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The Finest Work.
Speckless Head.  
Superior Cloth Cleaner.  
Slow Motion.  
Automatic Feed.  
Superior Scalping Device.  
Over Loading Avoided.

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GARDEN CITY MILL FURNISHING CO.,

CHICAGO, ILL.
POWER TRANSMISSION MACHINERY.

A. J. SHAW.

While the transmission machinery of a manufacturing establishment of any kind is one of the most important sections of the entire plant, not even usually more rigidly or accurately erected or receives less attention. Most of the special and regular machines are constructed in shops making a specialty of the particular class of which the machine is one, and is the result of much careful study and experiment, while the shafting, hangers, pulleys, and other details of the transmission machinery, are often too the product of nothing but the haphazard methods of the average small shop.

As long as the line shaft does not absolutely refuse to turn around; as long as the belts can be made to do their appointed work, even if under protest and by dint of constant coaxing and jockeying; as long as the gears are not entirely "out of mesh" and will somehow transmit motion from one to another, no matter with how much jar, bumping and clatter; the line shafting, belting or gearing is left to look out for itself. The "let-well-alone" policy is to one recognized, and "well-enough" means anything short of an absolute shut down.

The writer is familiar with a machine shop having a fair reputation for the quality of its work in certain specialties, in which the line shaft on one occasion broke in two, on account of being badly out of alignment. The hanger near which the break occurred was not less than eight or nine inches out of line with those on either side, and the shaft broke down on account of the constant bending backward and forward, to which it was subjected, being bent, straightened, and bent in the opposite direction 54,000 times per day. Whose ever has broken a wire by bending it backward and forward, will realize the effect this would have on the metal of the shaft, continuing day after day for weeks and possibly for months. This is an exaggerated and unusual case, but far too many line shafts are in a much better condition.

It is not an unusual thing for one-third to one-half of the entire motive power of a shop or mill to be absorbed in keeping the transmission machinery in motion, while for a plant properly erected and maintained but small fraction of this should be necessary.

All running parts, such as shafting, pulleys, couplings and gearing, should be as light as possible consistent with ample strength and rigidity. Lightness is desirable not only on account of the economy in first cost, which it involves, but on account of the constant saving which results, in oil, fuel and maintenance. Shafting should not be made so light, however, that it will run unsteadily at the end farthest from the driver. It may be amply strong to resist the tendency to twist off, but if the line is of great length, the driving end of the shaft may be a large fraction of, or even a whole, turn or more ahead of the other.

In one instance, the spinning room of a cotton mill was fitted up with a very long line of 1½ inch shafting. The shaft was amply strong as far as twisting off was concerned, but ran so unsteadily that it was impossible to make the machinery do good work. When a machine was thrown off at any part of the line, all the others would make a sudden jump ahead, causing the threads to break badly; and when it was thrown on again each machine in the line would receive a sudden check, thus causing more difficulty. The trouble was cured by the substitution of 1½ inch for the 1½ inch shaft.

If the saving of weight is considered of great importance, and the line is of considerable length, the diameter of the shaft may be reduced by making each length, or series of lengths, of a smaller size than the one preceding it. It is best, however, not to have too many sizes, as it interferes with the convenient changing of pulleys from one part of the line to another. On this account, unless the line is very long, it is better, in most cases, to make it of a uniform size throughout its entire length.

The diameter of shaft necessary for any given plant is influenced by the character of the machinery it is to drive, as well as by the power to be transmitted. If the work is very uniform and of such a character that slight, sudden, fluctuations in speed are not injurious, the shaft need not be very much larger than to transmit the required power with safety. If, on the other hand, heavy machinery is to be thrown into or out of action suddenly, or if the transmission is required to be smooth and free from sudden shocks, then the size of the shaft must be considerably larger than necessary for strength alone. The increase necessary cannot be stated definitely in general terms, as it depends on the character of the work to be done, and must be decided by the judgment of the designer or millwright, or by deduction from similar cases.

In addition to the twisting or torsional stress due to the power transmitted, mill shafting is subjected to transverse or side stresses, due to the pull of belts, the weight of pulleys, and the "lift" of gearing.

A Horse-Power is simply a unit used for measuring work done. Pressure or load is not "work." A pressure of a million pounds per square inch may be sustained by a surface of any magnitude, for an indefinite period, but unless there is a movement of that surface, there is no work done, or energy expended upon it. A man may hold a heavy weight in his hand for an indefinite period, but unless he raises that weight, there is no expenditure of "power." If, however, the weight be raised though any distance, an amount of energy is expended which is proportional to the weight lifted and the distance through which it moves. This energy is stored up in the weight and will be given out by it when it falls or is allowed to descend.

Work is the product of a pressure, load, or weight, into the distance through which it acts.

The pressure or weight may be measured in pounds, tons, or any other unit of weight, and the distance through which it acts may be expressed in inches, feet, or any unit of length. The product representing the quantity of work done is expressed by a compound word made of the two terms denoting the quantities multiplied, the unit of length being placed first, as: foot-pounds, foot-tons; inch-pounds, &c., usually abbreviated to ft. lbs., ft. tons, in. lbs., &c.

Thus, to weigh a one pound weight through a height of one foot, requires an expenditure of energy equal to one foot-pound. To move a body one foot against a resistance of 33,000 pounds, requires an expenditure of energy equal to 33,000 ft. lbs. The expenditure of this amount of energy in one minute represents one horse-power.

A Horse-Power is a conventional unit, representing a quantity of work equivalent to raising 33,000 pounds one foot high in one minute, and while the unit is an inconvenient one on account of the inconvenience of the number 33 as a multiplier and divisor, it is retained by forces of long-established usage.

The transmitting capacity of any shaft, of a given material is proportional to the cube of its diameter and the number of revolutions. Experience has shown that a wrought-iron shaft 1 inch in diameter will transmit with safety 128 or 44 of 1 H.P., at a speed of 1 revolution per minute; a shaft two inches in diameter 2×2×2=8 times as much as 4 of 1 H.P., and so on for any other size. From this is deduced the following rule for finding the transmitting capacity, for a twisting load, or torsional stress only, of any given shaft.

The United States Miller

MILWAUKEE AND CHICAGO, MAY, 1888.

PUBLISHED BY
B. HARRISON CAVENEK. [VOL. 25, NO. 1.

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[Written for the United States Miller.]
Multiply the cube of the diameter of the shaft in inches and the number of revolutions per minute, and divide the product by 39; the quotient will be the transmitting capacity of the shaft in Horse Powers.

Expressed in algebraic form the equation would be:

$$H.P. = \frac{0.06242 \times D^3 \times N}{N-2,}$$

in which $D$ = the diam of the shaft in inches, $N$ = the number of revolutions per minute, and 0.06242 is the fraction $\frac{\pi}{39}$ reduced to a decimal.

To transmit 1 H. P. at 1 revolution per minute, will require a shaft of 3.29 inches in diameter; from which by the application of the principles explained above may be deduced the following rule for determining the diameters of the shaft for twisting or torsional stress only, when the H. P. and revolutions per minute are given.

**Divide the H. P. by the number of revolutions per minute, extract the cube root of the quotient, and multiply by 3.29; the product will be the diameter of the shaft in inches.**

The algebraic expression would be:

$$d = 3.29 \sqrt[3]{\frac{H.P.}{N}}$$

**Example:** What diameter of shaft will be required to transmit 300 H. P. at 150 revolutions per minute?

250 = 100 = 2.18, nearly: the cube root of 2.18 is 1.3, nearly, which multiplied by 3.29 = 4.27 inches, the diameter required for the twisting stress only.

