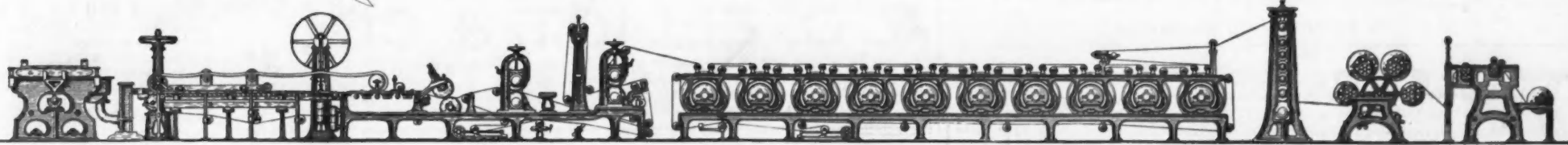


# THE PAPER TRADE JOURNAL.



"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XVIII—NO. 30.

NEW YORK, JULY 27, 1889.

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## Trade Topics.

### Sulphite Liquors and Sulphite Fibre.

By Dr. Frank.

I made the assertion some time ago that effective sulphite liquors could be made with a far less amount of sulphurous acid, and the composition which I gave of the solution—3.118 per cent. of SO<sub>2</sub>, of which 2.262 per cent. was free, and 0.856 per cent. was latent (the last being equivalent to 0.749 lime)—has been called in question by some as being not adapted for making good fibre, and that the lime percentage of the sulphite liquors was insufficient. Further information from the mills of Spiro & Co. gives the following as the average composition of the solutions made in the tower: Total SO<sub>2</sub>, 2.816 per cent., of which 1.664 per cent. was free and 1.152 per cent. was latent, this latter being equivalent to 1.008 lime. As the firm uses for every boiling one-half of tower and one-half of Frank solution, the average boiling solution is 3.035 per cent. SO<sub>2</sub>, of which 2.023 per cent. is free and 1.012 per cent. is latent, this last being equivalent to 0.885 lime.

The firm states that the quality of the fibre has been improved, and that it is purer and always free from gypsum. The ash percentage is 0.36, while that made by the Mitscherlich system contains from 1.3 to 2.1 per cent. In ninety-two charges the useful product of the acid was 96.8 per cent.

Owing to the great importance which the increasing use of sulphite fibre paper for printing purposes has for the fibre industry, any evils such as bad odors must be carefully avoided. When a magazine like the *Revue des Deux Mondes*, however, is printed on paper having a bad smell, a strong prejudice is created both among publishers and the public against papers made with an addition of chemical fibre. Schlumberger's investigations show that the defective papers had not been sufficiently freed from incrusting matters, and contained, moreover, large quantities of sulphite of lime. That a higher contents of the fibre in finely divided sulphite of calcium and sulphate ash also favors the fungous formation, and gives the pulp to which it attaches a disagreeable odor, and produces further decomposition, I have proved on several former occasions. If the paper is made from well boiled fibre, and is as free as possible from ashes, no such defects are to be feared.

### Adjustable Carriage for Jordan Engines.

An illustration is given of an adjustable carriage or truck for the purpose of enabling machinery or other heavy objects to be moved easily from place to place, as may occasionally be required. In this instance the device is applied to a Jordan engine, *a* representing the ordinary Jordan engine, on which *b b* are the legs, frames or supports, as usual. To the inside (or outside) of each of the supports *b* is adjustably secured a metal plate or frame, *c*, in bearings in the lower end of which is loosely journaled the roller *d*. There are vertical slots *c' c'* in the plate *c*, through which pass loosely the fastening bolts or screws *e e*, which are firmly secured to the respective supports *b b* and provided with adjustable nuts *e' e'*. If so desired, set screws may be used to equal advantage.

Above the plate *c* are secured to the supports *b b* bolts or spindles *f f*, of which there may be one or more, according to the size or weight of the machine or other object, and on each such spindle is journaled a cam or eccentric disk *F*, preferably provided on its circumference with perforations or recesses *f'*, adapted to receive the end of a bar or rod while the operator is in the act of turning the cams or disks around their spindles. It is also preferred to make the eccentrics or cam disks *F* with peripheral flattened

rest surfaces, *f' f'*, which are adapted to rest against the upper edges *c' c'* of the plate *c*, when the latter is moved down on the supports *b* to the limit of its motion in this direction.

While the machine or other object is at rest the cam disks or eccentrics *F* and the plates *c*, with their rollers *d*, are in the positions as shown.

If the machine is to be moved, the nuts *e' e'* are loosened a little, so as to liberate the plates *c c* from the supports *b b*. The eccentrics or cams *F* are then turned around their spindles *f* until one of the flattened surfaces *f'* rests against the upper edge *c'* of the plate *c*. During the turning of the cams or eccentrics *F* the adjustable plates *c c* are forced downward until their rollers *d d* touch the ground or floor, when by a further turning of the cams the machine *a* is raised

enough to cause the bottom of its supports *b b* to be lifted and held above the floor, thus causing the weights of the machine, &c., to be transferred to the rollers *d d* and their plates *c c*. The latter are then secured to the legs or supports *b b* by means of the bolts and nuts *e e'*, after which the machine may easily be rolled from one place to another. When the desired place for the machine, &c., is reached, the nuts *e' e'* are loosened and the cams *F* are turned, thus liberating the plates *c c* and causing the machine to sink until its supports reach the ground. If so desired, the rollers may remain in contact with the floor when the machine is at rest, or they may be raised slightly above the floor.

### Paper Millwright Practice.—XXIII.

[WRITTEN FOR THE JOURNAL.]

By James F. Hobart.

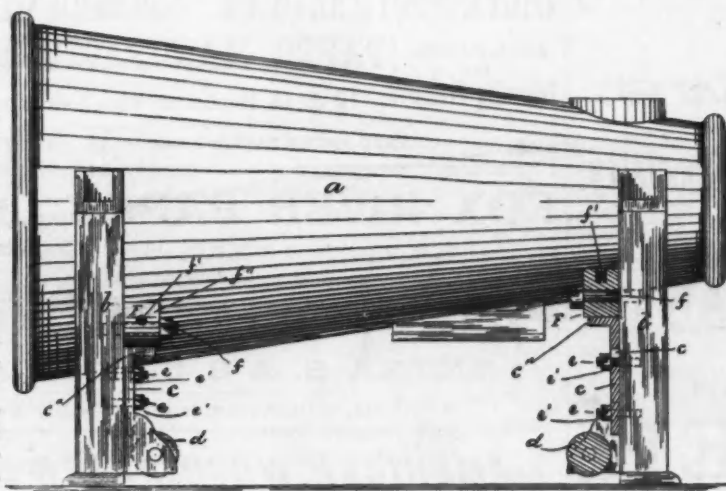
Shafting in a mill is too often a poor piece of engineering. It is often used for a different purpose than it was intended and arranged for. A small mill first answers all requirements, but gets too small. An addition is built; the engine or water wheel gets on a strike and is replaced by a larger one; the old gearing gives place to pulleys and belting, but that same old shaft is still twisting 'round and 'round, writhing with its overwork and trying to tear itself and surroundings to pieces. Pulleys have been put on the shaft where no pulley ever ought to be put; some of them are a long distance from hangers, and perhaps a big, heavy pulley is on the extreme end of the shaft, just where a heavy belt gets a big purchase on it. It is no wonder that the shaft is bent in a dozen places where the belt pulls it out of line. Add to this the settling of foundations, the decay of woodwork, and still wonder, if you will, why that shafting runs so hard.

When a boy I learned the millwright's trade. Not the trade of the old chaps who would pare a week on one cogwheel, or work two days cutting in the box of a water wheel jack shaft box—not this; but I learned to figure out speed and power from water wheel or engine to countershaft and machine, to lay out work and then execute it; or, as my father used to put the matter, "to make the marks right and then work to them." I used to make the boxes of hickory and maple wood, or beech, if in the section of the country where that wood was indigenous. Then those boxes were boxed, *i. e.*, cut into the post, bolster or bridgetree from one-half to one inch. A line of shafting erected in this way was intended to stay where it was placed, and it generally stayed there, unless the building gave way. For

very severe service we would pare out the inside of the box, except at the ends which were left a fit to the shaft, and fill the space thus pared out with babbitt metal.

There was no chance then to draw a chalk line from one end of the mill to the other, mark off 6 or 7 inches from each side thereof, bore two seven-eighth inch holes through the floor timbers, and screw up the hangers, which could be moved in any direction or were adjustable, as technically termed. Then the workman was obliged to draw a line exactly as it was wanted, lay off the gains to be cut in the timbers, and lay them all from the line; then do some exact cutting in working to the marks. It took much longer to put up a line of shafting than it does now, but when it was once up it was there to stay.

Slower speeds and larger shafting was



ADJUSTABLE CARRIAGE FOR JORDAN ENGINES, ETC.

the rule then, and the shafting had to be straight, or it would use up lots of power heedlessly. Nowadays shafting is thrown up in a hurry, but some of it needs tinkering every day. A 2 inch shaft running 300 revolutions per minute is economy, but the adjustable hanger is apt to prove a delusion and a snare. It is certainly a good thing to have when the building settles, or a tornado moves the northeast corner of the building around toward the south, but a building fit to contain running shafting should be strong enough to stand up and not have to settle down once in a while to take a rest.

The square shaft was about gone when I began to hang plumb bobs and drive off old pulleys and gears. It was a welcome absence, and never was mourned. The pulleys found upon shafts in those days were monuments of wonder and abomination. They were built from a cast iron flange and hub, which is one of the best methods in use to-day; but the slow speeds used made big pulleys necessary, and a huge "drum" was built on the jack shaft, or, in the case of gearing and a long, big shaft, the "drum" was located where the power was to be divided up among the machines. The "drum" was certain to exist somewhere, and that place used to be the scene of exciting events once in a while.

Half a dozen belts led off in as many directions from the huge cobhouse of plank and boards. When it was necessary to run a certain machine a little faster, the millwright would get out some wooden lags of the requisite thickness, and fasten them upon the drum with nails or glue. Eight or ten changes, applied from time, made the old drum a subject for a mechanical Barnum to envy and covet. There was a ridge here, carrying a belt; a deep groove there, with a belt in it which was continually doing its best to climb onto the highest ridge beside it, and a flat place carrying three or four belts whose chief mission seemed to be in trying to chafe each other's edges and all run in one place.

When a belt ran off a pulley there would be fun. It had to run off a counter or machine pulley. There was no chance for a

belt to get off the drum. When a belt did manage to get off its driven pulley, it would give just one flop, then commence to wind itself around the drum. This it was sure to do, every time. A belt beside it would gently lap over it, carry it around the drum until it took a turn upon itself and then the fun began. If the belt in question drove a grindstone or some other loose machine, everything would be quiet for about half a turn, or until the slack was all taken up; then that grindstone walked right up to the shaft in a hurry. About this time all hands made tracks for the door, and the grindstone began to climb up to the shaft. Up it went until something broke; generally the belt let go, the stone came down all in a heap, and the belt wound nicely around the abominable drum, with the exception of about 3 feet that went around as rigid as an iron bar, hunting for shelves, fire buckets, or anything which chanced to be within reach. When that belt went slap, slap against the floor above, everybody in the room overhead at once recognized it as an imperative signal to shut down, and the man nearest the gate wheel did that act immediately.

If the victim of the belt was another shaft, then it usually happened to be too strong for the belt to tear down and the belt itself was the sufferer. If the light hangers of today had been in use in the wind-up days all of the shafting in the shop would have been in a heap in short order.

There is not much danger from a wind-up nowadays; the belts are too poor. They don't hold on like those they had then, which had been years in the tanning process. About the only excuse a belt has now for winding up is in getting caught on a set screw or between two pulleys.

This set screw is an abomination which must be endured with the loose pulley. There were not many set screws in the old pulleys. With a big key, or perhaps two of them, they had little chance to slip or come off. However the new way is the best clear through, and the old way is nearly extinct. Perhaps in the future we can get rid of all of the shafting and all of the tight and loose pulleys, with their set screws and other death traps.

When Thomas A. Edison or some other man finds a way of producing electricity direct from coal, or Prof. R. H. Thurston gets the steam engine so improved that it will yield 1 horse power from 1 pound of coal per hour, then good-bye to all present methods of transmitting power. Electric motors will be connected direct with each machine, or by a single counter for giving the exact speed. What a nice thing it would be! Even at the present day a saving is made by the use of a motor for each machine. Over 50 per cent. of the engine power is realized, and in many a mill belts and shafting eat up all that and sometimes more.

I like to work in the "salamander mill." It is clean and bright. The old dog holes have been pretty well cleaned out. The abominable old claptrops which got burned are gone for good. The owner knew a thing or two; he learned some good lessons in the old mill. He kept the old machines because he had got used to them, for more than any other reason. He liked them. It did not seem as if he could throw them away and buy new ones right out of his pocket, so the old rattlers kept on rattling. The men kept tinkering the old concerns, and wedging up boxes and slides, and making the old things run as well as possible.

One night the fire got loose, and had a house cleaning. When the owner came down to hold forth as usual, he found the men hunting around among the ashes for the pet monkey wrenches and hammer heads they had left in the mill. The owner was terribly worked up over the occurrence, but after awhile he took his position beside the office safe, and they both cooled off together. When the bookkeeper came down, and they had fished the insurance policy out of the old safe, the "old man" began to feel like himself again. He set the men at work clearing up the rubbish and ruins, and went down town to order plans and material for a new building. The engine was unharmed by water, but it was taken out with the rest of the machinery. Owner said he "guessed he would have one a little bigger." The shafting was badly bent and twisted. The wiseman said he could straighten it so it could be used again, but the owner traded it off to a Down East chap for a railroad duster and a ton of steam pipe, and then went and bought a lot of nice, cold rolled shafting, all made to standard sizes and pulleys bored to fit.

Whenever there was a belt which was to be thrown on and off a loose pulley a shipper was rigged of the old steam pipe. A length of pipe ran along the floor or the ceiling, if overhead, to the spot most convenient to the operator of the machine. Then an elbow and 3 or 4 feet of pipe finished that end. Two pieces of wood notched over the horizontal pipe and screwed to floor or ceiling completed the shipper, with the exception of the jaw, which was made of a tee, two elbows, two nipples and two short pieces of pipe, or sometimes a block driven on the pipe and two pins let into it to engage the belt.

Automatic fire extinguishers were placed overhead, 16 feet apart, throughout the entire mill. The owner was not sure of them enough to trust them entirely. He had them all placed in a closed electric circuit and connected with a bell placed in the fire alarm telegraph office of the town the mill was located in. That is a good place for a fire alarm. Your watchman don't get asleep there, or get drunk, either. The mill hands have to be careful and not run against and break the wires or extinguishers. Just break the wire and the firemen are on the spot in a hurry.

### Mordanting Pulp.

Tin salts and stannic combinations are employed as mordants for preparing the pulp for coloring.

Simple protochloride of tin is a combination of tin with chlorine, and is easily soluble in water. When allowed to stand long the solution absorbs oxygen, and a white powdery precipitate is formed. It is advisable therefore to put the salt undissolved in the beating engine. Under the action of the oxygen of the atmospheric air, with which the stuff in the beating engine is constantly in contact, a portion of the chlorine from the simple chloride of tin is combined with a portion of the tin to make the stannic chloride (SnCl<sub>4</sub>). The liberated tin forms an oxide of tin with the oxygen, and is precipitated on the fibres.

With logwood the oxide of tin forms the haematefate, with red wood the brazilefate, and with cochineal the carminate, of oxide of tin. If the pulp with which the stannic oxide has been combined is treated with some sulphuric acid, decomposition takes place and a stannic sulphate is precipitated, while the liberated sulphuric acid remains free in the pulp. Stannic sulphate is decomposed rather rapidly in the heated pulp, while the process proceeds slowly at ordinary temperature—a fact which should not be overlooked.

The addition of acid to the mordant is not made when the dye is undesirably affected thereby.

When the simple tin salt (SnCl<sub>2</sub>) is used for precipitating oxide of tin on the fibres it necessitates the use at the same time of

(Continued on page 507.)

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(Continued from first page.)

other salts for certain dyes and color shades. The decomposition of the tin salt by oxalic acid (1 part of oxalic acid to 4 parts of tin) takes place on the fibres in the same way as by means of sulphuric acid. Oxalic acid imparts a yellowish shade to the original red of the cochineal. A higher temperature is to obtain the full effect of the oxalic acid.

Tin salt in general acts better with alum or acid earths on vegetable dyes than earth mordants. The colors are more lively without material change of tone. Exceptions are red pigments, which should keep a yellowish shade. Tin salt with acetate of alumina is the most suitable mordant for quercitron.

The tin as a rule is distributed after the dyeing. Its property of acting as a vivifier and clarifier on vegetable dyes is thus brought out more powerfully. The aluminous medium, on the other hand, must precede the dyestuff. The basic sulphate of alumina on the fibres forms haemateinate of alumina with the dye of logwood and brazileinate of alumina with redwood dyes. From these is formed an indissoluble double combination with the oxide of tin from the tin salt, and which produces the most lively shades.

For animal dye stuffs the pulp is best treated simultaneously with the bichloride of tin in the following proportions: Two and one-half parts of alum or sulphate of alumina, 1½ parts bichloride of tin; dye, 2½ parts of dry ammonia cochineal clarified with 1 part of tin salt.

A process which is in every way to be recommended for preparing the pulp for the reception of vegetable dyes is the decomposition of stannate of soda Na<sub>2</sub>SnO<sub>3</sub> by sulphate of alumina. In this way bases are obtained which precipitate a lively violet with logwood extract, and a pure yellow with quercitron. From the stannate of soda decomposed in this way, alumina and oxide of tin (SnO<sub>2</sub>) are precipitated as an inseparable double salt on the fibres, while the partly liberated acid of the sulphate of alumina combines with the alkali of the stannous soda to a sulphate of soda. In this way vegetable fibres impregnated with alumina-oxide of tin absorb the dyes readily and exhaustively, while the shades gain in durability.

The bluish shading influence of the alumina is still present, however, in this case, so that pure scarlet cannot be obtained in this manner. To have a pure fiery yellowish red, the acid tin solutions are used as mordants. The salt dissolves in water into an acid reagent liquid, which throws off the hydroxide of tin in boiling. When this separation is prevented by the addition of hydrochloric acid, we obtain the well-known mordant known as stannic acid and red mordant, and which is preferably used for producing scarlet shades from redwood and cochineal.

The following is the best method of preparing the red mordant: 4 parts nitric acid of 36° Bé. and 9 parts hydrochloric acid of 21-22° Bé. are gradually added to 2 parts of tin. This is the most suitable medium for

yellowish red tones from red wood. For scarlet from cochineal a better mordant is scarlet composition, which is made by dissolving 1,900 grams of tin slips in small quantities in a liquor of: 10 litres water, 10 kilograms nitric acid, and 2½ kilograms of hydrochloric acid. The solution is boiled for some hours and kept in tightly stopped glass vessels.

Mordant with 3 parts of the scarlet composition to 1 part of cochineal, and to the former a hot solution of some crystal tartar. The pulp is generally first colored with some annatto. For producing violet with logwood extract it is best to treat the pulp with the tin salt solution—1 part of the solution to 1 part of the extract. The shade can be rendered redder by the addition of small quantities of nitric acid. For ammonia cochineal, the hydrochlorous tin solution is also suitable as a fastening medium.—*Hoffmann's Handbuch der Papier Fabrikation.*

**Correspondence.**

**Chicago Notes.**

[FROM OUR REGULAR CORRESPONDENT.]

WESTERN OFFICE PAPER TRADE JOURNAL,  
114-118 La Salle Street,  
CHICAGO, July 22, 1899.

Of the American Strawboard Company and its prospects there is nothing but success to chronicle. If the company does not ultimately put the price above fifty, the fault is in its forbearance and not for any lack of opportunity.

On the 1st instant this company purchased the control of the interests of the C. L. Hawes Company, known as the Aqueduct Mills, Dayton, Ohio, and its branch house at Chicago and Cincinnati, and the American Strawboard Company will now supply the trade with a full line of bookbinders' and paper box makers' materials and machinery, and will add considerably to these lines, so far as stock is concerned.

During the dog days the paper trade of Chicago is much beset by the pertinacity of certain very indefatigable and voluble old ladies who represent the interest of the very numerous charities with which this great and generous city is blessed. So numerous, indeed, and frequent are the demands made upon these houses for donations of paper, more or less supercalendered, that their patience as well as their surplus stock is about run out, and it is hereby suggested that right here is a field for the dumping of that surplus with which the Eastern manufacturer is periodically cursed and which it is said he so frequently gives away to consumers in the West who are in no need of eleemosynary assistance.

A list of the more prominent "missions" in Chicago whose "waifs" are in immediate want of fine book and writings will be furnished on application, and as their capacity in the way of paper is unlimited there is no necessity for the Eastern manufacturer to have any qualms in the future about his "surplus," and he will thus be enabled to concentrate his attention on a possible deficit, which, according to the best financiers, is infinitely more difficult to handle.

Talking of a surplus reminds me that the Melbourne Age is printed on paper made in

Maine, U. S. A., and the Liverpool Daily Post also buys its "news" in this country, and there are other opportunities in this direction for the enterprising.

The report of the formation of an English syndicate for the purpose of advancing the price of paper in that country has had no effect on the trade here. The majority of the dealers are of opinion that prices in this country will not be affected by it.

A creditor's bill which has been filed in the Superior Court by the Smith Paper Company, of Lee, Mass., against the Jeffrey Printing Company, Frederick P. Read, Edwin O. Brown, Luther K. Tucker, James D. Woley, Charles B. Ross and the First National Bank of Chicago, presents one or two features in the charges made against the insolvent company.

The Smith Paper Company has an unsatisfied judgment of \$2,581 against the insolvent concern, and alleges that the stockholders above named, who had 1,270 shares of the stock, valued at \$127,000, never paid for their stock, except with about \$60,000 worth of second-hand printing presses and other machinery. In spite of this they took possession of the paper and asserted that the \$150,000 capital stock was fully paid up.

The bill asks that they be each held personally responsible for his pro rata of the indebtedness. The bill also asks that a chattel mortgage foreclosed by the First National Bank at the time of the failure be set aside as fraudulent, and the bank be decreed to pay the \$28,203 collected on it into the hands of a receiver.

It is alleged that the Jeffrey Printing Company executed the mortgage to the bank on the eve of the failure, when it had no right to show a preference for any of its creditors.

Mr. Perry, the representative of the Berlin & Jones Envelope Company, was in town last week, and reports that he finds each year a growing demand for the finer grades of paper and envelopes in the West, and the truth of this statement was shown by the large sales of the hand finished linen papers which have been but lately placed upon the market by the Berlin & Jones Company. As a rule Mr. Perry found business in the Northwest quiet, with a disposition on the part of buyers to hold off until after the crops were assured.

There is some agitation on the part of the daily newspapers to revive the question of a "world's fair," to be opened here in 1892. Should the subject take a tangible form the voice of the paper trade will doubtless be heard in the council room of the confederation of merchants of this city.

The Clark & Longley Company is again reorganized with a capital of \$10,000, and there be those who say that Harry Hart is playing the part of Atlas on this occasion.

LYSTER.

**Fox River Notes.**

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., July 22, 1899.

Waldemar Thilmany, of Detroit, the gentleman who purchased of the International Sulphite Fibre Company the right of manufacturing sulphite fibre for the entire Fox River valley to the capacity of 20 tons

daily, is in the city with his family, the guest of his brother, Oscar Thilmany. Mr. Thilmany's first intention was to himself organize a company to commence the manufacture of sulphite in this valley. The preliminary steps had been taken and nearly all of the \$300,000 worth of stock subscribed when another party came along and secured from him an option until August 1 upon his right or franchise for manufacturing in the district above stated. The name of this party is for the present withheld, but the conclusion of the matter is not far off. It is understood that the gentleman is now looking about the river with a view to securing a suitable location, and is vacillating between Appleton, Kaukauna and Depere. In case the option is allowed to expire before action is taken Mr. Thilmany will immediately proceed to organize his company as at first proposed. Whatever may be the termination of the matter the plant is secured for this valley and will be a large one. Either six or eight digesters will be put in from the beginning.

