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# The United States

# MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 1. }

MILWAUKEE, MAY, 1882.

{ Terms: \$1.00 a Year in Advance.  
Single Copies, 10 Cents. }

## THE STEVENS ROLLER MILLS

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.  
We also manufacture the

## Celebrated Cosgrove Concentrated Mill

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

**READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:**

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 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 4½ 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 ¼ to ½ 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,  
F. E. SMITH & CO.

**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. |
| James 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.]

# ODELL'S ROLLER MILL.

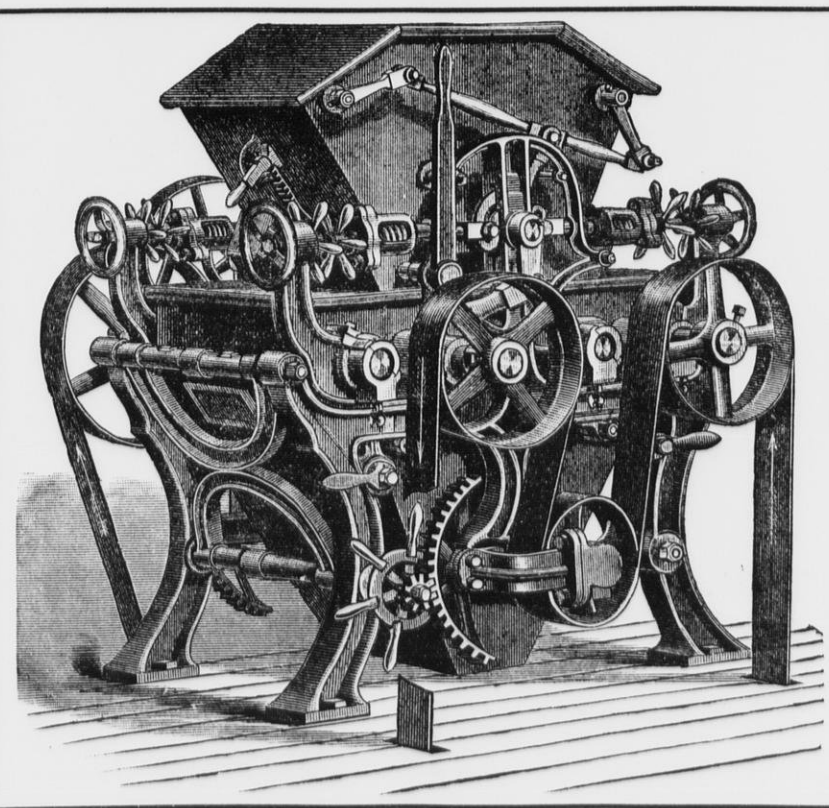
### An Established Success.

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. 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 tension-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

## Ansonia 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:

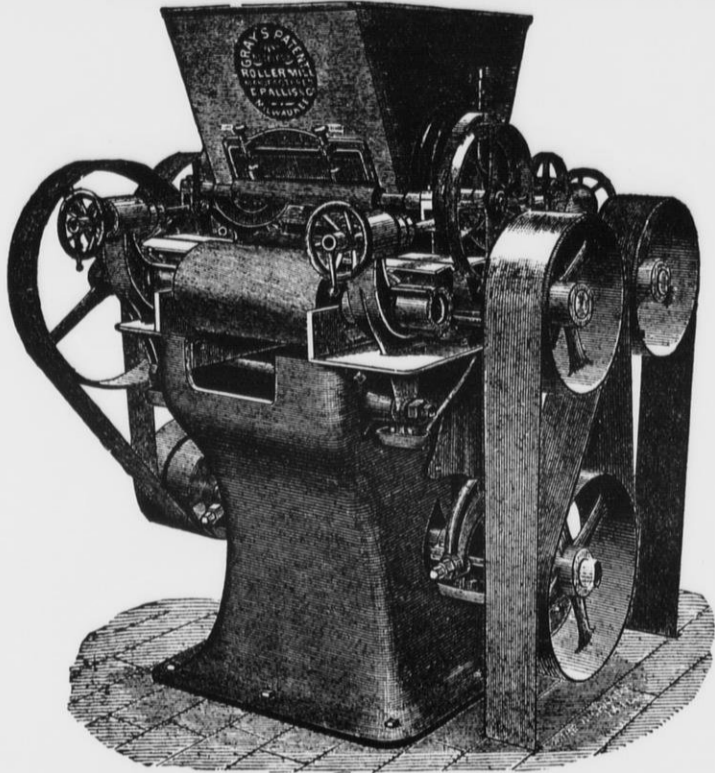
- |   |   |   |
|---|---|---|
| Geo. Priest & Co., Decatur, Ills., 36 Pairs | M. S. Rexford, Norman, Dak., 10 Pairs   | J. Mathers & Son, Greenville, Pa., 12 Pairs |
| M. M. Wright, Danville, Ills., 28 "         | Warder & Barnett, Springfield, O., 22 " | L. Payne, Franklin, Ind., 10 "              |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

Circular and Prices on Application to Sole Manufacturer,

### STILWELL & BIERCE MANUFACTURING CO., DAYTON, OHIO, U. S. A.

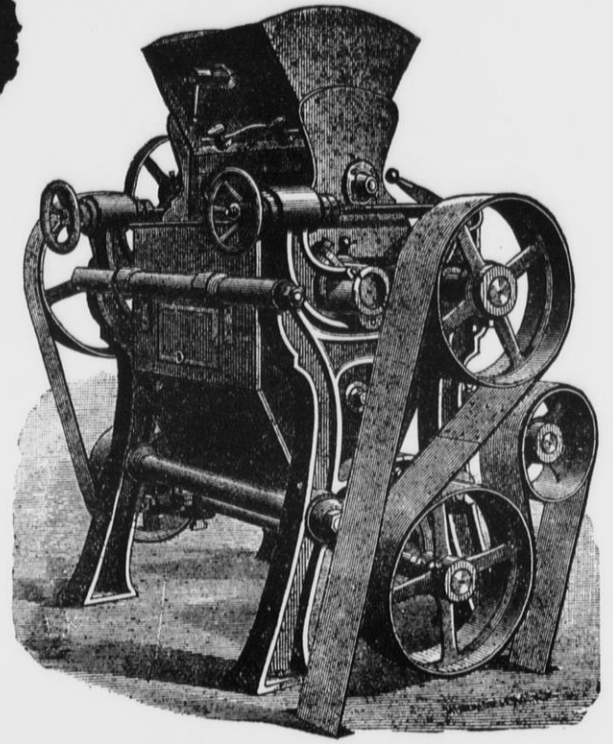
[Mention this Paper when you write to us.]

# GRAY'S PATENT NOISELESS ROLLER!



DOUBLE MACHINE.

# ROLLERS



SINGLE MACHINE.

WITH

## CORRUGATED CHILLED IRON ROLLS.

CORRUGATIONS CUT OF ALL DESCRIPTIONS.

# OVER 5,000 IN USE.

## First Premium Awarded at Millers' International Exhibition.

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. Hecker, New York City.  
 Becker & Underwood, Dixon, Ill.  
 Schurmeier & 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.

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

ADDRESS:

## EDW. P. ALLIS & CO.,

[Mention this Paper when you write us.]

MILWAUKEE, WIS., U. S. A.

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# The United States

# MILLER

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MILWAUKEE, MAY, 1882. 465

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Published by  
E. HARRISON CAWKER. { Vol. 13, No. 1 }

[Written for the UNITED STATES MILLER.]  
**Plain Talks About Milling.**

BY R. BIRKHOFF, M. E.

"Percentage" is the hobby of the manufacturers of milling machinery and the mill builders of our times. A nervous pursuit of 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 a new economical process, thereby augmenting the profits, before imitations of such improved process cuts into the profits by competition—also the search after still better methods, cause energetic business managers and owners many sleepless nights. Besides this, the mechanical experts as well as the practical 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 manufacturers with. Having, (in their mind) struck something, they manage to find some manufacturer whom they are able to cause to think there is something in it and then trials are made—generally at the expense of the manufacturer. Should the results prove good, then the patentee holds up his hat for a large share of the profits—if bad—why then the patentee regrets, and expresses himself extremely sorry that the clever manufacturer had spent so much money.

As far as flour-milling is concerned—it appears that every miller and milling expert has 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 dust catchers, which have already been placed 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 demanding 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 of 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 brooding 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 painful expression upon his face and said in a grave tone of voice "A piece of paper, please." He shoved back his chair, shut himself up like a jackknife and again said "a piece of paper." He jumped up from the table, drew his pencil from his pocket 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 unscrupulously 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 nets" barrel of flour from 4 bushels of wheat and sharp corrugations," etc., etc. Their imaginations are excited, their heads used and their heads feel as if they could do a thousand double back geared roller mills. Those millers may believe that there is but one good system to be followed, and every miller having recently changed his mill to "new process" have got it. Amongst the multitude of points of information, many in direct conflict with each other, many millers are liable to become thoroughly confounded and it is only by throwing off all trust from their crowds of advisers and using their own good judgment alone in selecting the system which they will adopt that they can save themselves from drifting on to the ragged edge of ruin.

The miller must examine carefully the merits of the different processes submitted to him and understand them thoroughly, and then be guided by his own judgment and not by assertions in advertisements, or arguments from the mouths of agents. The cheapest work is seldom the best, and "guarantees" to fit up mills at a slight expense that will turn out flour in quantity and quality better than the largest and most costly mills in the world, are little to be relied upon. The "forfeiture contracts" are often drawn, (like some insurance policies,) with so many "ifs," "ands" and "buts" that they do not eventually amount to anything and can never be collected. They are good baits, however, and should the dissatisfied miller who has entered into one of these contracts begin suit against the wealthy manufacturer, the chances are against him. The largest mill builders in this country build mills without giving guarantees of results. They believe in a common sense acknowledgment of their efforts to build substantially and economically and their reputation as mill builders is in itself a guarantee of the best kind.

The most reliable aid for manufacturers intending to make a change of their machinery, or the adaptation of a new process, is the study of a book which is known to be written by an uninfluenced and disinterested critic; one who honorably puts on paper the truth only, according to his best knowledge; one who records the tests and trials without modification in favor of anybody; one who relates practical results of the different methods in use for a series of years, with pedantic integrity.

Each branch of manufacturing has its universally acknowledged authorities, their critical authors having become thoroughly informed by careful and persevering devotion to their profession for a score or more of years. The Germans are indisputably great *Literati*, and as soon as a new device is invented, its merits or demerits are carefully considered, logically described and then praised or condemned, according to their value to the trade at large. The records of these investigations soon appear in print ready for the inspection of the discriminating public, who will place greater or lesser reliance thereon according to the reputation of the critic.

When I was employed as civil engineer for a certain iron rolling-mill, several years ago, I wondered why the roll-turners drew such fine salaries in comparison with the machinists working with them. I learned that they kept their *modus operandi* very secret. I learned time enough, that it is a trade requiring great skill, accuracy and deliberation. I wrote to our leading book dealers, East, about printed information in regard to roll-turning, but could obtain nothing. I then wrote to Germany and procured a book just published at the time, entitled "The Science of Turning Rolls and for rolling all shapes of bar iron." On showing it to some of my Welsh friends (ironworkers) they asserted that they did not believe it amounted to anything, but when I translated some paragraphs apparently sought for by even those practical workers, they asked with great interest if the work was to

be obtained in the English language. A year later the work was translated and published in the English language and purchased eagerly 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 as being indispensable to millers who desire to amplify their mental and mechanical horizon without calling for the assistance of the Cyphees of Modern Milling, or of the mill building establishments of Allis, Noye, Stillwell & Bierce, Downton, Chisholm, etc., etc., are "Pappenheim's Modern Milling" and "Prof. Kick's Flour Manufacture," both of which are published in Germany, and are at present, unfortunately, only published in the German language, but I am creditably informed that the work of translation of both these books is now being accomplished. I know of many German American, and American millers who now have these books in their libraries,\* and occasionally read chapters therein, or get them read and translated to them by some German friend.

Both these authors speak highly of, and recommend the "Ganz sharp, saw-tooth corrugations" for the reduction of wheat, asserting that 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 and make too much flour, which disadvantage must be looked for in from 3 to 10 years after they have been put to work, according to the severity of the labor with which they have 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 kept up on the merits of sharp and dull corrugations. 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 absolute disregard. They were content to bother 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, or, when buying a new machine, they make careful inquiries as to the amount of power required to drive it and give preference to the easiest running machine, but upon what amount of power their prime movers (water-wheels, or engines) waste, they do not stop to estimate. There are water-wheels employed in some mills which yield only 60 per cent. of the full power of the head, and a good wheel 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 sixteenth of an inch of scale necessitates 15 per cent. more fuel and the heating of the iron 15 per cent. hotter, and when the scale is from  $\frac{1}{8}$  to  $\frac{1}{4}$  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 unlucky cases.

And the engines! How many of them drag along a miserable existence, running like fury to give the power, overworked by steam pressure, rattling and jiggling in every joint, threatening to run away whenever a run of stone, a roll or a smutter is stopped. These

\*These books can be furnished, if desired, by the editor of the UNITED STATES MILLER

engines are generally of the old slide-valve type, 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 steam 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  $\frac{1}{4}$  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 throttle-valve wide open. The Reynolds-Corliss engine (built by Edw. P. Allis & Co., Milwaukee, Wis.) will save up to 50 per cent. of fuel over a slide valve engine. Mr. John Schuette of Manitowoc, Wis., a well-known miller told me at the time, that he made a 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 Reynolds-Corliss engine and start it up and for the new engine they were to have the old one and the value of the fuel saved in one year by the change. After the new engine had been run for two months he came to Milwaukee and squared up for the new engine paying a handsome bonus not desiring any longer time. He had a good slide-valve engine equipped with a patent "cut-off governor." The steam was indeed cut off but not at the right place—in the steam pipe and not just before entering the cylinder. It is said that Schuette saved about 45 per cent. of fuel which in his case was equivalent to \$3000 per year. A common slide-valve engine is cheaper in the first cost than a Corliss, but cheap machinery of 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 the 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. I 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 acknowledged.

The percentage of saving under the boiler as well as of the boiler itself is directly proportionate 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. The oil vapors liquefied by condensation will float on the overflow water in case of using a direct-contact heater. Both of the appurtenances are generally so constructed that fatty particles pass off without getting to the suction of the boiler feed-pump but owing to the turbulency 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 feed-pump and thus into the boiler.

Experiments have shown conclusively that organic, *i. e.* animal or vegetable oils will easily form a film of fat-acids in the boiler, having a tendency to destroy or corrode the iron. Mineral oils will not get rancid and acid so easily and as they are specifically lighter and more limpid than organic oils they

will be more readily carried off on the surface of the overflow etc.

The percentage in saving of steam itself depends upon the perfection of the jacketing of the boiler, steam-pipes and cylinder. These parts 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 must 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 mill 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, slabs, etc. to other manufacturing concerns.

Slag coal, or small bituminous coal is used in some localities for firing. It is cheap fuel 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, therefore it is advisable even where fuel is 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 will heat the feed water most and one by which the boiler can be kept free from greasy substances. Where the water is available put 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 horsepower capacity. The Reynold condenser is the only one manufactured in Milwaukee. 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 the condensed steam and injection water back into the boiler. Three of the largest flouring mills in Milwaukee are driven by Reynolds-Corliss 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 constantly on the watch to make a saving in fuel.

Steam engines will give the most economical results when running at high steam-pressure and with from 500 to 600 feet piston-speed per minute. It is safest not to run with more than 100 lb pressure and when engines are of short stroke the piston-speed must not be so great for the re-iterated jerking on crank-pin and other parts becomes very destructive at the necessary high number of revolution required. Corliss engines are built with long stroke and therefore better 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 the working of the wheel as an equalizer is 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 power is taken from the rim or from engine shaft as its accumulated inertia accelerates or retards the motion of the engine caused by the favorable or unfavorable positions of the crank by the 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 preferable to gear for transmitting the power of the engine. The belt serves to a certain extent, as an equalizer, having a similar effect

to 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 friction in the cogs. The constant bending of the shafts thereby straining all its fibres with every revolution, soon crystallizes the iron and then breakage must be expected. The constant jarring in the teeth of wheels held in mesh by weak bridge tree-work will soon wear away the strongest teeth.

A new mill should be watched with great care during the first year, for the settling of the building will misplace the bearings 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 lubricants for their machinery. Good lubricants should possess lasting qualities, reduce the friction 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 unadulterated lard oil or tallow.

A very nice, economical and reliable oiler has been patented lately by W. J. Faul, of New York City. It consists of a tin cup with a nipple which fits, and is entered into a hole drilled through the box cap. Within this cup, which is 1½ inches in diameter, is placed a tallow candle, which penetrates through the nipple 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 lubricator. These tallow candles are specially prepared of different degrees of hardness, and selected for use according to the necessities of the case. They are about ¼ of an inch thick and 3 to four inches long. I have known some of them to last 3 weeks on a 2½ inch shaft running 80 revolutions per minute. This is, undoubtedly, a good invention.

Light fast running shafts need lighter oils, such as cotton-seed oil, or lard oil mixed with, or made limpid by mineral oil. There are some mineral oils prepared from crude petroleum oils which are well adapted for oiling fast running shafts. In case oil cups are used provided with feeders, the cap ought to be placed so that the nipple ends are visible, they ought to be supported by small tripods or perforated tubes, so that the feeding can be inspected drop by drop. The common oil-cup with a small outlet is not economical, as the oil escapes too rapidly, and is therefore wasted. Common boxes with oil reservoirs 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 is effected, however, when the oil reservoir is placed below the bearing and round wicks stand in the oil and pass up through the babbitt on to the shaft. Thus the most economical and coolest boxes are obtained, for nothing but pure oil reaches the shaft from the cup by capillary attraction. The oil mixed with the worn babbitt metal 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 that purpose at one end of the reservoir which being removed, leaves an opening for emptying and cleaning.

(To be continued.)

#### Visitors.

During the past month the UNITED STATES MILLER has been favored with calls from the following gentlemen connected with the trade.

A. B. Crowders, St. Louis, Mo.  
William Cordes, St. Louis, Mo.  
J. E. Lcomis, St. Louis, Mo.  
W. C. Edgar, business manager of *The Northwestern Miller*, Minneapolis, Minn.  
G. M. Marshall, Esq., Kilbourn City, Wis.  
J. Schleissinger, of the Cackle Separator Mfg. Co., Milwaukee, Wis.  
Secretary S. H. Seamans, Milwaukee.  
Harmon F. Notbohm, Esq., Janesville, Wis.  
B. Delaurius, Montreal, Canada.

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MILWAUKEE, MAY, 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 to consider the receipt of a sample copy as a cordial invitation to them to become regular subscribers. Send us One Dollar in money or stamps, and we will send THE UNITED STATES MILLER to you for a year.

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The United States Consuls in various parts of the world who receive this paper, will please oblige the publishers and manufacturers advertising therein, by placing it in their offices where it can be seen by those parties seeking such information as it may contain. 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 interest, and will be highly appreciated.

IMMIGRATION from Europe, Dominion of Canada and from the Eastern States is crowding into the Northwestern States, Territories and Provinces at a great rate and business consequently is lively.

ONE of the oldest and best established flour mills, the *City Mills* in Milwaukee are offered for sale on account of the death of the owner; this is a valuable property and millers desiring such will do well to read advertisement on another page.

WITH this number we commence the publication of a valuable article, entitled "Plain Talks About Milling," written by Richard Birkholz, milling engineer. Our readers will obtain much valuable information by reading this article carefully. It is written in very plain language and is not made useless to many by the employment of an array of mathematical figures and formulas. We are pleased to say that Mr. Birkholz will continue to be a regular contributor to our columns.

We are gratified to inform our readers that F. B. Golley, M. D., a well known physician, resident in Milwaukee, will contribute a series of articles to the columns of the UNITED STATES MILLER, treating on the diseases with which those employed about flouring mills are liable to be afflicted, and also their remedies. The articles will be written in plain language, perfectly intelligent to all classes of readers. The first of these articles will appear in our June number.

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 appealed for final adjudication. The decision will be awaited with interest.

#### Market Review.

Prepared expressly for the "United States Miller," by Messrs. E. P. Bacon & Co., 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 active milling demand for local use and for shipment into the interior prevailed here during the first half of the month, which has abated, however, during the latter part, under a general feeling of weakness in the market. The cash Wheat here has been held wholly by the "Cligue," 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, notwithstanding the decline 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 as more distant futures, has tended steadily downward since 20th inst., when May reached \$1.34, and during the past two or three days has declined sharply under a prevailing apprehension that the "Cligue" would deliver 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 yesterday, rallying at the close, however to \$1.30. To-day the market is somewhat irregular, but a stronger feeling prevails, closing on noon Change at \$1.30 for May, \$1.31½ June, \$1.30½ July, \$1.20½ August.

The "visible supply" of Wheat in this country, comprising stocks in store at Lake and Sea-board ports and in transit, shows a reduction during the past four weeks of 1,752,000 bushels and is nine million bushels less than at the corresponding date last year. The reduction in the stock in store at this market during the past four weeks is 486,000 bushels; the present stock being 1,180,000 bushels.

Reports of the growing Winter Wheat are generally very favorably, but our recent advices from St. Louis state that the chinch bugs are making their appearance to an alarming extent in portions of Missouri, Kansas, and Illinois. The first new wheat arrived in St. Louis to-day from Southern Arkansas, of fair quality, and sold at \$4.50 per bushel, being bought no doubt for advertising purposes. Closing quotations: \$1.30 for May; \$1.31½ for June; \$1.30½ for July; \$1.20½ for August.

#### Recent Milling Patents.

APRIL 4, 1882.

Grain weighing and measuring machine, William H. Allen, New York City.  
Grain-separator, Barnard and Leas Mfg Co., Moline, Ill.  
Grinding-mill, John J. and B. Clark, Elgin, Ill.  
Cooling mechanism for grinding mills, John Fitzgerald, Brooklyn, N. Y.  
Roller mills, Noah W. Holt, assignor to John T. Noye Manufacturing Company., Buffalo, N. Y.  
Millstone, Rufus Moody, North Monmouth, Me.

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

APRIL 11, 1882.

Oatmeal machine, William Eberhard and R. Turner, Akron, O.  
Grain-transporting device—Thomas F. Horea, Cleveland, O.  
Machine for cutting grooves in rolls—John R. Reynolds, assignor to Pratt & Whitney Co., Hartford, Ct.  
Grain-elevator, Elias Roberts, E. Bauman and W. H. Lotz, Chicago, Ill.

APRIL 18, 1882.

Roller Mill, Richard Birkholz, Milwaukee, Wis.  
Cackle separator, William E. Gorton, Eau Claire, Wis.  
Millstone driver, Joab H. Wooster, Strykersville, N. Y.

### he Various Processes of Grinding.

FROM EMERICH PEKAR'S REPORT TO THE HUNGARIAN GOVERNMENT.

(Translated from the *Ungarische Muehlen Zeitung* of Vienna, Austria, for *The Miller*, (London.)

In order to fully understand on its merits the competition of other countries, now opposed to the largest and most important industry of Budapest and Hungary, I consider it necessary to examine briefly the systems in use in the different countries of the world for the production of flour, the chief factor in our food supply. This notice of the Hungarian, as well as the Austrian, Bohemian, German, 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 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 term "relatively branless flour." In the production of flour free from bran seven of the component parts of the wheat berry are removed, 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 of the human body, because the stomach and 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 perverted 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 sifting or dressing wheat passed once through stones in low grinding serves as an illustration of this statement. The group of six coatings, together with the germ, being tougher and more elastic than the albumen, the real flour-producing 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 cutting 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 *triticum sativum vel vulgare* and the *triticum turgidum*, that the soil, according to the climate, exerts various influences on the berry, observable 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 nice appearance, being large, thick, and 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 percentage of gluten it contains is small in proportion to its nutritive properties. The same variety of wheat will develop totally different 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 endosperm is homogeneous, with the so-called steely break, shiny on the surface where cut, and seldom showing any dark-colored 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 corresponding system of grinding. We know from history how man adopted whatever by its nature gave him the least difficulty to overcome and produce the best results with the least expenditure of labor, this leading to gradual improvement. In grinding the soft wheats already referred to, the stone rubbed less off the bran, which fell off in large flakes, consequently there was less bran in the flour

and although it still 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 stronger and more nutritious than that made from soft wheats. After the introduction 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 process 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 Germany 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 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 progress, and Watt's steam engine, the mightiest promotor of unfettered trade, provided the whole industry, and therefore also the flour trade, with unlimited power, which, unlike water-power, could be produced where required.

Although the art of grinding, based on physical properties of soft wheat or wheat softened by damping, did not materially alter, yet the process and the results obtained altered, in which respect extraordinary changes took place since the end of last century. The liberated States of North America were the first in the path of progress. The astonishing contrast by which the home industry of the Union was protected against the foreign trade, while the most unrestricted competition prevailed at home—a contrast that still exists—has borne its fruit. At the end of last century and the beginning of the previous one, there were mills at work in Pennsylvania and even on the Mississippi far surpassing anything then in existence in Europe. The production of one quality of flour as pure as possible, avoiding the making of inferior sorts, was attained by the mode of low grinding called the American system. The wheat was carefully cleaned before being ground, the hardest and best millstones, even as at the present day, were employed (Suesswasser quartz, such as form the riches of our Hegyalja and Barser districts), instead of the old bolter, cylindrical dressing machines clothed with silk, were used; elevators, worms, and an automatic arrangement of the machines as far as practicable, to save labor, were introduced. Thomas Ellicott and Oliver Evans, the most celebrated founders of this system, established it in 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 progress of the Americans, for in the same year Smeaton, by means of an atmospheric engine built on Newcomer's system, raised water into a reservoir, utilizing the fall to drive the overshot wheel of the mill at Deptford. Smeaton did not make any use of the American improvements. But even in England low grinding improved enormously with Watt's steam engine after 1786, under Boulton and Watts, and afterwards under Rennie, Moudslay, Murray, and Fairbairn, whose execution of details was unexceptionable.

In France special attention was paid to milling, still they did not equal the Americans. Their "mouture à 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 "mouture rustique" was low grinding with various grades of bolting. The bolter with the finest meshes gave the flour for the rich man, the next one that for the middle classes, and the

last one, the flour for the poor man. The "mouture économique," 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 similar variation of this process, another branch of which, the "mouture à gruaux blancs" or "mouture ronde," is at present a very important one; in this system a low grade of middlings flour is produced out of the hard wheats in making the semolinas required for macaroni 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 Touaillon's mill at St. Maur, as well as the Darblay mills at Corbeil, adopting and perfecting the most rational system of low grinding.

In Germany the improved system of low grinding was introduced about 1825 in a mill in Magdeburg, built by an Englishman named Murray, of Leeds. The towns of Berlin and Guben followed on the American system. Messrs. Ganzel and Wulf, who were sent by the Prussian Government to America to study the process, returned about 1827 and erected several mills on this system with excellent results. In 1828 the Bavarian Government offered a premium of £250 to anyone who would erect for his own use a three-pair mill on the American system; and about the same time the Wurtemberg Government erected a model mill on the same system. In 1836 we find in Saxony a mill on the American system at Plauen, near Dresden. In Austria its introduction commenced in Vienna, in 1840, with the building of the "Schuettel" mill, which is at present the 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 customary in Austria of repeated breaks and grinding of the middlings, the white extract 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 this respect our land bears the palm from Austria. The most brilliant example of a mill on the Anglo-American low grinding system 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 flour than 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 seen that the hard steely varieties of wheat, 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 property of the steely wheat, so rich in gluten and nutritive matter, was known in Western Europe, in so far that the French and English millers pay, even to the present day, higher prices for the good soft wheat, than, for instance, for the valuable Russian sorts, with tough 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 Russian wheats without exception at considerably lower prices than English or American.

The adoption of these means could lead to no result in Hungary, and therefore we had to seek some other method of freeing the berry from its coating of bran. In this way from small beginnings, the process 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 obtained in the middlings grinding, the berry being operated 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 human power.

The great care and patience required in this process led the French to term it appropriately "mouture en infini," but its results 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 gave rise to so many imitations.

(To be continued.)

### 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 motives were always trustworthy.

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 together.

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 intently.

"What are you looking at?" said Judge Whiting.

"At your foot, Whiting," said Woodle. "And, do you know, if I had your feet I would 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 "sprout germ" from the grain, and the "seam impurities" found between the lobes of the berry, before reducing the wheat to flour and middlings.

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. 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 ordinary strength and nutritious character 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 discoloration it causes in the flour, and the great majority 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. new catalogue*.

THE recent great fire at Lake City, Minn., destroyed J. D. Cumming's mill valued at \$12,000. It was partially insured.

UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

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[Entered at the Post Office at Milwaukee, Wis., as second class matter.]

MILWAUKEE, MAY, 1882.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. 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 1, 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 the United States are distributed as follows:

Alabama, 388; Arizona, 17; Arkansas, 234; California, 209; Colorado, 52; Connecticut, 309; Dakota, 44; Delaware, 96; District of Columbia, 7; Florida, 81; Georgia, 514; Idaho, 18; Illinois, 1258; Indiana, 1163; Indian Territory, 3; Iowa, 872; Kansas, 437; Kentucky, 642; Louisiana, 41; Maine, 220; Maryland, 349; Massachusetts, 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, 1942; North Carolina, 556; Ohio, 1462; Oregon, 129; Pennsylvania, 2786; Rhode Island, 47; South Carolina, 205; Tennessee, 620; Texas, 548; Utah, 129; Vermont, 231; Virginia, 689; Washington Territory, 45; West Virginia, 404; Wisconsin, 780; Wyoming, 3; Total, 21,356.

The directory is printed from new Burgeois type on heavy tinted paper and is substantially bound. It makes a book of 200 large pages. The post offices are alphabetically arranged in each state, territory or province. The name 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 indispensable to all business men desiring to 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, publisher 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 wheels 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 perpetration 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, 5,221; Scotland, 1,301; Austria, 1,437; Belgium, 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 not however think it hardly safe to employ the patients as barbers. 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 2s. 6d. to 3s. 6d. a sack has been of advantage to German millers, because it caused a diminution 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 water 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 flour abolished." *The Miller*. (London.)

We are willing to wager Mr. Van den 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 actual milling capacity of Minneapolis is placed by a recent writer at 21,100 barrels per day of twenty-four hours. To keep these mills running 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 commodious offices are now occupied and business goes on uninterrupted. May fire never harm them again.

EARLY ROLLER-MILLS IN EUROPE.—About the first practical attempt made to use rollers for making flour, was made by Herr Helfenberg at Rorschach, Switzerland in the year 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-Mill 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.

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 is 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 four-roller mills No. VIII. and 2 No. XXII.

Respectfully  
PROF. MAX GRUENBAUM,

Ganz & Company, Budapest, Austria-Hungary.

[Translated from the Hungarian Milling Journal for the UNITED 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 although not in the same proportion. \*\*\*\*\*

The unfavorable condition of last year's harvest as might be expected had an unfavorable 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 foreign 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 roller mill branch of our business will be profitable for a long time. Our works have been run to their full capacity, and have warranted the employment of 800 additional workmen. The buildings of several departments have also been enlarged.

Recent Publications.

INDIANAPOLIS CHAMBER OF COMMERCE REPORT FOR THE YEAR 1881.—This report shows a very gratifying increase in nearly every branch of business. The report is larger and 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 Sorghum, Swine Plague, Grasses, Cattle Diseases etc. These reports are of value to the highly educated, "gentleman farmer" but are too utterly technical for service to the ordinary granger. A little less Latin, and more plain terms of easy comprehension to the average American farmer would be elements which 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 Harper & Brothers, N. Y. Subscription price \$4.00 per year.

THE CENTURY MAGAZINE. The Century Co., New York, Publishers. Subscription \$4.00 per year.

ST. NICHOLAS FOR APRIL. Published by the Century Co., New York. Subscription price, \$3.00.

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 than 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 unhesitatingly can recommend the work to business 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 seen for a long time. The paper, presswork 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 Chisholm 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 Missouri Millers Association took place in St. Louis, April 15th. The attendance owing to short notice was light.

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 of Goddard & Sons, St. Louis, chairman; C. L. Krafft of the Camp Spring Mill company, St. Louis; Wm. Waggoner of Waggoner & Gates, Independence, Mo.; Wm. Anderson of Anderson, Henderson & Co., Columbus, Mo., and C. W. Sombart of the Sombart Milling company, Boonville.

The report of the secretary showed the association to be entirely free from debt. The liabilities had been settled some time since, the association had money in bank and was in a more prosperous 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 you it would be so."

THE STEVENS roller system will be exhibited at the Royal Agricultural Show in London, May next by Mr. Frederick Nell.

MESSRS. GANZ & Co., of Budapest, Austria-Hungary up to the close of the year 1881 had sold 6,340 sets of rolls. During the year 1880 they sold 1,326 sets many of them going to foreign countries.

THE Metropolitan Mills Co. (Limited) has been organized at Shad-Thames, London, with a 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 year.

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, 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 lands of the world at 105,000,000 acres, yielding 15 bushels per acre and he states the crop, consumption, surplus and deficit of each country as follows:

	Crop bus.	Consumption bus.	Surplus bus.	Deficit bus.
United States.....	400000000	250000000	150000000	.....
France.....	250000000	260000000	.....	30000000
Russia.....	160000000	80000000	80000000	.....
Germany.....	150000000	170000000	.....	20000000
Italy.....	140000000	145000000	.....	5000000
Turkey.....	90000000	80000000	10000000	.....
U. Kingdom.....	90000000	200000000	.....	110000000
Austria.....	90000000	76000000	14000000	.....
Spain & Portugal.....	85000000	85000000	.....	.....
Canada.....	40000000	30000000	10000000	.....
Australia.....	30000000	15000000	15000000	.....
Chili.....	15000000	10000000	5000000	.....
Other countries.....	20000000	139000000	.....	119000000
Total.....	1540000000	1500000000	284000000	284000000

These figures represent the distribution of supply and consumption at the nearest obtainable dates to 1879, and may be regarded as affording a fair approximation to the facts of 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 Agriculture estimates the coming wheat crop of that State at 35,612,190 bushels as against 37,581,094 for last 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 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 in gold and keeping its abundant products.

# COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE.

GENERAL MILL FURNISHERS

AND MANUFACTURERS OF

## IMPROVED COCKLE SEPARATORS

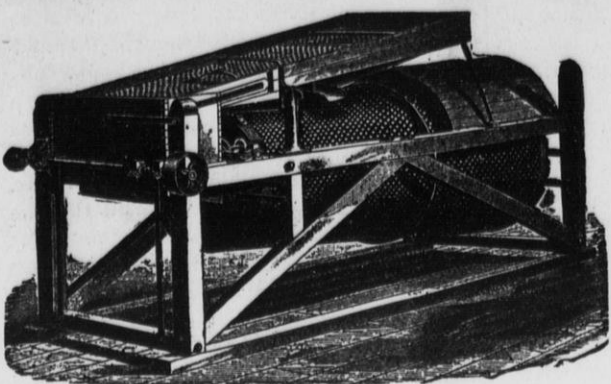
(Kurth's Patent.) Also built in combination with

**Richardson's Dustless Wheat Separators!**

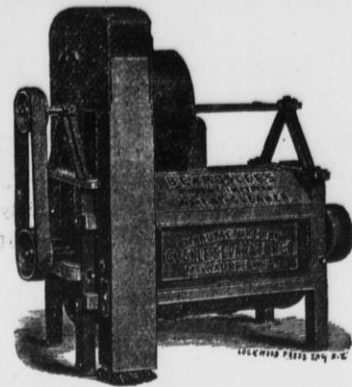
Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.

We will contract to furnish entire Wheat Cleaning Machinery for mills, and guarantee the best results.

Send for Illustrated Catalogue.



PLAIN COCKLE MACHINE.



BEARDSLEE'S WHEAT CLEANER.

Perforated Zinc at Bottom Figures.

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 a DAILY LOSS OF MONEY in a mill. There is NO MACHINE IN THE MARKET which can stand comparison with ours.

Carbondale, Ill., Dec. 2, 1881.  
Cockle Separator Mfg. Co., Milwaukee.  
Gentlemen:—Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work.  
Yours respectfully,  
BROWN & WINFREY,  
Perrysville, Ind., Nov. 24, 1881.  
Cockle Separator Mfg. Co., Milwaukee.

Hixton, Jackson Co., Wis., Dec. 30, '81  
Cockle Separator Mfg. Co., Milwaukee.  
Gents:—In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction.  
Respectfully yours,  
W. T. PRICE,  
per D. G. THOMAS.

P. S.—I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat.

As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain  
Yours, etc.  
D. G. THOMAS.

Minneapolis, Minn. Aug. 22, 1881.  
Cockle Separator Mfg. Co.:

We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.

Yours truly,  
CAHILL, FLETCHER & CO.  
La Crosse, Wis., July 30, 1881.

Cockle Separator Mfg. Co., Milwaukee.

Gentlemen:—The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. I cannot see that it breaks the wheat or requires an unusual amount of power to run it.  
Yours truly,  
WILLIAM LISTMAN.

Milwaukee, Wis., Aug. 23, 1881.  
Cockle Separator Mfg. Co.

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 reference, and to any party calling on us we will be pleased to show the machine in operation.  
Yours truly,  
NEW ERA MILLING CO.

Sirs:—The combined machine I bought of you, has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of.  
Yours, respectfully,  
B. O. CARPENTER.

Pott's Patent Automatic Feeder!

The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width, Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

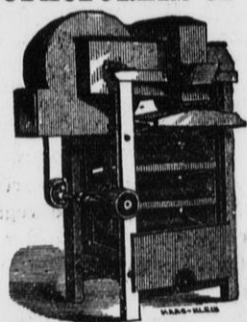
# HOWES, BABCOCK & EWELL,

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

Established 1856.

MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



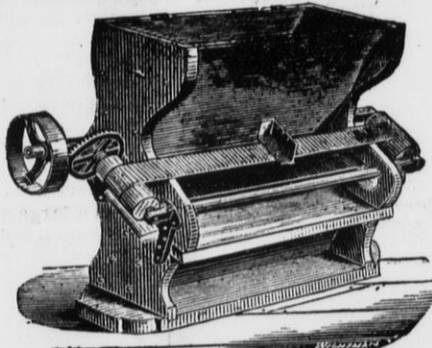
The Eureka Separator

occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



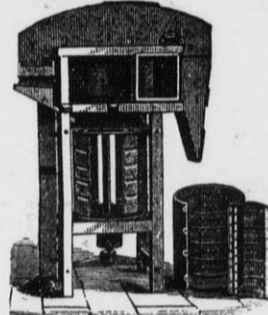
The Eureka Smut and Separating Machine.

A combined Smut and Separating Machine, having thorough ventilation. Over 15,000 of these Machines are now in use.



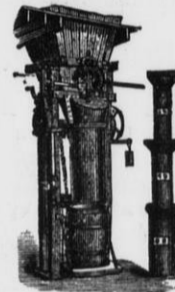
Eureka Magnetic Automatic Separator.

Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



Eureka Brush Finishing Machine

Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer.

Will pack whole and half barrels, (and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent creveling steel coil spring regulating the packing to perfection.

GENUINE DUFOR AND ANCHOR BRAND BOLTING CLOTHS. FULL STOCK ALWAYS ON HAND, MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER.  
Office and Warehouse in England, 16 MARK LANE, LONDON, E. C. Gen. Agency for Australian Colonies & New Zealand, THOS. TYSON, MELBOURNE, VICTORIA.

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PRACTICAL HINTS

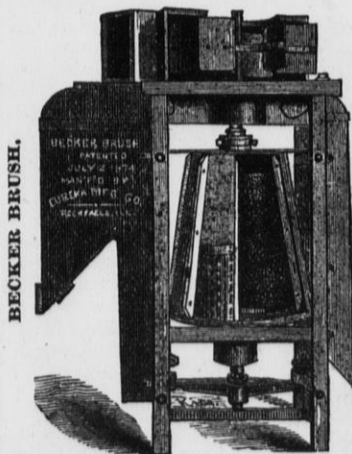
## Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.

Every Miller, Millwright and Millwright's Apprentice should have a copy.

THE UNITED STATES MILLER for one year and a copy of this book will be sent for \$4.00. Address,

UNITED STATES MILLER,  
Milwaukee, Wis.



BECKER BRUSH.

EUREKA MANUFACTURING CO.,

Manufacturers and Sole Proprietors of the

## BECKER BRUSH,

Galt's Combined Smut and Brush Machine.

The Only Practical Cone-Shaped Machines in the Market, and for that Reason the Best.

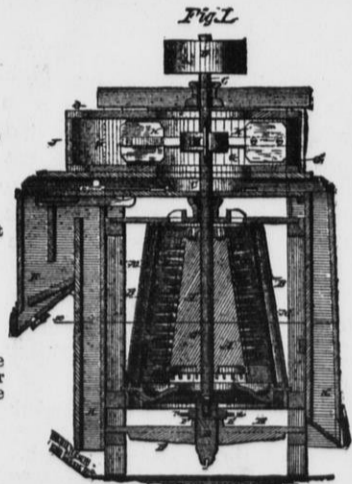
ADJUSTABLE WHILE IN MOTION.

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 milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, the users to be the judges of the work. For price and terms apply to

EUREKA MAN'G CO., ROCK FALLS, ILL., U. S. A.

[Mention this paper when you write.]



Galt's Combined

and Scourer.

# 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, substantially 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 kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice.

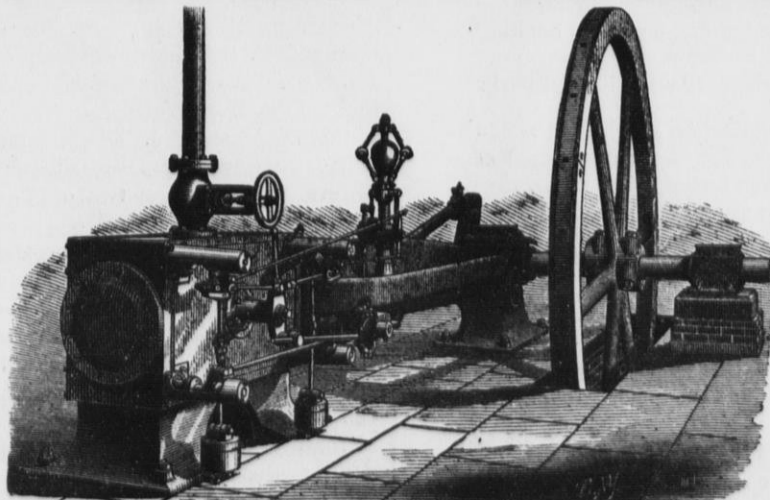
NO OTHER engine builder has authority to state that he can furnish this engine. The ONLY WORKS where this engine can be obtained are at PROVIDENCE, R. I., no outside parties being licensed.

WM. A. HARRIS, Proprietor.

[Mention this paper when you write us.]

# ATLAS-CORLISS ENGINE.

Will Replace Ordinary Engines, Guaranteeing to Save One-Third Fuel.



WRITE FOR ENGINE PAMPHLET.

ATLAS ENGINE WORKS, INDIANAPOLIS INDIANA, U. S. A.

BUILDERS OF ALL CLASSES OF

## Engines and Boilers,

We Build The Best Farm Engines and Small Engines for warehouses and elevators. [Mention this paper when you write us.]



## 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.  
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 mine—  
It 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 broken 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,  
I had no motion of my own.  
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 buds  
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 bright—  
Such 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,  
And with the certain step of man.

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 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, in 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?  
O 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,  
Your ripe lips moved not, but your cheek  
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 tears,  
I kiss'd away before they fell.

I 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  
Approaching, press'd you heart to heart.

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. Kimberly, Neenah; J. L. Clement, Neenah; E. W. Arndt, De Pere; B. F. Heald, Sheboygan; W. S. Green, Milford; O. Puhlman, Plymouth; Wm. Gerlach, Milwaukee; H. B. Sanderson, Milwaukee; S. H. Seamans, Milwaukee; E. Schraudenbach, Oconomowoc; Jas. Norris, Stoughton; S. P. K. Lewis, Beaver Dam; John May, Watertown; Wm. Albrecht & Co., Newburgh; J. Flegler, Manitowoc; J. R. Davis, Jr., Neenah; Gilbert & Barber, Geneva, the representative of THE UNITED 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 questions 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; total \$4,846.66. Disbursements to the amount of \$3,987.65 had been made, leaving a balance on hand of \$859.01. The finances of the association 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 organization to pursue for the ensuing year.

## SECRETARY'S REPORT.

## 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 payment and 72 the December payment of assessment No. 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 membership 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 delegates from the various state associations held a national convention in Chicago. The principal business before that convention was discussing and arranging for the settlement of the "Cochrane fraud." As your delegate to that convention, I opposed that settlement 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, thinking no doubt it was the wisest course to pursue with 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 representative of the Cochrane case claims, when the case was settled according to the terms agreed upon in convention, 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 with a demand upon the mill industry of the country—according to their own estimates, for about thirty-six millions dollars, or a settlement on the basis of \$6,000 per run of stone capacity (which was modified, after our organization to \$1000 per run). Backed by a decision of the United States Supreme Court they considered their position impregnable—but combined effort, with determination, and good legal ability, has enabled us, at a small expense, to each 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 up a strong organization 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 not come under the terms of those decisions: The sub-executive committee of the National Association met with the Denchfield claimants at Chicago for the purpose of effecting 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 somewhat, 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 the energy 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 gambling in grain. The past season has been fruitful of disasters to the milling fraternity in this direction. I understand full well, the cry and accepted belief that "nothing can be done to prevent it," "there is no use trying," "it is useless to stir up this matter." Well, perhaps this is all so, but I, for one, believe that with the courts in our favor, with laws behind us, much may be accomplished by united and persistent effort. We were told, "Oh, you can't beat the 'Cochrane ring, they have got a decision of the United States Supreme Court behind them," but this did not save their gambling scheme from defeat. A long pull, a strong pull and a pull altogether is what will accomplish the work. In this short report, I have no plan to propose or suggestion to offer, but call your attention to the subject as a fit one for the association to wrestle with. Much may be accomplished by united effort that could not be done individually. I would also call your attention to the unfinished organization of a fire insurance company. This matter has lain dormant since our meeting in April, 1880.

Last year I issued, under the auspices of the National 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 advisability of continuing these reports for the present season.

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 care 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 resolution 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 Puhlman, 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.

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 it be abolished.

Mr. Puhlman, of Plymouth, offered the following resolution:

Resolved, 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 assistance as they may require, to draft a bill for presentation at the next meeting of the legislature providing for the suppression of gambling, or dealing, in options of grain.

Mr. Seamans offered the following as a 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 is necessary to be taken looking toward the suppression 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 judgment deemed advisable.

Mr. Schraudenbach moved that Mr. Seamans be added to the committee and act in the capacity of chairman, which was accepted without a vote. Whereupon the president named the committee as follows: S. H. Seamans, chairman; Otto Puhlman, C. Manegold, J. 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 thousand bushel deal. Mr. Sanderson stated that he 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 today which has been there for three years. Mr. Clement, of Neenah, said that the dealer 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 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 committee reported the following nominations:

President, E. Sanderson, Milwaukee; first vice president, J. L. Clement, Neenah; second vice president, Otto Puhlman, Plymouth; secretary and treasurer, S. H. Seamans.

The report was unanimously adopted.

The president nominated as executive committee—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 thought it the most reliable information they obtained from any source.

The meeting then adjourned sine die.

**The Story of Joseph as Applied to Grain Speculators.**

Our brilliant and esteemed contemporary, the Cincinnati *Commercial* comes to the defense of the "bull" speculators in food supplies who are so noted in that city, with a formidable precedent from Old Testament history. 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 successful 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 losing 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 of one of the most marvelously attractive of 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 proceeded 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 which to control the market. He took all that 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 their reserves, became clamorous for food, and Joseph took advantage of their necessities and turned them to his own and the King's best account.

While our esteemed contemporary is entitled to credit for bringing at least one portion of the Bible within the easy comprehension of the Cincinnati speculators, we are sorry to be compelled to say that the *Commercial's* "improvement" of its Scripture is one of the most palpable *non sequiturs* on record. For it improvidently observes:

The only difference between the ancient and modern speculators is that now there is not an absolute monopoly of the business. Now the Josephites are numerous, but none of them have the advantage of a supernatural illumination as to futures in wheat, hence their frequent mistakes and the penalties they often pay in shipwreck of fortune. But when they are railed at and abused, as engaged in disreputable business, and at the 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 the above that when so immoral and false a deduction is drawn from so ably stated a premise, by so influential a journal, it is important 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" and carried it without the help of any loans.

2d: Joseph did not create an artificial scarcity of corn, but bought the surplus only, and thereby "sustained prices" for the Egyptian farmers.

3d: The statement that when the famine came he "sold his supplies at the highest rates and doubtless at an enormous advance on the original cost" requires substantiation, but, at all events, he sold the corn that kept 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 supplies 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 create 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 better 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 would be irresistible 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 are 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 fact that copper could be melted, for they left behind them the fragments too small to use and the 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 enabled them to survive the struggle in which they perished. They must have been very numerous, and have reached the point of development where they were capable of organizing industry.

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. The labor expended here cannot have been much short of that involved in building a Pyramid. Isle Royale is ten miles from the nearest land, and is incapable of producing food, so that all supplies except fish must have been brought from some distant point. Their excavations could of course never go below the point at which water would accumulate. Their hammers, 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 habitations are found, we can hardly doubt that the ancient miners lived south of the great lakes, and made yearly journeyings with fleets of canoes to the copper mines. The aggregate amount of the metal which they carried off must have been very great, and it has, I believe, been generally thought that the copper implements of the ancient Mexicans came from this source. M. Charnay in a recent number of the *North American* seems to think that the Mexicans reduced copper from its ores. A chemical analysis of their hatchets would solve the question, for Lake Superior copper is so free from alloys as to be unmistakable.

The superintendent of the old Caledonia Mine in Ontonagon County kindly took me to the top of a cliff where three Cornish "tributers"—miners working not for wages but for a share of the product—had cleared out 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 mass which would weigh certainly not less than seven tons. Many battered stone hammers lay around the mouth of the pit. The active little Englishmen, belonging to a race of hereditary miners perhaps as old as the Mound-builders themselves, had come around the world from the east to finish the work of the departed Asiatic race who reached here from the west at a time to which no date can be assigned. Not far away another party had cut down a dead cedar to make props for their tunnel. As they were putting the log in position, from its center dropped a small but perfectly formed stone hammer which had never been used. It was made from a stone found, I believe, only on the north shore of the lake. This tree was not far from two hundred and fifty years old; but as cedar is almost indestructible in this climate, it may have been dead several hundred years. The axeman said that he had found several hammers in the centre of cedars. It would seem barely possible that this hammer had been placed in a cleft of the tree, when it was a sapling, that the wood might grow around 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, undoubtedly by the ancient miner himself, when the tree was a twig.—F. JOHNSON, JR., in *Harper's Magazine for May*.

**Some Mississippi Overflows.**

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

Francois Xavier Martin records an extraordinary rise in 1718.

Gayerre states that in 1735 the waters were so high that many levees were broken and New Orleans was inundated.

A great flood is recorded by Gov. Sargent as occurring in 1770, of which few particulars are given.

In 1782 the whole districts of Attakapas and Opelousas were inundated.

Another overflow occurred in 1785, another in 1791, others in 1796 and 1799, and 1800, according to Gov. Sargent; the resulting devastation was so great that the people imagined the Northern lakes had broken through a channel to the river.

In 1811 and 1813 the river again broke through the levees, inundating the entire Teche Country, and in 1815 "a very great flood" occurred, in which the Ohio River reached at its mouth the highest point ever recorded.

Again in 1816, 1823 and 1824 portions of the country was overflowed.

Between 1824 and 1860 seven "great" floods are recorded, respectively in 1828, 1844, 1849, 1850, 1851, 1858 and 1859. All these were marked with great destruction of property, but that of 1850 was by far the worst, the damage occasioned being immense, the St. Francis, Tensas, and Yazoo Bottoms being 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 in April, then rose again until the middle of May when they attained their highest point, and then rapidly subsided, resulting in the almost entire destruction of the crops.—*St. Louis Miller*.

**Ancient Engineering.**

The ancients, when all is said and done that can be, in favor of modern prowess and progress, knew a few things that we moderns have no sort of conception of. In a late celebrated work on architecture, the author says that not only is it impossible to duplicate the great temples of Athens, but it is inconceivable how they were constructed. The same may be said of the temples and the pyramids of Egypt. The Roman roads were superior to any constructed in modern times. Their very remains are stupendous. The ancient canals of India and her immense water reservoirs, including their sites, are incapable of being improved upon. In fact, the very ruins of the ancient are "tremendous." One of the latest discoveries of the wonderful engineering ability of these ancients is the fact that, in preparing to cut a tunnel through the Isthmus of Corinth, it has been brought to light that the Roman Nero, as notorious for his cruelty as for his love of the arts, sciences and literature, had engineers upon the same spot; and more, that the route selected by them has been selected by the engineers now having charge of the modern undertaking. But Nero was preceded by Alexander the Great in the attempt to carry out the colossal undertaking, and in both instances, the engineers showed themselves to have thoroughly mastered the conditions required for the inception of the work.

