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THE CANADIAN LUMBERMAN

WOOD WORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

VOLUME XIV. }
NUMBER 4.

TORONTO, ONT., APRIL, 1893

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D. CLINT PRESCOTT,

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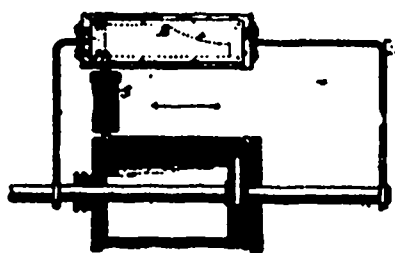
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THE INDICATOR.

IN a reply to an inquiry from several of our readers as to the action of the "Indicator" as used on the steam engine, says the Northwestern Mechanic, we have prepared the following cut and explanation, hoping that thereby the principle may be shown: although it must not be thought that the instrument used is anything like the one here shown; this merely shows the principle. In the cut will be seen the cylinder of an engine, showing the sectional view, and the piston being at the right hand end of the stroke.

The piston rod is extended out of the cylinder each way in order to make clear that the board above moves with the piston, in fact in this case is moved by it.

The board is shown supported by the arms which run up from the piston rod, and on the board is a sheet of paper tacked on to receive the card or tracing of the pencil, which is held in the place marked P at the upper end of the rod in the cylinder. It will be seen that a small pipe runs from the right hand end of the cylinder to the small cylinder and there is free connection between the small cylinder and the main cylinder of the engine.



THE INDICATOR.

The piston in the small cylinder is a neat working fit and is forced down by the spiral spring as shown at S. Now we will suppose that steam is admitted at the right end of the cylinder (the steam chest and valve being on the side in this case) and we see that the steam having free access to the small cylinder as well as the large one, will force the small piston up; and supposing this takes place before the piston of the engine has moved at all, the line that is drawn by the pencil will be perfectly straight as shown by the dotted line on the paper tacked to the board. Now that the piston has commenced to move, and the board moving with it, it will be seen that so long as the steam pressure in the cylinder (and indicator also) remains the same, the indicator pencil remains at the same height, and the line traced will be a perfectly straight line as from A to B. Now if we let the steam follow full stroke, the line will remain straight to the end of the stroke, but as this is not good practice, we cut off at half stroke. This means that when the engine piston has travelled half of its stroke the live steam is cut off, and the steam then in the cylinder expands, forcing the piston along but of course reducing the pressure as it advances.

As the pressure begins to fall, the spring in the indicator piston forces down the pencil arm, and remembering that the board is continually moving, we can readily see that the pencil will trace a curved line somewhat as shown. When the exhaust opens (we will suppose it to open and free the cylinder instantly) the pencil falls back to the original position, and on the back stroke traces a perfectly straight line. The dotted outline is called the card, and if we study it we can see that it represents the work the engine has done during the stroke, the height to which the pencil went as soon as steam was admitted, represents the pressure of steam in the cylinder at the beginning of the stroke. We also see that this pressure was maintained until the piston had made half its stroke, then the gradually falling line shows that the steam pressure was becoming less, owing

to the volume of steam contained in the cylinder being expanded to twice its normal volume, and finally we see the pressure line drop, showing that the exhaust was opened and the free escape of steam allowed. Then we see that the height of the diagram represents the steam pressure, the point where it begins to fall represents the point of "cut off;" and the height before the final drop, the terminal pressure, or pressure still existing when the exhaust is opened and discharged it into the atmosphere.

These exact conditions do not exist in practice, but this will serve to show the manner in which they indicate the performance of the engine.

If we know the steam pressure as it is admitted to the cylinder, we can easily read the card intelligently, but if we do not, the card has much less meaning to us.

This is arranged in practice by having the springs "S," very nicely adjusted in the following manner. A spring is made that will be compressed exactly 1 inch with a pressure of 20 pounds, this is called a "number 20 spring," another is made that will be compressed exactly 1 inch with forty pounds, and called a "number forty spring" so that you can remember that the number of an indicator spring means the pressure required to compress it exactly 1 inch.

Now if we know that a forty spring was used in taking a card, and the card measures 2 inches in height, we know that the steam pressure, when admitted to the cylinder was exactly 80 pounds, and if the height of the line at the other end of the card is $\frac{3}{4}$ of an inch, we know that the terminal or exhaust pressure must be $\frac{3}{4}$ of 40 or 30 pounds. This makes the measurement of cards entirely practical if we but know the spring employed. Revising this operation we can see if we wish to indicate an engine whose boiler pressure is 90 pounds, and we do not want our card to exceed 2 inches in height, we use either 45 or 50 spring, usually the latter, as it is best to keep the cards reasonably small.

Of course with the primitive indicator as shown in our cut, we can only indicate the right hand of the engine, and would require two of this type to fully indicate the engine, but of the commercial kind in use to-day, it is possible to indicate both ends with the same instrument, by only changing the connection at the different ends of the cylinders. Now tracing the evolution from this crude indicator of ours to the finely finished one of the present day, we will see that the board as large as the cylinder is replaced by a very light cylinder or drum, and instead of taking the paper for the cards to a board, we simply fasten them around this drum. This drum is revolved at the proper time to be in unison with the engine piston, by being attached by means of a cord wound around the base of the drum, to some moving part of the engine, that gives the correct motion.

The movement of the piston in the instrument of to-day is usually multiplied by a very light arm carrying the pencil over the paper and otherwise being much more simple and compact than our crude instrument, but otherwise it might be called similar.

We will at some future time enlarge upon this subject, still in a very elementary way, for we believe that this is the part to be explained and that any who is desirous of learning in this any other branch has got the principle so that he can thoroughly understand it, he will need little further help in this way.

A LUMBERING AFFAIR.

MASTER of Ceremonies. Now, boys, be good, come Fourth and select your partners. The Pickings are rich. The girls are Culled from the Upper-ten, and not one but that would grace a box. All join in. We want no Shelving, nor Siding off in the corners. This is no Common affair. The Gang-saw to the Dressing of the hall, the Band-saw to the musical numbers, while the

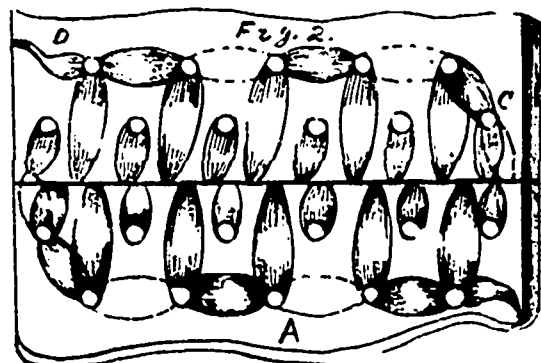
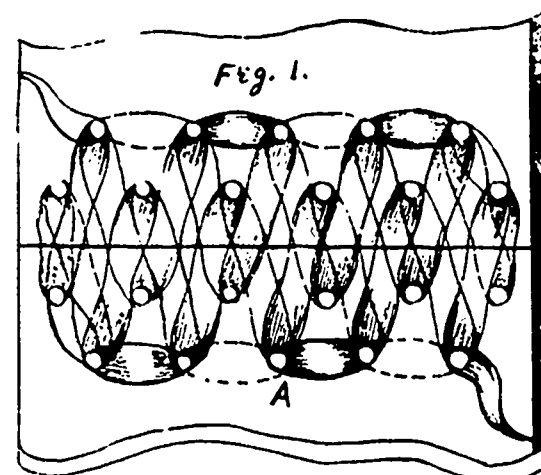
Jig saw to the dancing programme. The supper will be served in Double Courses being a Dry affair. Let there be no Cutting up at supper. The Inspector is Knot a respecter of Grades, and any one caught Ldgng Up will be Rejected, Marked Down and Thrown Out. N.Y. Lumber Trade Journal.

BELT LACING AGAIN.

By J. H. MUSE.

THE following sketches show styles of lacing that I illustrated about four years ago. Some asserted that Fig. 1 could not be laced as per cut, and appear exactly alike on both sides, without crossing. My only way out of this was to mail a sample to all who were interested; the result was that my postage bill greatly increased for some time.

Fig. 2 illustrates the celebrated hinge lace, which every practical man ought to be conversant with. I have run this lace for four years on a line shaft belt without replacing it. The cross stitch, A, was replaced several times, but the lace proper was not removed, as if it was not necessary.



This cross stitch will not make the lace any thicker, as it should be well hammered down after being put on the pulleys. If laced too "scattering," it does not last well. The best results are obtained by punching not over $\frac{1}{8}$ apart, using a full $\frac{1}{2}$ inch lace, and if the lace is very thin, and a small punch is used, $\frac{1}{2}$ apart for the holes is better, drawing the lace as tight as possible at C. If the lace is drawn in twice through each outside hole, it will add greatly to the life of shifting belts, as it completely covers or incloses the outside edge or end of the belt.

Fig. 1 I termed the "puzzler" lace. It is quite difficult to those not familiar with it. The hinge lace is superior to it for small pulleys, the only advantage of it is that it can be applied quicker. If the users of the hinge lace will adopt the cross stitch, they will be surprised at the result. In all cases I hammer the lace as flat as possible. Time will flatten it, but a nice smooth joint from the start is preferable. The Wood Worker.

SYMPOSIUM ON THE LOG DUTY.

POSITION OF "A" CRITICISED.

REJOINDER BY CANADENSIS.

THE symposium furnished your readers in the March number of your valuable journal recalls the wedding feast at Cana of Galilee, inasmuch as the better comes last. Or would it be more in accordance with the eternal fitness of things to say, first the bane and then the antidote. As a specimen of the argumentum ad ignorantiam, the communication signed "A" stands unique. The writer has determined to see no reason why the Canadians should be consulted in the matter of the export duty on logs. All his sympathy is for Yankee lumbermen and Yankee interests. To him Canada and Canadians are of no consequence, nor have they any rights of sufficient importance warranting a moments consideration.

