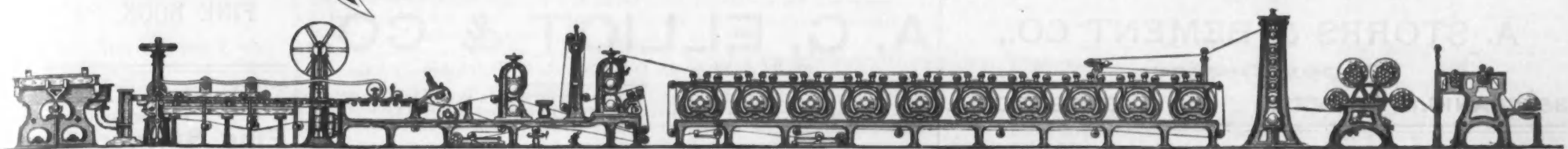


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# THE PAPER TRADE JOURNAL.



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

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## Trade Topics.

### Paper Calendering Machine.

An illustration is given of an improvement in means for insuring the introduction of the leading end of the web of paper between the bite of the successive calendering rolls of the series, and also in means for keeping the surfaces of the rolls free from adhering matter and for cooling the rolls, as may be needed.

The framework A has two bearings, C C, in which is mounted a rock shaft, a, having a forwardly extended arm, a', jointed to a rod, a'', connected to a foot treadle, a''', pivoted at a'. The rock shaft carries three arms, a'', having at their ends immediately over the roll B and near one end thereof suitable bearings for the journals a'' of one or more feed rolls, a'', which latter normally stand with their peripheries just above the periphery of the calendering roll B, but out of contact therewith.

Each arm, a'', below the rock shaft has hinged or jointed to it a narrow directing plate or finger, b, concaved to partially surround the roll B near one end, suitable weights, applied to the arms, acting not only to normally keep the feed roll or rolls, a'', elevated a little above the top of the roll B, as in Figure 2, but also to keep the directing plates pressed by gravity toward the roll B.

In practice a feed roll or series of rolls is needed at only one end of the roll B. The feed rolls co-operating with the upper calendering roll B, having engaged the web and started it forward, the web passes between the directing plates or fingers b and is by the latter directed between the nip of the rolls B B'.

The rolls B B' have co-operating with them near one end, respectively, suitable directing plates, b' b'', which are hinged, respectively, to angle bars, c' c'', the latter being extended across the machine parallel to the rolls and being attached, respectively, at their ends to the lower ends of arms 3 4, having suitable hubs or collars, which surround, but are fixed to pipes, d' d'', parallel to the rolls B B'. The directing plates b' b'', shaped as are the directing plates b, are also weighted, as at 40, the weights being sufficiently heavy to keep the said plates each pressed by the force of gravity toward the roll next to it. By hinging the directing plates to the angle bars any plate may be turned back and away from the roll next to it if it is desired to gain access to that roll—as, for instance, should the paper for any reason become clogged at that point. The machine represented has other pipes to which are fixed hubs of other like arms, 3 4, to which are connected other angle bars. Each of these angle bars carries one of a series of scrapers or clearer plates or blades, e' e' e'', the edges of which normally bear against or stand quite close to the peripheries of the calender rolls, being kept in position in a yielding manner by catches f' f' f'', which engage spring arms g' g' g'', each spring being connected by a screw, as 6, to a collar, as 7, fast on one of the pipes carrying the angle bars referred to.

The machine requires catches at only one end, and as the springs are attached to the collars fast on the pipes carrying the scrapers or clearers the latter are held with their edges against the rolls under a yielding pressure. These clearers by contact with the peripheries of the rolls prevent the accumulation thereon of any dust, dirt, lint or sizing coming from the moistened paper. To turn the scrapers fully away from the rolls for any purpose it is only necessary to move the catches f' f' f'', to release the springs engaged by them. The pipes referred to are mounted at one end in bearings in uprights h and at their other ends in bearings connected with hollow headers, and are free to turn therein. The hollow headers are filled preferably with cold air through or by an inlet pipe, and in practice the air may be supplied from any usual fan

or pump. The hollow air pipes d' d', &c., constitute supports for the clearers, and the latter constitute supports for the directing plates. These pipes have holes or openings, to be uncovered or controlled by suitable valves.

As soon as the leading end of the web has been guided between the two rolls B B' the foot of the operator may be relieved from the treadle and the feed rolls will rise. The directing plates b' b'' by their co-operation with the end of the web avoid hand manipulation preparatory to entering the web between each pair of rolls.

### Trials and Triumphs of a Millwright.

Thirty-seventh Paper.

[WRITTEN FOR THE JOURNAL.]

By JAMES F. HOBART.

"No. 3 boiler is leaking again," was the greeting Tramp received one morning as he entered the mill.

"Where does it leak this time?"

"Oh, same old place—around the hand hole plate."

"All right. I'll fix it so that it won't leak again very quickly. When are you going to pull that boiler off?"

"Right away, as soon as we get up steam in No. 5."

Tramp had seen considerable trouble with the hand hole and man hole plates of all the boilers during the time that he had been in the mill, and had only lately got down to the wherewithal of the true inwardness of the business. He had found that the

leaking was almost entirely caused by the plates becoming corroded, and that, in turn, the corrosion was caused by the steady running down over the plates of small quantities of water which had leaked out of the boiler around the hand hole plate owing to the poorly fitting joint.

It will be an astonishing object lesson to one who never had experience in the matter to see what a powerful corroding mixture can be formed out of plain hot water and common soot from coal. The two combined upon the surface of a boiler will soon eat away the iron to half of its original thickness. This mixture is what eats away the iron around hand and man hole plates, and it can best be prevented by making a tight joint to begin with, thus stopping the water, without which the coal soot does no harm.

Tramp found that leakage and soot had corroded the plates so that it was hard to make up a tight joint around the hand hole plates, and it was necessary to dress down the iron a little with a coarse file before attempting to make up the joint. It was not possible to do much to the iron, as there was very little chance to get at it, but by putting through the hole the shank half of a broken bastard file it was possible to work down the irregularities a little.

The surface of the hand hole plate was then thoroughly cleaned and three or four turns of common wicking were wound around it. Next a rubber gasket was selected, which fitted tightly against the wicking. It doesn't pay to fool around trying to cut out rubber gaskets in the form of ellipses for either man or hand holes, as they can be bought already cut out, of any desired size or shape.

The face of the rubber gasket (where it was to go against the boiler plate) was covered with a mixture of plumbago and black oil put on fairly thick. The plate was then inserted in the boiler and the nut was

screwed up pretty tight, after which the plate was taken out again, and it could easily be seen where the holes in the iron were located, owing to the oil and plumbago not having been squeezed out so much when under pressure at these points. Then, with some asbestos shredded up pretty fine and mixed with heavy cylinder oil or tallow to hold the mineral in place until the plate was adjusted, the gasket was packed under the parts over the holes in the boiler shell. The amount of packing to be put in had to be determined by judgment, and it had to be just enough to fill the cavities in the plate.

With a plate put in in this manner Tramp had no trouble in keeping a tight joint, and the plumbago made the joint break open easily without harming the gasket, so that the same one could be used again and again. For the man hole plates it was found that a gasket of asbestos board about one-fourth of an inch thick was the best that could be used. Just before the joint is to be made up soak the asbestos in hot water until it is soft, then smear well with plumbago and oil and make up the joint. When the joint is opened, all that is necessary will be to soak the gasket in hot water again, put on

sene oil on the waste and the torch thus made was lit and pushed into the boiler through the front hand hole (the back one had not been taken out). The interior of the boiler was very plainly illuminated by the torch light, and at the back of the boiler, just forward of the back head, Tramp saw a pile of dirt and mud, which looked as if a wheelbarrow load had been dropped there.

"How's that, Mr. Engineer, for a clean boiler?" asked Tramp, as the engineer peeped into the boiler.

"Thunder! Where did all that mud come from?"

"It came," said Tramp, "from running a steam generator for nine months without cleaning it out, something that is enough to spoil any boiler. You never should allow a boiler to run for over a month without taking down the hand hole plates and washing out the shell thoroughly; and every three months at least the man head should be taken out and a man put into the boiler to scrape off any scale or other deposit that may have formed on the inside of the shell."

"Shouldn't think a man would have to go in so often?"

"You shouldn't think? Well, 'sposin' you know, for once!

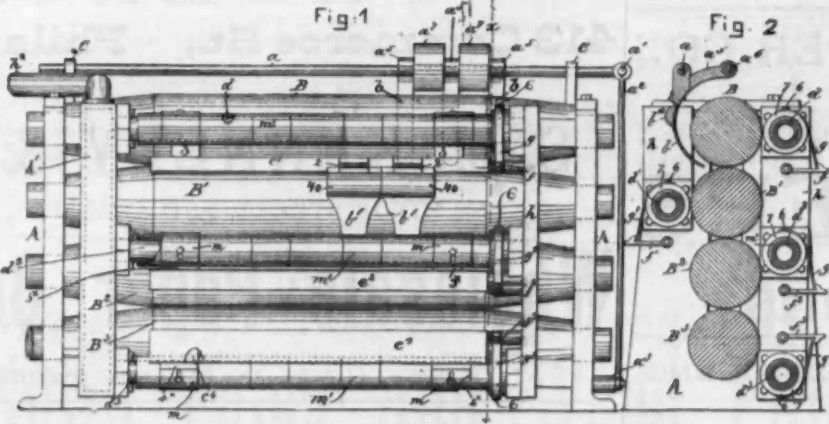
How in creation is a man to know that the boiler is all right if he don't go into it more than once in a dog's age? This running a boiler 'by guess' doesn't pay. Every body who tries it is apt to go up some day with the typical 'three gauges of water and 60 pounds of steam,' and nobody knows why that boiler let go. Go into the boiler often and you will know when a

stay bolt lets go or a brace breaks off. Perhaps one or two broken stay bolts or braces will do no harm, but keep it up till enough of them let go, and up goes the old teakettle."

"It looks as if there was something in it," said the so-called engineer, "and I believe I'll do it," and he did, and thereafter burned less coal, and the cost of repairs was also much reduced.

A friend of Tramp's has been having trouble with the large knives used on a paper cutting machine for trimming sheets or for recutting into smaller sizes. As stated, the knives have been giving trouble. They would not stand up to the work well when cutting heavy stock, especially cardboard. The knives had been ground on a wheel which had been worn down considerably, and which was originally only 18 inches in diameter. The emery wheel in question was used with water. A suspicion of the source of the knife trouble induced the manager of the mill to write to the maker of the knives and ask his advice concerning them. A reply was soon received that he (the maker of the knives) would not warrant them an hour if ground on an emery wheel. The letter further stated that a grindstone should always be used for sharpening the knives.

After this letter was received Tramp's friend was told not to grind any more of the good knives on the emery wheel, so he used a file with which to whet up the knives when they got dull, and this operation was repeated three or four times with each knife while a grindstone was being rigged up. It was decided to make use of the regular grinding machine, with the exception of the arbor and bearings on which the emery wheel was mounted. To this end a frame was made of Georgia pine, 4x8, to receive the bearings for a shaft nearly 3 inches in diameter, on which a 48-inch stone



IMPROVEMENT IN CALENDERS.

more oil and plumbago, and it will be as good as ever, and will last two or three years when opened every three months, if carefully handled.

When a plate was so very bad that it was impossible to pack up the corroded places, Tramp found that he could get a tight joint by shredding some asbestos and then putting a rope twisted up from it around the hand or man hole plate under the rubber gasket. The elasticity of the asbestos rope would allow the plate to be screwed down tight enough to prevent all leakage. The leaky hand-hole plate was fixed in this manner, and has been tight since.

"I was in a mill the other day," said Tramp, "and they were just taking out the hand hole plate after a nine months' run, during which time the boiler had not been opened once."

"Why do you open the boiler?" was asked of the engineer.

"She's got to foam in, an' I'm goin' to clean her out," was the reply. And "clean her out" they did; and need enough there was of it. The hose was put into the boiler and the full power of a fire pump was turned on, bringing away a stream of mud almost as large as the hand hole. The boiler feed was blown off through the feed pipe from the front end of the boiler, and after no more mud came out with the water the boiler was pronounced clean and the engineer set about making up the hand hole joint preparatory to filling the boiler with water again.

"Say," said Tramp, "let me look into that boiler, will you?"

"Look in? Yes, you can go in if you want to, in you'll crawl in through the hand hole."

"Guess 'twill do to look in," remarked Tramp, and he picked up a bunch of waste in the engine room and tied it around the end of a pole which happened to be in the boiler room. Then he poured some kero-

could be hung. The frame had a girder boxed in and bolted, to which the bed of the sliding carriage of the grinder could be fastened. It was, therefore, only necessary after the stone was mounted on its shaft to bring the carriage bed in front of the wooden frame and bolt the two firmly together, both standing on the floor, and each being entirely separate and self-contained.

It was expected that the knives would stand the work better after they were ground on the stone, although just what difference that would make has not been so clearly stated that it is fully understood either by Tramp or his friend. As long as both the grindstone and the emery wheel are kept wet while cutting, it would seem that the only way in which the knife can be made to stand better by the use of the stone is in the increased thickness given the knife just back of the cutting edge when the stone is used. This is caused by the smaller wheel concaving the knife much more than is done by the large grindstone, the angle from toe to heel of the bevel being the same in both instances. In comparing the bevels cut by wheels 15 and 48 inches in diameter, the difference is considerable and the larger one leaves the knife much stronger at the point indicated above.

Should there be any other real (not fancied) difference, both Tramp and his friend would be much pleased to learn the why and wherefore of the business, and stand corrected in a matter regarding which Tramp at least is at present rather skeptical in his belief.

### Testing Colors For Fastness.

[WRITTEN FOR THE JOURNAL.]

So much has been written and talked about the relative fastness of the colors used by the wall paper maker and the manufacturer of colored and coated papers that a method simple and practical enough to be adopted as a standard by the paper trade would seem to be a desideratum. Such tests, as a rule, are only made by mills employing a chemist, or where the foreman is possessed of some expertness in this direction, and generally speaking paper makers take their chances on the colors they buy without taking the trouble to find out anything about them.