If the shaft carries pulleys or gears it is usual to increase this diameter from 23 to 33 per cent., which would make the shaft from 51 to 55 inches.

The "Jack Shaft," or that which carries the main driving pulley or gear, should be made at least 50 per cent. larger than the diameter due to the power transmitted, on account of the side pull of the main driving belt, or the vibration and side pressure of the gears.

The calculation of the shaft diameters by the last rule may be considerably shortened by using the following table for **DIAMETERS OF ROUND IRON SHAFTING**.

<table>
<thead>
<tr>
<th>H. P. divided by revolutions per minute</th>
<th>Diameter of Shaft in inches</th>
<th>Diameter of Shaft in inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>0.755</td>
<td>3.75</td>
</tr>
<tr>
<td>0.025</td>
<td>0.94</td>
<td>4.0</td>
</tr>
<tr>
<td>0.050</td>
<td>1.213</td>
<td>4.25</td>
</tr>
<tr>
<td>0.075</td>
<td>1.393</td>
<td>4.5</td>
</tr>
<tr>
<td>0.115</td>
<td>1.674</td>
<td>4.75</td>
</tr>
<tr>
<td>0.15</td>
<td>1.935</td>
<td>5.0</td>
</tr>
<tr>
<td>0.25</td>
<td>2.583</td>
<td>6.0</td>
</tr>
<tr>
<td>0.35</td>
<td>3.281</td>
<td>6.5</td>
</tr>
<tr>
<td>0.45</td>
<td>4.283</td>
<td>7.0</td>
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<tr>
<td>0.55</td>
<td>4.943</td>
<td>7.5</td>
</tr>
<tr>
<td>0.65</td>
<td>5.541</td>
<td>8.0</td>
</tr>
<tr>
<td>0.75</td>
<td>6.101</td>
<td>8.5</td>
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<td>7.85</td>
<td>10.0</td>
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<td>8.385</td>
<td>10.5</td>
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<td>11.0</td>
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<td>11.5</td>
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<td>9.923</td>
<td>12.0</td>
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<td>12.5</td>
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<td>10.91</td>
<td>13.0</td>
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<td>1.75</td>
<td>11.4</td>
<td>13.5</td>
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<td>1.85</td>
<td>11.87</td>
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<td>15.43</td>
<td>18.5</td>
</tr>
<tr>
<td>2.85</td>
<td>15.76</td>
<td>19.0</td>
</tr>
</tbody>
</table>

**A.** The above table is for torsional stress only.

The machines are first-class, with safety and sanitary features. The drawings and specifications covering the invention of a typewriter. It is styled a typographer, and the original patent record was filed in the patent office on the 29th of December, 1894. The drawings of the time-stained patent closely resemble the construction of the modern type-writers. The patent was approved on the 18th of December, and is now prepared to the validity of the Remington and Caligraph patents, which enjoy a practical monopoly.
C. M. Palmer, publisher of the Northwestern Miller, has recently purchased a half interest in the Milwaukee Daily Tribune and will in future assume the active management of that paper. Mr. Palmer long since has been the unifying energy and capability as a journalist placed the Miller in the foremost rank in its field and it is reasonable to presume that he will continue his success in the field of daily journalism. We heartily congratulate him and wish him all success and prosperity in his new acquisition.

MILWAUKEE ITEMS.

After considerable labor we are able to make the following reliable statement:

The total flour production of all the mills running in Milwaukee for the months of January, February, March and April is 518,689 barrels. During this time the Central Mill Mills and Cream City Mills have been closed, and some other mills have been idle part of the time for the purpose of repairing or making alterations.

Mr. Edward Sanderson, of the Phoenix Mills, has been very ill during the past month, but we are pleased to learn that he is out of danger now, and is rapidly recovering.

Mr. Howell, of Hodge, Howell & Co., Buffalo, N. Y., paid his respects to the U. S. Miller recently. He was on his way to Minneapolis, after a few days' sojourn here, taking in our mills, and visiting his brother who lives here.

The Gem Mills have repaired the damages from the break last month, and are running on Monday. However, shut down for the season as soon as they grind out the wheat they have now on hand.

The Jupiter Mills are running full time on export flour. The Phoenix Mills and Eagle Mills are running to full capacity on orders.

The Duluth Mills are behind on orders and are running day and night to catch up.

The Daisy Mills have made a big run so far this year, and are yet behind on orders.

C. Manegold & Son are building a grain elevator and flour storage house adjoining their mills on West Wisconsin Avenue. The elevator is 150 feet long and 5 stories in height. As the river runs in the rear of the mill and new elevator, they will have the best of facilities for receiving grain and shipping flour by water.

F. Prinz & Co., 630 E. Water St., are meeting a big demand for cockle separators. Some large machines have been ordered for Minneapolis and additional ones for Milwaukee mills.

Capt. Richard Davis, proprietor of The Marine Boiler Works of Milwaukee, in a pleasant interview recently said to us: It is strange what little thought and care many use in the selection of a steam boiler. In some instances the millers have made up their minds that they want one "about a certain size, with "about a certain number of flues, etc., and then they hunt up the addresses of a few boiler makers and ask for figures and the chap that sends in the lowest bid takes the job. The consequence is that hundreds of thousands of boilers are in use today that the maker would not endorse with his stamp as maker. It is a wonder to me that more explosions are not heard of. There are no doubt a great many boilers sent out annually by these dealers in mere ready made, "cut off by the yard boilers" that would not pass any reasonable inspection. They make good business for boiler patchers though. Capt. Davis is an old resident of Milwaukee and is thoroughly trained and educated practical man. He has had a small beginning in early days built up a large business. He has been obliged several times to enlarge his works to accommodate increasing trade. His boilers can be found in the best steamers on all the lakes and in the best managed steamplants in the country. He says to his customers said to us: "If any one gets one of Dick Davis' boilers he gets something he can swear by."

THE COMING EVENT.

Before the June number of this journal goes to press the proceedings of the Millers' National Association at Buffalo, N. Y., will be a matter of history. All previous conventions of any very great importance have been called together by a mutual interest in patent infringement matters. Those things are no longer a source of anxiety to members of the Association but in lieu thereof a deep interest, pervading the ranks of millers in all sections of the country has developed in regard to the matter of disposing of flour and millstuffs after it has been manufactured and this question includes all the features of transportation, inspection, terminal charges, commissions, bills of lading, etc. As a preliminary, President Seybdt called together a meeting of prominent exporting millers from different sections of the country in the recent days at the Pacific Hotel, Chicago, May 15, and matters were pretty well discussed. There was also present John Borrowman and John Kingsford representing the London Corn and Flour Exchange. The foreign gentlemen explained the manner of handling export orders. President Seybdt suggested that two bureaus one to look after the export and the other of the domestic trade be established, said bureaus to be under the direct control of the National Association Committee with a competent man at the head to attend to details. Committees were duly appointed and instructed to report to the Executive Committee of the Millers' National Association at the Genesee House, Buffalo, N. Y., June 11, at 10 A. M. The announcement was made that special rates to the convention at Buffalo from all points had been made and that a delegation of western agents of steamship companies would be in attendance at Buffalo. It was believed by many present that the exporter, importer and steamer men would all make concessions on the bill of lading matter and that one satisfactory to all concerned would be agreed upon. If the measures now under consideration are carried out it will be without doubt the most practical and useful convention for the advancement of the manufacture of flour in the United States ever held. Let every miller that possibly can be on hand and make the convention THE EVENT of the year.