Passing over the second paragraph, we come to the third with two misleading statements (1) prices here are regulated by United States markets, (2) the loss of over a million dollars. The prices paid here for Canadian lumber are not regulated by the United States markets. Anyone acquainted with the principles of political economy knows that the cost of production in this, as in every other article of value, largely determines the selling price. It is the veriest nonsense to maintain that, irrespective of this and other considerations, such as markets in various parts of the world requiring the same article, etc., the prices for lumber, above all other commodities, are fixed for us by one of many consumers.

Admit that one-half of the exported products of our forests is sent to the United States—we are strongly of the opinion that the amount is somewhat excessive—we must also remember that probably 60 per cent of that is, by the Americans, sent to foreign countries, and does not enter into their home consumption. This lumber exported from the United States comes into competition with our own direct exportation and the foreign markets to a certain extent regulate the prices for us as manufacturers and the Americans as go-betweens.

Had we no other markets, nor any other customers but one, then it could be understood how our prices would be regulated by that one; but as such is not the case the assumption that prices are governed by any one market is unwarranted.

The truth that the American is a middleman pure and simple, and buys to sell to foreign markets must not be forgotten. The question of prices is determined by the seller or manufacturer in the first place and the buyer or consumer in the last, and not by the one intervening.

It is apparent to every one who gives this question any attention that the very moment an export duty is placed on logs, the import duty of the United States will be taken off lumber and it will be admitted free. No fears need be entertained respecting an annual loss of a million dollars, nor that any lumberman who is cutting his timber will cease doing so for want of a purchaser, nor will there be fewer men employed, nor will the consumption of all that can be raised on the farms in the back country be any the less than at present. Many considerations can be adduced in support of this statement, principal among which are—the nature of the commodity, the ever increasing demand and constantly decreasing supply, the limited area from which it is to be obtained, the difficulty and time required to reproduce, and when reproduced its admitted inferiority consequent upon the changed environment, and the fact that Americans are purchasing largely of our limits. The pine of Canada is needed and must be had the world over. It is immaterial to the case whether or not in any one country the importation is a mere fraction in the market, the need and want is felt and must be supplied from the source of production.

Before any of the astute American buyers of limits purchased they no doubt made themselves perfectly familiar with every rule, law, etc., respecting the limits. They know that the Dominion government regulates trade and commerce; they know that there was an export duty on logs; they know that by an order-in-council that can be re-imposed; they purchased the timber sub-

ject to any order that may be passed in Council, now or in any future time according as exigencies might arise; all this is known to them, and any such exercise of the power inherent in our Government cannot be called a breach of good faith. The Dominion government never entered into any agreement not to impose an export duty on logs should they purchase timber. They bought subject to any act or requirement of the government of the country. To associate the term good faith with the name American betrays the grossest ignorance of modern English, inexcusable in any one at all familiar with current events. The name American is synonymous with bad faith, the grossest deception and the lowest forms of commercial immorality.

An export duty on square timber and waney pine shipped to Britain is not demanded for the simple reason, with others, that Great Britain does not exact an import duty. The conditions and requirements of the trade between Great Britain and Canada are such, that they do not come into competition with each other. Great Britain is a consumer of this article of commerce and does not buy from Canada to sell to the same markets as she does. Nor does Britain attempt to confine to herself the timber trade. Nor make our dealing with her contingent upon certain conditions; nor does she take the stand of an outlaw and thief and demand, on her own terms, that which does not belong to her, threatening, coward-like, instant destruction to the owner if the demand is not complied with.

To this time no arguments whatever have been advanced to show why an export duty should not be placed on all logs leaving Canada, but, on the other hand, every reason exists for the duty. It is denied that the Americans want, or more correctly, need our lumber. The mere denial does not alter the fact, that they do need, in the most intense signification of the word, our lumber; and the proof is so very positive and clear that not to acknowledge the fact shows either gross stupidity, or the denial is for some ulterior purpose, in this instance—evident.

If our lumber be not needed by the Americans why in the name of common sense are they purchasing so very extensively of our limits; why are they transporting our logs to their mills and manufacturing them there? Ten or twelve years ago little or none of this was done, as they had then a sufficient quantity of pine to supply the demand; but times are changed. Their supply of pine is practically exhausted and the demand has each year increased to so great an extent, that to meet it they are compelled to purchase timber in Canada. Their shipments to South America and other countries are very large, the bulk of which is Canada lumber. They are pushing the trade everywhere possible and know right well if lumber cannot be purchased by them in Canada, that trade will pass out of their hands.

It cannot be denied that at the present writing Canada is over-run with these American buyers, eagerly anxious to purchase and purchasing. Many of them are holders of extensive limits, and as stated by one of them, will soon be the owners of all the pine to be obtained. For this reason, as well as others mentioned above, an export duty should be placed on logs whether the United States take off their duty or not. The action of our government should not be regulated by any consideration of what may be done in the premises by the American government. In allowing our logs to be taken from Canada to be manufactured elsewhere, we are trading with the simple production of the earth, upon which no time, care, nor skill has been expended in the cultivation; a form of trade more suited for a semi-civilized race, than for a people to whom the teachings of all great commercial countries are known.

In so trading, such productions having well defined bounds, we limit our commerce, prevent the growth of industry, and the acquiring of skill, inventive and other, and most of all compel the most promising of our youth to leave their country, and seek a more congenial clime for the development of their nascent powers.

The numerous articles of commerce, into which timber, as well as our mineral products enter, could be manufactured in Canada, affording employment to thousands, increasing our wealth, extending our commerce, expanding the inventive faculties of our youth, adding to our material and intellectual prosperity, and spreading

among us a higher knowledge of the arts and sciences. As it is we are impoverishing ourselves, retarding our progress, and enriching a boorish, selfish neighbor.

CANADENSIS.

REJOINDER BY WM. LITTLE.

I HAD intended sending a reply to controvert the absurdities contained in an article which appeared in your last issue over the signature of "A," but that I recently received a copy of a speech, or rather a travesty, on the subject of the export duty on sawlogs, delivered in the House of Commons by John Charlton, M.P., of which this article is evidently a synopsis, for I see that it begins with one of this gentleman's fallacies about the re-imposition of the export duty on sawlogs, as he says: "Entailing a loss of over a million dollars annually in the shape of additional duty paid into the United States Treasury," the absurdity of which may be seen when the whole duty on our pine lumber going to the States is but half this amount. Even if we had to lose the whole of the duty, which would not be the case if we withheld the logs, or exacted the \$2 export duty, for then they would ask this much more for the lumber made from these logs, and actually enable us to advance the price of our lumber above the additional duty. This is, however, about as near as this gentleman's random shots usually are.

Then he enlarges in the most doleful manner on the calamity to befall the Canadian lumber trade when the Bill, introduced for Buncombe only, by Mr. Charlton's Bogie Man, Weadock, became law, sometime in the Greek Calends, which is to add the export duty to the import duty, and compel the American people to pay \$4 duty on Canadian white pine lumber, and which would receive consideration from Congress just long enough to throw it into the waste basket. The American lumbermen are not so dearly beloved by the American people that they would submit one minute to an imposition of this kind in order to enable their lumbermen to "rob" us of our timber, the expression used by an hon. gentleman who recently occupied the place now filled by Mr. Weadock, but who would have nothing to do with such rascally work. The American people, on the contrary, would be delighted if we did not let these lumbermen have a single log till they permitted Congress to remove the duties from Canadian lumber, a measure they will do their utmost to prevent so long as we are so idiotic as to let them have the logs free without doing so. Their whole excuse, now that they are running out of timber, is that from the fact they now get the logs free they can give their people free lumber without removing the duties on what we manufacture.

"A" seems to think that I have some special theory on the subject of duties different from the ordinary run of people, but I beg to assure him I have none; and when he talks of mill culls selling at Bay City at \$7 and that they only fetch \$6 on the Georgian Bay, I don't dispute him in the least, except that I believe the prices quoted a little too low. I simply mean that I think they would probably fetch even \$7 on the Georgian Bay if Bay City had none to sell at \$7 or at any other price, which is the exact condition in which matters would now stand if we had not, as it were, bonussed over to Bay City more sawlogs last year than Bay City has now on hand of sawn lumber of all kinds, including mill culls. That's all the theory I have on the subject.

"A" has my thanks, however, for the special notice, as also for supplying the truly gratifying intelligence that this rascally free log exporting business has not yet entirely ruined Midland, it has only closed down already four mills there, which, I believe, is about four-fifths of the milling industry; this done in two years gives just six months' grace to close the remainder, so I presume we should be truly thankful that it is no worse. There is this at least to be said in favor of the working of this free log exporting business, that if it is a little painful it is not very prolonged. But, that we may rest fully assured that "A" is not the least niggardly in the matter, and that he is in fact "as mildly mannered man as ever scuttled ship or cut a throat," is at once apparent from what he says, for "all he asks is to be let alone and not interfered with, to allow the logs

to go out of the country unmanufactured, and, if the matter is left to itself, there is every indication that the difficulty will be solved satisfactorily to everyone" in the sweet by and bye.

"To be let alone and not interfered with" was, I believe, all the fox asked when caught alone at night in the hen roost.

No, "A," you and your preceptor, Mr. C., have had things your own way quite long enough. You have already had two years "free logs" and have never raised your hands to give us "free lumber," and we have no right to ask Mr. Cleveland to pull your chestnuts out of the fire; so you must expect to walk up to the Captain's office and pay your log export duties like little men, and when you get the lumber duties removed our Government will, I have no doubt, consent to again remove the export duties, even if the changes in the rates of export duties should appear a little tiresome, as Mr. Charlton remarked.