**Splendid Joke on His Wife.**

Dave Goudy is one of the dryest jokers in the world, and he had just as soon play a joke on a member of his own family as not. Dave's wife is a friend of his, and so she is subject to his jokes. She hates Indians, and always locks the doors when she sees the beggars who camp around Beaver Dam coming toward the house. Dave knew this, so he hired an Indian to go up to the house and get in, with a pass key, and beg a pair of Dave's old pants of the good wife, which she would gladly give to get rid of him, and then 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 his wife, and he got a drug store man named Griffis to go with him and watch the fun from a distance. The Indian got into the house, and when he asked for a pair of old pants the good lady saw through the joke and she gave him Dave's Sunday pants, and he went into the parlor and was going to put them on. This was too much for her, and she went to the kitchen and got a dipper of hot water. Nobody knows exactly what occurred, but Dave and Griffis suddenly saw an Indian come out of the front door, with one leg in a pair of black doeskin pants and the other pant leg dangling in the air, and the Indian yelled as though he was in pain, and he pulled out for the camp up the lake about six miles. As he 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 wife says when he wants to send his friends up to the nouse for any more pants to do so, by all means. She will be at home. *Beaver Dam (Wis.) Argus*.

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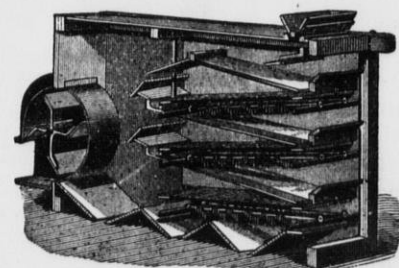
**ONLY DOUBLE BRUSH**

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It don't break or scratch the grain. Removes all the dust. Very light running. Send for circular and prices.

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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.

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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.

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Mention this paper when you write us.

### Legality of Grain Contracts.

REVIEW OF THE DECISION OF THE SUPREME COURT OF THE STATE OF WISCONSIN, UPON GRAIN CONTRACTS, BY GEO. B. GOODWIN, ATTORNEY OF MILWAUKEE CHAMBER OF COMMERCE.

The case of *Barnard vs. Backhouse*, upon the subject of grain contracts, just decided in our Supreme Court, published in *The Legal News* on the 23d of July, although involving no particular new theory upon that subject, is of much importance to the public, as it involves methods of trade connected with commission men and the Chamber of Commerce. The action was brought upon a promissory note, given in settlement 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 of the world in consequence of scarcity or some unusual demand; they may and do speculate in regard to future prices, exhibiting great forecast and ability, and, so long as these engagements are entered into with the intention that the subject matter of the contract shall be delivered and received in good faith, courts uphold their agreements." The court approvingly cites Justice Agnew 72, Pa., S., as follows: "It is not too much to require a party, claiming rights under such contract, to make it satisfactorily and affirmatively appear that the contract was made with an actual view to the delivery and receipt of grain."

The result reached seems to be that to 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 by the person seeking to recover, in addition to a written contract; that the *onus probandi* is on the person seeking a recovery on such contract, and that such contracts become gambling unless the subject matter of the agreement is to be delivered and received in good faith. While the rise in price is the object of the speculation, yet the court treats the subject as if the receipt or delivery of the actual grain were the speculative object, and, in the opinion of the court, the legitimate speculation for profits is rendered unlawful whenever the profits and not the subject that produces the profits is sought. The grain must be intended to be actually delivered and actually received, says the court, in good 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 a bad speculation concludes that this "intent," notwithstanding his written contract, was not to receive, he can thus escape liability.

In a gambling contract, which the statute prohibits, there must be at least two parties to the engagement, but a wheat deal is pronounced unlawful if only one of the parties to the contract had an intent either not to deliver or not to receive, no matter what the written contract is. By the decision, to make a valid contract, both elements must exist; therefore if one of the parties swears and makes corroborative proof, that he never intended to receive the wheat, no matter how strongly the other party avers and proves that his intention was to deliver, the contract must be held illegal, for both parties must intend to deliver and receive respectively. It then comes to this, that a commission man 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 and who can contradict him? If he swear falsely, no indictment for perjury will lie. He is only stating on oath his concealed and undiscoverable mental condition, at the time of the trade. He may show that the other party 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 a 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 be.

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 is construed into a cover for gambling, and the party must show its hands to be clean, before they are proven to be dirty. How a person seeking to recover on such a contract should show what the repudiating party's intentions were, I cannot see, and certainly a defense interposed would be the anticipation of success to the defendant. Other courts have placed the proof of this defense on the defendant; notably in the Circuit Court for the western district of Wisconsin. Certainly that much should be rigorously required in an unconscionable defense. The written contract should be *prima facie* lawful, and the defendant at least should be forced to show clearly a gambling agreement, or fail. This, of course is a criticism upon the method of ascertaining a fact, and not upon the fact, yet it is quite material as to who shall take the laboring oar in such an action. The rule laid down by the Supreme Court in this respect, is different from the rule in other cases. The presumption that holds in every other kind of contract is not in wheat deals, allowed, and the contract comes into court worse than a criminal, without a presumption in favor of its legality.

A single illustration will show how easily a person may repudiate by taking advantage of this requirement of the decision by showing his own intentions. A contract for future sale of grain may pass through twenty hands before 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 pass 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 contract with his anticipated wheat, and thus save or lessen a loss, even pocket a gain, and although he has fully profited by his speculation, he can make a little more by finally insisting that he was a gambler and never intended to receive the wheat, although he ordered his broker to purchase it for him and agreed to receive it, and has traded freely on the credit of it. And according to this decision, if he can establish his intent, he must, succeed. A legitimate result of this decision, although not intended by our court, will be to give the shield of the law to a dishonest loser, and to open the door to unfortunate ones to come in and offer defences supported by evidence of negative intents.

Why should the intent existing in the mind of one of the parties have any weight as against a written contract? To say the least, why should not the defendant be required to prove that both parties had the gambling intent? And why should not the burden of proof be upon the contestant?

Suppose a purchase of wheat is made for future delivery, upon the expectation on the part of the buyer, that some calamity will unsettle the government and both parties base their calculations of gain or loss upon this expectation, this would be a lawful speculation. The buyer, however, concludes that there will be no such calamity, and like a prudent business man, he gets out of his contract by at once paying the damage or difference, anticipating the same. His written decision would be legal, and no court would sustain an action under the statute, to recover back the difference.

Suppose again, without anticipation of a calamity, but from a study of markets, territory planted, and conditions of railroads, a 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 are better and that wheat will be two cents less, and he accordingly sells a like amount to some one else, covering his anticipated loss to a certain extent. What does it matter, in morals or in law, whether the wheat is to be actually delivered in September? He has traded 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. How is it material whether the wheat in bulk 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 difference? Why send a car-load or two to B and bring back a car load or two, when a balance and check would settle it? Delivery is no element in the transaction. Any commission house having a responsible purchaser can deliver at any time; but it would be merely putting 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 contract is measured in damages, by differences in values at law which always satisfy contracts. The difference between a gambling and speculative contract is close but well defined. In a gambling contract, an arbitrary sum, without 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 an opinion resting on chance. Such contracts are obviously demoralizing and run against public policy. The loss of the wage is total, without the intervention of wit, risk or credit. A time wheat contract does not have this element. It is based upon the future, but inevitable condition of the wheat market, where the price of wheat is fixed and determined by the laws of trade, supply and demand. The event is not uncertain; the amount to be paid one way or the other is measured by the market, just as the amount of damages for a breach of such contracts is fixed in the law by the market.

You may bet a million of dollars that it will rain to-morrow. There is no limit to the amount that may be bet, and it has no relation to the event. The happening of the event causes the wage to change hands. This is far different from making a contract to sell wheat. In such contracts, margins are a part of the purchase money, the market fixes the amount you must pay if you fail to receive or fail to deliver. Nothing is forfeited, nothing is bet, nothing is left to chance. If you fail to deliver and are sued, the court will give you in damage, the difference between the contract price and the market price on the day of fulfillment. It seems to me that the error is, in considering the wheat delivery, in form and not its equivalent, as all important. Under this decision it is established that the contract is void, even though the broker, pursuant to his written contract, tenders the wheat. Why should not the tender of the wheat to the purchaser make the contract solid? What gambling arrangement can be conceived where a fulfilment of the contract could be made by a tender of anything? It seems to me that the courts confuse margins with wagers or bet money. They are not. They are payments on the contract. They are not wage money any more than the part of the purchase money of a piece of land may be said to be a wager, which may be lost. The purchaser may conclude that the land is too dear, or land may have fallen in the market, and the purchaser may prefer to let it go and loose what he has paid and pay the damages. If the margins are not the wage, then where does the gambling arise? Can it be said that the wage money is the difference in market prices? Clearly not; because that is only the amount that the court would compel you to pay, if you did not fulfil your agreement.

A knowledge of the extent of wheat exchange is of benefit in considering the question. Commission houses in Milwaukee daily, and almost hourly, receive orders from all parts of the country and from Europe by mail and telegraph for the purchase or sale of wheat, by the thousands of bushels. These dealings continue, until mutual obligations to 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 their clearing houses. To deprive commission men of this right of exchange would almost stop business. So too, the single purchaser 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, says if it is intended practically and in effect to make this exchange, and pay the difference when the contract is made, the contract would be void. The effect of the decision seems then to be, to make wheat trades

moral, by making them difficult, or by giving dishonest men a chance to repudiate their written contracts.

In conclusion I call attention to the fact that 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 expel 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 recognized its authority and its disciplinary rights. So have the legislatures, in nearly every state, chartered like institutions with like power. The court, however, says that a person may have his property forfeited for repudiating a contract which the court pronounces illegal, and that contracts, the making of which the Legislature has sanctioned by chartering an institution for that kind of business, are illegal and void.

### Infant Food.

There are about twenty European preparations styled infant foods, beginning with that of Nestle, and at least twice as many American, all of which profess to furnish a complete nutrition for the infant during the first few months of its existence, while yet the conversion of starch into dextrine and sugar is beyond the capacity of the untrained digestive function. The examination of these with a microscope, assisted by such simple tests as iodine, which turns starch cells blue, and gluten (or albuminous) granules yellow, has engaged the careful attention of Dr. Ephraim Cutter, of Cambridge, and his results will startle most mothers who have relied upon the extravagant pretenses set forth in the circulars of manufacturers. Eliza McDonough, who preceded Dr. Cutter in this field, has been in a measure discredited; but it appears that her assertion—that the starch so far from being transformed into dextrine, was not sufficiently altered to render the recognition of its source difficult, whether from wheat, corn, rye or barley—was strictly true, and that these pretentious foods are, without exception, 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 inadequately 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 infant foods that contained a quantity of gluten as large as that contained in ordinary wheat flour. That is to say, a well compounded wheat gruel is superior to any of them, particularly when broiled with a little milk; and mothers are in error who place the slightest dependence 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. Sometimes 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 foods, 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 a tremendous shock to our sensibilities and to our faith in medical certificates, will not have been done in vain.—*New York Times*.

A GERMAN 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 been announced in Europe during the past two months of persons and firms in the milling and grain trades.

NEWS.

Everybody Reads This.

ITEMS GATHERED FROM CORRESPONDENTS, TELEGRAMS AND EXCHANGES.

WATERTOWN, Dak., will soon have a new roller mill.  
 ADAM BAER, miller at Greensburgh, Pa., is dead.  
 J. D. CHUBB is building a mill at Silver Creek, Minn.  
 Burned, E. & G. Folton's mill at Acton, Ontario.  
 M. 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 a custom mill.  
 EBENEZER WHEELER has sold his mill at St. Johnsbury, Vt.  
 A NEW mill is being built at Huntsville, Ala., for Wm. Hussey.  
 J. F. & J. L. Shields have sold their flour mill at Thompson, Ga.  
 J. R. Roberts is building a custom mill at Georgetown, Tex.  
 S. G. COOK has purchased the mill at Maguire, Minn., for \$75,000.  
 STEVENS & BARKER, of Chicago, Ill., have dissolved partnership.  
 Anthony Benning & Sons are building a mill at Frankfort, Minn.  
 WHITTINGTON & FRAZEE, of Calhoun, Ill., are remodeling their mill.  
 Mrs. J. B. McDUGAL has purchased Craske's mill at Stirling, Ontario.  
 BURNED—Krutz & Washburne's flour mill at Junction City, Oregon.  
 PERRY HUTCHINSON is building the largest mill in Kansas, at Marysville.  
 SHELLINGER & HUFFMAN, at Healdsburg, Cal., have sold their mill.  
 THE Pillsbury A mill at Minneapolis is lighted throughout by electricity.  
 WM. RUDOW, of Osceola, Wis., is changing his Cascade mill to a roller mill.  
 W. S. GILBERT's mill at Staun'on, Ind., is being enlarged and remodeled.  
 THE Anchor Milling Co., of St. Louis, are putting in 10 pair of Gray Rolls.  
 JORDAN BROS. mill, at Lower Verde, Arizona, was recently destroyed by fire.  
 SHEAZLEY & SON, of Osnaburgh, O., have sold out to George Leibtag & Co.  
 JAMES HARVEY, of the milling firm Mann & Harvey, at Wilber, Neb., is dead.  
 LINN & COOPER are building an 80 barrel steam flour mill at Humboldt, Nebraska.  
 RECTOR & SON, of Nebraska City, Neb., have sold their mill to John F. Kennedy.  
 J. J. Melvin & Son, of Comstock, Ky., have sold their mill to Francis H. Beard.  
 D. H. MORSE succeeded Morse & Hazen in 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., is the name of the new firm at Lafayette, Ind.  
 STRATTON & POWELL succeed J. K. P. Walker in the milling business at Cornig, Ark.  
 G. W. BIRD & Co., succeed Eikerman & Bird, in the milling business at Oswego, Kan.  
 THORNTON & CHESTER's new roller mill at Lockport, N. Y., is to be completed by July 1st.  
 J. S. WRIGHT & Co., Blue Rapids, Kan., are succeeded in business by Cyrus Upham, Son & 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 succeeded in the milling business by Chapman & Co.  
 E. J. Sheldon, of Manchester, N. Y., is putting in the Gray Reduction and Separating Machines.  
 THE Kehler Milling Co., of St. Louis, have ordered a 28x48 Reynolds Corliss Engine, for their new mill.  
 THE New Era Mills, of Milwaukee, are largely increasing their capacity and putting in the Gray 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 demoralized the Woodbine Flour Mill and moved it from its foundations.

The milling firm of Damp & Drayton, at Ashland, O., is dissolved. The business will be continued by John Damp.  
 THE Indianapolis flouring mills have a capacity of 2000 barrels per day. The product for 1881 was 249,367 barrels.  
 HARRINGTON & MOOREHOUSE, of Jefferson, Iowa, are improving their mill and putting in 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., April 7th and killed J. E. Reid, the hotel 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 extent of about \$4000. The mill was unoccupied.  
 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 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 Mfg 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 store in Milwaukee.  
 THE Franklin Mill Co. now building a mill at Appleton, Wis., are putting in 11 Odell roller-mills, manufactured by the Stilwell & Bierce Mfg. Co., of Dayton, O.  
 THE niece of Mr. Andrew Hunter, the Chicago manufacturer of middlings purifiers, was recently married at the British Embassy, in 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 putting 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 at 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. Downton, of St. Louis, to change their mill into a 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 loss is estimated at \$6,000, with an insurance of \$4,000.  
 IF the majority vote in the New York legislature indicate the feeling of the citizens of that state, free canals will soon be open to the public. The people will vote on the question next November.  
 THE large Eufaula Mills at Eufaula, which was built in 1877, by Norydye & Marmon Co., of Indianapolis, Ind., are adding three run of buhrs, which are being furnished by the original builders.  
 ON March 28, the Eclipse Milling Co., of St. Paul Minn., filed articles of incorporation to do a general milling and elevator business, with a capital 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 mill 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., are erecting an addition 30x30 feet to their flouring mill at that place. It is to be used for storage purposes. This mill is constructed of the white magnesian stone found in that vicinity, and is both handsome and capacious. Its

water power is said to be steady and to afford sufficient power at all times. During the past two months the owners have bought over 5,000 bushels of wheat. They report that the scarcity of good wheat has not been an obstacle to them and that they have kept their mill running at full capacity all winter.  
 THE milling firm of Clement & Stevens, of Neenah, Wis., is dissolved. Jackson L. Clement will continue the milling business. Mr. Stevens' attention is occupied with the Stevens Roller Mills and other milling inventions.  
 THE Elizabethport Flouring Mills Co., at Elizabethport, N. J., are increasing the capacity of the mill, and adding four run of stones, which with additional fixtures are being furnished by Norydye & 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 tired of waiting.  
 MESSRS. NORDYKE & MARMON Co., of Indianapolis, Ind., are remodeling all the four mills situated within the town of Pendleton, Ind. Potts & Parker and B. F. Aimen's mills are undergoing extensive alterations which will place 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 Rolla Mill Co., at Rolla, Mo., with a new 30x40 engine, a line of rolls and new bolting chests.  
 THE Goodlander Mill and Elevator Co., of 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 Milwaukee, 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 commenced. Some of the flour mills will probably 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 the line of the sewer is placed at about \$200,000.  
 A GRADUAL reduction roller 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 machinery comes from the Norydye & Marmon Mill Works, at Indianapolis, Ind., while Richards & Butler of same place do the millwright work.  
 THE new San Francisco Grain Exchange was formally organized on March 14, in the San Francisco Stock Board building. Geo. T. Mayre, Jr., was appointed temporary chairman, and A. F. Coffin was elected temporary secretary. The chairman appointed the following committee on permanent organization and to receive applications for membership: Messrs. Homer S. King, 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 overhauling and remodeling H. Human & Co's Mill at Highland, Ill. This mill is to be of from three to four hundred barrels capacity per day and guaranteed to make as good flour as the Alton Mill of E. O. Stannard & Co., recently built by R. L. Downton, which mill has so clearly shown the advantages of Downton's system of milling over other systems. Downton using the "Cranston-Dawson" Corrugated Rolls for reducing wheat to middlings and the "Downton" Smooth Rolls for reducing middlings to flour.  
 THE determination of Crocker, Fisk & Co., to go on with the erection of their mill is announced. 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 feet 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 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 capacity.—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 more 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, about 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 sleeping in another bed, when she heard a voice say, "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 on 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 were several residences. It was known that 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 vigilantes are out, and if the villain is caught there will be a neck-tie sociable, without judge or jury.—Polk City Paper.  
 Flour mill furnishing goods have recently been furnished to the following parties by C. F. Miller, of Mansfield, Ohio: S. D. Talbot, Armstrongs, Ohio, wheat cleaning machines, bolting-cloth, belting, elevator cups, conveyor 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 middlings purifier, mill stones, mill curbs, bolting-cloths and other goods; M. Kiser, Clarks, Ohio, a middlings purifier, bolting-cloth, belting, etc.; Dawson & Wherry, Cardington, Ohio, brush machine, bolting-cloth, etc.; R. B. Kline, Leipsic, O., bolting-cloth; Morris Bros., New Lisbon, Ohio, a middlings purifier, brush, smutter, bolting-cloth, belting, elevator cups, conveyor flights, middlings mill, etc., a complete new outfit; Luther Myers, Mitchell's Mills, Pa., a smutter, belting, etc.; Endslow & Heabler, New Washington, Ohio, bolting cloth; Higbee & Co., Bellevue, O., several roller mill machines; John P. Hollar, Carrollton, O., bolting-cloth; Sebold & Voelm, Sandyville, O., corn-sheller, bolting-cloth, etc.; D. Boor & Son, Defiance, O., bolt reel shafts, reel arms, reel ribs, mill curbs, Tripod Silent Feeders and other goods; D. H. Rowland, Richwood, O., a middlings purifier and middlings mill; McLaughlin & Watson, Granville, O., flour packer, shafting, gearing, proof staff and other materials; R. W. Messmore, Pancoastburg, O., bolting-cloth, belting, elevator-cups, etc.; S. Flickinger, Louisville, O., several reels of bolting-cloth; Messrs. Hall & Cook, Akron, O., middlings mill, middlings purifier, brush finishing machine, bolting-cloth, proof staff, paint staff and other goods; Henry Merchantell, Forest, O., wheat cleaning machinery; J. B. Miller & Co., Ashley, Ohio, a large lot of bolting cloth, wheat cleaning machines, middlings purifiers, bolting reels, conveyors, elevator cups, conveyor flights, including millwright work and plans of bolting, etc.; Allen B. Stauffer, Pickering, Pa., smutter and separator; Amstutz & Co., Russell, Ohio, 1 Zig Zag Separator, 1 brush finishing machine; Samuel Beck, Spring Mountain, O., shafting, gearing, pulleys, bolting-cloth, bolting-reels, conveyors, mill-curbs, tripod feeders, belting, elevator cups, conveyor flights, &c., a new outfit complete including millwright work.  
 It is said that a 400-barrel roller mill will be built at the Sioux Falls, Dakota, this year.  
 THE new grain elevator to be built this year at Detroit, Mich., will have a capacity of 1,300,000 bushels.

## Grain Gambling.

A COMMUNICATION FROM S. H. SEAMANS, SECRETARY OF THE MILLERS' NATIONAL ASSOCIATION.

What are you going to do about it? is a question 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 gives the committee a wide range, and unlimited time for investigation. They have as yet 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 individual ideas, that the committee is in dead earnest, and "mean business." I need only refer to the Association of which they are members to substantiate. The action of the meeting has been the means of awakening public attention to this growing evil, and the feeling is extending that possibly something may be done to do away with it. I believe a remedy can, and will be found to suppress it in a great measure if not entirely, but it must be by and through laws and influences of a general character, not local; in my own mind there is no question 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, 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 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 the property) therefore void. The judge sustained the plea, whereupon the parties were arrested for gambling, a penal offense against the laws, were found guilty and sentenced to the state prison for one year each. When 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 I trust will give our committee some light upon the legal and legislative aspect of the case. Since the meeting of our association, the subject has caused considerable discussion upon the Milwaukee Chamber and I must admit 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 working 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 further reason that we are liable to make a loss for our customers, in which case we know if 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 Wisconsin 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 responsible 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 on margins for customers, in other words, "they gamble by proxy" and the legitimate receivers give it respectability.

Much rash talk has been indulged in by the wounded "buzzards" on change, to the effect that our object is to interfere with "time contracts" and speculation; that it is the aim of the association to interfere in some way with legitimate prices in fact, to "bear" the market on wheat and

"bull" it on flour, or try to do some preposterous 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 governed by the immutable law of legitimate supply and demand is a necessary requisite to protect the rights of all producers, manufacturers and consumers.

Higher prices based upon the same law, are 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 parties 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 products of the country, which is unwarranted by 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 manufacturer, and very detrimental to the consumer. What we shall seek to accomplish is uniformity of legislation in the enactment of such laws as will effectually cover the case and the enforcement of the same, by and through the efforts of the several state associations, the whole to work in harmony under the auspices of the National Association. While the feasibility of the course may be questioned, its ultimate success, if persistently and judiciously managed is beyond a 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 foreign markets at fair, if not very high prices, profitably alike to the producer, manufacturer and shipper, but the insane mania for speculation and particularly that part of 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 Britain and the European Continent would not and could not pay the prices demanded by our manipulating speculator, consequently looked elsewhere to supply their wants, and worst of all for this country, remodeled their mills and by mixing the various grades of wheat, which they heretofore have been unable to use successfully, succeeded in producing 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 at 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 wheat of the country, but ten to twenty millions of mythical stuff, that never had an existence. During all these recontres the milling industries of the country must remain idle, discharge 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 meantime their business has become demoralized their customers have sought other sources to supply their wants, and yet such transactions are allowed to exist and must remain, for we are told "it cannot be prevented." If this is a fact, it is a severe commentary upon this enlightened nineteenth century. One thing is very certain, our committee propose to "wrestle" with it, if earnest, persevering effort on their part will succeed, preventing this nefarious traffic, it will be accomplished.

Yours truly,

S. H. SEAMANS.

## GAMBLING IN OPTIONS.

S. H. Seamans Esq., the Secretary of the Millers National Association in a recent letter 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 gambling in options, (to which the millers, as an association, complain,) may be carried on the floor of the Chamber of Commerce, I 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 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 of wheat. The total margins did not exceed \$50, estimated commissions to broker \$1,250, profit to operator, "List to the mocking bird! 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 you suppose the party, or his broker, received or delivered, expected to receive or deliver, paid for, or received pay for, or handled in any manner? Not one bushel. Yet a capital of \$50 assisted in making prices on 2,000,000 bushels of wheat! And this is a "legitimate" business by which the "poor farmer" (everybody in this trade is anxiously looking 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 of the friends of this most legitimate manner of dealing, I would direct attention to the case of the "victim" who came on to the floor of the Chamber but a few years since, the possessor of many broad acres well cultivated and cared for, flocks and herds of great size, houses and lots of much value, money in plenty, a good business well established, but becoming infatuated with the mania (that is ruining more men and women too, than all the gambling hells in existence because of its chartered respectability) bought and sold, continued to buy and sell, paying and settling differences until all, or nearly all, his property had vanished. His son told me very recently that over \$200,000 had disappeared to him and his family. He was a rich farmer. It seems "the boys" look out for the rich as well as the poor farmer. To-day he deals in very limited amounts. No wheat receipts pass through his hands, or those of his broker on his account. Yet he is doing a legitimate business? On the approach of a harvest, if prospects are fair, the "gang" howl seller September, October, November, etc., way 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 that capital has stepped in and bought perhaps double the crop that has been grown on hand, or can be delivered. When the "wrangle" begins fictitious prices rule the crop, until "settlement day," to the detriment of all classes of business either directly or indirectly. The consumer eats his last loaf before buying more bread, knowing full well that corner prices exist, and that business which has many millions of dollars invested, giving employment to many thousand men, must sit idly by without a murmur, and list to the oft-repeated phrase: "What are you going to do about it?" The question will be sometime answered.

## Speculative "Corners" and their Cure.

The appointment of a legislative committee to investigate "corners" in grain and provisions has been derided in some quarters as a 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 speculation in the prime necessities of life, there is not much difference of opinion, provided any legislation of that character can be made effective without doing more harm than good. The whole country has suffered within the past year, and suffered seriously in all its great interests, because of the excessive speculation 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 restrained by law does not deserve contempt, but is eminently proper and praiseworthy.

The presumption, of course, is greatly against the success of legislation in that direction. The experiment has been tried many times. It has never resulted in any

public benefit. In no other state has the evil 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 impracticable. In most instances, the law-making power has failed to distinguish between that speculation which is sometimes useful and that which is always and necessarily harmful.

If the committee divests itself of the cant 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. Because that is always impossible, the attempt is pretty sure to result in disaster, and if made, can do not much harm except to him who makes it. But the instant that somebody 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 the world, and it would serve him right. He had no business to be selling the property of other people. But blundering laws and commercial customs and rules framed on purpose to promote gambling, have taken just the opposite view of the matter. They treated the man who had sold the property of others as an innocent victim, and the owners who refuse 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 effective. It starts on the false assumption that a 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 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 the contrary, such contracts have been found of the greatest public utility. The cotton manufacturer can engage the planter to deliver his cotton as the mill may need it, and thus place thousands of operatives beyond the reach of disaster in consequence of fluctuations in the market. The miller can make similar contracts for grain, and the packer 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 his chances of getting it from others who do. Such a contract, instead of protecting industry against risk, exposes it to new and extraordinary 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 future. They have a right to buy all they can get, and, if anybody pleases to sell what he does not own, a "corner" necessarily comes, though the buyers may know nothing of it. Whether they do or not, their right to buy cannot be denied; the question is whether any man has a right to sell what he does not own. It is true the customs of commerce, are such that no deceit or fraud is necessarily involved in such a sale; but the root of the whole matter 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 from selling what does not belong to them. If that is done, "corners" can never arise, and speculation will be confined within comparatively safe limits; but unless it is practicable and wise to prevent sales of this precise character, it is sheer folly to meddle with the incidental evils of speculation which flow from 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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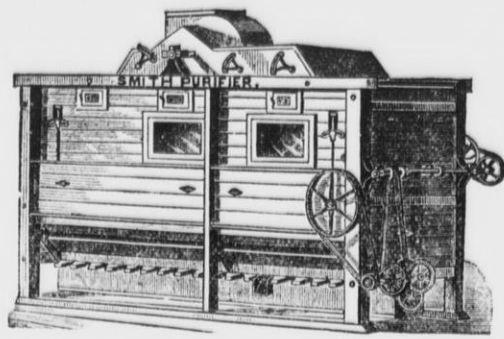
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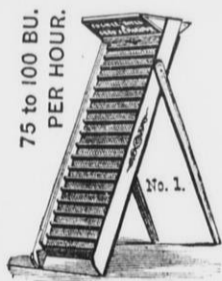
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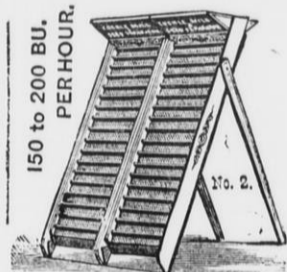
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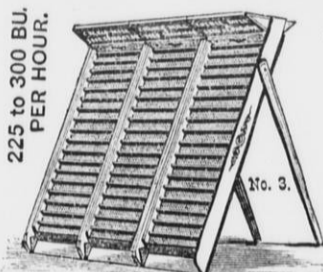
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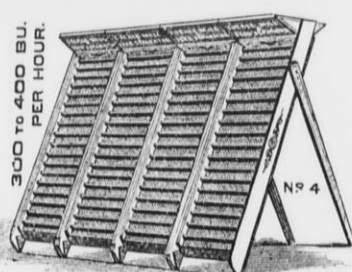
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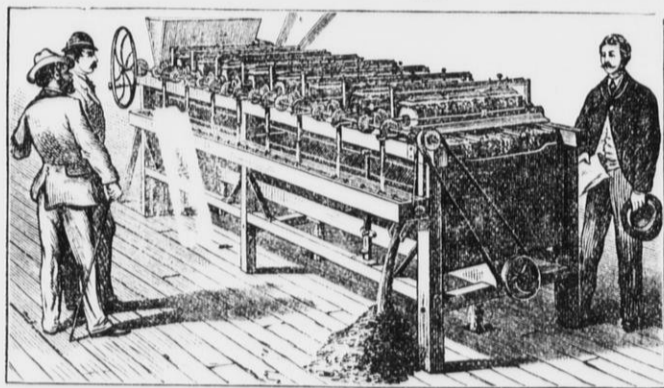
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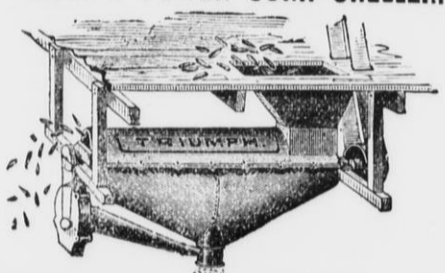
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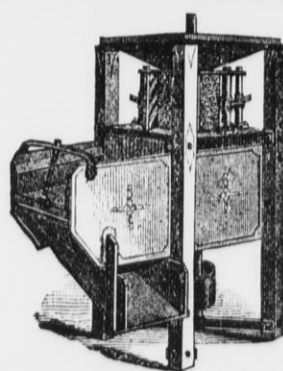
The Cheapest, Best, and most Simple Power Corn Sheller in use. Send for Circular and Price List.

Manufacturers of Steam Engines, Mill Builders and Mill Furnishers.

HULBERT & PAIGE, Painesville, Ohio.

[Mention this paper when you write us.]

**MARSHALL'S NEW CORN SHELLER.**



The only Self-Adjusting Sheller in use that will

**SHELL MIXED CORN**

FAST AND WELL,

And that will clean it THOROUGHLY.

Easy of access to all parts liable to clog. Thoroughly made. Sold as cheap as the cheapest.

Send for circulars to

**G. MARSHALL & SON, Mfrs.**

Kilbourn City, Wis.

[Mention this paper when you write to us.]

**BIRGE & SMITH, Practical Millwrights.**

PLANS, SPECIFICATIONS & ESTIMATES

MADE FOR ALL KINDS OF

**MILLWORK, MACHINERY, ETC.**

Flour, Sawmill, Tanners' and Brewers' Machinery, and General Mill Furnishers.

Corner of East Water and Knapp Sts.,

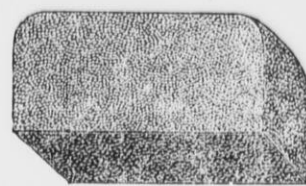
MILWAUKEE, WISCONSIN.

[Mention this paper when you write us.]

**John H. Miller,**

MANUFACTURER OF

**MILLER'S COMPOSITION**



**MILL BUHR RUBBER,**

SECTIONAL FURROW GAUGES AND STAFF.

PETERSBURGH, PA.

The Best, Cheapest, and Most Durable Rubber in the Market, USED DRY. Will outwear any Rubber made in the world, and retain its cutting qualities until entirely worn out.

FACE RUBBER, 12x6x3 inches; weight 12 lbs.; price, \$3.00. FURROW RUBBER, 12x6x1 1/4, 1 1/2, 1 3/4 and 2 inches, as required, \$2.50; or both for \$5.00, by express. Furrow Gauges and Staff \$1.25 per set, by mail. Send for circulars, testimonials &c. Address all orders as above.

N. B.—This Rubber will not wear a pair of Buhrs out of existence in 15 minutes. But if used in connection with the Pick and Red Staff will leave the face and Furrows in the best possible condition for making good work. For cleansing the face of Glazing it has no equal. Try it and be convinced. Money refunded if not satisfactory.

Remember U. S. Miller when you write to me.

**J. J. BELL,**

41 S. William St., New York,

Manufacturer and Importer of

**MILLSTONES,**

BOLTING CLOTHS,

Mill Irons, Belting, Mill Picks, Iron Proof Staffs, Smut Machines, Elevator Cups, and

Mill Furnishings in General.

Having been engaged in the manufacture of ESOPUS MILLSTONES, CHASERS, &c., for the past 30 years, I am prepared to fill all orders not only at the lowest price, but the best qualities for the purpose intended.

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**STEEL CAR PUSHER**

Made entirely of STEEL. ONE MAN with it can easily move a loaded car. Will not slip on ice or grease.

Manufactured by **E. P. DWIGHT,** Dealer in Railroad Supplies, 407 Library St., Philadelphia, Pa.

[Mention this paper when you write us.]

**SITUATION WANTED.**

A MILLER of many years experience in mills using stones and rollers, desires a situation. Can furnish first-class references. Address,

W. NEUBURGH, Care UNITED STATES MILLER, Milwaukee, Wis.

**FOR SALE.**

A good water power and mill with two run of stone at Stone Bank, Waukesha County, Wis. Mill is doing a good business, which with a moderate amount of improvements, could be largely increased. One half or the whole will be sold to the right party. For full particulars, address, U. S. MILLER, Milwaukee, Wis.

**IOWA MILL FOR SALE.**

The Elgin flour mills—3-run of stone—2 Lefel water wheels—8 1/2 feet head and plenty water. 2 purifiers and good bolting capacity. The power is ample for an 8-run mill. Address for further particulars

P. DOWSE, JR., Elgin, Iowa.

**FLOUR MILL FOR SALE.**

A new, 2-run grist mill, with dwelling house and barn and 15 acres of land, situated on the Zumbro river, in a fine grain growing country. It is seven miles from a railroad station. Good stone dam and plenty of water the year around. For further particulars, address

CHARLES MUELLER, Berne, Dodge Co., Minn.

**FLOUR MILL FOR SALE.**

Situated on the Chesapeake & Ohio Canal, 2 1/2 miles above Georgetown, D. C., with a perpetual water supply. Has three run of stone, and is capable of making 75 barrels of flour per day. A good home market for the flour. The building is of stone, with a large frame shed attached. Address

THOS. P. MOGAN, 1718 Rhode Island Ave., Washington, D. C.

**FOR SALE.**

A good two run, water power Grist Mill, 36x50, stone foundation. Good dwelling house and barn with 23 acres of land, situated in fine grain growing country, 1 1/2 miles from railroad station and 9 miles from Manitowoc, Wis.

For further particulars address, ANTON E. REIF, Branch, Manitowoc Co., Wis.

**THE CALDWELL**

**Water Mill For Sale!**

The best water mill property in north-east Missouri located at Monticello, the county seat of Lewis Co., Mo.

The mill house is 30x40 feet, 3 1/2 stories high, made of stone brick and frame, with two run of Buhrs, Lefel, improved wheels, 20 feet dam, stone foundation and machinery almost new, and now doing a good custom business. If desired, will also sell 250 acres of good farming land with three dwelling houses. The land could be divided into two good farms. Terms easy. Address, J. P. CALDWELL, Monticello, Mo.

**Flour Mill**

For sale at Carter's Depot, East Tenn., immediately on main line of R. R. from Norfolk to Memphis, 20 Miles from Bristol. Flour Mill, Residence, Millers' House, Out-buildings, 13 Acres of Land, including Water Privilege, Spring, Well, Etc. Unlimited water power and control of water site for half mile. In centre of good wheat and wool country. Mill building on stone foundation, 5 stories high, including 2 in attic, 4 pairs 1 1/2 feet French stones, 4 four feet Turbine wheels, 2 sets wheat elevators, 5 eighteen foot rolls, large and barrel packer, flour elevators and returns, Eureka smelter, wheat and flour scales. Title undisputed. Non-residence reason for selling. Possession at once; originally cost \$20,000. Will sell at a sacrifice. Can be made most attractive manufacturing seat in the south.

C. A. JACKSON & CO., Petersburg, Va.

# WEGMANN'S PATENT PORCELAIN ROLLS

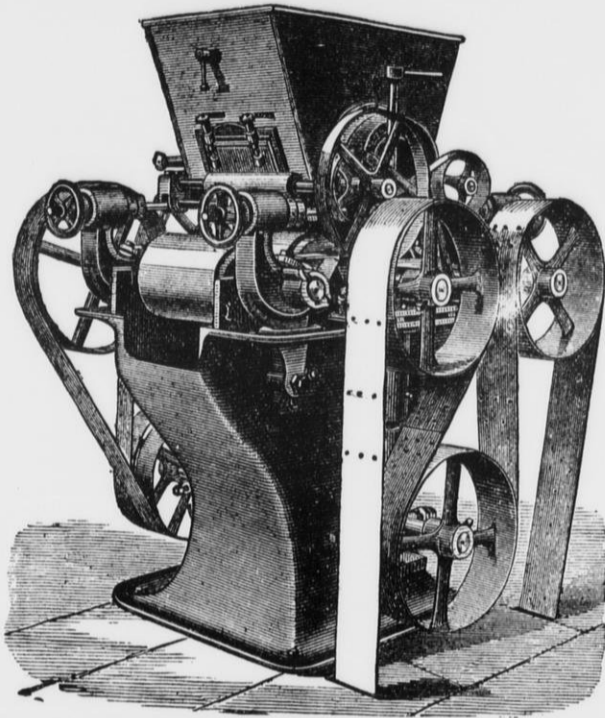
THE BEST ROLL

FOR

**MIDLINGS**

IN THE

WORLD!



THE BEST ROLL

FOR

**MIDLINGS**

IN THE

WORLD!

**"AWARDED SPECIAL PREMIUMS."**

## OVER 6,000 OF THESE ROLLS IN USE

IN THIS COUNTRY AND EUROPE.

The Superiority of Porcelain over Chilled Iron for Reducing Middlings for Tailings is as under:

**CHILLED IRON ROLLS**, whether polished at first or scratched with fine grooves, soon become, through wear, smooth and glassy, and will only squeeze instead of grinding.

**PORCELAIN** presents a continual inherent sharpness, which no art can give to any other material in equal fineness and regularity, which enables it to act upon the smallest particles of flour and to separate them.

**CHILLED IRON** discolors the flour, by reason of the carbon that exudes from it, and also by its liability to rust.

**PORCELAIN** does NOT discolor the flour and is entirely indifferent to any and all chemical influences.

**CHILLED IRON ROLLS** are smooth and "cake" the meal; more especially is this the case on soft material.

**PORCELAIN ROLLS** possess a certain porosity, and no matter how finely ground, or how long they have been used, still re-

tain this granular and porous texture, and will reduce the middlings without "caking"

**CHILLED IRON** can be cut with steel.

**PORCELAIN** can ONLY be cut by the best black diamonds.

**CHILLED IRON ROLLS** require 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 International Exhibition, 1878;

Little International Concours, 1879; First Gold Medal of the State, Berlin International Exhibition of the German Millers' Association, July 1879; and Gold Medal Le Mans, 1880.

Full Instructions regarding the system of using Rolls in place of Stones given to parties purchasing. Address

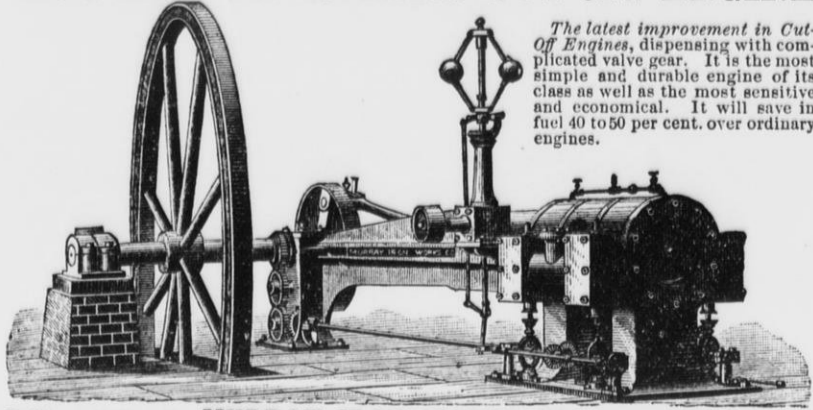
## EDW. P. ALLIS & CO., Sole Mfr's.

MILWAUKEE, WISCONSIN, U. S. A.

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**"HOWARD" AUTOMATIC CUT-OFF ENGINE.**



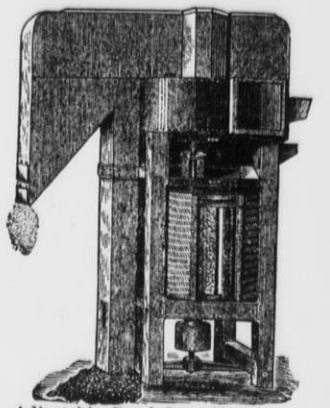
The latest improvement in Cut-Off Engines, dispensing with complicated valve gear. It is the most simple and durable engine of its class as well as the most sensitive and economical. It will save in fuel 40 to 50 per cent. over ordinary engines.

Built only by the **MURRAY IRON WORKS CO., BURLINGTON, IOWA.**  
BUILDERS OF ALL KINDS OF ENGINES AND MACHINERY.

**RICHMOND MANUFACTURING CO.,  
LOCKPORT, N. Y.,**

Manufacturers of  
**RICHMOND'S CELEBRATED  
Smut Machines,  
Brush Machines,  
Grain Separators,  
and Bran Dusters.**

Nearly Two Hundred of these Machines are now in operation in the city of Minneapolis, Minn., alone, and more than sixty in the city of Milwaukee, Wis. They are also extensively used in many other sections, both on Winter and Spring Wheat.



Adjustable Brush Smut Machine.

SEND FOR DESCRIPTIVE CATALOGUE.  
[Mention this paper when you write.]

**POOLE & HUNT'S  
Leffel Turbine Water Wheel**



Made of best materials and in best style of workmanship.  
**Machine Molded Mill Gearing**

From 1 to 20 feet diameter, of any desired face or pitch molded by our own SPECIAL MACHINERY. Shafting, Pulleys, and Hangers, of the latest and most improved designs.

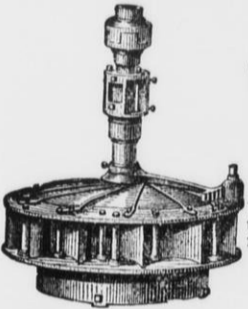
Mixers and General Outfit for Fertilizer Works.

Shipping Facilities the Best in all Directions.

**POOLE & HUNT, Baltimore, Md.**

N. B.—Special attention given to Heavy Gearing for Pulp and Paper Mills.  
[Mention this Paper when you write us.]

**James Leffel's Improved  
WATER WHEEL.**



The "OLD RELIABLE" with Improvements, making it the Most Perfect Turbine now in Use, comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this country. Our new Pocket Wheel Book for 1881 and 1882 sent free to those using water power. Address

**JAMES LEFFEL & Co., Springfield, Ohio.**  
and 109 Liberty Street N. Y. City.

[Mention this paper when you write us.]

**Stout, Mills & Temple,  
DAYTON, - - - 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 BOLTING CLOTHS.

Flour and Paper Mill Machinery, Best Chilled or Porcelain Rolls for Crushing Wheat and Middlings and

**GENERAL MILL FURNISHINGS.**

The AMERICAN TURBINE, as recently improved, is unequalled in the power utilized from a given quantity of water, and is decidedly the BEST "PART GATE" Water Wheel ever known. It has also been otherwise greatly improved.

Large Illustrated Catalogue Sent Free on Application.

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MEDAL & PREMIUM AWARDED TO  
**ALCOTT'S**  
Turbine Water Wheels  
Most Perfect Turbine in Use.

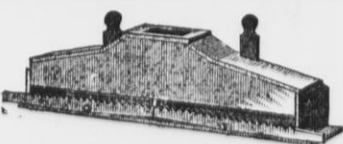


**ALCOTT'S IMPROVED TURBINE WATER WHEEL.**  
MANUFACTURED BY  
**T. C. ALCOTT & SON,**  
MOUNT HOLLY, N. J.

We have the BEST GATE in EXISTENCE and by it the Most Direct Efficient Applications of the Water to the Wheel.

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**The Perfect Feed Box.**



It insures a perfectly even distribution of the middlings over the entire width of the cloth. Every miller will appreciate this. Fits all purifiers. Address,

**CASE-MANUFACTURING CO.,**  
COLUMBUS, OHIO.

**W. E. CATLIN & CO., 68 LAKE ST., CHICAGO, ILL.,**  
AGENTS.

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**Over 1,500 of these Turbines  
IN USE.**



It has tight shutting and easily operated Gate; gives more power for the water used, and will last longer than any other Turbine. Large shop with improved tools for making this wheel and machinery. Illustrated Pamphlet and Catalogue with prices sent free by

**BURNHAM BROS.**

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**Milling Made Profitable.**

We build mills on any system known. We guarantee a saving of 25 per cent. on the cost of construction and room occupied by

**BOLTING CHESTS.**

We handle 45 bushels per hour on one reel successfully.  
**C. B. SLATER & CO.,**  
Blanchester, Ohio.



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**Mill Furnishing,  
Foundrymen & Machinists.**  
Established 1861.  
MANUFACTURERS  
**MILL STONES.**  
Flouring Mill Contractors.  
Send for Pamphlet.  
**Nordyke & Marmon Co**  
Indianapolis, Ind.

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**IMPORTANT NOTICE TO MILLERS.**

The RICHMOND MILL WORKS, and RICHMOND MILL FURNISHING WORKS are wholly removed to Indianapolis, Ind., with all the former patterns, tools, and machinery, and those of the firm who formerly built up and established the reputation of this house; therefore, to save delay or miscarriage, all letters intended for this concern should be addressed with care to  
**NORDYKE & MARMON CO.**  
INDIANAPOLIS, IND.

**CAWKER'S  
AMERICAN FLOUR MILL DIRECTORY  
FOR 1882:**

Is Now Ready for Delivery.

It has been compiled with the utmost care, and contains 22,844 Addresses

Of Flour Mill Owners in the UNITED STATES and CANADA.  
It give the Capacity and Motive Power of Mills wherever obtained.

**MILL FURNISHERS, FLOUR BROKERS,**

And Every one Desiring to Reach the Trade,  
**WILL FIND THIS WORK SIMPLY INVALUABLE.**

PRICE, TEN DOLLARS PER COPY.

Address **THE UNITED STATES MILLER, Milwaukee, Wis.**

Will be sent to any part of the world by Mail, POST-PAID, on Receipt of Price.

**JOHN C. HICCINS,**  
Manufacturer and Dresser of

**Mill Picks,**

No. 169 W. Kinzie Street,

**CHICAGO, - ILLINOIS.**



Picks will be sent on 30 or 60 days' trial to any responsible miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada. Send for Circular and Price List.

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**HENRY HERZER,**

Manufacturer

and

Dresser

-OF-

**MILL PICKS!**

NO. 156 ON THE CANAL,

**MILWAUKEE, WIS.**

I have had twenty-two years experience in the manufacture and dressing of Mill Picks, and can and do make as fine Mill Picks as can be made by anybody anywhere. I use only the best imported Steel for the purpose. My work is known by millers throughout the country, and is pronounced to be first class by the very best judges.

We have hundreds of the most gratifying testimonials from nearly all the States. We solicit your orders and guarantee satisfaction. Address as above.  
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**PATENTS**

We continue to act as Solicitors for Patents, Caveats, Trade Marks, Copyrights, etc., for the United States, Canada, Cuba, England, France, Germany, etc. We have had **thirty-five years' experience.** Patents obtained through us are noticed in the SCIENTIFIC AMERICAN. This large and splendid illustrated weekly paper, \$3.20 a year, shows the Progress of Science, is very interesting, and has an enormous circulation. Address **MUNN & CO., Patent Solicitors, Publishers of SCIENTIFIC AMERICAN, 37 Park Row, New York.** Hand book about Patents sent free.

**Northwestern Mill Bucket Manufactory**

810, 812, and 814 FLORIDA STREET.



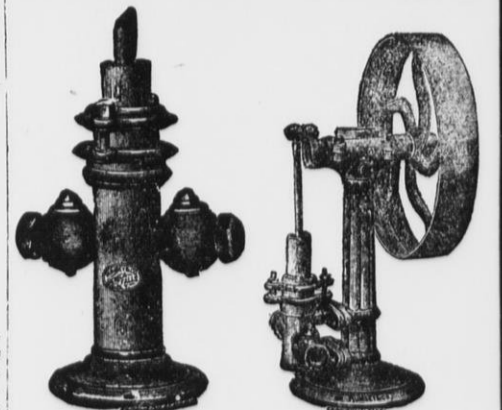
**NORTHWESTERN  
MILL BUCKET  
MILWAUKEE**

Is furnishing Mills and Elevators in all parts of the country with their superior BUCKETS.

They are UNEQUALLED for their SHAPE, STRENGTH and CHEAPNESS.  
Leather, Rubber, Canvas Belting and Bolts at lowest market rates. We have no traveling agents. Sample Buckets sent on application. Large orders will receive liberal discounts. Send for sample order.

Address all inquiries and orders to  
**L. J. MUELLER, 197 Reed St., Milwaukee, Wis.**  
[Mention this paper when you write us.]

**STEAM BOILER PUMPS**



We manufacture over forty different styles and sizes of Steam Boiler Feed Pumps, for hand and power, at prices from \$10 to \$100.

Catalogues furnished on application.  
**RUMSEY & CO., SENECA FALLS, N. Y.**

**GANZ & CO.,  
Budapest, Austria-Hungary.**

We are the first introducers of the Chilled Iron Rollers for milling purposes, and hold Letters patent for the United States of America. For full particulars address above.  
[Mention this paper when you write us.]

The United States

# MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 2. }

MILWAUKEE, JUNE, 1882.

{Terms: \$1.00 a Year in Advance.  
Single Copies, 10 Cents.

## THE STEVENS ROLLER MILLS

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.  
We also manufacture the

### Celebrated Cosgrove Concentrated Mill

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

**READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:**

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 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 4½ 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 ¼ to ½ 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.

BROOKLYN, NEW YORK, February 20, 1882.

Yours truly,

F. E. SMITH & CO.

**Among Recent Orders We Name the Following from Prominent Millers:**

Lexington Mill Co., Lexington, O., 12 pairs,  
Pollock & Co., Vincennes, Ind., 12 pairs,

E. O. Stanard & Co., St. Louis, Mo., 28 pairs,  
Penfield, Lyon & Co., Oswego, N. Y., 2 Cosgroves.,

E. T. Archibald & Co., Dundas, Minn., 12 pairs,  
Crocker, Fisk & Co., Minneapolis, Minn., 54 pairs.

James 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.]