The Old Virginia Reel is well nigh out of date, but reels of all kinds seem to be enjoying a real boom in flour mills, and really they deserve it.
LESS THAN ONE CENT A DAY
Receipts 12 Complete New Novels, besides Essays, Short Stories, Sketches, Poems, etc. Every week a new volume, and a volume in itself. One year's subscription makes a
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Famous Iron Works.
Sheboygan Falls, Wis.

GANZ & CO.
Budapest, Austria-Hungary

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C. N. SMITH,
DAYTON, O.
BUFFALO CONVENTION NOTES.

The Central Traffic Association; and the Western States Passenger Association has communicated with Secretary Seaman, of The Millers' National Association, offering a rate from all points to millers attending the Buffalo Convention of 14 fares for the round trip. No stop-over privileges are granted in going to or returning from Buffalo. The person buying a ticket for this occasion must get a certificate from the ticket agent who sells him the ticket. These must afterwards be stamped and certified by the Secretary of the Convention, and with this certificate a return ticket can be obtained for one-third fare.

Millers should apply to the Secretary to stamp and certify their tickets as soon as they arrive in Buffalo as possible, so as to avoid the grand rush usual at the close of conventions.

Although the programme is by no means yet complete, we are able to announce that papers will be given by the Convention, by S. T. K. Prime, Dwight, Ill., on "The City Situation of 1888," illustrated by diagrams and chart; by Jno. R. Reynolds, Jackson, Mich., on "The Necessities of Modern Milling," by Hon. J. K. Arkell, Canajoharie, N. Y., on "Bags and Bagging"; by A. A. Freeman of New York, on "Prices and Markets in Salt and Sugar and Flour and Regulation of Prices and Productions; by A. W. Howard, of Minneapolis, on "Comparative Baking Tests, with Record and Reports on various Brands and Grades of Flour; by E. W. Arndt, Depere, Wis., on "Mill Construction and Care of Milling Plant from an Insurance Standpoint;" by S. H. Seaman of Milwaukee, in connection with his report as Secretary and Treasurer of the Association, "An Historical Sketch of the Millers' National Association" from its inception to the present time.

The Headquarters of the Association and its officers during the Convention will be at the Genesee House.

The Buffalo committee on reception will look after the reception, entertainment and amusements of visiting millers. A banquet and steamboat excursion will be given.

We are now authorized to announce that The George T. Smith Middlings Purifier Co., of Jackson, Mich., will have in operation at the Convention a 50 barrel mill complete. This mill after the Buffalo Convention is over will be exhibited at the Centennial in Cincinnati and later in Paris, France, and Australia. It is unquestionably the most remarkable mechanical display ever exhibited for the inspection of Millers.

All or nearly all the mill-building and furnishing firms will be represented. A great number of flour dealers will be present. Lake and Ocean steamship lines will be represented. Freight Departments of Railroads will be represented. Even the milling press will be represented.

TO ADVERTISERS.

I hereby certify that I have in my office, Milwaukee Post Office Receipts subject to inspection, showing that I mailed during the months of March and April 2660 pounds of "Mail matter of the Second Class," I recommend anyone who doubts that we issued editions of 10,000 copies each in March and April to weigh a copy and figure in due time for the 12,000,000 copies each year, or 100,000,000 copies in all, which I guarantee to be editions of 10,000 copies each.

E. HARRISON CAWKEE, Publisher United States Miller.

N. B.—We respectfully suggest to advertisers in any paper a reasonable proof of circulation. No honest publisher we think ought to hesitate to show up, when asked to by interested parties.

With this number we print the first of a series of technical articles by A. J. Shaw upon Power Transmission which will be of practical value to every machine user. Millers will gain much useful information from the careful perusal of these articles and should not only read them carefully but preserve them for reference.

MILWAUKEE has been seized with the western "boom" fever in earnest. The city certainly possesses more of either a manufacturing point and as a place of residence and, with the exercise of proper enterprise on the part of her citizens there is no reason why she should not be made to enjoy as healthy a "boom" as have Kansas City, Minneapolis, St. Paul and other western places. An association has been formed by the prominent citizens, whose mission it is to make friends to the world at large the advantages of Milwaukee, and to interest outside capital in the city's progress. Booming western cities has been the citadel of the West and is as necessary in 1891 as it was in somewhat of an old story, but in this, as in everything else, there is still "room at the top" and we hope to see The Cream City make rapid advancement in that direction.

As a result of the awakening in Milwaukee, the city has been attacked by a horde of "advertising fads" with every conceivable scheme for the city's "benefit." These schemers have made many rich tails by following similarly agitated cities throughout the country, and have attacked the city by the fever than it is pounced upon by these quack doctors, who so thoroughly apply their leeches that the inflammation rapidly subsides and a reaction sets in. Merchants become skeptical regarding all advertising, they are so burdened with the expense of extra and unprofitable advertising, that they turn to the other extreme, and refuse to advertise at all. Thus the legitimate publications, who have all along been earnestly working for the good of the cause, are made to suffer for the ill deeds of some and weak judgments of others, and are compelled to struggle along without fair patronage, which they have earned and deserve. Advertisers feel that they have injudiciously spent more than they can afford in "snap schemes" and they get even on advertising in general by taking revenge out of the legitimate publications. This is an unhealthy state of affairs and all wrong. The press of Milwaukee have taken up arms against "snap advertising schemes" and we wish them success in their crusade.

Similar injustice is seen in other fields—in that of mill-furnishing for instance. Occasionally some mill machinery firm, seized with a desire to have a medium, thoroughly subservient to their purposes, for disseminating information in regard to their particular ware, will decide on publishing a "mill journal."

They would like to make it known what is called the scheme if possible and sometimes do, but they are satisfied to obtain their advertising and use of the editorial columns of a paper without any expense. We have no fault to find with a firm publishing such an "organ," any more than we have with the propagators of the schemes mentioned above. It is a perfectly legitimate enterprise, so far as they are concerned, but competitive firms who lend their aid by liberal patronage to such a medium, under the same vain hope of receiving benefit from a circulation which is governed and directed by the interests of the publishers' business, regardless of fair premises as to large circulation (in reality no greater than is given regularly by legitimate publications in the field), do wrong. They merely enable a competitor to obtain his advertising, in his chosen field, at their expense, and withhold from legitimate publications just that amount of patronage which is justly due to papers that have for years striven to furnish a thoroughly independent, clean and reliable paper for millers, one that they will read instead of consigning it to the waste basket as an advertising circular or organ of a machinery house.

THE OUTLOOK FOR MILLBUILDERS, FURNISHERS, Etc.

It seems somewhat surprising to the casual observer that so many new flour mills should be either in process of erection or about to be commenced. The fact is that there are not too many good modern mills in this country except in certain localities, and now that our unusually long winter and extremely cold, wet spring are apparently over, a number of new flouring mill enterprises will be carried out, many of them of considerable magnitude. A great amount of remodeling will also be done and it is true that there are thousands of mills in the United States to-day that are but slightly improved from their condition in 1870, and there are still living a great number of millers who can not or will not be convinced that any method is better than the plain old low-grinding system. They used to make money out of it. Perhaps this is the reason.

Floods have recently been disastrous in their effects on mill property in many sections and this will give rise to a heavy demand for labor and material. Aside from this the destruction of machinery and supplies by ordinary wear and tear, and the introduction of newly perfected machines will make a good business for hundreds of firms and give employment to thousands of men who can not or will not be convinced that any method is better than the plain old low-grinding system. They used to make money out of it. Perhaps this is the reason.