When you had the timber and could dictate to us you insisted that \$2 a thousand was only "a very moderate measure of protection to the American milling interest;" of course, to give this moderate measure of protection to the Canadian milling interest, our export duty on the logs should be \$4; but we don't ask any protection, we simply ask \$2 on the logs to offset the \$2 you insisted should be imposed on the lumber by your carefully worded proviso, otherwise we should only be compelled to ask \$1 export duty, and now that the tables are turned and we have the timber, we simply ask you to remove the lumber duties, which you are responsible for, and till you do so, to take a little of the medicine which you thought so necessary for our health when you prepared the prescription.

MONTREAL, Que.,

WILLIAM LITTLE.

March 25th, 1893.

TRANSMITTING STRENGTH OF SHAFTING.

A WRITER in the Mechanical News says: The use of extremely heavy shafting is not advisable under any circumstances unless actually needed to perform the work required. Some imagine that a large shaft affording a very strong margin of safety, is the most economical to use; that, however, cannot be considered a logical and mechanical position, unless tempered with sound judgment and much wisdom, sufficient of both to select properly. That there should be ample margin of strength no one will attempt to deny, but shafting multiplies in strength so rapidly as sizes increase, that the unenlightened are apt to make the selections much too large when aiming at only ample strength margin. To show how easily uninformed mechanics may make mistakes of that kind, it is only necessary to say that a three-inch shaft has nearly three and a-half times the transmitting strength of a two-inch shaft. None unaware of the fact would ever guess at that difference and may fall into the error of selecting a three-inch shaft to safely do the work of a two-inch. To more forcibly illustrate the difference, it can be stated that a two-inch shaft properly sustained with bearings at reasonable intervals will safely transmit 20 horse power at 100 revolutions per minute, and at the same time resent the transverse strain due to weight of pulleys and the pull of belts necessary for transmitting that much power. Under like circumstances and equally proportionate condition, a three-inch shaft will just as safely transmit sixty-eight horse power at 100 revolutions per minute. Shafting should never be so large as to make it absolutely rigid; on the contrary, it should be to a fair degree elastic, with an ability to give and take between the power and the work. When too rigid, unless above all requirements in size and strength, the liability to break is increased, especially if the work is of an abrupt and severe character. Long lines of shafting having the power at one end and the work at the other, should be graduated in size; the work and being of a size required to safely do the work and the power end larger in proportion to the length of the shaft or the distance between power and work. If such shafts be of the same size the entire length, and that of a fair working size only, there will be too much elasticity in the aggregate which will tend to gradually weaken, distort and in the end destroy the usefulness of the shaft.

VIEWS AND INTERVIEWS.

Felling Timber.

Spaniards dislike to fell trees or cut live timber of any sort, and this fact perhaps accounts for the giant trees of California. The Spaniards, two centuries ago, pushed their way through Mexico to California, and, save the clearing of paths through the dense forests, not a twig did their axes chop down. Nor do the Spaniards transplanted to this continent ever destroy timber. With stubborn pertinaciousness strangely at variance with their lethargic dispositions, they continue to build their houses of stone and mortar at great expense of money and physical exertion, when timber in abundance surrounds them out of which they could construct log houses, as did other pioneers, at a minimum of cost and labor. Why, the Spaniard does not even fell trees for firewood, but picks up dead limbs as they fall to the ground, or pulls them from the trees with his lariat.

Business Use of Slang.

In business, and especially in trade advertisements and announcements, increased force, and the kind of force that sticks, will be given to the whole ad., sometimes, by the use of an expressive colloquialism, which is often only another term for slang. "Ah! yer trolley's off," contemptuously sneered a scrubby little newsboy on King street the other day to a companion with whom he was endeavoring to straighten out a difference of some kind; "and 'your trolley's off,'" remarks a writer in a daily paper, "is getting to be pretty generally used to express what has been indicated by 'You're off your base.' If Macaulay or Charles Lamb offers anything more terse or pithy that would express to every one just what every one understands by 'You're trolley's off,' it would be worth quoting. Slang is perhaps richer in the history that touches the life and experience of all the people closely than most other words. Future generations may know the exact date when the trolley was first used, but if they could discover just when 'Your trolley's off' came into vogue they would know better when electric trolley cars began to be in general use and common to the people."

The Tallest Trees.

The Kew Bulletin tells us that "the tallest gum trees and the tallest trees in the world are found in the gullies of Victoria, several trees having been measured that were 400 feet high, and the highest was 471 feet." Visitors to the Indo-Colonial Exhibition will remember the size and beauty of other Australian woods, especially of the specimens exhibited in the Queensland court. The finest tree in the world is said to be the Agassiz, one of the *Sequoia gigantea*, 31 feet in diameter, nearly 300 feet in height, and of remarkable symmetry. At the Paris Exhibition of 1878 there were shown no fewer than 2,530 specimens of wood from India, belonging to 906 species and 432 genera. And a more recent exhibition, that held in Edinburgh in 1884, made us acquainted with the glories of the Japanese woods, and those of the Adaman and Nicobar Islands. Go to the East India docks and you will see the huge logs of padowk (*Pterocarpus Indicus*), a tree rivalling mahogany in the depth of the color of its wood and the density of its texture. Here, too, the stinkwood, the *Oreodaphne bulata* of South Africa, vies, in spite of its ill-chosen name, with the teak (*Tectona grandis*) of Burmah and Malabar. Or, if you prefer to see growing timber, cross over to Germany and note the massive beach trees of Hesse Nassau, whose branchless stems contain no less than 19,525 cubic feet per hectare, or nearly 8,000 cubic feet of timber per acre.

Hot Heads in Business Hats.

Many an important commercial transaction has been brought to an abrupt and unfortunate termination by a hasty word spoken. One writer has said: "A good temper is better than a legacy or a public pension." In the handling of the affairs of business there is hardly any calculating how far a persuasive and politic tongue counts. And the shrewd man of business is not unfrequently outwitted by his less capable rival simply because the one differs from the other in knowing how to

keep his temper. Fred. Woodrow, in *Age of Steel*, has put the case in this way: "A business man with no bridle on his tongue or his temper, is as much out of place in commercial or industrial life as a mouse is in a street car, or a match in a powder house. No business can be run on hysterics and sulphur except that of a publisher of dime novels or a politician, or a demagogue on a platform or in a pulpit. Whoever heard of spasms in arithmetic, or of bile in percentages, or of a hot head in a business hat being the better for a stoker in his brain? It is true that bad tempered men often succeed in business, but in most cases it will be discovered that there is a cool head and a calm hand between the match and the straw. Anger is one thing, and irritability is another. No man can be blamed for making a protest against an employe who makes an easy chair of his work bench or a botch of his workmanship, or who boils over occasionally when imbecility demands a salary, but as a rule it serves its purpose best when wisely controlled and decently exhibited."

Cheapening Production.

As indicating the trend of the age it is doubtless true, as some one has said: "That never before has mechanical genius applied itself in this country as now to the solution of the question, how shall the cost of production be further decreased by the introduction of more efficient machinery? This is the keynote of the manufacturers who are now most successful. The search for specialties is not alluring, as specialty competes with specialty, and consumption is perforce limited. In staple articles, however, there is a constant trade. The manufacturer, therefore, who surpasses his fellows in the cheapness with which he can turn out staple articles of equal quality surpasses them also in securing a large share of the trade and better profits." Perhaps there is no use in kicking against the pricks, and necessity, the mother of invention, having driven trade to this resort, it will remain there until ejected by some more potent force. This force, it may be, will be the revulsion of sentiment that is already brewing, against the substitution of the imperfect, the nasty, the slipshod, that in many cases is accompanying this cheapening of production. Or it may be a labor revulsion; for the demand of the consumer for cheapness and bargains in everything is forcing down prices of certain kinds of labor and the parent of the sweating system in many large cities is not the so-called sweater, but really the great mass of individual consumers, who insist on having cheap goods regardless of who suffers, even though it be their own neighbors and relatives.

PERFORATED BELTS.

A N engineer has been enquiring of us as to the value of belts perforated with holes. The argument of the dealer is, that the air is let out through these holes from under the belt, and being thus excluded, atmospheric pressure must be excluded, and the pressure of the atmosphere upon the pulley will help to secure a firmer grip without further tightening. This is on the supposition that the air is carried under the belt in the rush of the belt on the pulley. This engineer does not want to pay for perforated belts if they do not do what is claimed for them, and yet he wants all the adhesion he can get with the least tightening. We do not believe that atmospheric pressure has anything to do with the driving of belts, and has no part in causing them to adhere to a pulley, whether perforated or not. It has been found that at high speed belts do not adhere so well to pulleys as at a slower speed, and this has been claimed due to the air getting between the belt and pulley at the high speed and preventing less adhesion from atmospheric pressure. It can be quite clearly demonstrated that the centrifugal force of the more rapidly moving belt counteracts to some degree the adhesion of the belt and causes it to adhere so firmly. This is the cause of this peculiarity, not the taking of air under the belt.

NEW MEXICO TIMBER.

The forests of New Mexico cover an area estimated from 5,000,000 to 7,000,000 acres consisting mainly of pine, but with considerable quantities of spruce, with some walnut, ash, oak, hickory, etc.



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—BY—

ARTHUR G. MORTIMER

OFFICE.

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J. S. ROBERTSON, EDITOR.

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

Special pains are taken to secure the latest and most trustworthy market quotations from various points throughout the world, so as to afford to the trade in Canada information on which it can rely in its operations.

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

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

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

THAT BIG LUMBER COMBINE.

WELL-informed lumbermen do not attach much importance to the rumored combine of United States and Canadian lumbermen, constituting, what would practically be, a corner in lumber in Canada. As Mr. W. C. Edwards remarks in our Ottawa correspondence, it is much easier to secure a corner in grain than in lumber.

