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## The United States miller. Vol. 22 1886/1887

Milwaukee, Wisconsin: [s.n.], 1886/1887

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# The United States Miller



Published by E. HARRISON CAWKER. Vol. 22, No. 1. MILWAUKEE, NOVEMBER, 1886.

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

## BEFORE TRIAL!

Lamar, Mo., July 7, 1886.

SPERRY FEEDER CO.

Gentlemen:—Please send us one Feeder 9 x 18 Allis Roll (double). If satisfactory we will want two more of the same kind and one for 9 x 14 style B.

Respectfully,

Brand, Dunwoody & Co.

## SPERRY FEEDER CO.

MINNEAPOLIS, MINN.

Increase Capacity, Increase Yields, Better Grades, Reduce Running Expenses, by using our Feeders.

Refer to the following mills in which our Feeders have been adopted:

Pillsbury A,  
Pillsbury B,  
Anchor,  
Washburn A,  
Washburn C,  
Northwestern,  
Pettit,  
Columbia,  
Crown Roller,  
Dakota,  
Galaxy,  
R. D. Hubbard & Co.,  
Minnepilis, Minn.

**PENNSYLVANIA.**  
H. S. Klinger & Co., Butler.  
D. & A. Lukenbach, Bethlehem.  
Melbourne Mills, Philadelphia.

**NEW YORK.**  
Jewell Milling Co., Brooklyn.  
Jones & Co., New York City.  
Kings Co. Mill Co., Brooklyn.

**OHIO.**  
Schumacher Milling Co., Akron  
Washington, D. C., and others.

**CALIFORNIA.**  
Sperry & Co., Stockton.  
Pioneer, Sacramento.  
McGrary & Bro., Sacramento.  
Horace Davis, San Francisco.  
Golden Age,  
Del Monte,  
General Bidwell, Chico.  
Gridley Mills, Gridley.  
Victor Mills, Hollister.

## AFTER TRIAL!

Lamar, Mo., July 29, 1886.

J. A. MCANULTY.

Dear Sir:—Please send us two more Feeders for 9 x 18 Allis double rolls, and one for 9 x 14 style B. We are convinced from our experience with the one sent us that they will increase our capacity and yield materially. Ship as soon as possible and send bill.

Yours Respectfully,

Brand, Dunwoody & Co.

The only Force Feed Made for Feeding Mill Stock

## Do You Want Clean Wheat?

THE

## HERCULES

## Automatic Wheat Scourer and Separator.

Warranted to improve the COLOR and VALUE of flour in any mill. Anti-Frictional, Light Running and the only AUTOMATIC WHEAT SCOURER ever invented. Adjusts itself while in motion to the volume of wheat fed to it and requires no attention but oiling. Awarded GOLD MEDAL and highest honors at the late WORLD'S FAIR, NEW ORLEANS. Machines sent on 60 days trial and satisfaction guaranteed or no pay. Write for Circulars, Testimonials and Samples of Cleaned Wheat and Scourings.

THE HERCULES MFG. CO., Cardington, Ohio.

### IT HAS INCREASED OUR TRADE.

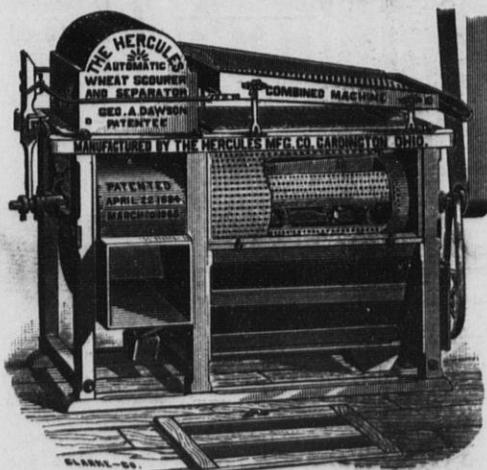
THE HERCULES MANUFACTURING CO., Cardington, Ohio.

Gentlemen:—We like the "Hercules" machine very much indeed. It has increased our trade, and we will buy another for our other mill in the Spring. It certainly is the best Scourer we know of.

[Mention this Paper when you write.]

SCHREURS BROS.,  
PROPRIETORS OF YOUNG AMERICA ROLLER MILLS,  
Muscatine, Iowa, December 9th, 1885.

Yours Respectfully,  
SCHREURS BROS.



## CAWKER'S AMERICAN FLOUR MILL DIRECTORY FOR 1886

ISSUED FEBRUARY, 1886. PRICE, \$10.00.

SENT BY MAIL, REGISTERED AND POST-PAID. EVERY

Mill Furnisher, Flour Broker, Transportation Company, Insurance Company,  
FLOUR IMPORTER, MERCHANT MILLER,

Or anyone desiring to reach those connected with the FLOURING INDUSTRY, should order this Book at once.

E. HARRISON CAWKER, NO. 124 GRAND AVENUE, MILWAUKEE, WIS.



**BELLAS, PATTON & CO.,**  
**Commission Merchants**  
 3 INSURANCE EXCHANGE BLDG.,  
 218 La Salle St., CHICAGO.

GRAIN AND PROVISIONS.  
 Bought or sold for shipment, or carried on margins.  
 Market Reports furnished to correspondents.

(ESTABLISHED 1855.)

**J. O. Mathewson & Co.,**  
 GENERAL  
**COMMISSION**  
**MERCHANTS,**  
 AUGUSTA, - GEORGIA.

**E. B. OWENS & CO.,**  
 Provisions and Grain  
 BALTIMORE, MD.

Sell on Track West and to Arrive.  
 Fine Storage Cellars for Meat and Lard.  
 Handle all kinds of Grain.  
 Liberal Advances on Consignments.

REFER TO Western National Bank, Baltimore; Citizens' National Bank, Baltimore; Wm. Ryan & Sons, Dubuque, Iowa; Whitmore Bros., Quincy, Ill.; Bloomington Pork Packing Co., Bloomington, Ill.

**L. EVERINGHAM & CO.,**  
 (ESTABLISHED 1865.)

**Commission Merchants**  
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 Opposite New Board of Trade, CHICAGO  
 THE PURCHASE AND SALE OF  
**GRAIN AND PROVISIONS**  
 On the Chicago Board of Trade.  
 For cash or future delivery, a specialty.

Special information, indicating course of markets,  
 freely furnished upon request.

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**GRIFFITHS, MARSHALL & CO.,**  
**GRAIN :: COMMISSION**  
 MINNEAPOLIS AND DULUTH, MINN.

Orders for Choice Milling Wheat Given Special Attention.

**FLOUR :: BROKERS**

MILLERS DESIRING TO SELL FLOURS BY SAMPLE in car lots in the cities of Baltimore, Md., or Washington, D. C., should communicate with P. H. HILL, Millers' Agent, WASHINGTON, D. C., and for Philadelphia, Pa., communicate with HILL & SCHAAF, Millers' Agents and Grain Brokers, 219 North Broad St PHILADELPHIA, PA. Highest references.

**SAM'L E. DUNHAM & CO.,**  
 COMMISSION  
**Provisions and Grain**  
 ROOM 83,  
 Board of Trade, CHICAGO.

The purchase of grain for shipment to home markets a specialty.

N. S. CLARK. A. C. MARTIN.

**CLARK & MARTIN,**  
**Commission Merchants**  
 FLOUR, GRAIN,  
 FEED AND HAY,  
 No. 51 West Second St., Cincinnati, O.

**PATTERSON BROS. & CO.,**  
**Commission Merchants**  
 FOR SALE OF  
**WHEAT, CORN, OATS, RYE.**  
 DEALERS IN  
 Seeds, Hominy, Grits, Steam Dried Corn Meal.  
 44 VINE ST., CINCINNATI.  
 ORDERS AND CONSIGNMENTS SOLICITED.

ESTABLISHED - - - - - 1876.

**JNO. R. TURRENTINE,**  
 -GENERAL-  
**Merchandise and Produce Broker,**  
 FLOUR, GRAIN, HAY AND RICE.  
 Dock Street, WILMINGTON, N. C.  
 MEMBER OF CHICAGO BOARD OF TRADE.

Reters by permission to A. K. Walker, Esq., cashier First Nat'l Bank, Hall & Pearsall, Adrian & Vollers, Merchants, Wilmington; Robt. Carey & Co., New Orleans, La.; Geo. P. Plant & Co., St. Louis, Mo.; Martin & Bennett, Chicago, Ill.

Solicits Orders for Carolina Rice and Peanuts.

**OWEN & BRO.,**  
**Commission Merchants,**  
 36 Chamber of Commerce, MILWAUKEE.  
 We give special attention to the purchase and sale of grain or provisions, for future delivery, here or in other markets.  
 Information regarding the present condition and future outlook for prices furnished on request.  
 OWEN & BRO.

S. S. STOUT. H. G. UNDERWOOD.

**STOUT & UNDERWOOD,**  
 (Formerly Examiners U. S. Patent Office.)  
 SOLICITORS OF  
**PATENTS**  
 66 Wisconsin Street,  
 MILWAUKEE, WIS.  
 TELEPHONE No. 502.

**Life Insurance.**  
**New England Mutual**

LIFE INSURANCE CO.  
 OF BOSTON.  
 Assets, - - - - - \$17,846,546.65  
 Liabilities, - - - - - \$15,288,761.16  
 Total Surplus, - - - - - \$ 2,607,785.49

BENJ. F. STEVENS, Pres't.  
 JOSEPH M. GIBBENS, Sec'y.

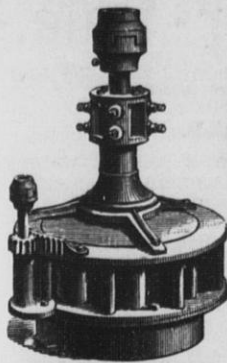
**BOILER INSURANCE.**  
**AMERICAN**  
**Steam Boiler Insurance Company**  
 OFFICE, 45 WILLIAM ST., NEW YORK.  
 Cash Capital, - - - - - \$200,000  
 ASSETS JANUARY 1st, 1885.  
 U. S. Gov. Registered Bonds, of which \$100,000 is lodged with the insurance Department at Albany, N. Y. .... \$216,138.00  
 Cash in bank and in office ..... 10,668.72  
 Premiums in course of collection ..... 16,839.35  
 \$243,644.33  
 LIABILITIES.  
 Reinsurance reserve ..... 40,225.00  
 All other demands ..... 2,013.27  
 \$ 43,149.24  
 WILLIAM K. LOTHROP, President.  
 WILLIAM E. MIDDLEY, Vice-Pres.  
 VINCENT R. SCHENCK, Secretary.

**Fire Insurance.**  
 Every miller and manufacturer having an A 1 risk, should apply for insurance in the Allied Mutual Fire Insurance Companies, of which S. H. Seamans, Milwaukee, Wis., is secretary.

**CONNECTICUT**  
**FIRE INSURANCE CO.,**  
 HARTFORD, - CONNECTICUT.  
 Cash Capital, - - - - - \$1,000,000 00  
 Reserve for Reinsurance, - - - - - 580,669 40  
 Outstanding Claims, - - - - - 90,396 57  
 Net Surplus, - - - - - 303,683 78  
 Total Assets, Jan. 1, 1886, - - - - - \$1,974,749 75  
 Surplus to Policy-holders, - - - - - \$1,303,683 78  
 J. D. BROWNE, President,  
 CHARLES R. BURT, Secretary.  
 L. W. CLARKE, Ass't Secretary.

**Attention!**  
**CUSTOM and EXCHANGE MILLERS.**

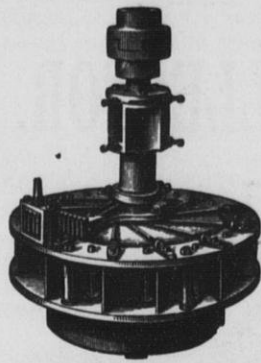
We have made arrangements with Potter & Huntington, whereby we can furnish one of their EXCHANGE TABLES and UNITED STATES MILLER for one year, for \$1.50; the price of the Exchange Table alone is \$1.00. This is probably the best Table ever prepared for Millers doing an Exchange or Custom Business. The range is from 25 to 36 lbs. of flour to each 60 lbs. of wheat, and corresponding amount of bran and middlings. (Toll and waste in milling deducted.) There are twelve Tables each of a different grade of wheat, and each Table a different amount of flour and feed and can be used for any amount of wheat, from two lbs. up to any No. of bushels. There is no guess work about it but all from actual experience. By it the Miller is always sure of his allowance of Toll. Hundreds of them are being sent to all parts of the United States and Canada. Send us One Dollar and Fifty Cents and we will send the Table and credit you for one year's subscription to the UNITED STATES MILLER. Address, UNITED STATES MILLER, 124 Grand Avenue, Milwaukee, Wis.



The "HOPEWELL"  
TURBINE  
Water Wheel

IS THE BEST.

For full particulars address  
**A. J. HOPEWELL,**  
EDINBURG, VA.



**JAMES LEFFEL'S IMPROVED  
WATER WHEEL,**

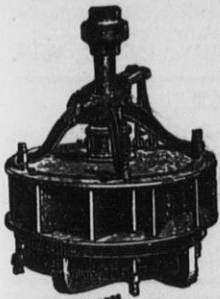
Fine New Pamphlet for 1885.

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** sent free. Address,

**JAMES LEFFEL & CO.,** Springfield, Ohio,  
and 110 Liberty St., New York City.

[Please mention this paper when you write to us.]

**Improved + Walsh + Double + Turbine**



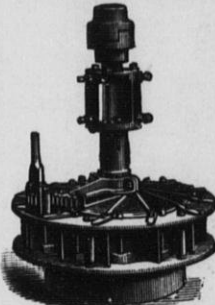
This wheel has a perfect fitting cylinder gate and draft tube combined, and allows no water to escape when closed.

**POWER GUARANTEED**

equal to any wheel on the market using equal amount of water. Address for particulars,

**B. H. & J. SANFORD,**

Phoenix Iron Works,  
Sheboygan Falls, Wis.



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

Made of best material 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.

**PEOL & HUNT, Baltimore, Md.**

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

[Mention this paper when you write to us.]

**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.

[Please mention this paper when you write to us.]

**STEEL  
CASTINGS**

**FROM 1-4 to 15,000 LBS. WEIGHT.**

True to Pattern, sound, solid, free from blow-holes, and of unequalled strength.

Stronger, and more durable than iron forgings in any position or for any service whatever.

40,000 **CRANK SHAFTS** and 30,000 **GEAR WHEELS** of this steel now running prove this.

**CRANK SHAFTS** and **GEARING** specialties.

**STEEL CASTINGS** of every description

Send for Circulars and Prices to

**CHESTER STEEL CASTINGS CO.**

Works, **CHESTER, PA.**

[Mention this paper when you write to us]

Office, 407 **LIBRARY ST., PHILADELPHIA, PA.**

Preserve your Copies of the  
**UNITED STATES MILLER**

—IN AN—

**ULLRICH BINDER**

This binder is suitable for binding your copies of the **UNITED STATES MILLER** for two or more years, any required number can be taken out without disturbing its contents. Binders made for all Publications, for binding Music, etc.

**ITS EQUAL CANNOT BE FOUND.**

Send post paid for \$1.10. Address

**UNITED \* STATES \* MILLER,**  
MILWAUKEE, WIS.

**LORD & THOMAS, NEWSPAPER**  
Advertising, 45 to  
49 Randolph St., Chicago, keep this paper on file  
and are authorized to **ADVERTISERS.**  
make contracts with

**Flint & Pere Marquette R. R.**

**LUDINGTON ROUTE.**

**Fast Freight & Passenger Line.**

Freight Contracted on through Bills Lading to all points in

*Michigan, Indiana, Ohio,  
New York, Pennsylvania,  
New England & Canada.*

AT LOWEST RATES.

All freight insured across Lake Michigan. Passengers save \$2.75 to all points East.

Dock and Offices, No. 50 West Water St., one block from Union Depot.

**L. C. WHITNEY,**  
Gen'l Western Agent,

**Marshall Automatic Grain Scale**

FOR USE IN

**FLOUR MILLS,**

**BREWERIES,**

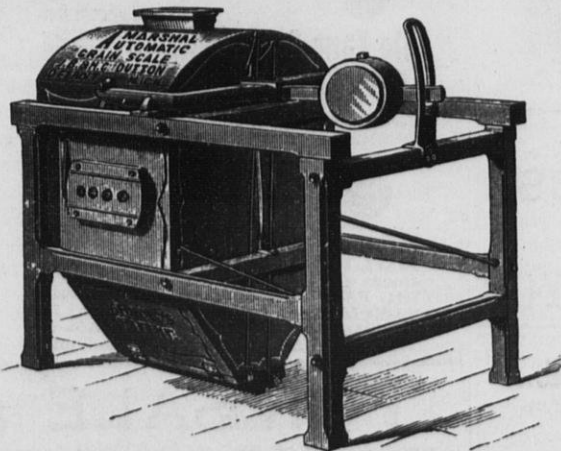
**Malt Houses,**

**ELEVATORS,**

**Distilleries, \* Rice \* Mills,**

**OIL MILLS,**

**Starch Factories, &c.**



This Scale is designed for weighing and registering the amount of grain transferred from one point to another. The weighing and recording is absolutely correct, and the machines are sold with a guarantee to that effect. By their use the miller can tell at any time how much wheat he is using to make a barrel of flour and know at once whether he is milling at a profit or loss. This scale can be used with equal advantage by shippers of grain or others who desire to know how much grain, flour, feed, bran, shorts, screenings, coal (or any other thing that can be spouted), is being transferred, with a perfect record made of same.

**JACKSON, MICH., Nov. 13, 1885.**

**J. B. & H. C. DUTTON, Detroit, Mich.**

Gentlemen: We have used the Marshall Automatic Grain Scale in our mill for six months, and it has proved entirely satisfactory.

Yours truly,

**ELDRED MILLING CO.**

**J. B. DUTTON & CO., DETROIT, MICH.**

No. 52 **WOODWARD AVE.**

SOLE OWNERS OF THE PATENT.

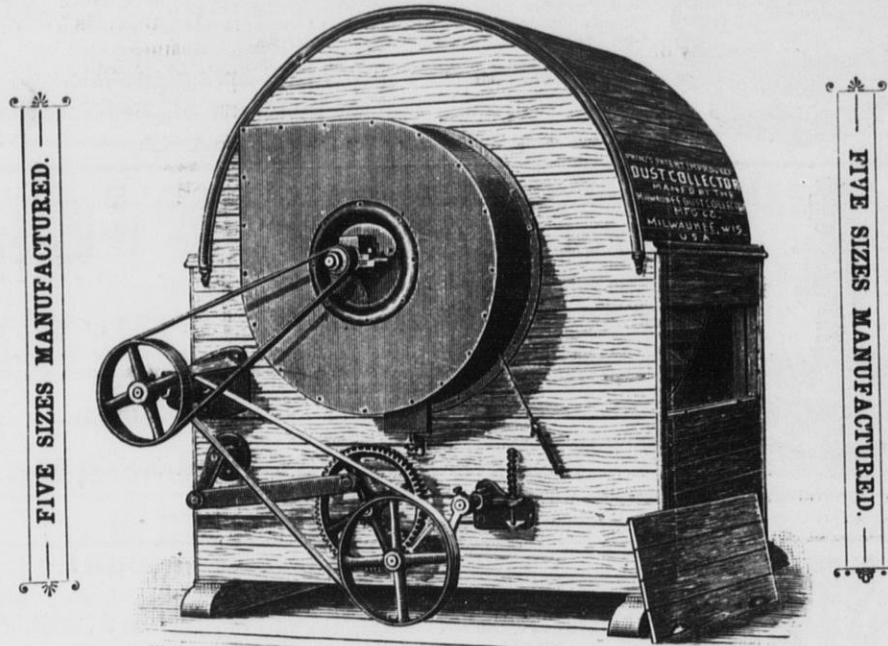
Also handle a full line of Flouring Mill Machinery.



IMPROVED

# PRINZ PATENT DUST COLLECTOR.

6000 IN SUCCESSFUL OPERATION.



ADDRESS FOR

"Treatise on Dust Collection," containing 50 pages of testimonials,

## Milwaukee Dust Collector Mfg. Co.,

MILWAUKEE, WIS.



## Howe Scales

— AND —

### HARRISON CONVEYOR

## Borden, Selleck & Co.,

GENERAL AGENTS,

CHICAGO, ST. LOUIS, CLEVELAND, CINCINNATI,  
48-50 LAKE ST. 612 N 3d STREET. 114 WATER ST. 116 MAIN STREET.

Howe Scales—Over 350 Modifications.

GRAIN TESTERS, FLAX TESTERS,  
CAR MOVERS,  
BARBED WIRE STRETCHERS,  
TRUCKS, BAGGAGE BARROWS,  
COFFEE AND DRUG MILLS,  
STEEL GRAIN SCOOPS,  
OIL TANKS, LETTER PRESSES,  
STANDARD, LIQUID AND DRY MEASURES.

### Do Your Own PRINTING.

Card Press, \$3.00  
Circular Size, 8.00  
Newspaper " 44.00



### AGENTS WANTED. SAMPLES FREE!

Goods SELL everywhere, to Everybody. BIG PAY! A pocket case of EIGHT Lovely SAMPLES, with our terms, FREE TO ALL. Send your address, and 2 stamps for mailing. Address THE HOLLEY WORKS, Meriden, Conn.

## FOR SALE

10,000 acres of Hardwood and Agricultural Lands near Lake Superior, AT \$3.00 TO \$5.00 PER ACRE. 4,000 acres in the Iron River Country, at low rates.

A RARE OPPORTUNITY FOR A GOOD FIND.

IF YOU WISH TO BUY  
CITY PROPERTY IN DULUTH,  
OR PINE, IRON OR FARM-  
ING LANDS,

(ADDRESS)

## LUCIEN \* J. \* BARNES,

Room No. 2, Exchange Building,  
DULUTH, MINN.

## Mills • For • Sale.

Short advertisements will be inserted under this head for One Dollar each insertion.

### FOR SALE.

One-half or the whole of a good water-power roller mill in Wisconsin. Has eight set of 9 x 18 inch rolls and well fixed with Machinery, capacity 100 barrels; also has four run of stone in good order used for Middlings, Rye, Buckwheat and Feed. This is a rare chance for a man with means. Said mill is situated in a village of 1,200 inhabitants with railroad communication, and surrounded by a good farming country, is only five miles from a rapidly growing manufacturing city of 13,000 inhabitants. Terms, three to four thousand dollars down, balance in annual payments for a long time, or I will exchange for good farming or Milwaukee city property. For further particulars, address  
BOX 488, MILWAUKEE, WIS.

### FOR SALE.

A Flour Mill in a good wheat section on D. R. G. R. R., Colorado. Finest of Water Power. Three runs of Burrs, Centrifugals and Cleaning Machine, all in best conditions. Good reasons for selling, and special inducements given to purchasers. For terms, etc., address FRED. PISCHEL, La Veta, Col.

### FLOURING MILL AND ELEVATOR FOR SALE.

All or one-half interest in a first-class 75-barrel steam flouring mill and elevator. All new and in good order. Located at Meriden, Jefferson Co., Kan., on the Atchison, Topeka & St. F. and the L. T. & S. W. Railroads; in the best wheat and corn growing county of the state. Building, heavy frame, 36x46, three stories, attic and basement, with stone engine room 22x34; all under iron roof. Capacity of elevator, 15,000 bushels; corn crib, dump and sheller. Side track to mill. Two sets 9x18 Allis Rolls; three burrs on wheat, one on corn; flour packer, scales, etc.; two Smith Purifiers; Barnard & Leus Separator; one 12-foot two-reel chest; one 16-foot four-reel chest; corn meal bolt; California Brush Finisher; one Western Corn Cleaner. Grain trade more than pays all running expenses. A splendid chance for a good miller. Exchange trade good. Mill cost over \$16,000. Will sell all for \$12,000, half cash, or half interest for \$6,000, half cash, or, if not sold by July 1st, will be leased for a term of years to responsible parties.

J. O. PEBBLES, Sec'y,  
MERIDEN MILL Co., Meriden, Kan.

### FOR SALE.

Half interest in 2-run Custom Water Power Flouring Mill. Dwelling house of 9 rooms and Ferry across Wisconsin river. Situated eight miles North of Kibourn City, Wis. Price, \$1600.00. The other interest may be bought at about same price. For particulars address M. F. WALTON, 584 Washington Street, Milwaukee.

## FOR SALE OR RENT

THE ELEGANT

## STONE

## GRIST AND FLOURING MILL,

— IN THE —

VILLAGE OF DELAFIELD, WAUKESHA CO., WIS.

Water Power, unfailing. All in A 1 condition for business. Also two good Residences with Barn and Out-buildings. A bargain for the right man. Address,

M. H. BUCK, WAUSAU, WIS.

## PATENTS

THOS. P. SIMPSON, Washington, D. C. No Pay asked for patents until obtained. Write for Inventor's Guide.

## LEARN TO TELEGRAPH COMPLETE LEARNERS'

OUTFIT, \$3.75; without Battery, \$3.00.

Railway Telegraph Supply Co.,

211 & 213 Randolph Street, - - CHICAGO



## UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00  
 To Canadian subscribers, postage prepaid..... 1.00  
 Foreign subscriptions..... 1.25

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 mail matter of the second-class.]

MILWAUKEE, NOVEMBER, 1886.

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.

## MILWAUKEE AMUSEMENTS.

ACADEMY OF MUSIC—Performances every evening, Wednesday, Saturday and Sunday matinees.

GRAND OPERA HOUSE.—Performances every evening, and Wednesday, Saturday and Sunday matinees.

DIME MUSEUM—Performances every hour from 1 P. M. to 10 P. M. every day.

NEW PEOPLE'S THEATRE.—Performances every evening, and Wednesday, Saturday and Sunday matinees.

MILWAUKEE INDUSTRIAL EXPOSITION closes Oct. 17

PALACE THEATRE—Every evening, Wednesday, Saturday and Sunday Matinees.

STADT THEATRE—(German)—Wednesday, Friday and Sunday evenings.

THE *American Miller* for November comes out in an elegant new dress and looks very healthy.

It is reported that J. D. Nolan will again take charge of the *Millers' Journal*, N. Y., a paper which he established many years ago.

THE firm of Lawrie & Waplington, publishers of the *American Millwright* has dissolved. Mr. J. A. Lawrie continues the publication.

THE potato crop is reported to be light in Great Britain and it is therefore probable that there will be a larger consumption of flour than usual during the next few months.

THE Pennsylvania millers are going ahead with their insurance company. B. F. Isenberg, of Huntingdon, Pa., is the secretary. The company will no doubt be ready for business by Jan. 1st, 1887.

AN unusual number of fires and accidents in flour mills have been reported of late. Carelessness is probably the principal cause of both fires and accidents.

WHILE the milling industry in this country has not been any too good during the past year, we can console ourselves with the knowledge that it has been positively disastrous in other countries.

SOME of our esteemed contemporaries are warmly discussing the value of exhibits of milling machinery at the principal exhibitions held yearly in large cities. It is our opinion that it pays well for manufacturers of milling machinery to make exhibits in such important milling centers as Minneapolis,

St. Louis and Milwaukee. This is also the opinion expressed by several exhibitors at the recent exposition in Minneapolis.

THE Sperry Feeder, manufactured by the Sperry Manufacturing Co., Minneapolis, are constantly in receipt of letters expressing unqualified satisfaction with the workings of the device, from millers in all sections of the country. Orders are pouring in from all directions and the capacity of the present factory is fully employed to keep up with orders.

HENRY SMITH, of the well-known firm of Milwaukee Mill and Elevator Builders, Birge & Smith, has been elected member of Congress for the district embracing the city and county of Milwaukee. He was the candidate of the Peoples or Labor party.

NATHAN M. NEELD, of the firm of J. C. Ferguson & Co., of Chicago, after borrowing \$400,000 on bogus warehouse receipts has disappeared and is supposed to have gone to Canada. His action has caused the failure of the firm. The creditors will endeavor to hold the Chicago Board of Trade responsible for the reason that they had made the warehouse "regular," on which the bogus receipts were issued, on the same principle that a bank which certifies a check is held liable. Litigation will follow.

MR. GEO. T. SMITH, of the Geo. T. Smith Middlings Purifier Co., Jackson, Mich., favored us with a pleasant call Nov. 10. Mr. Smith reports business as lively as ever in the purifier line and rapidly increasing in the Reel department.

## FLOUR MILL DIRECTORY FOR 1886-87.

All persons desiring to reach the milling trade should invest at once in a copy of Cawker's American Four Mill Directory for 1886-87. It is carefully compiled; contains 18,289 addresses in the United States and Canada; Shows in thousands of instances the capacity, power and system of milling (i. e. whether the stone or roller or combined system is used). It also contains a list of millwrights and American and European flour brokers. The book is sold at \$10 per copy and can be obtained by addressing the United States Miller, Milwaukee, Wis.

"THE American Cowboy" is the subject of a timely and instructive article by Joseph Nimmo, Jun., in the November *Harper's*. The public services which the cattle rangers have performed as pioneers of civilization, repressors of Indian outbreaks, punishers of injustice, and leaders in a great industry, are well shown. Special attention is given to the recent northern movements of cattle-raising through Montana, Dakota, Colorado, and Kansas. Some valuable information is given concerning the methods, the extent, and the proceeds of ranching in that section.

AFTER a series of experiments in the Royal Theater, at Munich, it has been decided that the electric light is much healthier for lighting crowded theaters and halls than gas. It does not raise the temperature; keeps the air purer; does not induce moisture and maintains an even temperature in all parts of

the room. The experiments were conducted by Dr. Breslau of Berlin, Germany.

JOHN L. McMILLAN, of Illion, N. Y., has invented a type-setting machine which will set 75,000 ems of nonpareil type per day operated by two men. His distributing machine will distribute about 150,000 ems per day. Such machines if they are practical in every respect, will go far towards revolutionizing the printing business. They are especially adopted to newspaper and book work.

## NEWS.

BURNED—John Kirk's grist mill at Raleigh, Ala.

BURNED—N. S. Goodley's flour mill in Collettin Co., S. C.

DESSERT & BANTES, millers, of Macon, Mo., have dissolved.

C. RAYMOND, miller of Janesville, Wis., has moved to Wicon, Fla.

EVERTS BROS., Jeffersonville, Ind., are building a corn meal mill.

JOSEPH HARRIS is about to build a grist mill at Fergus Falls, Minn.

O. H. TITUS, Wilmington, Del., has invented a new process for purifying flour.

DAVID SAMUELS, Marseilles, Ill., is building a corn meal mill on the Case system.

THE Westinghouse Machine Co's foundry in Prittsburgh, Pa., burned Nov. 7th

JOHN SNOW'S mill at Ness City, Ks., will start up Nov. 15th. Capacity 50 bbls.

THE flour mill at Bird Island, Minn., owned by Koke Bros., was burned out Oct. 8th.

RECEIPTS of wheat at Duluth since Jan. 1st, have been nearly twelve million bushels.

N. W. HOLT, of Jackson, Mich., has purchased a mill at Manchester and is refitting it.

SINLER & CO'S 75 bbl. mill at Hamilton, O., built by the Case Mfg Co. is now completed.

J. SAMMS & CO'S mill, capacity 200 bbls., at Portland, Oregon, is about ready to start up.

BROWN & CO'S new mill at Simcoe, Ont., will start up about Nov. 1st. Capacity, 150 bbls.

MINNEAPOLIS millers anticipate considerable trouble during the coming winter from lack of sufficient water.

BURNED—Oct. 10th, at Lincoln Ill., the mills belonging to Maloney, Spelman & Co. Loss, \$11,000, Insurance \$5,000.

THE Davis Malt House, at Watkins, N. Y., with a large amount of barley and malt, was burned recently. Loss \$100,000.

DUNCAN D. GARCELEN, a Chicago grain operator has made an assignment. Liabilities said to be about \$70,000, with \$17,000 assets.

AT Coolville, Athens County, O., Oct. 4, the Coolville Flouring Mills burned, involving a loss of \$20,000, with only \$2,500 insurance.

BURNED, Nov. 1st, at Rockford, Ill., Johnson's oat meal mill and A. L. Bartlett's flour mill and elevator. Loss about \$100,000 Insurance \$50,000.

CHARLES ESPLAN, lately with the Pray Manufacturing Co., will at once establish a mill machinery factory of his own in Minneapolis.

AT Yorkville, Mich., Oct. 24 D. L. Johnson's large flouring mill was burned. Loss \$18,000; insurance \$8,000. The fire was caused by over-heated journals.

THE Pray Manufacturing Company, Minneapolis, have recently taken contracts as follows: 50 bbl. mill for Thoms Bros., at Newark, Dakota and Ashley, Minn.; 50 bbl. mill for the Dunseith Roller Mill Co., Dakota.

THE D. R. Sparks' Milling company of Alton, Ill., made an assignment Oct. 19. The liabilities are about \$130,000. The failure of the crops for the past three years and the long-continued business depression are the reasons assigned. D. R. Sparks, manager of the company, is president of the Illinois Millers' association. He is a brother of Land Commissioner Sparks.



## TED.

BY HERBERT L. BAKER.

Ted was our "devil."  
 In impish pranks, with any  
 He held his level—  
 On me played many.  
 Pins he put in ye editor's chair,  
 Daubed up with ink his pet dog's hair,  
 Oft made the printers loudly swear,  
 Did Ted.  
 With dirty face and crooked nose,  
 Unkempt red hair and ragged clothes,  
 He was the cause of all our woes,  
 We said.  
 One day on my head  
 A wet sponge he threw;  
 Then out the door he fled,  
 As after I flew  
 Was I mad? Well, you can just bet!  
 Oft I suffered and oft made threat;  
 But now I determined that boy should sweat,  
 Or die!  
 A sponge I filled with ink and shellac,  
 So stood that when he opened a crack  
 In the door, I could hit ker-smack  
 His eye.  
 With hand upraised, I stood there intent,  
 Waiting a chance my anger to vent,  
 When happened for me a sad accident  
 Instead.  
 As opened the door my charge I threw  
 Straight to the mark—my aim too true!  
 'Twas the editor's wife a-coming through—  
 Not Ted,  
 The savory in ss struck her Greek nose,  
 The slime and ink ran down her fine clothes,  
 O'er silken gown to French slippers toes,  
 Ah, me!  
 What could I do? What could I say?  
 "You impudent chap, you will get your pay,  
 And soon discharge I shall you be to-day,"  
 Said she.  
 She ran the shop, so the editor meek  
 Said I needn't wait the end of the week,  
 But at once a healthier climate seek.  
 I sought.  
 The last I saw of that rascal, Ted,  
 He peeked 'round the corner, wagging his head,  
 With triumphant shout—you can guess what I  
 said  
 And thought  
 If I got a chance  
 At his Satanic highness,  
 Wouldn't I have made him dance?  
 Well, let's relieve our dryness.

## VALUE OF BAKING POWDERS IN MAKING BREAD.

Vesiculated bread is as old as civilization. Every race learned at an early date the culinary virtues of fermentation, and applied the process to all the cereal foods. But little change has been made in leavening during the long years that intervene between that early date and to-day. The baker of Paris and New York employs almost the identical method used by his colleague in Memphis, Babylon or Foo-Chow in pre-Christian centuries.

The physiology of fermentation was not understood until the present century. Chemistry, a new born science then, ascertained that the process instead of being simple was complexed and involved. When yeast or other leaven is added to moistened flour there occur both chemical and biologic changes. The cells of the yeast plant extend from the yeast into the flour itself, and develop in size and increase in number at the latter's expense. The starch cells are broken down, the starch changing into grape sugar, and thence into alcohol.

With these transformations carbonic acid gas is liberated in large quantities. The products of flour carefully baked at this stage are sugar and some gas in the resulting

bread and alcohol, compound ethers and carbonic acid gas. If fermentation be allowed to proceed beyond this point the gluten and other nitrogenous elements are also attacked. These produce putrescent and fetid compounds; while the starch and alcohol molecules break into lactic and acetic acids. Bread or dough is then "sour" and "bad."

The chief object of the fermentation is the liberation of the carbonic acid gas. This is evolved in minute bubbles, both from within and without the starch cells. Much is held in a mechanical way by the surrounding cells, but most escapes into the air. This liberation is accompanied by a swelling of the dough, which assumes a sponge like structure, and which is said to lighten. If the dough be now put into the oven or in anywise be subjected to heat, the bubbles or globules of carbonic acid gas still further expand. The first effect of the heat being to change the outside of the dough into a semi-impermeable crust, the gas escapes with difficulty and the sponginess of the interior is greatly increased. Bread may therefore be described as an artificial nutritious sponge whose pores and interstices are filled with carbonic acid gas.

Baking powders are in general any non-poisonous chemical compound which, when dissolved in an aqueous solution or subjected to change, liberate large quantities of carbonic acid gas. Of the former class a good instance is afforded by a mixture of cream of tartar (or bitartrate of soda), and baking soda (a bicarbonate of soda). These make up the familiar white and blue enveloped seidlitz powders. Dissolved in water, the extra molecule of tartaric acid in the cream of tartar, attacks the baking soda combining with the soda and liberating the carbonic acid gas. This in a seidlitz powder makes the "fizz," and in bread or rolls the lightness so much desired. Of the second class salaratus is a good illustration. In cake or biscuit, the high temperature of the oven breaks the soda into a lower carbonate and frees one atom of carbonic acid gas.

Baking powders may be roughly classified according to the leading chemical compound in their composition. This may be phosphoric acid, tartaric acid, hydrochloric acid, etc. This gives rise to such terms as phosphatic baking powders and cream of tartar powders. They are also named after incidental ingredients, such as ammonia or alum. These give rise to the terms ammonia and alum powders. The economic value of a baking powder depends on five elements:—

1. Its cost.
2. The amount of carbonic acid gas it liberates when used.
3. Its durability and uniformity.
4. Its freedom from injurious constituents.
5. Its leaving no unpleasant nor unhealthful residue.

N. Y. Herald.

## BOND REDEMPTION AND CIRCULATION.

Of the original amount of the Government three per cent loan of \$305,581,250 there has been called in \$228,616,650, besides which \$2,428,050 have been voluntarily surrendered and redeemed: the remainder, \$74,484,700 are subject to call or will be redeemed if voluntarily surrendered; of this amount the National banks own and have on deposit in the Treasury to secure circulation \$62,043,700. Possibly no more calls will be made in the

early future. But there are about \$29,000,000 of called bonds outstanding, which have not been presented for payment. The banks which have the most of these deposited to secure circulation are in no haste to replace them with other and higher priced bonds, and the treasury does not feel disposed to urge them to greater promptness because the clerical labor incident thereto is great and the substitution is going on about as fast as it could be conveniently managed. There is some contraction of National bank circulation, but there is an increase in the issue of one dollar silver certificates, so that the volume of currency in the aggregate is increasing rather than otherwise

## NONSENSE.

A SMART YOUNG MAN.—"College man, Eh?" said old Grampus.

"Yes, sir," young Mr. Slim meekly admitted.

"Thought so," growled the old man, "Graduated, I reckon?"

"Yes," young Slim confessed.

"Now," said the old man, what did you learn when you graduated? Come, speak up if you want the place."

"Nothing," said young Slim, still more meekly: "nothing at all."

"Thought so," roared the old man in triumph; "just what I thought."

"You see," added young Mr. Slim, in a voice that Moses might have envied, "we don't learn anything when we graduate; we have to learn it all before."

NIGHT-CAPS ARE NOT DUTIABLE.—At the foot of W. Edward avenue. Customs officer: "What have you in that parcel?"

"Only my laundry."

"Open it and let me see."

Man reluctantly opens package, disclosing shirts, collars, cuffs, etc., and a bottle.

"I thought you had nothing but laundry in that paper. What's in the bottle?"

"Night-caps."

"Pass on, sir."

GOT IT INTO HER HEAD.—San Francisco Chronicle: "Maria, what nonsense it is to talk to that child in that way. She'll never get it into her head."

"My dear, she's a girl and girls are much quicker than boys."

"They don't understand anything when they're women, much less when they're seven years old. What does that little thing know about changing the subject when anything disagreeable is spoken of? Changing the subject! stuff and nonsense."

The mother only repeated her little instructions to the child, and the father went off down town. He came home in the evening and found on a pet garden bed the marks of footprints. He called his little daughter.

"You've been tramping over that bed, when you know I told you not to."

"Papa, did you see any monkeys down town?"

"Monkeys? See here, haven't you been over that bed?"

"Papa, did you meet any pretty children to-day?"

"You little nuisance, did you trample those flour beds or did you not?"

There was a pause.

"Yes, but ma says to always change the subject when its disagreeable."



**BOB INGERSOLL'S SCAR.**—Speaking of Col. Ingersoll, writes the New York correspondent of the Hartford Times, reminds me that I once crossed the ocean with him and his family in the autumn of 1878, and I can easily understand how the stenographer has come to swear by him, for he has many charming and fascinating qualities. During the voyage his wife and one of his daughters was seasick from the moment we left Southampton until our good ship, the Main, of the North German Lloyd line, reached Sandy Hook. And all this time Col. Ingersoll was as attentive to them as the most devoted husband and father could have been. When they were confined to the stuffy stateroom he remained there with them, telling them stories and cheering them up; and when they were ready to come on deck his strong arms carried them up the companion way, tucked them in their steamer chairs, and remained at their side, conversing with them and the circle of passengers which always formed about him, making the deck ring with laughter at his well told and pointed stories, or holding the close attention of all as he argued some controverted points of ethics, politics or religion. On one of these occasions I remember, somebody asked him how he received the scar which he has over or under (I have forgotten which) one of his eyes. "Did you get it on the battlefield?" was asked. "Oh no," was the response; I will tell you how it came about. I was once on a picnic, where the duty devolved upon me to open the bottles of ginger pop. Now, as I was hard at work at this, one of the corks flew off, and a piece of wire attached to it struck me in the face—so that this scar is due to your temperance drinks."

**HE APPROVED OF THE TREATMENT.** Old Nelson Betrage, while working in the woods was bitten by a rattlesnake. In much alarm and in great pain he ran to the house. A physician who happened to be near by was summoned. "Old man," said the doctor, "nothing but whiskey, and a great deal of it can do you any good." But doctor, I am a temperance man; I haven't touched a drop of liquor in thirty years." All the better; the whiskey will have more effect." A boy who had been dispatched with a jug soon returned, and the old man, much against his will, began to drink whiskey. He was slow at first, but after a while he "swigged" it with the appetite of an old-timer. "Well," said the doctor, "you have had enough whiskey now; don't drink any more." "Think I've got er plenty?" "Yes I know it. "Don't yer think thar's er leetle of the pizen hangin' round the corners?" "No, I think you are all right." "Don't think that a leetle just ernuff uv it to bother me airtter awhile, has sorter settled down in my feet?" "No." Wall, now, Dock, s'pose we take a drink just for good luck." "I tell you that you must not drink any more." The old fellow sighed, looked at the jug, and asked: "What's become uv the snake?" On of the boys killed it," the doctor replied. "I'm sorry," said the old man. "Sorry! What for?" "'Cause I want it ter bite me again." —*Arkansaw Traveler.*

**HIS FIRST MARRIAGE FEE.** It was the first wedding. The groom was "new," so was the bride, and the Congregational clergyman had committed matrimony only in his imag-

ination. Finally, however, it was all over; the twain were one flesh and the little wife was weeping in the arms of the mother. The groom slipped up to the nervous minister, and as that gentleman was about to pass out into the night pressed a coin into his hand.

"A twenty dollar gold piece," thought the young preacher. His heart beat faster now than when he was officiating at the wedding. He needed the money so much. Indeed, he often wished his meagre salary was only half its size, he had such a difficulty in collecting it. And now to receive \$20 all at once. why, it—Then it occurred to him that it was customary for the minister to make the bride a present of his first marriage fee. The young man sighed as he removed his thin overcoat and returned to the room where the guests were offering their congratulations to the newly wedded couple.

"I forgot something," said he as he approached the bride. "This is the first marriage fee I have ever received. It is yours. It should be kept as a reminder of this occasion."

