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CANADA LUMBERMAN

WOODWORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

VOLUME XVII. }
NUMBER 7.

TORONTO, ONT., JULY, 1896

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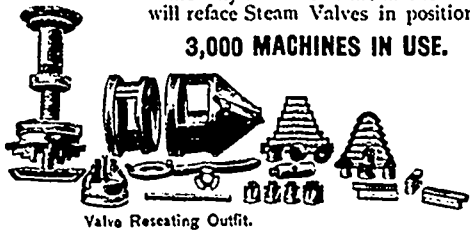
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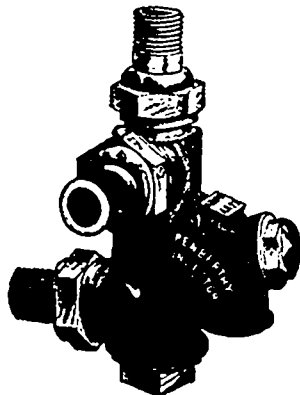
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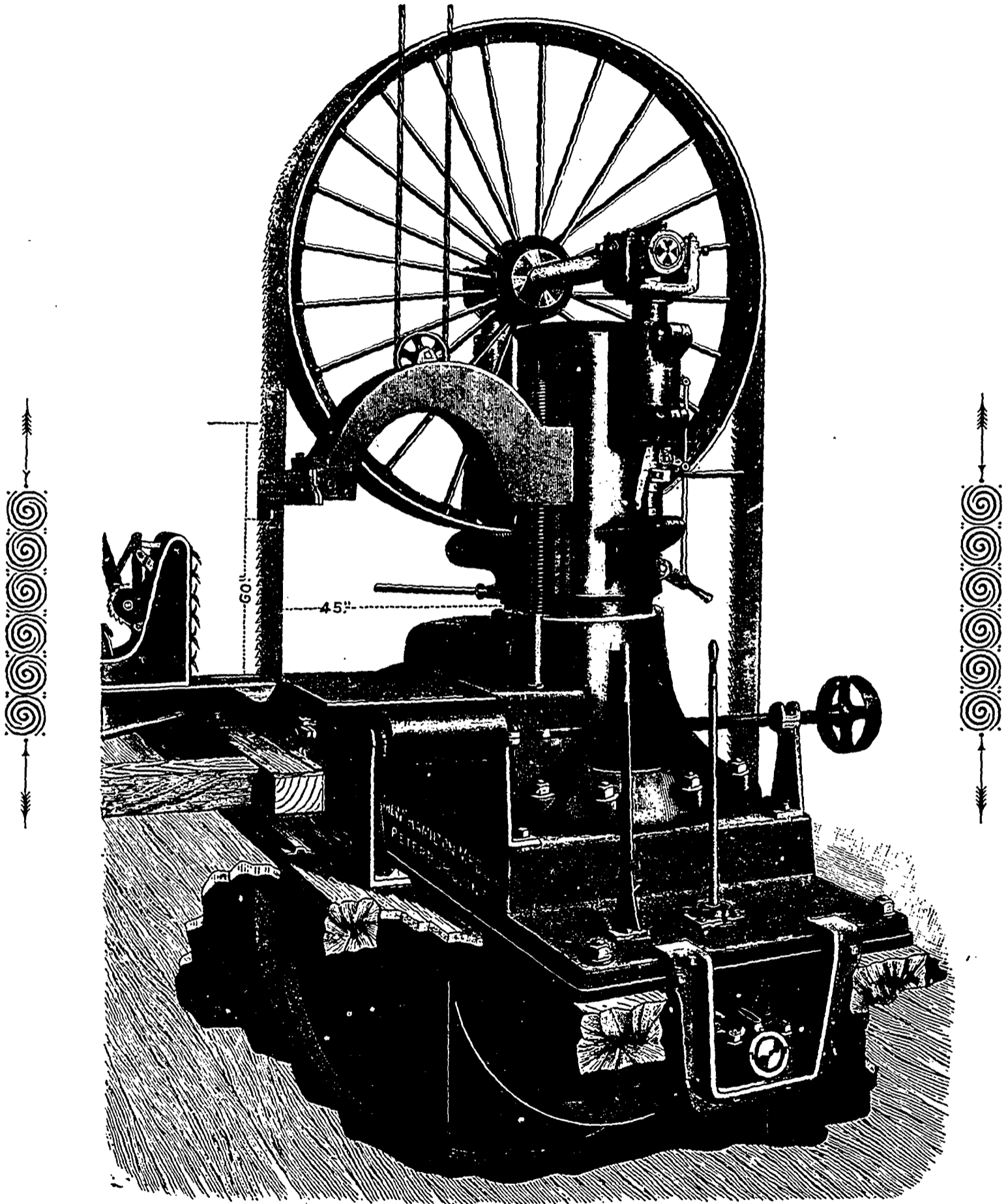
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SPOOL-MAKING.

THE making of white birch spools has of recent years become an important industry in some parts of New Brunswick and the Eastern States. From the Lumber World, of Buffalo, we obtain the following description of the method of manufacture:

The rough sticks are sawed into bars an inch to 2½ inches square and four feet long. These bars are piled in high stacks out of doors and left for about three months to dry and season thoroughly. Then they are stacked in the dry house. There are three dry-rooms in the mill, each about 16 feet square. Here the birch sticks are left generally for about six hours, or until they become thoroughly dried. This process of drying is of considerable importance. When the wood is taken out of the dry-house, it is ready to be used. Workmen take the four foot sticks and cut them up into blocks the length of the desired spool. The machines they use are called roughing-machines, and the men are known as roughers. The long stick, in less than a quarter of a minute, is cut off into proper lengths. These blocks have been bored throughout, and their eight corners are rounded off. From the roughing-machines the "blocks," as they are now called, slide down into barrels and are carried across the mill and dumped into huge bins.

From the bins the finishers shovel out the blocks as they need them. The finishing machines are marvels of mechanical ingenuity. Sets of keen knives are so arranged that, by one movement of the attending workman, a rough block is turned into a spool that needs only polishing to make it perfect. And the entire change has been made in less than a second. The spools are made to polish themselves. Sixteen barrels, two feet in diameter, made of slats and bound together with steel hoops, are filled with spools. A cake of wax is thrown into each, and then all are made to revolve by means of pulleys and belts. It generally takes about two hours for the spools to become polished by their continual rubbing and chafing against one another. The lump of wax rubs against them and aids in making the spool smooth.

From the revolving barrels the spools are turned into boxes ready for shipping. But they cannot be pronounced perfect until the gager has inspected them. Armed with steel gages which measure exactly the proper size of the spool desired, the gager picks out several spools from the box before him and measures them. They must fill the gage exactly. There are 15 different sizes of spools made at the mill. The 14 smaller sizes are made by the same process,

glue has become hard and firm. It is then the finishers turn to take the big bobbins in hand, and when they are done with them, the clumsy-looking sticks have been fashioned into perfect bobbins that need only a little sandpapering and some shellac on one end to be called finished. One has little idea of the amount of waste that is made in a spool mill. When the roughers start in with their long sticks, there are knots and bad pieces that must be cut out and thrown away.

It is the easiest thing in the world, with machinery that is whizzing and whirring so fast that the eye cannot follow its movements, to bore a hole a little from the centre of the block or make some other slight mistake, and then the block is of no further use and is thrown in with the waste. Sometimes the finishing machines run so fast that the heads of the spools become the least bit scorched and colored. That is enough to make the spool imperfect, and it is thrown away. There is a constant picking out of bad pieces and throwing them out, all through the process of making spools. Over half of the lumber brought into the mill is thrown into the waste heap.

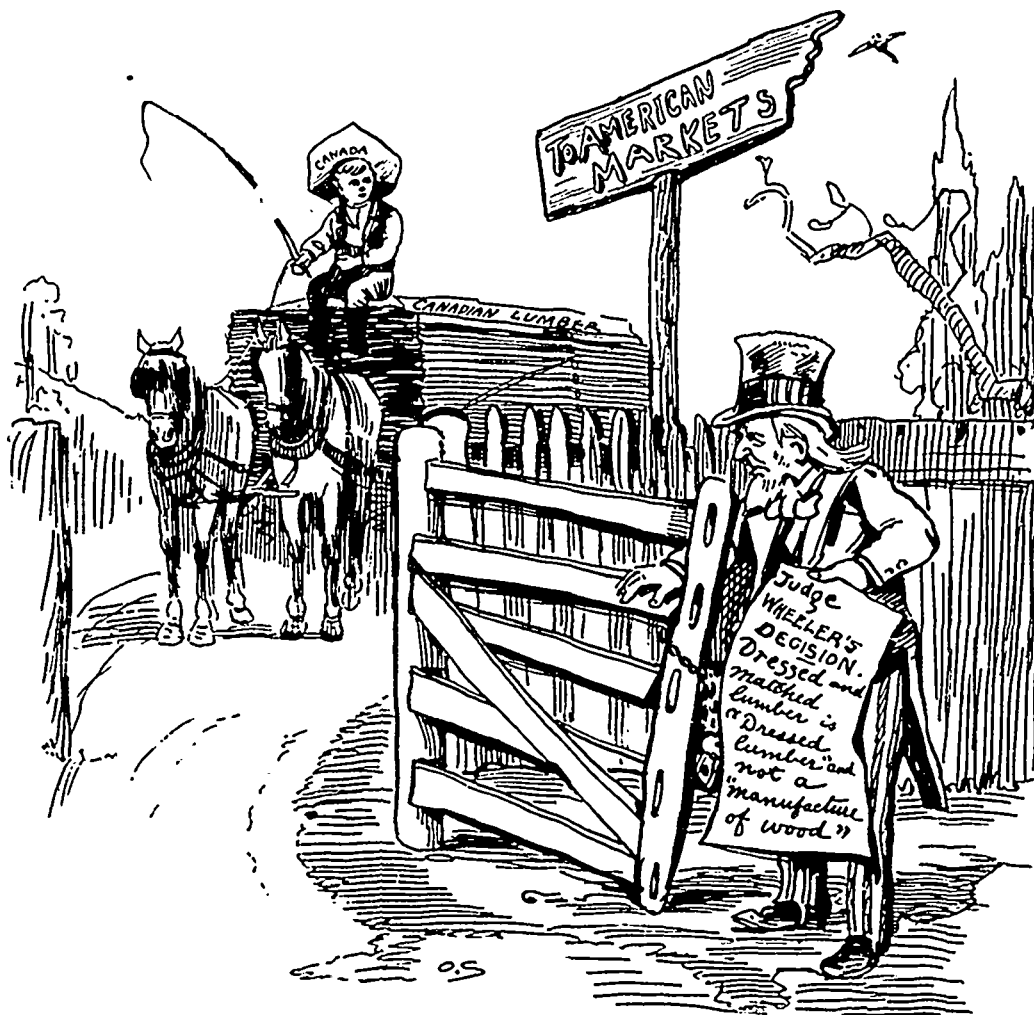
STRENGTH OF WOOD.

"As a result of nearly 40,000 tests of timber made at the laboratory of the Washington University of St. Louis, under the direction of the forestry division of the Department of Agriculture," says Railway Engineering and Mechanics, "the following facts have been determined: Seasoned

timber is about twice as strong as green timber, but well seasoned timber loses its strength with the absorption of moisture; timbers of large sections have equal strength per square inch with small ones when they are equally free from blemish; knots are as great a source of weakness in a column as in a beam; bleeding timber does not impair its qualities."

With some kinds of piston rod packing, when the engine stands still over night, there is a deposit of packing and rust on the rod where the packing comes in contact with it. This evil may be greatly lessened by locating a sight feed oiler so that it will drop cylinder oil on the rod continually while running. Give it a trial.

THE OPENED GATE.



UNCLE SAM:—"Well, after Judge Wheeler's decision, I s'pose I'll have to let you in and call that load dressed lumber."

YOUNG CANADA:—"If you'd called it anything else, I'd have called your head a manufacture of wood."

but the larger size, called a bobbin or long-length spool, has to be made in pieces. There are three of these pieces, the "barrel" and the two ends or heads. The barrels are turned from white birch sticks about two feet long and from two to 2½ inches square at the ends. The heads are fashioned from blocks that are from four to five inches square at the ends. What they call a Weymouth lathe rounds off the big blocks. Then the parts are taken to another machine, where they are glued and driven firmly together. The gluing is done by hand.

The freshly-glued bobbin is taken to a third machine which drills holes in the two heads. Then stout pegs are driven in, and the bobbins are taken to the dry-house to remain until the

NOVA SCOTIA NOTES.

[Correspondence of the CANADA LUMBERMAN.]

In our ramblings for June we parted company in the historic town of Shelburne, and I promised to give you something regarding the lumber business in my next. Before going into details, I will say that sawmilling at Shelburne and on the Shelburne river is one of the oldest industries of the province. Most of the mill-men now doing business in Shelburne and up the river are the grand-sons of men who began the business, so that in most cases the present operators were born and bred to the sawmilling business, and are consequently practical and in most cases successful mill-men. When I say "successful" I do not mean to compare them to some of the western lumbermen, who have made "millions," and whose positions and standing are looked upon by some as the natural and ultimate goal of all in the lumber business. What I do mean to say is that by dint of hard work, energy, and economy, together with their practical training, the majority of them have acquired a fair competence, which they richly deserve.

In the town of Shelburne James R. Bower has a steam saw mill, with shingle machine, planers, band saws, cylinder barrel, stave and heading machines and turning lathes, in which he does a good business, manufacturing barrel stock for fishermen, thin boards for fishermen's dories or boats, framing timber, ship builders' stock, such as futtocks and knees (of which the frames and bracings of deck beams, etc., are made), culling and planking timbers, deck plank, treenails, stanchions, rails, etc., etc., and besides he sends cargoes of lumber and shingles to Newfoundland and the West Indies. He also does considerable local sawing for the building trade. Mr. Bower began this business here only a couple of years ago, but through his indomitable energy and push has worked up a nice business.

Bower Bros. have a water power saw mill at the head of Shelburne harbor, about one mile from the town, with gang mill, shingle machine, barrel and heading machinery and planers, in which they do a good business. Some two years ago they had the misfortune to lose their mill by fire, and when they rebuilt the machinery was modernized. The class of work done is somewhat in the same line as James R. Bower, but they ship more of their stock to the West Indies and American ports. This section of the country is noted for its oak, which they supply for car works and furniture, the principal furniture manufacturers in the province getting their stock of oak from them.

Andrew Bower & Son have a band saw in their mill, which is on the Shelburne river, about four miles above Bower Bros. This is the first log band saw mill in Nova Scotia. When Mr. Bower heard of the band saw he judged it would be a good thing, although band saws were only in their infancy at the time; yet he had the courage to try the experiment and is thoroughly satisfied with the result. Both Mr. Bower and his son being practical mill-men, it did not take them long to master the difficulties that usually attend the change from one style of saw to another. They also have a fine water power and manufacture lumber, lath, pickets, shingles, ship plank, treenails, and anything else that can be made out of the round log, and find a ready market for their products.