We notice of late that quite a number of rather good looking men, connected with the milling trade, have gracefully submitted to the solicitations of representatives of the milling newspapers and have allowed their pictures to be taken "in color" and published in the papers. It is gratifying a harmless vanity for it can injure no one and it gives the photo-engraver a job, and then if he likes he can sell the rights of the pictures for many dollars. The right, however, they may please such ladies as may chance to see them, and stir up the ugly looking men to "lick up a bit," but—a picture of a man will never sell a smut machine.
They are in operation in over One Thousand Roller Mills.

They are in operation in over Two Thousand Burr Mills.

For Prices and Further Information, Address

GARDEN CITY MILL FURNISHING CO.,
CHICAGO, ILL.
OUR LONDON LETTER.

LONDON, Eng., May 2, 1888.—The English millers have, as doubtless your readers are aware, had a more comfortable time during the past month or two, as regards the margin of profit. This has been due to the cheap supply of good Russian wheats, which have enabled the English millers, with the help of English wheat, to produce a good flour and strong flour at a lower price than the corresponding quality of American wheat that millers have been rather pressed during the past week to take a decided course of action.

The weather had become winterly, and northeast winds retarded all harvest prospects. Besides the forecasts of the coming American crop, Californian, as well as Northwestern States, were seen taking the side of the sellers. Then, at home, farmers were busy in their fields and unwilling to sell at old prices, so that native samples had to be sought at more money.

In the north of England and Scotland there are still considerable breadths of barley to be put in, for the recent storms caught farmers when most actively engaged in pursuing that work, and rendered many lands once again unfit to be handled. On the whole, prospects are not cheerful. The period of cold has arrived, and crops are still waiting, checked by cold days and colder nights. At present, however, it cannot be said that the wheat crop in this country has been endangered by the weather.

On the Lane Corn Exchange last Monday, I heard a prominent miller state that we had received since harvest equal to 4,000,000 qrs. of foreign flour, as against 6,000,000 qrs. of farmers’ wheat. To this salute his dusty brother replied that if the English market did not soon mend he would seriously think of following the examples of several German brewers from the district of the Rhine, who have lately gone to Japan in order to supervise the production of German beer in that country. In such positions very high salaries are given, but being a manager a writer said he would build a roller mill and compete with the American mills on the Pacific slope.

For some little time past the milling public have been troubled about a report that has gone round the trade that a new system of milling has been perfected, and I have been asked several times since my return from Hungary, which visit, by the way, has been kept a secret, if I knew anything about this new system. The writer of the report that ventured so far without the name of the patentee, which was reproduced in an American milling journal with the name of the patentee, A London financial paper made a note of the fact from the American milling paper, and taking advantage of the nature of the “berry” it had to “crack,” dressed the “paw” to the effect that roller mills would be done away with by the new method of milling. The patent about which so much fuss has been made is only after all “an improved method and apparatus for sifting, bolting, sorting or grading meal, middlings, and bran, like pulverulent or granular material or produce,” and which, according to Mr. Carl Haageneimacher, to revolutionize the milling world. In my next letter I will give a few more details about this invention and the good work it was doing at Pesth. Already several machines have been sold and are at work in Germany, Austria, and Italy.

L. MAYGROVE.

OUR BUFFALO LETTER.

If Buffalo millers were never contented and happy, as far as prices and demand are concerned, they are so now. To use a very expressive but crude term, trade is “booming.” The only drawback for the moment, is that one cannot get the milling interest at this point, is the great scarcity of No. 1 hard Durhut wheat. The supply of this grade was totally exhausted last Monday, and the first cargo which, by the way, is divided among no less than ten millers, is yet four days off. It is true there has been plenty of “Washburn” hard, but for some reason our millers could not get satisfactory results from this wheat. Last week the holders themselves becoming weary of the stuff, commenced to slaughter the remaining 15,000 bushels, to-day at $5.92e., or about $5 less than was paid at the same time for No. 2 Northern from Duluth, and just what the wheat cost laid down here last fall. It is safe to say that no more spring with the graded name of “Washburn” will be sent to this market.

Prices of flour were advanced 50c per barrel on the 1st of May and again last Saturday, but so urgent is the demand that buyers do not mind the extra charge, and it is quite likely that another 25c will be added should the price of wheat go on to 80c. Then, of course, another upward tendency. Spring patents are selling to jobbers at $5.50, best Minnesota spring bakers’, $6.50, and straight roller winter, $6.50 per barrel. Millfed is weak and steadily declining; spring and winter bran selling at $i.50 ($15.50; middlings, $19.00 $19.50.

Country millers have been compelled to shut down, owing to light deliveries from farmers’ hands. This year it is not owing to a scarcity of feed or the rush of farm work that wheat is not coming to market, but to the fact of their being no stocks held back.

Winter wheat scarce; No. 1 white sold to-day at $1.08 and No. 2 red at 1.00. The general opinion is that spring wheat must sell lower, but winter will hold its own, owing to the short crop.

The New York State Millers’ Association held its annual meeting in Rochester toward the closing of last month. The following Buffalo millers were present: A. R. James, Frederick Urban, Jr., H. F. Shuttleworth, John Smith, and Horace Harvey. The session lasted nearly three hours, and was mainly taken up in the discussion of questions pertaining to the milling trade, the credit system coming in for the greater part of the time. The following resolution was unanimously adopted:

Resolved, That it is the opinion of this association that the inter-state commerce law should be so amended as to require all railways engaged in inter-state commerce to issue all bills of lading for exact amount of grain loaded in cars, and to deliver the same amount at destination.

At the conclusion of the session a vote of thanks was tendered to the retiring secretary and treasurer, Mr. J. A. Hinds, of Rochester, who has held that position since the organization of the association. He was also presented with a beautiful basket of roses by the Buffalo delegation.

Mr. A. R. James, who was elected president, made one of his neat and characteristic Yankee speeches in thanking the members for the honor conferred upon him. He said: “I do not consider my election as an honor to myself, but to Buffalo, the coming milling centre of this country. I thank you gentlemen, one and all, for the dignity you have seen fit to confer upon the Queen City of the West.”

Of the rest of the time spent in Rochester little could be drawn from our millers (not even with wild horses or red hot pinches), except that the Buffalo delegation were right royally entertained by their Flour City brethren, that they visited the art gallery in the Powers block after the supper, and were dined and winet until left aboard of the train bound home.

The officers elected for this year were: President, A. R. James, Buffalo; vice-president, H. W. Davis, Rochester; secretary and treasurer, H. F. Shuttleworth, Buffalo. The next meeting will be held in Buffalo.

Messrs. Harvey & Henry, owners of the “Queen City,” have received an apparently very anxious bid from New York to rent their mill for $4,000 per year. Refused.

The three large spring wheats are mentioned last month, have not yet completed repairs.

Mr. George Urban, Jr., now that the Republican state convention is over, and Mr. A. R. James, will begin active preparations for the coming millers’ convention.

THE SCANDINAVIAN ELEVATOR SCHEME.

[From our Buffalo Special Correspondent.]

Mr. Gautier de St. Croix and Mr. Charles C. Wolcott, agents of the Scandinavian Elevator Company, were in town a few weeks ago, ostensibly for the purpose of purchasing a site for a 2,000,000 bushel elevator. These gentlemen fell into the hands of the reporters, and from certain palpably ridiculous statements made in the published interviews, the trade here formed the opinion that the agents had learned little concerning their own business.