The young bride stretched out her hand and the coin rang as it touched her marriage ring. The guests looked up; the unconscious wife did not close her hand upon the fifty cent piece that lay there and all saw it. The minister was glad it was his first marriage, the guests tried to appear as if they did not see the half dollar and the reporter quietly smiled and thought perhaps the young husband was saving up to buy the divorce.—*Chicago Inter-Ocean.*

#### RAILROAD INTER-STATE TRAFFIC.

The Supreme Court decision that the State Governments, in legislating against railroad discriminations, have no power to deal with the inter-State traffic, but reaffirms the old principle that such legislation would trench upon the constitutional prerogative of Congress, which alone has the right to regulate commerce "between" States. The deduction is inevitably that, sooner or later, Congress will have to exercise its authority to make good the incompetency of the States to protect the people from this class of grievances complained of. Were it otherwise, the spectacle would be presented of thirty-eight different States all endeavoring to "regulate" railroads after their own fashion; thus producing confusion and jarring which would seriously if not fatally interfere with their efficient management, and, by consequence, place the public at a worse disadvantage than they are at present. The decision undoubtedly will impart new interest to the question at the approaching session of Congress. The popular feeling against discrimination is a growing one, especially at the West, and the average Congressman, we may be certain, will not care to antagonize it any more than he can help.—*N. Y. Commercial Bulletin.*

#### UNITED KINGDOM IMPORTATIONS OF FLOUR.

The *N. Y. Produce Exchange Weekly* says: "The importation of flour into the United Kingdom has quadrupled within the past twenty-one years, having risen from 3,904,471 cwts. in 1865 to 15,832,843 cwts. in 1885. During this period the imports of flour aggregated 169,894 cwts., of which quantity the United States furnished 85,750,286 cwts., or 51.4 per cent. The quantity imported

from the United States has increased in a remarkable manner, having risen from 256,769 cwts. in 1865 and 280,792 cwts. in 1866, to 11,731,903 cwts. in 1885, the proportion furnished by this country in 1885 having been 74.1 per cent., against only 6.57 per cent. in 1865. The quantity imported into the United Kingdom during the first nine months of this year has been 10,796,358 cwts., more than three-fourths of which was furnished by the United States. The enormous growth in the importation of flour must certainly be a depressing factor to the milling industry of Great Britain."

#### NEW PASSENGER DEPOT.

The new passenger depot of the Wisconsin Central Line in Chicago, on the corner of Polk street and Fifth Avenue, is now open. The building is a commodious and conveniently arranged structure, located in the business centre of the city and readily accessible from all the leading hotels, places of amusement and depots of all connecting lines from the east and south. The choice of a site on the South side for a Chicago terminus will be recognized by travelers as of incalculable benefits to persons who are so detained by business or otherwise that it becomes impossible for them to figure their time of starting with any reasonable approach to accuracy. There is no need of lee-way in time in order to guard against the danger of embarrassing delays at the frequently swung bridges. The train in service of the New Route to and from the Northwest is rapidly being increased and improved; two express trains run daily between Chicago and Chippewa Falls, Eau Claire, St. Paul and Minneapolis; the same number between Chicago and Ashland, Lake Superior; three trains between Chicago and Fond du Lac, Oshkosh, Neenah and Menasha, and four each way between Burlington and Waukesha. The fast train which leaves Chicago at 4 P. M. every day in the year arrives in Ashland, St. Paul and Minneapolis early the next morning, making close connection with all lines diverging. All classes of tickets are accepted on this train. Railroad people and the traveling public are justly beginning to regard the astonishing success attained by the New Route during the few months of its existence with mingled sensations of wonder and respect.

#### THE ENGLISH MILLING INDUSTRY.

The *Mark Lane Express* (London) says: the flour trade is very much depressed by the large arrivals of American brands, which have been sold at unprecedentedly low rates, and it has been stated that not a few country millers have shut down rather than persist in the hopeless attempt to make flour which can compete with the produce of the United States. The future of the British country milling trade is a problem which appears likely to be solved by the American millers simply crushing our native milling industry out of existence. And that is not all, for the entire agricultural interests of this country are being degraded, demoralized, and destroyed by an overwhelming foreign competition."

#### ITEMS OF INTEREST.

FROM the indications based on the business of the Sault Ste. Marie Canal for the first ten days of October, it would appear that the present package facilities will soon be insufficient. The average freight tonnage from October 1st to 10th inclusive, was 27,254 tons daily. The increase over 1885 for the year ending October 10th is 1,062,356 tons. If the record of the first ten days of October is a good indication for the year, the business



will show an increase of about 1,330,000 tons.

WE are in receipt of the annual report of the Commissioner of Pensions for the year ending October 30, 1886. The report shows the number of pensioners at the close of the year was 365,783; there were added during the year 43,086, and 22,089 were dropped from the rolls; the amount paid during the year was \$63,797,831.62; paid on new claims during the year \$22,137,054.16; since 1861 1,018,735 pension claims have been filed of which 621,754 have been allowed; the amount paid for pensions since 1861 is \$808,624,811.57.

SEVERAL American capitalists, including Senator Sharp, of Cambridge, Mass., have organized at Ottawa, Ont., a Canadian anthracite mining company, with a capital of \$500,000 to work valuable coal mines in the Rocky mountains at Banff, on the Canadian Pacific railway. It is proposed to ultimately employ 1,000 men. Twenty thousand tons of coal will be placed on the Winnipeg market next month, and as favorable rates have been granted by the Canadian Pacific, the American capitalists expect to undersell American dealers.

**SWEETENED MORTAR.** A letter in the *London Times*, by Mr. Thompson Hankey, points out that cane sugar and lime form a definite chemical compound, which has very strong binding qualities, and forms a cement of exceptional strength. Equal quantities of finely powdered lime of a common kind and of good brown sugar, mixed with water, form a mortar which has been found to join stones and even glass with great success. It is important that the lime should be thoroughly air-slacked, for if any dry particles be left they will swell and evidently break the joint. It is stated that this mortar is equal in strength to Portland cement, and that the latter may probably be improved by the addition of sugar, or perhaps even of treacle. A number of small experiments which have been made have proved entirely successful, and it now remains to see whether the material offers advantages in actual work sufficient to pay for its extra cost.

#### ACCIDENTS RESULTING FROM LOW WATER.

Shortness of water in steam boilers may result from various causes, chief among which are defects in the feeding apparatus, leakage of valves and fittings, defective indicators of the water level, whereby the attendant is deceived as to the actual amount of water in the boiler or boilers, or when all the appliances are in order, the carelessness of the attendant may be the means of bringing it about. In many cases also, it is the result of pure accident, for which no one can justly be held responsible. But whatever may be the cause of low water the effects are generally of such a serious nature that every available precaution should be used to guard against it.

Fig. 1 shows one of the battery of three horizontal tubular boilers, set up and connected in the usual way. The boiler shown in the illustration was the middle one of the battery. From some cause the blow-off valve of this boiler was not perfectly seated one night, and the water leaked out. When the engineer arrived in the morning, he tried the gauge on the first boiler, and finding it all

right, took it for granted that it was all right in the other boilers, and started his fires. When the pressure reached 48 pounds per square inch, the plates in this boiler had become so softened by heat that they ruptured over the fire as shown in the cut.

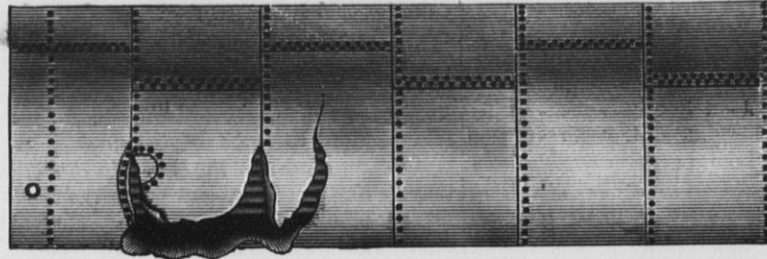


FIG. 1.

Too much care cannot be exercised to make sure that everything is all right before commencing a day's work. The first duty of the engineer when entering the boiler-room in the morning, is to ascertain the state of the water in each and every boiler. Do not touch the fires till this is done.

Fig. 2 shows a boiler of the vertical type, 48 inches in diameter, 8 feet 6 inches long, having about 80 tubes. The shell was 5-16 of an inch thick. The boiler had all the necessary attachments, which were in good condition. The mill for which this boiler supplied steam was shut down on Saturday night, and the fires were banked. The boiler was visited once on Sunday, when the water was found very low. It being necessary to start the whole mill to start the feed pump, it was not done, it not being thought absolutely necessary. At half-past ten Sunday evening, the boiler exploded, and the build-

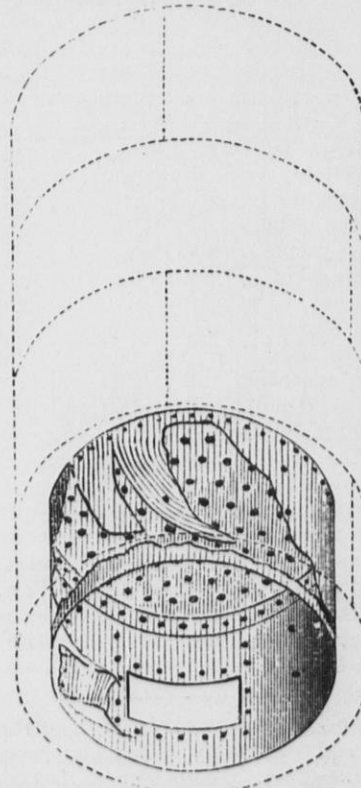


FIG. 2.

ing in which it was situated was set on fire by the explosion and burned. The boiler was thrown nearly three hundred feet. An examination of the fragments by the inspector showed the furnace very badly overheated. It is not best to take any risks under

such circumstances, no matter how much trouble is involved in taking suitable precautions. A boiler when fed by a power-pump driven from the shafting of an establishment of any sort should have in addition either a steam-pump or an injector to supply it with

water when the mill is not running; then there will be no shadow of an excuse for such an accident to happen.

Fig. 4 shows another boiler of the upright pattern, which

exploded a short time since. The feed-pump was out of order and the gauge-cocks stopped up and seldom used. The force of the explosion was sufficient to throw the boiler 300 feet high and 1000 feet away from its original position. The furnace or fire-box was torn entirely out of the shell. The figure shows the construction of the boiler, and the appearance of the fire-box after the explosion.

The wreck shown by Fig. 4 was the result of placing sole reliance upon the glass water-gauge where the water was bad. The glass indicated the proper amount of water a short time before the explosion occurred, but an examination of the fragments after the explosion showed the sheets to be badly burned. Glass water-gauges should never be depended upon solely, and especially where the water is bad should the gauge-cock be kept in good condition, and frequently tested.

Figs. 5 and 6 show the original form and the appearance after the explosion, of a boiler of the locomotive type which exploded some years since. The following account of the explosion is given in the words of the inspector who visited the scene of the wreck shortly afterwards:

"The boiler was of the locomotive type—a variety used in the oil regions of Pennsylvania—having a narrow base to the fire box and a tapering waist; base 26 inches wide by 4 feet 4 inches long; fire-box, 20 inches wide by 3 feet 10 inches long; front 4 feet high by 3 feet wide at axis; dome 22 inches diameter, by 30 inches high, measured from crown of shell; length over all, about 12 feet; diameter

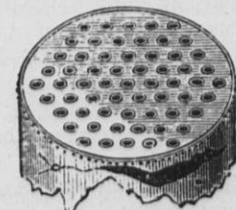
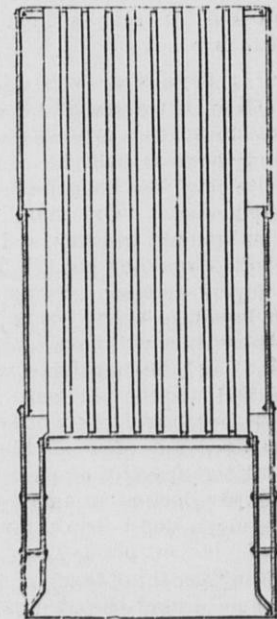


FIG. 3.

ing in which it was situated was set on fire by the explosion and burned. The boiler was thrown nearly three hundred feet. An examination of the fragments by the inspector showed the furnace very badly overheated. It is not best to take any risks under

of barrel, 30 inches, containing 28 tubes 3 inches diameter by about 8 feet long; thickness of shell, dome, and fire-box,  $\frac{1}{4}$  inch iron; tube-sheets, 5-16. The boiler was located in an open field some distance from the works, and covered by a shed; it was used to furnish steam for a small pumping-engine in a large well which was in process of excavation.

"The boiler as it originally appeared is shown by the following figure:

"When the accident occurred—Sunday, about 3 A. M. two men were in or near the shed; one was instantly killed, and his body thrown a distance of 150 feet from the shed; the other, who acted as engineer, was thrown a considerable distance and fatally injured.

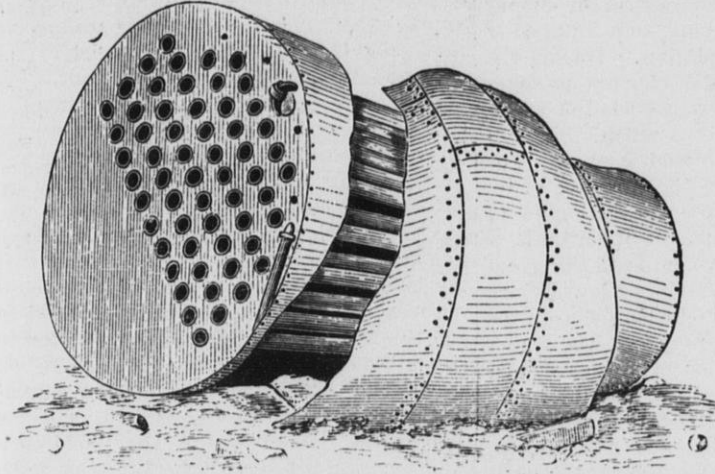


FIG. 4.

He died the following Wednesday morning. He said he had just started the injector to feed water into the boiler when "she blew up."

"The shed was literally reduced to kindling wood and scattered over several acres of ground. The boiler was torn into twelve principal fragments, besides small pieces of plate, stay bolts, and braces, which were scattered in all directions. The barrel of the boiler containing the tubes was thrown end over end, nearly in the line of its axis when in position, a distance of nearly two hundred feet, the tubes left bare by the tearing off of the waist, plunging into the ground, whence it bounded some distance further near the place where the taper-sheets that formed the waist had alighted.

"Most of the other parts were strewn in a curved line to the left, each piece going further until the most remote and largest

"A part of the tube sheet, with half the wrought-iron base-sill was attached, was dropped upon the tool-box of the diggers. The front of the shell, with the front of the fire-box attached, was thrown about 600 feet in a direction nearly opposite to that taken by the barrel.

"Nothing remained to mark the spot where the boiler stood except the grate-bars, which were forced into the ground that formed the floor of the ash-pit.

"The boiler was nearly new, and fitted with a common lever-safety-valve, and three gauge cocks. Fire-box was stayed to shell by screw-stays, spaced about  $5\frac{1}{2}$  inches apart, and headed over inside and outside. About twenty of those that supported the furnace-crown were attached in the same way to the 24-inch circle of the shell enclosed between the flange-rivets of the dome.

"The whole load upon the 24-inch circle of the center of the crown-sheet, at 120 pounds per square inch (a pressure that the safety-valve, with the weight at the end of the lever, even allowing it to be in working order, would have permitted), was 54,000 pounds, or 27 tons. The body of the safety-valve was tapped to receive the steam pipe from the boiler, also the steam-pipe to the engine and the escape pipe from the space above the valve, in the usual manner. The wings of the valve fit nicely into the chamber, and the tendency of the long steam-pipe, perhaps not properly supported or twisted out of its natural easy position, acting as a long lever on this valve-body, is to distort the parts and pinch the wings so that no ordinary force would move the valve from its seat. It is said that this boiler had been worked at a pressure of 130 pounds, which would probably be quite sufficient to weaken this part of the boiler, and the disaster may have occurred from want of strength to sustain such a load any longer.

"The pump, which was located a considerable distance from the shed, may have stopped

occurred, and are constantly occurring. We have no space in this issue to describe any of them in detail, but will endeavor to do so in an early issue.

Quite a diversity of opinion exists among engineers of experience as to whether gauge-

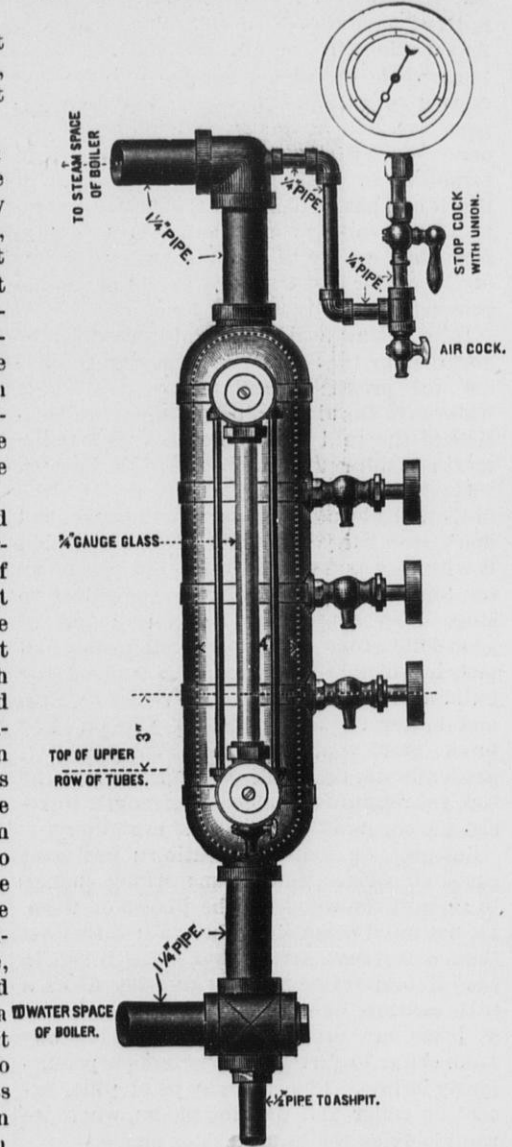


FIG. 7.

cocks or gauge-glasses are the more reliable indicators of the height of water in a steam boiler. Some favor gauge-cocks, and go so far that they will not permit a glass-gauge to be placed upon boilers under their care; while

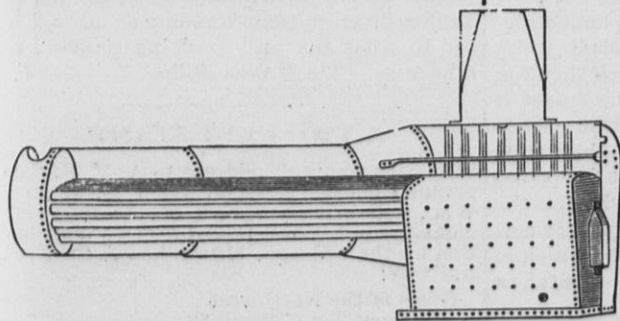


FIG. 5.

landed about 1,500 feet to the left. The crown and sides of the furnace were composed of one sheet, which seems to have been battened down upon the grate-bars, then turned once over upon the ash-heap, with its fire side up.

from accumulation of (water) condensed steam in the steam-chest. The steam would rise until the weakest part let go, and with an inoperative safety valve no warning would be sounded to rouse the drowsy attendants."

The wreck is shown in figure 6. In addition to such severe accidents as the foregoing, innumerable minor accidents have

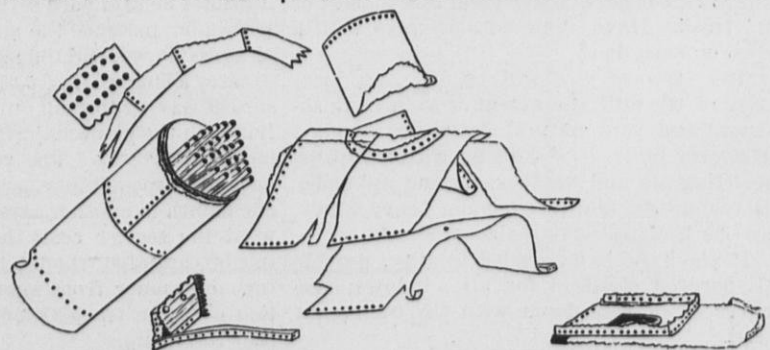


FIG. 6.

others are equally strong in their belief that gauge-glasses are the only reliable indicators, and are opposed to the use of gauge-cocks. As is usual in cases where diametrically opposite views are held by different persons, the

(CONTINUED ON PAGE 12.)



**CONSTRUCTION OF FLOUR MILLS.**

As in every branch of man's handiwork critics will criticise, therefore we expect more or less criticism on our writings under this heading; so to save the critic and cater to the demands of the day, we will confine our remarks to the construction of roller mills of from 50 to 150 barrels' daily capacity. Any further than speaking of the roller system and the machinery necessary to its successful operation, we shall open no argument pro or con the favorite system of any one. We will lay before you facts, which, combined in practice as well as theory, will result in what we consider the best aggregation. "Despise ye not small things," therefore when we speak of nails, screws, bolts, etc., consider that they are essential to the completeness of the whole structure.

In selecting a site for a mill, one must be governed by the source of wheat supply, market for products, and motive power. If water is to furnish the power then the location of the mill must be with a view to the most advantageous application of that power.

Having determined the capacity of the mill and its location, go for a foundation, and don't stop till you get it. If you can't find it with pick and shovel, send piles down one on top of the other until compelled to stop. Now commence and build; put in good solid stone foundation wall from 3 to 6 feet in thickness according to size of the building, well grouted to above high water, and better if throughout. If you build of brick, start your walls sufficiently heavy, gradually tapering off as approaching the top, yet retaining a sufficient strength to resist the constant tremor of the machinery.

Set posts on secure foundations; use good cast-iron corbels, and beams strong enough to support the weight to be placed on them. Do not build beams into the wall; rather set them in a recess, saving your walls intact in case of fire; frame posts to give the floors a little cambre, like the deck of a vessel, and if joists are used, place them all one way from cellar to garret with centers perpendicularly in line. Flooring may be of pine, except on roller and packing floors, where we would advise the use of ash or maple.

Place windows to well light each floor, and have one or more outside doors on every floor.

Mill stairs are open for a great improvement. They may be made winding, straight, or with a turn, to suit the arrangement of the mill, but never make them less than 8" or 9" tread. Have enclosed stairways with a door on each floor.

The style of roof will be subject to location of the mill, the extent of your bank account and your natural desire for display. However built, it should be with a view to resisting fire and weather, staying up under heavy snows, and down under heavy winds, and be the most serviceable generally.

If you build in a crowded locality, provide tin-covered shutters for all windows; also cover all outside doors with tin, then paint well.

To make a good mill door, use two thicknesses of  $\frac{1}{2}$  stuff, matched and laid at an angle of 45 degrees; use wrought nails or  $1\frac{1}{2}$ " No. 14 screws; let each door be in two sections, upper and lower, and provide durable locks and hinges therefor.—*American Millwright.*

**"CARRYING CHARGES" ON PRODUCE.**

One of the "taxes" on the grain trade, not generally understood, is thus described by the *Chicago Tribune*:

Business on the Chicago Board of Trade during the last few days of the month is generally in large part composed of what is technically known as "changing." Those who have bought property to be delivered at the opening of the month do not want it in their possession, and pay a premium to men who make it a business to carry the grain or provisions for those who operate without having the money required for possession of the property. The amount of the premium is determined by the storage charges plus the cost of insurance and interest on the money employed and the varying sum charged as profit on the accommodation. During the summer season the total of charges averages fully 2c. per month on each bushel of grain, and in winter about half as much, the storage charge being less in cold weather. For hog products the cost of the carrying is not far from 10c. per month on each barrel of pork and 1c. on each pound of lard. It is these carrying charges which form the great standing argument in favor of low prices. The cost being paid by the man who is the nominal owner of the property, the trader who takes an inside view of things evades this responsibility as much as possible, and, as a rule, ranges himself on the short side. It is chiefly a steady adherence to this line of policy that has built up those of the large fortunes on the board which have not been accumulated in the business of carrying for other people.

At first blush the profits of the latter may seem to be very small. They are not seldom represented by zero as calculated on the supposition that all the grain and provisions nominally carried are actually so. The profit comes in on the responsibility assumed which does not involve the outlay or use of capital. It is probable that at the close of this month fully five times as much wheat is turned over as is actually in store in this city at the present moment, and the same rule will apply to a smaller extent in the case of other grain. It is easy to see that if the nominal net cost can be collected on 5,000,000 bushels, while there is no expense except for clerk hire on any but 1,000,000, the profits at 2c. per bushel will be something enormous. And so they are. The fee is exacted in each case because it cannot be said with certainty that in that particular instance the money will not have to be employed, and the man who undertakes to carry a single lot of 5,000 bushels is pretty sure of having to shell out the cash therefor. But with the great majority of the trades it is the other way. The "long" who pays to have his responsibility carried for him from one month to another pays four or five times what the service costs the one who acts the role of capitalist, though he may simply borrow the money from another with which to tide over the trade through the months as they roll along.

It follows that an operator on the long side who should arrange to do his own carrying might count upon being able to do it as cheaply as the service is now performed for him on any particular parcel, and that he would average very much less than the sum he now pays out for the accommodation. In

other words, it need not cost more than a quarter to one-fifth as much as it actually does cost to transfer grain and provisions through the succeeding months, even with no change from the present rates of storage and insurance. This is a fact which does not seem to be understood by the trade, and of course the men who make their money by operating on the present system are interested in keeping its "true inwardness" a secret as long and as closely as possible.

**YIELD.**

There is one machine among the many employed in milling operations that is not nearly understood in utility; at least its potency to succeed in mill managing is not properly appreciated. It is the automatic grain scale that regularly weighs and registers the wheat as it is manufactured into flour. The business manager of the mill may imagine that whereas he at regular intervals weighs up so much grain into the stock hopper and takes account of all its products, that he has reduced the subject of yield to a science, and has the work indicative of profit or loss down to a very fine point; but it is noticeable that the balance sheet at the end of a season is not in accordance with the interval showing, and this is easily accounted for. But few if any millers like the idea of "getting left" on a test run consequently when the special test is made *special milling* is done, and not infrequently the fear of a poor yield on a trial occasion is too much for the poor miller's squareness, and he will if possible smuggle in some stock and shuffle aside some of the feed, or turn in some high-grade flour and turn aside some of the low-grade. Again, the manager usually accepts a good showing with a better grace than a poor one, and an ordinarily large yield creates a better feeling all around than the inordinately small. A good and reliable grain weigher and register properly manipulated does away with the test as usually conducted, and is at all times a powerful incentive to careful milling and grain buying, while at the same time there is not much room for debate and bickering between the miller and manager as to mistakes in weight of stock or products, as the grain scale is in charge of the managing miller, who has the privilege of overlooking the weighing and counting up of products. Of all the ways of getting at the truth of milling conduct, satisfactory to all around, none are so simple and positively certain as the well arranged and conducted automatic grain scale standing as an indicator to what the mill is doing properly or otherwise.—*The Modern Miller.*

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(CONTINUED FROM PAGE 9.)  
truth is found on the intermediate ground between the conflicting opinions.

Every steam boiler should be provided with both gauge-cocks and a gauge-glass. Neither should be relied upon exclusively, both should be referred to constantly, as, if this is done, the risk of being deceived in regard to the amount of water in a boiler is reduced to a minimum.

The best way to connect gauge-cocks or gauge-glasses is to connect each one independently of the others, and run the pipe straight through the front connection of the boiler. The connecting pipes should be of ample size, and that portion of them be exposed to the heat of the escaping gases in the smoke-box, covered with some good fire-proof non-conducting covering, to prevent ebullition and foaming of the water, and burning on of sediment in this portion of the pipes.

Where gauge-cocks and glass are both put on to the same connection, or where a water-column or combination is used, the connecting pipes should be larger, not less than 1½ inch pipe should be used, and the body of the water-column should have a clear diameter inside of at least 3½ inches; four inches would be better. The connecting pipe should be arranged with Ts at each bend (bends should be as few in number as possible), so that by taking out a plug the pipes can be scraped free from sediment or scale without disconnecting them. This enables the connections to be kept perfectly clean, when the worst water is used, without any trouble.

We insert here a cut, Fig. 7, to show what our experience has shown us is a good form of connection for a "combination" water column.

**RECENT MILLING PATENTS.**

The following list of Patents relating to milling interests, granted by the U. S. Patent Office during the past month, is specially reported by Stout & Underwood, Solicitors of Patents, 66 Wisconsin st., Milwaukee, Wis., who will send a copy of any patent named to any address for 50 cents:

Issue of October 5, 1886: No. 350,171—Separator or cleaner, A. Swingle, San Francisco, Cal.; No. 350,286—Dust Collector, G. Bigler, Buffalo, N.Y.; No. 350,298—Chaff guide for grain separators, E. O. Dockendorf, Sheldon, Iowa; No. 350,385—Middlings purifier, U. H. Odell, Ohio.

Issue of October 12, 1886: No. 350,509—Grinding mill, H. F. Stone, Appleton, Wis.; No. 350,600—Flour chest, J. Ozenbenger, Middletown, Cal.; No. 350,658—Automatic grain weighing and registering apparatus, C. L. Burgess, Woodhull, Ill.; No. 350,816—Automatic grain weigher and register, J. J. T. Dehekker, Sedgwick City, Kan.

Issue of October 19, 1886: No. 350,945—Machine for splitting grain, C. W. Roth, Evansville, Ind.; No. 351,014—Conveyor, A. Wissler, Brunersville, Pa.; No. 351,023—Dust Collector, B. A. Davis, Bermuda Oehre Works, Va.; No. 351,156—Grain cleaner, C. R. Bomboj, Hazleton, Pa.; No. 351,217—Grain separator, H. C. Smith and W. H. Bruce, Bertrand, Neb.; No. 351,307—Middlings purifier, H. J. Brinkman, Minneapolis, Minn.

Issue of October 26, 1886: No. 351,562—Middlings purifier, O. L. Anderson, Pleasantville, Ind.

**SIXTEENTH YEAR.**

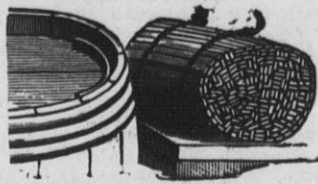
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THE CENTURY is an illustrated monthly magazine, having a regular circulation of about two hundred thousand copies, and often reaching and sometimes exceeding two hundred and twenty-five thousand. Chief among its many attractions for the coming year is a serial which has been in active preparation for sixteen years. It is a history of our own country in its most critical time, as set forth in

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**THE WAR SERIES,**

which has been followed with unflagging interest by a great audience, will occupy less space during the coming year Gettysburg will be described by **Gen. Hunt** (Chief of the Union Artillery), **Gen. Longstreet**, **Gen. E. M. Law**, and others; **Chickamauga**, by **Gen. D. H. Hill**; **Sherman's March to the Sea**, by **Generals Howard and Slocum**. **Generals Q. A. Gillmore**, **Wm. F. Smith**, **John Gibbon**, **Horace Porter**, and **John S. Mosby** will describe special battles and incidents. Stories of naval engagements, prison life, etc., etc., will appear.

**NOVELS AND STORIES.**

"The Hundredth Man," a novel by **Frank R. Stockton**, author of "The Lady, or the Tiger?" etc, begins in November. Two novelettes by **Geo. W. Cable**; Stories by **Mary Halleck Foote**, "Uncle Remus," **Julian Hawthorne**, **Edward Eggleston**, and other prominent American authors will be printed during the year.

**SPECIAL FEATURES**

(with illustrations) include a series of articles on affairs in Russia and Siberia, by **George Keenan**, author of "Tent Life in Siberia," who has just returned from a most eventful visit to Siberian prisons; papers on the Food Question, with reference to its bearing on the Labor Problem; **English Cathedral**; **Dr. Eggleston's Religious Life in the American Colonies**; men and women of **Queen Anne's Reign**, by **Mrs. Oliphant**, **Clairvoyance**, **Spiritualism**, **Astrology**, etc., by **the Rev. J. M. Buckley**, D. D. editor of the *Christian Advocate*; astronomical papers; articles throwing light on Bible history, etc.

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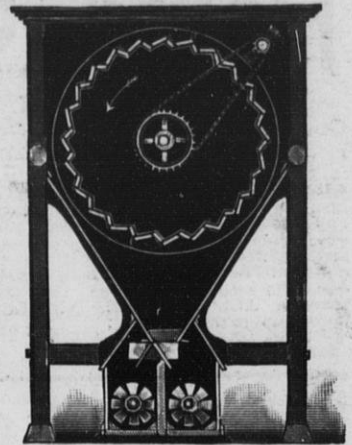
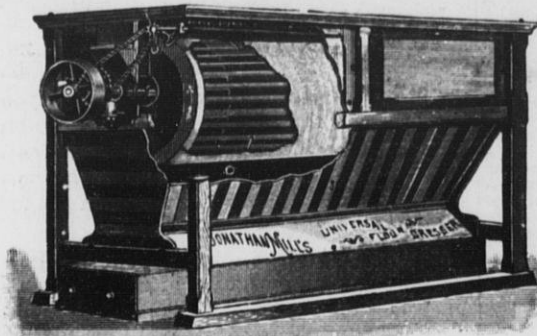
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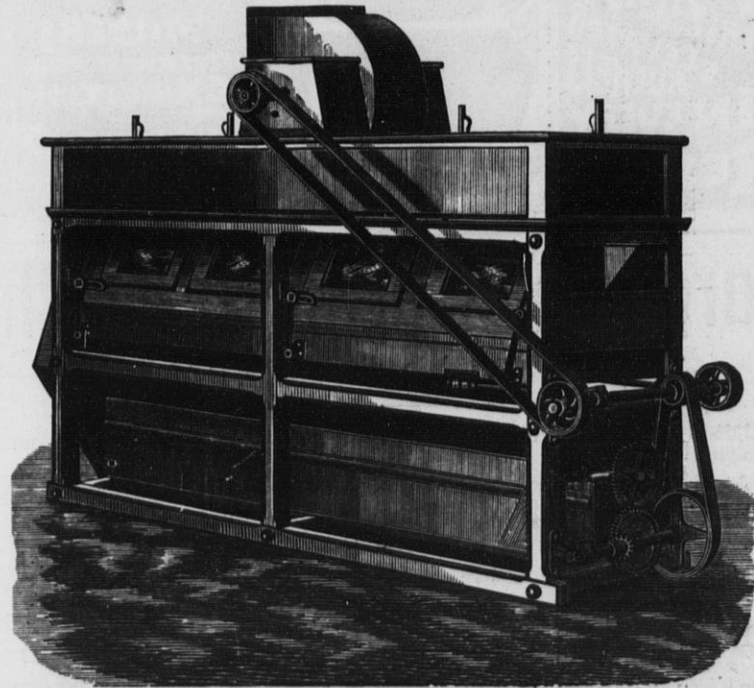
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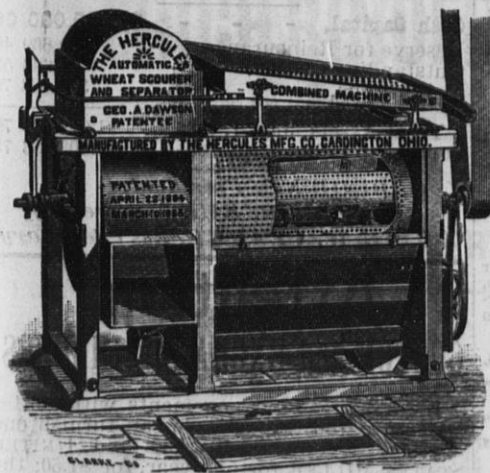
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 We give special attention to the purchase and sale of grain or provisions, for future delivery, here or in other markets.  
 Information regarding the present condition and future outlook for prices furnished on request.  
**OWEN & BRO.**  
 S. S. STOUT. H. G. UNDERWOOD.

**STOUT & UNDERWOOD,**

(Formerly Examiners U. S. Patent Office.)

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66 Wisconsin Street,  
**MILWAUKEE, WIS.**  
 TELEPHONE NO. 502.

**Life Insurance.**  
**New England Mutual**

LIFE INSURANCE CO.  
 OF BOSTON.  
 Assets, - - - - - \$17,846,546.65  
 Liabilities, - - - - - \$15,288,761.16  
 Total Surplus, - - - - - \$ 2,607,785.49  
**BENJ. F. STEVENS, Pres't.**  
**JOSEPH M. GIBBENS, Sec'y.**

**BOILER INSURANCE.**

**AMERICAN**  
**Steam Boiler Insurance Company**  
 OFFICE, 45 WILLIAM ST., NEW YORK.  
 Cash Capital, \$200,000  
 ASSETS JANUARY 1st, 1885.  
 U. S. Gov. Registered Bonds, of which \$100,000 is lodged with the Insurance Department at Albany, N. Y. \$216,138.00  
 Cash in bank and in office 10,688.72  
 Premiums in course of collection 16,839.35  
 \$243,664.35  
 LIABILITIES.  
 Reinsurance reserve 40,225.00  
 All other demands 2,013.27  
 \$ 43,149.24  
**WILLIAM K. LOTHROP, President.**  
**WILLIAM E. MIDGLEY, Vice-Pres.**  
**VINCENT R. SCHENCK, Secretary.**

**Fire Insurance.**

Every miller and manufacturer having an A 1 risk, should apply for insurance in the Allied Mutual Fire Insurance Companies, of which S. H. Seamans, Milwaukee, Wis., is secretary.

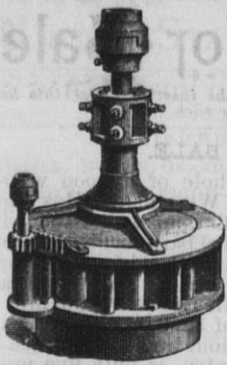
**CONNECTICUT**  
**FIRE INSURANCE CO.,**

HARTFORD, - CONNECTICUT.  
 Cash Capital, - - - - - \$1,000,000 00  
 Reserve for Reinsurance, - - - - - 580,669 40  
 Outstanding Claims, - - - - - 90,396 57  
 Net Surplus, - - - - - 303,683 78  
 Total Assets, Jan. 1, 1886, - \$1,974,749 75  
 Surplus to Policy-holders, - \$1,303,683 78  
**J. D. BROWNE, President,**  
**CHARLES R. BURT, Secretary.**  
**L. W. CLARKE, Ass't Secretary.**

**Attention!**  
**CUSTOM and EXCHANGE MILLERS.**

We have made arrangements with Potter & Huntington, whereby we can furnish one of their EXCHANGE TABLES and UNITED STATES MILLER for one year, for \$1.50; the price of the Exchange Table alone is \$1.00. This is probably the best Table ever prepared for Millers doing an Exchange or Custom Business. The range is from 25 to 36 lbs. of flour to each 60 lbs. of wheat, and corresponding amount of bran and middlings. (Toll and waste in milling deducted.) There are twelve Tables each of a different grade of wheat, and each Table a different amount of flour and feed and can be used for any amount of wheat, from two lbs. up to any No. of bushels. There is no guess work about it, but all from actual experience. By it the Miller is always sure of his allowance of Toll. Hundreds of them are being sent to all parts of the United States and Canada. Send us One Dollar and Fifty Cents and we will send the Table and credit you for one year's subscription to the UNITED STATES MILLER. Address, UNITED STATES MILLER, 124 Grand Avenue, Milwaukee, Wis.

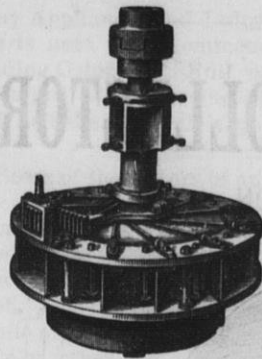




The "HOPEWELL"  
TURBINE  
Water Wheel

IS THE BEST.

For full particulars address  
**A. J. HOPEWELL,**  
EDINBURG, VA.



**JAMES LEFFEL'S IMPROVED  
WATER WHEEL,**

Fine New Pamphlet for 1885.

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 sent free. Address,

**JAMES LEFFEL & CO.,** Springfield, Ohio,  
and 110 Liberty St., New York City.

[Please mention this paper when you write to us.]

**Improved + Walsh + Double + Turbine**



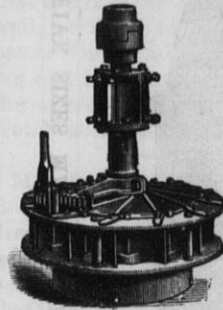
This wheel has a perfect fitting cylinder gate and draft tube combined, and allows no water to escape when closed.

**POWER GUARANTEED**

equal to any wheel on the market using equal amount of water. Address for particulars,

**B. H. & I. SANFORD,**

Phoenix Iron Works,  
Sheboygan Falls, Wis.



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

Made of best material 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 to us.]

**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.

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ITS EQUAL CANNOT BE FOUND.

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**UNITED STATES MILLER,**  
MILWAUKEE, WIS.

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49 Randolph St., Chicago, keep this paper on file  
and are authorized to  
make contracts with **ADVERTISERS.**

**Flint & Pere Marquette R. R.**

LUDINGTON ROUTE.

**Fast Freight & Passenger Line.**

Freight Contracted on through Bills Lading to all points in

Michigan, Indiana, Ohio,  
New York, Pennsylvania,  
New England & Canada.

AT LOWEST RATES.

All freight insured across Lake Michigan. Passengers save \$2.75 to all points East. Dock and Offices, No. 50 West Water St., one block from Union Depot.

**L. C. WHITNEY,**  
Gen'l Western Agent.

**STEEL  
CASTINGS**

Works, CHESTER, PA.

[Mention this paper when you write to us]

FROM 1-4 to 15,000 LBS. WEIGHT.

True to Pattern, sound, solid, free from blow-holes, and of unequalled strength.

Stronger, and more durable than iron forgings in any position or for any service whatever.

40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this.

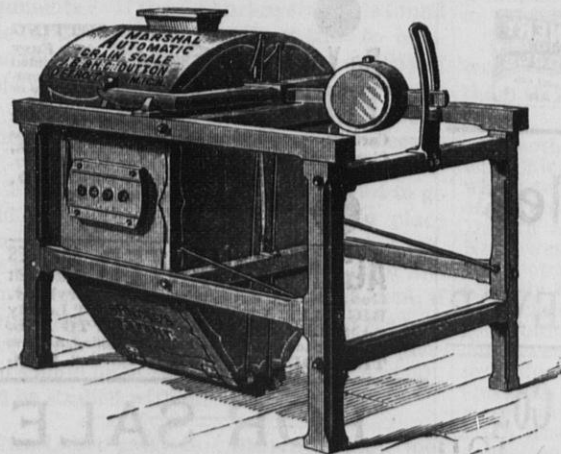
CRANK SHAFTS and GEARING specialties.

Send for Circulars and Prices to  
STEEL CASTINGS of every description

**CHESTER STEEL CASTINGS CO.**

Office, 407 LIBRARY ST., PHILADELPHIA, PA.

**Marshall Automatic Grain Scale**



FOR USE IN

**FLOUR MILLS,**

BREWRIES,

Malt Houses,

ELEVATORS,

Distilleries, \* Rice \* Mills,

OIL MILLS,

Starch Factories, &c.

This Scale is designed for weighing and registering the amount of grain transferred from one point to another. The weighing and recording is absolutely correct, and the machines are sold with a guarantee to that effect. By their use the miller can tell at any time how much wheat he is using to make a barrel of flour and know at once whether he is milling at a profit or loss. This scale can be used with equal advantage by shippers of grain or others who desire to know how much grain, flour feed, bran, shorts, screenings, coal (or any other thing that can be spouted), is being transferred, with a perfect record made of same.

**J. B. & H. C. DUTTON, Detroit, Mich.**

**JACKSON, MICH., Nov. 13, 1885.**

Gentlemen: We have used the Marshall Automatic Grain Scale in our mill for six months, and it has proved entirely satisfactory.

Yours truly,

**ELDRED MILLING CO.**

**J. B. DUTTON & CO., DETROIT, MICH.**

No. 52 WOODWARD AVE.

SOLE OWNERS OF THE PATENT.

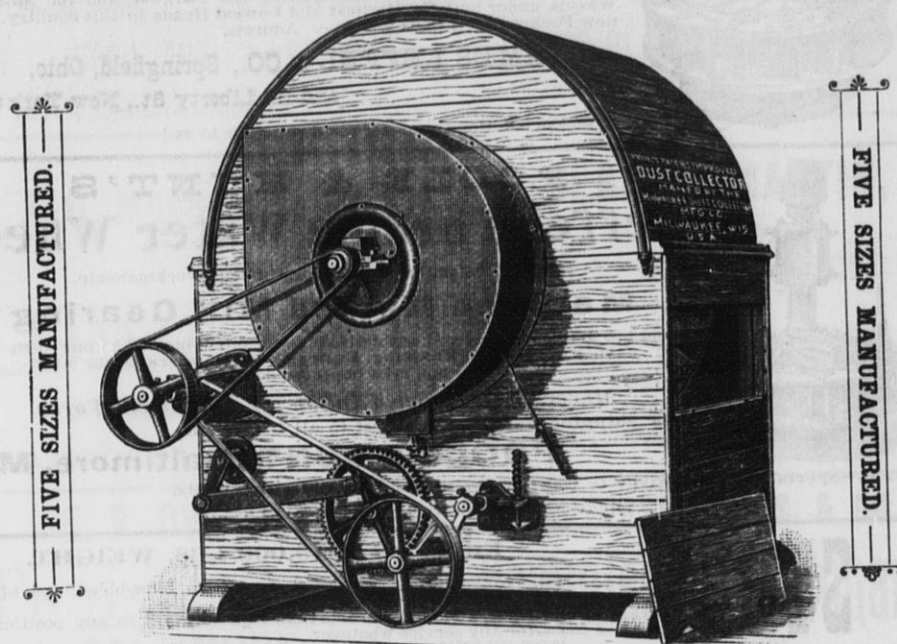
Also handle a full line of Flouring Mill Machinery.