George W. Durfee, Shelburne, has a water power mill in which he makes staves and heading for fish barrels, ships, blocks and pumps, and also does planing for builders in the town, and does a good shingle business besides. Mr. Durfee has an eye for a fast horse and usually has one ready to give your correspondent a spin when he has the pleasure of being in Shelburne. Mr. Durfee is a thoroughly practical man in his line of business, and pays strict attention to business when there is no horse trot on. The old saying, "All work and no play makes Jack a dull boy," is as applicable to mill-men as to any class; their work is exacting and an occasional change is a benefit to them.

Frederick R. Muir has a small mill in the town, planing, sawing, turning lathe, etc., also a cording mill, steam power.

John T. Ryer & Son had a fine rotary mill, but it was burned down. They have not rebuilt yet, but hope to do so at an early date.

At Ohio, some eight to sixteen miles up the Shelburne river, there are a number of mills, all water power; they are small, but in the aggregate saw a lot of lumber, some of which is for the local trade and the rest is shipped from Shelburne. Robert Bower has a nice rotary mill; then there is James Bower, David A. Bower, John J. Bower, and T. H. Bower & Son, and they all do about the same class of work, sawing lumber, shingles, staves and heading.

J. A. & J. H. McKay have a water power saw-mill at Clyde river, some fourteen miles west of Shelburne; they have rotary, edger, lath and picket machines, planer and shingle machine. Their logs come down the Clyde river. They also saw a large quantity of oak, finding a market for it in the furniture factories of the province, and a lot of spruce and pine, which is shipped from Port Clyde, a few miles away. There is a good demand for oak ship plank.

Mr. Joseph A. McKay owns and runs the hotel of the place, in which the weary traveller can have his wants well attended to and go on his way rejoicing. Both Mr. and Mrs. McKay do all they can to make the "wanderers on God's footstool" feel at home, and in this respect they are quite successful. Mr. McKay is a J. P., and woe betide the unlucky wretch that has been brought before him and proved to have broken any of the statutes enacted by the representatives of Her Majesty, Queen Victoria, yet I think his disposition would be to "temper justice with mercy." Mr. McKay is prominent in the affairs of the county of Shelburne, and also prominent in the political parties—both local and federal—with which he identifies himself.

Clyde river and Port Clyde at one time were the headquarters for ship-building and lumbering in the south-western part of Nova Scotia, but wooden ships having gone out of date, that industry has dwindled to very small proportions, and the lumbering mills, burned some years ago, were not rebuilt. While the owner, Hon. Thomas Coffin—a member of the MacKenzie administration—was doing business there the place was a live, busy spot. It is to be hoped that the ebb tide has been reached and the flood tide of prosperity will bring back some of the old time prestige.

W. J. P.

TWO BERLIN PLANING MILLS.

The planing mill of Mr. Jacob Kaufman is situated on the main street of the thriving German town of Berlin, Ont. It is a brick structure, three stories high.

Mr. Kaufman started a planing mill and lumber business in 1877, and since that time has turned over between \$50,000 and \$70,000 per annum. The present building was erected a short time ago, and thirty men are kept constantly employed in and around the factory.

On the ground floor is the heavy machinery, with offices in front. This machinery is comprised of two planers, two rip saws, a moulder, a resaw, and a sand-paperer. In the basement is a Goldie & McCulloch Wheelock engine of 45 h.p., supplied by a 60 h.p. boiler along side of the same make. On the first floor is a band saw, pony planer, buzz planer, three cross and rip saw machines, turning lathe, shaper, moulder, tenoning machine, mortiser, and blind slot machine.

The top flat is used for a store-room, in which are stored mouldings, doors, sashes, blinds, etc.

In two annexes are dry kilns of 20' x 18' and 15' x 18' dimensions, made by the Sturtevant Company.

In the yard is a large store house for dressed lumber, and 1,500,000 feet of lumber is kept piled in the yard. Mr. Kaufman has another yard further up the street in which he keeps lath, shingles and cedar posts.

All the lumber used in this mill is supplied from Mr. Kaufman's own saw mill at Trout Creek, where he cuts annually 2,000,000 feet of lumber. He reports prospects fair for a steady building season and is now busily engaged filling orders for building material.

Situated in the same town is the planing mill of Mr. John Hall, a short distance below that of Mr. Kaufman. To this mill and yard are shipped annually from 150 to 200 cars of lumber. The building is a three-storey frame structure, with brick faced front and concrete covered sides. A new 45 h. p. Wheelock engine supplies power to the mill.

The ground floor is filled up with the following heavy machinery: matcher, planer, two rip saws, cross-cut saw, and moulder. In front are the offices, projecting out from the building. On the first floor are the usual amount of machinery in a well-equipped planing mill, comprising: turning lathe, mortiser, tenoning machine, sand-paperer, boring machine, band saw, dadoing machine, rip saw, and buzz planer. This planer in two days will run through 13,500 feet of lumber. The second floor is used for bench work and a store-room. The other store-room is in a rear annex, and to one side is a dry kiln of a capacity of 30,000 feet.

In the yard of half an acre is piled the rough lumber, and in a shed 80' x 20' is stored the dressed lumber. The mill and premises are lighted by gas and the building is heated by steam. About 30 men are employed.

"THE LUMBERMAN" IS APPRECIATED.

THE Sauble Falls Lumber Co., Sauble Falls, Ont., in remitting their subscription, write: "We greatly appreciate THE LUMBERMAN, which continues in well sustained interest and value to its patrons."

FROM LES QUINZE TO QUEBEC.

Mr. Peter J. MacIntyre, of Edinburgh, Scotland, in the *Mattawa Tribune*, gives the following interesting description of a trip on a timber raft from the head waters of the Ottawa river to Quebec:

"The longest trip on a raft which it is possible to make is from the head of Lake Temiscamingue to Cap Rouge boom, near Quebec.

The timber is made in remote shanties, far above Lake Expanse. It is then floated down Quinze lake in a boom, and soon arrives at the foot of the Rapides des Quinze, fifteen in number, one of them nearly as wild as the Chaudiere at Ottawa.

At the foot of Les Quinze the timber is rafted up. The foundation of a crib consists of two long pieces of timber called floats; at each end of the stick is a large wooden pin; long traverses are then put on the pins and the timbers are tightly wedged in below. Above all this, the three long loading sticks are placed, then the footboards, row-locks, thole-pins and calumet-pins are put in their places, and the crib is finished. The cribs are then banded up together with "kirkshaws," cap pieces, pickets and rope. About a hundred and thirty-six cribs make a large raft.

We are then towed down Lake Temiscamingue to the head of the Long Sault Rapids. At low water this is a very dangerous place, and only single cribs can be run at one time.

Next comes the Mountain Rapids, then the Les Erables, after which follows La Cave and Demishars, none of which are very rough.

Our next place of interest is Mattawa, at the mouth of the Mattawa river. Here plenty of visitors come on board to get a meal of pork and beans. Here the old shanty "Chansons" are often heard:

Some are bound for England and some are bound for France,
But we are bound for Quebec town, to give ourselves a chance.

Rowing down the river with the side oars we arrive at the Deux Rivieres Rapids, which at high water are very wild and dangerous at the last pitch. Cribs have been known to "jack-knife," or tumble over backwards, drowning all hands.

Flies of all kinds are the greatest annoyance to the hardy river-men; mosquitoes, sand-flies, black-flies and other noxious insects torment the men all night. Oil and other devices are tried, "smudges" of grass are made, but it seems to be of little use, and all through the hot summer nights fiery French Canadian oaths are heard.

The Rochier Capitaine (or Captain Rock) is our next snubbing place. This is one of the rapids on the Ottawa which the raftmen fear, for at the foot are the graves of many who have perished in its waters, to be nameless and forgotten till the judgment day.

Some canoes were being built here, which remind us of the Canadian poet who sings:

"O light canoe where dost thou glide?
Below thee gleams no silver'd tide,
But concave heaven's chiefest pride."

Below Rockcliffe is Rhinds Rapids; we can run in bands.

Des Joachims rapids next engage our attention. At low water they are very dangerous,

and great difficulty is experienced in keeping clear of the bridge at the foot. Here the smashed cribs are wafted up, and the steam tug "E. H. Bronson" takes us in tow. This part of the Ottawa is called Deep River. We soon come to the famous Oiseau Rock. There is an old story of a "papoose" having been carried to the top of this rock by an eagle, and rescued by its mother.

The next place of interest is Fort William, now a fashionable summer resort, and once a Hudson's Bay Company's trading post.

Passing through the Narrows we arrive in Allumette Lake, and get a fine view of the town of Pembroke. At the foot of the lake are the Allumette Rapids, which may be run in bands.

The next snubbing place is at the head of the Pauquette Rapids, which also may be run in bands.

After a long tow down the river, we arrive at the head of the Calumet Rapids, which are allowed to be the worst on the river. At the mill we see the grand chute of the Calumet—a seething mass of whiteness, relieved now and again by the shining of the black rocks. At this historic place we see the grave of a hero. A large white marble monument built in the shape



A RAFT ON LAKE TEMISCAMINGUE.

of a cross marks the spot. The simple inscription on the stone is "A la memoire de Cadieux."

The legend says he married an Indian maiden of the Algonquin tribe. All was peace and quietness until the Iroquois made a sudden attack on them. Cadieux kept the foe at bay till his wife escaped with others in a canoe. Cadieux also escaped, but starved in the woods, and beside him was found "La Lament de Cadieux," his death song, and which is a great favorite in the woods and on the river.

Many graves are seen all around here, and the river song comes to mind, which, when translated, means:

For there's danger on the ocean when the waves are mountain high,
And there's danger in the battle-field when the angry bullets fly,
And there's danger at the Calumet, and death lies solemn there,
When I fell a helpless victim all in that deadly snare!"

Such is the fear which raftsmen have of this place that many of them leave, under which circumstances they are said to have the "Calumet fever!"

Our next stoppage is Portage du Fort, a series of rapids, the worst of which is the "Grand Traverse." Two runs only can be made here in a day, and the men are driven back in wagons.

Passing down in Chats Lake (or Lake of the Wild Cats), we run through the Snow Rapids, dividing the raft into four bands. In the distance we see Farrell's Wharf, once the nearest point of communication for the town of Renfrew.

A little further down is the mouth of the Bonchere. Sailing on we pass the village of Sand Point, Braeside and the town of Arnprior. We then snub on to a pier in the middle of the Chats Lake and at the Chats Rapids. Still further down comes the Chats timber slide, at the foot of which is Fitzroy Harbor. A fine view is now obtained of the seven chutes of the Chats, all coming straight down from an immense height into the lake below.

The tug again takes us in tow, and next morning we are in Lake Duchene, snubbed safely in Britannia Bay. Opposite us is Aylmer, a place of importance as a lumbering centre. Banded up at the foot of the Duchene Rapids, we again resume our journey till we snub at Skead's mills. Cribs then run through the "Rimmicks," the "three kings," the Mars Channel and the Chaudiere timber slide, at the foot of which the cribs band up.

Leaving our snubbing place below the parliament buildings we are towed out, and in two days we come to Grenville, at the head of the "Long Sault" Rapid. This is a very wild rapid and can be run in bands of six cribs.

Passing a good many French Canadian villages, we come to Carillon, where a fine timber slide has been built. On the opposite side of the river is the great government canal.

We soon run the "Big Sault" and Isacore Rapids, then a little river near Montreal. It was here the famous raftsmen and hero was born, whose praises are sung in many a remote lumber camp:

Some say he's very handsome, some say he's very tall,
They call him big Joe Muffaraw, the bully of Montreal.

Our next call is Bord a Plouffe, after which comes La Prairie. Here all the Iroquois Indians leave and return to their home, at the village of Caughnawaga, near Montreal.

The raft is now banded up compactly for the last time. Calumet pins, etc., are taken out; everything is swept and cleaned.

The steamer Hudson then takes a hold of us and we are soon again on our journey. We enter the broad bosom of the St. Lawrence at Sorel. Here the river is quite green in color. Next morning we are passing Three Rivers, having safely crossed the rough Lake St. Peter, and soon by the efficiency of the pilot and the skill of the crew we arrive safely at Cap Rouge boom. Here the raft is broken up and loaded on to the ocean going steamers. All hands are then paid off. Sharpers and agents of the worst description surround our poor raftsmen, and between whiskey and everything else he is perhaps robbed after being twenty-four hours in Quebec.

I have now finished, and if I have told you anything about our glorious Ottawa river, the true beauties of which the English traveller seldom sees, and above all, if I have interested you on behalf of our simple-hearted rivermen, I feel that I have not written in vain.—Au Revoir."



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ADVERTISING RATES FURNISHED ON APPLICATION

The CANADA LUMBERMAN is published in the interests of the lumber trade and of allied industries throughout the Dominion, being the only representative in Canada of this foremost branch of the commerce of this country. It aims at giving full and timely information on all subjects touching these interests, discussing these topics editorially and inviting free discussion by others.

Special pains are taken to secure the latest and most trustworthy market quotations from various points throughout the world, so as to afford to the trade in Canada information on which it can rely in its operations. Special correspondents in localities of importance present an accurate report not only of prices and the condition of the market, but also of other matters specially interesting to our readers. But correspondence is not only welcome, but is invited from all who have any information to communicate or subjects to discuss relating to the trade or in any way affecting it. Even when we may not be able to agree with the writers we will give them a fair opportunity for free discussion as the best means of eliciting the truth. Any items of interest are particularly requested, for even if not of great importance individually they contribute to a fund of information from which general results are obtained.

Advertisers will receive careful attention and liberal treatment. We need not point out that for many the CANADA LUMBERMAN, with its special class of readers, is not only an exceptionally good medium for securing publicity, but is indispensable for those who would bring themselves before the notice of that class. Special attention is directed to "WANTED" and "FOR SALE" advertisements, which will be inserted in a conspicuous position at the uniform price of 15 cents per line for each insertion. Announcements of this character will be subject to a discount of 25 per cent. if ordered for four successive issues or longer.

Subscribers will find the small amount they pay for the CANADA LUMBERMAN quite insignificant as compared with its value to them. There is not an individual in the trade, or specially interested in it, who should not be on our list, thus obtaining the present benefit and aiding and encouraging us to render it even more complete.

TO VISITING LUMBERMEN.

Lumbermen visiting Toronto are invited to use the office of the CANADA LUMBERMAN as their own. We shall take pleasure in supplying them with every convenience for receiving and answering their correspondence, and hold ourselves at their service in any other way they may desire.

PROSPECTS FOR CANADIAN LUMBER.

