill, of Dayton, Ohio, has or-
dered two pairs 9x18, and two pairs 8x14 Rolls
from E. P. Allis \& Co., of Milwaukee Wis Chisholm Bros. \& Gunn, of Chicago, Ill., have ordered twelve $9 \times 18$ double Roller machines,
from E. P. Allis \& Co., of Milwaukee, Wis. David Eluis \& Son, of Indiana, Pa., have ordered a full line of the Odell Roller Mills of
the Stilwell \& Bierce Mfg. Co., Dayton, Ohio. Van Vleck \& McArthur, manufacturers of
mill supplies, Hudson N. Y., have dissolved, and are succeeded by S. S. \& G. P. McArthur. Burned-Aug. 30, Danby \& Smith's elevator
and mill at Moscow, Minn. Loss $\$ 15,000$. Insur ance $\$ 7,500$. Fire supposed to be incendiary. E. P. Allis \& Co. of Milwaukee, Wis., receive from C. A. Gambrill Mfg. Co., Baltimore, Md. The mill at Arcadia, Ind., will be much en larged with machinery now being made by
Nordyke \& Marmon Co., of Indianapolis, Ind.
W. W. Snider, of Lyons, Iowa, visited Columbus, Ohio, and left his orders with the Case
Mfg. Co, for rolls, break machines and scalpers. A two pair 9x18 Roller machine has been
rdered from E. P. Allis \& Co Milwaut Wis., by Bierbauer \& Hutton, of Fillmore, Minn, One double $9 \times 18$ Roller Machine has been ordered from E. P. Allis \& Co. of Milwaukee,
Wis., by C. A. Donnel \& Co, Conway, Iowa. E. P. Allis \& Co. of Milwaukee, Wis., have the
order for two of their Double Roller machines from Smith, Stratton, Gifford \& Co., Nashville, Tenn.
E. P. Allis \& Co.. of Milwaukee, Wis, have machine, from May, Webber\& Co., Watertown

Messss. S. T. Emmons, of Homer, Mich.
recently ordered from E. P. Allis \& Co., of Mil waukee, Wis., two pairs of 9x14 Porcelain
Rolls.
Six of Gray's Double Noiseless Belted Rolle Mills have been ordered from E. P. Allis Co

Herzog \& Roberts, of Racine Wis., have confided an order for 5 double $9 \times 18$, and 4 double
$9 \times 24$ Roller machines to E. P. Allis \& Co., $9 \times 24$ Roller mach
Milwaukee, Wis.
L. Plante, of Faribault, Minn.. is remodeling
his mill and putting in his mill and putting in rolls, breaks an Columbus, Ohio.
Three double $9 \times 18$, and one double $9 \times 24$ Roller machines have been just ordered by J.
Stoly \& Co, Pekin, Ill., from E. P. Allis \& Co
of Milwauke, Wis. ONe 9x18 Double Gray's Noiseless Belted
roller mills, has been ordered from E, P. Allis \& Co., of Milwaukee, Wis., by A. F. Ordway \& Son, Columbus, Wis.
Two double $9 \times 18$, and one double $9 \times 24$ Roller
aachines have been ordered from E. P. Alli machines have been ordered from E. P. Allis W Dam, Wis.
Wilpord \& Nonthway, of Minneapolis Minn,
have ordered recently 19 of Gray's Double Noiseless Belted Roller M
\& Co., of Milwaukee, Wis.
Schrader, Maurer \& Serter, of Enon, Ohio,
have placed their order with the Case Mfg. Co., Columbus, 0 ., for a full gradual reduction
mill on the Case System.