Two or three sales of Canadian limits, representing considerable value, are announced for this month. These have brought a number of United States lumbermen and their agents to Toronto, and from here they have in most cases proceeded north to the region of the limits to investigate conditions. Besides, there are constantly passing through Toronto to the lumber districts in the interior, agents of various Michigan firms, who are already interested in Canadian limits. This has been especially the case during the winter just closing because of the number of these owners who have been working their limits. The bright young men of the daily press anxious to make a "scoop" have got after these men, made their acquaintance at the hotels, and worked them for a news item whenever opportunity presented itself.

Lumbermen are made of pretty shrewd stuff, and they are not the kind of men to give their business away, usually. Withal, they are genial and companionable, and are, if leisurely situated, ready to talk. Sometimes they have given these young men an item or two of news, at other times they have simply talked guff, knowing it to be guff. An instance in point. A big burly lumberman, who is a hail fellow well met, not a limit owner, but a shrewd, practical woodsman, who has passed through most of the gradations of a woodsman's life, from the felling of the tree to the more important occupation of a landlooker, was in the city a few weeks ago. He was here for the purpose of looking up some limits that were for sale. The newspaper young man got hold of him. Our lumberman friend talked freely. "Yes, the Americans were buying up the country, espe-

cially that part having any timber on it. He held in his pocket the option on a large tract of Ontario timber and in the interests of an important syndicate he was leaving the next day to make an examination of the limits, and the whole business would be closed up quicker than one could say Jack Robinson."

The fact is your lumberman was going north on an entirely different mission, and it served his purpose to use our friend of the daily press to throw some one else off the scent. That is all there was in at least one of the big stories of the combine that was given currency to lately. Mr. Elsmore, of Saginaw, who would likely know something of the alleged combine, was about right when, asked in regard to the matter, he said, "I guess all there is in it is what we have seen in the papers."

A month ago the newspapers of the United States started the story that a great meeting of spring wheat millers had been held in Chicago, and a "gigantic flour trust" had been formed. The news was telegraphed all over the country and papers at home and those abroad heralded it in big headlines and with various editorial comments. The despatch proved a catchy item for the newspapers for something less than the proverbial nine days. An investigation of the rumor by those most interested and more certain to know showed that the Chicago meeting was a very tame affair, and without any significance, and, as for the big trust the millers are waiting to see it materialize.

We live in a day when newspaper rivalry is keen; and we live in an age when readers look for spice and sensation. If a lumber or a flour trust can be made to fill the bill it answers for the occasion just as fitly as the latest suicide or defalcation.

WHITE PINE.

Two replies to the article on the log duty by "A" in the March LUMBERMAN will be found on another page of this month's issue. On the principle that there are two sides to every story readers will admit, we believe, that some good points are made by both Canadian and Mr. Little. The real point of discussion hinges largely on the belief, or the opposite, that there is no other timber to take the place of northern pine. And this pine being nearly exhausted in the white pine states of the United States our neighbors must look to Canada for their supplies. Opinions will differ here, and it is difficult to produce that kind of evidence which everyone can comprehend readily. In another part of this month's LUMBERMAN we publish an interview with a lumberman, of Tonawanda, N. Y., who lays great stress on the value of southern pine as a substitute for northern pine. It is also claimed, and a paragraph touching the matter is found on another page, that in New Mexico immense tracts of good white pine exist.

Then comes another question, which is quite debatable, and hard to solve to the satisfaction of many, whether the white pine of Michigan, Wisconsin, Minnesota or Canada has as yet nearly reached its limit of exhaustion, as is alleged to be the case by some. How hard it may be to arrive at the correct quantity of timber on a given tract of land is illustrated in negotiations for a recent purchase of timber land in Michigan. Three estimators were put on the job. Their separate estimates per acre ran thus. 25,000, 40,000 and 50,000. The totals were, of course, just as wide apart, thus. 40,000, 64,000,000 and 80,000,000. Somebody was evidently out, and what may occur in the estimate of an individual tract of land, may find its counterpart in the larger estimate, which after all is only an aggregation of the individual estimates.

LUMBERING IN BRITISH COLUMBIA.

THE Timber Inspector's report, of British Columbia, which has just been published furnishes an interesting account of the progress of lumbering on the Pacific Coast. The total quantity of timber cut during 1892, and which is subject to royalty, is 64,186,820 feet, and the royalty thereon is \$32,093.41. Rent from timber leases during the year amounts to \$31,673.63, thirty-four special timber licenses at \$50, representing \$1,700 and ninety general timber licenses at \$10, or \$900. The total revenue from timber sources foots up \$66,367.04. There have been issued thirty four timber leases, covering

112,694 acres, the rental being \$11,269.40. The acreage leased for timber cutting in 1886 was only 23,012, showing in six years a very encouraging development of lumbering operations.

An analysis of the amounts paid in royalty by the different lumber companies, shows that the British Columbia Mills, Timber and Trading Co., of Vancouver, contributed \$12,033.92, or nearly a half of the whole. The Island mills paid \$10,303.83 and the Mainland mills \$21,789.58 of the total. The percentage in regard to rentals, licenses, etc., as between Mainland and Island, is about the same. The acreage of timber lands held by the mills is 386,122, of which in round figures 85,000 acres are held by the British Columbia Mills, Timber & Trading Co.; 50,000 by the McLaren-Ross Co.; 32,000 by the Moodyville Saw Mills Co.; 32,000 by the Vancouver Saw Mills Co.; 22,000 by the Brunette Saw Mills Co., and 20,000 by the Michigan Lumber Co. The remaining acreage is divided among smaller mills on the Mainland and Island. The total daily capacity of 41 of the 54 mills in the Province is set down as 1,657,000 feet.

The Provincial Secretary has issued a notice to the effect that after the 1st instant a rebate of 25 cents per thousand feet will be allowed on all lumber shipped abroad since 31st August, 1891 provided the lumber shall have paid royalty under the Land Act, all arrears of royalty being at the same time paid by the claimants. This means that the rebate, disallowed since 31st August, 1891, will once more be granted, the disallowance being so wholly abrogated that the rebate during the period of former disallowance can now be claimed of the Provincial Government.

EDITORIAL NOTES.

SENATOR Snowball, of New Brunswick, returned from Europe a few days before the closing of the Dominion Parliament. He came direct from Paris to Ottawa, and at once waited on the Finance Minister and urged him to ratify the French treaty in the interests of the lumber shippers of the Maritime provinces, of which the Senator is one of the largest.

ENGINEER Keating's recommendation to the city council, of Toronto, that cedar block pavements to the amount of \$40,000 be constructed this year, has been referred back to this official for further consideration. The conclusion is that the sanitary evils that follow this form of pavement are a peril to the health of the people. This is safe ground to take, if the facts will support the contention, but not otherwise. If we look abroad we find that in European countries, where, because of the congestion of population, every care that is promotive of rightful sanitary conditions needs to be practiced, wooden pavements are growing steadily in public favor. This is the case in London, Bristol, Paris and other large cities. But the authorities in these cities do exercise some scientific knowledge of the work they undertake. Mr. Keating, who has shown himself a very capable man, probably knew what he was doing when he made the recommendation in question.

IN the speech from the Throne on the opening of the Ontario Legislature on the 4th inst. reference was made to the marked improvement in the state of the lumber trade, the prosperity of which is of so much importance to the revenue and other public interests of the province. To this activity is attributed the increased prices that were secured for the timber berths in the Nipissing and Georgian Bay districts sold during the past year. The reference on this point is in these words: "I am pleased to state that the prices obtained were high beyond precedent, averaging \$3,657 per mile, and this, although the dues to be paid on the timber when cut were increased by one-fourth as compared with the dues payable on berths formerly sold in the Nipissing and Algoma districts. In addition to the annual rental and timber dues which will be paid into the provincial treasury upon the timber when cut, the sum of \$3,250,000 was realized by way of bonus." Progress has been made in the establishing of a national park. The commissioners have completed the duty assigned. They have collected much useful information touching the objects of the commission, and a bill to establish a national park will be submitted to the Legislature this session.



A PROMINENT lumberman of Quebec is Mr. John S. Murphy, of Levis. In the winter season he spends less or more time in Toronto and certain sections of Ontario. In conversation a few days since he said: "All this year's cut of logs in the woods of Quebec has already been sold. The bulk of the timber will go to the Liverpool market. Prices with us are better in Europe than in the United States. Our trade with South America is also developing, and we are anticipating, in a short time, that this will be large enough to make the United States market a matter of indifference to us."

* * * *

"Despite the McKinley bill," said Mr. Shortreed, of Shortreed Bros., Hillsdale, Ont., "we are shipping large quantities of cedar poles to the United States. For the better quality of poles the Americans have got to come to Canada. Shipments of poorer stock, of course, have been reduced. We handle hardwoods nearly altogether and trade is very good. We ship principally to the States. I certainly favor free trade in lumber."

* * * *

"Lumber business is very satisfactory," remarked Mr. Gray, formerly of Hastings & Co. "This has been an active winter in the woods, and things will hum this summer around the mills. Undoubtedly there will be a good many logs rafted to Michigan, but our own mills will do lots of cutting. Prices are good. We have reason to be pleased with lumber conditions as they are to day, after the dull period that we had passed through, and I hope things may be allowed to remain in this shape."

* * * *

"We would prefer no export duty on logs," says Mr. T. H. DeCew, manufacturer of hardwood lumber, Essex, Ont., "and are hoping, and believe, the change in the administration in the United States will bring about in the near future closer trade relations between the two countries. I do not think it is policy for our government to do anything that might hinder the bringing about of this result. I noticed a statement in a recent LUMBERMAN that the Essex mills have put in 2,500,000 feet of logs. This refers only to Mr. Naylor's mill. I have a stock for my Essex mill of 3,500,000, besides 2,500,000 at my Colchester mill, making a total of 9,500,000, for Mr. Naylor and myself. This has been one of the finest winters for moving stock we have had in fifteen years."