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

## ODELL'S ROLLER MILL.

**An Established Success.**

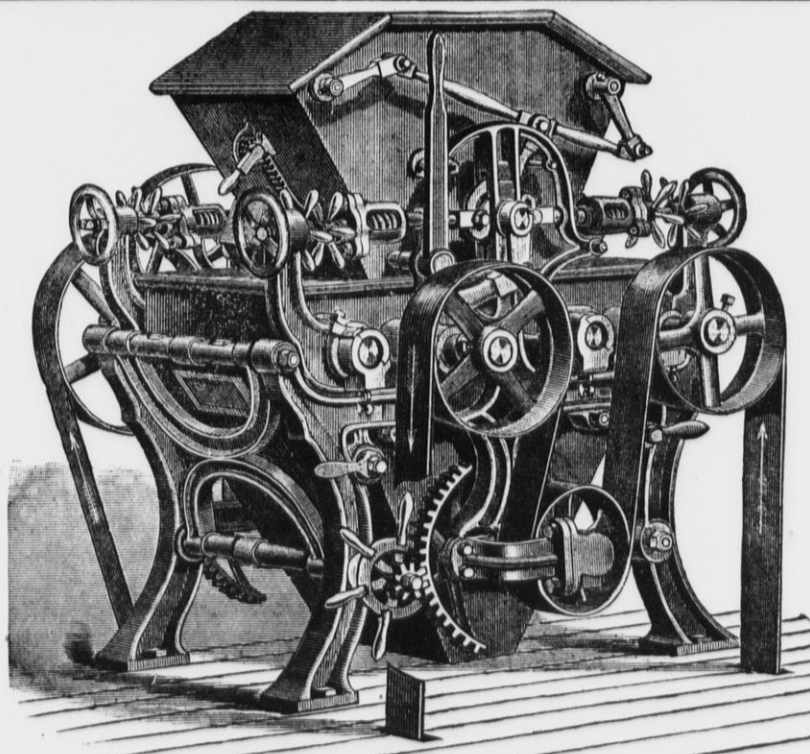
We invite particular attention to the following

### 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. 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 tension-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

### Ansonia 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. M. Wright, Danville, Ills., 28 "  
C. Seeley, Crete, Neb., 8 "

M. S. Rexford, Norman, Dak., 10 Pairs  
Warder & Barnett, Springfield, O., 22 "  
Barrett & Son, Spring Valley, O., 10 "

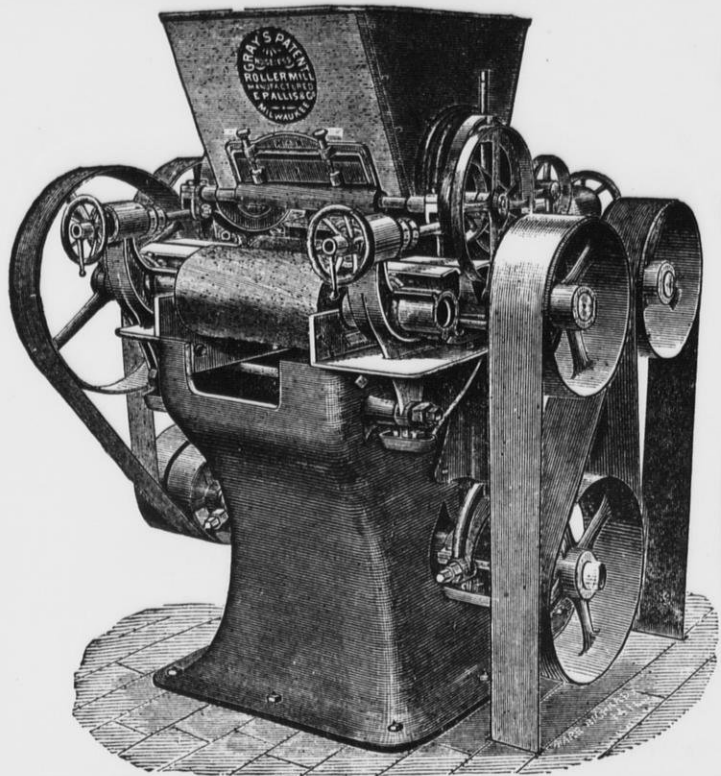
J. Mathers & Son, Greenville, Pa. 12 Pairs  
L. Payne, Franklin, Ind., 10 "  
Brown & Watkins, Crawfordsville, Ind. 8 "  
Franklin Mills Co., Appleton, Wis. 11 "

Circular and Prices on Application to Sole Manufacturer,

**STILWELL & BIERCE MANUFACTURING CO., DAYTON, OHIO, U. S. A.**

[Mention this Paper when you write to us.]

# GRAY'S PATENT NOISELESS ROLLER

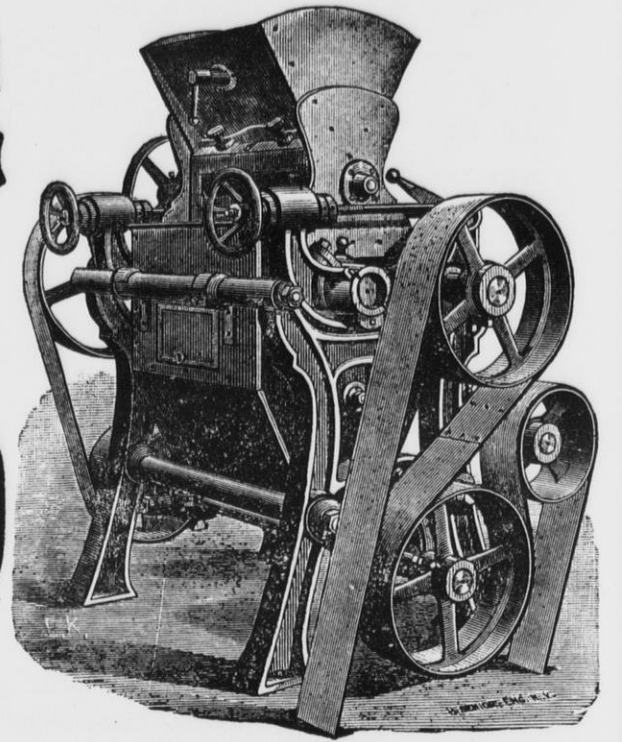


## MILLS

WITH

## CORRUGATED

OR



## SMOOTH CHILLED IRON ROLLS

And WEGMANN'S PATENT PORCELAIN ROLLS.

MANUFACTURED EXCLUSIVELY BY

# EDW. P. ALLIS & CO.

MILWAUKEE, WIS.

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, '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.*

# EDW. P. ALLIS & CO.

[Mention this paper when you write to us.]

# The United States

# MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 2 }

MILWAUKEE, JUNE, 1882.

{ Terms : \$1.00 a Year in Advance.  
Single Copies, 10 Cents. }

## The Urban Roller Mills, Buffalo, N. Y.

We have the pleasure of presenting to our readers an illustration of the new URBAN ROLLER MILLS, 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, including the basement. It is 40x96 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 roller mills, each containing two pairs of rolls, and also the flour-bins.

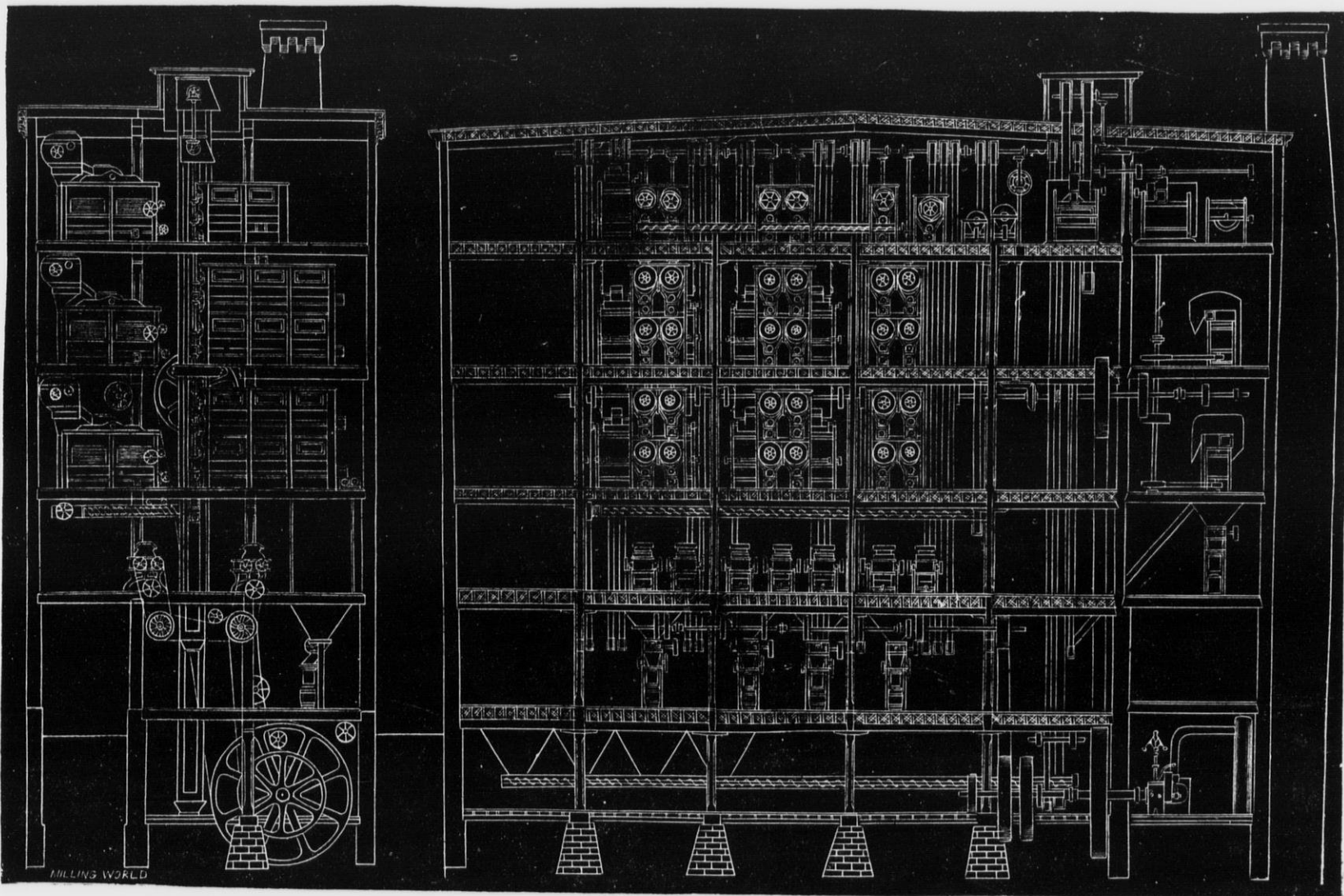
These roller mills are all driven by belt, being supplied with Holt's Belt Movement, and are also provided with a device for throwing the rolls apart, simultaneously, without interfering with the adjustment.

The third and fourth floors are given up to

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 directs it to such bins as he sees fit. The mill is heated with steam throughout, and

tinne to heat until finally a larger contact surface is ground out, large enough to admit lubricants. It often takes considerable time to effect this wearing and millers often lose their patience and swear. Often when the steps get in good running order, a settling of the building or a retrimming will get them out of order and the steps will heat again.

E. P. Allis & Co. have invented and patented a tram-step, which they warrant never to heat. This step contains a square steel button which cannot rotate. Its upper side is faced perfectly straight;



CROSS SECTION.

LONGITUDINAL SECTIONAL ELEVATION.

THE URBAN ROLLER MILLS, BUFFALO, N. Y.

ventilated. The main building stands back 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 25x30 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 oil-room. 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 fly-wheel, the latter weighing 20,000 pounds. The engine is a 200-horse power Reynolds-Corliss, built by E. P. ALLIS & Co., Milwaukee, Wis. The cylinder has a 22-inch bore, and the 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 engine-room is also a Worthington pump and a Berryman heater.

the bolting chests and purifiers; each floor 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-reels, two bran-dusters, one "Fir" centrifugal reel, from Messrs. Fiechter & Pruss, Minneapolis, 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 machinery. The cleaning machinery consists of one Barnard & Leas receiving-separator, one Richmond milling separator, one Kurth cockle-separator, two Richmond brush-machines, and one Howes, Babcock & Ewell magnetic separator.

The building on the grinding floor is connected by a tram-way with a three-story brick building which Messrs URBAN & SON are now putting up on Oak Street. This building is 40x90 feet, and will be used as a store. Howard elevators operated by steam will be placed in both the main building and the store. A covered drive-way 10 feet wide extends from Ellicott to Oak Street on the north side, allowing flour and grain to be easily handled, and coal to be dumped directly in front of the boilers. A standing pipe runs through the main building from top to bottom, with connections for hose on each floor, so that in case of fire the mill

the walls are painted white. From 20 to 25 men are employed.

[Written for the UNITED STATES MILLER.]  
**Plain Talks About Milling.**

By RICHARD BIRKHOLZ, M. E.

(Continued from May number.)

The steps for large and heavy, fast running upright shafts are often very troublesome, particularly when new. They are often sources of loss to the miller owing to the stoppages made necessary by their getting out of order and no amount of oil will keep them cool at times. It often puzzles the most skilful practical mechanic to ascertain what causes a sudden heating of the steps.

The difficulty generally arises out of too small bearing surface afforded by the convexity of the touching surfaces of both the steel point of shaft and the button.

This must be resorted to, to get a square bearing in case the step should not stand perfectly level or in case the building or foundation timber of such steps should begin to settle. When shafts are not heavy and do not run more than 40 revolutions per minute, but little trouble will arise, but when the two convex surfaces of the shaft and button, touching each other at *one point* are pressed together so tightly that no film of oil intervenes—the heating is unavoidable. The steps will con-

its lower side is turned a *calotte*, like a section of a sphere. The button is placed in the bottom of the pot, laying upon a faced plane; above this square button are placed one or more round buttons, faced straight on both sides. The bottom face of steel point is also plane. A hole is drilled diagonally through the square button and in the centre a hole is drilled from the top-face down until it meets the diagonal hole. From this hole radially, four grooves are filed in the face with a round file, deepest near the centre and gradually vanishing about half way between the centre and sides of the square. Both round buttons are also provided with center holes and radial furrows on the upper faces. The rotation of the point carries along the buttons—upper one fastest, the motion between frictional surfaces being thus gradually reduced. When the shaft makes less than 100 revolutions per minute, one round button only is laid on. By the rotation of point and buttons the oil is thrown out centrifugally and a new supply is obtained by the suction through the center hole. The whole combination works like a centrifugal pump. It is plain that this step will always keep cool as it is constantly well oiled. It has a large surface and any variation caused by settling of steps is equalized automatically by the rolling of the square button to suit. The point is guarded

(Continued on page 22.)

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The United States Consuls in various parts  
of the world who receive this paper, will please  
oblige the publishers and manufacturers advertis-  
ing therein, by placing it in their offices where it  
can be seen by those parties seeking such informa-  
tion as it may contain. We shall be highly grati-  
fied 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. BOULT, Esq., of the Riverside Mill  
Co., of Appleton, Wis., called during the  
month.

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

THE total shipments of flour from San Fran-  
cisco to foreign countries during the month  
of April were 90,413½ barrels, valued at  
\$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  
Japan valued at \$7,634.47.

THE grain trade of Russia is said to be  
badly demoralized. This is a direct result of  
Russian persecution of the Jews who con-  
trolled the trade to a great extent.

WE have received O. J. Bollinger's Water  
Wheel Catalogue for 1881, York, Pa. It is a  
handsome catalogue, full of information for  
millers. All users of water wheels should  
write to him for a copy.

THE Australian wheat crop is very short.  
Cargoes have been purchased from California  
for Melbourne and Adelaide, and there seems  
to be a probability 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.  
The lot consisted of 100 sacks and was sold  
for \$4.50 per bushel. It came from Johnson  
County, Arkansas, and was consigned to  
S. W. Cobb & Co.

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 bed in  
the dark.

THE Anti-Chinese bill has become a law.  
The bill prohibits immigration of Chinese  
to this country for ten years. Chinamen  
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  
the whole matter by "boycotting" the Chinese;  
refusing to employ them or to purchase goods  
of their manufacture. If this plan had been  
adopted unanimously the steamers bound  
for the "Flowery Kingdom" would soon have  
been crowded with homeward bound China-  
men. 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 known  
manufacturing institutions here are the  
Reliance Works of Messrs. Edw. P. Allis &  
Co.; The Cream City Iron Works of Filer,  
Stowell & Co.; The Cockle Separator Manu-  
facturing Co.; Messrs. Birge & Smith, mill-  
builders, etc.; The Milwaukee Dust Machine  
Company and Messrs. Weisel & Vitters, En-  
gine builders, etc. The most extensive mill-  
building and furnishing establishment prob-  
ably in this country is the one first named,  
but all of the others are doing an extensive  
and profitable business. Milwaukee has  
great advantages which will certainly make  
it one of the great manufacturing centres of  
the country. To those about to embark in  
the manufacturing business we would say,  
that they will do well to examine Milwaukee's  
advantages before locating elsewhere.

MR. JOSEPH NIMMO, jr., of the Bureau of  
Statistics, reports that the exports of domes-  
tic breadstuffs during March amounted to  
\$12,404,735, against \$22,301,161 for the same  
month in 1881, or a decrease of over 45 per  
cent. The total values for the exports during  
the three months ended March 31 of each of  
the years named were respectively \$35,557,452  
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 bread-  
stuffs was \$147,701,367, against \$204,729,787  
for a like period in the preceding fiscal year,  
a loss of about 25 per cent. The exports of  
tallow and provisions fell off about 50 per  
cent in March, 1882, as compared with  
March, 1881, and about 33½ per cent during  
the three months ended March 31, last, as  
against the same three months in 1881. For  
five months ended March 31, these exports  
fell off nearly 25 per cent, and for eleven  
months ended with same date they decreased  
about 22 per cent.

## Bashful Millers.

We have been present at many meetings  
of millers at their state and national meet-  
ings and have often regretted that so few  
of those present ever made their voices heard.  
This ought not to be the case. As a general  
thing, so far as our observations have exten-  
ded, three or four gentlemen had to run the  
meeting, do the speaking, make the motions,  
etc., during the sitting of the convention, but  
the moment the convention was adjourned  
every miller in the room would turn sociably  
to his neighbor and enter into cheerful con-  
versation conveying to each other in this way  
many beneficial ideas which ought to have  
been brought before the convention as a body.  
More than this, we have known a miller to  
attend a meeting and after it was all over say  
that "two or three fellows run the machine  
just as they wanted to." We asked him why  
he did not pitch in and help run it. "Oh! I  
don't know" he replied, and changed the sub-  
ject. Every flour mill owner in each state  
should become an active working member of  
the state association, should be present at the

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 represen-  
ted. Such an association would be a financial  
benefit to every individual mill in the state,  
great or small and the expense of it to each  
miller 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. Wash-  
burn breathed his last at Eureka Springs,  
Ark., 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, but emigrated to Wisconsin, then  
a territory, in 1841 and commenced the  
banking business at Mineral Point. He re-  
moved from there to LaCrosse and was elec-  
ted to Congress in 1854, where he remained  
until the war broke out in 1861, when he re-  
signed and entered the army at the head of a  
cavalry regiment which he raised. After  
serving four years he returned home a Major  
General and was immediately again elected  
to Congress, where he remained until 1871.  
He was then elected Governor of Wisconsin.  
This was the last public office he held, his  
term as Governor expiring in 1873.

Gen. Washburn's name was known in milling  
circles throughout the world as owner of the  
great Washburn flouring mills in Minneapo-  
lis. From his various investments it is esti-  
mated that he left at his death an estate  
worth more than \$2,000,000. Among his  
great gifts to Wisconsin is the Washburn ob-  
servatory at Madison which cost upwards of  
\$100,000. He also presented his magnificent  
country seat called Edgewood, near Madison,  
to be used as a reform school for girls. He  
was a great-hearted, charitable, honorable  
man and his country mourns to lose him.

## Cornell University and Mechanic Arts.

In 1870, Hon. Hiram Sibley, of Rochester,  
N. Y., provided for the erection of a suitable  
building for the department of Mechanical  
Arts of the Cornell University, at Ithica, N.  
Y. He also gave ten thousand dollars for in-  
creasing its equipment of tools, machines,  
etc., and has since made a further gift of  
thirty thousand dollars for the endowment of  
the professorship of Practical Mechanics and  
Machine Construction. Still later he provid-  
ed means for erecting and fitting up a brass  
and iron foundry, and a blacksmith shop.

Closely connected with the lecture-rooms  
are the rooms for freehand and mechanical  
drawing, the designing of machinery, and  
pattern-making, and the machine shop. The  
shop practice embraces work requiring the  
use of all hand tools and the machines em-  
ployed in the ordinary machine shops.

Each student in the department is required  
to devote two hours a day to work in the shop;  
but such students as have, before entering,  
acquired sufficient practical knowledge, are  
admitted to advanced standing. Attendance  
is required upon ten lectures or recitations a  
week, or their equivalent, in addition to two  
hours daily drawing, two hours daily shop-  
work, and the passing of the examination at  
the close of each term. The complete course  
occupies four years.

The machine shop is used for the sole pur-  
pose 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 gradu-  
ating scales and circles, and for working vari-  
ous forms and shapes.

In addition to the hand and lathe tools of  
the usual kind there are tools of the greatest  
accuracy, consisting of standard surface-  
plates, straight edges, and squares of various  
sizes, a standard measuring machine, measur-  
ing from zero to twelve inches by the ten-  
thousandth 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  
molding, casting, and forging. The cupola  
used is one of Colliau's improved, with a  
capacity of melting one ton of iron per  
hour.

For the purpose of instruction in experi-  
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 Thomp-  
son's steam-engine indicators, and Amster's  
planometer; Schaeffer & Budenberg's revolu-  
tion counter, steam-gauges, injector, inspira-  
tor, pop-valve, steam pump; Baldwin's link  
and valve motion, experimental valve motion,  
together with a large collection of brass, iron,  
and wooden models instructive and mechani-  
cal 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 repre-  
sentative 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  
way so far west as Wyoming. He loves the  
sea 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-  
tive apparatus, and is more or less permeat-  
ed with salt.

Codfish on toast is not as expensive as quail  
on toast.

The codfish ball is made of the shattered  
remains of the adult codfish mixed with the  
tropical Irish potato of commerce.

The codfish has a great wealth of glad un-  
fettered smile. When he laughs at anything  
he has that same wide waste of mirth and  
back teeth that Mr. Talmage has. The Wy-  
oming codfish is generally dead. Death in  
most cases is the result of exposure and loss  
of appetite. No one can look at the codfish  
of commerce and not shed a tear. Far from  
home with his system filled with salt, while  
his internal economy is gone, there is an air  
of sadness and homesickness and briny hope-  
lessness about him that no one can see un-  
moved.

It is in our home life, however that the  
codfish makes himself felt and remembered.  
When he enters our household, we feel his  
all prevailing presence, like the perfume of  
wooden violets, or the seductive odor of a  
dead mouse in a piano.

Friends may visit us and go away to be for-  
gotten with the advent of a new face, but the  
cold, calm, silent corpse of the codfish can-  
not be forgotten. Its chastened influence per-  
meates the entire ranch. It steals into the  
parlor like an unbidden guest and flavors the  
costly curtains and high-priced lambrequins.  
It enters the dark closet and dallies lovingly  
with our swallow-tailed coat. It goes into  
your sleeping apartment and makes its home  
in your glove box and handkerchief case.

That is why we say it is a solemn thing to  
take the life of a codfish. We would not do  
it. We would pass him by a thousand times,  
no matter how ferocious he might be, rather  
than take his life, and have our happy home  
haunted by his unholy presence.—Laramie  
Boomerang.

## Items of News.

A 125-barrel roller mill using rolls for reduc-  
tion purposes and for flouring middlings and  
finishing low grade (rolls exclusively) is being  
built at Chattanooga, Tenn., for C. C. Shelton,  
proprietor of the well-known "Citico Mills."  
Nurdyke & Marmon Co., of Indianapolis, Ind.,  
furnish the entire machinery.

LOUISVILLE, Ky., is about to redeem its repu-  
tation for good flouring mills, in the enterprise  
of Mr. C. M. Slocum, a well known miller of  
Mt. Sterling, Ky., who is about to build a four-  
run new process flouring mill there, having  
placed his order for the entire outfit with Nor-  
dyke & Marmon Co., of Indianapolis, Ind.

THE plans for the new Excelsior Flouring  
Mill at Minneapolis, Minn., have been com-  
pleted. The building will be of stone, 40x105  
feet, 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 power.  
The daily capacity will be 800 barrels.

Hicks, Brown & Co., of Mansfield, Ohio  
are increasing their capacity to 400 barrels  
and 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's  
Patent Porcelain Rolls on the middlings.  
Edw. P. Allis & Co., of Milwaukee, have the  
order.

**The Positive Adjustment and Automatic 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 over three years, in which time the inventor, Mr. S. P. Walling, a practical miller and millwright, has put in operation a large number of them and with the best results. He has taken out several patents on it and thoroughly perfected its various points, so that in offering 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 fixes the distance between the buhrs and renders it impossible for them to touch each other 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 and adjustable weight so any desired pressure 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 it through and after it has passed come back to exactly the same point and continue their work. Should the material accidentally be fed into the buhrs too fast they will open enough to save clogging or throwing off the belt. There is a perfect setting device at each end of the spindle, but the set at the step or lower end of the spindle 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 the lower side bearing box and not on the steel plug in the lower end of the spindle. This steel plug simply carries the weight and is subject to no side strain. The columns are 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 noticeable 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 buhrs together as in other portable mills. The upper buhr rests on rubber cushions so that tramming is rendered very easy and perfect. 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 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 rubber cushions so that one point can be raised or lowered without varying the others. With four points, when one is raised or lowered it 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, buckwheat, corn, feed, plaster, paint, coal facings and all kinds of minerals usually ground in buhr stones, the manufacturers claim that they have no equal, as they run to a positive point with an automatic adjustment and are 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, Messrs. Brewster Bros. & Co., Unadilla, N. Y.

**The Brewster Buck-Wheat Refiner.**

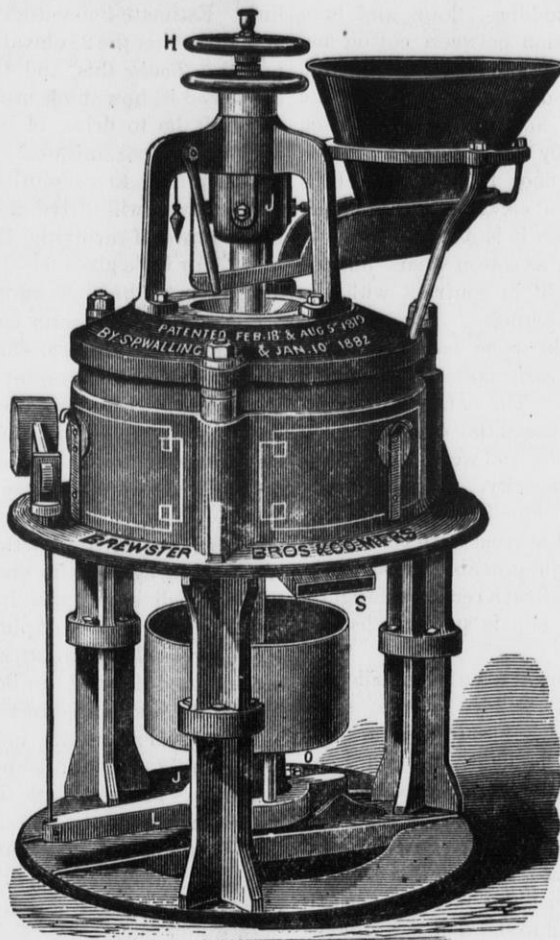
While the mechanism for the various processes of wheat-flour manufacture have been the subjects of much inventive thought and study, and while the past few years have witnessed marvelous and radical changes therein, the manufacture of other cereal food products (especially buck-wheat flour), have not been considered of so much importance until of late years. Now, buck-wheat flour is known to be a healthy and nourishing food, when

properly made, and the Brewster process is 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 Brewster machinery, and if our grandfathers could only see the method of making buck-wheat flour now, and the great excellence of the 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 presenting on this page, an illustration of Brewster's Celebrated Buck Wheat Refiner, which has met with the greatest favor amongst millers making the manufacture of buck-wheat flour either a speciality or a branch of their business. These machines are furnished with French buhr stones to crack and hull the buck-wheat, which after long experience it has been found can be done better in this, than in any other way. It is claimed that 50,000 bushels of buck-wheat may be passed between the stones before it is necessary to redress them. The buhrs run about an eighth of an inch apart, thus hulling and leaving a large portion of the meats of the buck-wheat kernels whole. The buhrs are adjusted by a single touch when running, thereby always doing good work. The products from the buhrs are divided into five grades, four of which are purified with air currents (suitable to size and weight) and each blast of air is controlled independent from the others. The product of the upper screen is composed of hulls and a little whole grain. The hulls are removed by an air current and the whole kernels re-

perfectly and without waste. The bran drawn from the different grades is repurified, and anything worth saving is returned to the buhrs.

The machines are furnished with tight and loose drive pulleys, counter-balance screens, steel madril fan and a perfect feeding device, so 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 substantially built of selected materials being constructed with especial reference to the requirements of millers and the work they have to perform. These Refiners are manufactured by MESSRS. BREWSTER BROS. & Co. of UNADILLA, N. Y., a firm well known to most millers to be rapidly growing into favor with many mill-furnishers. They will cheerfully answer all correspondence addressed to them about milling machinery, and especially about machinery for the manufacture of buck-wheat flour.

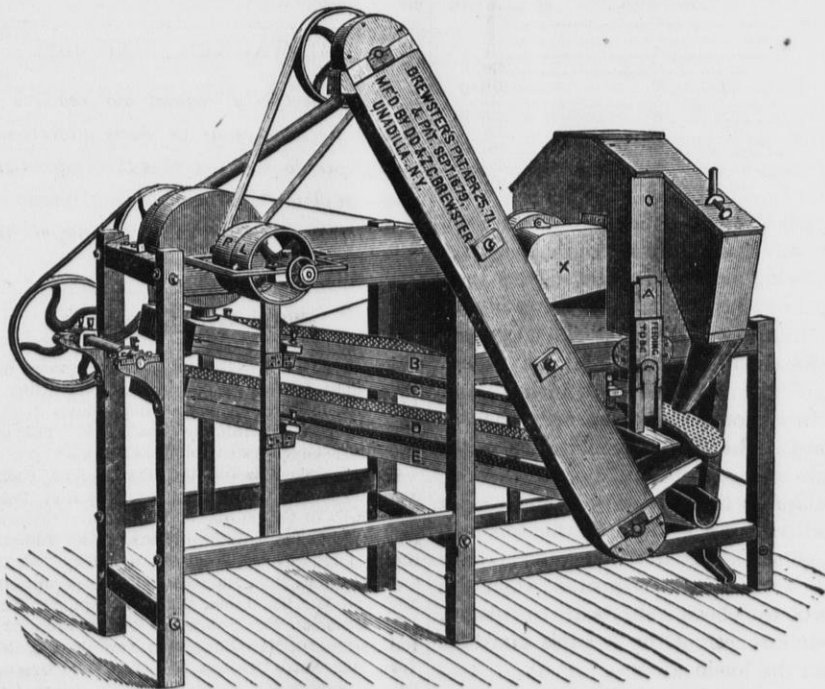


POSITIVE ADJUSTMENT AND AUTOMATIC MIDDINGS MILL.

ALL Europe is coming over Or will, if the present rate of immigration continues. By and by the question will be, What shall we do with all these people? or, rather, what will they do with themselves? *Chicago Journal.* Or rather, what will they do with us?

**A Popular Illustration of the Magnitude of England's Annual Production of Coal.**

Sir Henry Bessemer, the famous inventor, has addressed to the youths of England, through the medium of the *London Times*, a letter in which he strives to convey to them an idea of the quantity of coal annually produced in England. As our own country produces fully one-half the quantity, his popular



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 account 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. Each 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 the 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 reality—it 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 endeavored in a pictorial form to convey to

the mind's eye of my young friends something 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 itself inaccessible to my young friends, we fortunately have its base clearly marked out in the metropolis.

When Inigo Jones laid out Lincoln's-inn-fields, he placed the houses on opposite sides of the square just so far from each other as to enclose a space between them of precisely the same dimensions as the base of the great pyramid. Measuring up to the front walls of the houses, this space is just equal to eleven acres and four poles. Now, if my young friends will imagine St. Paul's Cathedral to be placed in the center of this square space, and having 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 to extend from the top of this flag-staff, each one terminating at one of the four corners of the square and touching the front walls of the houses. We shall then have a perfect outline of the pyramid of exactly the same size as the original. The whole space enclosed within these diagonal ropes is equal to 79,881,417 cubic feet, and if occupied by one solid mass of 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 to spare.

Higher up the Nile, Thebes presents us with another example of what may be accomplished by human labor. The great temple of Rameses, at Carnac, with its hundred columns of 12 feet in diameter, and over 100 feet in height, can not fail to deeply impress the imagination of all, who in their mind's eye, can realize this magnificent colonnade. 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 altitude of 7,000 feet.

But there is yet another great work of antiquity which our boys will not fail to remember 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.

MESSRS. HULBERT & PAIGE have recently issued the following circular, which explains itself:

PAINESVILLE, O. May, 1, 1882.

On and after this date the firm of Hulbert & Paige will be known, and the business conducted under the name of THE PAIGE MANUFACTURING COMPANY. Please note the same on your books. Soliciting your good will and continued patronage for the Company, we remain Yours Very Respectfully,  
HULBERT & PAIGE.

(Continued from front page.)

sideways by four adjustable babbitt 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 babbitt 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 plum-bago. Treated in this manner they will work with little friction and will last a great length of time.

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 core-spur. Owing to the great friction the loose 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.

I do not favor double belts, and always prefer 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 not hesitate to run belts up to a velocity of 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-running 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 increase the "life" of leather belts, and 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 principally for driving the roller machines. 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 those roller mills are bent in two directions right along, and the thicker and the stiffer the belts, the more power is lost by bending them in following the curvatures of the four pulleys over which they pass. Rawhide belts would be well adapted for roller mills if they would not stretch so much when new, and get stiff, unmanageable 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 would not penetrate through the flour-paste coat which had grown on or into the belt. So, rawhide belting was gradually replaced by strong, single oak-tanned belting.

In modern mills the wheat is divided into many different components, which must all be treated separately, and consequently a 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 finished stuff, swells in size three times, that all the 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 contain say one 7 inch belt wheat elevator, twenty-six 4 inch belt elevators, besides the 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 desire to have all elevators for intermediate 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 insufficiently than to be prevented from delivering the manufactured product. There are too many elevators to be looked after in a modern mill and one cannot afford to employ 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 out too rapidly when brought in contact 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, otherwise 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, Wis., who indeed takes great care to turn out a cup showing unquestionable good workmanship, which he sells at a reasonable figure. His NORTHWESTERN cup is strongly banded and will last.

Elevators always ought 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 can spout equally as well into the front of the boot (the ascending side) as into the back and sides of the boot; in the latter case the millwright 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" considerably, and I have, guided by my experience, made the following table of speeds at which the elevators will discharge well. The cups are assumed to be 16 inches from underside to underside.

Diameter of pulley.	Maximum Revolutions.	Maximum belt speed in feet.
24 inches	44	276
26 "	46	315
28 "	47	344
30 "	47	370
33 "	48	410
36 "	47	441
40 "	46	480
45 "	45	538
54 "	40	590
60 "	37	620
66 "	35	660
72 "	32	600

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 wheat. Middlings, flour and bran elevators, if 20 inches in diameter, ought not to run faster than 42 revolutions; if 24 inches in diameter, they should not be run faster than 40 revolutions. The shafts for elevators ought 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 shafting, must be but little regarded when the thickness of the elevator shafts are calculated. The lateral strength of the shaft, is taxed far more than the torsional.

For the benefit of the millwrights reading this, I will give a reliable list of shafting theoretically and practically tried. I computed it and made it short and easy.

SPEED OF SHAFT, 100 REVOLUTIONS PER MINUTE.		
1 3/4 inch rolled shaft transmits	5 horse power,	
2 "	7 "	"
2 1/2 "	11 "	"
3 "	14 "	"
3 1/2 "	17 "	"
4 "	25 "	"
4 1/2 "	35 "	"
5 "	40 "	"
5 1/2 "	50 "	"
6 "	60 "	"
6 1/2 "	80 "	"
7 "	140 "	"
7 1/2 "	150 "	"
8 "	250 "	"
8 1/2 "	350 "	"
9 "	450 "	"

This table can easily be memorized up to 4 inch shafting. Whatever the shaft runs more or less than 100 revolutions can be easily proportioned.

EXAMPLE: A 3 1/2 inch shaft makes 150 revolutions per minute, how much power will it transmit?

A 3 1/2 inch shaft at 100 revolutions as seen in the table above, transmits 40 horsepower; then 3 1/2 at 150=40 plus 1/2 of 40=60 horsepower.

EXAMPLE: A 4 inch shaft running 40 revolutions per minute, will transmit how many horse power?

A 4 inch shaft at 100 revolutions transmits 60 horse power, at 40 it will transmit forty-one hundredths, or four-tenths of 60= to 24 horsepower.

For elevator shafts figure as follows—The line runs 40 feet, twenty eight elevators, with belts averaging 4 inches in width, are on the line. Estimate 4 elevators to one horsepower and altogether the 28 elevators require 7 horsepower. Double this, and the question to be answered is, how thick must the first length of shaft be to drive 14 horse power at 40 revolutions per minute? The answer is; a shaft running 40 revolutions and driving 14 horse power will drive 2 1/2 as many, or 35 horse power if revolving 100 times per minute. Our table gives us 3 1/2 inches; that is the diameter of the first length. Towards the other end, this diameter can be decreased to 2 1/2 inches. No elevator shaft ought to be less than 2 1/2 inches in diameter.

Up to a few years ago, flour mills contained but very few pulleys and most of them were either wood-rimmed or solid wood pulleys; maple boxes were also used on most of the shafts. Now, owing to higher wages and prices of lumber, and furthermore on account 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 running less than 75 revolutions per minute, maple boxes may be used, but the insurance companies encourage the use of babbitt boxes for slow shafts, so that the better mills of to-day run their elevator shafts, driving bolt-uprights, etc., in babbitt boxes which cost but little more than maple ones.

(To be continued.)

UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

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To American subscribers, postage prepaid.....\$1 00 To Canadian subscribers, postage prepaid..... 1 00 Foreign Subscriptions..... 1 50 All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker. Bills for advertising will be sent monthly, unless otherwise agreed upon. For estimates for advertising, address the UNITED STATES MILLER.

[Entered at the Post Office at Milwaukee, Wis., as second class matter.]

MILWAUKEE, JUNE, 1882.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. 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 1, 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 the United States are distributed as follows:

Alabama, 388; Arizona, 17; Arkansas, 234; California, 209; Colorado, 52; Connecticut, 309; Dakota, 44; Delaware, 96; District of Columbia, 7; Florida, 81; Georgia, 514; Idaho, 18; Illinois, 1258; Indiana, 1163; Indian Territory, 3; Iowa, 872; Kansas, 437; Kentucky, 642; Louisiana, 41; Maine, 220; Maryland, 349; Massachusetts, 363; Michigan, 831; Minnesota, 472; Mississippi, 297; Missouri, 942; Montana, 20; Nebraska, 205; Nevada, 10; New Hampshire, 292; New Jersey, 445; New Mexico, 28; New York, 1942; North Carolina, 556; Ohio, 1462; Oregon, 129; Pennsylvania, 2786; Rhode Island, 47; South Carolina, 205; Tennessee, 620; Texas, 548; Utah, 129; Vermont, 231; Virginia, 689; Washington Territory, 45; West Virginia, 404; Wisconsin, 780; Wyoming, 3; Total, 21,356.

The directory is printed from new Burgeois type on heavy tinted paper and is substantially bound. It makes a book of 200 large pages. The post offices are alphabetically arranged in each state, territory or province. The name 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 indispensable to all business men desiring to 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, publisher of THE UNITED STATES MILLER, Milwaukee, Wis.

THE leading millers in Spain are commencing to introduce roller mills and quite a number have already been ordered from European and American manufacturers.

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

GEO. T. SMITH, of middlings purifier fame has returned to his native home and has already taken out another patent for an improvement of value to the Smith Middlings 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 bushel showing the weight of from 1 pound up and from 50c per bushel to either one, two or three dollars. Do you know where we can find a work of the kind? if so, do inform us.

If any of our readers know of such a table being 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 complete flour trade directory ever published and is indispensable to any mill-furnishing dealer. The work can be obtained at the office of the UNITED STATES MILLER. Price \$10.00 post paid to any address.

Market Review.

Prepared expressly for the "United States Miller," by Messrs. E. P. Bacon & Co., 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 market 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 for April delivery in that market. The result on both of these subjects has been unfavorable to 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 of either, unless otherwise specified. Quotations from that date will consequently be based upon the inferior of the two kinds of Wheat in market price. No change, however, will be made in this market, and contracts and quotations will be for No. 2 Spring as heretofore.

The arbitration Committee to whom was referred the determining of the true value of 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 expectation being from \$1.35 to \$1.38. This is regarded as removing the principal restraint from short-sellers and putting the market largely in their hands, buyers being denied the right of holding sellers to their contracts, in that market. Here, however, sellers will be held to the strictest accountability as heretofore.

A steady milling demand has prevailed through the month, which has been more marked at Chicago than here, from the fact that prices there have ruled from 4 to 6c. lower than here. The stock in store here 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 re-action from the decline of a few days since for cash and early future deliveries, closing on noon Change at \$1.30 1/2 for cash or June delivery, and \$1.29 1/2 for July. Later deliveries, however, receded still further, closing at \$1.14 for August. Crop prospects in the winter wheat sections continue highly favorable and now promise a larger yield than the remarkable crop of 1880. In the spring wheat section a largely reduced acreage has been sown, probably not to exceed 75 per 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.

## The Various Processes of Grinding.

FROM EMERICH PEKAR'S REPORT TO THE HUNGARIAN GOVERNMENT.

(Translated from the *Ungarische Muehlen Zeitung* 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 économique" and in the "mouture ronde," practiced in Saxony, Bohemia, and more especially in the Vienna district, where, in grinding the hard Hungarian wheats, this system originated in the second half of 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 consecutive breaking of the wheat in order to make middlings, and from them flour, was reserved for Hungary. In 1821 Helfenburg, of Rorschach, Switzerland, attempted to surmount 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 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 hostility shown to it by the Pesth and Ofen 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 Walzmuehlen" Company.

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 adoption of this system exists in the steely nature of our wheats, ripened by the hot sun of our rich Alföld 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 Komlossy 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 the roller process continued more and more to supplant the stones. The Hungarian miller, Johann Blum, of Ofen, was the leader in this progressive movement, followed by Heinrich Hagenmacher, at that time foreman in Barber and Klusemann's mill (now the Louise), and who later on became proprietor of a mill. On the basis of this process numerous large mills were established in Budapest and the provinces in the course of the decade from 1860. The process thus created was further developed. Already, in 1873, Ganz's works in Budapest turned out roller mills based on Wegmann's fundamental idea, and further extraordinarily developed by Mr. Mechwart. Karl Hagenmacher invented a middlings purifier superior to anything known until then in respect to the perfection of its work and capacity, and he brought 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 great responsibility, but with brilliant success. The late Josef Ullmann was also a pioneer in the sense that he opened up a market for our flours in distant foreign countries. 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 further, for our machinery, we now produce our own, and export besides a considerable quantity, for wherever our flour appears its excellence and freedom from bran testifies to the superiority of our system and its arrangements.

Leaving the minor and less important arrangements out of the question the numerous 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 countries which originally grew soft floury 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 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 retained. 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 firm 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 this divided into two other grades cannot be considered as a commercial article, as it is deficient both in quality and quantity.

In Great Britain efforts were made to extract a larger percentage of flour from the wheat. The native wheats there are comparatively poor in gluten, the flour is weak, and, consequent on the system of grinding, they contain bran.

The second principal system, a slow grinding one, as necessitated by the nature of the wheats, with brittle brans and steely endosperm, in the countries adopting it, was the middlings milling, high or Hungarian system of grinding, which was only developed at a later period on account of the difficulty in producing flour free from bran, but in its results it surpassed the other systems in an unexpected manner. The products of this system consisted originally 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 freedom from bran and other properties. The wheat which required this mode of treatment 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 it, is white, pure, and at the same time the 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 dark on 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 exhibitions of the world, the attention of interested parties was drawn to them, and our system of grinding was adopted in its entirety in Russia and Galicia, while in Minneapolis, the central point of the Northern States of the American Union, 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 further progress. We therefore find that the half middlings milling, which originated in Budapest, has been introduced to a greater 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, 8½ and 8¾, 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 accustomed to one old 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 system. 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 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 to 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.

(To be continued.)

## Grain Speculation.

CORRESPONDENCE BETWEEN A NEBRASKA LAD AND HIS CHICAGO UNCLE.

[From the Chicago Tribune.]

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 matter, 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 calves—or quite a herd of sheep with lambs; and Pa says I can 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, speculating 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 you could do it 'most as well as not. Steve Ashley—he's older than me, and the smartest boy round here—he says they don't pay all up 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 up five cents a bushel, I would make \$100. He ciphered it all out for me, just like a sum in arithmetic. I hear that it sometimes goes up 10 cents a bushel, and that would be \$200. I haven't said nothing to Pa about this, because he talks against spekelatin'—says it's like gambling.

I don't know 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 see which was ahead. My luck was on corn 'most all the time.

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 answer.

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 affectionate nephew.

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.

CHICAGO, April, 1882.—James Burns Jr., Lincoln, Neb.—MY DEAR NEPHEW: This is my first opportunity for answering your interesting letter, which came several days 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 a way as to please almost as much as if he said Yes. To do this with you may require a long letter. There may be forty reasons 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.



It is true I am in the grain business, but not in a gambling way. I send agents and money to country towns to buy grain and ship it here, where it goes into one of those 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 between 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 gain to farmers and dealers on advance would be \$2,500,000; which is a legitimate gain in money to the country. If this advance in the price was caused by general short crops and scarcity in provisions, so that the \$7,500,000 received for the crop would not buy so much other commodities as \$5,000,000 had done the former year, then, though an apparent gain, is in reality a loss to the country and the cause of harder times, though some individuals may have grown rich on the advance from 50 to 75 cents. Advance in prices does not always bring better times.

I think you are bright enough to see that an advance of 25 cents a bushel on 10,000,000 bushels of corn amounts to just \$2,500,000, and cannot by any honest figuring be made anything else; but I know many men who consider themselves bright, who believe that an advance of 25 cents a bushel 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. I will try to show you how they do it. They do not do it by buying and selling grain, but 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 receive.

You can see in the case suppose that \$2,500,000 is an actual gain in money to the country, 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 or set of men make in this way must be lost by some other man or set of men. That is exactly the case in all kinds of gambling—all the gains of one player must be losses to another. It is like playing marbles for keeps; you understand that.

In these fictitious deals in phantom grain, the gainer and looser do not trade together directly; if they did, each would know who gained what he lost, or lost what he gained, and future meeting on the street would not be so pleasant. But the trades are made through a broker, so that the parties who lose and gain do not know each other. Brokers 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 is well understood on both sides there is no real grain in the business.

This is the kind of trading you wish for, you may say. It is wrong for one to sell what one does not own and cannot deliver. But if you wish to buy what you don't want to take, you must buy of one who doesn't want to deliver. One is as bad as the other, and both are mere *betters*, instead of buyers and sellers.

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, believing 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 they had all sold, they would have gained (not made) \$6,000—but they would have gained it from the poor fellows they pretended to sell to.

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-

commodation of ladies who wish to speculate in grain privately. I presume he would serve boys also, if they are good boys and belong to the Sunday-School.

I want you to get this principle well fixed in your mind—namely: that all trades in which the gains on one side come and must come from losses on the other side, are gambling. All true trade is an advantage to both sides. The farmer sells his grain because he wants money to put into growing stock or crops; the buyer expects to make a profit for 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 "bucket-shops," where you can bet what the price of any kind of grain will be next month or next week, or in the afternoon, or to-morrow. 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 don't like the look or smell of the bucket-shops, you can find a respectable broker in a nice office, who will conduct your "bucket-shop 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. Now advertisements of all such schemes are excluded from the mails. Many states have tried to prevent "commercial gambling," but so far without success. 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 is not a bank-cashier in the country who could keep his place if it was known he speculated in grain. My advice is: Invest your money in colts, calves or sheep. You will gain more to let the lambs gambol on the prairie than to turn lamb yourself and gamble on the Board of Trade.

Faithfully, YOUR UNCLE JOHN.

#### Kentucky Millers' Association.

The Kentucky Millers' Association held their regular annual meeting in Louisville, Ky., May 4. The meeting was held in an apartment furnished by the Louisville Board of Trade. The following officers of the Association were present: W. M. Potts, Richmond, President; John E. Miles, Frankfort; Wm. Shaw, Paris; S. C. Kerr, Winchester and L. H. Nottagle, Lexington, Vice-Presidents, and W. G. Proctor, of Danville, Secretary 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 delegates responded to their names: W. E. Grubbs, Shelby City, W. N. Potts, Richmond; W. G. Proctor, Danville; J. W. Gilbert, Owensboro; J. W. Hackett, Louisville; C. C. Marble, Eminence, William Watts, Jessamine 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 Dishman, 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. P. Kerr, Winchester, Ky.; J. N. Miles, 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:

GENTLEMEN OF THE KENTUCKY MILLERS' ASSOCIATION: After another year has passed and gone, with all its vicissitudes, I trust and hope this convention will join me in returning gratitude to the Ruler of the Universe for permitting us to again meet under so favorable circumstances. And then I feel and think every member of this convention will join me, that it would be ungrateful in

us not to feel deeply thankful to the good citizens of our metropolis for their many acts of kindness extended to us. Louisville, the pride of our State, I must be allowed to say, I am proud of her, and I think every heart will thrill in unison with mine when reading the history of her, and then witnessing what she is to-day. I have 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 I should say, palaces, and the huge proportions of depots and machine shops of our system of railroads that bind our beloved South in ribs of steel. I feel proud of Louisville. It may be a weakness but I am not ashamed to confess it. Gentlemen, millers of Kentucky, we have met here, from, I hope, all parts of the State, entire strangers; and this is the strangest part that we are strangers, and I hope we will not long remain so to each other. We have met to get acquainted and confer for our mutual benefit; to tell of our wants our prospects, failures and achievements in our business. And I wish to impress on every one present that he, or they, have a work to perform to make this convention pleasant and profitable. I hold that no two intelligent millers can be together an hour without being benefited. Then when we have assembled the wisdom of the Kentucky millers, it appears that it must redound to their interest. At our last meeting there were four committees appointed, to make report at this time and place—one on the New Process of Milling, one on Tariff Rates on Railroads, one on Insurance and one on Grain. I hope those committees have been industrious, and have interesting reports on all those interesting subjects, and then I wish to have a free discussion and get all the information from millers and grain men here, and save time and expense to us, that we will not have all to incur, for at this time, when there is such a great revolution in milling, it would bankrupt any miller to try all the various methods. We can confer with each other and learn from each, I thought twenty-five years since that I knew all about milling, and with all the experience since, I now feel like I know very little, and the little I know I would very much dislike to see you getting at the same expense. Experience is a good teacher, but too costly to be indulged in, and I hope and am satisfied that many, if not all, will leave this convention very much benefited. I have labored for the last four years for our success, and it is in your hands and power to foster and care for it. We have a written constitution and by-laws, and our Secretary will be pleased to furnish every miller, mill-owner or others desiring a copy, and, after examining it to your satisfaction, I hope to have an accession to our forces. I want you to become members. The cost is very trifling in comparison to the benefits; a nominal sum—just enough to defray the necessary expenses. As our deliberations progress, and at the proper time, I want to see a goodly number avail themselves of the privilege of joining our little band of pioneers. I should call your attention to the Millers' National Association and its benefits, but I will leave that to abler hands. The Kings have had their day in the North and Northwest. The National Association, an indispensable power to measure arms with the giant, has like the shepherd boy, slain the monster and they will next turn their attention to other fields of labor. And I tell you it will be a day of calamity when they ascertain you are not members of the National Association. Who will fight all your battles, pay all the doctor's bills, and bind up and take care of the wounded. Gentlemen, I feel rather embarrassed under the kind treatment our friends have extended to us on this occasion, and I hope some one will move to appoint a committee to express our sentiments as to the many acts of kindness extended to us while custodians of the Falls City. May she live and prosper and her shadow never grow less. I think it is my duty to call your attention to a few subjects of interest connected with us. I desire there should be a committee appointed on the following subjects: On freights, on railroads and steamboats, on insurance, on milling, and on grain. We have before us a vast amount of labor. We are only now groping our way in darkness. I hope every miller here will enjoy himself and pass off the time pleasantly and profitably. I have, perhaps, said enough, and I will desist, and hear from you. I hope every miller or mill owner present will let us hear from him, give us his experience in mill machinery and his process, whether adverse or prosperous, join the association, enroll his name and post-office, and consider himself at home with us, and help to shape the destinies of our association, and have an influence in fixing the next and all subsequent places of meeting. We want to visit all parts of the State with our annual or called meetings.

The following new members were then elected: McAllister & Salle, Sanford; John White, Madison county; Jones, Ballard & Ballard, Louisville; George Deering & Co., Lancaster; John Dresher, Louisville; W. C. Smith, Louisville; E. Gripp & Sons, Louisville; J. T. McKenzie, Smithville; John Raidt & Co., Louisville; John H. Spillman, Garrard county; Ubank & Gilbert, Franklin; George M. Mullen, Whitesville; J. E. Mills, Greenville; W. T. Pyne, Louisville; J. G. Kirker, Louisville; C. C. Marble, Lancaster; Rodgers & Russell, Simpsonville.

Secretary W. G. Proctor then made his report as treasurer, showing all debts paid, and a balance on hand of \$6.15.

On motion a committee to revise the by-laws was appointed, with instructions to report May 5th.

The convention then adjourned to meet at 10:30 A. M. May 5th. That hour having arrived the meeting was called to order by President Potts, and after the reading of the minutes the roll was called, only a small number answering to their names. The first business in order was the election of new members, and the following names were proposed and received: Loving, Crutcher & Co., Louisville; W. L. Murphy, Louisville; Kentucky Flour Company, Louisville; J. C. Ameling, Louisville; A. Brandeis & Son, Louisville; G. W. Whipple, Louisville; Verhoff & Scradar, Louisville; W. H. Grainger & Co., Louisville; W. B. Crawford, Harrodsburg.

The next business in order was the election of officers for the ensuing year. Mr. W. C. Smith, of Louisville, arose, and in a neat little speech nominated Mr. Charles T. Ballard, of Jones, Ballard & Ballard, for Presi-

dent. Mr. Grubbs seconded the nomination, and 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 to be elected were four Vice Presidents. The following four gentlemen were elected by acclamation: First Vice President, W. C. Smith, Louisville; second Vice President, W. N. Grubbs, Henderson; third Vice President, W. S. Giltner, Eminence; fourth Vice President, J. N. Meyers, Frankfort.

Mr. Smith then nominated Mr. Proctor for re-election as Secretary and Treasurer, but that gentleman declined to serve, and nominated W. H. Wherritt, of Lexington, who was unanimously elected.

Upon report of the committee some amendments 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 engaged in of interest to all present. The standing committees on Freight, Milling wheat, Systems of Milling, and Insurance were then appointed by the President.