IMPROVED

# PRINZ PATENT DUST COLLECTOR.

6000 IN SUCCESSFUL OPERATION.



FIVE SIZES MANUFACTURED.

FIVE SIZES MANUFACTURED.

ADDRESS FOR

"Treatise on Dust Collection," containing 50 pages of testimonials,

## Milwaukee Dust Collector Mfg. Co.,

MILWAUKEE, WIS.



## Howe Scales

— AND —

### HARRISON CONVEYOR

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GENERAL AGENTS,

CHICAGO, ST. LOUIS, CLEVELAND, CINCINNATI,  
48-50 LAKE ST. 612 N 3d STREET. 114 WATER ST. 116 MAIN STREET.

Howe Scales—Over 350 Modifications.

GRAIN TESTERS, FLAX TESTERS,  
CAR MOVERS,  
BARBED WIRE STRETCHERS,  
TRUCKS, BAGGAGE BARROWS,  
COFFEE AND DRUG MILLS,  
STEEL GRAIN SCOOPS,  
OIL TANKS, LETTER PRESSES,  
STANDARD, LIQUID AND DRY MEASURES.

### Do Your Own PRINTING.

Card Press, \$3.00  
Circular Size, 8.00  
Newspaper " 44.00



TYPE SETTING

etc. is Easy  
by our printed  
instructions.  
For home or  
business use  
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Send 2 stamps  
for Catalogue of Presses,  
Type, Cards, &c., to factory.  
**KELSEY PRESS CO.**  
Meriden, Conn.

### AGENTS WANTED. SAMPLES FREE!

Goods SELL everywhere, to Everybody.  
BIG PAY! A pocket case of EIGHT Lovely  
SAMPLES, with our terms, FREE TO ALL.  
Send your address, and 2 stamps for mailing. Address  
**THE HOLLEY WORKS, Meriden, Conn.**

## FOR SALE

10,000 acres of Hardwood and Agricultural  
Lands near Lake Superior, AT \$3.00 TO  
\$5.00 PER ACRE. 4,000 acres in the  
Iron River Country, at low rates.

A RARE OPPORTUNITY FOR A GOOD FIND.

IF YOU WISH TO BUY  
CITY PROPERTY IN DULUTH,  
OR PINE, IRON OR FARM-  
ING LANDS,

(ADDRESS)

## LUCIEN \* J. \* BARNES,

Room No. 2, Exchange Building.

DULUTH, MINN.

## Mills • For • Sale.

Short advertisements will be inserted under this head  
for One Dollar each insertion.

### FOR SALE.

One-half or the whole of a good water-  
power roller mill in Wisconsin. Has eight  
set of 9 x 18 inch rolls and well fixed with  
Machinery, capacity 100 barrels; also has four  
run of stone in good order used for Middlings,  
Rye, Buckwheat and Feed. This is a rare  
chance for a man with means. Said mill is  
situated in a village of 1,200 inhabitants with  
railroad communication, and surrounded by  
a good farming country, is only five miles  
from a rapidly growing manufacturing city  
of 13,000 inhabitants. Terms, three to four  
thousand dollars down, balance in annual  
payments for a long time, or I will exchange  
for good farming or Milwaukee city property.  
For further particulars, address  
BOX 488, MILWAUKEE, WIS.

### FOR SALE.

A Flour Mill in a good wheat section on  
D. R. G. R. R., Colorado. Finest of Water  
Power. Three runs of Burrs, Centrifugal  
and Cleaning Machine, all in best conditions.  
Good reasons for selling, and special induc-  
ements given to purchasers. For terms, etc.,  
address FRED. PISCHEL, La Veta, Col.

### FOR SALE.

Half interest in 2-run Custom Water Power  
Flouring Mill. Dwelling house of 9 rooms  
and Ferry across Wisconsin river. Situated  
eight miles North of Kibourn City, Wis.  
Price, \$1600.00. The other interest may be  
bought at about same price. For particulars  
address M. F. WALTON, 584 Washington  
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## FOR SALE OR RENT

THE ELEGANT

### STONE

## GRIST AND FLOURING MILL,

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VILLAGE OF DELAFIELD, WAUKESHA CO., WIS.

Water Power, unfailing. All in A 1  
condition for business. Also two good Resi-  
dences with Barn and Out-buildings. A  
bargain for the right man. Address,

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If you have an invention to patent write to Munn & Co., publishers of Scientific American, 361 Broadway, New York. Handbook about patents mailed free.



## UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, No. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.10  
 To Canadian subscribers, postage prepaid..... 1.00  
 Foreign subscriptions..... 1.25

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 mail matter of the second-class.]

MILWAUKEE, DECEMBER, 1886.

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.

## MILWAUKEE AMUSEMENTS.

ACADEMY OF MUSIC—Performances every evening, Wednesday, Saturday and Sunday matinees.

GRAND OPERA HOUSE—Performances every evening, and Wednesday, Saturday and Sunday matinees.

DIME MUSEUM—Performances every hour from 1 P. M. to 10 P. M. every day.

PALACE THEATRE—Every evening, Wednesday, Saturday and Sunday Matinees.

STADT THEATRE—(German)—Wednesday, Friday and Sunday evenings.

SAN FRANCISCO parties recently exported 2,000 tons of flour to China.

ACCORDING to the *Railroad Gazette* (Dec. 3), 6,111 miles of railroad have been built in the United States so far this year.

THE flour production of Minneapolis for the year ending November 30, 1886, is reported to have been 5,057,000.

REPORTS from British ship-yards show that a greater number of iron sail-ships have been built during this year than during any year heretofore. The number of wooden ships built is however very small.

MR. F. STALLMAIER, formerly editor of *The Roller Mill*, published at Broadheath, England, has located in Vienna, Austria, from which point he will write articles for various milling papers both in Europe and America.

THE *Milling World* among many other questions, asks: "Is your supply of water insured?" Well, how can it be? We know of no water insurance company. That is a grave question that should be seriously looked into. Here is an opportunity for capitalists or Water Mutual Insurance Companies.

*The Roller Mill* of Buffalo, N. Y. has been purchased by Messrs. E. L. Burdick & Co. We trust that the new management will make the paper far cleaner than it has been in the past. Although beautifully printed its contents were anything but pleasing to all fair minded readers.

MR. JOHN W. WESTON, editor of the *American Engineer*, of Chicago, has been appointed Commissioner General for the United States International Exposition of Rail-

way Appliances and Industries to be held in Paris next year, commencing May 10 and ending October 1. Full particulars can be obtained by addressing Mr. Weston at No. 230 La Salle street, Chicago, Ill.

SOME of the editors of and contributors to the milling papers are getting themselves worked up to a white heat on the subject of the "Speed of Elevators." The fact is, but few millwrights entirely agree on this subject. Some go on the "cut and try" system, while others figure it out according to some rule or other and become firmly convinced that theirs is the only correct method. It is well, perhaps, to keep up the discussion; better still for millwrights to keep on figuring and experimenting, for sooner or later the vexed question will not only be completely solved but published to the world.

MR. ARTHUR, President of the National Brotherhood of Engineers in his opening address before the last meeting in New York is reported as saying: "We have no sympathy with those organizations who think that might is right, and that the rich owe the poor a living. There is no such thing as an inherent antagonism between capital and labor, but there always exists an antagonism between work and idleness. \*\*\*\* I read the four mottoes of your organization, printed on the programme of this convention; they are: "Sobriety and Truth," "Justice and Morality," "Defence, not Defiance," "Reason, not Violence;" and I say that so long as you are guided by these mottoes, so long will your order receive, as it does today, the approval and hospitality of this mighty city"

THE advocates of the "Short System" are abroad in the land and have no end of arguments in its favor, but are they not simply arguments? If the "Short System" is found able for a reasonable length of time to compete in the points of quantity and quality of yield and economy of cost of production with the "Long System," then the sooner it is generally adopted by the millers of the country, the better. On general principles we believe it advisable for mill owners not to go wild over the subject, and put it in, in place of an already costly and well-studied system, but to calmly await the development of the short system to its best stage, and then, if found to be an improvement on what we now have in our best mills, to adopt it. The question should have the careful attention of all, and be studied without bias.

THE Labor party in cultured Boston met with as great a Waterloo as their bitterest opponents could wish for, at the recent municipal election in that city. As time goes on it will be more and more thoroughly demonstrated that three parties cannot exist in this country, especially when the third party is to be constructed on a class basis with a plank in its platform advocating State ownership of land. There are too many owners of homes here to make any such theory acceptable to the masses. We believe, however, that although the agitation of this labor question has been of more or less present damage to both employer and employeé that the ultimate results will be beneficial to both. The agitation was bound to come and

it might as well come at one time as another. It has given all a chance to *think* and we believe it has done much toward making men respect the *rights* of each other.

## UNEASY PATENTEES.

There appears to be some prospects of more patent litigation. One George Van Name, whose name is at present quite unfamiliar to millers, claims to be the inventor of the patent process for making flour, his patent having been granted in 1867. In a case against George Bain and others which went to the Supreme Court the patent was declared void on account of its publication to the world long before in a book printed in Leipzig, Germany. He claims that the book produced in evidence was fraudulent and that no such matter had ever been published. On this ground he proposed to open the case. If the programme is carried out as it is rumored it will be, it is quite probable that the Millers' National Association will be drawn into the battle.

## DULUTH vs. CHICAGO.

A party of prominent Chicago grain men recently visited Duluth to look into the cause of her rapidly increasing grain trade and the Duluth method of doing business in that line. A Duluth correspondent says:

"The visitors spent several days here. They were shown through the elevators and examined with great care the process of cleaning grain. They examined the facilities for receiving the grain from the cars and loading it into vessels. There are no secrets seemingly in the grain business here. Apparently the seekers after the vanished trade were greatly interested in what they saw. They said little, but when they went away they left the impression that forthwith several Chicago elevators would be fitted up with cleaning apparatus, and the attempt would be made to recover the lost ground by an imitation of the Duluth plan."

The Duluth people claim that they can transport grain to eastern markets cheaper than Chicago. The correspondent further says:

"Another, and perhaps a stronger, reason why Chicago will never be able to get this wheat trade lies in the perfect organization of the country elevator interests in favor of Duluth and Minneapolis. Outside of this Northwestern country the extent and the omnipotence of this elevator organization is scarcely known. Chicago evidently does not appreciate what she is fighting, for if she did she would recognize that her wheat market can never be restored, and would cease useless efforts in that direction. The country elevators throughout Minnesota and Dakota were built and are owned by associations. Each association has its territory, and its collection of elevators is called its system. Some of these associations have as many as 70 or 100 elevators. How many systems there are can not be stated, but 15 of the associations have their head offices in the Board of Trade building at Minneapolis. These associations own and operate the elevators on the Northern Pacific and the Manitoba roads.

There are the Van Dusen system, the Sawyer System, the North Pacific Elevator Company, the Red River Elevator Company, and so on through the list. From the central office the buying and shipping of grain at all the country elevators in that system is regulated. Each country elevator reports to the central office daily the amount of wheat taken in and all the business done. The methods are perfect.

Now all of these country systems are controlled by the grain men of Minneapolis and Duluth. Through their complete organiza-



tion they hold the wheat of this northwest country and they hold it in the interest of Duluth and Minneapolis. How can Chicago break the grip?

As an earnest of what the intentions of these associations are, it may be mentioned that the grain men controlling several of them have within a very few days formed a company and taken out a charter to build at Duluth the coming season elevators to hold 6,000,000 bushels. A. J. Sawyer, who owns one of the largest of these country systems, is at the head of this new elevator company at Duluth. Does any one imagine that the wheat going into Mr. Sawyer's numerous country elevators will find its way to Chicago? The business of gathering up the wheat of the Northwest is systematized throughout. Since the millers withdrew their country buyers there has been little or no competition. At each railroad station there is an elevator, and that elevator is one of a string belonging to an association of grain dealers. The head office of the association is at Minneapolis or at Duluth, and thither goes the grain in due time.

Now, where will Chicago break into this close connection between the wheat-fields of the Northwest and the elevators at Duluth and Minneapolis? It is hard to see. This gigantic monopoly—for such it appears to be—formed to handle the wheat of this section, is too big for even Chicago to think of breaking it down. The machinery is all in operation and working smoothly. The relations of the railroads and the elevator associations are too close to encourage the suggestion that Chicago can get into the occupied territory."

For a winter outlet by rail, the road now building from Duluth to Sault Ste. Marie will soon be completed and connect with the Canadian Pacific or Michigan road. Finally says the Duluth man:

"There is one more reason why Duluth may be expected to maintain the long lead she has taken over Chicago as a wheat market. She has the best registry system in the country. The State of Minnesota puts its official indorsement on all the business transacted here. The elevators are entirely independent of and separated from the grain business. When the wheat goes into the elevator the owner of it receives his certificate for so much grain and the State steps in and requires that every certificate should be registered. From time to time the registrar goes to the elevator and calls for a statement of wheat in store. The amount must correspond with the amount represented by the certificates registered. The registrar says to the elevator company: "how much wheat have you got in store?" and the elevator company must open up the books and show just the condition of the business. The checks upon fraud are as nearly perfect as can be devised. Not a bushel of wheat can leave the elevator without being reported to the State. A State officer puts the grain into the elevator and lets it out. The Bank of Montreal and leading banks in the Eastern cities of the United States have investigated the system and pronounce it perfect. All they require preliminary to a loan is the telegram from their correspondent here that the registered certificates, or the number of bushels on which the money is to be borrowed, have been attached to the note, and the draft is honored without further inquiry. A certificate from a Duluth elevator is considered as good money as a bank note.

There is no system equal to this except the one upon which it is modeled—that in vogue in London and Liverpool, where the certificates are called "dock warrants." Chicago hasn't got it. If she had there would be fewer of her prominent citizens now living in Canada."

The most able and faithful exponent of the South that comes to our table is *The New Orleans Picayune*, now in its 51st year. It will stand comparison with any daily published in the North. It is high-toned, honest and

business-like in every respect, and deserves a large circulation among Northern business men.

MR. GILBERT LITTLE of London is engaged in preparing a book entitled "Modern Milling."

Will some one please favor us with the present address of Mr. A. R. Ennis, formerly located in St. Louis.

CUSTOM and Exchange millers will consult their interests by reading the advertisement concerning "EXCHANGE TABLES" on another page.

A PAPER MILL Mutual Insurance Co., has just been organized in Boston, with Edward Atkinson, the well-known writer on Economics, as president.

OUR January number will contain some valuable articles written expressly for us, by some of the ablest writers on milling subjects and withal practical men.

THE damage suit of a California mill against a Liverpool firm for packing inferior flour in the second-hand sacks of the mill has been quietly compromised, the dishonest flour dealers paying a round sum in cash to effect this.

THE *American Millwright*, after a brief existence has closed its career. We are sorry that Editor Lawrie found it advisable to cease publication. He was making a good paper which was becoming better appreciated with each issue.

OPERATIVE millers desiring a thoroughly practical work on milling can do no better than to purchase "Gibson's Gradual Reduction Milling." Price \$3 or with the UNITED STATES MILLER one year, \$3.50.

FOR \$1.80 we will send to any address in the United States or Canada post-paid, the *New York World* (weekly), THE UNITED STATES MILLER (monthly) and the History of the United States, a handsome volume of 320 pages bound in leatherette tree calf and containing 22 engravings.

THE *American Machinist* truly says: "There are two public dangers which should be fought against. They are the disregard of law by the 'vicious elements,' and the perversion of law by a certain class of wealthy men. The former breeds anarchists, and the latter monopolists."

THE *Northwestern Miller* will present to its subscribers this year the handsomest holiday number of a trade journal ever published. At least we believe so. The publishers have been "working like beavers" on it for months, and as they know how to work, we predict a most satisfactory result. We trust that the trade generally will appreciate it.

ONE of the finest catalogues we have seen for a long time has just been issued by the Prospect Machine and Engine Company, of Cleveland, Ohio. It is well illustrated with specially prepared cuts and contains much

of interest to all using steam engines. This catalogue will be sent to any steam user on receipt of four cents postage. Address as above.

By the way, what has become of all the milling experts and milling engineers we used to hear of so often three or four years ago? Certainly there are as many now as ever, but we imagine they have mostly got tired of the burden of carrying the titles either assumed or forced upon them, and are contented to be known as plain mill-wrights or mill-builders.

THE teeth of bakers decay so rapidly and peculiarly that Dr. Hesse, of Leipsic, declares himself often able to tell the occupation of patients by the condition of the teeth. He supposes the caries to arise from the action of an acid formed by the fermentation of inhaled flour dust. Are millers also generally afflicted with decayed teeth? It would be interesting to know.

OUR newly elected Congressman Henry Smith, for so many years known to the trade as a member of the mill-wrighting firm of Birge & Smith, has sold his interest in the business to his partner, and for the next two years will devote his entire attention to the interests of his constituents. We regret to see any man leave a good business for a political career, the path of which is always strewn with more thorns than roses; but if Mr. Smith makes as good a Congressman as he did a City Comptroller, his constituents will have no cause to complain.

THE *N. Y. Insurance Chronicle* says: The present local dullness in the fire insurance business is probably due to three causes, each of which has been advanced separately, in explanation of the phenomenal state of affairs: (1) to the small stocks in warehouses, (2) to renewals a long term in advance by certain companies before the compact went into effect, and (3) to patient waiting for the compact to go to pieces by parties who carry short lines of insurance in obedience to the daily repeated assertions of brokers that the old times will return "next week."

WE have received from the publisher, Mr. John Heywood, London, Eng., a new work entitled "The Construction and Equipment of Grain Magazines" (Elevators), written by G. Luther in German, and translated into English by Messrs. F. Stallmaier and Joseph Fux. It is illustrated by 12 photographs, 14 lithograph plates and 116 wood cuts. It is without doubt the most valuable work on the subject ever put in print, and is of vital interest to all builders or owners of grain elevators. We have no hesitation in recommending this work to our readers. If desired we can supply the book post-paid, for \$2 per copy.

THE mining craze has struck Milwaukee investors and the way mining companies are being organized and stocks bulled and beared here would make one think he was in California or Nevada. The only difference is that the western mines are of gold or silver, while ours are iron or copper, especially iron. A number of our best business men have been extremely fortunate and have made "a barrel of money." Of course, it goes without saying that others have dropped their



"boodle" in the most approved style and are watching keenly for an opportunity to "catch on" to something by which to retrieve their losses. Taking it all in all, it is perhaps better for men to gamble in mining stocks than in wheat. That is our opinion anyway.

The forthcoming Holiday Number of *The Northwestern Miller* will be profusely and elaborately illustrated. It will contain a hundred pages of miscellaneous and scientific matter, including Stories, Sketches, Essays and Reviews—prepared especially for this number. The covers are being engraved by the American Bank Note Co. Among the more prominent contributors to this annual, will be Julian Hawthorne, Joel Benton, James Lane Allen, Chas. Barnard, Richard M. Johnston and Louis H. Gibson. The humorous features will be provided by Eugene Field, Bill Nye, Robert J. Burdette, James Whitcomb Riley.

This will be the fourth holiday number of *The Northwestern Miller*, and its publisher expects it to achieve even greater success than the last.

#### FLOUR MILL DIRECTORY FOR 1886-87.

All persons desiring to reach the milling trade should invest at once in a copy of Cawker's American Four Mill Directory for 1886-7, issued Feb. 1, 1886. It is carefully compiled; contains 18,289 addresses in the United States and Canada; Shows in thousands of instances the capacity, power and system of milling (i. e. whether the stone or roller or combined system is used). It also contains a list of millwrights and American and European flour brokers. The book is sold at \$10 per copy and can be obtained by addressing the United States Miller, Milwaukee, Wis.

#### GLASS ELEVATOR BUCKETS.

Glass elevator buckets are now made by H. Ebsein Soehneat the Czarnowanz Glass Works near Murow in Upper Silesia. They are made in all the shapes and sizes that they have heretofore appeared in, in leather, tin, wood etc. Those made with a roundish bottom are most praised on account of their perfection in filling and discharging, there being no danger of clogging. The following advantages of glass buckets over others are claimed: Hardness, durability, smoothness, cleanliness and cheapness. The buckets work equally well on hard and soft materials and can be used anywhere that any other bucket can be. They are attached to the belts either by screws or lacing leather.

#### LOOK OUT FOR FIRES.

The winter is now upon us and it is generally supposed that the danger from fires is greater during this than any other season of the year. Be this as it may, it behooves the miller to use the utmost care to prevent his mill from getting afire. Owing to the peculiar conditions of the modern flour mill it is next to impossible to extinguish a fire after it gets a fair start, and therefore all known means for extinguishing an incipient blaze should be at hand on every floor. These guards against fire should be regularly inspected so that they will be in order if required. An empty water barrel and leaky pails are of no use as fire

extinguishers. Hand grenades it seems can no more be depended upon. To our mind the automatic sprinkling apparatus is the best means for checking or extinguishing fires, but that also has its drawbacks. Every miller should use the utmost care and diligence to prevent fires, and cover all contingencies with a good insurance policy, and no insurance company should issue a policy on any mill that they have the slightest reason to believe will be burned through either the negligence, carelessness or cupidity of the owner.

HON. DONALD MACLEAY, President of the Portland (Ore.) Board of Trade in his address at the twelfth annual meeting, said:

"Portland is the natural point from which American enterprise must compete with British capital, already reaching out for the traffic of the world from the shores of British Columbia. Thoughtful men argue that our situation is such, that cheap transportation, the greatest factor in building up trade, must be forever in our favor. We are within 150 miles of the coal fields; iron is at our doors; limestone is within easy reach; and on every hand we are surrounded by countless acres of golden grain. We are the centre of the railroad system of the Northwest; we lie at the meeting point of two great valleys, down which the iron roads seek our city on a water grade. Removal of the obstructions in the Columbia river will afford us a thousand miles of inland navigation through the most fertile sections of the United States and the British possessions; and there is no other commercial center on the Pacific coast which can be reached without climbing formidable mountain barriers. In the unhappy event of war, we are secure against attack. The entrance to the Columbia river could be easily defended against a naval force; and on all sides nature has afforded fine strategic points, from which to direct defensive operations."

#### DELAYS IN CANADIAN FREIGHT TRAFFIC.

"Great complaints," says the *Montreal Trade Bulletin*, "are made regarding the delays experienced by our merchants in the transit of flour over the Canadian Pacific Railway from stations in Manitoba. For instance, flour was received in this city last week from a station not far from Winnipeg, which had been on the road 45 days from the date of its shipment, and several other carloads had been on the way the same length of time, whilst the parties to whom they were shipped could get no trace of the flour from the Company. Owing to the great length of time consumed in bringing to market no inconsiderable portion of Manitoba flour and wheat, the trade in these staples has undoubtedly been very much curtailed. This sad want of despatch in its freight traffic, therefore, works even more harm to the Canadian Pacific than to our merchants, as the latter have always plenty of Grand Trunk stuff to fill their orders with."

#### MINERAL WOOL.

The use of this peculiar product is rapidly increasing. The peculiar reason why Mineral Wool is so excellent a non-conductor of heat is because it contains a great quantity of air. Air is so subtle and rapid in movement when unconfined, and so slow to convey heat, except by its own motion, that it is at once the very best distributor of heat, and also the greatest barrier to its transmission, according as it has, or has not, freedom to circulate. It is not a matter of surprise that this apparently anomalous state of things is misleading and

constantly giving rise to popular errors. That the dimensions of what is called an air-space are entirely arbitrary, no one will deny. It may have a volume of one cubic foot, or it may be the smallest unit of volume into which air is divisible. We are disposed to classify the first case under *climatology*, and the second under *insulation*, for so long as air may circulate at all, it is conveying heat from one place to another; while, if it is held in position by any medium, the heat must be conducted—not conveyed. Now, if the air-confining material is not very loose and porous, it will be found to transmit heat, and furthermore, the reduction of the per centage of volume of air by making the material more compact, develops its capacity for conducting heat. Therefore, so far as theory goes, the poorest conductor of heat is the material which contains the largest percentage of volume of air, and any other view of it is at variance with science and nature.

We find that 192 pounds, or *one cubic foot* of slag makes 192 pounds, or *eleven cubic feet* of ordinary Mineral Wool, so that the resulting fibres encase eleven times the quantity of air that the slag did; in other words, the cubic foot before conversion contained 100 per cent. of material, and after conversion only 9 per cent., therefore the product must contain 91 per cent. of its volume of air. In the same way the extra grade is found to have 95 per cent. of its volume of air in it, and consequently, it is a better non-conductor than the ordinary. It is certain that this proportion of air is not encased by any other product, natural or artificial, which is, at the same time indestructible.

The transmission of sound is prevented by a filling of Mineral Wool, because of its inelasticity or want of solidity. This is a very important feature, because no other material in general use for heat-proofing and fire-proofing possesses also the property of sound proofing. A fourth advantage, which is of equal value with the others, is the irritation which the glass fibres cause both to insects and vermin. There is nothing in its composition which can help to breed or harbor insects, and no animal life will remain in it.

Mineral Wool is manufactured by the Western Mineral Wool Co., of Cleveland, Ohio. Mr. E. O. Hoffman, No. 392 Broadway, Milwaukee, Wis., is the Western agent, and has recently filled some very heavy orders.

We will send the United States Miller, The American Miller, and The Northwestern Miller, (weekly), and The Milling World, (weekly), for one year, to any address in the United States or Canada for \$4.00, or to any Foreign Country for £1. 3s.

#### A TWO CENT STAMP.

Sent with your full address to A. V. H. Carpenter, General Passenger Agent, Milwaukee, Wis., will bring you ONE of the following named publications, issued for free distribution by the Chicago, Milwaukee & St. Paul Railway:

- Gems of the Northwest.
- A Tale of Ten Cities.
- Uncle Sam's Journey.
- Guide to Summer Homes.
- The Overland Journey.
- The Northwest and Far West.
- Plain Facts about Dakota.

All of these publications are finely illustrated and contain valuable information which can be obtained in no other way.



**THE VAN DEPOELE ELECTRIC RAILWAY AT  
APPLETON, WIS.**

The Van Depoele electric railway at Appleton, Wis., has a number of interesting features. Two turbines coupled together, capable of developing 100 horse-power, are used to run a 60 horse-power dynamo. The electric current so generated is conveyed by means of two heavy copper wires up to the overhead wires for a distance of about one mile. Here the feeders are electrically connected to the double overhead wires, these being placed over the center of the track, about 18 or 20 feet from the ground, and forming an exact counterpart of the track below. These overhead conductors are so suspended that it is possible for a traveling contact to pass over the wires uninterruptedly from end to end of the track. This traveler, running upon the overhead conductors, brings the current to the motors in the cars by means of a double flexible cable, the latter being so arranged that it can readily be transferred from one car to another. In order to effect this, the cables hanging from the travelers on the overhead wire are fastened with their lower terminals to a cross-bar made of some good insulating substance. To the center of this cross-bar is attached a handle, and if the handle be grasped the terminals of the cables can be hooked into two corresponding sockets, fastened to the underside of the roof on the front end of the car. From these sockets the current is led by means of insulated copper conductors to the motor and to a switch, and, in the usual way, by turning the handle either to the right or to the left more or less current can be sent through the motor, or be altogether shut off when the car is to be stopped. In the present case the motors are placed on the front platform of the car, so that the driver can sit near the motor and have at once full view of the road upon which he is running. As the motor is placed upon the front platform of the car, it is at all times under the eyes of the driver. This enables him to take good care of the machine and see that all working parts are in good order and kept clean. From this point he can also attend to oiling of the shafts, etc., so that there is no reason to neglect any important work.

The motor itself is a very plain but very substantial machine, of the type illustrated in Fig. 3. The commutator brush holder is

provided with two pairs of brushes, and is so arranged that by turning the handle either to the right or to the left, the motor can be made to run back or forward. On starting a car the driver turns on the current gradually until the maximum speed of the car is obtained, a speed which, for street cars, is ordinarily from six to eight miles per hour.

In the present plant five motors, one of

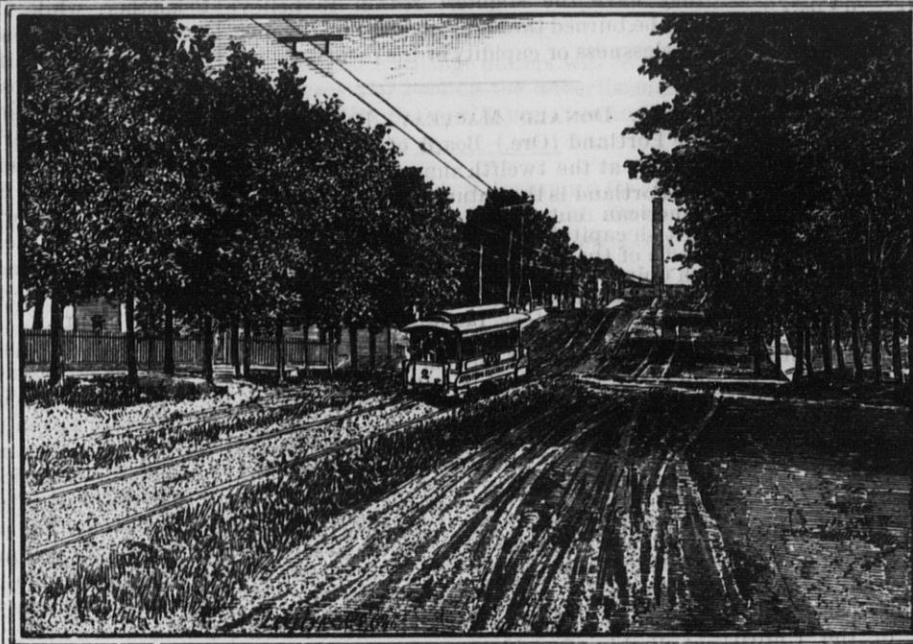


FIG. 2.

twelve horse-power and four of ten horse-power, are connected as follows: From the armature shaft of the motor a phosphor-bronze pinion meshes perfectly in a large gear wheel carried underneath the motor by a solid steel countershaft. Mounted upon the latter are two sprocket wheels, corresponding to two other sprocket wheels fixed solidly to the forward axle of the car; upon

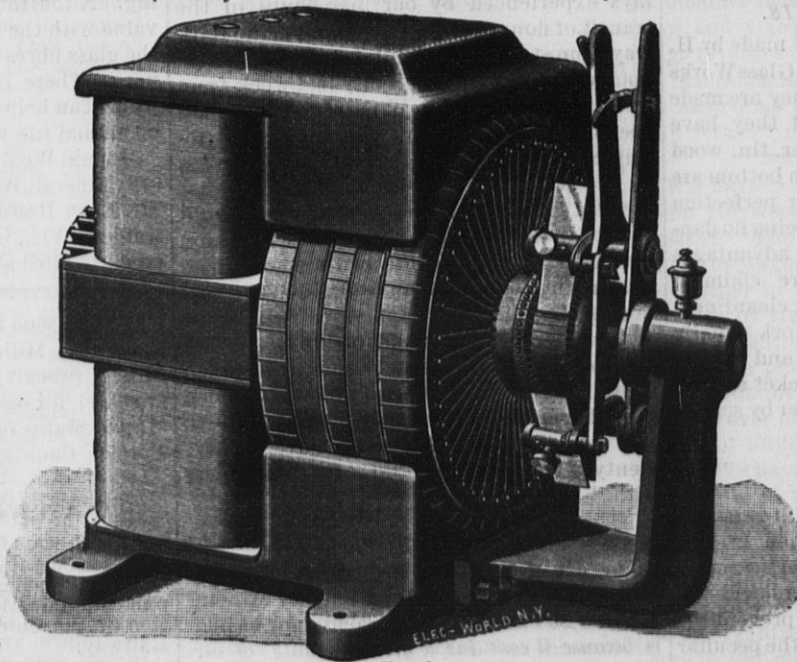


FIG. 3.

these sprocket wheels runs a specially made steel belt, so that on starting the motor the armature shaft revolves its pinion upon the large gear placed upon the counter-shaft, and the latter communicates motion to the axles of the car by means of the intervening

sprocket wheels and steel belts. The grade varies from six to nine per cent, and in one place a sixty-foot curve occurs on an eight per cent. grade; there are numerous curves forty to fifty feet radius. The views are taken from photographs.

**HOW A STEAM INJECTOR WORKS.**

The fact that steam from a boiler will not only reënter that boiler after passing through several pipes, contracted passages and valves, but will carry a considerable body of water with it, will always be an apparent paradox, and it is not surprising that locomotive engineers should be a little uncertain as to the exact explanation. The action of an injector may, however, be easily explained. High-pressure steam moves with an immense velocity, steam of 140 pounds pressure above the atmosphere being capable of flowing into the atmosphere at the rate of 1917 feet per second, or 1302 miles per hour, which is sufficient to impart a moderate velocity to a body heavier than itself. In an injector, that body is the feed-water. Unless, however, the feed can condense the steam, the injector will not work. The reason is apparently purely mechanical, as the steam, being bulky and highly elastic, can have no appreciable effect in driving the particles of water in any given direction. When, however, the steam is condensed into an unelastic jet of water still moving at a great velocity, it forces the feed-water before it into the boiler.

This is easily illustrated by supposing that an attempt was made to propel a ship by a jet of compressed air from the stern. The air would simply rise in a mass of foam to the surface, and the energy in the air would be wasted in spray instead of propelling the ship. A jet of water, however, directed astern would have no tendency to rise, as there would be no difference of specific gravity; and it would therefore propel the ship by reacting against the mass of water. It is somewhat singular that there has been so little theoretical discussion of the injector, accompanied by formula giving the quantities of water of a given temperature which should be delivered per hour by an injector of a given size, working

with a given pressure of steam. Some empirical formulas exist, based on the result of experiment, but such as are based on pure reasoning from the recognized physics seem to be very little known.—*Railway Gazette*.  
—Subscribe for the *United States Miller*.



## SHORT SYSTEM MILLING.

BY J. M. CASE, COUUMBUS, O.

A great deal is being said and written recently upon short systems of wheat milling. Men write upon it as though it was some new thing, some great discovery that has just been brought out. It is amazing to observe the lack of information that exists in relation to what has been done in the past in the short systems of wheat milling. It must be known to many that mills have been running in this country for four or five years on two three and four reduction systems. Mr. Huber, from Hungary, has built a large number of mills in this country in which he has used only three breaks; our company has built some mills in which we have used but three breaks. We have customers who have operated a two-break mill, and all this for the last three or four years. The writer in his

12 inches long, the results will be somewhat injured. If instead of 12 inch rolls being used, 18 inch rolls are put in their place, and the mill is made with only four reductions, the results will be fully equal to that of the six reduction mill using the 12 inch rolls. It will be remembered that the object of gradual reduction is to produce middlings, and it is a fact well known to expert millers that the lighter the feed upon the roll the more middlings will be produced; consequently, in using a roll 12 inches in length, if overloaded, it will defeat the object aimed at, that of producing a large quantity of middlings. This is owing to the fact that one particle of wheat piles up upon another particle and the two particles are crushed together in such a manner as to soften the chop and not produce middlings, whereas if the 12 inch roll was lengthened out to an 18 inch roll the thickness of the sheet of grain passing between the rolls will be proportionately

however, to make a short system of milling, turning out 20 to 25 barrels of flour per day of twenty-four hours on three double sets of 6 x 18 rolls, and make a good fair finish. It is also possible to reduce the number of bolts very materially below that which has hitherto been used and thought to be indispensable. There are certain grades of stock which may be ground and bolted together which ordinarily are kept separate in the more elaborate systems of milling and still a good straight grade of flour is produced. Our company are now building a mill in which we only use three double sets of 6x18 rolls, three bolting reels of peculiar construction and one wheat cleaner. This constitutes the entire mill, and we have every reason to believe that, so far as the head of the mill is concerned, this mill will produce about as good flour as is produced in the more elaborate system of milling. It must be remembered that all there is in milling, after all, is simply



FIG. 1.—THE VAN DEPJELE ELECTRIC RAILWAY AT APPLETON, WIS. SEE PAGE 24.

“Twenty statements,” which appeared some eighteen months or two years ago, stated that “in matters of reduction it was more important to have the requisite length of the roll than it was to have a great number of reductions.” That is, it is better to have four reductions with a roll 24 inches long than it is to have eight reductions with a roll 12 inches long. This is due to the fact that in the less number of reductions there is less abrasion, wearing or rubbing of the bran, and consequently less fibrous matter is disintegrated and mixed with the better stock. This fact has been known to the writer ever since we first commenced the building of flouring mills.

It is, however, the generally adopted system among the millers to use six breaks in the reductions, and this standard has been reached through a series of experiments, in which the miller expected to get a given capacity out of a given length of roll. For instance, a 6x12 roll is expected to develop a breaking capacity of 50 barrels in twenty-four hours, and do the work well. If the reductions are reduced below six, using a roll

reduced, so that one particle of bran does not lap over upon another particle, and in that condition a large quantity of middlings will be made. Herein lies the secret of short reductions. It is in the length of the roll. It is possible to produce an excellent good result from a three-break mill, but in doing so the length of the roll must be made proportionately to the work there is to be performed, otherwise the miller will find it a failure.

“But it must be remembered that the mere reduction of wheat to middlings preparatory to further reduction is not all of a system of milling. In fact, it is the lesser part of the present elaborate system of gradual reduction, and while it is true that the breaks may be considerably reduced, yet it is equally true, that in order to make a close yield and a good granular flour, the tail end of the mill can not be reduced beyond a certain limit. If a short system is used on the middlings and the low grade, it must be at the expense of a quantity of material that passes through the mill, or the capacity of the mill must be greatly reduced. It is possible,

to produce a good granular stock of middlings, purify them well, grind them and sift through a bolt. Pure middlings made on the short system and bolted will make just as good flour as pure middlings made on a long system, and there is no question of doubt that there are elements in the short system which are worthy of careful consideration to those who are not prepared to put in the more elaborate systems of milling, yet they must not expect to produce a result in all respects fully equal to the mills in which they have a large number of redressing bolts for handling the difficult material that comes from the tail of the mill. No short system of milling can ever be developed that will accomplish results at the extreme tail of the mill as perfect as they are done on the more complete systems. The product which would pass to low grade flour in the short system of milling would, in the more elaborate system, be rebolted, and the tailings over the bolt would be again reground and again bolted, and by this continued manipulation result would be obtained at the tail of the mill better than can be accomplished by the short



systems of milling. Yet at the head of the mill there is no reason why there should not be made, on a very short system, a grade of flour equal to that made on the longer and more expensive systems of milling. I may add, however, that it is the belief of the writer, and this belief is based upon no theoretical reasons, but actual experiment, that no two break mill can be successful. Three breaks are absolutely necessary, otherwise there will be both a richness of feed and a large quantity of low grade owing to the fact that in the second break the bran has got to be "chawed to pieces," comparatively speaking, otherwise it cannot be properly cleaned, but in the three-break mill, results can be accomplished which will prove satisfactory to most of the small mills in the country."

#### A DECISION RELATING TO "BOYCOTTS."

The most recent decision on the subject of boycotts was recently rendered by Chief Justice Bingham in a case on trial at Plymouth, Mass. The defendants were prominent Knights of Labor, and their side was represented by Gen. Butler and others. We take the following extract from the Chief Justice's decision:

"Every employer has a right to employ whom he chooses, and every manufacturer has the right to buy and sell from and to whom he pleases, and to use in any lawful way any material which he may choose to buy. But the right of labor to choose its own employer is no more sacred than that of the employer to buy what and of whom he chooses. It is also a principle that labor has the right to combine for the amelioration of its condition. Of course such a combination will reduce the profits of the employers. Employers may also combine to regulate labor, and the value of labor may be reduced as a result, or labor may be exposed to more rigorous conditions. Both combinations act adversely and injuriously, but within their rights. These being the rights of the parties, any man who undertakes to prevent the manufacturer from buying what or from whom he pleases interferes with a legal right. So if a combination of persons be made to interfere with that right, it is an unlawful combination. If the means used for interference are unlawful, there is a combination in every sense of the law. As to what means are unlawful, a combination to prevent one man from using anything made by another is a combination to an unlawful end, and if effected by threats or intimidation, there may be a conspiracy."

We will send you a copy of "Leffel's Construction of Mill-dams, and Bookwalter's Millwright and Mechanic," and "The U. S. Miller" for one year for \$1.30. Don't miss it.

#### PUBLICATIONS RECEIVED.

SCRIBNER'S MAGAZINE.—The first number of *Scribner's Magazine*, published monthly, with illustrations, was issued on the 15th of December. All succeeding numbers will be published on the first of the month, of which they bear date. *Scribner's Magazine* will be in the widest sense a magazine of general literature; and its main purpose will be to bring together not only good reading, but literature of lasting value. Each number will be fully illustrated, and in a manner which shall be in the best sense illustrative of the text. The subscription price is \$3.00 per year. Messrs. Charles Scribner's Sons, publishers, 743 and 745 Broadway, N. Y.

THE BROOKLYN (N. Y.) MAGAZINE, to be known after Jan. 1, 1887, as *The American Magazine*, has come to hand in the shape of a fine Christmas number. It is published by the Brooklyn Magazine Co., 7 Murray St., New York, and the subscription price is \$2.00 per year. Among other important features are the regular publication of the sermons of Rev. Henry Ward Beecher and Rev. T. DeWitt Talmage, D. D.

THE CHRISTMAS ART AMATEUR.—The colored study in *The Art Amateur* for December is a marvelous fac-simile of an exquisite figure in water colors, "In Dreamland," by Madeleine Lemaire, the famous Parisian flower painter. It represents a beautiful girl who has fallen asleep in a quaint old arm-chair; the big old-fashioned book in her lap is evidently responsible for her slumbers. A pleasant notice of Mme. Lemaire is accompanied by several fine illustrations of her skill in flower and figure drawing. There is a holiday profusion of decorative designs. The articles on flower painting are concluded, and a new series on fruit painting is begun. An excellent description of "wet" water color painting is given by H. W. Ranger, an expert in that form of art; there are valuable hints for the simple decoration of unadorned apartments, on American silverware, and on church vestments, and the usual "Note Book," and well-filled minor departments. If any reader does not yet know *The Art Amateur*, this Christmas Number is a capital one to begin its acquaintance with. Price, 35 cents; \$4.00 a year. Montague Marks, Publisher, 23 Union Square, New York.

THE COSMOPOLITAN, published by Schlicht & Field Co., at Rochester, N. Y. Subscription price, \$2.50 per year. This handsome magazine contains 64 pages, and is full of short stories, travels, adventures, and a great abundance of other interesting and instructive matter. A handsome premium is offered with the magazine, the well-known Shannon Letter and Bill File.

THE AMERICAN PROTECTIONISTS' MANUAL is the title of a work by Giles B. Stebbins, of Detroit, Mich. Its title indicates its object, and its contents fully justify the title.

FOR many years the December issues of *Harper's Magazine* have been distinguished by an unusual wealth of choice reading and pictures, with a special emphasis upon Christmas subjects. Rich as have been the previous numbers, the one just out stands easily at the head of all that for nearly forty years have entertained and enlightened innumerable readers. Everything is complete in itself, the serials being omitted from this number. Beside the strongest attraction of "The Boyhood of Christ," by the author of "Ben-Hur," the Howells farce, "The Mouse-Trap," Gibson's delightful "Wood Notes," and the bounteous departments of confidential discourse, of literary judgment, and of overflowing humor, presided over by the geniuses of G. W. Curtis, W. D. Howells, and C. D. Warner, we are regaled with six short stories (four of them beautifully illustrated), and five illustrated poems. Of the abundant cuts, twenty-five occupy full pages, and four are printed separately on plate paper. Notwithstanding the unparalleled richness of this number, we are assured by the publishers that it is only a Christmas form of the exalted standard which will be uniformly maintained throughout the year; and the magnificent prospectus detailing the coming treasures gives a splendid promise to the volume begun by this number.

OGLIVIE'S POPULAR READING No. 36 received—price 30 cents—containing the following eleven stories, all complete: Fighting Her Way, by Rose Ashleigh. Flitters Tatters and the Counsellor, by the author of "Hogan, M. P." Love in Idleness, by the author of "Loveday." Rosie, by a popular author. Atholl, by Mary Cecil Hay. In the Holidays, by Mary Cecil Hay. The Name Cut on the Gate, by Mary Cecil Hay. She Would be a Lady, by the author of "Bridged by His Love." A Great Feast, Mrs. Henry Wood. Josh Billings' Spice Box, by Josh Billings. Sent by mail, post paid, on receipt of price, by J. S. Ogilvie & Co., Publishers, 31 Rose St., New York.

RAND, McNALLY & Co.'s POCKET ATLAS OF THE WORLD is the title of a work of suitable size for the pocket which contains 200 pages of maps of every part of the world and the United States in particular accompanied by curt descriptions and reliable statistics. This little work so pregnant with information can be supplied for the nominal sum of 50 cts.

## NEWS.

ASSIGNED—D. C. Conley, miller at Dundee, Wis.

A BOARD OF TRADE is being organized in Fargo, D. T.

H. SMITH & Co., Grafton, Wis., have made an assignment.

BURNED—Otto Busch's grain warehouse at Two Rivers, Wis.

