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CANADA LUMBERMAN

WOODWORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

VOLUME XVII. }
NUMBER 6.

TORONTO, ONT., JUNE, 1896

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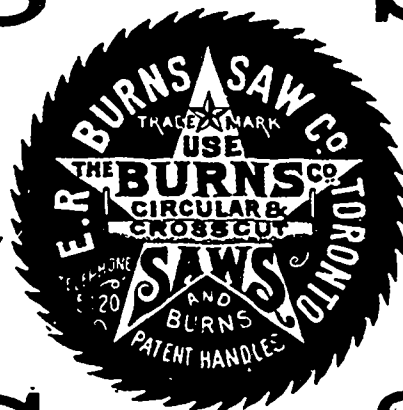
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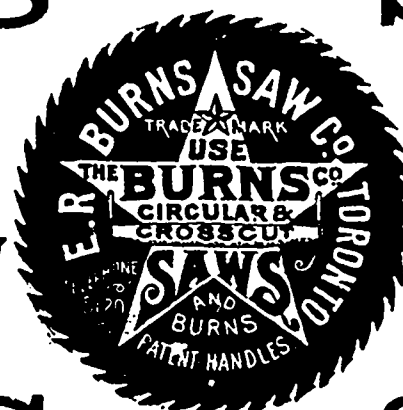


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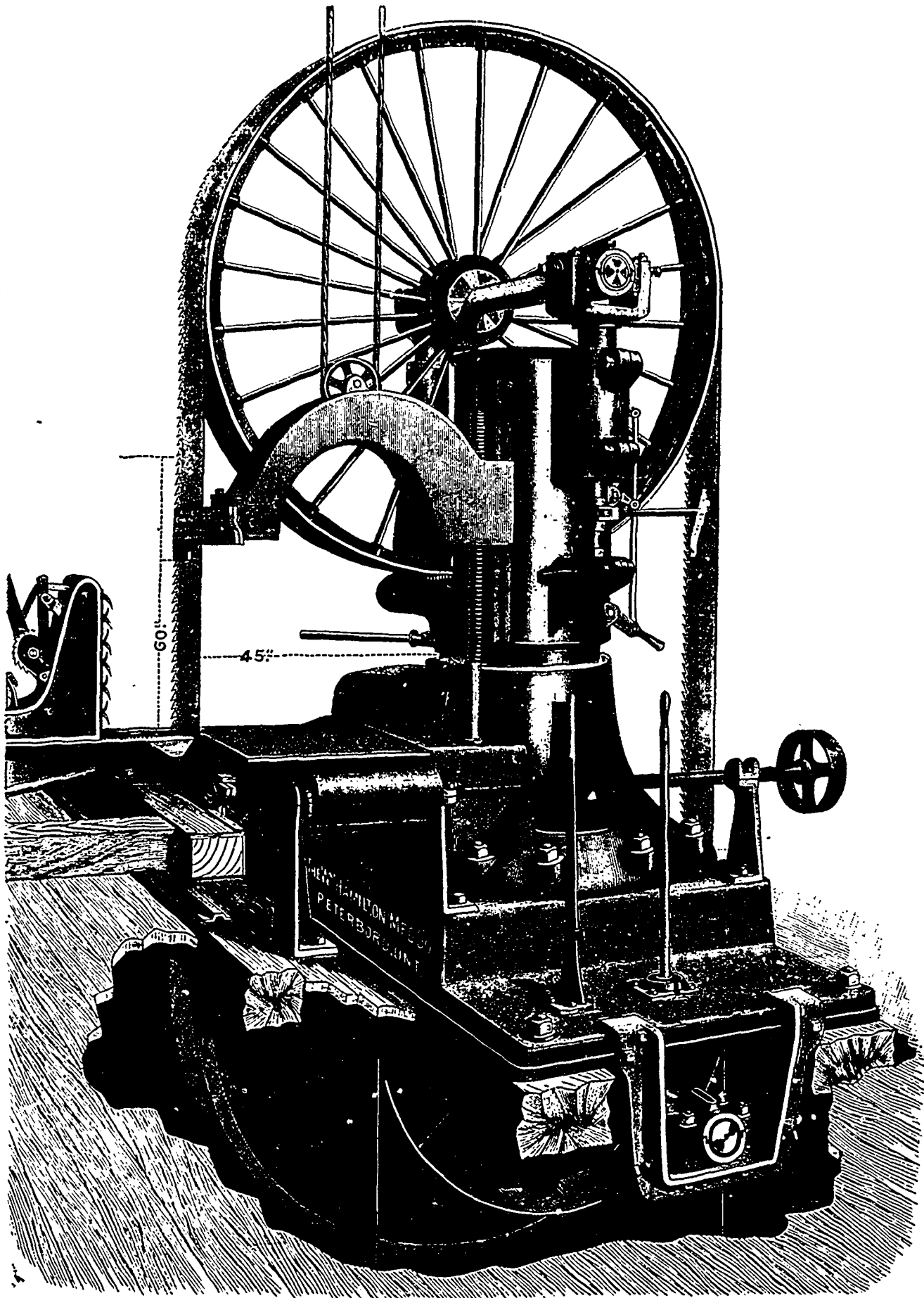
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CASUALTIES IN THE WORKSHOP.*

By CROMWELL GURNEY.

THERE are more casualties reported as occasioned by circular saws than from any other type of machinery, and, for this reason, too much prominence cannot be given to the danger of carelessness in handling them.

Sometimes it happens that no one is to blame when a fatality occurs, as when a circular saw breaks, as shingle saws and veneer saws are liable to do, being necessarily very thin and running at a very high rate of speed. All circular saws should be made of the best crucible or finest silver steel, and should be carefully and uniformly tempered throughout, requiring great skill and watchfulness on the part of the temperer. Great care is also required in hammering out these saws, as often the process forces the strain to one part, causing a slight bulge, which may crack when some unusual strain is put upon the saw. The crack relieves the strain caused by the bulge, and by boring a small hole at the terminus of the split it will go no farther, the saw being safer than before the fracture occurred. In using a rip saw a wedge should always be inserted behind the saw, in order to keep the cut open, that the wood may not bind the saw. A terrible example of this neglect came under the writer's observation. A clumsy hand was pushing a large piece of lumber upon a saw so fast that the machine almost stopped. At this moment the damp wood bound the saw, with the effect that the heavy lumber was shot, end on, into the man's chest, mutilating him horribly. Most of the accidents, however, are not due to imperfect saws, but to carelessness in the employee, who, as a rule, loses his fingers as a penalty.

Generally speaking, the circular saw is always dangerous when in motion, and care is needed on the part of the attendant when operating any style of saw machine; but there are adjustments or adaptations of saws much more dangerous than others. Those running through a slot in the table are perhaps the

most harmless as regards cutting accidents, while those overhanging their frames, and projecting out, are the most dangerous. Sometimes a hammer or wrench, left on the table, will be jarred until it comes into contact with the teeth of the running saw. As the teeth are unable to bite through the metal of the wrench or hammer, the saw itself breaks, sending its fragments with fearful veloc-

would be likely to cause stumbling, as to stumble against a running saw means horrible mutilation.

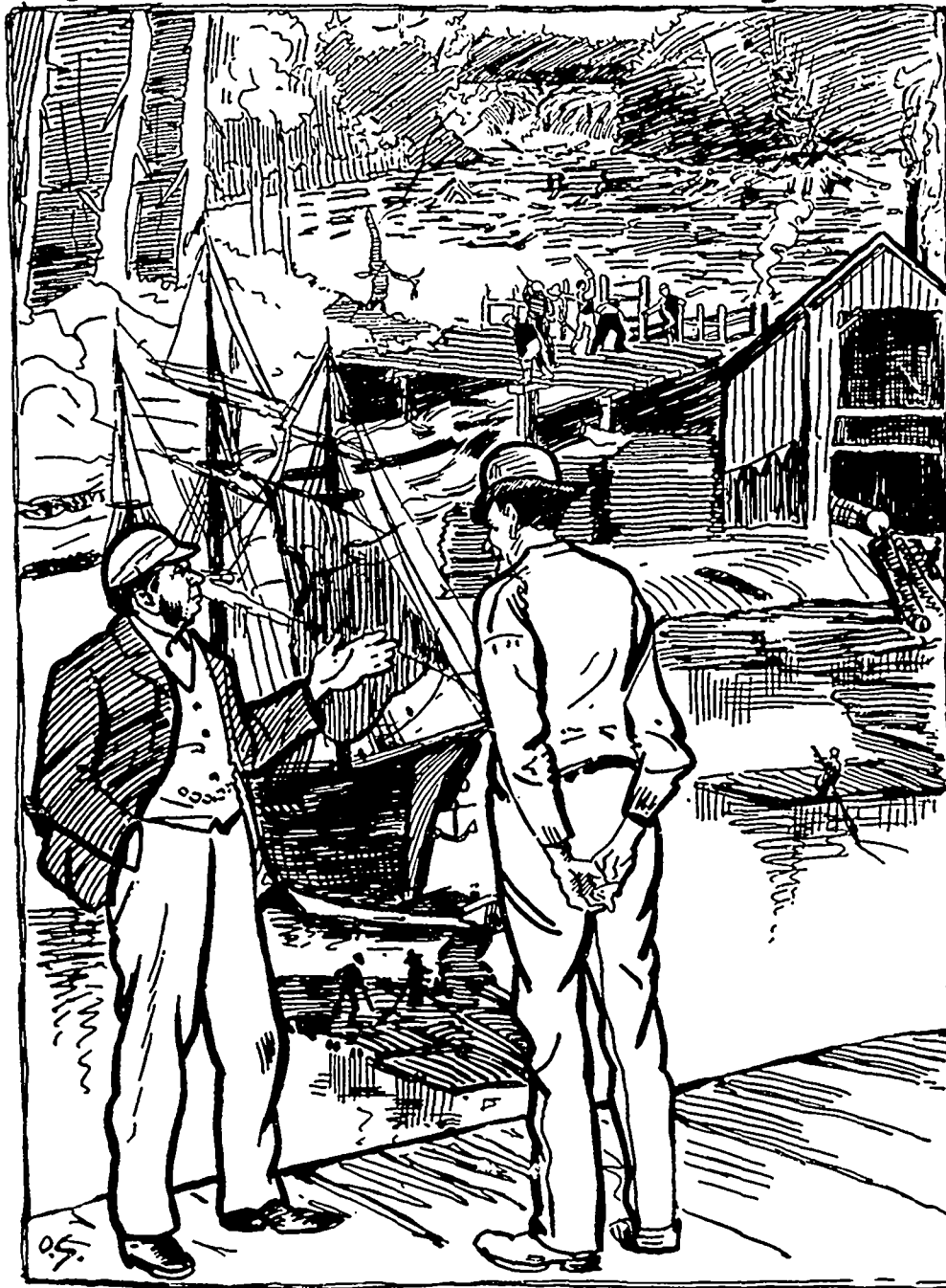
In using both emery wheels and saws, the operator should stand slightly out of the plane of the wheel, which puts him out of range, so to speak, if any accident should happen.

Great care should be exercised in putting a belt on a running pulley, as this operation causes many accidents. Every year there are the usual number of broken and dislocated arms reported from this cause. The reason of this is apparent at once to anyone who has felt the tremendous and sudden wrench when a fast-running belt starts unexpectedly while it is being put on. The most significant fact in all belt accidents is that the victims are not, as a rule, green hands, but old and skilled mechanics and engineers, whose familiarity with machinery has made them careless. A belt should never be held upon a pulley with the foot, as there is great danger of the boot getting caught in the joint of the belt. Neither should one be held on by a piece of wood held loosely in the hand, as the stick wrenched from the hand might strike the face or head of the holder.

WOOD-PULP TILES.

A NEW phase of the wood-pulp industry is developed in the manufacture of paper tiles for roofing purposes, which are known to the trade as Norway tiles. They are pronounced superior in quality, appearance and price, and the insurance companies appear favorably disposed and stamp the tiles as a very desirable and safe roofing material. Some of the qualities presented by this new factor in the line of building are its light weight, exceeding hardness, a non-conducting of heat and sound, and sufficient elasticity to meet all the requirements. It is urged that the difficulty of procuring perfectly square stone blocks except at high rates is thus overcome, for the pulp blocks, being cast in a square mold, are necessarily uniform, differing from the stone and brick which absorb so much heat in the summer. It is claimed that the new material prevents dampness, which is usually experienced in the case of stone.

AN ANXIOUS HOUR.



CAPTAIN MARINER:—A mighty good deal depends upon the success of that log drive.
MR. MILLMAN:—My fortune depends on it, that's all. To all appearance that drive isn't in a fair way of getting down, consequently I'm in a fair way of going up.

ity, as may be judged by one case, where a large piece of saw was buried completely out of sight in a neighboring post.

As to covering or guarding all saws, it is impracticable, without very much interfering with the quantity of work turned out. The floor about the neighborhood of a naked saw should be kept altogether free from obstructions which

* Abstract of a paper read before the Engineering Society of the School of Practical Science.

MAINTENANCE OF SAW MILL MACHINERY.

DOUBTLESS our placing circular saw mills in the list of machines that require care will provoke a smile from those who know how very little of such consideration this kind of machinery receives.

It may be of interest to the uninitiated to go with us for a few minutes into one of these institutions with its modern appliances. We may find a little standing room near the sawyer. Through a cloud of sawdust may be seen a large log lunging back and forth, while the savage saw cleaves board after board from its side. The head block man is riding the carriage and hanging on to his levers like a sailor clings to his rigging during a storm. Suddenly the carriage stops. One naturally takes a step backward as two timbers, armed with spike, dart through the floor nearby. The log bounds into the air and drops back on the blocks with a fresh side presented to the saw, and the turning jack disappears. Again the sawdust and bark flies; a great slab drops on the live rolls and wriggles away out of sight. A few more such snatches at the log and it disappears.

We have seen enough and breathe easier when a little farther away, for such violent motions and rasping sounds produce a sense of insecurity. The whole thing seems to be turned loose to do what it can before it accomplishes its own destruction. Of course the practical saw mill man looks upon this slamming and banging of things with a sort of matter of course complacency. Experience has taught him about where the boundary of endurance lies and he works right along that line.

It is only by dint of increased strength and the use of steel where cast iron is commonly used that this kind of machinery is made fairly durable. In view of the rough usage it gets, we need not wonder at its ranking among the most expensive as to cost of maintenance. It may also be said to demand a higher order of skill for its successful management than many might suppose it would require.