W. Thilmany is also interested in the Thilmany Paper Company, whose new stone mill at Kaukauna will be in operation in the course of three weeks. The last floors are being put down, and a portion of the 90 inch machine made by the Beloit Iron Works has arrived and been set up. The mill is a very complete and substantial one in every respect, and, as all the wheels are located in a mill adjoining, the entire basement floor is available for finishing and storage. Excavations will be commenced next week for a boiler house a short distance in the rear of the mill. It will all be of solid stone, and will contain two boilers 5x16 feet in dimensions. This mill will make paper of sulphite and ground wood exclusively.

C. B. Pride, who built the Thilmany Mill, has also taken the contract for making the repairs upon the mill of the Kaukauna Paper Company, which will be of the most thorough nature. The building of a cofferdam about the flume was commenced today. The flume will be very much enlarged and supplied with new and improved wheels; the wheel pit will be deepened 5 feet and 400 cords of stone taken from the tail race. All of the shafting and gears will be thrown out and replaced by new material, the floors inlaid and machinery overhauled, &c. No new machinery will be added immediately, however.

The Kimberly & Clark Company is about to make contracts for the construction at Kimberly, where its immense new plant is building, of a twenty-two room hotel supplied with all modern conveniences, and also a dozen or more cottages for the occupancy of their workmen and employees. The hotel and cottages will be erected on the bluff immediately overlooking the plant on the river below, in a very high and desirable location. The contract for building a depot at Kimberly has also been let to Kaukauna parties.

The boilers at the mills of the Telulah Paper Company and the Appleton Paper and Pulp Company have been partially reset and otherwise put in thorough repair this week.

A peculiar accident occurred at Kimberly

a few days ago, whereby Adolph Kloss, a laborer of this city, was seriously, although not dangerously injured. He was struck on the head and shoulders by a wheelbarrow loaded with mortar, which, through the carelessness of a workman above, was allowed to slip from a staging. The injured man was severely cut and bruised.

The Appleton Machine Company has recently shipped two knot borers and a barker to the Friend Paper Company at West Carrollton, Ohio, the shipment being supplemental of previous orders. This company has also nearly completed four wet machines for the Kimberly plant. Its contract calls for four additional ones.

The Atlas Paper Company has just put in two more of the large wood pulleys made by the Menasha Wood Split Pulley Company.

The paper upon which the Chicago Herald is printed is made by the Telulah Paper Company, of this city, and contains the watermark, "Chicago Herald."

P. V. Lawson, treasurer and manager of the Menasha Wood Split Pulley Company, is absent on a trip of a week or two through Michigan and Indiana.

A. B. Tower, of Holyoke, was in the city several days last week in consultation with the Kimberly & Clark Company.

Col. H. A. Frambach, of Kaukauna, of the Badger Paper Company, is absent on a trip to Chicago and Minneapolis.

H. T. Bartow, of New York, was a welcome visitor to this valley last week.

J. D. Witten and G. F. Steele, of Grand Rapids and Centralia respectively, have been in town recently.

Hon. C. B. Clark spends a good part of each day at Kimberly nowadays.

F. P. Elliot, of F. P. Elliot & Co., Chicago, visited the Fox River valley recently as the guest of prominent paper makers.

FOX RIVER.

**Philadelphia Notes.**

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., July 24, 1899.

Midsummer quiet prevails throughout the length and breadth of our paper trade. Not that trade and business in general have "gone to pot," but there is simply a slowing down, as it were, of the active stirring pulse of business for the time being. Many large consumers of paper, as in every other class of trade, are away taking their vacations, while their business is left to take care of itself; hence the absence of such parties serves in a great measure toward making the quiet in the paper trade alluded to. The early closing movement, i. e., at 5 P. M. during the week and 1 P. M. on Saturdays, is heartily enjoyed by all, and is of ineluctable benefit to both the employer and the employed. Many are away at present spending vacations, as their tastes dictate, and the coming month will find many more absentees than those already noted. We have a few whose sporting proclivities find vent by spending their vacations during the fall months, when gunning, &c., demand their attention. The vacation season this year is perhaps being enjoyed more generally than heretofore.

The dullness in trade referred to has,

**THE GLEN MFG. CO.,** 244 WASHINGTON STREET, BOSTON, **THE HAVERHILL PAPER CO.,**  
DAILY PRODUCT: 80,000 Pounds Finished Paper. **News Paper and Wood Pulp.** DAILY PRODUCT: 80,000 Pounds Wood Pulp—Dry Weight.

**W. A. BINGHAM,** Paper, Paper Bags, Flour Sacks, &c.,  
178 DUANE STREET, NEW YORK.

"ESTABLISHED 1729."  
**THE JAS. M. WILLCOX PAPER CO.,**  
(W. F. WILLCOX.) Philadelphia, Pa.

**HOLLINGSWORTH & VOSE,** 44 FEDERAL ST., BOSTON, MASS.,  
MANUFACTURERS OF  
**PURE MANILLA ROPE PAPER.**  
Z. T. HOLLINGSWORTH. Mills at West Groton and East Walpole, Mass. Daily Capacity, 22,000 pounds. CHARLES VOSE.

**PERKINS, GOODWIN & CO.,**  
Nos. 66 and 68 DUANE STREET, NEW YORK,  
Have on hand and to arrive all grades of Bleached and Unbleached

**SULPHITE AND SODA PULPS.**  
SOLE AGENTS FOR ZELLSTOFFFABRIK, WALDHOF, GERMANY. DAILY PRODUCTION, 100 TONS DRY. SEND FOR SAMPLES AND PRICES.

however, not had an appreciable effect as yet upon prices, which remain fairly steady for what little demand there is. Rag and paper stocks are in moderate demand only, with chemicals in a similar condition.

Without exception the general feeling is that the coming month will be only the beginning of a heavy fall trade, which everyone seems willing to concede will be the condition of things during the remainder of the year. At present the filling of government contracts by many of the fortunate bidders here serves in a measure to help keep up a show of business activity, while the less fortunate are content to rest quietly on their oars during the hot period, and arrange plans for trade later on.

The Fairfield Paper Company has, through its gentlemanly representative here, Walter T. Hoffman, secured quite a nice trade among many of the leading houses who cater to lovers of fine engraved work, such as wedding invitations, reception cards, &c. The Fairfield bristles, in all thicknesses, hand pasted, are equal to any made in this country or in Europe, and command a good sale here among the best of the trade. The Fairfield Company's newest goods, type-writer papers, are also doing well here, being uniform in weights, sizes, &c., and are most desirable goods. Mr. Hoffman is well thought of in the trade here, and has many friends in the business and social world.

Irwin N. Megargee & Co. report the volume of their business for the first six months of this year to have been much heavier than that of one year ago, with prices perhaps, as a rule, a trifle off, especially on the lower grades. At present trade is a little quiet, but the coming month is expected to see business stiffen up.

"Web." Morey, of D. W. Morey & Co., is at present quietly resting at Sea View, Mass., where he has located his family for the summer. He still has to use his crutches, but his injured ankle is improving fast. He expects to return to the city about August 1, when, he says, "the fur will fly."

M. O. Raiguel & Co. are quietly pegging away with trade, and look for a busy fall season. "Dave" Patton has just returned from a Southern trip, where he found everything bidding fair for much livelier times a little later on.

Among the few visiting tradesmen with us recently were noticed Mr. Foster, of W. B. Oglesby Paper Company, Middletown, Ohio, and Mr. Eaton, of Jos. Parker & Son, New Haven, Conn.

W. E. Lathrop, whose avoirdupois would appear to stick faithfully to him, paid us a

flying visit recently in the interest of the Richmond Paper Manufacturing Company.

A. H. Slocumb, of Fayetteville, N. C., dropped over here to bid his many friends good-bye prior to his departure for Europe on the steamer Nevada. He supplies all of our leading paper makers with his special grade of rosin, and has a big trade and many friends in this city.

The Schuykill Paper Mill, burned out last week, is to be rebuilt. CORONET.

Holyoke Notes.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., July 25, 1886.

There is very little change in the business bearings this week, and as far as new features are concerned there is very little to say. Business is quiet and prices are unchanged. Most of the deliveries just now are on old contracts, and new orders are not plentiful. Some of the mills are very well fixed as regards orders, with enough on hand to last for the present; but others are not so fortunate. Fine writings are holding their own very nicely, and the movement is fair. The best grade of book paper is in better demand at present and consumers are more frequent in their calls for these goods. The stock market does not show much change one way or the other, although some dealers say that they find a better demand for foreign rags than they did one month ago. There is a fair movement of domestics, and fair to choice lots find ready buyers. Chemicals are quiet.

The American paper manufacturers' annual convention at the Grand Union Hotel, at Saratoga, which occurs on Wednesday of next week, is not creating very much enthusiasm here. The present condition of the trade does not call for anything very radical and the main interest will centre on the banquet. It is expected that covers will be laid for 200 persons, and quite a number of invited guests not connected with the trade will be on hand to add to the after dinner speeches. Elisha Morgan, Colonel Train and James H. Newton have been working hard to make that feature of the occasion enjoyable, and it looks as if they will succeed. Among those who will speak will be Warner Miller, Alexander H. Rice, William A. Russell, Congressmen West and Wallace, C. B. Clark, William Whiting, Wellington Smith, Byron Weston, J. W. French, W. H. Parsons and others. Special arrangements have been made for the transportation of manufacturers in this vicinity. A train will leave Springfield at 1:15 P. M.,

taking on the Holyoke contingent and connecting at Greenfield with the fast express on the Fitchburg road. The party will reach Saratoga at 5 P. M.

The Holyoke Water Power Company has just made the following corporation return to the State authorities of the condition of its affairs: Fixed capital, \$600,000; capital paid in, \$600,000; assets, land and water power, \$351,595; buildings, \$739,247; cash and debts receivable, \$536,335; miscellaneous, \$15,552; total, \$1,642,731. Liabilities, capital stock, \$600,000; debts, \$400; profit and loss, \$442,330; reserve for depreciation, \$350,000; special dam renewal fund, \$250,000.

The Riverside Paper Company has just finished the improvements in the mill begun in June and the manufacture of paper was resumed this week.

Ex-Alderman Arthur J. McQuade, who was acquitted last week of complicity in the famous "boodle" cases, was here to-day and received many congratulations from his friends. Arthur is very popular with our manufacturers, all of whom wish him well. He was seen by a ubiquitous newspaper man, and to him he said that he is out of politics forever. He said that the recent verdict did not surprise him any, as the evidence was not strong enough to convict. Mr. McQuade always makes his headquarters at the Holyoke House when in the city, where he is quite a favorite.

J. H. Southworth, president of the Hampshire Paper Company, believes in donating his money to religious and educational institutions while he is alive, rather than to leave the duty to his executors. Not long ago he donated \$10,000 each to the Amherst and Mt. Holyoke Colleges and the Central Congregational Church at Philadelphia. Now he has given a handsome memorial library building, costing \$5,000, to South Dartmouth, his native town, and to the Congregational Church a parsonage and land valued at \$15,000.

F. D. Smith, paper ruler and finisher, is removing from the Whitcomb Mill, on Front street, to the old postal card factory on Race street. The room vacated by Mr. Smith will be used by the Coburn Trolley Company.

C. H. Smith & Co., manufacturers of dandy rolls, have removed from the Willard Building, on Front street, to the Whitcomb Mill, on the same street, where they will enlarge their facilities.

The Holyoke municipal baseball nine defeated the Springfield nine on Monday at Springfield, 14 to 10. A return game will be played here next month. H.

Boston Notes.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL, 49 Federal Street, BOSTON, July 25, 1886.

The past week has not developed change enough in paper trade circles to alter the tenor of previous reports.

Trade is comparatively quiet in mostly all lines of business.

The movement of paper stock from importers' hands continues to be of small proportions, so much so that business in this branch of the trade is claimed to be very quiet and decidedly dull. While some little more inquiry is noted there is not enough anxiety on the part of buyers for rags to hasten deliveries.

Domestic stock, so report W. J. Corbett & Co., is in very good demand, especially this firm's "Star" and "Excelsior" packings.

The present demand for chemicals is not up to last week's call. Bleaching powders are quoted at 1.70@1.80c., the later price being for "gilt edged" brands. Prices are firm here and in Liverpool. Caustic soda is quoted at 2.15@2.17 1/2c., with local supply small. Soda ash still rules at long quoted prices, 1 1/4@1.40c., but importers seem to think that higher figures are near at hand. Soda crystals are unchanged and firm at 7/8@.90c.

The receipts of chemicals for the past week include 933 casks of bleaching powders, 400 drums of caustic soda, 333 casks, 620 bags of soda ash and 280 barrels of soda crystals.

The total imports of paper stock for the week comprise 3,823 packages, classed as follows: 1,681 bales of rags, 441 bales, 326 coils of manillas, and 1,375 bales of miscellaneous grades.

The festivities incident to the paper manufacturers' convention will draw to Saratoga several members of the Boston trade, among them being the Hon. William A. Russell, Ex-Gov. Alexander H. Rice, J. Willard Rice, Col. S. P. Train, C. A. Cheney, Edward Conley, E. H. Clapp and S. L. Montague.

C. A. Cheney and wife were the guests of Roswell N. Fairfield, of Holyoke, on Sunday last, and took a drive over to the mills of the Fairfield Paper Company on Monday.

Charles E. Stone, of Brockton, Mass., who failed recently, carried on several lines of business, being a manufacturer of stays, a dealer in boot and shoe findings, and a paper dealer. A meeting of his creditors

(Continued on page 576.)

WILKINSON BROS. & Co.,

72 & 74 Duane St., New York,

MANUFACTURERS OF

Fine Manilla and Colored Paper.

GENERAL DEALERS IN

PAPER AND TWINE OF EVERY DESCRIPTION.

Mills at Birmingham, Conn.

WEEKLY WANTS.

G. H. WHITTEMORE,

11 Tribune Building, New York,

BROKER IN ALL GRADES OF PAPER.

PRICES WANTED ON FOLLOWING:

- 150 Tons, 38 in. Rolls, White, News.
- 3,000 Tons, 75 in. " " " "
- 60 Tons, S. S. & C. Book, delivered in Chicago.
- 600 Tons, 28 x 40 in., 37 lb. White, M. F. Book.
- 100 Tons, 30 x 41 in., 70 lb. No. 3 Book.
- 20 Tons, B. S. Lining, Ultramarine, Sheets and Rolls.
- 5 Tons, 30 x 40 in., 100 lb. and 150 lb., No. 1 Manilla.
- 100 Reams, Pink, No. 2 Book.

Sulphite News for New York Delivery. General Line Manilla Papers.

Manufacturers will find it to their advantage to correspond with me and send samples of their products.

GUSTAV EMANUEL, Paper Stock,

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BERLIN, GERMANY.

SMITH'S PNEUMATIC CALENDER FEED.

Patented Sept. 29, 1885; Nov. 16, 1886; other Patents now pending. This Machine is also Patented in England, France and Germany.

THE DANGER TO PAPER MACHINE TENDERS and the LOSS IN BROKEN PAPER at the CALENDER ROLLS MAKE THIS INVENTION OF ESPECIAL VALUE FOR THE REASONS THAT:

It prevents all danger and risk to the person of the operatives ordinarily incident upon leading the paper through the stack. It avoids "making broken" in the stack, as the doctors prevent the paper from clinging to the rolls, and as the action of the doctors upon the individual rolls removes any and all calendar spots from their surfaces, the latter are kept in perfect condition, thereby preventing defacement or injury to the paper, which would otherwise be the case; also by keeping the rolls clean, removing all dust and grit, the necessity for frequent grinding of the latter is avoided. The blower or fan which supplies the air should be located in some place whence cold, moist air can be obtained, and as this cold air is supplied through the doctors to the surface of the rolls, the latter are prevented from heating, and a better and more uniform surface is given to the paper.

In operation, the paper is introduced at the top roll and is conducted automatically between the other rolls, emerging from the bottom, and can be conducted immediately, without loss, to the reel.

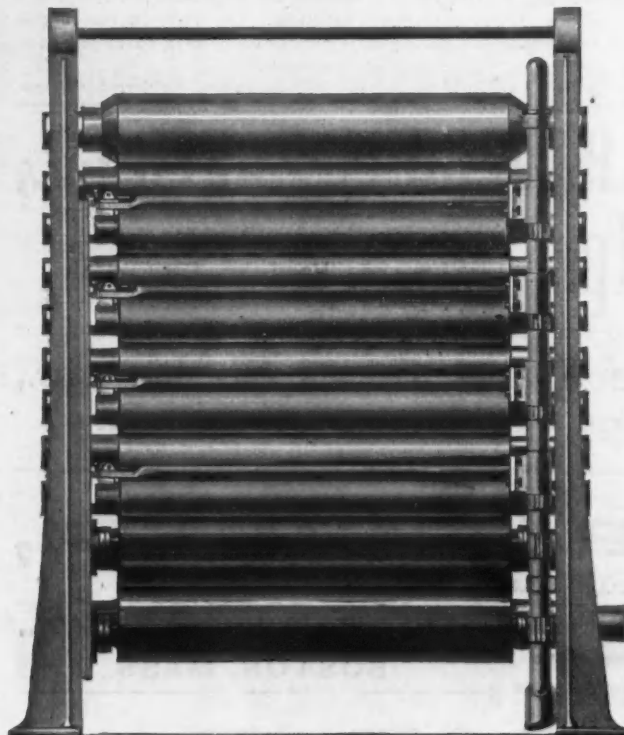
Among Paper Manufacturers now using Smith's Pneumatic Calendar Feed, all of whom endorse it most highly, are:

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| HUDSON RIVER PULP AND PAPER CO., Palmer Falls, N. Y. (3) | POWELL H. RAMSDELL, ARLINGTON MILLS, Salisbury Mills, N. Y. (2) |
| GLEN MANUFACTURING CO., Berlin Falls, Vt. (3)            | GLENS FALLS PAPER MILL CO., Glens Falls, N. Y.                  |
| HAVERHILL PAPER CO., Haverhill, Mass. (2)                | FRANK GILBERT, Waterford, N. Y.                                 |
| RUSSELL PAPER CO., Lawrence, Mass. (6)                   | TILESTON & HOLLINGSWORTH, Groton, Mass.                         |
| SUGAR RIVER PAPER CO., Claremont, N. H.                  | FAIRCHILD PAPER CO., Pepperell, Mass.                           |
| MONTAGUE PAPER CO., Turner's Falls, Mass.                | VAN NORTWICK PAPER CO., Batavia, Ill.                           |
| BRIDGEPORT PAPER CO., Bridgeport, Conn.                  | KIMBERLY & CLARK CO., Neenah, Wis.                              |
| LAKE GEORGE PULP AND PAPER CO., Ticonderoga, N. Y.       | SYMS & DUDLEY PAPER CO., Holyoke, Mass.                         |
| GEORGE W. WHEELWRIGHT PAPER CO., Fitchburg, Mass.        | WINONA PAPER CO., " "   |
| TICONDEROGA PULP AND PAPER CO., Ticonderoga, N. Y.       | GEO. R. DICKINSON PAPER CO., " "                                |
| JESSUP & MOORE PAPER CO., Philadelphia, Pa.              | EXCELSIOR PAPER CO., " "  |
| MARTIN & W. H. NIXON, Manayunk, Pa. (2)                  | PAGE PAPER CO., Furnace, " "                                    |
| WINNIPISOGEE PAPER CO., Franklin, N. H. (4)              | WILDER & CO., Olcott, N. H.                                     |
| HERKIMER PAPER CO., Herkimer, N. Y.                      | C. H. DEXTER & SON, Windsor Locks, Conn.                        |
| GEORGE H. FRIEND PAPER CO., West Carrollton, Ohio.       | W. C. HAMILTON & SON, Philadelphia, Pa.                         |
| SPRING GROVE PAPER MILLS, Spring Forge, Pa. (3)          |   |
| BRIDGE MILL PAPER CO., Pawtucket, R. I.                  |   |

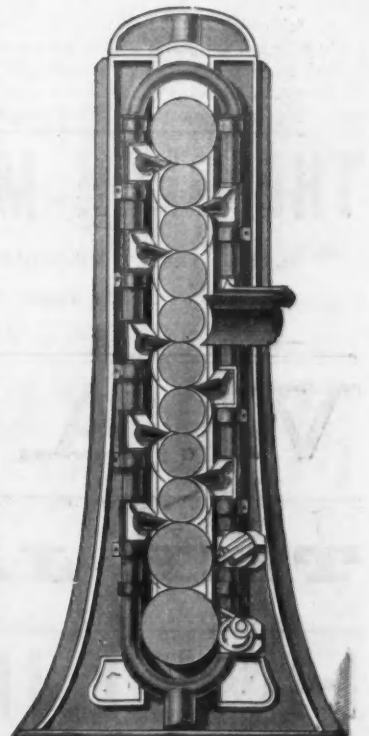
Convincing testimonials as to the real merits and advantages of SMITH'S PNEUMATIC CALENDER FEED will be shown upon application. The entire device is compact, readily adjusted, and enables large stacks to be easily and efficiently managed with least labor, and with but little or no loss of broken or damaged paper.

THE SMITH IMPROVED PAPER MACHINERY CO.,

85 WATER STREET, BOSTON.



Applied to Calendar on the Machine.



A Doctor for each Roll keeps off all Calendar Scabs.

DETROIT SULPHITE FIBRE CO.,

— MANUFACTURERS OF —

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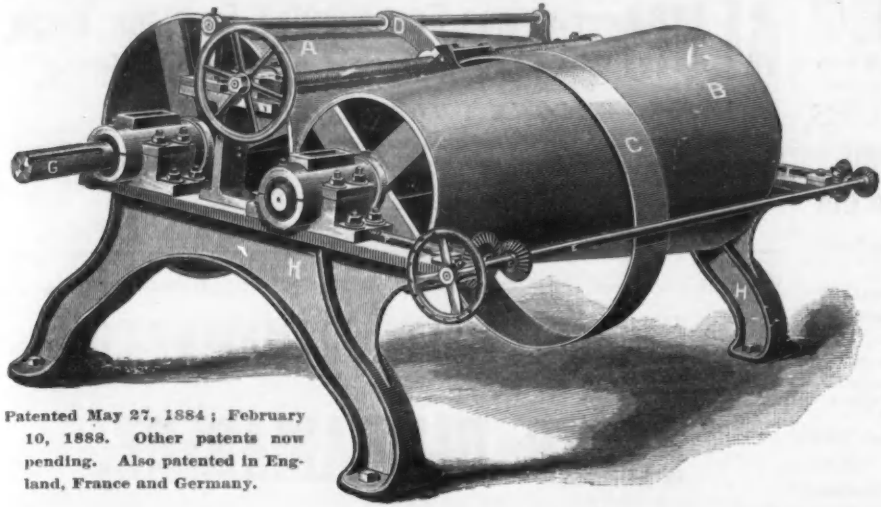
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Mitscherlich Process.

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# THE EVANS FRICTION CONE,

For REGULATING and CHANGING SPEED of PAPER MACHINE.



Patented May 27, 1884; February 10, 1888. Other patents now pending. Also patented in England, France and Germany.

The machine can be stopped or started by simply turning a hand wheel to open and close the Cones. The speed can be quickly and easily varied while running from 100 to 200 feet per minute. They are **PROMPT, EFFICIENT AND NOISELESS.**

AMONG OTHERS USING THEM ARE

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| RUSSELL PAPER CO., . . . Lawrence, Mass.       | S. D. WARREN & CO., Cumberland Mills, Me.    | G. W. WHEELWRIGHT PAPER CO., Fitchburg, Mass. |
| J. B. SHEFFIELD & SON, . . . Saugerties, N. Y. | WILKINSON BROS., . . . Birmingham, Conn.     | TILESTON & HOLLINGSWORTH, Mattapan, Mass.     |
| HAVERRILL PAPER CO., . . . Haverhill, Mass.    | FALL MOUNTAIN PAPER CO., Bellows Falls, Vt.  | PENN. PULP AND PAPER CO., Lock Haven, Pa.     |
| HOLLINGSWORTH & VOSE, East Walpole, Mass.      | F. W. BIRD & SONS, . . . East Walpole, Mass. | CLARION PULP AND PAPER CO., Johnsonburgh, Pa. |
| SYMS & DUDLEY PAPER CO., Holyoke, Mass.        | HOLLINGSWORTH & WHITNEY CO., Gardiner, Me.   | PARSONS PAPER CO., . . . Holyoke, Mass.       |

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HVES COAL AND SECURES STEADY STEAM.