If the articles which appear from time to time in the leading lumber trade journals of the United States are to be depended upon, it is only the question of a few days until the re-imposition of an import duty shall become an assured fact. But we are inclined to the belief that Canadian lumbermen need have little fear in this direction for a time at least. Certain it is that nothing will be done by the present government, and granting that the Republicans will regain control of affairs at the approaching election, the duty would not be imposed without a sufficient time being afforded for a reasonable consideration of all questions affecting the lumber trade. A duty on lumber entering the United States would probably mean that an export duty would at once be imposed upon saw logs by the Canadian government, and this step would prove disastrous to the Michigan manufacturers who now obtain their supply of logs from the Georgian bay district, and also to the pulp mills which are now supplied with spruce wood from our eastern provinces. The results of an import duty on lumber entering the United States would probably not be as serious as some may imagine. Glance at the figures representing the value of exports to that country of boards, deals, planks

and sawn timber for the past eight years. During the McKinley Act, when sawn lumber was subject to a duty of \$2.00 per thousand feet, they were: In 1888, \$7,497,78; 1889, \$7,804,163; 1890, \$7,744,954. In 1891, during which year the duty was reduced to \$1.00, the exports were \$8,498,046. Under the reduced tariff the figures for the following years were: 1892, \$7,539,766; 1893, \$8,217,331; 1894, \$6,134,204. In 1895, with free lumber, the exports were \$6,859,532. The above figures show almost as high an average for the three years under the \$2.00 duty as for a similar period with the reduced duty, while with free lumber last year the exports were below that of any other year with the exception of 1894. Allowance must be made, however, for the depression in the lumber trade which has prevailed in both countries during the past two years, and also for the fact that the market for white pine has of late been seriously affected by the increasing favor shown to the cheaper southern pine. A certain quantity of our lumber is bound to find a market in the United States, duty or no duty, and we believe Canada is in a better position to-day to battle with an American import duty than she was during the operation of the McKinley tariff. Each year she is becoming less dependent upon the United States for the disposal of her timber products. The English market is now consuming large quantities of our lumber and deals, while other nations are importing to a considerable extent and looking to Canada for their future supplies. Among these may be mentioned France, which under the new treaty is likely to be a large importer, the West Indies, South America, Spain, and Australia. In addition to the foreign demand, it is not improbable that the next few years will witness the establishment of a number of pulp mills, which will create a demand for spruce and other wood suitable for pulp manufacture. Already English capitalists are interesting themselves in the matter and are looking round for suitable spruce limits.

TREE CULTURE.

We are pleased to see that at least a few persons in Canada appreciate the fact that at the rate at which the forests of Canada are at present being cut down, it will not be very long before good merchantable timber will be a scarce commodity in this country. One of the persons who is thus looking into the future is Mr. Thomas Conant, of Oshawa, Ont., who, in the last two years, has planted about 12,000 trees, consisting of black walnut, red cedar, and shell bark hickory.

It is a well known fact that pine and other soft woods have of late been largely superseded in building operations by various kinds of hardwoods, more particularly maple and oak. In view of this change, and of the improbability that there will ever be a return of former conditions, the wisdom of replenishing our supply of hardwoods is clearly apparent. There are in Ontario alone thousands of acres of uncultivated land which might profitably be devoted to the growth of hardwoods for which there is likely to be the most demand in the future. Walnut for example is in the greatest demand at the present time owing to its extreme scarcity, and there is no doubt that this wood will always bring a satisfactory price. Buyers in the Glasgow market are at the present moment deploring the fact

that it is impossible to obtain shipments of Quebec walnut such as they were accustomed to receive in former years, owing to the fact that the supply has become exhausted. This evidences the wisdom of the advice given the farmers of Quebec by the Hon. Mr. Joly some time ago to turn their attention to the cultivation of walnut.

We in Canada have been so accustomed to being surrounded on every side with an abundance of wood that few of us realize the rate at which it is disappearing and the nearness of the time when our forests will, to a large extent, have disappeared. It behooves us to make provision for the future.

DISHONEST BUSINESS TACTICS.

JUDGING by the reports which come to hand from time to time of attempts made by certain business establishments in the United States to swindle Canadian lumber dealers, one would naturally conclude that the opinion was prevalent that Canadians were possessed of a very meagre equipment of business sense and shrewdness. These would-be "sharks" will probably find out ere long that as a rule Canadian lumbermen are not easily caught in their traps. We have so frequently referred to this matter that we feel an apology is necessary for making any further reference to it, but a case in point cannot, in the interest of the trade, be allowed to pass unnoticed, showing, as it does, how every opportunity is taken advantage of to defraud shippers out of their just receipts.

A traveller for an Ontario wholesale dealer was given an order by an American firm for ten cars of $\frac{5}{8}$ and $\frac{3}{8}$ bicycle rim stock. Upon the order reaching the office the wholesaler, who had learned to be cautious when dealing with certain United States customers, did not feel justified in shipping the ten cars at once, but offered to send forward one sample car for acceptance before shipping the balance, which was finally agreed to by his customer. Placing the order with a mill man he sent his inspector to ship the car. The inspector discovered, however, that some of the pieces had been cut too small, and suggested to the mill man to remedy the matter. As the stock was carefully tied up in bundles, the miller agreed to send the car forward subject to inspection there. When the car was received a report came to the wholesaler advising him of the above fact, when he instructed his customer to reduce the $\frac{5}{8}$ stock which was too small to $\frac{3}{8}$ and reject any $\frac{3}{8}$ stock which did not meet the requirements as to size. The account rendered by the wholesale dealer was as follows:

| | |
|--|----------|
| 10,175 pieces $\frac{5}{8}$ at $2\frac{1}{2}$ c. | \$254 37 |
| 3,800 " $\frac{3}{8}$ " $1\frac{3}{4}$ c. | 66.50 |
| | <hr/> |
| | \$320.87 |

Acting under instructions from the wholesaler, the stock was reduced and an account forwarded to him as below:

| | |
|--|----------|
| Freight | \$98.26 |
| 19 $\frac{1}{2}$ hours, time, 2 men and saw, at 75c. | } 14.63 |
| Edging strips too wide for planer. | |
| 400 pieces short at $2\frac{1}{2}$ c. | 10.00 |
| Discount of $\frac{1}{4}$ c. each on 9,225 pieces, $\frac{5}{8}$ run down to $\frac{3}{8}$, they being too poor for $\frac{3}{8}$. | 69.16 |
| 9,768 pieces $\frac{3}{8}$ rejected at $1\frac{3}{4}$ c. | 170.94 |
| | <hr/> |
| Balance | \$42.15. |

By the account the wholesale dealer was brought out in the debt of his customer to the

extent of \$42.15, and a draft for that amount was sent forward, with a request that prompt payment be made. Correspondence was at once opened by the wholesale dealer pointing out the fact that an error had certainly been made, and requesting that the matter be looked into, but several letters were replied to in the same tone, that they could not swerve from the position already taken and must request payment of draft at once. This fact again emphasizes the necessity of shippers of lumber guarding themselves in every possible way from being made the victims of sharp practices of this nature.

It will be observed that 9,225 pieces of 58 stock were reduced to 38, "they being too poor for 58," but as a matter of fact, a large portion of the reduced stock must have afterwards been rejected, as according to the account there was a shortage of 400 pieces, which would leave only 13,575 pieces in the car load. A strange condition of things indeed, that the shipper should be obliged to pay \$42.15 to his customer for taking the lumber off his hands, in addition to losing the lumber.

EDITORIAL NOTES.

THE many fatal accidents in saw mills which are chronicled from month to month suggests the desirability of employers taking every precaution to prevent the same. Many of the accidents are no doubt unavoidable, while others are the result of carelessness, induced by familiarity. While it is probably impracticable, under all circumstances, to cover or guard saws, every possible chance of a workman stumbling and falling upon them should be removed. A code of rules governing the operation of the machinery, and compiled with a view to protection, would also be of advantage if properly enforced.

A COMMENDABLE step has been taken by the National Association of Manufacturers of the United States towards the establishment of more intimate trade relations with South America. It is proposed to organize a party of representative business men for the purpose of visiting the Argentine Republic, the Republic of Uruguay, and the United States of Brazil, at the invitation of the governments of these countries. The tour will cover the months of July, August and September. The party will be considered as the guests of these nations, and after visiting the manufacturing establishments in the cities will be conducted through the provinces by a special train.

THE decision of Judge Wheeler in the United States circuit court, in the "dressed lumber" case, mention of which was made in our "Weekly Edition," is undoubtedly in accordance with the spirit of the law. Unless carried to the Supreme Court the decision will be final, and that an appeal will be made is extremely improbable. Americans are ready to admit that the decision of the board of general appraisers, "that the term 'dressed lumber' meant only such lumber as had been surfaced on one or two sides, and that when further worked it became a manufacture of wood," was manifestly unjust. The decision should result beneficially to Canadian planing mill operators, who have been shut out of the United States market by an unfair interpretation of the tariff.

REFERENCE was recently made in this journal to the unsatisfactory freight classification of lumber by the railway companies. In the United States the same difficulty seems to have been experienced, and a committee of the United States senate have taken up the matter. Senator Cullom, on behalf of the committee, has reported a bill, directing the Inter-State Commerce Commission to prepare and publish the classification of freight articles and rules, regulations and conditions for freight transportation. This is to be prepared by the first of March next, and three months thereafter is to be given for the hearing of complaints against such classification. The failure of any carrier to observe such classification shall be punishable as a violation of the act to regulate commerce.

ARE Canadian lumbermen making every possible effort to improve the condition of the trade and to discover new markets for their product? In answer to this question it may be said that the past year has witnessed an improvement in this direction, although there still remains an opening for further advancement. The Department of Trade and Commerce at Ottawa has received a letter from Mr. J. G. Colmer, secretary to the High Commissioner for Canada, in which it is stated that the Johannis Mineral Water Company, of 25 Regent street, S. W., one of the largest exporters of mineral water in the world, had intimated that the company would be glad to receive communications from Canadian manufacturers of box shooks, with a view to placing orders therefor. This company are said to require large quantities of shooks each year, and the growing scarcity of suitable woods in Europe has induced them to look to Canada for their supply. Canadian manufacturers should not permit opportunities of this kind to pass without taking prompt action to secure the trade, otherwise the business will turn in other directions. Having large quantities of lumber suitable for box shooks, and which it is difficult to dispose of, the trade should prove a profitable one for our lumbermen.

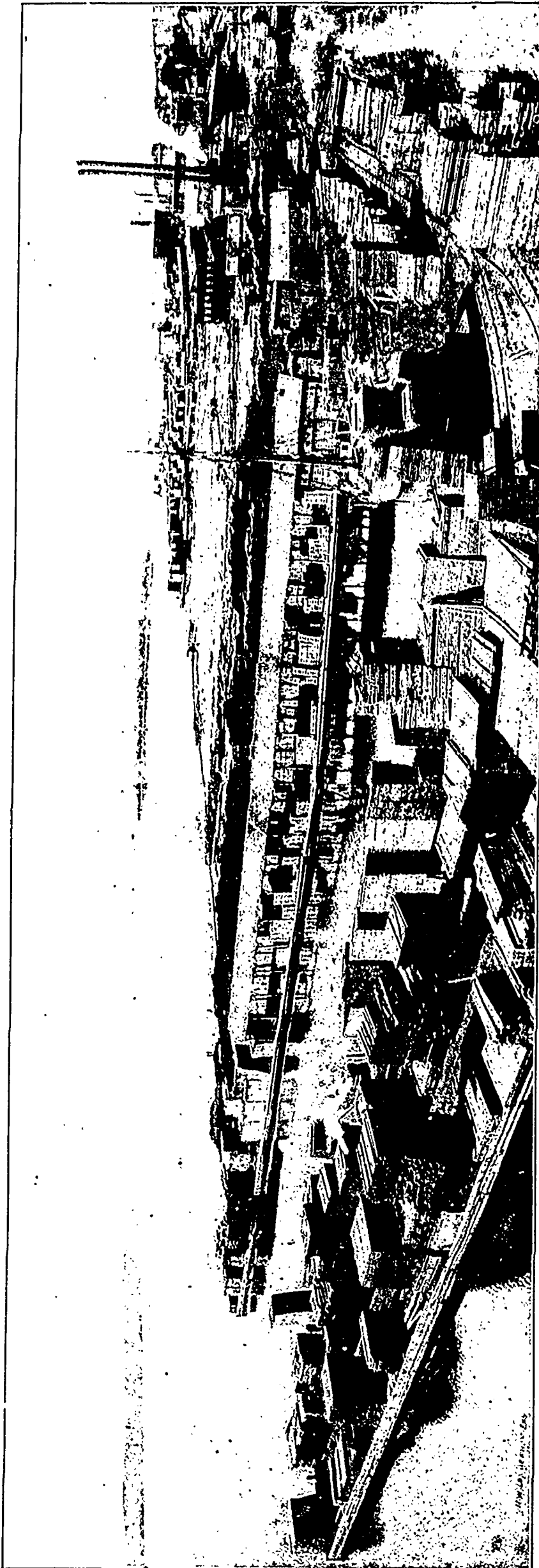
THE port of Quebec, which has of late years lost a large portion of its lumber shipping trade, promises to assume renewed activity as a result of the development of the wood pulp industry. The initiatory steps in this direction have been taken by the Laurentide Pulp Company, of Grand Mere, Que., who recently shipped seven car loads of pulp to Liverpool. The cars were placed alongside the steamer, and the goods are said to have been loaded with the greatest facility. As Quebec is the natural port of a heavily timbered spruce district, the prospects for an important and rapidly increasing export trade are considered promising. Of the quality of the pulp produced in Canada there is no question. It is increasing in favor with the paper manufacturers of the United Kingdom, being superior to that produced by Norway and Sweden. In 1893 Canadian pulp was sold in England at an average of \$28.40 a ton, as against \$20.77 for the Scandinavian product. The growth of the industry is shown by the following figures: In 1889 it did not appear in the customs returns; in 1890 the quantity exported was valued at \$168,180; in 1891 at \$208,619; in 1892 at \$355,303; in 1893 at \$455,893; in 1894 at \$547,217, and in 1895 at \$590,874.



Mr. E. C. Grant, of the Ottawa Lumber Company, who, by the way, is the only lumberman in Canada represented on the Committee of Management of the National Wholesale Lumber Dealers' Association of the United States, informs me that the feeling of the Association towards Canadian dealers is most friendly, and that it is desired that the Canadian representation should be increased. "The Americans realize the fact," said Mr. Grant, "that they must come to Canada for both lumber and timber. They have purchased Canadian limits and must get the logs out, and I think it would be unwise of the Dominion government to impose a large export duty on logs. Should the United States government re-impose the duty on lumber, then I say we must protect ourselves by levying a duty on saw logs. But I do not think there is any cause for alarm, as it is not probable that tariff restrictions will exclude our lumber from the American market."

* * *

Mr. Dwight Cutler was some years ago one of the leading white pine manufacturers of Michigan, in which state he now resides. His firm, the Cutler & Savidge Company, now operate a large mill at Cutler, Ont., on the Spanish river. His views on the lumber tariff question, therefore, as given to a contemporary, will be interesting. In his opinion if a duty should be restored by the United States on lumber above 60 or 75 cents, the Canadian government would retaliate by placing an export duty on logs. He thinks it probable that if a mere revenue duty of 60 or 75 cents a thousand were imposed it might be endured by the Canadians without an attempt at reprisal, but anything above that would inevitably lead to conditions which would eventually stop the exportation of logs to American mills, and, perhaps, greatly limit the exportation of lumber to the United States. One great advantage of the present conditions is the benefit derived to the places where the lumber is manufactured. He estimates that from \$600,000 to \$1,000,000 is spent in wages in the Saginaw valley and adjacent manufacturing points in sawing Canadian logs. If the duty of \$1 to \$2 was imposed it would mean the shutting down of the mills or their removal to Canada. But the re-imposition of a duty would raise the price of lumber in the United States, and having at heart the interest of the lumber industry at large, Mr. Cutler is in favor of the duty. Before the lowering of the duty Canadian prices were higher than they have ever been, since the effect of the reduction was a lowering of the average price at the Canadian mills. He further stated that logging costs about twice as much in Canada as in the United States, and last year his concern purchased 5,000 pounds of dynamite for road making and improving the rivers. The cost of supplies is high, and wages are much the same as across the line. He believed that logs would cost, delivered at the mill booms, in the neighborhood of \$10 a thousand feet, and consequently Canadian competition would not be as serious in the long run as is feared. The method of granting licenses would also serve as a balance wheel to Canadian production, preventing, as it does, an over-glut of low grade stock.