This need not be so, as there are many tests quite as simple as that described below, the use of which regularly on all purchases would give the paper maker much valuable information and save him thousand of dollars in the course of a year. There are in the market many cheap aniline lakes (and some pretty expensive ones) which are used as body colors, and are quite brilliant as a rule. They have mostly been prepared by a slipshod method of precipitating the aniline color on a flocculent mineral substance, and are simply conspicuous by their cheapness and general worthlessness, chief among which undesirable features is their want of ability to resist alkalies and sunlight. Strange to say, the owners of small mills, who make their purchases in small quantities, and who can least of all afford to be cheated, are usually the buyers of this kind of stuff, and these are the people who often attach value to such rubbish, where none is present, as a simple chemical test will easily show.

It is evident that for use in manufacturing wall and colored papers no qualities can be more important than that of permanence toward sunlight and resistance to alkalies. To test such colors (i. e., aniline lakes, &c.) the following method will be found simple, practical and efficacious: To test the resistance of any color toward alkali use a normal solution of caustic soda, of which the specific gravity is 1.046 at 15° C. One gram of the color is ground up with 10 cubic centimetres of the soda solution, and the mixture is allowed to rest for six hours. A blind experiment is also made with the same quantity of color and the same volume of a solution of sugar

(Continued on page 1108.)

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Correspondence.

Fox River Notes.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., December 5, 1892.

The week past has been made interesting to paper manufacturers in this valley by the test of two sorts of sulphite digesters with which they were previously unfamiliar. These are the Solomon Brunger digester at the Kimberly mills of the Kimberly & Clark Company, and the old deoxidized metal digester at the mill of the Badger Paper Company at Kaukauna, which has just been fitted with S. R. Wagg's patent lining. This is the first practical test which has been made of the Wagg lining, Mr. Wagg being superintendent of the mills of the Fox River Paper Company, of Appleton.

Thus far two cookings have been taken from the Solomon Brunger digester. The test seems to have been successful, the product of even the first cooking being perfectly white and of excellent quality. The lime scale formed instantly on the inside of the digester, preventing any corrosion or discoloration of the fibre. Two more digesters of the same patent have been ordered and are expected to be here sometime this month. Orders have been given to allow no visitors in the mill hereafter. The sulphite department is being completely rebuilt, and some new processes not yet patented are being experimented with by Superintendent Escott. In six months the whole system will have been changed.

The first cooking was taken off of the Wagg digester at Kaukauna at 1 o'clock this afternoon. The fibre is of beautiful quality and the digester seems to be a success. Examination showed no change in the lining. The lining is made of the acid proof tile used in the Mitscherlich digesters, but the joints are closed in a peculiar manner with hard metal alloy instead of with cement. The Badger people have given an order for lining their remaining digesters in the same way. This lining can be put into any sort of digester which shows signs of giving out, as well as in digesters originally new.

The question of procuring wood pulp is getting to be most vital with the print mills in this valley. There doesn't seem to be any in the market at any price. Nothing lower than \$1.60 per 100 is being paid, and mills cannot find it at that price. Manufacturers are scraping along as best they can, but it looks as though some would have to shut down before long for want of raw material. The general opinion is, however, that the

pressure is but temporary, and that by the first of the year pulp will be obtainable as before. The water has not gotten low enough to cause all the mischief, most of which must be ascribed to other and, temporary causes. Whatever the cause however, the result is very apparent, and a lively begging and borrowing is going on to keep the engines turning.

The Wisconsin River Paper and Pulp Company started its second paper machine about two weeks ago and it is running along in a very smooth and satisfactory manner, the mill producing about 20 tons of print paper per day. This company has lately increased the capacity of its wood pulp department 50 per cent. by putting in four more of the largest size "New England" grinders. It is now making about 24 tons of wood pulp daily.

The brickwork of the main buildings of the Plover Paper Company's plant on the Wisconsin River will be up and ready for the roofs this week. The machine building and boiler house are now completely inclosed. The stonework in the wheel pits is also finished. None of the machinery has yet arrived.

The dimension work on the big addition to the Neenah Paper Company's mill is completed and interior arrangements are now being attended to.

The roof timbers of the rag department building of the new mill of the Fox River Paper Company, in this city, are now being put in place, the brickwork having at last been completed. Two of the steam boilers have arrived from Hamilton, Ohio, and are now being put in place.

The scheme for a straw wrapping mill at Menasha, which was referred to in these columns several weeks ago, seems to have fallen through. It will probably not be heard from again for the present.

The stone flume and foundations for the new pulp mill being erected in this city by the Messrs. Van Nortwick are completed, and the frame of the building is now rising above them. The product will be in demand as soon as it can be produced.

The Badger Paper Company, of Kaukauna, has called in all its agents in the wall paper department, the output for the year being secured. The fifth machine has lately been put in and is now in operation.

The statistics of navigation on the Fox River, just issued, show that 1,173 boats passed up and down the river during the year just closed.

The new residence being erected in Neenah by F. C. Shattuck is now plastered and ready for the interior finishing. The walls of the new stone residence of Mrs. C. B. Clark are up as high as the

second story. The house will cost \$40,000 and will be one of the finest in Neenah.

Albert Gilbert, of Menasha, will depart this week on a vacation visit to the State of Mississippi.

Charles Wilson, of Minneapolis, was in town last week on business. He has lately sold 208 horse power of Babcock & Wilcox boilers to the Ishpeming and Negaunee Street Railway Company. Mrs. Wilson and her two sons arrived last summer from England and all are now pleasantly located at Minneapolis.

H. T. Bartow was in town several days a week ago. He is now with Charles D. Brown & Co., of Boston, and has had a very successful trip. His firm is about to add to its business the sale of chemicals and all sorts of mill supplies.

C. F. Wilson, of Albany, was a recent visitor to this valley.

FOX RIVER.

Miami Valley Notes.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, December 9, 1892.

All of the mills in this great paper producing section of the world are busy, and I do not exaggerate a whit when I put it "rushed." The manufacturers for the past several months have not known what it was to wish for fat orders. They are still coming in unsolicited, as many traveling salesmen have been withdrawn, with nice salaries running on just the same. While there is necessarily continued activity in the mills, the past fortnight from other standpoints has been one of the duller of the season.

Paper stock dealers are likewise in the vortex of a commercial whirlwind, while the paper novelty men are handling treble the business they handled the previous year.

At the end of the year 1892, when the books are balanced, many of the manufacturers will be astounded at the growth of their business. A résumé will show a phenomenal fiscal year, one of unlimited prosperity.

All of the preferred stock of the Stillwell-Bierce & Smith-Vaile Company, lately consolidated, has been taken. The \$500,000 on the subscription books was grabbed by discreet financiers and stable business men. Subscriptions placed on the books amounted to \$1,000,000 in a short time, and as a consequence many were refused.

The adjustment of the losses occasioned by the fire at the Tytus Paper Mill at Middletown equalled the report of the loss first given publicity. Work at repairing has been progressing with satisfactory haste. Fires are never welcome in a paper mill.

They seem to visit the Miami Valley when the wheels of machinery are wanted to run the fastest. Conflagrations and cyclonic visitations have been the unwholesome diet of the mills hereabouts this summer and fall.

The projectors of the proposed new fine writing paper mill for Dayton, when again seen this week, stated that they had not yet liberty to talk. When the plans are fully formulated and matured interesting facts will be given. The mill is a certainty and will be the third of its kind in this valley. The other two are owned by the Harding Paper Company. Two of the originators of the new Dayton mill are prominent blank book manufacturers, W. W. White and Thos. B. Reynolds, who recently built a large new factory in the eastern part of the city.

As the new year approaches several newspaper enterprises are being cast upon the uncertain waters.

The *News-Citizen*, of Oxford, has been enlarged into a metropolitan sized sheet.

There is talk of the *Evening Press* merging into a bigger paper, while a rumor that the Cincinnati *Commercial Gazette* intends establishing a plant here needs verification.

*Buzz*, a humorous weekly on the order of the New York humorous press, has been started humming in Dayton by L. G. and E. S. Reynolds, blank book manufacturers. They undoubtedly will make a success of their new departure. The artistic work is the result of *Life's* best men.

Ed. B. Weston's "Columbia" cutter is having a large and well merited sale. The invention is ingenious and designed to make the machine grow in popular favor.

The Franklin Paper Mill employees turned out en masse to participate in a jollification meeting this week. They were a little late.

Truly this has been an "oyster year." Up to date Dayton novelty dealers have been in big oyster pail orders up to their ears.

W. J. Aull, of the firm of Aull Brothers, paper dealers, is now off on his Southern tour. He found his Western trip fraught with interest to himself and his company in the way of orders.

In all probability the twine factory at Middletown will add more men to its force and increased facilities will be made. The factory is enjoying a substantial boom.

Two weeks ago a horse and buggy belonging to W. M. Mills, vice-president and general manager of the Dayton Globe Iron Works, was stolen by a dishonest colored servant in his employ. It has now developed that the thief sold the "rig" to a well-

known liveryman in consideration of the exchange of a watch.

Joe Hickman, formerly connected with the Ohio Paper Company, Miamisburg, has accepted a situation in the White Line Power House, this city.

Thanksgiving Day left many shining memories of pleasant events. All of the paper mills in this valley were closed down.

Men directly and indirectly interested in the paper trade were counted by the dozens at the great championship football game between the Dayton and Otterbein University clubs the other afternoon. R. R. Dickey, secretary of the Dayton Globe Iron Works, played his position as quarterback well, making timely passes. His clever interference saved the local team.

In the death of their little daughter, Alice, Mr. and Mrs. Charles Harding, of Franklin, are deprived of the sunshine of their home. This has been the second death in the family lately, and all of Mr. Harding's friends in the paper trade extend their sympathies.

Alexander Ure, aged sixty-nine years, for thirty-five years a faithful employee of the Oglesby Paper Company, of Middletown, died suddenly of heart failure last week. The funeral was largely attended by his brother workmen.

W. E. Crume, of the Crume & Sefton Paper Novelty Company, was one of the appraisers in the late change of the Stillwell & Bierce Company.

Considerable thieving in the Gardner and Tytus paper mills has been going on at Middletown for some time. The night prowlers steal machine pockets, brass valves and other articles of more value to the mills than to themselves.

Albert Strong, of Black & Clawson's, Hamilton, who let a heavy weight fall upon his right foot the other day, is improving, although the foot is badly mashed.

"Ben" Mills had two fingers fearfully mangled in a machine at the strawboard mills in this city this week.

A manufacturer of heavy paper here seems to think that the decision of the English Court of the Queen's Bench, that grocers may weigh paper with coffee, sugar, tea, &c., without being guilty of fraud, carries more weight than the average dealer thinks. Extra heavy paper will be in great demand in England.

Several paper men of means in this city are interested in a carbon manufactory now under construction at Noblesville, Ind.

A number of the paper manufacturers of Dayton complain with pronounced vehemence of the poor service afforded them

THE GLEN MFG. CO., 244 WASHINGTON STREET, BOSTON, OFFICE: THE HAVERHILL PAPER CO.  
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Manufacturers of PURE ROPE PAPERS, Middletown, Ohio.

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. SEND FOR SAMPLES AND PRICES.

for shipments. All of the railroad companies are busy, and are even running engines secured from other roads, but they cannot accommodate all. This unfortunate circumstance heaps expense and inconvenience on the manufacturers.

Chas. D. Mead's Chillicothe mill was closed down one day this week on account of delay in shipments of material occasioned by the crowded condition of the freight yards.

Samuel Blau, of the paper stock firm of M. Blau & Sons, visited the paper men in the southern part of the valley the past week. They all greet Mr. Blau with cheerfulness, recognizing his social and business qualities.

George Kimberly, of the Kimberly & Clark Company, whose interests are scattered throughout the North, was in the valley the past week.

The complaint of low water among paper mill men has become distinct and painfully audible in this valley; but the cry is general, reports from all over the country being identical with those sent out from this section. It will be only a question of time until electricity as a motive power will replace nature's scanty flow. Coal, however, will not be entirely shoveled to the rear in this city. The fall of water in Dayton is only a few feet and the mills depending on it are equipped with engines.

The Ohio Valley Paper Mill, at Amanda, is getting ready to make tissue paper. The manufacture of tissue paper, like that of fine writing paper, is decidedly limited here.

The day force of the Dayton Paper Novelty Company, which also works until 10 o'clock at night, was given one week's night work off to rest. The work is straining upon the men, although they are benefiting themselves in a financial way.

At least thirty railroad men, representing the heads of the freight departments of as many roads, happened in Dayton the other day. They came from all parts of the country and, singularly, unknown to themselves for a time, were all bent on the same business. The bait was a consignment of freight from the Stillwell & Bierce Company to Texas. Too many irons were in the fire, but only one became red hot. Twenty-nine of them were as cold as icicles. M.

**St. Louis Notes.**

[FROM OUR REGULAR CORRESPONDENT.]

ST. LOUIS, Mo., December 6, 1892.

Your correspondent being absent from the city at the time and immediately after the death of Mr. Lockwood could not repeat earlier the sentiments of sincere regret expressed by the local paper world at the departure of one whose life was devoted to fostering and advancing every interest of the trade and whose influence was perhaps more potent for its good than that of any other man.

This recognition of his power and purpose is entirely aside from the admiration of those who knew him personally and who had felt the influence of his personality. It comes from all whose interests he shared and forwarded; from the paper dealer, the stationer and the printer, each vying with the other in paying tribute to his memory.

At a recent meeting of the St. Louis Typothetae, after appropriate eulogistic remarks from various members, the following resolutions were adopted:

That it is with unfeigned sorrow that we learn of the death of Mr. Howard Lockwood, publisher of the *American Bookmaker*; a prominent member of the New York Typothetae and a faithful representative in the United Typothetae of America, where for six years he has rendered valuable service in giving character and tone to the organization.

That this report be spread upon our records, and a copy of the same be furnished for publication in our trade journals.

The volume of business is better than during the lull following the election; in fact St. Louis can indulge in no end of self gratulation over its increasing prosperity and growth. Of this there is no surer evidence than the bank clearings, which last week broke all local records by reaching the princely amount of about \$30,000,000.

Great sympathy is expressed for T. O. Sawyer, of the paper company bearing his name, at the death of his daughter, just reaching womanhood. Sickness in the shape of typhoid fever, which is very prevalent, but fortunately of a very mild type, has invaded all of the paper houses of late.