FOR THE EDSON PRESSURE-RECORDING GAUGE

ADDRESS **JARVIS B. EDSON, 145 Broadway, cor. Liberty St., NEW YORK.**

# SMITH, WINCHESTER & CO.,

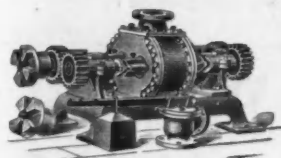
SOUTH WINDHAM, CONN.,  
— MANUFACTURERS OF —  
**PAPER MACHINERY,**

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Fourdrinier and Cylinder Machines, Washing and Beating Engines, Air-Drying Machinery for Drying Sized Papers.

SOLE MANUFACTURERS of the Jordan Patent Beating Engine, which has no rival for clearing the stock for fine papers. Chilled Iron and Paper Roll Super Calenders, Plate Calenders, Chilled Stack Calenders, Rag Cutters, Hand and Power Cutting Presses and Stop Cutters; the Hatch Patent Stop Cutter, the only cutter that can be regulated to cut between water-marks of writing papers. Screens, Brass and Nickel Plated, the latter warranted to wear twice as long as brass. Bed Plates, Roll Bars, Fan and Plunger Pumps.

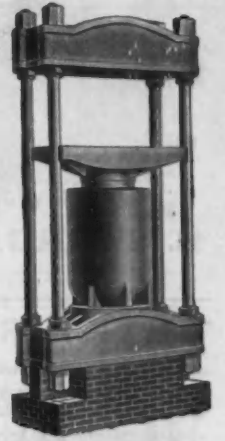
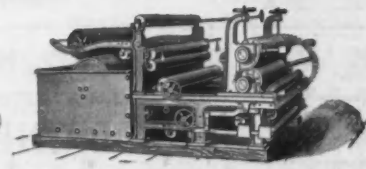
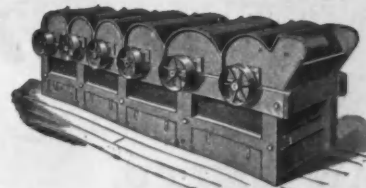
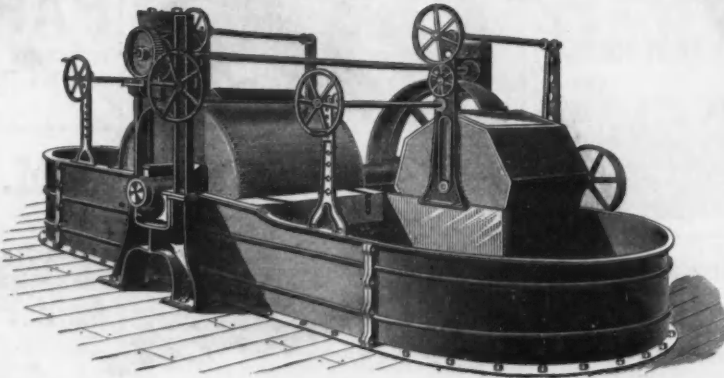
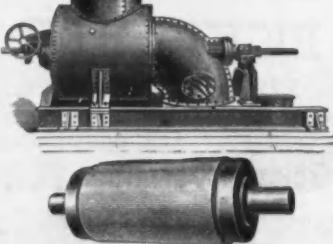
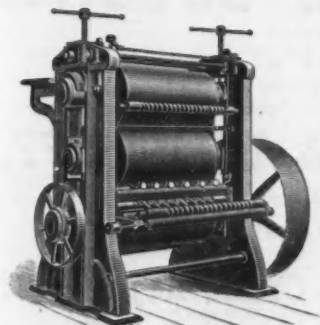
Also Gun-Metal Covered Rolls, for Size and Press Rolls; Stevenson Water Wheels. Shafting and Mill Gearing generally.



# HOLYOKE MACHINE CO., HOLYOKE, MASS.

All Kinds of CALENDERS for PAPER MILLS, GLAZED PAPER and CARDBOARD MANUFACTURERS.

Dusters, Engines, Turbine Wheels, Cotton Rolls, Husk Rolls, Paper Rolls, Chilled Iron Rolls, Elevators, Wood Pulp Machinery, Hydraulic Presses.



✉ CORRESPONDENCE SOLICITED.

# MARSHALL'S PERFECTING ENGINE.

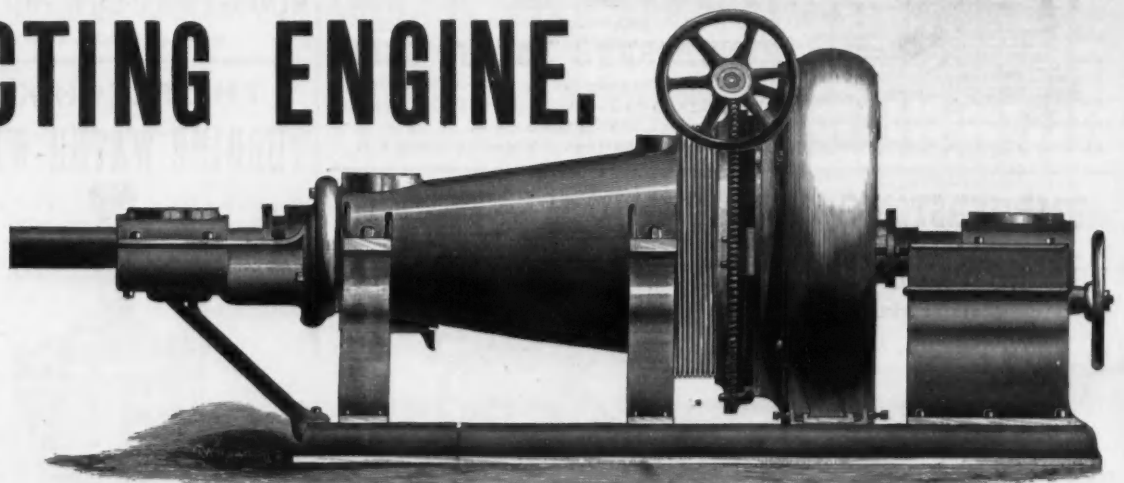
THESE ENGINES

Are now running on all Grades of Paper,

— FROM A —

MANILLA TO ANIMAL-SIZED WRITINGS.

Very Best of References Furnished.



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FOURDRINIER and CYLINDER WET and PRESS FELTS and JACKETS. All sizes and styles, suitable for making from the Coarsest to the Finest Paper. ALL FELTS GUARANTEED TO RUN WELL, OR THEY CAN BE RETURNED. We also manufacture Blankets and Stocking Yarns of all colors; also an EXTRA HEAVY SCARLET FLANNEL FOR UNDERWEAR, which we guarantee not to shrink. All the above we offer to Paper Makers at the lowest wholesale prices, in quantities to suit. For the best results from fast running, try our XX Style Felt for Fourdrinier Machines, and Style "C" for Cylinder Machine. Prices sent upon application.

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No. 340 Central Avenue, Albany, N. Y.,  
— MANUFACTURERS OF THE —

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N.B.—Our Felts are superior to any other Felts made in America. NEWS PAPER FELT A SPECIALTY. A trial solicited. Satisfaction Guaranteed.

**LOCKWOOD'S DIRECTORY**  
FOR 1888-9.

Only standard work of the kind published. Contains a list of Paper Manufacturers and Dealers; also list of Retail and Wholesale Stationers, Booksellers, &c. PRICE \$2.00. Address **HOWARD LOCKWOOD & CO.,** PUBLISHERS, 126 & 128 Duane Street, cor. Church, New York.

**FARREL FOUNDRY AND MACHINE CO.,**

ANSONIA, CONN., U. S. A.,

THE LARGEST MANUFACTURERS OF

**Chilled Rolls**

IN THE WORLD.

**CHILLED AND DRY SAND ROLLS**

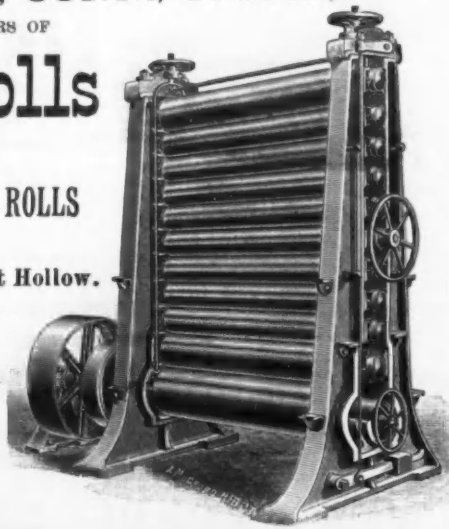
FOR ALL PURPOSES.

Rolls Bored for Steam or Cast Hollow.

**COMPLETE CALENDERS.**

Lift Rods operated by wheels above for raising any number of the rolls. Housings so made that the rolls may be taken out endwise through frame.

OLD ROLLS RE-GROUND AT SHORT NOTICE.



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**Leffel Turbine Water Wheel,**

Made of Best Materials and in the 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.

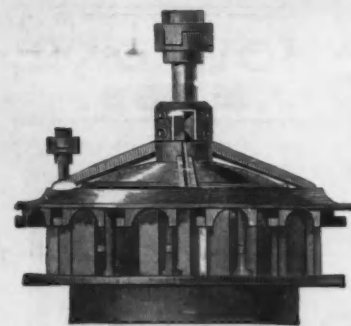
Mixers and General Outfit for Fertilizer Works.

Shipping Facilities the Best in all Directions.

**ROBERT POOLE & SON CO.,**  
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N. B.—SPECIAL ATTENTION GIVEN TO HEAVY GEARING.

**THE SUCCESS WATER WHEEL.**



This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of

**Heavy Gearing and Machinery**

FOR PAPER, COTTON AND GRIST MILLS.

SEND FOR PAMPHLETS AND PRICES.

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**FOURDRINIER AND CYLINDER WIRES.**

SOLE MANUFACTURERS OF

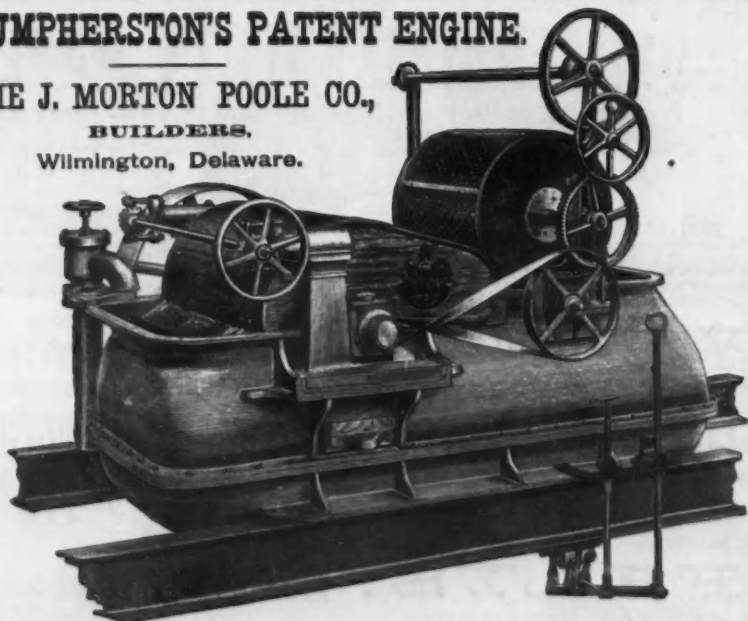
**HENTHORNE'S PATENT SEAM.**

The most perfect method of joining Fourdrinier Wires. GUARANTEED TO BE STRONGER THAN ANY OTHER SEAM NOW IN USE.

Eastern Agents, RAWSON & PEARCE, Paterson, N. J.

**UMPHERSTON'S PATENT ENGINE.**

**THE J. MORTON POOLE CO.,**  
BUILDERS,  
Wilmington, Delaware.



**RODNEY HUNT MACHINE CO.**

We guarantee every Wheel to give entire satisfaction.

Orange, Mass., U. S. A.,

ENGINEERS,

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Iron and Brass

FOUNDERS.



SPECIALTIES:

TURBINE WATER-WHEELS,

Horizontal and Vertical.

Power Trans-milling Machinery.

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Regulators

State requirements and write for prices.



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MILL SUPPLIES

AND

**RUBBER BELTING,**

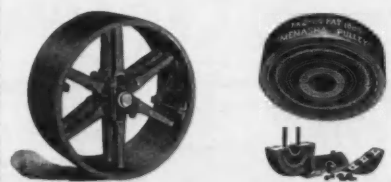
SPECIALY ADAPTED FOR USE IN PAPER AND PULP MILLS.

Leather Belting and all kinds of Mechanical Rubber Goods carried in stock or made to order.

**MERCULES FIRE HOSE.**

121 and 123 Lake St., CHICAGO; 7 Barclay St., NEW YORK.

**MENASHA PULLEYS.**



We are Sole Makers of the Hardwood, Bent Rim, Spoke Arm and Iron Hub Pulleys, bushed and gripped to the shaft by pure friction board.

Also, we are Makers of the smallest Wood Split Pulley made. We make them as small as 1 inch diameter.

Also, we are Sole Makers of the only Split Loose Pulley in the market. It has metaline bushing that requires no oil or other lubricant. No glue used in the construction of our pulleys. They are made of the best seasoned and kiln dried hardwood.

We also make the largest Wood Split Pulleys in the Market. A large number of Paper Mills in the United States are operated with our pulleys. The pulleys are similar to the above cuts.

Send for Illustrated Circular and Price List.

**MENASHA WOOD SPLIT PULLEY CO.,**

MENASHA, WIS., U. S. A.

**THE FLENNIKEN TURBINE WATER-WHEEL**



Is the most Simple, Strong, Durable and Economical Wheel manufactured. Send for Circular to

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ROCKFORD, ILL.



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MANUFACTURERS OF

**TWINES.**

Paper Mill Twines a Specialty.

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**ALUM**—Peerless, Concentrated, Excelsior, Eagle, Cake, Ammonia and Potash Alums.

TACONY CHEMICAL WORKS.

**CHARLES LENNIC & CO., LIMITED**

The Oldest Alum Manufacturers in America.

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HENRY MERZ, Pres. CHAS. F. ZENTGRAF, Sec. LOUIS DE JONGE, Trans.

**THE CONSOLIDATED ULTRAMARINE CO. LTD.**

**PAPER ULTRAMARINE,**

Equal to any Imported.

No. 55 MAIDEN LANE,

**NEW YORK.**

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**CONCENTRATED ALUM.**

**VENETIAN AND STRONG REDS,**

Ochres, Clays and Copperas,

MANUFACTURED EXPRESSLY FOR PAPER MAKERS' USES BY

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MANUFACTURER AND IMPORTER OF

**Chemically Pure Colors**

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CHAS. E. HORE, Superintendent.

**GLOBE ANILINE WORKS.**

HELLER & MERZ, Proprietors.

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Aniline Colors, Carmine, Pulp Colors, Eagle Brand Ultramarines, N. C. F Concentrated Alum.

**MASON, CHAPIN & CO.,**

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Sole Receivers for United States and Canada, of Following Brands

**BLEACHING POWDERS:**

N. Mathieson & Co.—Pilkinton & Co.—Hay, Gordon & Co.—Wigg Bros. & Steele, "Anchor Brand."

PROVIDENCE, R. I.

141 Milk Street, BOSTON.

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**FERRIC CHEMICAL AND COLOR CO.,**

—MANUFACTURERS OF—

Pillar Copperas, Venetian Red and Oxides of Iron,  
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**CYPRESS** IS THE MOST DURABLE WOOD FOR TANKS, VATS, &c.

We have all thicknesses in stock, and shall be pleased to answer inquiries in regard to the same from PAPER MANUFACTURERS and others.

**THE A. T. STEARNS LUMBER CO.,**

11 Federal Street, NEPONSET, and 470 Albany Street, BOSTON.

**IMPORTED ENGLISH WOOD PULP GRINDSTONES**

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"In every way Perfectly Satisfactory."

SEND FOR PRICES AND SAMPLE PIECES.

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DIRECTORY.

Cards under this heading will be charged for at rate of \$15 per annum for each card.

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GOLDMAN, M., & SACHS, Negotiate the Notes of Mfrs. and Dealers of Paper. 4 & 6 Pine st., room 9. Paper Bag and Box Machinery.

Paper Clays. BARBER, CHAS. B., 5 Beekman st., N. Y. McNAMEE & CO., RICH'D., 234 Broadway, N. Y.

Paper and Paper Makers' Supplies. BELDEN & DEAN, Paper Bags, Flour Sacks, Manila and Straw Papers.

CLARK, CHARLES S., Newspaper in Rolls for Perfecting Presses. Book, Plate and Chromo Papers.

MURPHY, JOHN J., 47 John and 5 Dutch sts. Paper Makers' Felts and Jackets.

Paper Manufacturers. DIAMOND MILLS PAPER CO., White and Colored Tissues, Copying-Paper, 41 Murray st., New York.

Printed Wrapping Paper. THOS. A. O'KEEFE, Printed Wrapping, 48 & 50 Duane.

Rags and Paper Stock. ATTERBURY BROS., 140 Nassau st.

Recording Gauges. EDSON, JARVIS B., 145 Broadway.

Straw Boards. HAYES, JAMES E. & CO., 75 Duane st.

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Paper Makers' Felts and Jackets. BOYNTON & SON, Manufacturers of Paper Makers' Felts and Jackets, East Aurora, N. Y.

Paper Manufacturers. JERSEY CITY PAPER CO., White and Colored Tissue & Manila Wrapping, Cornelison avenue and Montgomery st., Jersey City, N. J.

Paper Makers' and Paper Stainers' Colors. HAMPDEN PAINT & CHEMICAL CO., Springfield, Mass.

Paper Making Machinery. SMITH, WINCHESTER & CO., South Windham, Ct.

Paper Mill Engine Bars and Plates. SIMONDS, A. A., Dayton, Ohio, Manufacturer of Planing Machine Knives, &c.

Rags, Paper and Paper Stock. BUTLER, THOMAS, Cotton and Woolen Rags, Iron and Metals.

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LANEV, JAMES, & CO., Dealer in Paper and Paper Stock, Cotton and Woolen Rags, Rochester, N. Y.

RICHMOND, F. H., & CO., Paper and Paper Stock Warehouse, Cotton Waste Dealers, Providence, R. I.

SIMMONS, JOHN, Wholesale Dealer in Paper and Rags, 20 and 22 Decatur street, Philadelphia.

SMIDER, S. LOUIS, Sons, Manufacturers and Wholesale Paper Dealers, 121 Walnut st., Cincinnati, Ohio.

Rags, Paper and Paper Stock.

WILLCOX, JAMES M., & CO., Wholesale Commission Paper and Rag Warehouse, 509 Minor street, Philadelphia, Pa.

Recording Gauges.

EDSON PRESSURE-RECORDING GAUGE. Saves coal and secures steady steam. Address JARVIS B. EDSON, 145 Broadway, cor. Liberty Street, New York.

"PEERLESS" RECORDING GAUGES. Write for testimonials. S. P. JONES, No. 28 School st. Boston, Mass.

Rosin for Paper Makers.

E. E. CLARK is at first hands for perfectly clean Bating Strained Rosin for Paper-Makers' use. Orders solicited. 3 Custom-House St., Boston, Mass.

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BROWNE, M. C. - Especially for Paper Mills and Wholesale Paper Dealers, Holyoke, Mass.

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Wholesale Paper Dealers.

MOORE & STARK, Wholesale Paper. 637 West Main Street, Louisville, Ky.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JULY 19, 1889.

Table with columns: An. Colors, Alum, Alum's Cake, Al. Powders, Soda Ash, Soda, Soda, Sal., Ultramarine, Books, Newspapers, Engravings, Ink, Lead Pencils. Includes values in dollars and cents.

Imports General Merchandise for the week ended July 19, 1889. \$7,581,707

IMPORTS OF PAPER STOCK AT NEW YORK.

JANUARY 1 TO JULY 23, 1889.

Table with columns: Whence Imported, Rags, Old Papers, Chemical Papers, Ground Wood, Manila Stock. Lists various countries and their respective paper stock imports.

AGGREGATES AND VALUES.

Table with columns: Paper, reams; Paper, pkgs.; Paper, cases; Books, cases; Stationery, cases; Rosin, bbls; Totals. Shows aggregate values for various paper products.

Exports General Merchandise for the week ended July 23, 1889. \$6,400,222

BOSTON IMPORTS.

FROM JULY 18 TO JULY 24, 1889, INCLUSIVE.

Table with columns: Books, Paper, &c. Lists various paper and book imports to Boston.

NEW YORK IMPORTS.

FROM JULY 26 TO JULY 23, 1889.

Table with columns: Paper Stock. Lists various paper stock imports to New York.

A. Wertheim & Co., by same, 50 tons chemical fibre. John H. Lyon & Co., by same, 1 ton chemical fibre.

M. H. Robertson & Co., Egypt, Liverpool, 85 bs. papers. John H. Lyon & Co., by same, 31 bs. papers.

Jessup & Moore Paper Company, Denmark, London, 150 bs. rags. M. A. Ring & Co., by same, 110 bs. rags.

Horace Dutton & Co., by same, 109 bs. rags. J. W. Mason & Co., by same, 198 bs. manillas.

R. H. Overton, by same, 85 bs. rags. Atterbury Brothers, Island, Stettin, 192 bs. rags.

Burgass & Co., by same, 265 bs. bagging, 36 coils rope. Neumark & Gross, by same, 140 bs. bagging.

J. W. Mason & Co., by same, 120 coils rope. Norwegian Wood Pulp Company, by same, 30 tons ground wood, 270 tons chemical fibre.

A. Wertheim & Co., by same, 150 tons chemical fibre. R. H. Overton, by same, 25 tons chemical fibre.

Paper. E. Fougere & Co., Panama, Bordeaux, 35 cs. F. R. Arnold & Co., by same, 25 cs.

W. P. Dane, Westernland, Antwerp, 5 cs. Louis C. Wagner, by same, 30 cs.

Scoville & Adams Company, by same, 6 cs. A. Osgite, City of Rome, Liverpool, 1 cs.

Krusus Brothers, Trave, Bremen, 6 cs. colored. P. Hyman & Son, by same, 1 cs.

G. Gennert, Wieland, Hamburg, 10 cs. E. & H. T. Anthony & Co., by same, 2 cs.

Davies, Turner & Co., by same, 6 cs. Henry Bainbridge & Co., Germanic, Liverpool, 5 cs.

E. Tucker's Sons, by same, 1 cs. B. Lawrence Stationery Company, by same, 4 cs.

American News Company, P. Caland, Rotterdam, 17 cs. Kinney Tobacco Company, La Normandie, Havre, 1 cs.

W. S. Kimball & Co., by same, 9 cs. Vanderveer & Holmes, Auranis, Liverpool, 6 bs.

Merchants' Dispatch Company, by same, 1 cs. Cottier & Stymus, by same, 2 cs. hangings.

C. B. Richardson & Brothers, Denmark, London, 1 cs. Hermann Isaac, La Normandie, Havre, 20 cs.

F. J. Emmerich & Son, by same, 1 cs. hangings. A. V. Benoit, by same, 20 cs.

May Brothers, by same, 5 cs. W. H. Wallace & Co., by same, 1 cs.

A. Siegel, Ems, Bremen, 1 cs. BOOKS, to United States of Colombia, 1 cs.; to Bremen, 11 cs.; to Havre, 4 cs.; to Newfoundland, 7 cs.;

to Antwerp, 4 cs.; to Berlin, 2 cs.; to British Honduras, 1 cs.; to British West Indies, 2 cs.; to British possessions in Africa, 4 cs.; to China, 20 cs.;

to Central America, 10 cs.; to Glasgow, 2 cs.; to Hamburg, 3 cs.; to London, 31 cs.; to Liverpool, 6 cs.; to Porto Rico, 1 cs.; to Peru, 1 cs.

PAPER, to Argentine Republic, 11 cs.; to Cuba, 76 cs.; to Central America, 37 pkgs.; to Liverpool, 7 cs.;

to Uruguay, 19 cs.; to Brazil, 1,174 rms.; to British West Indies, 745 rms.; 11 pkgs.; to Bremen, 1 cs.;

to China, 5 cs.; to Chili, 1 cs.; 435 pkgs.; to Frankfurt, 2 cs.; to Grenoble, 1 cs.; to Hull, 4 cs.; to Hamburg, 1 cs.;

Bleaching Powders. Linder & Meyer, Venetian, Liverpool, 136 cks.