VIEW OF CEDAR MILL AND DOCKS, AT DESERONTO, ONT., SHOWING SHINGLE DOCKS WHERE THE RECENT FIRE ORIGINATED.

THE RATHBUN COMPANY'S CEDAR MILL.

THE accompanying illustration shows the cedar mill and docks of the Rathbun Company, Deseronto, with shingle dock where the recent fire originated which destroyed a large portion of the town. Fortunately, the mill escaped destruction, but the loss to the stock is placed at \$50,000. The total loss to the Rathbun Company is in the neighborhood of \$200,000, more than half of which is covered by insurance.

The cedar mill was started in 1872 to meet the demand from the United States for cedar timber cut to suitable sizes, and to furnish the necessary material for the company's car and ship work. It is a two-storey structure, built of frame, the outside walls lined with brick, with stone partition walls. The size is 60x180 feet, with an addition 50x85 ft., fitted with automatic sprinklers and steam force pumps. It is operated the year round, and is fully equipped with the best machinery for the economical manufacture of material. Its power equipment is a twin engine, 10x36 inch cylinders, making 125 revolutions a minute, and backed by five boilers of 375 horse power.

The mill cuts lumber, railway ties, fence posts, lath, shingles, box shooks, headings, pickets, stave bolts, paving blocks, and other products of wood.

SALE OF QUEBEC TIMBER LIMITS.

On the 28th of May there were offered for sale by the Department of Crown Lands at Quebec some 278 square miles of timber limits. There was a large attendance of buyers present, and competition was very brisk, particularly for the Upper Ottawa limits. The results were entirely satisfactory, the sale proving to be one of the most successful ever conducted by the Department. In every case the upset price was realized, and sometimes trebled. Mr. P. Blouin acted as auctioneer, Hon. Mr. Nantel and Mr. Tache being also present. Below are the details of the sale, with classes of timber which predominate :

UPPER OTTAWA AGENCY.

The value of these limits consists in the quantity of white pine existing thereon, although other species are to be found, such as red pine, spruce, and hardwoods.

Islands in Lake Kaniwanaka, Ottawa river. Area, 2½ square miles. Upset price per mile, \$500. Price obtained, \$500. Total amount, \$1,259.53. Purchasers, Poupore & Frazer.

Block A, 5th range, North, half No. 1. Area, 25 square miles. Upset price per mile, \$350. Price obtained, \$950. Total amount, \$23,829.37. Purchaser, Eugene Malo.

Block A, 5th range, South, half No. 1. Area, 25 square miles. Upset price per mile, \$350. Price obtained, \$510. Total amount, \$12,829.37. Purchasers, E. D. & C. A. Moore.

Block A, 5th range, South, half No. 2. Area, 25 square miles. Upset price per mile, \$350. Price obtained, \$380. Total amount, \$9,579.37. Purchasers, E. D. & C. A. Moore.

Block A, 1st range, No. 8 A. Area, 1½ square miles. Upset price per mile, \$400. Price obtained, \$850. Total amount, \$1,281.35. Purchaser, Eugene Malo.

LOWER OTTAWA AGENCY.

Formerly this was a white pine country, but 40-day value consists in the spruce, although there is a fair amount of pine to be picked up.

Red River, South A. Area, 22 square miles. Upset price per mile, \$100. Price obtained, \$191. Total amount, \$4,248.32. Purchaser, E. D. Moore.

Red River, South F. Area, 49¾ square miles. Upset price per mile, \$50. Price obtained, \$100. Total amount, \$5,130.25. Purchaser, E. D. Moore.

No. 34 A. Back River. Area, 8 1/10 square miles. Upset price per mile, \$100. Price obtained, \$100. Total amount, \$837.27. Purchaser, Joliette Lumber Co.

SAGUENAY AGENCY.

This is principally a spruce timber limit, with a few scattering pine.

Laval No. 2. Area, 1 1/10 square miles. Upset price, \$14. Price obtained, \$15. Total amount, \$22.71. Purchaser, Chas. Belanger.

RIMOUSKI WEST AGENCY.

Value consists in spruce and cedar, with a few scattering pine here and there.

River Neigette. Area, 10 9/10 square miles. Upset price per

mile, \$30. Price obtained, \$30. Total amount, \$3,601.15. Purchasers, Pinault et Frere.

BONAVENTURE WEST AGENCY.

This and the Gaspé agency following is valuable for the white spruce and cedar thereon, there being also a little pine.

Grand Cascapedia, No. 2 North. Area, 24 square miles. Upset price per mile, \$25. Price obtained, \$110. Total amount, \$2,714.52. Purchaser, J. M. Fortier.

Grand Cascapedia, No. 2 South. Area, 24 square miles. Upset price per mile, \$25. Price obtained, \$70. Total amount, \$1,754.52. Purchaser, G. A. Grier.

Grand Cascapedia, No. 3 South. Area, 16 square miles. Upset price per mile, \$25. Price obtained, \$99. Total amount, 633.68. Purchaser, J. M. Fortier.

Salmon River. Area, 36 square miles. Upset price per mile, \$25. Price obtained, \$125. Total amount, \$4,611.78. Purchaser, J. M. Fortier.

Carleton, No. 3. Area, 4 square miles. Upset price per mile, \$20. Price obtained, \$56. Total amount, \$236.42. Purchasers, J. & P. Nadeau.

GASPE CENTRE AGENCY.

York River, No. 2, North. Area, 3 square miles. Upset price per mile, \$20. Price obtained, \$21. Total amount, \$72.32. Purchaser, Angus McKinnon.

The total sum realized was \$70,401.93, which includes ground rent and fire tax for current season.

As regards the timber agencies in the east and north part of the province, it would not be surprising if at no distant date a fair price was realized for the white birch (Bouleau) thereon.

THE DISPOSAL OF SAWDUST.

Just at the present time the disposal of sawdust is a live question, in view of the fact that the Dominion government has prohibited the discharging of such into rivers and streams. The following particulars and illustrations in reference thereto, taken from our esteemed contemporary, The Timberman, will doubtless prove interesting to saw-mill owners:—

The advent of improved machinery and general advance in the study of uses of waste products have in recent years brought out some interesting developments in the sawdust line. The writer has knowledge of the details of some late work along this line which may interest those who have sawdust to dispose of, for, if the projects are successful, there will of course be a demand for a material which is now largely wasted. The new process of reducing sawdust to the proper form for compression into blocks involves some special machinery and apparatus, views of which are herewith presented.

Fig. 1 shows an upright boiler arrangement, which was constructed from an old boiler, being fitted with the inlet pipe connections at the top at E, through which the sawdust is run from above. The ingredients used in combination with the boiling of the sawdust are introduced through the pipe F, and consist of 12 pounds pale grade resin, 15 pounds degrass, 6 pounds litharge, 13 pounds chalk, 12 pounds petroleum, and several pails of lard oil, to a 300 pound batch of sawdust. As the sawdust falls into the boiler

through the pipe E, it receives a saturation of steam. the latter being admitted through the pipe H. When the boiler is nearly filled, a check valve is closed in the pipe E, thus preventing more sawdust from entering; the valve H is opened full force and some water also permitted to enter this way, which in combination with the

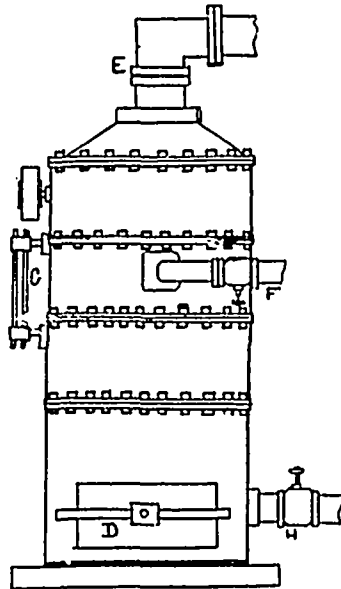


FIG. 1.—BOILING AND STEAMING THE SAWDUST.

steam boils and works the sawdust and the compounds together thoroughly. This is kept up several hours. The temperature is known by the gauges at C.

Next, the steaming and boiling process is stopped, the door D opened, and the worked sawdust shovelled out. From this point it goes to the paper pulp mill, where the sawdust is reduced to a pulpy condition in the ordinary way in which wood chips, etc., are digested for paper making. The next work calls for the return of the prepared pulpy mass to the shop, in which it is partly dried out in large square pieces, and these are compressed into compact forms in such machines as are shown in figures 2 and 3.

The principle of the specially devised machine presented in fig. 1 is shown without the frame work, the latter being very powerful. The large sawdust pulp block is seen in the centre in process of being compressed between the steel plates A, A. These plates are adjusted to suit the con-

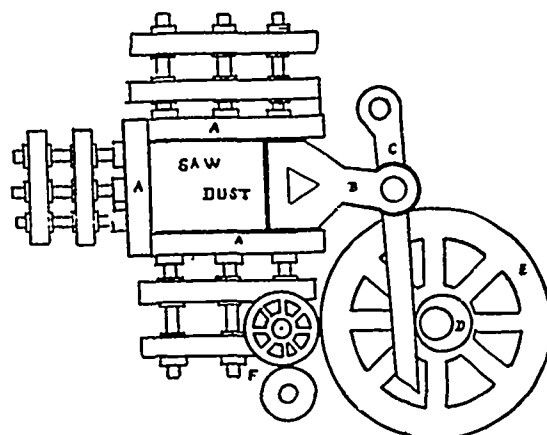


FIG. 2.—FIRST PROCESS OF COMPRESSION.

ditions, and when the wheels F revolve and in turn revolve the large wheel E, the cam on D on the shaft of the latter forces the lever C forward slowly and firmly. The push block B is fixed to this lever as shown, so that the forward motion of the lever carries the block too. The arrangement is such that a very powerful compression is

secured, and the sawdust pulp is greatly reduced in dimensions, and consequently compacted.

But further compressing is desired to attain the ends required for many purposes. This second pressing is done on a machine of finer construction, as may be observed in fig. 3, in which the same block of pulp sawdust is shown in the centre in act of being squeezed into small proportions between the upper press plates A, A and the side pushers B, B. This view is a top one and shows what may be seen when looking down upon the machine. Of course, all the bearings of the shafts are very strong, and so is the frame. These parts are not shown in the drawing.

The work is as follows: The belt drives the wheel F, and this in turn imparts motion to the series of wheels E, E, E, E by means of the bevelled gears as presented in the view. These gears marked E are keyed to heavy screw shafts, and cause these shafts to move as required.

The face of each gear is made wider than appears to be represented in the sketch, and this width permits considerable play inward and outward according to the conditions. All this machinery is, of course, experimental and crude.

As to some of the uses to which the product may be put, they may be classed as follows: Sawdust bricks, for the compressed stock is so

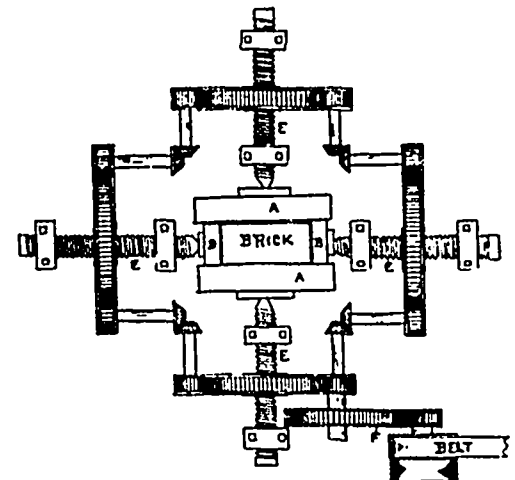


FIG. 3.—PROCESS OF SECOND COMPACTING OF THE BLOCKS.

hard and efficient that there is no doubt that it can be used as a building material, providing that some sort of a weather-proof coating is put on. Thus far, a cheap enamelling has been used, and the brick present a most attractive appearance. Then the pressed blocks are so firm that they are in condition for many uses. They may be cut and turned into handles for tools, loom shuttles, tops, buttons, and like articles, which are usually made from stock in which there is little or no grain, or in which the grain is very close. The sawdust blocks are so closely compacted that there is no possibility of splintering. Spools for thread, picture frames, mouldings, and hundreds of like goods are possible to make from this material.

LARGE as is the amount of Canadian lumber exported, it forms only one-quarter of the sawn lumber received in Great Britain, and only one-sixteenth of the square timber, the great proportion being the product of the north of Europe and the Southern States. Great Britain is the largest importer of timber among the nations of the earth, her own forest area being only about four per cent., and contributing but little towards the lumber requirements of the nation.

LARGEST MODERN SAW-MILL IN THE DOMINION.

(COMMUNICATED.)

Messrs. Andre Cushing & Co., St. John, N. B., have just completed the building of their new mill to take the place of the one burned last year. The old mill was established in 1852, right at the edge of the falls, on the St. John river, on what is known as Union Point. The new mill has a capacity of one hundred and fifty thousand superficial feet per day, or forty-five million feet annually, without counting in the nights, and they are expected to be quite as important a factor as the days in the operation of this mill.

The energy and indomitable pluck of George S. Cushing, shown in undertaking and carrying to a successful issue such a mammoth enterprise at a period when everyone was crying hard times and business depression, has proved a great benefit to the city of St. John and the vicinity, where most of the fittings, etc., have been purchased, and above all, to the large number of men who have found steady employment during the erection of the buildings and the placing of the machinery, for the work was carried on right through the winter months, when work of any kind is rather scarce and a sort of luxury.

The mill is thoroughly modern in every respect, and neither expense, labor nor care have been spared to enable Mr. Cushing to saw his lumber and handle the same to the best advantage for shipment to the Sound, New York, Boston, and foreign markets. All precaution has been taken to prevent loss by fire that the insurance companies could recommend, and much that they did not recommend. The boiler house is separate from the mill proper and is composed entirely of non-inflammable material. The mill proper is two hundred and twenty-six feet by sixty feet, three stories, on a stone and brick foundation, and shows one marked improvement over most mills, in that, owing to the height of the floors, the same being, respectively, sixteen, twelve and twelve feet, the light is extra good, and the danger of fire vastly decreased.