The Case Mfg. Co., Columbus, Ohio, have just
aken the contract of Jordon, Shounty \& McFaraken the contract of Jordon, Shounty \& McFar-
land, of East Brook, Pa., for a full gradual reduction mill on the Case System.
The Michigan State Fair, at Jackson, has awarded the highest premium, with gold medal, the best slide valve engine on exhibition.
Two pairs of $9 \times 18$ Allis' Rolls, Gray's Noiseless Belt movement and patent frame, have
been ordered by R. Ruston. of Evansville, Ind., feen ordered by R. Ruston, of Evansville, Ind
from E. P. Allis \& Co., of Milwaukee, Wis. A large invoice of roller mills was shipped to
ustralia via New York recently by Nordyke \& Marmon Co. of Indianapolis, Ind., for converting a 1,000 -barrel mill to the roller system. Late deaths in the milling fraternity: Wm. Walker, Calumet Station, Prov. of Quebec,
Canada: J. E. King, Bennington, N. H. Canada: J. E. King, Bennington, N. H.; Namuel
A. Smith, of Empire Mill Co., St. Louis, Mo. Messrs. H. Resener \& Co's mill at Cheshire O, which was rebuilt by C. B. Slater \& Co., of
Blanchester O., have added rolls for finishing up their offal, Slater \& Co., doing the work. E P. Allis \& Co, of Milwaukee, Wis, have recently made a large shipment of Rolls of all
sizes to the Pacific Coast to meet the increasing demand for their machines in that region.
The Stilwell \& Bierce Mfg. Co., of Dayton
are having a large demand for the Odell Rolls,
and are now making plans for a large number and are now making plans for a large number
of mills in Ohio, Pennsylvania, Illinois and of mills in
Michigan.
The citizens of Henning, Minn., are very desi-
rous of obtaining a good flouring mill, and are willing to give some inducepents of a substantial nature to any one who will erect a suitable mill there.
A water mill has at last become an assured
addition to the young city of Vaaler. Minn., addition to the young city of Vaaler. Minn.,
Mr. Tuff, of that place, having ordered a threerun outfit of
anapolis, Ind

The well known firm of Shepp \& Co. Tamaqua, Pa., have decided upon remodeling their machinery made by Nordyke \& Marmon Co., ndianapo
The proprietors of the new mill at Grand Marmon Co, of Indianapolis, Ind. are jubilant over the results. The flour is highly spoken C. B. SLater \& Co., of Blanchester O., are
furnishing Mr. John Ribeyer at New Harmony, furnishing Mr. John Ribeyer at New Harmony,
Ind., with two of their improved Bolting Chests, nd., with two of their improved Bolting Chests, offal, and other machinery.
The Eagle Mill Co., at Parkersburg, West Va., are about to give their mill a thorough
overhauling, and have ordered their entire overnauling, and have ordered their entire
outfit, including the Slater Reels, from C. B. Me a Co., W.
Messrs. D. W. Barret \& Son at Rainsboro, O.,
are enlarging their bolting capacity with Slater Reels, and are giving their mill a general overReels, and are giving their mill a general over-
hauling. C. B. Slater \& Co. of Blanchester O., furnishing the necessary machinery.
Judge Randolph, of Princeton, Ky., has de-
cided that a flouring mill would be a good investment, and with that end in view has purchased a two-run water mill outfit from No
dyke \& Marmon Co., of Indianapolis, Ind. The Minneapolis Millers held their second picnic at Lake Minnetonka, Saturday, Aug. 19. regret that it was impossible for us to picnic with A new flouring mill is being built at Bates-
ville, Mo., for W. H. Gaunt. The machinery sides the usual parts, and all came from the Nordyke \& Marmon Mill Works, Indianapolis, Nordy
Ind.
The
The mill at Sweetwater, Tenn., which was will contain nothing now but rollers, all which together with the usual machinery will be made by Nordyke \& Marmon Co., Indianapolis, Ind.
The water power at Columbus, Ga., is stated
to be equal to 75,000 horse power, nine months in the year, and even at its lowest stage the cotton, and other mills are there, but there is room for more.
The mill of Saigers Bros., at Allentown, Pa., well \& Bierce Mfg. Co., of Dayton, Ohio A complete line of the Odell Rolls ars to be used. Wolf, of Allentown.
The well known Winona Mill Co., of Winona,
Minn., has ordered from the Case Mfg. Co Columbus, O., a number of their 1st breaks and roller machines. They are now using 42 feed
ooxes in their mill, all furnished by the Case Mfg. Co., Columbus, Ohio.
W. Havis, Monroe, N. C., E. L. Black, Neb., W lington, Iowa, J. Burton \& Co., Blancherster O.
and John Dikes Monroe, N. C., have placed the and John Dikes Monroe, N. C, have placed their