I see an item on its rounds throughout the country announcing the loss by the Graham Paper Company of \$25,000 by fire

in its paper warehouse. The facts are as follows: There was a small fire about two blocks distant from Graham's rag packing house, but at no time did it occasion the slightest alarm. This rag warehouse is about 2 miles distant from the paper jobbing department.

Amid the direful rumors of no rags, no bleach, no water, no more cheap paper, &c., which fill the papermaker's horizon, comes a ray of hope, not much larger than a man's hand, but still something to tie to, in the statement that a Chicago firm has discovered that wood pulp is an admirable substitute for sheepskin in the manufacture of banjeos. It adds: "The tone leaves nothing to be desired." This happy assurance is indeed a sustainer.

Since my last letter this market has been visited by Mr. Kimberly, Jr., of Wisconsin; Mr. Darwall, of the New York and Pennsylvania Company, New York; Mr. Swain, of the Whiting Paper Company; Mr. Krueger, of the Western Coated Paper Company; Mr. Castle, of the Beebe & Holbrook Company, and Mr. Mohr, of Reading, Pa.

Arthur Hill, of the Holyoke Envelope Company, has been visiting Mr. Pirie, of the St. Louis Paper Company.

"Ben" Brown, of the Dickinson Paper Company, and H. M. French, of the Graham Paper Company, have recently returned from the Fox River country. D.

**Holyoke Notes.**

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., December 8, 1892.

City politics have occupied the attention of most of our citizens during the past two weeks, and we have just emerged from one of the hottest municipal campaigns ever waged in the city. Dennie L. Farr, who has long been identified with one of the largest manufacturing concerns in the city, was elected mayor by a majority of nearly 1,000.

Business has not changed very much since last week and the volume of trade is about the same as that of a year ago. Most of the manufacturers could handle more orders very comfortably, but the fine writing and book mills are fairly well supplied. Prices are unchanged and the ruling figures

have been well adhered to. There is still some talk of a shut down of the fine mills, but nothing definite has been done about it. A few manufacturers met recently and talked the matter over, and another meeting may be held soon to take some action. It is barely possible that another advance in prices may be decided on, but thus far it has been discussed only and nothing may come of it. The shut down, in case it is ordered, will not last over ten days.

The suit of Frank H. Smith, formerly bookkeeper for the Judd Paper Company, against the Connecticut River Railroad Company, which has been on trial a week before the Superior Court, was finished this week and the jury returned a verdict of \$20,000 for Mr. Smith. This case has attracted a great deal of attention, and it was a hard fought legal battle. The railroad corporation has asked for another trial, but it is likely that a settlement will be effected before it will begin.

It has been rumored on the street for a number of days that Postmaster Prescott, who has held his position for thirty years, will resign on January 1, to become treasurer of the Nonotuck Paper Company, in which he is interested. Mr. Prescott does not deny or confirm the rumor.

Several paper makers were elected to various city offices on Tuesday. William Reardon, superintendent of the Albion Paper Mill, was elected a school committee member at large; A. W. Esleek, treasurer of the Beebe & Holbrook Company, will serve Ward Seven in the school board; David Toole, Patrick Gere and C. M. Hartzel, employed by the Albion and Parsons paper companies, will serve in the common council.

The James Ramage Paper Company has just made its corporation return as follows: Fixed capital, \$85,000; capital paid in, \$85,000; Assets—Land and water power, \$27,000; buildings, \$21,000; machinery, \$27,000; cash and debts receivable, \$45,573; manufactures and merchandise, \$21,801; total, \$152,464. Liabilities—Capital stock, \$85,000; debts, \$37,804; profit and loss, \$29,659; total, \$152,464.

George W. Herring, aged eighty, a veteran master mechanic, died at the home of his daughter last week. He received a stroke of paralysis some time ago and

never recovered from its effects. He leaves a son and a daughter.

Euclid Smith, employed by the George C. Gill Paper Company, was badly injured early this week by having his arm caught in the dusters.

William Bowers, an employee of Buchanan, Bolt & Co., wire weavers, received the welcome intelligence, a few days ago, that he has fallen heir to \$25,000. The property is located in Scotland and Bowers will soon leave for his native land to take possession. He is a worthy man and will make good use of his new found property.

The mill owners at South Hadley Falls have expended about \$200,000 during the past year on improvements. The Carew Company has put out about \$150,000, and the capacity of the mill is very nearly doubled. The Hampshire Company's new stock house cost about \$8,000, and considerable room has been gained by its erection.

The Whiting Paper Company has ordered about 750 copies of the new work, "Picturesque Hampden," which will be distributed among its patrons. An edition of 10,000 small books containing the article most interesting to the company will be furnished. The book will be illustrated by handsome half tone pictures.

The Valley Pump Company, of Easthampton, has just set a large pump having a capacity of 500,000 gallons a day in the mill of the Mount Tom Sulphite Pulp Company. This company is at present shipping sixteen carloads of fibre a week. The business has steadily increased since the mill began operations.

The Parsons Paper Company has decided to erect another business building on Main street. It will contain two stores.

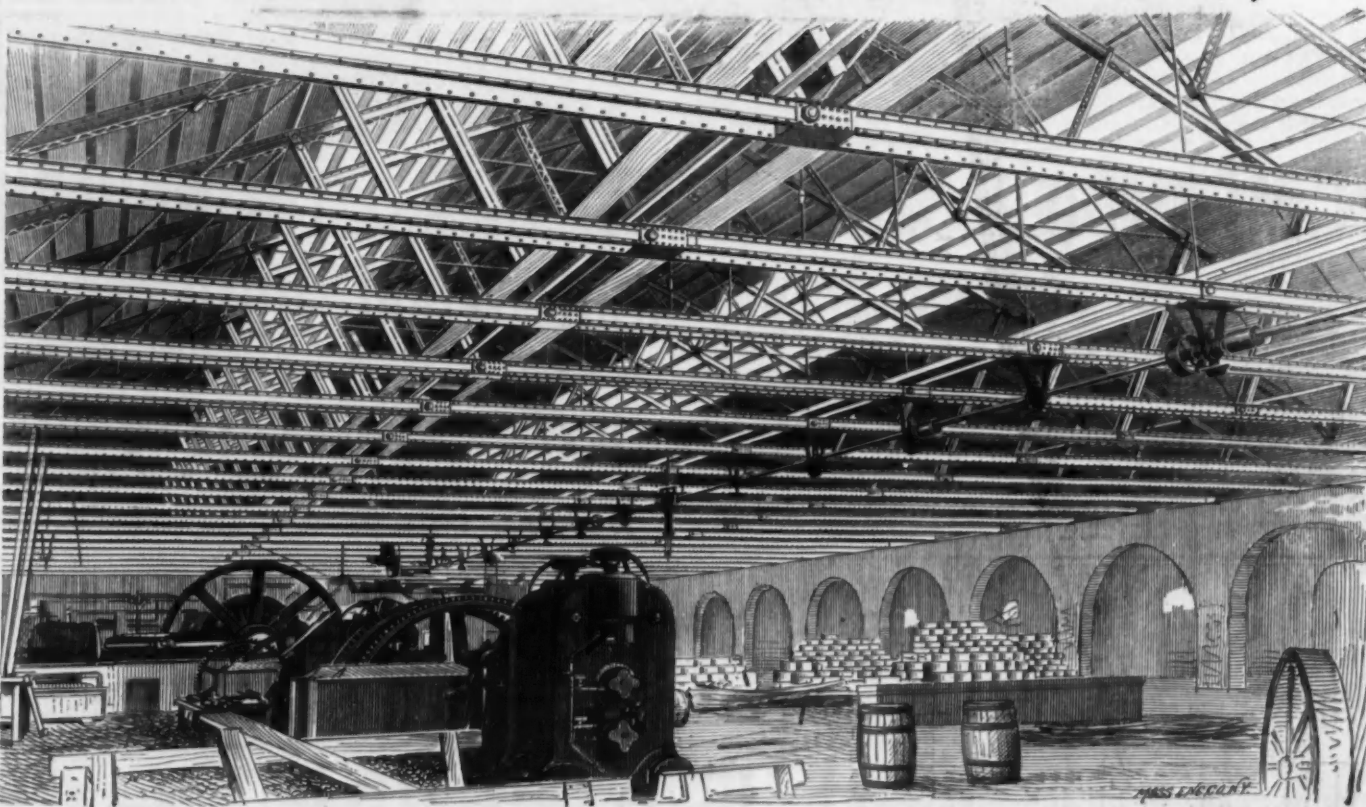
Architect A. B. Tower is making a business trip through Maine this week.

Samuel Snell has the contract to furnish the drainer bottoms for the new Riverside Paper Mill.

W. F. Whiting and wife had a very pleasant wedding reception last evening at the Hon. William Whiting's residence on Elm street. Many Holyoke people and a number from other cities were present. The rooms were very tastefully decorated and it was an enjoyable affair. H.

CHAS. M. JARVIS, Pres. and Chief Engineer.  
BURE K. FIELD, Vice-President.  
GEO. H. BAGS, Secretary.  
F. L. WILCOX, Treasurer.

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GENERAL IRON  
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The accompanying illustration is taken direct from a photograph and shows the construction of an Iron Truss Roof, designed and built by us for the Coe Brass Mfg. Co., at Torrington, Conn. The roof is over their rolling mill, which is a building 118 feet in width and 223 feet in length. The line of brick arches, shown on the right, connects with an adjoining muffle room, which is also covered with an iron truss roof designed and built by us.

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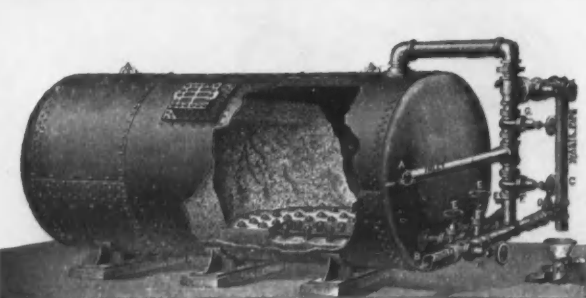
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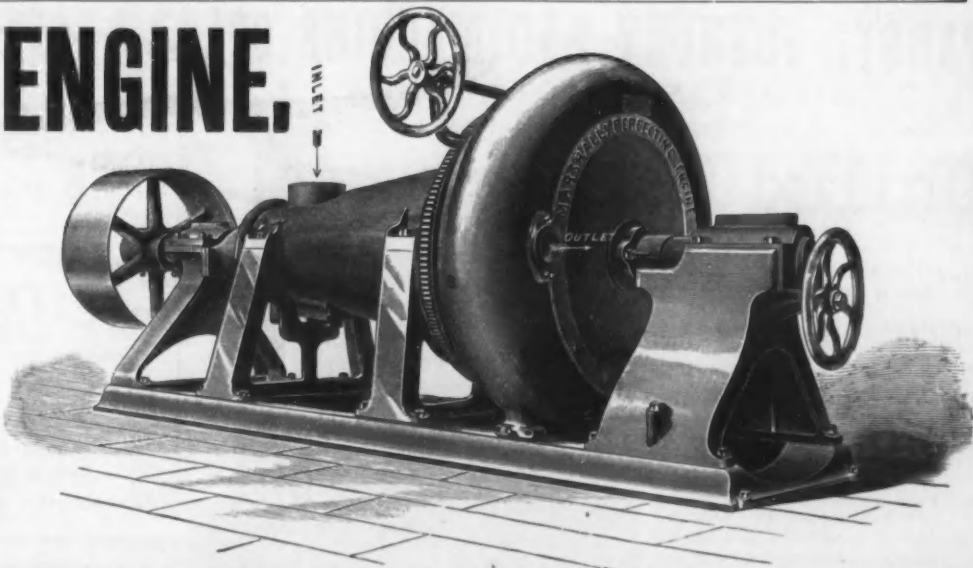
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VERY BEST OF REFERENCES FURNISHED.

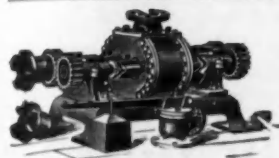
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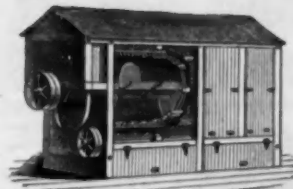
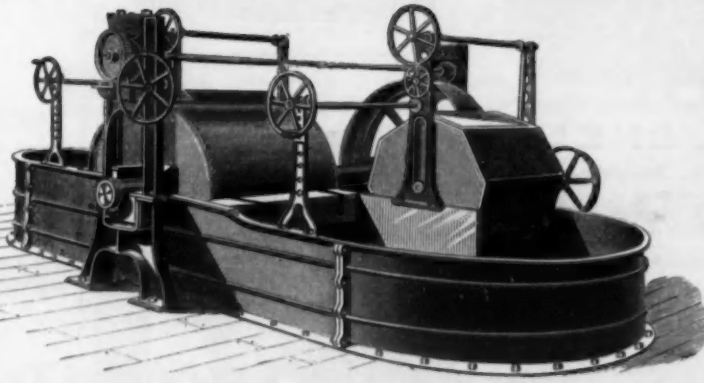
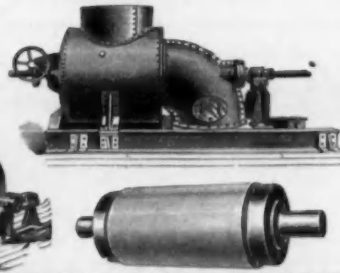
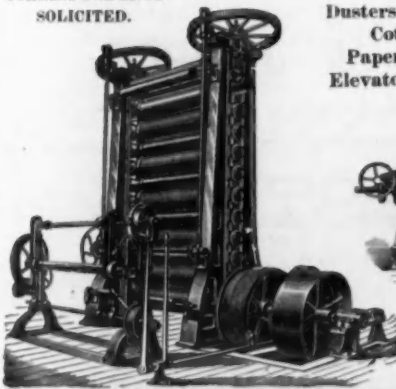


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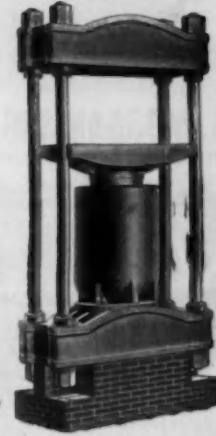
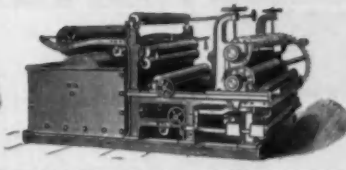
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G. W. KNOWLTON, Pres. Office of THE ONTARIO PAPER CO., JOHN A. DECKER, Supt.  
WATERTOWN, N. Y., August 12, 1890.