* * * *

Robert Batty, a Canadian woodsman, and now working in Oregon, writing to a former friend and school-mate, says: "I scaled one log 15 feet long that made 2,600 feet of lumber and another the same length that contained a little over 2,400. I have scaled dozens of the same length with 1,600, 1,800 and 2,000 feet in them. The timber here is very tall and large. It is no trouble to get from 250,000 to 300,000 feet of lumber off one acre. I know of one acre from which was cut 289,000 feet actual measurement. In timber like what I have mentioned the cutters go through it and fell all the trees they can without felling them across each other to damage them: then when the logs are cut and hauled out they go over it again and so on until all the timber is taken out. We had pretty fair weather all last summer and up to the middle of November then we had three weeks of very wet weather and a little snow. Then we had cool dry weather up to 21st December, when it snowed over 3½ feet in two days. On the 25th and 26th December it rained and took all the snow off. For four weeks we had fine bright weather, then it commenced to snow again and snow fell every day for two weeks, and now it is raining again. The coldest weather we have had this winter was 18 degrees above zero."

Mr. P. O. Byram, of Grand Falls, N.B., is not pleased with "A's" reference in the last LUMBERMAN to the small mill men of the country. Local milling, says Mr. Byram, "is needed to meet the wants of the farmers and pioneers of the country. It would be a big mistake for the country to encourage a monopoly in lumber at the cost of local milling enterprise. Are we to take away the market for our farmers, and worse still, drive our children to seek employment elsewhere? Mr. Phipps' observations in the same LUMBERMAN are, to my way of thinking, apt to leave a decidedly wrong impression. He says the cutting and hauling of the logs out of the woods is the main work of lumbering, and he would minimize the work of cutting these logs into lumber. The manufacturing of lumber consists not alone in cutting the logs into boards and scantling. If encouragement is given to home manufacturers it means that these boards will be planed, tongued, grooved, and a thousand and one articles made out of the lumber. More than this activity, in the mill means activity in the foundry and the machine shop. Force the small mill men to go out of business and you will curtail the output of every manufacturer of mill machinery of whatever kind in the Dominion. The evil is far reaching."

* * * *

"It is all nonsense," said Mr. N. C. Dymont, of Barrie, Ont., "to talk of a lumber combine. What does it mean? Simply that if such were the case, a lot of Americans would come over here and purchase limits, off which they would cut and ship logs. Now, does it seem reasonable that the lumbermen of Canada, who are here on the ground, and who know just about as much about the value of our limits as any American, would permit any such scheme to mature? The lumbermen of Canada are now the owners of all these limits, and if there is anything in them it is not likely that they are going to let the Yankees pull the wool over their eyes and get the advantage. The fact of the matter is, that no such proposition has been made and so far as I know there is no reason to make it. I quite agree from a Canadian lumberman's standpoint with the Dominion Government in their action in refusing to replace the export duty. If we put on our duty of \$1 again the American government would at once clap on the old duty of \$4 per thousand on cut lumber, and this would practically shut us out of their market for our manufactured lumber. It is true that there are two mills on the north shore of Georgian Bay shut down now, but I contend that if the duty was reimposed they would all shut down. The only feature that I see which we want improved is that our government should endeavor to have the remaining \$1 per thousand tax removed on manufactured lumber going into the United States."

* * * *

Mr. E. O. Elsemore, representative of several large Michigan lumber firms, has been doing some prospecting in the Georgian Bay and other northern lumber sections. During his stay in Toronto he makes his headquarters at the Walker. He considers the rumors of a big combine of Canadian and American lumbermen as mere newspaper talk. Mr. Elsemore had a hand in the purchase of \$500,000 of timber limits from McArthur Bros., of Toronto, in the early fall of last year. These limits are now being worked by their American owners. "We have had this winter," said Mr. Elsemore, "900 men, all Canadians, in our employ. The material and supplies for our seventeen camps was all bought in Canada. This expenditure ought to be of some benefit to Canada. Speaking of the present agitation for a reimposition of the log duty Mr. Elsemore said: "It would not drive American lumbermen out of Canada. They could let their timber stay there until the tax was removed again. No dues are payable until the trees are cut. It won't pay Canada to discourage American investments here. Last year we imported from your side 1,400,000,000 feet of timber. Of that amount 1,100,000,000 came from Ontario. Now, does it benefit you or not to sell us that timber? As far as I'm concerned I don't believe in these two countries being divided up by a little patch of water. I say if we have anything to sell and you want it, come over, buy it, pay for it and take it away. If you have anything we want let us do the same without any interference from customs officers. I think things are leading that way, too, all the time."

A TALK WITH WORKINGMEN.

By Ed.

ONE of the arguments sometimes used for a reduction in the hours of labor is that workingmen may have more time for self improvement and education. It is by no means certain that this spare time, if secured, would to any large extent, be used in this manner. The men who are to-day improving their opportunities, despite the hours given to manual occupation, would appreciate, and no doubt wisely use, these additional hours. The men who spend their time now in ways that are neither healthful nor improving from a moral or intellectual point of view would in many cases only extend the dissipation of valuable time as a result of extra time on their hands. This, however, opens an interesting field of labor discussion, that we shall not follow further at the present time.

This much will be agreed to by all thoughtful men, whether the end is accomplished in eight hours or ten hours, or under even less favorable circumstances, that the workingman who expects to attain success in his work must read and study at least on the lines of his particular vocation. If one is satisfied to drift with the tide and be a nobody among the multitude of nobodies in his calling, he need not trouble himself about books or opportunities for intellectual culture. The many enquiries, however, that come to a journal of the character of the LUMBERMAN, asking what books one may read with most profit to a working mechanic anxious to become a better mechanic, makes clear that there are scores of workingmen sincerely desirous of self-improvement. Nothing in the work of an editor gives him greater pleasure than the opportunity to answer such enquiries and perhaps give a word of counsel that will prove an inspiration to some worthy seeker after knowledge.

Of course there are those ready with objections to suggestions such as we have here given expression to. But the lion and the adder are ever in the way of the man who does not want to do a thing. Some remarks on this point have recently appeared in the columns of a trade contemporary and we give them a place here as pertinent to the subject under discussion, and exceedingly practical. "With many of us, reading is largely a matter of opportunity, some think they lack the means of procuring books, or more frequently still, imagine that they have not the time necessary for the mastery of the helpful volumes. If one would stop to consider but for a moment, however, the amount of money we spend for cigars, amusements, etc., we would soon find that we could easily accumulate in a year's time a sufficient amount to be able to invest in a nice little library. I do not mean to deprive oneself entirely of amusements, because it is easy to realize that "all work and no play makes Jack a dull boy." If we would, nevertheless, stop to consider the great benefit derived from a mechanical library, and the possible increase in salary by reason of intelligent use, or, at least, the being able to accomplish a day's work with a greater amount of ease, we would certainly profit by it far more in the end.

"It frequently happens that the taste or appreciation for what is advancing and ennobling in literature of this kind is lacking. This is the heaviest bolt on the gate of knowledge; for no amount of recommendation can give one interest in a book, and in mental as well as in physical food we are profited only by what we assimilate. But it is just for those who feel both longing and limitation that this article is written—simply to act as a finger-post indicating in what direction mental culture may be reached. Bear in mind also that there are "passing" books and "lasting" books. This we have more or less all of us experienced in books written in the form of romance, fiction, novels, etc. The same thing holds good on mechanical literature. One cannot expect to find the same amount of help in the books of the day as in the books for all time. Again, the manner of reading will differ. The one kind furnishes comparatively easy reading, because more on the level of our own knowledge and experience—but the latest book should not occupy the time to the exclusion of the older authors, who often give you their thought more by way of reward than of help, just as nature does not spread her gold upon the surface, but let us search and dig, or crush the rock to get the precious ore. We must do some reading that requires thought and labor."

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

NOT very much credence is placed in the reported big combine of American and Canadian lumbermen. No doubt many United States lumbermen have been over here this year, and a number of properties, representing large figures, have passed from Canadian to American hands. But this is a very different matter to capitalizing a concern of \$10,000,000, as the rumor goes, and buying up pretty much the whole lumber interests of the Dominion. Leading lumbermen at the Capital, who would be likely to know something of the matter, say there is nothing in it. Mr. W. C. Edwards, M.P., said: "A firm with one hundred millions capital might, perhaps, be able to make conditions of cut and output, but a firm with only ten millions is not in it. It is much easier to corner wheat than to corner lumber." Mr. R. A. Hurdman said: "Gen. Alger, of Michigan, has already purchased limits on the St. Maurice, but the formation of a combine is not under consideration. The General, who is very wealthy, has had the limits for some three years, but nothing has been done on them." Mr. Charleson, late government timber agent for Quebec, said: "There are a lot of men fishing round for options. If they can get a good commission they sell; if not, nothing is done." Mr. Charlton, M.P., said: "There can be nothing in the nature of a combine. There are several firms largely interested in this district that will not come in. Amongst these on the other side, are A. Hill, H. Budman, Temple Emery; Geo. W. Peck, Cleveland, C.; Greenback and Gilchrist, of Alpena; Nelson, of Chelveygan; Nelson Holland, Merrill & Co. and William Peters, of Saginaw. These men would not join a combine, but some already hold limits. There might be a sub-firm who would join in a company, but nothing in the nature of a combine."

PRICES ADVANCING.