The mill proper was erected under the superintendence of Jas. Sterling, St. John, N. B., after the plans of the owner and manager, George S. Cushing, and the blue prints of the same furnished by the Filer & Stowell Co., Milwaukee, Wis. Eight hundred thousand feet of lumber, or fifty-two cars, or four transcontinental trains, were used therein, besides some four hundred thousand bricks, of which thirty thousand are fire-brick, or, if put on teams at one time and hauled to the mill, there would be one thousand teams, so that the line of teams would reach twenty-five thousand feet, or nearly five miles. To this add one hundred and eighty barrels of cement, three hundred barrels of lime, twenty-three hundred barrels of sand and seventeen tons of fire-clay, and you will have a small idea of the material used in the erection of this mill.

The boiler house is a model of perfection, is forty-eight feet by ninety-six feet by twenty-two feet, and contains six boilers, built by Jas. Fleming, St. John. They are a credit to the firm and to their designer. This firm, however, lacks one essential, viz., membership in The Concatenated Order of Hoo-Hoo. The same firm also built the double engines, with a five-hundred horse-power. The boiler house is removed from

the mill thirteen feet, and outside of the drive-belt the connections are of metal even the feed sluice box. A word as to this drive-belt—it is forty-eight inches wide and one hundred and ten feet six inches long, of double leather, manufactured by Grattan & Knight, Worcester, Mass., is made entirely of the best part of the hides, viz., the backs, and was furnished by T. McAvity & Sons, St. John, N. B. The same firm also furnished all the other belting, some two thousand feet, as well as the steam fittings, etc.

The saw-dust carriers, in which there are six hundred and forty feet of wrought iron, were made by a local blacksmith, and James Elliott has reason to be proud of his workmanship, for this mass of carriers moved off without a hitch or a mite of bother. This carrier is called "Cushing's Latest," and is composed of eight-inch links interwoven one with the other.

Messrs. Waring & White have supplied most of the pulleys and shafting, as well as both the edgers, and their worth will be better known later.

The band-saw machines were furnished by the Filer & Stowell Co., the order being placed through their representative, Ike Trissell, commonly known to the eastern lumbermen as "The Royal Ike." He also furnished the two steam niggers, the two Cline log rollers, and the sixty-inch inserted tooth steam jump-saw, as well as the centre-deck eccentric log jumpers.

Hoo-Hoo No. 1284, T. S. Wilkins, furnished the Giddings & Lewis Mfg. Co.'s gang, and great things are expected from this piece of machinery from Fond du Lac, Wis.

Cowan & Company, Galt, Ont., placed their planing machines in this mill, and they warrant them to be the best ever placed in the Dominion, and to be capable of any class of work required of that style of machine.

This miscellaneous mass of machinery, pulleys, shafting, belting, steam roller and bolts, &c., were placed before W. P. Jobson, Hoo-Hoo No. 3727, New Orleans, La., as waggon load after waggon load arrived and the different cars were reported on the siding, and he was asked to make a mill and to be sure to have the mill the most modern hereabouts. How well he did it was demonstrated as hour after hour, day after day, week after week and month after month, he kept placing piece after piece of pulley, circular saw, band saw, rollers, &c., &c., &c., gradually bringing order out of chaos, and so it went on until one day he announced that he was ready to start the steam and turn everything over. There was no hesitation or fear to be noticed on his face as he gave the word to start. He never seemed to think that there might be a pulley out of line, a connection loose, or a key not in its proper place; but after everything had moved along just as if it had been running for weeks instead of minutes, and a log lay on the bed hauled up the steepest log-slip ever built, he was seen working Mr. Cushing's hand like a pump handle, as if he were trying to bail out his pockets, which the salt brine from his sparkling eyes kept filled to their utmost capacity.

Mr. Jobson met a great deal of adverse criticism on account of many of his devices for the saving of the handling of the lumber any more than was absolutely necessary, but just the same he followed out his own ideas, and later his wife came east to help him enjoy his present success.

The cat came back, and to-day, as the emblem of the Hoo-Hoo floats above the premises, it excites the wonder and admiration (?) of the public.

Briefly recapitulating, the material used is as follows. Cement (Portland), 180 barrels; lime, 300 barrels; sand, 2,300 barrels; fire-clay, 17 tons; six boilers, 48 tons; two engines, 14 tons; crank-shaft, 4½ tons; fly-wheel, 8½ tons; two band-saws, &c., 62½ tons; gang, 15 tons; brick, common, 370,000; brick, fire, 30,000; lumber, 800,000 sq. ft.

To facilitate the work during the short winter days and for night work the mill is equipped with E. Leonard & Sons' automatic engine, and the Canadian General Electric Co.'s dynamo, with 225 lights, including 10 arc lights for the wharves.

The boilers are supplied with fresh water piped for six miles from the famous Spruce lake. This latter in itself is a vast improvement over the old mill, which used the river water, to say nothing of the mud that came along at the same time, and the salt that was very injurious to the boilers.

A very interesting feature is to note how the men stay by this company. There are twenty-five or more who have been in the employ of Andre Cushing & Co. for over ten years, viz.: Terence O'Brien, 1852 (since the company started), 44 years he has been on the Point for 60 years; Chas. Hagarty, 1863, 33 years; Jep. Duke, 1870, 26 years; Wm. McKinnon, Wm. Lynton, Michael Kingston, Patrick Gleason, Robert Gaskin, Daniel Sexton, Bat. Hagarty, 1873, 23 years; Lawrence Gary, Michael Cullion, Wm. Nixon, 1874, 22 years; Thos. Coram, 1879, 17 years; Gilbert L. Purdy, 1880, 16 years; John Cullion, John Cronin, Henry Herricks, George McLaughlin, 1880, 16 years; Patrick McQuinn, Newton Fowler, 1882, 14 years; Edward Goldie, 1884, 12 years; Willard Dykeman, John Gillis, 1885, 11 years; Wm. Herricks, 1873, 23 years.

OLD TIMBER LIMITS.

KINGSTON, June 9th, 1896.

To the Editor of the CANADA LUMBERMAN:

DEAR SIR, I understand that Messrs. Gil-mour & Co., Bronson & Weston, and probably some other of the lumber kings, own, or rather hold, under Government licenses, a large amount of land in the central and north part of Hastings county. On this land there is a very large quantity of fallen pine timber, as well as considerable standing but dead pine. The live pine has been all removed, or at least cut down, years ago.

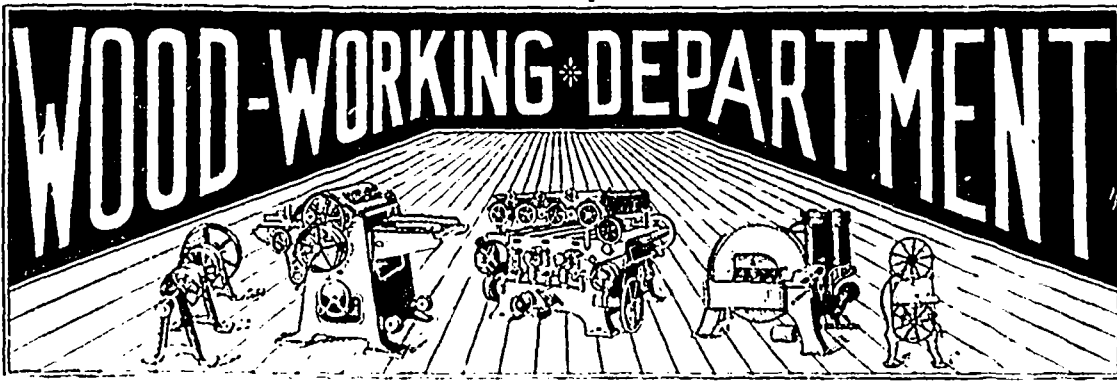
This fallen pine is perfectly good for many purposes, but the limit holders will not use it themselves nor allow anyone else to do so. If they would sell it the Government would derive considerable from the dues, but they have refused to do so.

I think the Government, in view of the fact that the timber is becoming more worthless every year, should either cancel the license and sell to some one who will remove it, or compel the present owners to do so.

Yours truly,

"LUMBERMAN."

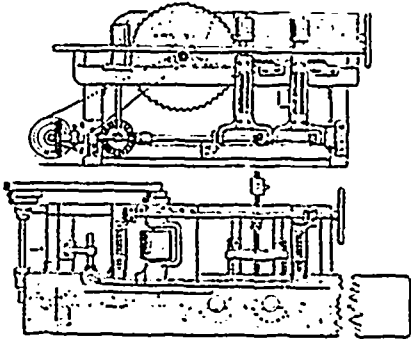
Examine the foundation bolts on your engine occasionally to see that the nuts are not working loose. If they have nuts on both ends, adjust them so that the bolt will be flush with top of nut on the upper side.



SLAB-SAWING MACHINE.

A PATENT has been granted in the United States to Austin W. Goodell, of Philadelphia, Pa., for a slab-sawing machine as shown herewith, for which the following points are claimed :

A slab-sawing machine, a saw attached thereto, a movable fence thereon, means to move the fence simultaneously at each end from a single operative point, upright feed-rolls therefor seated upon a rectangular shaft, the rolls being in longitudinal and removable sections, and carried in a yoke upon a shaft normally upright but having means for side adjustment. A slab-sawing ma-



SLAB-SAWING MACHINE.

chine with a fence therefor, having attached thereto a delivering mechanism suited to shifting positions of the fence, feed-rolls therefor mounted upon shafts normally perpendicular, but pivotally supported from a feed-shaft arranged for outward and inward moving, means for raising or lowering the end of the feed-shaft nearest the feed end of the machine, and means for connecting the feed shaft to the cross feed-shaft for such adjustment and the maintenance of their driving-contact under such adjustment.

CARE OF WOOD-WORKING SAWS.

THERE is a great variety of opinions in regard to the care of the small saws generally used in the different departments of wood-working. Some of these opinions are right, and some must just as certainly be wrong. I will admit at the start that there are more than one of several ways which may be right, owing to differing conditions, but there are several ways which I have seen that are wrong under all conditions.

These saws when new were well shaped so far as the teeth were concerned, and cut easily and smoothly, but before six months they were in a shape to surprise one used to well-fitted saws. The hook was almost entirely gone, so that they did a good job of scraping, but were a failure as far as cutting was concerned. They had meanwhile never been trued up or ground, only hand filed, as the foreman did not believe in anything else and thought he knew because of his age and experience. He believed in filing the rip or split-

ting saws with a little bevel, so the outside corner was about like a cut-off saw, the points generally about a thirty-second longer one side than the other. This is the saw to cut, according to his rule, but I noticed the saws cut hard, and were inclined to dodge the hard places and burn somewhat. Here was a case of the won't-see kind. I don't think that foreman will live long enough to see that his way is wrong.

My idea is, have the saw well trued up so that every tooth does its share. Give hook enough to insure an easy cutting angle, different woods demanding slight variations, then make the edge of the tooth square as possible, with good corners both sides. Given plenty of power and fair speed and you have something you can get the work from. To keep such a tooth after you get it, grind it instead of filing by hand. The grinders of to-day are so simple and have such variety of adjustments, that they are far superior to hand filing.

If some men would watch carefully the action of a saw while at work, with a view to finding out its defects, they would learn something to their advantage. Band saws for shop work are often ill-used and condemned before they have given half service. A great many men can run, file and braze band saws, but the number thins down considerably when it comes to doing a nice job. The saw should be free from kinks before brazing. Great care should be taken to make the splice an even taper, to have the saw the same thickness at the braze without filing much afterwards. Be sure it is clamped perfectly straight before solder is applied. After brazing, smooth up and file as squarely as possible, and if necessary, smooth up by running an oil stone along-side of teeth for smooth work.

Good judgment is necessary in straining the saw. Many break from too much strain; some from too little. Some people think anything will do for a saw guide. I would condemn all old chunks of wood shoved in back of the saw or at the side. Get a good roller guide of modern make, of which there are several good ones. If your saw is not well fitted the guide will not control it altogether, although it will to a certain extent. The best way is to go slow and watch the work, and when you get it in good shape, keep to that until you find something better.

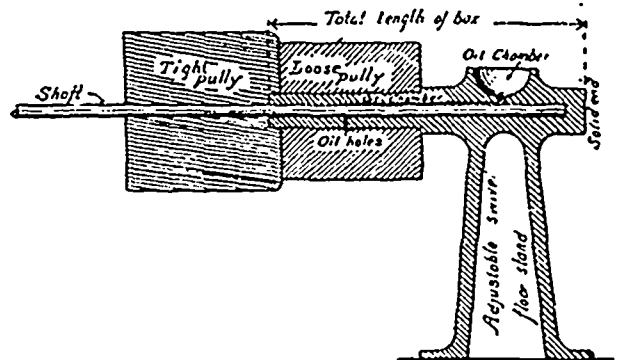
There is nothing I like better than to go into shops where there are machines of old style and notice their inconvenience and sometimes their convenience. Once in a while I see features that could be adopted with beneficial results, and am surprised that others are tolerated. I recall one feature about a buzz planer (an old-style machine) which struck me as rather a good thing, but possibly too expensive. It consisted of a lever to set the gage for any bevel or square, so

you could hold the gauge in position with one hand, tighten one hand screw with the other, and set accurately. I have often wondered why there is no improvement in this line. With most machines we have to loosen two hand screws, jar the gauge down about where we want it, and hang on tightly with one hand while we tighten one screw with the other. Then it is apt to slip before you get them both tight, and you must try again. To set up square you are apt to get it back too far, and have to get a square at last to set it. This old machine would set right up square every time, and stay there. The adjustments were also good for keeping the boxes in line with bed better than many of the machines of the present day. Uncle Dean, in Wood-Worker.

AN IMPROVED LOOSE PULLEY.

Mr. E. B. Knight, of Chilliwack, B. C., writes as follows to the Wood-Worker on the question of a good loose pulley :

"We run an ordinary planer and matcher and a fast-feed flooring machine in connection with our saw mill. The loose pulley on the planer has been in use for fifteen years, and on flooring machine since 1890, so that their durability is unquestioned. The tight and loose (jump) pulleys on both machines are 14 inches diameter, using 8-inch double leather belts. The loose pulleys were built to order in this way : The outer bearing or floor stand of countershaft is made a solid box, 16 inches in length, and extends right up to tight pulley. Nine inches of this solid box next tight pulley is turned on outside, and loose



AN IMPROVED LOOSE PULLEY.

pulley runs on outside of this box, instead of on shaft as usual. In centre of where loose pulley runs, four holes are drilled through box and a small channel cut in babbit from oil chamber to these holes. By this means, when you oil end bearing of a countershaft (which you can do any time) you oil loose pulley at the same time. You will notice that the loose pulley is oiled from the inside, as it should be, in place of through a hole in the loose pulley. I enclose rough hand sketch to show the idea more clearly. If any of your readers want a certain cure for the ordinary loose pulley nuisance, this is the only thing with which I am acquainted, and I speak from fifteen years' experience."

Grate-bars should be allowed room to expand when they are put into a furnace. If they are wedged tightly into place when cold they will expand when heated and the furnace be damaged or the bars will be warped out of shape. Do not allow them too much room endwise, or they may fall off from the bearer at the front end. This may seem to be an unnecessary warning, but fires have gone into the ashpits more than once on this account, hence it is well to be on the safe side.