THE BAGLEY & SEWALL CO.:  
GENTLEMEN—The following is the record of the 86 inch wire Fourdrinier Machine purchased of you for the past week:  
August 4, . . . 24,335 lbs. | August 6, . . . 24,020 lbs. | August 8, . . . 23,337 lbs.  
August 5, . . . 23,390 lbs. | August 7, . . . 24,010 lbs. | August 9, . . . 24,865 lbs.  
Average per day, . . . 23,992 lbs.  
These figures are the net shipping weight of the paper, averaging 31 lbs. to the ream, 24 x 36 in.  
Yours respectfully, E. B. STERLING, Sec'y.

FRONTENAC PAPER CO., DEXTER, N. Y., August 20, 1890.

BAGLEY & SEWALL CO., WATERTOWN, N. Y.:  
GENTLEMEN—At 8:30 to-night our machine tender shut down to put on a NEW FIRST FELT. The paper was off the reel less than ELEVEN MINUTES. It cannot be done on any other make of machine than the BAGLEY & SEWALL.  
Hastily,  
F. W. SPICER, Sec'y and Treas.

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### "NEW ENGLAND" WOOD PULP GRINDER,

which has a record of making 9,520 pounds fine pulp, dry weight, in twenty-four hours, with 250 horse power; 28,000 pounds good news pulp, dry weight, in twenty-four hours, with three grinders, using 750 horse power; 84,000 pounds news pulp in twenty-four hours, with eleven grinders, using 2,150 horse power. Can be seen in operation daily.

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All machines sold with ample guaranty as to efficiency and NO PAY asked until they perform all that is claimed. We have competent engineers and make no charge for estimates. Plans and drawings furnished. Machines on hand for prompt delivery.

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- Indiana Pulp and Paper Co., Marion, Ind.
- Kane's Falls Pulp Co., Fort Ann, N. Y.
- Umbagog Pulp Co., Livermore Falls, Me.
- Marion Pulp Co., Marion, Ind.
- Hon. Wm. A. Russell, Boston, Mass. (2 orders).
- Nova Scotia Pulp and Paper Co., Mill Village (2 orders).
- G. H. P. Gould, Lyons Falls, N. Y.
- P. C. Cheney Co., East Tilton, N. H.
- National Metal Edge Box Co., Hardsboro, Vt.
- Battenkill Paper Co., Middle Falls, N. Y.
- Lake Umbagog Wood Pulp Co., Sunapee, N. H.
- Bennington Valley Pulp Co., North Bennington, Vt.
- Westmoreland Paper Co., West Newton, Pa. (3 orders).
- Winnipisquoi Paper Co., Franklin, N. H.
- Alvin Record, Livermore Falls, Me.
- Augusta Pulp Co., Augusta, Me.
- P. C. Cheney, Manchester, N. H.
- J. C. McIntyre, Fort Ann, N. Y.
- Kennebec Fibre Co., Benton, Me.
- Carrabassett Pulp Co., Skowhegan, Me. (2 orders).
- Richards Paper Co., Skowhegan, Me.
- Salmon River Paper Co., Malone, N. Y.
- Port Leyden Pulp and Paper Co., Fort Leyden, N. Y.
- Rochester Paper Co., Rochester, N. Y.
- Saranac River Pulp and Paper Co., Cadyville, N. Y. (2 orders).
- Piscataquis Falls Pulp and Paper Co., Montague, Me.
- Glens Falls Paper Mill Co., Glens Falls, N. Y. (2 orders).
- Marinette and Menominee Paper Co., Menominee, Mich.
- Smith Paper Co., Lee, Mass. (3 orders).
- Pasumpscic Pulp Co., Pasumpscic, Vt.
- Goddard Wood Paper Co., Wendell Depot, Mass.
- Atlas Paper Co., Appleton, Wis.
- Kimberly & Clark Co., Kimberly, Wis.
- Farley Paper Co., Irving, Mass.
- Fonda Lake Paper Co., Fort Leyden, N. Y.
- Mason-Perkins Paper Co., Bristol, N. H.
- Buckingham Pulp Co., Buckingham, Canada.
- Godfrey & Clark, Pittsburg, Pa.
- Eau Claire Pulp and Paper Co., Eau Claire, Wis. (3 orders).
- Hartford Pulp Co., Hartford (City), Ind.
- Kokomo Wood Pulp Co., Kokomo, Ind. (2 orders).
- Glen Manufacturing Co., Berlin Falls, N. H. (3 orders).
- James Davy, Thorold, Canada.
- Tomahawk Pulp Mills, Tomahawk, Wis. (2 orders).
- John E. Waller, Skaneateles, N. Y.
- Herkimer Paper Co., Lyons Falls, N. Y.
- Herkimer Paper Co., Lyons Falls, N. Y. (2 orders).
- The Geo. H. Friend Paper Co., West Carrollton, O.
- Sebago Wood Board, South Windham, Me.
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- Anderson Paper Co., Anderson, Ind. (2 orders).
- Herkimer Paper Co., Lyons Falls, N. Y. (2 orders).
- Susquehanna Water Power and Paper Co., Conowingo, Md.
- Fall Mountain Paper Co., Bellows Falls, Vt. (4 orders).
- Adirondack Pulp and Paper Co., Malone, N. Y. (3 orders).
- DuPont Paper Mill Co., Louisville, Ky. (3 orders).
- Crescent Paper Manufacturing Co., Hartford City, Ind. (2 orders).
- Marseilles Wood Pulp Co., Marseilles, Ill.
- The E. B. Eddy Co., Hull, Canada.
- Wisconsin River Pulp and Paper Co., Stevens Point, Wis.

OLIN SCOTT, Bennington, Vt.

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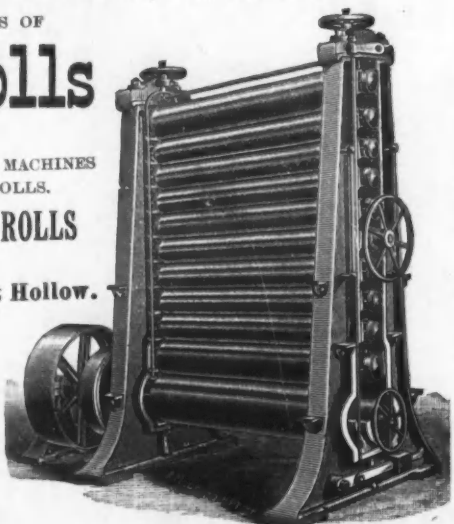
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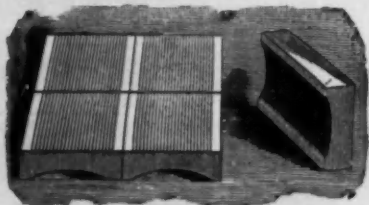
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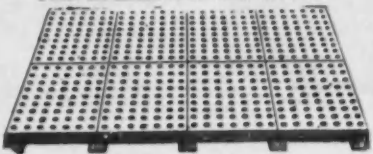
## SAMUEL SNELL,

Holyoke, Mass.,

MANUFACTURER OF

### FILTERING STONES

Under the KLABY and SNELL Patents.



(Size No. 8.) SEND FOR CIRCULAR.

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MANUFACTURERS OF

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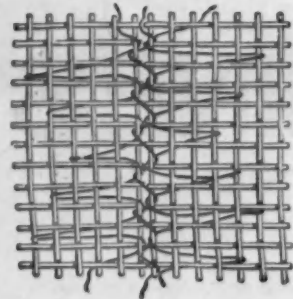
BRASS, COPPER AND IRON WIRE CLOTH.

Sellers' Patent Truss Dandy Rolls.

WATERMARKING A SPECIALTY.

Cylinder Molds, &c.

HOLYOKE, MASS.



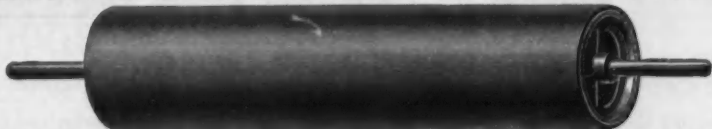
## BOSTON BELTING COMPANY,

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Established 1828.

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ORIGINAL MANUFACTURERS OF RUBBER GOODS.



RUBBER COVERED COUCH ROLLERS FOR FOURDRINIER, CYLINDER AND WET MACHINES (Warranty given with each Roller).

Also make Rubber Covered Press and Stamping Rollers, Rubber Belting, Hose, Packing, Deckel Straps and all kinds of Rubber Goods for Mechanical Purposes.

256 to 260 Devonshire St., BOSTON. 100 Chambers St., NEW YORK.

And Agencies in the principal cities of the United States, Canada and Europe.

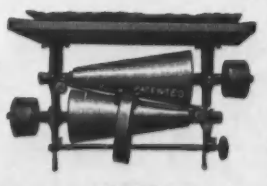


## THE EVANS FRICTION CONES

Are running thirty-seven of the best paper machines in this country transmitting from 20 to 40 horse power each. Hundreds of small cones, hanging and standing, in operation, driving all kinds of machinery. Send for Catalogue "G."



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## METAL



### SKYLIGHTS

Absolutely no leakage from any source; no dripping or sweating; fire-proof; ventilating.

THE CLOVER LEAF

### VENTILATOR

FOR MILLS, FACTORIES AND DYE HOUSES.



Made of galvanized iron or copper. Strong upward draft; exhausts foul air, odors, gases, steam, etc. Perfectly storm-proof. Send for illustrated circular.

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ESTABLISHED 1840.

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2831 TO 2839 NORTH BROAD ST.,

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## FRICTION CLUTCH PULLEY.



Licensed under Friction Clutch Patents of 1879, 1888, 1889, 1890, and other patents pending. All kinds of Machinery for the Transmission of Power. SEND FOR CATALOGUE.

O. C. BARBER, President. F. GRAY, Vice-President. W. C. GRAY, Treasurer. H. C. NELLIS, Secretary.

## PIQUA

### Woolen Mills,



## THE F. GRAY CO.,

PIQUA and AKRON, OHIO,

Principal Office, PIQUA,

MANUFACTURERS OF

Fourdrinier, Harper and Cylinder

### FELTS.

Press Felts and Jackets for all kinds of Paper.

TRY OUR HARPER FELTS. THEY ARE THE BEST MADE FOR ALL GRADES OF PAPER.

## THE UNITED STATES CHEMICAL CO.,

No. 1 South Front Street, Philadelphia.

CORRESPONDENCE SOLICITED.

# ALUM

U. S. Refined Alum, Neutral, U. S. Refined Alum, Basic, U. S. Refined Alum, Acid, and ALUM CAKE. PURE ALUMINA. DOUBLE REFINED ALUM.

AGENTS: H. C. HULBERT & CO., NEW YORK.

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

## THE CONSOLIDATED ULTRAMARINE CO. L.T.D.

### PAPER ULTRAMARINE.

Equal to any Imported.

No. 55 MAIDEN LANE,

NEW YORK.

C. U. C.

TRADE MARK.

## GLOBE ANILINE WORKS.

HELLER & MERZ CO.

### PAPER MAKERS' COLORS,

FELTS AND JACKETS,

55 Maiden Lane, New York.

## Spot Cash Paid for "UNDERCUTS"

Send to the Sole Manufacturers,

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167 & 169 Wooster St., New York.

## A. KLIPSTEIN,

BRANCH: 120 Arch St., Philadelphia.

122 Pearl Street, New York.

## SUGAR OF LEAD, BICHRO. POTASH AND SODA.

## VENETIAN AND STRONG REDS AND COPPERAS.

MANUFACTURED EXPRESSLY FOR PAPER MAKERS' USES BY

THE S. P. WETHERILL COMPANY, 925 CHESTNUT STREET, PHILADELPHIA.

## EDWARD HORE ESTATE,

MANUFACTURER AND IMPORTER OF

### Chemically Pure Colors

FOR PAPER STAINERS.

62-86 NORTH ELEVENTH STREET, BROOKLYN, N. Y.

CHAS. E. HORE, Superintendent.

## WM. PICKHARDT & KUTTROFF,

98 Liberty Street, New York,

BRANCHES AT BOSTON, PHILADELPHIA, PROVIDENCE AND CHICAGO,

IMPORTERS OF

Aniline Colors, Carmine, Pulp Colors, Ultramarines.

### AURAMINE, PATD.

## MASON, CHAPIN & CO.,

IMPORTERS AND JOBBERS.

Sole Receivers for United States and Canada of Following Brands

### BLEACHING POWDERS:

MATHIESON'S, SHAFER'S, ANCHOR, HUTCHINSON'S, KURTZ. SODA ASH, CAUSTIC SODA.

PAPER MAKERS' FELTS.

PROVIDENCE, R. I.

141 Milk Street, BOSTON.

58 Pine St., NEW YORK.

## FERRIC CHEMICAL AND COLOR CO.,

MANUFACTURERS OF

Pillar Copperas, Venetian Red and Oxides of Iron, WORCESTER, MASS.



present rates are too high. In answer to the second question we prefer the mutual plan of insurance to the stock companies, and in reply to the third question we think the location and water supply the most important of any of the considerations. Another very important thing is the watchfulness and care and good condition which exists in each separate plant. BYRON WESTON COMPANY.

CLEVELAND PAPER COMPANY, CLEVELAND, Ohio, December 2, 1892. Any paper mill that will carry out the requirements so as to be acceptable to the factory mutuals of New England will find that this is by all means the best insurance for paper mills. We consider their rates fair. Insurance on paper mills not equipped so as to be acceptable to factory mutuals is in some instances too high, and rates are made too indiscriminately.

As to ordinary mutual and stock companies, we consider the stock preferable. The proper elements for consideration are for the insured, and those to be considered by the insurer are the conditions and surroundings of the plant, which should be governed by good business instincts. CLEVELAND PAPER COMPANY, N. W. Taylor.