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 the 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 held next year.

#### The Squirrel Problem.

"A squirrel is up a tree and a man on the ground with a gun is trying to shoot it; but the squirrel persists in keeping on the opposite 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 between itself and the man. Now the problem is, 'Has the man been around the squirrel?' He has been around the tree with the squirrel on it, but has he been around the squirrel?"

The *Express* invited answers to this problem, and received twenty-seven of which fifteen say yes, the man does go around the squirrel, and twelve say no, he does not. A few have sent us their reasons, and two send figures demonstrating the problem. The following answers are printed:

1. Of course the man goes around the squirrel. He goes around the tree and everything on it.

2. 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 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 at opposite sides of circle—the horse at A would at every time going around the ring go around the inside half of B and that B returned the compliment

A(—X—)B

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 is 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 doesn'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 motion at the jute works of the Dolphin Mfg. Co., Paterson, New Jersey, and the finished product aggregates 4,144,748 pounds per annum. Six hundred hands are employed.

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 expected when the wheels of the great southern 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 ft., is reported to have come upon a hot spring, whose waters rushed forth in a column to a height of nearly 80ft. 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 Academy 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. Conte-Granchamps 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 kilometres 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 IMPROVEMENT** 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 secondary battery is to play a very important part in the practical adaptation of electricity to every-day uses, not only as a reservoir to supply power, light, etc., but as a regulator of the current.

A **GIGANTIC** scheme is on foot, said to originate from Mr. Edward Atkinson, which, if carried out, will abolish all the cotton warehouses in the South. It is claimed to be the purpose of the company of which Mr. Atkinson is reported to be the head, to establish ginneries at every accessible point to and on all railroad lines, purchase the planters' cotton 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 for the erection of gins and presses to manipulate all the cotton coming into the Atlanta market. Should the plan be feasible, a revolution will be wrought in the handling of the cotton crop.

**BELTING.**—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 Mechano-Technical Laboratory at Munich. In making a graphic representation of the results by setting the loads per square inch on a horizontal line and erecting verticals corresponding to the elongations at the different loads, the curves thus obtained show considerable difference for leather, india rubber, and cotton belts. All these materials stretch more at first, with light loads, than afterward. The lines, therefore, are more curved at the beginning, and afterward approach more to a straight 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 tests by Prof. Bauschinger is that india rubber and cotton belts are inferior to leather, not only as regards elasticity, but also as regards tensile 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 are not made with great care.

Duty of Capital to Labor.

In the course of an article on the above head the *Hartford Courant* says: We shall never be free from the class of ignorant, cheap politicians who seek to advance their own interests by arraying labor against capital, but their power for evil will be greatly lessened when our railroads and our leading manufacturing industries have adopted some system of recognizing and rewarding good service, by means of which each has secured the loyalty of its best men. That this is possible has been demonstrated repeatedly, although it must be admitted, in isolated cases. When it becomes more general, strikes will be rare occurrences; for the better class of laborers will recognize the fact that their employers would not call for reduction in wages if the interests of both employers and employed did not require it. When men know that prosperity for the employer brings an advance in wages without pressure, they will be more ready in a season of adversity to submit to a reduction without grumbling. There is unfortunately too much reason for the common belief that an increase of pay seldom comes until it is forced, no matter how good the times while the first excuse for reduction is improved with celebrity.

Things worth Knowing.

**PAINT FOR SMOKE STACKS.**—Linseed oil mixed with graphite is said to be a valuable paint for iron smoke-stacks. John Dent of Ore Knob, N. C. says he painted two iron smoke-stacks subject to the corrosive action of sulphurous acid fumes, with a mixture of this kind two years ago and they appear now to be as good as new.

**FLOUR PASTE.**—Flour, four ounces; water, 1 pint; nitric acid, 40 minims; oil of cloves, 5 minims; carbolic acid, 5 minims. Thoroughly mix the flour and water, strain through a sieve, add the nitric acid, apply heat until thoroughly cooked, and when nearly cold, add the oil of cloves and carbolic acid.

**POLISHERS' glaze** is not a varnish, but finish, applied after the work has been bodied-in in the usual way, and which saves the time and trouble of splitting off—small work especially. It is often applied with a brush, though some prefer a rubber, in which case it should be simply wiped on, and not rubbed. It is made by dissolving gum-benzoin in spirits. Fill a bottle about one-quarter up with the gum, broken small, and then fill with spirits and let it stand a few hours.

**THE ECONOMY OF HARD AND SMOOTH ROADS.** At a recent meeting of the Engineers club of Philadelphia, Mr. Rudolph Heving, the President presented some notes on the resistance to traction on streets, compiled from various authors who had experimented on the subject, in which he showed that if one horse can just draw a load, on a level, over iron rails, it will take 1½ horses to draw it over asphalt 3½ over the best Belgian, 5 over ordinary Belgian, 7 over good cobble stone, 13 over a bad cobble stone, 20 over an ordinary earth road and 40 over a sandy road.

**CEMENT FOR LEATHER BELTS.**—For making cement for leather belts, take of common glue and American isinglass equal parts, and place in a glue-pot. Add water to cover the whole. Soak ten hours. Then bring the mixture to a boiling heat, and add pure tannin, till the whole becomes rosy or like the white of eggs. Apply warm. Buff off the grain of the leather where it is to be cemented; rub the joint surfaces solidly together; let it dry a few hours and it is ready for use. If properly put together no rivets will be needed, as the cement is as strong as the leather.

The *American Machinist* says of the above "We have known ten dollars paid for a recipe for cementing belts, similar, but not quite equal, to this."

**RUBBER STAMP INK.**—The following proportions are said to give an excellent ink, which, while not drying up on the pad, will yet not readily smear when not impressed upon the paper. Aniline red (violet), 90 grains; boiling distilled water, 1 ounce; glycerine, half a teaspoonful; treacle, half as much as glycerine. The crystals of the violet dye to be powdered and rubbed up with the boiling water, and the other ingredients stirred in.

**THE STRENGTH OF WOODEN COLUMNS.**—Some important tests of wooden columns, says an

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 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 columns. 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. 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 column more than has heretofore been estimated. Reasons for exercising more caution in other respects in the construction and adjustment of wooden columns in buildings 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 product of Southern California. The total is as nearly double the 1880 export as possible, while it is 2½-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 improved machinery and dear labor can beat the backward cheap labor of Russia in the markets of the world. But Russia will not consent to be thus shouldered out even if the prices of wheat should have to go lower. The result would be not only lower prices, but increased consumption as well, so that the increased production of this coast would not go to waste. We make about 1,700,000 barrels of flour a year, most of which is consumed here and in the Pacific States surrounding us, such as Nevada, Arizona, Idaho, Montana and Colorado. Last year we exported nearly 800,000 barrels, leaving about a million barrels for consumption at home and in the territories. As our population increases we shall consume a correspondingly larger proportion of flour on this coast. The extension of the Southern Pacific and the opening up of connections 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 the last official accounts, is the tremendous decline in the flour exports from Atlantic ports. Although the American crop was so short 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 42,000,000 bushels of 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 American 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 array of merchant mills in that country, will not be again felt as heavily as before.—*Millers Gazette, (London.)*

"BEST IN THE WORLD."

GARDEN CITY

WHEAT BRUSH!



Gathmann's patent "inclined bristles" prevents all clogging when the brushes are run close together. This is the

ONLY DOUBLE BRUSH

Which can be set up close so that it will

Thoroughly Brush Wheat.

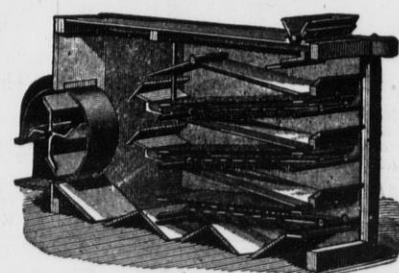
Guaranteed to IMPROVE COLOR of the FLOUR.

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

Middlings Purifier!



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!

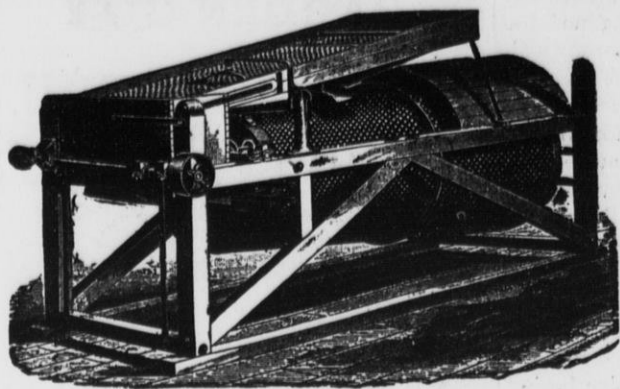
Which has long been acknowledged as the best made, and which has lately been further improved, making it now beyond competition. We make it up in the best style at short notice. Send for prices and samples.

Garden City Mill Furnishing Company,

CHICAGO, ILL.

Mention this paper when you write us.

# COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE. GENERAL MILL FURNISHERS



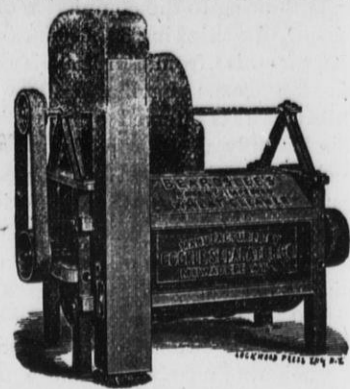
PLAIN COCKLE MACHINE.

## AND MANUFACTURERS OF IMPROVED COCKLE SEPARATORS

(Kurth's Patent,) Also built in combination with

### Richardson's Dustless Wheat Separators!

Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.



BEARDSLEE'S WHEAT CLEANER.

We will contract to furnish entire Wheat Cleaning Machinery for mills, and guarantee the best results.

Perforated Zinc at Bottom Figures.

Send for Illustrated Catalogue.

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 a DAILY LOSS OF MONEY in a mill. There is NO MACHINE IN THE MARKET which can stand comparison with ours.

Carbondale, Ill., Dec. 2, 1881.  
Cockle Separator Mfg. Co., Milwaukee.

Gentlemen:—Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work.

Yours respectfully,  
BROWN & WINFREY.

Perrysville, Ind., Nov. 24, 1881.  
Cockle Separator Mfg. Co., Milwaukee.

Sirs:—The combined machine I bought of you has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of.

Yours respectfully,  
B. O. CARPENTER.

Hixton, Jackson Co., Wis., Dec. 30, '81  
Cockle Separator Mfg. Co., Milwaukee.

Gents:—In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction.

Respectfully yours,  
W. T. PRICE,  
per D. G. THOMAS.

P. S.—I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat.

As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain  
Yours, etc.  
D. G. THOMAS.

Minneapolis, Minn. Aug. 22, 1881.  
Cockle Separator Mfg. Co.:

We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.

Yours truly,  
CAHILL, FLETCHER & CO.

La Crosse, Wis., July 30, 1881.  
Cockle Separator Mfg. Co., Milwaukee.

Gentlemen:—The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. I cannot see that it breaks the wheat or requires an unusual amount of power to run it.

Yours truly,  
WILLIAM LISTMAN.

Milwaukee, Wis., Aug. 23, 1881.  
Cockle Separator Mfg. Co.

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 reference, and to any party calling on us we will be pleased to show the machine in operation.

Yours truly,

NEW ERA MILLING CO.

Pott's Patent Automatic Feeder!

The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width. Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

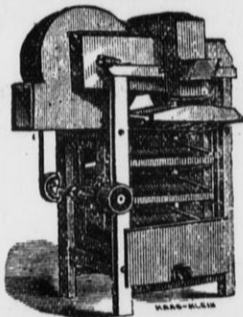
# HOWES, BABCOCK & EWELL,

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

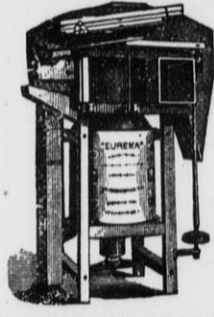
Established 1856.

MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



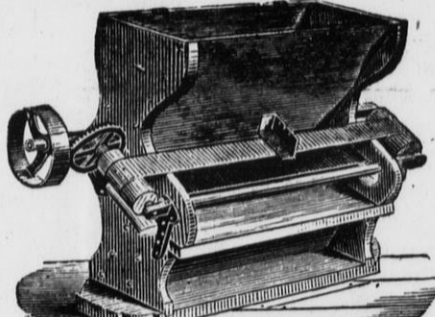
The Eureka Separator

occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



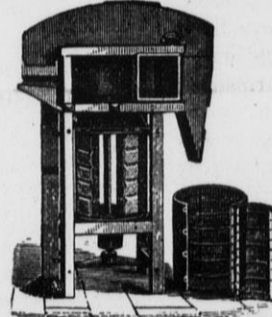
The Eureka Smut and Separating Machine.

A combined Smut and Separating Machine, having thorough ventilation. Over 14,000 of these Machines are now in use.



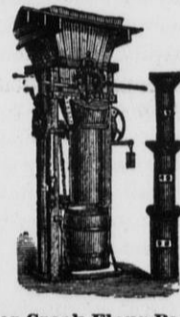
Eureka Magnetic Automatic Separator.

Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



Eureka Brush Finishing Machine

Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer.

Will pack whole and half barrels, and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent creveling steel coil spring regulating the packing to perfection.

GENUINE DUFOUR AND ANCHOR BRAND BOLTING CLOTHS. FULL STOCK ALWAYS ON HAND. MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER.  
Office and Warehouse in England, 16 MARK LANE, LONDON. E. C. Ger. Agency for Australian Colonies & New Zealand, THOS. TYSON, MELBOURNE, VICTORIA.

## 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.

THE UNITED STATES MILLER for one year and a copy of this book will be sent for \$4.00. Address,

UNITED STATES MILLER,  
Milwaukee, Wis.

## EUREKA MANUFACTURING CO.,

Manufacturers and Sole Proprietors of the

### BECKER BRUSH,

Galt's Combined Smut and Brush Machine.

The Only Practical Cone-Shaped Machines in the Market, and for that Reason the Best.

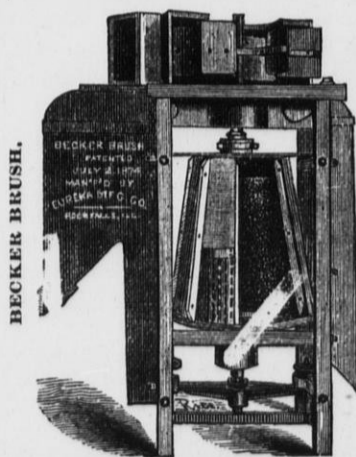
ADJUSTABLE WHILE IN MOTION.

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 milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, the users to be the judges of the work. For price and terms apply to

EUREKA MAN'G CO., ROCK FALLS, ILL., U. S. A.

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BECKER BRUSH.

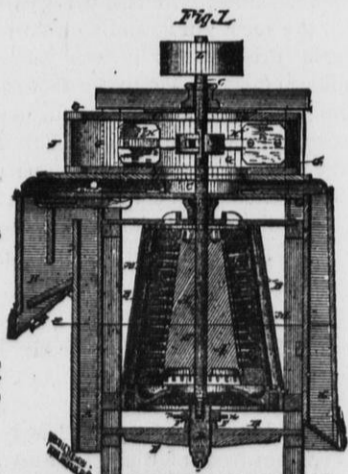


Fig. 2

Galt's Combined Smut and Scourer.

# 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, substantially 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 kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice.

NO OTHER engine builder 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.

WM. A. HARRIS, Proprietor.

[Mention this paper when you write us.]

# A NEW PROCESS ROLLER MILL! FOR SALE!

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 WM. C. DURANT,

"CITY MILLS,"

MILWAUKEE, WIS.

# STEEL CASTINGS

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

True to pattern, sound and solid, of unequalled strength, toughness and durability.

An invaluable substitute for forgings or cast iron requiring threefold strength.

Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Locomotives, etc.

15,000 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. Circulars and price list free. Address,

CHESTER STEEL CASTINGS CO.,

407 LIBERTY ST., PHILADELPHIA, U. S. A.

Works, CHESTER, PA. [Mention this paper when you write us.]

## TRADE NOTES.

HURST BROS., Salem, Oregon, have purchased 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. ALLIS & Co., of Milwaukee, are building a 50x60 Reynolds-Corliss cylinder for compounding Edw. Sanderson's engine.

CAPITOL CITY MILLS, 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 & Schaubler, Mascoutah, Ill., were from E. P. Allis & Co., Milwaukee.

J. J. KNOEPLER & Co., of Milwaukee, ordered E. P. Allis & Co., to improve their present engine by putting on a 20x36 Reynolds-Corliss Cylinder.

JOHNSON & CUNNINGHAM, of Centralia, Ill., have just purchased of E. P. Allis & Co., of 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 pairs 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. Noiseless Roller Mills.

GIBSON & 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. ALLIS & Co., have just received an order from the Salem Mill Co., of Salem, Oregon, for 4 pairs of Wegmann Pat. Porcelain Rolls for middlings.

CHISHOLM BROS., Chicago, Ill., have ordered two pairs of Gray's Patent Noiseless Roller 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. Noiseless Roller Mills. E. P. Allis & Co., of Milwaukee will furnish the machines.

WM. ANNESSER, of Ottawa, Ohio, have ordered of E. P. Allis & Co., of Milwaukee, 6 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. ALLIS & 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 Milwaukee, will be a 14x42 Corliss engine from the same firm.

E. P. ALLIS & 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. ALLIS & Co., of Milwaukee are changing over the mill of Johnson & Co., Franklin, Pa. 9 pair of sharp cutting rolls for wheat and 3 pairs of Wegmann Pat. Porcelain Rolls for middlings will be used.

J. MILLER & Co., of Racine, with their accustomed enterprise have ordered E. P. Allis & Co., of Milwaukee, to replace their 8x24 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 necessary machinery of E. P. Allis & Co., Milwaukee.

HICKS, BROWN & Co., of Mansfield, O., are making extensive repairs in their mill, increasing the capacity to 400 barrels, and using 25 pair of sharp cutting iron rolls for wheat

## A NEW DEPARTURE

We are the Sole and Exclusive Licensees for this Country under the  
**MORRITZ MARTIN PATENTS**

— ONE —

## CENTRIFUGAL 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.**

THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will make clear flour and a clean finish on stock that cannot be treated in the common reel without loss, no matter how much silk it is passed over. IT IS SPECIALLY ADAPTED to handling soft, reground material, full of light impurities, whether from rolls or stone. IT IS INDISPENSABLE to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner. IT MAKES A CLEAN SEPARATION on caked and flaky meal from smooth rolls, which no other style of reel can do. IT IS VASTLY 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 Hundred sold in six weeks.**

REFERENCE TO LEADING MILLERS IN THE UNITED STATES.

Write for descriptive circular and price list to

**GEO. T. SMITH MIDDINGS PURIFIER CO., - Jackson, Michigan.**

[Mention the United States Miller when you write.]

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. Allis & Co., of Milwaukee, are doing the work.

A STEAM boiler must burst before an explosion takes place, but the interval between the bursting and the explosion is of a short duration as that between the breaking of a gun cap and the discharge of the gun.

DILLON, BOWERS & STOCK, of Rock Falls, Ill., 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 middlings.

S. T. HAYT, of Corning, N. Y., ordered of E. P. Allis & Co., Milwaukee, 11 pair of sharp cutting iron rolls for wheat and 1 pair of 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. 12 pairs of Gray's Pat. Noiseless Roller Mills, 11 pairs of sharp corrugated iron rolls for wheat, and one pair of Wegmann Pat. Porcelain 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 Pat. Noiseless Frame with belt movement.

DUNLAP & McCANCE, of Richmond, Va., are making a complete change in their mill, E. P. Allis & Co. having contracted to furnish them 30 pair of sharp cutting iron rolls for wheat and 18 pair of Wegmann Pat. Porcelain Rolls for middlings, all in Gray's Pat. Noiseless Frame with belt movement, and all the machinery necessary for a 600 barrel mill.

SMUT in wheat is a plant, and like the mushroom is propagated by its own seeds, which are so small, that they are absorbed by the wheat plant with the water taken from the soil and conveyed with the sap to the wheat kernel, where it finds proper elements for its development, turning the whole interior of the kernel to one mass of smut.

J. H. REDFIELD, of Salem, Ind., writes that the prospects for the mill furnisher and millers are very good, so far as his observation goes. He says "I have now under contract 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 O. H. Merritt, Jonesville, Ind.; F. M. Lemmons, Leesville, Ind.; Gwartney & Watson, Mauckport, Ind., and others. My sales for purifiers during the 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, Scottsborough, Ind.; H. W. Clark, Knoxville, Tenn.; Wanner & Hoag, Marlette, Mich.; Isaac 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, Hammonds-Mills, Ga.; Col. Schultz, Blanchard, Iowa; H. W. Blark, Knoxville, Tenn.; Gregsby & Gregsby, West Baden, Ind.; Josiah Peeling, York, Pa.; James Davenport, Abbyville, O.; Jonathan Turley, Nutchell, Ind.; and others.

THE following millers have lately placed orders with E. P. Allis & Co., of Milwaukee, for Gray's Patent Noiseless Roller Mills: Wilderman & Hill, Freeburg, Ill.; H. Temple, Fenton, Mo.; Engelke & Feiner, St. Louis, Mo.; D. B. Merrill & Co., Plainville, 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, Ind.; Hobson & Hartsock, Nokomis, Ill.; John Hurd, Marshall, Mich.; Wm. Wells, Hillsboro, Ill.; D. B. Pooock, Naylor, O.; L. W. Taylor & Co., Mt. Pleasant, Iowa.; Chambers & Smiler, Hegensville, Mo.; Ardinger, Piper & 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.; J. K. Mulley & Co., Denver, Col.; Kidder Bros., Terre Haute, Ind.; H. B. Powell, Shawneestown, Ill.; F. W. Stock, Hillsdale, Mich.; Week, Fungler & 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.; McMahan & 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 standing crops of ripe corn by the blighting north-west winds which prevailed during the last week in January, and we regret to say that 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 the previous year, and will, in some measure, compensate for the reduced yield, but even with the increased acreage the total supplies available 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 will be made during the current month. Wheat.—to-day's prices are equal to 49s. per 480 lbs. c. f. and i. to Europe, or 4s 7d. to 4s. 8d. per bushel f.o.b., for standard samples of average quality, whilst Tuscan is selling at 4s. 9d. to 4s. 10d. 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, Austria.

Feeder for roller mills, Chas. B. Campbell, assignor to John T. Noye M'fg. Co., Buffalo, N. Y.

Buckwheat huller, G. S. Cranson, assignor to 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.

MAY 2, 1882.

Grain-Cleaner, Isaac Snare, Richwood, Ohio.

Rice-polisher, Henry B. Stevens, Buffalo, N. Y.

Automatic grain-weighing machine, Simpson & Gault, Cincinnati, O.

MAY 9, 1882.

Grinding-roll, Richard Birkholz, Milwaukee, Wis.

Grinding-mill, James M. Collier, Gadsden, Ala.

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, N. Y.

Grain-elevator, Frank J. Firth, Philadelphia, Pa.

Hominy-mill apparatus, James Goodyear, Yonkers, N. Y.

Dust-collector, 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.

[Written for the UNITED STATES MILLER.]

**The Miller's Cough.**

By FRANK B. GOLLEY, M. D., of Milwaukee, Wis.

Among the many diseases to which the human family is liable, probably but one or perhaps two, should excite more alarm, or appeal more definitely to the patient and friends for prompt relief, than the series of lung affections. Their insidiousness seems calculated to mislead, and in the vast majority of cases 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 is the membranes are very sensitive and easily irritated, causing cough. 2nd; cough may be caused by some source of direct irritations in the throat or bronchial tubes, such as inhaling very cold air, irritating gasses, or particles. 3rd; a person may cough from an unhealthy condition of the blood, influencing the nervous system, as in rheumatic and 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 the alimentary canal. (dyspepsia.) The character of cough is unhappily too familiar to people in general, and certainly needs no time at my hands. All artisans working in dust for a sufficient length of time, are sooner or later affected with throat, bronchial, and lung troubles, often of a severe nature; especially 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 time perhaps no noticeable effect; but after a sufficient quantity has come in contact with the now irritated surfaces, the effect is disastrous in the extreme. Nature has provided 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 continually carried toward the throat, and may, in moderate quantities be thrown 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 the quick expulsion of the contained air or 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 understand how, in the stone-cutter or metal-worker the continual application of minute, but irregular sharp pointed pieces of metal or any other material, to so delicate a structure, can do untold injury. After these conditions have existed for a length of time, a slight irritation ensues, with congestion and increased 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 the globe, viz; consumption. Over three millions of people die annually with this disease. It also occasions a larger proportion of deaths than any other disease not epidemic or endemic. 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 particularly interesting part of our subject. In Millers we have a more favorable, but sufficiently 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 starch crystals (60 per cent.) which are insoluble in water, and about equal parts of gluten, (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 understood,

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 processes 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, hydrogen, &c. By the means of the putrefying gluten, fermentation in the sugar and starch is produced with the formation of acetic and lactic acids. Both are quite powerful acids. Again if a slightly alkaline 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 starch is very difficult of digestion, passing the body undigested. The chewing or eating of wheat is a prolific cause of dyspepsia, and as has been before mentioned, dyspepsia may cause cough. From what has thus far been shown, we may with confidence deduce the following conditions regarding millers cough. 1st; we have fourteen hundred square feet of membranous surface in the average lung, with which particles of dust are continually coming in contact, and as I have already shown may become decomposed; for here we have the proper conditions. A warm moist membrane secreting an alkaline fluid, readily mixing with the dust, and its subsequent decomposition is separated from the blood by a membrane only one twenty-four-hundredth of an inch in thickness. That is a narrow space, but in a healthy man who has lived his three score years and ten not one drop of blood ever escapes. It is a wonder that so little trouble is experienced from these conditions.

This state of affairs continuing for years with but little if any intermission, produces the inflamed conditions recognized by many long engaged in flouring mills. This eventuates in a chronic catarrhal condition of the whole membranous surfaces, often being an extension downwards from the bronchial tubes. This irritable condition of the membrane lining the tubes after a time renders the nerves in these parts hyper-sensitive, producing spasms of the muscular fibers of the tubes inducing that excessively annoying affection, "asthma". It is quite uncommon to find a case of pure spasm of the tubes unassociated with its twin affection bronchitis. In treating a case of asthma the remedies are often directed to the bronchitis, as the primary lesson. After these milder conditions have existed for a length of time, with but little if any improvement, it merges into chronic catarrhal pneumonia, with excessive cell 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 the last, progress into chronic interstitial pneumonia (that is a chronic inflammation of the tissue between the lung spaces) which is neither more nor less than a variety of consumption. Its onset is slow and at first its symptoms are undefined; but in an individual exposed to the inhalation of metal, stone, cotton, or grain-dust, who has dragging pains in the sides, short breath, irritable and ineffectual cough, gradual loss of strength, and perchance a nightsweat, be cautious of him, and use every 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 intelligently 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 accommodate ourselves to the situation.

It has seemed to be impracticable to wear some form of shield to keep the dust from the lungs, or it would have been more generally adopted by millers. I would suggest, 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

have the causes of cough as enumerated at the beginning of this article, but each is subject to dust as the existing cause.

**Recipe.**

Pulv. Ammon Chloride, forty grains,  
Syr. Senigae, half an ounce,  
Ext. Hyosciami, Fluid., half an ounce,  
Syr. Tolu, add enough to make four ounces.

**Sig:** Take a tea-spoonful from four to six times a day.

Should the trouble be further down in the chest, with asthma and considerable expectoration, use the following:

**Recipe.**

Tinct. Belladonna, three drams,  
Syr. Ipeacac, four drams,  
Tinct. opii Camphorata, one ounce,  
Pulv. Ammon Chloride, thirty grains,  
Syr. Tolu, sufficient to make four ounces.

**Sig:** Use a tea-spoonful three to five times a day as required; use after meals and on retiring.

If the cough occurs in a nervous person with but little expectoration, and no consumption, try the following:

**Recipe.**

Acid Hydrocyanic, dilute, half a dram,  
Spts. Chloroform, two drams,  
Syr. Scilla, three drams,  
Aqua. Lauri Cerasi, three drams,  
Syr. Simple, sufficient to make three ounces.

**Sig:** Take a tea-spoonful after meals and on 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 all the cases, nevertheless I will give as a tonic, where the lungs have a tendency to inflammation, the following:

**Recipe.**

Acid nitric dilute, two drams,  
Tinct. Columbae, one ounce,  
Syr. Ginger, one ounce,  
Add Tinct. Auranti, sufficient to make four ounces.

**Sig:** Take a tea-spoonful three times a day as a tonic at meal time.

As a stomach bitter and tonic where no acid is needed, try the following:

**Recipe.**

Tinct. Cinchona comp, one ounce,  
Tinct. Gentian comp, one ounce,  
Syr. Limonis (U. S.), two ounces.

**Sig:** Take a tea-spoonful three times a day in a little water before meals (take clear if preferred).

Hoping some of the above suggestions may be of service to the numerous readers of THE UNITED STATES MILLER, I am,

Yours respectfully,

F. B. GOLLEY, M. D.

**NEWS.****Everybody Reads This.**

ITEMS GATHERED FROM CORRESPONDENT, TELEGRAMS AND EXCHANGES.

BURNED—J. B. Syke's mill at Harber, Mo.

GEO. DOW is renovating his mill thoroughly, at Cambridge, Wis.

WILLIAMS & KLENCK are building a mill at Oakland City, Ind.

SAXTON & MILLIGAN, at Summer, Ill., are remodeling their mill.

A TWO-RUN water mill is being built at Salem, Ga., for J. D. Langhorn.

M. GROFF has purchased Miller Bros. & Co.'s mill at West Caro, Ohio.

J. M. WOODS 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, were destroyed by fire May 5th. Loss \$250,000.

HEUCK's flour mills were burned recently at Chaska, Minn. Loss \$20,000. Insurance \$5,000.

F. W. ALDRIDGE is said to have purchased Roberts & Perkins' mill at Fargo, Dak. He will make extensive improvements and increase capacity.

THE Throop Grain Cleaner Co. now of Auburn, N. Y., will, it is said, soon remove to Buffalo, New York.

CROCKER, FISK & Co.'s new mill at Minneapolis, Minn., will have a capacity of about 500 barrels per day.

THE Eureka Mfg. Co. of Rock Falls, Ill., have sold a Becker Brush to the Noel Mill Co. of 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. WOODFORD, of Weston, W. Va. is about to commence the erection of a fine large flouring mill driven by an automatic engine.

THE flouring mill at Vail, Ia., was struck by lightning and set on fire, but the flames were extinguished before much damage was done.

WASHBURN, CROSBY & Co., of Minneapolis, will put in one of Stout, Mills & Temples' water wheels with a capacity of 800 horse power.

THE Southern States have during the past season purchased \$177,000,000 worth of breadstuffs and provisions from the Northern States.

MESSRS. W. & F. Livingston, importers of bolting cloths and millstones, have removed from Broadway 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 feet one day last week, receiving fatal injuries.

A LARGE grain elevator and flouring mill is being built at Athens, Ga., for the Athens Compress and Mill Co., to be driven by a Cummer engine.

TODD MILLS at Dallas, Texas, are putting in a new brush machine, and have bought the "Becker" of the Eureka Mfg. Co. of Rock Falls, Illinois.

E. A. THOMAS has commenced the erection of a first-class new process flouring mill, to be driven by an automatic engine, at Straumsburg, Nebraska.

WM. SCHAFER of Lancaster, Mo., wants the best brush made, and after looking around has bought the "Becker made by the Eureka Mfg. Co. of Rock Falls Ill.

A 200-barrel gradual reduction mill using Jonathan Mills reduction mills for reducing purposes, rolls for finishing is being built at Charleston, Ill., for F. F. Randolph.

HERZOG & ROBERTS' flour mill in Racine, Wis., was burned down recently. Loss \$20,000. Insurance \$16,000. The mill will be rebuilt immediately on the latest and most improved plan.

HOPER BROS., of Moundville and Powhattan, O., have ordered machinery for a large combined stone and roller mill of Nordyke & Marmion Co., which will be erected at Powhattan.

W. A. SETTLE of Clarkswell, Tenn., wants a 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 MACKAY, formerly of Algona, Iowa, has accepted the offer of the citizens of Pipestone, Minn., who agreed to pay a bonus to him in case a four-run new process mill was built there.

JOHN 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 Mfg. Co. of Rock Falls, Ills.

J. H. TOWNSEND & 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 have its capacity enlarged.

DAVIS & TAYLOR of Lawrence, Mass., (the largest millers in the state) upon investigation have concluded the Becker was what they wanted, and have ordered one of the Eureka Mfg. Co. of Rock Falls, Ill.

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, WHEELOCK & REED, of Murfreesboro, Tenn., are overhauling their mill, and find they want a Becker Brush to properly clean their wheat and have ordered one through their contractors from the Eureka Mfg. Co. of Rock Falls, Ills.

G. A. WEBBER, a first-class millwright and mill furnisher of Nashville, Tenn., is overhauling a number of mills in the Southern 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. ANNIS 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 hereafter conduct the business. Mr. Lepper is said to be an old first-class mill hand, and it is expected that under his supervision the mill will be greatly improved.

ALFRED 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 highly esteemed among his acquaintances, and did much towards building up the city which was his home.

**E. P. Bacon & Co.,**

Room 23 Chamber of Commerce,

**MILWAUKEE.**

**COMMISSION**

**GRAIN, SEEDS, PROVISIONS, ETC.**

Special Attention given to the Purchase and Shipment of Grain for Milling Purposes.

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.

Orders for Purchase and Sale of Grain for Future Delivery will be Promptly and Carefully Executed.

Mention this paper when you write us.]

**L. Everingham & Co.,**

No. 125 LaSalle Street,

**CHICAGO.**

**MERCHANTS!**

**BOTTLED BEER.**

**VOECHTING, SHAPE & CO.,**  
SOLE BOTTLERS OF  
JOSEPH SCHLITZ BREWING COMPANY'S  
**CELEBRATED MILWAUKEE LAGER BEER,**  
Cor. Second and Galena Streets,  
**MILWAUKEE, WISCONSIN.**  
BOTTLE SUPPLIES CONSTANTLY ON HAND.  
Parties corresponding will please state where they saw this advertisement.]

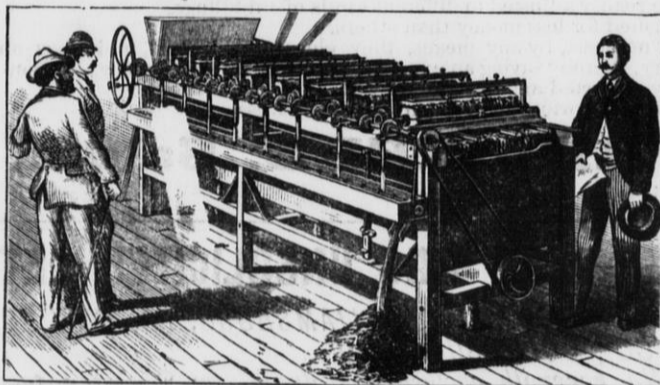
**ELECTRIC PURIFIER COMPANY,**

**New Haven, Conn.**

Factory, New Haven, New York Office, 17 Moore Street.

This Company was Organized at New Haven on the first of March, 1891, with a Capital of \$300,000.

**Electric Middlings Purifiers.**



HAVING PURCHASED THE SMITH-OSBORNE PATENTS GRANTED BY THE

United States, Great Britain, France, Belgium, Austria and Canada.

The first Machine manufactured was put up soon after the United States patent was granted, in February, 1890, in the ATLANTIC MILLS, BROOKLYN, and has been in almost constant practical use since, demonstrating beyond a question that it possesses the following advantages:

- It Purifies Middlings Absolutely without Waste.
- It Purifies Middlings with Greatly Reduced Power.
- It Purifies Middlings with Greatly Reduced Space.
- It Purifies Middlings with Greatly Increased Rapidity.
- It Purifies Middlings from Spring and Winter Wheat Equally Well.
- It Purifies Middlings with the Best Results.
- It Dispenses with the Use of Air Blasts.
- It Dispenses with the Use of all Dust Houses.
- It Dispenses with the Use of all Dust Collectors.
- It Dispenses with the Dangers of Explosion and Fire.
- IT PURIFIES DUST HOUSE MATERIAL OF ALL KINDS.
- IT PURIFIES THE FINEST MIDDINGS OF ALL KINDS.
- It is Remarkably Adapted to Custom Mills.
- It is Excellently Adapted to Manufacture Farina.

**SOMETHING NEW.**

A Combination Electric Purifier—A Complete System of Three Purifiers in One. Samples of work will be sent upon application, by mail, and all inquiries answered from the New York Office. Parties contemplating building new mills, or reconstructing old ones, should see the superior working of the ELECTRIC SYSTEM before making contracts for Purifiers elsewhere.

**JOHN RICE,**

General Manager.

No. 17 Moore St., NEW YORK.

**GEO. G. SMITH, San Francisco, Cal.,**

Manufacturer and Agent for the Pacific Slope.

**JAMES E. LOOMIS, St. Louis, Mo.,**

Gener Western Agent.

[Mention this paper when you write to us.]

**"THE GREAT ROCK ISLAND ROUTE"**

Call your attention to the following REASONS WHY, if about to make a Journey to the GREAT WEST, you should travel over it:

As nearly absolute safety as is possible to be attained. Sure connections in UNION DEPOTS, at all important points. No change of cars between CHICAGO, KANSAS CITY, LEAVENWORTH, ATCHISON or COUNCIL BLUFFS. Quick journeys because carried on Fast Express Trains. Day cars that are not only artistically decorated, but furnished with seats that admit of ease and comfort. Sleeping cars that permit quiet rest in home-like beds. Dining cars that are used only for eating purposes, and in which the best of meals are served for the reasonable sum of seventy-five cents each. A journey that furnishes the finest views of the fertile farms and pretty cities of Illinois, Iowa and Missouri, and is afterwards remembered as one of the pleasant incidents of life. You arrive at destination rested, not weary; clean, not dirty; calm, not angry. In brief, you get the maximum of comfort at a minimum of cost.



That the unremitting care of the Chicago, Rock Island & Pacific Railway for the comfort of its patrons is appreciated, is attested by its constantly increasing business, and the fact that it is the favorite route with delegates and visitors to the great assemblages, political, religious, educational and benevolent, that assemble from time to time in the great cities of the United States, as well as tourists who seek the pleasantest lines of travel while en route to behold the wonderful scenes of Colorado, the Yellowstone and Yosemite. To accommodate those who desire to visit Colorado for health, pleasure or business, in the most auspicious time of the year, the Summer season and months of September and October, the Company every year puts on sale, May 1st, at all coupon ticket offices in the United States and Canada, round trip tickets to

**DENVER, COLORADO SPRINGS AND PUEBLO,**

At reduced rates, good returning, until October 31st. Also to San Francisco, for parties of ten or more, for ninety days, at great reduction from regular fares.

REMEMBER, this is the most direct route for all points WEST and SOUTHWEST. For further information, time-tables, maps or folders, call upon or address

**R. R. CABLE,**  
Vice-Pres't and Gen'l Man'gr, Chicago.

**E. ST. JOHN,**  
Gen'l Ticket and Pass'r Agent, Chicago.

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 respect.

THE current in the river changed the channel 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.

REBUILT.—The Southern Mills, which are owned by Engelke & Feiner, and which were partially destroyed by fire last Christmas, have been rebuilt and, with increased capacity, are now ready for and doing a big business. The 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 contracts for the past month and the past few 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.; Oscar Oexle, & Co., Germany.

IN 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 left leg being broken and left arm badly shattered. The flesh on both broken limbs was fearfully mangled. The arm must be amputated, but it 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 miller and wheat buyer, and has the necessary capital to manage the business to its full extent. The excavations for the basement has commenced, and work on the three upper stories will be hurried forward, in order to be able to handle the new wheat crop.

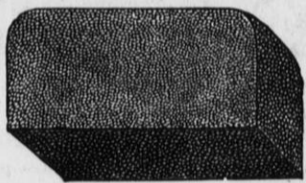
THE Kehler Milling Co., of St. Louis, have closed a contract with the John T. Noye Mfg. Co., for furnishing the machinery for their new mill in that city. The building is 36½x80 feet, and five stories high, and will have capacity for turning out 800 barrels of flour in 24 hours. This mill is to be fitted up on the Stevens roller system complete, containing twenty-two double Stevens roller mills. The machinery will be driven by a 28x48 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, etc., are to be made by the contractors in Buffalo, and the Richmond Mfg. Co., by special contract with Mr. Kehler, will furnish the cleaning machinery.

THE Victor flouring mill at Ottawa, Ill., Cotton, Dowell & Hamilton, proprietors, completed about two months since, is a fine new building of wood, four stories, costing upwards of \$40,000. It is situated on the banks of the Fox and 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 ten 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.

**John H. Miller,**

MANUFACTURER OF

**MILLER'S COMPOSITION**



**MILL BUHR RUBBER,**

SECTIONAL FURROW GAUGES AND STAFF.

PETERSBURGH, PA.

The Best, Cheapest, and Most Durable Rubber in the Market, USED DRY. Will outwear any Rubber made in the world, and retain its cutting qualities until entirely worn out.

FACE RUBBER, 12x6x3 inches; weight 12 lbs; price, \$3.00. FURROW RUBBER, 12x6x1¼, 1½, 1¾ and 2 inches, as required, \$2.50; or both for \$5.00, by Express. Furrow Gauges and Staff \$1.25 per set, by mail. Send for circulars, testimonials &c. Address all orders as above.

N. B.—This Rubber will not wear a pair of Buhrs out of existence in 15 minutes. But if used in connection with the Pick and Red Staff will leave the face and Furrows in the best possible condition for making good work. For cleansing the face of Glazing it has no equal. Try it and be convinced. Money refunded if not satisfactory. Mention U. S. Miller when you write to me.

CHOICE BEVELLED EDGE

**FLOUR BRANDS**

For two dollars and upwards. Also RUBBER STAMPS, BURNING BRANDS, SEALS, STEEL NAME STAMPS, LETTERS AND FIGURES, Etc. Orders promptly attended to. CHAS. H. CLARKE, 82 Wisconsin St., Milwaukee, Box 114

**SITUATION WANTED**

By a Miller of long experience; Situation in a large City mill preferred.

Address, **JOHN HAWKS,**

Care of United States Miller,

Milwaukee, Wis.

**Steam Flouring Mill For Sale.**

On account of owner's death. Four acres of land with the mill with 4000 grape vines and orchard. Mill has three run of buhrs. It is three stories high and has good stone basement; built six years ago. Mill now has a good Custom trade and is also adapted to Merchant milling. Plenty of grain raised in the vicinity with large demand for feed stuffs. A modern built frame house and barn in good order on the premises. Situated 3¼ miles from Allegheny, only ¼ mile from city line. Terms: Half cash, balance on time to suit purchaser. Address

**MRS. JNO. KNOEDLER,**  
West View, Allegheny Co., Pa.

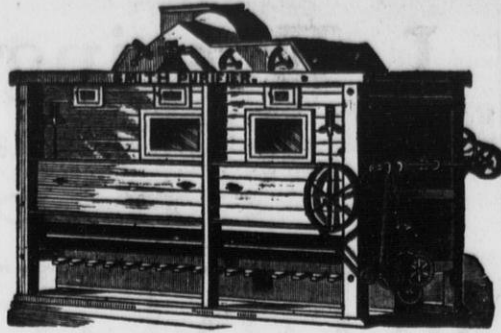
Low in Price!

Quantity and Quality of Work Considered.

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Under ALL Patents owned by the Consolidated Middlings Purifier Co.

SIMPLE, EASILY ADJUSTED.



Adapted to all Systems

Of Milling and Every Grade and Condition of Middlings.

FOURTEEN SIZES,

SINGLE, DOUBLE AND SPECIAL MACHINES.

DURABLE, LIGHT RUNNING.

BOLTING Cloths,

Best Brands

SOLD AT IMPORTERS LOWEST PRICES. Sold by the piece, or cut and made up in any quantity desired. Plans of bolting complete for stone or roller mills. Address,

C. F. MILLER, Mansfield, Ohio.

TWO THOUSAND SMITH PURIFIERS WERE SOLD IN 1881.

More than FOUR THOUSAND now Running in the United States.

The Smith Purifier

Is in Use in Every Milling Country in the World. Has GRADED, CONTROLLABLE AIR CURRENTS. Has a POSITIVE AND EFFICIENT means of cleaning the Silk of the Sieve.

It is Impossible to do Good and Economical Work without these Features.

OUR CLOTH TIGHTENER makes it both Easy and Convenient to keep the Silk always properly stretched.

OUR AUTOMATIC FEED is Positively SELF-ADJUSTING and RELIABLE.

Write for Descriptive Circular and Price List to

GEO. T. SMITH MIDDINGS PURIFIER CO., Jackson, Mich., U. S. A.

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PURIFIERS.

REDFIELD'S COMBINED ELEVATOR AND PURIFIER!

Why these Purifiers are Such Favorites Wherever Introduced.

1. It is because they do better work.
2. Are more simple in construction, less subject to get out of order, and require less attention.
3. Are more durable, as they have fewer journals and wearing parts.
4. Require less power.
5. Sieves do not choke up, as soft substances in middlings are not permitted to come in contact with the sieve.
6. Are more readily adjusted to different kinds of middlings.
7. Are furnished for less money than others.
8. Last, but not least, by any means, they elevate their own middlings any height and distance necessary, thereby saving an expense, in setting up and starting, of from \$50 to \$150. Right to use fully protected and guarantee given.

For circulars giving prices and full particulars, address

J. H. REDFIELD, Salem, Ind

[Mention this paper when you write.]

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.

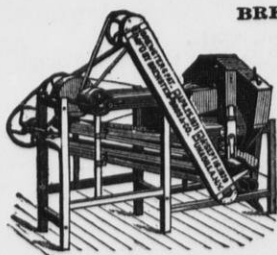
Very Truly, DAVID SNIVELY & SONS.

This Box does not flour the middlings in feeding them, but gives 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,

CASE MFG. CO., COLUMBUS, O.

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Buckwheat Refiners & Portable Mills.



BREWSTER'S CELEBRATED Buckwheat Refiner Is the only Machine whereby the greatest yields of PURE, WHITE, SHARP FLOUR can be obtained. The only reliable, practical and durable Machine IN THE WORLD.

The Positive Adjustment AND AUTOMATIC Middlings Mill Is strictly Self Protecting, THE BEST ADJUSTMENT IN THE WORLD. And the only PERFECT GRANULATOR, GRINDS COOL, SELF OILING, GREAT SAVING OF POWER, SIMPLICITY AND Durability Combined.



Satisfaction Guaranteed on all our Goods. Send for descriptive Circular, giving Prices, Sizes, Terms, etc.

BREWSTER BROS. & CO., Unadilla, N. Y.

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C. F. MILLER.

MANSFIELD, OHIO,

GENERAL MILL FURNISHER.

Plans and Specifications for Mills of any Capacity.

ROLLER MILLS ON THE STEVENS SYSTEM A SPECIALTY.

BOLTING CLOTH of the Best Brands at Importers' Prices. Water Wheels, Purifiers, Cleaning Machinery, Reels, Belting,

And Everything used in a Flour Mill, AT THE LOWEST PRICES. If you want anything for your Mill, write first to me.

J. J. BELL,

41 S. William St., New York,

Manufacturer and Importer of

MILLSTONES,

BOLTING CLOTHS,

Mill Irons, Belting, Mill Picks, Iron Proof Staffs, Smut Machines, Elevator Cups, and

Mill Furnishings in General.

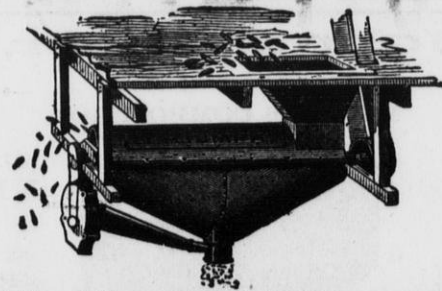
Having been engaged in the manufacture of ESOPUS MILLSTONES, CHASERS, &c., for the past 30 years, I am prepared to fill all orders not only at the lowest price, but the best qualities for the purpose intended.

(Mention this paper when you write.)

FOR SALE.

A good water power and mill with two run of stone at Stone Bank, Waukesha County, Wis. Mill is doing a good business, which with a moderate amount of improvements, could be largely increased. One half of the whole will be sold to the right party. For full particulars, address, U. S. MILLER, Milwaukee, Wis.

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.

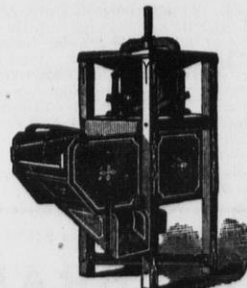
Manufacturers of Steam Engines, Mill Builders and Mill Furnishers.

HULBERT & PAIGE, Painesville, Ohio.

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MARSHALL'S

NEW CORN SHELLER.



The only Self-Adjusting Sheller in use that will SHELL MIXED CORN,

FAST AND WELL,

And that will clean it THOROUGHLY.

Easy of access to all parts liable to clog. Thoroughly made. Sold as cheap as the cheapest.

Send for circulars to

G. MARSHALL & SON, Mfrs.

Kilbourn City, Wis.

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BIRGE & SMITH,

Practical Millwrights.

PLANS, SPECIFICATIONS & ESTIMATES

MADE FOR ALL KINDS OF

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Flour, Sawmill, Tanners' and Brewers' Machinery, and General Mill Furnishers,

Corner of East Water and Knapp Sts.,

MILWAUKEE, - - - WISCONSIN.

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Flour Merchants,

BRISTOL, ENGLAND.

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Chamberlain, Pole & Co.,

Brokers & Factors

IN FLOUR,

BRISTOL, ENGLAND.

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H. G. JANSSEN & CO.,

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Amsterdam, Netherlands, Europe.

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Telegrams, OROBIO, Amsterdam,

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MILLER,

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— BY —

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A practical and useful Hand Book, on Mill construction, Plans, Water Wheeis, Boilers, Engines, Transmission, Grain Cleaning, Wheat Drying and Heating, Granulation and Grinding, Buhr Stone, Mounting Buhrs, Various Millstone Dresses, Buhr Dressing, Rollers, Purifiers, Reels and Chests, Elevating, Spouting and Conveying, Weighing, Testing, Packing, Branding and Storing, Changing and Altering Mills, Millwrighting Tools and Operations, Composition and Structure of the Wheat-Berry, Grain Destroyers, &c., &c., &c. 550 large octavo pages, 350 illustrations, contains three times as much matter as any Milling work published. Free by Mail on receipt of \$6.00. Address all addresses to

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STEEL

Made entirely of STEEL. ONE MAN with it can easily move a loaded car. Will not slip on ice or grease.

CAR

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Manufactured by E. P. DWIGHT, Dealer in Railroad Supplies, 407 Library St., Philadelphia, Pa.

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MILWAUKEE, WISCONSIN,

## MILL BUILDERS AND FURNISHERS,

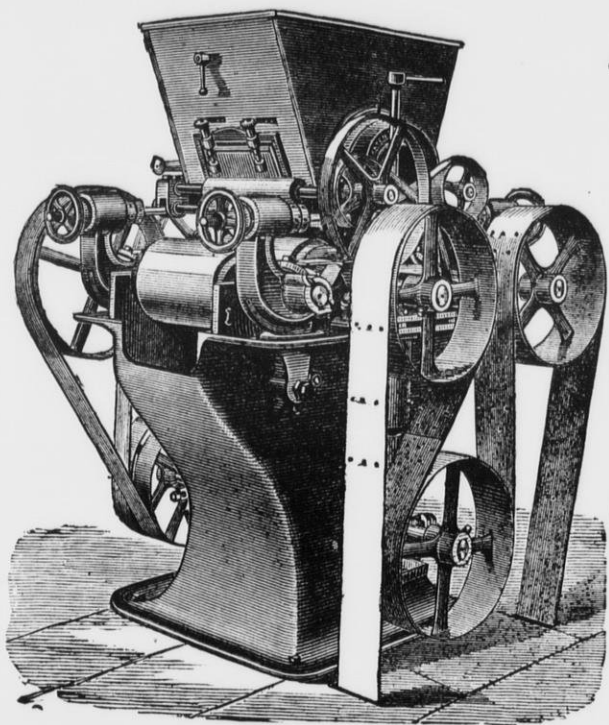
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GRAY'S PATENT NOISELESS

# ROLLER MILLS

CORRUGATED AND SMOOTH CHILLED IRON ROLLS,

## 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 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 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.

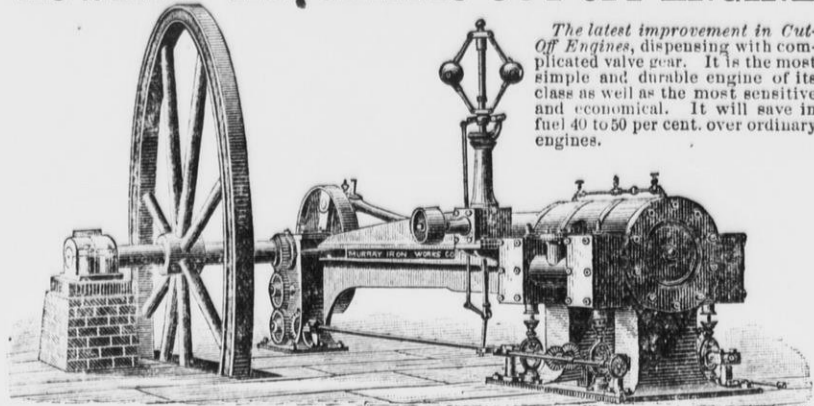
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**"HOWARD" AUTOMATIC CUT-OFF ENGINE.**



The latest improvement in Cut-Off Engines, dispensing with complicated valve gear. It is the most simple and durable engine of its class as well as the most sensitive and economical. It will save in fuel 40 to 50 per cent. over ordinary engines.