We have examined a mill that will cut 50,000 feet of lumber per day, which is quite a different thing from one that can only cut from 3,000 to 5,000 feet. As there are fifty perhaps of the latter to one of these larger mills, we will confine what may be said on the subject to the operation of the greater number.

It would be perfectly useless to attempt to harmonize the views of sawyers on many subjects connected with the management of saws, as well as other parts of a mill. Hence we are not in the field as a missionary to change men's ways of thinking, but, if possible, to throw out a hint here and there which may be of value to some.

First, as to power required: Any good engine with saw in fair order will cut about 3,000 feet of one inch boards in ten hours for each ten h.p. developed. That is to say, a thirty h. p. engine will cut 9,000 feet per day, or at least can be made to do so. We are aware this is more than the average performance; in many cases it is nearly double what is done.

It may be interesting to note how much of the time a saw must be idle during each day or hour. For an example, take 400 revolutions for a saw per minute, and a feed of one inch to each revolution, which is a low average for a 15 h. p. engine. At this rate the saw makes 24,000 turns

per hour, and allowing that it is only cutting two-thirds of the time, the balance being consumed in backing the log, then we have 16,000" cut, or the equivalent of 1,333 feet per hour, and in ten hours 13,330 feet board measure, allowing the timber sawed to be twelve inches wide. An average day's work for such a mill may be estimated at about 5,000 feet, so we may see about how much of the time is consumed in turning the logs, putting them on the blocks and, as we sometimes say, pottering around.

The management of the circular saw seems to be the sawyer's shibboleth. Yet he may not have any well defined line of action. For instance, we know of no rule for determining the number of teeth that a circular saw should have. It is generally understood, however, that where coarse feeds are used, say from three to six inches to a revolution of the saw, that the saw teeth may be spaced to about three inches apart, while with small powers and fine feeds, say one-half to two inches, the saw teeth may be as much as six to eight inches apart. Indeed, we have known some cases where these spaces were doubled with apparent advantage. This was where the power was very limited, of course.

It is readily seen that sixteen teeth and one inch feed, thirty-two teeth, with two inch feed, and sixty-four teeth, with four inch feed, will each require power corresponding to their number of teeth, as in each case every tooth cuts chips one-sixteenth of an inch in thickness. But should we use a saw with thirty-two teeth on a feed of one-half inch we find that each tooth cuts but one sixty-fourth of an inch, or what might be considered as mere scraping, and as much power will be consumed, in all probability, in doing this as would be required to cut a chip twice or three times as thick. Hence, we may see there may be a great waste of power by having too many teeth in a saw.

From the foregoing we may reasonably conclude that one tooth to the horse power to be applied would not be far from the proper thing, that is, sixty teeth for sixty h. p., thirty teeth for thirty h. p., and one tooth for one h. p. But, as saw mills never get much below ten h. p., we would not require any one-tooth saws. They have been made, however, with four teeth, and successfully used, we are told. It is needless to say anything about thick or thin saws further than this: When required as thin as ten to twelve gauge, the motion should be both steady and rapid. Both being very hard to secure with limited power, such as small mills usually employ, it is probably best to use heavier saws in such mills.

Perhaps velocity has more to do with making thin saws work well than any other condition. The effect of centrifugal force, which the rapid speed produces on the saw blades, is well understood by saw makers. This, together with the driving strain, take effect principally at the central portion of the saw, and so stretches the steel at this point that it becomes necessary to provide for this change by hammering when in the hands of the saw maker, and by his knowing the velocity at which a saw is to run, he can make the proper allowance for this expansion.

It is well known that heat, so often produced by friction, is one of the most troublesome things the sawyer has to contend against. The derangement of the saw thus produced by unequal

expansion cannot be provided for by the maker.

It sometimes happens, however, that a saw may be hammered a little too "tight" at the centre, and then its performance will be improved by becoming warm at this point. It is often a matter of surprise to see how a very little heat will affect the running of a circular saw, the sun's rays being sufficient to unfit it wholly for work. Great damage often comes to a saw by cooling it with water. Those acquainted with the nature of metals know that when heated and allowed to cool gradually, a thing will come much nearer assuming its original shape than it will do if cooled suddenly, so that saw being frequently cooled in this way will soon require re-hammering.

The preventatives against undue friction and heat are too well known to require much comment. Usually, of course, it results from not giving the saw teeth sufficient spread to make a free curf. Sometimes the cause is more remote, and may be traced to improper setting of the mill frame, or carriage. For instance, if the saw-arbor is not perfectly level, the effect will be to spring the saw, as the latter will obviously lop over at the top, toward the carriage, if this end of the arbor is low, and at same time the under half of the saw will spring in the same direction. Just what the effect of all this will be on the cutting qualities of the saw cannot be foretold, but it is safe to say it will not be likely to cut a truly straight line, and therefore will be very apt to rub on the timber and become warm, or possibly hot in spots.

The same effect may be produced by allowing the trackway to get in wind, as it is called, or in other words, out of level.

It is useless, perhaps, to say much about the forms of dress given saw teeth by different sawyers. A diversity of opinion will doubtless always exist on this subject.

There are really but two prominent differences, i. e., that known as the "briar tooth" and the "chisel tooth." The first, of course, must be bent right and left alternately to give proper width to the curf they cut.

One objection to this form is, that these teeth may be sprung back by the pressure of the cut, and another is, that the lumber cut will not be as smooth as when every tooth is made to cut on each side, as is the case with teeth that are spread at the points equally on each side, giving them the form of a chisel. Some combine these two forms in the saw, by following a chisel tooth with two briar teeth, one right and the other left handed, a form which is sometimes employed in hand saws.

Of the several plans named, we believe that of the uniformly swaged tooth, or chisel shape, is the most generally used.

A word with reference to the manner of upsetting the steel to form this tooth, may not be out of place. This should be done with light strokes of the hammer. Heavier ones are liable to shatter and destroy the texture of the steel.—"Quirk," in the Tradesman.

White poplar weighs 33.06 pounds to the cubic foot.

Well-dried locust weighs 45.05 pounds to the cubic foot.

Seasoned dogwood weighs 47.05 pounds to the cubic foot.

LUMBERING METHODS IN CALIFORNIA.

A RECENT number of Pacific Coast Wood and Iron, published at San Francisco, Cal., contains an interesting article relating to California redwood, and the methods of lumbering as practised by the Usal Redwood Company, of which Mr. Robt. Dollar, once prominently identified with the lumber industry of Canada, is local manager.

The following description of Californian methods will doubtless have an interest for Canadian readers:

"A logging railroad has been constructed from the landing up along the creek for a mile and a half, and is being extended from month to month as needed. Trees growing along the creek and the slopes near by are cut, and the logs handled by a donkey engine, which hauls a cable with much greater speed than the old ox teams, and loaded on the cars to be hauled to the mill.

To reach out into the more distant hills and up the lateral canyons opening into the main one, a large engine, called a "bull donkey," is placed at the mouth of the canyon, and this machine operates three winding drums or cables. First is the main wire cable, about one inch in diameter, which extends from the bull donkey back up the canyon, or over the hills, for a mile and a half. This is pulled out by a smaller cable from the engine passing over a pulley at or near the point desired to be reached by the large cable. A second small cable is also used to enable the large cable to be hauled up a branch canyon if needed. Two telegraph wires

run parallel from the engine up the whole route of the cable, and are connected with an electric bell located right in front of the engineer. By touching both wires at once with an iron rod a circuit is established, and signals can be sent from any point on the line. A small donkey engine is located at the point on the route where they are getting logs. This small machine hauls the logs from the place where they are cut to the line of the large cable, and they are coupled together much the same as railroad cars, from 20 to 26 or 30 logs forming a train. This train is hitched to the large cable, and then the field operator with his rod signals the engineer, who answers with his whistle, and the great log-train starts off, pulling the end of the small cable after it. It may strike a snag, but a quick signal stops the engine until all is clear again. The train may break in two, but at a signal the great cable is hauled back and the broken-off part of the train pulled up and coupled again. Once more it starts, and at last pulls up at the logway, by the side of which the logging train stops for its load.

The locomotive on this road is a peculiar one. It has three cylinders, and these instead of turning the driving wheels directly, as is usual, connect with a flexible shaft which runs lengthwise of the engine, and every wheel of the locomotive is

a driving wheel, and driven by a pinion on the flexible shaft. Thus the locomotive has great power to climb steep grades and turn sharp curves.

At the mill the loaded cars are pulled one at a time into the room by a winding drum and cable, and the logs pulled to the saw carriage in the same way. The lumber is all sawed with a band saw, the blade six or seven inches wide, which walks through the logs as if they interposed no resistance. The boards after being sawed pass on by automatic machinery, and are all slit into proper widths and cut to proper lengths, with no human assistance beyond a directing hand, and being delivered then on trucks upon an elevated platform, they are lowered to the piles, rather than lifted to them. Where lifting is required, special cranes are provided.

The thick parts of the slabs are sawed into shakes, and almost everything is worked into merchantable shape. All the edgings and pieces are thrown into a yawning hole, and a grinding "craunch" is heard as the "hog" converts them into chips, which conveyors carry along the boiler furnaces, which are thus fired without

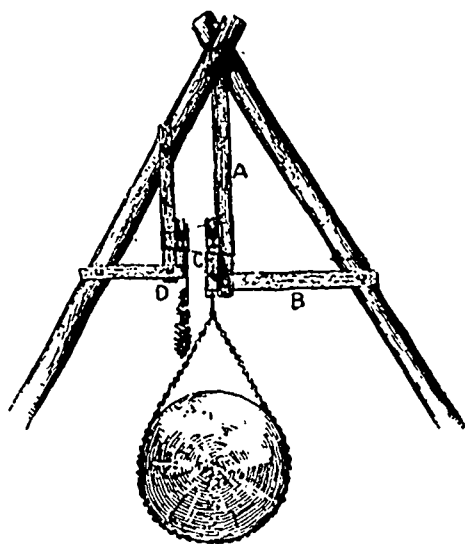
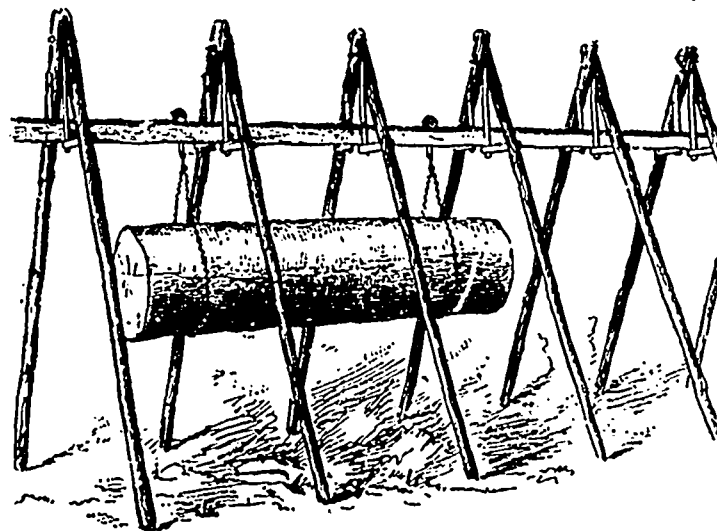


FIG. 1.—SECTIONAL VIEW OF LUMBER CONVEYOR.

FIG. 2.—LOG IN RIGHT POSITION ON CONVEYOR ON WAY TO MILL.
SYSTEM OF CONVEYING LOGS TO THE MILL.

human labor. All the sawdust and many of the slabs are carried on endless belts to a fire pit near the foot of the hill, where they are consumed. Probably enough fuel is there consumed to supply one-fourth of the city of San Jose.

A monster main engine of 600-horse power is so well balanced and firmly seated that not a tremble can be felt, and there are one or two auxiliary engines besides. Water pipes pass everywhere with such arrangements that the heat of a burning shaving would at once let loose a sprinkler with a rush of water under 145 pounds pressure. Steam does all the lifting and tugging, pulling and hauling. Keen-eyed and skillful men direct the whole, and although the mill does not run at night, one band saw cuts from fifty to sixty thousand feet of lumber every day. The mill is arranged for another band saw, and a dynamo and arrangements for electric lights are now being put in, so that four times this output will be possible.

Vessels lie just outside the elevated wharf, and are loaded by means of a "traveller" on a tightly-stretched wire cable, a donkey engine furnishing the power."

METHOD OF CONVEYING LOGS.

From a correspondent of Lumber, New York, we obtain the following particulars and illustra-

tions of a system of conveying logs to the mill in operation in California:

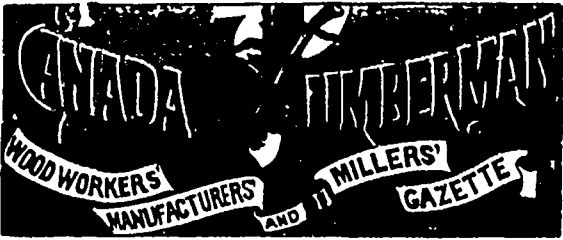
The distance from the Blackstone Mill in Mendocino county, Cal., to the logging camp is about 10 miles, being, as is usually the case, through a pretty rough country, where it would be difficult and expensive to build a railroad. The route is mostly along the bed of a creek. At distances of 10 feet apart each were placed inverted Vs made of two saplings about 12 inches in diameter and 30 feet long, as illustrated in Fig. 1. From this is suspended a track as shown in illustration, A being the hanger, B the cross piece, both of 3x8 pine, let into the uprights and into each other, and bolted together. C is the support for the rail, being 4x12 pine. By "pine" in this connection is understood the tough fir, called also Oregon pine. On this is placed a 40-pound T rail. A traveller runs on this, consisting of a flanged wheel, from which is suspended the log. At the loading place in the woods is a platform which is raised and lowered by a simple arrangement. The log is rolled on this and raised sufficiently to clear the ground on its passage, then suspended by chains to the travellers,

two of the latter being used for each log, and the platform lowered. By a simple grip the traveller is connected to an endless wire cable, which moves about five miles an hour, and started on its journey to the mill. The position of the log is shown in Fig. 2. At the landing place there is a similar platform, over which the log is stopped by loosening the grip, the platform raised, the chains removed,

and the log rolled into the mill pond. The chains are hung on the travellers, which have been placed on the return track D, and the grip being attached, they are carried back to the camp. Small articles of freight are sent up to the camp on these return travellers. There are three telephones along the line, one at each end and one in the middle, in case of accidents. The power is furnished by the mill, through which the cable passes; but, as the grade tends downward from the woods to the mill, this is not called upon to any extent. Some of the logs are 10 feet in diameter and of immense weight, but the system works perfectly.

