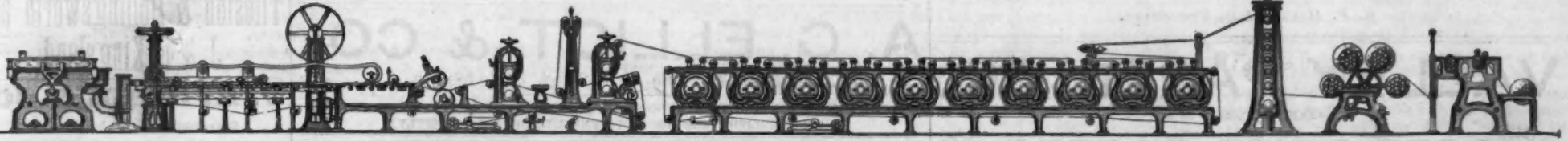


THE PAPER TRADE JOURNAL.



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

VOLUME XV.—NO. 40.

NEW YORK, OCTOBER 2, 1886.

WHOLE NUMBER 648.

Trade Topics.

Fibre-Cleaning Separator.

An illustration is given of a machine for separating fibres, whether long or short, from foreign substances, whereby the fibres are cleaned for use in manufacturing paper or other stock.

It consists of a screen or perforated shell adapted to contain fibres with an agitator adapted to agitate the fibres by repeatedly lifting them from the perforated portion of the screen or shell, and permitting them to fall back thereon until the foreign substances have been separated from the fibres and passed out of the shell through the perforations. The cut represents a plan view of the separator, with a portion of the cover broken away to show the inner parts. The frame A is supported by uprights or legs, *c*, and itself supports a semi-cylindrical perforated screen or shell, B, and the agitator D. The shell may be a wire screen or a thin shell of any desired material. The perforations or meshes *b* may be of any desired size or number.

The agitator D is adapted to rotate or partially rotate in suitable bearings, *i i*, located at the ends of the frame, and is provided with radial arms *a a* and crank-handle H at one end. The agitator shaft occupies the position of the longitudinal axis of the semi-cylindrical shell, and the radial arms are adapted to be oscillated within the shell in planes right angular to their supporting shaft.

There may be a cover similar in shape to the shell and hinged at one side to the shell or frame A.

The machine may be operated in a horizontal position or in an inclined position. When the fibres to be cleaned are long it is preferred to secure the apparatus in a nearly horizontal position, removing the agitator and partly filling the shell with the fibres to be cleansed, distributing the fibres along the length of the shell; then replacing the agitator in its bearings, the arms extending down among the fibres and letting the cover down by means of the arms an oscillatory motion and thoroughly agitates the fibres by lifting them up, first on one side of the shell and then on the other, and letting them fall again directly upon the perforations, until all loose and foreign substances have left the fibres and passed through the perforations, leaving the fibres within the shell thoroughly cleaned and fit for use, after which the cover is lifted, the agitator removed and unclean fibre substituted for that which has been cleaned, when the operation may be repeated. When the fibres are comparatively short, or no longer than the fibres which are usually wasted, the agitator is secured in an inclined position, and the cover is provided with a suitable opening at the higher end, through which the fibres are introduced with constant flow.

By oscillating the arms as described, the fibres are not only separated and cleaned, but they are continuously fed toward the lower and open end of the shell, where they pass out cleaned, ready for use, and are removed by an endless belt or in any desired manner.

Each arm *a* occupies a position on one side of its supporting shaft directly opposite the space between two arms on the opposite side of the shaft, and when an arm on one side has oscillated to the highest point any fibres falling from it will pass down upon and beneath the next arm below it, which latter arm passes to the highest point on the other side of the shell, carrying with it the fibres just fallen from the arm next above it, from which the fibres fall to the next arm below, and so on until they are expelled from the shell at its lower end.

The explanation of the forward movement of the fibres from one end of the shell to the other is found in the fact that the arms oscillate in planes right angular to their supporting shaft, as before stated, and that the shaft is inclined, so that the lower side of the circular plane that would be described by a complete revolution of any given arm about the shaft is in about the same vertical plane as the upper side of the plane described by the arm next above it on the shaft, and the fibres, fall-

ing in a vertical line, pass from one arm to the arm next below it on the shaft, thus traveling from one arm to another at each oscillation of the arms.

It is obvious that steam or other power may be applied to operate the agitator. The legs and supports may be of any desired form or material. When used in an inclined position, the cover may be fixed upon or form a part of the shell.

The machine is chiefly designed for saving the waste of jute or manilla stocks.

Chipping the Jordan Engine.

[WRITTEN FOR THE JOURNAL.]

By JAMES F. HOBART.

"Chipping the Jordan" is a familiar job to the millwright, and it can be made hard or easy, according to the amount of brains possessed by that dignitary. A set of tools made from $\frac{3}{8}$ -inch octagon steel (8-square) for the smaller pieces of filling, $\frac{1}{2}$, $\frac{3}{8}$ and $\frac{3}{4}$ inch steel for the larger places, will greatly lighten the task of chipping the shell. These tools, especially the longer ones, for chipping the inner end of the shell, should be made with an offset of about one inch for the larger tools, $2\frac{1}{2}$ or 3 inches from the cutting edge, and the tool so ground that the face of the tool is worked next to the shell, instead of the bevel of the tool, as when a common chisel is used. These tools are heavy enough to allow of their being used by momentum, still they are not so heavy as to forbid the use of a mallet.

Short, medium and long tools 1 inch, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{3}{4}$ inch wide, together with common $1\frac{1}{2}$ and 2 inch framing chisels, go to make up the necessary kit of cutting tools, and a sledge-hammer, mallet, hand-hammer, large and small monkey-wrenches, screw-driver, pin-bar and a big crowbar or lever make up the necessary tools. To these may be added one or two pieces of pipe for rolls, a plank or two, a jack-screw and a pair of chain falls stout enough to lift the cone; if a pair of rope falls are available, so much the better, and so are a couple of rag-bale trucks and a pair of wooden horses whereupon to place the spindle and cone. All of these things are not absolutely necessary for doing the job, for like most other millwrighting jobs, it can be done with a monkey-wrench, a hammer, a chisel and plenty of time and brains. Millwrighting is such a hard wearing trade and so quickly breaks a man down that he is entitled to use every available facility for making his work lighter as well as for saving time.

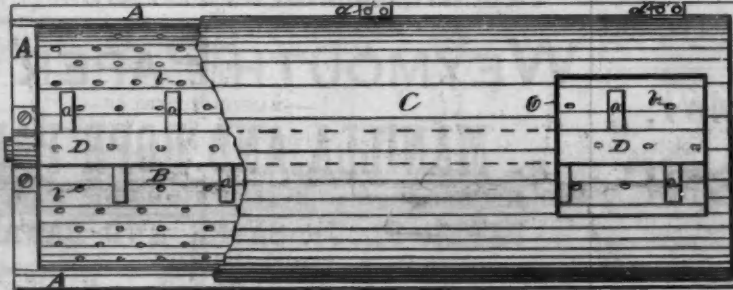
If there is any chance to put an eye-bolt in the timber or floor directly above the large end of the Jordan engine, then do it by all means, and put a similar eye-bolt six feet from the first but away from the engine, and just in line with the centre of the machine. Hang the chain falls to the first eye-bolt, and the rope tackle to the second, and you are nicely rigged for handling the cone when ready.

First of all, remove the belt. This can be done by running off the pulley, but it is not well for the belt to do so. Such usage will do for belts under eight inches wide, but for wider belts, throwing them on and off pulleys soon cuts, cracks and wears them out. Such usage is worse than the regular wear. It is better for the belt to put on the clamps and take out the hooks, or to cut the lacing, but do not do this unless the lacing is too much worn to be used again.

Next, remove the pulley from the engine spindle. It does not pay to keep half a dozen men around all the time to do the lifting and pulling. In most millwrighting jobs, work can be done faster and easier if more calculation is made to take advantage of things, and not do them by main strength. Place one end of a 10 ft. two-inch plank under

the pulley, placing a "bait" or fulcrum about twelve inches from the pulley and under the plank; let the fulcrum be high enough that the plank shall lie nearly level when bearing against the pulley and fulcrum. Let the helper hold up the plank while you twist the pulley to the end of the spindle, and get it about half off, then let the helper bear down on the plank until he barely takes the weight off the pulley. Now if you draw the pulley off, while he swings the plank to accommodate you, the pulley will easily be removed without fuss or lifting, and your helper can lower his end of the plank until it rests on the floor. Then he can take hold of the pulley and roll it to an out-of-the-way place. The pulley may be easily replaced on the spindle by reversing the above line of operations, and this too may be done while many millwrights would be hunting up half a dozen hands to help lift the pulley back on the spindle.

The adjustable bearing must next be stripped off, then the box and braces which form its support. The writer is in the habit of freeing the whole device from the Jordan head, then making fast to it with the chain



FIBRE-CLEANING SEPARATOR.

falls which have been left hanging to the eye-bolt overhead. Pull up on these falls until the slack is all taken up, then remove the adjusting screw and the cap of bearing; then slack away on the chain falls and lower both box and its slide to a truck placed underneath to receive it, after which it may be lowered thereon and trundled to one side for your helper to thoroughly clean while you are chipping.