Mellon \& Gaiser, New Brighton, Pa., have Case Mfg. Co, Co on the Case System. This will make 4 mills the Odell Roller Mills have lately been con-
tracted for by Rictor \& Co., Williamsburg, W. W.
Va.; H. Snavely, Junction Station, Pa.; B. S.
Runburgh \& Co., Sedalia, Mo.: Jas. L. Brownlee, Runburgh \& Co., Sedalia, Mo.: Jas. L. Brownlee,
Mondov1, Wis.; G. Frick, Chillicothe, O.; Stein lanta, Ga.; W. G. Crabb, 'Clinton, Ind.; Jacob
Snyder, Parksville, Ill.; W. D. Dorwin, Dit Wis.; Crane \& Hughes, Grand Ledge, Mich. Ar Winfield, Kan., Sept. 9, W. H. Colgate was Wood's flouring-mill, which burned some weeks ago. Colgate was a look-keeper of the mill, and
his books are said to be in a bad shape. Anothe
man was put in his
$\qquad$
rage and frenzy at being discharged, set fire to
the mill and books. The prisoner is an only
son of $J$. B. Cole

## READ IT: READ IT:

 OVER ONE YEAR IN OPERATION, GIVING SAME SATISFACTION AS WHEN FIRTS STARTED.
## Fully Guaranteed. No Filling up of the Cloth. No Experiment any more. Try it and Satisfy Yourself.

 It is the only one which gives Satisfaction. All the Leading Mills are adopting our Machines.
## AN IMPORTANT PROBLEM SOLVED AT LAST.

Taking care of the dust laden air from Middings Purifiers and other machines, using air to carry off the dust, has been
thoroughly met and conquered in the highest degree by the

## PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of $\boldsymbol{F}$. Prinz. He produced a machine, that will give satisfaction in such a manner that no miller would ask for anything better. Simplicity is a Leading Feature in this Machine.
No Dead Air Chamber.-The dead air chamber, which has been a source of much trouble in other machines by wearing out and allowing the air to get in, thereby injuring the power of the cleaning mechanism on the cloth, which results in the cloth filling up, is entirely overcome in this machine, as it has NO DEAD AIR CHAMBERS.
Less Power is used with this machine than any other as there is no back press-

ure on the fan; the motion of the fan has to be reduced whenever this machine is applied.
It does away with the cumbersome dusty, dirty old-fashioned dust room, entirely, and the numerous spouts leading to them, which fill up the Mill, leaving no room to get around.
It Retains the Dust in the Mill, thus allowing no waste of stock by being blown out into the air as is the case with the old-fashioned dust room.
It does away with the liability of dust explosions, as the air coming from the machine is entirely free from dust, which is not the case with the air coming from any other Dust Collector offered to the milling public heretofore.

We the undersigned manufacturers GUARANTEE ENTIRE SATISFACTION in the use of this machine.
Our machine does not infringe on any patent, which we fully guarantee; on the other hand we caution parties in purchasing infringing machines.

## LOW PRICES FOR EXCELLENT MACHINES.

## THESTIMMOMTATES.

MILWAUKEE DUST COLLECTOR MFG. CO
Still water, Minn., July 24th, 1882


Milwaukee Dust Collector Mfg. Co.
[Please mention the United States Miller when you write to us.]
MIL WAUKEE DUST Collector MFG. Co.
Gentlemen: We have been using the Prin
Dundas, Minn., Aug. 10th, 1882.

## AN OPEN LETTER

Office of J. B. Miller \& Co.. Ashley, O.
Ashley, O., Aug. 15, 1882.
Mr. C. F. Miller, Mansfield, $\boldsymbol{O}$.
Dear Sir :-In reply to your favor of recent date, we have now been running about four months, and wish to say to you that your system of bolting, as adopted in our Roller Mill, has proved to be a great success, and your bolting cloth is certainly of very superior quality. We have not found it necessary to make any changes, since starting our mill, and we are very much pleased with results, both as to quality and yield of
flour. In conctusion we wish to express our high appreciation of your ability in our high appreciation of your ability in
arranging mills, to operate on the gradual reduction system.

Very truly yours,
J. B. MILLER \& CO.

## Flour Wanted.

Millers wishing to sell their Flo ur mirect in New England at a small com-first-class reference, please address FLOUR SALESMAN,
C. F. MILLER,

## MANSFIELD, OHIO.

[^6]
What Slater's Bolting Reels do.
The improvements in Alt d Co's Mill are complete and the Mill is again in
full blast.