BURNED—Stevens Bros.' mill and elevator at Cumberland, Iowa.

BURNED—November 5, the Otis grain elevator at Cleveland, Ohio. Loss \$35,000.

SEVEN Minneapolis mills are now using steam power when the water power is not sufficient.

BIRMINGHAM, Ala., is rejoicing over the investment of \$3,000,000 by New York capitalists in her mines and iron works.

At Stevens' Point, Pa., Nov. 10, James Connelly's saw-mill, grist-mill and chair factory was destroyed by fire. Loss \$15,000; partially insured.

It is rumored that a wealthy Minneapolis miller is contemplating the erection of a mammoth mill at Niagara Falls, the future great milling center.

MR. M. D. BEARDSLEE the Minneapolis representative of the Milwaukee Dust Collector Company, has recently received patents for a grain grader which we believe to be valuable.

The firm of Youngblood & Hall, wholesale flour and feed dealers, at Atlanta, Ga., has been dissolved and A. P. Youngblood, No. 61 Alabama street, Atlanta, Ga., continues the business.

THE Prospect Machine and Engine Co., Cleveland, O., have among their late orders an engine of 265 horse-power for the Brown Hoisting and Conveying Co., one of the same size for A. G. Cook, Laconia, N. H.

S. KAMMERER of Fountain City, W. S., an old and experienced miller, is dead. He met with a bad accident about a year ago and since then he lost his mill and dwelling by fire, both of which were uninsured.

Two new grain elevators having a capacity of storing 820,000 bushels, with all necessary machinery for cleaning and grading have recently commenced operation in Buffalo, N. Y. They are accessible by all railways entering Buffalo.

FARMER Roller Mill Co., at Grand Rapids, Mich., has given a chattel mortgage on the stock to Roger Butterfield, trustee for home creditors. The liabilities are \$21,000; nominal assets, \$50,000; actual assets, probably \$30,000. The concern commenced business in June, 1884.

GRATIOT WASHBURN, son of Hon. E. B. Washburne, died of apoplexy in Louisville, Ky., Dec. 17. Mr Washburne was born May 6, 1849, at Galena, Ill., and received his education at Bloomington, graduating at the Normal school. For eight years he was assistant secretary of the American legation in Paris and was among those who remained there when Prussian ordinance thundered at its gates. He returned to the United States and made New York his place of residence, having been accorded a position in the customs house. He had been elected secretary of the American exhibition in '87, and gave his energies and time to the success of the exposition. He was an indefatigable worker, a deep thinker and scholar and a thorough gentleman. He was unmarried.

SUIT has been brought by the United States government against the owners of the water power at Neenah and Menasha to perpetually restrain them from draining off water from Lake Winnebago and the Lower Fox river, for hydraulic purposes, when the level is at or below the foot of the dam at Menasha which is the governing point for water levels. Complaint has been made by vessel men that the low stage of the water impeded navigation last season, and that in addition to the drought they had to contend with millmen, who drew off sufficient water to make the situation worse than it would have been otherwise. The action is partly because of the intention of Menasha men to dig a new canal on which to erect large mills, and which will call for the use of more water even than last year. The action of the government will only have a serious effect on millmen during severe seasons of drought, when it may cause them to close down.



**BEWARE OF RUNNING MACHINERY.**

Referring to the death of Thomas G. Ferguson recently, by accident in a mill, *The American Millwright* says: "From the circumstances connected with the accident, none there be to blame him with carelessness. For years he had been employed around machinery, and like many others of the craft, thought his experience would insure his safety. This accident ought to induce additional caution and carefulness on the part of those having business around moving machinery, and to further the exercise of caution we herewith give a few instructions on the subject. Wear close fitting clothes. Have a blouse or jacket to button tight around the waist or body; have the sleeves to fit the arms closely as far up as the elbow. Never wear a coat around machinery. Never approach a pair of gears or a pulley from the driving side. Never attempt to save time by putting or trying to put on any fast-running belts without slacking up or stopping entirely to do it. It is cheaper to stop to put on a belt than to attend a funeral, perhaps your own. Never allow an inexperienced person to go through the mill without an attendant. Never allow a woman to go through a mill—no matter how many attendants—while in motion. Never attempt to go through a mill in the dark. You may forget the exact location of some dangerous object and seek to avoid it, but it is still there, noiselessly waiting a chance to wreck you. Never allow any dangerous place to be left unguarded. Keep your eyes open while oiling. Never relax your vigilance for an instant; it may cost you your life. Cold cast iron has a total disregard for human flesh and the safest way is to acknowledge its power and avoid a test of strength. Many people need no telling to 'grab a post' or any thing you can hang on to, but if you feel a gentle tug at your clothes, grab, and grab quick and don't let go till the cloth does. We always thought that we were as careful as a man could be, nevertheless, we have been 'caught' more than once, and only an instantaneous effort saved us from injury and possible death. We have been an unwilling witness to many a mill and factory accident and have seen some victims escape with the loss of their clothes, while others have been torn and mangled by the merciless machinery. One cannot be too careful. Too much cannot be done to lessen the dangers of machinery. Experience seems to give no absolute safety. Nothing can. Your own carefulness will be your greatest protection."

**NONSENSE.**

**A BEAR STORY.**—The boys are nearly all down from the mountains now, securely housed for the winter. One of them says: "Over onto Yankee Fork last season I struck some rich float. It was good, you bet. Being rather late in the evening, and knowing there was no one around, thought I'd take it in next morning. Well, I started out early, before sun-up, and I was so excited that I left my gun in the blankets. Well, as I was traveling along the trail, just where the canyon narrows so that two men could hardly pass each other, what in thunder should I see but a big brown bear coming down the trail. Now I had nothing on me to show fight with, and the bear didn't seem inclined to runaway, and

I was in a bad fix. Well, boys, do you know what I did? I just fell down on all-fours and commenced to prance. The bear pranced, we both pranced up to each other; he sidled up to me, and I sidled up to him; he kissed my ear and I kissed his; and we both went along about our business as though nothing had happened.

**THIS IS REFORM.**

The Wisconsin Central Line has resolved upon a reform which should be imitated by all the roads in the country.

It has decided to increase the pay of the porters and waiters employed on its sleeping and dining cars to an amount which will give them ample compensation for their work, and prohibits them from receiving "tips" from passengers. Orders are issued to them to receive no money from any passenger, except for blacking shoes, "when requested" to do so. For that service they are permitted to accept ten cents.

The passengers on the Wisconsin Central after this will not be annoyed by the un-American system of gratuities to employes of the road. The road will pay its employes and not trust to the charities of the traveling public to maintain them.

This is a real reform. It is a greater boon to the employes even than to the public. It relieves them from a degraded position. The man who depends upon "tips" for a livelihood necessarily loses self-respect. The system is one which is inconsistent with the status of a free American citizen. It is a disgrace to the great railway corporations that they have so long fostered this degrading practice. They are amply able to pay fair wages to all their employes, but they have left one class of them dependent upon the charity of others. The wages paid to sleeping car porters have been hardly sufficient to pay their board, and they have been forced to rely upon the gratuities received from passengers, leading them to obtrusive attentions upon those who feed them liberally, while others were correspondingly neglected. The Central road is entitled to great credit for setting the example of paying its men fair wages and prohibiting "tips" on its line.

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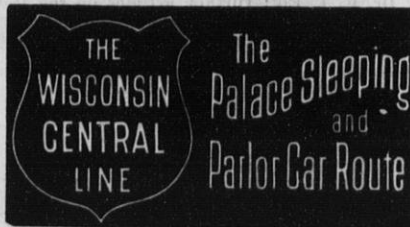
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Notable special papers to be published very early are General F. A. WALKER'S ON SOCIALISM; Dr. WILLIAM HAYES WARD'S ON BABYLONEAN CYLINDERS; Mr. JOHN C. ROPES' ON THE PORTRAITS OF CÆSAR; Captain GREENE'S ON COAST DEFENCE, etc., etc.

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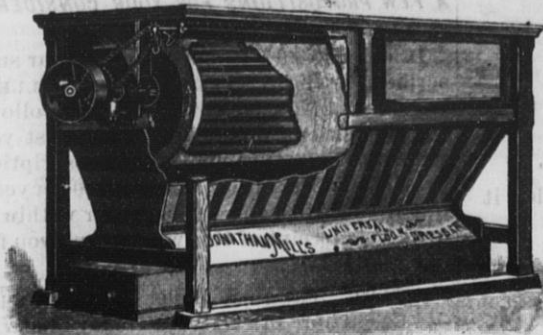
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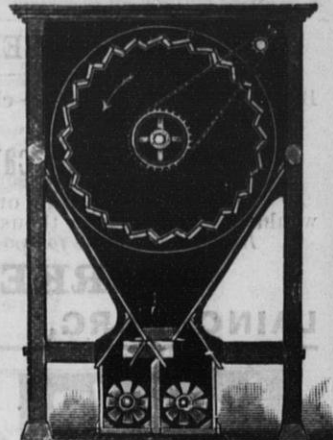
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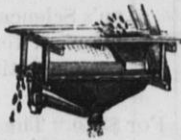
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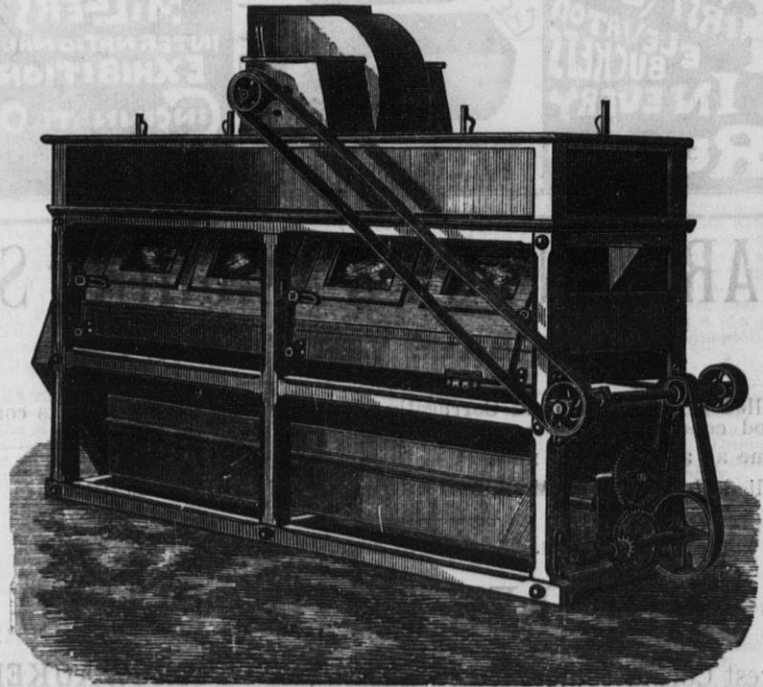
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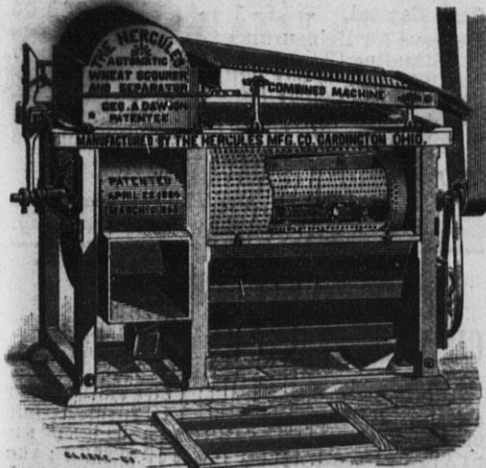
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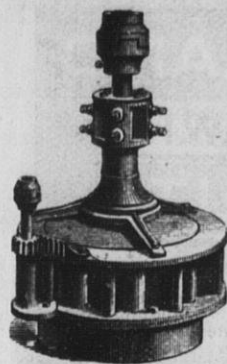
**Fire Insurance.**  
 Every miller and manufacturer having an A 1 risk, should apply for insurance in the Allied Mutual Fire Insurance Companies, of which S. H. Seamans, Milwaukee, Wis., is secretary.

**CONNECTICUT**  
**FIRE INSURANCE CO.,**  
 HARTFORD, - CONNECTICUT.  
 Cash Capital, - - - - - \$1,000,000 00  
 Reserve for Reinsurance, - - - - - 580,669 40  
 Outstanding Claims, - - - - - 90,396 57  
 Net Surplus, - - - - - 303,683 78  
 Total Assets, Jan. 1, 1886, - - - - - \$1,974,749 75  
 Surplus to Policy-holders, - - - - - \$1,303,683 78  
 J. D. BROWNE, President,  
 CHARLES R. BURT, Secretary.  
 L. W. CLARKE, Ass't Secretary.

**Attention!**  
**CUSTOM and EXCHANGE MILLERS.**

We have made arrangements with Potter & Huntington, whereby we can furnish one of their EXCHANGE TABLES and UNITED STATES MILLER for one year, for \$1.50; the price of the Exchange Table alone is \$1.00. This is probably the best Table ever prepared for Millers doing an Exchange or Custom Business. The range is from 25 to 36 lbs. of flour to each 60 lbs. of wheat, and corresponding amount of bran and middlings. (Toll and waste in milling deducted.) There are twelve Tables each of a different grade of wheat, and each Table a different amount of flour and feed and can be used for any amount of wheat, from two lbs. up to any No. of bushels. There is no guess work about it, but all from actual experience. By it the Miller is always sure of his allowance of Toll. Hundreds of them are being sent to all parts of the United States and Canada. Send us One Dollar and Fifty Cents and we will send the Table and credit you for one year's subscription to the UNITED STATES MILLER. Address, UNITED STATES MILLER, 124 Grand Avenue, Milwaukee, Wis.



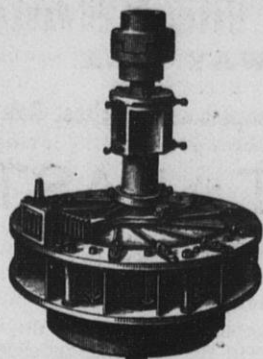


The "HOPEWELL"  
TURBINE  
Water Wheel.

IS THE BEST.

For full particulars address

A. J. HOPEWELL,  
EDINBURG, VA.



JAMES LEFFEL'S IMPROVED  
WATER WHEEL,

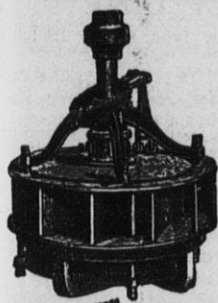
Fine New Pamphlet for 1885.

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 sent free. Address,

JAMES LEFFEL & CO., Springfield, Ohio,  
and 110 Liberty St., New York City.

[Please mention this paper when you write to us.]

Improved + Walsh + Double + Turbine



This wheel has a perfect fitting cylinder gate and draft tube combined, and allows no water to escape when closed.

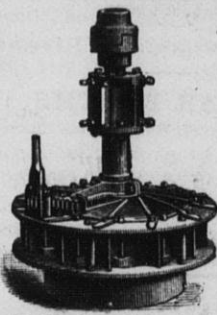
POWER GUARANTEED

equal to any wheel on the market using equal amount of water. Address for particulars,

B. H. & J. SANFORD,

Phoenix Iron Works,

Sheboygan Falls, Wis.



POOLE & HUNT'S  
Leffel Turbine Water Wheel

Made of best material 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 to us.]

Preserve your Copies of the

UNITED STATES MILLER

—IN AN—

ULLRICH BINDER

This binder is suitable for binding your copies of the UNITED STATES MILLER for two or more years, any required number can be taken out without disturbing its contents. Binders made for all Publications, for binding Music, etc.

ITS EQUAL CANNOT BE FOUND.

Send post paid for \$1.10. Address

UNITED \* STATES \* MILLER,  
MILWAUKEE, WIS.

Flint & Pere Marquette R. R.

LUDINGTON ROUTE.

Fast Freight & Passenger Line.

Freight Contracted on through Bills Lading to all points in

Michigan, Indiana, Ohio,  
New York, Pennsylvania,  
New England & Canada.

AT LOWEST RATES.

All freight insured across Lake Michigan. Passengers save \$2.75 to all points East.

Dock and Offices, No. 50 West Water St., one block from Union Depot.

L. C. WHITNEY,

Gen'l Western Agent.

Partner Wanted

FOR THE MANUFACTURE AND SALE OF A

NEW

Machine for Flour Mills,

(Patented.)

For the Dominion of Canada.

ADDRESS,

W. K., Post Office Box 30, Young America Minn.

Marshall Automatic Grain Scale

FOR USE IN

FLOUR MILLS,

BREWERIES,

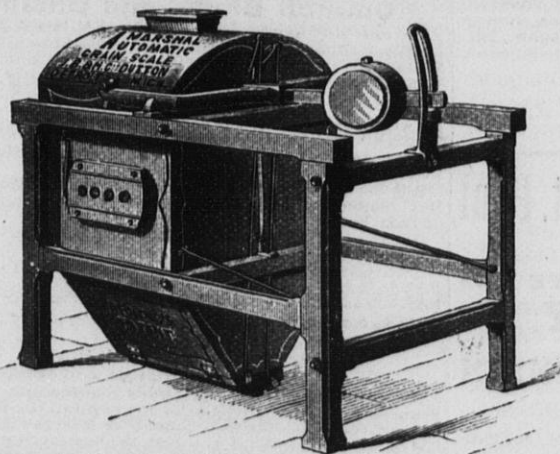
Malt Houses,

ELEVATORS,

Distilleries, \* Rice \* Mills,

OIL MILLS,

Starch Factories, &c.



This Scale is designed for weighing and registering the amount of grain transferred from one point to another. The weighing and recording is absolutely correct, and the machines are sold with a guarantee to that effect. By their use the miller can tell at any time how much wheat he is using to make a barrel of flour, and know at once whether he is milling at a profit or loss. This scale can be used with equal advantage by shippers of grain or others who desire to know how much grain, flour feed, bran, shorts, screenings, coal (or any other thing that can be spouted), is being transferred, with a perfect record made of same.

J. B. & H. C. DUTTON, Detroit, Mich.

JACKSON, MICH., Nov. 13, 1885.

Gentlemen: We have used the Marshall Automatic Grain Scale in our mill for six months, and it has proved entirely satisfactory.

Yours truly,

ELDRED MILLING CO.

J. B. DUTTON & CO., DETROIT, MICH.

No. 52 WOODWARD AVE.

SOLE OWNERS OF THE PATENT.

Also handle a full line of Flouring Mill Machinery.



WILL CURE any case of Blind, Bleeding, itching, or Protruding PILES.

Never Fails. Cure Guaranteed. Price per Box, 50 cents and \$1.00. (Physicians' Jars, for use in their practice, \$2.00.)

Dr. Williams' Indian Pile Ointment is sold by all Druggists, or mailed on receipt of price by the Williams Mfg Co., Cleveland, O.

[Please mention this paper when you write to us.]

"TRIUMPH" CORN SHELLER

CAPACITY

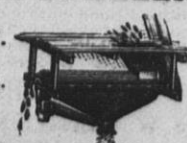
2000 BUSHEL PER DAY.

Shells wet or dry corn.

CHEAPEST AND BEST SHELLER.

PAIGE MANUF'G CO.,

No. 12 Fourth St., Painesville,



[Please mention this paper when you write to us.]



**GOODRICH PASSENGER STEAMERS**  
TWICE DAILY EACH WAY

—BETWEEN—  
**Milwaukee & Chicago.**  
Fare to Chicago \$1 less than by railroad.

**Chicago and Racine Line.**

Leave Milwaukee.....	FOR	Arrive at Milwaukee.....
7:00 P. M.	Chicago.....	5:00 P. M.
7:30 A. M.	Chicago.....	5:00 A. M.
7:00 P. M.	Racine.....	5:00 P. M.

**Fare to Chicago Only \$2.**

Round Trips, \$3.50, meals and berths included on first-class tickets.

Sure connections at Chicago with all morning trains for all points East, South and Southwest.

**Sheboygan & Manitowoc Line.**

Daily.*	Leave Milwaukee.....	At Milwaukee	Arrive Milwaukee.....
	7:00 a. m.	4:00 p. m.	

**Manistee & Ludington Line.**

Daily, leave 7 P. M., except Sunday.

**Saginaw & Bay City Line, Daily except Sundays.**

Milwaukee.....	Leave Milwaukee.....	At Milwaukee	Arrive Milwaukee.....
*7:00 p. m.	7:00 a. m.	8:00 a. m.	

Making close connections at Ludington with F & P. M. R. R. for Saginaw, Bay City, Detroit, and all points in Northern Michigan and all points East.

**Pierpont & Frankfort Line.**

Leave Milwaukee daily at 7:00 P. M., except Sunday.

**Kewaunee & Ahnapee Line.**

Leave Milwaukee Tuesdays, Thursdays and Saturdays, at 7 A. M.

**Menominee & Sturgeon Bay Line.**

Tuesdays, Thursdays and Saturdays at 7 A. M.

**Green Bay & Escanaba Line.**

Leave Milwaukee Tuesdays, Thursdays and Saturdays at 7 A. M., touching at Oconto, Menominee, Nahma, Fayette, Depere, and making close connections with railroad at Escanaba for Nequaunee, Ishpeming, Quinnesec, Norway, and all Lake Superior points.

\*Mondays. †Sundays.

G. HURSON, Secretary and Agent.  
THOS. FORBES, Passenger Agent.

**Green Bay, Winona & St. Paul**

**RAILROAD**

IS THE **SHORTEST ROUTE FROM GREEN BAY**

and all points in

**EASTERN \* WISCONSIN**

—TO—

- NEW LONDON,
- STEVENS POINT,
- GRAND RAPIDS,
- WAUSAU,
- MERRILL,
- WINONA,
- LA CROSSE,
- CHIPPEWA FALLS,
- STILLWATER,
- HUDSON,
- EAU CLAIRE.

**ST. PAUL, MINNEAPOLIS,**

and all points in MINNESOTA, DAKOTA, and all points on the

NORTHERN PACIFIC RAILROAD and ST. PAUL, MINNEAPOLIS & MANITOBA RAILROAD.

Passengers from all points on the CHICAGO & NORTHWESTERN R'Y, south of Green Bay and Fort Howard, connect with the

**C. B., W. & St. P. R. R.**

—AT—  
**FORT HOWARD JUNCTION.**

They will find it

**THE SHORTEST LINE**

to all the above points.

**THE PASSENGER EQUIPMENT**

of this Road embraces all the modern improvements and conveniences that tend to make traveling by rail safe and comfortable.

Be sure your tickets read via the

**Green Bay, Winona & St. Paul Railroad.**

S. W. CHAMPION, General Manager.  
GAVIN CAMPBELL, General Manager.  
GREEN BAY, WIS.

**Detroit, Grand Haven & Milwaukee RAILWAY LINE.**

The Shortest, Cheapest and Quickest Route

—BETWEEN THE—

**WEST AND EAST**

New York, Boston, and all points in Northern and Eastern Michigan.

COMMENCING MAY 17th,

the Palace Side-wheel Passenger Steamer "City of Milwaukee," will leave Milwaukee daily, Sundays included, at 11:45 noon and connect at Grand Haven with Limited Express Train which leaves at 6:00 P. M. Time, Milwaukee to New York, 32 hours.

Ticket Office, 99 Wisconsin Street,

—WHERE—

**SLEEPING CAR BERTHS**

can be secured. Dock, foot of West Water Street.

GEORGE B. REEVES, B. C. MEDDAUGH,

Traffic Manager, West. Pass. Agt.  
Chicago, Milwaukee.

W. J. SPICER, Gen'l Manager, Detroit, Mich.

**THE CHICAGO AND**

**NORTH-WESTERN RAILWAY.**

THE BEST ROUTE AND SHORT LINE BETWEEN

**Milwaukee, Chicago, Council Bluffs, and Omaha.**

The only line to take from Chicago or Milwaukee to Freeport, Clinton, Cedar Rapids, Marshalltown, Des Moines, Sioux City, Council Bluffs, Omaha and all points West. It is also the

**SHORT LINE**

Between Chicago, Milwaukee and ST. PAUL OR MINNEAPOLIS, and the best route to Madison, La Crosse, Ashland, Duluth, Winona, Huron, Aberdeen, Pierre and all points in the Northwest.

It is the direct route to Oshkosh, Fond du Lac, Green Bay, Ishpeming, Marquette and the mining regions of Lake Superior.

It is the LAKE SHORE and PARLOR CAR ROUTE between

CHICAGO and MILWAUKEE,

PALACE SLEEPING CARS on night trains.

PALATIAL DINING CARS on through trains between

Chicago and Milwaukee,

Chicago and St. Paul,

Chicago and Council Bluffs,

And Chicago and Winona.

If you are going to Denver, Ogden, Sacramento, San Francisco, Helena, Portland, or any point in the West or Northwest, ask the ticket agent for tickets via the "NORTHWESTERN" if you wish the best accommodations. All ticket agents sell tickets via this line.

M. HUGHITT, Gen'l Manager.  
R. S. HAIR, Gen'l Passenger Agent  
CHICAGO.

Milwaukee Office, 102 Wisconsin St.

**Milwaukee & Northern Railroad.**

THE OLD RELIABLE ROUTE.

**17 Miles the Shortest Line**

—TO—

**GREEN BAY,**

Fort Howard, Depere, Menasha, Neenah, and Appleton, Marinette, Wis., and Menominee, Mich.

—THE NEW ROUTE TO—

New London, Grand Rapids, and all points in **CENTRAL AND NORTHERN WISCONSIN.**

The new line to Menominee is now completed, and opens to the public the shortest and best route to all points on the Michigan Peninsula.

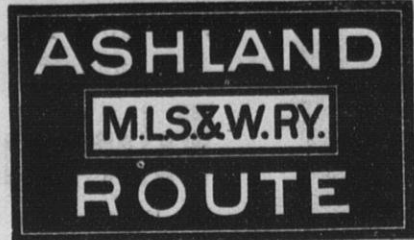
**CONNECTIONS.**

AT PLYMOUTH with the Sheboygan and Fond du Lac Division Chicago & North-Western R'y for Sheboygan and Fond du Lac.

AT FOREST JUNCTION with Milwaukee, Lake Shore and Western Railway.

AT GREEN BAY with Chicago & North Western and Green Bay, Winona & St. Paul Railroads, for all points North and West.

C. F. DUTTON, General Supt.



The Milwaukee, Lake Shore & Western Railway has been well named the Fishing and Hunting Line of Wisconsin, passing, as it does, through thousands of acres of but partially explored woods and within easy reaching distance of lakes and streams that have never been fished by white men, all well stocked with the game fish for which Northern Wisconsin waters are noted. The woods abound with game; deer, bear, wolf, mink, beaver, pheasant, and other game are quite plentiful.

**THE ONLY LINE**

From Milwaukee to the new Iron Mining District in Wisconsin and Michigan—Gogebic, Wakefield, Bessemer, Ironwood and Hurley.

Direct line to ASHLAND and beyond.

Sleeping cars between ASHLAND and CHICAGO. The GUIDE BOOK, and other descriptive matter, containing full information, maps and engravings of the country traversed by the line, will be sent on application to the General Passenger Agent.

CHAS. A. COLE, Gen. Agent, 105 Washington St., Chicago.

Chicago Depot, Cor. Wells and Kinzie Sts., (C. & N. W. R'y.)

H. F. WHITCOMB, Gen'l Manager.

CHAS. V. MCKINLAY, Gen'l Pass. Agent.

MILWAUKEE, WIS.

This space will be occupied by an advertisement of the

**WISCONSIN CENTRAL LINE,**

the recognized Popular Route between Chicago and St. Paul and Minneapolis.



Owens and operates nearly 5,500 miles of thoroughly equipped road in Illinois, Wisconsin, Iowa, Missouri, Minnesota and Dakota.

It is the Best Direct Route between all principal points in the Northwest, Southwest and Far West.

For maps, time tables, rates of passage and freight, etc., apply to the nearest station agent of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, or to any Railroad Agent anywhere in the World.

R. MILLER, General Manager.

A. V. H. CARPENTER, Gen'l Pass. and Tkt. Agt.

J. F. TUCKER, Ass't Gen'l Manager.

GEO. H. HEAFFORD, Ass't Gen'l Pass. and Tkt. Agt.

MILWAUKEE, WISCONSIN.

For notices in reference to Special Excursions, changes of time, and other items of interest in connection with the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, please refer to the local columns of this paper.



## UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00  
 To Canadian subscribers, postage prepaid..... 1.00  
 Foreign subscriptions..... 1.25  
 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 mail matter of the second-class.]

MILWAUKEE, JANUARY, 1887.

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.

## MILWAUKEE AMUSEMENTS.

ACADEMY OF MUSIC—Performances every evening, Wednesday, Saturday and Sunday matinees.

GRAND OPERA HOUSE.—Performances every evening, and Wednesday, Saturday and Sunday matinees.

DIME MUSEUM—Performances every hour from 1 P. M. to 10 P. M. every day.

PALACE THEATRE—Every evening, Wednesday, Saturday and Sunday Matinees.

STADT THEATRE—(German)—Wednesday, Friday and Sunday evenings.

CHICAGO trade for 1886 is placed at \$997,000 000.

The total fire loss in the United States and Canada, for the year 1886 is placed at 116,600,000. It is fearful to contemplate.

M. Jossi of Antwerp, Belgium, has invented an apparatus for the aeration of cargoes of grain by means of compressed air. The new system is not expensive, and is readily applied.

A CONSIDERABLE demand for California wheat from Peru has arisen, for the reason that Peru has closed her ports against Chili, on account of cholera.

PROMINENT grain dealers of New York, Philadelphia, Baltimore and Chicago are making arrangements to form an association for the purpose of carrying their own insurance on grain in registered warehouses.

MESSRS. G. W. BROWN & SONS, of Beecher City, Ill., writes us as follows: "We desire a good miller to erect or assist (say half) in erecting a flour mill in our village. This we consider as good a location as any in central Illinois. Our citizens are willing to help an enterprise of this kind liberally.

CUSTOM and Exchange millers will consult their interests by reading the advertisement concerning "EXCHANGE TABLES" on another page.

THE annual report of the Millers' National Insurance Co. of Chicago, Ill., has recently been issued. It shows a surplus over all liabilities of \$1,122,904.71. This includes \$935,984.29 of deposit notes subject to assessment. The total losses for the year 1886 were \$88,926.21.

The total losses paid since organization in 1876 amount to \$632,601.44. Col. W. L. Barnum is secretary of the Company, and his address is No. 205 La Salle st., Chicago, Ill.

THE almanac for 1887 gives a few items of general interest. New Year's Day came on Saturday, Washington's Birthday comes on Tuesday, St. Valentine's Day on Monday, April-Fool Day on Friday, Memorial Day on Monday, Fourth of July on Monday, Christmas on Sunday; Easter Sunday will be on the 10th of April; Lent begins March 2. There will be four eclipses—two of the sun and two of the moon; one (Feb. 8,) visible as a partial eclipse in the United States. The others that occur, as follows, are not visible in the United States: The annular eclipse of the sun, Feb. 23; Aug. 19, of the sun.

OPERATIVE millers desiring a thoroughly practical work on milling can do no better than to purchase "Gibson's Gradual Reduction Milling." Price \$3 or with the UNITED STATES MILLER one year, \$3.50.

ABOUT 8 o'clock, in the evening of Jan. 6, a fire broke out in the foundry department of the Reliance Works of Edw. P. Allis & Co. Damage is estimated to amount to about \$50,000. Fully insured. Quite a number of men will be thrown out of employment for about two months, in which time it is expected that a new foundry will be built. The firm sends a large number of their men to Pullman, Ill., where they have made arrangements to do their work until the completion of the new shops. There will be little delay in filling orders.

It is reported that a young man traveling for Edw. P. Allis & Co., has recently swindled the firm out of \$1,900 and left for parts unknown.

THE *American Machinist* says: A machinery dealer sold an engine and boiler to a party in Georgia under an agreement reserving title and ownership in the seller until the whole purchase price should be paid. This was supposed to be a very safe transaction, but as the property was destroyed by fire, and as the Supreme Court of Georgia has decided that in the absence of negligence on the part of the buyer the risk was wholly that of the seller, that machinery dealer has lost faith in the security of such contracts.

FOR \$1.80 we will send to any address in the United States or Canada post-paid, the *New York World* (weekly), THE UNITED STATES MILLER (monthly) and the *History of the United States*, a handsome volume of 320 pages bound in leatherette tree calf and containing 22 engravings.

## MUTUAL INSURANCE COMPANIES DO SOMETIMES FAIL.

The announcement is made by the *Standard* of Boston, that the Spinners' Mutual Fire Insurance Company, of that city, of which Edward Atkinson is president, has gone into voluntary liquidation. The reason of this is understood to be the loss of \$28,000 on the Indian Orchard Mill, which was lately burned, and a bad run of losses in general business.—*Spectator*.

This is certainly a great surprise to many underwriters and others who felt that such a

thing as failure was hardly possible with any of the New England Mill Mutuals. Not only had the system been regarded as affording substantial protection, but it had been looked upon as a system affording insurance far below any rates that could be safely named by any stock companies. The *Spectator* says that the Spinners' Mutual was represented from the first to be a gilt-edged company, and if it could not make a success, it will be astonishing if some of the other mutuals do not speedily follow its example and close up their business.

ROBERT GRIMSHAW'S new work, entitled "The Pump Catechism" is just out. Price \$1.00. The work is a practical help to runners, owners and makers of pumps of any kind. It covers the theory and practice of designing, constructing, erecting, connecting and adjusting pumps. The work can be ordered from the UNITED STATES MILLER.

WE have received from Mr. Bruno Kniffler, representing the Moritz Martin patent, No. 211,033, a copy of the decree of the U. S. Circuit Court for the Eastern Dist. of Michigan, in the case of Moritz Martin, complainant, vs. The Geo. T. Smith Middlings Purifier Co., impleaded with A. H. Kirk, W. H. Fender and Sam. L. Bean, defendants, which decrees the complainant a proportionate share of the royalties paid to the Smith Co., by the Milwaukee Dust Collector Co., for license to manufacture dust collectors under nineteen different patents, including No. 211,033. The amount of such royalties to be paid over to complainant was referred to Wm. J. Wells of Detroit, Mich., as Special Commissioner of the Court for determination.

## BUREAU REPORTS.

IN commenting on the recent action of our Chamber of Commerce, the *N. Y. Commercial Bulletin* says: "The Milwaukee Chamber of Commerce has taken a stand against the publication of monthly reports by the National Bureau of Agriculture, on the off-hand assumption that such a publication subserves no useful purpose to the agricultural and commercial interests, and enables foreign customers to establish values for our crops, in advance of the harvest, often less than the actual out-turn would warrant. The National Board of Trade accordingly is to be petitioned to use its influence with a view of suppressing these reports. We doubt if the National Board will do any such thing. The Bureau Reports unquestionably are susceptible of improvement in more ways than one, but as they stand, they are infinitely better than nothing, and it is preposterous to allege that they 'subserve no useful purpose to the agricultural and commercial interests.' It may well be asked, where would the commercial and agricultural interests be without them? Simply at the mercy of whatever reports and estimates it might suit the professional speculators to put forth."

We will send the *United States Miller*, The *American Miller*, and The *Northwestern Miller*, (weekly), and The *Milling World*, (weekly), for one year, to any address in the United States or Canada for \$4.00, or to any Foreign Country for £1. 3s.



## DULUTH ITEMS.

DULUTH is to have an elegant union depot built during 1887. The building will be owned and operated by a joint stock company.

A LARGE number of men are at work clearing the right of way on the Duluth short line between Oneonta and Thomson.

THERE is a great deal of interest manifested in elevator building, and it is estimated now that not less than 10,000,000 bushels of storage capacity will be added during 1887, and prominent railway officials and shippers and receivers claim that it will all be needed. President Fisher, of the St. Paul & Duluth road, says that his road would have brought from 8,000,000 to 10,000,000 bushels more wheat here this winter if there had been sufficient elevator room, while the Omaha road has been prevented from bringing here 1,500,000 bushels of corn. The receipts of wheat here since last January have amounted to 22,550,000 bushels for the year, while shipments were 16,764,192 bushels. The gain in receipts over last year is 6,725,000 bushels, and in shipments 3,000,000 bushels. Had Duluth had sufficient elevator capacity, her receipts would have been larger than those at Minneapolis, which leads this year by about 8,000,000 bushels.

WHEAT thieves have been bothering grain receivers for some time. It is estimated that over twenty cars of wheat have been stolen during the past few months. Efforts are being made to put a stop to it.

A NEW bank to be called the Union National Bank of Duluth is soon to be opened in Duluth. The authorized capital is \$2,000,000 and paid up capital \$500,000. A new private bank with a capital of \$200,000 will soon start business.

THE new DULUTH EXCHANGE was formally opened on the afternoon of January 3. In concluding the opening address President Beneteau said:

"In conclusion, gentlemen, I might say that the Duluth Produce Exchange offers special inducements to operators in almost every line of business peculiar to our location, including transportation and insurance."

Mayor Sutphin, Hon. H. S. Colfax, late of Colfax, Dak., Col. Lucien J. Barnes, Secretary of the Exchange, and others made eloquent and instructive speeches. We cannot resist making the following brief extract from the speech of Col. Barnes.

Our shipments of flour increased from 1,155,000 barrels for 1885, to 1,350,000 barrels for 1886.

Our receipts of wheat for the year 1886 were 22,672,000 bushels, as against 15,000,000 for 1885.

It will be observed that our receipts and shipments of wheat for the past year exceeded those of Chicago by several million bushels, and our wheat was not only of a better quality, but it was clean before it was received or admitted to storage in the elevators of our city. The storage capacity of our elevators is now 11,500,000 bushels, and with the completion during the present season of four new elevators, we shall be in condition to furnish storage room for 15,000,000 bushels.

Our elevators now contain about 10,000,000 bushels, as compared with 5,000,000 bushels at the close of 1885. We received by lake during 1886, 700,000 tons of coal, as compared with 600,000 tons during 1885.

The value of new buildings erected in Duluth during 1886 was \$3,000,000 and in addition thereto the railroads terminating here paid out \$1,000,000 for new docks, flour sheds, depots, side tracks and other terminal

facilities, while the early future promises greater activity in the line of railroad building in the section of country tributary to Duluth than has been witnessed at any time in our past history.

Not many years ago, our city was of so little importance, that even its location was totally unknown to the great and wise men in Congress who listened with rapturous delight to the sarcastic description by the member from the Kentucky blue grass region, who has since climbed into the gubernatorial chair, of the imaginary commercial greatness then hovering over the devoted heads of the few pioneers and cruisers who had penetrated to these unknown and frozen regions of the north. Now twenty-eight passenger trains arrive at and depart from our city. All honor to the pioneers and early settlers of Duluth for their sagacity in selecting the site laid out by nature as combining advantages not possessed by any other city upon the great chain of lakes. All honor to that distinguished financier, Jay Cooke, of Philadelphia, whose name will ever be gratefully remembered by his loyal fellow countrymen for his eminent services to the government during the dark days of the war for the union, and who secured the construction of the Northern Pacific railroad from Duluth to the fertile valleys and boundless prairies of Dakota.

All honor to the firm of Carrington & Casey, merchants, who rose from their primitive and miniature commercial transactions at the little town of Middlebury, to their present position in the world of business, and whose wealth and good judgment located and completed the first elevators built in our city, which have contributed so greatly to the growth and prosperity of Duluth.

All honor to those who opened up the canal which connects our peerless harbor with the waters of the great lake.

All honor to George C. Stone and his associates, for the discovery and development of the great field of wealth, hidden but a short distance below the surface of the earth, along the Vermillion range.

Honor to those who maintained their allegiance to Duluth, through good report and through evil report, through the crisis in her history until they can to-day witness her on the high road to a growth and prosperity which is to be astonishingly great, brilliant and permanent.

As an indication of this, permit me to refer to the activity which has characterized real estate transactions at this point during the past twelve months. It appears from the records of the register's office that there have been over 2,000 transfers recorded during that period, covering a valuation of \$5,000,000. In the accomplishment of this result the real estate agents operating here at the beginning of the year, have been largely assisted by others coming from various points in Dakota and elsewhere, who now seem determined to capture their share of business on the floor of this exchange. We welcome them as valuable additions to our organization. Henceforth, let every stranger visiting Duluth find his way to the Produce Exchange rooms, and he need not depart therefrom without a feeling of relief as well as of satisfaction.

The rate of taxation for all purposes, has been fixed for the present year upon Duluth property at 22 2 mills, the assessed valuation being about \$12,000,000.

Our public and private schools and churches are in a flourishing and prosperous condition. We have just erected a handsome high school building at a cost of \$20,000, and an equal amount has been expended during the past year for the erection and improvement of other buildings and grounds.

In these few remarks hastily prepared, I have purposely refrained from indulging excessively in statistics, and refer you to the annual reports of our newspapers and of our various commercial organizations for more complete and detailed information.

We may well congratulate ourselves upon the many and unmistakable evidences of prosperity in our midst, the rapid growth of our city in wealth and population, and especially upon the rapidly increasing membership of the Duluth Produce Exchange.

## INDIAN vs. AMERICAN WHEAT.

There seems to be an idea prevalent that India can so successfully compete with America in the matter of wheat growing that the latter country will, ere long, be beaten out of the field, on the score of cheapness of production. This idea has probably been brought about by the fact that within the last seven years the Indian wheat exports have risen from one to five-and-a-half million quarters, which latter figure is about the total likely to be reached in the present calendar year; and also by the fact that the present low prices of wheat are considered to have been mainly caused by this increase in Indian wheat supplies. We do not share this latter opinion, but consider that present low prices have been brought about by over-production alone, in which the Indian supplies have played one of the least important parts. It may at first sight be granted that as the native Indian wheat cultivator works for something like 2d a day, the Indian farmer starts with a great advantage over his American rival. It has also been endeavored to be demonstrated by figures that 30s per quarter is the minimum average price at which Indian wheat can be laid down in London, whilst American wheat cannot be grown profitably for less than 32s 6d, if it can for that, which there is reason to doubt. On this point it may be argued that if the present value of the Indian rupee were not exceptionally low (1s 5½d) the Indian farmer would not be able to grow wheat at the above price; and it is open to believe that the present abnormally low value of silver will not always be maintained, indeed it has already risen 10 per cent. from the lowest point this year. Indian wheat, moreover, largely as it has grown in consumption of late years, could not be expected to entirely supplant other varieties; for instance, if a British or Continental miller were to make his flour wholly from Indian wheat, he would find it unsaleable, in other words, Indian wheat cannot stand alone as a flour making grain for European tastes, therefore there would always be a limit beyond which the supply of India could not profitably grow, whilst almost every other quality of wheat would stand alone if no other sort of wheat were forthcoming. There is, moreover, considerable vagueness about the home requirements of India; we know approximately that India grows 35 million quarters of wheat in a good season; we know, too, that a larger quantity than five million quarters has never yet been exported in one year, and that, nevertheless, there is no accumulation of old wheat; on the contrary, we are told that the natives, who used to store the whole of the surplus of one or even two harvests, in pits, are now complaining of the emptiness of these pits. This, therefore, would seem to dispose of the notion that ten years ago India only produced fifteen to twenty million quarters. A country like India, with its lack of transport facilities and absence of modern machinery, and its primitive method of growing wheat, is not likely to have more than doubled its growth of wheat in a single decade; on the contrary, the growth of the cultivation of wheat under present conditions in India must of necessity be slow. America, on the other hand, grows on its present acreage, in fairly good years more than sixty million quarters, against less than forty million quarters ten years ago, and has exported in one year within the



decade nearly twenty-five million quarters, and might possibly have an equal amount to spare next season if the crop yields well. Thus it would appear that India's capacity to export is at a maximum six million quarters, and that this maximum has been reached within the last two years, so that for the present, at least, there is not much prospect of America being beaten out of the field as a wheat grower by India.—*Millers' Gazette* (London, Nov. 1).

#### FROM BRADSTREETS.

CHICAGO AS A GRAIN MART.—The fact that receipts of wheat at Chicago this season have declined, and that what it has lost in this direction has been gained largely by Minneapolis and Duluth, has stirred up newspapers as well as members of the grain trade in the northwest. It is noted, too, that the chief grain inspectors at Chicago and a committee of the Chicago Board of Trade have been examining the methods of handling grain at the northwestern cities named, presumably with the intention of improving their own when they get home again. It is alleged that Chicago has thus far graded wheat which was not quite clean, quite low, against the merits of the grain, and that from this practice the opportunity to buy good wheat cheap and clean it (say at Milwaukee, after paying extra carriage) has given rise to a regular business in that line at the cost of consignors. Meanwhile the practice is working its own cure, and Chicago is surprised to realize that Minneapolis, St. Paul and Duluth grade wheat subject to cleaning, that the elevators are all fitted with cleaning apparatus and that a state weighing law are among a few reasons why Chicago's long supremacy as a grain market had begun to show signs of a decline.