Mason, Chapin & Co., by same, 426 cks. Warren & Co., Iowa, Liverpool, 331 cks.

E. & F. King & Co., by same, 40 cks. Caustic Soda. Warren & Co., Iowa, Liverpool, 200 drums.

E. & F. King & Co., by same, 200 drums. Soda Ash. Warren & Co., Iowa, Liverpool, 139 cks.

Morey & Co., Venetian, Liverpool, 84 cks. Linder & Meyer, by same, 40 cks. and 620 bags.

E. & F. King & Co., by same, 70 cks. Soda Crystals. Warren & Co., Iowa, Liverpool, 280 bbls.

Sizing. C. A. Cheney, Iowa, Liverpool, 103 bags. Thomas Groom & Co., by same, 190 bags.

W. A. Castle, by same, 215 bags. PHILADELPHIA IMPORTS. FOR THE WEEK ENDED JULY 20, 1889.

Books. Porter & Coates, British King, Liverpool, 4 cs.

Paper Stock. Order, Maryland, London, 161 bs. rags, 77 bs. thread waste, 99 bs. bagging.

Brown Brothers & Co., by same, 151 bs. old papers. Order, British King, Liverpool, 5 bs. waste.

Soda Ash. Order, Maryland, London, 30 cks. Order, British King, Liverpool, 110 cks.

Caustic Soda. Pennsylvania Salt Manufacturing Company, British King, Liverpool, 135 bbls.

Bleaching Powders. E. Yarnall & Son, British King, Liverpool, 25 tcs.

China Clay. Order, British King, Liverpool, 50 cks. TRAIN, SMITH & CO., IMPORTERS OF AND DEALERS IN ALL DESCRIPTIONS OF

Paper Makers' Supplies,

24 FEDERAL STREET, BOSTON. BRANCH OFFICES: 30 BEEKMAN STREET, NEW YORK. 21 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO., Successors to BARLOW & CO., WHOLESALE DEALERS IN AND PACKERS OF

Woolen Rags and Paper Makers' Supplies,

237 and 239 SOUTH STREET, and 66 and 68 UTICA STREET, THE OLD STAND, BOSTON, MASS. WOOLEN RAGS GRADED IN COLORS AND QUALITY.

STEPHEN LEE, SPRINGFIELD, MASS., IMPORTER OF AND DEALER IN

Paper-Makers' Supplies.

F. BREDT & CO., No. 194 Fulton Street, SOLE AGENTS FOR New York City, U. S. A. JOSEPH PORRITT & SONS' ENGLISH FELTINGS.

SOLE IMPORTERS OF MARINE BLUE (Aniline) for Newspaper Mills. Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue. ESTABLISHED 1855.

DARMSTADT & SCOTT, IMPORTERS AND PACKERS OF PAPER STOCK.

Offices: 21 and 23 Centre Street; Packing House: 312 Water Street, New York. SPECIAL ATTENTION CALLED TO OUR OWN PACKING. ESTABLISHED 1846.

HAMBURG, GERMANY, A. WERTHEIM & CO., CASSEL, GERMANY. TIMES BUILDING, Rooms 110 and 111, NEW YORK, Sorters, Packers and Shippers LINEN - OF ALL KINDS OF - COTTON RAGS A.W. & Co. RAGS

Jute Baggings, Waste Papers, Hemp, Jute and Manila Rope CAREFULLY AND CLEANLY SORTED. It has the Indorsement of Leading Bankers, Chemists and Experts. USE It has never been successfully altered since its introduction in 1875.

COMMERCIAL SAFETY PAPER,

TO PREVENT THE "RAISING" OF CHECKS, DRAFTS, ETC. It is the ONLY PAPER, when once written upon, from which the INK cannot be removed, thereby preventing the "raising" of Checks, Drafts, &c.

MANUFACTURED BY MOUNT HOLLY PAPER COMPANY, MOUNT HOLLY SPRINGS, PA., U. S. A. Also Manufacture 1 Tub Sized and Loft Dried Map Paper that will not shrink or distort, especially adapted for Printing in Colors, as well as Flat and Folded Ruled Papers of every description.

THE CENTRAL PAPER AND FIBER CO., 17 Blackstone Building, Cleveland, Ohio, MANUFACTURERS OF -

Paper and Fiber Machinery.

TOMPKINS DIGESTERS.

# The Paper Trade Journal.

DEVOTED EXCLUSIVELY TO THE INTERESTS OF  
**The American Paper Trade.**  
 Weekly, \$4.00 per Annum.

Single Copies, . . . . . 10 Cents  
**HOWARD LOCKWOOD & CO.,**  
 Publishers.

HOWARD LOCKWOOD, WILLIAM F. HAMILTON,  
 NEW YORK: SATURDAY, JULY 27, 1889.

THE JOURNAL contains the latest and fullest information relative to the paper trade in all parts of the world, including descriptions of new appliances and processes for making paper, experiments with new fibres and other materials, a record of the water supply, with the latest manufacturing news in all parts of the country. It gives the cream of all the foreign technical journals which relate to the paper interest, besides communications from competent persons in the trade, both at home and abroad. The market review and quotations show the state of trade in all the principal cities, and no pains have been spared to make these accurate and complete.

Advertisements cannot be received for insertion in the current week later than 9 A. M. on Friday. The charge for advertising is 25 cents a line, each insertion. The rates for standing and displayed advertisements to be had on application. Card in Directory Column and one copy of paper, \$15 a year.

Subscription per annum and postage for Great Britain.....	4s
Subscription and postage for France, per annum.....	25 francs
Subscription and postage for Germany, per annum.....	24 reichsmark

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All communications must be addressed to  
**HOWARD LOCKWOOD & CO.,**  
 Publishers.

125 and 128 Duane Street, N. Y.  
**CABLE ADDRESS: Catchow, New York.**

### BRANCH OFFICES.

Western Office—FREDERICK E. LYSTER, General Manager, 114 LA SALLE ST., CHICAGO, ILL.  
 Boston Office—A. L. DELESDERNIER, General Manager, 49 FEDERAL ST., BOSTON, MASS.

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Paper Trade Journal, Every Saturday,	\$4.00
American Stationer, " Thursday,	2.00
American Bookmaker, Monthly,	2.00
American Mail and Export Journal, Monthly,	3.00
Lockwood's Directory of the Paper and Stationery Trades, Annually,	2.00

All Pioneer Publications.  
**HOWARD LOCKWOOD & CO.,**  
 125 and 128 DUANE ST., NEW YORK.

The first page illustration this week is of an arrangement applicable to Jordan engines and other heavy machinery for the purpose of effecting their easy removal when necessary. This carriage has been put to practical use and, as we understand, with satisfactory results. The description amply explains the method of operation.

NEXT week the American Paper Manufacturers' Association will meet at Saratoga, and it is understood that the preliminary gathering which is to occur on the evening preceding the day of meeting is likely to be a success. The members of the trade who may attend will doubtless have a pleasant time at the banquet, and we trust that they will find the work of the day succeeding it equally pleasant and profitable.

SOME of the daily papers are making a clamor about the "strawboard trust," as if the new company which has been formed was about to lay a burden upon the public. It is evident that the newspapers making this fuss do not understand the situation or the conditions which are likely to control the manufacture of strawboards. There is a reasonable excuse for consolidating the various interests in this branch of paper making; but this consolidation will not, nor do we believe that it can, affect consumers injuriously.

THE postal card contract will probably be awarded to a professional politician who has succeeded in underbidding all competitors. There is no particular harm in this, nor can it be expected that the Post Office Department should refuse to make the award to the lowest bidder, the terms on which the contract is to be let being strictly enforced. The public will expect, as it has the right to demand, a good card with suitable writing surface, if the postal card nuisance is to be continued. It may be that the prospective new contractor expects to make money by supplying a poorer article. This should be guarded against by rigid inspection and by holding the contractor strictly to the specifications. Perhaps when we get one cent

letter postage the postal card will be got rid of. We hope that the next Congress will reduce the letter rate so as to render this possible.

ON Thursday last a dry goods commission firm, having its headquarters in Philadelphia, with branch houses in New York, Boston and Chicago, made an assignment, with liabilities of more than \$4,000,000. The business was established over forty years ago, and at one period reached a high water mark of yearly sales amounting to \$15,000,000. The failure was a surprise generally, although the best informed in dry goods and financial circles had discounted the inevitable. Many reasons will be brought forward to explain the disaster, but it never should have occurred. The only safe rule for commission merchants to follow is to restrict their advances on consignments and never to exceed 75 per cent. on goods actually in warehouse. Losses through sales in such cases seldom form an item of importance. The general effect of this failure is not, we are glad to say, likely to be disturbing.

ONE of our exchanges tells the story of a workingman employed by a manufacturing concern and who made a model of a valuable improvement, which the assistant superintendent of the works took possession of and then patented, afterward assigning the patent to the firm. The employee received nothing for his improvement and lost his patent, which has proved of great value to his employers. It is hard to believe that such a rascally proceeding could be countenanced by any reputable house, but it is stated that this is not an isolated instance, but that it is "typical of many others." The person who secured the patent must have committed perjury, and the act, both on his part and by the firm which took advantage of it, was a robbery, pure and simple. The original inventor has probably no remedy; he was not asked nor was he expected to give his employers the benefits of his invention. Had it been so understood, the patent would not have been secured by the means adopted. There are people who would scorn to profit in this manner; but if employers wish to discourage invention or to deprive themselves of the benefits which the intelligence of their employees might be able to secure, they can adopt no surer way of doing so than by pursuing a course as in the instance referred to.

It may be considered as good as settled that an International Exhibition will be held in New York in 1892. Responding to an invitation from the Mayor of the city a number of prominent citizens met on Thursday and decided to engage in the undertaking. Sub-committees on permanent organization, finance, legislation and site and buildings were provided for. Having proceeded so far, the gentlemen who have entered upon the work of preparing for such an exhibition cannot well retreat. They must carry it forward to complete and perfect realization. The World's Fair of 1892 will commemorate the discovery of America by Columbus. Four centuries will have elapsed since that navigator set foot on the soil of the New World. Little did the adventurous seaman dream of the future which the land previously unknown to Europe had in store. The changes which have occurred within 400 years would have been entirely beyond the comprehension of his day. He sought the way to Eastern splendor and barbaric wealth, to connect the path of imperialism with that of despotic power; but opened instead the gateway to liberty, education and the rule of the people. It is strange to look back upon the events of the past four centuries and to see how they have shaped the history of the world contrary to precedents and at variance with the standards of Europe. The new country has achieved more in the four centuries than the old world in thrice that number of years. Its advance within a century has been unparalleled by that of any section of the earth of which history gives a record. It is well, therefore, that the people of America should commemorate the discovery made by Columbus. It would be well for all of the nations of this Western hemisphere to make this commemoration peculiarly their own, entering into it with a zeal and liberality which shall become memorable. We look to all of

our great industrial interests to help in making this event a success. The paper trade ought to become prominently identified with it. Shall not the paper manufacturers at their meeting next week take steps to become actively engaged in promoting the exhibition and in helping to make it the most important which modern times have witnessed?

### Watermarks.

BY DANDY.

Inasmuch as Christopher Columbus discovered America in 1492, it has been decided that the proper thing to do is to celebrate the discovery. This will be done in New York in 1892, just four hundred years since the wild, untutored red man got his first glimpse of his white brothers. It is astonishing how time flies. There are few of us who seem to regard this and the rapid changes which it brings.

New York having thus started in, I fear that Chicago and Philadelphia are in the consomme, unless, indeed, they get up separate exhibitions of their own. But, then, New York is really the best place, and can provide ample room for a first-class affair and take care of the crowds at the same time.

Running over some recently reported patents in a foreign paper I have been impressed with certain of their peculiarities. For instance, a Swedish inventor has secured a patent for making a sheet of paper sized on one side and unsized on the other.

His process simply consists in using a double cylinder machine, the stuff in one vat being sized and in the other unsized. The sheets from each making cylinder are united on the felt and pass through the presses and over the dryers.

It strikes me that there isn't much novelty of invention in this, and that if such a patent claim should be advanced in this country it wouldn't hold water as well as the paper on which it would be claimed.

Another patent is for an up and down shake on the Fourdrinier, described as follows: "A vertical joggling or reciprocating motion is imparted to the wire or endless wire cloth, on which the pulp is carried. While being carried along on this wire cloth the pulp first assumes a web-like condition, in consequence of the separation of the water and the settling together of the fibre."

"The vertical joggling motion may be slight in extent, but very rapid, and is such that it can be produced by mere concussion, and may also be combined with a horizontal motion. This vertical joggling motion facilitates the separation of water from the pulp, and, acting in combination with the horizontal motion, causes the fibres to settle together in a uniform manner, thus producing a paper of great regularity and evenness."

"To impart the desired motion any suitable mechanism may be used, and this mechanism is arranged to act on the frame carrying the wire at or near the outer or entering end at which the pulp is supplied to the wire. It is also provided with springs having adjusting devices for regulating and controlling the action." Altogether a sort of jig which the fibres are to be made to dance. This "is English, you know."

Next comes Austria with a queer kind of an arrangement for "sorting the disintegrated wood for the manufacture of cellulose." The machine, which is to do this is described as under, with one or two interpolations of my own in parenthesis.

It "consists principally of two endless sieves (wires) which run round rollers, and are arranged one above the other. The rollers which carry these sieves are of the same diameter and revolve at the same speed, so that the horizontal parts of the sieves—the sieves being moved in opposite directions—move together at the same peripheral speed and in the same direction."

"Within the upper sieve is a box open at its bottom" (inverted suction box) "and from which the air is drawn off continuously, thereby causing a current of air to permanently pass through the openings of the horizontal lower part to the upper sieve. The disintegrated wood is fed on to the upper part of the lower sieve, and all those parts of wood which are free from knotty portions are by means of the current of air previously mentioned drawn up against the upper sieve, remaining there while the heavier knotty portions remain on the lower sieve, traveling with it and finally falling into a receptacle at the point when the lower sieve moves downward."

"The lighter particles of wood are carried along with the upper sieve, which

extends beyond the lower one, until they pass beyond the influence of the air current, when they immediately fall in receptacles placed there for that purpose. On this end of the air box is arranged a partition which is provided with openings for reducing the air current, in order that parts of wood which still adhere to the upper sieve, and which still contain small parts of knots or were round the knots, and are consequently heavier, will fall into suitable receptacles provided for them, while the lighter portions, free from all traces of knots, still adhere to the sieve and are carried past the influence of the air current, when they also fall."

Now, are these wires ("sieves") flat like a Fourdrinier wire, or are the "rollers" mentioned the same as a cylinder mold? I cannot quite determine.

I notice that there is a large representation of the New York paper trade in the surf at Manhattan Beach each Sunday morning. Duane, Beekman and other streets are well represented, and the paper men evidently enjoy their morning dip hugely.

A paper maker this week was asked if he would use jute butts if he could buy them at 1 1/2 cents. He promptly said that he would not, as he had excellent results from the use of wood; his paper was strong, well finished, and his customers were satisfied.

It looks as though the condition in which the butt market has been for some time past would injure the sale of butts in years to come, as it has taught paper makers how to use wood to the best advantage.

The litigation over paper bag patents seems to have reached a stage where the end is in sight. A Master has been appointed, I hear, to ascertain the profits of the defendants in the suit and also what they owe the complainants in the way of damages.

I imagine that it will take some damages to pay the lawyers' fees in the case.

### Trade Talks.

**Robert B. Atterbury, Atterbury Brothers, New York.**—I returned on the Auranis last Monday. The steamer would have been in on Sunday, but we had head winds and fogs which caused a great deal of delay. Then there was a mutiny on board, and six of the crew were brought into port in irons. I had a very pleasant trip. Going over I had good company, and when we got the papers we found that the Derby was coming off in a couple of days, so we immediately arranged to go. It was a great day. Everything that could roll was on the road, everybody was in good humor and there was a great deal of enjoyment. Business with us is good, and if it keeps up as well as it has since I have been away we will be perfectly satisfied.

### Changes, Removals and New Firms.

J. E. McCrary, publisher, Sargent, Neb., has sold out.  
 Mr. Boyles will publish the *Daily Siftings* at Decatur, Ala.  
 C. D. Rice will publish a newspaper at Walterborough, S. C.  
 C. E. Hogadone, stationer, &c., Grand Rapids, Mich., has sold out.  
 C. J. Curtis, publisher of the *Pioneer*, Astoria, Ore., has sold out.  
 Bonner & Dilley, publishers, Tyler, Tex., have dissolved partnership.  
 Tryon & Griswold, publishers, Perry, Ia., have dissolved partnership.  
 J. A. Padon has commenced the publication of the *Herald* at Rusk, Tex.  
 Noble, Fox & Curran, printers, St. Louis, Mo., have dissolved partnership.  
 Southam & Brierly, printers, London, Ont., have dissolved partnership.  
 Mrs. E. J. Wormley, bookseller and stationer, Red Oak, Ia., has sold out.  
 Perry & Potter, publishers, Charlotte, Mich., have dissolved partnership.  
 The Press Company, publisher of the *Press*, Seattle, Wash. Ter., has sold out.  
 C. C. Murray and others will publish the *Journal of Commerce* at Chattanooga, Tenn.  
 Clark & Campbell, dealers in paper hangings, Toronto, Ont., have dissolved partnership.  
 J. W. Pratt & Son, printers, New York, N. Y., have been succeeded by James W. Pratt.  
 H. L. & F. M. Spooner, publishers of the *Canastota Journal*, Canastota, N. Y., have sold out.  
 I. G. Hoffman and H. H. McCreary have commenced publishing the *Sun* at Gainesville, Fla.  
 Pierce Brothers, publishers and printers,

St. Louis, Mo., have been succeeded by W. G. Pierce.

The Kellogg Printing Company, printer, Providence, R. I., has been succeeded by the Standard Printing Company.

R. H. Tate, formerly of Barrs, Clark & Tate, Jacksonville, Fla., has just started in the stationery business at Decatur, Ala.

B. F. Scheffer, formerly agent for the estate of Theo. F. Scheffer, stationer, printer and bookbinder, Harrisburg, Pa., has severed his connection with the business, which will be conducted by the remaining heirs at the old stand.

The Imperial Envelope and Box Manufacturing Company, of Charleston, S. C., has been organized, with Jonathan Lucas president and F. S. Rodgers treasurer, for the manufacture of paper boxes, tags, envelopes, &c. The capital stock is \$10,000.

The partnership existing under the style of the McEwan Manufacturing Company, Hamburg, N. J., in the business of manufacturing strawboards, has been dissolved, and Harrison Quinby succeeds. R. B. McEwan remains as general salesman.

The name of the Allegheny Pulp and Paper Company, of Big Island, Va., is to be changed to that of the Lynchburg Pulp and Paper Company, and the offices of the company will be removed from Richmond to Lynchburg. The company will increase its capital stock from \$30,000 to \$100,000 and will build a paper mill on the water power which it controls at Big Island, on the James River, 19 miles from Lynchburg. At a meeting of the stockholders of the company, held last week, officers were elected as follows: President, P. A. Krise; vice-president, J. P. Bell; general manager, E. B. Thaw; secretary and treasurer, W. McWaugh; directors, J. B. George, W. S. Forbes, E. B. Thaw, D. P. Morrison, S. P. Halsey, P. A. Krise and J. P. Bell.

### Failures.

C. W. Sherman, publisher, Plattsmouth, Neb., is in the hands of the sheriff.

William A. Hemphill, printer, Minneapolis, Minn., has made an assignment.

J. H. Locke, stationer, Mobile, Ala., who failed a long time ago, has paid a dividend of 25 cents.

G. W. Woodhouse, dealer in paper hangings, &c., Wallingford, Conn., has made an assignment.

Butt & Farnham, stationers, St. Paul, Minn., who failed some time ago, have paid a dividend of 25 cents.

The Richmond Paper Company, Providence, R. I., has shut down its mills and announced its inability to meet liabilities, aggregating \$800,000. A note which went to protest on Wednesday brought matters to a crisis, and a meeting of the stockholders was held yesterday. The heaviest indebtedness is for wood, sulphur and fuel. The present creditors are not the men who originally engaged in the enterprise.

Among the men who have lost money bordering on \$100,000 each in the enterprise are the late United States Senator Anthony, Col. George W. Davidson, editor of the *Journal*; Jesse Metcalf, in whose name all of the company's product has of late been billed; Frank Richmond Harvey, a well-known lumber merchant, and Postmaster Henry W. Gardner, who lost about \$200,000.

Two years ago the company became embarrassed. The liabilities were then a round million of dollars. A settlement was had at 33 cents on the dollar, and Henry Gardner and F. H. Richmond made a settlement with the concern on endorsed notes. The amount of the paper indorsed by these two men amounted to \$660,000. They settled for \$75,000 each, and this money was paid to the creditors. Then the property was mortgaged to secure the creditors for further indebtedness. It was found that the concern is quite as badly involved as at the time of the first trouble, and that there is no way to tide over the embarrassment. Just how much the present failure is for is unknown at present, but those who are presumed to know place it at \$800,000.

### Fires.

Fonda & Co., printers, Oakland, Cal., have been damaged by fire to the extent of \$3,500. Fully insured.

### Personals.

Frank Squier, of Perkins, Goodwin & Co., who has been laid up sick for a week, has gone to Vermont with his family for a two weeks' rest.

Robert B. Atterbury, of Atterbury Brothers, who has been across "the herring pond," arrived home on the Auranis last Monday. He looks as though his trip had done him good.

Frank W. Palmer, Public Printer, and Mr. Bryant, superintendent of the Government printing office, have been guests of Charles H. Mullin, at Mount Holly Springs, Pa., en route to Gettysburg.



Paper Bag Litigation.

Judge Wallace, of the United States Circuit Court, on Wednesday signed the decree in the case of the Union Paper Bag and Machine Company v. James M. Waterbury et al.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage, R. S., bill of sale; and Real, a mortgage on real estate.]

Table with columns: Mortgages, Amount. Sub-sections: EASTERN STATES, MIDDLE STATES, WESTERN STATES, TERRITORIES, LIENS RELEASED.

General Notes.

Wilkinson Brothers & Co., 74 Duane street, have long been the proprietors of a brand of writing paper known as the "Clarion."

A receiver has been appointed for the paper hanging business of Freeborn & Co., Portland, Ore.

A company now engaged in the manufacture of wood pulp proposes to build a paper mill, and wants estimates for a complete equipment, including an 88 inch Fourdrinier machine.

The Jeffrey Manufacturing Company, Columbus, Ohio, manufacturer of chain elevating and conveying machinery, reports that trade has been very active in the past month.

Michael Hynes, of Watertown, N. Y., accompanied an excursion to Kingston, Ont., Canada, on Wednesday last. He became intoxicated, fell off the dock there and was drowned when going on the boat for the return trip.

Eugene S. Happel, confidential clerk for Carl Kahler, manager of the Medical Monthly Publication Society, was charged with embezzlement at the Jefferson Market Police Court on Sunday.

Marie Schulz, a concert saloon Tyrolean warbler, and married her in May. They had been very extravagant, and went to live at Hillmeyer's Hotel, at Rockaway, at rates far beyond their means.

The demand for the automatic compound engine recently placed on the market by the Westinghouse Machine Company is said to be such that the company is actually selling entire shop orders of different sizes before their manufacture is even commenced.

The Springfield (Mass.) Republican says it is feared by John H. Williams, the firm of Williams & Watson, the paper hangers of that city, that his junior partner, Alfred F. Wattson, has left with \$1,800 belonging to the firm.

Mr. Wattson's suspicions were not confirmed until yesterday morning, when he arrived home from a visit among some out of town creditors. Then he at once decided to dissolve the firm; he will assume all the liabilities of the firm and he hopes to come out all right.

SPECIAL NOTICES.

[Insertions under this heading will be charged 50 cents a line. Payment invariably in advance.]

THOS. BUTLER & CO., Rags, Paper Stock, Old Metals, Rubber.

CARPENTER & BARTLETT, Cotton and Woolen Rags, Paper Stock, Old Metals and Rubber.

JAMES SAVAGE, JR., Rags, Paper Stock, Rubber, &c., &c.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, Friday, July 26, 1889.

THE MONEY MARKET.—The stock market is moderately active, and shares generally show a recovery.

Table with columns: Sixty days, Four months. Rows: Double named, First class, Good, Single named, First class, Good, Not so well known.