Next take all of the bolts out of the large head and see that they are all cleaned and nicely oiled before being put back again. Drive the head off of the shell by striking with the sledge in half-a-dozen places around its edge, and be very careful that the thin edge is not broken by the hammer. When once free from the shell twist the head along the spindle six or eight inches, then twist it back again toward the shell. This will loosen the packing, which can be easily removed. Next take two turns around the stuffing-box with the bight of a rope, and make fast to the rope falls which are hanging from the second eyebolt. The head can be easily removed and carried away upon a rag truck, as the box was done.

Usually, after the gland is removed, the spindle will slide through the packing in the small end of the engine; otherwise it must be removed with a packing hook. Attach the chain falls to the spindle, close to the cone, by means of a rope; take up the weight of the cone, then attach the rope falls to the same rope to which the chain falls are attached. Pull on the rope falls and the cone will slide out; by slacking on the chain falls the cone may be drawn out until the end of the spindle barely rests in the small-end stuffing-box. Then remove the chain falls, attach them as far forward on the cone as possible, and the cone may be swung out of the stuffing-box and the large end of the cone placed upon a rag truck, to be easily run back until the front end of the spindle is free of the shell; then it may be raised bodily and placed on the horses, the spindle resting directly on the pieces of board in which notches have been cut, permitting it to turn easily without danger of rolling off the horses.

Saw the handle off of an old broom and let the helper thoroughly clean out the shell and crevices in the cone. Get out all the dirt and stuff. Also knock the slide out of the sand-box, and have both slide and grooves well scraped and greased before replacement.

Notice, during chipping, if any of the filling

has become rotten. If so, replace it with new by cutting out holes at both ends of the length, also a short hole in the middle; drive blocks in these holes; then cut out the two remaining pieces of wood and fill their places likewise. Be very particular, in chipping around the feed opening, to make sure that there is plenty of room for the stuff to come down into the machine. One Jordan the writer recollects which would not run an engine of stock in three hours, and it was decided to have the machine chipped, which was done, and found to work no better. A little investigation showed that the cone, forward of all the knives, had not been touched, and that it completely filled the corresponding part of the shell to the entire exclusion of pulp.

Sometimes, when an engine is newly filled, the cone projects a little beyond the shell when set back and the large end cannot be bolted home when this happens. To remedy the trouble, a circle of wood, one-half inch, more or less, in thickness, is cut out and slipped into the large head, being held in place by the thin flange before mentioned. After the Jordan has been once chipped this wooden ring

should be removed, otherwise there will be just so much unnecessary clearance between the head and cone, and in this place stuff will collect and perhaps come out when it is not at all desirable, perhaps bringing a dash of some former color with it.

After the chipping has been finished, the cone and spindle may be replaced as described for taking them out, but after the cone has reached the position when one end is on the truck, and the pulley end of the spindle just entered into the shell, it is well to make fast the chain falls so that the spindle will just balance them; then enter the spindle in the front stuffing-box, put the chain falls in the spindle close up to the cone, and slide it quickly into place.

After putting on the large head, trouble is frequently met with in putting in the bolts. Some of these bolts want to go in particular places, and refuse to be screwed home if not put in that particular hole. Now, this is too much trouble, so just have a bottoming tap made to fit these bolts, and one application of the tap will remove the trouble forever.

For packing the Jordan, the writer usually fetches a loose hemp rope from the rag-room. This is untwisted and each strand in turn untwisted until the tow is straight; then three bunches, about half an inch in diameter, are braided loosely together and drawn through a dish of tallow, made as soft as cream by melting in oil. A braid of this size, about eight feet long, will pack both ends of the engine, and will need little, if any, attention for a year.

In setting up a Jordan, the gate-box, if one is used, as always should be done, should be placed far enough away from the Jordan head to allow that head to be removed without first removing the gate-box. All that is necessary to do this is to have the pipe connecting the bottom of the large head with the gate-box made long enough to reach the box when it is placed in the desired position. The box in question is usually stuck close up against the Jordan shell, and in some instances it is cut partly away to allow room for the head bolts. All of this may be avoided by placing the gate-box against a wall or post; it may be located many feet from the engine if necessary and still work equally as well.

When built of wood these gate-boxes are apt to get rotten, the gate sticks, and often gets to leaking so badly that it is impossible to make the stuff rise over it. A neat brass affair is now made which removes all of this difficulty, and is much more pleasant to the eye than the clumsy wooden affair usually seen.

After a Jordan has been chipped all it will, it is customary to load it in the cars and send it back to the maker to be new filled. Some-

times this is very expensive, owing to the distance, causing heavy freights, and when this is the case it pays to buy a set of knives all ready to be placed in the engine. The solid filling for the cone and the "onion" filling for the shell (this "onion" filling is made of layers about a quarter of an inch in thickness and renders the operation of chipping very easy) can all be ordered with the knives, and only fitting and driving are necessary, after which the Jordan may be ground with sand and water and be all ready for work.

It pays to have an extra Jordan engine on hand at all times, so that when one needs chipping or filling, it can be set on one side, the spare engine put in its place and got to running with hardly an hour's delay.

The speed has a great deal to do with the excellence of work done by a Jordan engine. If it is desired to "just brush" the stuff, the speed will not matter as much as if the stuff was too long and needed much cleaning. In this case, if the Jordan is to run 250 revolutions per minute, it is exceedingly desirable to have it run at that speed and not be above and below it.

Driving by an overloaded engine is to be particularly avoided, as when it is done the change of speed can be distinctly heard in the Jordan every time that the engine passes over the centres, and if it be a long-stroke automatic engine the trouble becomes very marked—unbearable, in fact, if the fly-wheel or main pulley of the engine chances to be too light, or is running too slow.

The Acid or Bisulphite Processes.

[WRITTEN FOR THE JOURNAL.]

It is well known that continual jarring even of pure lead will soon disturb what are termed the molecules, when crystallization ensues; first the elements of cohesion are marred and displaced, and the metal becomes hard, but all are fully recuperated and an equilibrium restored by subjecting them to a temperature of about 400° Fahr., which may be safely done without fear of affecting size and shape. That no mistake may occur in making the joints, connections and the like in the preliminary processes, I subjoin the following table of melting points of various metals:

| Metal | degrees Fahr. |
|---------------|---------------|
| Copper | 2,160 |
| Brass | 1,900 |
| Iron, red hot | 1,677 |
| Zinc | 740 |
| Lead | 624 |
| Tin | 427 |

Although, strictly speaking, many of the above-named metals will not unite without the addition of a third or fourth, nevertheless fair joints may often be made by fusing together two edges of metals having quite a difference in melting points. I have made some good steam joints in this manner, but it is not safe to go too far with experiments of this kind. In making the elbows and all short turns, where the diameter is large, I have found it much better and cheaper in the end to hammer, say, one-half the section out of a solid ingot and then the mate, and subsequently burning them together. This can be easily done over a form that any mechanic can make. This method is far preferable to bending lead tubes, and, as far as running into molds, I have never succeeded except by making the piece much thicker and heavier than necessary. It will be found an easy job to hammer if the metal is warmed frequently. By this means reducers can be made, and when burned and finished up in good shape look as well as any and are much better, for even with heavy lead castings they are apt to be porous and spongy, something impossible with hammered goods, and with large diameters it is next to impossible to make short bends and curves without distorting the bore, which may lead to disastrous results. With a three-inch pipe, after the entire plant had been erected, I found that one curve—made by binding a lead tube—had nearly closed the bore, so much, in fact, that the fumes were arrested and condensed, the liquid running back down the pipe and stopping the concern altogether.

With storage tanks and their accessories great care must be taken that they rest on a firm basis, or else some sag will displace a

(Continued on page 475.)

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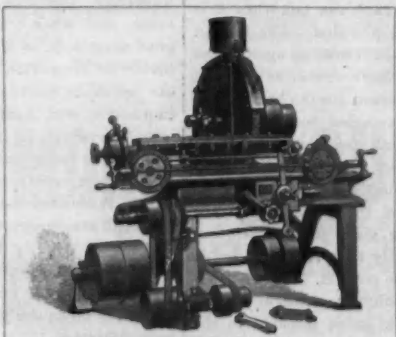
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Boston Notes.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
200 Devonshire Street,
BOSTON, September 27, 1886.

A review of the paper trade for the past month shows that the movement of paper from dealers' hands during September has been of very good proportions. So far as the demand for paper is concerned the outlook for October is very encouraging; prices, however, still rule lower than the conditions of the market would seem to justify. While manufacturers and paper dealers recognize the fact that the market value of paper is too low, competition is so great that buyers have the advantage.

In paper stock business seems to drag along from day to day without much change. Although the volume of paper stock moved during the past four weeks has been larger than for the previous month, the business has been done at very unsatisfactory prices to dealers. In this case it is the paper maker who has the advantage. The only firmness noted is that of paper-stock dealers in maintaining that prices are as low as they will be, since they are as low as they can be. Said a paper-stock importer: "We have struck bottom and can get no lower; we are on bed rock."

The chemical market is in fair condition, a good jobbing trade being reported. Bleaching powders have lost their buoyancy, quotations this week being 1 3/4 cents for store lots and 1.72 1/2 to 1 3/4 cents to arrive; market firm at these prices but quiet. There is only a moderate demand for soda ash reported at 1 1/4 to 1 3/4 cents. Caustic soda is in fair jobbing demand at 2.47 1/2 to 2 1/2 cents per pound of 60 per cent. Soda crystals are quoted at 92 1/2 to 95 cents, with fair demand.