Built only by the **MURRAY IRON WORKS CO., BURLINGTON, IOWA.**  
BUILDERS OF ALL KINDS OF ENGINES AND MACHINERY.

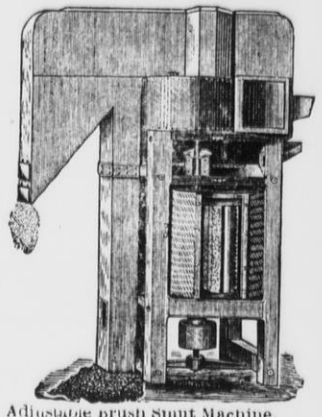
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**LOCKPORT, N. Y.,**

Manufacturers of

**RICHMOND'S CELEBRATED**  
**Smut Machines,**  
**Brush Machines,**  
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**and Bran Dusters.**

Nearly Two Hundred of these Machines are now in operation in the city of Minneapolis, Minn., alone, and more than sixty in the city of Milwaukee, Wis. They are also extensively used in many other sections, both on river and Spring heat.



Adjustable brush smut machine.

SEND FOR DESCRIPTIVE CATALOGUE.

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**Leffel Turbine Water Wheel**

Made of best materials and in best style of workmanship.

**Machine Molded Mill Gearing**

From 1 to 20 feet diameter, of any desired face or pitch molded by our own SPECIAL MACHINERY. Shafting, Pulleys, and Hangers, of the latest and most improved designs.

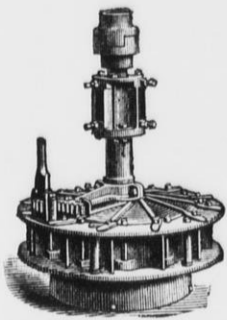
Mixers and General Outfit for Fertilizer Works.

Shipping Facilities the Best in all Directions.

**POOLE & HUNT, Baltimore, Md.**

N. B.—Special attention given to Heavy Gearing for Pulp and Paper Mills.

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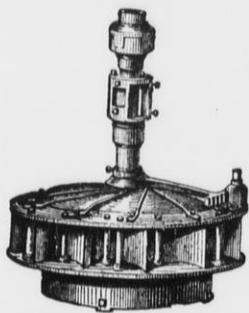
**James Leffel's Improved**  
**WATER WHEEL.**

NEW PRICE LIST FOR 1881.

The "OLD RELIABLE" with Improvements, making it the Most Perfect Turbine now in Use, comprising the Largest and the Smallest Wheels, under both the Highest and Lowest heads in this country. Our new Pocket Wheel Book for 1881 and 1882 sent free to those using water power. Address

**JAMES LEFFEL & Co., Springfield, Ohio.**

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**DAYTON, - - - 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 BOLTING CLOTHS.

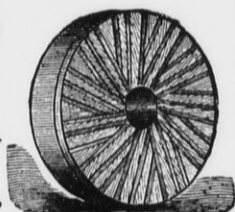
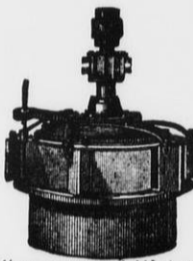
Flour and Paper Mill Machinery, Best Chilled or Porcelain Rolls for Crushing Wheat and Middlings and

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The AMERICAN TURBINE, as recently improved, is unequaled in the power utilized from a given quantity of water, and is decidedly the BEST "PART GATE" Water Wheel ever known. It has also been otherwise greatly improved.

Large Illustrated Catalogue Sent Free on Application.

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**CAWKER'S**  
**AMERICAN FLOUR MILL DIRECTORY**  
**FOR 1882:**

Is Now Ready for Delivery.

It has been compiled with the utmost care, and contains 22,844 Addresses

Of Flour Mill Owners in the UNITED STATES and CANADA. It gives the Capacity and Motive Power of Mills wherever obtained.

**MILL FURNISHERS, FLOUR BROKERS,**

And Every one Desiring to Reach the Trade, WILL FIND THIS WORK SIMPLY INVALUABLE.

PRICE, TEN DOLLARS PER COPY.

Address **THE UNITED STATES MILLER, Milwaukee, Wis.**

Will be sent to any part of the world by Mail, POST-PAID, on Receipt of Price.

**JOHN C. HIGGINS,**

Manufacturer and Dresser of

**Mill Picks,**

No. 169 W. Kinzie Street,

**CHICAGO, - ILLINOIS.**



Picks will be sent on 30 or 60 days' trial to any responsible miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada. Send for Circular and Price List.

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**Northwestern Mill Bucket Manufactory**

310, 312, and 314 FLORIDA STREET.



Is furnishing Mills and Elevators in all parts of the country with their superior BUCKETS.

They are UNEQUALLED for their SHAPE, STRENGTH and CHEAPNESS.

Leather, Rubber, Canvas Belting and Bolts at lowest market rates. We have no traveling agents. Sample Buckets sent on application. Large orders will receive liberal discounts. Send for sample order.

Address all inquiries and orders to L. J. MUELLER, 197 Reed St., Milwaukee, Wis.

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**Over 1,500 of these Turbines**  
**IN USE.**



It has tight shuttings and easily operated Gate; gives more power for the water used, and will last longer than any other Turbine Large shop with improved tools for making this kind of machinery. Illustrated Pamphlet and Catalogue with prices sent free by

**BURNHAM BROS.**

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**Milling Made Profitable.**

We build mills on any system known. We guarantee a saving of 25 per cent. on the cost of construction and room occupied by

**BOLTING CHESTS.**

We handle 45 bushels per hour on one reel successfully. **C. B. SLATER & CO.,** Blanchester, Ohio.



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**MEDAL & PREMIUM AWARDED TO**  
**ALCOTT'S TURBINE WATER WHEELS**  
**Most Perfect Turbine in Use.**

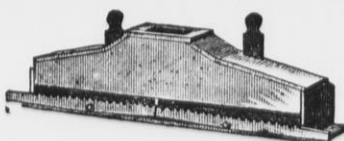


MANUFACTURERS OF  
**Circular Saw Mills, Shafting, Pulleys, Hangers & General Mill Machinery, Stating Particulars of Stream, &c.**  
Address: **T. C. ALCOTT & SON,** Mount Holly, N. J.

[Mention this paper when you write us.]

The wheel is STRONG, DURABLE AND EFFECTIVE. Unsurpassed in power at "part gate." Warranted to give full satisfaction.

**The Perfect Feed Box.**



It insures a perfectly even distribution of the middlings over the entire width of the cloth. Every miller will appreciate this. Fits all purifiers. Address,

**CASE MANUFACTURING CO.,**

COLUMBUS, OHIO.

**W. E. CATLIN & CO., 68 LAKE ST., CHICAGO, ILL.,** AGENTS.

[Please mention this paper when you write us.]



**Mill Furnishing, Foundrymen & Machinists. Established 1851.**

**MILL STONES.**

Flouring Mill Contractors.

Send for Pamphlet.

**Nordyke & Marmon Co**

Indianapolis, Ind.

[Mention this paper when you write us.]

**IMPORTANT NOTICE TO MILLERS.**

The RICHMOND MILL WORKS, and RICHMOND MILL FURNISHING WORKS are wholly removed to Indianapolis, Ind., with all the former patterns, tools, and machinery, and those of the firm who formerly built up and established the reputation of this house; therefore, to save delay or miscarriage, all letters intended for this concern should be addressed with care to

**NORDYKE & MARMON CO. INDIANAPOLIS, IND.**

**HENRY HERZER,**

Manufacturer

and

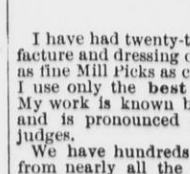
Dresser

—OF—

**MILL PICKS!**

NO. 156 ON THE CANAL,

**MILWAUKEE, WIS.**

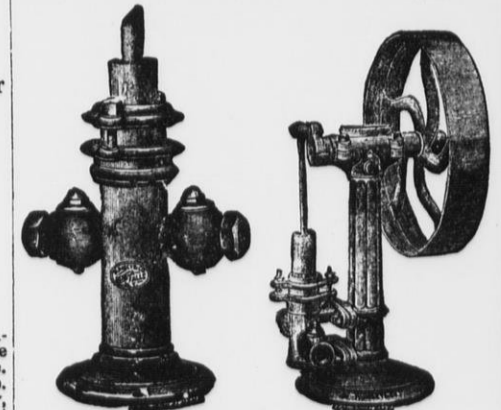


I have had twenty-two years experience in the manufacture and dressing of Mill Picks, and can and do make as fine Mill Picks as can be made by anybody anywhere. I use only the best imported Steel for the purpose. My work is known by millers throughout the country, and is pronounced to be first class by the very best judges. We have hundreds of the most gratifying testimonials from nearly all the States. We solicit your orders and guarantee satisfaction. Address as above. [Please mention this paper when you write us.]

**PATENTS**

We continue to act as Solicitors for Patents, Caveats, Trade Marks, Copyrights, etc., for the United States, Canada, Cuba, England, France, Germany, etc. We have had thirty-five years' experience. Patents obtained through us are noticed in the SCIENTIFIC AMERICAN. This large and splendid illustrated weekly paper, \$3.20 a year, shows the Progress of Science, is very interesting, and has an enormous circulation. Address MUNN & CO., Patent Solicitors, Publishers of SCIENTIFIC AMERICAN, 37 Park Row, New York. Hand book about Patents sent free.

**STEAM BOILER PUMPS**



We manufacture over forty different styles and sizes of Steam Boiler Feed Pumps, for hand and power, at prices from \$10 to \$100.

Catalogues furnished on application.

**RUMSEY & CO., SENECA FALLS, N. Y.**

**GANZ & CO.,**  
**Budapest, Austria-Hungary.**

We are the first introducers of the Chilled Iron Rollers for milling purposes, and hold Letters patent for the United States of America. For full particulars address as above.

[Mention this paper when you write us.]

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# The United States MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 3. }

MILWAUKEE, JULY, 1882.

{Terms: \$1.00 a Year in Advance  
Single Copies, 10 Centee.

## THE STEVENS ROLLER MILLS

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.  
We also manufacture the

### Celebrated Cosgrove Concentrated Mill

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

**READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:**

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 4½ 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 ¼ to ½ 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,  
F. E. SMITH & CO.

**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.
James 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.]

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

## ODELL'S ROLLER MILL.

### An Established Success.

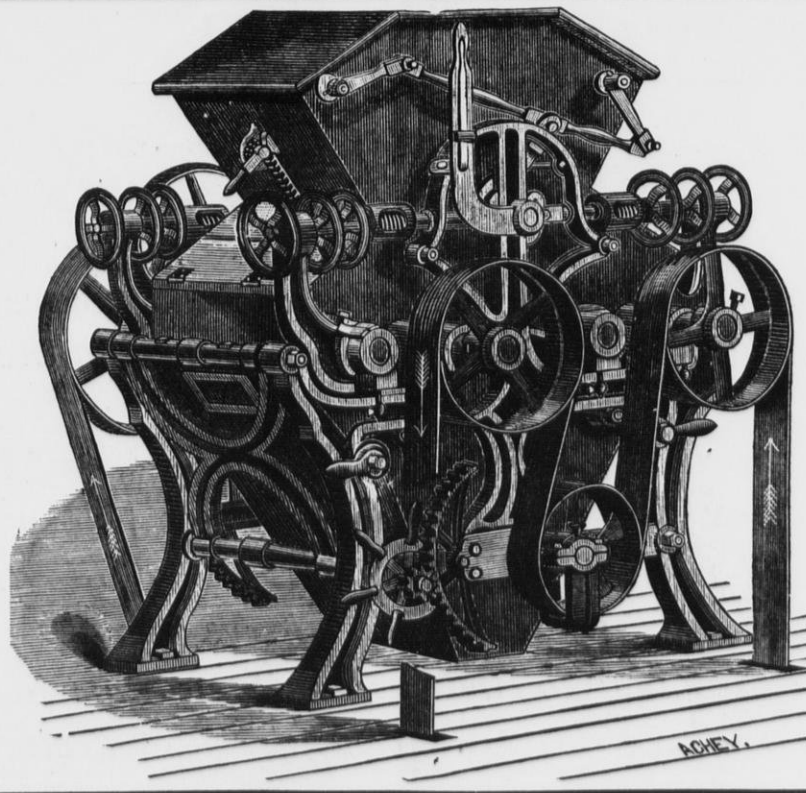
We invite particular attention to the following

#### 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. 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 tension-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

### Ansonia 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.

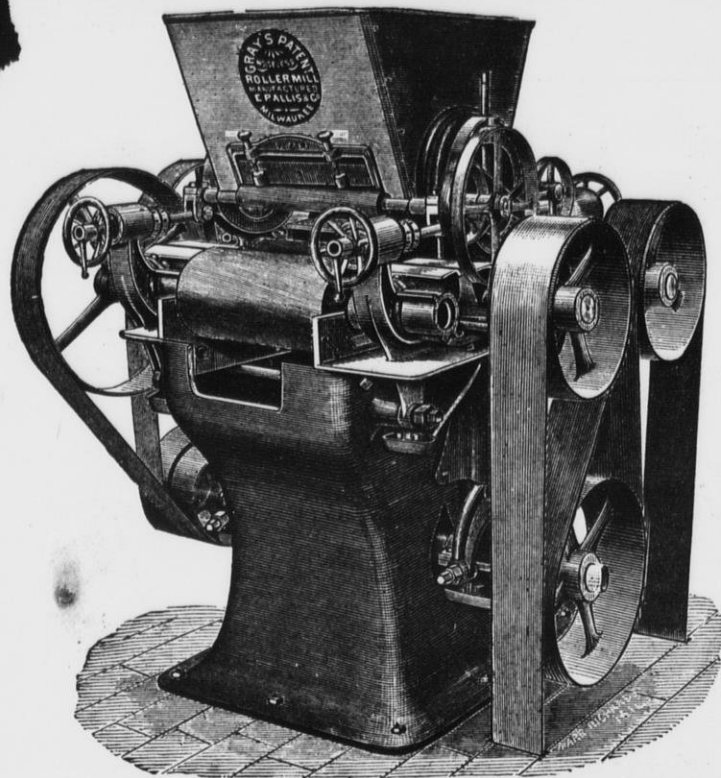
Circular and Prices on Application to Sole Manufacturer,

## STILWELL & BIERCE MANUFACTURING CO.,

DAYTON, OHIO, U. S. A.

[Mention this Paper when you write to us.]

# GRAY'S PATENT NOISELESS ROLLER

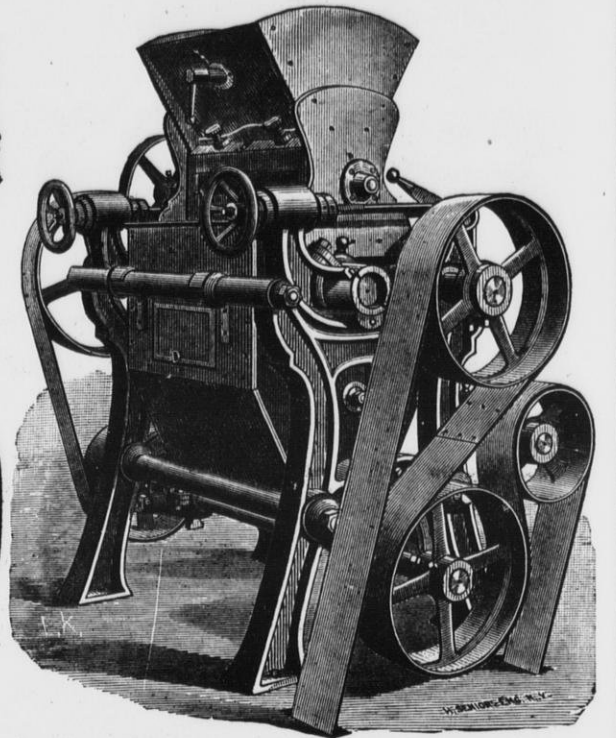


## MILLS

WITH

## CORRUGATED

OR



# SMOOTH CHILLED IRON ROLLS

And WEGMANN'S PATENT PORCELAIN ROLLS,

MANUFACTURED EXCLUSIVELY BY

# EDW. P. ALLIS & CO.

MILWAUKEE, WIS.

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, '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.*

# EDW. P. ALLIS & CO.

[Mention this paper when you write to us.]

# The United States

# MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 3. }

MILWAUKEE, JULY, 1882.

{Terms: \$1.00 a Year in Advance.  
Single Copies, 10 Cents.

## Automatic Cut-Off Engine.

BUILT BY WOODBURY, BOOTH & PRYOR, ROCHESTER, N. Y.

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 being used largely for electric 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 as to bring the bases and holding down bolts in a direct line, enabling the engine 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 rocker-arm, 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 cut-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, with the fastening of the rods, constitute all

the parts of the valve works inside of the steam chest. All the other parts connected with the valves and valve gearing are outside where they can be seen at all times. The arms of the governor extend across the centre, 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 in speed. It is provided with a dash pot.

One of the most valuable features presented in these engines is that of close govern-

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 kind, enabling it to be worked at any required speed as well as an ordinary slide valve. Cutting off the steam sharply when the requisite point is reached, owing to its long and rapid travel, and lapping well beyond the edges of the ports. Constant uni-

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 similarly 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 throughout 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 simply 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 window-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 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.

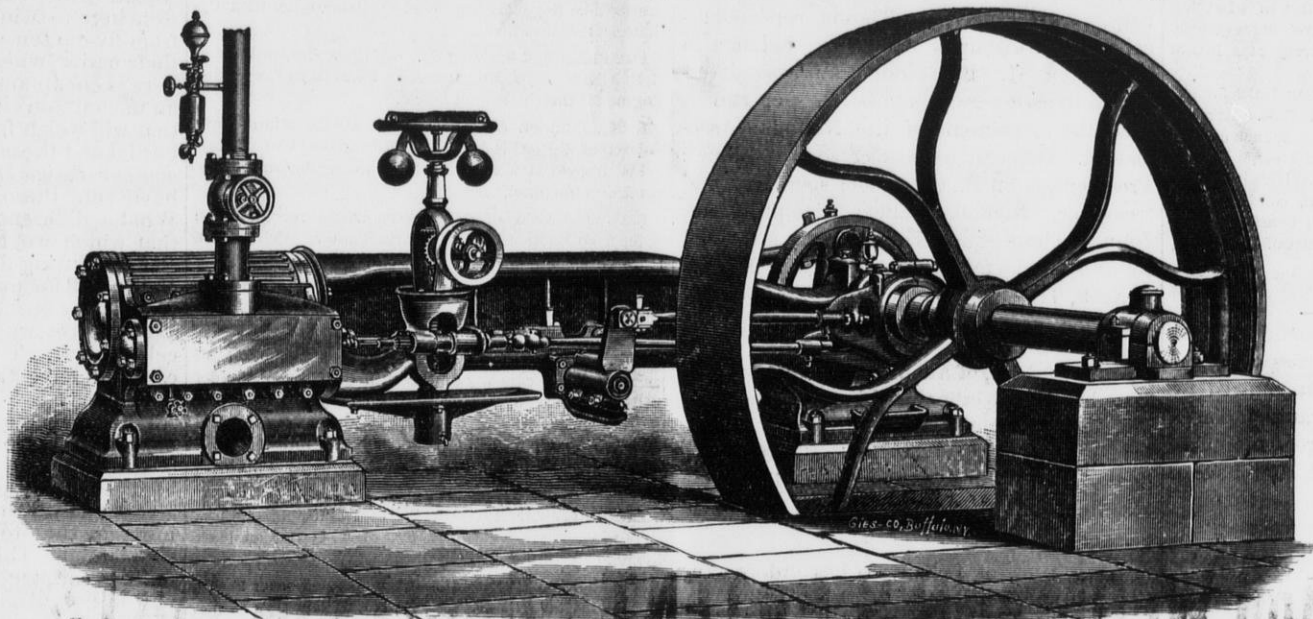


FIG. 1.—AUTOMATIC CUT-OFF STEAM ENGINE, MANUFACTURED BY WOODBURY, BOOTH & PRYOR, ROCHESTER, N. Y.

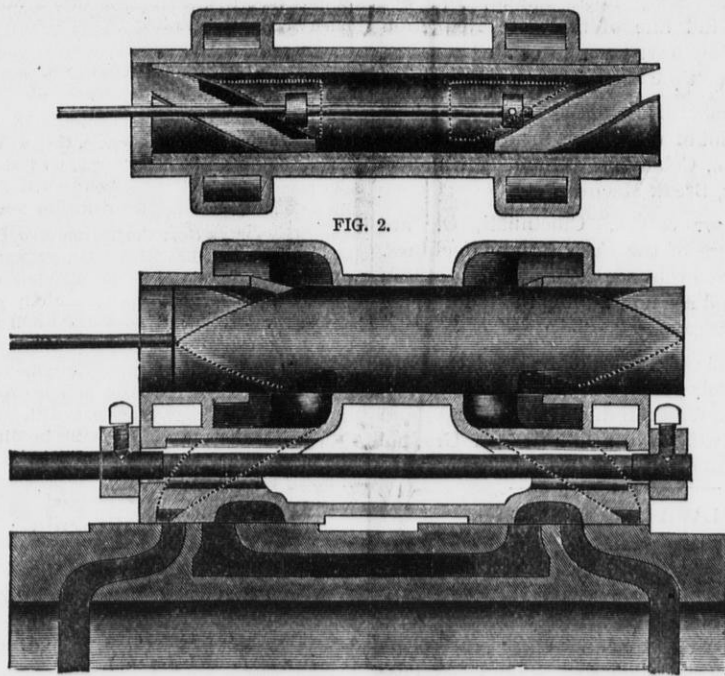


FIG. 3.—AUTOMATIC VALVES.

ing, and in this respect they are without a rival. The secret of this remarkably uniform speed lies first in the peculiar construction of the governor itself, and second, in the fact that it has comparatively no work to perform. The mere rolling of the balanced cut-off valve, while sliding lengthwise in its seat, will readily be seen to require but a trifling amount of force. The governor has, therefore, nothing to do but regulate the speed, without being hampered or loaded with a heavy cut-off valve working under boiler pressure, or with any other resistance, presenting in this respect a marked contrast to many of the automatic engines now in the market. These engines have been placed in many establishments where the very closest approximation to regularity of speed was not only desirable, but an absolute necessity; and it is a fact borne out by the testimony of the users that they give a steadier motion than any other, maintaining it throughout the range of their power, with a variation of not exceeding three per cent. from the normal speed, under the most sudden variations of load.

formity of speed, immediate provision being made by the governor for the most sudden change of load, and the movement of the valve not having the slightest tendency to move the governor arms from their natural position due to the speed.

As a result of the above advantages there is secured in these engines a high degree of economy, which, combined with their simplicity, and recognized durability, make them rank at once among the most efficient and desirable engines in market. These engines are finely fitted and finished, and any further information can be obtained by addressing the makers, who also build steam boilers and other varieties of engines in a large range of patterns and sizes.

## A Wheat-Eating Worm.

J. M. Barnes has made a discovery of another enemy of the growing wheat, on his farm near town. He had noticed for a week or more that in spots his wheat was becoming thinner, and he found on examination that something was cutting the wheat plants near



# GLAD TIDINGS OF GREAT JOY

TO MILL OWNERS WITH DUSTY MILLS AND CLOUDY BROWS.

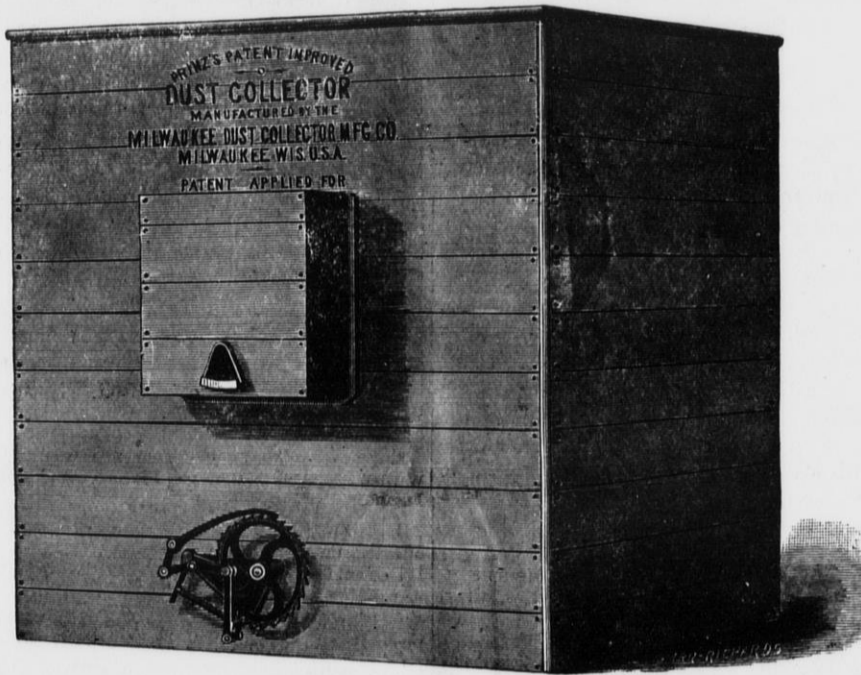
## An Important Problem Solved at Last.

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

## LESS POWER IS USED

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 PRICES FOR EXCELLENT MACHINES.

### TESTIMONIAL.

Milwaukee, June 18th, 1882.

MILWAUKEE DUST COLLECTOR MANUFACTURING CO:

Gentlemen,—The Dust Collector you have put in on trial in our Mill is giving the same satisfaction as when first started, over two months ago. We have therefore concluded to adopt your machine for all our Purifiers, Roller Exhausts and Cleaning Machinery. You will please make as many Machines for us as are necessary. Yours Truly,

NEW ERA MILLING CO.

More testimonials are given in our circular, for which please address

**Milwaukee Dust Collector Mfg. Co.**

Milwaukee, Wis. U. S. A.

[Please mention the United States Miller when you write to us.]

## UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, No. 118 GRAND AVENUE, MILWAUKEE, WIS.  
SUBSCRIPTION PRICE.—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid.....\$1 00  
To Canadian subscribers, postage prepaid..... 1 00  
Foreign Subscriptions..... 1 50  
All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker.  
Bills for advertising will be sent monthly, unless otherwise agreed upon.  
For estimates for advertising, address the UNITED STATES MILLER.

[Entered at the Post Office at Milwaukee, Wis., as second 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 seen in the UNITED STATES MILLER. 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 1, 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 the United States are distributed as follows:

Alabama, 388; Arizona, 17; Arkansas, 234; California, 209; Colorado, 52; Connecticut, 309; Dakota, 44; Delaware, 96; District of Columbia, 7; Florida, 81; Georgia, 514; Idaho, 18; Illinois, 1258; Indiana, 1163; Indian Territory, 3; Iowa, 872; Kansas, 437; Kentucky, 642; Louisiana, 41; Maine, 220; Maryland, 349; Massachusetts, 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, 1942; North Carolina, 556; Ohio, 1462; Oregon, 129; Pennsylvania, 2786; Rhode Island, 47; South Carolina, 205; Tennessee, 620; Texas, 548; Utah, 129; Vermont, 231; Virginia, 689; Washington Territory, 45; West Virginia, 404; Wisconsin, 780; Wyoming, 3; Total, 21,356.

The directory is printed from new Burgeois type on heavy tinted paper and is substantially bound. It makes a book of 200 large pages. The post offices are alphabetically arranged in each state, territory or province. The name 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 indispensable to all business men desiring to 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, publisher of THE UNITED STATES MILLER, Milwaukee, Wis.

We call the especial attention of our readers to the "IMPORTANT LETTER TO MILLERS" from the STILWELL & BIERCE MANUFACTURING CO., of Dayton, Ohio.

A BOSTON writer predicts that wind-mills will, in the near future, be used extensively for the purpose of generating and storing electricity for use as desired.

OUR readers who are 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 New York last year came from the different countries as follows: Germany, 199,000; Ireland, 64,000; England, 39,000; Sweden and Norway, 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 Chattanooga, 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 observers 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 Ill.; 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 favor of a strong protective tariff.

THE PHOENIX 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 mill work. Our old friend Jonathan Mills,

known the world over as an inventor of flour mill machinery, and designer and builder of flour mills, assumes the position of general manager. Among the machines manufactured by this establishment are the JONATHAN MILLS CENTRIFUGAL BOLTING REELS and improved ROLLER MILLS. The Company will also make a specialty of furnishing MILLS' GRADUAL REDUCTION MACHINES and will also do a general mill-furnishing and mill-building business. The Phoenix Foundry and Machine Works have a fine reputation amongst millers and now they are better prepared than ever before to meet promptly all of their 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 and instantly killed. "Uncle Samuel," as he was fondly 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 90th year when he was so suddenly summoned to that better land beyond. We extend our heartfelt sympathy to his family and friends.

[Written for the UNITED STATES MILLER.]

## Plain Talks About Milling.

By RICHARD BIRKHOLOZ, M. E.

(Continued from June number.)

An indirect saving can be made by always buying good machinery. Many millers will buy from the lowest bidder and mill furnishers aiming to sell only the best machinery cannot compete in price with those who slight work in order to make a margin on a low bid. Each will manage to earn about the same; they all desire to make money. I 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 results 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 its place of destination; couplings which fit loosely on the ends of the shafts instead of being drive-fit, which after being keyed on, are not square on the shafts and which, after the bolts have been put in and tightened, will "spring" the shafts, causing them to wobble around, wearing and loosening the boxes, consuming power, wabbling the pulleys on them in all directions. A well-made coupling requires time, skill and absolute correctness of workmanship. Poor fitting pulleys are another result of cheap work; they will not go onto the shafts at all or else they will go on too loosely and after the key or set-screw is tightened they will run untrue and out of balance, shaking the entire mill-floors. Then badly fitted gearing, which will not run on the pitchline, on account of being bored eccentrically or slanting, is another result of cheap work. Such gears cause an intermitting noise whether they are of iron or core and iron. Among other cheap things I will mention, green maple cogs, poorly set and dressed core-wheels, badly trimmed pinion teeth cheap and nasty babbitt, poor belting and elevator cups, leaky bolting chests with loose joints, green lumber, conveyor shafts of green wood, warping up and cutting conveyor boxes. Poorly fitted keys are constantly in danger of working loose and dropping out, thereby causing 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 supply only good machinery.

Many millers are inclined to regard the millwright as one seeking to despoil them of their cherished wealth, but if they are good correct advisers, they should be esteemed as their best friends. The millwright must necessarily have the entire confidence of the millowner consulting him, and also of the mill 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. A 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 miller and millers should not overlook this fact.

The millwright visits a mill, and is asked to

use his best judgment in effecting a change embodying the latest improvements. He examines the building; he finds low and few stories and feels somewhat discouraged; he feels still worse when he finds a cupola roof, contracted upper story with waste-room under the main roof.

When the miller consents upon his advice to 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 if he could accomplish something desirable.

A new process mill must have high stories—a building with basement and four to five stories above. I do not say that a new process mill cannot be made out of a cupola topped building with few floors—oh, no—but a surplus of elevators, shafting and gearing must be resorted to. Elevators will be present everywhere and more money is spent sometimes in rebuilding such mills with an unfavorable building than the changing of the building would cost and besides this a 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, admitting passage between their legs, all plumb and on one shaft. They would see how necessary it is for driving and spouting to the chests and purifiers if they stand in a certain 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 for convenience sake. They can re-utilize nearly all of the old shafting, pulleys and gears, 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 diagram, the fruit of mere hard earned experience, 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 him some machines and then leave him to his own unaided endeavors to make his investment pay.

Unscrupulous agents try to "get on the right side" of the miller by telling him that a small 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 circumstances 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 frequently overrun with millers wanting experts to examine their mills and asking for drawings 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 measurements of their mills, make drawings, specifications, estimates, and finally draw up 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 hand for a reasonable remuneration for his lost time, and then—well, there have been cases where the millowner 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 temple drawings 1½ to 2 per cent. of the total cost of 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 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 the flour with which it is mixed.

Flour may be conveyed without harm for the molecules are so far reduced that they will not powder by the action of a conveyor. Breaks and products of smooth rolls ought not to be conveyed to exceed 6 feet, on account of producing flour dust; if such are conveyed for a short distance, the flights of the conveyors must be iron in order to shove along the stuff 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 delivers it into a separate cloth dust room, (Kirk & Fender). The conveyors are placed below the joist but are spacious in size over 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 spout into the elevator. The meal is not conveyed over five feet.

The loss of dust through slatted windows of old-fashioned dust rooms is calculated to be about ¼ of one per cent. of wheat ground; this 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 about 2½ 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 dust-room in a 1000 barrel mill or \$5,700 per year. Besides that a great amount of coal is lost on account of the warm air of the mill being sent out of the building. Here a saving may be effected by even the smallest mill owner.

It has been satisfactorily proved by experiments 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 have 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 greatest 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 reduction 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 smutters, consume a great deal of power. I have indicated a 600 bushel receiving separator in one case and found it to consume 6½ horse powers. A 100 bushel smutter in another 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 Continued.)

**A New Mechanical Dictionary.**

Since the completion of KNIGHT'S AMERICAN MECHANICAL 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 fertility of resource in the adaption of means to ends quite as marvelous and equally important in practical results. Achievement has outrun the most sanguine expectation, and with such rapidity that even the most recent records 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 individual 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 indispensable supplement to all works of reference upon mechanics now extant, as none of them cover the period mentioned.

The same method has been adopted in dealing with the subject matter in both works. First, each article appears in its proper alphabetical place, thus fulfilling the function of a dictionary, in affording direct response to inquiry. Second, the items of information thus distributed throughout the work are classified in Special Indexes of the Art, Profession or Manufacture to which they pertain. The book thus fills the function of a Cyclopædia, which is a collection of treatises.

The value of a work of references depends largely upon its index. When one has a question to ask of an ordinary cyclopædia 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 notion of its use. This is accomplished by grouping 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 subject 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 at easy command. This Index cannot fail to

meet with the heartiest appreciation among those who have experienced the labor and difficulty attending an exhaustive search upon any line of inquiry.

"Index-learning turns no student pale,  
Yet holds the eel of science by the tail."

The work treats many thousand subjects, and is illustrated with over 2,500 carefully prepared engravings, and numerous full-page plates, and for general typographical excellence, quality of paper and printing, it is unsurpassed. It may be bound uniform with any edition of the Knight's American Mechanical Dictionary, or with any cyclopædia or other book of reference of the usual size and shape. Sold only by subscription in four sections, containing 240 pages each.

For further particulars address the Publishers, HOUGHTON, MIFFLIN & Co., Boston, Mass.

**Built-up Work in Engine Construction.**

BY HORACE SEE.

[A paper read before the American Society of Mechanical Engineers.]

This paper is intended to treat, in as general and brief a way as possible, of some of the advantages resulting from the use of built up work in engine construction.

It will be desirable for you before proceeding farther, to understand what is meant by the term "built up" as applied to the subject under consideration. We mean a structure

hammer can fashion each piece to near the required shape, where but a small portion of the tough material has to be removed, and where the risks are a great deal less. All of these requirements are met by the built-up system, which has also the additional advantage of furnishing to the forge such shapes as can be more easily made with the fibres of the material running in the proper direction.

With castings the evils resulting from crowding too much into one piece are of an analogous character. We will take a bed-plate to illustrate this. Two patterns, each consisting of one fore and aft and two athwartship 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, either on the floor or in the oven. In the machine shop the largest planing machine is called into play, and that, quite possible, not able to plane more than one piece at a time. Each 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 required for the athwartship, and another for the fore and aft pieces. This subdivision also

the direct line of what he has set out for quite as much for the exercise of all the faculties of the mind as there is in any other direction in the world. In other words, he should start out to learn something quite different from the commonly accepted idea of a trade—something to which the skill of his hands is only secondary. Not by any means that 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 real 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 that 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 absolutely 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, that the prevailing idea combats the theory that a young man who is to follow mechanical pursuits should be taught to reason systematically by some sort of previous educational training, but that the sentiment is not impressed as it should be that as he learns to use his hands he should just as systematically learn to use his higher faculties. In

aword, the popular idea of a trade needs to be vastly enlarged, and made to comprehend what really constitutes a mechanic. In this way a young man may be able to understand in the beginning what it sometimes takes him years to learn—takes him so long to learn what to do, that he never begins to do it.

It would be foolish to call a man a surgeon who knows how to cut, but not when or where. It is equally foolish to call a man a mechanic who knows how, but not when or why to do a thing.

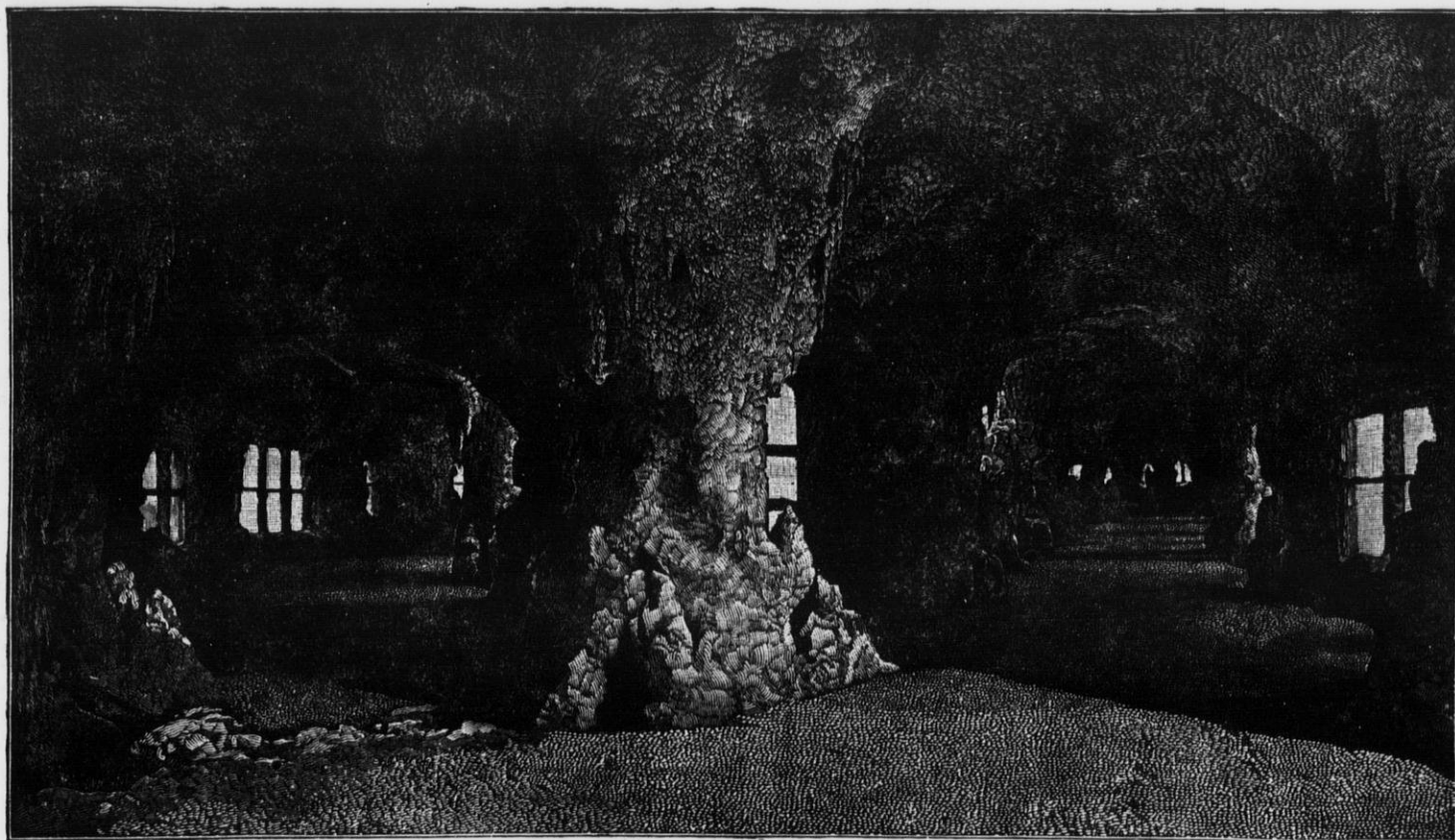
Another fallacy, and one which has much to do with fostering the belief that it is not worth while to interest anything but muscle in the case of the mechanic,

is that there is not so much ahead of the mechanic as there is ahead of the professional man. This notwithstanding it is contrary to all facts, is the prevailing opinion.

If from 200 boys 100 are taken, indiscriminately, for any of the professions, and the other 100 are devoted to mechanical pursuits, giving each equal advantages 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 eminence before the world is also better. There will be more absolute failures amongst the professional class than amongst the other—that is, failures to make a respectable 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 than 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.



GROTTO AND AQUARIUM OF THE TROCADERO.—PARIS, 1881.

(From Knight's Mechanical Dictionary.)

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 largest 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 propeller engine, are made.

The following extract from a letter in *Engineering*, of August 19, 1881, strikes the keynote of the subject: "The fact will doubtless have its influence for all time coming when the shafts for gigantic steamers are to be ordered, as it is absolutely impossible to insure that a forging shall 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 forged 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 aft one, on a smaller planer than in the other system.

This subject could be elaborated, but I think enough has been said to call attention to and furnish food for reflection upon a very important part of steam engine construction.

**Mechanical and Professional Education.**

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 mechanic. This is one of the commonly accepted 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 success in a 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 like many another false idea that ought to have disappeared generations ago.

The young man who looks to mechanical pursuits 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





**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 receipts therefor, applied to a bank for a loan, and were allowed the loan on condition of their giving a warehouse receipt for 18,000 bushels No. 1 white winter wheat and No. 2 red, the same or an equivalent in flour to be held for the bank as security for the payment of a note of \$20,000. The millers subsequently 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 the wheat in store for the remainder. Upon 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. 2. That the pledge in this case was not invalid because of its specifying two kinds of wheat, but that the pledge was entitled to take an equal amount of each kind. 3. That, not finding the requisite amount of wheat, the bank might legally take an equivalent from 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 annually 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 unsuccessful; 16 were compromised and 6 were 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 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 exorcised because of the myriads of rabbits which are eating up colony farm products and threaten an entire devastation. Cats are 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 feet.

EDWARD WILLIS, a Sudbury (Mass.) miller, has at the present time a seven-toed cat, which is rearing two seven-toed kittens of her own, three red or "ferret" squirrels, and a raccoon. They are all together, and the cat regularly nurses the entire lot, manifesting just as much affection and anxiety the welfare of the squirrels and the raccoon as 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 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 applications. This has now been realized in the Technical High School at Stuttgart. One term will be devoted to theoretical principles, the most 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 telegraphy was appointed in the Dresden Polytechnikum.

SLY OLD HORSE.—Anent "The Blues," I have heard a charming story, illustrative of the wonderful intelligence of some horses. One evening the officer on guard hearing a noise in the stables, concluded that a horse must have got loose. He therefore went with a corporal of the guard, and, looking through a keyhole, saw an old troop-horse lifting up the lid of the corn bin and munching away at the oats. The officer rattled the door by mistake. The old charger instantly cocked his ears, stole back to his stall, artfully slipped his head back into his halter, and awaited events as if nothing had happened. Seeing this, the officer and corporal, pretending to be deceived, after looking around the stables, went out again. So soon, however, as the horse heard the lock turned upon them, he slipped his halter and attacked the corn bin again. At this the crafty old warrior was firmly secured.—*London Figaro.*

**Things Worth Knowing.**

GRAPHITE paint has lately been put to a new use. It has been applied to iron to protect it against the corrosive action of the sulphurous acid fumes which are so destructive in metallurgical works. The result of the experiment was so successful that the corrugated iron roofs of the Colorado Smelting Works in Denver have been coated with it.

A WEALTHY 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 connected with its telephone and battery. Then at night, he puts his ear to each of the instruments and listened for the murmuring of the waters—and in several cases heard it.

BLACK walnut can now be manufactured very cheaply. One part of walnut peel extract 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 bi-chromate of potash with water is rubbed on it, and then your walnut is ready. Furniture dealers have been known to make excellent walnut from very poor pine, but the difference was slightly perceptible; however, this method is said to defy detection.

A MODE OF HULLING WHEAT.—A SWISS process of removing the bran of wheat without loss of nutritive matter, consists in moistening 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 hull proper, so that it may be removed by the slightest friction, leaving the gluten with the body of the grain.

IMPERMEABLE LEATHER.—The following process for rendering leather impermeable, says the Manchester *Mechanical World*, is given by Mr. Jacques, of Hemming, near Sarrebourg. It depends on the property of soap solution being decomposed by acids, and being transformed into fatty acids which are insoluble in water. The leather is dipped before using in a solution containing from 2½ 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, transforms the soap solution into insoluble fatty acids, and renders the leather perfectly impermeable.

MANY work-shops contain a dirty wash-leather, which is thrown aside and wasted for the want of knowing how to clean it. Make a solution of weak soda and warm water; rub plenty of 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 rinsed in water only, for then it would be so hard when dry as to be unfit for use. It is the small quantity of soap left in the leather that allows the finer particles of the leather to separate and become soft like silk. After rinsing, wring it well in a rough towel and dry quickly; then pull it about and brush it well, and it will become softer and better than most new leathers. In using a rough leather to touch up highly-polished surfaces, it is frequently 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 white-wash yellow with copperas and covering the stone and rafters with it. In every crevice in which a rat may go we put the crystals of the copperas and scatter in the corner of the floor. The result was a perfect stampede of rats and mice. Since that time not a footfall of either rats or mice has been heard around the house. Every spring a coat of yellow wash is given the cellar as a purifier, as a rat exterminator, and no typhoid, dysentery, or fever attacks the family. Many persons deliberately 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. Cover up everything eatable 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 exterminator as the chemist can provide. We never allow rats to be poisoned in our dwelling. They are so apt to die between the walls and produce annoyance."

FIREPROOF PAINT.—Some experiments, says the London (Eng.) *Timber Trades Journal*, were recently shown at the offices of the United Asbestos Co., in the presence of the Lord Chamberlain and others. The Asbestos was prepared as a paint, with which wood, canvas, and gauze net were coated, and various specimens were submitted to the action of fire and strong flame, but in no case was ignition effected. Among other experiments, a piece of light pine wood, about six inches long by four inches square, painted with five coats, was placed for upwards of half an hour in an ordinary grate fire; but although the wood within was reduced to charcoal there was no blaze whatever emitted during the charring. In the yard of the premises a small model theatre, built of wood, was sprinkled with turpentine and set light to. Every portion ignited, and the whole consumed. A similar model, with the scenes and the wood framing all painted with Asbestos, was drenched with turpentine and set fire to, but the thin scenes were only partially 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 to the whole of the woodwork on the great stage of the Crystal Palace.

CONSUMPTION OF BOXES IN CALIFORNIA.—It looks, says the Reno *Gazette*, as if the consumption of boxes on the Pacific coast would continue to increase and the manufacture of them become one of the greatest industries in the country. There is already a vast amount of packing going on, and it must increase rapidly for many years, for the resources of the coast are not one-tenth part developed. The whole East is open to the California producer of grapes, apples, pears and small fruits, while the whole world is drawing on her for salmon, canned goods, borax and other staples. Nevada, Utah, Colorado, Wyoming, Arizona, New Mexico and Texas send for greens and vegetables every day in the year nearly, and they all have to be boxed. All this time great vineyards are being planted to grapes, the foothills are being cleared and orchards set out, the rivers are being stocked with salmon and trout, 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 increasing; 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 extravagant.

**Foreign Items.**

DURING the year 1881 there were granted, in Germany, 4,399 patents.

AN English and Canadian syndicate, of which the Duke of Manchester is the head, has purchased of the Canada Pacific Railroad 5,000,000 acres of land of sections running from Brandon to the eastern boundary of British Columbia, with an interest in all the town 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.

**"BEST IN THE WORLD."****GARDEN CITY****WHEAT BRUSH!**

Gathmann's patent "inclined bristles" prevents all clogging when the brushes are run close together. This is the

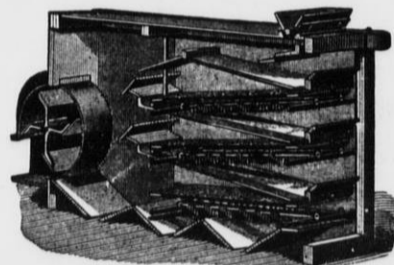
**ONLY DOUBLE BRUSH**

Which can be set up close so that it will

**Thoroughly Brush Wheat.**

Guaranteed to **IMPROVE 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****Middlings Purifier!****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 competition*. We make it up in the best style at short notice. Send for prices and samples.

**Garden City Mill Furnishing Company,****CHICAGO, ILL.**

[Mention this paper when you write us.]

# COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE.

## GENERAL MILL FURNISHERS

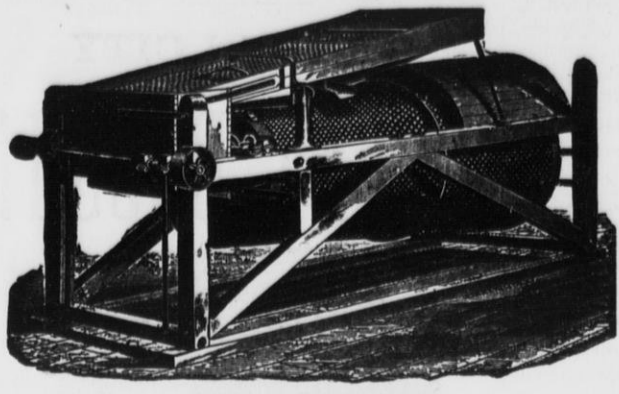
AND MANUFACTURERS OF

### IMPROVED COCKLE SEPARATORS

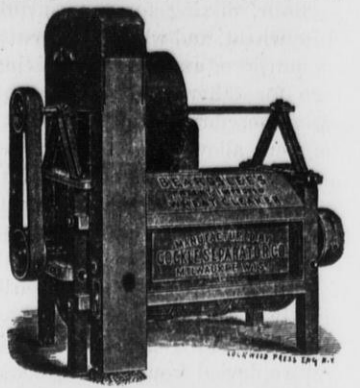
(Kurth's Patent.) Also built in combination with

### Richardson's Dustless Wheat Separators!

Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.



PLAIN COCKLE MACHINE.



BEARDSLEE'S WHEAT CLEANER.

Perforated Zinc at Bottom Figures.

Send for Illustrated Catalogue.

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 a DAILY LOSS OF MONEY in a mill. There is NO MACHINE IN THE MARKET which can stand comparison with ours.

Carbondale, Ill., Dec. 2, 1881.  
Cockle Separator Mfg. Co., Milwaukee.  
Gentlemen:- Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work.  
Yours respectfully,  
BROWN & WINFREY.

Perrysville, Ind., Nov. 24, 1881.  
Cockle Separator Mfg. Co., Milwaukee.  
Sirs:- The combined machine I bought of you has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of.  
Yours respectfully,  
B. O. CARPENTER.

Hixton, Jackson Co., Wis., Dec. 30, '81  
Cockle Separator Mfg. Co., Milwaukee.  
Gents:- In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction.  
Respectfully yours,  
W. T. PRICE,  
per D. G. THOMAS.

P. S.- I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat.

As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain  
Yours, etc. D. G. THOMAS.

Minneapolis, Minn. Aug. 22, 1881.  
Cockle Separator Mfg. Co.:

We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.

Yours truly,  
CAHILL, FLETCHER & CO.  
La Crosse, Wis., July 30, 1881.

Cockle Separator Mfg. Co., Milwaukee.  
Gentlemen:- The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. cannot see that it breaks the wheat or requires an unusual amount of power to run it.

Yours truly,  
WILLIAM LISTMAN.

Milwaukee, Wis., Aug. 23, 1881.  
Cockle Separator Mfg. Co.  
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 reference, and to any party calling on us we will be pleased to show the machine in operation,  
Yours truly,  
NEW ERA MILLING CO.

Pott's Patent Automatic Feeder! The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width. Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

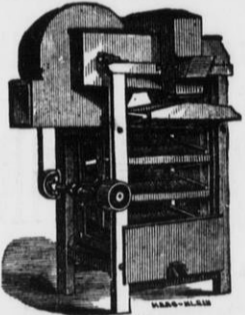
# HOWES, BABCOCK & EWELL,

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

Established 1856.

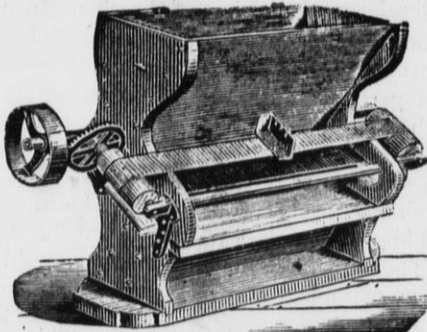
MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



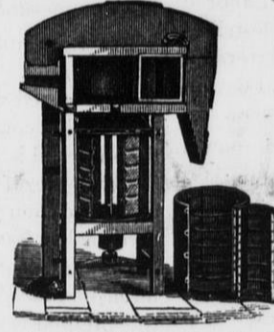
The Eureka Separator occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



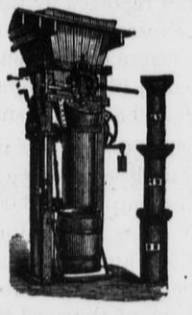
The Eureka Smut and Separating Machine. A combined Smut and Separating Machine, having thorough ventilation. Over 14,000 of these Machines are now in use.