To purchasers and sellers of No. 1 hard in this market the interview as reported was very amusing. For instance, Mr. Gautier de St. Croix said: “Lately, there has been a marked falling off in the quality of the grain graded as No. 1 hard Duluth, and while it was well known that this grain ought to be superior to any grain in the East or in Europe, and the fact remained that it was but little, if any, better than the yield of less-favored regions.”

Anyone who has handled No. 1 hard since its introduction knows that the character of the wheat has not perceptibly changed; the proportion of soft and half soft is certainly large (the result of weather and of soil), but Buffalo’s No. 1 hard is the same as it has always been, viz.: not less than 75 per cent. of hard Scotch sife and not less than 58 pounds to the measured bushel. The average amount of sife in the No. 1 hard used by our millers is 85 per cent., and average weight 61 pounds.

(Continued on page 11.)
Automatic Force Feeders!

MCAULY'S 1ST BREAK REGULATING FEEDERS AND ENDSER.

OUR GUARANTEE

Fills Your Guarantee of 20 Per Cent. Increased Capacity
From Sible, Fletcher, Holmes & Co.

Your Force Feeders fill your guarantee to increase the capacity 20 per cent, as your system enables us to treat our sixth break stock better with four double Allis mills than we formerly could with five double Allis mills.

Please arrange your system on our "Red Dog" Stock.

TEN MORE.

Fills a Guarantee to Increase Patents 4 Per Cent.
From Galaxy Mill Co.

We have your system of Feeders on our Rolls throughout our mill, and can safely say there is no Feeder made equal to the McCauly on any and all kinds of Stock, from first break to the softest low grade. We also have one of your Feeders on our own Mill, which surprised us when we got it to work. It increased the capacity and gives us an even feed the whole length of the roll. We are more than pleased with them.

MAXWELL, HICKER & POMERINE

Office of The Tennessee Milling Co.,
Terrell, Texas, July 18th, 1887.

Hasseltine Mill Furnishing Co., Minneapolis, Minn.

Gentlemen,—The McCauly Force Feeder shipped us has arrived in a fine condition, and the feeders are working as well as we are well pleased with them. We can ship them by the following order: Five in Feeder to be used on 24x18 Double Stevens Roller Mills, speed 450, bearing of shafts 24. One Mccauly Feeder as above, with roll shaft 24. All Feeders shipped from the foundry.

TERRILL MILLING CO.

A. J. Childers, Pres.; T. M. Kell, Sec'y.

E. J. Lockhead, Bpt.

THE "SALEM"

is the original round cornered Elevator Bucket and its shape is broadly covered by a foundation patent.

All buckets of the same shape, though produced by a different process, trespass upon our rights, and render dealers and users as well as manufacturers liable for damages.

AVOID INFRINGEMENTS.

W. J. CLARK & CO., Sole Manufacturers, SALEM, OHIO.

THORNBURGH & GLEASON, Gen'1 Agents, CHICAGO.

WANTED!

We want the addresses of

HEAD MILLERS
in all mills having a capacity of 150 barrels of flour per day or more with short description of mill, system, power used, etc.

We want the addresses of

MILLWRIGHTS
who take contracts for millbuilding, repairing, etc., and who would take orders for flour mill, elevator and malt house machinery and supplies.

We want the addresses of

ENGINEERS
having charge of large engines in flour mills, elevators, breweries and malt houses.

Cawker's AMERICAN FLOUR MILL AND ELEVATOR DIRECTORY FOR 1888, issued March 8, is meeting with much praise from all departments of the trade. While not claimed by the publisher to be perfect, it answers FULLY the requirements of the trade. It is the only list published. The demand is limited and the price (Ten Dollars per copy) is cheap, considering the labor required in compiling, printing and selling. It contains ists of flour mill and grain elevator owners, miscellaneous kinds of mills such as corn, rye, oatmeal, rice and feed mills, millwrights, flour brokers and dealers in various sections of the United States and Canada, and a good list of European flour and grain importers. Kind of power used, rolls or stones, capacity and millers supposed to be worth $10,000 or more are indicated in thousands of cases.
Minneapolis cannot compete with Buffalo in the quality of flour produced as the wheat received there is softer, coming as it does, from farms which have not been long enough under fertility to produce No. 1 hard. The wheat shipped to Buffalo from Duluth comes from virgin soil, which alone can produce the average amount of hard required to fill the standard. To show the value placed on Minneapolis wheat in this market, it is necessary to go on "change and attempt to sell the pick of the Minneapolis samples which were sent here to take the place of Buffalo No. 1 hard. This wheat grades No. 1 hard in Minneapolis, but barely passed as No. 1 North here, and not only this, Buffalo millers will not touch it at so under the price asked for No. 1 hard from Washburn.

Mr. Gautier de St. Croix must have heard of the rivalry existing between Minneapolis and Duluth, and also of an inspection so rigid at the latter place that there is a difference of 3 to 4c per bushel in favor of the shipper to the former market.

Mr. Gautier de St. Croix also says that one of the benefits to Buffalo will be "the improved quality of wheat which the millers of this vicinity will then obtain can not fail to give a general stimulus to the milling industry in this region." 7

Neither Mr. Gautier de St. Croix nor his company can improve the quality of the No. 1 hard wheat ground by Buffalo millers or sold here, nor can he give the milling industry at this point or Rochester a general impetus, unless he first removes the discrimination under which our trade now suffers and which gives Minneapolis the same rate to the East as Buffalo.

The agent says: "About 18 months ago the Millers' Association of England and Scotland sent an agent out to America to ascertain why no more hard wheat came to England."

If this were true, what becomes of the millions of bushels of this grade annually shipped to Europe for exportation? All go through the mixing process in New York? Its identity is certainly always preserved here. Admitting the mixing of wheat is done in Duluth it would be impossible with our admirable system of inspection, to pass anything but the best and it is under the standard adopted by a committee of the best judges of grain in the world.

According to Mr. Gautier de St. Croix, Buffalo will be benefited by the elevating and handling of from 20,000,000 to 30,000,000 more bushels of grain per annum than at present, which will be the increased traffic by canal and railroad.

Where is this wheat to come from, if the wheat is taken from the elevator monopoly whose wheat must come here now, how can he get 20 to 30 millions more wheat?

The agent says: "The past few years hardly any of the best grade of wheat has come East. The result of this has been that the millers of the Atlantic slope and of Great Britain have been unable to produce the quality of flour which is demanded in the market, and have, in many instances, been driven into bankruptcy."

No, Mr. Gautier de St. Croix, was not the absence of certain grades of wheat which has brought disaster on the English miller, but it was free trade, together with low freight rates that did the business. Flour laid down from Minneapolis in Liverpool at 27c per barrel will make milling unprofitable in any portion of the old country.

We have got to the light in which the Scandinavian elevator scheme is regarded here.

[From our own Correspondent.]

OUR BALTIMORE LETTER.

The mantle of a bust and more profitable epoch has apparently fallen upon us, for since my last report the Baltimore markets have developed a degree of activity and strength rarely witnessed in these parts.

Flour, in sympathy with wheat, has been rapidly advancing, and at this writing fully maintains the improvement assumed during the month.

The stock of flour at and below $4.25, the grades most sought after, is exceedingly scarce at present, and renders an assortment desirable for jobbers extremely difficult.

Minnesota, and our own city mills, in addition to all others having business with Baltimore, as appended quotations will show, have marked up prices 25 to 30c per barrel.

This action has had the effect of augmenting the tendency of trading wondervolly, and had the stock above referred to accessible, the sales recorded would have reached much larger proportions. Rio shippers have been conspicuous for their non-appearance in the market. Enhanced pretentions' frighten them off. They are now hoping for a change in the situation, which will shortly result favorably to their side, and enable them to purchase more advantageously than at current rates.