OTTAWA LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

Apart from the operations of the mills lumber matters in the Ottawa valley are decidedly quiet, the election campaign being the absorbing topic. None of the mills are running at night, and until the country becomes settled after election disturbances it is not probable that the manufacturers will find it necessary to do so. The lumber drives have been quite successful, nearly all being now in safe waters. I hear that Mr. Alex. Fraser has some square timber hung up, and a raft belonging to Mr. Alex. Barnett has also been blocked owing to the breaking of a dam.

The first ten mile section of new line built this season on the O. A. & P. S. Ry. will be handed over by the contractors early in August. This will complete the line to a distance of 175 miles west of Ottawa, and the entire road is expected to be completed by the 15th of October.

Mr. E. C. Whitney, of the St. Anthony Lumber Company, came to the city about the middle of June from his home in Minneapolis. He states that the lumber trade in the United States is dull just now owing to the unsettled state of the money market, but expects an improvement after the election.

The men engaged during the winter in the woods have all returned, the last batch arriving a week ago from the Les Quinze section. The journey required eight days, a great part of the way being traversed by boat and on foot. They will remain until about the first of August, when they return to the woods.

OTTAWA, Ont., June 20, 1896.

NEW BRUNSWICK LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

S. T. KING & SON'S MILL.

Improvements have been made to S. T. King & Sons' mill at Kingsville, and they now have a mill which, fitted as it is with a gang and a Lane's patent rotary, is capable of cutting upwards of 100,000 feet of lumber every day. A new patent haul-up has been put in. When the logs reach the main floor of the mill they are put upon live rolls, by means of which they are carried up to a steam jump saw, which cuts them off. In this there is considerable saving, as a cross-cut saw was formerly used for that purpose. Steam kickers also have been introduced. The refuse stuff from the mill is carried out to the dump by an endless wire rope fitted with buckets. There it is burned. This rope is 600 feet long, the dump being 300 feet away from the mill. The greatest saving effected by the improvements, however, is in the boiler house. Ten boilers were used in former years, but after the explosion they were taken out and three new ones put in. These boilers are run by one man, who has an eye to the water and looks after the drafts. Thus the services of four men are dispensed with. The fuel, sawdust, is carried to the furnaces by endless chains, and there are extra furnaces to burn up the surplus sawdust.

The new rotary was built by the Lane Manufacturing Company, of Montpelier, Vermont, and is a two and a half back lever set works rotary mill. The feed carriage is driven by Prescott shot gun feed. The lever rig is so arranged as to get immense leverage and enable the operator to handle the long heavy carriage about as easy as an ordinary light one. The rotary is fitted with two saws, one directly under the other. The lower saw is the larger of the two, and does the greater part of the work, but when a big log goes on the carriage the upper saw is brought into use. The millwright was Mr. Charles T. Winslow.

BITS OF LUMBER.

Upham's mill, opposite Andover, is nearing completion.

Miller & Woodman's saw and shingle mill at Pokiok has started sawing.

James Porter, whose mill was destroyed by fire last winter, is pressing on the work of rebuilding.

Capitalists with whom Messrs. Stetson, Cutler & Co., of St. John, are said to be interested, are said to have selected a site near Ashland, Me., for the erection of a saw mill, with a capacity of 30,000,000 feet annually.

Alfred West's new saw mill at Cove's Island will shortly commence operations. The boiler for the new mill was shipped a couple of weeks ago, and the engine, machinery attachments, etc., which were constructed by Messrs. Leonard, will be put into place as soon as possible.

ST. JOHN, N.B., June 20, 1896.

BRITISH COLUMBIA LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

The certificate of registration has been published of the Turkish Harbor Timber Co., Ltd. The objects of the company are: To carry on business as timber merchants, saw mill proprietors and timber growers, and to buy, sell grow, prepare for market, manipulate, import, export and deal in timber and wood of all kinds, and to manufacture and deal in articles of all kinds in the manufacture of which timber or wood is used, and to buy, clear, plant and work timber estates, etc.

The Victoria Lumber Co. are running their saw mill night and day.

Dr. Edgar, provincial timber inspector, will hereafter have his headquarters at Nelson.

Nine car loads of bridge timber were recently shipped in one week to Ontario points over the C. P. R.

The Lumby saw mill at Vernon has been running steadily all spring, and a large number of logs have been converted into lumber. Mr. McIlvanie, the proprietor, reports having received orders for clear pine and tamarac lumber from as far east as Manitoba.

What is considered the largest turn of logs ever hauled in British Columbia was brought down to the water from Mr. H. M. Cade's camp at Sechelt by Tom Fay, one of the teamsters. A "turn" of logs is the amount pulled over the skid-road from the camp to the water in one load. This famous load, which was pulled by a six-horse team, contained 10,670 feet.

NEW WESTMINSTER, B. C., June 19, 1896.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

The cargo market on the Saginaw river shows little activity, and judging from the April and May shipments, which were the smallest for many years, the bottom of inactivity seems to have been struck. Mr. Hopkins, of the Saginaw Board of Trade, entertains gratifying anticipations, nevertheless, as to the general outlook for the season of 1896. The increase in the two Saginaw river cities has been remarkable in the past year, and especially in Saginaw, where there are at present thirty-six lumber yards.

The past few years has witnessed a great change in the lumber business of the Saginaw valley. Until recently nearly all the lumber was shipped by water, but rail freight rates are now reduced until it is profitable to ship by rail. In 1885 there were shipped by water 659,505,000 feet and 149,672,000 by rail. In 1890 the shipments by rail and water were about equal. Last year only 136,120,000 feet was shipped by water and 393,527,000 feet by rail.

The total shipments of lumber from the Saginaw river up to June 1st are the smallest in thirty years.

On the Spanish river in Canada there are 25,000,000 feet of logs hung up on the main river and tributaries, which belong to Michigan mill owners, and which will not come down unless there are heavy rains.

Cody & Addis, of Menominee, Mich., have contracted to cut 30,000,000 feet of pine timber along the line of the Munising Railway, for Comstock Bros., of Alpena, Mich., in two years. The logs are to be cut at the Burtis mills, Munising.

The plant of the Thompsonville Lumber Company at Thompsonville has been purchased by a Buffalo concern, who will locate a hoop and stave mill at that point. The demand for cooperage stock is fairly good, with favorable prospects.

Albert Paek has 30,000,000 feet of logs in the streams in Georgian Bay, Ont., which will be rafted as fast as possible to Alpena to be converted into lumber. With these logs Mr. Paek has sufficient timber on the same streams to stock the Alpena mill for five years.

The amount of timber to be rafted out of the Spanish river this season for Michigan parties is given as follows: Edmund Hall, Detroit, 10,000,000 feet; S. G. M. Gates, Bay City, 4,000,000 feet; Pitts & Co., Bay City, 12,000,000 feet; C. K. Eddy & Sons, Saginaw, 7,000,000 feet; Saginaw Lumber Company, Crow Island, 12,000,000 feet; Albert Paek, Alpena, 8,000,000 feet; Alger, Smith & Co., Detroit, 12,000,000 feet. In addition to this a large quantity will come from other Georgian Bay points.

SAGINAW, Mich., June 21, 1896.

PROPER TIME FOR CUTTING TIMBER.

"The Economic Society of Westphalia," says Cosmos, "has been attempting to determine experimentally the most fitting time to cut down trees. To this end four beams were shaped from four red ash trees of the same age, which had grown in the same soil and had equally sound wood, but had been cut each in a different month, from December to March. These were loaded with equal weights, and it was found that the resistance to the load was greatest in the case of the wood cut in December, being less by 12 per cent. for the January wood, by 20 per cent. for that cut in February, and by 30 per cent. for the March wood. Two ash trees of the same size having been buried in moist soil, it was shown that the one that had been cut in February rotted in eight years, while in that which had been cut in December the wood preserved its hardness after sixteen years in the earth. Two wheels whose spokes had been cut respectively in December and February presented a great difference in durability. The first lasted six years, while the second was unfit for service at the end of two years. It follows from this that the appropriate time for cutting timber to be used for construction is the month of December, and it seems that the period of cutting should by no means be prolonged into January."

LEGAL DECISIONS.

G. T. PALMER vs. THE PENOBSCOT LUMBERING ASSOCIATION.—The plaintiff's logs were driven by the defendant corporation, and were lost, it was alleged, by the negligence of the Association. Suit was entered in the Supreme Court at Bangor, Maine, for \$100,000. In his charge the judge said that the defendant corporation did not in any case agree to insure logs handled by them from loss, but only agreed to exercise reasonable care in rafting and due diligence in preserving plaintiff's rights. The court instructed the jury to ascertain whether or not the boomage was paid on the logs that broke away, as upon that depended the condition of the logs and the claims of the plaintiff. The verdict of the jury was for \$2,899.92 in favor of the plaintiff.

At the Sundridge, Ont., division court recently Rob sued Parkin, a Lindsay lumberman, to recover the value of a number of pine logs cut by the locatee, with the view of having them manufactured into lumber for building purposes. Shortly after Rob cut the logs, lumberman Parkin stamped and removed them. After hearing evidence as to the quantity and quality of the pine cut, judgment was given in favour of the plaintiff at the rate of \$4 per M. This judgment is an important one, as affecting the rights of the settler under the Free Grant Act.

The Supreme Court of Louisiana held, in the recent case of Ball vs. Levin et al., that where joint owners of a saw mill plant tortuously and wrongfully entered upon the partnership premises on a Sunday, when the other proprietor was absent, and removed therefrom certain important parts of the machinery essential to the operation of the mill, and kept them away for more than a month, during which time it was idle, the co-proprietor who thus had his rights invaded and was prevented from operating the plant was entitled to actual and punitive damages commensurate with his loss and injury.

PUBLICATIONS.

The first annual report of the Chief Fire Warden of Minnesota is to hand. It contains interesting statistics of the extent of forest fires, and closes with some strong arguments for the preservation of our forests.

Cassier's Magazine for July contains interesting articles on engineering subjects, among which are: "Steam Boilers, their Equipment and Management," by Albert A. Cary; "Vertical vs. Horizontal Turbines," by Samuel Webber, and "Early American Saw Mills," by Joel Sharp.

A young man named Ouellette was drowned off the drive at Wahnapiatae recently.

THE NEWS.

—R. Bickell is erecting a veneer factory at Millbrook, Ont.
 —Vigars & Co. are building a lath mill at Port Arthur, Ont.
 —Mr. Geo. Godda, Eganville, Ont., is building a saw and shingle mill.
 —Mr. Johnson, of Bracebridge, Ont., will build a sash and door factory at North Bay.
 —It is rumored that a company intends erecting a saw mill at Fesserton, Ont., on Bush's Point.
 —Parson & Davis have commenced sawing at their new mill at Greer's Bay, Ont., head of Lake Dore.
 —F. Hurlburt & Co., of Seguin Falls, Ont., intends putting in a drag saw and splitter for his shingle mill.
 —The saw and shingle mill of Mr. Peter Donnelly, of Tait, Ont., has closed down until fall, for lack of water.
 —For the first season in thirty five years the Parry Sound Lumber Co.'s mill at Parry Sound, Ont., is not operated.
 —The Governor General and Lady Aberdeen recently visited the Laurentide Pulp Co.'s mills at Grand Mere, Que.
 —J. E. Maunder, of Lindsay, Ont., has purchased the sash and door factory and lumber business of Mr. Caleb Mark, of Little Britain.
 —The Quebec Government has doubled the number of fire rangers in District No. 1, in compliance with the requests of the lumbermen.
 —The large saw mill at Lunenburg, Ont., owned by Mr. John Bush, is now under the management of Mr. Gerald Gardner, and is in full operation.
 —The lumber office in Toronto of the Grand Trunk Railway Company has been abolished, and hereafter all lumber will be ordered direct from Montreal.
 —Allen Bros., Grimsby, Ont., have found business good enough to compel them to build a new planing mill, which will be situated three miles out of town.
 —At McLeod, N. W. T., a bonus-by-law has been passed to assist in the building of a new mill by the McLaren Company, whose mill was burned some time ago.
 —The Morgan Falls Pulp Co., Limited, of New Germany, N. S., has shipped ten vessel loads of pulp to the American market, aggregating 1,457 tons, during the past ten months.
 —An exchange says: Saw mills are badly needed in the settlements of Muskoka and Nipissing, where there is an inexhaustible supply of birch, hemlock, spruce, cedar, elm, cherry and other valuable woods.
 —The principle business of Angus, Que. is the Royal Paper Mill Co.'s works, comprising a large paper mill, pulp mill and saw mill, all of which are in full operation day and night, and give employment to about 250 hands.
 —It is estimated that 75,000 cords of spruce pulp wood, or about 1,000 canal boat loads, will be brought out of Canada this season through the Chambly and Champlain canals, and delivered at Condoeroga and mills on the Hudson river.
 —The Sturgeon Falls Pulp Co. will erect a new mill at Sturgeon Falls, Ont. The company expect to get out about 10,000 cords of pulp wood this season. The amount to be expended by the company is estimated at about \$75,000.
 —Some quick work was recently performed at the McLaren mills at Buckingham, Que. At six o'clock a car load of lumber, which 2 1-2 hours before was in log shape, at the mills, 3 1-2 miles distant, was billed and ready for its destination.
 —The Coleman Planing Mills and Lumber Co., Ltd., of Burlington and Hamilton, are very busy. They do a large retail lumber business and erect buildings. They have 26 houses under construction in Hamilton alone. Their box crate

business is good and buidlers' supplies are moving, but the outlook is not very encouraging.

—During April the importation of lumber into the United States from Canada was 57,073,000 feet, as against 50,433,000 feet for the same month last year. Imports for the ten months ending April 30 were 609,292,000 feet in 1896 and 426,720,000 feet in 1895.

—The Sault Ste. Marie Pulp and Paper Co. is removing its power house and offices and the high pressure water works pumps, and also the dynamos which are used both for the mills and towns, to make room for the new mill which it is proposed this summer to erect.

—The Byng Inlet Lumber Company, of Byng Inlet, Ont., have overhauled their plant considerably during the past winter, put in a battery of four new steel tubular boilers, in place of eight old-fashioned ones taken out, and have also improved the interior part of the mill.

—The Soo Express says the pulp making and water power scheme continues to engage the attention of the people of Port Arthur, Ont. The town has the natural requirements for pulp grinding and paper making, a grand supply of raw material within easy reach, and magnificent water power.

—The Hawkesbury Lumber Co., of Hawkesbury, Ont., have purchased a 25 K. W. dynamo of the Edison type for lighting the interior of their six mills, which were previously lighted by arc and series incandescent, from a 60 light wood arc dynamo and 35 light Ball dynamo, and which are now used to light their yards. The change is a decided improvement on the old system.

—The Manufacturers Gazette says: The North American Paper and Lumber Co., with headquarters at Halifax, N. S., is seeking of the Dominion Government incorporation with a capital stock of \$2,500,000. It proposes to manufacture lumber, pulp, paper, wooden goods, etc. The water powers of Nova Scotia, though numerous, are not of great volume. This company propose to build pulp and paper mills at Halifax, claiming that the cost of coal is so low as to make favorable competition with American pulp and paper mills run with water power. It claims spruce wood to be cheaper in Nova Scotia than at any other accessible point. It would seem that this new pulp and paper enterprise would have exceptional facilities for supplying Europe with their requirements. It is understood that the prime movers in this enterprise are Americans, though several large timber land owners and Halifax capitalists will join in the venture.