Eureka Magnetic Automatic Separator. Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



Eureka Brush Finishing Machine. Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer. Will pack whole and half barrels, and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent creveling steel coil spring regulating the packing to perfection.

GENUINE DUFOUR AND ANCHOR BRAND BOLTING CLOTHS. FULL STOCK ALWAYS ON HAND, MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER.  
Office and Warehouse in England, 16 MARK LANE, LONDON, E. C. Gen. Agency for Australian Colonies & New Zealand, THOS. TYSON, MELBOURNE, VICTORIA.

## Abernethey's New Book.

PRACTICAL HINTS

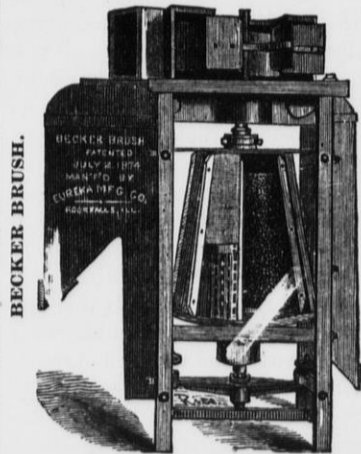
### Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.

Every Miller, Millwright and Millwright's Apprentice should have a copy.

THE UNITED STATES MILLER for one year and a copy of this book will be sent for \$4 00. Address,

UNITED STATES MILLER,  
Milwaukee, Wis.



BECKER BRUSH.

## EUREKA MANUFACTURING CO.,

Manufacturers and Sole Proprietors of the

### BECKER BRUSH,

Galt's Combined Smut and Brush Machine.

The Only Practical Cone-Shaped Machines in the Market, and for that Reason the Best.

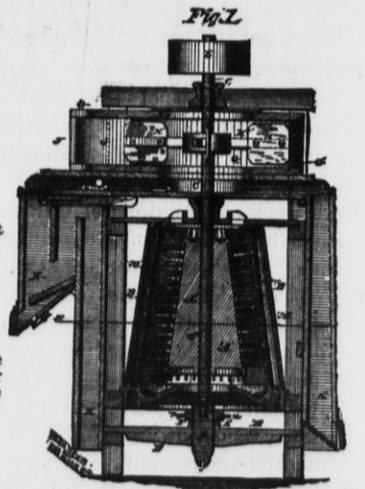
ADJUSTABLE WHILE IN MOTION.

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 milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, the users to be the judges of the work. For price and terms apply to

EUREKA MAN'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 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, substantially 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 kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice.

NO OTHER engine builder 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.

WM. A. HARRIS, Proprietor.

[Mention this paper when you write us.]

# A NEW PROCESS ROLLER MILL! FOR SALE!

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 WM. C. DURANT,

"CITY MILLS,"

MILWAUKEE, WIS.

[Mention this Paper when you write.]

# STEEL CASTINGS

Works, CHESTER, PA.  
[Mention this paper when you write us.]

FROM 1-4 to 10,000 LBS. WEIGHT.  
True to pattern, sound and solid, of unequalled strength, toughness and durability.  
An invaluable substitute for forgings or cast iron requiring threefold strength.  
Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Locomotives, etc.  
15,000 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.  
Circulars and price list free. Address,

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

NEWS.

GEO. H. CORLISS, of Providence, R. I., has recently furnished pumping engines for that city.

BURNED.—B. E. Smith's mill, at Pott's Grove, Pa. Loss, \$14,000.

BURNED.—Henry Rodee's mill, at Ogdensburg, N. Y. Loss, \$65,000. Insurance, \$43,000.

SCOTT, PENROSE & Co., have dissolved partnership. D. Scott continues the business.

FREDERICK H. PERRY, of Whitney's Point, is dead.

KLUMER & VOGES, of Evansville, Ind., dissolved; Fred. Voges continues.

MRS. J. A. ELLIS, of Grafton, Neb., has sold out her milling business to Welch & Price.

THE mill of Messrs. Hole & Fanger, at Celina, O., 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 machinery is to be furnished by the Nordyke & Marmon Co., of Indianapolis, Ind.

MESSRS. FISHER BROS' mill, at Spencer, Ind., burnt out; loss \$5000. Insured.

TENNESSEE winter wheat has already arrived in Milwaukee and is being ground into flour.

A LARGE roller mill is to be erected at Abilene, Kan. It will have a capacity of about 200 barrels per day.

THE KELLER PURIFIER Co., of Lima, O., will hereafter be known as the LIMA MILL FURNISHING Co.

THE firms owning the "Union" and "Sparta" flour mills, at Sparta, Ill., have consolidated under the name of Gordon, Barker & Co.

THE Keller Purifier Co., of Lima O., will hereafter be known as The Lima Mill Furnishing Co.

PELEG HOWLAND of the milling firm of P. & F. A. Howland, of Ambton Mills, Ontario, Canada, is dead.

E. A. TOWNLEY & Co., Monticello, Ill., have dissolved and are succeeded by S. H. Hubbell & Co.

MESSRS. COX, BRUNER & Co., of Peoria, Ill., have disposed of their milling interests to J. W. Donmayer & Co.

THE milling firm of Smith & Jovey, of Hobart, Ind., have dissolved and are succeeded by Jovey & Ballentine.

THE firm of Barrett & Oglesby, of Dalton, Ga., is dissolved. The business will be carried on by Barrett, Denton & Lynn.

THE 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, \$6,000. Insurance, \$1,200.

THAT jolly miller, Sam. Robinson, of Sandersville, Ga., recently caught with his hook and line, in his mill pond, a cat-fish weighing forty-five pounds.

DON'T throw away your old flour barrels. They are useful. It has been found that an ordinary flour barrel will hold 678,900 silver dollars.

MESSRS. WALSH, DE ROO & Co. have commenced the erection of a 175 barrel roller mill at Holland, Mich. It is furnished with a Reynolds-Corliss engine and the Gray Roller Mills.

L. R. BROWN & Co., formerly of Stevensville, 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 mill is of the Nordyke & Marmon Co's make, at Indianapolis, Ind.

**FOR SALE.**  
A Four-run Mill at Troy, Doniphan Co., Kansas, with Rolls and Purifier, plenty of steam power, and everything in good order for making first-class flour. For particulars address  
D. M. PARKER, Troy, Doniphan Co., Kan.

**A FACT.**  
I sell my flour in competition with the best St. Louis Mills. I get the same price. My Mill has made a net profit, since the harvest of 1881, of nearly 50 per cent. over the cost of the Mill.

**AN OPINION.**  
I could not afford to do without the Slater Reels if I had to pay twenty-five dollars a month for the privilege of using each Reel in the mill. This is the statement of Mr. J. W. Buky, of Nicholasville, Ky.  
C. B. SLATER & CO.

**SLATER'S REELS.**  
Mt. Sterling, Ill. May 25, 1882  
C. 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 Flour. No other change was made in the Mill.  
Correspondence solicited.  
Respectfully yours,  
C. B. SLATER & CO.

Milwaukee Steam Engine Works.

Improved Corliss Engine

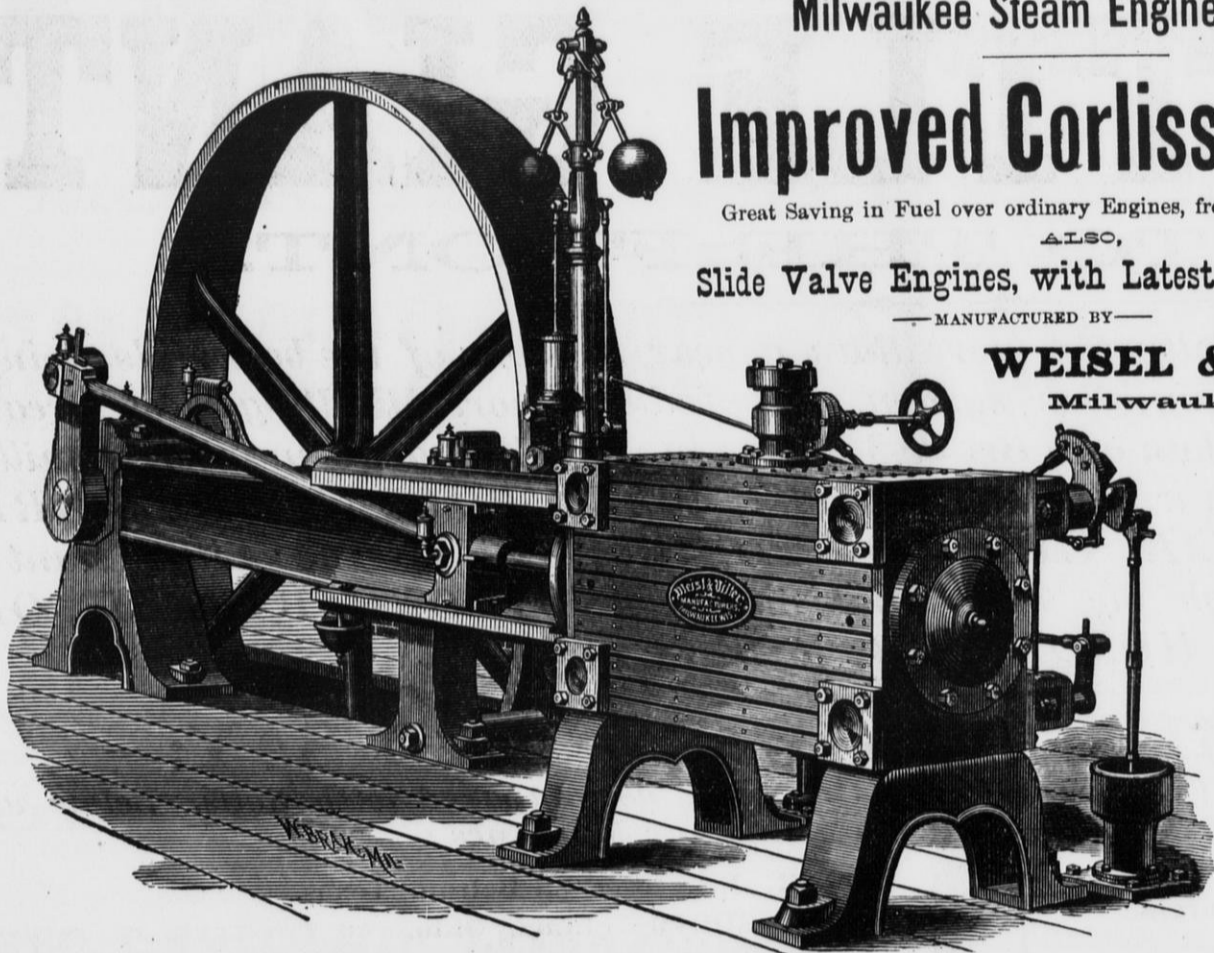
Great Saving in Fuel over ordinary Engines, from 40 to 50 per cent.

ALSO,

Slide Valve Engines, with Latest Improvements.

—MANUFACTURED BY—

**WEISEL & VILTER,**  
Milwaukee, Wis.



This Cut was taken from a Corliss, 12 inch Diameter, 36 inch Stroke.

**BOLTING CLOTH!**

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 us before you order. Address,

**CASE MFG. CO.,**  
Office & Factory; Columbus, Ohio.  
Fifth St., North of Waughten.

**BIRGE & SMITH,**  
**PRACTICAL**  
**MILLWRIGHTS.**

PLANS, SPECIFICATIONS & ESTIMATES  
MADE FOR ALL KINDS OF  
MILLWORK, MACHINERY, ETC.  
Flour, Sawmill, Tanners' and Brewers' Machinery, and General Mill Furnishers,  
Corner of East Water and Knapp Sts.,  
MILWAUKEE, WISCONSIN.  
Mention this paper when you write us

STEAM AND AIR PUMPS,  
PULLEYS, SHAFTINGS, HANGERS, GEARINGS,  
WRITE FOR PRICES,  
**WEISEL & VILTER,**  
MILWAUKEE, WIS.

**BOLTING CLOTH Important Letter to Millers.**



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 drive, 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 others, 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 simultaneously 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 MILLERS 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 GUARD AGAINST BUYING MACHINES WITH THESE ADJUSTMENTS OF ANY BODY, UNLESS THE MACHINES ARE THE ODELL ROLLER MILLS, MANUFACTURED BY US.

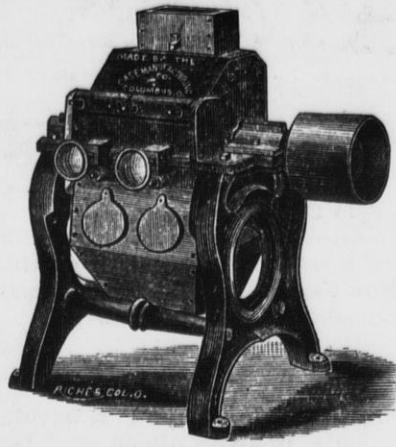
We are prepared to fill orders for these Mills promptly, and guarantee them to be of the very best material and workmanship.

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 MFG. CO.,**  
Dayton, Ohio.

# The Case Break Machines.



SINGLE MACHINE.

Capacity, 5 to 60 Bushels per hour.

Milwaukee, Wis., March 29, 1882.  
**CASE MANUFACTURING CO., Columbus, O.:**  
 Dear Sirs,—They excel our most sanguine expectations. After a trial of about three months we are highly pleased with their work, their capacity, and small amount of power required to drive them. If these Machines work as well 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 &amp; CO.

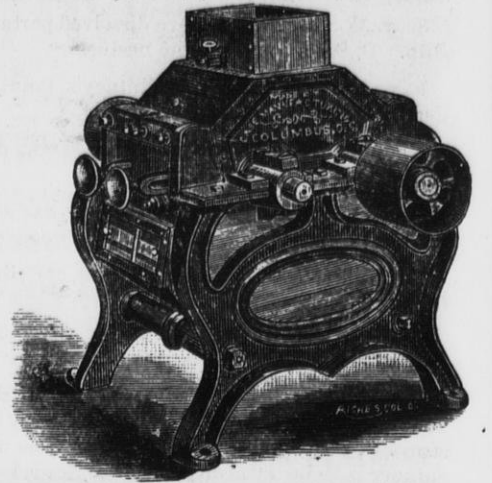
(Mr. S. is Secretary of the Millers' National Association.)

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, 120 Bushels per hour

# THE LITTLE GIANT

## STEPS TO THE FRONT.

*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. BROWNLEE, Irvington, Illinois.  
 D. B. SEARS' SONS, Rock Island, Illinois.  
 GOLDEN AGE MILL CO., San Francisco, California  
 LOS GATOS MANUFACTURING CO., Los Gatos, California.  
 TEXAS STAR MILLS, Galveston, Texas.

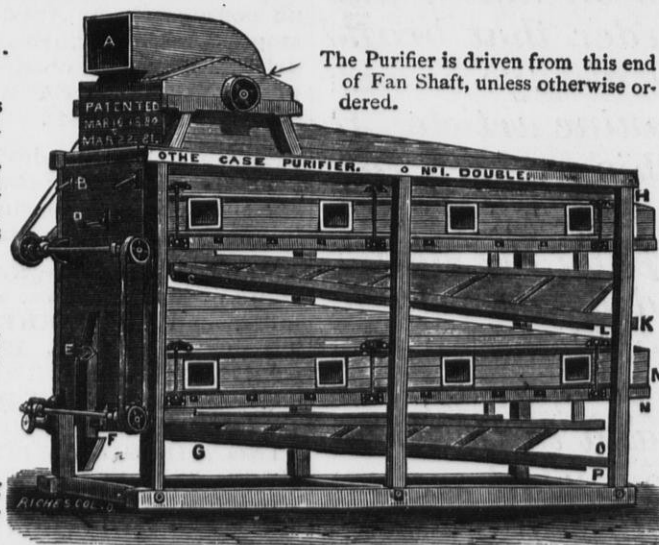
WEAR, LEE & CO., Belton, Texas.  
 W. B. GORTON, Lima, Ohio.  
 J. B. HICKS & CO., La Grange, Ohio.  
 J. B. MILLER & CO., Ashley, Ohio.  
 S. H. SEAMANS & CO., Milwaukee, Wisconsin.  
 J. H. LAUDIS, Yerks, Pennsylvania.

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

# THE CASE MIDDLING PURIFIER

A—The Fan Spout is reversible—is 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 length 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, sliding one-half the length of Riddle.



The Purifier is driven from this end of Fan Shaft, unless otherwise ordered.

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

The upper and lower halves are each a complete machine, and can be run together, or separately, as desired.

## STANDS TO-DAY WITHOUT A RIVAL,

Doing more and better work than any other, giving Double the Capacity, costing less, and runs without jar or noise. It is the ONLY DOUBLE PURIFIER, and has many new and valuable points, which we have covered with Patents.

Can fill orders promptly. Address

OFFICE AND FACTORY,

5th Street, North of Naughten.

[Please mention the United States Miller when you write to us.]

# CASE MANUFACTURING COMPANY,

COLUMBUS, OHIO.

**E. P. Bacon & Co.,**

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No. 125 LaSalle Street,

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**COMMISSION MERCHANTS!**

**GRAIN, SEEDS, PROVISIONS, ETC.**

Special Attention given to the Purchase and Shipment of Grain for Milling Purposes.

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.

Orders for Purchase and Sale of Grain for Future Delivery will be Promptly and Carefully Executed.

Mention this paper when you write us.]

**A NEW DEPARTURE**

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

**MORRITZ MARTIN PATENTS**

— ON —

**CENTRIFUGAL FLOUR DRESSING REELS**

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 make clear flour and a clean 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 ADAPTED to handling soft, reground material, full of light impurities, whether from rolls or stone. IT IS INDISPENSABLE to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner. IT MAKES A CLEAN SEPARATION on caed and flay meal from smooth ro which no other style of reel can do. IT IS VASTLY 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 Hundred sold in six weeks.**

REFERENCE TO LEADING MILLERS IN THE UNITED STATES.

Write for descriptive circular and price list to

**GEO. T. SMITH MIDDINGS PURIFIER CO., - Jackson, Michigan.**

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**John H. Miller,**

MANUFACTURER OF  
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**MILL BUHR RUBBER,**

SECTIONAL FURROW GAUGES AND STAFF.

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The Best, Cheapest, and Most-Durable Rubber in the Market, USED DRY. Will outwear any Rubber made in the world, and retain its cutting qualities until entirely worn out.

FACE RUBBER, 12x6x3 inches; weight 12 lbs; price, \$3.00. FURROW RUBBER, 12x6x1 1/4, 1 1/2, 1 3/4 and 2 inches, as required, \$2.50; or both for \$5.00, by express. Furrow Gauges and Staff \$1.25 per set, by mail. Send for circulars, testimonials &c. Address all orders as above.

N. B.—This Rubber will not wear a pair of Buhrs out of existence in 15 minutes. But if used in connection with the Pick and Red Staff will leave the face and Furrows in the best possible condition for making good work. For cleansing the face of Glazing it has no equal. Try it and be convinced. Money refunded if not satisfactory.

Mention U. S. Miller when you write to me.

**Steam Flouring Mill For Sale.**

On account of owner's death. Four acres of land with the mill with 4000 grape vines and orchard. Mill has three run of buhrs. It is three stories high and has good stone basement; built six years ago. Mill now has a good Custom trade and is also adapted to Merchant milling. Plenty of grain raised in the vicinity with large demand for feed stuffs. A modern built frame house and barn in good order on the premises. Situated 3 1/2 miles from Allegheny, only 1/4 mile from city line. Terms: Half cash, balance on time to suit purchaser. Address

MRS. JNO. KNOEDLER,

West View, Allegheny Co., Pa.

**THE ELECTRIC PURIFIER CO.**

FACTORY, NEW HAVEN, CONN. NEW YORK OFFICE, 17 MOORE ST.

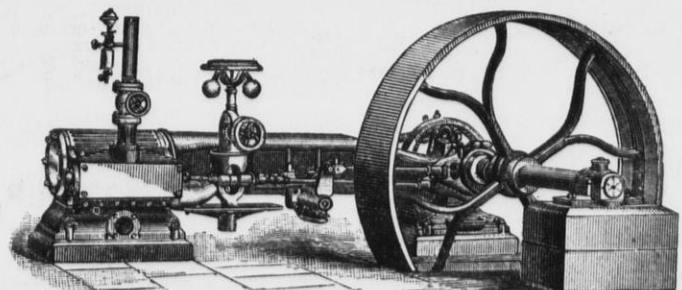
**IT PURIFIES MIDDINGS**  
Absolutely without waste. With greatly reduced space. With greatly increased rapidity. With greatly reduced power. With the very best results.

**IT DISPENSES WITH**  
All air blasts. All dust houses. All dust collectors. All dangers of explosion. All dangers of Law Suits.

Circulars, Samples, and all Information desired will be sent out from the New York Office on Application.  
JOHN RICE, General Manager, 17 Moore Street, New York.  
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Automatic Cut-Off, Fixed Cut-Off, and Slide Valve

**Steam Engines, Tubular Boilers.**

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**C. F. MILLER.**

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**GENERAL MILL FURNISHER.**

Plans and Specifications for Mills of any Capacity.

**ROLLER MILLS ON THE STEVENS SYSTEM A SPECIALTY.**

**BOLTING CLOTH** of the Best Brands at Importers' Prices. Water Wheels, Purifiers, Cleaning Machinery, Reels, Belting,

Everything used in a Flour Mill, AT THE LOWEST PRICES. If you want anything for your Mill, write first to me.

**BOTTLED BEER.**

VOECHTING, SHAPE & CO.,

SOLE BOTTLERS OF  
JOSEPH SCHLITZ BREWING COMPANY'S  
**CELEBRATED MILWAUKEE LAGER BEER,**

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MILWAUKEE, WISCONSIN,  
BOTTLE SUPPLIES CONSTANTLY ON HAND.



Parties corresponding will please state where they saw this advertisement.]



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MILL BUILDERS AND FURNISHERS,

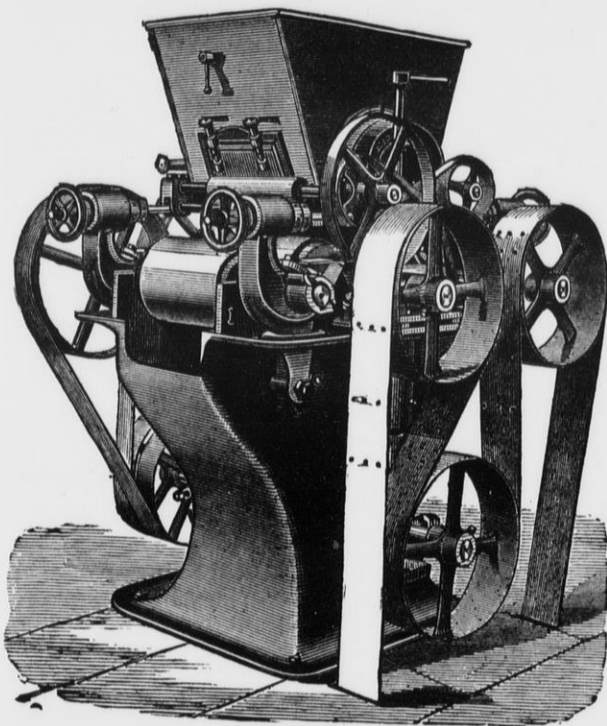
AND SOLE MANUFACTURERS OF

GRAY'S PATENT NOISELESS

# ROLLER MILLS

CORRUGATED AND SMOOTH CHILLED IRON ROLLS,

# 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 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 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

# EDW. P. ALLIS & CO.,

MILWAUKEE, WIS.





The United States

# MILLER

Published by E. HARRISON CAWKER. { Vol. 13, No. 4. }

MILWAUKEE, AUGUST, 1882.

{Terms: \$1.00 a Year in Advance. Single Copies, 10 Cents.

## THE STEVENS ROLLER MILLS

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. We also manufacture the

### Celebrated Cosgrove Concentrated Mill

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

**READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:**

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 4½ 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 ¼ to ½ 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,

F. E. SMITH & CO.

**Among Recent Orders We Name the Following from Prominent Millers:**

Lexington Mill Co., Lexington, O., 12 pairs,  
Pollock & Co., Vincennes, Ind., 12 pairs,  
James Norris, St. Catherines, Ont., 28 pairs,

E. O. Stanard & Co., St. Louis, Mo., 28 pairs,  
Penfield, Lyon & Co., Oswego, N. Y., 2 Cosgroves.,  
McNeil & Baldwin, Akron, O., Cosgrove and 10 pairs.

E. T. Archibald & Co., Dundas, Minn., 12 pairs,  
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.

## ODELL'S ROLLER MILL.

### An Established Success.

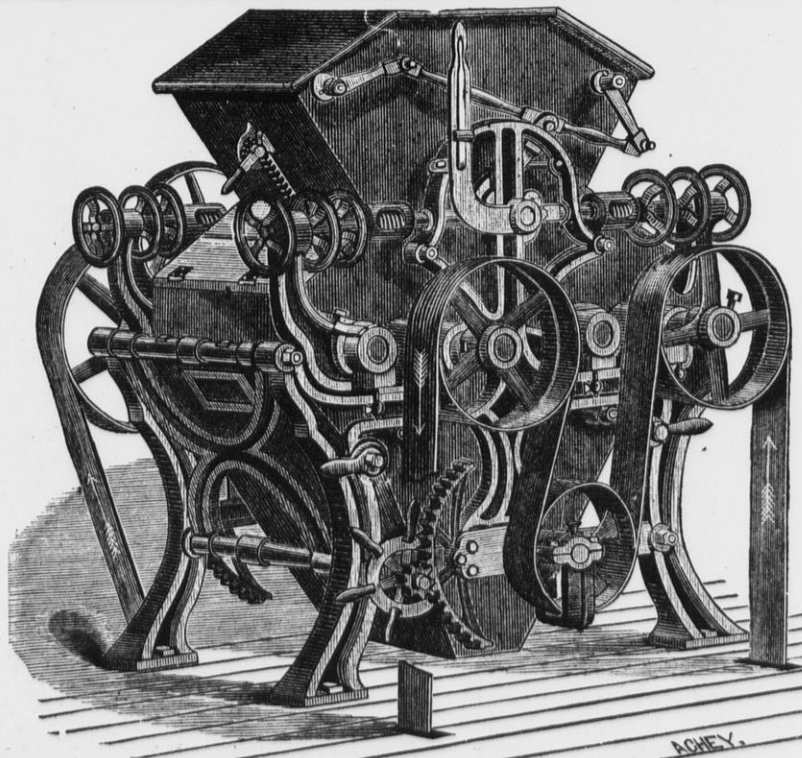
We invite particular attention to the following

#### 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. 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 tension-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

### Ansonia 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.,

DAYTON, OHIO, U. S. A.

[Mention this Paper when you write to us.]

# 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 21st, 1880; March 8th, 1881; December 20th, 1881. 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 Noiseless 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,

**MILWAUKEE, WIS.**

# The United States

# MILLER

Published by  
E. HARRISON CRAWKER. { Vol. 13, No. 4. }

MILWAUKEE. AUGUST, 1882.

{ Terms : \$1.00 a Year in Advance.  
Single Copies, 10 Cents. }

## Decortication.

Decortication of wheat is the act of stripping off the covering of the wheat berry. Many inventors have striven to invent a machine which would effectually accomplish this, but heretofore they have not succeeded in doing so. The most recent invention for decortivating grain has been made and just been patented by Wilson Ager, of Washington, D. C. In reference to it, a late issue of 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 successfully completed, we are enabled to give the following facts. Wilson Ager of the Trades mill, has perfected an invention which promises to be in great demand among millers everywhere. It is a grain decortivating apparatus, the process through which the grain passes completely removing the cuticle of the wheat berry, and enables the miller to realize a much higher percentage 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, between 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 operated upon produces, after passing through the burrs, 90 per cent. of middlings, and when ground by rollers gives 92 per cent. Without this process of cleaning grain, the best results seldom exceed 60 per cent. by rollers, and about 45 by buhrs. When milled by either of the old processes, from 10 to 20 per cent. of the fancy grade 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 order to bring it up to the grade known as bakers' 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 pound of "chop" of the first break and whatever 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 12 11-16 ounces of middlings, 2 1/4 ounces of break flour, one ounce of bran; loss by handling 1-16 of an ounce. This would show an average of about 90 per cent. of middlings and 10 per cent. of break flour of a superior quality sharp and white, worth \$2 more than ordinary 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 first-class 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 ground by both the roller and burr process of grinding. The bran produced is found superior to bran made without the cleaning process, being larger and broader than can be made by any other method, a result which has surprised millers, who have invariably contended that the bran would be pulverized so fine as to become mixed with the flour, thus lowering and injuring the grade.

"This invention is protected by three American patents on the mechanism, and one on 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 machinery manufactured in the state of New York, in Washington, D. C., and in Minneapolis.

"Mr. 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 Europe and other parts of the world giving instructions in the milling business. 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 parts 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 practical forms, is abridging time and space in a very real and significant manner, it behooves the chiefs and leaders of all important industries to be up and seeing what their competitors 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 making to substitute, as far as practicable, the export of flour for that of wheat, and especially is this so in Victoria and South Australia, to say nothing of New Zealand. In the present instance we shall confine ourselves chiefly to the great colony of Victoria, as we have just received the official governmental return of the milling statistics for that colony, some account of which will be certainly interesting and instructive to many of our readers. The flour mills, it appears then, numbered 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 7,281,053 bushels, producing 157,784 tons of flour. The quantity of other grain operated on is given at 742,126 bushels. Coming to the approximate value of the grain operated on, 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, Ballarat 4, Echuca 2, Heathcote 2, Melbourne 7, Stawell 2, St. Arnaud 3, Sandhurst 3, Talbot 2, Warraratta 3, Warrnambool 2. These are 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 3, Swan Hill 3, St. Arnaud 3, Towring 2, Wimmera 3, Warranga 4, and Yarrowonga 2 mills. It is a curious fact that only one mill driven by wind seems to have ever existed in Victoria, and that disappeared in the year 1873.

Considering that these 145 flour mills grinding flour out to the value of something like a million of sterling belonged to the members of a community—vast, by the way, judged by Australian standards—numbering only 860,000 persons, it is evident that export considerations enter largely into the industrial calculations of Australian millers. They are doubtless the more encouraged to persevere in their endeavors to develop a considerable export trade from the fact that, owing to the late improvements in railway communications within the colony, carriage is now easy and cheap almost anywhere; and then again the Australian millers can secure an almost unlimited supply of wheat, some of which is, it must be confessed, of good quality. To give some idea how wheat culture has steadily advanced in Victoria we may mention that the quantity of wheat raised in bushels in 1839 was just 12,600. In the following year it increased to 50,420, and in 1845 had grown to 234,734. In another decade it had reached the sum of 1,148,011 bushels, and in 1862 it stood at 3,008,487. In 1877 it 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 statistic, do not give us the flour mills returns for the other members of the group, we have been enabled through other sources to ascertain that in New South Wales there were in 1880, 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 2,036-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 Colonies was at least 500 flour mills, while we learn on competent authority that not only were many of the existing mills being fully renovated 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 take a very considerable step onward, and altogether lift the industry out of those proportions to which the word "Colonial" can be slightly applied.

In Australia proper, the millstone still continues to be the chief factor in the granulation of wheat, although in not a few mills rollers, both porcelain and chilled iron, are used in the softening of middlings and semolina into flour. In New Zealand there is at least one mill which works on the gradual reduction system by rollers. This class of 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 powerful organizations, known as the Western Railroad 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 patented inventions which they have intro-

duced from time to time, their attitude towards 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 foreign element is largely represented. These men have somehow become possessed of the notion that the patent system operates to their detriment, and many of them, through ignorance, are opposed to the system of patents in any form. The folly and inconsistency 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 to, or were so completely dependent upon, 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 facilitating and cheapening transportation, could neither sow their seed, reap their crops, nor send their grain to market.

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 that the large vote by which the recent obnoxious 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 fortunate accident that prevented this destructive 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 on Patents happened, most fortunately, to be composed of members who were favorably disposed towards the existing patent system.

These statements are full of instruction and warning to the inventors of the country. The facts brought out by this committee show the existence of several powerful organizations, with abundance of money at their disposal, and prepared to use every 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 show that the sentiment of Congress is against them.

The strength of this opposition is so formidable, 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 it that their imperilled interests shall be boldly and strongly defended.—*Manufacturer and Builder*, (N. 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 continues satisfactory.

THERE are in Ireland, according to official estimate 4,500,000 acres of waste mountain and bog, of which only about 1,000,000 are worth reclaiming, and these nearly all bog so situated that the water could be easily and naturally drained from them.











**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 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 prominent: (1) the necessity that is acknowledged to exist in the United States for training boys 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 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 beginners out of position.

These are the three branches of the question. The resident portion of our population 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 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 running over, the supply far exceeding the demand, and yet all the colleges and universities contain thousands of others who are preparing to become lawyers, doctors or ministers. If a man 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 of apprentices, and from their arbitrary decision there is no appeal. Hence it is that in sheer despair the American parent turns to the public schools for relief, and asks if that beneficent institution, which has done so much for his children already, cannot be made to help him in this emergency also, and establish a department for the technical education of his boys and girls at the taxpayers' expense.

The original intention of the common school system was to provide every child in 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, to prepare young men to enter college. All this advancement has been strenuously resisted by some taxpayers and wealthy capitalists, who insist that it is done in violation of the fundamental principles upon which the 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 common schools, but educate them elsewhere, after paying their full share towards the fund that defrays the expense of educating their neighbor's children. But these men should see the duty and propriety of helping those who cannot help themselves. They can 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 of technical departments in the public schools will be opposed by the same class of men 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 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 is paid to the demand of their brothers. The opponents of the education of our girls and boys in the practical arts and mechanical trades at public expense reason from a superficial standpoint and from a mistaken notion of economy. The best economy, as far as society and Government are concerned, is that which educates the masses in knowledge and trains them to self-supporting industry. No proposition in social or political economy is more demonstrable than that.—*Chicago Journal.*

**The Food Speculation.**

While hundreds of thousands of workingmen throughout this country are on "strike" because their wages, though nominally larger than those of corresponding laborers in other countries, yet are practically smaller, because their purchasing power is less in relation to social needs, the Chicago market reports relate "a remarkable rise in the prices of grain 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 extraordinary speculative rises are also specified in oats, pork and lard.

When Wall street stock speculators win or lose we have no words either of congratulation for winners or pity for losers. That is an acknowledged gambling forum. But when a hundred methods of speculation are applied to the necessities of human life the effect of a rise imperils the home comfort of millions of innocent families and endangers the public peace. The gamblers in meats and breadstuffs 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 confusing all the calculations of these party managers at Washington who are preparing for the coming political campaign in the old 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 moments. The boys in the *Inter-Ocean* office hardly expected to find the old man at his case when they came to work in the morning, for when he had gone home the night before they had noticed his steps were very feeble. For over forty years he has held a case; first on a metropolitan daily, then on a country weekly, and then on a religious monthly. His hand was steady yet, despite his sixty odd years, and very few of his "a's" got into his "r" box. This bright sunshiny morning he came in and greeted his fellow-typos with a pleasant "good morning." The boys noticed his hand trembled somewhat, and that his voice was husky and uncertain, but they paid no particular attention to these things; the old man had been acting rather strangely for the last few days, and they attributed these failings to a gradually weakening constitution. He stood at his case for almost an hour throwing in, and had distributed nearly all his matter, when of a sudden and without 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 him to a chair in front of the fire. His head dropped forward on his breast, and his breathing became more and more rapid. The pressman ran for a glass of water, and returning held it to his lips. As the water touched his parched tongue a spasm of pain shot across his face, and his frame was convulsed with agony. With an effort which seemed almost superhuman, he dashed the glass upon the floor, and it was splintered into a thousand pieces. This effort seemed to arouse him somewhat, and he gazed about him with a bewildering stare.

"Boys," he said, "boys, are the cases all full?" "His mind wanders," whispered the foreman, in a low voice, and then said aloud as he bent over the old man, "Yes, Dick, old 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 made an effort to stir the fire with a warped 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, Dick, we'll throw in some quoins and that will bring it all right," said

one of the boys in a sympathetic voice.

"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 lock up the planer in the forms to fill out 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 to 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 tears stood in the veteran's eyes. "The form is pied and we ought to have been to press an 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 it in a helpless manner. "It's all wrong, but it is too late," he gasped. "The press waits." Here his head sunk again upon his breast, and his breathing was thick and fast. "Yes, boys, lock up the forms and look out—look out for loose spaces."

The boys stood silently around the old compositor, and the scene was an impressive one in the extreme.

"The pages are all proved up, everthing all right," he murmured in broken accents. "Now, then, careful boys, lift off the forms, and clean off the stones, and before, before you start up the press—let us—jeff for the drinks."

He fell with a heavy thud to the floor, and the 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 enough on a sea voyage to pay the freight charges has been verified by some test experiments made at the California Agricultural 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 twenty-four hours, absorption being nearly 33 per cent. of the total absorbed during the fifteen days' exposure. The following table shows the figures.

	First. 24 hours.	Total. In 15 days.
Oats .....	2.79 per cent.	7.70 per cent.
Barley .....	1.45 per cent.	7.00 per cent.
Wheat .....	2.45 per cent.	6.56 per cent.

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 float of course, rises and falls with the action 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 attempts than this of Gauchez's to capture "waste" force.

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 apt to be when laid by the usual rule of thumb way in cold weather, they are certain to press against each other and bulge out the track into a sort of double wave line in sum-

mer. Spikes will not cure the difficulty. Indeed, the less strain placed upon spikes the better for everybody. Here is the remedy for spreading which one now forever silent was about to put into practical shape and patent, but which may be here given free: No track for a railroad should be laid without a constant consultation of the thermometer 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 find in this hint something valuable. A reliance on spikes against spreading might be shown to be nonsense by a little boy who had received his first lesson in "expansion" of bodies. The absence of spikes, though, may show that the rails had spread and that the inspection was negligent.—*New York Times.*

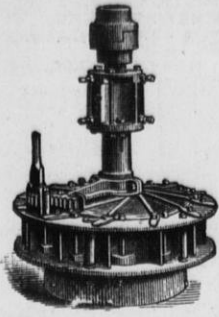
Few of the young mechanics of the present time appreciate the many advantages by which they are surrounded, making comparison with the situation as it was a generation ago. The young mechanic, who thinks it is harder to take the front rank at the present time than it was for his father to achieve excellence 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 were almost unknown. No mechanical papers were published. Mechanical dictionaries were unheard-of things; large factories never dreamed of maintaining circulating libraries for the benefit of the mechanics employed. Popular lectures on mechanical topics were not thought of. Free night schools 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 improvement of which will lead him on to 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 this reason, with others, that so few of the mechanics who are surrounded with exceptional advantages reach eminence in their trades. A qualification that the mechanics of 40 or 50 years ago possessed, and which is sadly lacking in the youth of the present day is self-reliance and enterprise. Our boys have so many helps, and things are so generally 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 upon their 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 river above Camden there is a fall of 8,000 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 the boundless resources of a country so munificently endowed by nature.

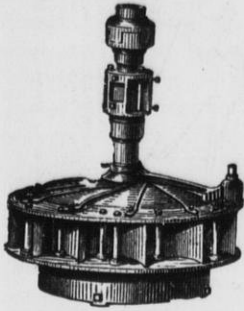
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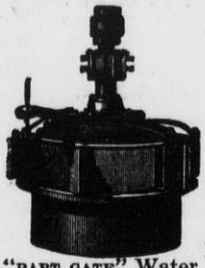
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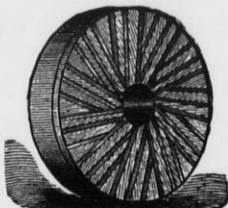


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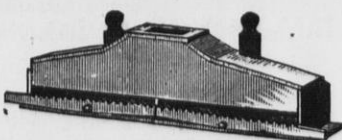


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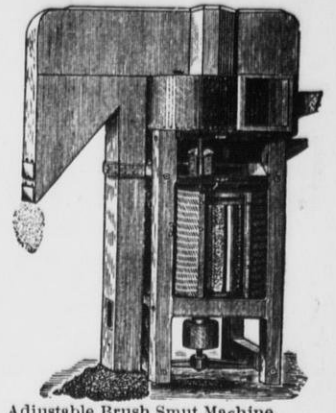
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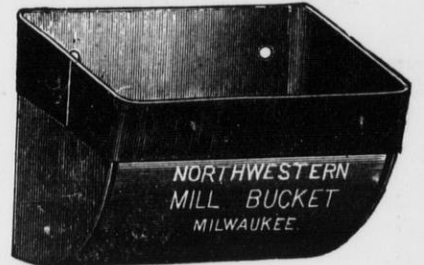
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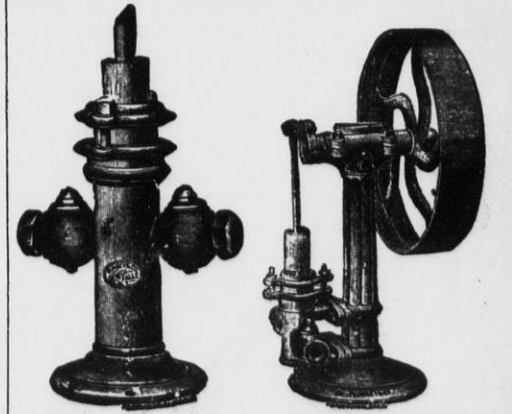
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Don't order your Cloth until you have conferred with us; it will pay you both in point of quality and price. We are prepared with special facilities for this work. Write us before you order. Address,  
**CASE MFG. CO.,**  
Office & Factory; Columbus, Ohio.  
Fifth St., North of Waughten.

**FOR SALE.**  
A Four-run Mill at Troy, Doniphan Co., Kansas, with Rolls and Purifier, plenty of steam power, and everything in good order for making first-class flour. For particulars address  
**D. M. PARKER, Troy, Doniphan Co., Kan.**

# The Geo. T. Smith Middlings Purifier.

## LOW IN PRICE,

Quantity and Quality of Work Considered.

Licensed Under all Patents

Owned by the Consolidated Middlings Purifier Company.

Simple, Easily Adjusted,

## Two Thousand SMITH PURIFIERS were Sold in 1881.

THE SMITH PURIFIER is in Use in every Milling Country in the World. More than Four Thousand are now running in the United States.

The Smith Purifier has a Positive and Effective Means of Cleaning the Silk of the Sieve. The Smith Purifier has Graded, Controllable Air Currents. It is Impossible to do Good and Economical Work without these Features.

OUR CLOTH TIGHTENER

Makes it both convenient and easy to keep the Silk always properly stretched.

OUR AUTOMATIC FEED

IS POSITIVELY SELF-ADJUSTING AND RELIABLE.

WRITE FOR DESCRIPTIVE PRICE LIST AND CIRCULAR TO

**GEO. T. SMITH MIDLINGS PURIFIER CO., Jackson, Michigan**

[Please Mention this paper when you write to us.]

## PURIFIERS.

### REDFIELD'S COMBINED ELEVATOR AND PURIFIER!

Why these Purifiers are Such Favorites Wherever Introduced.

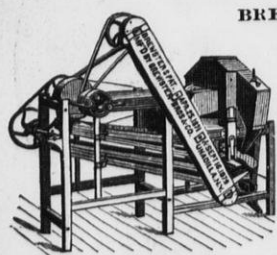
1. It is because they do better work.
2. Are more simple in construction, less subject to get out of order, and require less attention.
3. Are more durable, as they have fewer journals and wearing parts.
4. Require less power.
5. Sieves do not choke up, as soft substances in middlings are not permitted to come in contact with the sieve.
6. Are more readily adjusted to different kinds of middlings.
7. Are furnished for less money than others.
8. Last, but not least, by any means, they elevate their own middlings any height and distance necessary, thereby saving an expense, in setting up and starting, of from \$50 to \$150. Right to use fully protected and guarantee given.

For circulars giving prices and full particulars, address

**J. H. REDFIELD, Salem, Ind.**

[Mention this paper when you write.]

### Buckwheat Refiners & Portable Mills.



**BREWSTER'S CELEBRATED Buckwheat Refiner**  
Is the only Machine whereby the greatest yields of **PURE, WHITE, SHARP FLOUR** can be obtained.  
The only reliable, practical and durable Machine **IN THE WORLD.**

The Positive Adjustment AND AUTOMATIC Middlings Mill  
Is strictly Self Protecting, **THE BEST ADJUSTMENT IN THE WORLD.**  
And the only **PERFECT GRANULATOR,** GRINDS COOL, SELF OILING, GREAT SAVING OF POWER, **SIMPLICITY AND Durability Combined.**



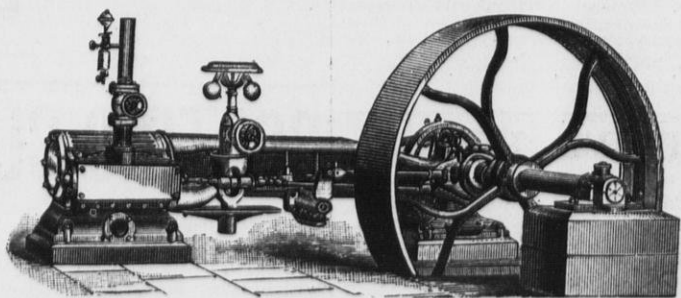
Satisfaction Guaranteed on all our Goods. Send for descriptive Circular, giving Prices, Sizes, Terms, etc.

**BREWSTER BROS. & CO., Unadilla, N. Y.**

[Mention this paper when you write.]

## WOODBURY, BOOTH & PRYOR

ROCHESTER, N. Y.,



Manufacturers of

Automatic Cut-Off, Fixed Cut-Off, and Slide Valve

## Steam Engines, Tubular Boilers.

[Mention this paper when you write.]

### SPECIAL NOTICE.

For the more complete protection of our customers, and to put an end at once and forever to the demands for royalties by which they have recently been annoyed, we have purchased **ALL PATENTS** relating to Purifiers, lately owned by Huntley, Holcomb & Heine, including the well-known **MIDDLETON PATENT** and its several re-issues.

Every purchaser or owner of a Geo. T. Smith Purifier, in the past or future, owns the right to use it unmolested and unchallenged, and in this right we have, can and shall protect them.

Intending purchasers should give this notice attention, as it is of the utmost importance to them.

## Adapted to all Systems

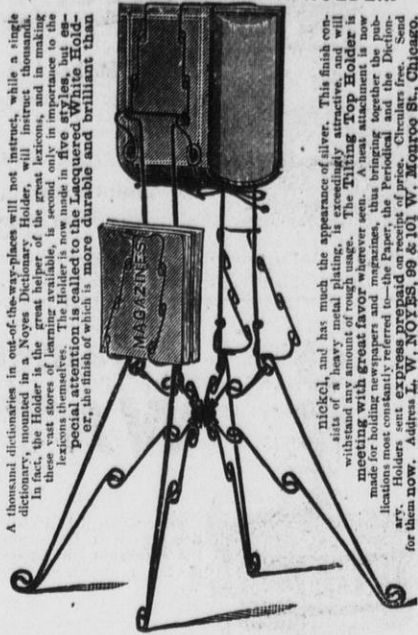
Of Milling, and every Grade and Condition of Middlings.

## FOURTEEN SIZES

Single, Double and Special Machines.

Durable, Light Running.

A PLACE FOR YOUR DICTIONARY, A PLACE FOR YOUR NEWSPAPERS, A PLACE FOR YOUR PERIODICALS, And an ornament for your house, all in one, THE NOYES DICTIONARY HOLDER.



A thousand dictionaries in out-of-the-way places will not instruct, while a single dictionary, in a Noyes Dictionary Holder, will instruct thousands. The Holder is made of heavy metal plate, is exceedingly attractive and will withstand any amount of rough usage. The Tilting Top Holder is now meeting with great favor wherever seen. A neat attachment is now being made for the Holder, which will hold the Periodical and the Dictionary most constantly referred to—the Paper, the Periodical, and the Dictionary. Holder sent express prepaid on receipt of price. Circulars free. Send for them now. Address J. W. NOYES, 99 & 101 W. Monroe St., Chicago.

BUDGETT, JAMES & BRANTH,

## Flour Merchants,

BRISTOL, ENGLAND.

[Mention this paper when you write us.]

Chamberlain, Pole & Co.,

## Brokers & Factors

IN FLOUR,

BRISTOL, ENGLAND.

[Mention this paper when you write us.]

Orobio de Castro & Co.,

AMSTERDAM (Holland), Europe, Telegrams, OROBIO, Amsterdam, AGENTS FOR

## FLOUR and GRAIN.

American Correspondence Solicited. Consignments Accepted.

ESTABLISHED 1850.

WILLIAM BRYCE & CO.,

36 MARK LANE,

LONDON (England.)

40 ST. ENOCH SQUARE,

GLASGOW (Scotland.)

TELEGRAMS:

BRYCE, London or Glasgow.

CONSIGNMENTS OF FLOUR SOLICITED.

**STEEL CAR PUSHER**  
Made entirely of STEEL. ONE MAN with it can easily move a loaded car. Will not slip on ice or grease.  
Manufactured by E. P. DWIGHT, Dealer in Railroad Supplies, 407 Library St., Philadelphia, Pa.  
[Mention this paper when you write us.]

### A FACT.

I sell my flour in competition with the best St. Louis Mills. I get the same price. My Mill has made a net profit, since the harvest of 1881, of nearly 50 per cent over the cost of the Mill.

(AN OPINION.)

I could not afford to do without the Slater Reels if I had to pay twenty-five dollars a month for the privilege of using each Reel in the mill. This is the statement of Mr. J. W. Buky, of Nicholasville, Ky.

C. B. SLATER & CO. Manchester, O.

**J. J. BELL,**  
41 S. William St., New York,  
Manufacturer and Importer of

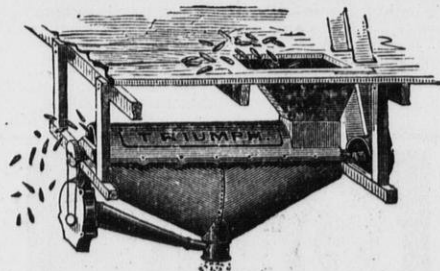
## MILLSTONES, BOLTING CLOTHS,

Mill Irons, Belting, Mill Picks, Iron Proof Staffs, Smut Machines, Elevator Cups, and

## Mill Furnishings in General.

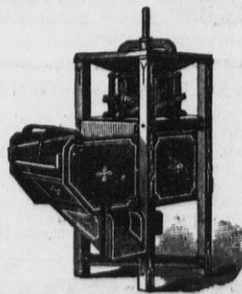
Having been engaged in the manufacture of ESOPUS MILLSTONES, CHASERS, &c., for the past 30 years, I am prepared to fill all orders not only at the lowest price, but the best qualities for the purpose intended.  
[Mention this paper when you write.]

### 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 Builders and Mill Furnishers. THE PAIGE MFG. CO., Painesville, Ohio.  
[Mention this paper when you write us.]

### MARSHALL'S NEW CORN SHELLER.



The only Self-Adjusting Sheller in use that will **SHELL MIXED CORN,** FAST AND WELL, And that will clean it THOROUGHLY. Easy of access to all parts liable to clog. Thoroughly made. Sold as cheap as the cheapest. Send for circulars to **G. MARSHALL & SON,** Founders and Machinists and Manufacturers of Marshall's Rotary Force Pump. Improved Jonval Turbine Water Wheel, etc. Kilbourn City, Wis.  
[Mention this paper when you write to us.]

CHOICE BEVELLED EDGE

## FLOUR BRANDS

For two dollars and upwards. Also RUBBER STAMPS, BURNING BRANDS, SEALS, STEEL NAME STAMPS, LETTERS AND FIGURES, Etc. Orders promptly attended to by **CHAS. H. CLARKE,** 82 Wisconsin St., Milwaukee, Box 114.





# GLAD TIDINGS OF GREAT JOY!

TO OWNERS WITH DUSTY MILLS AND CLOUDY BROWS.

## 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 thoroughly met and conquered in the highest degree by the

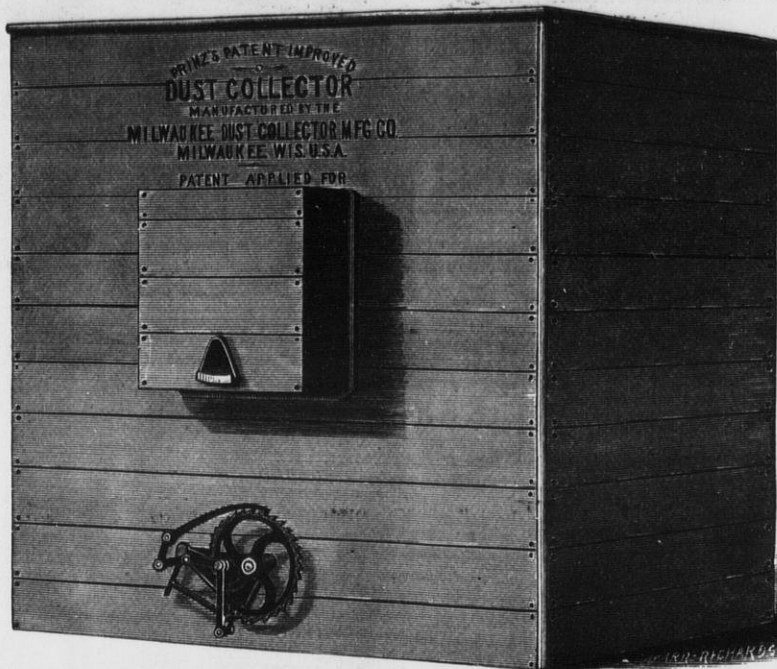
# PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of 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 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 in purchasing infringing machines.