The sale by Mr. J. R. Booth this month of between five and six million feet of lumber to a United States "middle" firm at an advance of from 50c. to \$2 per thousand feet, according to grade, over last year's prices, portends stiff prices for Canadian lumber this year. This lot, with the exception of a large contract in the hands of the Shepard & Morse Manufacturing Company, very largely exhausts, it is said, the really first-class lumber of this district. A local lumberman is authority for the statement that every board to be cut for miles around Ottawa has been secured by American and English buyers amid great competition. Lumber everywhere is in demand this year. Even the South American market, which has been practically nil for some years, is brightening up.

LUMBER TOLLS.

A deputation of lumbermen waited on the Minister of Public Works, recently, asking that a change be made in the joint stock companies general act so as to make it compulsory on the part of the companies affected to charge rates of toll at so much per 1,000 feet board measure instead of per piece, as the law now stands. It is complained on the part of the small dealers that the present mode of collecting tolls is unjust, because a small log containing 50 or 75 feet board measure is made to pay as much toll as a log containing 250 or more feet. It is believed the Government will see the justice of what is asked, and will have the changes made in the joint stock companies general act to meet the case. Of course, this no way affects Government works, the Government having the right to levy tolls on any scale it pleases, nor it is claimed will it in any way affect joint stock companies, but it will be equitable among dealers.

INDIFFERENT LENGTHS.

Captain W. O. McKay, lumberman's agent, has orders to secure a large number of men for the drives. Good hands are worth from \$28 to \$35 per month.

An indication that the season's work in the woods is coming to a close is to be found in the large number of shantymen who are commencing to crowd the lower town hotels.

Buell, Hurdman & Co., have made a number of changes in the lower portion of their mill, and expect to have everything in order for sawing the early part of next month.

Harry Pratt, the champion river man of the Upper Ottawa, leaves in a few days with a picked gang for the Ottawa drive. Various other gangs are going forward to different points.

Extensive improvements are being made at the old Perley & Pattee mill, that is now the property of Mr. J. R. Booth. Over two hundred and fifty workmen are engaged on the work. Seven new water wheels are now being placed in position. Three of these are of enormous size, being known as the Canadian wheels, and similar to those placed in Mr. Booth's large mill last spring. It is learned that the machinery for the new mill will begin to arrive about the middle of next month, but the improvements cannot be completed or the whole of

the machinery placed in position before midsummer. When completed the mill will employ almost as many hands as the other mill owned by Mr. Booth.

Lumber shipments are very heavy on the C.A.R. line at the Chaudiere. The company are said to be 900 cars behind in their shipments. Every lumber car the company has is running between Ottawa and American points.

Another lumber deal is recorded this month. The Ottawa Lumber Co. have purchased the entire cut of '93 of R. H. Klock & Co.'s mills at Klock's mills and Moore lake and McCracken, Boyle & Co.'s mills at East Templeton. The entire cut will aggregate about 7,000,000 feet.

OTTAWA, Can., March 27th, 1893.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

RECENT reports of Australian trade are more discouraging than it had hoped would have been the case. This seems contradictory, too, in view of the large order I reported last month as having been received by Robt. Ward & Co. for Australian shipment. Outside, however, of this order trade would appear to have become very flat. Word is current here of a cargo that has been lying at Sydney for three months, and advertised for sale, to be delivered at any port in Australia, but there is no demand, and the cargo cannot be disposed of. The financial market in the Antipodes is far from encouraging. There are at present five vessels loading at British Columbia ports for foreign. At Burrard Inlet, Br. ship County of Yarmouth, 2,154 tons, for U. K. f. o.; Chil. ship Hindostan, 1,542 tons, for Valparaiso; Am. bark Seminole, 1,439 tons, for Santa Rosalia; Am. ship Ivy, 1,181 tons for Wilmington, Del.; Br. bark Assel, 795 tons, for Antofagasta. In addition to these there are now due the Norwegian bark Sigurd, 1,530 tons, now at San Francisco, which will load at Burrard Inlet for Port Pine at 40s., April-May loading. She is chartered by Robt. Ward & Co., Ltd. There are also due shortly the American bark Harry Morse, and the Hawaiian bark John End, both of which are coming up from San Francisco. It is anticipated that a satisfactory local trade will be done this season.

COAST CHIPS.

Romander Eckforth & Son are contemplating building a sawmill on Hornby Island.

John Wilson, manager of the Brunette Sawmill Co., has been unanimously elected Vice-President of the Board of Trade of this city.

The Brunette Sawmill Co., Westminster, contemplate increasing their capital stock to \$300,000 and extending their business operations.

The Revelstoke Lumber Company will have their sawmill in operation early next month. The machinery has been supplied by the Wm. Hamilton Manufacturing Co., Peterboro', Ont.

Jas. Scott, who got his leg cut off by a saw in the Hastings mill about a year ago, and brought action against the British Columbia Mills, Timber and Trading Co., the owners of the mill, claiming that the accident happened through the company's neglect, has been awarded \$2,500, the amount claimed.

Bringing sawlogs from the United States to Canada is a good deal like bringing coals to Newcastle, says the Nelson Tribune. Yet that is what is happening right here in West Kootenay—or, rather, is what will happen as soon as the Kootenay is free from ice. G. O. Buchanan, the Kaslo sawmill man, has contracted with Bonner's Ferry parties for 1,000,000 feet of logs, the logs to be cut in Idaho and rafted down Kootenay river, thence up the lake to Kaslo.

Mr. H. DePencier, manager of the MacLaren-Ross Lumber Co., says there is a fair chance of the mills starting up within the next three months, but it will all depend upon the foreign lumber trade. If the mills had railway connection with the Great Northern or Northern Pacific, whereby lumber could be shipped to the Middle States, the trade, Mr. DePencier says, would soon be in better shape. He does not expect to see the lumber industry of the Province developed to any extent until one of the Central American canals is built.

The Royal City Planing Mills, of Vancouver, have already shipped two carloads of dressed lumber, consisting of stairs and flooring to Chicago for use in the construction of the Canadian building at the World's Fair, and they are now preparing their own exhibit, which will be shipped almost immediately. Amongst their exhibit will be two very finely polished spruce and cedar doors, which have been manufactured with the greatest care. One of the most interesting portions of their exhibit will, however, be some sections of the native woods of this Province. One section of spruce measures 5 feet 8 inches, and was cut 48 feet nine inches from the

butt. A section of Douglas fir measures no less than 6 feet 7 inches across, though cut 45 inches from the ground, so that the size at the butt must be enormous. It is, however, expected that a still larger section will be obtained. Two limbs of Douglas fir measuring 16 inches across will also be sent, as well as a log of hemlock 3 feet in diameter. All these were obtained from the mill's camp near Hastings. A carload of fine dressed lumber has also been sent by Geo. Cassidy & Co. It consists largely of mantels and ornamental work for use in the buildings of the Canadian section.

NEW WESTMINSTER, B.C., March 25th, 1893.

NEW BRUNSWICK LETTER.

[Regular correspondence CANADA LUMBERMAN.]

A DIFFICULTY over freight rates has shown itself among the shinglemen. The inter-state committee, at Washington, has given a decision which compels the Canadian Pacific, Maine Central, and Boston and Maine railways either to reduce their rate on shingles from northern Maine or advance it on shingles from New Brunswick. The ruling states that the rate from Fort Fairfield, Me., to Boston, shall not be more than 6½ cents higher than the rate from Fredrickton, N.B. The railways have been giving Fredrickton shipments a cut rate, and the Maine mills protested. Locally the operators who will be most affected are Alex. Gibson, J. R. Morrison and D. F. George, all of whom ship from Fredrickton. These conditions, however, apply only in winter. In summer they ship by schooner to Boston, New York and other ports. St. John men ship almost entirely by water. The Restigouche County shingle men have a favored rate via Intercolonial and Grand Trunk railways, and ship by those lines.

PIECE STUFF.

Joseph Campbell, of Newtown, will get out 1,000,000 feet of logs.

The tonnage of wooden vessels at this port shows a steady and marked decrease.

Instead of making lumbermen's rafting-pins by hand, they will now be made by machinery, a New Brunswick man Haneberry, of Fredrickton, having invented such a machine.

T. S. Whitman, of Annapolis, N.S., has now more pulp wood hauled in than any two former years combined. It is for the United States market. Pickels & Mills, of Annapolis, will get out 6,000,000 feet of lumber this season.

The Commissioner of crown lands in his annual report, which has just been laid before the legislature now in session, expresses the opinion that the outlook in the British and Continental market is no better than last year, but he anticipates a larger cut this year than last.

C. T. White, of Apple River, N.S., has about 5,000,000 feet of white pine lumber on the river, and about ten cargoes of piling. At Eatonville, C. F. & F. R. Eaton have landed at the river to date logs enough to make about 6,000,000 feet of lumber, and expect to get out 1,000,000 feet more before the season closes. Their new mill is nearly completed.

St. JOHN, N.B., March 24th, 1893.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE work of rafting logs on the Saginaw river, which has assumed large proportions the last few years, is meeting with strong opposition just now from the vessel owners who ply their trade on the river. Their contention is that the rafts are an obstruction to navigation, and efforts are being made to secure congressional interference, and have the matter referred to a commission of engineers to investigate and report. Lumbermen are uniting, and will present a strong protest at the meeting of government engineers to be held at Detroit, April 6th. The large quantity of logs that have been brought over from Canada, and which will certainly be substantially increased this season, lends special interest to the matter with many Michigan lumbermen. The vessel owners, however, are equally determined to fight and secure, at least, a reduction in the size of the rafts.

BITS OF LUMBER.

Operations in the woods are practically suspended.

Mitchell & McClure, of Saginaw, expect that their mills will cut a large quantity of Canadian logs.

James Hamilton, who is operating in Georgian Bay waters, for Gilchrist, of Alpena, has 5,000,000 feet of logs banked. They will be towed to Alpena.