Neither does the European demand for flour prevail, commensurate with the "tidal wave," but that will doubtless follow later on, and at even higher figures than are now asked, for when our friends across the water are hungry, it has been their custom heretofore to obtain satisfaction at about the greatest cost. Cereals have been on the rampage now for quiet some time.

The trading in corn, owing to the lack of supply, is too small to comment upon. In passing, will say that it is strong and higher with a continued upward tendency. August wheat, the option receiving the most attention here, is advanced between 78 and per bushel from the lowest point of the year.

While the receipts of wheat and the stock in store are extremely limited, thereby restricting business in the near by months, speculation, on the other hand, is the new crop present, which will be the increased traffic by canal and railroad.

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[From our own Correspondent.]

OUR ST. LOUIS LETTER.

The upward tendency of values specially noted in my last, having developed a veritable "boom," gives promise of conditions more or less mixed and unsettled the confronting influences for the day being apparently pretty nearly evenly balanced; the "short crop" ery continues to come from nearly

(Continued on page 18)
THE "PERFECTION" IS KING!

65 Per Cent. at HALF GATE,
THREE QUARTER GATE,
FULL GATE,
We Guarantee 80 Per Cent.

SAVES ALL COST OF PENSTOCK.

Tight Gate! Extreme Simplicity! No Clogging! Dozen Other Virtues!

TOO GOOD TO BE TRUE, EH!

Well, you don't pay for it till it does all we say in your own mill before your own eyes. Remember that!

BEATS ANY OVERTHROWN EVER BUILT.

Because it gives same high percentage at part as at full gate, and is the only Water Wheel in the world that does so. Besides its Perfectly Tight Gate, Absolutely Tight.

DON'T BUY AN ENGINE AND BOILER To help out your falling water power in dry times until you properly improve the water power, with the magnificent Water Wheel which gives you a high percentage when water is low.
The "PERFECTION" often SAVES THE NECESSITY OF STEAM POWER.

INVESTIGATE THIS WHEEL.

It costs nothing to write us and get our Circulars and learn our terms of sale. We save you money and IMPROVE your power.

IF WE DON'T, YOU DON'T PAY US, THAT'S ALL.

Besides, Besides, Besides, Besides, we will also agree to set the "Perfection" beside or in place of your present wheel, and if we don’t beat it (not EQUAL, mark you, but BEAT it) will give you the Perfection for nothing. Isn't that fair?

CRAIG RIGGWAY & SON, COATESVILLE, PA.

GARDEN CITY FLOUR DRESSER.

SUPERIOR TO MOST.

THE EQUAL OF ANY FLOUR DRESSER MADE.

Sole Agent for the Celebrated Bodmer Bolting Cloth.

For Prices, Address

GARDEN CITY MILL FURNISHING CO., CHICAGO, ILL.
all quarters, but many traders have become distrustful of it, and while it is generally believed that we have entered upon a higher plane of values, it may become necessary to supplement "crop news" with real, or threatened political disturbances before the fancy figures predicted by some can be realized. Meanwhile, the brokers are hopeful that the increased activity already felt will continue, and that the entire product of the country will be wanted at values that will insure prosperity in every direction. The "agreement" entered into by millers and flour dealers establishing terms of sales of flour, so far as I can learn through interviews, has worked and is working satisfactorily, and parties to the agreement are sanguine of the best results in the future.

The agreement referred to is as follows:  

Whereas, Owing to the very small margin of profit which has existed for some time, and the vexations arising from a variety of terms and practices which have lately prevailed in flour trades, it becomes necessary for the protection of both buyers and sellers that a uniform system be established;  

Therefore, the owners of four dozen wheel signatures, hereto attached, agree with each other to adopt, and adhere to, the following terms and conditions of sale, to take effect April 23, 1888:  

1. To pack no flour in sacks of less than 24 lb. weight.  
2. To pack 56 lb., 48 lb., and 24 lb. sacks only, as fractional parts of a barrel, as established by the law of the state of Missouri.  
3. All sales must be made for cash, or on time not exceeding thirty days. Cash sales to be settled for by sight draft on shipment of goods. Sales made at thirty days to be closed by a thirty day draft on shipment of goods, which drafts are to be held, regardless of arrival of goods. Sales made to parties which have no banking facilities may be excepted, as far as owing by draft is concerned; but in no case shall longer than thirty days be given on such sales. No discount shall be allowed for anticipating payment of a time sale.  
4. All sales of mill feed shall be on sight draft, bill of lading attached.  
5. That whether sales are made "F. O. B." or "cost and freight," the seller will only be responsible for the rate of freight specified in bill of lading, and any expense paid by buyer will be at this risk of recovery from the transportation company; nor will seller be responsible for damage or damage incurred by the transportation company; but will, on being furnished with required proofs of overcharge or damage, do everything necessary to procure speedy settlement for buyer's benefit.  
6. In all sales made "cost and freight," route of transportation must be subject to buyer's option, unless previously specified otherwise.  
7. No greater difference than 10 cents per barrel shall be allowed on flour packed in sacks. Half barrels to be 13½ cents each. extra.  

The Regina mills started up Monday, after a suspension of operation for a few days to introduce new and valuable machinery, they are running half time, not because of any limit to the demand for their product, but because of their belief that the stock of milling wheat will be exhausted entirely in this market before anything can be drawn from the new crop. The Geo. P. Plant Milling Company is running full time, and has turned out over 200,000 barrels since their damages were repaired. The Seashare Milling Co., Saxon Mill Co. and Victoria Flour Mill Co. are running full time. The E. O. Stannard Milling Co. is running their New Eagle Mills full capacity, and doing excellent work; the Addon Mill is running half time. The Kansas Milling Co. is running half time here; their "President" Mill, at Bethalto, being shut down. It is not likely they will start the "President" until after harvest, and the outlook for wheat in that section of Illinois is so unpromising, they may not be justified in starting up even then. The Merrimac Mills, (H. E. Egggers & Co.) are running half time. Kansas City are running three of their mills; one of them full time, two of them half time. The E. Goddard & Sons' Flour Mill Co. shut down this week.

The "St. George Mill Co." is also shut down. The "Camp Spring Mill Co." is repairing the mill by putting in the "short system," and will increase the capacity to 1000 barrels per day. The "Bielzel Mill Co.," East St. Louis, and the "Crown Milling Co.," Belleville, (J. F. Imbs & Co.) are running full time. The "Woodward Milling Co.," and the Southern Mill Co., (McMillin mills) are running full time, and seem to have no difficulty in placing all their product. The "mill machinery" firms, represented by Tom Miller and "Downtown," as well as the "Todds & Stanley company," report a steady trade.

The well-known long house of H. L. Chase, whose connections extend from Boston to San Francisco, report a good trade in their line during the past month, the demand including both domestic and export orders. The stock of wheat of all grades in store here is 466,683 bushels, and of flour about 80,000 barrels.

Mr. Nicholas Eisenmeyer, late of Little Rock, Arkansas, has sold his mill at that place, and goes to Washington Territory for the purpose of engaging in milling there.

Respectfully Yours,  


ABOUT WHEAT CLEANING, Etc.  
LANCASTER, PA., May 16, '88.  

Editor United States Miller, Milwaukee, Wis.  