The Flour manufactured at this Mill is not surpassed by the finest brands We are incre.-Effingham Times.
We are increasing the capacity of the Mill we built at Barnesville, O., for Carter, Wiesner $\boldsymbol{A}$ Co. last spring. They
say they are making the best Flour in the county. Respectfully yours,

> C. B. SLATER \& CO.
 to any other manufactured in their county, and is getting a wide reputation. C. B. Slater \&
Co., of Blanchester O., who planned and built the mill, have been called upon to enlarge their capacity.
The Chicago. Milwaukee and St. Paul Rail-
way Company is about to way Company is about to erect at Milwaukee a
building 80 feet wide and 400 feet building 80 feet wide and 400 feet long, to be
devoted to the manufacture of car wheels, and deom it, when once in full operation, there will be turned out 150 wheels daily, or an annual
product of $20,000,000$ pounds of castings product of $20,000,000$ pounds of castings
The Case Manufacturing Co. have just taken
the contract to put their entire system in then the contract to put their entire system in the
"Canal mill" of Simon Gebhart, Dayton, O. Mr. "Canal mill" of Simon Gebhart, Dayton, O. Mr and is always on the lookgout for the best in the way of machinery. He is one of the first in Ohio to adopt Gradual Reduction, which he did a year or two ago in his other Dayton mill. His
brother, Joseph R. Gebhart, has just started up on the Case system.
The Case Mfg. Co
The Case Mfg, Co, of Columbus, O., write us
that they will have a display of their machinery at the coming Exposition at Chicago. Millers of the North aud West attending will be interested in this as the line of machines made by this firm are at this time attracting no little
attention. The company reports business brisk, and they are constantly adding to their force to
enable them to get out the goods ordered. They enable them to get out the goods ordered. They
have no traveling agents.

The Franklin Millwright and Machine Shops are putting in considerable new machinery and doing extensive repair work for the Union
steam Mills. Among the more chinery being added are a ten-reel bolting chest, a two-reel bolting chest, one run of
middlings stones and 300 feet of detachable link
belting. The firm within the past year have belting. The firm within the past year have
more than doubled their working force, and this coming fall will still further increase it works, the old one being too small to run all
their machinery.

Messrs. Huntington \& Koch, of Barton, Wis, have just started up their mill on the Case the local paper giving an account of it, we infer account says: "Their decisicn was made with great caution and deliberation, but their action
then was quick and energetic. Only about two months ago they purchased at Columbus, Ohio the 'Case roller system,' consisting of a series of
seven sets of iron rollers for their Barton mills, seven sets of iron rollers for their Barton mills,
and to-day they have them in full blast, manufacturing 100 barrels of flour per day and of a
better quality than that of the world-renowned Minneapolis mills. We say that they make better quality, because such is the fact. The
Barton roller mills have all the improvements, and are in this point fully ahead
of the Minneapolis mills. We are assured also by these gentlemen that their rollers are to day ahead of anything in the state, and they are so
admitted to be by competent judges from parts of the state who are daily visiting their mills to see this new system working, and who
invariably, return home convinced that the stone age in milling is a thing of the past Orders are coming in thick and fast from al
quarters for their flour, and they can choose quarters for their four, and they can choose Indeed it may be said that they are without
competition to-day, although it is not at all competition to-day, although it is not at all
probable that they will remain so very long for other millers will be quick to profit by their when the roller system will be as general
in this country as the stone system now is."

## LEGAL.

A. B and C owned the mills on a certain stream, and they built a reservoir for their mutual benefit, above the mills, the water of which was used in common for over thirty years. Then A erected a new dam below, and, it being
of greater height, the old dam was submerged. A asserted the right to control the use of the water from the new dam. and B and C disputed his claim, and asked for an injunction against him. In this case, Adams vs. Manning, the term, decided that the injunction should be granted. Judge Parker, in the opinion said: The artificial use of the stream, by long-continued use, became its natural condition. The erection of the lower dam would not give to A any exclusive use of the water stored thereby, but by submerging the old dam A practically continued that in existence, and the rights of B
and C in the old reservoir were contined in and C in the old reservoir were continued in
the new one. The judge added: When controversies arise between mill owners, each of whom has a separate right to the use of water to be drawn from a common reservoir for stor-
age on irregularly recurring occasions of need, the time and manner depending upon the quantity in store the needs of others and established custom, it is the proper ottice of a court of equity to call them into its presence, and in one proceeding and by one decree determine their respective rights and obligations. A separate action at law to each for each wrongful detention or drawing will not furnish adequate relief practically no relief at all.