PATENT—PRIOR PUBLICATION—SPECIFICATIONS IN FOREIGN LANGUAGE.—The question was recently raised in England whether the deposit of a specification in the German language in the library of the Patent Office in such a way as to be accessible to the public was such a publication as to avoid a patent subsequently obtained in England. In addition to the deposit of specifications and drawings at the Patent Office, the fact had been duly announced in the *Patents Journal*. Mr. Justice Chitty, before whom the case came, held that the deposit amounted to a prior publication. The true test, he said, was whether the German specifications had been so published in England as to become matter of common knowledge. The fact that they were not in English, he said was immaterial, as German was a language generally known.

#### TO CURE A FELON.

The *Boston Transcript* says: That woolen smoke is a cure for a felon is certainly one of the medical discoveries of the age. Could we give the name of the correspondent who sends us the following, it would be at once recognized as of authority sufficient to guarantee the truthfulness of any assertion to which it might be appended:

"If you ever endured the agony of a felon, you will appreciate the fact that it can be cured by woolen smoke. Place the woolen rags under an inverted flower-pot, and put coals upon them, or set them on fire some other way, then hold the felon over the smoke,

and it will extract all the pain. This has been done by a friend of mine within a week. I assure you that in my circle we consider it as great a discovery as that ether will temporarily deaden pain. The only remedy for a felon that I ever considered infallible, and I have had cognizance of several aggravated cases, was having the part laid open (under the influence of ether) and the bone thoroughly scraped. That reaches the root of the difficulty; but the smoke cure is far better. I once took a woman to a hospital, and charged the attendants to see that the ether was administered previous to the operation; but they broke their promise, and it took two men to hold the poor girl during the operation, after she had suffered untold distress with her finger for three weeks, which distress I had shared."

#### SUGAR AS AN ANTI-INCURSTER FOR BOILERS.

THE *Rivista di Artiglieria e Genio* contains an article by Colonel Polto, of the Italian Engineers, detailing a series of experiments carried out by him using sugar to prevent boiler incrustation. The boiler used was of the Field type, 126 tubes and 20 h. p. It commonly required cleaning every 45 days, or after every 380 working hours, when the weight of scale removed was 12 kilogrammes, or 26½ lbs., the best method of preventing the same having been employed. Before commencing experiments, one-third of the tubes were left purposely uncleaned. The boiler was filled with water and 2 kilos. (4½ lbs.) of sugar were introduced, a supply of 2 or 4 lbs. being added alternately for each of the seven days. After the usual 45 days' work, the boiler could be cleaned without scraping, and much scale had been removed from the tubes purposely left uncleaned. The rest of the tubes were perfectly clean. On repeating experiments another 45 days the unclean tubes were much better, 8 kilos. of old scale being detached and found at the bottom. The sugar was a kind known in Italy as Muscovado, a raw sugar. With water of medium hardness—about 5½ lbs. per horse power—working twelve hours a day, gave best results. The saccharine solution was found to have no corrosive effect on the boiler plates.

#### OATMEAL.

THE nutritive properties of oats are becoming better known, and oatmeal is coming into more and more general use. In the first place to properly manufacture oatmeal the very best grain should be used. Next in importance is the proper kiln-drying of the grain. Unless oats are properly kiln-dried it is vain to expect good meal. It is generally supposed that the purpose of kiln-drying oats is to drive out the moisture which they contain. Of course this must be done, but there is an equally important purpose to be accomplished in the process, and that is the "cooking" of the grain. But the drying and cooking are so inseparably allied that it would be difficult to explain where the one ends and the other begins. A skillful drier knows well the difference, and is well aware how many points he has to consider as to condition and texture of the grain he is handling, and the best way to bring out the flavor of the different grades of oats, which are as varied as the soils on which they grow. It is in the matter of "cooking" that the millers on this coast fail,

and their failure cannot be remedied by the cook of the household, however skillful she may be. One of the great objections to the more general use of oatmeal at the breakfast table is the long time it requires to cook—from thirty to forty-five minutes—whereas thoroughly good porridge should be cooked in from twelve to fifteen minutes, if the oats are properly kiln-dried. The use of "drying pomo" is an entire mistake in the manufacture of oatmeal and the steam-drying process is a still greater failure. The older process of drying on coke-kilns, either of metal plates perforated or of wirecloth, produce much better results where skillfully worked than any other process as yet in operation. Any one who has ever tasted the toothsome oatcakes which once formed the staple bread of Scotch households, knows that they had a flavor and crispness that no other bread had. These cakes were "fired" on what was called a "brander," and the heat of the peat or wood-fire went direct to the cakes. The process of firing was exactly similar to "broiling a steak." Cakes baked on this plan were far preferable to those fired any other way. It would seem that the more directly the heat can be applied to oats without any intervening plates or bars the more effectually they are dried, and the result in the quality of the meal is more satisfactory. There is nothing to hinder a much larger consumption of oatmeal if the public are supplied with the genuine article at a reasonable price. Millers should lose no time in improving the quality of this valuable article of diet.—*Daily Alta California* (San Francisco).

#### VIOLATIONS OF BUSINESS HONOR.

An old mercantile authority says that honor is violated when a man uses information confidentially entrusted to him to anticipate the informer. A man violates the laws of honor when he takes advantage of another's unskillfulness or inexperience, or the technicalities of the law to impose on him. A man acts dishonorably when he does not make sacrifices to pay his debts promptly; when he attempts to raise the market price on another buyer; when he sells below the market price to get away his neighbor's customers; when he is unmindful of favors; when he does not allow his clerks and dependents to share in his prosperity, and in all cases when he does acts which, if thoroughly understood, would tend to lower him in the estimation of his customers, or of any good man.

#### A NEW FEATURE IN THE FLOUR TRADE.

"Purchases of flour have recently been made by Montreal firms on Newfoundland account," says the *Montreal Trade Bulletin*, "to an extent which is something very unusual for this season of the year. No less than five vessels have been engaged at Halifax by Messrs. James Lord & Co., of this city, to take about 12,000 bbls. of flour, besides butter and provisions, to St. Johns, N. F. Two vessels are already being loaded, and the other three are now on the way to Halifax to take on cargo. The principal of the above firm informed us that he never before received such large orders from Newfoundland after the close of navigation, although he has been in the trade for the past twenty-five years. A considerable portion of this flour has been purchased in the west on a through rate to Halifax via the Intercolonial."



MINNEAPOLIS NOTES.

JANUARY 5 the north side of the annex to Pillsbury's elevator in Minneapolis burst open and 60,000 bushels of wheat mingled with the debris of the building run out on the ground. The building cost about \$12,000. The loss on the wheat will be very little.

THE Pray Manufacturing Co. of Minneapolis has made an assignment. The official schedule shows the liabilities to be \$292,826 with assets amounting to \$124,457.

A LARGE sawmill is to be erected in North Minneapolis, and will be ready to commence operations next spring. It will cost about \$130,000 and will have a capacity of cutting 20,000 feet per hour.

THE *Pioneer Press* in its annual review, in regard to the flour industry, says:

The flour milling year ends naturally Sept. 1. A detailed review of the year's product was published Sept. 13, and the figures given here are for the year ending at the date named above. Since then the millers have had some unusually trying experiences. The fall and winter months are always liable to

rapid growth of the export is indicated in this table, giving the record for eight years:

	Barrels.	Barrels.
1878	109,183	1,700,750
1879	442,598	1,732,031
1880	700,442	1,989,552
1881	1,181,322	2,408,590
1881-82	627,086	

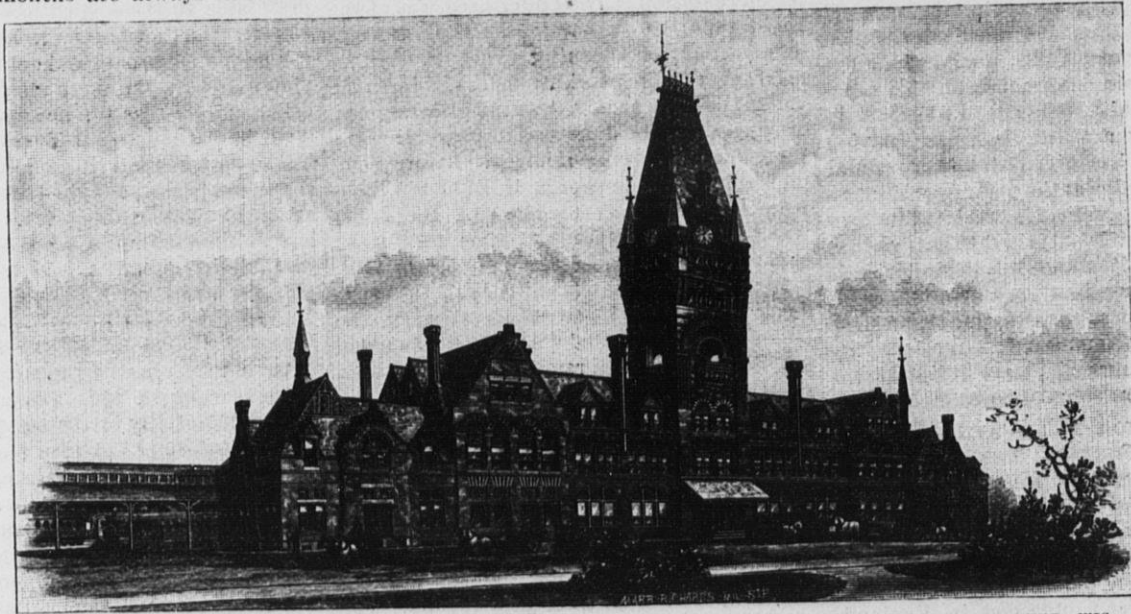
THE rumor that Minneapolis millers were about to pool their interests for the purchase of grain and the sale and storage of flour has stirred up a great amount of discussion in the newspapers. From inquiries made from parties who ought to know something about it we are inclined to believe that there is nothing in it. The Minneapolis millers have, it seems, found it unprofitable to maintain their local association.

DIED, at Tipton, Ia., Dec. 28, E. R. Stephens, junior member of the milling firm of Crocker, Fisk & Co. He was about 40 years old at the time of his death. He leaves a family. He had resided in Minneapolis since 1867.

A HAPPY NEW YEAR CELEBRATION.

New Year's eve, as has been its custom since the present managers have been in office,

character of the work. With well chosen and happy words he expressed the Company's appreciation of the services of all, complimented the employes on the character of the work they had produced, and commended the zeal they had shown in the Company's interest. He said the race had been so close between several of the salesmen, and also of the foremen, that in the language of the turfmen, all could be covered with a blanket as they passed under the wire; and in the future two prizes would be given to each class, a first and second. Among the traveling salesmen, all things being considered, Mr. Jno. M. Roe, of St. Louis, southwestern agent, appeared to be slightly in advance of his competitors, and among the foremen the statistics which had been kept during the year showed that Mr. Luther J. Curtis, of the reel room, a close winner. Each was presented with the Company's check for a liberal sum. The recipients appropriately acknowledged their thanks and were congratulated by their associates. A sentiment was drunk to the Company and then speeches were made by Clark, Winn,



THE NEW UNION PASSENGER STATION OF THE CHICAGO, MILWAUKEE & ST. PAUL RAILWAY AT MILWAUKEE, WIS.

make trouble with the water power and the trouble this season has been more serious than usual. The Pillsbury and Washburn mills are now nearly all provided with steam plants and undoubtedly, after their late experiences, the other millers will all soon be so provided against emergencies. Instead of indicating any back set to the milling interest, however, this feature furnishes an added element of stability.

The milling capacity was enlarged somewhat by additions and improvements on old mills. The total daily capacity is now 33,175 barrels. The total product for the twelve months was 5,687,347 barrels against 5,450,163 barrels the preceding year, an increase of 237,184. The statement showing the remarkable growth in the past five years is exceedingly striking. It is as follows:

	Barrels.
1880-81, total product	2,900,268
1881-82, total product	2,301,967
1882-83, total product	4,000,403
1883-84, total product	4,797,240
1884-85, total product	5,450,163
1885-86, total product	5,687,347

The record of the flour shipments for the past four years is as follows:

	Barrels.	Barrels.
1885-86	5,109,183	4,814,424
1884-85	5,208,951	4,089,908

A particularly gratifying feature of the situation is the development of the export trade. For the twelve months ending Sept. 1 the total export was 2,408,590 barrels. The

George T. Smith Middlings Purifier Co. entertained its traveling salesmen, foremen and office assistants. At 3 o'clock, p. m., five sleigh loads left the Company's office, drawn by the firm's own teams of magnificent Percheron horses, and drove four miles to Michigan Centre, where Tim. Pangborn had prepared a sumptuous New Year dinner, at which, at half-past 4, fifty-two of the company's employes, including its officers, sat down. For an hour and a half social conversation, mingled with the clatter of the dishes, as the numerous courses were changed, and the clinking of wine glasses made merry music. Then followed speeches, stories and songs. Col. Rodney Mason, with whose name all who know the Geo. T. Smith Middlings Purifier Company and its history are familiar, led off with a presentation speech, in which he stated the annual custom and reiterated the promise of the company to make a handsome present at the end of the year to that salesman and to that foreman who had respectively sold the most machines with the least expense, and reduced the expenses of his department the most, while keeping within the bounds of the Company's instructions in reference to the

Webster, Reynolds, Roe, Mason, Hoffman and others. Tim. Pangborn amused the guests with some of his inimitable stories, told as only Tim. can tell them, and from then on until 8 o'clock, side-splitting yarns, appropriate songs by J. W. McGraw and others, filled up the time. A pleasant ride to the city wound up an evening voted by all the pleasantest in the Company's history.—*Jackson (Mich.) Citizen.*

FLOUR MILL DIRECTORY FOR 1886-87.

All persons desiring to reach the milling trade should invest at once in a copy of Cawker's American Flour Mill Directory for 1886-7, issued Feb. 1, 1886. It is carefully compiled; contains 18,289 addresses in the United States and Canada; Shows in thousands of instances the capacity, power and system of milling (i. e. whether the stone or roller or combined system is used). It also contains a list of millwrights and American and European flour brokers. The book is sold at \$10 per copy and can be obtained by addressing the United States Miller, Milwaukee, Wis. This Directory is published once in two years.



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## YIELD.

THERE is one machine among the many employed in milling operations that is not nearly understood in utility; at least its potency to success in mill managing is not properly appreciated. It is the automatic grain scale that regularly weighs and registers the wheat as it is manufactured into flour. The business manager of the mill may imagine that whereas he at regular intervals weighs up so much grain into the stock hopper and takes account of all its products, that he has reduced the subject of yield to a science, and has the work indicative of profit or loss down to a very fine point; but it is noticeable that the balance sheet at the end of a season is not in accordance with the interval showing, and this is easily accounted for. But few, if any, millers like the idea of "getting left" on a test run, consequently when the special test is made *special milling* is done, and not frequently the year of a poor yield on a trial occasion is too much for the poor miller's squareness, and he will, if possible, smuggle in some stock and shuffle aside some of the feed, or turn in some high grade flour and turn aside some of the low grade. Again, the manager usually accepts a good showing with better grace than a poor one, and an inordinately large yield creates a better feeling all around than the inordinately small. A good and reliable grain weigher and register properly manipulated does away with the test as usually conducted, and is at all times a powerful incentive to careful milling and grain buying, while at the same time there is not much room for debate and bickering between the miller and manager as to mistakes in weight of stock or products, as the grain scale is in charge of the managing miller, who has the privilege of overlooking the weighing and counting up of products. Of all the ways of getting at the truth of milling conduct, satisfactory to all around, none are so positively certain as the well arranged and conducted automatic grain scale standing as an indicator to what the mill is doing properly or otherwise.—*The Modern Miller.*

## ITEMS OF INTEREST.

A LABORING man of Minerville, Pa., has patented a car brake, which he thinks is much better than the Westinghouse brake. He says it can stop a freight car running at the rate of thirty-five miles an hour in fifteen feet, lock the wheels dead in six or eight seconds, and stop a locomotive running at the rate of forty miles an hour before it has moved twenty-five feet. He has been offered \$75,000 for his invention.

PORTLAND (OREGON) FLOUR OUTPUT.—The *Portland News* says that Portland probably has fewer flouring mills than any other city situated in the heart of a great wheat-growing country in the United States. A very large quantity of wheat is received there annually. There are but three mills in the vicinity of the metropolis, two in Portland and one at Albina. Only one at Portland has produced any quantity of flour this year, the others confining themselves to other productions. The two at Portland have a capacity of 1,350 barrels, and were operated about 300 days this year, turning out about 405,000 barrels. This output, at \$3.75 per barrel, was

worth \$1,545,000. The officers of the mill report a large and increasing demand for the flour, which now goes in all directions, principally to Europe, although British Columbia, Puget Sound and other parts of the Pacific Coast consume large quantities of it. There is room in Portland for several flouring mills of large capacity.

MONTREAL STORAGE RATES.—The rates of storage in Montreal are as follows: On grain ex-craft—elevating and weighing in, 1c per bushel, 10 per cent. off; transshipping from one vessel to another (each vessel), 1c per bushel, 10 per cent. off; storage for each term of ten days, 1c per bushel. On grain ex-cars and carters—Storage for first term of 10 days, 1c per bushel; each succeeding 10 days, 1c per bush.; loading on cars, \$1 per car. No extra charge for weighing out and delivering grain in bulk on board craft, or in hoppers for bagging. On flour and meal—Storage for 48 hours, 1c per bbl. and 1c per bag of 100 lbs.; storage for 10 days, 2c per bbl. and 1 1/2c per bag of 100 lbs.; storage for first month, 3c per bbl. and 2c per 100 lbs.; storage for succeeding months, 2c per bbl. and 1 1/2c per bag of 100 lbs. delivery to craft, 1 1/2c per bbl. and 1 1/2c per bag of 100 lbs.; up-ending or repiling, 1c per bbl. and 1c per bag of 100 lbs.; loading on cars, \$1 per car. The cooorage on flour, 1 1/2c per bbl. On short weight there is a fine of 2c per bbl. on flour. The inspection of flour is 2c per bbl. or bag.

THE "typo-telegraph," which is a new invention, is now being tried in Paris by the Minister of Posts and Telegraphs. It has been submitted by M. Etienne de Fedor, and it is intended to be devoted chiefly to press messages. The article of a paper or journal which is to be forwarded by telegraph to another journal is first set up in ordinary type in a column and then stereotyped. The block is afterward sent to the telegraph office and serves as original of the message. M Fedor claims that the rapidity of the transmission may reach 1,200 letters per minute, or about 14,000 words per hour.

THE very best way to prevent scale in a steam boiler, is to use a feed water heater that will deposit the scale by raising the temperature of the water in the heater high enough to liberate the soluble matter before the water gets into the boiler. Nobody ever heard of "bagged sheets" on a heater. We see one every day on boilers. Don't let the scale in and it won't trouble you.

TEMPERING STEEL.—When we were much younger than we are now and the zylonite clearing on top of our head hadn't acquired such beauteous proportions, we had to temper up a lot—yea verily, many lots—of steel tools, and here's the "great secret" we used: We got a "slush bucket" and washed it out clean, then weighed out 1 oz. corrosive sublimate, put in two handfuls common salt and stirred it up with two gallons rain water, heated the tools in hot lead and hardened in this liquid and drew over a charcoal fire. A tool never broke.

You can make your own "gas fitters'" cement thusly: Melt up 4 1/2 lbs. rosin, 1 lb. beeswax, and stir in 3 lbs. Venetian red; it will hold gas in.

SALE OF WHEAT DEPOSITED—APPARENT AUTHORITY.—A company operating an elevator receiving wheat on deposit and also

purchased wheat on its own account. The wheat deposited and the wheat purchased were mingled in common bins, and publicly sold and shipped from day to day, with the knowledge of the depositors. The Supreme Court of Indiana held (*Lagrange et al. vs. Witherspoon et al.*) that, under the circumstances, the elevator company was clothed with an apparent title and right to sell the wheat, and that those who purchased wheat from them in good faith and in the usual course of business would be entitled to hold it as against the depositors.—*Bradstreet's.*

OF interest to engineers is a tell-tale paint, the invention of an Englishman. If the bearings of an engine are covered with this paint, the abnormal color of which is a brilliant red, and such bearings run hot, the paint will darken in color, until at 180° Fahrenheit it is quite brown. As the paint cools it recovers its original color.

DOWN draughts in chimneys may be obviated by a recent English device. It consists of a number of grooved rings placed over each other with spaces between and made of metal or clay. The grooves are so shaped that when the wind strikes them it is so deflected that it draws air up the chimney, and in this way effectually prevents down draught.

## NONSENSE.

A COURT EPISODE.—Judge Cory's Irish setter went into convulsions the other day. He was sitting on a faded orange blossom beside the judge when the name of A. L. Miller was called. Miller is a Norwegian. He has been a resident of the United States for six years and served fifteen months in the Stillwater penitentiary. When his name was called not one of the twenty-six prisoners stirred. The dog scanned the crowd and finally fixed his eyes on Miller. The judge did likewise.

"Miller, you are charged with vagrancy," he said.

Miller never stirred.

"Stand up, sir, when I call your name."

Still Miller remained immovable and the dog seemed mystified.

"Bailliff, ask him if he talks English," ordered the court.

"Can du intet tala Engleska?" asked the bailliff.

"Yah, voeg can stet itcha tula Engleska," replied Miller.

The dog smiled.

"He says he can't talk English," interpreted the bailliff.

The dog smiled again.

"Well, tell him I will give him thirty days in the work-house where he may study the English language," replied the court.

"Vell, vell," said the man who couldn't speak English, "you vas ye yamdest yudge as I ever see 'cause I no speak English. I wish now I say I speak English.

The dog convulsed.—*Pioneer Press.*

A GOOD story is told upon a patent churn agent. He visited a farm house to sell one of his double-g geared, back-action, chain-lightning churns, that would bring butter in eight minutes by the clock. The old man had sworn to wage war on all agents, but he was from home, and the young ladies of the house invited the agent in, gave him his dinner and talked about his churn. Finally they said they would not buy one unless it would do the eight-minutes act, as stated



in the hand-bill. "Just bring on your cream," said the knight of the churn. "and while you watch the clock I will run the machine." The girls filled up the churn with the rich creamy looking liquid, and the man grasped the handle and began to churn. At the end of eight minutes he took off the cover, but there was no signs of butter. He laid off his coat and turned away at the crank for another eight minutes, but yet there was no sign of butter. Then he laid aside his vest and unbuttoned his collar. He twisted and perspired, and swore under his breath, until forty minutes had gone by, and the butter did not come. Then with a wild look in his eye he gathered up his churn, called for his bill, hitched up his team and bled himself away.

The girls had filled the churn with buttermilk.

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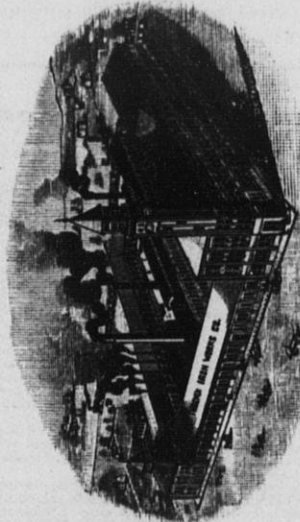
**MILLING PATENTS.**

The following list of patents relating to milling interests granted by the U. S. Patent office during the past month, is specially reported by Stout & Underwood, Solicitors of Patents, 66 Wisconsin street, Milwaukee, Wis., who will send a copy of any patent named to any address on receipt of 50 cents:

- Issue of November 2, 1886—No. 351,782, pneumatic grain elevator, J. Lewis, South Evanston, Ill.; No. 351,854, grain conveyor, H. Delhaye, Paris, France.
- Issue of Nov. 9—No. 352,135, grinding mill, J. R. Kinley, Chicago, Ill.; No. 352,228, brushing mechanism for bolting reels, J. W. Crosby, Leeds, England.
- Issue of Nov. 16—No. 352,810, middlings purifier, J. P. Deubel, Ypsilanti, Mich.
- Issue of Nov. 30—No. 353,353, automatic grain weighing machine, C. Dominy, Englewood, Ill.; No. 353,436, feeding mechanism for grain, flour, etc., C. A. Andrus, La Grange, Ohio.

**THE PHENIX IRON WORKS CO.'S NEW WORKS AT ST. CLOUD, MINN.**

On January 1, the Phoenix Iron Works Co., of Minneapolis, took possession of their splendid new establishment at St. Cloud, Minn. The authorized capital, \$50,000, has all been paid in, and the machinery all placed and started up. The officers elected at the annual meeting of the company are: J. M. Rosenberger, president; J. M. Schutz, vice-



president and manager; John W. Head, secretary; H. J. Rosenberger, treasurer; J. B. Rosenberger, superintendent. The office of the company is at 46 Corn Exchange, Minneapolis.

The grounds that the buildings cover are 360 feet front, facing the canal, and 240 feet deep. The buildings cover the entire block, with railroad facilities at the back end. The three-story building, with the tower, is 60x280 feet, used for wood-working shop and main office. The machine shops extend the full length of the 360 feet frontage, with a two-story building on the lower corner and extending 280 feet deep. The foundry, 62x218 feet, and blacksmith shop, 40x60 feet, are located in the center. The shops are fitted up with the latest improved iron and wood-working machinery for manufacturing the firm's specialties. The new works form one of the largest establishments of the kind in the country and the manufacturers of the "Monitor" and the "Crown" are to be congratulated that they have secured such splendid permanent quarters.

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We respectfully refer to the following well-known firms: S. H. Seamans (Empire Mills), Sec'y of the Millers' National Association; E. Sanderson & Co. (Phoenix Mills), Milwaukee, Wis.; Daisy Roller Mills, Milwaukee, Wis.; Nunnemacher & Co. (Star Mills), Milwaukee, Wis.; Roots & Co., (Millers), Cincinnati, O.; C. H. Seybt, (Miller), Highland, Ill.; Kosmack & Co., (Flour Brokers), Glasgow, Scotland; J. F. Imbs & Co., (Millers), St. Louis, Mo.; E. Schraudembach, Okauchee Roller Mills, Wis.; Winona Mill Co., Winona, Minn.; Herrick, Kirk & Co., New York; and many others. Name of firm ordering copies printed on title page with cable address, etc., free of charge, making it to all intents and purposes your own Private Cable Code. State number of copies desired when writing. Prices furnished on application. Address,

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## NEWS.

THE new mill at Rapid City, Dak., has started up.  
 THE grist mill at Moyock, N. C., burned Christmas. Loss, \$7,000.  
 O. DARLING'S flour mill at San Diego, Cal., has been attached for debts.  
 THE 600-barrel flour mill at Fergus Falls, Minn., has shut down for the winter.  
 TRACK-LAYING is progressing slowly on the new railroad from Winnipeg to Hudson's Bay.  
 AT East Orange, N. J., Dec. 24, George K. Sutphin's grist mill on Midland avenue was burned. Loss, \$6,000.

CRESKO, Ia., millers have declared war against outside flour and feed, and the citizens are stocking up well at low prices.

THE N. P. Railroad has extended its line down the Red River to East Grand Forks, Minn., opposite Grand Forks, Dakota.

THE boiler in the new flour mill at Lafayette, Ind., exploded with terrific force, Jan. 4, killing engineer DeLyst and miller Reid.

MARRIED—Jan. 9, V. L. Rice, head book-keeper of the Wabasha roller mill, of Wabasha, Minn., to Miss Gertrude Whitmore, of same place.

ACCORDING to the returns made by the commission there are in Dakota 344 elevators, and 306 warehouses, having an aggregate capacity of 13,843,000 bushels.

AT Neshanook Falls, Fla., Dec. 15, fire destroyed Swogger's flouring mills, with its grain and flour. The fire is supposed to be the work of an incendiary. Loss, \$5,000.

THE Chicago, Milwaukee & St. Paul R. R. have purchased a valuable piece of property in Kansas City, on which to erect a depot. Real estate is said to be booming in Kansas City.

THE Knights of Labor have lifted the boycott placed on the Empire Mower and Reaper Works of J. F. Seiberling & Co. and other enterprises in which J. F. Seiberling was interested in Akron, O., and elsewhere.

MR. WILLIAM LINDEKE, the St. Paul miller, has recently sold his mill and a part of his adjoining property to the St. Paul & Northern Pacific R. R. for \$150,000. He is now erecting a new 250-barrel roller mill on his property adjoining that sold to the railroad. It will, of course, be driven by steam power, and we understand the engines and boilers have already been contracted for.

THE Prospect Machine & Engine Co., Cleveland, O., have shipped one of their 450 horse-power engines to the Bohn Manufacturing Co., St. Paul, Minn., and will soon ship an 850 horse-power engine to the A. H. Hart Co., New York, and one of the same size to the Mahoning Valley Co., of Youngstown, O. Their Reel trade is also very encouraging. One of their late foreign orders is for ten of their largest size Jonathan Mills Dressers for a new mill in New Zealand.

THE San Francisco Produce Exchange makes the following report on January 1, 1887: Stock on hand, 400,000 tons; required for consumption, seed, carry over and shipments to Pacific Ocean points, 150,000 tons; balance available for shipments to Europe, 250,000 tons, equal to 8,000,000 bushels. Last year California sent to Europe 402,000 tons, 60 per cent. more than the quantity at present in the state for export to Europe. Next season's surplus is likely to be small, with only a small carry over to add to it.

CHAS. H. PILLSBURY is thus quoted by an interviewer: "Usually about the close of navigation millers shut down or store most of the flour, as it will not stand advanced rates, but none of the millers or their correspondents in America or Europe have any stock of flour, and consequently all mills are running as far as their water power or steam adjuncts will permit; and instead of their being an immense stock of flour on hand, as is usual at this time of year, I don't think there is a miller in Minneapolis who has not more orders on his books than he has flour."

THE Prospect Machine & Engine Co., of Cleveland, O., have had a very large trade on the Jonathan Mills Universal Flour Dressers during the past year,

and they report a very encouraging outlook for the coming year. Among their recent orders are 18x36" reels, ordered by Nordyke & Marmon Co. for a new mill in New Zealand; 4x36" and 2x26", ordered by Edward Corbett, for Marietta, O., mills; 4x20", ordered by Nordyke & Marmon Co.; 1x36", ordered by Smith, Hill & Co., Quincy, Ill.; 1x20", for Hinman & Co., of Perry, Ill.; 1x20", Baldwinville, N. Y.; 1x20" and 1x36", Denton, Tex.; 3x20" to Nordyke & Marmon Co.; 1x26", Delavan, Ill.; 1x26", Philadelphia; 8x36", E. P. Allis & Co.; 1x36" and 1x20", Danville, Ill.; 1x20", Auburn, Ky.; 1x26" and 1x20", Nordyke & Marmon Co., etc., etc. Their orders for the present month show a great increase over the corresponding month last year.



After Forty years' experience in the preparation of more than One Hundred Thousand applications for patents in the United States and Foreign countries, the publishers of the Scientific American continue to act as solicitors for patents, caveats, trade-marks, copyrights, etc., for the United States, and to obtain patents in Canada, England, France, Germany, and all other countries. Their experience is unequalled and their facilities are unsurpassed.

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Half interest in 2-run Custom Water Power Flouring Mill. Dwelling house of 9 rooms and Ferry across Wisconsin river. Situated eight miles North of Kibourn City, Wis. Price, \$1600.00. The other interest may be bought at about same price. For particulars address M. F. WALTON, 584 Washington Street, Milwaukee.

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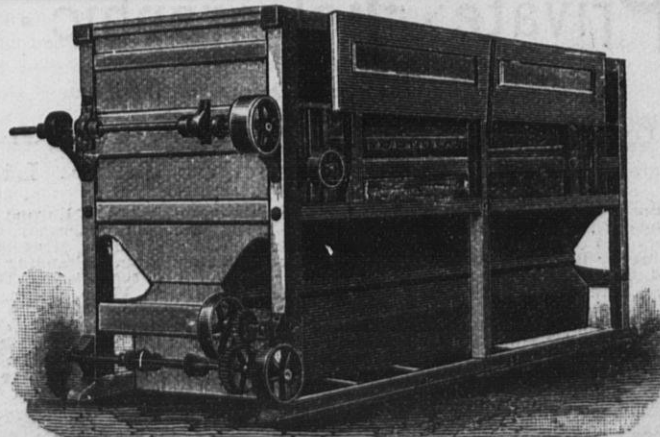
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**PROPOSALS FOR FLOUR FOR ISSUE AND FOR FLOUR, FAMILY.**

HEADQUARTERS DEPARTMENT OF DAKOTA, OFFICE CHIEF COMMISSARY OF SUBSISTENCE, ST. PAUL, MINN., JAN. 12, 1887.

SEALED PROPOSALS, in triplicate subject to the usual conditions, will be received at the office of the Acting Commissary of Subsistence at each Post named herein until 12 o'clock M., Tuesday, Feb. 15, 1887, at which time and places they will be opened in the presence of bidders, for Flour if wheat is raised and flour is manufactured in vicinity of said posts delivered thereat in the following quantities:

FLOUR, ISSUE.	DELIVERED AT
10,000 lbs.	Fort Abraham Lincoln, D. T.
8,000 "	" Bennett, D. T.
120,000 "	" Meade, D. T.
30,000 "	" Missoula, M. T.
22,000 "	" Pembina, D. T.
44,000 "	" Sully, D. T.

Sealed Proposals will be received and opened, at this office, at the same time, for 680,000 lbs. of Flour for Issue, and 60,000 lbs. of Flour, Family, or any part thereof, delivered free on board of cars at St. Paul, Minneapolis, Minn., or Bismarck, Dak.

Flour for issue to be equal in quality to standard samples to be seen at the respective offices, and to be put up in barrels, or square double sacks, or square single sacks, containing 100 pounds net each, as may be required, and deliverable after 10 days' notice.

Flour, Family, to be of a quality equal to Washburn's "Superlative," packed and deliverable under the same conditions as Flour for Issue.

The successful bidders will be required to enter into formal written contract, within ten (10) days after notification of award, and furnish bond to the amount of one third the value of the articles contracted for.

The right to diminish the amounts to be purchased is reserved to the Government, and with the consent of the bidders to whom awards are made, they may be increased.

For conditions, etc., apply to the undersigned, or to the above mentioned offices.

The Government reserves the right to reject any or all bids.

Proposals should be enclosed in sealed envelopes and marked "Proposals for Flour."

C. B. PENROSE,  
Captain and C. S. U. S. Army,  
Chief C. S. Dept. of Dakota.

We will send you a copy of "Leffel's Construction of Mill-dams, and Bookwalter's Millwright and Mechanic," and "The U. S. Miller" for one year for \$1.30. Don't miss it.

**PUBLICATIONS RECEIVED.**

WE acknowledge the receipt from Mr. J. M. Case, of the Case Mfg. Co., of Columbus, O., of a handsome calendar and an original acrostic Garfield memorial which shows great ingenuity and skill.

THE New Year's number of *The Art Amateur*, published by Mr. Montague Marks, 23 Union Square, is certainly a fine collection of artistic gems, and deserves to be in the hands of all art lovers.

HARPER'S MAGAZINE for January furnishes a generous installment of the novel attractions promised in its prospectus for the coming year in four strong and fresh contributions—the first part of Sir Edward Reed's "Continental Navies," the commencement of the series of Southern articles in Charles Dudley Warner's "New Orleans," Millet's "Summer Campaign with the Cossacks," starting the series of Eastern Papers, and the initial installment of Kathleen O'Meara's Russian novel, "Narka." Besides these special features the number contains a double installment of Blackmore's "Springhaven," the continuation of Roe's "Home Acre," a capital story by R. M. Johnston, "A Note on Impressionist Painting" by Theodore Child, several short poems, and the richly laden departments.

THE sales of *The Century Magazine* have gone up over 30,000 copies in six weeks, since beginning the Life of Lincoln. A second edition of December will be issued on the 15th. A veteran New York publisher predicts that the permanent edition of the magazine will go beyond 300,000 before the completion of the Lincoln history. The January installment, which is said by the editors to be of most surpassing interest, occupies thirty pages of the magazine, and treats of Mr. Lincoln's settlement in Springfield; his practice of law in that city; the Harrison campaign; Lincoln's marriage; his friendships with the Speeds of Kentucky; the Shields duel; and the campaign of 1844. The illustrations are numerous, including portraits of Joshua Speed and wife, of Mrs. Lucy G. Speed, Milton Hay, President Harrison, General Shields, William H. Herndon (the law partner of Mr. Lincoln), and Mr. Lincoln himself, from the pho-

tograph presented by him to Mrs. Lucy G. Speed, in 1861. Pictures are given of the house where Lincoln was married, also the house where he lived after his marriage, etc., etc.

THE GRAPHIC NEWS, Cincinnati, O., Holiday number has come to hand, and we must say is highly meritorious from every point of view. The illustrations are numerous and of high artistic merit—the colored plates are well executed and the typography and paper and press work are about as near perfection as we ever see. *The Graphic* is steadily growing in popular favor, and is well deserving of the extensive patronage it already enjoys.

THE February number of *Scribner's Magazine*, of which 125,000 copies have been ordered as a first edition, will contain a most interesting article, by Mr. John C. Ropes, upon the "Likenesses of Julius Caesar, with 18 portraits, one of which, engraved by Mr. W. B. Closson, will be the frontispiece of the number. A new story is begun in the same number,

by Mr. F. J. Stimson (J. S. of Dale), entitled, "The Residuary Legatee." The second installment of ex-Minister Washburne's "Reminiscences of the Siege and Commune of Paris" is of the greatest interest, describing as it does the most interesting phases of the Siege.

Messrs. Scribner have in press a new novel, by Mr. John T. Wheelwright, entitled, "A Child of the Century."

THE BROOKLYN MAGAZINE for February will be a very attractive number. It is withal one of our brightest magazines, and one of the cheapest: 20 cents per number, or \$2.00 per year. *The Brooklyn Magazine*, 132 Pearl St., New York.

WE will furnish the UNITED STATES MILLER for one year and Alden's Handy Atlas of the World, post-paid, to any address in the United States or Canada, for \$1.

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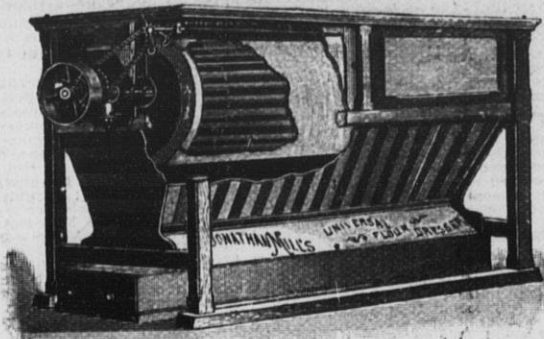
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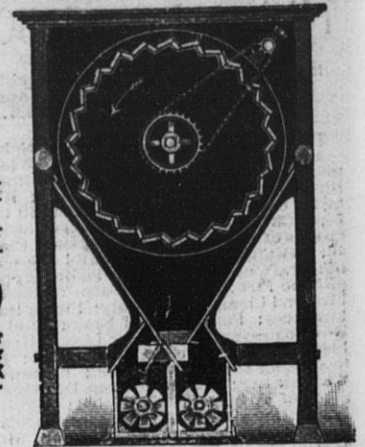
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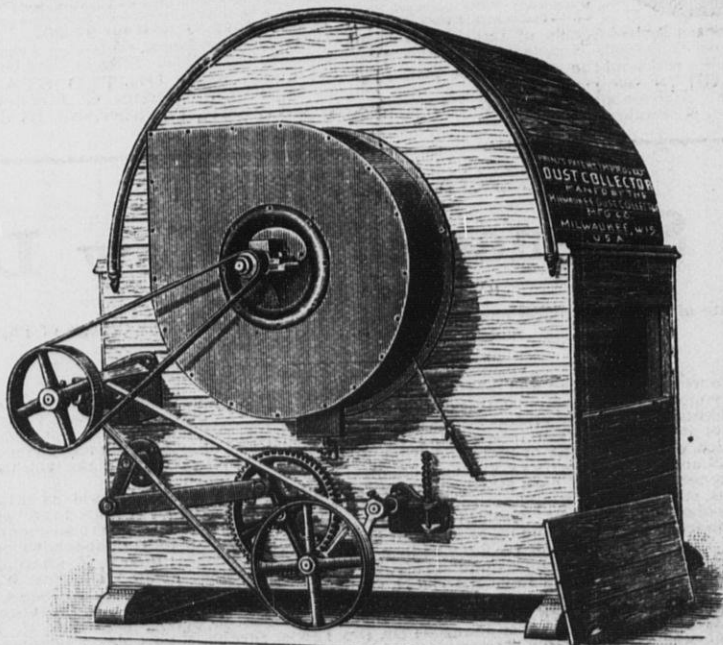
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**WATCHES, CLOCKS, JEWELRY,**

**Silver and Plated Ware.**

Special Attention Given to Repairing.

No. 106 GRAND AVE.,

Cor. West Water St.,

MILWAUKEE, WIS.

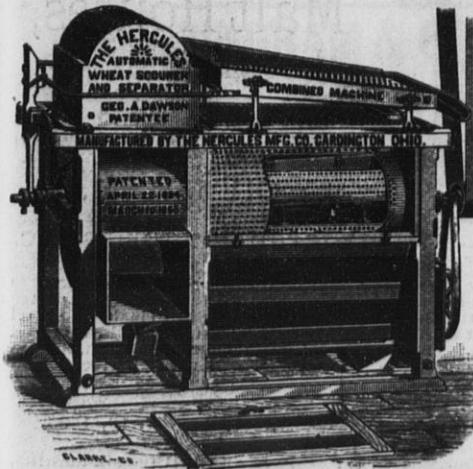
**OUR**  
BUCKETS  
**ARE NOT**  
COMMON CHEAP  
ONES  
**BUT ARE**  
FIRST CLASS  
ELEVATOR  
BUCKETS  
**IN EVERY**  
**RESPECT**

**SALEM**  
BUCKETS  
GENERAL AGTS. CHICAGO  
THOMAS BROTHERS & CO.  
W. J. CLARK & SONS  
SALEM, OHIO

**THEY WERE**  
**AWARDED**  
**FIRST**  
**PREMIUM**  
**AT THE**  
**MILLERS'**  
**INTERNATIONAL**  
**EXHIBITION**  
**CINCINNATI, O.**  
**1880.**

[Please mention this paper when you write to us.]

## DO YOU WANT CLEAN WHEAT?



### THE HERCULES

## Automatic Wheat Scourer and Separator.

Warranted to improve the **COLOR** and **VALUE** of flour in any mill. Anti-Frictional, Light Running and the only **AUTOMATIC WHEAT SCOURER** ever invented. Adjusts itself while in motion to the volume of wheat fed to it and requires no attention but oiling. Awarded **GOLD MEDAL** and highest honors at the late **WORLD'S FAIR, NEW ORLEANS**. Machines sent on 60 days trial and satisfaction guaranteed or no pay. Write for Circulars, Testimonials and Samples of Cleaned Wheat and Scourings.

THE HERCULES MFG. CO., Cardington, Ohio.

### IT HAS INCREASED OUR TRADE.

THE HERCULES MANUFACTURING CO., Cardington, Ohio.

Gentlemen:—We like the "Hercules" machine very much indeed. It has increased our trade, and we will buy another for our other mill in the Spring. It certainly is the best Scourer we know of.

[Mention this Paper when you write.]

Yours Respectfully,

SCHREURS BROS.

SCHREURS BROS.,  
PROPRIETORS OF YOUNG AMERICA ROLLER MILLS,  
Muscatine, Iowa, December 9th, 1885.

## CAWKER'S AMERICAN FLOUR MILL DIRECTORY FOR 1886-7

ISSUED FEBRUARY, 1886. PRICE, \$10.00.

PUBLISHED EVERY TWO YEARS.

SENT BY MAIL, REGISTERED AND POST-PAID.

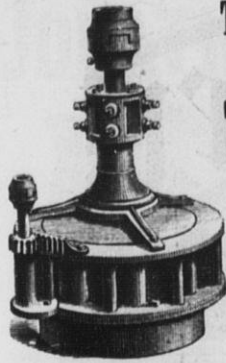
EVERY

**Mill Furnisher, Flour Broker, Transportation Company, Insurance Company,**  
**FLOUR IMPORTER, MERCHANT MILLER,**

Or anyone desiring to reach those connected with the **FLOURING INDUSTRY**, should order this Book at once.

**E. HARRISON CAWKER, NO. 124 GRAND AVENUE, MILWAUKEE, WIS.**

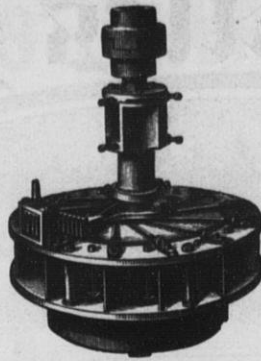




## The "HOPEWELL" TURBINE Water Wheel

IS THE BEST.

For full particulars address  
**A. J. HOPEWELL,**  
EDINBURG, VA.



## JAMES LEFFEL'S IMPROVED WATER WHEEL,

Fine New Pamphlet for 1885.

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 sent free. Address,

**JAMES LEFFEL & CO.,** Springfield, Ohio,  
and 110 Liberty St., New York City.

[Please mention this paper when you write to us.]