THE BACON PAPER COMPANY, BOSTON, December 5, 1892. 1. The requirements of mutual companies and present condition of first-class paper mills in regard to protection against loss by fire should warrant a reduction, at least to old rates. 2. We consider the mutual plan the best, inasmuch as the cost of insurance is less, as our accounts show during the past thirty years. 3. Materials used in manufacturing, location of storage and handling of same, plans and materials used in construction, facilities for extinguishing fire, general management of the mill. THE BACON PAPER COMPANY.

CROCKER, BURBANK & CO., FITCHBURG, Mass., December 5, 1892. So far as rates are concerned mutual companies are supposed to conduct their business in the most economical way possible. If that is correct the insured pay only cost of doing the business. No one ought to expect to have it done at less price. The fact that most of our mills are insured in mutual companies is a sufficient answer to your second question. With us the only consideration in insurance is, whether it is policy to be at the expense of fitting up a mill to the standard requirements or seeking insurance elsewhere. CROCKER, BURBANK & CO.

D. M. BARE & CO., ROARING SPRING, Pa., December 5, 1892. We think the rates of insurance on good risks are too high, while those on poor ones may be too low. We believe it to be to the interest of paper manufacturers to make their risks as good as they possibly can, and keep them good. Much can be done with care and attention to keep the risks satisfactory to the insurance companies. We are very much in favor of the New England mutuals' plan, but there appears to be some objections to the insurance laws of Pennsylvania by these companies, and at present we are not in them, although we would like to be. D. M. BARE & CO.

TILESTON & HOLLINGSWORTH CO., BOSTON, December 3, 1892. In our judgment the mutual plan of insurance is by far the best. By this method you pay the expense of doing the business and no more, and an experience of many years has shown that this method is quite safe and very cheap. It has another great advantage. It tends to prevent fires and loss by requiring many precautions and apparatus to put fires out before they have made much headway. The mutual mill insurance companies have led the way in reducing the amount of the annual fire losses of the United States—a waste which at this time is a national disgrace. We do not think the present rates in the mutual mill insurance companies are too high. TILESTON & HOLLINGSWORTH COMPANY.

TICONDEROGA PULP AND PAPER COMPANY, TICONDEROGA, N. Y., December 3, 1892. We are firm believers in insurance by mutual companies. We do not think the existing rates charged by them are too high, and we consider insurance by them far preferable to insuring in stock companies. As to the elements taken into consideration in insuring paper mill property we would name first, the construction of the mill; second, means of lighting and heating it; third, the kind of stock used in manufacturing paper; fourth, the pumps, automatic sprinklers and other facilities for protection from fire; fifth, watchman's clock, lantern and record of fidelity. Ticonderoga Pulp and Paper Company, CLAYTON H. DE LANO, President.

BARDEEN PAPER COMPANY, OTSEGO, Mich., December 3, 1892. We have no complaint to make. We have all our properties fully covered with automatic sprinklers and are getting rates which pay the

insurance company well, and which are as low, perhaps, as we could expect. The mutual plan is the correct one if on a proper basis, the same as the New England Mutual; but here in the West it has not been successful as a rule, and until we can reach the standard of the New England Mutual would prefer the stock plan. There are mills that no rate would be high enough for in my mind, the slack government of the mill inviting conflagration. G. E. BARDEEN, President.

THE LOUIS SNIDER'S SONS COMPANY, CINCINNATI, December 3, 1892. We consider the existing rates on paper mill entirely too high. The mutual plan of insurance is more economical than the regular stock companies, but the mutual companies require quite a considerable outlay in the way of fire protection which is not required by regular stock companies, and when that outlay is considered in the general equipment of the mill we feel that the stock companies' rates are preferable. The only dangerous part about a paper mill where goods are used is the regular assorting room and regular cutting and dusting room, and if these rooms were properly equipped in accordance with the requirements of the mutual company we do not see why it (the mutual company) should not be satisfied to insure at about as low rates as it does without the large outlay necessary for the full equipment in regard to the plan of the entire mill; but we think, too, that the proper equipment of the regular assorting room and regular cutting and dusting room according to the plan of the mutual company would cause the stock companies to make much lower rates than they do. THE LOUIS SNIDER'S SONS COMPANY.

CLIFF PAPER COMPANY, NIAGARA FALLS, N. Y., December 3, 1892. In answer to your inquiries, in our opinion: (1) Existing rates are too high in the stock companies. (2) We believe from our observation that the mutual plan of insurance is much preferable where the company is sound, like the Eastern mutuals. (3) We consider the mutual insurance, as written by the Eastern mutuals, is not only better by reason of its low rates, but particularly by its system of inspection. There are very few mills which are kept as free from liability to fire as they might be where they are inspected by regular inspectors as sent out by insurance companies. There are no mills that want to catch fire, but people will get careless, and many things escape notice which, when they are called to their attention, are remedied, and no doubt a great many fire are thereby avoided. CLIFF PAPER COMPANY.

BALLSTON SPA, N. Y., December 2, 1892. I do not think existing rates are too high where the mill is not equipped with automatic sprinklers. Stock companies take insurance on paper mills where there is no sprinkler system. The mutual companies will not do this. They (the mutuals) insist upon having the mills fully equipped for all emergencies—putting out fires automatically as well as otherwise. I think this is the most important thing to be considered in insurance on big mills. Every mill should be fully equipped with the very best automatic sprinklers, and not only pumps for fire purposes driven by water, but each mill should be fully equipped with the best possible pump, to be driven by steam, for putting out a fire when it is necessary to use it. Each and all of my mills are fully equipped in the best possible manner with automatic sprinklers and with pumps—fire pumps driven by water, and each mill has a powerful steam pump. So that I think that there is the greatest safeguard against fire, for there is every appliance driven by steam and water for putting out that fire. All of my mills are insured with the mutuals, and some that are an extremely low risk are in the stock companies, but nearly all are in the mutuals. GEO. WEST.

ALLEN BROTHERS COMPANY, SANDY HILL, N. Y., December 5, 1892. No. 1.—Existing rates too high? It is not the province of the insured to say whether the rates are too high or too low. Every one insuring always seeks to get the lowest rate possible. No. 2.—Whether the mutual plan of insurance in the ordinary stock companies is preferable? Our experience is that both plans are satisfactory. We do not care to have our eggs all in one box, and for this reason adopt both plans. No. 3.—What elements should be taken into consideration on paper mill insurance? Construction of buildings. Absence of enclosed ceilings or other spaces. Fewer number of stairs and hatchways. (Continued on page 1110.)

# LINK-BELT ENGINEERING CO

NICETOWN, PHILA. 49 DEY ST. NEW YORK.

Elevators, Conveyors, Manilla Rope Power Transmission Machinery, Ewart Detachable Link Belting Dodge Chain, Howe Chain, &c.

Western Connection: LINK BELT MACHINERY CO., Chicago.

## Wood Pulp, Soda and Sulphite, IMPORTED BY G. RAU, BUILDING, New York.

SOLE AGENT FOR THE U. S. AND CANADA: ROZES AINÉ & FRÈRES, Agen, Well-known Packers of Linens and Cottons.

# MOOSEHEAD PULP

UNIFORMITY, CLEANLINESS, STRENGTH, COLOR. FOR BOOK, MANILLA, No. 1 NEWS. PERFECT GROUND SPRUCE PULP. MOOSEHEAD PULP AND PAPER CO., SOLON, ME. Office, 308 Sears Building, Boston.

BROOKLYN AND BUFFALO, N. Y.; BAYONNE, N. J.

## ROYAL ALUM, REX ALUM, KING FILTER ALUM, LUMP AND GROUND ALUM.

Our Alums are used in more than 100 mills in the United States and Canada. Write us for quotations and state the kind of paper you make and we can save you money.

Martin Kalbfleisch's Sons Co., 55 FULTON ST., cor. of CLIFF ST., New York.

## TRUE & McCLELLAND, PACKERS AND IMPORTERS OF Paper Stock and Wastes.

OFFICE: 184 SUMMER STREET, BOSTON. Foreign Packing Branches: 19 Corporation St., Manchester; 97 Park St., Liverpool.

## STANDARD STAVE & COOPERAGE CO.

MANUFACTURERS OF CEDAR, CYPRESS, PINE OR OAK RESERVOIR TANKS OF ANY SHAPE OR CAPACITY, FOR PAPER AND PULP MILLS. 19 WHITEHALL STREET, NEW YORK. OFFICES: 100 STATE STREET, BOSTON. Illustrated Catalogue upon Application.

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GALVANIZED IRON — TIN PLATE. THE CINCINNATI CORRUGATING CO., PIQUA, OHIO. WRITE FOR CATALOGUE AND PRICES.

## McNEIL STEEL TUBULAR BARROW MANUFACTURERS OF STEEL WHEELBARROWS.



THE J. C. McNEIL CO., AKRON BOILER WORKS, AKRON, OHIO. Every Paper Mill should have one in the boiler room.

## The Oakland Paper Co., MANCHESTER, CONN.,

Manufacturers of No. 1 Engine Sized, ALL RAG, White and Colored, Flat and Envelope PAPERS. All Rag Duplex Envelope a Specialty. Send for Sample Book. N. T. PULSIFER, Treasurer.

W. J. THOMPSON & CO., Book, News and Manillas, 34 HIGH STREET, BOSTON. Cor. Federal, MILLS HAVING SPECIALTIES IN THESE LINES, WRITE US.

**TO ALL WHO PRACTICE ECONOMY.** Having made a special study of ELECTRIC POWER TRANSMISSION and of its application in all forms to PAPER MILL PLANTS, we are prepared to advise, to estimate and furnish plans on ELECTRIC CONSTRUCTION. MASSACHUSETTS ELECTRICAL ENGINEERING CO., STONE & WEBSTER, Managers, 4 Post Office Square, Boston, Mass.

# ALUM! ALUM!

Write us for quotations before renewing your alum contract. We manufacture the MERRIMAC POROUS ALUM. This is of great strength and purity, has an absolutely uniform composition, and is free from iron, zinc, specks and free acid. We also manufacture all other grades of Sulphate of Alumina and Ammonia Alum that are required by the paper maker. Address MERRIMAC CHEMICAL CO., 13 Pearl Street, Boston, Mass.



Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED DECEMBER 2, 1892.

Table with columns for various goods like Alum, Soda Ash, Newsprint, etc., and their respective values.

Imports General Merchandise for the week ending December 2, 1892..... \$8,023,229

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO DECEMBER 7, 1892.

Table with columns for 'Whence Imported', 'Rags', 'Old Papers', 'Chemical Fibre', 'Ground Wood', and 'Manilla Stock'.

a. Including 154 bs. cotton waste. b. Including 1,189 bs. cotton waste. c. Including 431 bs. cotton waste. d. Including 380 bs. cotton waste.

NEW YORK IMPORTS.

FROM NOVEMBER 10 TO DECEMBER 7, 1892. Paper Stock. Leon Gottheil, Westernland, Antwerp, 97 tons chemical fibre.

Burgess & Co., by same, 73 bs. manillas. R. H. Overton & Son, Tower Hill, London, 86 bs. papers.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED DECEMBER 8, 1892. Paper.

E. G. Soltmann, Westernland, Antwerp, 1 cs. W. Seyd, by same, 12 cs. G. W. Sheldon & Co., by same, 30 cs.

BOSTON IMPORTS.

FROM DECEMBER 1 TO DECEMBER 7, 1892, INCLUSIVE.

Wm. Guild & Co., Georgian, Liverpool, 1 cs. and 8 bs. periodicals. Gregory & Brown, by same, 7 cs. paper hangings.

PAPER STOCK.

Train, Smith & Co., Borderer, London, 2,462 bs. rags, 223 bs. waste paper and 200 bs. flax waste.

WOOD FIBRE.

W. A. Castle, Sorrento, Antwerp, 370 bs. L. Watson & Co., by same, 127 bs. (cellulose).

Bleaching Powder. J. L. & D. S. Riker, Kansas, Liverpool, 310 cks.

Caustic Soda. Edward Hill's Sons Company, Kansas, Liverpool, 81 drums.

Soda Ash. Wing & Evans, Bostonian, Liverpool, 95 cks. and 200 bags.

Soda Crystals. Warren & Co., Palestine, Liverpool, 280 bbls.

Crude Sulphur. Linder & Meyer, Bostonian, Liverpool, 500 bags.

EXPORTS OF PAPER, &c., FROM NEW YORK FOR THE WEEK ENDED DECEMBER 6, 1892.

BOOKS, cases, to British Australasia, 1; to Cuba, 1; to Hamburg, 1; to Mexico, 73; to Liverpool, 37; to Bremen, 1; to British West Indies, 10; to Venezuela, 1; to Colombia, 2; to Brazil, 3; to Central America, 6; to China, 1; to Dutch West Indies, 2; to London, 4; to New Zealand, 1; to Peru, 1; to San Domingo, 2.

AGGREGATES AND VALUES.

Table with columns for Paper, reams; Paper, pkgs.; Paper, cases; Books, cases; Stationery, cases; Rosin, bbls.; Totals.

Exports General Merchandise for the week ending December 6, 1892..... \$8,023,229

THE SELKIRK PROCESS

Will (with less Soda than you now use) increase the Daily Yield of CHEMICAL FIBRE

From your SODA DIGESTERS FIFTY PER CENT. Address THE SELKIRK STANDARD FIBRE CO., 31 N. Pearl St., Albany, N. Y.

WALDHOF SULPHITE PULP

STRONG! PURE! FELTY! OF ALWAYS EVEN QUALITY.

SOLE AGENT FOR THE UNITED STATES. No. 140 NASSAU STREET, NEW YORK.

TRAIN, SMITH & CO., IMPORTERS OF AND DEALERS IN

Paper Makers' Supplies, 24 FEDERAL STREET, BOSTON.

BRANCH OFFICES: 36 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, 287 and 289 SOUTH STREET, and 66 and 68 UTICA STREET, THE OLD STAND, BOSTON, MASS. WOOLEN RAGS GRADED IN COLORS AND QUALITY.

ESTABLISHED 1855. DARMSTADT & SCOTT, IMPORTERS AND PACKERS OF

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SPECIAL ATTENTION CALLED TO OUR OWN PACKING.

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

ALSO IMPORTERS AND DEALERS IN MARINE BLUE (Aniline) for Newspaper Mills, Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue.