## A Mill Dam Suit.

A raised a dam which set the water back on B's mill; C bought A's land, and B sued him for the damage he had suffered. In this case, Prentiss vs. Wood, the defense was made that, as the dam was raised in 1865, the right of B to sue was barred. The Supreme Judicial Court of Massachusetts, in April, in sustaining a verdict for the plaintiff, in the opinion, delivered by the Chief Justice (Morton), said: It is settled that a person who is injured by a continuing nuisance may maintain an action against the original wrong doer who creates it, or against any grantee who continues it after a request and refusal to abate it.


The rapid increase of our orders and wide inquiry for our Machines prove that the Case Reduction Machines are fast becoming the favorite system of Milling.

## It is not an experiment.

the case manufacturing co., Columbus, Onio:
Gents:-We have been running your full system of Gradual Reduction for 90 days, and the result as been a fine one. It has been the cause of raising our flour $\$ 1.00$ per bbl., and increased our trade an such an extent that we are now way behind our orders. The Little Giant runs with little attention,
and a better break can't be made from wheat. No fluff and but little break flour and a yery eren




Double Break Wachine, capacity 120 bushels per hour.

OAEFH MAINUE"AOTEERING "HOWARD" AUTOMATIC CUT-OFF FNGINE.


Built only by the MURRAY IRON WORKS CO., BURLINGTON, IOWA. builders of all kinds of engines and machinery.

## Mention the Puer when youllurtio tiva

## HARRIS-CORLISS ENGINE. BUILT BY-

WM. A. HARRIS, Providence, R. I.

Built under their', original patents until their expiration. Improvements since added: "STOP MOTION ON REGULATOR," prevents engine from running away ; "SELF-PACKING VALVE STEMS" (two patents), dispenses with four stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying a troublesome defect in other Corliss Engines, "BABBITT \& HARRIS' PISTON PACKING" (two patents). "DRIP COLLECTING DEVICES" (one patent). Also in "General Construction" and "Superior Workmanship."

The BEST and MOST WORKMANLIKE form of the Corliss Engine now in the market, sub stantially built, of the best materials, and in both Contensing and Non-Condensing forms.

The Condensing Engine will save from 25 to 35 per cent., of fuel, or add a like amount to the power and consume no more fuel. Smair parts a be placed on new work oriered at short notice. NO OTHER engine bnilder has authority to state that he can furnish this engine
The ONLY WORKS where this engine can be obtained are at PROVIDENCE, R. I., no outside parties being licensed.

## BOLTING CLOTH



Let it not be forgotten that we keep a very large stock of the genuine Dufour Bolting Cloth always on hand, and those who order that brand from us will always be sure to get the genuine article. In addition to this we keep constantly on hand a large stock of Dutch Anchor Cloth, which we import direct from the manufacturers, in Switzerland, and is not sold by any other dealers in Bolting Cloths in this country. This we warrant to be equal to, and even superior, to any other brand in the market, except Dufour. We know what we say in this regard. Cloths made up ready for the reel in the best manner possible, by the use of our Patent Attachments, using the best of Ticking and Silk Twist. Please write us for prices, discounts, and samples of cloth and making, before purchasing elsewhere.

Address,
HOWES, BABCOCK \& EWELL,
[Pease mention the United States Miller, when you write to us.]
Silver Creek, .N Y.

## A NFW DIFPARTURT

We are the Sole and Exclusive Licensees for this Country under the
MIORERTMEZ MIAFMIIN PAMEINTME

## CIITIIIII HIIFLUIIR DRISNIIE RRIIS

And we are now prepared to fill orders for machines with latest improvements, which include OUR NEW DOUBLE CONVEYORS,

NEW CLOTH FIXING AND STRETCHING DEVICE,
NEW AND SIMPLIFIED MANNER OF DRIVING.
THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will make clear hour and a lean finish on stock that cannot be treated in the common reel without loss, no matter how much sill it is passed over.