Japan is said to have a forestry law that compels the planting of two trees for every one cut, thereby keeping intact the forests.

"I have often wondered what became of the old-style bicycles," remarked a wheelman. "I discovered the other day what had become of one of them. During a ride down in Jersey I came across a saw-mill in the woods. To my astonishment and amusement I found that the motive power for the mill was supplied by a young man and one of the big-wheeled bicycles that were in vogue before the safeties appeared. The bicycle was suspended from the ceiling and connected with the mill machinery by a belt. The young man sat upon the seat of the wheel and worked the pedals with his feet, and in this way kept the saw in motion for hours at a time.—Exchange.



MONTHLY AND WEEKLY EDITIONS

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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.

THE MANUFACTURE OF VENEERS.

In a recent number of the Canadian Gazette, of London, the statement is made that British capital might find profitable employment in Canada in the manufacture of veneers and cut stock. "There are in Ontario," says the Gazette, "considerable areas of suitable timber for both 'slicing' and 'rotary-cut' veneering—such as maple (four varieties), birch (three varieties), oak (three varieties), elm (three varieties), beech, sycamore, basswood, ash, balm and whitewood—adjacent to a line of railway, so as to be convenient for shipping. The most improved machinery for this class of work can be obtained in Canada; and the veneering or cut stock, properly dried, cut to size and carefully bundled, can be shipped to Great Britain and made into furniture, house decoration, packing boxes, nail kegs, barrels, butter tubs, and an almost infinite number of lesser although by no means small or unimportant lines of goods. A great deal of attention and study has been given this veneer industry, and its development and its extension from one line of manufactured goods to another—such as pianos, organs, sewing machines, etc.—have been such that at this present time large lines that were formerly manufactured of solid material are now 'built up,' so as to be cheaper, more durable and substantial, and much lighter; and many other lines of industry are

moving into the using of veneer for constructive material. A trade could, it is believed, be built up reaching into millions per annum; and as the industries provided for are increasing daily necessities, so the business would increase from year to year. The capital for the industry on a large scale, however, would have to come from England."

Several Canadian papers have recently published articles on this subject, echoing the opinions expressed by the Gazette. As the result of enquiries in various quarters, we are inclined to think that the prospects for a Canadian veneer manufacturing industry are scarcely so promising as they have been pictured. In order that our readers may be in a position to judge for themselves on this point, we submit for their consideration a few particulars bearing upon the subject.

First, as to the supply of native woods suitable for furniture veneers—we have only maple, birch and cherry—our oak is unsuitable for this purpose, and our walnut practically extinct. We would therefore be dependent upon foreign countries to a larger extent than the United States for our raw material.

As to the extent of the market for the manufactured product, we have in Canada about one hundred furniture factories, not more than twenty-five of which use veneers, as the majority make only the cheaper grades of stock. We have, perhaps, twenty piano and organ manufacturers, which consume a considerable quantity of veneers of the finer grades, such as could not be made from native material. We have also a limited number of casket factories which employ veneer. It is doubtful if from all these sources a sufficient demand would come to keep a single mill of fair capacity running six months in the year. It would be too much to expect that a local mill would succeed in capturing all the home trade. Indeed a well-known piano manufacturer informed the writer that if a mill were established his firm would not think of placing all their orders with it, as they would thereby be depriving themselves of the variety of stock which they now enjoy. There has likewise to be taken into account the fact that Canadian users of furniture veneers are at present supplied from American mills under a tariff of only 10 per cent. Unless a higher rate of duty than this were imposed, the Canadian manufacturer would find it a difficult matter to supplant American goods in the home market. What are the prospects outside the home market? A high tariff and the natural advantages enjoyed by the American manufacturer shuts out the possibility of finding a market in the United States. How is it with Great Britain? Her next-door neighbor, France, is the largest and most skilful producer of veneers in the world. To France, therefore, the British and German manufacturer goes to buy the finer grades of veneers, such as are not manufactured in his own country. There is demand in Great Britain for maple veneer which possibly Canada might hope to supply.

In view of the above facts, there would seem to be no satisfactory opening in Canada for manufacturing furniture veneers. On the other hand, there does seem to exist the opportunity for profitable enterprise in the manufacture of the rougher grades of veneer, such as are used for cheese boxes, butter tubs, fruit baskets, etc. The market for goods of this class has

wonderfully developed during the last decade, and is still growing. These goods are principally made of maple and elm, with which material we are abundantly supplied. As these goods are cut from steamed logs, the mill would require to be located at some central point, where cheap labor would be available, and where the veneer could be made at once into the finished article. In this way the great waste which would result from warping and cracking in the event of the veneer being shipped abroad, would be avoided.

We shall welcome any further information on this or any other subject bearing on new openings for enterprise in connection with the profitable disposal of our forest products.

QUEBEC AS A SHIPPING PORT.

THE evolution which has taken place within the past few years in connection with the lumber business is greater than would appear at first glance. The methods in vogue a few years ago have given place to those in keeping with modern developments. While these changes have been in the interest of commerce at large, disaster has sometimes resulted to some particular section or industry. Take, for instance, the city of Quebec, which in earlier years was the principal shipping centre for the timber products of the province and much of the deal trade of the Ottawa valley. In those days the timber in log form was taken to Quebec by the lakes and rivers for sawing, but the logs are now cut into deals and lumber in the vicinity in which they are obtained and the product shipped by rail. Consequently Montreal, being easily accessible by rail, has secured a large portion of the lumber trade of the Ottawa valley, and Quebec has lost much of its old-time prestige as a shipping port.

Further, it was thought that Quebec would be enabled to hold the square timber trade, even if losing the lumber shipping industry, but within the past two years large quantities of square timber have been shipped to Montreal by rail, to be loaded on the steamships for Europe. It is stated that even waney pine timber from points on the United States side of Lake Superior, 1,200 miles distant, is finding its way to Montreal in no small quantities.

The port of Quebec can only retain a fair proportion of the timber shipping trade by reaching out to meet the requirements of the times, and in this connection Messrs. Dobell and Sharples, two of the largest lumber merchants, have pointed out that it is necessary to improve the railway facilities with the lumber districts. The construction of the Parry Sound Railway would give direct communication with the mills of the Ottawa valley and with the timber districts of Parry Sound. An instance of the advantages of such communication is shown by the Lake St. John Railway, which carries a large portion of the trade of Quebec.

The Harbor Commissioners of Montreal have provided, at a large expenditure, ample accommodation for vessels. The announcement has just been made of a reduction of 20 per cent. on harbor dues, to take effect as soon as the necessary by-law receives the sanction of the Lieutenant-Governor. This step is of importance to all having to do with the commerce of the city, and will certainly prove beneficial to the St. Lawrence route, in competing for the carrying trade.

EDITORIAL NOTES.

SOME United States companies are said to have secured orders within the last six months for complete saw-mill outfits for Japan, to be used in the manufacture of boxes. In view of the feeling which is said to exist in Japan in favor of trading with Canada, and of the fact that Japan has vast timber lands, Canadian machinery manufacturers should take steps to secure a portion of this trade.

THE practice indulged in by some lumber manufacturers of labelling cars with the name of the shipping firm is receiving some condemnation at the hands of wholesale dealers. By this means the wholesaler's customer becomes acquainted with the mill man from whom the stock is obtained, and in placing future orders he will probably transact the business direct with the mill man, thereby shutting out the wholesale dealer who had been the means of securing the trade, and who is justly entitled to any benefits to be derived therefrom.

A SUBSIDY of \$50,000 has been granted by the Dominion Government towards establishing a fortnightly steamship service between Canada and France, the Canadian ports being Montreal in summer and St. John, N. B., and Halifax in winter. There is already a prospect of considerable business between these countries as a result of the new French treaty. The exports of lumber from Canada have increased, and with the additional facilities provided by a steamship service as above stated, there is reason to anticipate closer trade relations and more satisfactory returns to shippers.

THE lack of cleanliness around lumber camps is a matter to which Mr. John Simpson, superintendent of Algonquin park, draws attention in his annual report to the Commissioner of Crown Lands. The interior of the camps, he says, is left in complete chaos with old clothes, boots, straw, etc. Last spring an attempt at clearing one of the camps was made, but the filth was merely taken and dumped behind a rocky bluff at the back of headquarters. The question is one, we believe, to which too little attention has been given in the past, affecting as it does the health of workmen employed in the woods. Outbreaks of typhoid fever in lumber camps are quite frequent, largely the result, no doubt, of disregard of necessary sanitary precautions. Employers and employees alike should feel an interest in this matter, and it is hoped steps will be taken to effect an improvement along this line in the future.

It is a matter of regret that the past month has witnessed the destruction by fire of several large saw mills in Ontario, entailing a loss of upwards of \$200,000. While in most cases the loss is largely, if not altogether, covered by insurance, the inconvenience caused is of considerable moment to the companies interested, who had completed arrangements for the season's trade and had recently commenced sawing operations. In the case of the Hawkesbury Lumber Company, who suffered the loss of three mills, the difficulty will be overcome by running the three remaining mills day and night for the balance of the season. The Imperial Lumber Company will take immediate steps to rebuild their mill at

Warren, while a decision has not yet been reached by the Katrine Lumber Company regarding the reconstruction of their mill. It is hoped that the owners will not be seriously handicapped by the unfortunate occurrences.

CHANGE OF LOCATION.

FROM every side expressions of regret are heard that the wholesale lumber firm of Donogh & Oliver have resolved upon taking their departure from Toronto. Their new location will be North Tonawanda, N. Y., where they have leased the docks and yard of A. M. Dodge & Co., and will continue business under the style of the Donogh & Oliver Company. The change is simply the removal of their main office, now in the Board of Trade Building, to Tonawanda, as the office at the Northern docks in Toronto will be maintained. By this arrangement the members of the firm will be enabled to give their personal attention to their extensive hardwood trade in the east, while their western connection will not suffer by the removal. Their Buffalo yard was sold some time since to the Arthur Hill Company, of Midland.

The loss sustained by the removal from Toronto of such well-known dealers is keenly felt by the trade. During the many years of their business life in Toronto, the members of the firm have always been recognized as honorable and reliable in all dealings, and this has secured for them an extensive connection. The LUMBERMAN wishes them success in their new field.

LUMBER ADVERTISING.

To advertise or not to advertise—that's the question. We shall, of course, maintain that it is a dividend-paying investment. You may not agree with this, and may, perhaps, think the motive which prompts the affirmative of the argument is a selfish or mercenary one; but we shall immediately interpose an objection to the negative of the question on the ground that disbelievers pay but little or no attention to the details of the business, and assume that because buyers do not come flocking after their goods, immediately after inserting an ad in a lumber journal, that advertising is a "dead horse," and are, consequently, not qualified to judge of its true merits.

There is a right way and a wrong way to advertise, and the right way is what we shall, in a few words, consider.

Every ailment demands a specific remedy, whether it be disease or bad trade. If you are sick, and call in the doctor, he doesn't simply prescribe medicine; but, after a thorough diagnosis of your trouble, he decides what is the nature of your ailment, and orders a certain remedy to fit the case. Just so with advertising. If trade is dull, it will hardly be of much value to simply advertise your name and business—that's too general. If you demand specific results from your advertising, you have got to say something specific. For instance, here, you're a lumber dealer; your running an ad in a lumber journal, but nobody seems to write you, asking for several car loads of lumber, and remarking that they know you're in the lumber business because they saw your name in the paper. The result is, after awhile you begin to think advertising don't pay just because buyers don't keep telling you that they read your ads every week.

If you wish to be reminded of the fact that your ads are read, just put out a "feeler" in the shape of something the market is short on, and inform buyers that you have the article demanded, for sale, at a bargain, perhaps. You need hardly expect a department-store bargain-counter rush, but the chances are that you will be convinced, in a substantial manner, that people do read ads. If you have a particularly fine lot of piece stuff, say so in your ad, give the dimensions and the amount you have to offer, and if there is anything in the way of "inducement," let your ad tell it to prospective buyers. If there is any reason why it should be taken in preference to any of the thousand-and-one other stocks of piece stuff, tell what that reason is. If you're long on something which the market is short on, there's just the opportunity you're looking for; advertise the fact; tell it with a loud voice; let the people know it. Somebody, from somewhere, will want to know more about it, and will write you. Then—well! then it's your business to sell it. Don't depend on your ad to sell goods. It only gets you into communication with buyers. Suppose to-day you have half a million feet of 6-inch No. 2 fencing, 16-foot lengths, don't it seem reasonable to expect that, under present market conditions, it would be easier to interest buyers in 16-foot board than it would be to get them to read a lot of stuff about ceiling, siding and finish, or high grades, lowest prices and prompt shipments? Certainly it would.

Change your ad to fit the markets, if you want the best results. The market is usually up or down on certain grades, giving opportunities to spring its "short" features to good advantage in your ad.

Lumber stocks throughout a certain territory are to a greater or less extent alike, and it's a little difficult, sometimes, to find "features" in the different stocks to attract buyers from all of the other stocks to your particular stock, but if you can name no reason which will conserve their interests in coming your way, how can you expect that they are going to single you out from the whole lot of manufacturers as the possessor of the best advantages? No! You can't expect it. You'll just simply have to take your chances with the rest, and miss a good many sales which you could coax your way by offering as a specialty some particular grade of stock which you very well know the market demands.

When the advertising solicitor comes around and expatiates on the beneficent effects of advertising, he uses his best argument to sell his space. Do you buy it just to please him, or do you really expect it will profit you? If the latter, then why not give it a fair show to prove its meritorious qualities? Your salesman can't sell lumber by simply calling on the retailer, telling him he represents so-and-so, and asking him what he wants. He's got to do some talking, use some argument; and usually, a good deal of it too. Then how do you expect an ad, which only says you have a big stock of everything, is going to breed results?

When you try to talk the dollars out of a man's pocket, whether by salesman or advertisement, you've got to get right down to business, and use the hottest arguments you can command. High grades, low prices and prompt shipments won't do. Everybody claims that, and it seems like a sort of tail piece, just fired on to finish up every ad written, and has no specific value. If you demand specific results for your advertising, make specific offers and make them every week. —Mississippi Valley Lumberman.



Who thought for a moment, when the wooden rim for bicycles was in its experimental stage, that the lumber trade would ever be affected by its adoption. Yet the bicycle has become so general that no small quantity of rock elm and maple is required in the manufacture of rims, and I know one dealer in particular who is supplying large quantities of such stock for this special purpose, and I have reason to believe that he is realizing a snug little sum thereby.