The receipts of chemicals for the week to

date include 1,219 casks of bleaching powder, 491 casks of soda ash, and 280 barrels of soda crystals.

The receipts of paper stock for the same period of time were 31 bales of rags, 777 bales of paper stock, 92 bales of paper waste, and 32 coils of old rope—a total of 932 bales and coils.

Other receipts include 240 casks of china clay, 410 bags of hide cuttings, and 453 barrels of rosin.

The promise of the Boston Board of Health to modify its regulations so as to admit rags at this port without being subject to steam heat has not as yet taken official form. The report of the committee before which the long hearing on rag disinfection was held was accepted by the Board of Aldermen some weeks ago, and being sent to the City Council, that body, after a hard fight, also accepted the report, the vote standing 32 to 34. The next move is awaited with interest.

Although the Board of Health is silent upon the matter, the feeling among importers is very strong that no further interference will come from the health officials. This point will probably be tested in a week or two, as by that time some shipments of rags are expected to arrive at this port.

Train, Smith & Co.'s paper mill, at Bristol, N. H., is expected to be running by the middle of October. The mill has been thoroughly overhauled and put in complete repair at heavy expense. The capacity is five tons a day of manilla paper. C. A. Lucas is the superintendent.

Under date of September 13 Mason, Perkins & Co., of Bristol, N. H., announce that they have organized under the laws of New Hampshire a corporation known as the Mason-Perkins Paper Company, and will continue the manufacture of paper and strawboard as heretofore and under the same general management. B. F. Perkins is treasurer and general manager; the same and David Mason and N. H. Weeks are the directors.

Colored papers have been a specialty with the manufacturers in times past, and they will continue this line as a part of their output.

Philip Greely, representing E. H. Haskell, paper dealer, is on a business tour through the Northern part of New England.

J. L. Hobson, president of the Glen Manufacturing Company, is in town this week. Wellington Smith, of Lee, Mass., and C. A. Crocker, of Holyoke, Mass., are among recent visitors.

About four weeks ago the Glen Manufacturing Company, of Berlin Falls, N. H., started up its second machine, and is running to its full capacity on wood news.

On Friday night, September 24, the stock houses and buildings of the Fall Mountain Paper Company, Bellows Falls, Vt., were damaged by fire. The loss is not as large as at first estimated, it now being stated at \$25,000. The company was insured in the Manufacturers' Mutual of New England. The paper-mill machinery was not damaged and the mill is now running again.

Gibbs & Son, wall-paper manufacturers, of Chelsea, Mass., are fixing up the roller skating rink in Malden for the manufacture of print papers, and the firm expects to move into the new Malden factory in about two weeks.

The funeral of E. W. Dennison, founder of the Dennison Manufacturing Company, took place in this city on Sunday last from Rev. E. E. Hall's church, Union Park street. The attendance at the church services was very large, among those of the paper trade present being Hon. Alexander Rice, of Rice, Kendall & Co., and Colonel Jordan, of Pulsifer, Jordan & Pfaff. The floral tributes were very numerous, the Boston Paper Trade Association contributing a handsome floral gift in the shape of a closed book. The pall-bearers were: H. K. Dyer, New York city; F. B. Gilbert, Philadelphia; F. E. Pope, Boston; F. W. Chandler, Brunswick, Me.; Preston Pond, Boston; J. F. Talbot, Chicago; Albert

Metcalfe, Boston, and C. E. Sawyer, Roxbury. The remains were interred at Newton, Mass. DELESDEMIER.

Holyoke Notes.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, MASS., September 30, 1886.

The paper trade is feeling the influence of the general improvement all over the country, and some of the mills notice an increase in the number and size of their orders. There are very few mills in this city whose product is not well covered by orders for some little time ahead, and this order of things ought to reign for a number of months. The season of the year has come when more paper is used in all kinds of business, and the demand should be brisk for some time to come. The publication of books which have been delayed on account of the uncertainty of the times ought to come along, and many other things which call for large quantities of paper ought to be heard from soon. There is no change in prices of sufficient importance to chronicle, and it is unlikely that they will go any lower, as the low-water mark was touched some time ago, and the tide ought to flow the other way. Fine writings are moving quite freely this week and in larger volume. Book papers are responding to the increasing call, and a marked improvement in this line is noticeable. There is a quiet movement in news, and manillas are in better request. The stockmen are an unhappy lot, because their business does not seem to increase as it should. Manufacturers are all buying very closely and in medium lots. There is very little call for either foreign or domestic rags.

The investigation of George M. Bartholomew's affairs has been going on for several days, but very few developments which have not been fully enlarged on by the daily press have come to light. The newspapers, large and small, have all had their say on the matter

and having exhausted their vocabularies have paused to take breath, and as a consequence are taking a calmer survey of the situation. It is thought, from the tone of several letters which have come from the missing financier, that he would gladly return to Hartford and assist his friends in the task of straightening out his affairs, if he could be assured that he would not be introduced to a felon's cell. He has called attention to the fact in several of his letters that, if he could be allowed to help in the unsnarling of the tangled threads, he could put his creditors in a way to realize more out of his assets to meet his obligations than if the business was managed by persons unacquainted with their true value, present or future. Mr. Bartholomew says, in regard to his personal liabilities, that in indorsing the paper of the several corporations he relied wholly on the representations of these companies as to their ability to meet the same when due and did not think that he was exceeding a safe limit. The receivers are now busying themselves in ascertaining the value of the real estate held by the several companies and to determine how much property has been disposed of for which no account has been rendered. The creditors of the Schuyler Electric Light Company met at Hartford on Tuesday, and after discussing the situation pretty thoroughly adjourned for one week, when their committee will meet the stockholders and try to effect some sort of a settlement. The local water-power company holds about \$200,000 worth of Bartholomew's paper, which it claims is amply provided for. Outside of this, the banks and private individuals hold \$40,000 or \$50,000 worth of it. There are those here who still have faith enough in Bartholomew to believe that he will yet return and do his best to make an honest settlement of his affairs, but the number is somewhat small.

The new addition to the Beebe & Holbrook paper mill is fast approaching completion and it is hoped to have it ready for occupancy by

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THE GLEN MANUFACTURING CO., THE HAVERHILL PAPER COMPANY,
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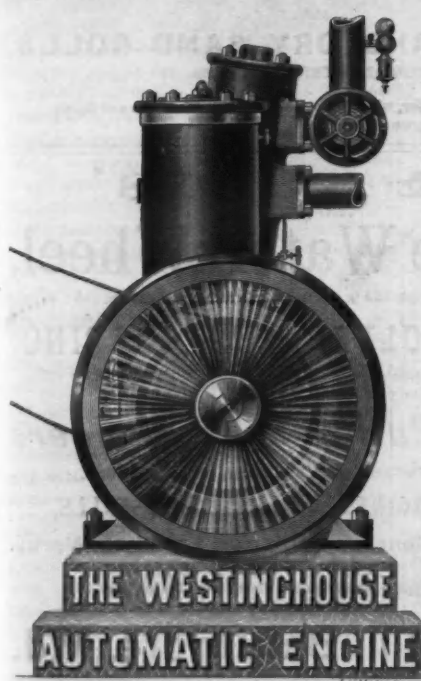
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J. ARCE & CO., Mexico, Mex.
PAUL GIRARDONI, Vienna, Austria.
CARBONE & GIRARDONI, Genoa, Italy.

Licensed Manufacturers for Great Britain and India: ALLEY & MACLELLAN, Glasgow, Scotland.

November 1. The room thus gained will greatly increase the company's facilities and will afford additional conveniences which have long been desired. It is probable that these improvements will cost the company in the vicinity of \$70,000 and will be money well invested.

Emory H. Walker, foreman of the Valley Paper Company's rag-room, has bought a residence at Beechlawn, for \$3,500.

Paul Grimm, of Bautzen, Germany, who is pleasantly remembered in this city, having spent two years at the Albion Paper Company's mill learning the American methods of paper making, has arrived in this country and expects to visit Holyoke soon. The cards are out for his wedding, which occurs at West New Brighton, S. I., on Tuesday of next week. The young lady of his choice is Isabella L. Clarke, daughter of John S. Clarke, a well-known citizen of West New Brighton.

Paymaster E. M. Estes, of the Holyoke Envelope Company, who is a staff officer in the Odd Fellows, spent a portion of the week in Boston taking part in the observances.

The marriage of Susie, daughter of Moses Newton, to Henry L. Russell, is announced to occur on October 12.

D. J. O'Neill, who has been employed by the Whiting Paper Company as a machine-tender for a number of years, recently severed his connection, and his fellow employees presented him with a handsome lounge.

M. J. Leavitt, of the Dickinson & Clark Paper Company, our local oarsman, was defeated by J. W. Joyce in the single-scul race at Springfield this week. H.

Paper Manufacturers and Cellulose.

The raw materials at present most made use of for the manufacture of paper are wood, straw and esparto, which, when rightly handled and combined, make fine white paper, the low price of which astonishes all those not initiated into the secret of this kind of manufacture. In order to be able to compete successfully in this line it would be well if each paper maker could himself prepare the wood, straw or esparto pulp necessary for his own use, a combination far less complicated than many would imagine.