## Improved + Walsh + Double + Turbine

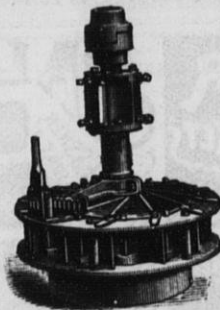


This wheel has a perfect fitting cylinder gate and draft tube combined, and allows no water to escape when closed.

### POWER GUARANTEED

equal to any wheel on the market using equal amount of water. Address for particulars,

**B. H. & J. SANFORD,**  
Phoenix Iron Works,  
Sheboygan Falls, Wis.



## POOLE & HUNT'S Leffel Turbine Water Wheel

Made of best material 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 to us.]

Preserve your Copies of the  
UNITED STATES MILLER  
—IN AN—

## ULLRICH BINDER

This binder is suitable for binding your copies of the UNITED STATES MILLER for two or more years, any required number can be taken out without disturbing its contents. Binders made for all Publications, for binding Music, etc.

ITS EQUAL CANNOT BE FOUND.

Sent post paid for \$1.10. Address

**UNITED STATES MILLER,**  
MILWAUKEE, WIS.

## Flint & Pere Marquette R. R.

LUDINGTON ROUTE.

### Fast Freight & Passenger Line.

Freight Contracted on through Bills Lading to all points in

Michigan, Indiana, Ohio,  
New York, Pennsylvania,  
New England & Canada,  
AT LOWEST RATES.

All freight insured across Lake Michigan. Passengers save \$2.75 to all points East.

Dock and Offices, No. 50 West Water St., one block from Union Depot.

**L. C. WHITNEY,**  
Gen'l Western Agent.

## SAVE YOUR POWER Belting and Machinery

—BY USING—

## National Pulley Covering

Cheap and Durable. Effective and Easily Applied.

SEND FOR CIRCULAR and SAMPLE.

Engines, Boilers, Hot Polished Shafting,  
Pulleys, Hangers, Leather Belting, Etc.

**H. P. YALE & CO.,**

98 West Water St., - - MILWAUKEE, WIS.

## Marshall Automatic Grain Scale

FOR USE IN

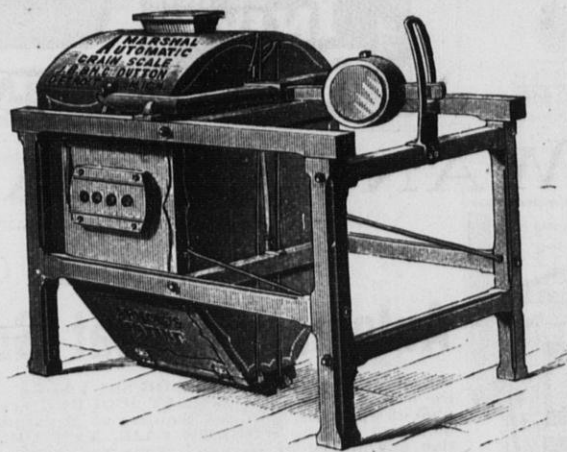
**FLOUR MILLS,**  
BREWERIES,

Malt Houses,  
ELEVATORS,

Distilleries, \* Rice \* Mills,

OIL MILLS,

Starch Factories, &c.



This Scale is designed for weighing and registering the amount of grain transferred from one point to another. The weighing and recording is absolutely correct, and the machines are sold with a guarantee to that effect. By their use the miller can tell at any time how much wheat he is using to make a barrel of flour, and know at once whether he is milling at a profit or loss. This scale can be used with equal advantage by shippers of grain or others who desire to know how much grain, flour, feed, bran, shorts, screenings, coal (or any other thing that can be spouted), is being transferred, with a perfect record made of same.

JACKSON, MICH., Nov. 13, 1885.

**J. B. & H. C. DUTTON, Detroit, Mich.**

Gentlemen: We have used the Marshall Automatic Grain Scale in our mill for six months, and it has proved entirely satisfactory.

Yours truly,

**ELDRED MILLING CO.**

## J. B. DUTTON & CO., DETROIT, MICH.

No. 52 WOODWARD AVE.

SOLE OWNERS OF THE PATENT.

Also handle a full line of Flouring Mill Machinery.



## WILL CURE any case of Blind, Bleed- ing, Itching, or Protruding PILES.

Never Fails. Cure Guaranteed.  
Price per Box, 50 cents and \$1.00.  
(Physicians' Jars, for use in their  
practice, \$2.50.)

Dr. Williams' Indian Pile Ointment  
is sold by all Druggists, or mailed on  
receipt of price by the  
**Williams Mfg Co., Cleveland, O.**

[Please mention this paper when you write to us.]

## "TRIUMPH" CORN SHELLER

CAPACITY

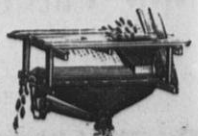
2000 BUSHELS PER DAY.

Shells wet or dry corn.

CHEAPEST AND BEST SHELLER.

**PAIGE MANUF'G CO.,**

No. 12 Fourth St., Painesville,



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**BELLAS, PATTON & CO.,**  
**Commission Merchants**

3 INSURANCE EXCHANGE BLDG.,  
218 La Salle St., CHICAGO.

GRAIN AND PROVISIONS

Bought or sold for shipment, or carried on margins.  
Market Reports furnished to correspondents.

(ESTABLISHED 1855.)

**J. O. Mathewson & Co.,**  
GENERAL  
**COMMISSION**  
**MERCHANTS,**  
AUGUSTA, - GEORGIA.

**E. B. OWENS & CO.,**  
Provisions and Grain  
BALTIMORE, MD.

Sell on Track West and to Arrive.  
Fine Storage Cellars for Meat and Lard.  
Handle all kinds of Grain.  
Liberal Advances on Consignments.

REFER TO Western National Bank, Baltimore; Citizens' National Bank, Baltimore; Wm. Ryan & Sons, Dubuque, Iowa; Whitmore Bros., Quincy, Ill.; Bloomington Pork Packing Co., Bloomington, Ill.

**L. EVERINGHAM & CO.,**  
(ESTABLISHED 1865.)  
**Commission Merchants**

200-201 Royal Insurance Building,  
Opposite New Board of Trade, CHICAGO

THE PURCHASE AND SALE OF  
**GRAIN AND PROVISIONS**  
On the Chicago Board of Trade.  
For cash or future delivery, a specialty.

Special information, indicating course of markets,  
freely furnished upon request.

WM. GRIFFITHS. JAMES MARSHALL. GEO. E. DODGE.

**GRIFFITHS, MARSHALL & CO.,**  
**Grain · Commission**  
MINNEAPOLIS AND DULUTH, MINN.

Orders for Choice Milling Wheat Given Special Attention.

**FLOUR ·· BROKERS**

MILLERS DESIRING TO SELL FLOURS BY SAMPLE in carlots in the cities of Baltimore, Md., or Washington, D. C., should communicate with P. H. HILL, Millers' Agent, WASHINGTON, D. C., and for Philadelphia, Pa., communicate with HILL & SCHAAF, Millers' Agents and Grain Brokers, 219 North Broad St., PHILADELPHIA, PA. Highest references.

**SAM'L E. DUNHAM & CO.,**  
COMMISSION  
**Provisions and Grain**

ROOM 83,  
Board of Trade, CHICAGO.  
The purchase of grain for shipment to home markets  
a specialty.

N. S. CLARK. A. C. MARTIN.

**CLARK & MARTIN,**  
**Commission Merchants**  
FLOUR, GRAIN,  
FEED AND HAY,  
No. 51 West Second St., Cincinnati, O.

**PATTERSON BROS. & CO.,**  
**Commission Merchants**

FOR SALE OF  
**WHEAT, CORN, OATS, RYE.**  
DEALERS IN  
Seeds, Hominy, Grits, Steam Dried Corn Meal.  
44 VINE ST., CINCINNATI.  
ORDERS AND CONSIGNMENTS SOLICITED.

ESTABLISHED 1876.  
**JNO. R. TURRENTINE,**  
—GENERAL—

**Merchandise and Produce Broker,**  
FLOUR, GRAIN, HAY AND RICE.  
Dock Street, WILMINGTON, N. C.  
MEMBER OF CHICAGO BOARD OF TRADE.

Refers by permission to A. K. Walker, Esq., cashier First Nat'l Bank, Hall & Pearsall, Adrian & Vollers, Merchants, Wilmington; Robt. Carey & Co., New Orleans, La.; Geo. P. Plant & Co., St. Louis, Mo.; Martin & Bennett, Chicago, Ill.

Solicits Orders for Carolina Rice and Peanuts.

**OWEN & BRO.,**  
**Commission · Merchants,**  
36 Chamber of Commerce, MILWAUKEE.  
We give special attention to the purchase and sale of grain or provisions, for future delivery, here or in other markets  
Information regarding the present condition and future outlook for prices furnished on request.  
OWEN & BRO.

S. S. STOUT. H. G. UNDERWOOD.

**STOUT & UNDERWOOD,**  
(Formerly Examiners U. S. Patent Office.)  
SOLICITORS OF

**PATENTS**  
66 Wisconsin Street,  
**MILWAUKEE, WIS.**  
TELEPHONE No. 502.

**Life Insurance.**  
**New England Mutual**

LIFE INSURANCE CO.  
OF BOSTON.  
Assets, - - - - \$17,846,546.65  
Liabilities, - - - - \$15,288,761.16

Total Surplus, - - - \$ 2,607,785.49

**BENJ. F. STEVENS, Pres't.**  
**JOSEPH M. GIBBENS, Sec'y.**

**BOILER INSURANCE.**

**AMERICAN**  
**Steam Boiler Insurance Company**

OFFICE, 46 WILLIAM ST., NEW YORK.  
Cash Capital, - - - - \$200,000

ASSETS JANUARY 1st, 1885.  
U. S. Gov. Registered Bonds, of which \$100,000 is lodged with the Insurance Department at Albany, N. Y. .... \$216,138.00  
Cash in bank and in office ..... 10,668.72  
Premiums in course of collection ..... 16,839.35

LIABILITIES.  
Reinsurance reserve ..... 40,225.00  
All other demands ..... 2,013.27

\$ 243,604.33

WILLIAM K. LOTHROP, President.  
WILLIAM E. MIDGLEY, Vice-Pres.  
VINCENT R. SCHENCK, Secretary.

**Fire Insurance.**

Every miller and manufacturer having an A 1 risk, should apply for insurance in the Allied Mutual Fire Insurance Companies, of which S. H. Seamans, Milwaukee, Wis., is secretary.

**CONNECTICUT**

**FIRE INSURANCE CO.,**  
HARTFORD, - CONNECTICUT.

Cash Capital, - - - - \$1,000,000 00  
Reserve for Reinsurance, - - - - 580,669 40  
Outstanding Claims, - - - - 90,396 57  
Net Surplus, - - - - 303,683 78

Total Assets, Jan. 1, 1886, - \$1,974,749 75  
Surplus to Policy-holders, - \$1,303,683 78

**J. D. BROWNE, President,**  
**CHARLES R. BURT, Secretary.**  
**L. W. CLARKE, Ass't Secretary.**

**Attention!**  
**CUSTOM and EXCHANGE MILLERS.**

We have made arrangements with Potter & Huntington, whereby we can furnish one of their EXCHANGE TABLES and UNITED STATES MILLER for one year, for \$1.50; the price of the Exchange Table alone is \$1.00. This is probably the best Table ever prepared for Millers doing an Exchange or Custom Business. The range is from 25 to 36 lbs. of flour to each 60 lbs. of wheat, and corresponding amount of bran and middlings. (Toll and waste in milling deducted.) There are twelve Tables each of a different grade of wheat, and each Table a different amount of flour and feed and can be used for any amount of wheat, from two lbs. up to any No. of bushels. There is no guess work about it, but all from actual experience. By it the Miller is always sure of his allowance of Toll. Hundreds of them are being sent to all parts of the United States and Canada. Send us One Dollar and Fifty Cents and we will send the Table and credit you for one year's subscription to the UNITED STATES MILLER. Address, UNITED STATES MILLER, 124 Grand Avenue, Milwaukee, Wis.



**GOODRICH PASSENGER STEAMERS**

TWICE DAILY EACH WAY

BETWEEN

**Milwaukee & Chicago.**

Fare to Chicago \$1 less than by railroad.

**Chicago and Racine Line.**

Leave Milwaukee.	FOR	Arrive at Milwaukee.
7:00 P. M.	Chicago	5:00 P. M.
*7:30 A. M.	Chicago	5:00 A. M.
7:00 P. M.	Racine	5:00 P. M.

**Fare to Chicago Only \$2.**

Round Trips, \$3.50, meals and berths included on first-class tickets.

Sure connections at Chicago with all morning trains for all points East, South and Southwest.

**Sheboygan & Manitowoc Line.**

Daily.*	Leave Milwaukee	At Milwaukee	Arrive.
	7:00 a. m.		4:00 p. m.

**Manistee & Ludington Line.**

Daily, leave 7 P. M., except Sunday.

**Saginaw & Bay City Line, Daily except Sundays.**

Milwaukee	Leave	At Milwaukee	Arrive.
	*7:00 p. m.		6:00 a. m.

Making close connections at Ludington with F & P. M. R. R. for Saginaw, Bay City, Detroit, and all points in Northern Michigan and all points East.

**Pierport & Frankfort Line.**

Leave Milwaukee daily at 7:00 P. M., except Sunday.

**Kewaunee & Ahnapee Line.**

Leave Milwaukee Tuesdays, Thursdays and Saturdays, at 7 A. M.

**Menominee & Sturgeon Bay Line.**

Tuesdays, Thursdays and Saturdays at 7 A. M.

**Green Bay & Escanaba Line.**

Leave Milwaukee Tuesdays, Thursdays and Saturdays at 7 A. M., touching at Oconto, Menominee, Nahma, Fayette, Depere, and making close connections with railroad at Escanaba for Negaunee, Ishpeming, Quinnesec, Norway, and all Lake Superior points.

\*Mondays. †Sundays.

G. HURSON, Secretary and Agent.

THOS. FORBES, Passenger Agent.

**Green Bay, Winona & St. Paul**

RAILROAD

IS THE SHORTEST ROUTE FROM

**GREEN BAY**

and all points in

**EASTERN \* WISCONSIN**

-TO-

- NEW LONDON,
- STEVENS POINT,
- GRAND RAPIDS,
- WAUSAU,
- MERRILL,
- WINONA,
- LA CROSSE,
- CHIPPEWA FALLS,
- STILLWATER,
- HUDSON,
- EAU CLAIRE.

**ST. PAUL, MINNEAPOLIS,**

and all points in MINNESOTA, DAKOTA,

and all points on the

NORTHERN PACIFIC RAILROAD and ST. PAUL, MINNEAPOLIS & MANITOBA RAILROAD.

Passengers from all points on the CHICAGO & NORTHWESTERN R'Y, south of Green Bay and Fort Howard, connect with the

**G. B. W. & St. P. R. R.**

-AT-

**FORT HOWARD JUNCTION.**

They will find it

**THE SHORT LINE**

to all the above points.

**THE PASSENGER EQUIPMENT**

of this Road embraces all the modern improvements and conveniences that tend to make traveling by rail safe and comfortable.

Be sure your tickets read via the

**Green Bay, Winona & St. Paul Railroad.**

S. W. CHAMPION, General Pass. Agent. GAVIN CAMPBELL, General Manager. GREEN BAY, WIS.

**Detroit, Grand Haven & Milwaukee RAILWAY LINE.**

The Shortest, Cheapest and Quickest Route

BETWEEN THE

**WEST AND EAST**

New York, Boston, and all points in Northern and Eastern Michigan.

COMMENCING MAY 17th,

the Palace Side-wheel Passenger Steamer "City of Milwaukee," will leave Milwaukee daily, Sundays included, at 11:45 noon and connect at Grand Haven with Limited Express Train which leaves at 6:00 P. M. Time, Milwaukee to New York, 32 hours.

Ticket Office, 99 Wisconsin Street,

WHERE

**SLEEPING CAR BERTHS**

can be secured. Dock, foot of West Water Street.

**GEORGE B. REEVES, B. C. MEDDAUGH,**

Traffic Manager, West. Pass. Agt. Chicago. Milwaukee.

**W. J. SPIGER, Gen'l Manager, Detroit, Mich.**

THE CHICAGO AND

**NORTH-WESTERN RAILWAY.**

THE BEST ROUTE AND SHORT LINE BETWEEN

**Milwaukee, Chicago, Council Bluffs, and Omaha.**

The only line to take from Chicago or Milwaukee to Freeport, Clinton, Cedar Rapids, Marshalltown, Des Moines, Sioux City, Council Bluffs, Omaha and all points West. It is also the

**SHORT LINE**

Between Chicago, Milwaukee and ST. PAUL OR MINNEAPOLIS, and the best route to Madison, La Crosse, Ashland, Duluth, Winona, Huron, Aberdeen, Pierre and all points in the Northwest.

It is the direct route to Oshkosh, Fond du Lac, Green Bay, Ishpeming, Marquette and the mining regions of Lake Superior.

It is the LAKE SHORE and PARLOR CAR ROUTE between

CHICAGO and MILWAUKEE, PALACE SLEEPING CARS on night trains.

PALATIAL DINING CARS on through trains between

Chicago and Milwaukee,

Chicago and St. Paul,

Chicago and Council Bluffs,

And Chicago and Winona.

If you are going to Denver, Ogden, Sacramento, San Francisco, Helena, Portland, or any point in the West or Northwest, ask the ticket agent for tickets via the "NORTHWESTERN" if you wish the best accommodations. All ticket agents sell tickets via this line.

M. HUGHITT, General Manager. R. S. HAIR, Gen'l Passenger Agent. CHICAGO.

Milwaukee Office, 102 Wisconsin St.

**Milwaukee & Northern Railroad.**

THE OLD RELIABLE ROUTE.

**17 Miles the Shortest Line**

TO GREEN BAY,

Fort Howard, Depere, Menasha, Neenah, and Appleton. Marinette, Wis., and Menominee, Mich.

THE NEW ROUTE TO

New London, Grand Rapids, and all points in CENTRAL AND NORTHERN WISCONSIN.

The new line to Menominee is now completed, and opens to the public the shortest and best route to all points on the Michigan Peninsula.

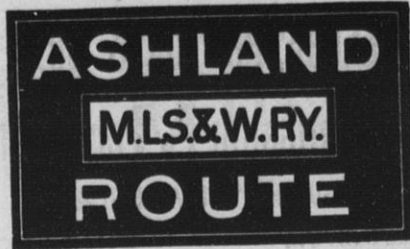
**CONNECTIONS.**

AT PLYMOUTH with the Sheboygan and Fond du Lac Division Chicago & North-Western R'y for Sheboygan and Fond du Lac.

AT FOREST JUNCTION with Milwaukee, Lake Shore and Western Railway.

AT GREEN BAY with Chicago & North Western and Green Bay, Winona & St. Paul Railroads, for all points North and West.

C. F. DUTTON, General Supt.



The Milwaukee, Lake Shore & Western Railway has been well named the Fishing and Hunting Line of Wisconsin, passing, as it does, through thousands of acres of but partially explored woods and streams that have never been fished by white men, all well stocked with the game fish for which Northern Wisconsin waters are noted. The woods abound with game; deer, bear, wolf, mink, beaver, pheasant, and other game are quite plentiful.

**THE ONLY LINE**

From Milwaukee to the new Iron Mining District in Wisconsin and Michigan—Gogebic, Wakefield, Bessemer, Ironwood and Hurley.

Direct line to ASHLAND and beyond.

Sleeping cars between ASHLAND and CHICAGO. The GUIDE BOOK, and other descriptive matter, containing full information, maps and engravings of the country traversed by the line, will be sent on application to the General Passenger Agent.

CHAS. A. COLE, Gen. Agent, 105 Washington St., Chicago.

Chicago Depot, Cor. Wells and Kinzie Sts., (C. & N. W. R'y.)

H. F. WHITCOMB, Gen'l Manager.

CHAS. V. MCKINLAY, Gen'l Pass. Agent.

MILWAUKEE, WIS.

This space will be occupied by an advertisement of the

**WISCONSIN CENTRAL LINE,**

the recognized Popular Route between Chicago and St. Paul and Minneapolis.



Owens and operates nearly 5,500 miles of thoroughly equipped road in Illinois, Wisconsin, Iowa, Missouri, Minnesota and Dakota.

It is the Best Direct Route between all principal points in the Northwest, Southwest and Far West.

For maps, time tables, rates of passage and freight, etc., apply to the nearest station agent of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, or to any Railroad Agent anywhere in the World.

R. MILLER, General Manager. A. V. H. CARPENTER, Gen'l Pass. and Tkt. Agt.

J. F. TUCKER, Ass't Gen'l Manager. GEO. H. HEAFFORD, Ass't Gen'l Pass. and Tkt. Agt.

MILWAUKEE, WISCONSIN.

For notices in reference to Special Excursions, changes of time, and other items of interest in connection with the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, please refer to the local columns of this paper.



# UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.  
SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00  
To Canadian subscribers, postage prepaid..... 1.00  
Foreign subscribers..... 1.25  
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 mail matter of the second-class.]

MILWAUKEE, FEBRUARY, 1887.

*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.*

## MILWAUKEE AMUSEMENTS.

**ACADEMY OF MUSIC**—Performances every evening, Wednesday, Saturday and Sunday matinees.

**GRAND OPERA HOUSE**—Performances every evening, and Wednesday, Saturday and Sunday matinees.

**DIME MUSEUM**—Performances every hour from 1 P. M. to 10 P. M. every day.

**PALACE THEATRE**—Every evening, Wednesday, Saturday and Sunday Matinees.

**STADT THEATRE**—(German)—Wednesday, Friday and Sunday evenings.

A BILL is pending before the Wisconsin legislature to regulate millers' and manufacturers' mutual insurance companies.

At the meeting of the sub-executive committee of the Millers' National Association, held in Chicago, Feb. 10, the claims of a number of patentees were discussed, and it was decided unanimously to compromise none of them. So long as no member of the Association is sued, the association will remain passive. Those who are not in the association must fight their own battle if they get into litigation with patentees. The total number of members in the Association is less than 1,000. This number should be largely increased.

A MECHANIC in Germany has, he claims, perfected an electric middlings purifier which can be manufactured at a reasonable cost. Many millers in this country will recollect the electric purifier which was on this market a few years ago. A considerable fortune was expended on the machine, but it failed to secure permanent recognition. It required a genius to run it—one who was both a miller and an electrical expert, and those kind of geniuses were not plenty in those days, and are not very numerous yet. There is no use in saying that electric purifiers will never succeed, but from past experience we believe their chance for ultimate adoption to be very small indeed.

THE long talked of "Inter-state commerce bill" has become a law. Taken all in all it may well be considered a congressional puzzle, so puzzling in fact that many congressmen do not claim to understand it and many others doubtless don't understand it who pretend to. All pronounce it "Ambiguous," (with a big A, we presume). One of the meritorious (?)

features of the bill is that it provides several fat offices for prominent politicians to scramble for and will, to a limited extent to be sure, reduce the surplus revenue in our national treasury. If the bill is liberally construed by the commission provided for, it will doubtless prove beneficial to the railroads at the expense of the general public.

CUSTOM and Exchange millers will consult their interests by reading the advertisement concerning "EXCHANGE TABLES" on another page.

## KANSAS MILLERS' ASSOCIATION.

Representatives of 35 Kansas milling firms, in answer to a call, met at Newton, Kan., Feb. 8, and organized the Kansas Millers' Association with C. R. Underwood, of Salina, president; B. F. Wood, of Winfield, and Wm. Bowman, of Atchison, first and second vice-presidents; David Roberts, Great Bend, secretary; B. Warkentine Newton, treasurer. A constitution and by-laws were adopted and the association starts out in good shape. Knowing from personal experience the enterprising character of Kansas business men we do not doubt but that the success of the association will be all that could be desired.

## NEBRASKA MILLERS' ASSOCIATION.

The Nebraska Millers' Association met at Lincoln, Neb., February 9. C. C. White was elected president; D. H. Harris, of Bennett, secretary, and R. Bridge, of Freemont, treasurer. A constitution and by-laws was adopted. After an interesting business and social session the convention adjourned to meet at Columbus, May 11, 1887, at which time it is expected that a majority of all the millers in the State will be present as members. Success to the Nebraska Association. Let other States follow their good example.

RECENTLY a barrel was produced from paper pulp which seems destined to supersede the wooden article. Its general appearance is that of a common wooden barrel thickly varnished, while only five pieces are used in making it. It is bound with ordinary wooden hoops, and the head is in one piece, so constructed that it fits into the barrel air-tight and is held firmly in place by a hoop without the use of nails. The body is seamless and the interior and exterior are glazed with a substance which renders the barrel impervious to moisture so that liquids of all kinds can be transported in it without loss.

On January 25th, Thomas Dougherty, the chief flour inspector of the New York produce exchange, certified that he had inspected 150 barrels of flour which had been shipped from a distance in these paper barrels and had found them to be all sound. It generally happens when flour is shipped in wooden barrels, that a quantity of it sifts through the cracks where the staves join and is lost. It was found by weighing the flour in paper barrels that none of it had been lost in this manner. The pulp used in the production of these barrels is obtainable from any fibrous substance and as there is hardly a locality where some such substance does not grow, the barrels can be manufactured almost any where. The bulk of the wood used for the manufacture of barrels is now brought from Western Ohio, Indiana, Michigan and Wisconsin, and as the supply is constantly de-

creasing there, the difficulty and expense of obtaining the timber is increasing. The inventors of this process for making barrels say that the weeds and rank grasses which grow on the meadows lying between Jersey City and Newark will produce an excellent pulp for this purpose, and that thus these practically waste lands may be made productive and profitable. The cost of manufacturing the paper barrels is no greater than that of making the wooden articles, and with the patented machine it is said two men can produce 600 barrels a day.

## COMMISSIONER FINK AND THE INTER-STATE COMMERCE BILL.

One of the most interesting contributions to the Inter-state Commerce Bill, from the point of view of the railroads is that made by Commissioner Albert Fink in a carefully prepared communication published this week, in which he discusses the effects and bearings of the law upon railway rates. In this document Mr. Fink concerns himself with the interpretation of section 2, relating to discriminations, and section 4, relating to long and short hauls. He starts from the proposition that the object of the passage of the law was to make the transportation charges of the railroads "reasonable and just," and he says the sections in question must be construed in the light of this object. In the construction of both of the sections referred to he lays much stress upon the clause, "under substantially similar circumstances and conditions," which occurs in each. If this clause were not incorporated in section 2, the commissioner says, it would forbid the practice of pro-rating, but the insertion of the clause bringing up for consideration the different circumstances and conditions legitimately influencing rates apart from the service allows different rates to be charged for the same service.

Regarding the bearing of the clause upon the interpretation of the long and short haul section, Mr. Fink says that the "conditions and circumstances" must refer to the principal elements which control transportation charges, the cost of service and competition, using the word "competition" in the widest sense, and as including competition with water routes, with rail routes between markets, etc. If, he says, it can be shown that it costs a railroad more to carry freight for fifty miles over its road than to carry the same kind and quantity of freight one hundred miles, the clause would be an authorization for charging more for the fifty-mile service than for the hundred-mile service. The result would be the same in case it could be shown that the rate to the end of the hundred miles was fixed by water transportation at an amount hardly sufficient to pay the railroad the cost of doing the work. In this case he holds that the railroad company would be justified in making a lower rate to the station one hundred miles distant than it does to the station fifty miles distant. In short his view is that in all cases where the cost of the service and legitimate competition justify a higher charge for a shorter than for a longer haul, section 4 does not prohibit it. Mr. Fink's interpretation of the long and short haul clause, it will be seen, would make that much-discussed section a much more flexible provision than the earlier critics of the bill, from the railroad side, seem to have thought it.—Bradstreet's.



## THE MICHIGAN MILLERS.

The Michigan Millers' Association convened in the parlors of the Kalamazoo House at 1 o'clock, Feb. 1, President D. B. Merrill, of Kalamazoo, presiding, and Frank Little, also of that city, secretary. There was a good representation of the milling interests of southern, western and northern Michigan present. Among those in attendance were C. G. Voigt, of Grand Rapids; F. W. Stock, of Hill-dale; George I. Crossette, of Constantine; E. C. Hinman, of Battle Creek, C. C. Kritzer, of Newaygo; Eli Wise, of Paw Paw; E. B. Badger, of Niles; A. C. Weeks, of Allegan; John A. Heck, of Tecumseh; Geo. H. Rix, of Lawton; Monroe J. Cornwell, of Cadillac; C. M. Darrah, of Big Rapids; Frank Newman, jr., of Dorr; C. S. De Roo, of Holland; E. B. Martin of Read City; N. W. Rowe, of Grand Rapids, and Martin Henderson, of Muskegon.

They at once began the discussion of topics of the greatest interest to their business and property protection.

Mr. Weeks, of Allegan, offered the following which was unanimously adopted:

*Whereas*, under act No. 148 of public acts of 1881, all insurance agents are prohibited from soliciting or acting as agents for foreign insurance companies in this state, not doing business under act of April 3, 1869, as amended, under a heavy penalty; and

*Whereas*, on account of said act No. 148, insurance companies have entered into a combination, thereby raising rates, until in some cases they are prohibitory, and

*Whereas*, we cannot see why any person should not have the privilege of taking out insurance in any company they may desire, whether it is organized under the law of 1869 therefore, be it

*Resolved*, That this meeting unanimously request that the act entitled "An act to prevent the soliciting or issuing of unauthorized fire or inland marine insurance policies in this State," such act being No. 148 of the act of 1881 be repealed.

This was followed by the appended preamble and resolution, offered by Mr. Hinman of Battle Creek, and the same was unanimously adopted:

*Whereas*, under the existing insurance laws, insurance companies doing business in Michigan have combined to advance the rates of insurance on property, and in many instances totally excluding certain lines of manufacturing property from obtaining insurance legally within this State, and

*Whereas*, the said board insurance companies by means of this combination and the existing laws exclude many good companies from legally doing business in this State, and permit a virtual monopoly of the business to a few board companies; therefore, be it

*Resolved*, That it shall be considered unlawful for two or more fire insurance companies doing business under the State laws, to form any combination to maintain insurance rates or to pool their earnings. Each insurance company shall act independently and make a rate on property to be insured independent of any other insurance company. Any violation of this act shall be punishable by a fine of \$500 for each company interested and \$50 per day for a continuance of the violation.

A committee consisting of Messrs. Hinman, Rowe and Stock was appointed to secure the proper drafting of a bill embodying the above principles and ideas, secure the printing and and forwarding of the same to every miller in the State and present it to the legislature.

The question of a bill which passed the legislature authorizing the organization of a Millers' Mutual Fire Insurance Company came up. The bill was drafted by Mr. Frank

Little of Kalamazoo, for the State Millers' Association, but before the Company was formed, some enterprising gentlemen at the capitol got away with the organization.

At the afternoon meeting the action of the National Millers' Association was discussed, and the opinion prevailed that that association had drawn from the pockets of the Michigan millers all that it ever would. There was a strong sentiment to increase the strength of the State Association, and as Mr. Voigt expressed it, "by united efforts the wheat grown in Michigan can all be ground in the State. There is no use exporting wheat."

Nearly all those present renewed their membership by the payment of \$5, and are willing to aid in securing the passage of their insurance bill and organize a strong State Association.

At the evening session the committee on nomination of officers made the following report which was adopted unanimously:

President, D. B. Merrill of Kalamazoo; Vice President, C. G. A. Voigt of Grand Rapids; Secretary and Treasurer, Frank Little of Kalamazoo.

The constitution of the State Association was read and adopted. The Secretary was instructed to have constitution published and sent to all millers in the State, with a view of getting all interested in the Association.

An hour was spent in discussing various matters of interest only to the millers themselves. The question of selling flour by brands and by letter were discussed at length and the sentiment was paramount that Michigan flour will stand on its merits anywhere and sell against the world's competition. The claims of patent holders on the methods of bolting flour by the roller process were discussed, Mr. Merrill stating that he had been threatened with suit for infringement of a patent of that kind.

## TAXING PRINCIPLES.

If the socialists of the various shades in the United States would agree on a definite formulation of their principles they would be able to exert no small force in politics. But it is as hard for them to agree as it is for the doctors. Nor is the difficulty of agreement peculiar to this country. In France it is scarcely to be doubted that there would be a revision of the basis of taxation if there were even approximation to agreement on the form which reformation should assume. Need of revision exists in England, and indeed throughout Europe. The discussion of the subject in this country has received impetus from the plain platform declarations of Henry George and his immense run at the polls. But while public opinion of the weightier sort has been inclined to yield much to George in the matter of principle, the very classes of which he is the most distinguished exponent are not so harmonious as might be supposed. A committee at Chicago submitted a scheme the other day including what they considered necessary legislation in the interest of the laborers, and the intention to press the topic may be inferred from the presentation of it to a committee representing the Iroquois Club, the Union League Club, the Citizen's Association and the Commercial Club. But instead of insisting on the simplification of the basis of taxation, a la George, the workingmen's committee suggested to those powerful clubs the compelling an honest taxation of property, real

and personal, including bank stocks and deposits, securities and similar properties.

No form of property can so easily evade every public process, and none can be assessed with so sure a result of incalculable inequity. The notion that money constitutes wealth has been the most stubborn survival of crude thought, and probably can never be wholly expelled from political economy. But in the field of practical fiscal it is not difficult to learn that money cannot be successfully taxed—cannot be made to bear a direct and fair proportion of the public burden.—N. O. Picayune.

ROBERT GRIMSHAW'S new work, entitled "The Pump Catechism" is just out. Price \$1.00. The work is a practical help to runners, owners and makers of pumps of any kind. It covers the theory and practice of designing, constructing, erecting, connecting and adjusting pumps. The work can be ordered from the UNITED STATES MILLER.

## BREAD MAKING WITHOUT GRINDING

According to the French *Journal de la Boulangerie*, an attempt is being made to prepare bread without putting wheat grain through the usual process of grinding. The experimenter is M. Sezille, and his plan may be briefly stated. Water plays an important role in his process, as the experimenter proposes to produce from 319 to 330 pounds of bread from 220 pounds of grain. He enthusiastically proceeds immediately to compute the total saving to the French Republic through his process, and he modestly places the aggregate at 70,750,000 bushels of grain a year. The process may be characterized as a new method of preparing dough, and is nothing more than a repeated washing process. First of all, the grain is stirred about for some minutes in a trough filled with water, whereby the light and defective grains are brought to the surface and removed. After the defective grain is removed the sound remnant is left in the water a half hour longer, when it is freed from dust. The grain then passes into a cylinder of perforated tin made with roughened interior, where a portion of the epidermis, from 2 to 3 per cent. of the first or external layer is rasped off. The remainder of the husk together with the crease dirt, nominally insignificant, and according to Sezille only two per cent., he allows to pass into the dough. The second step is a warm bath, from 20 to 25 degrees Celsius, and about 400 pounds of grain are handled at a time. This water is mixed with a kilogramme, or 2.204 pounds, of half-dry yeast or barm and from 5 to 7 ounces of grape sugar. This is the essential point in this process. The grain remains about 24 hours in this bath, and is then ready for panification. Next follows the manipulation, which remotely resembles grinding, for rolls are brought into use, but it is in reality only a kneading process, as the cheese-like mass is merely crushed between the rolls in order to break up the tough husk and mix it with the rest of the dough. This completes the dough, which is salted and moulded into loaves. The process is thus seen to be very simple, but it is not short, for it demands time to take the place of the machinery used in milling. The competition with grinding processes offered by this curious method of M. Sezille is not likely to prove a dangerous one, for time and space and the necessary hand labor are money.



## THE PRACTICAL GIRL.

She, with a milk pail on her arm,  
Turns aside with her young cheeks glowing,  
And sees down the lane the slow, dull tread  
Of the drove of cows that are homeward going.

"Bessie," he said—at the sound she turned,  
Her blue eyes full of childish wonder—  
"My mother is feeble and lame and old,  
I need a wife at my farm-house yonder.

"My heart is lonely, my home is drear,  
I need your presence ever near me,  
Will you be my guardian angel, dear,  
Queen of my household to guide and cheer me?"

"It has a pleasant sound," she said—  
"A household queen, a guiding spirit,  
To warm your heart and cheer your home,  
And keep the sunshine ever near it,  
But I am only a simple child,  
So my mother says in her daily chiding,  
And what must a guardian angel do  
When she first begins her work of guiding?"

"Well, first, dear Bessie, a smiling face  
Is dearer far than rarest beauty;  
And my mother, fretful, lame and old,  
Will require a daughter's loving duty.  
You will see to her flannels, drops and tea,  
And talk with her lungs and liver;  
Give her your cheerful service dear:  
"The Lord he loveth a cheerful giver."

"You will see that my breakfast is piping hot,  
And rub the clothes to a snowy whiteness;  
Make golden butter and golden rolls,  
And polish things to a shining brightness;  
Will darn my stockings, and mend my coats,  
And see that the buttons are sewed on tightly;  
You will keep things cheerful and neat sweet,  
That home's altar fires may still burn brightly.

"You will read me at evening the daily news,  
The tedious winter nights beguiling;  
And never forget that the sweetest face,  
Is a cheerful face that is always smiling,  
In short, you'll arrange in a general way,  
For a sort of sublimary heaven;  
For home, dear Bessie, say what we may,  
Is the highest sphere to a woman given."

The lark sang out to the bending sky,  
The bobolink piped in the nodding rushes,  
And out of the tossing clover blooms  
Came the sweet, clear song of the meadow  
thrushes.

And Bessie, listening, paused a while,  
Then said, with a sly glance at her neighbor,  
"But, John—do you mean—that is to say,  
What shall I get for all this labor?"

"To be nurse, companion and servant girl;  
To make home's altar-fires burn brightly;  
To wash and iron and scrub and cook,  
And always be cheerful, neat and sprightly;  
To give up liberty, home and friends,  
Nay, even the name of a mother's giving;  
To do all this for one's board and clothes;  
Why, the life of an angel isn't worth living!"

And Bessie gayly went her way,  
Down through the fields of scented clover,  
But never since that sunny day  
Has she won a glance from her rustic lover.  
The lark sings out to the bending sky,  
The clouds sail on as white as ever,  
The clovers toss in the summer wind,  
But Bessie has lost that chance forever.

[Julia Miles Dunn.]

## NONSENSE.

MUSIC TEACHER—"The object of this lesson is to inculcate obedience. Do you know what obey means?" Apt pupil—"Yes, marm, I obey my pap." "Yes, that's right. Now tell me why you obey your father." "He's bigger'n me."

"Yo' says dey pumps dat ar coal ile outen de yarth? Den, honey, you looks out fer fun one o' dese days! Fer when de ile all clean gone offen de yarth's axtle she boun' to get

a-fire, and den prophesy be 'stablished shuah 'nuff!"

AN Alabama man recently divorced from his wife died from grief over the separation. He is supposed to have been overcome while endeavoring to sew on a suspender button.

BOUND FOR HEAVEN, BUT GOT INTO THE CANAL.—An anecdote is told of Moody, the revivalist, and a Canaler, to the following effect:

He was holding forth in Rochester, and in walking along the canal one day came across a boatman who was swearing furiously. Marching up he confronted him and abruptly asked:

"Sir, do you know where you are going?"

The unsuspecting man innocently replied that he was going up the canal on the boat, Johnny Sand.

"No, sir, you are not," continued Moody; "you are going to hell faster than a canal boat can carry you."

The boatman looked at him in astonishment and then returned the question:

"Sir, do you know where you are going?"

"I expect to go to Heaven."

"Not by a — sight; you are going into the canal!" and, suiting the action to the word, he took Moody in his arms and tossed him into the murky waters, where he would have drowned had not the boatman relented and fished him out.

EASTERN drummer (to St. Louis merchant)—That was a pretty bad failure of Isaac Stein's? Merchant—'Pad? Vell, you vas right it vas. It vas de vorst failure of de season. His greditors made him bay 75 cents on the dollar. It is better to stay in peesness as to fail like dot.

"ANY chance for a situation in your street railway company, Mr. Jerkies? I am a good accountant."

"Where did you work last?"

"I was book-keeper in a bank."

"How long?"

"Ten years, sir."

"Book-keeper in a bank for ten years! Great, Scott, man, you ought to be able to buy me out by this time!"

It is told in Louisville that a party of Kentucky officials from Frankfort recently went into the country to brace up. Walking lazily along one day they came across a big rattle-snake lying across the road. All saw it, but no one paid the least attention to it, and each carelessly stepped over it and said nothing. A farmer watched the proceedings in horror, killed the snake, and asked the officials what was meant by such conduct. He was informed that it was such an every day affair for men to see snakes in Frankfort that no one thought anything of a single snake in the path.

A ST. PAUL clergyman is reported as saying that if Jesus Christ "run a carpenter shop here in this city, there are fully one-half of our church members who drive up to our churches in their fine carriages who would not speak to him. He could not get social recognition unless he lived on Summit avenue or belonged to a club."

NOT HIS FAULT—A counsellor who is a great believer in the law's delays, and never loses an opportunity to profit by them, recently moved in the superior court for the postponement of a case in which he was

attorney for the defendant. His opponent, who was anxious to proceed with the trial, said: "This is the fifth time that you have made excuses for not going on with this matter. Your Honor (to the judge) this case has been adjourned on his motion every time. I have always been ready for trial and I think he has had indulgence enough. The interests of my client are suffering on account of these continued delays."

"It is impossible," replied the dilatory lawyer, "for me to proceed at this time. My wife has just had a baby and I have had no time to prepare myself."

"Oh, well," answered the counsel for the plaintiff, testily, "you always have some excuse. I have never asked for any delay. In every instance in which a motion has been made for an adjournment you have been responsible for it."

"I hope you don't consider me responsible for this one," replied the procrastinating barrister; and then, noticing the smile upon the face of the judge, he added quickly, "It wasn't my fault, and I assure your Honor this will be the last time." Amid the general laughter that this occasioned the speaker sank into his chair in helpless confusion. The judge with his handkerchief pressed to his mouth, with difficulty mastered his desire to shout, and intimated with a wave of his hand that the case might go over for the term.

A VERY religious old darkey brought ten pounds of geese feathers into Baltimore to sell, and the buyer found them of such excellent quality that he said: "Uncle Reuben, if you will promise not to mix any hen's feather in I'll agree to buy all the geese feathers you can bring me." "I—I can't 'zactly promise on dat, Mas'r Sodus." was the hesitating reply. "Dar' am two kinds of religun in my house, an' while mine leans to'rd clean geese feathers de ole woman's kinder allows hen's feathers to get mixed into de bag to make up weight. Reckon you'd better 'zamine de bag afore it goes on de scales. I nebber buys a coon up a tree."

A YOUNG widow in Waukesha, whose husband had been dead for a month, and whom she had always supposed free from the small vices, was overhauling his clothes the other day. She found a large plug of tobacco in a coat pocket. "Oh, George, George!" she exclaimed despairingly, "you and I will never meet in the good world." In another pocket of the same garment she found a life insurance policy for \$5,000, of which she had before known nothing, and she burst forth exultantly, "Oh, yes, we will, we will! Heaven will forgive him his one little fault!"

WHERE A RAILROAD COMPANY GETS ITS WORK IN.—"Can you tell me," he asked, as he entered an office on Broad street, the other day, "why the railroads should discriminate so heavily against dressed meat over live stock?" "Certainly, sir; dressed meat is dead, isn't it?" "Of course." "Well, anything that can't kick is always bulldozed by a railroad company."

THE deacon's wife wanted to jot down the text, and, leaning over to her scrapegrace nephew, she whispered: "Have you any cards about you?" "You can't play in church!" was his solemn, reproving answer; and the good woman was so flustered that she forgot all about the text.



## NEWS.

E. E. STARK, miller, Clyde, O., has sold out.

MR. J. NEYMAN is erecting a grist mill at Center, Ala.

D. W. THOMPSON, of Abbottsburg, N. C., will rebuild his mill.

WHEAT HEATERS are again in favor among Kansas millers.

STEPHEN ANDRUS, miller, at Perrinsville, Mich., has sold out.

C. C. HARRIS & FREEMAN are building a mill at Jasper, Ala.

A STEAM corn mill has been erected at Liberty, Va., by John Bell.

AN elevator will be built soon at Chetopa, Ks., by B. S. Edwards.

A CORN mill has been erected at Rockwood, Tenn., by L. M. Walsh.

J. R. MCKINNEY, Blackwell's Station, Ga., is erecting a grist mill.

A CORN mill has been erected at Barnesville, Ga., by R. A. Weldon.

THE Winona (Minn.) Mill Co., are putting in another large steam engine.

W. H. LONG & Co., Howard, Pa., have started their 75-barrel roller mill.

S. F. STRAIGHT will shortly erect a \$20,000 flour mill at Hermosa, Dak.

JACKSON BROS. have one of the finest roller mills in Kansas, in Cawker City.