The story is being told of some Michigan lumbermen who loaded 30,055 feet of logs upon a pair of bob-sleighs. The sleighs were built entirely at the camp. They were six-foot run sleighs, runners four and one-half inches thick. The beam is 18x20 inches thick and 15ft. long, made of maple, and the load is held in place by 850 feet of half-inch steel chains

weighing 2,000 pounds. There are fifty logs in the load, the smallest measuring 406 feet and the largest 1,205—all eighteen feet long. They are arranged on the load in ten tiers, each of which, except the top one is stayed separately by the chains. This huge load weighed nearly 140 tons, and a team of chestnut geldings, weighing about 3,500 pounds, hauled it to a considerable distance. About 500 people witnessed the feat.

A quantity of sawlogs belonging to the Saginaw Lumber and Salt Company broke a week ago, but the most of them have been recovered.

A large boom is to be built near the mouth of the river, at Bay City, for the storage of logs rafted across the lake from Canada. The contract has been let for driving 4,000 piles for the boom.

SAGINAW, Mich., March 25th, 1893.

TRADE NOTES.

Mr. F. E. Gaudrie, of Pt. Hope, Ont., has recently had patented a labelling machine, which is said to be perfection itself. It labels all kinds of preserving cans such as those used for tomatoes, corn, peas, salmon, lobsters, etc., at the rate of 100 a minute. It is made to go either by hand or power and a child ten years of age can easily run it. It is patented in the United States and Canada, and patents are being secured for England, France and Germany. Mr. Alonzo W. Spooner, of Pt. Hope, who usually knows a good thing when he sees it, has secured control of this machine for Canada and all orders will be supplied by him from Pt. Hope.

PERSONAL.

Mr. Isaac Cockburn, the well-known Ontario lumberman, has been elected secretary of the Manitoba Lumberman's Association.

Messrs. Sadler & McDonald, of Lindsay, Ont., are on a visit to North Galveston, Texas, where they are interested in lumbering operations.

The LUMBERMAN was pleased to receive a call from Geo. Cormack, Jr., lumberman, of Whitby, Ont. Mr. Cormack is constantly on the road and reports the outlook for trade this year, as bright.

Michael Carr, of New Edinburgh, Ont., a driver in the McLaren mill, died suddenly of apoplexy a week ago. Deceased was highly respected by all who knew him and a prominent member of the Methodist church.

The wife of Mr. Edward Hutchison, foreman for the Buell, Hurdman Lumber Co., Sunnyside, Kippewa, Ont., was recently presented with a handsome gold watch, locket and chain by the shantymen as a token of the high esteem in which she is held by them.

Mr. W. B. McLean, of the Conger Lumber Co., has been elected secretary of the Clan McLean, an association recently organized in this city. One purpose of the organization is to tender a reception to the hereditary chief of the clan, Sir Fitzroy Donald McLean and Lady McLean, should they visit Toronto during the coming summer.

In the death of Mr. A. F. Mackay, of Liverpool, Eng., the lumber trade of Great Britain and Canada loses a most esteemed member. The deceased was one of the octogenarians of the trade, being in his eighty-third year at the time of death. The firm have a branch at St. John, N.B., under the control of Mr. W. Malcolm Mackay.

On March 17th, Mr. Hugh R. McLachlin, of Arnprior, Ont., one of the oldest and best known of Canadian lumbermen, was called to his eternal rest. About seven years ago deceased retired from active work, having secured a competence, and settled down to private life in Arnprior. He leaves a widow and family of seven, all grown up, to mourn his loss.

On 13th ult., Mr. Allan Grant, of Fitzroy, Ont., a prominent lumberman of that city succumbed to a severe illness of three weeks duration. Mr. Grant was well-known on the Ottawa river, having at one time carried on an extensive square timber business. He was the second son of the late Capt. John Grant, who took part in the war 1812; and grandson of Lieut. Allan Grant, who engaged in the war of Independence. The families on both sides were U. E. Loyalists. His mother still survives at the advanced age of 91 years. Deceased leaves a widow and three children to mourn his loss.

Frederick Burrows, one of the pioneers of York, Ont., died at his residence in township of King on 23rd ult. after a lingering illness. The deceased was a native of Sligo, Ireland, who came to America when a young man. After living in New York for some two years he settled in Toronto in the thirties. Later, in partnership with his brother George, who now resides near Stayner, he entered into the lumbering business in King township, where the firm erected the first steam saw mill operated in that district. Mr. Burrows lived to see that forest district become thickly populated and increased in wealth.

THE NEWS.

ONTARIO.

—Jas. Howard, lumber dealer, Whitby, has assigned to J. F. Paston.

—The mill of John McLaren, of Renfrew, is now lighted by electricity.

—Pickard Bros. sawmill at Glanville, Ont., is opened for the season.

—Robert Hadden's mill, Vasey, has been running for a month, with stock for a long season's operations.

—Mr. Lowx and Mr. Stearns, of Duncansville, have each some 10,000 logs to be sawn in their mills this season.

—Wm. Boyes, a mill hand at Staples, was held up by a gang of masked men and robbed of \$90 cash and a gold watch.

—H. Landop, planing mill, St. Thomas, is in financial difficulties. Loan society has an encumbrance of \$21,000 or so, and the bank claims almost \$11,000.

—The Georgian Bay Lumber Co., of Waubesa, are building a flat-bottom side-wheel boat, to be used among the logs where there is not sufficient depth for the tugs.

—Gillies Bros., of Braeside, whose limits are on the Coulange, expect to start their drives about the middle of the month. The snow has been excessively heavy in the district.

—The shingle mill of McConachie & Co. near Huntsville, is being put in shape for the season's work, which will be commenced early this month. A good trade was done last season.

—The Rathbun Company, of Deseronto, can lay claim to shipping a quantity of pine lumber to New Glasgow, N.S., to be used in the building of the first steamer constructed in Canada.

—Mason & Co., at Mechanicsville, have taken out five thousand pieces of spruce during the past winter. The snow averaged nearly five feet and road-cutters had to wear snowshoes to pursue their operations.

—The Export Lumber Co., of Ottawa, is stowing away in the neighborhood of 100,000 feet daily in its dry sheds in Rochesterville, a fact that is indicative of a likely demand at good prices in the near future.

—A local paper says that Alex. Cameron, of Windsor, who owns extensive timber limits in Colchester, charges a number of the residents in the township with appropriating his timber. It is thought that \$2,000 worth has been taken.

—This is the season when the local papers tell of the big loads of sawlogs that are drawn by the lumbermen of their locality. A story comes just now of a load of fifty sawlogs drawn a distance of three miles on the Madawaska river.

—Mr. N. S. Lusty, of Rodney, has in stock at his mills, 1,250,000 feet of lumber, composed chiefly of white ash, black ash, white oak, black oak, hickory, hard and soft maple, soft elm and basswood. Capacity of mill, 15,000 feet per day.

—The Gall Lumber Manufacturing Co., of Toronto, is applying for a charter to carry on a lumbering business, with a capital of \$50,000. The company will be composed of Thos. Meaney, John S. Hutton, George Ritchie, George Gall and George W. Nickels, all of Toronto.

—R. D. Thexton, of Lindsay, is cutting large quantities of hemlock and cordwood upon his 1,000 acre limit on Bull Lake. In the course of a couple of weeks a substantial cottage will be erected on a charming site for a summer residence, and Mr. Thexton's family will occupy it during the summer months.

—Thompson & Son, of Peterboro, got drawn out of Harvey township across Deer Bay a large stick of white ash, which measured 36 feet long, 31 x 31 inches at the butt and 27 inches at the top and was drawn to Lakefield by three large teams of horses. Mr. Thompson says it is the finest stick of square timber he has seen in a good while.

—Daniel McCormick, foreman for McLeod, Irwin & McCormick, on the Wahnapeit river, had a load of logs drawn last week with one team, which contained 35 logs with an average of 12 inches in diameter. The logs were loaded by Dunkin McCormick, J. Canning and Thomas King, the teamster being David McKenzie.

—A frightful murder near Webbwood, Algoma, was reported a fortnight ago. It seems a man brought in two bottles of whisky to Stone & Berrill's camp near Webbwood, intending one for himself and one for a friend. The friend seized the two bottles, and treated the boys, which annoyed the first man so much that he drew his knife and stabbed him, breaking off about two inches of the blade in his head. The poor fellow was taken to the doctor at Webbwood, but died when about five miles on his way back.

—A big drive will start down from Windfall lake by the Coulogne river in charge of Foreman Bertrand, with about fifty men, for W. C. Edwards & Co., Ottawa.

—P. P. Young, of Young's Point, has bought large quantities of cedar and pine in Harvey, Burleigh, Douro and Smith townships, to be cut in the local mills the coming summer.

—Mr. M. Flood, foreman of the Hawkesbury Lumber Co., states the firm took out over 40,000 logs of pine on the Fide Grande during the past winter. Mr. Flood has been engaged as foreman for the firm of Gilmour & Hughson at Hull Point, Que.

—The excellent sleighing of the present winter has enabled the mills along the St. Clair branch, M.C.R., to get out more logs than in any previous winter for the past ten years, and the quantity equals that of four or five average years. Holmes, Moore & Courtright have at their mills in Inwood, 3,500,000 feet, and at Homesdale, 2,500,000 feet. Paul Weidman & Co. have at Weidman, 5,000,000 feet and at Glen Rae 3,025,000. This stock will furnish two years' solid sawing and means constant employment to a good staff of mill hands during that time.

—Chas. Wilson Rowe, who attempted to carry on a fake lumber business in Canada some time ago, has been convicted in Philadelphia of using the United States mails for the purpose of defrauding and of conspiracy. Rowe's scheme was very comprehensive and he succeeded in swindling lumbermen throughout the northwest of thousands of dollars before he was arrested. He represented himself as an extensive lumber dealer, and by referring the lumbermen to a fictitious banking firm of Philadelphia as to his financial standing, he obtained large shipments of lumber which he sold and never paid for.