In order to attain this end one must naturally not fall into the error of the greater number of those who have built manufactories for the production of cellulose, and principally of bisulphite cellulose, and who have spent such enormous sums in their proposed enterprise that, for want of means to continue working, many have been obliged to close soon after having begun operations, and some even without ever having been in regular working order. In some of these manufactories gigantic towers, lined with lead, have been erected at the cost of large sums of money and their uselessness is now perfectly established. Almost everywhere ovens have been built for the calcination of pyrites; these ovens are no longer used, and in some works have never even been heated. American boilers, with treble partitions and lead linings, have been made use of, costing each as much as \$1,600; these boilers require permanent repairs, and would not have been in anywise necessary for the manufacture of the finest cellulose if the unfortunate speculator had only taken the trouble to find out how certain foreign mills make that kind of cellulose, which, notwithstanding all competition, always takes the highest price. I will not here speak at length of that other well known inconvenience, consisting in the sulphurous liquor that cannot be got rid of without danger of endless lawsuits with the river conservancy or with the town councils. For my part, knowing as I do the drawbacks of this manufacture, I should never have run the risk of building a mill for the fabrication of bisulphite cellulose, being perfectly aware that, with far less expenditure and far less danger, one can make chemical wood pulp of better quality than that obtained by any of these methods.

The reader will understand that I cannot here give a full description of the system which I am occupied in promoting, and that I can only seek to give as clear an idea as possible of the numerous advantages that it offers, namely: considerable economy in buildings and machinery; abolition of all lead linings; freedom from the inconveniences arising from the discharge of sulphurous or other liquor; the ability successfully to treat with the same material three different substances, and the great economy of a mode of manufacturing this pulp of quality superior to that of any other kind of cellulose.

These suggestions are principally made for the manufacturers who make white writings and printings, and for whom white pulp is a matter of necessity; but I must add that the same installation is equally well suited for the manufacture of "blonde" and brown wood cellulose, which cost less to fabricate than the white, and with which one can make unbreakable millboards, such, for instance, as the American stiffeners for boots, and a kind of packing paper able to resist the most violent tension, and which, calendered, is as bright as a mirror. For this "blonde" and brown cellulose such choice wood is not required as for

white pulp; knotted or crooked parts of the tree can be used, pine heavily charged with resin, the crusts of trees coming from saw-mills, and refuse wood of all kinds; all these are easily disaggregated and rendered supple by the system I propose, and give a paper almost as strong as that made from wood of superior quality; the characteristic difference consists in the shade and purity of the pulp.

The art of paper manufacture is no longer such as it was ten years ago. Paper making at that time was far more complicated than it is now on account of the almost exclusive use of rags, which required sorting, boiling, bleaching, &c., and gave likewise much work for the mixing of divers qualities of pulp; these rags took up much room, necessitated numerous pulp reservoirs and great horse-power. The mechanical art of the engine-man consisted principally in knowing how to manage the rag-engine so as to beat the rags properly, making use of all the power and speed that the mill could afford. Pulp engines are now a thing of the past, and are not classed by the modern paper maker among the accessories of his mill. Those who possess many of these engines seek to get rid of them, or, if they maintain some few, it is only as recipients for coloring, sizing, or diluting the pulp. A new and improved system of edge runners now replaces the pulp engine, for late experiments have proved that it is weight, combined with speed, which acts on the pulp made after the new system.

The cellulose that I am now seeking to introduce, when well combined, takes the place of rags. Esparto cellulose represents cotton rags; on this pulp the water-mark takes easily, standing out purely and clearly; wood cellulose stands for linen rags; straw cellulose replaces unbleached rags and is at once size and farina. With these three varieties of cellulose, paper of equal quality to the good sorts of ten years ago can now be made at a third of the ancient cost price. These kinds of cellulose can be manufactured at a low price, but at the same time they must not be handled indifferently; if the pulp remains a few moments too long between the engine-roll and bed-plate, this suffices to destroy the inestimable quality of the fibre. In order to preserve the natural tenacity of the three different fibres that I have mentioned, as well as the silky and brilliant aspect required in modern papers, this pulp should be crushed and refined between stone runners having a bed-plate of another nature. Thus handled, cellulose made either of wood, of straw, or of esparto, has the fibre drawn out to its full length, it is defibrated and refined, and gives a paper which is strong and has body. The mechanical wood pulp added to this cellulose takes the aspect of rag pulp and is no longer apparent, whereas triturated stone against stone, chemical as well as mechanical pulp is ground to powder, and gives a paper at once heavy and thin, which is not accepted by the purchaser.

My object in writing this article is to intimate to the paper manufacturer that he can now easily make and prepare in his own mill the cellulose that he requires, and which is best suited to the quality of the paper that he produces. The question of the necessary wood is of minor importance, for it is not always in the most wooded regions that the greatest number of mills producing wood cellulose are found. In France, for instance, where there is certainly no lack of wood well suited to this purpose, many manufacturers make use of that coming from Norway and Sweden, these two nations selling it there at a price which enables it to compete with that of native wood. In Great Britain wood is not scarce; if I do not mistake, several counties, Kent for instance, are rich in fir trees; in Wales, likewise, there should be much wood suitable for making cellulose. Should this, however, not be the case, or should the forests belong to landowners not inclined to fell their trees, it is certain that as soon as the manufacture of cellulose shall be introduced into England, wood will reach there in abundance from all sides.

It must not be supposed that I am advising the installation of important works for the sale of cellulose to the paper maker, though there is no reason why in England such works should not be built, thus freeing your manufacturers from the necessity of taking their wood pulp from abroad, but my principal object is that each paper manufacturer who can possibly do so should make his own cellulose, suiting the quality and the quantity to his requirements. Some will perhaps object that they use so little of this kind of pulp that it is scarcely worth while making it themselves. If these manufacturers will let me know to how much the quantity of cellulose used in their mills amounts in the course of the year, I will prove to them at all events the economy that they would secure would be well worth their attention. Others will say that they are strict conservatives and that no other than rag pulp shall ever be used in their works. I would not be so discourteous as to say that I have some slight doubt of this assertion, though I could tell an anecdote of a paper-maker friend of mine who was lately telling me of his conservatism in the rag-pulp line, and who, half an hour later, in the heat of conversation on paper matters, lost sight of his strict principles, and in answer to a sam-

ple of cellulose that I had shown him brought forth a sample of the last wagon-load he had received.

It cannot be denied that wherever paper is manufactured, cellulose is one of the requirements of the day, and is likely to become more and more necessary as by degrees every paper maker shall have introduced it into his produce. There exist, certainly, many inventions, and several of them give very good pulp; but everywhere the complaint is the same—the works cost too much to build and keep up, and consequently do not pay. In an article which appeared in the July number of the *Paper Makers' Monthly Journal*, the cry was loud against foreign cellulose makers, whose mills have cost them so much to build that they are obliged to sell their pulp at prices which are to the great detriment of those who make use of the same. This article concluded with the remark that those who raise so high the price for their pulp seem to forget that consumers in Great Britain are quite capable of setting up cellulose manufactories for themselves, and what I say is that they should do so at once.—A. Abadie, in *Paper Makers' Monthly Journal*, London.

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(Continued from first page.)

joint and a leak occur. These sometimes cause great damage and it is impossible to trace out and remedy the defect until the mischief has all been done. One concern has had to replace a large engine and fine battery of boilers, besides much other expensive machinery from this cause, the vats being over the machine-shop, and too few props and stays placed under; they would be in the way, said the boss. With this digression I will now talk more of these experiments with new methods.

The experimental digester was again lined with lead, the capacity in gallons being the same as before, and the space around the lining, between it and the boiler or shell, filled with dust charcoal, or that portion which blew over in cleaning and reburning charcoal for chemical purposes; this was received direct from the ovens and was perfectly dry, hence no opportunity to generate steam, and was a perfect non-conductor. The top and bottom space was first hermetically sealed and the heads well bolted on. Pressure was held at eighty pounds nearly seventeen hours and there was not the faintest perceptible trace of displacement in the lining, and it was particularly noticeable that the outer shell expanded but very little, and at no time was hot enough to make it uncomfortable to the bare hand when held against it.

No one will, I think, need to be told that there is no necessity, so far as amount and character of the pulp is concerned, of the outside boiler being hot, and so far as these experiments teach the heat usually felt at this point materially detracts from the general results. It has been shown that the wood, subjected to these three influences, heat, pressure and acid, undergoes chemical as well as mechanical changes, and if all three of these conditions are requisite—a fact yet to be established—then we have cripped one very important element, also made it less by using it to expand these large boilers.

Again, it has been shown as the result of scores of tests that among the principal causes of the lining wearing out so soon, crawling and bagging nearly at every heat, is the unequal expansion of the two metals and the lack of contraction of the lead; hence it is plain to be seen that some means must be adopted to prevent this. We have seen that this very heat which expands the iron is communicated by the lead, which in response to the internal pressure forces against the iron, and is the means, or rather, direct transmitter, of this element of mischief.

The only question to be decided so far as this lead trouble is concerned, is the cheapest and most efficient method of prevention. I have tried coating the lead on the outside, water outside of the shell, and other methods too numerous to write out, and the only economic and at the same time efficient and permanent method is to leave a good space between the two and fill with some non-conducting material, as dry porous wood or charcoal, anything that will keep its form and shape when hot, and at the same time be a firm backing for the soft and yielding lead under pressure.