Dear Sir:—In the last number of your valuable paper I found an article written by L. Gathmann in regard to wheat cleaning. I have no doubt if we cleaned our grain as well as he does and contained much more flour can be made under all systems, either rolls or burrs, long or short system. I think myself there is more "humbug" in milling than their any necessity for and I don't doubt it at all if all millers had understood as much about milling eight or ten years ago as they do at present, that there would not be a single long system mill in the country. The ignorance of millers and the ignorance of the mill furnishers (or business policy) created the gradual reduction of long system mills. I am running my little Burr mill in competition against a full roller mill; I have all the custom work I can tend to; I am using an old 24" Munson mill, new stock, and very close, and I have them just as smooth as I can make them and use very little face. I use this mill for the main reduction, or in fact I make but one reduction on wheat, unless you count the Garden City First Break and Scapler as one reduction.

The coarse middlings I grind on a 4x12 smooth roll. The fine middlings I grind on a 6" and 8" roll. I have now that you western people will say, "what old fogies," but let me tell you that I make just as much money in proportion as my neighbors, the full roller mill. I don't believe in making $100 out of the mill and spending a $10 for improvements. As far as white and red the roller mill can make it, by mixing their whole products together. I am convinced that the whole thing is hinged on the wheat cleaning more than anything else, and further that you can make good clear flour by almost any system if you have good clean wheat to begin with.

Respectfully Yours,  

M. L.

THE CHICAGO, MILWAUKEE & ST. PAUL R. R.  

As disseminators of practical information the railway companies of the United States do quite as much in the way of educating the entire portion of our population as is done by the public schools in "teaching the young how to shoot." In addition to the matter of frequent time schedules, dealing only with figures showing the arrival and departure of trains at all stations, some of the railway companies call attention to particular facilities offered, by publishing guide books, pamphlets, circulars, etc. While we are among the leaders in the matter of advertising the various roads, also convey the intelligent mind considerable information of a character calculated to instruct the reader thereof. The sending of a two-cent postage stamp to A. H. Carpenter, General Managers & Operators,  

The Chicago, Milwaukee & St. Paul railroad.  

A Treatise on Hunting and Fishing.  

A Treatise on Hunting and Fishing.  

The Woman's Magazine, published at Boston, has come to hand. It is a handsome, finely illustrated periodical, and will certainly please the ladies, young and old.

THE WIDE AWARE FOR MAY is an excellent number, with the usual variety of prose and verse by the best writers. The frontispiece is a saltily executed picture of Queen Louise of Prussia and her two sons. A paper on Chinese Dragons gives some curious illustrations from an old Chinese MS. The paper on the family of James Madison, reproduces a number of very interesting historical portraits. D. Lothrop Co., Boston.

In the American Magazine for May, William Ewing Curtis begins a series of illustrated articles on "The Oldest of American Literature," in which paper will deal largely with Carthageus which was the first city founded on the continent, although several colonies had been founded, as well as a few small settlements and a fortress had been built at Panama. The city bestows the rendezvous of the Spanish galleons that went to South America for treasure, and consequently a most tempting field for pirates. Incidents in relation to these, together with descriptions of the large churches, palaces and other buildings, afford a great scope for an article of this character. Curtis has taken full advantage of the opportunity.

The Cosmopolitan for May opens with an illustrated article, "The Pedigree of the Devil," by M. D. G. Smith, of the illustrators. Four colored, or color-note-worthy articles are, "What Our Grandfathers Laughed at;" "Children in Persia;" "A Congress of Anonymous Women;" and "The Tragedy of the Hoang Ho, the Curse of China;" etc. The frontispiece is a fine plate in color representing Mephistoophiles and Margaret, as acted by Mr. Irving and Miss Terry.
And what is the lesson? The lesson to me is this: Formerly we laid great stress on the subject of mutual insurance. You could tell us to apply to your agent, he or she here dressed in your broadcloth suits. You see the point I wish to make? Unbeknown to you, we have changed all that. We have reversed the emphasis and are presenting it to you in a different way. It shows that the stage of the business is different from what it was, and that it is now full of new opportunities. It is a different business now. Machinery does that for you now. You put on your business suit and sit in the railroad car or your office. You get your correspondence in order, and your main study now is how to sell your flour.

The milling business has ceased to be the art it used to be; it has become a mechanical business with the members, and the art has gone out of it. Am I right there? As I said before, your dress proves it to me. Legally, you can do a great deal to protect yourselves. You can do nothing, or very little, toward shaping the general markets. That is not what milling does. But certainly you can do a great deal toward ameliorating your local condition. I think that milling does great wrong to itself and to the trade at large in not joining together for that purpose.

Some fifteen years ago I had a competitor in my town with whom I used live in the usual style of two men in one town. We disputed each other and tried each other to the verge of the bank and the verge of the world. We did it happily and I think fairly. We sold each other, and we fought and fought until there was not much left of either of us. To-day, gentlemen, you all work closely together and have been doing so for years. When one wants to make a sale to a man with whom he is on terms, he simply calls him and asks him if he is buying or selling. If he is not, he will either buy or sell. We have the same wheat and we have the same market, but we get along the very best kind. We used to tread on each other continually, but for the last six years we have made our prices together. Just last week we sold a stock company and appointed a manager to buy wheat for us in certain territory, and one day they got a car and we sold it at the head of the board. And so it goes right along without any friction or misunderstanding of any kind. That is what I mean.

I met that same miller the other day—by the way, he is an uncle of mine—and I said to him, 'Why don't you all get together to bring back the old state of affairs?' 'Well,' he said, 'it would take a good many years to mend things, and we would be willing to allograte the pleasant arrangement we now have.' I know that we have paid a least $1,000 less at each mill this year than we would have done under other circumstances.

We farm out the territory and we don't jump into our neighbors' pasture. No, we respect our fences; we don't do it. It is not considered possible. Otherwise, the moment you overstep your limits the others will do the same. You put in a resolution here morning about mutual insurance. Some twelve years ago some of my neighbors got together and talked about mutual insurance. Well, after talking it over a little while I took my buggy and went down to them and talked with them. And we finally got twenty millers together to guarantee that if anything came to the others would back him. And this small, modest, local beginning, is to-day the Millers' National Insurance Company, which has about $0,000 in risks and has a surplus of $200,000; and it has gone to millers, insurance at just one-half of the cost charged by regular insurance companies.

What has been done in Illinois can be done in Indiana. Illinois, where the West-Central Illinois Millers' Association started a local organization, there were 28 firms that immediately signed the articles of agreement, paid in their initial fund of $2,000, and over 15 have joined the association. They have another meeting at the end of this month to elect officers. So you see here; their trade is just the same, and their competition is just the same. And why can it be done? It can be done because the state of Indiana for some unaccountable reason has always been slow in association experiments. I have been in charge of our National Association for the last fifteen years and have made several efforts to get local associations here, but I have not been able to do much.

A couple of weeks ago I was at the North Western Millers' Association. They have now 88 members. They started a little over a year ago. They make their wheat prices the same, and they do four or five things together. I do not know if you have millers up there in a strip of country from Kansas City to St. Joseph, and from there to Kokomo and Quincy? Not a single complaint, that means one hundred of the association lived up to the rules.

I have heard it talked up again and again that the other fellow does not live up to the rules. Is this other fellow? You, yourselves, are the other fellows.

Some gentlemen got together last week—saw Mr. Seyt; he knows all about it, he can get us together. I do not know of any instance of this in the western states, but I believe it is the case in the eastern states, and there is an old proverb which says: 'The Lord helps those that help themselves.' It is a good rule. You, yourself, must be the ones to take the initiative. Others will assist you; others who have had experience will assist you in getting started. But the first requisite is, he must have a contrite heart, and when you join a millers' association it is for you to know that your neighbor is just as honest as you are yourself.