* * *

MR. DAVID McLAREN, a leading lumber merchant of Ottawa, who spent the greater part of last winter in England, states that the outlook for the lumber trade across the Atlantic is good. Stocks are lighter than usual at this season, and the demand excellent, with prospects of a continued good consumptive demand. There appears to be a better feeling over there, that manifests itself in increased business generally. Mr. McLaren states that he found a very strong feeling in London in favor of drawing the mother country and her colonies closer together. The expression of loyalty by the colonies during the recent war scare made a strong impression.

* * *

"LUMBER is just now in a transition state," said a keen observer of lumber matters with whom I conversed recently. "A few years ago," he added, "quality was subordinate to quantity, and the mill man endeavored to cut as large a stock as possible with little regard to efficiency. But times are changing, and where a manufacturer formerly cut six or seven million feet, probably nearly all of one length, the wise mill man now prefers to have one million feet, which he cuts to special lengths and sizes to meet the requirements of the market. I must admit, however, that Canadian mill men have been somewhat slow in realizing the necessity for this change, and many of them have not yet learned the advantages to be derived from greater care in the manufacture of stock. In this respect the manufacturer in England is entirely different. There everything is sawed to special lengths. Just to give you an instance of what is required by the English market, at one time a gentleman was taking out a quantity of stock in the Georgian Bay district for that market, and all strips over three feet in length were cut to half-foot sizes and tied up in bundles of 25 each. Of course he got a good price, and could afford to take the trouble. Another point which I might point out," said my informant, "is the necessity for sawing off cull ends of boards. If a board has, say, two feet of cull lumber on the end, it should be sawed off, as the customer to whom it is shipped is obliged to pay freight thereon, while the lumber is of no value whatever. Manufacturers are also experiencing an increasing demand for thin stock, and few have apparatus to manufacture it. When it comes down to $\frac{3}{8}$ inch, it requires a very rigid saw frame to prevent springing."

Mr. C. M. Beecher, of Vancouver, B. C., and one of the leading lumber dealers of the Pacific Coast, visited the eastern provinces last month. Mr. Beecher is a nephew of the late Rev. Henry Ward Beecher. Interviewed by a representative of the press, Mr. Beecher remarked that when he left home no less than fifteen ocean-going vessels were lying in the harbor of Vancouver, loading cargoes of lumber and other western products for foreign ports. "A cable," said he, "from Vancouver to Australia and the Orient would give a wonderful impetus to the lumber trade, as the British Columbia dealers would then be in a position to communicate daily, at a comparatively low rate, with the island continent, and both countries would no doubt be very largely benefitted. I am a firm believer in preferential trade between the colonies themselves as well as with Great Britain. I believe that were such a policy as that outlined by Sir Charles Tupper, now Prime Minister of Canada, carried into effect, that the progress of the Dominion of Canada during the next decade would be far ahead of any material advancement made in the United States during the last fifty years. I have no hesitation in saying that if Australia were to impose a duty of one dollar per thousand on lumber produced outside the colonies, it would start every saw mill in the province of British Columbia, and give new life to the whole of Western Canada; where we now ship fifteen million feet, our yearly export would go to forty million at a single bound, and I need not tell you what this would mean to all branches of trade on the Pacific Coast." Mr. Beecher stated that his firm sell lumber all the way from the Atlantic to the Pacific, three million feet going yearly to one town in Nova Scotia alone. They also purchase machinery from Nova Scotia, which goes to show that interprovincial trade is steadily on the increase.

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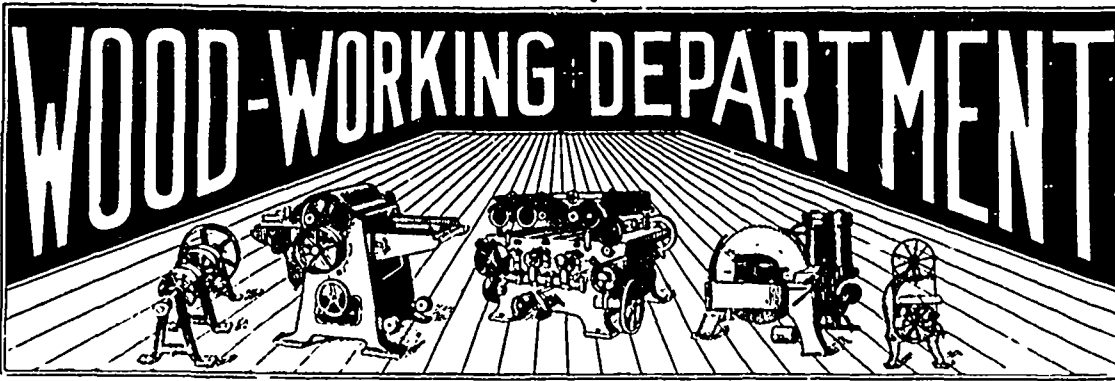
WHEN I met Mr. John Gray, lumber merchant, of Toronto, he had just returned from the Nipissing district. He informed me that the water in the rivers in that section was as low as is usual in July, and prospects were not very bright for getting the logs out. While admitting that it was rather discouraging to lumbermen to have their logs hung up after getting them out of the woods, Mr. Gray remarked that ultimately it would be a benefit to the trade. "Some of the mills," he remarked, have large stocks of old lumber on hand, and in some cases the cut of '94, which I think will shortly require to be re-piled, is still at the mills. The trade is very quiet at present, the great trouble being with the lower grades of pine. No. 1 cuts are always marketable, as I believe there is nothing to take the place of white pine for certain purposes. On a recent visit to Philadelphia I found I could sell all the No. 1 grade I could send along, but when it came to culls, spruce and hemlock were being used largely instead. Lumbermen made a great mistake in cutting their limits. Some years ago they went through them and cut all the best pine, leaving the cull trees, and now when the lower grade lumber is manufactured, there is little or no demand. Had they reversed the order of things they would have been millionaires to-day." Mr. Gray is also interested in timber limits, and took occasion to remark upon the low price at which spruce limits could be obtained. A gentle-

man who had recently been offered the option of the purchase of a limit in New Brunswick, estimated that at the price at which the limit was offered, the lumber could be laid down in New York at \$6 per thousand. "And," he added, "there is a considerable advantage in manufacturing spruce deals for the English market, as any cull stock can be utilized in the manufacture of pulp."

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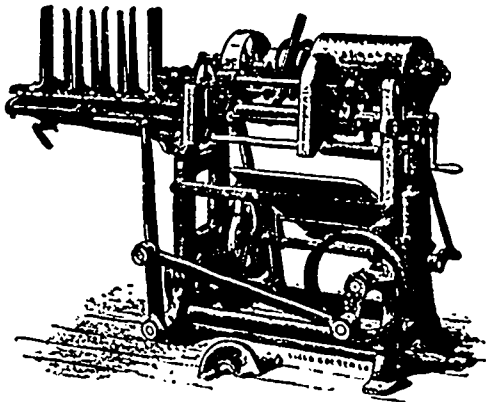
A GENTLEMAN from the west with whom I had the pleasure of an interesting chat recently, was Mr. Wm. Margach, Crown Timber Agent for the Rainy River district, whose headquarters are at Rat Portage. Of the future prosperity of the western country no one is more sanguine than Mr. Margach, and no one, perhaps, is better acquainted with its resources. "The lumbermen of the west," said he, "have experienced a better demand for lumber since the beginning of the year than for the past three or four years, and as our market is entirely in Canada and depends largely on the grain production of the North-west, present indications point to a good year. You are, of course, familiar with the Government system of granting timber licenses. Lumber operators employ scalers to measure the logs after being cut, their measurement being checked by Government officials. It is my duty to see that proper returns are made to the Government. The boundaries of my district are the Ontario boundary line on the west, the United States boundary line on the south, the line between Thunder Bay district and Rainy River on the east, and James Bay on the north. The distance is about 200 miles from east to west, and between 100 and 150 miles from north to south. The timber is pine, spruce and tamarac. In the valley of the Rainy River, which is 80 miles in length, there are to be found immense quantities of spruce. I am quite familiar with the greater part of Ontario, and from my knowledge I believe there is more spruce timber in the Rainy River valley than in all the rest of Ontario. The country offers the best of facilities for the manufacture of pulp, spruce being a natural product of the flat lands, which are about half covered with water, and which means that many water powers are available. There are large rivers, such as the Kaministiquia, the Wabigon and the Eagle, while at the Lake of the Woods the Keewatin Power Company have expended upwards of one million dollars in developing the water power. At Sault Ste Marie, where the finest pulp mill in Ontario has been erected, there are considerable quantities of spruce, but it is only a matter of a little time until it becomes exhausted, and thereafter the Rainy River valley must furnish the supply. The spruce industry is only in its infancy, and the next few years will witness great developments in connection with the utilization of this wood." Mr. Margach remarked that the output of logs in his territory during the past winter had been quite large, in fact considerably in excess of the previous winter. Mining operations, he said, were also quite active, and were resulting in the consumption of no small quantity of lumber.

Canada exports several million dollars' worth more lumber to the United States each year than to Great Britain. The value of Canada's forest products is about \$80,000,000 per annum, of which nearly 70 per cent. goes into local consumption.



AUTOMATIC BLIND SLAT TENONING MACHINE.

This machine is automatic, the work to be finished being simply placed in the hopper. The machine, taking each slat in turn separately, cuts it to accurate length, and cutting away the surplus wood leaves a small round smooth tenon at each end. This finished slat is thrown from the front, where it may be caught in a box or basket, while another slat takes its place and is operated on in the same manner. The waste cuttings, which vary in length, are caught on the incline and carried to the back of the machine, where they may be disposed of. The sawdust is caught and controlled for disposal by the hoods,



BLIND SLAT TENONING MACHINE.

which completely cover the saws. The operator sorts and piles the slats in the hopper and the machine finishes them at the rate of 2,500 per hour. The method employed and the construction of the machine insure a large amount of perfect work. The slats are of an accurate length and the tenons round and true.

THE DANGERS OF BELTING.

PROBABLY few persons, whether mechanics or not, realize how many accidents occur in connection with belting, and how many of these accidents are fatal, says the American Machinist. With a full appreciation of the dangers of steam boilers, circular saws, cheap elevators and similar terrors of the mechanical world, the belt seems to be able to hold its own with any of them as an agent of destruction.

As belts are in use wherever machinery turns, so the accidents caused by them are distributed over the whole land, and no complete record of them is ever compiled, no comprehensive view of their malignant work is ever obtained by any individual; but, wherever one may live, he will find the local press occasionally telling of one of these casualties, usually with horrifying details of whirling limbs and scattered brains.

These belting accidents are, as a rule, usually the result of carelessness or ignorance, the latter case too often meaning the carelessness of an-

other who has permitted the ignorant exposure. After nearly every accident it might be truthfully remarked that it need not have occurred, and that it would not have occurred, if everything had been all right, and if someone had not done wrong.

Belting accidents do not occur where belts are running steadily and where they are left alone. They never chase their victims, but they do sometimes suggest the existence of some power of fascination to draw the innocent toward them. When a belt breaks while running, it usually simply drops down in a heap on the floor, although occasionally it winds around the running shaft and catches a victim in its coils as it goes.

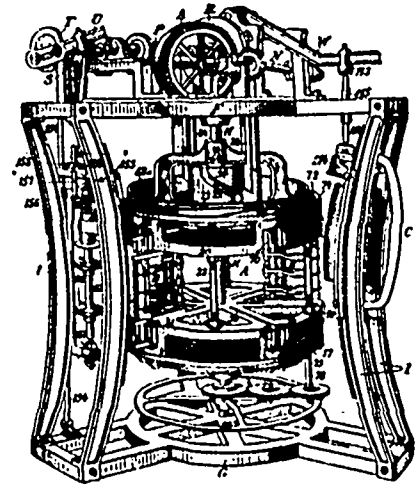
When a belt is being thrown onto a pulley on a running shaft, when it is thrown off a running pulley, when it is dangling from a running shaft in the process of relacing or repairing—these are all times of danger. The responsibility for the events that occur is to be divided between the belt itself, burrs and rough spots upon the shaft, projecting set-screw heads, notches in the edge of pulleys, slipping ladders, loose clothing of workmen, and other particulars all more or less wrong in themselves.

It is idle to think that the handling of belts in connection with running shafting can ever be stopped, any more than the starting of kitchen fires with kerosene can be stopped; but much may be done to make the practice less frequent, and to make it, when necessary, as safe as possible. It is very remarkable that, with the great quantity of belting employed in every industrial establishment, it is so rare to find any man whose business it is to look after the belts and see that they are always in order, and if repairs, taking up or other adjustment is necessary, to do it at times when the shafting is stopped. If belts are large enough to do their work without overstraining, the giving out and the handling of them during running hours would seem to demand an explanation.

Hiram Goo and D. B. Hoppins, of Delevan, N. Y., have patented a box nailing machine, comprising a carriage mounted to slide longitudinally, a rotary work holding device normally forward of the carriage, a tacking device on said carriage, and comprising mechanism for driving tacks in the overlapped ends of the hoop on the work-holding device, mechanism having connection with the tacking device for imparting a step-by-step motion to the carriage, mechanism for rotating the work-holder, and a nailing mechanism comprising a plunger and nail guides or chutes for nailing the work after the tacking operation and arranged to drive nails in a line at right angles to the line of tacks.

RECENT WOOD-WORKING PATENTS.

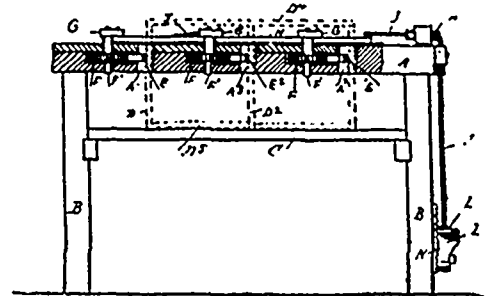
PATENTS for wood-working machinery have been granted in Canada as follows:



MACHINE FOR MAKING STAVES.

Patentee: John O. Storwick, Christiansund, Norway, granted 5th March, 1896; 6 years.

Claim.—In a machine for making staves for casks, barrels, and the like, the combination with means for holding the wood blocks out of which the staves are cut, and a rotatable support or carrier or a number of such holders, of tools arranged around the said rotatable carrier and consisting of a hollow saw, a shaft carrying tools for crozing and cutting and bevelling off the ends of the staves, and a jointing device, said three sets of tools acting simultaneously upon three different wood blocks, and said carrier making one-third of a revolution each working period of said tools. In the combination with a rotatable carrier for the wood blocks of a barrel-formed saw for cutting staves out of the blocks, said saw being keyed to a shaft that has its bearings on a carriage which works up and down on curved guides, so that the cutting section of the saw during the movement of the carriage describes an arch which is a continuation of the curve representing the longitudinal shape of the saw.