It has been suggested by an ex-pulp man of Chicago that the boiler should be made of the best steel and then plated with some non-corrosive metal as gold; this plan, although costly at the start, would pay better than any linings of lead as now put in, for taking into consideration the original cost of the lead, the frequent renewals of rings and the thin plate of low-grade gold would soon approach insignificance, although sufficient of this metal is not forthcoming to practically demonstrate the theory at the present time.

Then, with the pulp, no matter what kind of digester or lining, it should by rights be treated in appliances constructed of boxes with one end open, composed of strainers, then one or more fans, kept in motion by outside power, causing the pulp to be forced through the strainers; these boxes can be arranged in the receiving-vat, the open end discharging the pulp, which has been forced through the strainers, to the machine, and I think could easily be arranged so that a number of strainers and fans could be worked from one shaft. I am having a small appliance of this kind made, and if it works as I have good reason to think it will, shall have results and illustrations of the process ready for my readers at an early day. These tests, the readers must remember, are by no means easy to make, and results are given as found, but try them before calling any one of them impracticable or theoretical.

Personals.

Harry E. Jones, salesman for Woolworth & Graham, is very sick with typhoid fever at his home in Litchfield, Conn.

Daniel P. Crocker, of the Crocker Manufacturing Company, Holyoke, who has been somewhat under the weather of late, his system having run down, has, under the advice of his physician, been taking a rest for a few weeks. He will soon be able to return to business.

A receiver has been appointed for the publishing business of John C. Williamson, New York.

Early Engineering Reminiscences.

BY GEORGE ESCOL SELLERS.

It was several years before it was learned how the counterfeiters had obtained the peculiar water-marked paper, in fact not until the old United States Bank had become a Pennsylvania State institution, and when the facts were learned it was in so singular a way, savoring more of romance than reality, that I must be excused for what may run into a long digression in relating them. During the frequent conferences with Mr. Nicholas Bidde, in hope of reaching some mode of preventing counterfeiting bank notes, I learned in confidence much of what had been done in the detective line and its results by an unsuspected officer of the bank whose position was high, and who had become so much interested in the pursuit that in disguise he affiliated with some of the most desperate counterfeiters of the period; although both he and Mr. Bidde have passed away reasons still exist why he must remain nameless. It was through his machinations that the most expert engraver and counterfeiter this country had ever produced was arrested, with all his tools and machinery, including a simple and most ingenious eccentric lathe with which he reproduced the work of Spencer's mole lathe, that had never before been done by counterfeiters. The man was convicted and sentenced to the Eastern Pennsylvania penitentiary for a term that, at his age, amounted to a life sentence. The judge in passing sentence, in my judgment, committed a most unpardonable vandalism in ordering the destruction of the unique eccentric lathe and other ingenious appliances, and in seeing the order carried out, with the exception of a few burins and other small tools, which Samuel R. Wood, the then Warden of the Eastern Penitentiary, preserved; Mr. Wood was a Quaker and a most kindly-disposed man; he became interested in his prisoner and had wormed out something of the early history of this ingenious mechanic, who had gone astray "through force of circumstances that should be taken into consideration when judging the man." These were Mr. Wood's own words when expressing to Mr. Bidde his belief that if, by promises of shortening his term by procuring a pardon, his confidence could be gained, much valuable information tending toward the suppression of counterfeiting would result from it, but without some such course he was satisfied the imprisonment would be of short duration; for labor the man was listlessly picking oakum, and physically rapidly sinking. Mr. Bidde thought the experiment worth a trial. Soon after Mr. Wood reported that he had made no progress; he had tried kindness, but the man had become more reticent; to all his advances he only received muttered monosyllabic replies. I suggested that he might probably be reached by giving him more congenial employment than oakum picking, and proposed substituting die-sinking, such as was then coming into use for stamping the corner of note and letter papers. Provided with samples and such tools of his as Mr. Wood had preserved, with him I had my first interview with the man in his solitary cell; he was sitting on the side of his cot, his fingers locked together clasping his knees, a bundle of partly picked oakum lay by him; as we entered the cell he glared at us, his high, narrow, receding forehead, aquiline nose, thin, tightly-compressed lips, deep set, piercing eyes, gave him more the appearance of a caged eagle than a human being. Mr. Wood explained that I had proposed work that he might find relief from oakum picking. He wanted none of it, nothing could kill time; at first he refused to listen to me; when he saw the kind of work he denied having the ability to do it; he had never done it or seen it done. Then, looking at me, he burst forth in a perfect torrent: "Can you tell me what became of that red-haired fellow who was taken with me; he fought the officers like a very devil, and yet, though I know he was secured and ironed, he was not brought to trial with me; I see it all now, he was a fraud, it was a trick to trap me; if I was only free for a day, and could get my hands on him, his life should pay for it, and I would die contented." Mr. Wood, to quiet him, said the man had a separate trial, and had been sentenced to a long term. His reply was: "I don't believe a word of it, he was too smart for that; he was a splendid fellow with his pen; he never had his equal and never will again; he could raise a note that would defy detection." I took from my pocket and held toward him his old burins and other small tools; he seized them with trembling hands, he fondled them as if they were living; their touch seemed to have totally changed the man—for when Mr. Wood took them from him, explaining that they could not be left with him, he at once agreed to try his hand at the work I proposed. In addition to his little tools he would require a light hammer, a small oil-stone, a bench or stool, with clamp or vise to work on. It was arranged that the dies and designs should be prepared.

His sentence, in accordance with the Pennsylvania system, was solitary confinement with labor. Hours for this new work were arranged, during which a guard was to be

with him, who was to deliver to him the tools and work, taking them away at the expiration of the time. After leaving the cell, Mr. Wood said it was necessary for him to have the consent of the prison inspectors for this change of labor; as to that, he had no doubt they would meet the evening before the time fixed on to initiate the man at his new work.—American Machinist.

(To be continued.)

Packing for Bottles.

A new packing for bottles and all fragile articles is made of chemical wood fibre, is entirely white in appearance and possesses an elastic quality which is said to excel that of anything hitherto discovered or used for this purpose. It is made in Maine and is said to have the most tenacious and elastic fibre of any of the wood products, being very much thicker than any pulp board produced, and having a soft and felt-like appearance. It is manufactured by special machinery and in form the completed article presents the appearance of a sheet of felt studded with small knobs. It is also applied to wall decoration, and when used in this connection it may be colored or bronzed in any desired tint and made in different designs. It is also utilized for carpet-lining and for stair pads. Its principal use, however, is the packing of fragile articles.

It is capable of being manufactured into sewed cylinder wrappers for bottles, and special machinery has been devised and built for the purpose of making cylinders to fit every size bottle. Each machine in operation turns out 15,000 cylinder wrappers per day, each one being made to fit the bottle like a glove.

Modern Progress.

With the tendency to rapid progress and improvement so characteristic of modern times, says the Mechanical World, when one discovery follows so rapidly upon the heels of another in almost every branch of applied science, and when one invention has barely time to establish its claim to pre-eminence ere it is superseded by something newer and better, there is fortunately a growing disposition on all sides to communicate and disseminate useful information as widely as possible. Exceptions there will, of course, always be found to every rule, and although some firms with specialties of manufacture may be here and there met with, who are very jealous of any outsider knowing how they conduct their

business, yet as a rule it will be found that those who are the most unwilling to communicate information to others are those who have least to boast of. While formerly it was the rule to work almost everywhere with closed doors, all strangers being jealously excluded, we now find that those firms who possess well-ordered shops, fitted up with every modern improvement in the way of machinery, tools, &c., are nowadays only too proud to show visitors over their establishments, and the principals take pleasure in pointing out and enlarging upon the merits and excellence of special machinery, and in showing how rapidly and with what excellence their goods can be produced. They have learned that isolation means stagnation or retrogression, and do not fear but court criticism, which may open their eyes to defects they had not previously thought of, and thus pave the way to further improvement and advancement.

Nowadays, when competition is so keen and everything seems to be moving at express speed and under high pressure, isolation, unless for some unusually exceptional object, certainly does not pay, and the most successful business men know that it is absolutely necessary to keep pace with the times—know what is going on around them, and adopt really sterling improvements as they are made, or otherwise make way for those who do. Hence, free intercourse, the interchange of ideas and knowledge, are essential to progress and throughout all the ramifications of business, and indeed of society, this principle is becoming more and more clearly recognized. He who knows least is the most jealous of the little knowledge he possesses, and is least communicative, lest others should get to know as much as he does. On the other hand, the really thoughtful and ingenious, those who are continually adding to the sum of human knowledge, are they who delight in enlightening others on any point on which they have any special information, or which they have with difficulty thought out for themselves.

The periodical publications of the press, and especially the scientific and technical journals, form the principal medium by which the newest information is disseminated, and the latest achievements in any particular direction are made known to the world; and the literature of our own time is nowadays mostly written first of all for some enterprising publication, and published week by week, or month by month, before being made up, as formerly, in book form. Knowledge of most

kinds, and especially technical knowledge, is acquired so rapidly that if it is to be published as original it must be made known almost as soon as acquired. Hence the proprietors of enterprising journals are always on the lookout for specialists, or for any who have the reputation of being particularly knowing on subjects on which information is required, or who have exceptional opportunities and facilities for acquiring experience.