T. W. WILSON desires to sell his 50 bbl. steam mill near Albert Lea, Minn.

R. R. WALKER, of Harrisville, Pa., has started his 50-barrel full roller mill.

J. M. TAYLOR, Slate Mills, Va., is refitting his flour mill with roller machinery.

J. C. HARVEY, Plover, Wis., will rebuild his mill, which was destroyed by fire.

A STOCK company has been organized at Dublin, Va., to build a roller flour mill.

CAPT. D. P. DYER, of Kansas City, Mo., will build a large flour mill at Baxter, Kan.

JACOB EMMERT, of Greensburg, Ind., is erecting a 50-barrel water power roller mill.

A \$10,000 mill is to be erected at Chase, Rice Co., Ks. The plans have not yet been adopted.

THE firm of Jackson & Hosken, Dayton, Wis., has dissolved; Mr. Joseph Jackson succeeds.

AUG. SCHWABHEIM and others of Chippewa Falls, Wis., will build a 75 bbl. mill next spring.

FRED MYERS, Poplar Bluff, Ark., will rebuild his saw and grist mills, lately burned, at once.

BURNED—Jan. 19, E. R. Stewart & Son's mill at Clifton, O. Loss \$25,000. Insurance \$12,000.

It seems quite probable that quite a number of new mills will be erected in Nebraska this year.

THE Loup City Roller Mill Co., of Loup City, Neb., has incorporated with a capital stock of \$50,000.

THE Knoxville Flouring Mills, Knoxville, Tenn., will put in about \$4,000 worth of new machinery.

P. P. DONAHUE, is the new head miller of Perry Hutchinsons 300 bbl. roller mill at Marysville, Ks.

JOHN D. KNOX & Co., of Topeka, Kan., have contracted for machinery for a 75-barrel full roller mill.

At a recent meeting of the Iowa Millers' Association, J. J. Snouffer of Cedar Falls, was elected president.

WEBSTER, ROOKS Co., Ks., wants some one to build a mill at that place. The citizens are willing to assist liberally.

It is reported that Mr. Warner, Shelbyville, Tenn., contemplates erecting a \$6,000 flour mill at Shepherdsville.

E. M. STAUFFER, Quarryville, Pa., will erect a large steam mill, with all improved machinery, for making roller flour.

MR. EITEL's mill at Chaska, Minn., will be remodeled to the roller system this spring with about 100 bbls. capacity.

A 50 bbl. mill will probably be built at Nicollet, Minn., this year by H. A. Anderson and others of that place.

THE "Farmers' Exchange Flouring Mills" have been incorporated at Metropolis City, Ill. Capital stock, \$10,000.

THE Ashton Flour and Feed Co. has been incorporated at Muscatine, Iowa, Wm. Huttig, President. Capital stock, \$10,000.

THE Maryville City Mills Co., capital stock \$8,000, has been organized at Maryville, Tenn., to build a 50-barrel roller flour mill.

ALEX. WOODS, of Smith's Falls, Ont., contemplates erecting a roller mill of from 75 to 100 barrels capacity the coming spring.

THE Geo. T. Smith Middlings Purifier Co., of Jackson, Mich., recently sold C. A. Pillsbury & Co., of Minneapolis, 41 centrifugal reels.

BURNED—Robert Moore's mill at Waterville, Ks. Loss about \$25,000. Insurance \$17,000. Mr. Moore has had two mills burned heretofore.

J. O. STOWE & Co., Sterling, Ks., will soon make another large addition to their mill which will give it a daily capacity of about 300 bbls.

THE Goldcamp Milling Co has been organized at Ironton, Ohio, with a capital stock of \$16,000. John S. Goldcamp and others, incorporators.

THE Phoenix Milling Co., of Tracy, Mo., will tear down their old structure and erect a substantial brick mill, to be operated on the roller system.

"Callar's Flour Mill," at Stewartsville, Mo., is to be enlarged and made a roller mill, at a cost of \$4,000. The contract for same has not been let as yet.

W. F. PHELPS, is the new secretary of the Duluth Chamber of Commerce. He recently resigned the position of secretary of the St. Paul Board of Trade.

DR. J. R. HOWES new mill in Duluth, Minn., has a most desirable location having perfect receiving and shipping facilities by both rail and water. The mill is already doing an excellent business.

J. L. WHIPPLE talks of removing his first class flour mill from Wyandotte to Detroit, Mich., unless a stock company is formed to buy him out. He will establish a mill in Detroit anyhow.

THE Aveyer Elevator Bucket Co., Cleveland, O., have now in successful operation a press which turns out rapidly, seamless, steel elevator buckets. They are extremely low in price and are very durable.

H. M. LEWIS & Co., proprietors of the "Casco Roller Mills," at Camp Point, Ill., are doing a thriving business with J. T. Little as head miller. Their mill has a capacity of 150 barrels per day.

STARR & Co., of Wheatport, Cal., have just completed their new mills, and A. D. Starr, president of the company, is now in the East having plans drawn for and selecting the engines and machinery. In 1888 this company exported, largely to Europe, about 500,000 barrels of flour.

THERE is talk of a large flour mill and elevator being built at Keewatin, Manitoba, the mill to have a capacity of 1,000 barrels daily. A. Mitchell, of Montreal, and S. Mather, of the Keewatin Lumbering Co., are mentioned in connect on with the scheme. There is fine water-power at Keewatin for running machinery.

THE Citizens Milling Co., of Toronto, have remodeled their mill to the full roller process. Messrs. Inglis & Hunter furnished the machinery, using "Case" Rolls, and altering their rolls from gear to the "Case" Belt Drive, and putting the "Case" Patent Vibratory Feed on, all over the mill. They made a very successful start.

A TERRIFIC explosion completely destroyed the roller flouring mill at Carberry, Manitoba, Jan. 6, caused by the ignition of flour dust. Mr. Ritchie, the miller in charge, was badly burned about the face and hands. Some of the heavy timbers in the mill were thrown sixty feet. The loss is estimated at \$35,000. The building, which is a complete wreck, will be rebuilt.

MR. JOS. SCHULTZ, manager of the Phoenix Iron Works, St. Cloud, Minn., informs us that his father, Mr. Jos. Schultz, will erect near the works a model flouring mill, of a capacity of 75 barrels per day, which will be fitted up with the milling machinery made by the Phoenix Works, and be run not only for profit but also for the purpose of showing in practical operation the machinery manufactured by the Iron Works Co. The new mill will be fitted to grind wheat, corn, rye and oats, and will make flour by a new process invented by Manager Schultz himself, a flour which it is said is better in every way than

any manufactured by the Minneapolis mills. The products of the mill will be merely for the local trade, but it will add another important enterprise to St. Cloud's rapidly growing list, and will increase the indebtedness of this city to the energetic Phoenix Company.—*St. Cloud Journal-Press*.

THE flour milling industry is well represented in Newmarket, Ont. Without any exception, the finest mill north of Toronto is situated here. The mill is a comparatively new building of white brick, 45x100 feet, five stories high, with a storehouse attached, 32x60, capable of storing 30,000 to 40,000 bushels of wheat. The power is water, with steam auxiliary, and has a capacity of 200 barrels per diem. The mill is just now being remodeled to the full Hungarian process; the bolting will be done on an entirely new system, there being none like it in Canada. The machines are built especially for this system of working, and are much more economical and efficient, and take up much less room, than the old style of bolt. The proprietor, Mr. B. F. Reesor, claims that when completed the mill will be equal to any in the United States, and second to none in the Dominion. The trade will be principally in strong flours, for bakers' and family use.

## PUBLICATIONS RECEIVED.

IN the February *Century* Mr. Edward Atkinson continues, in his second paper concerning "The Relative Strength and Weakness of Nations" the skillful application of statistics to social science for which he is conspicuous. In pointing out the weakness of nations, comparative data concerning national debts and area of territory per capita and the size of standing armies of leading nations are not only presented but are graphically expressed in an ingenious manner. A very interesting exhibit is made of the relative proportion of "the assumed product per capita (of various nations) which is absorbed by national taxation only," on the basis of previous calculations. This, of course, goes far toward making clear some of the chief elements of the weakness of nations, in contrast to which the exhibit for the United States is marked.

IN *Scribner's Magazine* for February James Russell Soley, U. S. A., refers to the condition of the American navy in 1861, and suggests improvement in various of the naval departments. As an incentive to the best endeavor on the part of naval officers he recommends a radical change looking to the recognition of individual merit. He claims that a training school, with modern ships, and modern weapons is a necessity. A trained naval reserve force should be ready in case of need, and finally he says that a dozen or twenty ships do not make a navy, but that the process of creating a navy must go on year after year in order to embody the latest inventions and improvements.

THE ART AMATEUR for February has for its most striking feature an admirable double page crayon drawing—"The Man at the Wheel,"—by E. Renouf. Scarcely less noticeable is the fine charcoal head of Alfred Tennyson, by Jacques Reich, from the drawing in the Salmagundi Exhibition. Among the numerous practical designs are several for chasubles and chalice veils, a panel of oak leaves and acorns for wood carving and decorations for a fruit plate (apples) and a square vase (phlox). A long and interesting illustrated notice is given of the A. T. Stewart collection, which is to be sold next March. The specially practical topics treated in this number are fruit and portrait painting in oils, the use of water colors, china painting and church vestments. There are also several useful articles on interior decoration, including a suggestive talk on the "Color Scheme of a Room." The various exhibitions and other themes of current art interest receive pungent notice in "My Note Book" and the Boston and Paris correspondence. A prize of One Hundred Dollars for the best design for a new cover for THE ART AMATEUR is offered by the publisher, Montague Marks, 23 Union Square, New York.

IN the current number of *Harper's Monthly*, Sir Edward J. Reed concludes his interesting review of the "Navies of the Continent," discussing the naval strength of Italy, Russia, Germany, Austria and Turkey. His conclusions are worth noting. Regarding the minor naval powers he says that they are falling more or less completely out of the lists of naval competition. Touching the more important of the continental naval powers, he says: "The naval policy of Germany is defensive. She is almost without pretensions upon the open sea. Turkey is slowly



but surely succumbing to Russia, and in the near future the Russian Black sea fleet will hold unquestioned mastery over Turkey. Italy has a naval role of her own to play in Europe, and on the whole is playing it well. Austria would do well to hesitate, in her present naval condition, before again exposing herself to the swift and destructive onslaughts which the tremendously armed and excessively fast Italian ships could make upon her. France is a really great naval power, and there are circumstances which would make a naval conflict between her and England one of the most uncertain in the history of the world."

#### HOW IT WORKS.

A Chicago commission merchant has been telling *Daily Business* how the bucket-shop manipulation of the wheat market is carried on. He said:

"Whenever the market looks especially strong everybody wants to buy a little wheat. The fellows on the Board buy some, and every fellow in the country invests a few dollars. The country trades through the bucket-shops, and the aggregate amount of wheat bought in small lots is very large; some days, I am reliably informed, running up as high as 50,000,000 bushels. Two or three central concerns in this city have 400 or 500 agencies and branch bucket-shops scattered through the country, and they get reports every afternoon of the amount of business done at each one of them. These few central concerns handle two-thirds of the bucket-shop business of the whole country. The country shops clear their trades through the main houses in this city, and every afternoon the managers go home knowing exactly how the country stands. On an active bull day they leave off 40,000,000 or 50,000,000 bushels short to the country. The next morning, if the conditions are favorable, a certified check for \$50,000 is put in the hands of Slapdash, the broker, who is directed to "unload" 1,000,000 bushels of wheat at the opening regardless of price. The wheat must be got rid of at once. The market closed weak the night before, and it is safe to assume that the country had caught on at the top, with its 1c. margin. Mr. Slapdash does not know anything about that, nor does he care. He knows that he has received a certified check for \$50,000 from a capitalist, perhaps unknown as a bucket-shopper, and an order to get rid of 1,000,000 bushels of wheat quick. This he proceeds to do after the most approved fashion, breaking the market in a jiffy within a split, 1/4c. or 1/2c. of the limit to which the country is margined. The scalpers tail on and help the thing along. They always try to go with the big orders—to swim with the current. When the market gets down to within a small fraction of the freezeout limit. Broker B appears with a certified check for \$12,500 or \$15,000 in his pocket and a club in his hand in the shape of an order to sell 250,000 or 300,000 bushels of wheat the minute the price touches—well, we will say 84c. 'Dump it,' are his instructions; 'offer it below the market; sell it at 83 1/4, sling it.' An official quotation, 83 1/4c., goes out over the tape. The 1c. margins of 20,000 victims who were long 40,000,000 or 50,000,000 bushels of wheat to the bucket shops are wiped out, and \$400,000 or \$500,000 in money goes into the coffers of the bucket-shops. The manipulators have gained their point. At this point broker C, representing the bucket-shops, appears in the pit with a \$50,000 certified check in his pocket, and an

order to buy 1,000,000 bushels of wheat. The market turns up, and the tailers go with it. It reacts 1/2 to 1c. The wheat that was dumped has been bought, the deal adjusts itself, and the bucket-shop man gets out with a very small loss, or perhaps no loss at all. Brokers Slapdash, B and C pocket nice commissions, the victims growl at the Board of Trade, call it a robber and go right along feeding the bucket-shop tiger. This game has been played again and again to my certain knowledge, and it will continue to be played until the law steps in to protect the public by wiping the bucket shops out of existence."

#### STREET CLEANING IN PARIS.

BY H. VIVAREZ.

The removal of household refuse is a matter which has attained to far more importance in Paris than in London. The density of the population is much greater, while the consumption of vegetables which gives rise to a large amount of waste matter, is much more considerable. Previous to the year 1870 the inhabitants of Paris were permitted to place their domestic refuse on the edge of the pavement in front of their houses, provided that they did it early in the morning. In reality those deposits commenced to be made as soon as the obscurity of the evening favored the act, and a serious nuisance was thus created. In the year 1846 the authorities had attempted to oblige the inhabitants to keep their waste in their houses until the moment when the dust-cart passed to collect them. That regulation was renewed in 1870, on account of the public health during the siege of Paris. But alike in 1846 and in 1870 the law was a dead letter, particularly in the more remote districts. It was not only opposed by the negligence and ill-will of the inhabitants, but there was mixed with these a question of another order.

There exists in Paris a special industry which supports about 15,000 persons, and produces seven or eight millions of francs per annum. It is the rag-picking (*chiffonage*) carried on by a nocturnal population which sally forth at dusk, basket on back and hook in hand, to pick out from the heaps of refuse, by the light of a lantern, rags, paper, bones, in a word, anything which can be utilized in the slightest degree. Contrary to what might be expected, the population is generally composed of thoroughly honest people, of excellent character, and this has always contributed to secure for the craft of *chiffonage* the sympathy of the press and the public. It is to the interest of the rag-pickers that the refuse should lie in the street as long as possible, in order that they may turn it over and over, and by patient search extract everything of value. This consideration has always had great weight in the amount of observance accorded to the regulations. Recently the law has been put vigorously into force by E. M. Poubelle, Prefect of the Seine, and the question of *chiffonage* has been again discussed by the press most vigorously. This time, however, the authorities of the city have prevailed, thanks to their energy and moderation. The new rule is dated March 7, 1884, and its chief provisions are as follows: (1) It is forbidden to throw into the public thoroughfare, at any time of the night or day, either domestic refuse or sweepings from the interiors of buildings. (2) From the present date the landlord of each property must deposit every morning, either

on the pavement outside, or within the doorway, at a point perfectly visible and accessible, one or more receptacles of sufficient capacity to contain the household refuse of all the tenants of the building. These receptacles must be placed at least one hour before the official time of collection, and must be carried back into the interior of the building within a quarter of an hour after the passage of the dust-cart. (3) The receptacles must satisfy the following conditions: Each must have a maximum capacity of 120 litres (4.23 cubic feet) and must not weigh more than 15 kilogrammes (33 lbs.) empty. If it be circular it must not be more than 55 m. (21.6 in.) in diameter, and if elliptical or rectangular it must not exceed 50 m. (20 in.) in width, nor 80 m. (31.5 in.) in length. In any case the height must not be greater than the smaller of the two horizontal dimensions. The receptacles must have two handles at the upper part. They must be painted or galvanized, and bear in plain characters the number of the house and the name of the street.

These rules are in force and cause no difficulty in execution. The population of Paris have adapted themselves to the new order of affairs; the opposition of the *chiffoniers* is gradually dying out, while public sanitation has realized a sensible improvement.

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#### ITEMS OF INTEREST.

AMERICA LEADS THE WORLD IN STEAM AND WATER POWER.—This country leads all others in steam and water power available for industries. We have 8,152,000 horse-power in steam and 61,150,000 in river. The United Kingdom has 7,780,000 in steam, and only 4,500,000 in its rivers; Germany, 4,325,000 in steam and 5,040,000 in rivers; France, 3,573,000 in steam and 6,130,000 in rivers; Russia, 1,365,000 in steam and 46,115,000 in rivers; Austria, 1,200,000 and 5,830,000 respectively; Italy, 480,000 and 3,960,000; Belgium, 595,000 and 370,000; Holland, 216,000 and 530,000. All Europe represents 20,917,000 steam horse-power and 72,505,000 river horse-power. The steam power is in active use, but less than one-tenth of the river power is used.

THE WAY RATS CLIMB.—Where do these rats come from? Originally from the sewer and when the cellar floor is not made of cement or stone they are sure to get into the house. When the track is once opened they keep it well beaten. They go from the cellar all over the house. The lead pipes in the wall make excellent ladders for them to climb. They are expert climbers. When the house is to be cleaned the pipes are greased, if they are to be got at, so as to keep the rats in one part of the house. If this cannot be done then wire nets, with sharp-pointed sides, are hung directly near the holes. These tickle their whiskers, and when they raise the net and pass under it they cannot get back to the hole. In this way they are all corralled in one place. It takes time, as they are cute, and some of the old fellows cannot be led into any sort of traps. If there is anything in their way they will go miles out of their route to get around it.—*N. Y. Tribune.*



## PRACTICAL NOTES ON BELTING.

The formula given below is based on the experience of engineers in Great Britain, America and France. It serves the purpose of showing what width of belt will do the required work most efficiently and at the same time last the maximum number of years. Many engineers, more especially in this country, are content to provide belts of greatly reduced width and of single substance, instead of double, hence the frequent complaints of their stretching, breaking and lasting so short a time. As a matter of convenience and arrangement of machinery, a narrower belt than that which is shown by the generally accepted formula is often imperative; but in the absence of any such condition it is questionable economy to depart materially from it. The following may be regarded as an axiom: To use a belt of ample width and substance for the work required is to secure for it a long existence, with satisfaction to all concerned.

Directions for calculating the width of belts required for transmitting different numbers of horse-power:—Multiply 33,000 by the numbers of horse-power to be transmitted; divide the amount by the number of feet the belt is to run per minute; divide the quotient by the number of feet or parts of a foot in length of belt contact with smaller drum or pulley; divide the last quotient by six, and the result is the required width of a tanned leather belt in inches.

Explanations.—The figure 33,000 represents the number of pounds a horse is reckoned to be able to raise one foot high in a minute. To obtain the number of feet a belt runs in a minute, find the number of revolutions per minute of the driving shaft and multiply by the circumference of the drum, which is always 3.1416 its diameter. The final division by six is because half a pound raised one foot high per minute, is allowed to each square inch of belting in contact with the pulley; a pound must therefore be allowed to two square inches, or six pounds to a strip one foot long and one inch wide.

Example.—Required the width of a single belt, the velocity of which is to be 1,500 feet per minute; it has to transmit 10-horse power, the diameter of the smaller drum being four feet with five feet of its circumference in contact with the belt.

$$33,000 \times 10 = 330,000 \div 1500 = 220 \div 5 = 44 \div 6 = 7\frac{1}{3}$$

inches, the required width of belt.

Directions for calculating the number of horse-power which a belt will transmit.—Divide the number of square inches of belt in contact with the pulley by two; multiply this quotient by the velocity of the belt in feet per minute; again we divide the total by 33,000, and the quotient is the number of horse-power.

Explanations.—The early division by two is to obtain the number of pounds raised one foot high per minute, half a pound being allowed to each square inch of belting in contact with the pulley.

Example.—A six-inch single belt is being moved with a velocity of 1,200 feet per minute, with four feet of its length in contact with a three-foot drum. Required the horse-power:

$$6 \times 48 = 228 \div 2 = 114 \times 1200 = 172,800 \div 33,000 = 5\frac{1}{3}$$

horse-power.

It is safe to reckon that a double belt will do half as much work again as a single one.

Hints to users of belts.—1. Horizontal, inclined and long belts give a much better effect than vertical and short belts.

2. Short belts require to be tighter than long ones. A long belt working horizontally increases the grip by its own weight.

3. If there is too great a distance between the pulleys, the weight of the belt will produce a heavy sag, drawing so hard on the shaft as to cause great friction at the bearings; while at the same time the belt will have an unsteady motion, injurious to itself and to the machinery.

4. Care should be taken to let the belts run free and easy so as to prevent the tearing out the lace holes at the lap; it also prevents the rapid wear of the metal bearings.

5. It is asserted that the grain side of a belt put next to the pulley will drive 30 per cent. more than the flesh side.

6. To obtain a greater amount of power from belts, the pulleys may be covered with leather; this will allow the belts to run very slack and give 25 per cent. more durability.

7. Leather belts should be well protected against water and even loose steam and other moisture.

8. Belts working in very wet places should be ordered to be water-proofed.

9. In putting on a belt, be sure that the joints run with the pulleys and not against them out.

10. In punching a belt for lacing, it is desirable to use an oval punch, the larger diameter of the punch being parallel with the belt, so as to cut out as little of the effective section of the leather as possible.

11. Begin to lace in the centre of the belt, and take care to keep the ends exactly in line and to lace both sides with equal tightness. The lacing should not be crossed on the side of the belt that runs next the pulley. Thin but strong laces only should be used.

12. It is desirable to locate the shafting and machinery so that belts shall run off from each other in opposite directions, as this arrangement will relieve the bearings from the friction that would result where the belts all pull one way on the shaft.

13. If possible the machinery should be so planned that the direction of the belt motion shall be from the top of the driving to the top of the driven pulley.

14. Never overload a belt.

15. A careful attention will make a belt last many years, which through neglect might not last one.—*Textile Manufacturer.*

## RECIPES WORTH KNOWING.

TO STAIN BRICKS.—For staining bricks red, melt one ounce of glue in one gallon of water, add a piece of alum the size of an egg, then one-half pound of Venetian red and one pound of Spanish brown. Try the color on the bricks before using, and change light or dark with red or brown, using a yellow mineral for buff. For coloring black, heat asphaltum to a liquid state, and moderately heat the surface of the bricks and dip them. Or make a hot mixture of linseed oil and asphalt, heat the bricks and dip them. Tar and asphalt are also used for the same purpose. It is important that the bricks be sufficiently hot, and be held in the mixture to absorb the color to the depth of one-sixteenth of an inch.

A GOOD DISINFECTANT.—Copperas (sulphate of iron) one pound dissolved in a pail

of water is an effectual and convenient disinfectant for drains, cesspools, sinks and all waste-pipes.

HOW TO CLEAN BRASS.—It is a great mistake to clean brass articles with acid, as they very soon become dull after such treatment. Sweet oil and putty powder, followed by soap and water, is one of the best mediums for brightening brass and copper.

PAINT FOR SHEET IRON.—A satisfactory paint for sheet iron is made of varnish, one-half gallon; boiled linseed oil, one-half gallon; add red lead sufficient to bring to the consistency of common paint. Apply with a brush. Applicable to any kind of iron work exposed to the weather.

FIRE PROOF SHINGLES.—An exchange says that shingles may be made fire-proof by setting the butts into a trough of water into which half a bushel of each, of lime and salt and six pounds of potash have been dissolved.

STOPPING RUNAWAY HORSES.—The following method of stopping runaway horses would seem to be good, but few horse owners would care to advertise the vicious character of their animals by such a conspicuous device; neither would the owner of a horse ordinarily safe wish to adopt such a cumbersome contrivance as a regular part of his harness: "Place a cord with a running knot around the horse's neck near the neck strap. To this slip-noose attach a pair of reins which may be thrown over the dash-board ready to be seized at once. When the horse starts take up this cord and tighten the horse's throat. The most furious horse thus checked stops instantly and will not fall or kick. This is a Russian discovery."

NEURALGIA.—A very simple relief for neuralgia is to boil a handful of lobelia in half a pint of water, till the strength is out of the herb, then strain off and add a teaspoonful of fine salt. Wring cloths out of the liquid as hot as possible, and spread them over the part affected. It acts like a charm. Change the cloths as soon as cold, till the pain is all gone; then cover the place with soft, dry covering till perspiration is over, so as to prevent taking cold; or

Take two large tablespoonfuls of cologne and two teaspoonfuls of fine salt; mix them together in a small bottle; every time you have an acute affection of the facial nerves, or neuralgia, simply breathe the fumes into your nose from the bottle, and you will be immediately relieved; or

Prepare horse-radish by grating and mixing with vinegar, the same as for the table, and apply to the temple when the face or head is affected, or to the wrist when the pain is in the arm or shoulder.

## FLOUR MILL DIRECTORY FOR 1886-87.

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## FLOOR GRANARIES.

A sensible article upon the subject of granaries, and written by G. Luther, has lately appeared in pamphlet form, from which the following is taken: An ordinary warehouse, having five or six floors, with few or no middle partitions, so that the whole floor can be used for storage grain in heaps of moderate depth, is called in Germany a "floor granary." Most of the European grain warehouses are built in this style. Handling the grain in sacks is preferred, as it often happens that these granaries are used for other purposes. The grain is shot down on the floor, and heaps formed, which are separated by gangways. The depth of these heaps (or beds) varies from three to four feet; in Russia six feet. The only means of preserving the grain is by a current of air passing over the grain heaps. It is, therefore, necessary to provide such buildings with as many windows as possible, in order to insure draught. The stored grain, especially when wet, has to be frequently turned, which is only practicable by the employment of hand-labor. The great drawback to this system of granaries consists in the expense involved in the employment of this manual labor, not only for the turning of the grain, as previously mentioned, but also for shoveling to and from the elevators or traveling bands, when being stored or removed. In order to economize expense in this respect, an arrangement has been adopted in which the floors consist of a series of hoppers. The advantages of storing in warehouses of the latter description are, however, dearly bought, as a simple calculation will readily prove the difference between the space generally utilized and that which ought to be utilized. Take, for instance, the area of a building 100 feet by 50 feet: with six floors, each floor 10 feet high, in which the grain is stored in heaps of four feet in height. The cubic area of a warehouse of these dimensions would be, with an allowance of 25 per cent. for gangways, 100x50x4x6=90,000 cubic feet; whereas the contents of the building should be represented by 300,000 cubic feet. It therefore follows that only about one-third of its capacity is utilized. This means an increase of 220 per cent. in the current expenses in regard to storing space, and an increase of 330 per cent. in regard to material and labor for building, together with a proportionate increase for interest on capital, labor, building material, fire insurance and amortisation. As the walls and floor construction of such granaries require to be very strong compared with those erected on the silo system, which need only to be very primitive in construction, and considerably less costly, it needs but little consideration in erecting a granary, to which system the preference should be given.

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14th and 5th Ave. So glory be to God, Sunday mornin' come all bright and warm, and I was all dressed in me best. We went down and got aboard the boat. I was feeling furst-rate, drinkin' lager beer and eating pretzels, and dancing the Society and the Racquet, until the boat got out in the middle of the ocean and then I felt awful sick in me stomach. Julia McIntyre comes to me, and says she to me: Mrs. O'Grady, what in the devil is the matter wid ye? You're lookin' very pale. You'd better go and see the doctor on board the boat. So I went to the doctor, and says he to me, me good woman, you're very ill, you'd better have a Seidlitz powder. So I sid, let's have it. So he gave

me two powders, one was in a blue paper, and the other in a white one; says he to me, me good woman, ye puts one of these in one glass and one in the other, and drink both glasses at the same time. Bad 'cess to him, how in the devil do ye suppose I could drink both glasses at the same time. Sure I'm no contortionist. So I drank one glass after the other, and, Holy Father, I thought I was an animated gashouse! Julia McIntyre comes up to me and says she to me: Mrs. O'Grady, what in the devil is the matter wid ye? You do be fizin' away for all the world like a soda-water fountain. O God, I was so thirsty, I'd given \$1.35 for the skuse of a lemon and me-self back to the corner of 14th and 5th Ave.

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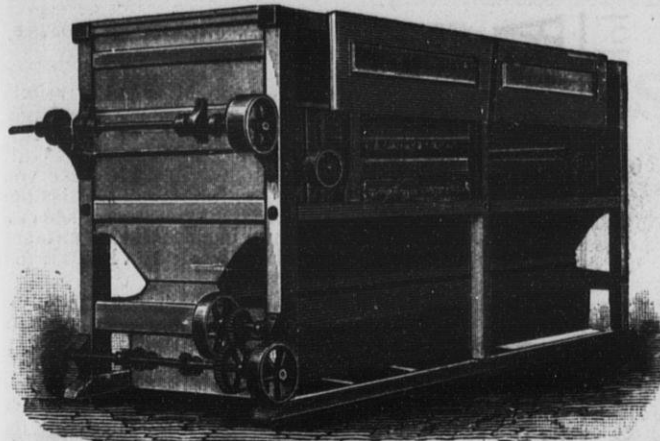
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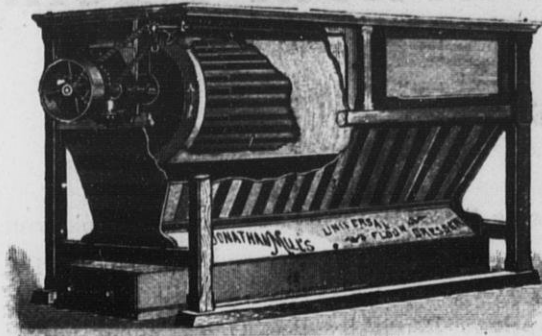
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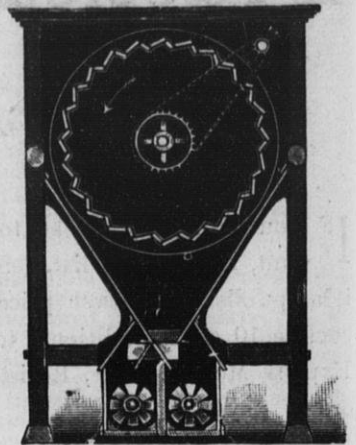
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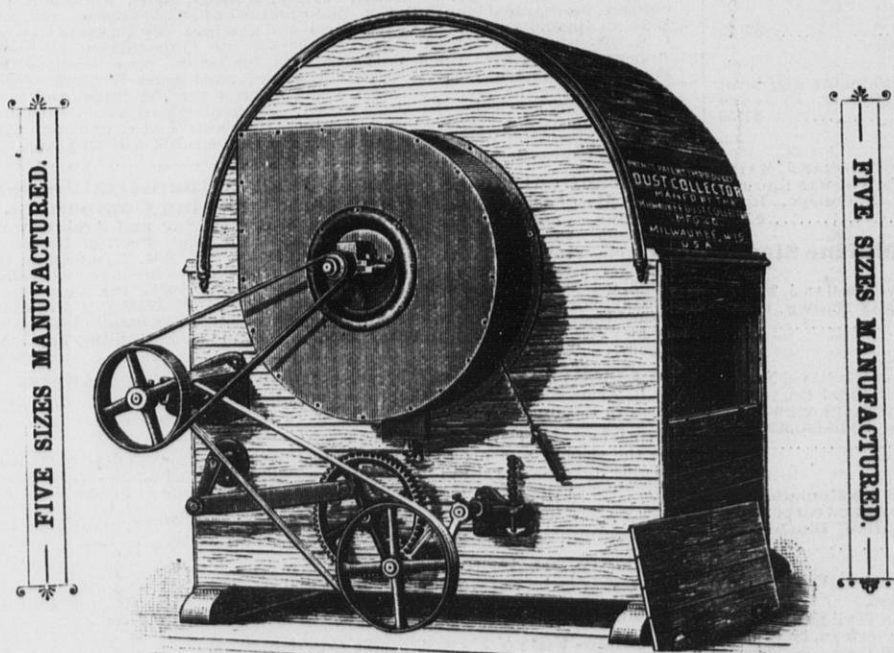
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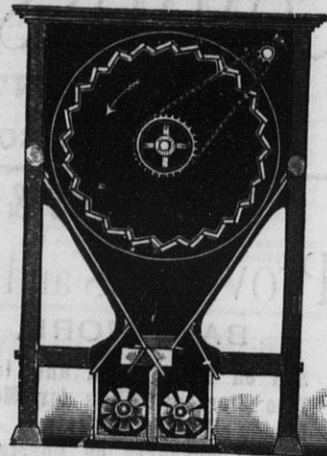
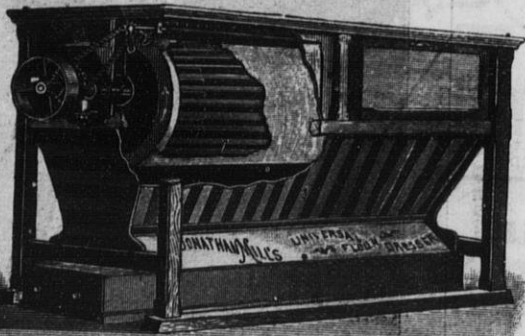
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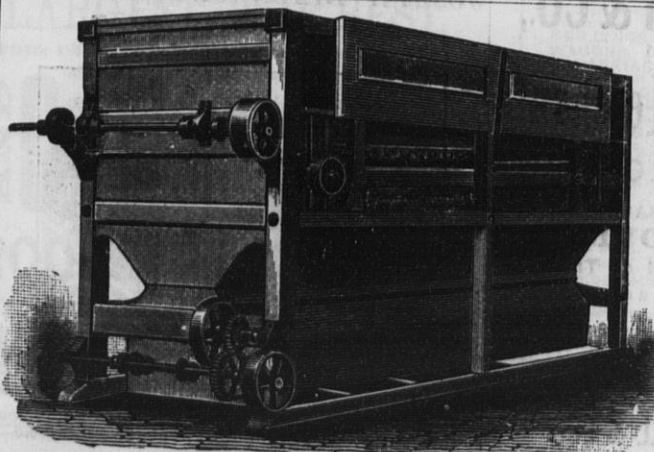
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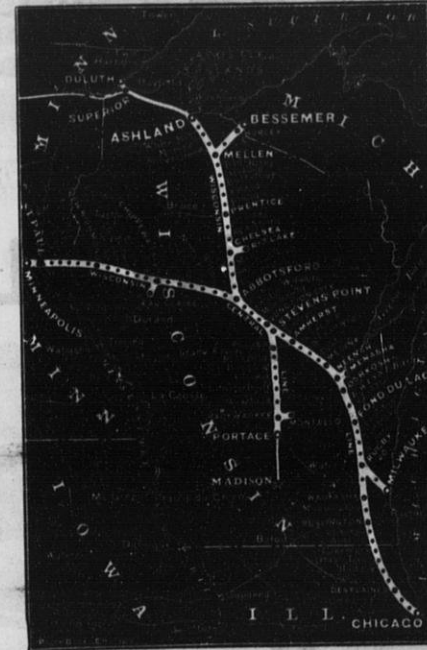
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If the management of the Millers' National Association desire a full attendance of millers at their June meeting, they should not persist in holding their meeting in New York City.

If they do, there will not be a sufficient number to make a corporal's guard in attendance.

We will send the United States Miller, The American Miller, and The Northwestern Miller, (weekly), and The Milling World, (weekly), for one year, to any address in the United States or Canada for \$4.00, or to any Foreign Country for £1. 3s.

## MILWAUKEE ITEMS.

MESSRS. C. J. KERSHAW & Co. recently contracted to ship 75,000 bushels of wheat by rail to New York.

ALBERT BRUSS, an employee in the Phoenix Mills, recently had his leg hurt severely by the falling on it of a sack of flour.

EDWARD P. ALLIS & Co. commenced, April 5, to lay the foundation for a large building to occupy the vacant space between their blacksmith and carpenter shops on Clinton street to be used by them as their general offices, shipping and drawing rooms. The structure will be conveniently arranged with offices for their different departments. The new foundry which is being built to replace the old one recently burned down will be one of the largest in the country and is fast approaching completion. The firm expect to get things in shape to commence casting in about a month from now.

EDWARD CRONIN, a laborer on the new foundry building at the E. P. Allis works, fell through a skylight on the roof April 6, and was almost instantly killed. It seems that Cronin and another workman were carrying a plank on the roof, Cronin following his companion, who held the other end of the plank. The unfortunate man did not see the opening in the roof when he reached it, and fell feet first. In going down Cronin struck across a beam which reversed his position. He struck upon his head and shoulders, fracturing his skull at the base of the brain. The distance of the fall was 34 feet. A physician was called, but the man died just as he arrived. Cronin boarded at 137 Michigan street, and had been at work on the foundry building only two days. From the statements of the other men employed in the building it appears that the accident was due to Cronin's failure to see the opening in the roof, and that no one else was to blame in the matter.

THE Kieckhefer Elevator Company, Milwaukee, are enjoying a very brisk trade at this time, and are placing for the Philip Best Brewing Company four steam hoisting engines; one steam elevator for the Berlin Coffin Company, Milwaukee; two for a manufacturing company in Plymouth; one for Torchiani & Kremer; one for Blatz bottling department; one for Campbell's steam laundry; one for Layton's packinghouse; one for Meyer's steam dye-works; John Dahlmann, hydraulic elevator; and Albert Trostel, steam and hydraulic elevators.

THE Minerva furnace, of Milwaukee, which was closed by the panic of 1873, reopened in 1881, and operated for three years, is to be started up again about the 1st of May next. Chas. Himrod & Co., of Chicago, will have the management of the property. The furnace will be run on Bessemer pig and No. 1 foundry iron.

Two boilers in Wolf & Davison's shipyard exploded at 5 o'clock in the morning, April 9. The damage is estimated at from \$5,000 to \$10,000.

We know it is none of our business to interfere with the affairs of that limited private organization which sails under the august name of THE MILLERS' NATIONAL ASSOCIATION, but as long as it pretends to be a NATIONAL affair, we claim the right to make a suggestion through the columns of our own paper and it is this: We believe it would give more general satisfaction if the Secretary and Assistant Secretary were actual millers. The Secretary we find no fault with, because he has long been actively engaged in the milling business, and his sympathies are entirely with it, but the Assistant Secretary (Mr. C. M. Palmer) never has been a miller, but is a *milling journalist*. Owing to his position, he is admitted to all the secret meetings of the sub-executive committee, and is enabled to obtain information denied to the other members of the milling press. We do not think this is right. We have no antipathy to Mr. Palmer, whom we are proud to call our friend, and whom we know to be a gentleman in every sense of the word, but we believe the association made a mistake in appointing any milling journalist, assistant secretary, and we think Mr. Palmer has made a mistake in accepting the position. We have no doubts of Mr. Palmer's honesty, but any journalist occupying that position would lay himself open to the suspicion of suppressing or delaying information to other papers until it had first appeared in his own.

It matters little what milling paper is declared the "Official Organ" and on that score we certainly have no objection to the *Northwestern Miller*, if it be considered necessary to have any special "official organ," but this can hardly be so, for all the milling papers have always made it a point to publish all available news concerning Association matters.

We believe by proper management that thousands would gladly become members of the Association, and its usefulness would then be greatly increased, but now its membership consists of only a very few hundred members, and it seems almost a burlesque to call it a NATIONAL Association. If the Association will treat the milling press with absolute fairness, we know that the press will reciprocate and "boom" the Association and help to make it in numbers what it should be.



[We think every old soldier in this land will appreciate this poem.—EDITOR.]

### THE SOLDIER TRAMP.

SCENE—A CITY POLICE COURT.

"Yer honor, I pleads guilty; I'm a bummer;  
I don't deny the cop here found me drunk;  
I don't deny that through the whole, long summer  
The sun-warmed earth has been my only bunk.  
I haint been able fur to earn a livin';  
A man with one leg planted in the tomb  
Can 't git a job—an' I 've a strong misgivin'  
'Bout bein' cooped up in a Soldiers' Home.

"'Whar did I lose my leg?' At Spottsylvania—  
Perhaps you've read about that bloody fight—  
But then I guess the story wont restrain you  
From doin' what the law sets down as right.  
I'm not a vag through choice, but through misfortune  
An' as fur drink—well, all men have their faults;  
An', judge, I guess I 've had my lawful portion  
O' rough experience in prison vaults.

"I served as private in the Tenth New Jersey,  
An' all the boys 'll say I done what 's right;  
Thar aint a man kin say that Abram Bursery  
War ever found a-shirkin' in a fight.  
Right in the hell-born, frightful roar o' battle,  
Whar shot an' shell shrieked thro' the darksome  
wood,  
Amid the blindin' smoke an' musket's rattle,  
You 'd always find me doin' the best I could.

"We had a brave ol' feller for a colonel—  
We called him Sweetey, but his name was Sweet—  
Why, Judge; I swear it, by the Great Eternal!  
That brave ol' cuss 'd rather fight than eat.  
An' you could allus bet your bottom dollar  
In battle, Sweetey 'd never hunt a tree,  
He 'd allus dash into the front an' holler:  
'Brace up, my gallant boys, an' foller me!'

"Well, jest afore the Spottsylvania battle,  
Ol' Sweetey cum to me and says, says he:  
'I tell you, Abe, 't aint many things 'll rattle  
A tough, old, weather-beaten cuss like me;  
But in my very soul I 've got a feelin'  
That I 'm agoin' to get a dose to-day,  
An' 't aint no use fur me to be concealin'  
The skittish thoughts that in my bosom play.

"'Fur many years you 've been my neighbor, Bursery,  
An' I hev allus found you squar an' true—  
Back in our little town in old New Jersey  
No one has got a better name than you.  
An' now I want yer promise, squar'ly given,  
That if our cause to-day demands my life,  
An' you yourself are left among the livin',  
You 'll take me back an' lay me by my wife.'

"Well, Judge, that day, amidst the most infernal  
An' desp'rate bloody fight I ever seed,  
'Way up in front I saw the daring colonel  
Throw up his hands and tumble off his steed.  
In half a minute I was bendin' o'er him,  
An' seein' that he was n't killed outright,  
I loaded him upon my back an' bore him  
Some little distance back out o' the fight.

"The blood from out a ghastly wound was flowin',  
An' so I snatched the shirt from off my back,  
For I could see the brave ol' cuss war goin'  
To die, unless I held that red tide back.  
An' purty soon I seed he was revivin',  
An' heard him whisper: 'Abe, you've saved my life,  
Your ol' wool shirt, along with your connivin',  
Has kept me from that grave beside my wife.'

"Well, Judge, while I stood thar beside him, schemin'  
On how to get him in a doctor's care,  
A ten-pound shell, toward us come a-screamin'  
Just like a ravin' demon in the air.  
An' w'en it passed, I found myself a-lyin'  
Across ol' Sweetey's body, a.' I see  
That 'tarnal shell, that by us went a-flyin',  
Had tuk my leg along fur company.

"Well, Judge, that's all; 'cept when the war was over,  
I found myself a cripple, an' s'ince then  
I've been a sort o' shiftless, worthless rover,  
But jest as honest as the most o' men.  
I ne'er stole a dime from livin' mortal,  
Nor never harmed a woman, child or man—  
I've simply been a bum, and hope the court 'll  
Be jest as easy on me as it can."

Then spake the judge: "Such helpless, worthless  
creatures  
Should never be allowed to bum and beg;  
Your case, 't is true, has some redeeming features,  
For in your country's cause you lost a leg.  
And yet I feel the world needs an example  
To check the tendency of men to roam;  
The sentence is, That all your life—your camp 'll  
Be in the best room in my humble home."

The soldier stared! Dumb! Silent as a statue!  
Then, in a voice of trembling pathos, said:  
"Judge, turn your head, and give me one look at you—  
That voice is like an echo from the dead."  
Then forward limped he, grimy hand extended,  
While tears adown his sun-browned cheeks did roll,  
And said, with slang and pathos strangely blended:  
"Why, Colonel Sweetey; durn your bra'e ol' soul."  
—Don Santiago Carino.