BOX MAKING MACHINE.

Patentee: Abner Carey, Cairo, Illinois, U. S., granted 17th March, 1896; 6 years.

Claim.—In a box making machine, comprising a top plate having transverse slots, and clamping bars held movably in the said top plate, to clamp the parts of the box in place, and a table arranged below the said top plate, for supporting the lower ends of parts of the box previous to being clamped by the said clamping bars, with means substantially as described, for simultaneously moving the said clamping bars into and out of contact with the parts of the box to be held in position.

The strength of wood increases with its density.

A cubic foot of the best cedar weighs 32 lbs. green and 28 pounds dry.

NEW MACHINERY WORKS.

THE new and commodious premises of the A. R. Williams Machinery Co., Toronto, which are just being completed, are probably the most complete works of their class in the Dominion. The new building has a frontage 73 feet on Front street, and extends back a distance of 150 feet, being built on the north end of the same lot as originally occupied by the Soho works at the south end. It consists of five floors, the first or ground floor being on a level with the Esplanade, and the next floor on a level with Front street. The structure is substantially built of pressed brick. The offices on Front street will be convenient and commodious, and much more accessible to the public than the quarters formerly occupied by the company.

We understand the ground floor of the Esplanade property will be converted wholly into workshops, thus giving a very important enlargement to this department. The second floor will be extended this summer to cover the whole of the old property, and will be connected with the Front street store.

The business of this company has been greatly hampered for want of sufficient space, but with the present accommodation this difficulty will be overcome, and they will be enabled to classify their machinery upon the departmental principle.

The first and most important department will be found on the Front street floor, and will cover the company's large output of iron working tools and machinery, consisting of the produce of their London tool works and other establishments whose output they control in this line, including lathes, planers, drilling and milling machines, shapers, gear cutters, etc.

Another department will consist of cutting and drawing presses of all descriptions, their variety in this line covering the greater portion of the Bliss and Styles designs as built by the E. W. Bliss Co., of New York.

The bicycle machinery emporium will constitute another important feature, consisting of tools and other special bicycle machinery, including the "Cowdrey" machines for making wood rims, automatic screwing machines, lathes, shapers, friction drilling machines, etc.

One large department of their business will be occupied by planing mill and furniture factory machines of all descriptions, both new and second hand, while in the basement of the building on the Esplanade level will be located the engine and boiler department, or what might be termed "power department," including water wheels, electric motors, boilers and engines of all descriptions—marine, stationary, upright, and portable.

The machinery supply room will occupy the west side of the Front street floor. This department has grown to large proportions, and covers everything necessary in a machine shop, planing mill, furniture factory—in fact, all sorts of factories and factory supplies.

The saw mill department will occupy the next floor off Front street, and will cover all classes of saw mill machinery of the latest and most approved designs. The shingle mill machinery will be located in a portion of the same floor, and will cover the new "Boss" shingle machines, jointers, drag sawing machines, and everything necessary to equip completely a first-class shingle mill.

Contractors' plant will constitute another branch, consisting of stone breakers, rock drills, boilers for same, hoisting engines of all descriptions, with or without boilers, pulsmeters, etc.

The pump department will be situated in a portion of the second floor, and will cover their line of duplex Worthington pattern steam pumps, with rotary pumps, pulsmeters, etc.

The brass working machinery will be another special feature, and will cover all the latest improved designs, both American and Canadian.

Shafting, hangers, and wood split pulleys will constitute another large line; while the belting department covering the best Canadian and Scotch belting, must not be overlooked.

This company are the representatives of the Cleveland Twist Drill Co., and in this department of their business they count among their customers the leading manufacturers of Canada.

The above are some of the leading features, but do not by any means exhaust the list, as this company are prepared to supply machinery for all purposes. Their stock at Toronto, Montreal, Brantford, and London is very complete. The Montreal warehouses are located at 345 and 347 St. James street, and are finely equipped. They are under the able management of Mr. F. C. Wilson. The Brantford branch is located at 193 Colborne street, and under the management of Mr. Robert Kerr, is doing well; while the London Machine Tool Co., at London, under the mechanical superintendence of Mr. William Yates, is kept busy in working upon ordered tools.

This company is thoroughly Canadian in its composition and

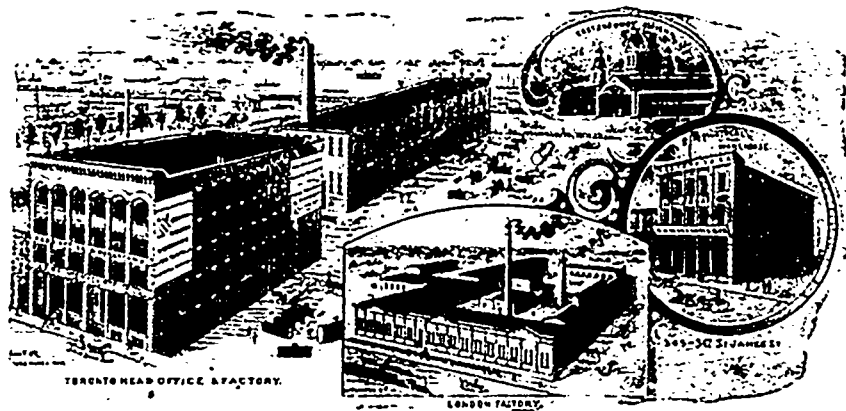
impulses, and although representing a few leading American firms in lines that are not manufactured in Canada, they are steadily encouraging the production of new goods from American and other first-class designs in Canada, and by Canadian mechanics. In fact, it appears to be their motto to have everything that it is possible to have produced in our own country, as they thoroughly believe it to be our patriotic duty to maintain for Canadians the Canadian market; especially as it is clearly evident to every observer that the American market is not to be opened to Canadian products, especially in the manufactured or partially manufactured lines.

On the whole, we believe this to be one of the most thoroughly equipped machinery establishments in the Dominion or the United States, as they claim to occupy more floor space and cover a greater line of machinery than any other existing concern.

NOVA SCOTIA NOTES.

(Correspondence of the CANADA LUMBERMAN.)

THE bright prospects for getting logs down the streams have not been realized in many cases, as the snow gradually melted, with no rain, which is very unusual in this province. Consequently there has not been the usual spring freshet to enable the operators to stream drive, thus holding back a great deal of lumber. Water mills are already feeling the effect of a



NEW WORKS OF THE A. R. WILLIAMS MACHINERY CO., TORONTO.

short supply of water to saw even what logs were gotten to the mills.

The prices for all lumber in the English, American, and other markets have held up well, and the millmen not being able to get out their logs and saw them will feel that it is a serious loss to them. As the lumber gets scarcer the loggers naturally have to go up the smaller branches of the rivers, and these are the places where the logs are stopped in most cases. Some of the larger mills have a small supply of logs at the mills and a reserve, so that they can be obtained with an ordinary spring rain. The farmers are also feeling the need of rain, and unless some comes soon farming operations will be at a stand-still.

In my last notes I gave you a pretty full account of the mills on the south shore as far as Liverpool. Continuing along westward, we find T. G. Nicol operating at Mitchell Brook. He has about a million feet, which is to be sawn by a portable mill a new departure in this section, there being only three steam mills in about one hundred and twenty miles, or from Bridgewater to Tusket. Mr. Nicol has his lumber sawn principally for the South American and American markets, shipping direct from Port Joli, about one mile from the mill. He is also interested in and the manager of the Gold River Lumber Co., Gold River, an account of whose operations I gave in the April number.

At Granite Village, three miles further west,

Mr. Frank G. Nicol has a water power circular saw mill. His cut this year will be about six hundred thousand feet, also for the South American and American markets.

H. W. Freeman, Jordan River, has a water power gang and circular saw mill, with shingle machine, lath machine, and planers for finishing lumber ready for any market. He is getting out a lot of hemlock boards for the American market this season, besides spruce, which he saws into English deals. Mr. Freeman finds that the deal market is the most reliable in price, while the logs cut to best advantage with the least trouble. He will take out about two million feet of spruce and one million of hemlock and pine. The water power at Jordan River is a very fine and strong power, and no doubt will be utilized eventually for manufacturing pulp. Mr. Freeman lives at Shelburne, seven miles distant, and has telephones in his office and house which he finds a wonderful convenience. I must diverge a little to say that the telephone system of the Yarmouth & Queens County Telephone Co. is a great success for the business men, in fact for all classes of the community, which is shown by the fact of it being a paying institution.

Shelburne is the next town on the way west, and is a town with a history which would take more space than can be given here to do it justice, or to state the facts, some of which probably have tradition for their basis. It is one of the oldest, if not the oldest, towns of what may be called "British Nova Scotia." The harbor was considered suitable for the British Navy, and was occupied by it for some time. The expectation of the residents of the town was that it would be made headquarters

of the British forces in North America; in fact, the land for a mile or so was laid off into blocks with streets that are to be yet seen fenced, graded, and crossing each other at right angles, only wanting houses to make a town. If these expectations had been realized, Shelburne would have been, considering its situation as to harbor and surrounding country, the prettiest town in North America; but their hopes were dispelled when the change was made to Halifax, tradition says through the personal pique of one of the commanding officers. Building was carried on extensively until wooden ships were discarded. Since then fishing vessels, yachts and dories have been built. Some of the vessels built there are now in the sealing trade in the north Pacific ocean. Fishery cruisers for the Government service have also had their first baptism in Shelburne harbor—vessels noted for speed and good sailing qualities—Joseph McGill being the builder. One of the finest was the "Agnes Macdonald."

In my next I shall touch on the lumber interests of Shelburne.

W. J. P.

Spanish mahogany weighs 53.25 pounds to the cubic foot.

The Norway spruce, well dried, weighs 32 pounds to the cubic foot.

Well-seasoned red hickory weighs 62.57 pounds to the cubic foot.

OTTAWA LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

Mr. Alfred Cross, of Liverpool, Eng., was in the city a fortnight ago. He represents some wealthy English firms who are large importers of hardwood for furniture manufacture, the object of his visit being to become acquainted with the timber resources of Canada. Formerly most of the lumber required has been obtained from the United States, but after viewing some of our hardwood forests, Mr. Cross decided to secure sections of maple and silver birch, as these are the woods that he most desires. Mr. Cross's backers in England also think it desirable that a mill should be established here for sawing up the lumber, and the probability is that it will be somewhere in this locality.

The death of Mr. James W. Agret, of this city, has removed one who formerly took an important part in the lumber trade of the Ottawa valley. He was in his day considered to be the best bushman and raftsmen of these sections, being endowed with great energy of mind and bodily strength. At one time he owned one of the most valuable timber limits on the Ottawa, and was also one of the contractors of the C. P. R. line.

Mr. Peter Colter, well known as a lumber agent and explorer, returned early in May from a three months trip through the different lumbering districts.

Mr. McLeod Stewart has had printed and distributed in pamphlet form the paper upon the physical features and geology of the route of the proposed Ottawa canal, between the St. Lawrence river and Lake Huron, by Dr. R. W. Ells and Professor Barlow, read at the last meeting of the Royal Society of Canada.

OTTAWA, Ont., May 22, 1896.

BRITISH COLUMBIA LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

ANOTHER association of lumbermen has recently been organized in this province, to be known as the "Associated Lumbermen of British Columbia." It is intended to include dealers who ship their lumber into the eastern market, and who are not connected with the Central Lumber Company. At an early date I hope to be able to give some further particulars of the organization, of which, I learn, Mr. F. H. Moore is the efficient secretary.

A recent issue of the British Columbia Commercial Journal contains the following with respect to lumber matters: "A Vancouver gentleman, Mr. C. M. Beecher, has interviewed several members of the government with a view to securing protection to the lumber industries on this coast. We are not aware what shape it is desired that this protection should assume; but it was supposed by many people that, under the operation of the lumber combine which recently went into operation, all that was desired in the way of protection was in that way to be obtained. If the combine is supreme on both the United States and Canadian sides of the line, it is hard to see where protection comes in, unless the effort is being made by some who happen to be outside of the combination. On the other hand, if it be better forest protection that is being sought, we would suppose that the provincial authorities are those who ought to be approached. In any case it would be of interest and possibly of general benefit to know what is desired. Meantime, we have not yet learned that the combine has proved to be a failure."

At present there are eight vessels loading lumber at British Columbia ports for foreign markets, which is below the average number since the opening of spring. Their destinations are: Melbourne, Delagoa Bay, Cork, Antwerp, Tientsin, Shanghai, Santa Rosalia and San Francisco.

The Brunette Saw Mills Co. shipped some of the longest lengths of sawn timber yet shipped per rail from their mills. These were 94 feet long, and 7 x 18. Other timbers in the shipment were thicker though not so long. They will be used in the construction of some hopper scows for the Dominion government.

COAST CHIPS.

The Sutton Lumber Co., of Uxetlet, have removed their head office to Victoria.

The Royal City Mills recently filled an order for 80,000 feet of spruce for the English market.

Lloyd's saw mill at Westholme, B. C., was recently damaged by fire to the extent of \$500.

The Nelson Saw Mill Company has taken over the business of John Bell at Trail and Rossland.

Mr. J. H. Ramsdell, for several years superintendent of the Moodyville mill, has resigned his position.

The British Columbia Mills, Timber and Trading Co., of Vancouver, propose opening a branch in Rossland.

Grant & Monnee, saw millers, Union, have lately put in a new band saw, adapted for both light and heavy work.

Mr. A. E. Griffiths is manager of the Turkish Harbor Timber Co., of Vancouver, who propose erecting a mill this summer.

Mr. J. G. Woods, for many years manager of Leamy & Kyle's mill at Vancouver, has been appointed superintendent of the Moodyville mills.

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

NEW BRUNSWICK LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

INTEREST for the past two weeks has been centred upon lumber drives. The season thus far has been an unusually dry one, while the snow melted so gradually that the streams were not benefitted much thereby. The result is that difficulty has been experienced with driving, particularly on the smaller streams, and at the time of writing grave fears are held lest much lumber will be hung up. In some cases larger crews have been put on, who have pushed the drive along at full speed, but even then some have been unable to get to their destination. A few days' rain would be welcomed by lumbermen, who, in view of the strong demand in Europe for deals, are feeling no little anxiety in the matter.