The market for sterling was dull and rather heavy, owing to very limited inquiry and an increased supply of grain bills. Posted rates for sterling closed at \$4.86 1/2 for sixty days' and \$4.88 for demand.

THE PAPER MARKET.—The doings of the week in the paper market show very little out of the ordinary routine. It is reported that a large Eastern mill, which failed two years ago and has been working under an extension, suspended payment on Thursday.

unchanged, but manufacturers, outside of those making all jute papers, are placing less dependence on jute stock, and are using larger quantities of wood fibre.

JUTE BUTTS.—The Jute Butt market is quiet. Business is very light, and there is no change in the position of affairs.

WOOD PULP.—There is a fair movement. We hear of sales of Maine product at 1 1/2 @ 1 3/4 c. New York delivery.

WOOD FIBRE.—The demand has slackened a bit, and the movement is not as active as it has been. Some contracts for foreign grades have been placed—some 1,500 tons—but details have not been reported.

FOREIGN RAGS AND PAPER STOCK.—The market for foreign rags is not at all active, and there is no crowding for chances to secure lots.

DOMESTIC RAGS.—There is a steady movement of supplies under old contracts, but new business does not come to hand in a satisfactory way.

BAGGING, &c.—There is a lack of business in the Gunny market. Manufacturers do not show any desire to purchase and importers are not crowding matters.

OLD PAPERS.—There is a moderate movement. We quote: No. 1 Hard White Shavings, 3 1/2 c.

STRAW.—There is a moderate movement and prices are steady. We quote: No. 1 rye at 70c; short rye at 45 @ 50c; oat at 40c.

ROSINS.—Rosins are steady on moderate demands. We quote in lots from the yard: Common to Good Strained, \$1.35 @ 1.37 1/2.

CHEMICALS.—There is a moderate call for paper makers' chemicals, but the tone of the market continues better.

while some lines of heavy chemicals are in less active request, and, if anything, a shade easier in tone. The annual meeting of the Alkali Association was held in London yesterday, and is reported to have been very satisfactory.

Under date of the 10th inst. J. P. Bruner & Co. say of the Liverpool market: "During the past week chlorate of potash has been the principal article in demand,

while some lines of heavy chemicals are in less active request, and, if anything, a shade easier in tone. The annual meeting of the Alkali Association was held in London yesterday, and is reported to have been very satisfactory.

Soda crystals are in moderate compass and held for £2 10s. to £2 12s. 6d. There is a lull in the demand for caustic soda, and second-hand parcels are now more freely offered and prices are rather easier.

Chlorate of potash has been in active request and considerable sales have been made at 4 1/2 d. up to 4 3/4 d., while 4 1/4 d. is now asked.

CHINA CLAY.—There has been a fair demand, for the season, for extra and superfine qualities, and there are no surplus stocks of these grades, recent arrivals having been pretty well sold up.

COAL.—The hard coal market is reported quiet from all the centres of trade; the past week was dull, if one may credit all the reports which come to us.

Alkali, 35 @ cent. Alum, lump, 2.75 @ cent. Alum, ground, 1.85 @ cent. Alum, Keystone, 1.75 @ cent.

Alum, diamond, 2.00 @ cent. Alum, pearl, 2.00 @ cent. Alum, porous, 2.00 @ cent. Aluminous Cake, 1.00 @ cent.

EDWIN BUTTERWORTH & CO. MANCHESTER, ENGLAND. PACKERS OF ALL KINDS OF Paper Stock, Cotton Waste and Buffalo Sizing, Wood Pulp, Moist and Air Dry Pulp, Soda and Ground Pulp.

88 GUNNY BAGGING, &c. OFFICE IN NEW YORK: Tract House, 150 Nassau Street, near Tribune Office. JAMES FIRNIE, Manager.

CRATTY BROS. & ASHCRAFT, Lawyers. 189 Dearborn Street, CHICAGO. COMMERCIAL AND CORPORATION LAW.

REFERENCES.—Western Wrapping Paper Mfg. Ass'n, CHICAGO; Chicago National Bank; Western News Co.; Rand, McNally & Co., NEW YORK; George Mather's Sons, BOSTON; Carter, Rice & Co.

COBURN-TAYLOR MFG. CO., Holyoke, Mass.

IMPROVED RAG CUTTER. An economical Labor Saving Machine, suitable for all classes of Paper Mills.

CORRESPONDENCE SOLICITED.

PRICES CURRENT. NEW YORK MARKET.

Paper Market.

DEALERS' BILLING PRICES.

Table with columns: Ledger and Record, Flat Caps, superlines, Flat Caps, fines, Flat Caps, engine-sized, Blotting, English, Book, super-sized and calendared, Book, super-sized and tinted, Book, extra machine finish, Book, machine finish, low grade, News, No. 1, News, rag and wood, News, straw, Poster, Hanging, superline, No. 1, Hanging, superline, No. 2, Hanging, machine satin, Hanging, white blank, No. 1, Hanging, curtain, Hanging, buff, Hanging, brown, Colored papers, double medium, Colored papers, glazed medium, Colored papers, 10x20, Colored papers, tissues, 20 x 30, 10 ream, Tissues, black, 20 x 30, 10 ream, White tissue, 20 x 30, 10 ream, White tissue, 24 x 36, 10 ream, Manilla, Four-sick, cream, Manilla, Four-sick, drab, Manilla, Rope, unbleached No. 1, Manilla, Rope, unbleached No. 2, Manilla, No. 1, light weight, Manilla, No. 1, heavy weight, Manilla, Bogus, Wrapping Parchment, Tissue Manilla, full count, weight and size as 45, other sizes in proportion, Hardware, light colored, No. 1, Hardware, No. 1, glazed, tarred, Hardware, No. 1, glazed, Binders' Boards, 1/2 ton, No. 1, Binders' Boards, 1/2 ton, No. 2, Straw Boards, air-dried, No. 1, Straw Boards, steam-dried, XXX, Straw Boards, steam-dried, XX, Straw Boards, steam-dried, X, Straw Boards, air-dried, Penn., Straw Boards, air-dried, State, Straw Wrapping, bass, 15 x 20, 15 1/2 lbs., 20 sheets, 20 x 40, from 20 to 24 lbs., 20 sheets, 24 x 36, from 24 to 28 lbs., 20 sheets, 20 x 30, 21 lbs., 20 sheets, 20 x 30, from 14 to 17 lbs., 20 sheets, 18 x 24, from 12 to 15 lbs., 20 sheets, 15 x 20, 20 lbs., 20 sheets, 15 x 20, from 7 to 8 1/2 lbs., 20 sheets, 14 x 18, 12 x 15, 12 x 15, 12 x 15, Straw Wrapping, 1/2 lb., heavy weight, Straw Wrapping, 1/2 lb., light weight, Cigarette Straw Tissue, per case of 200 Cigarettes, 20 books to the box, 200 sheets to the book, Tea Papers, 16-sheet quires, 12 x 18, 14 x 20, Card Middles, ground wood, Card Middles, lung fibre wood, Card Middles, rag and wood, Wood Fibre, bleached, Wood Fibre, unbleached.

English Rags, &c.

Table with columns: New Cuttings, cotton, Loom Rins, cotton, Outshots, cotton, Seconds, Thirds, New Print Tabs, Checks and Blanks, Light Prints, Light Fustians, Dark Fustians, Black Calicoes, First Canvas Lines, Second Canvas Lines, Gunny Bagging, No. 1, Gunny Bagging, No. 2, Burlaps Bagging, No. 1, Rope, Manilla, tarred, Rope, Manilla, untarred, Jute Threads, Clean Jute Ropes, Mixed Rope, Flat Tow.

Chemicals, Coloring Materials, &c.

Table with columns: Alkali, 35 @ cent, Alum, lump, 2.75 @ cent, Alum, ground, 1.85 @ cent, Alum, Keystone, 1.75 @ cent, Alum, diamond, 2.00 @ cent, Alum, pearl, 2.00 @ cent, Alum, porous, 2.00 @ cent, Aluminous Cake, 1.00 @ cent, Anti-Chlorine, 1.00 @ cent, Bichromate Potash, American, 1.25 @ cent, Bleaching Powders, spot and to arrive, 1.75 @ cent, Caustic Soda, 70 @ cent, Clay, China, English, 10 @ cent, Clay, China, Star, 12.50 @ cent, Clay, China, Keystone, 10.75 @ cent, Clay, Terra Alina, 10 @ cent, Clay, Terra Alba, French, 8.75 @ cent, Clay, Terra Alba, American, No. 1, 7.75 @ cent, Corn Starch, 1.00 @ cent, Copperas, American, 1.00 @ cent, Extract Logwood, 1.00 @ cent, Mineral Fibrous Pulp, 10.25 @ cent, Orange Mineral, 1.00 @ cent, Potato Starch, 1.00 @ cent, Prussian Blue, dry, 1.00 @ cent, Prussian Potash, American, 1.25 @ cent, Rosins, common to good strained, 1.35 @ cent, Rosins, E, 1.45 @ cent, Rosins, F, 1.55 @ cent, Rosins, G, 1.65 @ cent, Rosins, H, 1.75 @ cent, Rosins, I, 1.85 @ cent, Rosins, K, 1.95 @ cent, Rosins, M, 2.05 @ cent, Rosins, N, 2.15 @ cent, Rosins, W, 2.25 @ cent, Sal Soda, English, 1.00 @ cent, Soda Ash, caustic, 48 @ cent, Soluble Blue, 1.00 @ cent, Spanish Brown, 1.00 @ cent, Sugar Lead, white, 1.00 @ cent, Sugar Lead, brown, 1.00 @ cent, Sulphate of Alumina, 1.00 @ cent, Sulphuric Acid, 68 @ cent, Ultramarine, blue, 1.25 @ cent, Venetian Red, 1.00 @ cent, Vitriol, blue, 1.00 @ cent, Yellow Ochre, Rochelle, 1.00 @ cent.

BOSTON MARKET.

Table listing various paper stocks and their prices, including categories like Paper Stock, English Rags, and Leghorn Rags.

Advertisements.

Twenty-five cents per line of eight words each insertion. No charge less than one dollar. FOR SALE - ONE SECOND-HAND JORDAN ENGINE...

WANTED!

MANUFACTURERS TO Send us Samples of their Stock OF PAPER ON HAND, WITH BOTTOM TEN DAY CASH PRICES.

We buy large lots and sell all grades of Paper, Rags and Paper Stock. We trade Stock or Cash for Paper.

BULKLEY, WARD & CO. 14 and 16 So. 7th Street, PHILADELPHIA, PA. FOR SALE.

Two 9 stack iron calendars, 72 inch face each stack; seven 6 inch and two 12 inch rolls; all fitted with frames, boxes and running gear.

FOR SALE. 50 Horse Power Steam Engine, wheel 12 feet; diameter, 16 inch face. 55 Horse Power Steam Tubular Boiler.

FOR SALE. One 30 inch and one 36 inch Beating and Washing Engines in good order, now running.

TO PAPER MANUFACTURERS. I beg to call attention to the fact that I am prepared to supply mills with Hemp, Sisal and Jute Twines of every description.

JOHN CROTTY, 428 Broome St., New York.

E. WALTHER, Architect, Civil and Mechanical Engineer. Plans, Estimates and Superintendence for Mills of every description.

FOR SALE. A second-hand Rotary Boiler, with all necessary gearing; in good condition; taken out to be replaced by a larger one.

FOR SALE. Eight Cast Iron Dryers, 36 x 76 inches. Three Dryers, 28 x 72 inches. One 9 Stack Chilled Calenders, 72 inch face, first-class condition.

Potter Building, 38 PARK ROW, NEW YORK. THE undersigned (formerly HOWSON & SONS) continue the practice of the Law of Patents, Trade Marks and Copyrights before the Courts.

KALION CHEMICAL COMPANY, Gray's Ferry Road, west of 31st St., PHILADELPHIA, December 3, 1888.

Mr. WALTER T. BRADLEY, 987 N. Ninth Street, Philadelphia: Dear Sir - I made an exhaustive examination of your Lime which came to hand on November 28, 1888.

The Chemical Analysis gave the following results: Lime, 95.80 per cent. Magnesia, .45 "

Yours truly, H. G. SHAW, F. C. S., Superintendent.

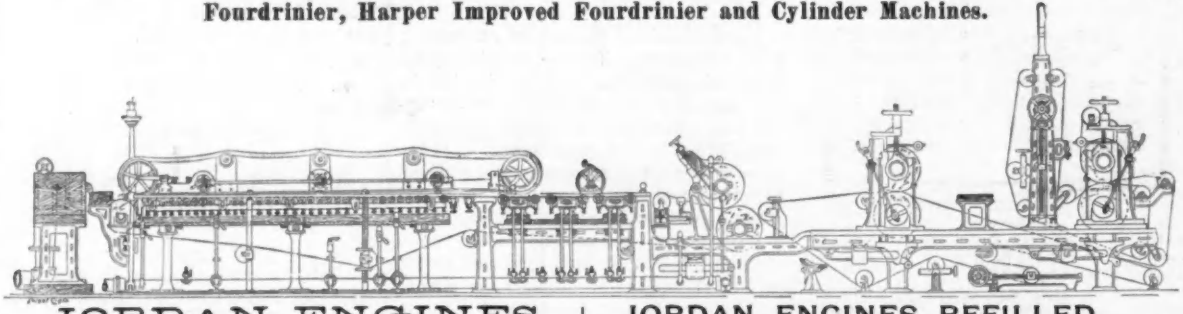
WALTER T. BRADLEY is a manufacturer of Lime especially adapted for chemical purposes and Paper Manufacturers' use, and will be pleased to quote prices either by car or barrel to any who may desire to give his Lime a trial.

OFFICE AND YARD: 987 N. Ninth Street, Philadelphia. FOR TRADE.

I have a large tract of land that I will trade for paper, paper bags, wood dishes, paper stock - in fact, anything pertaining to paper. Persons having anything to offer give price and particulars. Address C. B. ROBERTSON, Lafayette, Ind.

FOR SALE. Five Flint & Fisher wood pulp grinders, all in first-class order, and can be seen running at Rensselaer, N. Y. Change of business permits us to sell one or all at a great reduction from cost.

THE BLACK & CLAWSON CO., MANUFACTURERS OF PAPER MILL MACHINERY.



JORDAN ENGINES. | JORDAN ENGINES REFILLED. Screens, Calenders, Rag Cutters, Cylinder Molds, Doekel Straps, Paper Cutters, Screen Plates, Dandy Rolls, Stuff Box Trucks, Iron and Brass Castings REVOLVING REELS AND STACK REELS. MANUFACTURERS OF THE KOEGEL SLITTER.

THE BLACK & CLAWSON CO., Hamilton, Ohio.

TO PAPER MAKERS.

We are prepared to furnish, on contract or otherwise, from three to four tons daily of Superior Spruce Wood Pulp, f. o. b. Cars at Ottawa, Ont., or Barges at Hull, P. Q.

THE E. B. EDDY MFG. CO., HULL, CANADA.

SPECIAL BARGAINS. One 18 x 48 in. Horizontal Corliss Engine; one 16 x 42 in. Horizontal Corliss Engine; one 12 x 36 in. Horizontal Greene Engine; one 16 x 42 in. Horizontal Babcock & Wilcox Engine; one 14 x 42 in. Horizontal Wheelock Engine.

FOUNDRY AND MACHINE WORKS, LEE, MASS. E. P. TANNER, Proprietor.

Paper Mill Machinery, Engines, Machines, Calenders, Trimming Presses, Rag Cutters, Pulleys, Shafting, Gearing, Screen Plates, Cylinder Molds, Engine Roll Bars, Bed Plates, &c.

FOR SALE. One 62 inch Fourdrinier Paper Machine. To be taken out immediately. A good machine at a great bargain.

One 62 inch Two Cylinder Machine. To be taken out immediately. New vat, used one month. A first-class machine.

One 7 ft. diameter by 20 ft. long first-class Rotary. Used four years. All in good order.

Also large lot Miscellaneous Machinery. F. H. DAVIS & CO., 101 Milk Street, Boston.

FOR SALE. ESSEX PAPER MILL, BLOOMFIELD, NEW JERSEY, Ten Miles from New York City.

Built in the most substantial manner of brick and stone; Water Power of 32 feet fall from the Morris Canal; three Steam Engines of 20, 40 and 80 horse power; eight Rag Engines and Washers; 62 and 84 inch Fourdrinier Machines; eight Tenement Houses; Coal by canal or railroad at a low price; Freight from New York City on Paper Stock or Paper, 70 cents per ton.

TO MANUFACTURERS. All paper sold by the yard should be measured and marked by KINSLEY'S MEASURING MACHINE.

MANUFACTURED BY E. KINSLEY, BELLOIT, WIS. REFERENCES: Black & Clawson Mfg. Co., Hamilton, Ohio. The Fussey & Jones Mfg. Co., Wilmington, Del.

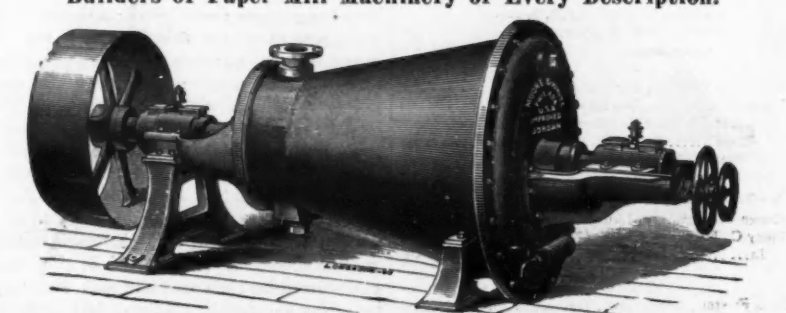
THE SIBLEY MACHINE COMPANY. MANUFACTURERS OF PAPER MAKING MACHINERY, Paper Engines, Dusters, Rag, Rope and Paper Cutters, Roll Bars and Bed Plates; also Mill Gearing, Shafting, Pulleys and Hangers.

Jobbing of all kinds. Castings at short notice. Railroad Dusters, 5 to 6 cylinders, specially heavy, and the best made for all kinds of Paper Stock. No. 139 FRANKLIN ST., NORWICH, CONN.

80 H.-P. STEAM BOILER. 68-in. FOURDRINIER PAPER MACHINE And other similar Machinery cheap.

FLATNER & PORTER MFG. CO. Unionville, Conn.

THE MOORE & WHITE CO., PHILADELPHIA, PA.



Builders of Paper Mill Machinery of Every Description. Friction Clutch Pulleys and Cut-off Couplings, Cylinders, Fourdrinier and Harper Improved Paper Machines; White's Patent Stop Cutters; Four Pulley Cutters.

ALL MACHINERY of the HEAVIEST and LATEST IMPROVED PATTERNS.

CHENEY-BIGELOW WIRE WORKS, SPRINGFIELD, MASS.

PAT. ENTIRELY HOLLOW TRUSS DANDY. LIGHTEST AND MOST RIGID DANDY EVER PUT ON THE MARKET. PATENT SEAM WOVE DANDY COVERS. ARTISTIC WATERMARK WORK A SPECIALTY.

Fourdrinier and Cylinder Wires, Cylinder Molds, Felt and Wire Guides, Section Box Plates, Slitters, Lock Valves.

WILLIAM ROBINSON, Paper Stock Merchant,

VICTORIA MILLS, Foundry Street, Oldham Road, MANCHESTER, ENG. NEW CUTTINGS, HEMP STRINGS, PACK CORDS, OLD RAGS, BAGGING AND ROPES.

COTTON MILL SWEEPINGS, COTTON FLOCKS, SELECTED COTTON TARES, OLD PICKERS.

STANIAR & LAFFEY, MANUFACTURERS OF

Fourdrinier Wires and Dandy Rolls, CYLINDER MOLDS, BRASS, COPPER AND IRON WIRE CLOTH, Brass, Copper and German Silver Wire, BRASS WIRE CLOTH for Covering Cylinders and Washers,

Nos. 11-19 PASSAIC AVENUE, EAST NEWARK, N. J.

HERMANN ISAAC, Sole Agent for the United States

L. LACROIX FILS, Angouleme and Mazeret, France, Manufacturers of Cigarette, Copying Book and Celluloid Paper.

WILLIAM WARNE & CO., 29 Gresham Street, London; Mills: Tottenham, Middlesex, Manufacturers of "Prince of Wales," "Sultan," "Premier," Patent Mineralized Corrugated, "Omniium Gatherum," "Horsey," "Motto," "Name" and "Gordon" Tobacco Pouches; Volute Seamless Hose Pipes; Consolidated Emery Wheels; Mineralized Corrugated Bands; Mineralized India Rubber Sheets, Valves, Washers, Tubes, Railway Butters, Steam Packing, &c.; Patent Junction India Rubber for Mechanical Purposes, &c., &c.; Rubber Garments.

GUST & HEINR. BENEKE, Loebau i. Sachsen, Manufacturers of Colored Glazed Paper. OFFICE: STEWART BUILDING, 280 Broadway, NEW YORK. P. O. Box 2443. WAREHOUSE: Washington and Vestry Streets, NEW YORK. DISTRIBUTING STORE: 69 Canal Street, NEW ORLEANS.

DEGRAUW, AYMAR & Co., MANUFACTURERS OF

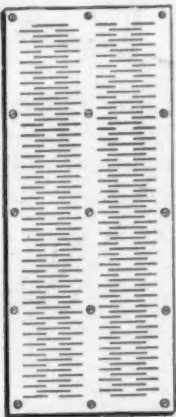
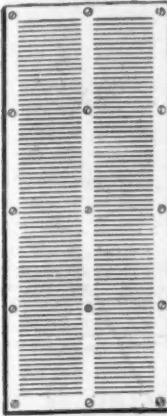
MANILA AND SISAL ROPE - FOR - THE PAPER TRADE,

Nos. 34 and 35 South Street, New York City.

**JUDSON & WILLIAMS,**

Holyoke, Mass.,

MANUFACTURERS OF  
**Screen Plates.**



REPAIRING  
**OLD SCREEN PLATES**  
A SPECIALTY.

HEIN & KRUMHOLTZ, Proprietors.  
**CHICAGO STEAM BOILER WORKS,**



Water, Lard and Oil Tanks and Sheet Iron Work.  
Office and Works: 54 & 56 FULLERTON AVE.



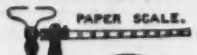
**DISK FAN OR EXHAUSTER,**

For Drying and Ventilating, Removing  
Steam, Dust, &c.  
Specially adapted for use in Paper Mills.

—MANUFACTURED BY—  
**ANDREWS & JOHNSON,**  
59 and 61 Lake St., Chicago.

SEND FOR CIRCULAR CONTAINING PRICE LIST.  
**THE MORRISON & HERRON TESTING SYSTEM.**

**THE MORRISON & HERRON IMPROVED PAPER TESTING MACHINES.**



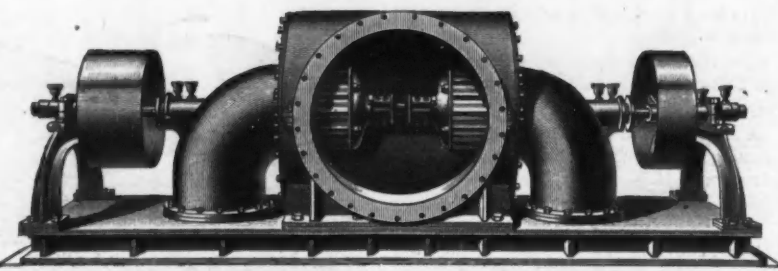
Three Different Machines  
—FOR—  
**Strength, Thickness and Weight**

A NEW PRINCIPLE APPLIED IN TESTING PAPER.  
Thickness shown to the sixteen-thousandth part of an inch.  
Used in the GOVERNMENT PRINTING OFFICE and the DEPARTMENTS at Washington.  
Price, complete, \$150.00  
Or Strength Indicator, 75.00  
Thickness Gauge, 75.00  
Paper Scale, 20.00

ADDRESS ALL ORDERS TO  
**H. MORRISON,**  
805 D Street, Washington, D. C.

**CAUTION.**  
All persons are liable to prosecution who make, buy or use Paper Testers that confine and break paper within its edges, as my Patents cover that method.