Paper Making and Its Accessories.

BOOKS OF REFERENCE.

The following is a list of Books of Reference on subjects connected with Paper Making, Chemicals, Colors, Machinery, Hydraulics, &c.:

AUERBACH.—Anthracene: Its Constitution, Properties, Manufacture and Derivatives. 8vo. \$3.00
BAIRD.—Standard Wages Computing Tables. Folio. \$3.00
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BENSON.—Manual of the Science of Color. 12mo. 1.00
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BOX.—A Practical Treatise on Heat as applied to the Useful Arts. Illustrated by 14 plates. 12mo. \$3.00
BOX.—A Practical Treatise on Mill-Gearing. 12mo. \$2.00
BOX.—Practical Hydraulics. 12mo. \$3.00
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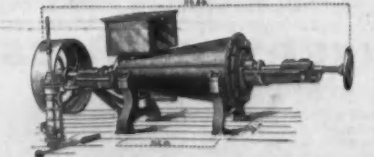
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Southworth, Bulkley & Co., paper dealers, Philadelphia, Pa., upon examination of the books of the concern find the good assets to be \$39,000 and the liabilities \$40,000.

C. W. Barnes & Co., paper manufacturers' agents, 21 Park row, New York, are endeavoring to effect a compromise with their merchandise creditors.

New York, who succeeded Watson, Sumner & Co., in March last, continue to carry on the old business as before, retaining the agency for Whitehead's justly celebrated felts and jacketings and Curtin's ultramarine.

Further subscriptions to the Charleston fund have been made through the Stationers' Board of Trade as follows: George Routledge & Sons \$50; L. Pattberg & Brothers, \$25; F. Beck & Co., \$50; Valley Paper Company, \$15, and White, Stokes & Allen, \$10.

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Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, OCTOBER 1, 1886.

THE MONEY MARKET.—Speculation in the stock market has been irregular and less active. Prices have weakened, and almost every active share shows a decline.

Table with columns: Double-named, First-class, Good, Sixty days, Four months.

Sterling has been quiet and steady and without special feature. Posted rates closed at \$4.83 for sixty days' and \$4.86 for demand.

THE PAPER MARKET.—The closing week has not been a particularly active one in the paper market, and while the month opened with a very fair volume of business, the last half has not been as encouraging.

JUTE BUTTS.—The Jute Butt market has been quiet. Holders have been asking 2 1/2 @ 2 3/4 c for high-grade Bagging Butts and 1.60 @ 1 1/2 c for Paper Butts on spot.

WOOD PULP.—Ground Wood is moving in very fair shape and prices are held quite firm. Poplar is quoted at 1 1/4 @ 1 1/2 c, and Spruce 2 @ 2 1/2 c delivered.

WOOD FIBRE.—Chemical Fibre is in good demand and prices are as before. The combination prices are held firmly, but "cuts" are being made by outsiders.

FOREIGN RAGS AND PAPER STOCK.—Some importers and dealers report an improved demand, and as a whole the past month has shown a very fair business.

DOMESTIC RAGS.—The week has been a quiet one in the domestic rag market, as the closing week usually is.

BAGGING, &c.—The demand for Bagging is light, and for the most part is for small lots. Importers are quoting 1 1/2 c for No. 1 Manchester for shipment.

OLD PAPERS.—The Old Paper market is quiet. Some dealers claim they are promptly shipping all the Hard Shavings they can get at prices within our quotations.

STRAW.—There is a fair business in the straw market and prices are steadily firm.

ROSINS.—The market is quiet, sales being limited to small lots. Prices on medium grades have hardened somewhat.

CHEMICALS.—The Chemical market has been quiet during the past week, but has shown a good degree of strength, with a hardening tendency in almost all quarters.

stocks are tight the position generally certainly appears a strong one. There is a good inquiry to-day from America, £7 5 @ £7 10s, being the prices now asked for hardwood.

CHINA CLAY.—English has been more active during the past week. Sales aggregating 450 tons of prime medium grades were made at \$13.50 @ 14 per ton.

COAL.—Anthracite is in good trade and buyers are anxious to get supplies forward. Saward's Coal Trade Journal says: "The Philadelphia exchanges have advanced the line trade prices fifteen cents per ton."

DIAMONDS. RANDEL, BAREMORE & BILLINGS, IMPORTERS AND CUTTERS OF DIAMONDS, MANUFACTURERS OF DIAMOND JEWELRY, 48 NASSAU ST. AND 69 MAIDEN LANE, NEW YORK.

PRICES CURRENT. NEW YORK MARKET.

Table with columns: Paper Market, Dealers' Selling Prices, Ledger and Record, Flat Caps, etc.

Table with columns: Straw Wrapping, basis, 15 x 20, 15 1/2 lbs. 30 sheets, 36 x 40, from 38 to 42 lbs. per ream, etc.

Table with columns: Woolen Rags, White Woollens, Blue Grey Stockings, White Stockings, etc.

Table with columns: Shavings and Old Paper, White Collar Cuttings, White Envelope Cuttings, Hard White Shavings, etc.

Table with columns: Rags, Rope and Bagging, White Shirt Cuttings, Mill Amortized Whites, Unbleached Muslins, etc.

Table with columns: English Rags, &c., New Cuttings, cotton, London Fines, cotton, Outshots, cotton, etc.

Table with columns: English Old Papers and Shavings, Hard Shavings, No. 1, Soft and Colored Shavings, No. 1, etc.

Table with columns: Hamburg Rags, &c., N S C. New Shirt Cuttings, S P F F. No. 1 Linens, S P F F. No. 2 Linens, etc.

Table with columns: Alexandria Rags, Whites, Blues, Colors, Smyrna Rags, Whites and Blues, Mixed, etc.

Table with columns: Japanese Rags, Whites, ordinary, Blues, ordinary, Blues, selected, etc.

Fires.

The Baptist Witness, De Saul, Fla., was burned out September 27. Loss, \$1,500; no insurance.

E. S. Miner, bookseller and stationer, Necedah, Wis., has been burned out. Loss, \$1,000, partly insured.

E. S. Miner, dealer in books, Necedah, Wis., was burned out on September 21. Loss \$1,000; partly insured.

McCarn & Singray, publishers of the Bee, Frankfort, Ky., have been damaged by fire. Loss, \$200; fully insured.

Davis Brothers, printers, Philadelphia, Pa., have been burned out. Loss from \$2,000 to \$3,000; insured for \$2,500.

W. A. Reed, stationer, &c., Necedah, Wis., has been burned out. Loss, \$4,000, of which \$3,000 was covered by insurance.

W. W. Wilcox, dealer in paper and printing supplies, Chicago, Ill., had his stock damaged by fire on September 30.

The Longview Printing Company, publisher of the Clarion, Longview, Tex., has been burned out. Loss, \$1,250; no insurance.

Fire in the stock-house of the Fall Mountain Paper Company, Bellows Falls, Me., on September 25, damaged the building and stock to the extent of about \$25,000.

Fire broke out in the sixth story of Cohen & Leiser's publishing house, No. 92 Longworth street, Cincinnati, Ohio, September 28. It was confined to the sixth floor and was extinguished with slight loss.

Mortgages, &c.

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

Table with columns: Mortgage, Amount, Brody & Cheheimer, J. F. Dolan, Freund & Stein, J. A. Mass.

EASTERN STATES.

Table with columns: Mortgage, Amount, George W. Washburn, W. H. Wheeler, Charles E. Smith, The New Era Company.

MIDDLE STATES.

Table with columns: Mortgage, Amount, Fosnot & Burr, The Photo-gravure Company.

WESTERN STATES.

Table with columns: Mortgage, Amount, Hatton-Snowden Company, J. C. Ruskstahl, The Corbett & Skidmore Company, Wis., Wannamaker & Marshall.

SOUTHERN STATES.

Table with columns: Mortgage, Amount, G. F. M. Turner.

LIENS RELEASED.

Table with columns: Anton Bicker.

General Notes.

Grant M. Walrad has been appointed receiver of the Morning Star Publishing Company, Indianapolis, Ind.

The Puritan Color Company, Bethlehem, Pa., manufactures all shades of colors, dry and in paste, for the use of paper makers, paper stainers, &c.

J. H. Sheperd & Co., King's Creek, Ohio, are going to put in a new single cylinder, ten-dryer 68-inch machine to run on straw wrapping.

Charles P. Sumner & Co., 74 Broad street, New York, who succeeded Watson, Sumner & Co., in March last, continue to carry on the old business as before.

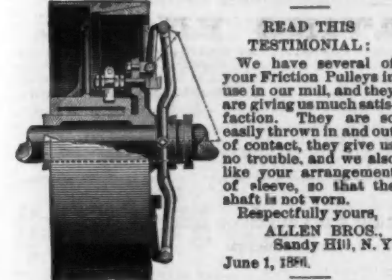
PHOENIX IRON COMPANY,
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Manufacturers of the Celebrated
TRENTON ENGINES,
BOILERS AND MACHINERY
OF EVERY DESCRIPTION.
CHILLED ROLLS A SPECIALTY.
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CHICAGO
Steam Boiler Works and Iron Foundry,



Water, Lard and Oil Tanks and Sheet-iron Work.
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FRICTION PULLEYS.
SIMPLE, STRONG AND DURABLE!