The purchase of the Rourke mill and property at St. Martins by Maine capitalists has not taken place, and in all probability Messrs. Rourke will carry on operations themselves this season.

Messrs. Currie & Co., of Eel River, have completed their new mill and commenced sawing. The dimensions of the mill are as follows: Main building 70 x 30 ft., with an extension on the south side 50 x 30 ft. The power is furnished by a 120 h.p. T. M. Nagle engine and boiler, both furnished by the Robb Engineering Co., of Amherst. The mill will contain four shingle machines, rotary double edger, lath machine, planer and matcher.

The Point Wolfe property on the Bay Shore is one of finest in New Brunswick, and contains a large growth of lumber. It is estimated that 175,000,000 feet have been cut there in the past 26 years.

The Dominion government will likely subsidize two or more lines of steamers from this port to Europe next winter. This will enable lumbermen to place their product regularly upon the English market, as was done during the past winter.

HITS OF LUMBER.

C. & I. Prescott's mill at Albert has begun sawing.

R. C. Tait is having a new rotary put in his mill at Shediac, which will largely increase its capacity.

Jan. E. Porter, M.P.P., has commenced re-building his mill at Andover, which was consumed by fire last autumn.

The new saw mill of Messrs. Purvis at Carleton has commenced sawing. This will provide employment for a large number of men.

J. C. Wright and Chesley Smith, of Hopewell Hill, have purchased the steam rotary mill belonging to Dowling & Fletcher at Alma.

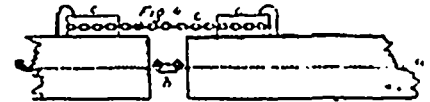
Frank and Henry Swim, of Doaktown, are building a new mill there with rotary, planer, clapboard machine, etc., to be ready by June 1. The old mill will be used for cutting board stuff.

St. JOHN, N.B., May 20, 1896.

A recent issue of the Montreal Herald says: An agent of Howry & Sons, the well-known lumber agents of Fenelon Falls, Ont., and Saginaw, Mich., called on Mr. J. Prescott, head of the Montreal Municipal Labor Bureau, on Saturday, and enquired whether he could provide two hundred skilled lumbermen to go to South Africa to work in the bush there, and teach the natives how to fell trees and trim logs for market. Mr. Prescott replied that he could fill the contract, and he is now awaiting final arrangements before he picks his men. According to the agent it is intended that the men after teaching the natives the practical work will become bosses.

CANADIAN PATENTS.

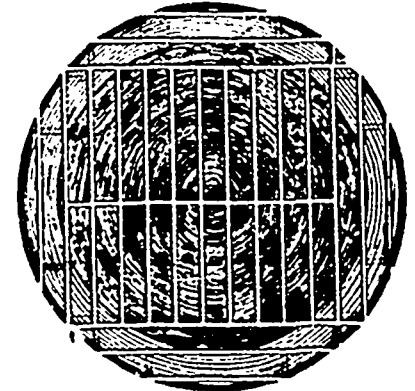
DENIS GAHERTY, of Montreal, was granted a patent on March 9th for a log boom, as shown by the accompanying illustration. It is comprised of any number of lengths or panels, each of which are formed of 2, 4, 6 or more pieces of timber bolted together, between which are laid



LOG BOOM.

longitudinally in grooves one or more wire cables, a, figs. 1, 2, 3, 4 and 5, and all the lengths or panels held together by means of the wire or cables, a, and wrought iron couplings, b, and the ordinary coupling C, C, C, substantially for the purpose set forth.

A patent has been granted in Canada to Annie S. Dees, of Moss Point, and George H. Howard, of Washington, U. S., for a device for sawing logs, as shown herewith. It consists in a saw mill, the combination of two carriages on opposite sides of the saw and rigidly secured together gauges on both carriages, stops to regulate the inward movement of the gauges, and means for operating the



DEVICE FOR CUTTING LOGS.

gauges, tracks on the under side of the carriage, rollers journaled to the floor for supporting the carriage, and bearings on the opposite side of the carriages. In the combination of a gauge one part capable of a predetermined movement toward the saw and an indefinite movement from the saw, with similar gauge on the other part, the two like parts being firmly united together with a saw, and means for moving them in either direction, whereby the material to be cut supported on one part is measured by the gauge on the other part.

ELECTRIC TREE FELLER.

AN apparatus has been brought out for felling trees by electricity. There is no saw proper, its place being taken by a drill, which, according to the nature of the wood may be used to perforate the base of the tree with a number of holes, placed so close together that nearly all the fibres have been cut, or it may be used to make a sweeping cut, as the cutting edges are on the side of the tool. This is the usual method. The machine is fastened to the tree and a cut of suitable depth is taken across its surface; the drill is then advanced an inch or two, and another cut is taken across its surface; the drill is then advanced an inch or two, and another cut is taken until about half the thickness of the tree has been gone through. Wedges are then forced in to keep the cut from closing up, and the operation is continued until it would not be safe to cut away more wood. The fastening chains are then loosened and the machine is removed, after which the final separation of the tree is accomplished by a hand saw or axe.

Cassier's Magazine for June contains interesting articles from the pen of well-known writers, among which are "Peat Fuel in Germany," by Louis Stern, "Steam Superheating," by W. H. Patchell, and "Economic Workshop Output," by W. E. Hall.

A valuable publication has been issued by the Century Company, of New York, covering a study of the white pine, with tables and volume of yield. It is edited by Gifford Pinchet and Henry S. Graves, and includes 102 pages, in cloth binding.

THE NEWS.

CANADA.

—R. H. Young, of Turtle Lake, Ont., is rebuilding his mill.

—E. Humphrey, Warton, Ont., has sold his saw mill to Thos. Moore.

It is said that Porter Bros. will erect a large saw mill near Kaslo, B. C.

—A company is being formed at Westville, N. S., to manufacture shingle mills.

—The Brennan Mfg. Co. have placed new machinery in their mill at Huntsville, Ont.

—Bateson Bros. have leased the lath mill of the Ontario Lumber Co. at French River, Ont.

—Chew Bros.' mills at Midland, Ont., have resumed operations. Additional improvements have been made.

—The Ontario and Western Lumber Co., of Rat Portage, Ont., is applying to the Ontario Government for incorporation.

—The Sault Ste. Marie Pulp & Paper Co. have let the contract for the erection of another pulp mill at Sault Ste. Marie, Ont.

—E. I. White, a Nova Scotia lumberman and ship builder, has bought the Samuel Longfellow homestead at Machias, Me.

—P. C. Heuser, of Collingwood, Ont., has purchased a planing mill at Thornbury, and purposes adding considerable machinery.

—The Annapolis Manufacturing Co., of Lequille, N. S., is seeking incorporation. It is proposed to do a general lumbering business.

—The citizens of Westmeath, Ont., will raise the sum of \$1,000 to assist Tucker & Hodges in rebuilding their mill recently burned.

—A button, upon which a monogram of the association is engraved, is now worn by members of the Western Retail Lumbermen's Association.

—Mr. Kilgour Shives, the well-known millman of Restigouche, N. B., has purchased an electric dynamo to be used in lighting his shingle mill at Campbellton.

—An American syndicate is said to be desirous of purchasing from the Vale Barrel Machine Co., of Hamilton, Ont., the right to manufacture the machine in the United States.

—The Ottawa Specialty Manufacturing Company, Ottawa, is seeking incorporation, with a capital of \$45,000, to manufacture wooden and metalware furniture, interior fittings, etc.

—The Manitou Wood Manufacturing Co., of Toronto, which is seeking incorporation, will manufacture lumber, staves, heading, veneers, pulp, etc. The factory will probably be located at Midland.

—Rhodes, Curry & Co., of Amherst, N. S., have received two cars of Douglas fir from British Columbia, to be used in the manufacture of railway cars. Some of the pieces of timber are 75 feet long.

—The North American Paper and Lumber Co., with headquarters at Halifax, N. S., are seeking incorporation, with a capital stock of \$2,500,000. It is proposed to manufacture lumber, pulp, paper, wooden goods, etc.

—Hiram Walker is said to be negotiating with some eastern parties for the erection of a large saw mill on the site of the old sugar refinery above Walkerville, Ont. The mill will be stocked by logs rafted down from the north.

—Some eight or ten portable mills will be operated between St. John and St. Martins, N. B., this summer. A couple of them will be located at or near Loch Lomond, three at Tynemouth Creek, and the remainder along the shore.

—Incorporation is announced of the Masterman Pulp Company, Ltd., of Montreal, with a capital of \$300,000, the objects being to manufacture and deal in pulp, timber, woodenware, etc. The promoters are John A. Banden, Wm. Arthur, S. Frederick and W. H. Masterman.

—George Waite, who in December last, while employed in John T. Kerr's saw mill at Iona Station, Ont., met with an accident which resulted in the loss of a leg, has entered an action against Mr. Kerr, claiming \$5,000 damages.

—An order-in-council has been passed making the regulations for the sale of timber of Indian lands in Ontario and Quebec, approved by order-in-council of 15th September, 1888, and amendments thereto, applicable to all Indian lands throughout the Dominion with the exception of British Columbia.

—A Port Arthur exchange says: The steam barge Wesley will shortly arrive to take on a cargo of three hundred cords of Hazlewood & Whalen's pulp wood at Big Pic river. It is estimated that it will employ an aggregate of one hundred men all summer to load their pulpwood on the lake steamers.

—The Milton Pulp Mill Company, Milton, N. S., are operating their mill day and night. The mill has run for fifteen months without losing a day. The company employ 38 men, and the pay roll is about \$1,200 monthly. These figures include only the men employed in manufacturing the pulp. Large quantities of wood have been brought to the mill during the past winter, and still a greater quantity is now on its way down the river.

—Knight & Morrow, of Bedeque, P. E. I., are running their mill night and day, and are meeting with a brisk demand for their product. The mill is 150 feet long and 60 feet wide. It is run by steam and has a rotary saw, cross-cut, shingle saw and a cylinder saw for sawing staves. It gives employment to about 25 men, under the supervision of John McPhee, engineer. The lumber used for sawing is obtained in New Zealand, and brought to the mill by cars.

—Mr. S. B. Benson, of Midland, who spent the past winter inspecting the timber limits of the Haliburton Land and Emigration Co., formerly known as the nine townships of the English Land Co., reports that a large number of wolves infest a portion of the country he explored. It is his opinion that the game laws are but slight protection to the deer while these wolves are at large. He noticed many carcasses of the deer slain by the wolves, and that only parts of the carcasses were eaten, thus showing that the spirit of slaughter rather than hunger caused the wolves to hunt the deer. He believes that the game wardens should employ men to exterminate these wolves with poison.

FOREIGN.

—During last year America shipped to Africa \$4,500,000 worth of merchandise, of which more than one-third was lumber from the Pacific Coast, the actual amount being \$1,807,610.

—The Seattle Lumber Exchange has been organized at Seattle, Wash., which promises to be of great benefit to the lumber industry of the western coast. The opening of the exchange was the occasion of much merriment.

—The Standard Oil Company will make an attempt, this spring, to tow a barge across the Atlantic Ocean, from either New York or Philadelphia to some English port, probably Liverpool. This has never yet been tried. The Standard Oil Company has been considering the plan for four years, and was about ready to make the trial last summer, but the idea was given up.

CASUALTIES.

—D. J. St. Eloi had his leg broken on J. R. Booth's drive at Nipissing, Ont.

—Raoul Methot, 16 years of age, was killed in his father's mill at St. Antoine, Que., by a log rolling over him.

—While putting a belt on a pulley in a saw mill at Chelmsford, Ont., Charles Adams was instantly killed by being dashed against the pulley.

—Erastus Durling was killed at Done Settlement, N. B. He was rolling logs off a brow, and was caught between two of them, being crushed to death.

—W. H. Ellis, in the employ of W. & R. Butler, Woodstock, Ont., received serious internal injuries by being struck by a piece of lumber from a planer.

—Alex. Stewart, a lad of eighteen years, while working in Steinhoff & Gordon's mill at Wallaceburg, Ont., accidentally fell upon the saw, receiving serious injuries.

—The clothes of an employee of J. R. Warner & Co., St. John, N. B., named Peter Carey, became entangled in the machinery, and he was carried around one of the shafts. Both legs were broken and other injuries received.

—A young man named James R. McDonald, employed at Macpherson & Schell's saw mill at Alexandria, Ont.,

was seriously injured by a floor-scraper, which, being caught by a saw, struck him on the back of the head.

—Word has been received at Ottawa of the drowning of Joseph Monette on Bissett's creek, which flows into Lake Nipissing, by the breaking of a jam. He had been in the employ of Bronson & Weston for a number of years.

—W. C. B. Rathbun, the Toronto representative of the Rathbun Co., of Deseronto, Ont., while cleaning a revolver, was accidentally shot in the left side below the chest. At first it was thought the wound would prove fatal, but strong hopes are now entertained of his recovery.

PERSONAL.

—Mr. W. C. Caldwell, the well-known lumberman of Lanark, will oppose Hon. John Haggart in South Lanark for parliamentary honors.

—Mr. H. H. Cook, president of the Ontario Lumber Co., has accepted the Liberal nomination for East Simcoe for the Dominion parliament.

—Mr. Maurice Walsh, lumber merchant, of Bridgewater Cove, near the city of Quebec, died suddenly on the 4th ultimo, from heart failure.

—Mr. Edward Mackay, of the firm of Carswell & Mackay, lumber merchants, Renfrew, Ont., died on the 12th of May, at the age of 40 years.

—Hon. E. J. Flynn, Commissioner of Crown Lands for Quebec, has accepted the invitation of the Lieutenant-Governor to form a cabinet, as successor to Hon. Mr. Taillon.

It is rumored that Mr. Henri Vassal, lumber manufacturer, of Drummondville, Que., will be the Conservative candidate for the counties of Drummond and Arthabaska at the approaching general elections.

—Mr. E. C. Grant, of the Ottawa Lumber Company, has been elected a member of the American Lumber Corporation. He is said to be the first Canadian to obtain this distinction.

—Mr. J. W. Todd, of Watson & Todd, lumber merchants, Liverpool, Eng., with branch offices at Ottawa and Montreal, is at present in Canada, superintending the season's shipments of pine deals, boards, etc.

—Mr. Jas. B. Klock, head of the lumber firm of R. H. Klock & Co., of Klocks Mills, Ont., recently returned home from a business trip to Europe, and was given a reception by the townspeople. In all probability he will contest the Nipissing district in the Conservative interest at the Dominion elections.