THE LATE MR. OEXLE.—There has just passed away, Mr. Oscar Oexle, of Augsburg, Bavaria, who, as a milling engineer, enjoyed but a few years since a world-wide fame, and who unquestionably rendered services to the cause of modern milling which can scarcely be exaggerated. This is not the place for a detailed account of his life and works, but we cannot let this occasion pass without supplementing our biographical memoir with a few general observations. There can be no doubt that the late Mr. Oexle was a man who united a very rare combination of mental gifts and moral qualities, and that, over and above all, there ran through his composition what the world has agreed to call by the undefined, yet well understood word, "genius." He came prominently before the world just when the art of milling was passing through one of those transitional epochs which come sooner or later in the history of all arts and sciences, and it may emphatically be said that he rose to the occasion. Probably few milling engineers ever rendered more service than he to the cause of roller milling. His first appearance in this country dates, if we mistake not, from the year 1868, when he was called to give his services to the North Shore Milling Company, of Liverpool. In the mill of that firm he erected a stone plant on the Hungarian model, which is said to have treated Hungarian wheat with results not inferior to those achieved in the most renowned mills of Budapest. Two years later he fitted into the Phoenix Mill of Messrs. J. Davidson and Sons, of Newcastle-on-Tyne, steel rollers, consisting of smooth rollers for working on middlings, and of fluted rolls for the disintegration of the caked products yielded by the former, and his connection, too, with the reconstruction of the Tradeston Mills, Glasgow, is well-known. Again a few years, and he erected, while on a visit to the United States, a model roller mill for the late Governor Washburn, at Minneapolis, which proved successful, and was doubtless not without its influence on the introduction of roller milling into that great milling centre. It would seem marvellous, were it not for the well-known fact that genius has constantly triumphed over seemingly insuperable obstacles, that the above installation at Minneapolis, along with a great deal of Oexle's best work, was done after he had lost his sight. This affliction, which to an ordinary man would have meant the abandonment at least of his professional career, seemed to have no other effect on Oexle than the stimulation, if possible, of mental and moral energies. He was incessantly traveling through Europe, the British Isles and the United States, putting in a milling plant here and there, and introducing everywhere the

Wegmann porcelain roller mills, for which he had been appointed general agent. This phase of his life had a duration of about five years, and then it was ordained that his brilliant career should be cut short by a mental affliction from which he never recovered. That misfortune befel him in the year 1881, and since then the milling world has been deprived of his keen insight and sure judgment; but he had worked well and faithfully, while he had yet the opportunity, and he has left a permanent mark on the history of the industry with which he was associated.  
—The Miller, London.

### A MILLING QUESTION.

It is reported that a movement is on foot in the United Kingdom to raise a large fund for the purpose of grinding wheat into flour in India on an extensive scale. The scheme is probably undertaken in recognition of the fact that flour from the United States is offered in British markets at prices with which wheat cannot compete on equal terms. The grinding of the grain previous to shipping it or the product effects a large saving of freight, as it not only dispenses with transportation of the offal, but the flour in bags is a much more desirable article to stow in cars and ocean vessels than is the grain in bulk. For this reason some carriers will handle the product on cheaper terms than the same weight of raw material. But for the fact that the offal commands a relatively much higher price in the British Isles than with us, the English miller would stand no chance of making a profit by purchasing foreign wheats to be ground at home. The bran and other offal are greedily bought by stock feeders there at prices nearly equal to those paid per ton for our corn, and this fact enables the British miller to work at a small profit by a careful study of the qualities of wheat offered from the different countries and by mixing them up in such a way as to produce a desirable flour at the lowest possible cost. Only one thing stands between him and bankruptcy, and that is the failure of all attempts hitherto made for compressing the bran into bales which will occupy little more room than the same weight of flour. This has been experimented with in the West by several persons during the last ten years, but they have not yet solved the problem. If they or others should ever succeed in doing so the millers of the United Kingdom may as well accept the inevitable at once.

Of course this would involve a cessation of the process of exporting wheat in the berry from this and other countries, making of the miller here and in India a much more important character than he is to-day. One of the most interesting features of the change would be the abolition of a big wheat market except at the large milling centres, which would elevate Minneapolis to a higher relative position than she occupies now, and might even furnish to St. Louis a reason for existing which she is barely able to assert in recent years. This set of circumstances is simply pointed out as among the bare possibilities of the future. At present the indications are decidedly against its ever being actualized. So far as the attempt to bale bran has progressed up to date it has met with no greater measure of success than would attend the effort to make a rope of sand. But will it always be so? *Chicago Tribune.*



## MILLERS' NATIONAL ASSOCIATION.

Pursuant to an invitation issued from this office March 1, to each of the manufacturers of roller mills throughout the country, so far as known, and not identified with the Consolidated Roller Mill Co., to meet the sub-executive committee, Millers' National Association, at the Grand Pacific hotel, Chicago, March 8, for consultation, the following representatives were present: Henry Stanley, president Todds & Stanley Mill Furnishing Co., of St. Louis; Wm. Mills, of Stout, Mills & Temple, Dayton, O.; Jos. M. Schulz, vice president and manager Phoenix Iron Works Co., Minneapolis; Joseph T. Lemon and J. D. Mawhood, of Richmond City Mill Works, Richmond, Ind.; J. L. Willford, W. P. Northway, and Mr. Paul (Attorney), of Willford & Northway Mfg. Co., Minneapolis; Philo Ferrier, of Ypsilanti Machine Works, Ypsilanti, Mich.; J. Silas Leas and H. A. Barnard, of Barnard & Leas Mfg. Co., Moline, Ill.; John Wilson, president Great Western Mfg. Co., Leavenworth, Kas.; and J. J. Obenchain, representing Knowlton & Dolan, Logansport, Ind.

The sub-executive committee was represented by John Crosby, president ex-officio; C. H. Seybt, chairman; F. L. Greenleaf, member from Minnesota; J. A. Hinds, member from New York; S. H. Seamans, member from Wisconsin, and C. M. Palmer, assistant secretary.

The meeting was called to order by the president, John Crosby in the chair. Mr. Seybt, chairman, stated the object of the meeting, as embodied in the call, stating fully the position of the committee, whose sole aim and object was the protection of members from claims for infringements and royalties, and further explained it to be the policy of the association to place the responsibility upon manufacturers, where it properly belongs, of protecting purchasers of their machines from all liability for royalties and infringement. The discussion was entered into freely by all. The unanimous decision of every manufacturer present showed a commendable disposition to hold purchasers of their machines free from all claims for infringements or royalties, and to that end have agreed, individually, to make arrangements whereby our association may hope to escape litigation. Your committee also met the members of the Consolidated Roller Mill Co., who were also in session at the Palmer house, and concluded arrangements with them, which we believe will be satisfactory to you. Much of the business being necessarily of a confidential nature, and at the present time unfinished, cannot be made public in this report, but will be made known at the proper time.

Respectfully submitted,  
S. H. SEAMANS, Sec'y.

To the Members of the Millers' National Association of America.

In view of the fact that the Consolidated Roller Mill Co. has brought suits for infringement of patents covering certain devices in connection with roller mills, and in further consideration of extensive litigation being threatened, your executive committee having had the leading patents of the Consolidated Roller Mill Co. under consideration, and it appearing on the face of the patents,

as they read, that numerous other roller mills, manufactured in the United States, infringe said patents owned by the Consolidated Roller Mill Co., we deem it our duty, in order to protect the members of our association against the annoyances and expense of an extensive litigation, to accept a proposition of the Consolidated Roller Mill Co., and have obtained a release for all our members from liability to such company, by reason of any past, present or future use of roller mills heretofore purchased from anyone, and in order to carry out such protection, the Consolidated Roller Mill Co. has executed and filed with the association a good and sufficient bond in the penal sum of \$100,000.

In arriving at the decision indicated by the foregoing, which is the result of much labor and the most careful consideration, your committee has no desire to prejudice suits now in the courts, or which may hereafter be brought, but have acted, as they deem, for the best interests of the Millers' National Association, and your committee have made a further agreement with the Consolidated Roller Mill Company, whereby any roller mills, hereafter purchased of them by any member of our association, are entitled to a special discount, and in no event can the price exceed a specified discount of the list price of August 2, 1886.

Now, therefore, we, the executive committee, hereby advise all members of the Millers' National Association, that having provided for the protection of its members, they will not defend any suits which may be brought, arising out of the future purchase of machines outside of our arrangements.

Done at Chicago, Ills., this 9th day of March, A. D., 1887.

JOHN CROSBY,  
President of the Millers' National Association, and ex-officio member of the Executive Committee.

C. H. SEYBT,  
Chairman of Executive Committee.

J. A. HINDS,  
Member from New York.

S. H. SEAMANS,  
Member from Wisconsin.

F. L. GREENLEAF,  
Member from Minnesota.

ALEX. H. SMITH,  
Member from Missouri.

## GRAIN INTERESTS IN THE NORTHWEST.

Mr. C. M. Shultz, commercial editor of the *Pioneer Press*, in a letter dated April 5, says:

Although the new freight rates were supposed to go into effect April 1, that fact did not check the outward flow of wheat and flour at Minneapolis. The shipments of wheat the previous week were the largest of any single week during the year up to that time, but last week the figures exceeded those of the week before by several thousand bushels. The flour shipments were also very large, aggregating 168,000 barrels, against 153,000 the week before.

The mills have been doing the best they could with the water-power at command, but the shipments have exceeded the total production by fully 30,000 barrels. This has left the millers with very small stocks at this point; in fact, warehouses here are said to be entirely empty, but the fact remains that

the flour which has been shipped out during the past month has not been disposed of, but has merely been shifted from Minneapolis to Eastern warehouses.

The flour market is extremely dull, and values show little change from last week. Orders from abroad are like angels' visits, and the few that do come are at prices considerably below the nominal market.

The wheat market during the past week has been frightfully dull. Receipts keep up well, but the only demand has been from local millers, as shippers are waiting to learn more about the new freight rates before taking large quantities. The wheat shipped from here last week was all on orders previously received. Stocks in store at Minneapolis show considerable decrease this week, as in addition to large shipments millers have been drawing quite heavily from the store to fill up the bins in their mills. It is understood that some of the millers are making preparations to grind for only a week or two longer, when they will shut down, unless the flour market improves materially. They claim that at the present relative prices of wheat and flour there is no money in the milling business, and the small mills particularly are inclined to be very much in the dumps over the situation.

There is now nearly seven million bushels more wheat in store at Minneapolis and Duluth than there was a year ago at this time, and with harvest only five months away. If the farmers should not sell another bushel between now and next harvest, it is estimated that there is yet sufficient wheat back in country elevators to come forward to supply the mills here and still leave a surplus on September 1, almost as large as it is now—18,000,000 bushels. While this may be overdone somewhat, it would not be surprising if we start in on a new crop with fully 12,000,000 bushels in store at Minneapolis, St. Paul and Duluth.

With good weather, seeding will begin in some of the southern counties about the 20th of this month. The farmers are already at work preparing their ground, and the recent heavy, damp snow, which was general all over Minnesota and Dakota, has put the soil in excellent condition.

The railroad companies have come to the rescue of the local millers between here and Chicago in the matter of transit rates, through some hocus-pocus which is not quite clear to the general public, but nevertheless seems to be entirely satisfactory to the millers. It is understood that they will be given transit rates from interior points in Minnesota and Dakota, which will enable them to grind the wheat into flour and ship it East and still compete with the Minneapolis mills.

JUDGE PENNYBUNKER cannot stand the smell of tobacco. It invariably gives him the headache. He was on the street car, and a cowboy by his side was smoking a vile old pipe. "My friend," said Pennybunker, "your pipe makes me sick."

The cowboy took the pipe out of his mouth wiped the mouthpiece carefully on his pants, and holding it under the sufferer's nose, said: "You kin smoke, stranger, until I git off the kears. I jest know how you feel. It always makes me feel sick to see a feller smoking when I've left my pipe at home."—*Texas Siftings*.



**SOUTHWEST MISSOURI MILLERS' ASSOCIATION.**

Mr. C. G. Wade, Secretary of the above named Association, issues the following call to Missouri Millers:

You are earnestly requested to be present at the regular Annual Meeting of this Association, Wednesday, April 13, at Carthage, Mo. Very important business will be transacted at this meeting. The committee on grade respectfully ask each member to make a test from 500 to 3,000 bushels in a test. Bring samples of wheat before cleaned and after cleaned, samples of each grade of flour made, sample of shipstuf and bran also; number of bushels wheat ground in test, with number of pounds each grade of flour, number of pounds of ship-stuff and number of pounds of bran taken from said test, that the committee on grades may act intelligently in preparing grade for syndicate, to be founded at this meeting. Find enclosed resolutions passed at last meeting. Noticing particularly fine for non-attendance. Make a special effort to be present at this meeting. Reports of several State Organizations have been received and will be read at this meeting. Bring with you all items of interest that you may collect. Make this a matter of business as well as pleasure, and with a hearty co-operation we are sure of success.

**A DRIVE AT AMERICAN POLICY.**

The Inter-State Commerce Bill, is to our mind, an absolute outrage on privileges which have universally been enjoyed by individuals and corporations ever since this Republic was established. We have no desire to write at length on this subject at the present time, but it is our honest conviction that this move on the part of Congress, is with a view ultimately to Government ownership of all the railroads of the country, which would add immensely to the political strength of the party in power at the time such an event should transpire, making such party to all intents and purposes almost autocratic. No doubt evils have existed in the management of railroads. Evils have also existed in the management of every other business under the sun. But the laws in existence for years if enforced have been sufficient to correct all flagrant evils. Why then pass such a sweeping bill now which will change the entire transportation system of the country. *Qui bono?*

**A COMMUNICATION FROM COLUMBUS, O.**

Gentlemen:—Please correct the statement made in the Northwestern Miller of March 4, in which we are represented as claiming that we had forced the Smith Co. into a withdrawal of the royalties which we have been and are paying to the Consolidated Middlings Purifier Co. Such a rumor has no basis whatever. We expect to pay this royalty so long as our interests are protected by the patents for which we pay license.

As to our "Crowing and misrepresentations" there is no foundation whatever for the statement made in reference thereto. It is true we claim to be building the best purifier made in this country; which claim we believe to be based upon facts, and we shall not curtail or restrict our right to make such statements whenever an occasion may call for an expression of our views.

Very truly yours,

THE CASE MFG. CO.

**ORANGE HEWEN.**

It is with pleasure that we are enabled to write a brief sketch of the life of ORANGE HEWEN, one of the ablest of New York millwrights. Mr. Hewen was born at Skinner's Eddy, Wayne Co., Pa., in the year 1819. His

father emigrated to Pennsylvania when about twelve years of age from Norwich, Conn., with one of his maternal uncles, four brothers being scattered in various directions on account of the loss at sea of the father who was a captain sailing from Boston. No family, so far as known, has ever been found in New York or Pennsylvania bearing the name of Hewen, except the descendants of the orphan boy of 12 who exchanged his home in New England for the privations of a pioneer life in Pennsylvania. Early in life the subject of this sketch displayed remarkable mechanical ability and turned his attention especially to millwrighting, and flouring mills, and the results of his planning and labor, may be found throughout Northern Pennsylvania and Southern New York. He was peculiarly fortunate in being able to fit his work to suit circumstances, and his constant efforts were to simplify constructions and use no unnecessary machinery. Among his labors may be noted the construction of the first circular sawmill in Florida, in 1864 for Bigler & Co. In 1868 he built one of the first band sawmills for sawing pine timber for Nicholas Shoemaker at New Melford, Pa. The saw used was made to order in Paris. The latest large mill in which he was interested in building, was that of Geo. Q. Moon & Co., of Binghamton, N. Y., in which city he has resided for the past 35 years. Strictly honest, of a most quiet and unassuming disposition he, like most men of fine mechanical genius has not been so fortunate as to amass any great amount of wealth, his chief desire always having been to live comfortably and never to be in debt.

WORK will commence in a few days on the mammoth flour mill to be erected at Keewatin mills, says the *Manitoba Free Press*. The site selected is immediately in the rear of the railway station, and the magnificent water power at that point will be utilized. The mill will have a capacity of 1,000 barrels per day. Adjoining the mill will be erected an elevator with a capacity of half a million bushels. The enterprise is in the hands of wealthy eastern capitalists. In addition to the elevator to be erected at Keewatin, it is the intention to build elevators and storehouses at all the principal wheat markets in Manitoba. Among the other capitalists interested in this project is the managing director of the Keewatin Lumber Co. Mr. Mather will superintend the construction of the mill and elevators, and he intends to have them completed in time to handle the crop of 1887. After the mill is completed Mr. Mather will manage the concern, and in this connection he will have Alex. Mitchell, of Montreal, associated with him. This will be the largest mill in the northwest territories, as Ogilvie's mill in Winnipeg, which at present occupies that position, has a capacity of 800 barrels a day.

**A QUERY.**

A correspondent writes to us as follows: Take the average country roller mill, in usual condition of machinery and steaming apparatus, good soft coal at \$6.00 per ton, engineer \$1,000 per year, capacity of mill averages 100 barrels per day; no allowance for wear and tear, oil, or interest on plant.

On the above basis, what is the average cost per bushel in converting wheat into

flour, (including usual elevating) for coal and engineer only?

Will our readers please send in their views on this subject and oblige the inquirer?

THE newly installed officers of the Milwaukee Chamber of Commerce are as follows: President, C. A. Chapin; First Vice-President, I. H. Lowry; Second Vice-President, Oscar Mohr. W. J. Langson remains Secretary as usual. President Chapin in addressing the Board, said in reference to Milling in Milwaukee:

"It is uncertain whether the milling in transit will be done away with at an early date or not. It is understood that it is temporarily suspended. A great many are of the opinion that this transit system, which has been carried on so extensively for a number of years, has been a great injury to the grain trade and the milling business of Milwaukee, and a material benefit to both of these at Minneapolis. The milling business at Milwaukee has only been fairly maintained the last year. The completion of the new Daisy mills during that time, with a daily capacity of about fifteen hundred barrels, is an important acquisition to our milling interests."

DUNLOP BROTHERS' latest grain and flour circular from Glasgow, dated March 30, says:

"No change of moment to report in trade during the past week. In the absence of demand prices have continued to favor buyers. Arrivals large of Flour, but light of Wheat, Maize, &c.

"The Quarterly returns of Glasgow Stocks issued this morning show a reduction in Flour of 26,000 sacks, and in Wheat of 32,000 quarters since 30th December last, and this in the face of the heavy import of Flour for the period in question of upwards of 435,000 sacks per 280 lbs. The weekly consumpt and export averaged 35,523 sacks and 8,745 quarters respectively, as against 36,295 sacks and 10,287 quarters during the immediately preceding term."

**ITEMS FROM FOREIGN COUNTRIES.**

A CONSIDERABLE amount of railway building will be done in Australia during the present year.

HARBOR improvements of the value of \$40,000,000 are contemplated at Buenos Ayres, Argentine Republic, S. A.

THE Italian Government has concluded to have all steam engines used in its navy built hereafter by Italian manufacturers, and have recently given orders for engines of 12,000, 20,000 and 25,000 horsepower, respectively.

MESSRS. CROYSDALE & SON'S flour mill at Knottingly, England, has recently been fitted up with an electric light plant consisting of one self-regulating dynamo, and 63 sixteen candle-power Edison Swan lamps.

THE British Government will doubtless grant a subsidy of \$500,000 per annum for the establishment of a fast line of steamers to run to China and Japan in connection with the Canadian Pacific R. R.

LUNDY'S mill at Morden, Man., has been leased by Gray & Morden for a term of years and put in operation.

THE *Trade Bulletin* of a late date says: The flour milling interests of Ontario are not generally understood, and consequently their importance is much under-rated. In Ontario there are about 2,000 grist and flour mills, nearly 1,000 of which have within the past few years, undergone vast improvements, necessitating an immense outlay of capital, consequent upon the change from the old



stone system of grinding to the new roller process. From inquiries we have instituted, it has been ascertained that the cost of placing a combination set of rollers in a mill, has ranged from \$4,000 to \$5,000 in quite a number of instances, but for machinery suitable for high class patents, the refitting of an ordinary sized mill has cost from \$10,000 to \$12,000. A very moderate estimate, places the total amount of capital expended in transforming the mills in Ontario from the old system to the new, at between \$6,000,000 and \$7,000,000. The adoption of the roller system was undoubtedly a much needed improvement, which has completely revolutionized the milling industry of Ontario, and will tend vastly to the furtherance of its best interests.

WE will send you a copy of "Leffel's Construction of Mill-dams, and Bookwalter's Millwright and Mechanic," and "The U. S. Miller" for one year for \$1.30. Don't miss it.

**NEW ORLEANS' INCREASING EXPORT TRADE.**—The *Times-Democrat* of New Orleans notes the arrival of 250,000 bushels of grain from "the upper Mississippi," which are "only the vanguard of the grain shipments down the river." There are about 1,000,000 bushels of corn at St. Louis, and 150,000 bushels of wheat at Belmont, "awaiting export" via New Orleans, which was to be shipped as fast as vessels could be secured to move it. Several grain-exporting houses have established agencies there, and look to New Orleans to become "a leading exporter of western grain."

WE will furnish the UNITED STATES MILLER for one year and Alden's Handy Atlas of the World, post-paid, to any address in the United States or Canada, for \$1.

**MESSRS. GANZ & COMPANY.**—The yearly report of Messrs. Ganz & Co., iron founders and mechanical engineers, of Budapest, Hungary, and Ratibor, Germany, has just been published, and shows that, all things considered, there is far severer industrial and commercial depression in Austro-Hungary than we have yet experienced at home. It is, however, evident, that those in whose hands the management of this world-renowned firm rests have proved equal to the occasion, by seeking and finding abroad that room for the employment of their capital which circumstances denied to them at home. Thus as regards roller mills and other milling machinery, which Messrs. Ganz & Co. have made a special feature of their manufacture for years past, the report says: "Home needs appear to be covered in the near future, and at present custom for roller mills, and to a certain extent for milling machines, is only to be found at home in small or newly erected mills." On the other hand, an active export trade in this class of goods has been carried on. A branch office has been opened in Bombay, and agencies have been established all over India, with the result that some good orders have been obtained for the erection of mills in India, and others are in course of negotiation. A branch office has likewise been established in Melbourne, to still further extend the relations that had already been

created in that land. The manufacture of turbines, which had only been recently commenced by the company, shows signs of vigorous life, as orders had already been received from foreign countries, notably from Servia and Italy. The most cheering part of the report, however, is that relating to the electric lighting section of the works. The company has now for some years past cultivated this branch of mechanical engineering, and the directors were able to point with pride to the fact that the system of division used by the company, and known as the Zipernowskydéri, had been adopted by some of the first firms of electrical engineers in the world, including the Edison Company, in the United States of America, and many of the Edison companies of Europe. During the year 1886 the company had been able to carry out as many as 19 electric installations of capital importance in all parts of the world. —*The Miller* (London).

**MILLING NEWS FROM SWITZERLAND.**—An Austrian contemporary learns that the Swiss millers have been buying freely from importers both of Russian and Hungarian wheat. Many heavy forward sales have been effected, and although the granaries at such places as Romanshorn, Buchs, and Brunnen are full, yet their stock of wheat sells nearly as fast as it arrives. Usually Swiss millers give the preference to Russian grain, probably on account of the price, but it is said that this year even the best samples of Russian grain are so notable inferior to the standard of the harvest before, that the best mills are using little else than Hungarian wheat. On the other hand, the imports of flour from Hungary are insignificant, and there seems some possibility that this trade may receive a death-blow should the Protectionists succeed in passing a heavy import duty through the Bundesrath, or House of Deputies. It is believed, however, that the duty will not be increased beyond 50 to 75 centimes 100 kilos (220.46 lbs.), in which case the merchant mills of Hungary would still find it possible to sell their products in Switzerland.

**THE GRAIN CROP INSURANCE** on the Pacific coast last year was not so profitable as heretofore. The *Coast Review*, referring to this fact, which it attributes to over-insurance, says: There is but one way to prevent the overinsurance of growing grain, and that is, to place the insurance when the grain is ripening or "turning." The value may be closely approximated at that time, and the proper amount of insurance is merely a simple sum in proportion. There is little risk of overinsurance, for the grain tables in use can be employed by any man of ordinary intelligence. Under the present system grain crops are insured for 50 per cent of the estimated value, and the companies pay up to the face of the policy. This limit is essential to safe business, for the value of crops may vary widely from the most probable estimates. The 50 per cent. limit, if there is no considerable overinsurance, stimulates the utmost caution by the crop-owner and all his crop-owning neighbors, and all will turn out and persistently fight fire in a neighbor's field in order to protect themselves.

### MANAGING A MULE.

You, Nebuchadnezzar, whoa, sah !  
Whar is you tryin' to go, sah ?  
I should think by dis time you'd know, sah ?  
Is'e a holdin' ob de lines.  
You better stop your prancin',  
You's powful fond of dancin',  
But I'll bet my years advancing'  
Dat I'll cure you ob your shi. es.

Look heah, mule ! Better min' out,  
Fus' ting you know you'll fin' out  
How quick I'll wear dis line out  
On your ugly stubborn back.  
You needn't try to steal up  
An' lif' dat precious heel up ;  
You's got to plow dis field up,  
You has, sah, for a fac'.

Dar, dat's de way to do it !  
He's comin' right down to it,  
Jes' watch him plowin' troo it.  
'Dis nigger ain't no fool.  
Some folks dey would a beat him ;  
Now dat would only heat h'n ;  
I know jes' how to treat him :  
You must reason wid a mule.

He minds me like a nigger ;  
If he was only bigger  
He'd fetch a mighty figger,  
He would, I tell you ! Yes, sah ?  
See how he keeps a clickin'  
He's as gentle as a chicken,  
An' nebber tinks o' kickin'—  
WHOA, DAR ! NEBUCHADNEZZAR !

Is dis heah me, or not me ?  
Or is de debbel got me ?  
Was dat a cannon shot me ?  
Hab I laid heah more'n a week ?  
Dat mule do kick amazing' ;  
De beast wasspil' in raisin',  
By now I 'spect he's grazin'  
On de odder side de creek.

### CORNMEAL.

Good cornmeal is-like granulated sugar in grain, and if properly made from the best white flint corn looks like it in the hand. It should be free from all chit, bran or hull, and the soft meal found in the cob end of the kernel, all of which injures its keeping and baking qualities, and the looks of the meal. By the old process of reducing corn at once upon millstones, it was impossible to make thorough separation of these from the meal. The soft chit meal has a sweet flavor, but as it detracts from the keeping qualities and appearance of the meal, and is apt to contract a strong taste, it should hence by all means be kept out, and if a sweet taste is wanted to the bread it can be supplied by sugar. Two reductions are therefore necessary to the making of first-class cornmeal. For the first reduction stones, rolls, or machines like a hominy mill can be employed, the object being to get rid of the objectionable part mentioned. The hominy mill will do the best service of anything, leaving an almost pure product for the second reduction, and requiring no separate bolting between the reductions; that is if a regular hominy mill with separator is used. Nothing excels millstones for the second reduction, although rolls might equal them. The millstones should have plenty of furrows, say two-thirds furrow surface, which would increase the capacity and make more granular meal, as compared with the old method. The flint varieties of corn are always the best for meal. In using meal made in this way, by adding one-third flour, and if wished (and as we like it) sweetened a little, a bread delicious enough for any epicure can be made. The truth is that not one miller in a hundred takes much pains to make fancy cornmeal, and but few housekeepers know how, or do make a palatable corn bread; and in this great land of corn but few know how cheap and how delicious a corn bread they might have.—*Millers' Review*.



## NONSENSE.

You doubtless heard the story about the Good Templars who were marching down street bearing a banner with the appropriate inscription: "We bend the knee but not the elbow." But there was an old fellow who was holding up a tree box while he viewed the procession; his temperance charter had expired a year or two before, and he hadn't had time to renew; he was about four-thirds full. He looked at the banner and deciphered the inscription with great disgust. "Aw—yes, he said, "you bend the—hic—knee, but not the—hic—elbow. I know you do. That comes of this—hic—beastly habit of drinking out of the bung hole!"

"MAY be I haf to fail before spring," said a Pennsylvania merchant to a traveling salesman who was trying to sell him a bill of goods. "But you are worth \$40,000 and have only \$10,000 worth of stock. You'd have to pay \$4 for one if you failed."

"Great hefens, was it like dot? Vell, den, I keep right on, und you may send me some more sugar und tea und coffee. I vait until I vhas vorth \$10,000, and haf \$40,000 vorth of shtock."—*Wall Street News*.

PLANTATION PHILOSOPHY.—De man what 'peers to be in the bes' humor when he's in trouble minds me of the calacanthus, what smells de sweetes' arter it's mashed. We's got some little respect fur de drunkard ez laung ez he erpeers ter pe ershamed o' gettin' drunk, but when he gits so he aint ershamed o' his shame, we drops him, knowin' dat he is er gone case. Folks dat is allus er talkin' erbout de wolf in sheep's clothin' doan 'peer to know dat we sometimes find er sheep in wolf's clothin'. De kindes' hearted man I eber seed had er face dat would skeer er half-grown boy putty nigh to death. We's allus apt ter make er mistake consarnin' de showy pusson. Some men 'peers ter carry a light wid 'em whareber da go, and, thinkin' dat da ken 'complish 'most anything, we pins our faith ter 'em, neglectin' de dull-lookin' man; but when de hard test comes, de dull-lookin' can, nine times outen ten, grab er 'portant p'int sooner. A coal o' fire ain't ez bright ez er blaze, but it ken flash powder quicker.

"It's a great thing," exclaimed a whiskered passenger on an east-bound train—"a great thing—one of the best laws that ever passed Congress. That's what we've been fighting for out in Iowa for a long time. We want the railroads regulated, and I tell you this law is going to do it. It is one of the most popular laws that Congress ever passed. I know the people are in favor of federal regulation of railroads, and this law pleases 'em to a man. I'm the editor of the leading paper in my town, and, of course, the people talk to me a good deal. We all like the law and hope it will be enforced to the very letter."

"I think it will be," replied the conductor, to whom these remarks had been addressed; in fact I'm sure of it, for I received orders to-day from the general passenger agent to take up all editorial passes April 5, in conformity with the requirements of the law, which goes into effect that day."

"W-what's that?"

"I say we are ordered to take up all editorial whole-line passes April 5, in conformity with the requirements of the new inter-state commerce law."

"Well, all I've got to say," replied the country editor, warmly, "is that dog-gurned law is a fraud and a swindle and an outrage. That's what it is, and I believe the railroad monopolists lobbied it through so's they could cheat and rob the people of their rights in the guise of doing better by 'em. It's a flagrant assault upon the liberties of the people, and we'll snow old Cleveland under next year for ever making a railroad tool of himself and signing it. Besides I'll give my member of Congress fits in my next issue. The traitor voted for it."—*Chicago Herald*.

"WHAT a popular girl Miss Harvey is," said one young man to another, of a young lady whom he had been watching for some time as he sat on a hotel piazza. "She has a crowd of admirers around her all the time."

"Yes," said his companion, "I've been watching her too. Even the mosquitoes seem to be mashed on her."—*Somerville Journal*.

WARM WEATHER INDICATIONS.—When a young but broken-hearted widow can come out of her grief sufficiently to pay \$75 for a poodle dog, and to object to give a man \$1 for mowing her husband's grave lot, there is a strong hope that she will soon be able to tell the difference between a spray of orange blossoms and a widow's weeds.—*Full River Advance*.

GROSS INJUSTICE. Col. Blood (of Kentucky)—People do me an injustice when they accuse me of being a hard drinker.

Mrs. Blood (indignantly)—Who has accused you of being a hard drinker?"

Colonel—A good many people; but I am not a hard drinker.

Mrs. Blood—No, indeed, my dear; you are an easy drinker.—*New York Times*.

A TELEGRAPH operator in Milwaukee was one day trying to call up an office in a small town in the interior of the State, where the instrument was presided over by a woman. He was about to give up in despair when the operator in another small town a few miles distant from the first ticked out the query: "What in heaven's name do you want?"

"I want M'iss Brown of Burgeville," replied the Milwaukee man. "I have been trying to get her for the last half hour."

"That is nothing came the reply. "There is a young fellow clerking in a dry goods store there who has been trying to get her for the last three years, and he has not succeeded yet. Do not get discouraged."—*Chicago Rambler*.

A KENTUCKIAN with a large jug making a bargain with a countryman to take him four miles over the hills, asked: "How much'll you charge?"

"Oh, a couple of swigs of the stuff in that jug'll make it about square, I reckon."

After the journey had been made and the countryman had taken a swig, he said: "Stranger, I'm a peaceable man, but if you don't want to be chock full of lead to-night you'd better find another way to carry yer molasses."

THE scene is a young ladies' seminary. "Ah," said one pupil to another in triumph, "my mamma gives me a penny every morning for taking a spoonful of cod liver oil!"

"And what do you buy with the penny?" eagerly returned the second girl in a tone not devoid of envy.

"Oh," returned the former speaker, "I do not spend it at all; mamma puts it away for me every day to buy more cod liver oil with!"—*London Figaro*.

BUTCHER (to young housekeeper)—I have nothing left, mum, but a hindquarter of lamb and liver. Young Housekeeper—Very well. You may send me a hindquarter of liver.—*Life*.

We will send the United States Miller, The American Miller, and The Northwestern Miller, (weekly), and The Milling World, (weekly), for one year, to any address in the United States or Canada for \$4.00, or to any Foreign Country for £1. 3s.

HOW TO BURN COAL.—*Power-Steam*: The throwing of fuel upon the fire is generally considered as a means of augmenting the amount of heat produced, and taken as a whole it does have that effect. But for the maintenance of a steady fire and even heat only a small amount of fuel should be thrown upon the fire at a time. The reason for this is that coal is dependent upon two constituents for its heat-giving properties. One of these, the carbonaceous, remains in a solid state; while the other, the bituminous, is volatilized. As the latter process must be accomplished before the first will be ready for burning, the first effect of throwing fuel upon the fire is that of cooling. Not only must the solid coal be raised to the furnace temperature, but the volatilization must be carried on.

Here the same laws come into play as in the evaporation of water. The evaporation and the volatilization require more heat than that accounted for in the elevation of temperature, and which is therefore rendered latent. Hence, unless care is taken to burn these gases as they are given off, it would be better that they did not exist. For it will be readily understood, that if the fire which is due to the combustion of the solid carbons did not have to heat these gases, it would give out just that same amount of heat that would be available for steam making.

It is due to this fact that coke has been accredited with greater heating properties than bituminous coal, simply because the gases in the coal have been distilled and not burned. But when the furnaces are so designed that these gases are thoroughly burned, the heating properties of the coal will be found to be greater by just the amount of heat given out by the combustion of the gases in excess of what was required to distill them.

These principles simply go to prove what we have so often urged, namely, light and frequent firing, with a careful adjustment of dampers to prevent the formation of smoke.

## RECIPES.

DRY POCKET GLUE is made of 12 parts of good glue and five parts of sugar. The glue is boiled until it is entirely dissolved; the sugar is then put into the glue, and the mass is evaporated until it hardens on cooling. Lukewarm water melts it very readily, and it is excellent for use in causing paper to adhere firmly, cleanly, and without producing any disagreeable odor.



**FIRE EXTINGUISHERS.**—The ingredients of many of the patent fire extinguishers are said to be 8 pounds carbonate of soda, 4 pounds alum, 3 pounds borax, 1 pound carbonate potash, and 24 pounds silicate of soda solution, which are mixed together; 1½ pounds of this mixture is added to each gallon of water when required for use.

**TO REMOVE EXUDATIONS FROM BRICK WALLS.**—The simplest and least expensive method for removing saltpeter exudation from brickwork, when the efflorescence is in position where the sun and wind do not have free access, is to wash it off with diluted hydrochloric or common muriatic acid of commerce. About half a pound of the acid is used with an ordinary pailful of water, the application being made with a sponge.

**MARBLE CEMENT.**—A cement for marble is made by stirring to a thick batter with silicate of soda, twelve parts Portland cement, six parts slaked lime, six parts fine lead, and one part infusorial earth. It is excellent, also, for uniting alabaster. The objects to be joined need not be heated. After twenty-four hours the fracture is firm, and the place where the union was effected can scarcely be discovered.

**LETTER PROTECTOR.**—Letters or envelopes which it is desired to protect against unauthorized opening (by moistening the pasted portion) may be securely sealed by using a solution of oxide of copper in ammonia, as paste. This liquid has the faculty of dissolving the cellulose. When applied to the paper it dissolves the cellulose on the surface, and on drying the two partially dissolved surfaces adhere indissolubly together. The same thing may be accomplished by using water glass (silicate of soda or potassa). In this case the chemical action is different, but when it is completed the pasted surfaces cohere as permanently as in the preceding case.

## NEWS.

An oat-meal mill is being erected at Moorhead, Minn.

A NUMBER of farmers in the vicinity of Osterburg, Bedford Co., Pa., are organizing a stock company to erect a mill.

The firm of Lynch & McDowell, flour brokers, Philadelphia, Pa., has been succeeded by Jno. Lynch & Bro., No. 142 N. Delaware Ave.

The St. Croix Falls *Standard* (Minn.) hears that Isaac Staples will build at the falls a dam, canal and "one of the largest mills in the Northwest."

**KILLED.**—John Mitchell got his clothing caught in the machinery in the flour mill at Marquette, Mich., and being drawn into the machinery was literally torn to pieces.

The flouring mill of Russell, Root & Quilton on the Elk River, three miles above Elk River, Minn., was burned March 1st. Loss \$10,000 to \$12,000; partially insured in companies represented in Minneapolis.

At Carrollton, Mo., Feb. 18, a grain elevator belonging to Geo. C. Averill caught fire and burned to the ground. There was a large amount of grain stored therein. Insurance on the building was \$1,500, but loss is estimated at \$3,500.

**PARTNERS WANTED.**—The following persons are desirous of obtaining partners in the milling business: J. F. Dodd, Waterford, Va.; Nauffziger & Mosser, Wheatland, Mo.; S. A. Hess, New Philadelphia, O.; Andrew Sherwood, Mansfield, Pa.

Though it is some time since paper flour barrels were first invented, yet they have not come into general use. A cargo of flour in paper barrels was received in New York recently shipped by J. F. Seiberling, of Akron Ohio. It was the first cargo

in paper barrels received in that city. It is claimed by the consignees that the barrels caused a saving of \$5 in transit, as none of the flour was lost through loose hoops or a shrinkage in the staves.

A LARGE flour storehouse owned by Messrs. Pillsbury & Co., in St. Paul, collapsed early on the morning of March 3d. In it were stored 125,000 barrels of flour in sacks and barrels. The building covered a block of ground in length and half a block in width, and was one story high. The damage is variously estimated at from \$30,000 to \$50,000.

W. J. ELBERS, Longwoods, Md., will remodel to the roller system soon.—E. Rowe has rented Parker's mill at Newbern, Tenn.—H. B. Smith and F. Filer will erect a mill at Ludington, Mich.—It is reported that J. N. Bell, Stratford, Ia., will adopt the "short system".—S. H. Grimes and others will build a mill at Moscow, Ia.—Roedeker's mill at Burnett, Kas., will be changed to the roller system.—A. E. Tucker & Son are building a grist mill at Russellville, Ark.—A stock company proposes to erect a \$20,000 mill at Rockwell, Tex.—Probably W. P. Huff, of Roanoke, Va., will change his mill to the roller system.—Extensive improvements have been made in Wm. Rakow's mill at Primrose, Pa.—The roller system will be put in Beard, Gillaud & Co.'s mill at Fisherville, Ky.—W. F. SCHILT, Bremen Ind., will soon try the "short system".—\$100,000 is the capital of the newly incorporated Adams Mill Co., San Antonio, Tex.—A 150 bbl. mill is to be built at Lebanon, Tenn., by J. Williams and others.—L. Arundale, Burton, Ga., has just built a \$25,000 flour and saw mill.—Another mill will probably be built at Greenville, Tex.—Wentz & Gerken recently bought the "Crown Roller Mill" at Bloomington, Ill.—A grist mill is being built at Waverly Station, Va.—The Marysville, (Ks.) City Mills Co., have organized with a capital of \$18,000.—Columbus, Neb., is to have an oat and corn meal mill soon.—J. S. Woods, Dowagiac, Mich., will change his mill to the roller system soon.—Wycoff's mill at West Richfield, O., now boasts of a new engine.—Collor's new mill at Stewartville, Mo., will be changed to rollers.—Geo. J. Seney will soon start up the "Queen B" Mill at Sioux Falls, Dak., which has been idle for years.—J. N. Gruber and others will build a \$10,000 roller mill at Ebenezer, Tenn.—J. C. Veyls & Son, Elizabethtown, Ind., contemplate changing to rollers.—M. L. Maxwell is building a steam roller mill at Eden, Ala.—Plans have been made for a \$10,000 roller mill at Annawan, Ill.—A flour mill will be built this year by Webb & Brown at Eureka Springs, Ark.—D. W. Thompson will build a new mill at Abbottsburg, N. C., in place of the one burned.—S. R. Stuart and others are thinking of erecting a mill at Midlothian, Tex.—The "Upper Center Mill" at Howard, Kas., is being refitted.—Strait & Gregory are building a 100 bbl. roller mill at Hermosa, Dak.—The new \$10,000 roller mill at Bellevue, Idaho Ter., will be ready for business about June 15th.—Freeman & Peede have contracted for the erection of a roller mill at Kaufman, Tex.—The Knoxville, (Tenn.) Mills are adding about 4,000 worth of machinery.—Geo. Merrill and others will build a steam flour mill at Camden Me., soon.—A company has been formed for building a roller mill at Riceville, Tenn.—600 bbls. per day is what the Eldred Mill at Jackson, Mich. now turns out without much trouble.—J. L. German, Whitewright, Tex., is thinking of building a flour mill and wants information.—The "Dayton (Tenn.) Flour Mills" have been rented by Snow Bros., and will start up soon.—Mt. Morris, Mich., is to have a new grist mill.—C. C. Harris will build a mill at Jasper, Ala.—Markle & Ames have commenced work on their Clay City, Ind. mill.—New mills are in contemplation at Yellow Springs, O., by J. H. Little; at Baldwin, Mich., by J. Grant; at Minieska, Minn.; at Tracy, Mo., by Phoenix Milling Co.; at Cerro Gordo, Ill., by D. S. Shillebarger; at Philadelphia, Tenn., by A. Cook; at Mt. Blanchard, O., by Geo. Douds; at South Linton, Ind. by a stock company; at Moorhead Minn.; an oat-meal mill by a stock company; a steam flour mill at Hights town, N. J., by G. Norton; a flour and saw mill at Garden City, Ala.; at Kemp, Tex., by J. H. Friedly; at Coleman, Tex., by C. D. Morgan; at St. George, W. Va., by Titus & Clowges; at Blackwell's Station, Ga., by J. R. McKinney; at Pecos City, Tex., by M. J. Murphy; at Carlton Kas., by H. C. Smith; a corn-mill at Upper Cross Roads, Md., by C. T. Scarff; at Crown Point, Ind., by Dan Vincent.

**SITUATIONS WANTED.** As second miller, L. F. Miller, Brownstown, Ind.; as miller in custom roller

mill, L. Meeker, Evansville, Minn.; as second miller by Henry Bramstedt, Fountain City, Wis.; as engineer by Ed. Morgan, Gallipolis, O.; as head miller by F. W. Kepner, Quincy, Pa.; as miller by Jerome Thiell, Binghamton, N. Y.; as head miller by E. E. Holt, box 82, Palatine, W. Va.; as miller in roller mill by S. W. Hildebrand, Putneyville, Pa.; as miller by V. G. Haag, Stayton, Oreg.; as second miller by Wm. Teichgraber, Nickerson, Kans.; as head miller by N. C. Lloyd, Box 304, Aurora, Ont., Canada.; as head miller in small roller mill by S. A. Davidson, Chamois, Osage Co., Mo.; same by David Hoch, Lansing, Mich.; as second miller by Walter G. Lew's, La Mira, O.; as head miller of small roller or stone mill by J. Ousebury, Maquoketa, Ia.; as helper in roller mill by Edw. Oldman, Goodrich, Mich.; as first or second miller by H. S. Hopkins, Dayton, Ind.; as miller in roller mill by W. Russell, Swedesboro, N. J.; as second miller or helper by Henry J. Zahn, Fairview, Pa.; as head or second miller by Edw. Irwin, No. 74 Fourth street, Milwaukee, Wis.; as second miller by H. Copping, Vernon Center, N. Y.; as engineer by P. O. Box 20, Bolivar, Mo.

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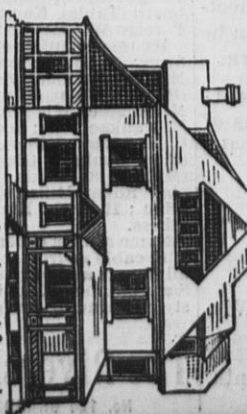
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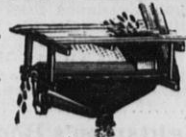


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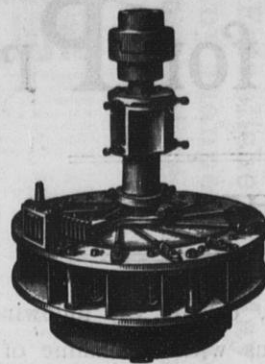
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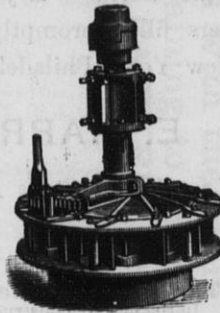
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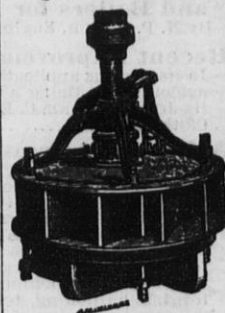
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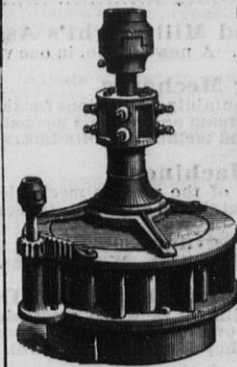


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