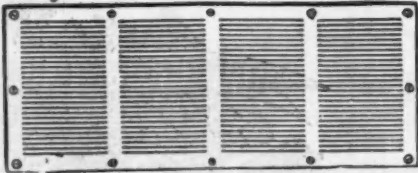
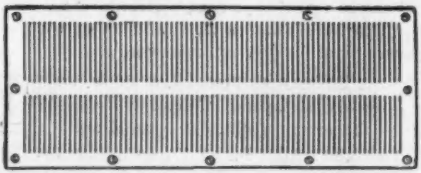
**THE VICTOR TURBINE.**



THE above engraving represents a pair of 12 inch VICTOR TURBINES arranged on a horizontal shaft, with Cast Iron Flume, Draft Tubes, End Bearings for Shaft, and Driving Pulleys complete, all mounted upon a substantial cast iron bed plate. The entire arrangement is very complete and strictly first-class in every particular. We are now prepared to furnish Victor Turbines either single or in pairs on horizontal shafts and where the situation admits of their use we recommend them.

NATHAN BARNERT. ROBERT A. HALEY. WM. C. MARTIN.

**ANNANDALE Screen Plate Co.,**  
PATERSON, N. J.



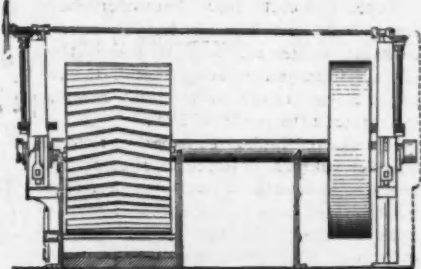
Manufacturers and Repairers of  
**SCREEN PLATES.**

Our New Plates are made of the  
**VERY BEST METAL,**  
and for price and durability cannot be surpassed.  
**OLD PLATES RE-CLOSED.**

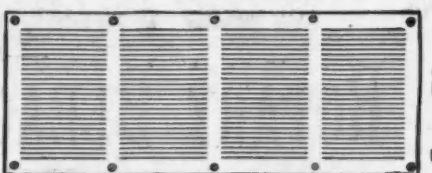
**GRESSMAN'S IMPROVED RAG ENGINE**

With Geared Lighter, for raising both ends of the Roll Shaft alike.

THE roll in this Engine has angular knives or fly bars, whereby the stock is more effectively and rapidly acted upon, making more regular and even stuff. This improvement is in use in a number of leading mills.



For further information, address  
**GEO. W. CRESSMAN,** Lafayette Hill, Montgomery County, Pa.



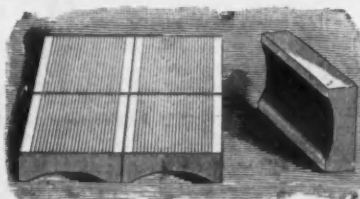
**A. A. TRAIN,**  
MANUFACTURER OF  
**Screen Plates**  
OF BRASS OR CAST METAL,  
At Prices that Cannot be Surpassed.  
21 MAIN ST. FITCHBURG, MASS.

— THE —  
**HARDY & PINDER PATENT Cast Metal Screen Plates**

HAVE STOOD THE TEST OF YEARS AND ARE ACKNOWLEDGED  
BY PAPER MANUFACTURERS

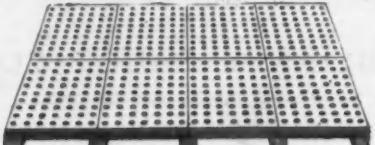
The Best in the World!

**HARDY & PINDER,**  
FITCHBURG, MASS., U. S. A.



**SAMUEL SNELL,**  
Holyoke, Mass.,  
MANUFACTURER OF  
**FILTERING STONES,**

Under the KLABY and SNELL Patents.



(size No. 1.)  
HOLYOKE PAPER CO., Holyoke, Mass.  
PARSONS PAPER CO., Holyoke, Mass.  
BYRON WESTON, Lowell, Mass.  
BREMNER & MOORE, Louisville, Ky.  
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ALEX. HUSTEN & CO., Montreal, Can.  
PATTEN PAPER CO., Appleton, Wis.  
MORRISON, BARE & CANS., Fitchburg, Pa.  
And many others.

(size No. 2.) SEND FOR CIRCULAR.

**UPRIGHT OR HORIZONTAL.**

In use in a large number of best Paper and Pulp Mills in this and other Countries.

Possesses more than Double the Capacity of other Water Wheels of same diameter, and has produced the Best Results on Record, as shown in the following tests at Holyoke Testing Flume:

SIZE WHEEL.	HEAD IN FEET.	HORSE POWER.	PER CENT. OF USEFUL EFFICIENCY.
15 inch.	18.06	30.17	.8682
17 1/2 inch.	17.98	35.35	.8690
20 inch.	18.21	49.00	.8582
25 inch.	17.90	68.62	.8584
30 inch.	11.65	52.54	.8676

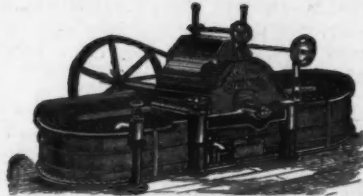
WITH PROPORTIONATELY HIGH EFFICIENCY AT PART GATE. Such results, together with its nicely working gate, and simple, strong and durable construction, should favorably commend it to the attention of all discriminating purchasers.

THESE WHEELS ARE OF VERY SUPERIOR WORKMANSHIP AND FINISH. THE VICTOR WHEEL HORIZONTAL SHAFT, DISPENSING ENTIRELY WITH GEARS.

STATE YOUR REQUIREMENTS AND SEND FOR CATALOGUE TO THE  
**STILWELL & BIERCE MFG. CO.,** DAYTON, OHIO, U. S. A.

**THOMPSON & CAMPBELL**

(Successors to KREIDER, CAMPBELL & Co.),  
1030 Germantown Avenue, Philadelphia, Pa.



**W. H. RUSSELL'S SAND WASHER,**  
An improvement in Washing Engines.  
**MACHINISTS AND MILLWRIGHTS.**  
Manufacturers of Beating and Washing Engines, Pumps, Rag Cutters, and Paper Mill Work in General.  
**MILLWRIGHT WORK A SPECIALTY.**  
ALSO, MAKERS OF

**Improved Cylinder and Fourdrinier Machines.**



PATERSON, N. J.

GEO. B. BARTON, Treas. CHAS. B. BARTON, Pres. LEWIS C. STONE, Manager.  
**RICE, BARTON & FALES MACHINE AND IRON CO.**  
(At Old Stand of Rice, Barton & Co.)  
**WORCESTER, MASS.,**  
—MANUFACTURERS OF—

**PAPER MACHINERY**

OF EVERY DESIRABLE VARIETY,  
Iron and Brass Castings, Chilled Iron and Paper Calendar Rolls, Rag Engines, Rag Cutters, Steam Pressure Regulators, &c.  
**HYDRAULIC PRESSES, FROM 5 TO 14 INCH PISTON.**

**PAPER MACHINERY.**

**FOURDRINIER AND CYLINDER MACHINES.**



IRON TUB and WOOD TUB BEATING ENGINES, WET MACHINES, Rag Cutters, Water and Stuff Pumps, &c., &c.  
ESTABLISHED 1858.

**BOSTON BELTING CO.,**

New York. Established 1828. Boston.



206 to 260 Devonshire St., Boston.  
100 Chambers St., New York.  
109 Madison St., Chicago.  
2 & 4 California St., San Francisco.

**Rubber Belting, Hose, Packings. Rubber Rolls—Press, Sizing, Couch. DECKLE STRAPS, FIRE HOSE—RUBBER, COTTON, LINEN.**  
Sole Manufacturers, "IMPERIAL" Sewed Rubber Belting

Boston Notes.

(Continued on page 568.)

was held in this city on Saturday last. Among his creditors are several of the city trade dealers and manufacturers, although the individual accounts are not heavy. E. H. Stone, of Stone & Forsyth, was secretary of the meeting, and reported assets as follows: Equity in real estate, \$3,000; stock on hand, \$2,000; machinery and fixtures, \$1,000; good accounts, \$3,500; cash, \$600; total assets, \$10,100. Liabilities, accounts payable, \$7,000. J. C. Kennedy, representing Carter, Rice & Co.; W. Stetson, of Hall & Stetson, and D. C. Bartlett were appointed a committee to investigate affairs, and, if considered advisable, to assent to the appointment of George K. Brooks as assignee. This committee made a trip to Brockton on Monday, and a report of the visit is looked for this week by the creditors.

The Hollingsworth & Whitney Company, which with the Union Paper Bag and Machine Company brought suit against James M. Waterbury and the Pultz & Walkley Company for infringement of patents, has received notice that injunction has been served upon the defendants as ordered by the court in its recent decision, a full report of which decision was published in last week's issue of THE PAPER TRADE JOURNAL. This settles the S. O. S. bag question. The Hollingsworth & Whitney Company controls the S. O. S. bags in New England, New Jersey and New York, manufacturing the bags under license from the Union Paper Bag and Machine Company.

For some years past the name "Theodore Pinkham" has ornamented a big blue sign which hung over the door of No. 46 Federal street. And this same blue sign for several years before hung above the door of his store on Elm street, and it came with Theodore Pinkham when he removed to his present large and spacious quarters. To the visiting buyers of strawboards that old blue sign is as well known as is the genial Theodore Pinkham himself. That sign is still there, and long may it continue to hang; but upon the big glass window to the right of that store door is now another sign. This new sign is lettered in gold, and it reads "American Strawboard Company," and nothing more. While that old blue sign will still be a Federal street landmark, the fact is to be noted that the business and stock in trade formerly carried on by Theodore Pinkham have been sold to the American Strawboard Company. Theodore Pinkham will remain, and the business of selling strawboards will continue right along at the same old place, No. 46 Federal street, but the business will be done in the name of the American Strawboard Company, with Theodore Pinkham manager.

The big leather belt made by Samuel Kidder for Hollingsworth & Vose attracts no little attention in the show window at No. 60 Federal street, where it is now displayed. Although this is a pretty good sized belt, it being 46 inches wide, 153 feet 7 inches long, double thickness, and weighing 1,423 pounds, Samuel Kidder, the manufacturer, has made larger ones. A three ply leather belt 48 inches wide, 120 feet long, and weighing 1,500 pounds was made for the Boston Cordage Company two years ago. To make that belt 100 hides were used. Making large leather belts is one of Samuel Kidder's specialties—a fact that it might pay consumers to remember when something extra is wanted in leather belting.

Horace Dutton is spending a short time at the White Mountains with his family.

C. S. Whitney will leave the city on Thursday next for the White Mountains, and will locate for a few weeks at the St. Clair House, Bethlehem.

W. E. Whitney is summering at the Ocean House, Swampscot, but later in the season he will pass a week at Saratoga.

E. W. Teele (don't let the types get this O'Toole) rushed off to New York this week for a big order. If he gets it, we take in the beach on Saturday. DELESDESNIER.

Obituary.

JOHN P. MORTON.

John P. Morton, head of the well-known publishing house of John P. Morton & Co., Louisville, Ky., died on July 19, aged eighty-two years. He had been in failing health for several years, and in June, 1888, was stricken down, but rallied to some extent, gradually becoming weaker, however, until he passed away. At the time of his death he was one of Louisville's most respected citizens.

OSMYN BREWSTER.

Osmyn Brewster, formerly of the widely known publishing firm of Crocker & Brewster, Boston, Mass., died at his residence in that city on July 15.

CHARLES H. CLAYTON.

Charles H. Clayton, a well-known stationer, whose place of business was at 157 Pearl street, New York, died of heart failure

on July 25 at Brown's Station in the Catskills, whither he had gone June 15 for his health. He suffered a stroke of paralysis about eighteen months ago, and since then he had been failing.

He was born on Washington's Birthday, 1817, on the corner of Broadway and Thames street, and when fourteen years of age went into his father's (E. B. Clayton) stationery store, which had been started in the year of his birth. As he continued to take an interest in the business up to the time of his death, he could claim nearly sixty years' continuous connection with the stationery trade of this city. On his father's retirement the firm name was changed to E. B. Clayton's Sons, and later to C. H. Clayton & Co., by which it has been and will continue to be known, as Mr. Clayton took care to give the son who will now take the business in hand a name which will perpetuate the style of the firm.

Mr. Clayton was a director in the Harvard Insurance Company, vice-president of the American Institute, and prominent in the Holland Lodge of Freemasons.

The funeral will take place at 11:30 A. M. to-day, from the residence of his son-in-law, Frederick S. Robinson, at 152 West Fifty-eighth street.

Jacob Schmidt, of Newark, N. J., editor and proprietor of *Der Beobachter am Passaic*, which he started in 1872, died on Saturday night, July 20. He was born at Rhein (Pfalz), Germany, in 1841, came to America in 1855, and served through the war in the Ninth New Jersey Regiment.

Thomas A. Birch, printer, New York, N. Y., is dead.

In Town.

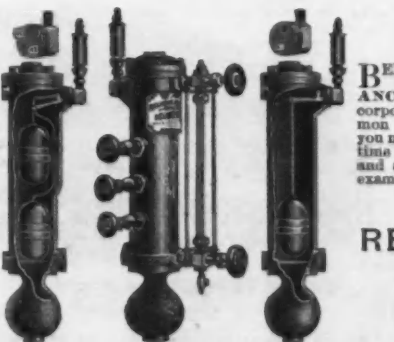
Frank Gilbert, Waterford, N. Y.; T. S. Safford, Camden, N. J.; Alexander Robertson, Montville, Conn.; James Morley, Loudville, Mass.; Charles Callender, Glendale, Mass.; G. L. Wright, Mittineaque, Mass.; Moses Newton, Holyoke, Mass.; James Ramage, Monroe Bridge, Mass.; Charles Hamner, Burnside, Conn.; Oliver Woodworth, New London, Conn.; George West, Ballston, N. Y.

Brains in Business.

One great secret of success in business—the secret, in fact, of success on a large scale—is to conceive of it as a matter of principles, not merely as a series of transactions. There are great merchants as there are great statesmen, and there are small merchants as there are small politicians, and the difference between the great and the small men is very much the same in both professions. The small politician works by the day, and sees only one small opportunity before him, the small merchant does the same thing—he is looking for the next dollar.

The statesman, on the other hand, is master of the situation, because he understands the general principles which control events. This knowledge enables him to deal with large questions and to shape the future. The great merchant does the same thing. His business is not a mere money getting affair, not a mere matter of barter, but a science and an art. He studies the general laws of trade, watches the general conditions of the country, investigates present needs, foresees future wants and adapts his business to the broad conditions of his time and place. He puts as much brains into his work as does the statesman, and he ends by being not a money getter, but a large minded and capable man.

An eminently successful man, of the statesmanlike quality, said the other day that the more he understood of life the more clearly he saw that it was all done on business principles. By which he meant, not only that the universe stands for the dollar, but that the universe is governed by unvarying laws, that promptness, exactness, thoroughness and honesty are wrought into its very fibre. On these business principles all life is conducted—if not by men, at least by that Power which is behind man. It ought to be the ambition of every young man to treat his business from the point of view of the statesman, and not from the politician. —*Christian Union*.



BEFORE shutting down for repairs or putting in any new boilers, investigate the merits of the RELIANCE SAFETY WATER COLUMNS. Many large corporations have found it profitable to discard the common appliances and adopt these safeguards. Of course you need not do so unless you wish to, but it is worth your time to investigate. There is always economy in safety, and any safety appliance is worth the time it takes to examine it.

SEND FOR ILLUSTRATED PRICE LIST.

**RELIANCE GAUGE CO.,**  
838 Sheriff Street, Cleveland, Ohio.

Manufacturing News.

EASTERN STATES.

The long projected pulp and paper mill at Jay, Me., will, it is said, soon be under construction.

The Glen Manufacturing Company, Berlin Falls, N. H., is said to be enlarging its paper mill.

A storehouse, 60 by 120 feet in dimensions, is being built at the Monadnock Mill, Bennington, N. H.

MIDDLE STATES.

The Schuylkill Paper Mills, Manayunk, Pa., burned last week, will be rebuilt.

The Felts Mills Pulp and Paper Company, Felts Mills, N. Y., has ordered from the Stilwell & Bierce Manufacturing Company, of Dayton, Ohio, through F. A. Brooks, salesman for the last named company, six 55 inch vertical, one pair of 40 inch horizontal and one pair of 30 inch horizontal "Victor" turbine water wheels, and all of the power plant for driving its new mill.

J. T. Anderson, Penn Yan, N. Y., will put in six horizontal "Victor" wheels to drive the new mill which he is building.

The Remington Paper Company has ordered a "Victor" turbine to drive its sulphite plant.

SOUTHERN STATES.

The Lynchburg Pulp and Paper Mill Company, Big Island, Va., proposes to increase its daily capacity for making wood pulp from 12,000 pounds to 16,000 pounds, and is making arrangements to build a paper mill.

Sulphur Fabric.

Paper and cloth have heretofore been coated with sulphur by dipping narrow strips into molten sulphur. By this method stiff and brittle strips are produced, the sulphur forming an unbroken crust covering the surface of the paper or cloth.

If instead of dipping the paper or cloth into molten sulphur a solution of sulphur is prepared in a volatile solvent (by preference bisulphide of carbon), and sheets of paper or cloth are drawn through the solution, and the solvent is allowed to evaporate, repeating the operation as often as necessary for the desired saturation of the fabric, the material by this method becomes thoroughly impregnated with granular or crystalline sulphur, presenting an appearance entirely different from the crust produced by molten sulphur. The sulphur sheets produced by this method, owing to the granular or crystalline structure of the deposit, retain a high degree of pliability, and even when creased the sulphur does not splinter as it does in ordinary sulphur strips, such as are in the market and used for sulphuring wine casks, &c. These sheets of paper or cloth, impregnated with granular or crystalline sulphur, form a suitable material for a great variety of purposes. They may be used for wrapping furs and woolen goods, to prevent their destruction by insects, or they may be placed underneath wall paper and carpets to prevent dampness and mould.

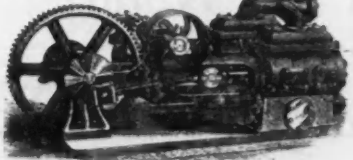
Strips of the fabric may be burned for disinfecting houses without danger from dripping sulphur, as in the case of ordinary sulphur strips. This is patented.

WANTED—A POSITION AS A FINISHER BY an experienced hand; steady work and good employment. Address J. F. S., care of Paper Trade Journal.

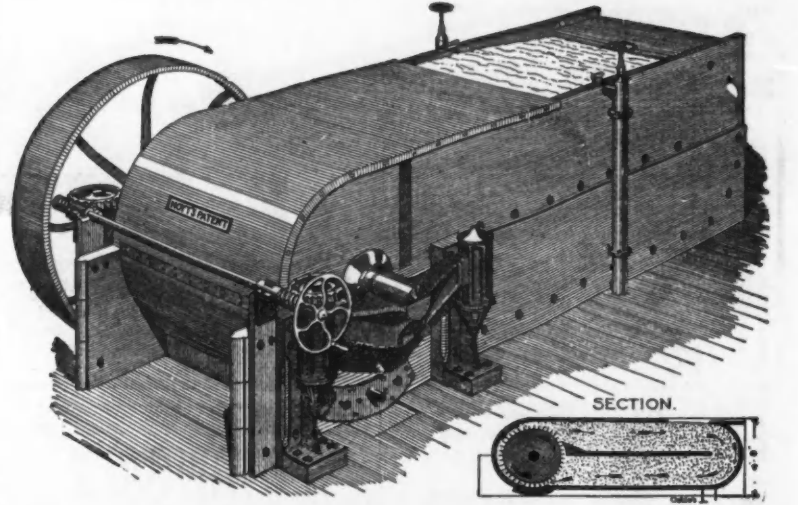
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FOR ALL DUTIES.  
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FOR PARTICULARS ADDRESS JOHN HOYT, Manchester, N. H.



PAPER MILL WORK A SPECIALTY. Perforated Iron, Copper and Brass for Vats and Drainer Bottoms, Washers, Pulp Screens, False Bottoms, Stock Boilers, both Rotary and Stationary; Sand Traps, Button Catchers, Suction Box Covers, Shower Pipes, &c., &c. Screens and Filter Plates, Perforated Tin and Brass of all sizes. Iron, Steel, Copper, Brass and Zinc punched to any size and thickness required. CORRESPONDENCE SOLICITED. SATISFACTION GUARANTEED.

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—AND—  
ROTARY BLEACHING BOILERS.

THOSE WHO HAVE UNSAFE ROTARY BOILERS IN USE CAN EXCHANGE THEM FOR THE Loring Patent Rotary, and can be furnished with abundant evidence that the Loring Boiler is absolutely safe, and the only safe Rotary Bleaching Boiler in use. For the production of chemically prepared wood pulp it has been found extremely difficult to make a boiler that would remain absolutely tight for any considerable length of time. I have accomplished this result by adopting modes of construction far in advance of the best methods for producing first-class boiler work, in combination with substances and methods entirely independent of boiler work, and only known to myself. I invite special inquiries in regard to my patent WOOD PULP BOILERS, patent STRAW PULP BOILERS, and Rotary Bleaching Boilers; also to my patent process for extracting water from wood and straw pulp, and to my improved Fibre or Drainer Tanks, and Fibre Valves. The numerous steam boilers built by the undersigned have proved more durable and safer than those of any other manufacturer in the United States. Steam boilers now in good condition that have been in constant use twenty-eight years can still be seen in use in Boston. Not one of the many thousand boilers, varying in weight from one-half to forty tons, has ever exploded or given out, to cause injury to a single person or to one dollar's worth of property, during the twenty-eight years.

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NOTICE.—I have been informed that irresponsible boiler makers have offered to build Rotary Boilers with whole wrought iron heads and a hollow journal, which would be an infringement of my patent. Such boilers will be made by the undersigned at low prices—having special tools for the work—and no extra charge made for the patent right, which would have to be paid by the user if made by an unauthorized person.

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Daily Capacity: 50,000 Lbs.  
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# THE J. H. HORNE & SONS CO.,

**THE PATENT JORDAN PLUG.**



Patented May 25, 1875, and Jan. 5, 1885.

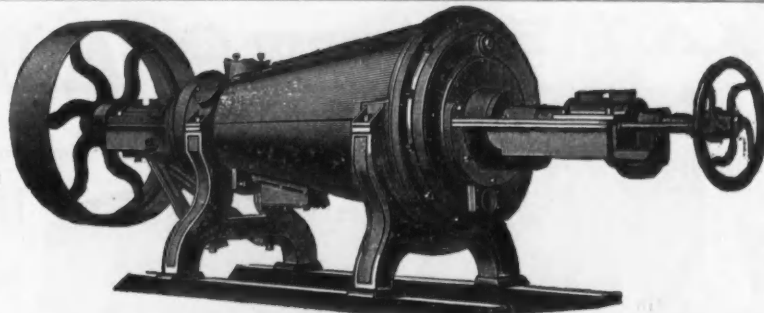
This Plug is an improvement over all kinds in the country. It can be refilled with New Bars at the mill where it is used, when worn out, by any ordinary mechanic, in a short time, and thereby save freight and expense of sending it away to be refilled. All of our Jordans contain this style Plug.

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**JORDAN AND PAPER PULP ENGINES,**

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JORDAN ENGINES REFILLED.

JORDAN BAR AND FILLING constantly on hand.



**THE JORDAN ENGINE.**

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- NO CLOGGING.
- NO STIRRING.
- NO STRINGS.
- NO RAKING.
- EMPTIES ITSELF.

IT IS THE ONLY **MIXING ENGINE** EVER PUT ON THE MARKET.