The death is announced at Nappan, N. B., of Mr. Thomas Bulmer, in his 74th year. He was an extensive lumberman and contractor, being one of the pioneers in stripping the northern part of the county of Cumberland of its pine, in the forties, and a few years later went into the making of hackmatack knees and lumber. He is said to have amassed considerable wealth.

—Mr. John Macdonald Grant, Clerk of Patents in the Crown Lands Department of Ontario, died in Toronto on the 17th ultimo. Mr. Grant entered the service of the government in 1860, since which time he has filled the position with much efficiency. He has been succeeded by Col. C. J. Jones, formerly registrar of the department, Mr. Frank Veigh, Secretary to the Commissioner, becoming registrar.

Probably the oldest tree in France, if not in all Europe, is the famous "Chieftains' Oak," standing near Martignyles-Baines, in the department of the Vosges. The age of this monarch of the forest is certainly over a thousand years. It was already noted for its size at the time of the revolt of the Jadquerie in 1358, to which its name can be traced, and it no doubt served the leaders of the enemy as a rallying point during Louis XIII's war of conquest in Lorraine in 1634-46. The giant is now decaying at the top and evidently has almost completed its term of existence. It measures one hundred feet in height, forty feet in circumference near the ground, and seventy feet around the branches.

In Finland the best forests are now in the hands of the government. The feeling in Finland is that although they scarcely show a profitable investment at present, the time will come—probably within the present generation—when the State forests will be a source of great wealth to the country, and that, therefore, the State should continue to acquire as much additional forest territory as possible. This important movement is beginning to make itself felt. There are firms who have to restrict their purchases to crown logs for securing large-sized timber, and the cost of these is very high. The revenue of the crown forests in Finland for the first six months of this year was about \$40,000, as against \$380,000 for the corresponding period of last year.

THE MASTERMAN PULP MILL.

The new Masterman pulp mill, which has recently been put in operation at Mill Cove, N. B., is one of the most complete establishments of its kind in America. The site is on the banks of the Miramichi river, at the mouth of a large brook which empties into the river. From this brook water power is obtained for operating the mill, there being two dams, the larger for reserve, covering 200 acres.

Seven large buildings, with one or two smaller ones, contain the plant in its entirety. All are built on stone foundations. The walls of the digesting building, which is 84 x 32 ft. in size, are built up of stone to a height of 30 feet, with a thickness of from four to two feet. The walls above that are of wood, making a height of 60 feet. The other buildings are of wood, sheathed with iron. The store-room is 100 x 50 ft. and the paper mill of the same size. To the rear of these is the engine and boiler rooms, 100 x 40 ft. Two other buildings through which the pulp passes in different stages of its manufacture are 20 x 100 ft. and 50 x 40 ft. The large digester building, 84 x 32, has a tank-house adjoining of one storey, 84 x 30, while at the back of these is the sulphur burning and acid building, 60 x 70, and the wood-cutting building, 40 x 70.

Into this latter structure the slip, 240 feet long, leads from the water. The logs when raised to the top of this are carried against saws, which cut them into lengths. These pieces are then stripped of their bark by machines similar to those used in shingle mills, and the knots are then bored out by other machinery. The sections are then thrown into the grinders, which cut them into small chips of three-fourths of an inch across. All sawdust and fine particles having been shaken out, these chips are carried down to the digesting building, situate on a 40

or 50 foot lower level. Here the stuff is stored in immense bins till it passes below to the digestors, six in number, where it is cooked for 12 or 15 hours, and after going through different operations, passes on to the buildings containing the paper mills, which reduce it into the sheet form and leave it in rolls ready for shipment.

The acid, which amounts to 76,000 gallons a day, is run by gravitation into the digesters. Throughout the whole plant gravitation is made use of in the conveyance of materials to a large extent, thereby effecting a great saving in machinery for pumping.

The mill is lighted throughout by an electric light plant placed in the building. The equipment is almost entirely of Canadian manufacture, the fittings being supplied by McAvity & Sons, of St. John, and the boilers and engines and most of the machinery by E. Leonard & Son, of London. The water power is also an important factor in cheapness of operation. A raceway 1,700 feet in length carries the water from the lower dam with a 25-foot head on the wheel, which is a 240 horse power turbine of the improved Leffel pattern, made by Paxton & Tait, of Port Perry, Ont.

The capacity of the mill will be thirty tons of dry pulp per day, while the largest mill in the United States only turns out fifty tons of wet pulp in the same time, wet pulp being 30 to 40 per cent. moisture. Upwards of 80 cords of wood per day will be converted into pulp, for which from \$2.50 to \$2.75 per cord is generally paid.

A cubic foot of logwood weighs 57.07 pounds.

Satinwood weighs 55.31 pounds per cubic foot.

Lancewood, without knots and well dried, weighs 45 pounds to the cubic foot.

AN HISTORIC TREE. An historic elm tree at Plymouth, Pa., was cut down recently for fear it would collapse during a heavy blow and cause damage. The elm was voted on March 2, 1774, by the town meeting as a place of public rendezvous, and was then referred to as "the noble tree upon which our ancestors have gazed." Subsequently to 1774 it served as an auction mart, village market, and whipping-post. A count of the rings upon it showed that the tree was 372 years old.

THOMAS PINK
MANUFACTURER
OF
LUMBERING
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SKIDDING TONGS
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PEMBROKE, ONT.
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Ontario Branch . . .
 Corner Front and Yonge Sts.

TORONTO

J. H. WALKER
 Manager

FOREST FIRES.

From nearly every section comes the report of forest fires, owing to the extreme drought of the present season. The United States, as well as Canada, has suffered considerable loss, especially in the east. In Canada, the provinces of New Brunswick and Nova Scotia have been the seat of a number of fires, but the largest ones have been confined to Ontario, their location being along the line of the Ottawa, Arnprior and Parry Sound Railway.

A despatch from Whitney, dated May 12, says: What proved to be the greatest fire this district has ever known started on Saturday not far from here. Every one thought that when it reached the Madawaska river, which is almost a quarter of a mile wide here, that this would afford a fire break. But the wind carried the cinders across into the bush on the opposite side, and away the fire continued in its career, feeding on brush and dry leaves and other vegetation of years' accumulation. At one part of this river McLachlin Bros.' rivermen, who were engaged in driving logs, had to take all their supplies,

place them in a boat and put out into the river. Some of the men who were less fortunate had to wade into the river until they were up to their chin in water and remain there until the flames were past. The fire kept along the Madawaska river until it reached the Egan estate, some twelve miles east of Whitney. By this time the wind was dying down, and the cool shadows of evening seemed to check the raging of the flames. The fire burned all night, however, and left in its track thousands of trees burning. At different places where there were gummy knots in the trees the spouting flame afforded a fine spectacle. Sunday morning the wind sprang up again, but altered its course so that the fire partly burned back over its course of the previous day, but settlers, who were unfortunate enough to be near its course, had all their belongings packed up ready at any minute to run to a place of safety. The efforts put forth by Mr. Booth's efficient firemen and also the officials of the O., A. and P. S. Ry., rendered valuable service in saving property and protecting their right of way, none of which was damaged to any extent,

as large forces of men were kept on hand to watch the fire closely. The fire is thought to have been caused by the burning of the right of way.

TRADE NOTES.

Mr. John Carew, of Lindsay, has purchased an improved shingle mill from the Kingston Locomotive and Engine Co., of Kingston.

The McEachren Heating & Ventilating Co., of Galt, Ont., will shortly ship a dry kiln outfit to Nova Scotia, being the fourth shipped to that province since March 1st.

Incorporation is being asked for by the MacGregor-Gonrly Co., of Galt, Ont., to manufacture wood and iron working machinery, castings, etc. The capital stock is to be \$300,000.

The William Hamilton Mfg. Company, of Peterboro, Ont., recently shipped two steam loggers to British Columbia, one for Gilley Bros. and the other for the Hastings Saw Mill Company, Vancouver.

Owing to increase of business the Penberthy Injector Company, of Detroit, Mich., have found it necessary to add a large number of monitor lathes and improved machinery to their equipment, and to put in a new engine to supply additional power required by increase of plant. The stock department has been moved to another building in order to make room for additional machinery.

ROBIN, SADLER & HAWORTH

Manufacturers of

OAK-TANNED LEATHER BELTING

MONTREAL AND TORONTO

Orders addressed either to our Toronto or Montreal Factory will have prompt care.

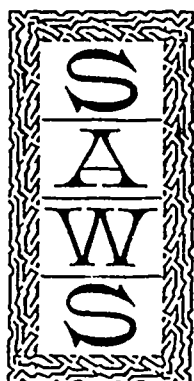
Goods will be forwarded same day as order is received.



SHURLY & DIETRICH

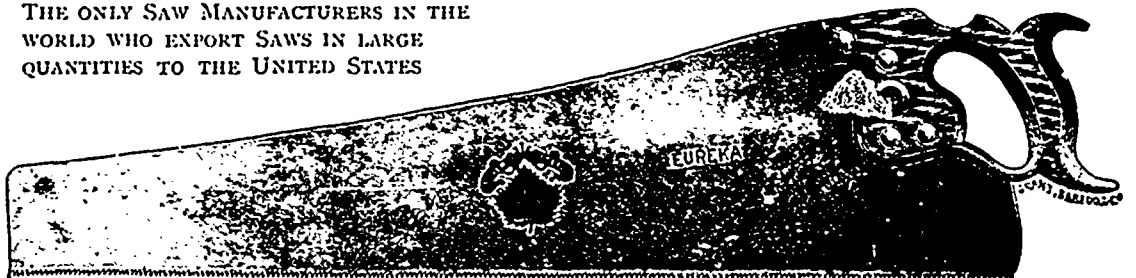


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THE ONLY SAW MANUFACTURERS IN THE
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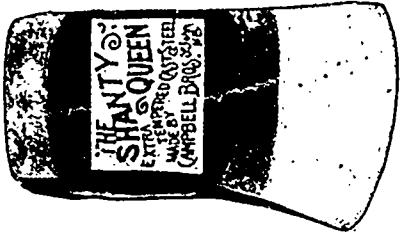
GALT, ONT.



SOLE PROPRIETORS OF THE SECRET CHEMICAL PROCESS OF TEMPERING :: Our Silver Steel Saws are Unequaled

It is estimated that 3,000,000 wood bicycle rims will be used in the United States this year. They are nearly all made of rock elm. Only 20 to 25 per cent. of the elm produced is suitable for good rims. On the basis of 2 1/2 feet to the rim, 3,000,000 rims require 7,500,000 feet, hence the furnishing of this particular quality of stock requires the handling of fully 35,000,000 and possibly 40,000,000 feet of rock elm lumber.

There are two kinds of teak wood, the Indian and African. This wood is very valuable in ship-building. The Indian teak (*Teleona grandis*) is a tree of the natural order Verbenaceae, is slow of growth, a beautiful tree, and attains a height sometimes of 200 feet. Its white flowers are used medicinally. The leaves are used for coloring purple. The timber is strong and resembles mahogany. The most extensive forests are in Pegu. The trees grow in lumps forming their own forests. Elephants are used in the teak districts to carry the timber and for piling it up.



THE "SHANTY QUEEN" AXE
 GAMPBELL BROS.

Send for sample lot and try this axe in frosty weather...
 Manufacturers
 St. John, N. B.
 WRITE FOR PRICES

RAILS FOR TRAMWAYS

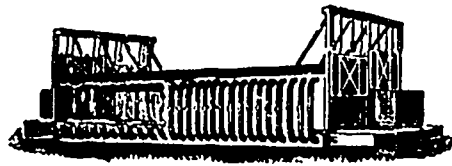
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 Box 512, Woodstock, Ont.

Dry Kilns and Heaters CHEAP

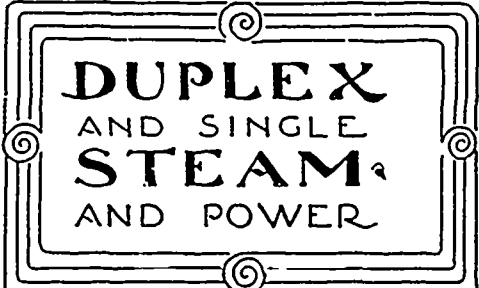
One Second-Hand Sturtevant Heater, 1,000 feet one-inch Pipe and Fan to match; has been used only about four months.
 One Sturtevant Heater, 5,500 feet one-inch Pipe and Fan to match; in first-class order.
 (The above have been used in lumber dry kilns, but are also applicable to heating buildings, etc.)

For prices and full particulars of the above, also our catalogue and prices of Heating and Ventilating, write the...

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OAK TANNED BELTING
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**FINE SITES FOR NEW MILLS
BEST OF FREIGHT FACILITIES**

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after eating a hearty meal, and the result is a chronic case of Indigestion, Sour Stomach, Heartburn, Dyspepsia, or a bilious attack.