IT IS SPECIALLY ADAPTED to handliug soft, reground material, full of light impurities, whether from rolls or stone.
iy of the low grade flour at the same time it makes the offai cleaner. from smooth rolls, which no other style of reel can do IT MAK ESA CLEAN SEPARATION on caked and flaky meal from sm.
IT IS VASTE Y SUPERIOR to the common reel for dusting middlings.
THEY CAN BE USED TO ADVANTAGE as a complete system of bolting, to the exclusion of the ordinary reel.
Over one FIundred sold in six weelze.
REFERENCE TO LEADING MILLERS IN THE UNITED STATES.
Write for descriptive circular and price list to
GEO. T. SMITH MIDDLINGS PURIFIER CO., - Jackson, Michigan.
[Please mention the Mnited States Miller when you write to us.

# EDW. P. ALLIS \& CO. MILWAUKEE, WISCONSIN. 

## GRAY'S PATRNT NOISELESS

## ROLLERMILLS

## corrueated anv smooth chlile iron rolls,

## WeGMNN's patent porcelain roller.

We shall be Pleased to hear from Millers contemplating an improvement in their Mills, or Building new ones, and can furnish Estimates and Plans of our system of GRADUAL REDUCTION ROLLER MILLING. We have built and Changed over hundreds of Mills. in all parts of the Country, and using all classes of wheat, BOTH HARD AND SOFT, and can furnish references on application. The Largest and Best Mills of this Country are using our System and Roller Machines. Messrs. C. A. Pillsbury \& Co., of Minneapolis, have over 400 PAIRS OF OUR ROLLS AND HAVE RECENTLY PLACED AN ORDER WITH US FOR ABOUT ONE HUNDRED AND TWENTY MORE. We have had a longer and larger experience in Roller Mill Building than any other manufacturers of this country. There is no EXPERIMENT ABOUT OUR SYSTEM and Rolls, so expensive to millers, and when the mills that we build or change over are ready to start, THEY DO SO AND WITH PERFECT SUCCESS, and there is no further changing, additions, stopping or expense. We manufactured and sold during the year 1881 over TWO THOUSAND FIVE HUNDRED pairs
of rolls.

We can send competent men to consult with any millers who contemplate an improveinent, and whom they can depend upon as being RELIABLE AND THOROUGHLY COMPETENT to advise them as to the number and kind of machines required, best method of placing them and the change required, if any, in the bolting and purifying system. WE DO NOT URGE A GENERAL CLEANING OUT OF ALL OLD MACHINERY unless we clearly see such would be the ONLY COURSE TO PURSUE to make a SATISFACTORY AND RELIABLE MILL. In nearly all instances we can use all the Old Machinery, leaving it in its original position, or with as slight a change as possible. We aim to make the Improvement so that it will be a Profitable one to the Miller,
and at the least expense possible.

Our System is THOROUGH and RELJABLE, and our Roller Machine Perfected by Long Experience, and the Miller takes no chances in using them, as HE DOES with the New Fangled Notions of Drive and Adjustment on many other machines now TRYING TO FOLLOW OUR IMPROVEMENTS and still avoid our Patents, in BOTH of which THEY FAIL. We were the first to advocate the Entire Belt Drive, and were opposed by every other maker, who claimed it was not positive, etc., etc., and now that our Belt Drive is an ACKNOWLEDGED SUCCESS, and will SUPERSEDE EVERY OTHER STYLE, these advocates of Gear Drive have suddenly learned that Belts are the Thing. The same may be said of our Spreading Device, Feed Gates, and Adjustable Swing Boxes. Other Makers are now copying these. ALL these Features, including BELT DRIVE with ADJUSTABLE COUNTERSHAFT and TIGHTENER, the SPREADING DEVICE, FEED GATES, Adjustable Swing Boxes and Leveling Devices, Self-Oiling Boxes, etc., are secured to us by several Strong Patents, and we CAUTION MILLERS in regard to these Infringements
of Our Patents and Rights, for we shall look to THEM tor Redress. The matter is in the hands of our Attorneys, who will soon of Our Patents and Rights, for we shall look to THEM for Redress. The matter is in the hands of our Attorneys, who will soon
take VIGOROUS ACTION against the Makers and USERS OF MACHINES infring take VIGOROUS ACTION against the Makers and USERS OF MACHINES infringing Our Patents.

Several machines are already on the market which Broadly Infringe, and we are informed that other makers are now changing their Old Style Machines, and adopting in a large measure Our Improvements. BEWARE OF THEM.

Send for New Illustrated Catalogue, Civing full Information, to EDW. P. ALLIS \& CO. Branch Offlce 318 Pine Street, Bonson Block, SAN FRANCISCO, CAL.