W. A. CASTLE, SPRINGFIELD, MASS., IMPORTER OF

FINE GRADES LINEN AND COTTON RAGS. All Grades of Sizing.

Waldhof Bleached Sulphite Pulp.

GRIFFIN & LITTLE, PAPER MILL CHEMISTS, Office and Laboratory: 103 Milk Street, Boston.

EXPERTS IN THE SULPHITE PROCESS AND ALL CHEMICAL MATTERS PERTAINING TO THE MANUFACTURE OF PULP AND PAPER.

MENRY WILDMAGEN, ARCHITECT,

Will furnish plans and superintend the construction of Paper, Sulphite Fibre and Pulp Mills.

Makes a specialty of Planning, Superintending and putting into operation ALL KINDS OF SULPHITE FIBRE MILLS.

ALSO WILL GIVE INSTRUCTIONS IN REGARD TO THE MANUFACTURE OF SULPHITE FIBRE.

Has had a wide experience in this line, having built several of the largest mills of the above description, to which he will refer if desired.

APPLETON, WIS.

A. WERTHEIM & CO., Times Building, New York, IMPORTERS OF Chemical and Mechanical Wood Pulp.

Sole Selling Agents in United States and Canada for SODA PULP MILLS OF HUGO GRAF HENCKEL, OF DONNERSMARK. FAMOUS "LION BRAND" UNBLEACHED SULPHATE PULP.

"Patent Olive Compound" Lubricating Grease. Cazenovia Paper and Pulp Felts and Jackets.

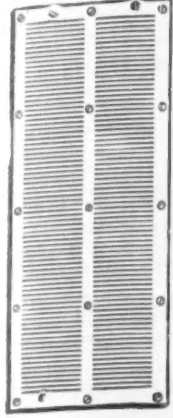






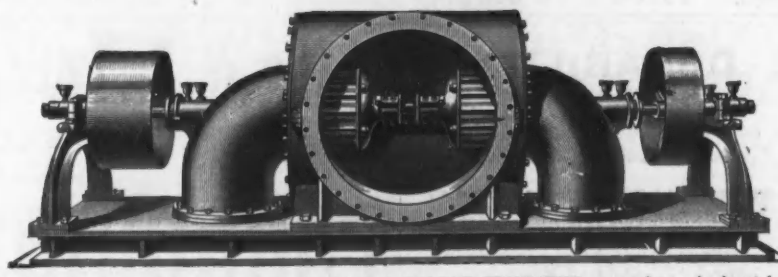
JUDSON & WILLIAMS, HOLYOKE, MASS.,

MANUFACTURERS OF



SCREEN PLATES - OF - BRASS - OR - CAST METAL. REPAIRING OLD SCREEN PLATES A SPECIALTY.

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.

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

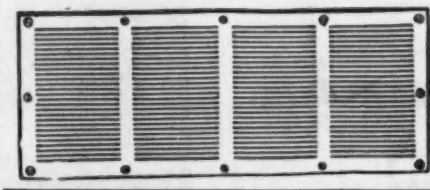
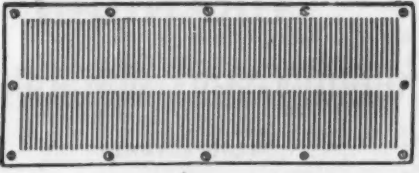
Table with 4 columns: SIZE WHEEL, HEAD IN FEET, HORSE POWER, PER CENT. OF USEFUL EFFECT. Lists various turbine specifications.

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.

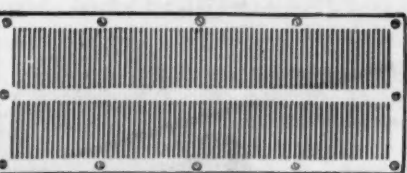
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ANNANDALE Screen Plate Co., PATERSON, N. J.

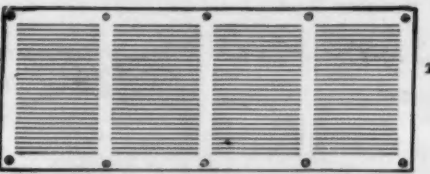


Manufacturers and Repairers of SCREEN PLATES. Our new Plates are made of the VERY BEST METAL, and for price and durability cannot be surpassed.

A. A. TRAIN, 21 Main St., FITCHBURG, MASS.,



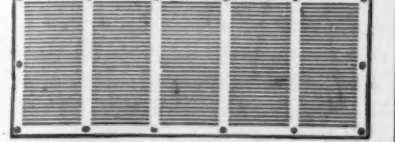
Screen Plates



OF BRASS OR CAST METAL, AT PRICES THAT CANNOT BE SURPASSED. BEST STOCK USED. Write for Prices and Gauges. All Work Warranted.

The Western Screen Plate Works MAKE AND REPAIR SCREEN PLATES

Accurately, Promptly and Cheaply. All NEW PLATES are made from our "Special Brass," which is the best quality obtainable.



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MANUFACTURERS OF THE Gotham Centrifugal Pump, Corley Refining Engine AND PAPER AND PULP MILL WORK. WRITE FOR PARTICULARS.

DEWITT-ESTEY WIRE CLOTH WORKS, NEWARK, OHIO. FOURDRINIER WIRES. Brass and Copper Wire Cloth of Every Description. BEST QUALITY, HEAVY GRADE, PURE SILK EDGES. Brass Wire Cloth For COVERING CYLINDERS and WASHERS. Dandy Rolls and Cylinders Made and Repaired.

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.

ADDRESS ALL ORDERS TO HOWARD L. MORRISON, 1009 Pa. Ave., N. W., 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.

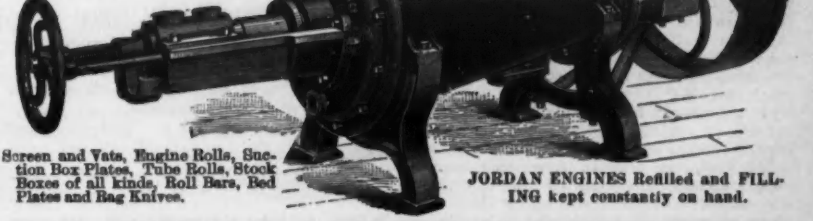
CAMERON STEAM PUMP. SIMPLE, RELIABLE, COMPACT, DURABLE. NO OUTSIDE VALVE GEAR. THE A.S. CAMERON STEAM PUMP WORKS. ADAPTED FOR ALL PURPOSES. FOOT OF EAST 23rd STREET, NEW YORK.

FOSTER & BROWN, SACCARAPPA, MAINE, MACHINISTS AND IRON FOUNDERS.

SPECIALTIES: Improved Paper-Coating Machines; Hanging Machines, and Power Reels for Coated Paper; the Merrill-Foster Noiseless Pulp Screens; Paper Slitting and Trimming Machines; Hardened and Ground Slitters; Automatic Elevators. BUILT UNDER OUR OWN SUPERVISION.

Windsor Locks Machine Company, WINDSOR LOCKS, CONN.,

JORDAN ENGINES, DRYERS, Rotary and Staff Pump Reels, RAG CUTTERS,

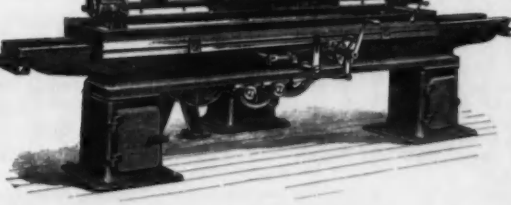


Screen and Vate, Engine Rolls, Section Box Plates, Tube Rolls, Stock Boxes of all kinds, Roll Bars, Red Plates and Rag Knives. JORDAN ENGINES Rebuilt and FILLING kept constantly on hand.

HEADQUARTERS FOR COMPLETE SHAFTING EQUIPMENT FOR Pulp and Paper Mills.

DODGE WOOD SPLIT PULLEYS, PATENT SPLIT FRICTION CLUTCHES, AMERICAN SYSTEM OF ROPE TRANSMISSION, PATENT CHAIN OILING JOURNAL BEARINGS, ETC. RICE MACHINERY CO., ENGINEERS AND MACHINISTS, 65 & 67 SOUTH CANAL ST., CHICAGO, ILL. New Catalogue Ready.

HORNER MACHINE CO., Holyoke, Mass.

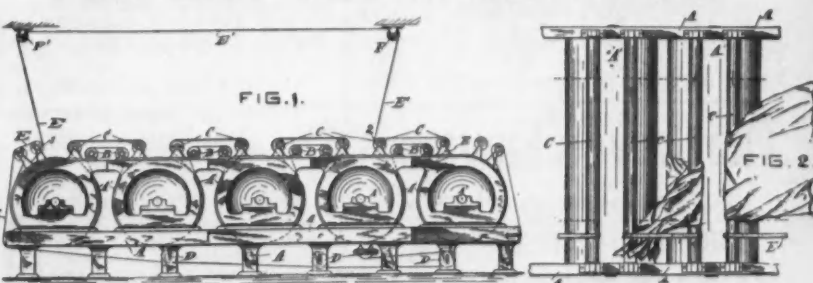


AUTOMATIC KNIFE GRINDERS. From 30 to 144 Inches. Will grind a perfectly straight edge, using water, thus preventing drawing the temper from the knives.

JUTE BREAKERS.

J. C. DICKEY, SANDY HILL, N. Y., Will furnish a Jute Breaker on thirty days' notice that will, with the help of one man, break up 40 bales in ten hours. It is used on bagging also. No dusters, as heretofore used, are required, as it breaks up and dusts the stock at one and the same time.

AN IMPROVEMENT IN DRYERS FOR ANY PAPER MACHINE.



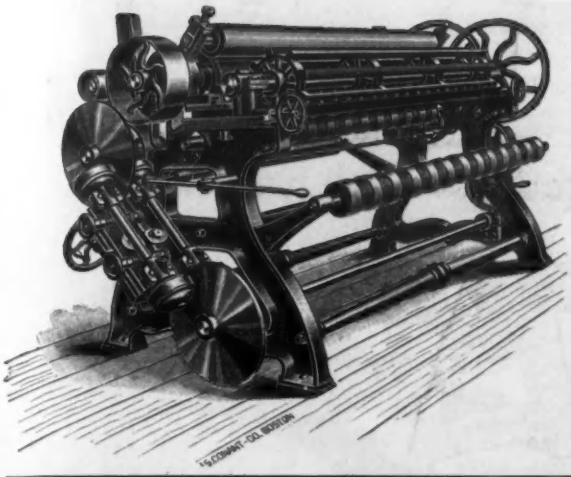
It carries the Paper through the Dryers automatically. It will do it better than it can be done by hand and never drop an end. It is guaranteed to be Practical, Durable and Cheap.

FOR FURTHER PARTICULARS ADDRESS THOS. LINDSAY, Brookville, Ind. IT CAN BE SEEN IN OPERATION HERE AT ANY TIME.



# ADVERTISEMENT.

**J. H. HORNE & SONS COMPANY**, Lawrence, Mass., manufacturers of Pulp Engines, exclusive licensees under the **HOYT PATENT** recently sustained by the Supreme Court of the United States, and owners of the **HORNE PATENT** for the improvement thereon. Our improved **HORNE ENGINE** has already gone largely into use and we are prepared to continue to supply the same to the trade. **J. H. HORNE & SONS COMPANY**, Lawrence, Mass.



## THE "HORNE" FRICTION CUTTER

IS IN ADVANCE OF ANY CUTTER IN USE TO-DAY.

WE HAVE EIGHT RUNNING IN ONE FINISHING ROOM.

AFTER USING ONE SEVEN MONTHS  
**A CUSTOMER SAYS:**

*"You have the Perfect Cutter. We are sure it will save its cost in one year in the saving of waste paper alone."*

THE **J. H. HORNE & SONS CO.**, LAWRENCE, MASS., U. S. A.,

MANUFACTURERS OF PAPER MILL MACHINERY.

## THE MILLIKEN

### NOISELESS PULP SCREEN.

SIMPLE, DURABLE, PERFECT, COMPACT.

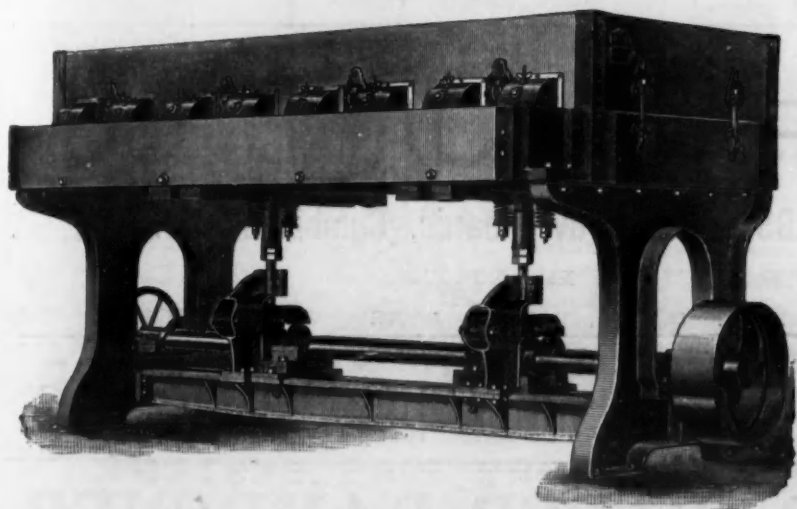
COMPLETE, NOISELESS, NO STRINGS, LESS POWER.

Plates are sure to last longer, and but two-thirds the number being necessary. No waste of stock when washing up. Occupies a small space; a simple, solid built flooring the only foundation necessary. Excellent work accomplished with eight (8) plates and 11-1000 screen plate. Six (6) hours' time only required to put in position ready for work. In ordering the Screens no particulars are required.

IT HAS NO EQUAL AS TO SCREENING QUALITIES, CAPACITY AND SAVING OF STOCK.

WARRANTED. THREE MONTHS' TRIAL GIVEN. ADDRESS

**C. R. MILLIKEN**, PORTLAND, ME.



# PERFECTION BRONZE ONE-METAL DIGESTERS

MANUFACTURED SOLELY BY

**EASTWOOD WIRE MFG. CO.**, Belleville, N. J.

## 35,000 HORSE POWER.

Rumford Falls, Maine.