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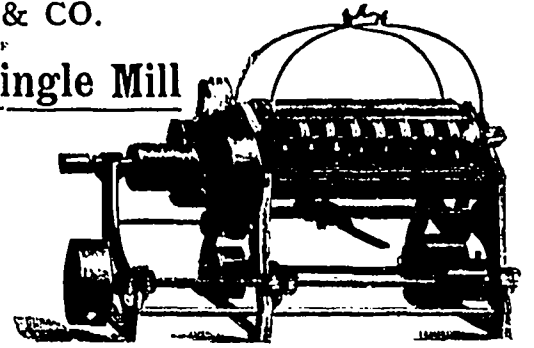
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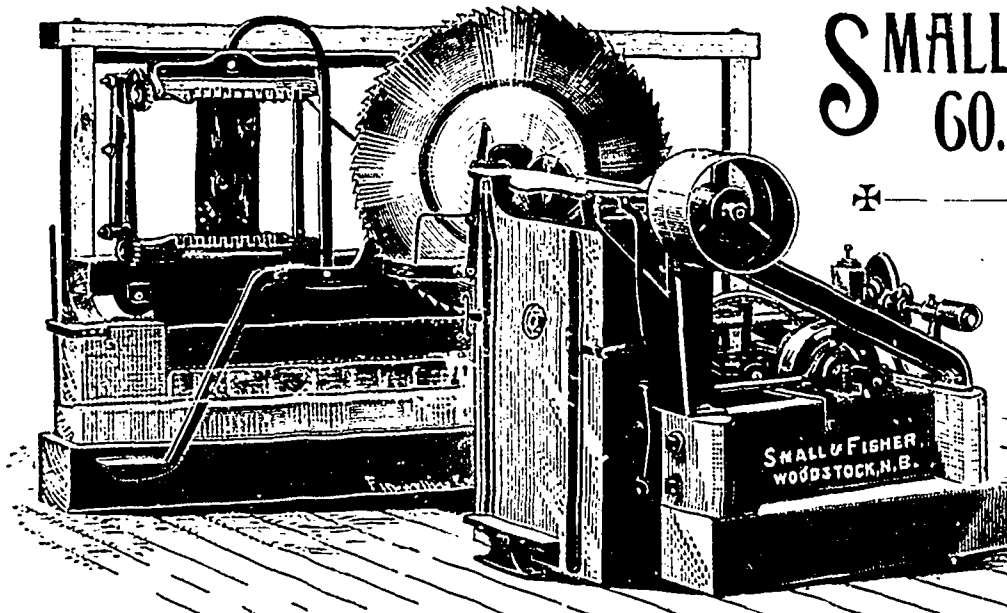
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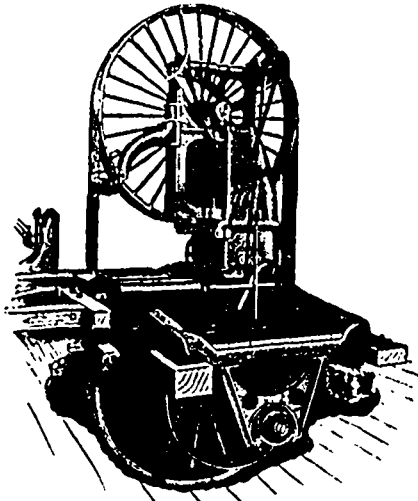
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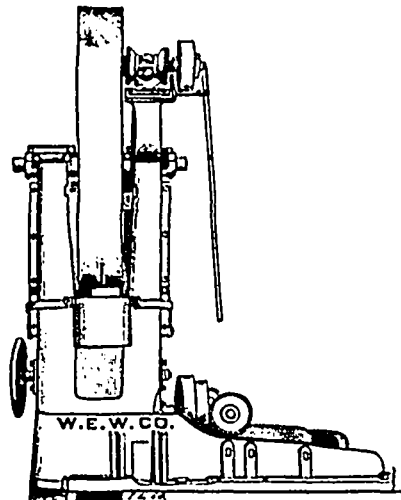
Dodge Wood Split Pulley Co.

Office: 68 King St. West, TORONTO, Ont.

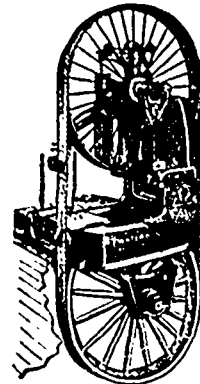
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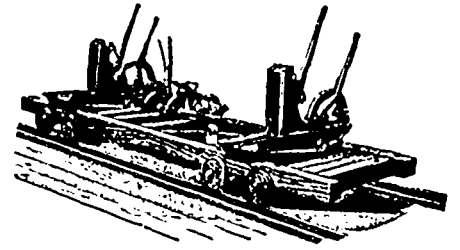
Right Hand—Front View.
"NEW ALLIS"
It surpasses all others in many points.



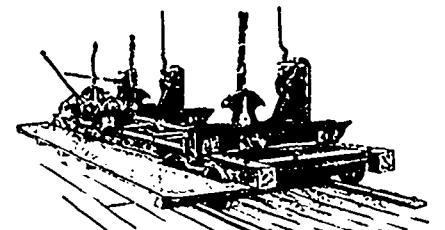
Rear View "NEW ALLIS"
Short Upper Mandrel.
Wheel Centrally Hung.
Lower Wheel Inside Frame.
NOTE



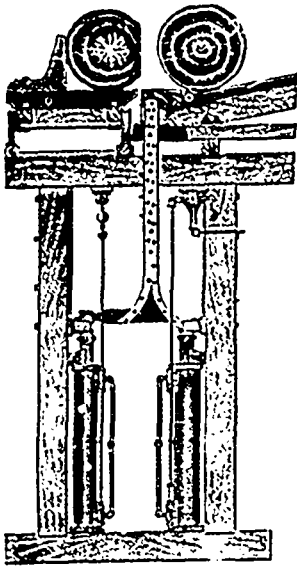
34 NEW ALLIS
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Sold in Canada since
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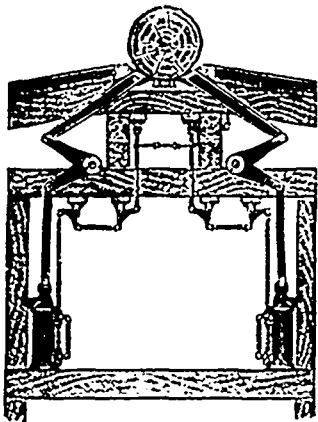
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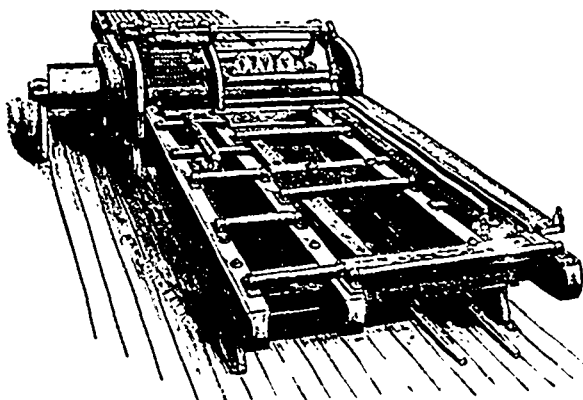
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NEW WORKS OCCUPIED

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Best Quality of Work
Low Prices . . .

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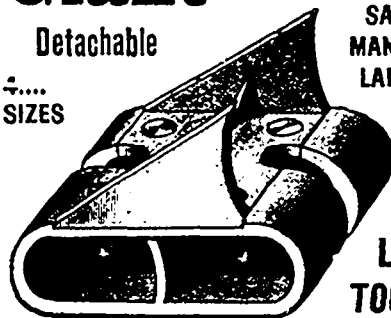
Combined Gang Edger and Flooring Machine.

Giant

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SIZES



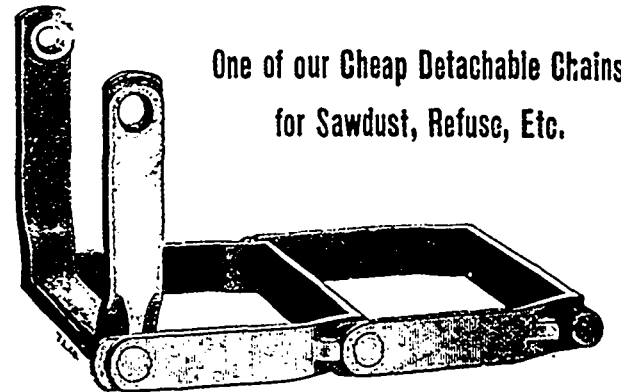
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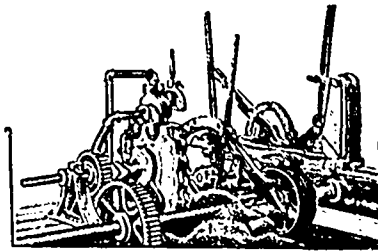
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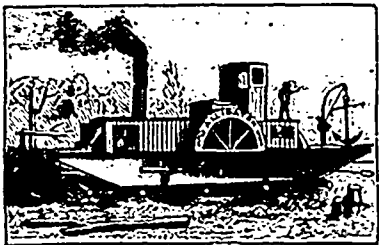
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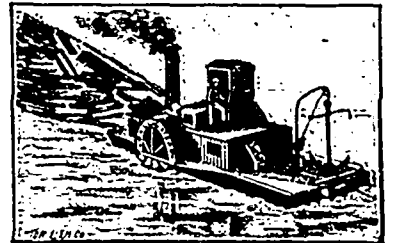
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•• Saw Mill Machinery ••

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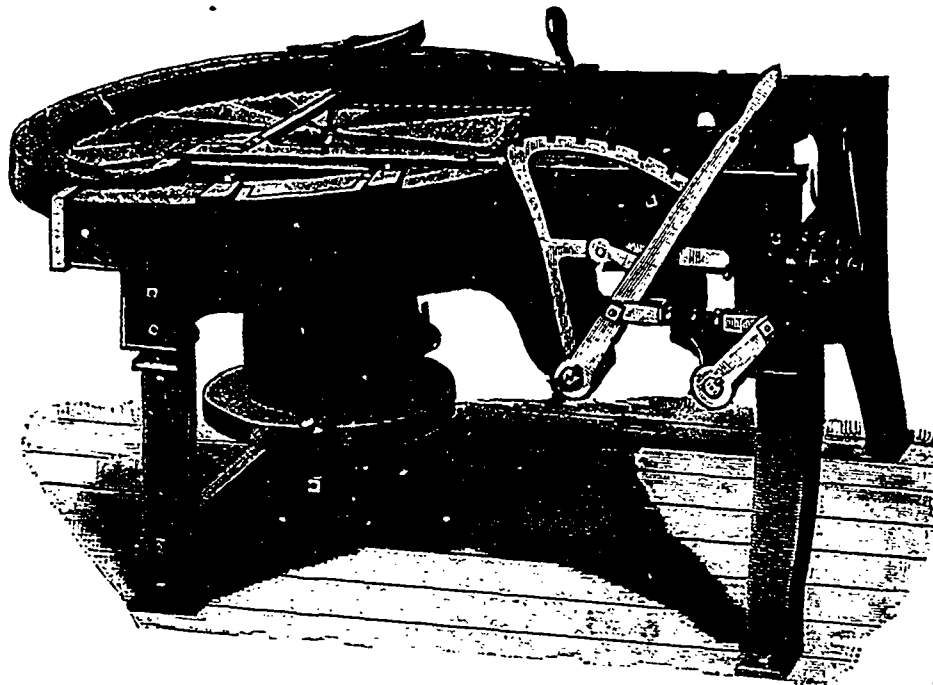
∴ WILL make more Shingles per day than any self-acting machine with vertical saw in existence, and more Shingles from the same quantity of timber.

**THE FRAME**

... Is of Iron throughout, very heavy and rigid, strongly bolted and braced.

**THE CARRIAGE**

... Is very light and strong, made of forged Cast Steel Plate, running on steel ways or tracks. Will take in a block 18 inches wide and 19 inches long, adjustable for 16-inch or 18-inch shingles.



—CAPACITY FROM 25,000 TO 50,000 PER DAY—

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Dear Sir,—We have waited two years before giving you our idea of your machinery. This we do to thoroughly test it, and can now say we know what it can do.

Your Saw Mill is equal, or nearly equal to any we have seen of much heavier make, and far in advance of any light rig in the market. The capacity per day is fully up to your guarantee, 40 M per day. We have tested with eight men.

The Shingle Mill cannot be beaten for any kind of timber. Ours being in a manner a custom mill, we have good, bad and indifferent timber, but for all it does the work satisfactorily.

You may use this in any way you please, or refer to us at any time.

Yours truly,  
(Sgd.) W. J. & H. W. FOWLDS.

# Canadian Locomotive & Engine Co., Limited, - - Kingston, Ont.

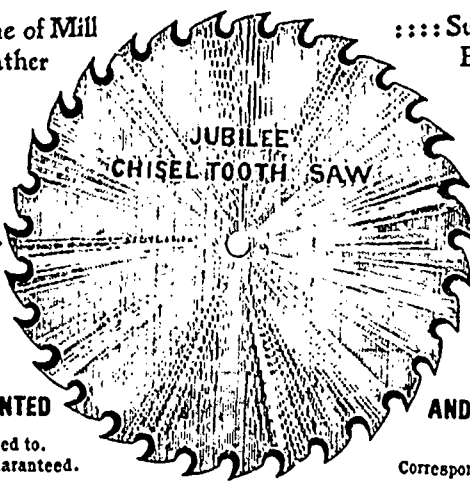
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Saws of all Description

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**WHY BAND SAWS BREAK**

SIXTEEN  
REASONS,  
AND HOW TO  
AVOID THEM



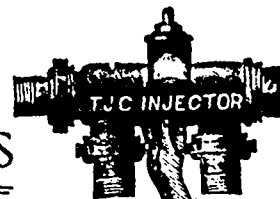
Being instructions to filers on the care of large band saw blades used in the manufacture of lumber.

A book filled with valuable information on the care of band saws. Giving the reasons for breaking; analyzing each reason; giving instructions to dispense with the causes as laid down in each reason; and full details on filing and brazing. The proper styles of hammers to use are illustrated and described, and views of blades showing the blows of the different styles of hammers form an important part of the illustrations. Improper and unequal tension are then treated, and the manner of properly setting irregular teeth is described. In connection with the treatise is a history of the invention, manufacture and use of the saw from its origin to the present time. The work in whole makes an accumulation of information such as has never before been published.

The book is printed on fine paper, good clear type, and is handsomely and substantially bound in cloth. It will be sent to any address on receipt of the price, ONE DOLLAR.

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the most economical boiler feeder in the world.

20 per cent. saved in coal over any other make. Absolutely automatic. Easily attached. Applicable to all kinds of boilers.

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| 20  | 15 00   | 40 to 72     |
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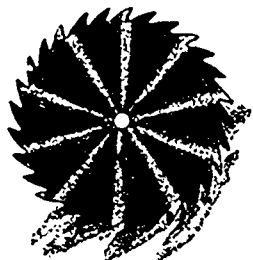
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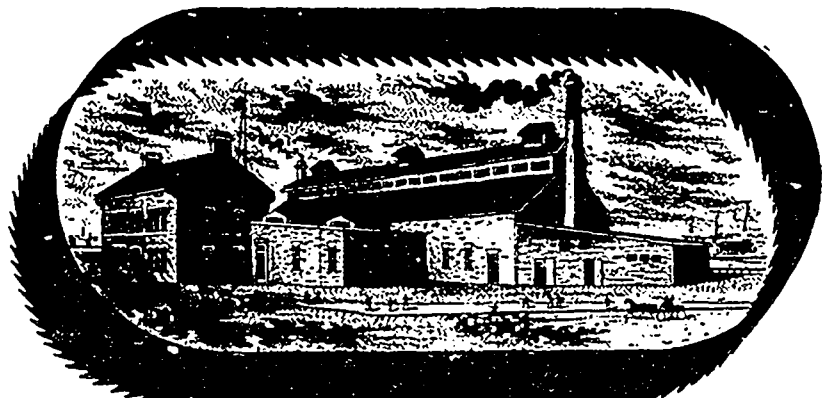
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