## Frank Andree's Excelsior Centrifugal Flour Dressing Machine.





The above mentioned parties will at perme ma dive
The above mentioned parties will at any time give desir
further information will be cheerfally given at our office.

DEEORTPTIONT.
Througs spout $A$ the chop enters Front Cylinder $B$. Grit or Middlings, and for pass through sud the bran is trken by the catchflap in the Front Cylinder, separated
and carried through onening $C$ and spout $D$. The grit and flour passing through Front Cylinder $B$ are carried by conveyor $E$ backward to opening $F$ and spout $G$, and de-
posider






THE MACHINE CAN BE BEEN IN OPERATXON AT

## COCKLE SEPARATOR MANUFACTURING COMPANY, MLLWAUKEE. <br> GENERAL MILL FURNISHERS

 IMPROVED COCKLEE SEPARATORS

Richardson's Dustless Wheat Separators! Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.

Bottom Figures.

Perforated Zinc at Bottom Figures. Send for Illustrated Catalogue.
plain cockle machine
WE GUARANTEE GREAT CAPACITY combined with GOOD QUALITY OF WORK. Any common Sleve will separate the cockle trom wheat, but to separate It THE

 Gentlemen:-Replying to your late Gents:-In answer to your inquiry of We have been using two of Beards- requires an unusual amount of power
 recommen all that you claim for it. We summer, works to my entire satistac- finisher, for nearly two years, and are have tested ours throughly by this tion. Respectfully yours, Wrice, passing one hundred and fifty busheis Cockle Separator Mfg. Co. 23 , 1881. time and know whereot we speak. We per D. G. THOMAS. per hour through them, one third more having tried it once, and can conscien- P. S-I have been milling now for than rated capacity, and are not using tiously vouch tor its good work. $\quad$ twenty-seven years, but never have I any other cleaners, and consider our
seen anything that will equal yours in
wheat as well cleaned as any in Minne-

Yours respectfully,
Perrysville, Ind., Nov. 24, 1881 . Cockle Separator Mfg. Co., Milwawkee.
Sirs:-The combined machine I bough Sirs:-The combined machine I bought screenings and separate the cockle trom of you has been running about three it without wasting any of the small
weeks. It certainly does all you claim wheat. In my opinion every mill in th
 Yours respectfully, $\quad$ B. G. CARPENTER. other. I remain Iours, etc. D. G. THOMAS. June has been in operation since that


Gentlemen:-The Beardslee's Grain Cleaners which we have purchased from you for our New Era and Milwaukee Mills give us the best of satisfaction. Experienced millers having seen the work done by the machine agree with us, that it cannot be beat. You are at liberty to use our names as a rei-
erence, and to any party calling on us we will be pleased to show the machine in operation, Yours truly,
anter

NEW ERA MILLING CO.

## HOWES, BABCOCK \& EWELL,

Mistablishel 1856. Silver Creek, Chautauqua County, New York, ర. S. A. Matalished 1856.


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Will pack whole and hhal barres, and
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[^0]:    References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines. Among recent orders we mention the following:

    |  |  |  |  | J. Mathers \& Son, Greenville, Pa. 12 | airs |
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    | M. M. Wright, Danville, Ills., - | ${ }_{28} 8$ Pairs | M. S. Rexiord, Norman, Dak., ${ }_{\text {Warder }}$ \& Barnett, Springfield, | 10 Pairs | L. Payne, Franklin, Ind., ${ }_{\text {Brownde }} 10$ | 析 |
    | C. Seeley, Crete, Neb., | 8 | Barrett \& Son, Spring Valley, O., | 10 | Franklin Mills Co., Appleton, Wis. 11 | " |

    M. M. Wright, Danville, Ills., - 28 ".

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     At refuoed rateg, good returne, COLORADO SPRINGS AND PUEBLO,
    
     R. R. CABLE,
    E. ST, JOHN,

[^2]:    PATENTS
    
    
    
    
    
    

[^3]:    References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines.

    Circular and Prices on Application to Sole Manufacturer,

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[^5]:    [Please mention the United States Miller when you write to us.]

[^6]:    Materials and Plans for Stone or Roller Mills. Roller Mills furnished complete with all necessary appliances, and the most perfect system of bolting for Mills of any Bolting Cloths by the piece, or made up Bolting Cloths by the piece, or made up
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