READ THIS TESTIMONIAL:
We have several of your Friction Pulleys in use in our mill, and they are giving us much satisfaction. They are so easily thrown in and out of contact, they give us no trouble, and we also like your arrangement of sleeve, so that the shaft is not worn.
Respectfully yours,
ALLEN BROS.,
Sandy Hill, N. Y.
June 1, 1894.

No End Thrust. For particulars, address

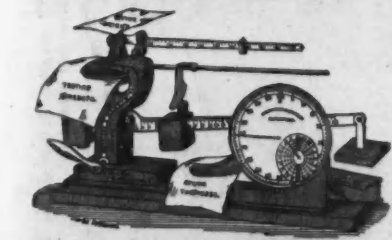
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SANDY HILL, N. Y.
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PAPER & TESTER.
Patented in the United States and in foreign countries, July 15, 1884.



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SHOWING HOW THE TESTS FOR WEIGHT, STRENGTH AND THICKNESS ARE MADE.

THREE MACHINES IN ONE.
A New Principle Applied in Testing Paper.

The paper broken or ruptured within the edges. Thickness shown to the sixteen-thousandth part of an inch. Used in the Government Printing-Office and the departments in Washington.

ADDRESS ALL ORDERS TO
E. MORRISON,
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The "Paper Tester" can be seen at the office of the Paper Trade Journal.

ESTABLISHED 1840.
GEO. J. BURKHARDT'S SONS'
CEDAR TANK FACTORY,
2831 to 2839 N. Broad Street, Philadelphia.



Boiling Tubs, Stuff Chests, Water Tanks, &c., for Paper Manufacturers.

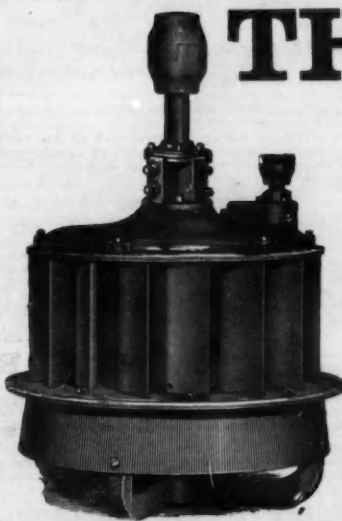
MILLARD'S NEW
PATENT WOOD PULP GRINDER

WITH IMPROVED HYDRAULIC FEED,

Is Superior to any Machine now on the Market.

—BUILT BY—

THE STILWELL & BIERCE MFG. CO.,
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THE VICTOR TURBINE.

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

On view at Permanent Exhibition of Mill Machinery, 24 to 34 New Chambers Street, New York.

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 EFFECT. |
|--------------|---------------|--------------|-----------------------------|
| 15-inch. | 16.06 | 30.17 | .8982 |
| 17 1/2-inch. | 17.96 | 36.35 | .8930 |
| 20 inch. | 19.21 | 49.00 | .8839 |
| 25-inch. | 17.90 | 65.92 | .8664 |
| 30-inch. | 11.65 | 82.54 | .8676 |

With proportionately High Efficiency at Port-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, and of the Best Material. We also continue to manufacture and sell at very low prices, the

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So long and favorably known. State your requirements, and send for Catalogue to the
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MANUFACTURERS OF

CHILLED * ROLLS

For Paper Machines,

RUBBER, BRASS, COPPER, FLOUR, OIL AND INK MILLS.

Calenders Furnished Complete,

With Plain or Friction Clutch, Driving Pulley or Bevel Gearing, Journal Boxes or Side Pieces, Shafts, Levers, Weights, Outboard & Inboard Stands, &c.

ROLLS SUPPLIED,

Finished or Turned for Grinding.

Rolls Bored for Steam or Cast Hollow.

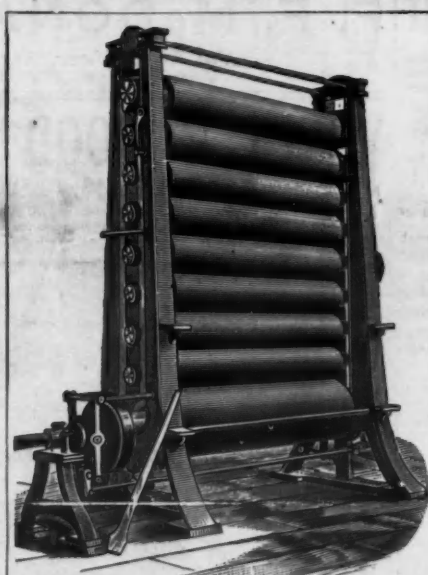
Rolls of all Kinds Reground.

WE RECEIVED THE HIGHEST AWARD FOR

CHILLED CAST-IRON ROLLS

— AT THE —

Centennial Exposition in Philadelphia, 1876.
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As we cast all our own Rolls, as well as finish them, we have absolute control of their manufacture from the beginning, and can guarantee them to be
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and equal in every respect to any other made.

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FOR ALL KINDS OF
LONG KNIVES.

THIS MACHINE SOON
PAYS FOR ITSELF IN THE
labor it saves. It will
grind a knife in less
time than on a grind-
stone, and with a per-
fectly straight edge, in
itself a sufficient rea-
son for purchasing the
machine, to say noth-
ing of the economy.



PATENTED AND MANUFACTURERS OF THE
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For Grinding Wood for Manufacturing
Wood Pulp.
Wheels Made to Order, and Castings Filled.
SATISFACTION GUARANTEED.

OLD JACKETING BOUGHT.

USE THE *Mason*
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FOR STEAM PUMPS

Used by the Leading Pump-Makers.
SEND FOR ILLUSTRATED PRICE-LIST,
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BARRY'S PATENT
Automatic Steam Regulator

Can be used with live or exhaust steam, or both.
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W. H. RUSSELL'S SAND WASHER,

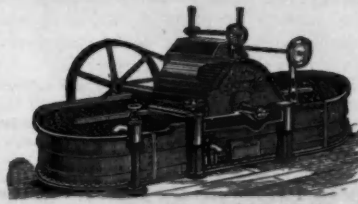
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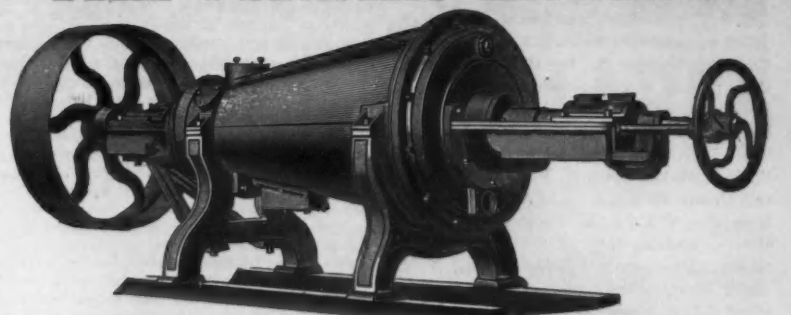
MILLWRIGHT WORK A SPECIALTY.



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THE JORDAN ENGINE.

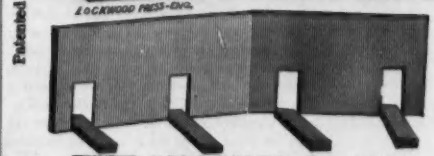


THE PATENT JORDAN PLUG.

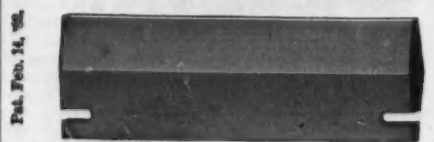
Patented May 23, 1875, and
Jan. 4, 1883.



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.



THE "HORNE" PLATE.



DOUBLE BEVEL CRUCIBLE STEEL ROLL BAR.

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Jordan and Paper Pulp
ENGINES,

Roll Bars, Bed Plates, Rag Knives,

JORDAN ENGINES REFILED.

Jordan Bar and Filling Constantly
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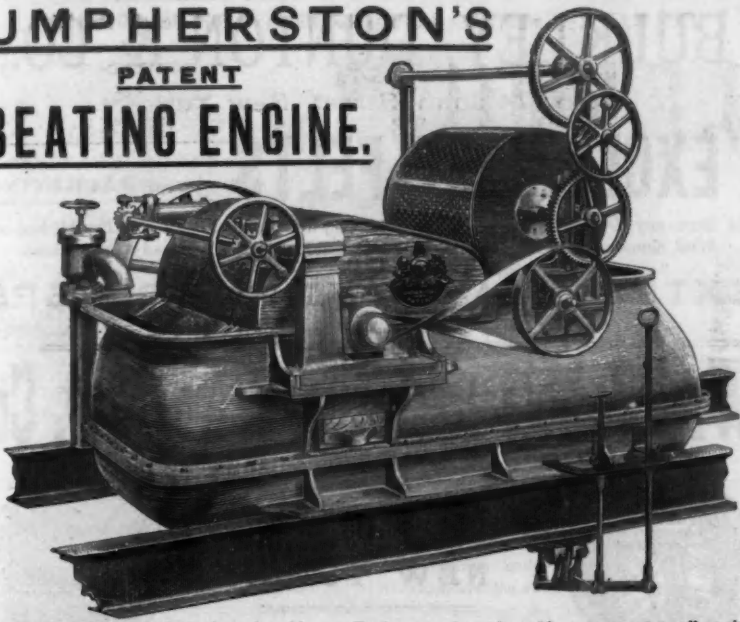
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Packers of all kinds of Paper Stock, Cotton Waste and Buffalo Sizing.