### LOW PRICES FOR EXCELLENT MACHINES.

### TESTIMONIALS.

WHAT THE SECRETARY OF THE MILLERS' NATIONAL ASSOCIATION SAYS:

MILWAUKEE DUST COLLECTOR MFG. CO.

Milwaukee, July 24th, 1882.

Dear Sirs:—In reply to your inquiry with regard to the working of the "Prinz Dust Collector," put into our mill, would say: We have had it in operation about three weeks, taking the suction from all our millstones and break rolls. During this time it worked to our entire satisfaction without being aided or interfered with in any manner. In short, the machine was not opened until it had been in operation three weeks, when we found that it was entirely free from any accumulation of flour or dust, and apparently as clean as when it made the first revolution. You have evidently struck the correct principle. We have waited long for a successful machine of this kind, and shall want more of them as fast as we can place them in our mill.

Yours truly,

S. H. SEAMANS & CO.

MILWAUKEE DUST COLLECTOR MFG. CO.

Milwaukee, June 18th, 1882.

Gentlemen:—The Dust Collector you have put in on trial in our Mill is giving the same satisfaction as when first started, over two months ago. We have therefore concluded to adopt your machine for all our Purifiers, Roller Exhausts and Cleaning Machinery. You will please make as many Machines for us as are necessary.

Yours truly,

NEW ERA MILLING CO.

More testimonials are given in our circular, for which please address

## Milwaukee Dust Collector Mfg. Co.

MILWAUKEE, WIS.

[Please mention the United States Miller when you write to us.]

The Case Mfg. Co., of Columbus, O., are furnishing Messrs. Frank & Bentzin, of New Ulur, Minn., with a lot of machinery.

The Independence Mill Co., of Independence, Ia., have ordered from the Case Mfg. Co., of Columbus, O., some gradual reduction machinery. They intend to break three sizes of graded wheat on the machine.

The last half of the Pillsbury "A" Mill started up July 17 and it is reported that all the machinery moved harmoniously and that the great work gives satisfaction. Manitoba wheat will be used principally for the next few weeks.

D. DE WAR & Co., of Kansas City, Mo., are putting in rolls of the Case Mfg. Co's pattern.

J. B. FICKLIN, of Fredericksburg, Va., is putting in some of the Little Giant break machines, of the Case Mfg. Co., of Columbus, O.

Messrs. DIERCKS & Co., of Marietta, O., are just about starting up on the gradual reduction system of the Case Mfg. Co., of Columbus, O. They will have a complete mill when all is 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, O.

A. G. MOWBRAY, Superintendent of the Winona Mill Co., of Winona, Minn., has ordered a first break machine of the Case Mfg. Co., for his mill at Stockton, Minn.

I. C. MANSFIELD, of Athens, Tenn., has ordered a first break machine of the Case Mfg. Co., of Columbus, O.

Messrs. VOISENET & Co., of Elkhart, Ind., have ordered a full gradual reduction mill of the Case Mfg. Co. The machinery will all be running inside of two weeks.

NORDYKE & MARMON Co., of Indianapolis, Ind., are manufacturing a flouring mill outfit for French & Nye, of Beloit, Kan.

HINTON & Bro., of Marco, Ind., are remodeling their mill to the new process.

A new three run flouring mill is being built at Bridgeport, W. Va., for Jas. B. Sandusky.

W. A. & C. S. SCHOFIELD, of Indianapolis, Ind., are remodeling their mill to operate on the gradual reduction system. Nordyke & Marmon Co., of the same place, furnish the necessary 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., for Jas. Moore & Co.

BOUGHNER & TALLEY, of Gaylord, Kan., are commencing the erection of a three-run new process mill.

# A NEW DEPARTURE

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

## MORRITZ MARTIN PATENTS

—ON—

# CENTRIFUGAL 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.

**THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will make clear flour and clean 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 ADAPTED to handling soft, reground material, full of light impurities, whether from rolls or stone.**  
**IT IS INDISPENSABLE to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner.**  
**IT MAKES A CLEAN SEPARATION on caked and flaky meal from smooth rolls, which no other style of reel can do.**  
**IT IS VASTLY 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 Hundred sold in six weeks.**

REFERENCE TO LEADING MILLERS IN THE UNITED STATES.

Write for descriptive circular and price list to

**GEO. T. SMITH MIDLINGS PURIFIER CO., - Jackson, Michigan.**

[Mention the United States Miller when you write.]

HARVEY & Son's mill, at Marion, Ind., which our readers will remember as being recently destroyed by fire is about to be rebuilt.

NORDYKE & MARMON Co., of Indianapolis, Ind., received a cablegram from South Australia, ordering an outfit of rolls for manufacturing patent roller flour. The capacity of the mill is one thousand barrels of flour per day.

WARD & WYRICK, of Gardner, Kan., have contracted with Nordyke & Marmon Co., of Indianapolis, Ind., for a new process flouring mill outfit which will be operated in connection with the elevator now owned by the first-named firm.

POSTMASTER MCKAY, of Cedar Bluffs, Kan., 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 a desirable location at Spring Station, Ind., and will transfer their business to the latter place. The machinery for the new flouring mill is of the Nordyke & Co's make, at Indianapolis Ind.

A 125-barrel gradual reduction mill is being built by Helmer & Cook, of Fond du Lac, Wis. The 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 & Co. one pair of porcelain and one pair of sharp corrugated rolls in Gray's Noiseless Frame.

Messrs. ALLIS & Co., have received an order from John Damp, Ashland, O., for two pairs of porcelain rolls in Gray's Noiseless Frame.

BALARD, ISOM & Co., Albany, Oregon, have recently ordered from E. P. Allis & Co., one pair of porcelain and one pair of sharp corrugated rolls in Gray's Noiseless Frame.

# The Little Giant Break Machines.



Single Machine capacity, 5 to 60 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.



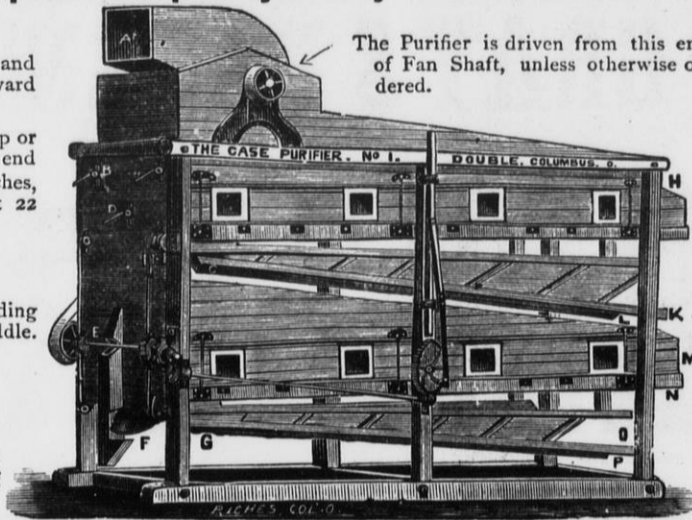
Double Machine capacity, 120 bushels per hour.

WRITE FOR PARTICULARS AND OUR **Very Low Price List** AS COMPARED TO ROLLS.

## THE CASE MIDDLINGS PURIFIER,

STANDS TO-DAY WITHOUT A RIVAL, doing More and Better Work than any other, giving double the capacity; 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 spout, 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 length 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, sliding one-half the length of Riddle.



The Purifier is driven from this end of Fan Shaft, unless otherwise ordered.

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

The upper and lower halves are each a complete machine, and can be run together, or separately, as desired.

Address

### CASE MANUFACTURING COMPANY,

OFFICE AND FACTORY, 5th Street, North of Naughten.

COLUMBUS, OHIO.

[Please mention the United States Miller, when you write to us.]

## 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,**

Silver Creek, .N Y.

[Please mention the United States Miller, when you write to us]

## STEEL CASTINGS

Works, CHESTER, PA. [Mention this paper when you write us.]

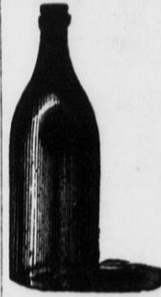
FROM 1-4 to 10,000 LBS. WEIGHT.

True to pattern, sound and solid, of unequalled strength, toughness and durability. An invaluable substitute for forgings or cast iron requiring threefold strength. Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Locomotives, etc. 15,000 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. Circulars and price list free. Address,

**CHESTER STEEL CASTINGS CO.,**

407 LIBERTY ST. PHILADELPHIA, U. S. A

## BOTTLED BEER.



VOECHTING, SHAPE & CO.,

SOLE BOTTLEERS OF

JOSEPH SCHLITZ BREWING COMPANY'S

CELEBRATED MILWAUKEE LAGER BEER,

Cor. Second and Galena Streets,

MILWAUKEE, - - - WISCONSIN.

BOTTLEERS' SUPPLIES CONSTANTLY ON HAND.

[Parties corresponding will please state where they saw this advertisement.]

**John H. Miller,**

MANUFACTURER OF

MILLER'S COMPOSITION



**MILL BUHR RUBBER,**

SECTIONAL FURROW GAUGES AND STAFF.

PETERSBURGH, HUNTINGDON CO., PA.

The Best, Cheapest, and Most Durable Rubber in the Market, USED DRY. Will outwear any Rubber made in the world, and retain its cutting qualities until entirely worn out.

FACE RUBBER, 12x6x3 inches, weight 12 lbs; price, \$3.00. FURROW RUBBER, 12x6x1 1/4, 1 1/2, 1 3/4 and 2 inches, as required, \$2.50; or both for \$5.00, by Express Furrow Gauges and Staff \$1.25 per set, by mail. Send for circulars, testimonials &c. Address all orders as above.

N. B.—This Rubber will not wear a pair of Buhrs out of existence in 15 minutes. But if used in connection with the Pick and Red Staff will leave the face and Furrows in the best possible condition for making good work. For cleansing the face of Glazing it has no equal. Try it and be convinced. Money refunded if not satisfactory.

—Mention U. S. Miller when you write to me.

**BIRGE & SMITH,**

**PRACTICAL**

**MILLWRIGHTS.**

PLANS, SPECIFICATIONS & ESTIMATES

MADE FOR ALL KINDS OF

MILLWORK, MACHINERY, ETC.

Flour, Sawmill, Tanners' and Brewers' Machinery, and General Mill Furnishers,

Corner of East Water and Knapp Sts ,

MILWAUKEE, - - - WISCONSIN.

[Mention this paper when you write to us]

**Situation 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, Milwaukee, Wis.

**C. F. MILLER,**

MANSFIELD, OHIO.

Materials and Plans for Stone or Roller Mills. Roller Mills on the Stevens System a Specialty. The Cosgrove System just the thing for small mills. Plans and Specifications furnished of any desired capacity. Genuine Zurich Silk Bolting Cloths direct from the Manufacturers. Warranted Best Quality.

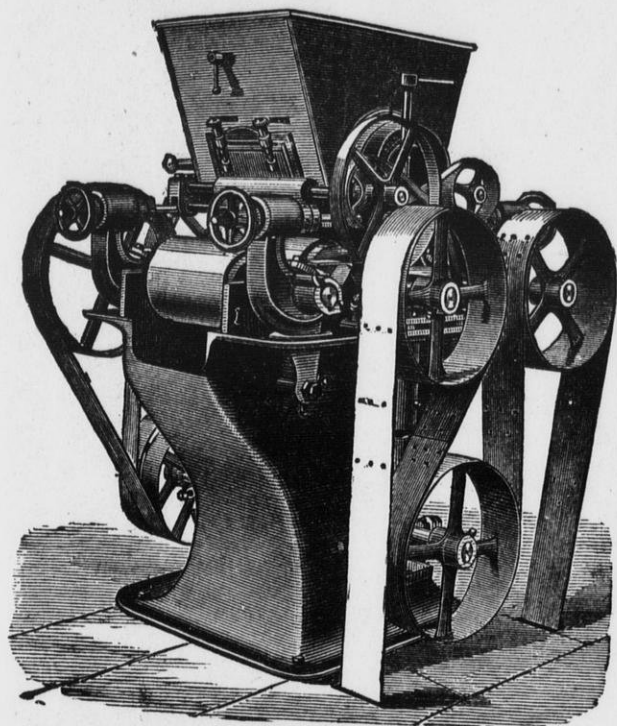
[Mention U. S. Miller when you write to us]

**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, Milwaukee, Wis.

**EDW. P. ALLIS & CO.****MILWAUKEE, WISCONSIN,****MILL BUILDERS AND FURNISHERS,****AND SOLE MANUFACTURERS OF****GRAY'S PATENT NOISELESS****ROLLER MILLS****CORRUGATED AND SMOOTH CHILLED IRON ROLLS,****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 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 **VIGOROUS ACTION** against the Makers and **USERS OF MACHINES** infringing Our Patents.

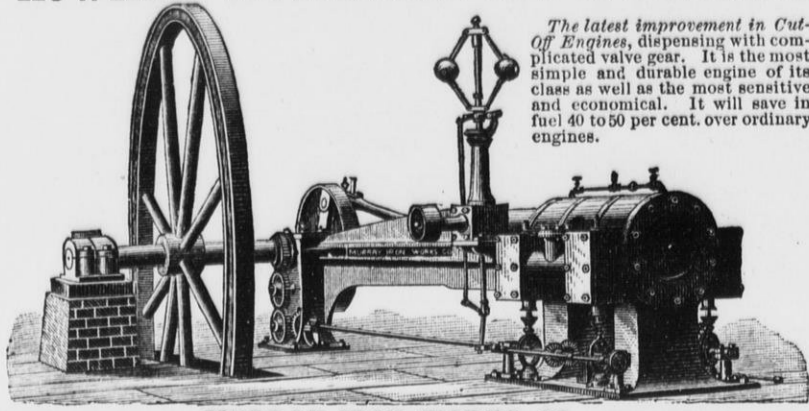
Several machines are already on the market which Broadly Infringe, and we are informed that other makers are now changing their Old Style Machines, and adopting in a large measure Our Improvements. **BEWARE OF THEM.**

Send for New Illustrated Catalogue, Giving full Information, to

**EDW. P. ALLIS & CO.,**  
MILWAUKEE, WIS.



**"HOWARD" AUTOMATIC CUT-OFF ENGINE.**



The latest improvement in Cut-Off Engines, dispensing with complicated valve gear. It is the most simple and durable engine of its class as well as the most sensitive and economical. It will save in fuel 40 to 50 per cent. over ordinary engines.

Built only by the **MURRAY IRON WORKS CO., BURLINGTON, IOWA.**

BUILDERS OF ALL KINDS OF ENGINES AND MACHINERY.

Mention this Paper when you write to us.]

**WANTED TO RENT WITH PRIVILEGE OF BUYING,** a Water Power Mill in good condition and in a good wheat section. Wisconsin or Minnesota preferred. Address **O. K.** Care of UNITED STATES MILLER, Milwaukee, Wis.

**DON'T BUILD A MILL** until you write for Prices and Samples to the **BODINE ROOFING COMPANY,** MANSFIELD, OHIO.

**HARRIS-CORLISS ENGINE.**

-BUILT BY-

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

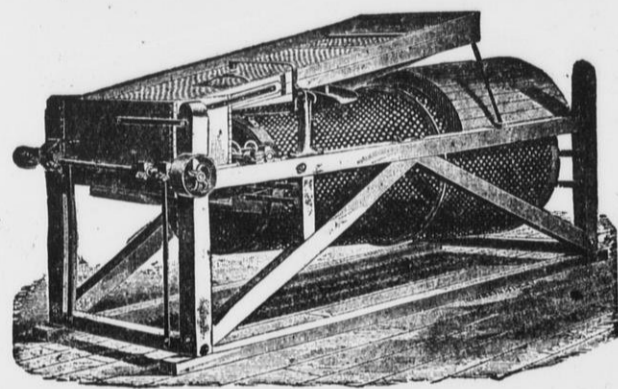
Built under their original patents until their expiration. Improvements since added: "STOP MOTION ON REGULATOR," prevents engine from running away; "SELF-PACKING VALVE STEMS" (two patents), dispenses with four stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying 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, substantially 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 kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice. NO OTHER engine builder 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.

**WM. A. HARRIS, Proprietor.**

[Mention this paper when you write to us.]

**COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE. GENERAL MILL FURNISHERS**



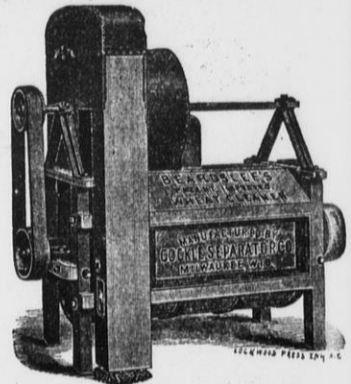
PLAIN COCKLE MACHINE.

AND MANUFACTURERS OF  
**IMPROVED COCKLE SEPARATORS**

(Kurth's Patent.) Also built in combination with

**Richardson's Dustless Wheat Separators!**

Also Sole Manufacturer of **BEARDSLEE'S PAT. GRAIN CLEANER.**



BEARDSLEE'S WHEAT CLEANER.

We will contract to furnish entire Wheat Cleaning Machinery for mills, and guarantee the best results.

Send for Illustrated Catalogue.

**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 a **DAILY LOSS OF MONEY** in a mill. There is **NO MACHINE IN THE MARKET** which can stand comparison with ours.

Carbondale, Ill., Dec. 2, 1881.  
**Cockle Separator Mfg. Co., Milwaukee.**  
Gentlemen:—Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work.  
Yours respectfully,  
**BROWN & WINFREY.**  
Perrysville, Ind., Nov. 24, 1881.  
**Cockle Separator Mfg. Co., Milwaukee.**  
Sirs:—The combined machine I bought of you has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of.  
Yours respectfully,  
**B. O. CARPENTER.**

Hixton, Jackson Co., Wis., Dec. 30, '81  
**Cockle Separator Mfg. Co., Milwaukee.**  
Gents:—In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction.  
Respectfully yours,  
**W. T. PRICE,**  
per **D. G. THOMAS.**  
P. S.—I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat.  
As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain  
Yours, etc.  
**D. G. THOMAS.**

Minneapolis, Minn. Aug. 22, 1881.  
**Cockle Separator Mfg. Co.:**  
We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.  
Yours truly,  
**CAHILL, FLETCHER & CO.**  
La Crosse, Wis., July 30, 1881.  
**Cockle Separator Mfg. Co., Milwaukee.**  
Gentlemen:—The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. We cannot see that it breaks the wheat or requires an unusual amount of power to run it.  
Yours truly,  
**WILLIAM LISTMAN.**  
Milwaukee, Wis., Aug. 23, 1881.  
**Cockle Separator Mfg. Co.**  
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 reference, and to any party calling on us we will be pleased to show the machine in operation.  
Yours truly,  
**NEW ERA MILLING CO.**

**Pott's Patent Automatic Feeder!**

The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width. Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

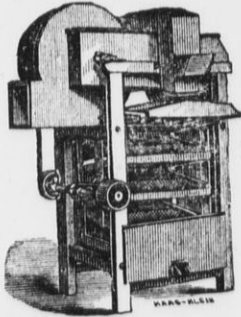
**HOWES, BABCOCK & EWELL,**

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

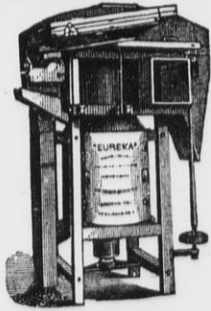
Established 1856.

MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



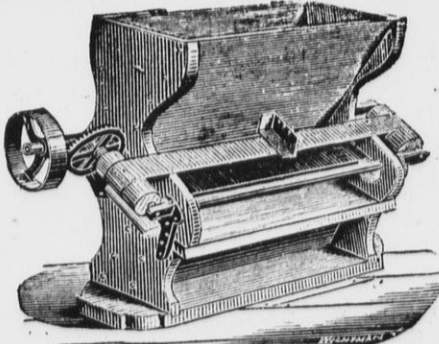
The Eureka Separator

occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



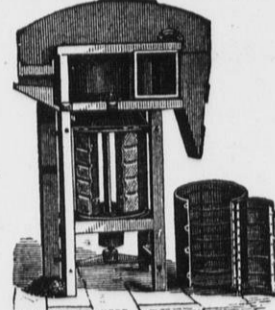
The Eureka Smut and Separating Machine.

A combined Smut and Separating Machine, having thorough ventilation. Over 15,000 of these Machines are now in use.



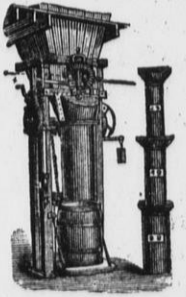
Eureka Magnetic Automatic Separator.

Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



Eureka Brush Finishing Machine

Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer.

Will pack whole and half barrels, and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent leveling steel coil spring regulating the packing to perfection.

**GENUINE DUFOUR AND ANCHOR BRAND BOLTING CLOTHS.** FULL STOCK ALWAYS ON HAND. MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER.

Office and Warehouse in England, 16 MARK LANE, LONDON, E. C.

Gen. Agency for Australian Colonies & New Zealand, **THOS. TYSON, MELBOURNE, VICTORIA.**

**Abernethey's New Book.**

PRACTICAL HINTS

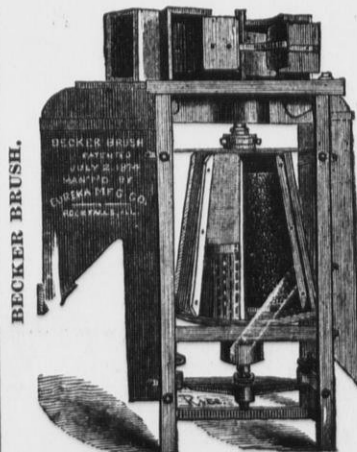
**Mill Building.**

The Latest, Best and Only Exclusively Flour Mill Work in Print.

Every Miller, Millwright and Millwright's Apprentice should have a copy.

THE UNITED STATES MILLER for one year and a copy of this book will be sent for \$4.00. Address,

**UNITED STATES MILLER,** Milwaukee, Wis.



BECKER BRUSH.

**EUREKA MANUFACTURING CO.,**

Manufacturers and Sole Proprietors of the

**BECKER BRUSH,**

—AND—

Galt's Combined Smut and Brush Machine.

The Only Practical Cone-Shaped Machines in the Market, and for that Reason the Best.

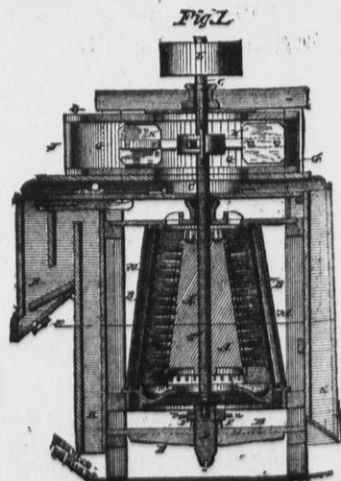
ADJUSTABLE WHILE IN MOTION.

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 milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, 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.]



The United States

# MILLER

Published by E. HARRISON CAWKER. { Vol. 13, No. 5. }

MILWAUKEE, SEPTEMBER, 1882.

{Terms: \$1.00 a Year in Advance. Single Copies, 10 Cents. }

## THE STEVENS ROLLER MILLS

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.

We also manufacture the

### Celebrated Cosgrove Concentrated Mill

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

READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:

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 4½ 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 ¼ to ½ 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,

F. E. SMITH & CO.

Among Recent Orders We Name the Following from Prominent Millers:

Lexington Mill Co., Lexington, O., 12 pairs,  
Pollock & Co., Vincennes, Ind., 12 pairs,

E. O. Stanard & Co., St. Louis, Mo., 28 pairs,  
Penfield, Lyon & Co., Oswego, N. Y., 2 Cosgroves.,

E. T. Archibald & Co., Dundas, Minn., 12 pairs,  
Crocker, Fisk & Co., Minneapolis, Minn., 54 pairs.  
James 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.]

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

## ODELL'S ROLLER MILL.

### An Established Success.

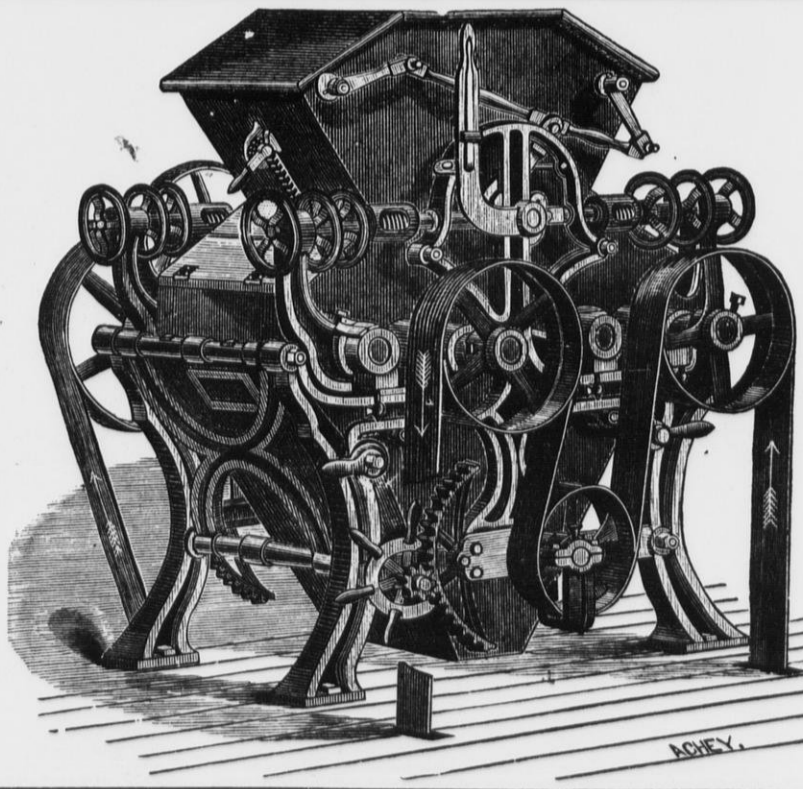
We invite particular attention to the following

#### 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. 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 tension-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

### Ansonia 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.,

DAYTON, OHIO, U. S. A.

[Mention this Paper when you write to us.]

# 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 21st, 1880; March 8th, 1881; December 20th, 1881. 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 Noiseless 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,

**MILWAUKEE, WIS.**

# The United States

# MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 5. }

MILWAUKEE, SEPTEMBER, 1882.

{ Terms: \$1.00 a Year in Advance.  
Single Copies, 10 Cents.

## 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 antiquity, wheat was the chief staple of consumption. The island 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 ancient 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 civilisation 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 originated; suffice it to say that we are told the Chinese records speak of its cultivation in the Flowery Kingdom 2,700 years B.C., and it was certainly known to the Egyptians 4,000 years ago.

An enumeration of the different varieties or kinds of wheat would be almost impossible. One French experimenter, I believe, succeeded in producing over 800 varieties. For general purposes the subdivisions into winter and spring wheat, coupled with the attributes "hard" and "soft," are sufficiently definite for our purpose.

A grain of wheat is not a seed, as might be supposed at first sight, but a fruit, perfect in itself and bearing 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 about one-fourth part of an inch. Next comes a single coat or layer as thick as the outer five together, surrounding the interior portion of the berry and containing nitrogenous substances (gluten) technically called *perisperm*. The interior portion of the berry comes next, consisting principally of starch, &c., *endosperm*, and lastly, 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 contains 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 greatest length with that of the berry, and that the gluten and starch cells are disposed in such a manner that they are least disturbed 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 interior of the wheat grain, points out a rational method of procedure in separating the flour particles from the bran and germ, to which I shall 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 just in proportion to the quantity of gluten it contains. 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 best scientists as well as the best millers, are now agreed that it should have no place in the flour, as its yellowish cast not only discolors the flour, but the oil it contains is a hindrance to bread-making. To this, however, I will call your attention 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, running as low as 7½ per cent. in some wheats, and as high as 22 per cent. in others. 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," contains 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 has to 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 the reduction of the wheat is concerned, to four systems of milling. 1st, Low or Flat Milling; 2nd, New Process Milling; 3rd, Half-High 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 re-grinding them; bolting this product, 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, re-grinding the bran, breaking down the coarse middlings, &c. 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 to seven reductions are generally employed, though with the Jonathan Mills machines the first two reductions are hardly such, but are 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 jumped from one reduction to ten or twelve; 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 scientific and practical aspect of this system 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 nor a sudden revolution at home. If you 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 important question, viz., what machines are best 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, 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 a 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 reasoning. The first step of progress has been taken as a rule, first from necessity, and once taken other improvements have suggested themselves, 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 of 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 Romans 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 by 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 a white and better flour.

In the sixteenth and seventeenth centuries several grindings and boltings were resorted to in France and Germany with this purpose in view, resulting finally in the famous *mouture economique* (or "economical milling") and *mouture Lyonnaise*.

These systems, or rather this system (for the Lyonnaise milling was only the *mouture economique* long drawn out), is chiefly notable because it was an attempt not only to increase the 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 that 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 in the last century.

There was so much room for progress in everything that improvements in process naturally came last.

This is why we find little or no change for the better in milling methods until what is comparatively a recent date. So long as a rumbling millstone, propelled by unsteady power, and with little or no dress, and absolutely no balance, ground the grain, and a hand-sieve performed the bolting, it would be folly to expect elaborated systems to be followed.

Progress naturally took the obvious line of mechanical improvement, resulting in the automatic mill of Oliver Evans, and the wonderful improvements in mill machinery made in his and more recent times. Besides the *mouture economique* in France, the first attempt at gradual reduction in modern times was 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 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



a limited number of mills, either in Europe and America, and some of 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 millstones have 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 "given a fair show," and this conviction 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 place in a correct gradual 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 could, or can be, found better than French burr. But the aims of milling have changed. It is not 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 for grinding, suitable also for granulating wheat, in which it is so desirable to avoid grinding? This could hardly be the case; for the very qualities which made the millstone 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 observed in granulating wheat are as before stated, 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 helpless. There is but one way to remove the dirt from the crease of the wheat kernel, and that is by splitting the berry lengthwise along the crease and then separating the dust by means of a wire cylinder. 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 those who have attempted to break the wheat in this way have uniformly sought for some better 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 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 a 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 be employed. Now anyone knows that even one reduction of the wheat on the millstones 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

reduction with millstones. The "patent" has been only moderate in quantity though excellent in quality, and the percentage of "wheat flour" and low grade large and of very 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 perfect machine in its operations. It is true in some few instances, where really first-class millers are at the helm, the millstone may approach uniform 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 imperfections may in time be obtained, but the millstone can never be used to reduce wheat to middlings until it is stripped of its gritty, abrasive nature, and to get rid of this is to 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 worse than useless for granulating render it valuable for grinding the middlings after they have been produced and thoroughly purified. On the contrary, a grinding action, a quick reduction, is exactly what the middlings need to produce a live, strong flour. Our American millers have quite generally perceived this fact, and even in many mills where attempts are made to conform as nearly as possible to the Hungarian system, millstones are yet retained for grinding middlings, and it is exceedingly unlikely that any device will ever entirely supplant them in that function; and here is where the millstone finds its proper place in gradual reduction.

#### ROLLS AND ROLLER MILLING.

I will next call your attention to rolls and roller milling, which I assure you deserve more than a passing notice. As to the date of their invention it is well known to those who have looked into the matter, that experiments 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 Cambay was the inventor of rolls, while other authorities refer their invention to Collier, a Frenchman, and still others to Bollinger, an Austrian. All three of these first roller mills proved failures of a decided kind; but experiments with rolls continued, and ten years later a Mr. Sulzberger, of Frauenfeld, in Switzerland, announced that he had built a roller machine which avoided all the objectionable features of the earlier ones. An extraordinary *furor* was occasioned by the introduction of this machine. Large roller mills were erected throughout Germany, Italy and Austria. Everyone believed that the day of millstones was over. The mechanical publications of fifty years ago were lavish in their praise of 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 revolution certainly went backward. Experiments continued to be made with rolls as before, 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 completely this assumption, for Sulzberger's roller mill was, to say the least, equal, if not 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 not 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 certain conditions, states that the main cause 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 rolls successfully, and that for soft and 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 these earlier mills was too extensive. They tried to use them for everything, and failed. They attributed the failure, very naturally, to the system; and the result was that it was 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 candid and thorough investigation had preceded these attempts, it would have been apparent that no one machine could be constructed so as to satisfy all the requirements of a gradual reduction of wheat to flour; but inventors have gone on attempting to comprise in one appliance principles of operation essential antagonistic, and the result has been disastrous in every case. Anyone who brings an unbiased judgment to bear upon the matter can hardly fail to see that in milling, as in everything else, eclecticism is best. The candid miller cannot close his eyes to the merits of burr stone, nor to the value of the principle embodied in roller mills, for 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 of discarding rolls entirely and going back to millstones, had recognized the value of rolls for a part of the reducing process, and had used both 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 for so long a time.

The revival which rolls and roller milling has experienced in the past few years has perpetuated in some forms the fatal mistake which led to the abandonment of rolls forty years ago. And there is the same reason for it. When Collier and Sulzberger introduced their roller systems, it was with the conviction that the millstone was not fitted to reduce wheat to flour. We have just seen that if they had not made the fatal error of supposing that, therefore, the millstone was useless and 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. In many cases they have hastily assumed that, therefore, the millstone was useless, and 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 follow that it cannot reduce middlings; nor does it follow that because rolls can do some things better than the millstones, they should supplant millstones entirely. The attempt to make a coachman act as cook and porter, can only result in spoiling a good coachman. Rolls are good enough in their place, but their legitimate place is not to absorb all functions of reduction.

On exceedingly hard wheats like those of Minnesota and Hungary, a complete roller system, employing rolls for all reducing purposes, will doubtless succeed better than if 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 himself the agent for a roller mill, has said that rolls 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 roll by the same criterion that we did the millstone. It would be tedious to define the

difference in rolls occasioned by 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, though the extent of this modification is overestimated by interested parties. The rounding of the corrugation and the giving of a differential speed to rolls are merely attempts to disguise in a measure the action 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 their claim to be considered the best means for reducing wheat; for if we examine the action of rolls we shall find them deficient in many important particulars, 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, he will readily see that whatever the character 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 found in the crease.

If you will examine minutely the product of a first break on rolls, you will fail to observe evidence of any particular intention in breaking the wheat beyond reducing the size of the particles to be handled as mentioned before. You will find the wheat broken in every conceivable shape, and only in a few 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 broken 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 a 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 successive reduction grows poorer and poorer.

Nor can it be denied that the breaking of the wheat into ragged, irregular shapes by a first reduction on corrugated rolls, facilitates the comminution of the bran coatings in subsequent 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. Some of these mills, it is true, do not show an inferior article of what is called wheat or break flour, but it will be found that these same mills do not make the regulation amount of "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 and thus hold the wheat flour up to a good marketable grade. And it may be here added that the reports of the percentage 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 "patent," 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 opportunity 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.)

















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TO OWNERS WITH DUSTY MILLS AND CLOUDY BROWS.

## 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 thoroughly met and conquered in the highest degree by the

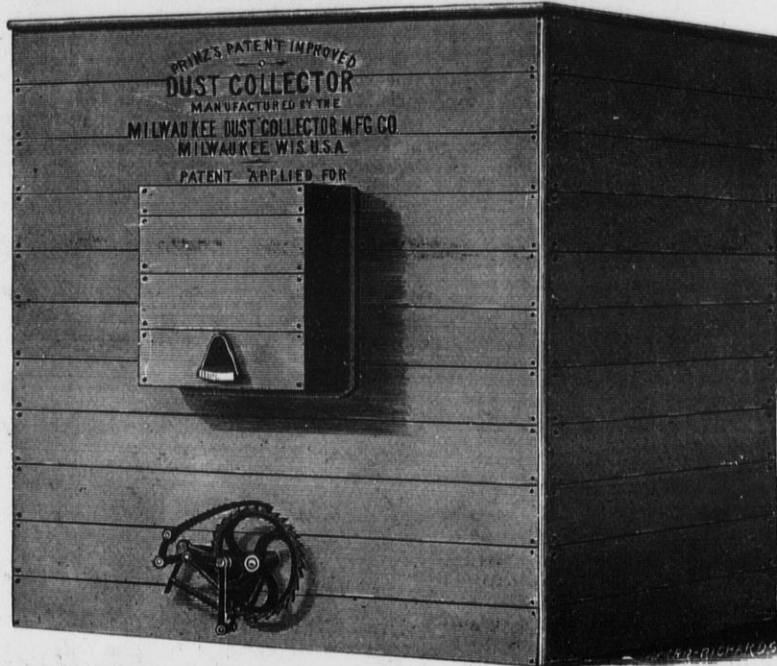
# PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of 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-*



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*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.

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WHAT THE SECRETARY OF THE MILLERS' NATIONAL ASSOCIATION SAYS:

MILWAUKEE DUST COLLECTOR MFG. CO.

Milwaukee, July 24th, 1882.

Dear Sirs:—In reply to your inquiry with regard to the working of the "Prinz Dust Collector," put into our mill, would say: We have had it in operation about three weeks, taking the suction from all our millstones and break rolls. During this time it worked to our entire satisfaction without being aided or interfered with in any manner, in short, the machine was not opened until it had been in operation three weeks, when we found that it was entirely free from any accumulation of flour or dust, and apparently as clean as when it made the first revolution. You have evidently struck the correct principle. We have waited long for a successful machine of this kind, and shall want more of them as fast as we can place them in our mill.

Yours truly,

S. H. SEAMANS & CO.

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Gentlemen:—The Dust Collector you have put in on trial in our Mill is giving the same satisfaction as when first started, over two months ago. We have therefore concluded to adopt your machine for all our Purifiers, Roller Exhausts and Cleaning Machinery. You will please make as many Machines for us as are necessary.

Yours truly,

NEW ERA MILLING CO.

More testimonials are given in our circular, for which please address

## Milwaukee Dust Collector Mfg. Co.

MILWAUKEE, WIS.

[Please mention the United States Miller when you write to us.]

# THE CASE MIDDLINGS PURIFIER,

A—The Fan spout, 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 length 39 inches, and diminishes the height 22 inches.

B—Air-valve upper Riddle.

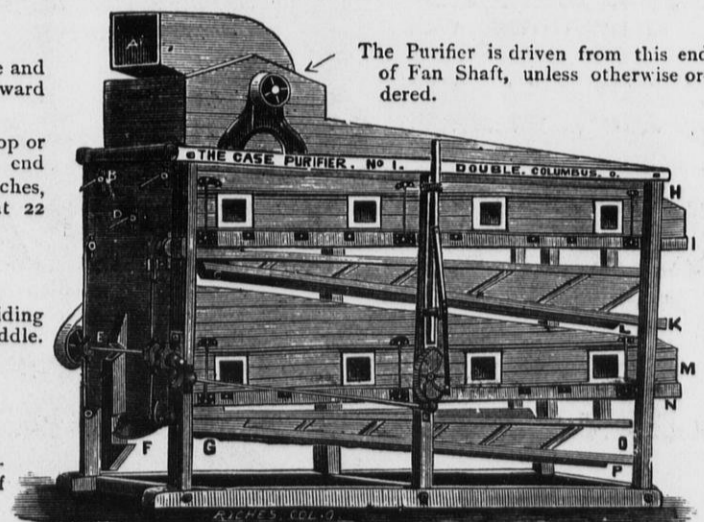
C—Cut-off for upper Riddle, sliding one-half the length of Riddle.

D—Air-valve, lower Riddle.

E—Upper Riddle tails off here.

F—Lower Riddle tails off here.

G—Cut-off for lower Riddle, sliding one-half the length of Riddle.



The Purifier is driven from this end of Fan Shaft, unless otherwise ordered.

H—Feed Box for upper Riddle.

I—Bolting Cloth for upper Riddle.

K—Purified Middlings from upper Riddle.

L—Cut-off from upper Riddle.

M—Feed Box for lower Riddle.

N—Bolting Cloth for lower Riddle.

O—Purified Middlings from lower Riddle.

P—Cut-off from lower Riddle.

The upper and lower halves are each a complete machine, and can be run together, or separately, as desired.

**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

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

True to pattern, sound and solid, of unequalled strength, toughness and durability. An invaluable substitute for forgings or cast iron requiring threefold strength. Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Locomotives, etc. 15,000 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. Circulars and price list free. Address,

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## BOTTLED BEER.

VOECHTING, SHAPE & CO.,

SOLE BOTTLERS OF

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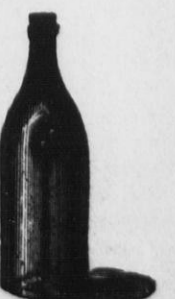
CELEBRATED MILWAUKEE LAGER BEER,

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BOTTLERS' SUPPLIES CONSTANTLY ON HAND.



[Parties corresponding will please state where they saw this advertisement.]

# 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, OHIO:

GENTS:—We have been running your full system of Gradual Reduction for 90 days, and the result has been a fine one. It has been the cause of raising our flour \$1.00 per bbl., and increased our trade to 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 even 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 4 20-60; on Fultz and White wheat we used 4 30-60. Were we to fit up another mill we would certainly buy the Little Giant.

Respectfully yours,

J. B. MILLER & CO.

ASHLEY, OHIO, JULY 24TH, 1882.



Double Break Machine, capacity 120 bushels per hour.

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THE BEST OFFER EVER MADE.

Office of the UNITED STATES MILLER, Milwaukee, Wis

Gentlemen:—The *United States Miller* is now in its seventeenth year and is recognized by the trade everywhere as a valuable authority on milling subjects. Some of the ablest writers on milling and mechanical subjects in general, residing in Europe as well as America, contribute to its columns. You will find it of value to you to take the paper regularly and to read it carefully. We want you to subscribe now, and we hereby make you the following offer, which we believe you will find it to your advantage 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:

1. **The Lady of the Lake**, a romance in verse, by Sir Walter Scott;
2. **Grimm's Fairy Tales for the Young**, the best collection of fairy stories ever published.
3. **David Hunt**, a novel, by Mrs. Ann S. Stephens.
4. **Reaping the Wirlwind**, a novel, by Mary Cecil Hay.
5. **Dudley Carleon**, a novel, by Miss M. E. Braddon.
6. **Essica**, OR THE MYSTERY OF THE HEADLANDS, a novel, by Etta W. Pierce.
7. **A Golden Dawn**, a novel, by the author of "Dora Thorne."
8. **Valerie's Fate**, a novel, by Mrs. Alexander.
9. **Sister Rose**, a novel, by Wilkie Collins.
10. **Anne**, a novel, by Mrs. Henry Wood.

Remember, we will send all the above books by mail, post paid, and the UNITED STATES MILLER, regularly for one year, upon receipt of *One Dollar*, in cash. This will furnish you information of the highest character to your trade, and entertaining and instructive miscellaneous reading for yourself and family for a whole year.

Address all orders to

**UNITED STATES MILLER,**

E. HARRISON CAWKER,  
Publisher.

Nos. 116 and 118 Grand Avenue,  
MILWAUKEE, WIS.

N. B.—"MILLS FOR SALE" advertisements occupying 1 inch space or less—one dollar for each insertion; *cash with order.*

"SITUATIONS WANTED" advertisements fifty cents each insertion; *cash with order.*

## 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,**

Silver Creek, N. Y.

[Please mention the United States Miller, when you write to us.]

## A NEW DEPARTURE

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

**MORRITZ MARTIN PATENTS**

— ON —

## CENTRIFUGAL 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.**

*THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will make clear flour and a clean finish on stock that cannot be treated in the common reel without loss, no matter how much silk it is passed over. IT IS ESPECIALLY ADAPTED to handling soft, dry ground material, full of light impurities, whether from rolls or stone. IT IS INDISPENSIBLY ADAPTED to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner. IT MAKES A CLEAN SEPARATION on caked and flaky meal from smooth rolls, which no other style of reel can do. IT IS VASTLY 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 Hundred sold in six weeks.**

REFERENCE TO LEADING MILLERS IN THE UNITED STATES.

Write for descriptive circular and price list to

**GEO. T. SMITH MIDLINGS PURIFIER CO., - Jackson, Michigan.**

[Please mention the United States Miller when you write to us.]

## THE MILLERS MUTUAL INSURANCE COMPANY OF WISCONSIN

is now issuing Policies of Insurance on all approved applications received so far. The Company has now sufficient members to allow it to increase the risks on any one Mill from \$1,000 to \$3,000. All matters relating to Insurance should be addressed to

**JOHN SCHUETTE, Sec., Manitowoc, Wis.**

[Please mention the United States Miller when you write to us.]

# EDW. P. ALLIS & CO.

MILWAUKEE, WISCONSIN.

## MILL BUILDERS AND FURNISHERS,

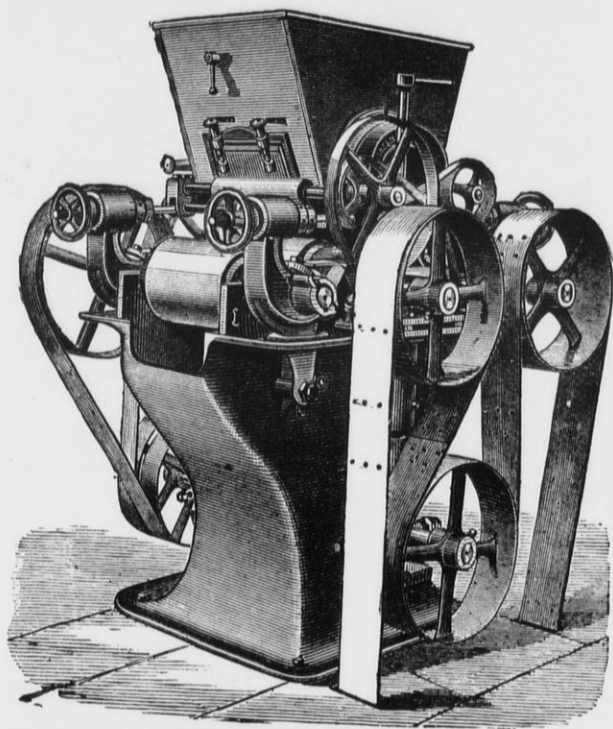
AND SOLE MANUFACTURERS OF

GRAY'S PATENT NOISELESS

# ROLLER MILLS

CORRUGATED AND SMOOTH CHILLED 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 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 for Redress. The matter is in the hands of our Attorneys, who will soon take VIGORIOUS 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

# EDW. P. ALLIS & CO.,

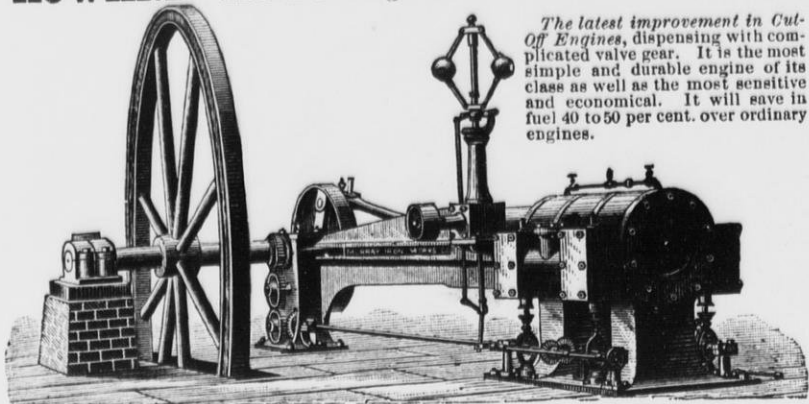
MILWAUKEE, WIS.

Branch Office 318 Pine Street, Benson Block, SAN FRANCISCO, CAL.

J. R. CROSS, Manager.



“HOWARD” AUTOMATIC CUT-OFF ENGINE.



Built only by the MURRAY IRON WORKS CO., BURLINGTON, IOWA. BUILDERS OF ALL KINDS OF ENGINES AND MACHINERY.

Mention this Paper when you write to us.]

The latest improvement in Cut-Off Engines, dispensing with complicated valve gear. It is the most simple and durable engine of its class as well as the most sensitive and economical. It will save in fuel 40 to 50 per cent. over ordinary engines.

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, substantially 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 kept in stock, for the convenience of repairs and to be placed on new work or red at short notice. NO OTHER engine builder 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.

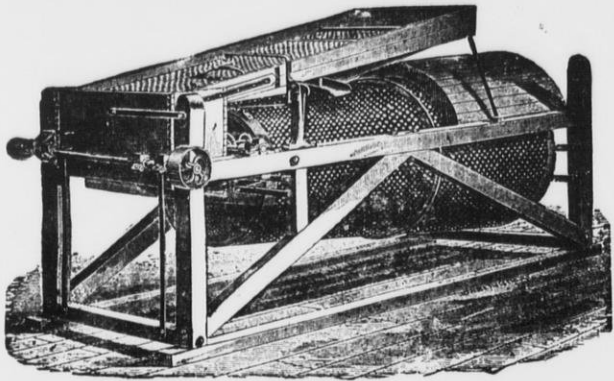
WM. A. HARRIS, Proprietor.

[Mention this paper when you write to us.]

WANTED TO RENT WITH PRIVILEGE OF BUYING, a Water Power Mill in good condition and in a good wheat section. Wisconsin or Minnesota preferred. Address O. K. Care of UNITED STATES MILLER, Milwaukee, Wis.

DON'T BUILD A MILL until you write for Prices and Samples to the BODINE ROOFING COMPANY, MANSFIELD, OHIO.

COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE. GENERAL MILL FURNISHERS



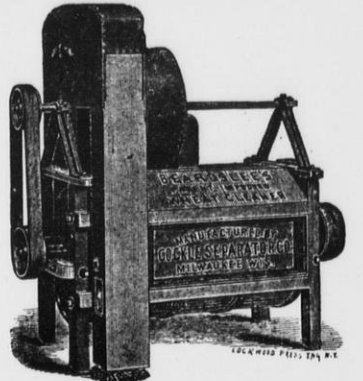
PLAIN COCKLE MACHINE.

IMPROVED COCKLE SEPARATORS

(Kurth's Patent.) Also built in combination with

Richardson's Dustless Wheat Separators!

Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.



BEARDSLEE'S WHEAT CLEANER.

We will contract to furnish entire Wheat Cleaning Machinery for mills, and guarantee the best results.

Send for Illustrated Catalogue.

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 a DAILY LOSS OF MONEY in a mill. There is NO MACHINE IN THE MARKET which can stand comparison with ours.

Carbondale, Ill., Dec. 2, 1881. Cockle Separator Mfg. Co., Milwaukee. Gentlemen:—Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work. Yours respectfully, BROWN & WINFREY.

Perryville, Ind., Nov. 24, 1881. Cockle Separator Mfg. Co., Milwaukee. Sirs:—The combined machine I bought of you has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of. Yours respectfully, B. O. CARPENTER.

Hixton, Jackson Co., Wis., Dec. 30, '81. Cockle Separator Mfg. Co., Milwaukee. Gents:—In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction. Respectfully yours, W. T. PRICE, per D. G. THOMAS.

P. S.—I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat. As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain Yours, etc. D. G. THOMAS.

Minneapolis, Minn. Aug. 22, 1881. Cockle Separator Mfg. Co.: We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.

Yours truly, CAHILL, FLETCHER & CO. La Crosse, Wis., July 30, 1881. Cockle Separator Mfg. Co., Milwaukee. Gentlemen:—The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. We cannot see that it breaks the wheat or requires an unusual amount of power to run it. Yours truly, WILLIAM LISTMAN.

Milwaukee, Wis., Aug. 23, 1881. Cockle Separator Mfg. Co. 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 reference, and to any party calling on us we will be pleased to show the machine in operation. Yours truly, NEW ERA MILLING CO.

Pott's Patent Automatic Feeder!

The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width. Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

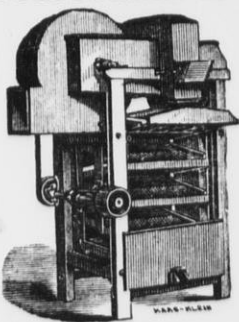
HOWES, BABCOCK & EWELL,

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

Established 1856.

MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



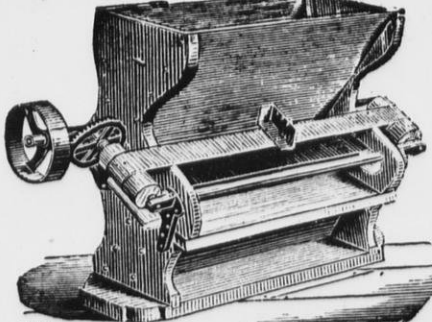
The Eureka Separator

occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



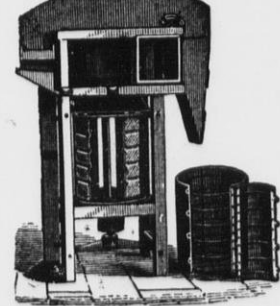
The Eureka Smut and Separating Machine,

A combined Smut and Separating Machine, having thorough ventilation. Over 14,000 of these Machines are now in use.



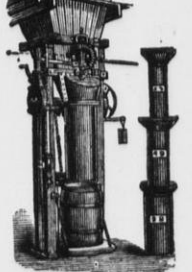
Eureka Magnetic Automatic Separator.

Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



Eureka Brush Finishing Machine

Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer.

Will pack whole and half barrels, and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent crevelling steel coil spring regulating the packing to perfection.

GENUINE DUFOUR AND ANCHOR BRAND BOLTING CLOTHS. FULL STOCK ALWAYS ON HAND. MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER. Office and Warehouse in England, 16 MARK LANE, LONDON, E. C. Gen. Agency for Australian Colonies & New Zealand, THOS. TYSON, MELBOURNE, VICTORIA.