It is peculiar in the milling business that every fellow, no matter what small trade a man runs, knows he makes the best flour on the road; and he cannot understand how the other fellow's flour has not gone to pieces long ago. I heard that a thousand times and pretty nearly every man has told me that when you get acquainted with the millers, you get along somewhere in a way that makes you feel that you are doing business as well as you do, just as good as you are, knows as much about the business as you do, and whenever you come to that conclusion then you are ready for an association and not before.

You can trust the other fellow just as well as he can trust you. If you agree to hold up the wheat prices, or hold them down, whichever way you want to, and agree to hold the flour price—that you will not pay the best wheat, that you will not sell flour in any market for less than so and so, you will find that the other fellow will do the same. Take it up and keep your minds to be honest about it, and stick to it, and you will find that the other fellow is just as honest as you are.

Now, how to get at it. I would advise that you select different localities in the state, each man going his own way; and extend. Use lines drawn from east to west or from north to south; or in a certain territory and ask them to come together in the milling business, the first thing I did was to go to a tailor and order a $35 suit, and that I could do it every day. They take to-day as though you might pass for a Methodist.
sources of supplies, and who have about the same markets. Then you bring them all to a level. There you make it a point of vital interest to yourself and everyone with you, and every time you make a point it possibly involves the whole situation. We have tried it in other states and find that it works the best in that way. We have a much more common district to take hold of it, and he must make up his mind that he will not rest until his district is in a leading position and you will find when you first go to work in earnest that it is much easier than you imagine.

I am of the opinion, however, that the less you put upon your paper the better it is. You firmly regard your interest in a little book is all that is required; and that fully carried out will work a great deal better than a long list of rules and by-laws and penalties for every violation. I know by experience it is very hard to collect such a penalty. You could not collect such a penalty by law. Your own conscience must be the regulator of these matters.

You will find if you have organized in that way it will work all right. But don’t knock the whole business over because some brother has been wanting to put your name in it, but let us try and fix it up again; let us try and be right. Let us do a little better spirit in that way. The man who has done wrong, if he is talked to properly, will feel ashamed of what he has done. If you tell him that and you will find it works very pleasantly indeed.

Then when these districts are organized in that way you will find it of very great advantage. Have one district follow another like links in a chain, and you will find they will pull together. Of course, your state organization must be the leader head of these local organizations, and any of the districts get to quarrelling between themselves, not the individuals, but the districts, then the state organization must step in and take up the matter; and above that must be the national organization to take up any disputes that may arise between the state organizations.

Before I close I want to make this point. You must have one man in each district to take the matter up and push it; not only for his private interests but for the good of the cause. There are always more who will be leaders. Such men must take hold of it in earnest and there is no doubt about it's success undoubtedly. If you have a very hard case to manage, and I can be of any use to you, I will be glad to do so. (Applause.)

Mr. D. A. Richardson introduced a resolution regarding money raised, and a committee was appointed to organize to make Indiana roads to allow such privileges to Indiana millers as was given by trunk lines.


The following resolution was next adopted.

Resolution. That this association make application for membership in the Millers’ National Association.

The chair announced that the next thing in order was the report of the committee on the selection of officers for the ensuing year. The committee recommended that the follow-


The report was concurred in by the association.

Mr. Ranck moved that Mr. Nic. Elies be appointed a member of the executive committee of the Millers’ National Association. Adopted.

Mr. Seybert — Mr. Chairman, the matter of transportation to Buffalo to the Millers’ National Association will receive our attention at Chicago next week.

The President — We now have thirty-three members, and we want an even hundred. Let every member here try and get others to join. If we can get a membership of one hundred we would be in a good condition to do something.

NOTES.

The excursion given by the Nordyke & Marmon Co. was an interesting event. When the steam boat Little Otter left the depot, the visitors went through the entire establishment. A novel feature was the driving of a set of rolls by electricity. The works were in full operation, and visitors who had never been there before were surprised at their magnitude. This company has the facilities for turning out an immense amount of work, and we trust that its business will demand the continual turning of every wheel.

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The Maywood Farm Mystery, by Willard Collins, Illustrated
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The Romanic Adventures of a Milkmaid, by Thomas Henderson
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The Days of a Hero, by Henry Crandall
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The Scarlet Terror, by Mrs. J. H. Balch, Illustrated
The Kings of the Skies, by Mrs. J. S. Nicodemus, Illustrated
The Witches, by Mrs. J. S. Nicodemus, Illustrated
The Last of the Flaggins, by Mrs. E. N. Slocum, Illustrated
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The Colour of Courage, by the author of “Dora Thomas,” Illustrated
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S. P. Thompson & Co., 328 Patterson St.,. Baltimore, Md., Flour and Grain Commission. [Apr. 68]


W. K. Sherwood, Flour and Grain Commission, 15 Sth Commercial Street, St. Louis, Mo. [May 26]

L. R. Hard, Minneapolis, Minn. Flour, Grain and Commission. [May 26]

NEW CATALOGUES, etc., RECEIVED.

The Sidle Fletcher Holmes Cook Book is the title of a neat 36-page pamphlet issued by the well-known millers The Sidle Fletcher Holmes Co. of Minneapolis, Minn. It is furnished free to their customers and others desiring it. It deserves a place in the kitchen of all who like well-cooked food. Send for a copy.

The Robert Allenson Perforated Metal Co., 75 Van Dam Street, N. Y., have issued a 36-page catalogue giving full information and illustrations of all perforated metals. Write for a copy.

The Todd & Stanley Mill Furnishing Co., 911 N. Second street, have just issued their Price List, No. 54, for 1886. Mill and elevator owners will find it handy to refer to when they want to buy machinery or supplies. Sent free on application. Get it.

The Avery Elevator Bucket Co., Cleveland, O., are out with a new catalogue which is an item of interest to the Trade.

Herrman Bros., York, Pa., have just issued the 1886 Water-wheel book, which will interest users of water-power.

The Fenniclin Turbine Co., Dubuque, Ia., have just got out a new Water-wheel book which will be of service to those contemplating buying new wheels. Sent free to all asking for it.

C. C. Phillips, 39 S. Broad St., Philadelphia, Pa., has issued a grading mill catalogue which feed millers will find of especial value. These are for grading most anything.

Thornburgh & Gleeman, Nos. 19–21 N. Clinton st., Chicago, Ill., have recently published a comprehensive catalogue of the different departments of their business. As dealers in mill and elevator supplies they are known everywhere.

CAN A STEAM BOILER or pipe become hot enough to ignite a match purely from heat, without the least possible friction? At what heat would it ignite, and what would be the highest number of degrees of steam heat that could be brought to bear upon the outside of a steam-boiler under pressure? Also, could steam-pipes set fire to anything else? A phosphorus match will ignite at 140 degrees Fahrenheit; steam at the boiling point is 212 degrees; under high pressure of 300 pounds to the inch, steam can be heated to 405 degrees—but this is not hot enough to set fire to wood as dry pine wood ignites at 800 degrees, and charcoal at 380.—St. Paul Pioneer Press

Nevertheless “de sun do move;” we have seen it! A pipe has been laid on pipes through which super-heated steam was passed from the boiler to an oil retort charred black in a few hours. The woodwork on which heating pipes were hung 300 feet from the boiler became so charred that the screws let go and the pipes fell down. We can cite actual occurrences by the dozen.—Insurance Monitor, N. Y.
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