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Non-Adjustable Noiseless Screens, Screen Plates, Stuff Pumps, Three Plunger Suction Pumps, Dryers, Revolving Reels, Cone Pulley Cutters, White's Patent Stop Cutter.

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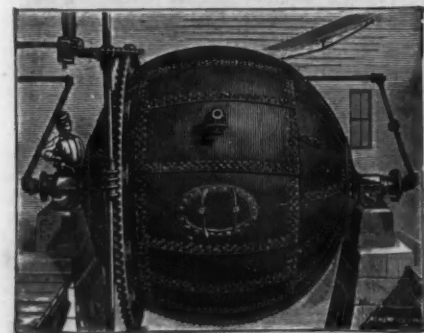
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Made to any Length, Width and Strength.
MAIN DRIVING BELTS,
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No Cross Joints, Unaffected by Damp, Clings well to the Pulley, Has no Equal; in fact, is THE BEST.

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Special attention is invited to our FOURDRINIER FELTS for FAST RUNNING ON NEWS, which are unsurpassed.

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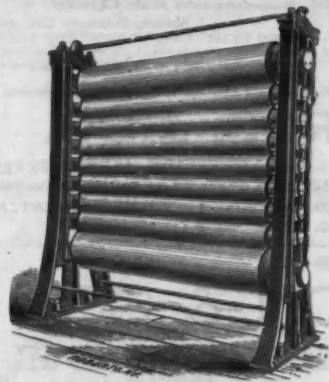
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EXTRA HEAVY CANVAS DRYER FELTS, all widths, cut to any length, at Manufacturers' Prices. WE WARRANT EVERY FELT to work well, and if it does not, it can be returned.

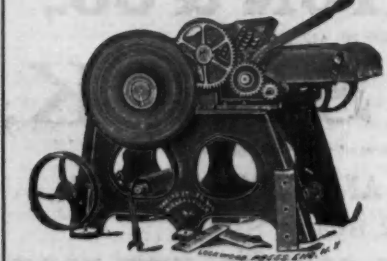
We also manufacture Blankets, Flannels, Stocking Yarns of all Colors, and Men's Heavy Wool Socks. Also, an Extra Heavy 6-4 Scarlet and White Flannel for Underwear, which we guarantee not to shrink. All the above we offer to Paper Makers at the Lowest Wholesale Prices, in quantities to suit.

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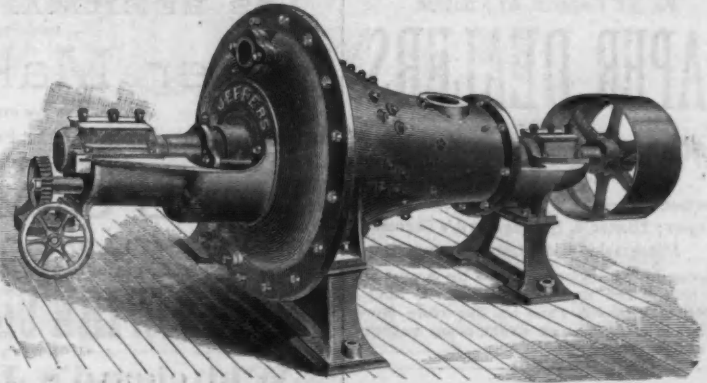
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BEST AND CHEAPEST Voelter Wood Pulp Machines,
Built from new and heavy patterns, with improved features. Send for Circulars.

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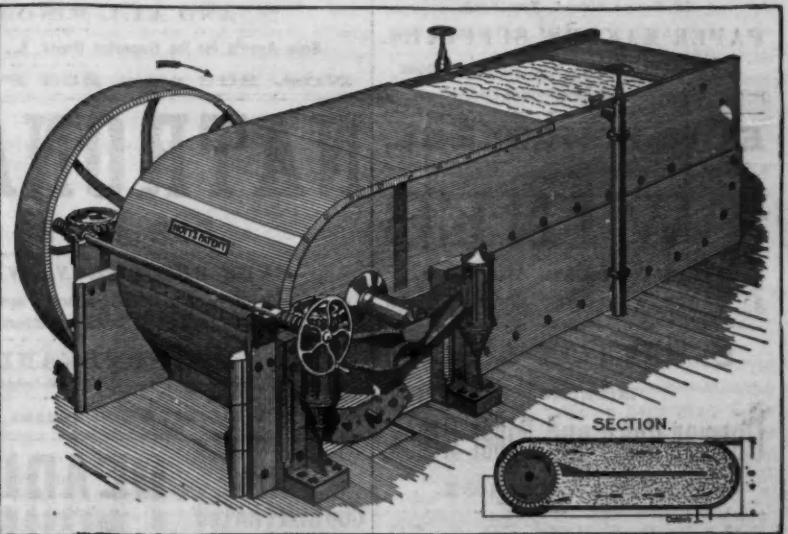


USED FOR REFINING PAPER STOCK OF ALL GRADES AND QUALITIES.

THESE ENGINES treat the stock differently from any others, and in a manner more nearly correct, both theoretically and practically. The fibres are not cut by the action of the knives, but are drawn out gradually, and properly finished. By using this Engine, stock can be taken from the beaters three to four hours sooner than if finished altogether in them, thus practically increasing the capacity of the mill. The curved knives are so formed as to avoid unnecessary close contact at any point, and this will account for the relatively small amount of power required to drive the Engine, the great durability of the knives, and the superiority of the product. Cons should revolve 400 times per minute to produce the best results. Floor space, 8 feet by 4 feet. Distance from floor to centre of shaft, 22 inches.

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THE PUSEY & JONES COMPANY,
Builders of Paper Machinery,
WILMINGTON, DEL.

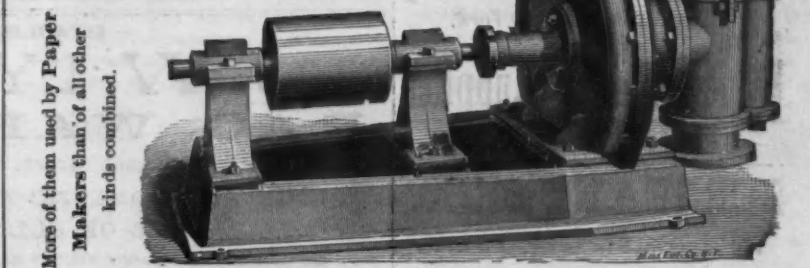
HOYT'S PATENT BEATING ENGINE.



FOR PARTICULARS ADDRESS **JOHN HOYT, Manchester, N. H.**

THE OLD RELIABLE HEALD & SISCO

Centrifugal Pump.



MORE OF THEM USED BY PAPER MAKERS THAN OF ALL OTHER KINDS COMBINED.

— MORE THAN TEN THOUSAND IN USE. —

CAUTION!—The Suction Primer is patented, and the right to make and sell the same belongs solely to us; and we hereby give notice that we shall protect ourselves against any infringement of our rights by manufacturers making, and parties using, said Primer.

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A PERFECT WATER PURIFYING SYSTEM
In constant use by Cities, Towns, Water Companies, Factories, Mills, Steam Boilers, Public Institutions, Private Residences.

INDISPENSABLE TO PAPER MANUFACTURERS.
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AGENTS FOR THE UNITED STATES
Whitehead's Felts and Jacketing and Curtius' Ultramarine.
Extra Extra Heavy Canvas Dryers, all widths,
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ALWAYS IN STOCK AT LOWEST PRICES.
Satisfaction Guaranteed. Send for Prices.

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DEALER IN
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SERGEANT BROS.,
132 Nassau St., New York, P.O. Box 3709.
HAVE ALWAYS ON HAND AND TO ARRIVE
**FOREIGN RAGS,
JUTE AND PAPER STOCK,
CHEMICALS, CLAYS,
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ALSO AGENTS FOR
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WOOD PULP,
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JOHN H. LYON & CO., 10 & 12 Reade St.,
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—AND—
IRA L. BEEBE, 132 Nassau St., New York,
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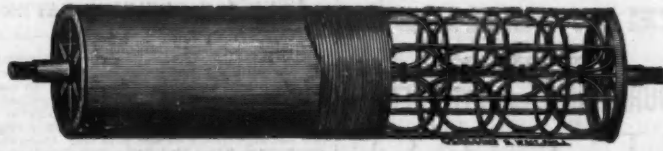
**PATENT
FLEXIBLE
RIVETED**
MONARCH RUBBER BELTING
Warranted Specially for Use in
PAPER MILLS, or wherever an extra strong and perfectly
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—MANUFACTURED ONLY BY—
THE GUTTA PERCHA AND RUBBER MFG. CO.,
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DECKEL STRAPS, RUBBER-COVERED ROLLS, HOSE, PACKING, AND ALL OTHER KINDS OF MECHANICAL
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H. C. HULBERT & Co.,
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SOLE AGENTS FOR OVER TWENTY YEARS FOR THE SALE OF
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