CASUALTIES.

—James Davidson was killed at the Aberdeen mills, Fredericton, N. B., by a lath bolt piercing his side.

—Louis Defoe was killed in Gilmour & Co.'s mill at Trenton by being struck by a slab thrown from a large circular saw.

—Henry Carr, employed in Howry & Sons' mill yard at Fenelon Falls, Ont., had both bones of his leg broken above the ankle.

—Albert Stewart, working on the river for W. Caldwell, Lanark, had his leg severely injured while breaking up a jam of logs at Herron's Mills.

—Messrs. Wm. Mason & Son, Ottawa, have received word of the drowning on the Desmoine river, while breaking a jam of logs, of J. Lansing, of Lachute, and J. B. Mohuse, of Pembroke.

—C. A. Sandbury, while regulating some machinery in the St. Anthony Lumber Company's mill at Whitney, Ont., slipped and fell against the saw. One of his legs was severed at the knee.

—James Watters was crushed to death beneath the log carriages in Gillies' mill at Braeside, Or. He was working on the carriages, conveying the logs into the mill, when he slipped and fell.

—As the result of a quarrel between two men named Ritchie and Prevost, employed at Doherty's mill at Campbellton, N. B., the former was struck on the head by a whittletree. The blow resulted in his death.

—Joseph Paicment, employed at Nault & Frere's mills at St. Adele, Que., was caught by a band, which tore his arm out and threw him upon the saw, which cut open his side. Death has resulted from his injuries.

—Michael Dunne, 22 years of age, was drowned in a stream known as the Pee-Jaw, on the Dumoine river, where he was employed by the Hawkesbury Lumber Company. He was a brother of the Rev. Father Dunne, of South Gloucester.

—A storm struck the Ottawa river on the 8th inst. Fifty men were at work on the boom in the river. Two were killed by the lightning, and five seriously injured. The dead are Frank Ferrier, of Ottawa, and Nat. McNeil, of Bristol, Ont.

—While operating an edger in Patterson's saw mill at Temple, N. B., Lee Lint, of Fredericton, missed his footing and fell to the floor. His left foot came in contact with the lower part of the huge saw and was completely severed at the instep, and the detached piece of flesh lurked a distance of 50 feet. His condition is critical.

—A terrible accident recently occurred at Taylor's mill at Chatsworth, Ont. An edging, which was caught by one of the saws of the edger, was driven backwards with the force of a bullet, striking James McNabb on the right side of the neck, and passing clear through, protruded about two feet on the other side. Death was instantaneous.

PERSONAL.

Mr. Charles Beck, lumber merchant, of Penetanguishene, Ont., who was mentioned as the probable Liberal candidate for Algoma, decided not to offer himself for public honors.

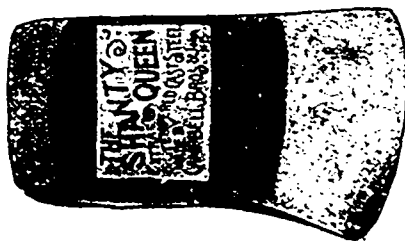
Mr. Llewellyn Powers has been nominated by the Republicans for governor of Maine. Mr. Powers is a wealthy lawyer and owner of 175,000 acres of timber land, most of which is situated in Aroostock county, and he has been called the "Timber Land King."

Capt. R. Tivey, of Peterboro', has received the appointment of timber inspector for the Lakesfield-Peterboro section of the Trent Valley canal. Mr. Tivey is an experienced man, having been in former years bridge inspector on the Midland division of the Grand Trunk system.

Mr. Thomas Butler, foreman at the Rathbun Company's lumber shanties at Deseronto, Ont., dropped dead on the 10th ultimo, after having been ailing for some time. He was one of the oldest employees of the company, having been connected with them for about forty years. His brother, Matthew J., is a civil engineer in the employ of the same company.

James Sharp, of Thamesville, Ont., the Canadian representative of the firm of Sharp & Tyle, Liverpool, Eng., died on the 18th of June. He was at one time the principal purchaser of products for the Columbia Handle Company, and recently formed a partnership with Mr. Wm. Buchanan, lumber dealer, of Thamesville. At the time of his death he was only 33 years of age.

His interest in the timber business in Oregon has compelled Mr. T. H. DeCew, of Essex, Ont., to remove to that state. For the past twelve years Mr. DeCew has carried on a large saw mill business in Essex, giving employment to about one hundred men the year round. He has also been a leading light in conducting the affairs of the town. A farewell banquet was tendered him by the townspeople, at which about three hundred persons were present.



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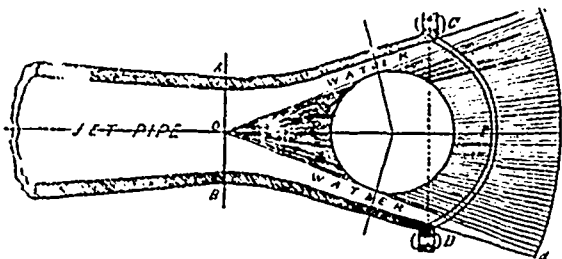
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THE BALL NOZZLE.

On the 16th of May there assembled at the C.P.R. elevator, Dalhousie square, Montreal, the Board of Underwriters, Chief Benoit, of the Montreal Fire Brigade, and a number of leading insurance men of the city. The gathering was by invitation of Mr. Thomas Howard, the Canadian representative of the American Ball Nozzle Co., of New York, to witness a demonstration of the working of the Ball nozzle shown by the accompanying illustration, with which the C.P.R. elevators are equipped, using the company's own hose. The exhibition unexpectedly



Chief Benoit and members of the Board of Underwriters were unanimous in their expressions of admiration of the valuable fire-fighting qualities of this nozzle, which, as against the ordinary straight-stream nozzle, an English authority has likened to the Gatling gun compared with the ordinary rifle. The victory was all the more creditable from the fact that Mr. Howard had had no intimation that his nozzle would be called into contest with one worked by its inventor, while the Ball nozzle was put in charge of a member of the fire brigade, who had not had it in his hands before, all of which goes to prove the contention of the manufacturers that simplicity is one of its strongest points. It does not call for any special training to use, the only direction being, "Turn on the water, the Ball does the rest."

The problem of this mysterious nozzle has engaged the attention of many of the leading scientists of the world. Catalogues and information may be obtained from Mr. Thos. Howard, Board of Trade Building, Montreal.

Of the various woods classified, white pine ranks first from the standpoint of commercial use, and the other pines next, these being used chiefly for house finishing and other kindred purposes. The general use of oak in the better grade of house finishing and in manufacture of furniture gives that wood next place. Then come the less important hardwoods, including ash, birch, maple, etc. Hickory, which is used chiefly for wagon stock, is one of the woods least used, the annual cut reaching not more than 250,000,000 feet, as against 3,000,000,000 feet of oak. Black walnut has now become so scarce that it has practically ceased to be quoted in the lumber market. A small quantity still exists in Kentucky, Tennessee and Missouri, but it is sold by the single tree.

developed into a competition between the Ball nozzle and the Descarie controlling nozzle, the inventor of the latter being present.

The first test was with a stream from the hydrant at about 55 lbs. pressure. Chief Benoit did not consider that the possibilities of either nozzle could be shown from so low a pressure, and suggested bringing down an engine. This was done, and the two nozzles were each given 100 feet of hose connected with the Silsby engine. The result showed the Ball nozzle's superiority both in volume and range of spray and stream, the latter reaching a height of over 150 feet, against an extremely high wind.

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 (The above have been used in lumber dry kilns, but are also applicable to heating buildings, etc.)

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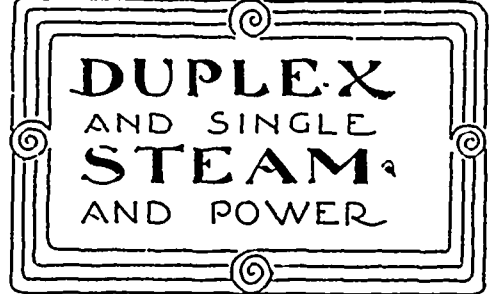
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THE TREE A COMPOSITE BEING.

A TREE is a composite being; a kind of community by itself. The leaves and limbs are all the time striving with each other to see which shall have the most room and the most sunshine. Each strives for all it can get. While some perish in the attempt, or meet with only very indifferent success, the strongest of the buds survive.

Each leaf helps to sustain the limb which carries it, and each limb furnishes some nourishment to the common trunk for the common welfare. The tax is always adjusted according to the ability of each to contribute. As the limbs of a tree are constantly striving for the mastery, so each bush and tree in grove or forest is striving with others for the mastery. The weakest succumb to the strongest; some perish early, some lead a feeble existence for many years, while even the strongest are more or less injured. With plenty of room, the trunk will be short, the branches many and wide-spread; where crowded, the lower

limbs will perish for want of light. Dead limbs fall to the ground to protect and enrich it for nourishing the surviving limbs and the trunk. The scars heal over, more limbs perish as new ones creep upward, and thus we find tall, clean trunks in a dense forest. -Exchange.

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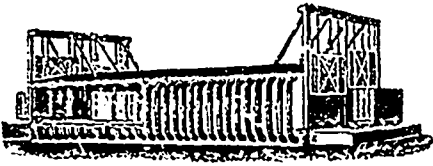
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THE above is a fac simile of the title page of the latest and most complete Lumber Inspection Book published.

We shall be pleased to send you a copy on receipt of four 3 cent Canadian postage stamps

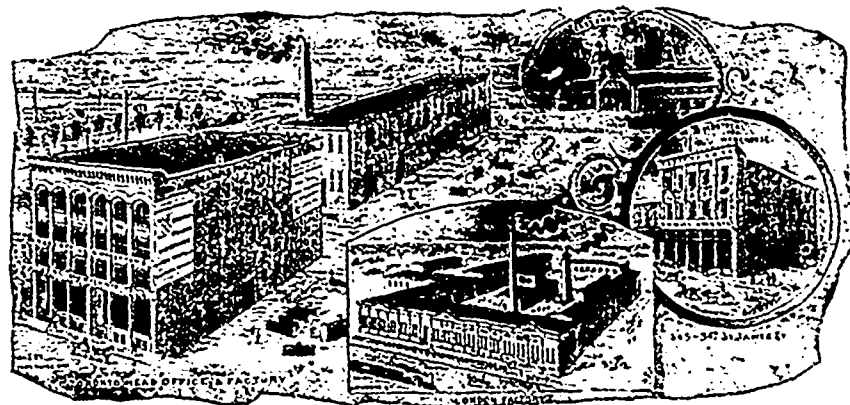
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ELEPHANTS IN A LUMBER PILE.

WILLIAM B. Tourgee has just returned from a trip round the world, says the Buffalo Courier. One of the places which offered some of the most interesting scenes was found in the large lumber yards of Burmah. The teak wood industry is the great industry of that country. The wood grows for the greater part in the northern part of Burmah, where it is cut and floated down the Irrawaddy to Rangoon, where the more important and larger yards are located.

It is in these lumber yards that they employ the elephants in moving and handling the logs. The elephant has practically the entire handling of the logs from the moment they are ready to be taken from the back water, where they have been stored until the logs have been converted into the thin planks used in shipbuilding and other industries, where it answers the purpose better than any other known wood.

A dozen or more elephants may be employed in the same yard. They are nearly all males, which are, generally speaking, larger and stronger than the females. These intelligent creatures will balance a log on their tusks, and, holding it firmly with their trunks, will proceed to walk off with it to the saw. They will then hold the log up to the saw while it is at work, and will see that it is cut properly, either cross-wise or lengthwise, as may be desired. They pull the slabs away with the ends of their trunks, and pile them in piles that are as neatly arranged as the most exacting yardmaster could desire. The principal work of the elephants consists of taking the logs from the water and piling them up in the yards. They will pile logs in the neatest manner imaginable, and will adjust them at either end until they are perfectly satisfied that they are rightly arranged. Mr. Tourgee says that the yard owners look upon a good elephant

as almost priceless, and seldom part with them. What makes their work so very valuable is that they can do this heavy work in that hot climate without being affected by the heat, as other animals would be.

There are 200,000,000 acres of forest lands in the Republic of Quenzula. Rosewood, satin-wood, mahogany, and white and black ebony are found.

The manufacture of artificial silk from wood pulp has been fully established as an industry in France, and there is a prospect that it will be undertaken on a large scale in England. Textile fabrics, made wholly or in part of the new material, are now sold readily in Paris and London. It will not be long before they find their way to America. The silk worm cannot compete with chemical and mechanical ingenuity. Great is wood pulp!