Finest Water Power in New England. Located in Oxford County, Me., on Androscoggin River. Power practically insured against drought by reservoir system at Rangeley Lakes. Fall of 182 feet in less than a mile. Nearest seaport, Portland. Ample railway connections. Unsurpassed location for PULP, PAPER, PAPER MACHINERY and SUPPLY MILLS. Over 1,000,000

acres timber, suitable for pulp, in valley above the Falls, drained by the Androscoggin. Complete facilities for handling same. Special inducements offered. Lower rates for POWER and MILL SITES than made elsewhere. For prospectus, terms and further information, address

RUMFORD FALLS POWER CO., Portland, Me.

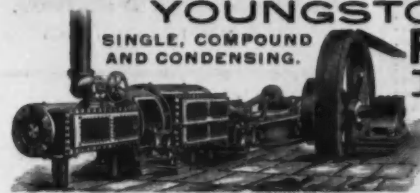
## WILLIAM TOD & CO.

YOUNGSTOWN, OHIO.

SINGLE, COMPOUND AND CONDENSING.

### PORTER-HAMILTON ENGINE

Blowing Engines, Hydraulic Cranes & Accumulators Heavy Special Machinery. ENGINE CATALOGUE ON APPLICATION.



## J. & W. JOLLY, MANUFACTURERS OF

MCCORMICK'S HOLYOKE TURBINES,

BOTH VERTICAL and HORIZONTAL.

PAPER MILL MACHINERY.

Allen's "Blue Spot" Preventative.

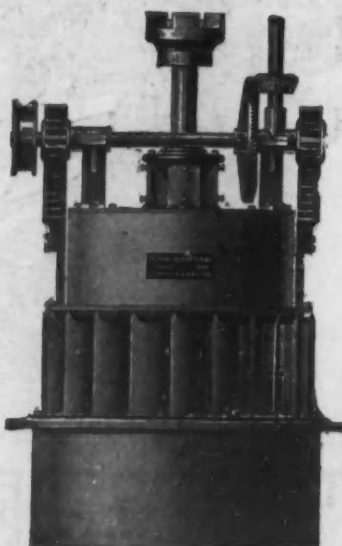
Screens and Vats for Paper Machines.

RAG ENGINES AND JORDAN ENGINES MADE AND REFILLED.

Bleach Boilers, Fan Dusters, Ferry's Patent Star Dusters.

PAPER CALENDER ROLLS MADE AND REPAIRED. CHILLED ROLLS. SHEET, SUPER AND WEB CALENDERS.

POWER SUCTION PUMPS, STUFF PUMPS, POWER BOILER PUMPS, SUCTION BOXES AND PLATES, PULLEYS, HOLYOKE, MASS., U. S. A. SHAFTING, GEARING, &c.



## DILTS' IMPROVED THREE AND FOUR POCKET HYDRAULIC FEED PULP GRINDER.

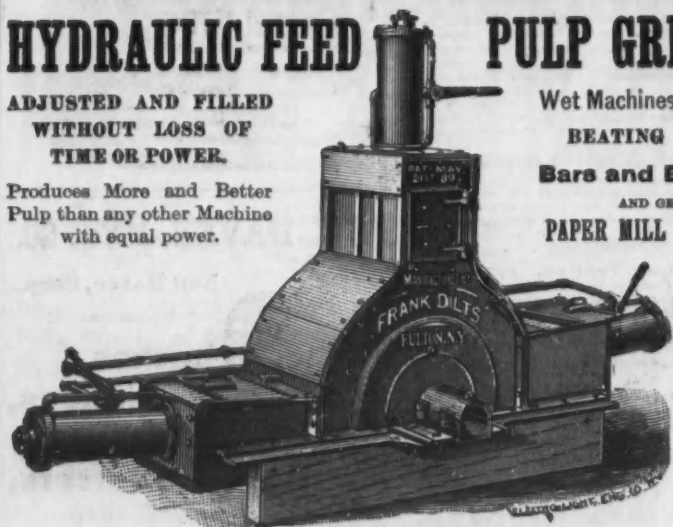
ADJUSTED AND FILLED WITHOUT LOSS OF TIME OR POWER.

Produces More and Better Pulp than any other Machine with equal power.

Wet Machines and Screens.

BEATING ENGINES,

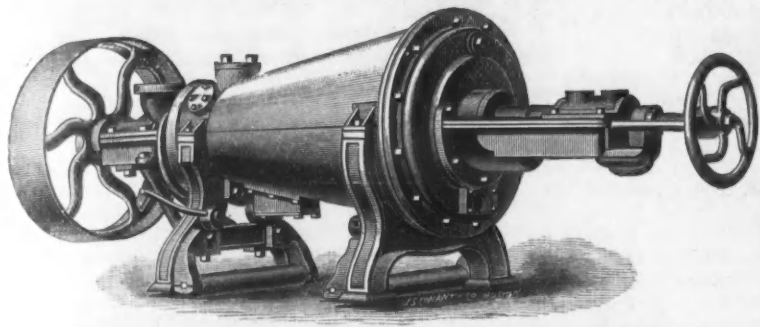
Bars and Bed Plates AND GENERAL PAPER MILL MACHINERY.



MANUFACTURED BY **FRANK DILTS**, Fulton, N. Y.







# EMERSON MANUF'G CO.

MAKERS OF THE BEST JORDAN ENGINE IN THE WORLD.

**GREATEST PRODUCTION.**  
**FINEST PAPER.**  
**LONGEST WEAR.**  
IN USE IN MANY OF THE LEADING MILLS OF THE COUNTRY.

**BEATING ENGINES.**

Roll Bars, Bed Plates.

RAG KNIVES,  
JORDAN BARS AND FILLING.  
JORDAN ENGINES REFILLED.

PATENT ROLLERS,  
*Jordan, Moved by One Man.*

ESTIMATES MADE FOR ALL PAPER MILL MACHINERY.

LAWRENCE, MASS.

## OUR JORDAN ENGINE,

Showing our Patented Improvements, **THE ROLLERS** and **IMPROVED HEAD.**

This Head will increase the wear of the Jordan 25 per cent.

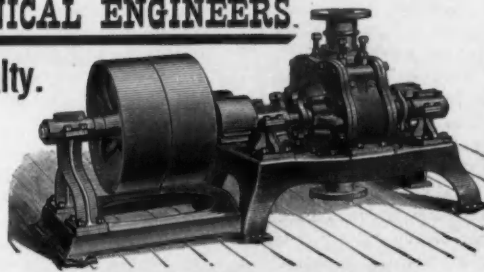
WRITE FOR PARTICULARS.



## E. D. JONES, SONS & CO.

MILLWRIGHTS AND MECHANICAL ENGINEERS.

Paper Mill Plans a Specialty.



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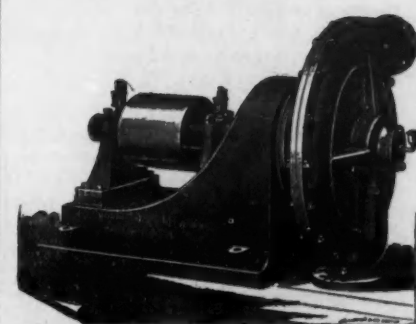
ALSO MANUFACTURERS OF

Improved Patent Rag Engines, Dusters, Elevators, Etc.

**CROCKER'S**

Rotary Pumps and Turbine Water Wheels.

VERTICAL AND HORIZONTAL ENGINES. SHAFTING, PULLEYS, HANGERS AND GEARING.



## A NEW <sup>\* Improved \*</sup> Double Suction PUMP.

IN IRON, BRASS OR BRONZE.

STANDARD SIDE SUCTION PUMPS  
Always in Stock.

OVER 15,000 PUMPS IN USE.

Buyers are cautioned against circulars or other representations of Centrifugal Pump makers regarding "Baldwinsville" Pumps, as we are the only manufacturers so engaged in this line of business at this place, and are the sole makers under the well-known Heald & Sisco patents. Send for catalogue.

MORRIS MACHINE WORKS, Baldwinsville, N. Y.

## THE IMPROVED JENKINS BROS. VALVES



Have the Keyed Stuffing Box and Disk Removing Locknut.

NOTE GENUINE unless they bear our TRADE MARK.

Cost no more than the Imitations. Send for Prices and Discounts.

**JENKINS BROS.,**

71 John Street, New York.

31 N. Fifth St., Philadelphia.

105 Milk Street, Boston.

21 N. Canal St., Chicago.

## CYLINDER WASHERS.

FOR EFFICIENCY AND DURABILITY UNEXCELLED.

All Iron and Copper except the Gash.

## THE BEST TURNING RAG ENGINE BUILT.

Tubs either Iron or Wood.

Double Lighters, Relief Lever, Adjustable Breast and Fall, Iron Rolls.

GENERAL PAPER MACHINERY,

**DOWNTOWN MFG. CO.,**

East Downtown, Pa., U.S.A.



Catalogue for 1902 sent on application.



## NEW CASTLE PULP STONES

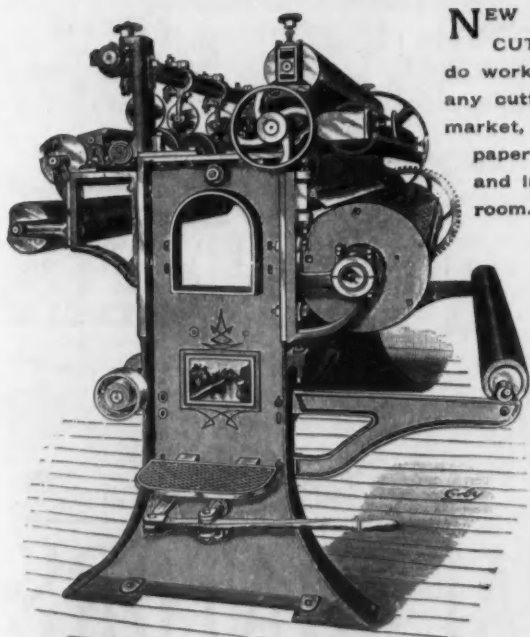
A SPECIALTY.

Grindstones of all kinds, mounted and unmounted, for Mills, Factories, Machine and Repair Shops.

OFFICE AND YARD:  
2 Sleeper Street, Boston Wharf.

BOSTON.

Specially selected GRIT for Paper Knife Grinding.



NEW PATTERN CUTTER. Will do work equal to any cutter on the market, both on paper machine and in finishing room.

## Paper Mill Machinery.

FOURDRINIER AND CYLINDER MACHINES.

Very Substantial and Convenient Designs, Embodying all Late Desirable Improvements.

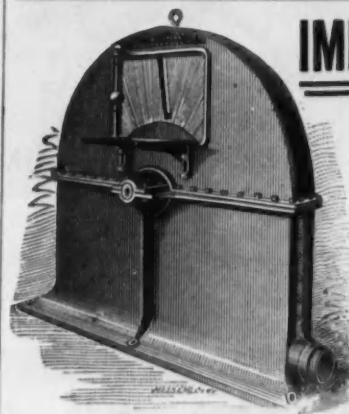
## IRON AND WOOD TUB BEATING ENGINES.

Wet Machines, Rag Cutters, Duplex and Triplex Stuff and Suction Pumps, Double Suction Water Pumps, Etc., Etc.

ESTABLISHED 1858.

## BELOIT IRON WORKS,

BELOIT, WIS., U. S. A.



## IMPROVED BARKERS

FOR

Ground Wood Pulp Mills.

ALSO

HOOPER'S ECCENTRIC PULP SCREENS.

TICONDEROGA MACHINE CO.

TICONDEROGA, N. Y.

# UMPHERSTON PATENT WASHING AND BEATING ENGINES.

— 353 —

In most successful use (138 in the United States) on all grades of stock, Felts, Wrappings, News, Print, Book, Blottings, Rope, Tissues and the finest Writings and Ledger Papers.

FOR FURTHER PARTICULARS APPLY TO

**THE J. MORTON POOLE COMPANY,**

Sole Makers for America, WILMINGTON, DELAWARE.

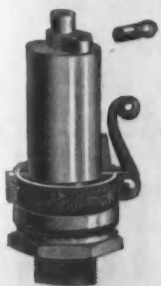


FIG. 221. POP SAFETY VALVE.

## POP SAFETY VALVES.

You will stop using the other man's when once you have tried **Lunckenheimer's Improved Pop Safety Valve.** Warranted the best in the market. Supplied by dealers. Write for illustrated Catalogue of above and other valuable steam specialties of interest to steam users. Mention this paper.

THE LUNKENHEIMER BRASS MFG. CO., Cincinnati, Ohio, U. S. A.



fitness the dignity which attaches to the large manufacturing interests of a prosperous country. The building is of pressed brick with trimmings of pink Milford granite. The roof is of iron trusses, covered with slate and lined on the inside with wire lath and plaster, for the purpose of preventing condensation. The fire room floor is of concrete. An annex to the building contains a scale room for tallying the weight of coal, and a complete washroom for the fireman, who has now become a gentleman of leisure.

Passing to the operative portion of the plant, it will, when completed, consist of eight horizontal return tubular boilers of 125 nominal horse power each, to carry a working pressure of 130 pounds. These boilers are arranged in two batteries of four each in either end of the building (one battery is now in operation), the space between being utilized as a pump room. Following the progress of the coal, after it is weighed it is dumped on to a grating at the end of the boiler house, shown in the general view. The large lumps are easily broken by the teamster, the grating serving as a screen to reduce the coal to a uniform maximum size. From the grating the coal falls into a bucket elevator carrying it to an overhead conveyor extending the entire length of the boiler house, from which it distributes into square iron bunkers having hopper bottoms. The bunkers are supported on iron girders in front of and above the boilers. From the bunkers the coal flows by gravity through swivel spouts to the hoppers of the stokers.