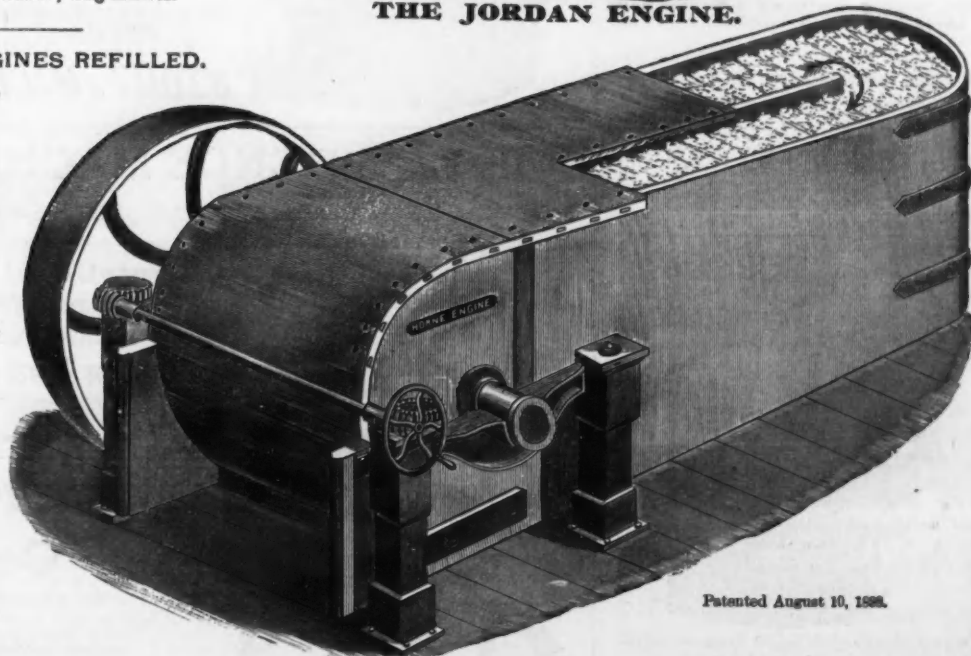
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TAKES LESS FLOOR SPACE AND BEATS STUFF IN LESS TIME THAN ANY OTHER ENGINE.

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**STRONGEST!**  
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For Rags, Rope, Tow, Straw and other Paper Materials.

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Boilers and Heavy Sheet and Boiler Iron Work for Paper Mills a Specialty.

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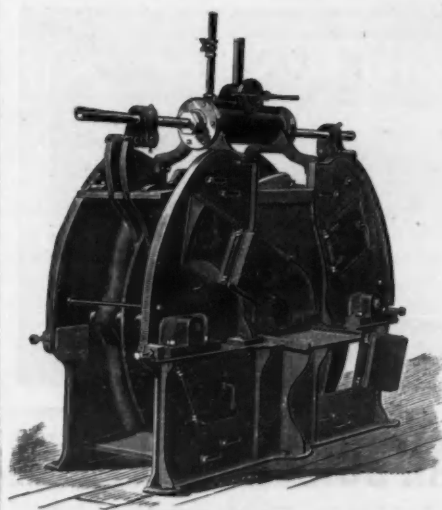
L. M. BIGGS, PROP., SUMMIT CITY BOILER WORKS, AKRON, OHIO.

- Respectfully refer you to
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  - T. W. CORNELL, " "
  - J. E. SEIBERLING, " "
  - C. H. PALMER, " "
  - D. E. HILL, " "
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ALL pockets operated and controlled by one Hydraulic Cylinder. Two pockets always grinding while the other two are being refilled. No time lost nor any variation of speed by reversing Hydraulic Feed. By the arrangement of pockets, friction is reduced to the minimum.

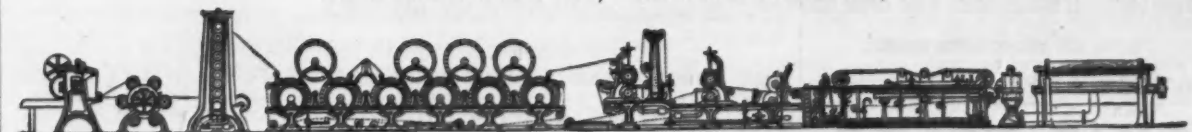
Fifteen of these Machines can be seen in operation in our mills here.

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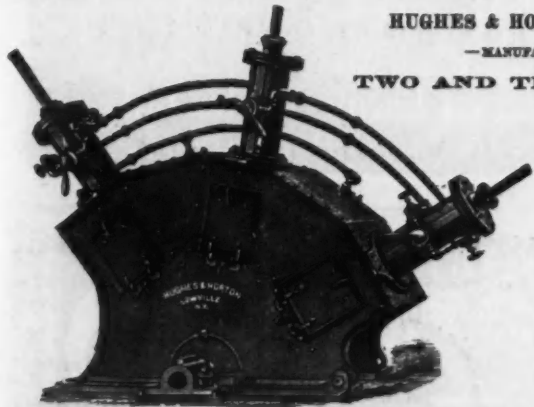
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Wood Pulp Grinders,

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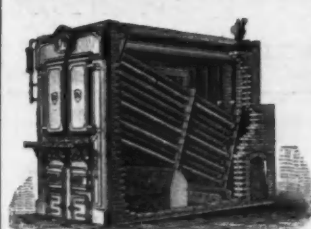
HIGHEST GRADE RUBBER BELTING,

Specially adapted for Paper Mills, and the

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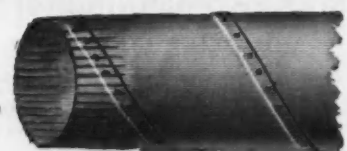
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ECONOMICAL, DURABLE AND POSITIVELY SAFE.

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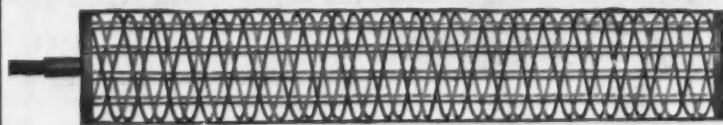
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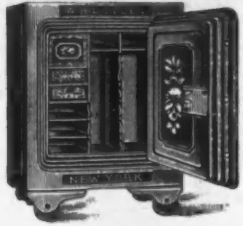
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Made on an entirely new principle and guaranteed to  
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UNEQUALLED FOR LIGHTNESS,  
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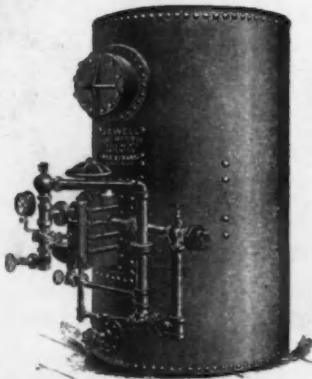
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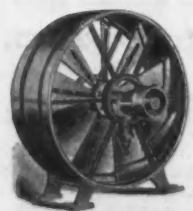
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**PACKERS**  
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COTTON AND ENGINE WASTE DEALERS.  
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In ordering Felts, please mention kind of stock  
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Particular attention called to our Superior Felts  
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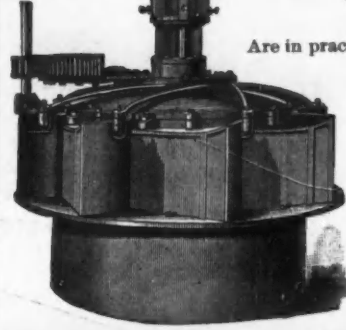
# VENTILATE! VENTILATE!



Why suffer from Heat,  
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**THE CLARK**  
**LIGHT RUNNING**  
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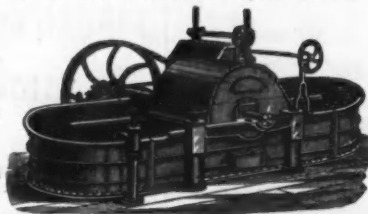


FROM SIX TO SIXTY-SIX INCHES DIAMETER,  
Are in practical operation under heads from 4 to 100 feet head: are strong, durable, and give high efficiency.

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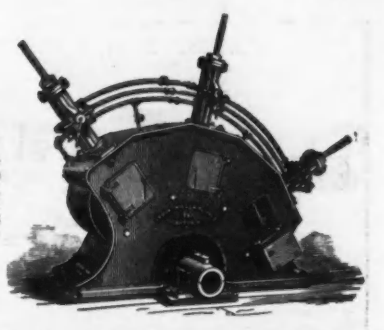
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Made heavy and strong, double  
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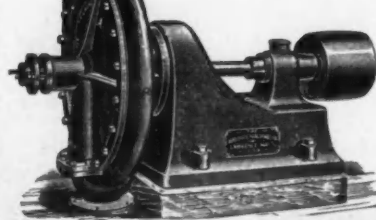
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Superior in construction to any  
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pounds extra good pulp per day,  
dry weight, per each grinder.  
Hydraulic feeds, fine adjustments;  
strong and reliable in every way.  
Two and three pocket machines.



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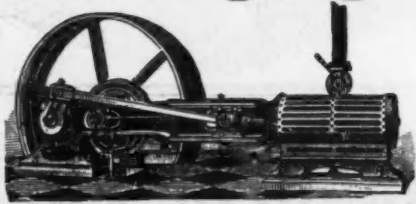
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Superintendent of the Construction and Erection of  
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**CUMMER STEAM ENGINE.**  
Complete Steam Plants, Boilers, Engines of every  
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**ECONOMY GUARANTEED.**  
Drawings and Superintendence.  
CORRESPONDENCE SOLICITED.

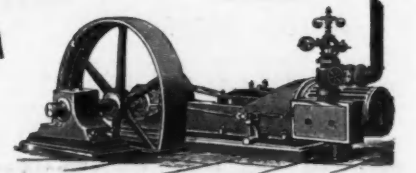
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**NEW PULSOMETER,**  
THE CHEAPEST AND BEST STEAM PUMP IN THE MARKET. PRICES LOWER THAN ANY OTHER.  
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75 to 2,000 HORSE-POWER.  
THE STRONGEST ENGINE IN AMERICA



Simple, Economical  
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HIGH ECONOMY. DURABILITY. CLOSE REGULATION.

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The attention of Paper Makers is called to the  
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Automatic Engines for Electric Lighting, Throt-  
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SEND FOR CATALOGUES AND PRICES  
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Complete motive power PLANTS FURNISHED.  
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By using this Company's **ONE-METAL DICESTERS**, Rotary or Stationary. No Linings to Repair or Renew.

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MANILA. ALL KINDS OF ROPE AND JUTE STOCK.

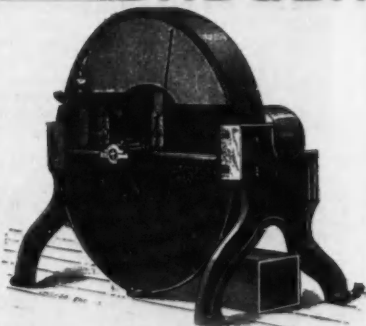
MANILA ROPE.

The Celebrated Pack of this firm may always be known by this Trade Mark on Wooden Tags.

### THE NEW FRAMBACH AND BADGER PULP GRINDERS.

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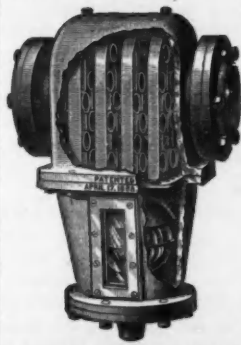
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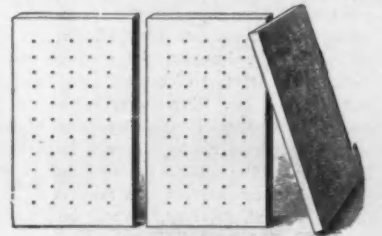
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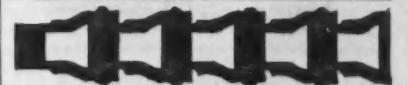
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BOSTON.

**The Building Association as a Factor in Economics.**

By Augustine M. O'Neil.

It has been said that he has not lived altogether in vain who has made two blades of grass to grow where but one blade grew before. This somehow reminds one of the Italian proverb which says: "A man has lived to no purpose unless he has either built a house, begotten a son or written a book." It is the function of a building association to loan money to those of its members who desire to build houses. These associations, comparatively new, are to-day so numerous as to suggest the inquiry: What potency, if any, has the building association in the region of economics? Or, to use plainer language, what effect, if any, do the building associations as a whole produce on the general wealth of the country? Do they add to it? Do they diminish it? Do they concentrate it? Do they distribute it?

The main question, as first stated, is not unnatural when the avowed purposes of these associations are considered; nor is the question unimportant when their number and the amount of capital they control are kept in view. Every member of every one of these associations is by virtue of his membership either a lender or a borrower. In respect to the lender the association affects and effects interest. In respect to the borrower it affects rent. It will be shown further on that the building association also affects wages, and rent, wages and interest are regarded by some economists as the only channels for the distribution of all the capital of the world.

The underlying principle of these associations is, with regard to the lender, the accumulation of a capital by the aggregation of a great number of small individual contributions. It is a plan by which the servant with but one talent does that which the Master said the slothful and unprofitable servant should have done—namely, to put the money with which the Master has intrusted him out at usury; for that which be-

tween the private lender and borrower would be usury is, in the case of these associations, expressly authorized by statute. The building association is a co-operative society whose chief end, by an anomaly, is accomplished entirely outside of the association; for while the object of such an association is to enable its members to buy land or to build a house, yet it neither sells him the land nor builds him the house. It simply lends him money on the security of his house or land.

A building association, in America at least, is a stock association. The stock is by no means a necessary feature. Yet the stock form is the form which prevails without exception in this country. It is probably owing to the fact that the stock is an unnecessary adjunct that the building association differs in respect to its stock from all other stock associations. For whereas in all other stock associations the payment of the stock subscription is but the first step in the career of the society by which it shall get money to build its railway or dig its canal or accomplish any other end for which it was designed, in the case of a building association the society ends whenever the stock subscription is fully paid in.

This much having been premised for those to whom the building association is an unknown quantity, an attempt will now be made to assign the building association to its proper economic position.

1. A building association is a creator of capital. It must be remembered that the capital of a country consists of the aggregate of the savings of all the individuals in the country. A nation of spendthrifts would be a poverty stricken nation. All capital is the result of saving, and a building association is a savings bank. The capital handled by a building association is not subtracted from capital in Wall Street or elsewhere. It is gained by savings in wages. It is capital that probably would never have existed but for the building association. A member of a building association once said in a public meeting that, should he never receive a cent of interest, still the money he had invested in the build-

ing association had been a positive gain to him, since before entering the association he had never saved a cent.

2. The building association acts as a distributor of wealth by promoting the possession of land in small holdings. There is more in this than may appear at first sight to those who make no study of "the dismal science." Everyone knows that the country, the State and the city increase in wealth from year to year. But then there is that other startling fact that during all this increase there are many persons in the community, and perhaps their number is multiplying, who instead of getting richer are constantly becoming poorer. They do not get their aliquot share of this increase of capital. When mention is here made of persons who are becoming poorer there is no intention to include spendthrifts or sluggards, but reference is had to the sober mechanic or clerk or professional man who would work if he could get the work to do. That such deserving persons should not share in a prosperity that to be healthy should be general is a grave evil. It is an evil which if intensified and persisted in for many generations might bring about the total disruption of society. The contrast between the hitherto unheard-of fortunes of a few of our wealthiest men and the deep poverty of numbers of our people was never more strongly marked than at present. Now, the building association, by furthering the distribution to each man of a moderate amount of wealth, tends strongly to counteract this growing evil. The importance in a republic of everybody's having "a stake in the soil" can hardly be overestimated. That careful investigator, Arthur Young, speaking of small land holdings, said: "The magic of property is capable of turning sand into gold." When we compare the English yeoman of the past with the English farm hand of the present, the difference is wonderfully in favor of the yeoman. But the yeoman was a small land owner, while the farm hand is not. The rooted persistency with which the French return to a republican form of government is in all probability chiefly due to the prevalence of the

system of small landed proprietorship. Those who own the country will always govern the country. Where the people own the soil a republic is a logical consequence of such soil ownership, because only by means of a republic can the people govern.

To the wage earner it is of incalculable importance that he should own his own home. There are three demands of our nature which are imperative. These are the demand for shelter, the demand for food and the demand for clothing. The demand for food and the demand for shelter recur daily; the demand for clothing recurs less often. The stomach must be filled every day, if possible, and the landlord must by most persons be met at least once a month. If a man be unable otherwise to meet his landlord he must work for such wages as may be offered to him. If he owns his own home the only landlord he has is the city, and perhaps his mortgagee. But the city is an indulgent landlord whom he can put off for a while. The mortgagee makes his demand usually only once in six months. In those six months contests with the employer by the wage earner may be lost and won—lost by the employer and won by the wage earner because of the latter's ability to stand out for what he conceives to be his due. A man who owns his house has a place of shelter at least, and a coign of vantage which his less fortunate brother does not possess.

3. The building association, by creating capital, increases the amount annually spent in wages and thus tends to raise wages. It is a fact known to everybody familiar with the subject that a very preponderating portion of all the moneys loaned by these associations is spent in wages paid to carpenters and others in erecting new houses. If this capital had not first been got together by members of a building association it could never have satisfied the hunger—the *auri sacra fames*—of the workmen who built the house for the borrower. "The creation of capital," says Emile De Laveleye in his "Elements of Political Economy," "always involves the employment of labor, and tends at the same time to increase wages, since fresh capital

requires fresh laborers, and the increased demand for these will cause them to be better paid."

4. The capital created by a building association is an addition to the circulating capital of the country, permanent during the existence of the association. Economists draw a distinction between wealth and capital and again another distinction between fixed and circulating capital. For example: A has \$100,000. This is his wealth. With \$20,000 of it he buys a residence. With \$100,000 of it he builds and stocks a factory for the manufacture of woolen cloth. The residence he has bought is wealth, but it is not capital. It does not directly contribute to production. His factory is instrumental in the production of other wealth. His factory therefore is not only wealth, it is capital. Again, of his capital some is spent in building the factory and supplying the machinery, and some is spent in the purchase of wool and in the payment of wages. That portion expended in the factory and machinery wears out slowly and is hence called fixed capital. That portion devoted to wages and material has to be renewed almost daily and is hence called circulating capital. It must be evident that the interest of the workingman in circulating capital is much more immediate and constant than in either of the other forms of wealth.

Now, the capital of a building association, being constantly renewed, is circulating capital. Herein lies the difference between the capital loaned by a savings bank and that loaned by a building association. The repayment of the savings bank loan is indefinitely postponed; whereas the repayment of the principal of the building association loan commences simultaneously with the payment of the interest. The money therefore flows back by the veins at the same time that it flows out by the arteries.

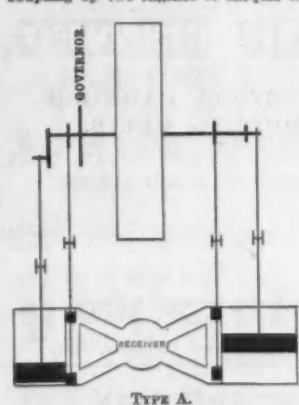
5. The building association fills one economic function that is quite unique. It measures the market value of money. The building association is the only lender upon bond and mortgage that is allowed to charge

# ELEMENTARY COMPARISON OF PRESENT TYPES OF COMPOUND ENGINES.

IN this article we will assume what is undoubtedly true, that the reader understands what a Compound Engine is and why it is compounded; being, in brief, a means of expanding the steam down until we have wrung all the available pressure out of it, without encountering condensation inside the cylinder, due to the excessive expansion. In the simple engine there stand the two inevitable alternatives: good pressure thrown away at each exhaust, or good steam condensed at each admission; and, see-saw between them as we may, the best we can do is a compromise, which leaves from 8 to 10 pounds of available pressure to be sacrificed at each stroke, instead of being turned into work as it should be. The above is a painfully elementary statement, but it will do.

The Compound Engine is, therefore, essentially a development from the Simple Engine. To begin at the beginning, we might set up alongside of our simple engine another entirely separate engine of the same kind, only, say, four times as large; or twice as large, and running twice as fast, which is the same thing. Let the second engine run on the exhaust of the first, and we get a rude compound effect. The impractical nature of this combination is obvious, although the writer once ran across a case where the low pressure engine stood at right angles to the high pressure, and drove a separate line shaft to avoid a quarter turn belt. The aggregate result was not altogether bad.

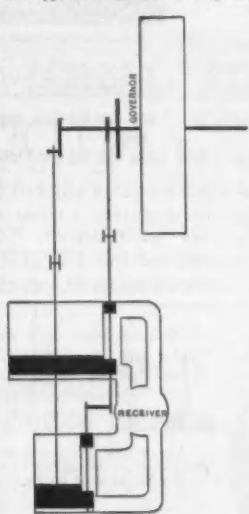
Coming now to a practical type, about the best of the early designs was produced by coupling up two engines of unequal sizes to opposite ends of a single crank shaft.



This is known as the "Coupled Compound," and is shown in skeleton in Type A. It has the advantage of distributing the strains uniformly over two sets of parts, so that in its running qualities it is likely to give as good performance as either engine by itself. This type is usually characterized by undue first cost and cost of maintenance, since it is really two distinct engines in all parts saving the shaft and hand wheel. The floor space for a given power is necessarily great. Two separate sets of valves must be used. If operated from one governor through an extended rock shaft, the valve train lacks rigidity and the governor is so overloaded as to hamper its performance. (We are speaking now of the modern high speed engine with a shaft governor.) If two governors are used, the division of load between the two engines is haphazard, and results are nowhere. Builders of this type usually resort to the other alternative of governing on the high pressure cylinder only, and actuating the low pressure valves from a fixed eccentric without cut-off, or sometimes with the additional expedient of a cut-off adjustable by hand. Under a uniform load this valve mechanism will give a very good result, but it is not adapted to the fluctuating loads in ordinary service. The prime defect of Type A, however, is that the quarter cranks and the great distance between the cylinders necessitate a large intermediate receiver through which the steam must pass from the high to the low pressure cylinder, emblematically indicated in the illustration. The effect of the receiver may generally be detected in the indicator diagram by a sudden fall in the high pressure release line, showing "free expansion"—i. e., expansion without pressure on the piston—and the high pressure exhaust line, instead of coinciding with the low pressure admission line, will show a considerable gap, indicating a loss of pressure between cylinders. The evil of a receiver cannot be avoided in this type of engine, but the losses may be partially obviated (?) by the use of a reheater, usually in the form of a live steam jacket around the receiver.

Type B, known as the "Tandem Compound," is in some respects a simpler method of compounding. Her: the low pressure cylinder is attached directly to the simple engine as an auxiliary, either in front or back of the high pressure cylinder, as may be preferred.

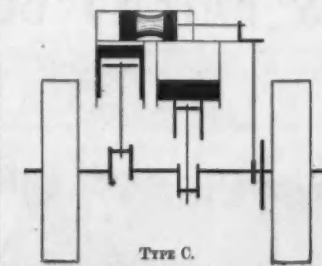
It is a cheap form of engine as usually built, occupies less floor space than Type A, and, by reason of the cylinders being nearer together, the receiver volume between cylinders is cut down somewhat, but by no means to the extent necessary to maximum efficiency. This type encounters the very objectionable necessity of transmitting the sum of the



powers developed in both cylinders through one set of parts, which, as such engines are thus far designed, are none too large for the power which would be developed in one cylinder alone. The want of balance and the rapid and simultaneous reversals of the heavy pressures on both pistons twice in each stroke, aggravated when condensing by the absence of low pressure compression, is a tremendous abuse of mechanism which is bound to tell in the long run, and very likely in the short run. It must be borne in mind in this connection that steam pressures are rapidly increasing as compounding becomes general and the call for "more power" becomes louder. The engine which to-day is handled on 80 pounds will in two years have to face 120 pounds, and in five years 150 pounds, with a condenser back of it at that. This is sure to come, and the designer who does not provide for it is digging a pit for himself and his customers. In Type B, too, as in the last, two complete sets of valve gear are to be handled, with the same attendant alternatives. Generally the exhaust valve of the low pressure cylinder is independent of the steam valve, and the engine becomes "four ported," with a consequent large increase of low pressure clearance. This is fatal to economy, and the one thing above all others to be avoided.

But Types A and B are doing good service, nevertheless, and certainly stand on a higher engineering plane than their ancestral simple engine. Being original types, their good and bad points have had time to become well known. It therefore remains for the broadly informed engineer to draw a wet sponge across the blackboard, and lay down a re-design which shall avoid the defects of each and add to their good qualities all the acknowledged support which single action and self lubrication bring to the severe duty demanded of the modern engine.