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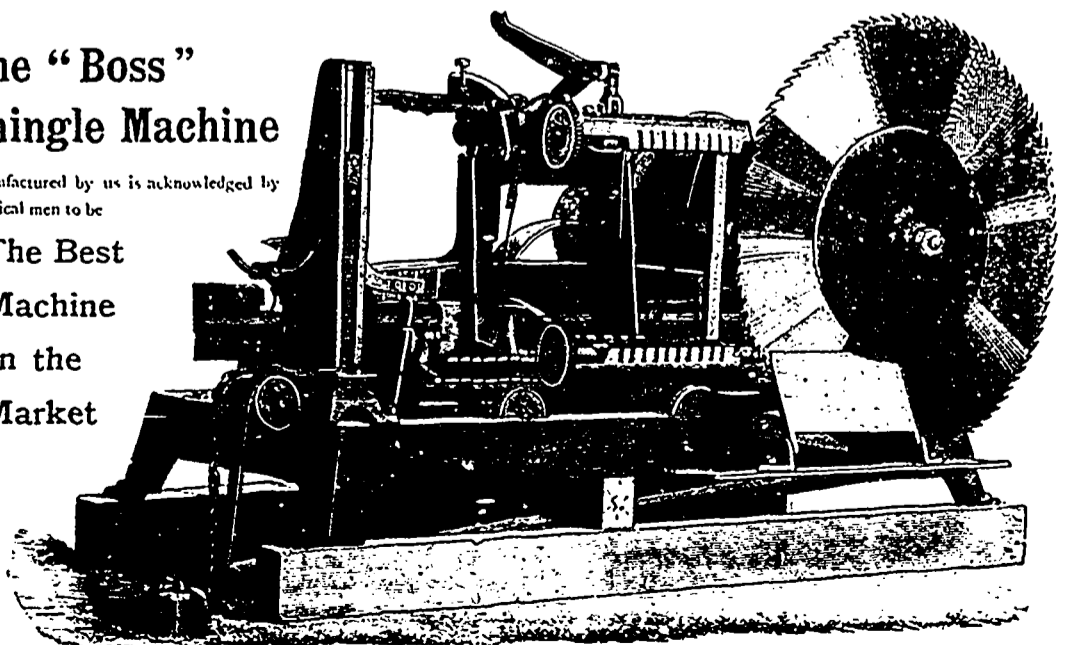
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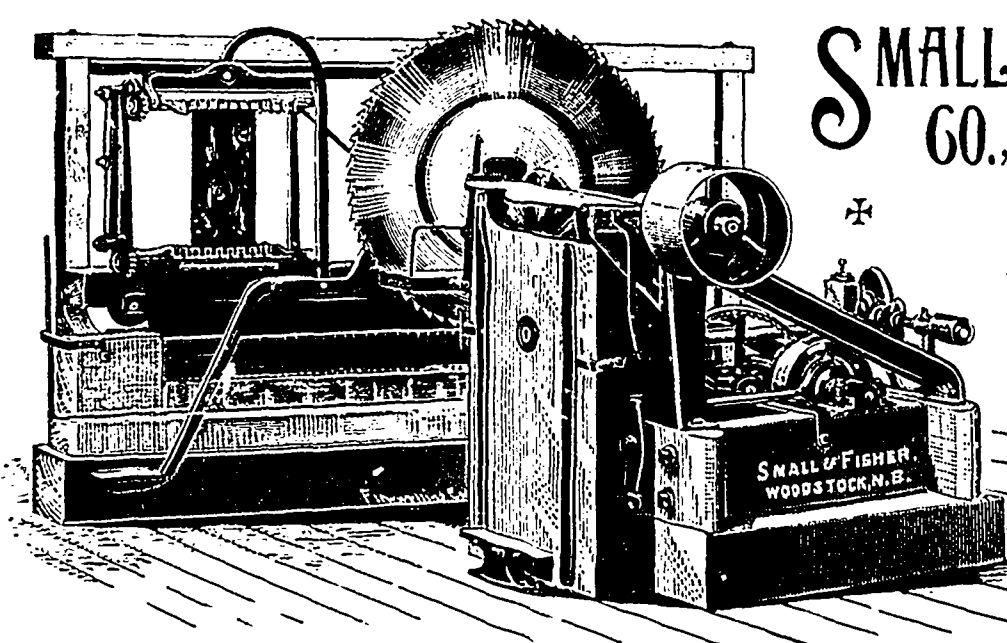
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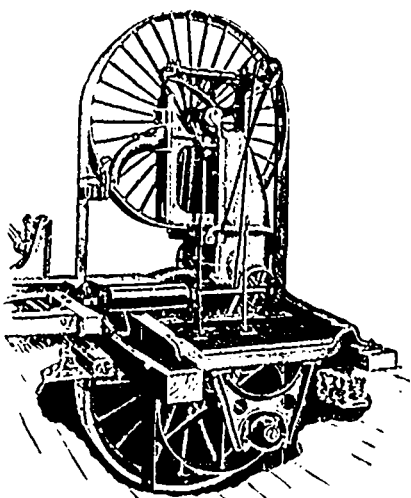
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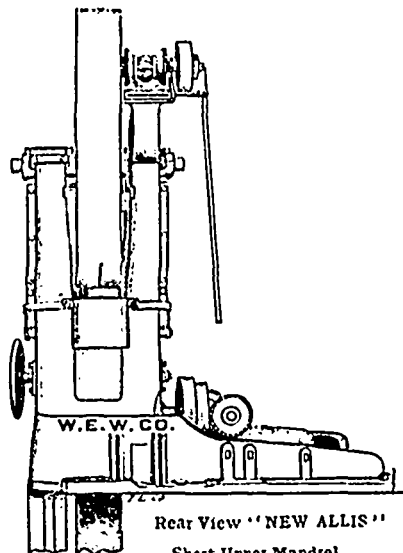
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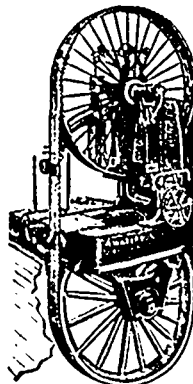
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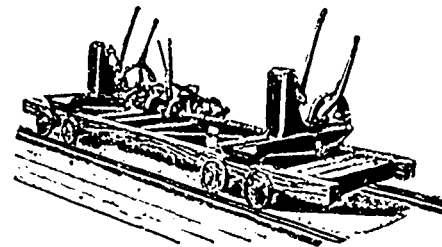
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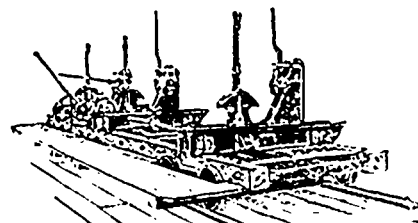
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Wheel Centrally Hung.
Lower Wheel Inside Frame



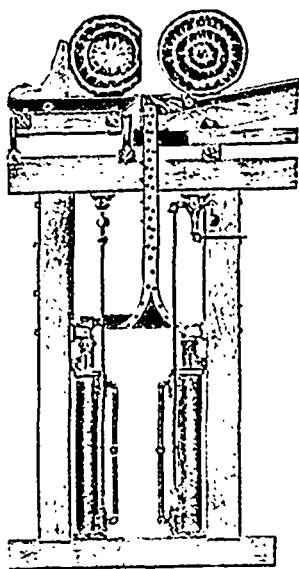
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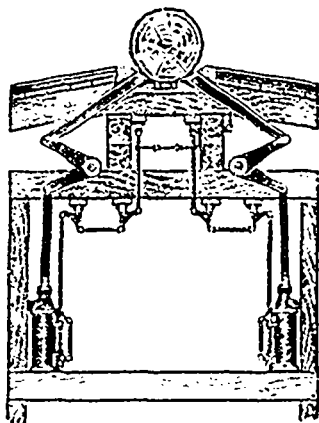
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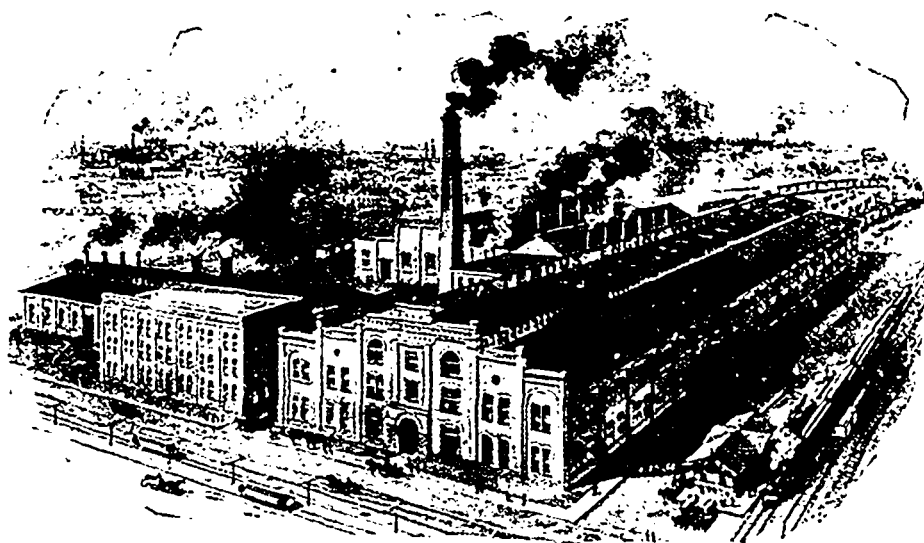


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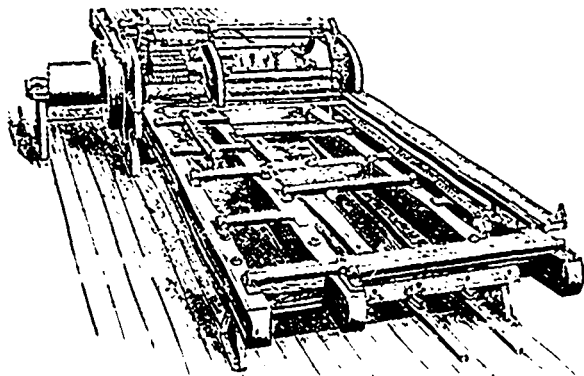
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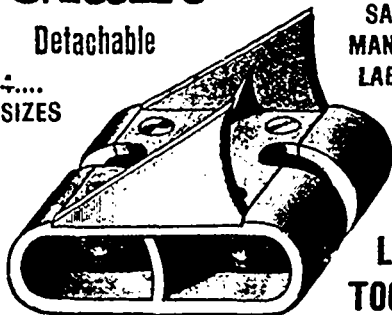
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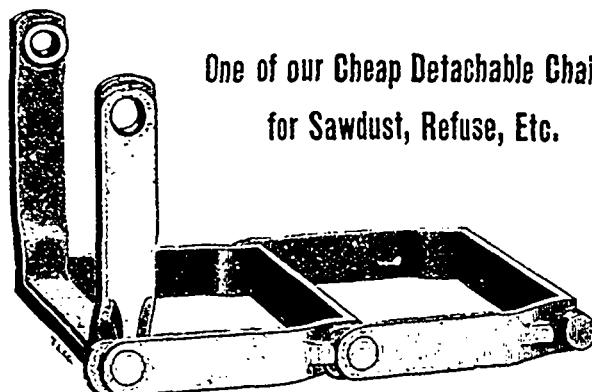
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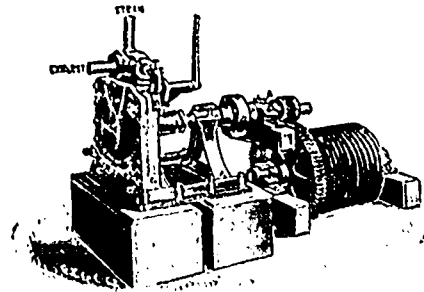
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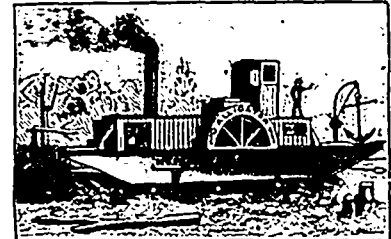


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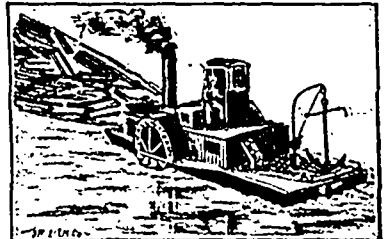
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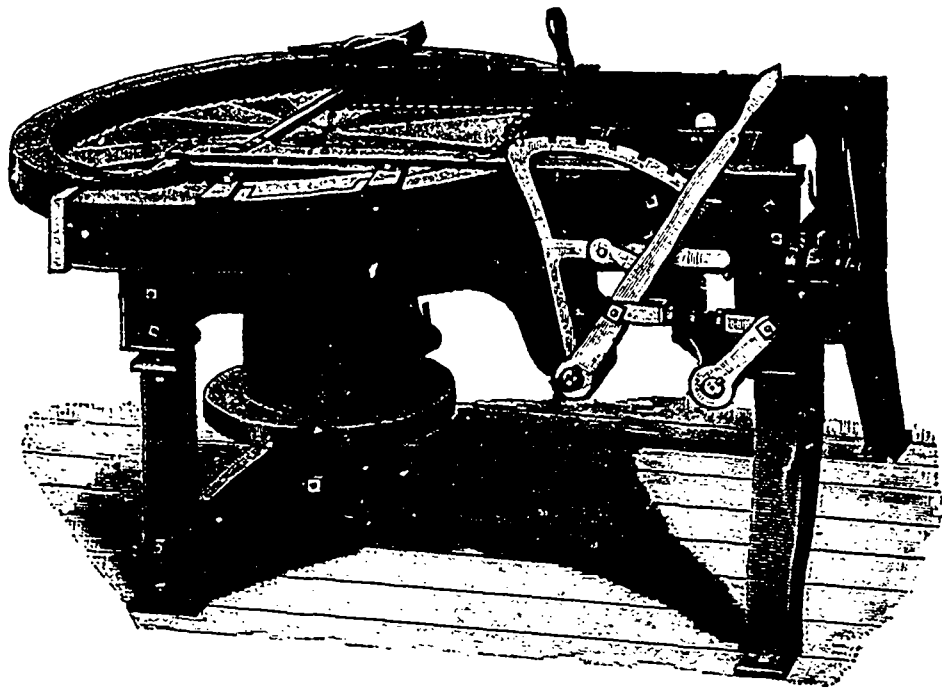
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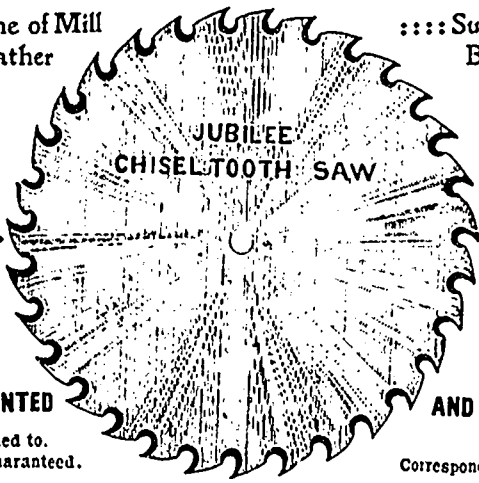
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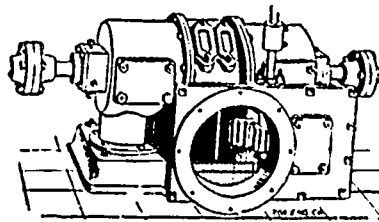
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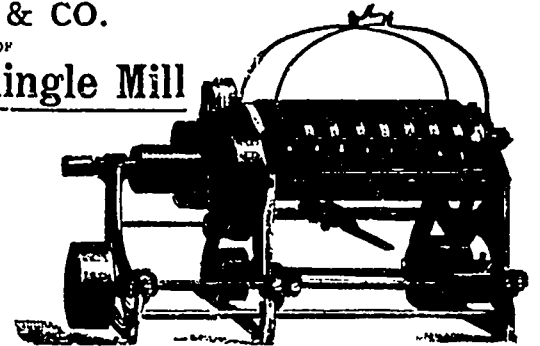
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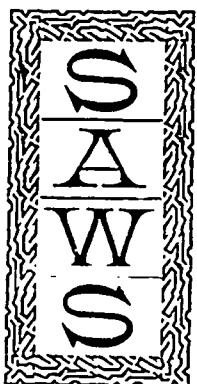
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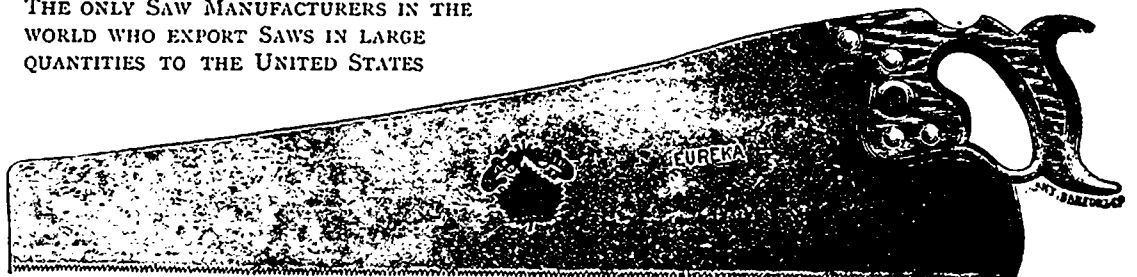


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