Abernethey's New Book.

PRACTICAL HINTS

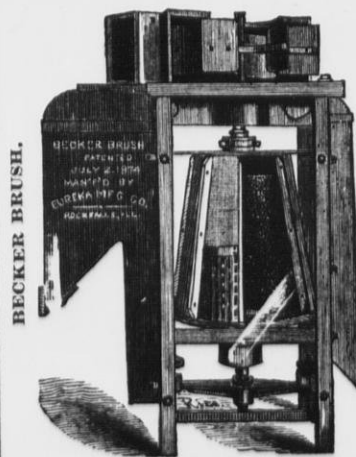
Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.

Every Miller, Millwright and Millwright's Apprentice should have a copy.

THE UNITED STATES MILLER for one year and a copy of this book will be sent for \$1.00. Address,

UNITED STATES MILLER, Milwaukee, Wis.



BECKER BRUSH.

EUREKA MANUFACTURING CO.,

Manufacturers and Sole Proprietors of the

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 milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, the users to be the judges of the work. For price and terms apply to

EUREKA MAN'G CO., ROCK FALLS, ILL., U. S. A.

[Mention this paper when you write.]

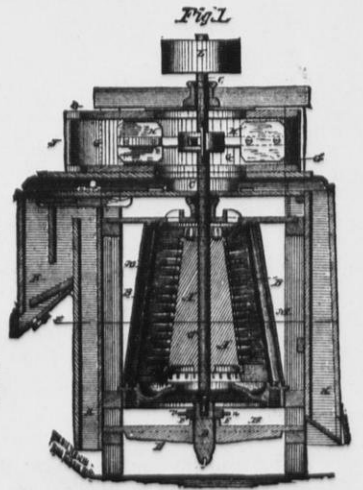


Fig. 1

The United States

# MILLER

OCT 5 1882  
U.S. PATENT OFFICE

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 6. }

MILWAUKEE, OCTOBER, 1882.

{Terms: \$1.00 a Year in Advance.  
Single Copies, 10 Cents.

## THE STEVENS ROLLER MILLS

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.  
We also manufacture the

### Celebrated Cosgrove Concentrated Mill

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

READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:

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 4½ 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 ¼ to ½ 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,

F. E. SMITH & CO.

Among Recent Orders We Name the Following from Prominent Millers:

Lexington Mill Co., Lexington, O., 12 pairs,  
Pollock & Co., Vincennes, Ind., 12 pairs,  
James Norris, St. Catherines, Ont., 28 pairs,

E. O. Stanard & Co., St. Louis, Mo., 28 pairs,  
Penfield, Lyon & Co., Oswego, N. Y., 2 Cosgroves.,  
McNeil & Baldwin, Akron, O., Cosgrove and 10 pairs.

E. T. Archibald & Co., Dundas, Minn., 12 pairs,  
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.

## ODELL'S ROLLER MILL.

### An Established Success.

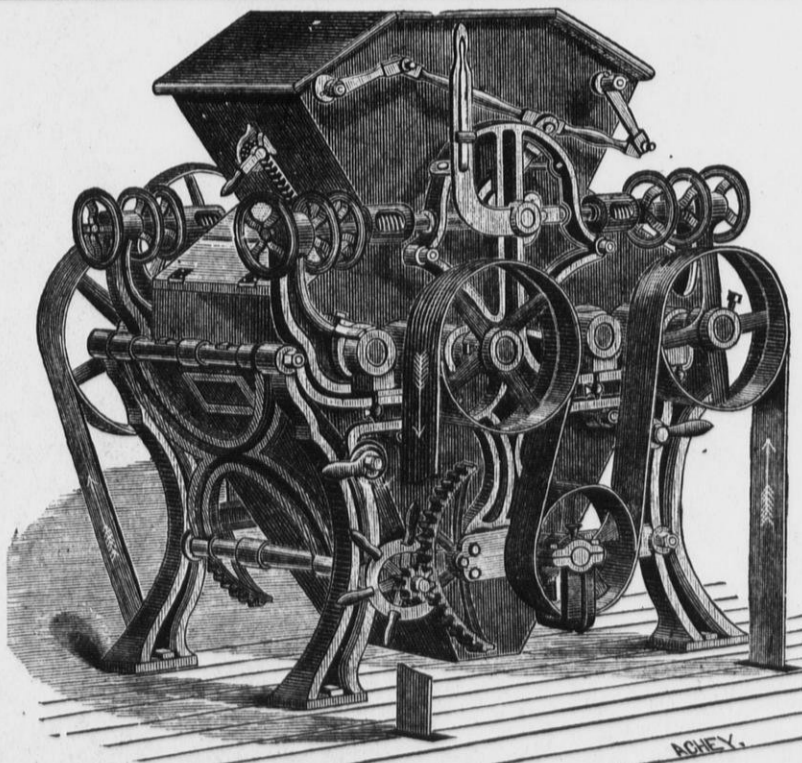
We invite particular attention to the following

#### 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. 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 tension-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

### Ansonia 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.,

DAYTON, OHIO, U. S. A.

[Mention this Paper when you write to us.]

**THE LARGEST MILL FURNISHING ESTABLISHMENT IN THE WORLD.**

**RELIANCE WORKS,**

**EDW. P. ALLIS & CO. Prop's.**

MILWAUKEE, WIS. U. S. A.

SOLE MANUFACTURERS OF

Gray's Patent Noiseless Belt

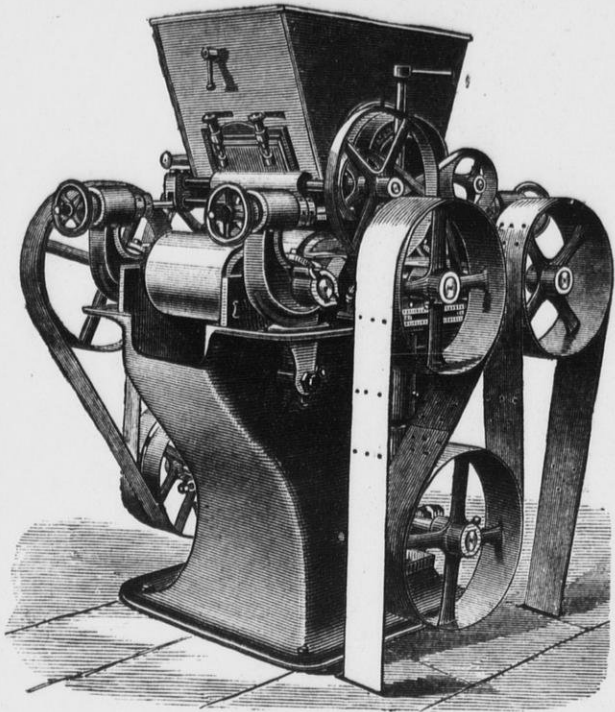
**ROLLER MILLS**

WITH

**WEGMANN'S PATENT PORCELAIN ROLLS.**

Unexcelled for reducing Middlings to Flour.

Far ahead of Smooth Iron or Scratch Rolls and entirely superceding the Mill Stones for this purpose.



**Read the Following Letters.**

Messrs. E. P. ALLIS & Co., Milwaukee, Wis. Terre Haute, Ind., Aug 22nd, 1882.

Gentlemen:—We are very much pleased with the whole eight set of Porcelain Rolls you put in our Mill. The two double set sent us soon after starting 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 or fine Middlings are much better, being almost entirely free from germs and not as specky.

Yours Truly,

KIDDER BROS.

[Mention this Paper when you write to us.]

Messrs E. P. ALLIS & 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. I have been using the original Porcelain Gear Machines for five years and became convinced a long time ago that Mill Stones could not produce as satisfactory results.

I am 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 Mill Stones, dispenses with costly stone dressing and for reducing Middlings and soft branny residuums and tailings is unequalled by any Machine, Iron or stone, at least this is my opinion after five years of practical experience.

Yours truly,

JOHN HARVEY,

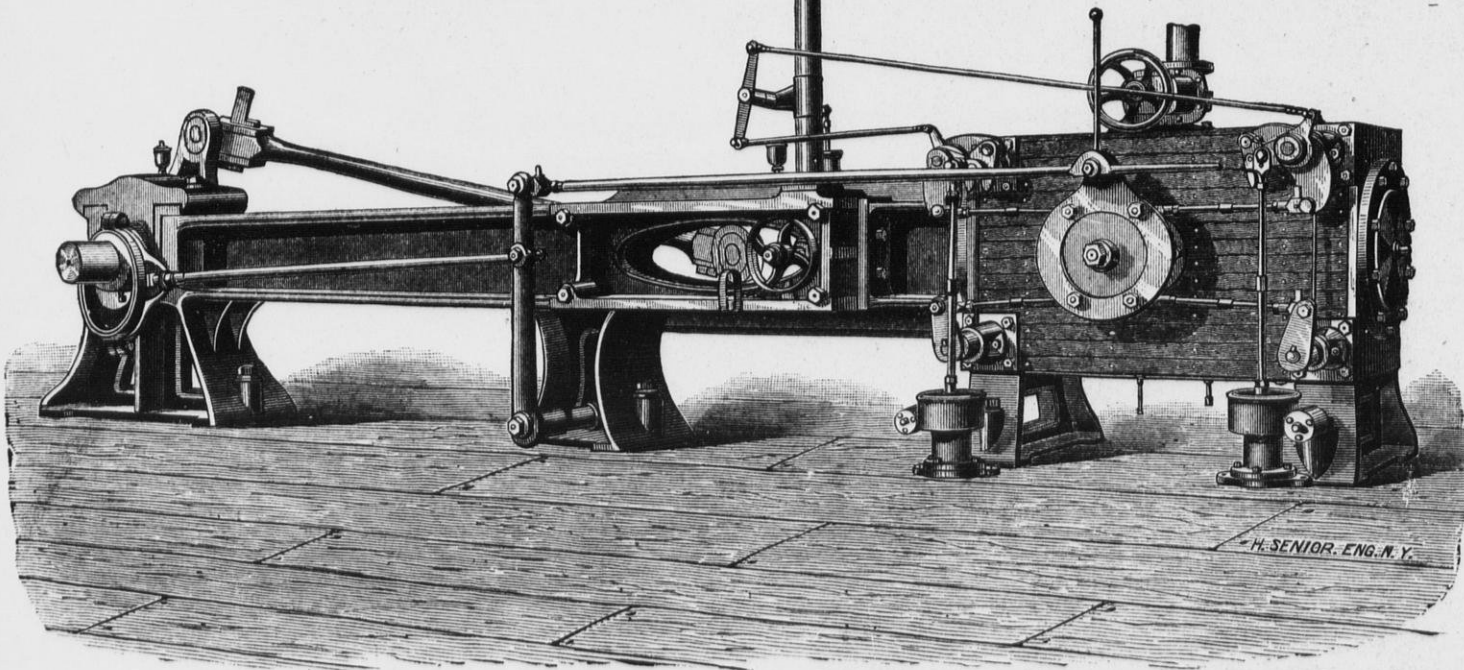
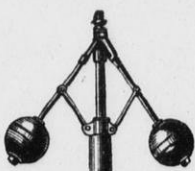
Head Miller Kings Co. Mills, Brooklyn, E. D.

ALSO SOLE MANUFACTURERS OF THE CELEBRATED

**REYNOLDS'**

**CORLISS ENGINES**

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 Cut-off Engines.

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

**Edw. P. Allis & Co.,**  
MILWAUKEE, WIS.

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

J. B. A. Kern.....Milwaukee, Wis.	Albert Wehausen.....Two Rivers, Wis.	L. H. Lanier & Son.....Nashville, Tenn.
LaGrange Mill Co.....Red Wing, Minn.	Green & Gold.....Faribault, Minn.	Wells & Nieman.....Schuyler, Neb.
New Era Mills.....Milwaukee, Wis.	Meridan Mill Co.....Meridan, Minn.	Grundy Centre Milling Co.....Grundy Centre, Iowa.
Daisy Flour Mills.....Milwaukee, Wis.	Townshend & Proctor.....Stillwater, Minn.	B. D. Sprague.....Rushford, Minn.
Winona Mill Co.....Winona, Minn.	Sooy & Brinkman.....Great Bend, Kansas.	The Eisenmeyer Co.....Little Rock, Ark.
W. D. Washburn & Co.....Anoka, Minn.	Frank Clark.....Hamilton, Mo.	A. W. Ogilvie & Co.....Montreal, Canada.
Archibald, Schurmeier & Smith.....St. Paul, Minn.	N. J. Sisson.....Mankato, Minn.	Geo. Urban & Son.....Buffalo, N. Y.
White, Listman & Co.....La Crosse, Wis.	Jas. Campbell.....Mannannah, Minn.	A. A. Taylor.....Toledo, O.
Milwaukee Milling Co.....Milwaukee, Wis.	C. J. Coggin.....Wauconda, Ill.	Pindell Bros. Co.....Hannibal, Mo.
Stuart & Douglass.....Chicago, Ill.	J. J. Wilson.....Algona, Iowa.	Kehlror Milling Co.....East St. Louis, Ill.
Stillwater Milling Co.....Stillwater, Minn.	Ames & Hurlbut.....Hutchinson, Minn.	Walsh, DeRoo & Co.....Holland, Mich.
Otto Troost.....Winona, Minn.	Lincoln Bros.....Olivia, Minn.	Goodlander Mill and Elevator Co.....Fort Scott, Ks.
E. T. Archibald & Co.....Dundas, Minn.	Northey Bros.....Columbus Junction, Iowa.	W. Seyk & Co.....Kewaunee, Wis.
C. McCreary & Co.....Sacramento, Cal.	Bryant Mill Co.....Bryant, Iowa.	Topeka Mill and Elevator Co.....Topeka, Kan.
Gardner & Mairs.....Hasting, Minn.	David Kepford.....Grundy Centre, Iowa.	Strong Bros.....Graceville, Minn.
J. Schuette & Bro.....Manitowoc, Wis.	Waterbury & Wagner.....Janesville, Minn.	C. A. Roberts..... Fargo, D. T.
Minnetonka Mill Co.....Minnetonka, Minn.	W. A. Weatherhead.....South Lyons, Mich.	Coman & Morrison.....Fox Lake, Wis.
J. D. Greene & Co.....Faribault, Minn.	Geo. Bierline.....Waconia, Minn.	J. G. Schaapp.....Grand Island, Neb.
F. Goodnow & Co.....Salina, Kansas.	James McCafferty.....Burton, Mo.	Fred Schumacher.....Akron, Ohio.
A. L. Hill.....Faribault, Minn.	Geo P. Kehr.....Menomonee Falls, Wis.	Warren Mfg. Co.....Warren, Minn.
Beynon & Maes.....Owatonna, Minn.	Winona Mill Co. compounding their present 24x60 Winona, M.	
Eagle Mill Co.....New Ulm, Minn.	Forest Mills Co.....Forest, Minn.	

# The United States

# MILLER

Published by  
E. HARRISON CAWKER. { Vol. 13, No. 6. }

MILWAUKEE, OCTOBER, 1882.

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Single Copies, 10 Cents. }

## The Phoenix Foundry and Machine Works at Terre Haute, Indiana.

### A MODEL MILL-BUILDING ESTABLISHMENT.

The engraving which we herewith present for the inspection of our readers, represents the PHOENIX 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 Phoenix 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

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.

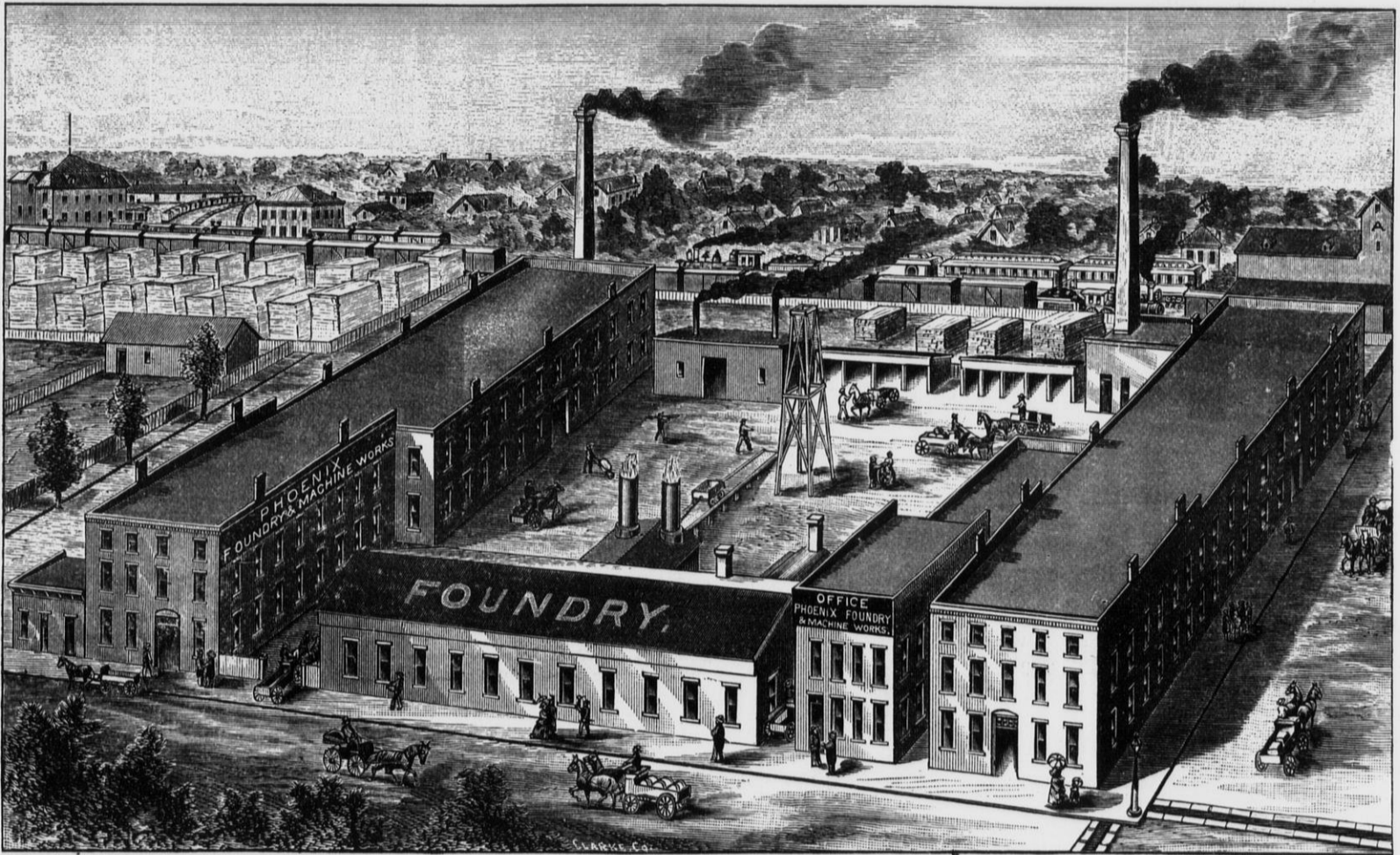
All the persons who are connected with the company are men of business experience and are wide awake and go ahead, and with all these special machines, with their extensive shops in which they have mechanics who cannot be excelled in their respective trades, they intend to make their institution occupy 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 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 quality and quantity. This may be considered a fact.

### 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-valve



PHOENIX FOUNDRY AND MACHINE WORKS, TERRE HAUTE, IND., U. S. A.

In 1879 the Company was incorporated. The present officers, F. H. McElfresh, President; 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 Phoenix 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 x 156 feet, with boiler and engine room in basement, the building being two stories high. The wood-working shop is 50 x 156 feet, two stories high. The foundry is 50 x 140 feet, and an office 30 x 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, screw-cutters, shapers of every variety and style, universal wood-workers, planes, surfacers, 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

man who works each tool is a *mechanic* in the largest sense, and unexcelled.

They have associated with them Mr. Jonathan Mills, who is well known by the millers 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 inventions which have lightened their labors and filled their pockets.

Mr. Mills has now three new machines which the company are manufacturing—a new six-break reduction machine, with scalping reels combined, which will be built in one frame, and is intended to meet the wants of small 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 other 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 arrangements 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 simply 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 has 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, Minnesota 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 Patents used heretofore. If millers could always obtain No. 1, Hard Spring Wheat for milling purposes, at a reasonable price, there is little doubt but that they would greatly prefer it;

engines in point of economy and cost of repairs.

*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 points 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' x 24' Reynolds' Corliss engine, (manufactured by E. P. Allis & Co.,) Mr. Jno. W. Hill, an acknowledged authority on steam engineering, says: "this economy of 2½ 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-Corliss engine has repeatedly made a barrel of flour with less than 25 lbs. of coal, and in several instances with less than 20 lbs. If any other engines have a better record than this 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 three-fourths the power from the same expenditure of fuel, or, in other words, an automatic 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 CASE****PURIFIER****Reduction Machines and Rolls.****READ WHAT MILLERS SAY OF THEM!  
PURIFIERS.**

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, Williamsburg, 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, but since we put 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."

C. 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 \$1000, we estimate."

MANY 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.,**

**OFFICE AND FACTORY, 5th Street, North of Naughten. Columbus, Ohio, U. S. A.**











# The Geo. T. Smith Middlings Purifier.

## LOW IN PRICE,

Quantity and Quality of Work Considered.

### Licensed Under all Patents

Owned by the Consolidated Middlings Purifier Company.

### Simple, Easily Adjusted,

## Two Thousand SMITH PURIFIERS were Sold in 1881.

THE SMITH PURIFIER is in Use in every Milling Country in the World. More than Four Thousand are now running in the United States.

The Smith Purifier has a Positive and Effective Means of Cleaning the Silk of the Sieve. The Smith Purifier has Graded, Controllable Air Currents. It is Impossible to do Good and Economical Work without these Features.

**OUR CLOTH TIGHTENER**

Makes it both convenient and easy to keep the Silk always properly stretched.

**OUR AUTOMATIC FEED**

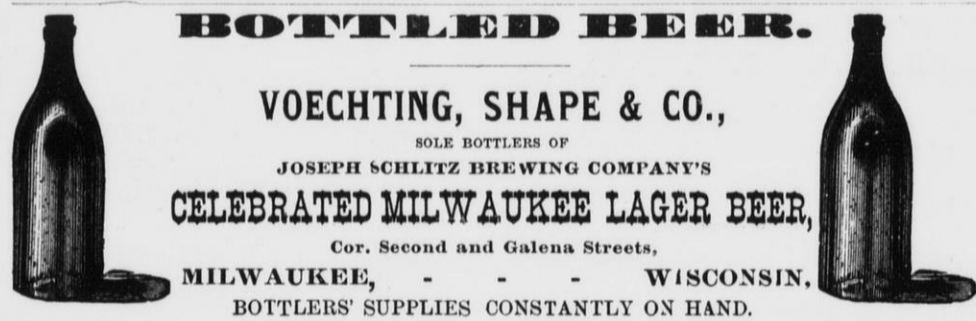
IS POSITIVELY SELF-ADJUSTING AND RELIABLE.

WRITE FOR DESCRIPTIVE PRICE LIST AND CIRCULAR TO

**GEO. T. SMITH MIDLINGS PURIFIER CO., Jackson, Michigan.**

Please Mention this paper when you write to us.

**BOTTLED BEER.**



**VOECHTING, SHAPE & CO.,**  
SOLE BOTTLERS OF  
**JOSEPH SCHLITZ BREWING COMPANY'S**  
**CELEBRATED MILWAUKEE LAGER BEER,**  
Cor. Second and Galena Streets,  
**MILWAUKEE, - - - WISCONSIN.**  
BOTTLE SUPPLIES CONSTANTLY ON HAND.

Parties corresponding will please state where they saw this advertisement.

## STEEL CASTINGS

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

True to pattern, sound and solid, of unequalled strength, toughness and durability.  
An invaluable substitute for forgings or cast iron requiring threefold strength.  
Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Locomotives, etc.  
15,000 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.  
Circulars and price list free. Address,

**CHESTER STEEL CASTINGS CO.,**

407 LIBERTY ST., PHILADELPHIA, U. S. A.

Works, CHESTER, PA.  
[Mention this paper when you write us.]

## Buckwheat Refiners & Portable Mills.



**BREWSTER'S CELEBRATED Buckwheat Refiner**  
Is the only Machine whereby the greatest yields of **PURE, WHITE, SHARP FLOUR** can be obtained.  
The only reliable, practical and durable Machine **IN THE WORLD.**



The Positive Adjustment AND AUTOMATIC **Mirling Mill**  
Is strictly Self Protecting, The **BEST ADJUSTMENT IN THE WORLD.**  
And the only **PERFECT GRANULATOR,** GRINDS COOL, SELF OILING, GREAT SAVING OF POWER, **SIMPLICITY AND Durability Combined.**

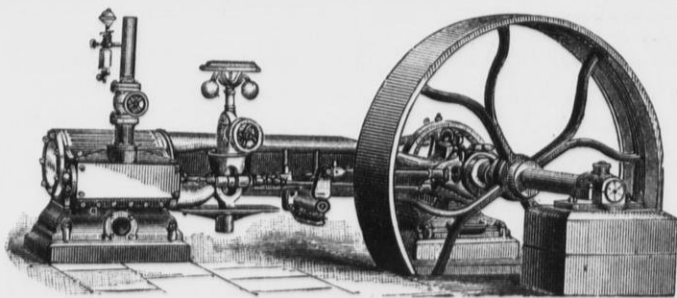
Satisfaction Guaranteed on all our Goods. Send for descriptive Circular, giving Prices, Sizes, Terms, etc.

**BREWSTER BROS. & CO., Unadilla, N. Y.**

[Mention this paper when you write.]

## WOODBURY, BOOTH & PRYOR

ROCHESTER, N. Y.,



Manufacturers of

Automatic Cut-Off, Fixed Cut-Off, and Slide Valve.

### Steam Engines, Tubular Boilers.

[Mention this paper when you write.]

### SPECIAL NOTICE.

For the more complete protection of our customers, and to put an end at once and forever to the demands for royalties by which they have recently been annoyed, we have purchased **ALL PATENTS** relating to Purifiers, lately owned by Huntley, Holcomb & Heine, including the well-known **MIDDLETON PATENT** and its several re-issues.

Every purchaser or owner of a Geo. T. Smith Purifier, in the past or future, owns the right to use it unmolested and unchallenged, and in this right we have, can and shall protect them.

Intending purchasers should give this notice attention, as it is of the utmost importance to them.

### Adapted to all Systems

Of Milling, and every Grade and Condition of Middlings.

### FOURTEEN SIZES

Single, Double and Special Machines.

### Durable, Light Running.

Chamberlain, Pole & Co.,

### Brokers & Factors

**IN FLOUR,**

**BRISTOL, ENGLAND.**

[Mention this paper when you write us.]

**BUDGETT, JAMES & BRANTH,**

### Flour Merchants,

**BRISTOL, ENGLAND.**

[Mention this paper when you write us.]

### Orobio de Castro & Co.,

AMSTERDAM (Holland), Europe,  
Telegrams, OROBIO, Amsterdam,  
AGENTS FOR

### FLOUR and GRAIN.

American Correspondence Solicited.  
Consignments Accepted.

ESTABLISHED 1850.

**WILLIAM BRYCE & CO.,**

36 MARK LANE,  
**LONDON (England.)**

40 ST. ENOCH SQUARE,  
**GLASGOW (Scotland.)**

TELEGRAM : **BRYCE, London or Glasgow.**

CONSIGNMENTS OF FLOUR SOLICITED.

### J. J. BELL,

41 S. William St., New York,

Manufacturer and Importer of

### MILLSTONES,

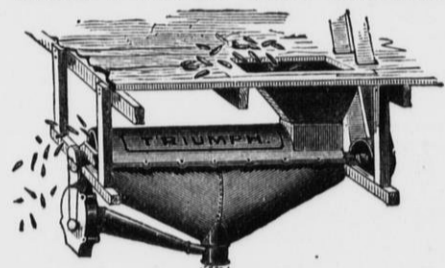
BOLTING CLOTHS,

Mill Irons, Belting, Mill Picks, Iron Proof Staffs,  
Smut Machines, Elevator Cups, and

### Mill Furnishings in General.

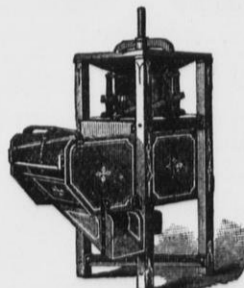
Having been engaged in the manufacture of ESOPUS MILLSTONES, CHASERS, &c., for the past 30 years, I am prepared to fill all orders not only at the lowest price, but the best qualities for the purpose intended.  
[Mention this paper when you write.]

### TRIUMPH POWER CORN SHELDER.



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 Builders and Mill Furnishings.**  
THE PAIGE MFG. CO., Painesville, Ohio.  
[Mention this paper when you write us.]

### MARSHALL'S NEW CORN SHELDER.



The only Self-Adjusting Sheller in use that will **SHELL MIXED CORN,** FAST AND WELL, And that will clean it THOROUGHLY.  
Easy of access to all parts liable to clog. Thoroughly made. Sold as cheap as the cheapest.  
Send for circulars to  
**G. MARSHALL & SON,**

Founders and Machinists and Manufacturers of Marshall's Rotary Force Pump. Improved Jonval Turbine Water Wheel, etc.  
Kilbourn City, Wis.  
[Mention this paper when you write to us.]

CHOICE BEVELLED EDGE

### FLOUR BRANDS

For two dollars and upwards. Also RUBBER STAMPS, BURNING BRANDS, SEALS, STEEL NAME STAMPS, LETTERS AND FIGURES, Etc. Orders promptly attended to  
Box 114  
**CHAS. H. CLARKE,**  
82 Wisconsin St., Milwaukee.

### STEEL CAR PUSHER

Made entirely of **STEEL.** ONE MAN with it can easily move a loaded car. Will not slip on ice or grease.  
Manufactured by **E. P. DWIGHT,** Dealer in Railroad Supplies, 407 Library St., Philadelphia, Pa.  
[Mention this paper when you write us.]

**A. PLOUVIER,**  
Agent for Flour,

**ANTWERP, (Belgium.)**

Advances on Consignments.

### W. M. SHOOK,

Millwright and Contractor

Dealer in all kinds of Mill Furnishings.  
**PRACTICAL ROLLER MILL BUILDER,**  
Office and Shops 172 and 174 South Market Street,  
**CANTON, OHIO.**

### WALKER BROS. & CO.

FLOUR AND GRAIN

### Commission Merchants

TRINITY SQUARE,  
London, E. C., - England.

### WILLIAM MITCHELL,

Flour and Grain Merchant,

Londonderry, Ireland.

Consignments and offers solicited.





# An Immense Success!

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

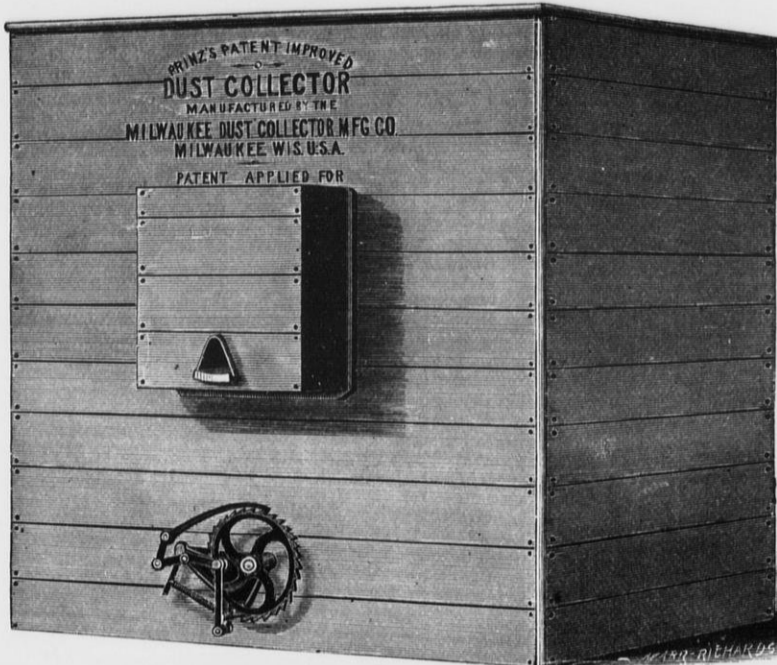
## PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of 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.

### TESTIMONIALS.

MILWAUKEE DUST COLLECTOR MFG. CO. Stillwater, Minn., July 24th, 1882.  
Dear Sirs: Have made such inquiries as we are able, and upon such we increase our orders to four machines, adding three more for No. O Smith Purifiers.  
Yours Respectfully,  
J. H. TOWNSSHEND.

MILWAUKEE DUST COLLECTOR MFG. CO. Dundas, Minn., Aug. 10th, 1882.  
Gentlemen: We have been using the Prinz Dust Collector for the past year. We consider the machine a great success. It does its work well at all times.  
Very truly,  
E. T. ARCHIBALD & CO.

## Milwaukee Dust Collector Mfg. Co.

MILWAUKEE, WIS.

[Please mention the United States Miller when you write to us.]

### AN OPEN LETTER

Office of J. B. Miller & Co., Ashley, O.  
Ashley, O., Aug. 15, 1882.  
Mr. C. F. Miller, Mansfield, 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 conclusion we wish to express 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 Flour direct in New England at a small commission by a salesman who can furnish first-class reference, please address

FLOUR SALESMAN,  
Box 2679, Boston, Mass.

### C. F. MILLER,

MANSFIELD, OHIO.

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 desired capacity. Genuine Zurich Silk Bolting Cloths by the piece, or made up with Webbing. Warranted best quality. Mention the United States Miller when you write.]

DON'T BUILD A MILL until you write for Prices and Samples to the BODINE ROOFING COMPANY MANSFIELD, OHIO.

#### What Slater's Bolting Reels do.

The improvements in Alt & 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 made anywhere.—*Effingham Times.*

We are increasing the capacity of the Mill we built at Barnesville, O., for Carter, Wiesner & Co. last spring. They say they are making the best Flour in the county. Respectfully yours,

C. B. SLATER & CO.  
Blanchester, Ohio, U. S. A.

MESSRS. CARTER WEISNER & Co., at Barnesville, O., claim that their flour is far superior 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 Railway Company is about to erect at Milwaukee a building 80 feet wide and 400 feet long, to be devoted to the manufacture of car wheels, and from 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

THE Case Manufacturing Co. have just taken the contract to put their entire system in the "Canal mill" of Simon Gebhart, Dayton, O. Mr. Gebhart is one of the largest millers in Ohio, and is always on the lookout 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., of Columbus, O., write us that they will have a display of their machinery at the coming Exposition at Chicago. Millers of the North and 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 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 important machinery 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 more than doubled their working force, and this coming fall will still further increase it. Recently the firm put in a new boiler at their 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 gradual reduction system, and from the tone of the local paper giving an account of it, we infer it has been a success from the start. The account says: "Their decision 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, 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 a better quality, because such is the fact. The Barton roller mills have all the very latest 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 all 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 all quarters for their flour, and they can choose their customers and fix their price themselves. Indeed it may be said that they are without 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 experience, and the day is likely not far distant when the roller system will be as general in this country as the stone system now is."

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 Supreme Court of Connecticut, at the present 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 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 storage 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 office 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.

#### 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

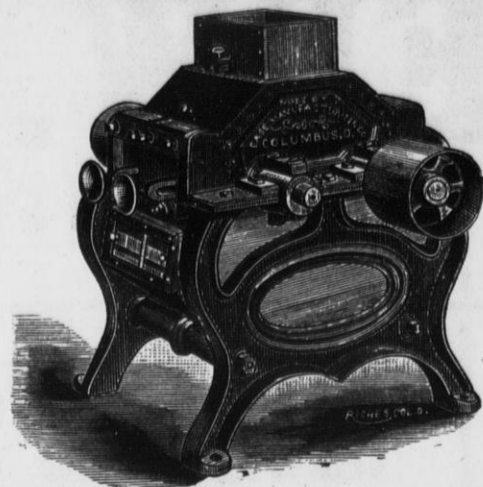
# The Little Giant Break Machines.

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.



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



Double Break Machine, capacity 120 bushels per hour.

THE CASE MANUFACTURING CO., COLUMBUS, OHIO:

GENTS:—We have been running your full system of Gradual Reduction for 90 days, and the result has been a fine one. It has been the cause of raising our flour \$1.00 per bbl., and increased our trade to 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 even 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 4 21-60; on Fultz and White wheat we used 4 30-60. Were we to fit up another mill we would certainly buy the Little Giant.

Respectfully yours,

ASHLEY, OHIO, JULY 24TH, 1882.

J. B. MILLER & CO.

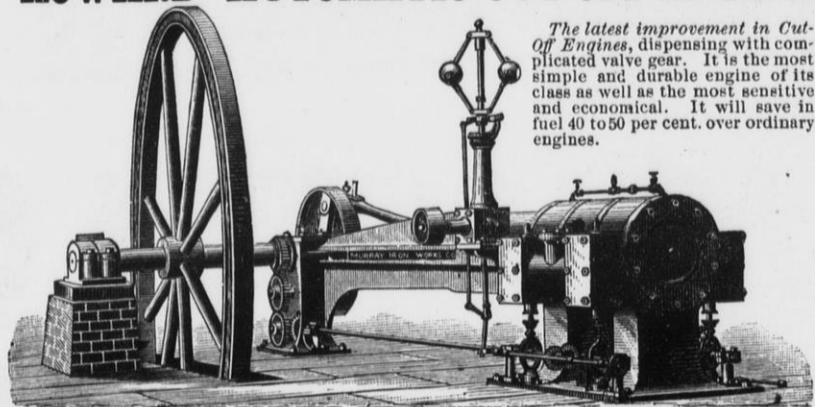
## CASE MANUFACTURING CO.,

OFFICE AND FACTORY, 5th Street, North of Naughten.

COLUMBUS, OHIO.

Please mention the United States Miller, when you write to us.]

### "HOWARD" AUTOMATIC CUT-OFF ENGINE.



Built only by the MURRAY IRON WORKS CO., BURLINGTON, IOWA.  
BUILDERS OF ALL KINDS OF ENGINES AND MACHINERY.

The latest improvement in Cut-Off Engines, dispensing with complicated valve gear. It is the most simple and durable engine of its class as well as the most sensitive and economical. It will save in fuel 40 to 50 per cent. over ordinary engines.

Mention this Paper when you write to us.]

## 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, substantially 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 interchangeable, and kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice. NO OTHER engine builder 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.

WM. A. HARRIS, Proprietor.

[Mention this paper when you write to us.]

## 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,  
Silver Creek, N. Y.

[Please mention the United States Miller, when you write to us.]

## A NEW DEPARTURE

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

### MORRITZ MARTIN PATENTS

— ON —

## CENTRIFUGAL 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.

THE CENTRIFUGAL has more than FOUR TIMES the capacity of the ordinary reel, and will make clear flour and a clean finish on stock that cannot be treated in the common reel without loss, no matter how much silk it is passed over. IT IS SPECIALLY ADAPTED to handling soft, reground material, full of light impurities, whether from rolls or stone. IT IS INDISPENSABLE to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner. IT MAKES A CLEAN SEPARATION on caked and flaky meal from smooth rolls, which no other style of reel can do. IT IS VASTLY 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 Hundred sold in six weeks.  
REFERENCE TO LEADING MILLERS IN THE UNITED STATES.

Write for descriptive circular and price list to

GEO. T. SMITH MIDDINGS PURIFIER CO., - Jackson, Michigan.

[Please mention the United States Miller when you write to us.]

## THE MILLERS MUTUAL INSURANCE COMPANY OF WISCONSIN

is now issuing Policies of Insurance on all approved applications received so far. The Company has now sufficient members to allow it to increase the risks on any one Mill from \$1,000 to \$3,000. All matters relating to Insurance should be addressed to

JOHN SCHUETTE, Sec., Manitowoc, Wis.

[Please mention the United States Miller when you write to us.]

# EDW. P. ALLIS & CO.

## MILWAUKEE, WISCONSIN.

### MILL BUILDERS AND FURNISHERS,

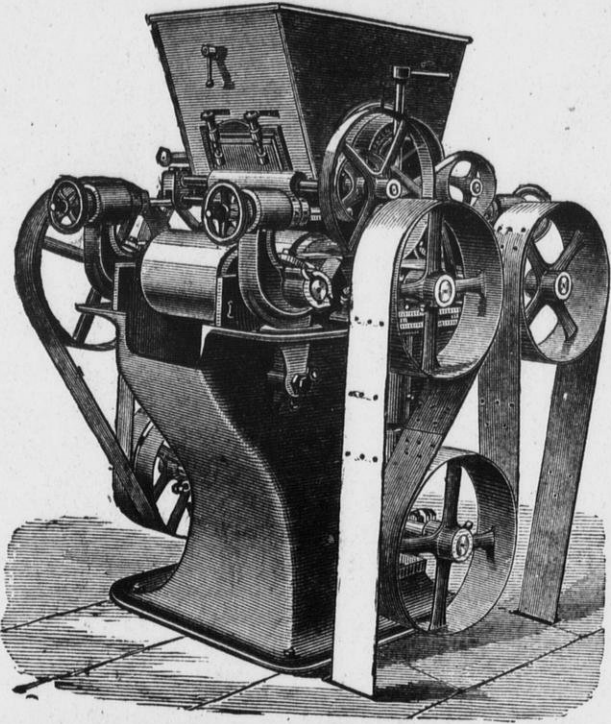
AND SOLE MANUFACTURERS OF

GRAY'S PATENT NOISELESS

# ROLLER MILLS

CORRUGATED AND SMOOTH CHILLED 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 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 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

# EDW. P. ALLIS & CO.,

## MILWAUKEE, WIS.

Branch Office 318 Pine Street, Benson Block, SAN FRANCISCO, CAL.

J. R. CROSS, Manager.



# Frank Andree's Excelsior Centrifugal Flour Dressing Machine.

PATENT APPLIED FOR.

Economy is wealth, and this machine is economical in labor; economical in horse power; economical in repairs; economical in price and rich in the yield, and thereby hangs EXCELSIORSHIP. The inventor, Mr. F. Andree has succeeded after many experimental efforts, in constructing a "Flour Sifting Machine" on the "Centrifugal Principle," which will prove in effect the above combination of merits. In Germany sifting machines have been universally adopted and scarcely will you find the common cylinder in use in any mills here, wind-mills not excepted. There are Centrifugal Machines in the market here, which however do not deserve recognition of great merit, they being of the German discarded pattern, and will do where there are none better, but time and study improves, and we offer a vastly superior one which we will try to bring under the notice of every miller, interested in the progress of milling machines, and we are confident of making it a "Miller's Pride" on account of its being a "dwarf in size and giant in effect."

Mr. Andree's invention consists of two cylinders, an upper or front, and the centrifugal; both of which are incased in frames or reels and constructed in such a manner that they act upon one another. The Centrifugal Machines in general use have no upper or front cylinder, in consequence of which the bolting cloth in the centrifugal cylinder is easily worn out and instantly destroyed if foreign matter works in. This evil is perfectly overcome by the upper or front cylinder. (See cut and description below.)

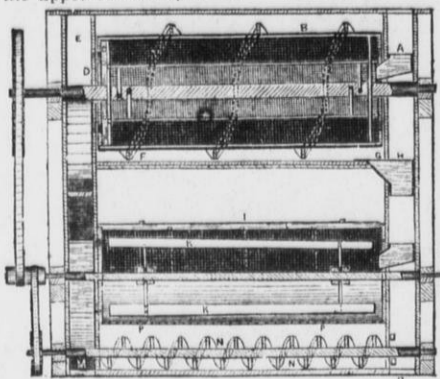


FIG. 1

## DESCRIPTION.

Through spout A the chop enters Front Cylinder B. Grit or Middlings, and flour pass through and the bran is taken by the catchflap in the Front Cylinder, separated and carried through opening 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 deposited into the Centrifugal Cylinder H, then received by the screw-shaped wings K and evenly thrown against gauze-reel L. The flour will pass through the gauze, while the middlings remain, and is taken by the wings K and carried to the front, passing outside through spout L. The flour drops in the hopper, having at its bottom a double conveyor, thence passes outside through spout M.

This machine is built in one size, and its ability surpasses all expectations. The power required is but trifling, as only one-half of one horse power will suffice to produce 150-180 revolutions per minute of the Centrifugal Cylinder; ten to twelve barrels can be sifted in an hour, and this work is performed infinitely better than it can be done with machines now in use, which require a good deal more power and accomplish but half the amount of work.

The bolting cloth in this machine will wear off but very little, if at all; the reel is constructed of three parts of frames, and is stationary. The bottom frame of the reel of the Centrifugal Cylinder is covered on the inside with zinc, and the other two frames with bolting cloth. As most of the action is below, all wear is avoided in this new construction. The frames are held together by means of screw-clamps, and can be changed within a short time, thus enabling the miller to have his bolting cloth fine or coarse.

The cheapness of the bolting covering is another item worthy of consideration, being only \$3.00 to \$4.00 for both frames. This ingeniously constructed machine will produce with three grades coarser bolting cloth a much better flour than the common cylinder, and occupies a considerably smaller space, being 6 1/2 ft. long, 3 1/2 ft. wide and 7 ft. high.

The price, complete, delivered on board the cars at Chicago, uncovered, is \$350.00; for the cover \$9.00 will be charged if kept by the purchaser, if returned in good order, \$1.50 will be charged for the use of it only. We furnish on application an expert to put up the machine, who will receive, outside of board and free fare, \$4.00 per day.

## THE MACHINE CAN BE SEEN IN OPERATION AT

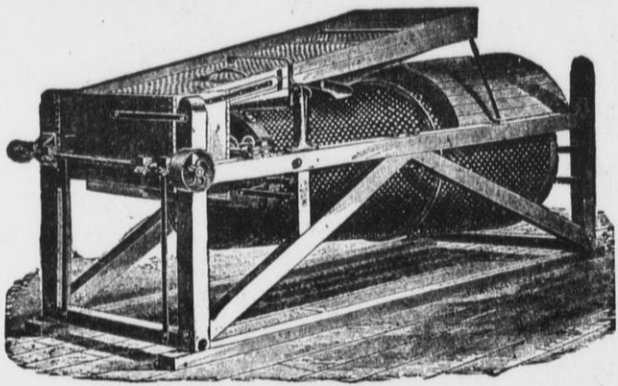
- |   |                |                                |                 |
|---|----------------|--------------------------------|-----------------|
| INDUSTRIAL EXPOSITION                   | Chicago, Ill.  | EAGLE MILLING CO.              | Quincy, Ill.    |
| ANDREE BROS., 376 & 378 N. Water Street | Chicago, Ill.  | FRED VOLTZ, 676 Milwaukee Ave. | Chicago, Ill.   |
| NORTON MILLS, 3 West Madison Street     | Chicago, Ill.  | INDUSTRIAL EXPOSITION          | Milwaukee, Wis. |
| PETER DAANE                             | Oostburg, Wis. |                                |                 |

The above mentioned parties will at any time give desired information. All machines are built under the personal supervision of the inventor. Consignments made on ten days trial. Any further information will be cheerfully given at our office.

**F. ANDREE & CO., Sole Manufacturers.**  
330 East Division Street, CHICAGO, ILL.

# COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE.

## GENERAL MILL FURNISHERS



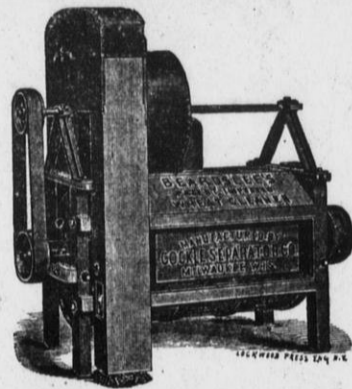
PLAIN COCKLE MACHINE.

## IMPROVED COCKLE SEPARATORS

(Kurth's Patent.) Also built in combination with

### Richardson's Dustless Wheat Separators!

Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.



BEARDSLEE'S WHEAT CLEANER.

**Perforated Zinc at Bottom Figures.** **Send for Illustrated Catalogue.**

**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 a DAILY LOSS OF MONEY in a mill. There is NO MACHINE in THE MARKET which can stand comparison with ours.**

Carbondale, Ill., Dec. 2, 1881.  
*Cockle Separator Mfg. Co., Milwaukee.*  
Gentlemen:—Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work.  
Yours respectfully,  
**BROWN & WINFREY.**  
Perrysville, Ind., Nov. 24, 1881.  
*Cockle Separator Mfg. Co., Milwaukee.*  
Sirs:—The combined machine I bought of you has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of.  
Yours respectfully,  
**B. O. CARPENTER.**

Hixton, Jackson Co., Wis., Dec. 30, '81  
*Cockle Separator Mfg. Co., Milwaukee.*  
Gents:—In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction. Respectfully yours,  
**W. T. PRICE,**  
per **D. G. THOMAS.**  
P. S.—I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat.  
As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain  
Yours, etc. **D. G. THOMAS.**

Minneapolis, Minn. Aug. 22, 1881.  
*Cockle Separator Mfg. Co.*  
We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.  
Yours truly,  
**CAHILL, FLETCHER & CO.**  
La Crosse, Wis., July 30, 1881.  
*Cockle Separator Mfg. Co., Milwaukee.*  
Gentlemen:—The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. We cannot see that it breaks the wheat or requires an unusual amount of power to run it.  
Yours truly,  
**WILLIAM LISTMAN.**  
Milwaukee, Wis., Aug. 23, 1881.  
*Cockle Separator Mfg. Co.*  
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 reference, and to any party calling on us we will be pleased to show the machine in operation.  
Yours truly,  
**NEW ERA MILLING CO.**

**Pott's Patent Automatic Feeder!** The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width. Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

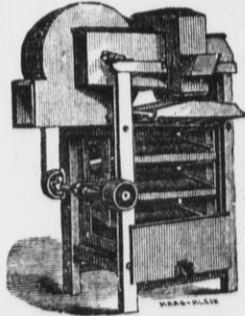
# HOWES, BABCOCK & EWELL,

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

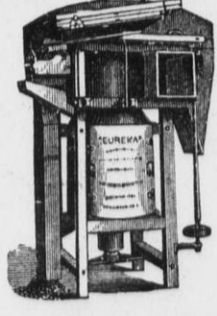
Established 1856.

MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



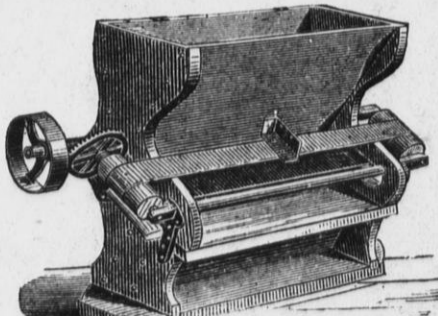
The Eureka Separator

occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



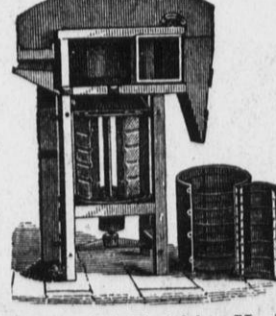
The Eureka Smut and Separating Machine.

A combined Smut and Separating Machine, having thorough ventilation. Over 14,000 of these Machines are now in use.

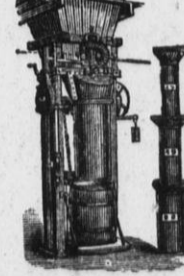


Eureka Magnetic Automatic Separator.

Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



**Eureka Brush Finishing Machine** Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer.

Will pack whole and half barrels, and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent creveling steel coil spring regulating the packing to perfection.

**GENUINE DUFOR AND ANCHOR BRAND BOLTING CLOTHS.** FULL STOCK ALWAYS ON HAND. MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER.  
Office and Warehouse in England, 16 MARK LANE, LONDON, E. C. Gen. Agency for Australian Colonies & New Zealand, THOS. TYSON, MELBOURNE, VICTORIA.

## Abernethey's New Book.

PRACTICAL HINTS

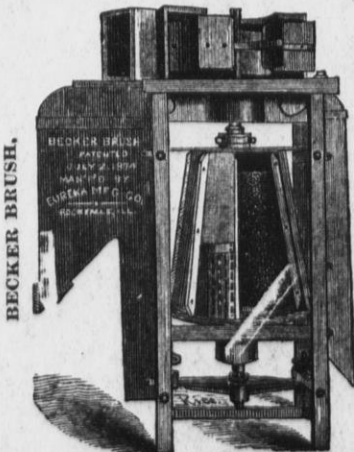
### Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.

Every Miller, Millwright and Millwright's Apprentice should have a copy.

THE UNITED STATES MILLER for one year and a copy of this book will be sent for \$4.00. Address,

**UNITED STATES MILLER,**  
Milwaukee, Wis.



BECKER BRUSH.

## EUREKA MANUFACTURING CO.,

Manufacturers and Sole Proprietors of the

# 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 milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, the users to be the judges of the work. For price and terms apply to

**EUREKA MAN'G CO., ROCK FALLS, ILL., U. S. A.**

(Mention this paper when you write.)

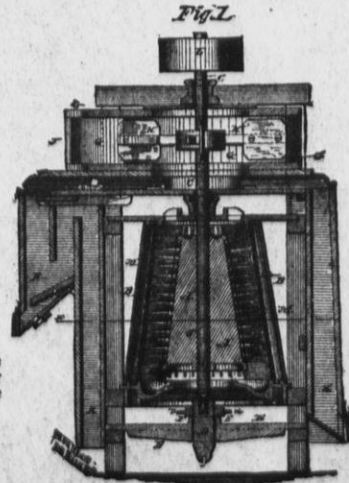


Fig. 2