Type C shows in vertical outline the Single Acting Compound Engine. In the light of the foregoing criticisms note that the strains from the pistons are separately and



symmetrically distributed, each through its own connections, hence there is no accumulation of strains as in Type B. At the same time all bearings are larger both in length and diameter than have ever before been employed, with the further advantage of profuse and

certain lubrication, and the entire absence of reversed strains. Note particularly that the cylinders have been brought close together, and the cranks being opposite the intermediate receiver is entirely done away with. The space which corresponds to the receiver in other engines is now reduced to the "D" of the piston valve, and is in constant communication with the high pressure cylinder. There is, therefore, neither free expansion nor loss between cylinders to any measurable extent. The low pressure cylinder is single ported, and its clearance is reduced to a lower percentage than is possible with any engine not having the valve across the cylinder head. Upon these two points largely depend the remarkable economy of this engine, and it will be seen that the design leaves no room for further improvement in these particulars. By virtue of the relative location of the cylinders we are no longer compelled to use eight, four or even two valves, but we control the steam distribution to both cylinders by a single valve, perfectly balanced against any pressure of steam, and actuated from a single governor. The functions of this valve equal in precision the most perfect adjustment of the four valve engine, with the advantage that being a single piece of mechanism it has no adjustment of its own to become disturbed. The perfection of the valve motion is, in short, beyond criticism, and is accomplished by means so simple as to almost create a suspicion of their efficiency until investigated. We invite the critical attention of engineers to this point.

Owing to the light inch pressure on the bearings and the nature of the lubrication, the internal friction of this engine is shown in our testing room to be from 3 1/2 to 5 per cent, according to the size of engine, the result, we believe, being much lower than has ever been obtained. The single acting feature and the internal lubrication are common to all Westinghouse Engines, and enable them to operate at speeds wholly inconsistent with such designs as Types A and B. And just here we would call attention to the fact that the advantages of single action and self lubrication are in no wise connected with the high steam efficiency (the latter being obtained wholly by proportion and distribution), but bear wholly on the mechanical operation.

The reduction of floor space over the other types is very great, being 50 per cent. or more, as shown by the dotted lines. The cost of foundations is reduced in like proportion. The logic of the above is incontrovertible. It is not a theory, but is the explanation of facts known to exist, and must appeal directly to everyone who contemplates the use of Compound Engines. It is only necessary that these facts and their results be understood, to show the marked superiority of Type C over Types A and B, as indicated in the foregoing illustrations and descriptions. This is an age in which development is rapid—so rapid that it is difficult for those only casually interested to keep pace with those whose business it is to bend their best efforts to the production of something better than has heretofore existed. For this reason we are willing to incur special pains and expense to lay before the manufacturing public those points which are all important in the change now taking place in the gradual turning of the attention of manufacturers from simple engines to their compound successors. Above all argument is record, and it is to this that we point with special pride. The Westinghouse Compound Engine has made a public record of fuel duty superior to any thus far attained in equal powers by any engine of any type. This statement is not confined to high speed Compound Engines, but applies equally to slow speed engines with releasing valve gear. When this greater efficiency is combined with exceptional running and wearing qualities and a mechanical simplicity which enables a wellnigh perfect steam distribution to be accomplished with a single valve of the simplest form, then Compound Engines have been reduced to a point where they can be used for all service and for all kinds and conditions of manufactures. It is with pleasure that we announce that we are prepared to ship, practically, on receipt of order, Compound Engines from about 30 H. P. up to 300 H. P. with numerous other patterns now under way which will extend our range of sizes from 5 to 500 H. P.

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a premium. With respect to the building association the laws against usury are suspended. The association is allowed to exact usury. Money has been sold recently in one of the associations at 44 per cent. This premium is to be divided by the probable duration of the loan, to wit, eleven years. This will give 4 per cent. per annum as a result. This 4 per cent. added to the regular annual interest, which in this case was 5 per cent., gives a total annual interest of 9 per cent. In many cases a borrower would have to pay as much for a loan from a private lender, but the transaction would be attended with a subterfuge. A broker's charge would be the convenient vehicle of the usury. But at the building association sale in the open market is made apparent the plain, palpable and unmistakable measure of the current value of money at long loans on bond and mortgage.—Office.

**Flooring Composition.**

A flooring composition lately patented consists of a mixture of fibrous asbestos and silicate of soda or potash, though other materials may, for special uses, be added thereto. The silicate of soda or potash is liquefied, and while in that condition the fibrous asbestos is added thereto and thoroughly incorporated and mixed therewith. On drying this mixture hardens to a dense, tough, compact, impervious and somewhat elastic mass, in some respects resembling horn. This elastic horn-like property renders it capable of great resistance to wear. This is said to be very useful for flooring for factories and like places where ordinary hard pine flooring is quickly destroyed. In such places a flooring of the new composition, say, one-eighth of an inch in thickness, has been found to exhibit no signs of wear after six months' continuous usage.

The composition may also be utilized for roofing, being either applied in its plastic condition or first formed into roofing tiles. It may also be formed into tiles and may be utilized to displace wood and iron (possessing, as it does, the lightness of the one and the strength of the other) for various other building and architectural purposes, as for cornices and the like. As it can be produced in sheets of any desired thickness, it may be utilized for covering walls and ceilings in fireproof and other buildings, for which purpose it may be embossed or ornamented in various ways. It may be used for sheathing or be formed into articles of hollow ware and utensils of various sorts. The composition is also particularly available where indestructibility is a most desirable property.

The composition when dry is not at first wholly insoluble, but it may be rendered so by treatment with acid or a hardening solution. It is made as follows:

A silicate of soda, which can be obtained upon the market and is called "A" silicate, and which at ordinary temperatures is gelatinous, is liquefied in a steam kettle, adding a little water, if necessary, to thin the solution to work easily, and to it is then added about 15 per cent. of its weight of fibrous asbestos. While it is important that the asbestos shall be in a fibrous and not in a powdery condition, the cheap fibrous quality answers well for the purpose. The asbestos should be picked apart to mix readily with the silicate, and the mass should be thoroughly mixed to distribute the fibre uniformly. It is then allowed to stand for a few hours, when it is ready for application. If it be a floor that is to be covered, it is only necessary to have the boarding cleaned from oily and other matter that would prevent adhesion, and the plastic mass may be at once applied with a trowel, being spread evenly and smoothly over the surface.

It is necessary to make the coating about three times the thickness desired in the finished work, as the material shrinks a great deal in drying. The addition of sand, clay or other material assists in reducing the shrinkage, but somewhat at the expense of the elasticity of the substance. Such addition also adds to its weight, which may not always be desirable. The coating when dry

is partially soluble in water. By long exposure to the action of the atmospheric carbonic acid it becomes in time wholly insoluble; but as the change takes place very slowly it is desirable to render the substance at once insoluble, which may be done by treating the coated surface with dilute acid. This is preferably, though not necessarily, done before the coating is entirely dry. Sulphuric acid may be used for the purpose. This acting on the silicate of the alkali decomposes it, silicate being deposited and sulphate of soda resulting. The silica, being probably in the gelatinous condition, dries down to a perfectly insoluble body, while the sulphate of soda effloresces to the surface, and may be removed by sweeping it off or by washing it away. It is advisable to repeat the acid treatment several times to get the best result.

Other solutions or compounds may be employed to render the substance insoluble. For example, salts of the heavy metals and of the alkaline earths, which, by combining with the silica, form insoluble compounds, may be used. Solutions of these will serve the same purpose as the acid, although the latter is preferred and is deemed to give the best results; or in mixing other materials with the asbestos and silicate, those which by combination with the silicate form insoluble compounds may be selected. For example, if carbonate of lime should be thus employed, silicate of lime and carbonate of soda result. In fact, where sand or other silica is used, the silica thus introduced gradually enters into the compound and a very insoluble silicate of soda results.

To secure the requisite toughness and coherence in the finished product it is necessary to employ the asbestos in a fibrous condition. Powdered asbestos will not produce the same result. By thorough mechanical mixing the fibres are uniformly distributed and ramify in every direction through the mass in such way as to impart to the slab or sheet when dried greater elasticity and tenacity than is found in horn, rendering it difficult to break, even when produced in thin sheets.

**RITTER-KELLNER PULP.**

The undersigned are prepared to contract with a News or Book Mill for their supply of Sulphite Pulp. Thirty Tons per Month can be supplied.

TORONTO PAPER CO., Cornwall, Ont.

**A Fox River Reverie.**

"In the evening it flourisheth; in the morning it is cut down and cast into the press."

The Tree was brave; it stood many a shock,  
Had weathered storms and could the fierce wind mock.  
Long had it lived; before the nation's birth  
A leafy home for songsters making mirth.

High reared its head, it shook its limbs with pride;  
'Twas monarch here—the gathering human tide  
Might ebb and flow, but it would live when death  
Had smitten man and stopped life's breath.

In summer time, in virgin green arrayed,  
It cast on earth a cool, refreshing shade,  
And could tell man of many a darker age  
If he would wisely read from Nature's page.

But perverse man preferred to find elsewhere  
What he would learn, and with thoughtless air  
He felled the Tree; for on it he could choose,  
When into paper made, to read the latest news.  
APPLETON, Wis., July 10, 1889. J. SMITH.

**LINK-BELT ENGINEERING CO.**

NICETOWN, PHILADELPHIA.

NEW YORK: No. 49 Dey Street.

Log Hauls for Pulp Mills,  
Chip Elevators, Chip Conveyors,  
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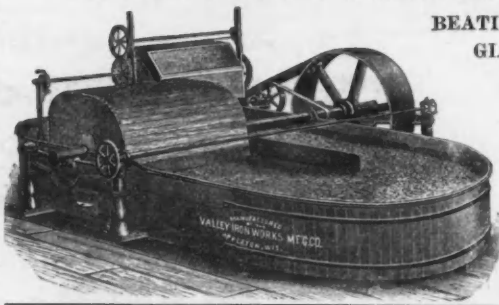
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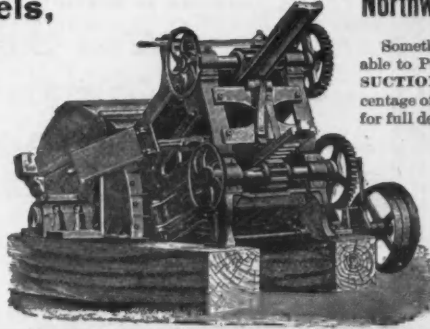


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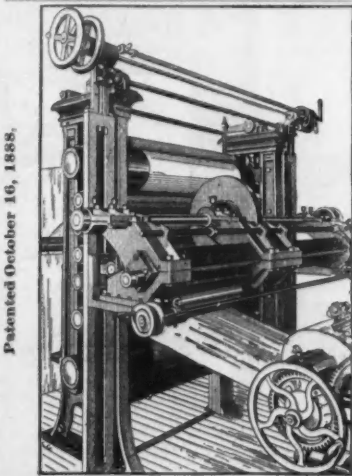
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Patented October 16, 1888.

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OF MALONE, N. Y.

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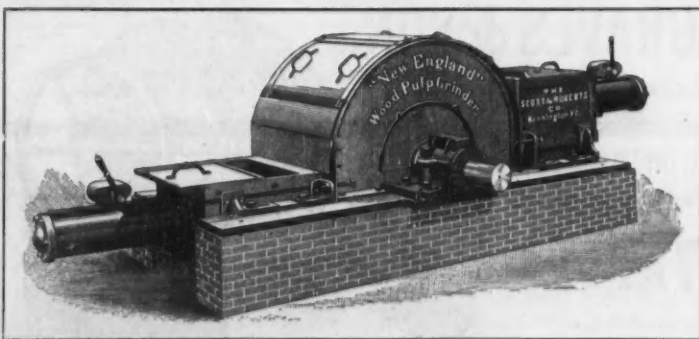
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**Strength of Boiler Shells.**

(Continued.)

If we accept the inspection laws referred to, assuming even results of the two strains, then rules 4 and 5 will find the proper pitches for boiler joints made of iron plates and iron rivets; but in composite boiler shells, the introduction of symbols representing the actual powers of resistance of the components will be necessary; we will then have for double or multiple joints:

$$p = \frac{a \times S}{t} + d \dots \dots \dots (6).$$

which can be applied also to an all iron joint or to joints made of other materials than the usual iron and steel. If we desire to find the pitch of the rivets, when the rivet diameter and a certain percentage of joint strength are given, we may use the following formula:

$$p = \frac{d \times S}{(100 - S)} + d \dots \dots \dots (7).$$

This does not include the thickness of the plates; it relates only to the proportion existing between the distance from centre to centre of the rivet holes and the space between the holes.

Other convenient formulæ are readily obtained from A, B and C by transposition; as, for instance, if it is desired to know the shear to which the rivets are exposed in any particular case after all the elements have been obtained, the formula will take this shape:

$$Shear = \frac{C \times R \times f}{t \times B} \dots \dots \dots (8).$$

and will give the pounds per square inch of cross section to which the rivets are subjected in the seam by the steam pressure C, which has been obtained by the Ordinance formula.

The rivet hole determines the size and measure of the rivet after it is driven, because it is then filled by it; and in making calculations with the aid of these formulæ the trade sizes of the rivets must not be taken. In punching holes for rivets in boiler plates, it is the usual practice to use punches one-sixteenth of an inch greater in

diameter than the trade diameter of the rivets, and it is also usual to make the dies which are used with the punches one-thirty-second of an inch larger in diameter than the punches to be used with them. The result of this method is to make conical holes in the plates, corresponding to the sizes of punch and die. If the punched holes are not to the dimensions of the punch and die here given, and if the material of the plate immediately around the hole has not suffered in the act of punching, then the proper size of holes to be used in the formula would be the mean diameter of the conical holes so made, instead of one-sixteenth of an inch larger than the punch, as they are usually assumed to be. It is well known, however, that the material of the plates bordering the holes is weakened by the detrusion of the punch. To what distance this reaches from the surface of visible separation of the metal may not be definitely known, and must necessarily be different with different materials and punches; but it is certain to be a small measurable distance into the plate around the hole. If we take the diameter of the punched holes to be equal to that of the die, we will not be far from the actual state of the case, especially as some of this disturbed metal is removed by the reamer or crushed by the drift pin. We are safe in this assumption in so far as the ultimate strength of the joint is concerned, because, as usually happens in rupture, the plates give way, while the rivets

rarely fail; and again, the plates suffer loss of substance by wear and waste, while the rivets are preserved against deterioration, and therefore the initial strength of the plates ought to be favored.

In view of these facts, the suggestion is here made, that when we wish to determine pitches from given plates and rivets, that we use the greater diameter of the punched hole, whatever that may be, for the quantity expressed by a in all of these formulæ, and that we assume the rivet diameter to be that of the lesser diameter, or reamed out diameter of the rivet hole. The result of this apportionment of the material will be effectively to strengthen the plates, which all experience has proven to be necessary; so that while this decision appears to be against reason and the isolated facts of experiment—the resistance to shearing always proving less than that to direct tension in the same material—it must be constantly borne in mind that the strains on the plates and rivets are not direct in the ordinary lap joints as they are used in a boiler, the plates being subjected to some transverse strain while under tension, and the rivets to some tensile strain while under shear. Strictly speaking, the plate loses what is punched out of it, together with the metal destroyed around the punched hole, and the rivet gains by whatever increased diameter it gets in the process of riveting. They should be estimated upon what they actually are when the joint is made up.—*Locomotive.*

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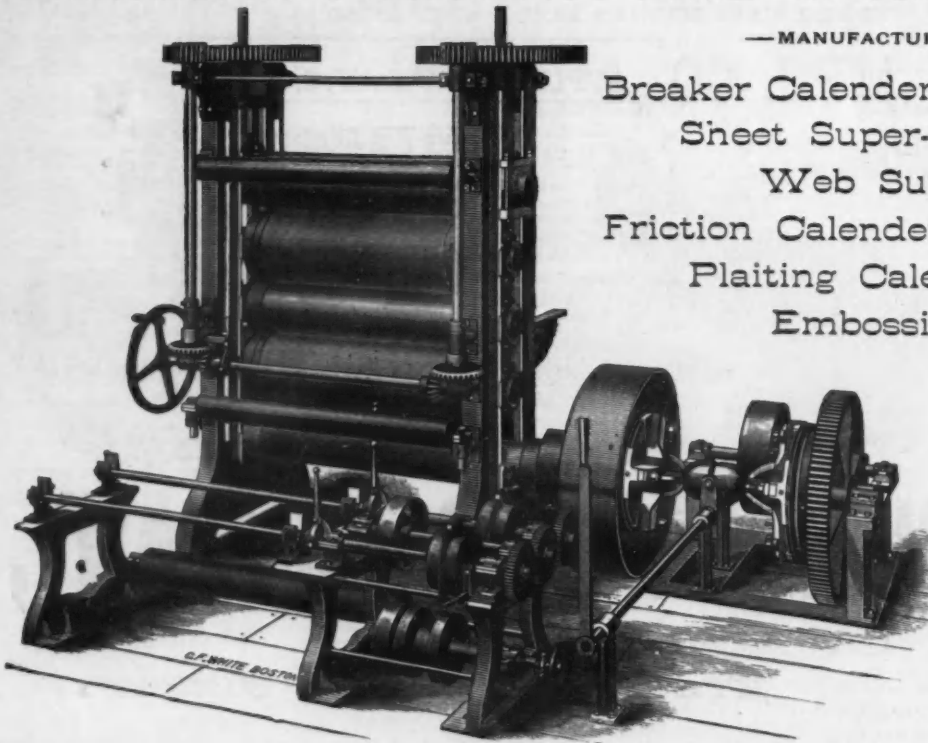
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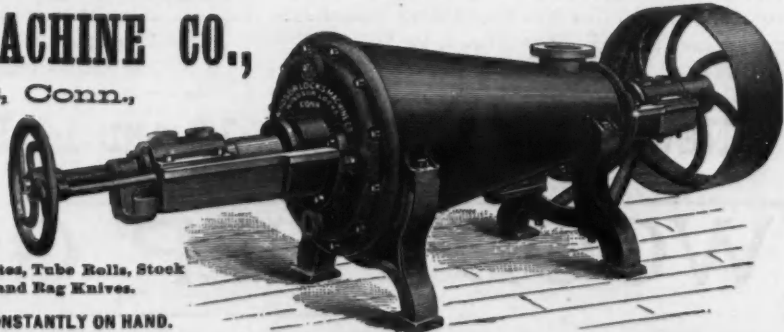
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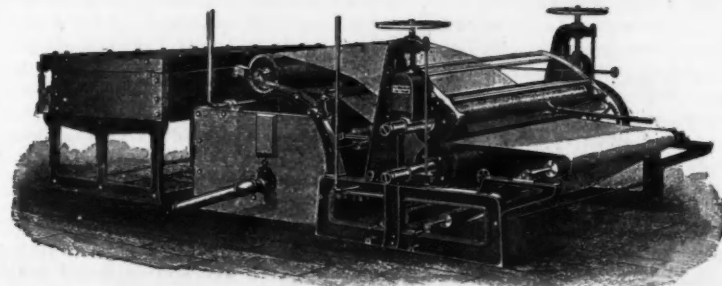
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**IMPROVED WET MACHINE.**



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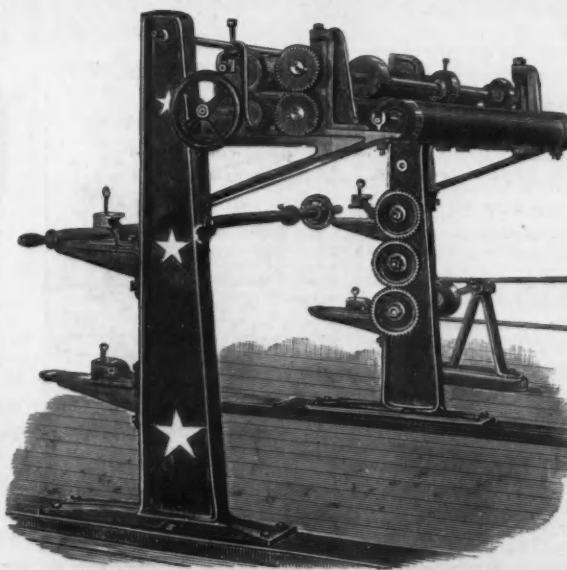
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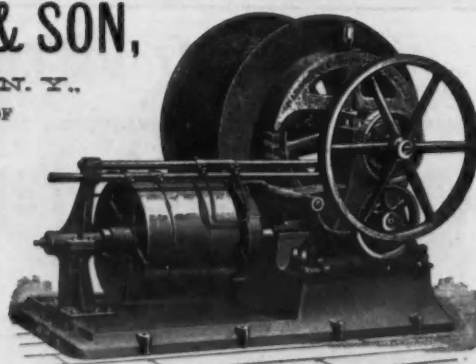
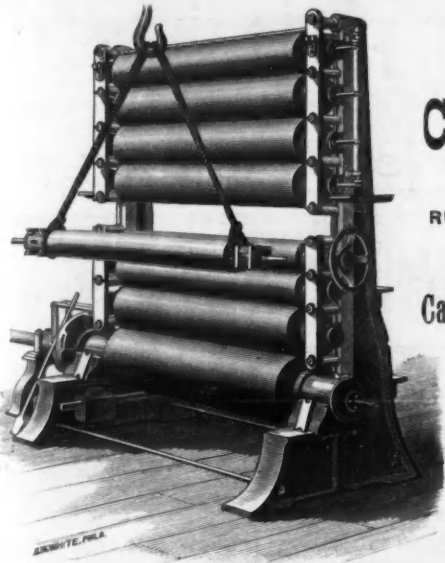


FIG. 10 STEEL SCREW FLOOR MACHINE (LEFT HAND)

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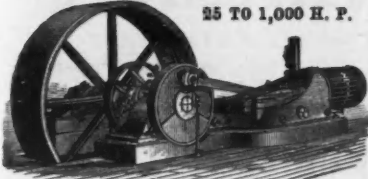
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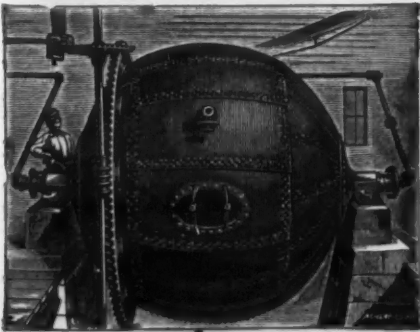
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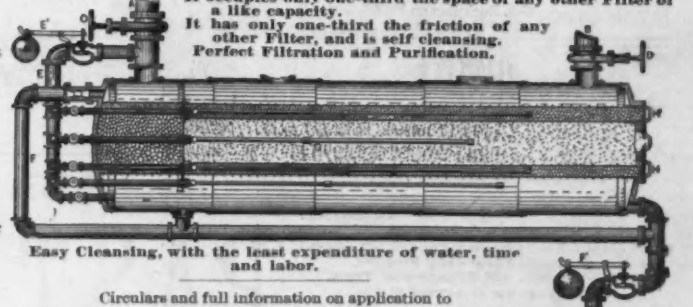
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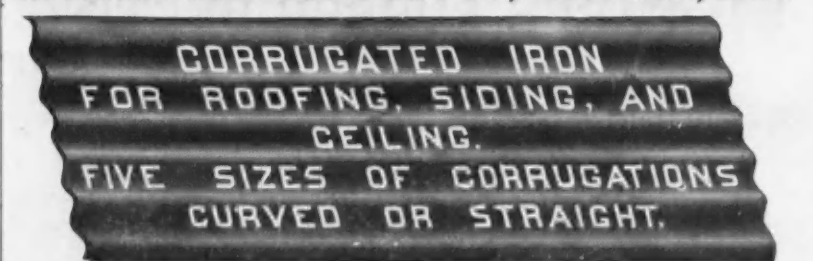
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Best Belt in the World for Paper Mill Use.

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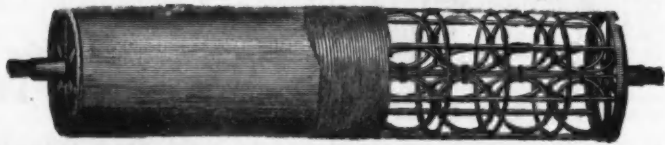
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FREE FROM IRON AND FROM EXCESS OF ACID.

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Improved Patent Dandy.



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SEND FOR SAMPLES AND PRICES.

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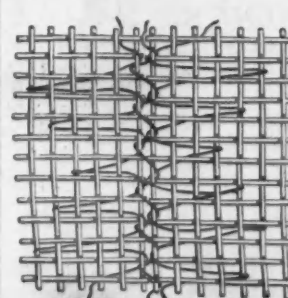
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**Fourdrinier Wires,**  
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These Wires present an even surface. No stitching to mark or break paper. Will not fill up and cause stoppage. Exceed all others in strength and durability. We refer to FAIRFIELD PAPER CO., HOLYOKE PAPER CO., and many other mills now running them.

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