Each boiler is equipped with a Roney mechanical stoker, with which the public is already familiar. The stoker furnishes a continuous supply of coal to the furnace at a slow rate of feed; the quantity of coal

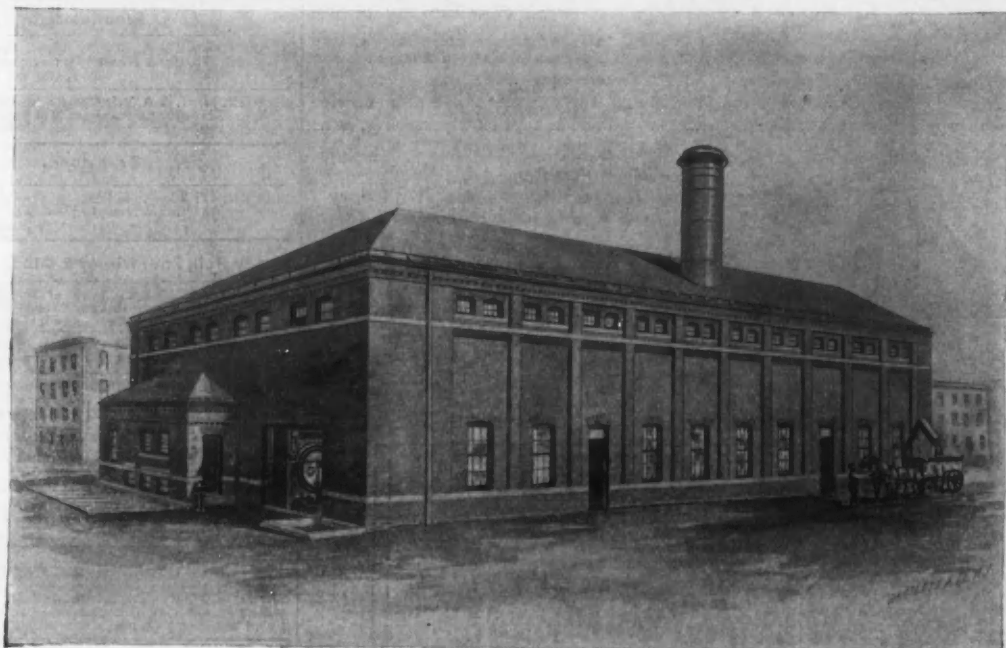
and its distribution being regulated at will by hand wheel adjustments on the traverse motion. The power to operate the entire battery of stokers is a small engine carried

through perforated channels in the firebrick tile. This portion of the device constitutes a strictly smokeless furnace, the result being obtained, not by concealing or con-

extremely sensitive. After leaving the coking arch the coal is slowly worked down over the rocking grates into the hottest portion of the fire, and when consumed

a spout into carts for removal. Thus, from the time the coal is first dumped by the teamster until the ashes are in the cart, there is practically no manual labor employed, and the duties of the fireman are reduced essentially to watchfulness and supervision only. One man constitutes the force of firemen and runs the entire plant.

A most interesting portion of the plant is the means of securing controllable draft. The usual expensive chimney stack is conspicuous by its absence, and in its place will be found a steel stack 72 inches in diameter, extending 17 feet above the ridge of the roof and showing a total height to the top of about 55 feet above the ground. This stack is lined with one course of brick merely to prevent rust, and is finished with ornamental top similar to the familiar shape on the smoke stacks of the Pennsylvania Railroad locomotives. The stack, having no functions, so far as the production of draft is concerned, is only of a length sufficient to deliver the gases above the roof. The stack is supported on an entablature, which in turn is carried on "I" beams above the boiler room. On these "I" beams is a large slow running exhaust fan whose outlet discharges directly up into the bottom of the stack. The waste gases from the furnace pass through a Lowcock economizer, which opens into the suction of the fan. The economizer is carried on iron columns and the whole system is therefore overhead and out of the way, leaving a clear floor space below. A by-pass damper is provided on each side of the economizer, so that the draft can be direct to the stack in case the economizer is temporarily out of service for repairs. A steam cone nozzle may be set in the base of the stack as a relay in the remote contingency of any necessity for overhauling the fan. The proba-



BOILER HOUSE FOR CURTIS, DAVIS & CO., CAMBRIDGEPORT, MASS.

on a bracket at one end of each battery and driving a slow moving eccentric shaft.

The action of the stoker is first to liberate the free gases and partially coke the coal on a dead plate underneath the coking arch, in connection with an indraft of hot air

suming the smoke, but by actually preventing it by complete combustion from the start. Right here lies a large portion of the economy due to mechanical stoking, to say nothing of the extermination of the smoke nuisance to which most cities are

the ash and cinder falling on the dumping grates is dropped into the ashpit. From the ashpit the ashes fall into a screw conveyor, which carries them to one end of the building, where they are elevated into an ash bin and discharged as required through

# THE UNITED PAPER COMPANY,

General Offices, TIMES BUILDING, Rooms 45 and 46, NEW YORK,

Owners of a large number of Tissue Paper Mills, manufacturing all kinds and grades of

## WHITE, COLORED AND MANILLA TISSUE PAPERS.

FRUIT, ROLL, TOILET, RAILROAD AND PARCHMENT COPYING TISSUES. ALSO  
WHITE AND MANILLA TISSUES FOR WAXING PURPOSES.

SUPERCALENDERED WHITE COPYING PAPERS A SPECIALTY.

OUR EXTENSIVE CAPACITY ENABLES US TO FILL ORDERS PROMPTLY.



# THE RUSSELL CEMENT LINED DIGESTER.

The **Russell Patent** covers every description of Acid Proof Cement Lining and can be applied to any form of Sulphite Digester in use. This Lining for Sulphite Digesters is now in constant operation in many of the largest mills in the country, **more than thirty Digesters being lined with the RUSSELL CEMENT LINING**, and in every case it has given entire satisfaction and proved itself to be a **Perfect Lining**.

IT IS THOROUGHLY ACID PROOF.

IT IS EASILY APPLIED.

IT IS DURABLE AND IMPROVES RATHER THAN DETERIORATES BY USE.

IT PREVENTS RADIATION OF HEAT, AND THUS EFFECTS GREAT SAVING OF STEAM AND INSURES EVEN COOKING OF ENTIRE CONTENTS.

IN THE "ONE METAL" DIGESTER IT PREVENTS CORROSION AND THE DANGEROUS EXPANSION OF THE BRONZE.

Manufacturers of Sulphite Pulp and those intending to build Sulphite Mills are invited to examine into the merits of the *Russell Cement Lining*. Correspondence solicited. All inquiries cheerfully answered.

**THE AMERICAN SULPHITE PULP CO., 35 WATER STREET, BOSTON, MASS.**

## Silesian White.

I am now importing from Marseilles, France, white Plaster Rock, or Gypsum, which is taken from the same quarries from which the imported Swan Brand of Silesian White is manufactured, and am prepared to offer to the trade Silesian White of a quality that I will guarantee to be equal to or better than the imported, and at a price with which the importers cannot compete.

I also have No. 2 Silesian White for sale, which will answer all purposes where the pure white color is not required.



Works of H.C. Higginson, Newburgh, N. Y.

I also manufacture **CALCINED PLASTER** of every grade, **WHITING** of every grade, **MARBLE DUST** for Soda Water Manufacturers' use, **MARBLE FLOUR** and **SILEX**.

I shall be pleased to furnish samples on application, and solicit correspondence for prices, &c.

**H. C. HIGGINSON, Newburgh, N. Y.**

## Pearl Filler.

I will guarantee my Pearl Filler to be equal in every respect to the imported brand of Pearl Hardening, and can offer it at a price at which Paper Makers can afford to use it.

I also am the sole manufacturer of the celebrated brands of

**A. AND C. PULP,** both wet and dry;

**SULPHATE OF LIME,** of different qualities;

**TERRA ALBA** and **PAPER MAKERS' CLAY,** all prepared especially for Paper Makers' use.



# LOBDELL CAR WHEEL COMPANY,

Wilmington, Del., U. S. A.,

MANUFACTURERS OF

## CHILLED ROLLS

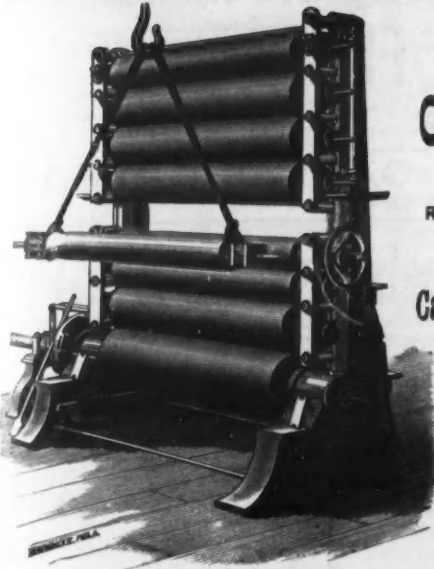
For Paper Machines,  
RUBBER, BRASS, COPPER, FLOUR,  
OIL AND INK MILLS, ETC.

### Calenders Furnished Complete,

WITH PATENT OPEN FACE HOUSINGS  
so arranged that any roll can be removed  
without disturbing the others in the stack.

ROLLS SUPPLIED FINISHED OR  
TURNED FOR GRINDING.  
ROLLS BORED FOR STEAM OR CAST  
HOLLOW.

ROLLS OF ALL KINDS REGROUND.



# LEVIATHAN BELTING.

Unsurpassed for Strength, Durability  
and Traction Power.

Made any length, width and strength.  
Guaranteed to run straight. Even throughout.  
Unaffected by heat, steam or water.

BELTS FOR MAIN DRIVING AND WORK OF A  
HEAVY NATURE A SPECIALTY.

## MAIN BELTING COMPANY,

SOLE MANUFACTURER,  
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## AMOS H. HALL'S

### Cedar Vat & Tank Factory,

North Second Street, above Cambria,  
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Drainers, Stuff Chests, Broken Tubs, Straw Kettles,  
Boiling and Size Tubs, Water Tanks, &c.,  
FOR PAPER MANUFACTURERS.

Downtown Office: 140 Chestnut St., cor. Second.

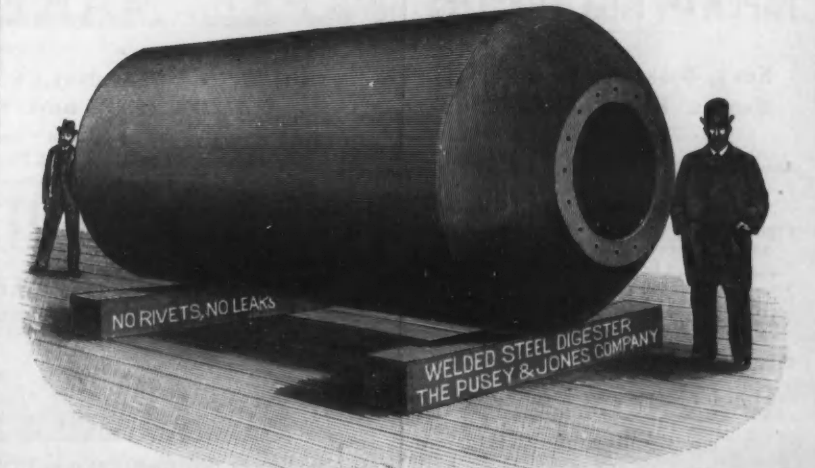


### Diamond Automatic Knife Grinder.

The only practical machine on the market, using  
water on wheel to prevent the drawing of the temper  
from the knives.  
Manufactured by DIAMOND MACHINE CO.,  
PROVIDENCE, R. I.

# WELDED DICESTERS,

For Making Chemical Wood Fibre either by SODA or  
BISULPHITE Process.



No Seams! No Rivets! No Leaks!  
These can be furnished to parties in the United States  
and Canada only by

## THE PUSEY & JONES COMPANY,

WILMINGTON, DEL.



We are now prepared to furnish  
PENINSULA AND NEW CASTLE  
**Wood Pulp Grindstones,**  
SUITABLE FOR ANY STYLE OF GRINDER,  
On short notice. Sure to give satisfaction. Will  
pay you to get our prices.  
**THE CLEVELAND STONE CO.,**  
230 Front Street, New York.  
Tacoma Building, Chicago.  
Sleeper Street, South Boston.  
CLEVELAND, OHIO.

**HARRINGTON & KING PERFORATING CO.**  
MANUFACTURERS OF  
**PERFORATED SHEET METALS**  
OF ALL KINDS  
FOR MILLING & MINING MACHINERY  
and other uses.  
CHICAGO, ILL.  
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For Milling and Concentrating Works, Coal, Stone and Ore  
Screens, Clay and Sand Screens, &c.

ESTIMATES PROMPTLY FURNISHED.  
For Paper, Woolen, Oil and Flour Mills, Pumps, Dryers,  
Screens, Ventilators, &c.

**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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**The Dow Positive Piston Pump**  
AN IMPROVED SYSTEM - GREAT ECONOMY - LARGE CAPACITY - HIGH OR LOW SPEED.  
**Kensington Engine Works, Ltd.**  
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**THE LAWRENCE MACHINE CO.,**  
LAWRENCE, MASS.,  
MANUFACTURERS OF  
**Centrifugal Pumps,**  
STEAM ENGINES,  
GENERAL MACHINERY,  
Phosphor Bronze and  
Composition  
**PUMPS and VALVES**  
For Pulp and Paper Mills.  
Send for Catalogue and Discounts.

ESTABLISHED 1846.  
**JOHN WALDRON, NEW BRUNSWICK, N. J.,**  
MANUFACTURER OF ALL STYLES OF  
COATING MACHINERY FOR LITHOGRAPH, LABEL, FANCY, GLAZED, BOOK AND SAND PAPERS.  
Also Cardboard and Paper Hangings Machinery. Hilbers, Staib and  
Waldron Patent Hanging Up Machines. Patent Power Reeling  
Machines for Coated Papers and Cardboard. Embossing  
Machines, Paper Rolls, Polishing Machines, &c.  
Machinery is universally used by the manufacturers of above goods  
in the United States and Canada.

CHAS. S. BARTON, President and Treasurer. LEWIS C. STONE, Manager.  
**RICE, BARTON & FALES MACHINE AND IRON CO**  
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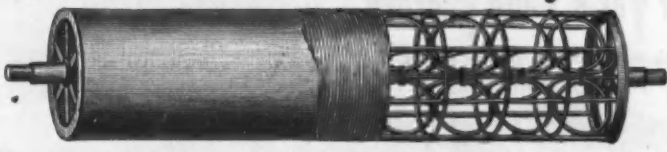
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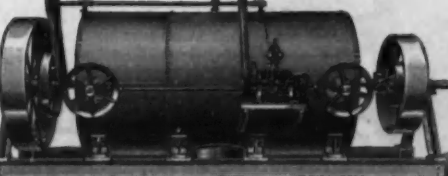


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