—The Dickson Company, Peterboro, have purchased the mills, water power, and other Lakefield property belonging to the Lakefield Lumber Company for \$55,000. To the Dickson Company these mills are a very valuable adjunct. They will now have room to hold all the logs they require in the waters above Lakefield, and hence they will be able to commence the season's cutting very much earlier at Lakefield than at either Peterboro or Harwood. The Lakefield mills will be run to their full capacity. The Peterboro mills and the Harwood mills will be operated as usual, and the output of lumber this season will be a very large one. The limits were also offered for sale but were withdrawn at the following figures: Harvey limits, \$1,500; Anstruther, \$5,000; Burleigh, \$2,500.

QUEBEC.

—The Merchants Bank has disposed of 175,000 feet of spruce to the Oswego Manufacturing Company. The lumber formerly belonged to the Thompson Lumber Company, of Calumet, Que.

—Wm. Grimes, of Aylmer, is getting out some fine maple from his land on the Eardley mountains. He sold to J. R. Booth, Ottawa, one stick nineteen feet long, and at the small end it was 24 inches in diameter. Mr. Grimes is selling all this fine timber to J. R. Booth, Ottawa, and R. & W. Conroy, Aylmer.

MANITOBA AND THE NORTHWEST.

—The partnership existing between W. J. Mathers and J. B. Mathers, of Neepawa, Man., has been dissolved by mutual consent. Mr. Wm. J. Mathers continues the business and with his well-known push, will no doubt make it as successful in the future as in the past. Mr. J. B. Mathers, has purchased the stock-in-trade of Mr. A. R. Stevens, retail lumber, in Glenborough. Mr. Stevens retires on account of ill-health.

NEW BRUNSWICK AND NOVA SCOTIA.

“Probably not for years,” says a local correspondent, “has there been such activity in lumbering in the Tatanagouche district, N.S.”

—The Harris Car Works, of St. John, N.B., have been amalgamated with the business of Rhodes, Curry & Co., contractors and builders, Amherst, N.S., and the plant will be removed to Amherst.

—A. Dickie has about 9,000,000 feet of logs landed in the Stewiacke river, N.S., which will be brought to his mill throughout the spring and summer. A. Higelow, whose mill is situated about four miles from Lower Stewiacke, are planning a large summer's work.

—Norman McLellan, of Shulee, N.S., is under arrest, on the charges of inflicting bodily injuries on John Robertson, also of Shulee. McLellan and Robertson were working in the lumber woods for Prescott and Gillespie, when they got into a dispute over their work. Whereupon, it is stated, McLellan struck Robertson over the back with a handspike, breaking his shoulder blade and inflicting a deep wound on the back of his head.

TRADE REVIEW.

Office of CANADA LUMBERMAN, }
March 31, 1893. }

THE GENERAL SURVEY.

ANTICIPATIONS of a month ago that the demand for lumber would be manifest early in the season are being well borne out by present conditions.

The cut of logs in the woods the past winter was heavy, and the mills will have abundance of work this summer. As a matter of fact the cut of not a few mills was contracted for before the timber had been felled.

Lumbermen in New Brunswick are anxious to see the treaty with France ratified as this will give an important outlet for their lumber. British Columbia looks for a good season's local trade and some improvement in export.

So far as Toronto is concerned building permits already granted are of fair size, and whilst no large trade is expected, the season will be an improvement likely on last year. Country trade is improving.

UNITED STATES.

Standing on the threshold of the spring and summer trade it must be said that not for several moons has the outlook been more cheery for lumber. Reports from the leading lumber centres in all parts of the country tell of a growing demand for stocks, and prices for many lines, and emphatically so, for white pine, hard and constantly stiffening.

FOREIGN.

Keeping line with conditions on this side of the Atlantic some improvement, though less marked, is discernable in the lumber market abroad. A brighter outlook is reported from South America and Canadian lumbermen, both those of the Ottawa district and in British Columbia, look forward to increased shipments this year.

HARDWOODS.

The hardwood market shares in the general improvement that marks the lumber market generally this spring. A correspondent in western Ontario, who operates largely in hardwoods says that trade was, perhaps, never better.

TORONTO, ONT.

Table with 2 columns: Description of lumber products and their prices.

CAR OR CARGO LOTS. CONTINUED. Table with 2 columns: Description and price.

YARD QUOTATIONS. Table with 2 columns: Description and price.

HARDWOODS PER M. FEET CAR LOTS. Table with 2 columns: Description and price.

OTTAWA, ONT.

Table with 2 columns: Description and price for Ottawa, Ont.

QUEBEC, QUE.

Table with 2 columns: Description and price for Quebec, Que.

BOSTON, MASS.

BOSTON, MASS., March 31.- Considerable lumber is moving and prospects are good for the early spring and summer trade.

Table with 2 columns: Description and price for Boston, Mass.

Table with 2 columns: Description and price for various lumber products.

OSWEGO, N.Y.

OSWEGO, N.Y., March 31.- With the opening of navigation signs of a good season's trade are not wanting.

Table with 2 columns: Description and price for Oswego, N.Y.

Table with 2 columns: Description and price for various lumber products.

Table with 2 columns: Description and price for various lumber products.

BUFFALO AND TONAWANDA, N.Y.

TONAWANDA, N.Y., March 31.- Business is not at present terribly brisk, but dealers have every confidence that a large trade will be done this season.

Table with 2 columns: Description and price for Buffalo and Tonawanda, N.Y.

ALBANY, N.Y.

ALBANY, N.Y., March 31.- Navigation is opened and shipments of lumber are commencing to move out. Prices for white pine show remarkable firmness.

Table with 2 columns: Description and price for Albany, N.Y.

Pine	.....\$2 40	LATH.	Spruce	.....\$2 40	\$2 50
Sawn Pine, ex. XXVX	\$4 35	SHINGLES.	Round butts, 6x18	.....\$5 90	\$6 00
Clear butts	3 10		Hemlock	.....2 15	2 30
Smooth, 6x18	5 40		Spruce	.....2 20	2 30

SAGINAW, MICH.

SAGINAW, MICH., March 31.—Stocks of pine are light enough to make sellers quite indifferent to pushing sales. Large quantities of pine are contracted for ahead of the cutting. Prices are downright hard. There is no large amount of stock going out because there is little offering.

Uppers, 1, 1 1/2 and 1 3/4	.....\$4 00	FINISHING LUMBER—ROUGH.	Fine common, 1 in.	.....35 00
2 in.	.....46 00		1 1/2 and 1 3/4 in.	.....36 00
Selects, 1 in.	.....40 00		2 in.	.....36 00
1 1/2 and 1 3/4	.....41 00		C, 7, 8 and 9 in.	.....30 00
2 in.	.....41 00			

Clear, 1/2 in.	.....24 00	SHINGLES.	1/2 in.	.....19 00
3/4 in.	.....48 00		3/4 in.	.....34 00
Select, 1/2 in.	.....21 00		No. 1, 1/2 in.	.....13 00
3/4 in.	.....47 00		3/4 in.	.....23 00

TIMBER, JOIST AND SCANTLING.
2x4 to 10x10, 12, 14 and 16 ft. \$11 00
18 ft. 13 00
For each additional 2 ft. add \$1; 12 in. plank and timber \$1 extra; extra for sizes above 12 in.

XXX 18 in. Clinax	.....3 60	SHINGLES.	18 in. X (cull)	.....1 00
XXX Saginaw	.....3 40		XXX shorts	.....2 25
XX Clinax2 25		XX1 50
18 in. 4 in. c. b.1 25			

Lath, No 1, white pine2 25	LATH.	Lath, No 2, W. pine, Norway1 65
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NEW YORK CITY.

NEW YORK, March 31.—Lumber conditions point to a good season's trade. White pine continues as scarce as ever. Buyers report stocks low at Albany, Buffalo and Tonawanda, and prices very firm and advancing.

Uppers, 1 in.	.....\$4 00	COFFIN BOARDS.	.....22 00
1 1/2, 1 3/4 and 2 in.	.....46 00	Boys, in.	.....\$17 00
2 and 4 in.	.....55 00	Thicker	.....17 50
Selects, 1 in.	.....40 00	Ceiling, base, fig. No. 1	.....40 00
1 in., all wide	.....41 00	No. 2	.....35 00
1 1/2, 1 3/4 and 2 in.	.....43 00	No. 3	.....24 00
2 and 4 in.	.....57 00	Shelving, No. 1	.....30 00
Fine common, 1 in.	.....36 00	No. 2	.....25 00
1 1/2, 1 3/4 and 2 in.	.....38 00	Molding, No. 1	.....36 00
2 and 4 in.	.....45 00	No. 2	.....34 00
Cutting up, 1 in. No. 1	.....28 00	No. 3	.....34 00
No. 2	.....21 00	Level sidg., clear	.....22 50
Thick, No. 1	.....29 00	No. 1	.....22 00
No. 2	.....24 00	No. 2	.....20 00
Common, No. 1, 10	.....22 00	No. 3	.....16 00
and 12 in.	.....20 00	Norway, c1, and No. 1	.....23 00
No. 2	.....20 00	No. 2	.....20 00
No. 3	.....17 00	Common	.....18 00

FROM THE FAR WEST.

The LUMBERMAN had the pleasure of a call a fortnight ago from Mr. W. J. Sutton, of Ucluelet, B.C. This is the farthest-most post-office in western Canada, and the mails are received every two weeks by boat. Mr. Sutton is engaged in lumbering, and though isolated from the masses of humanity enjoys life thoroughly. The section of country is one to be admired for its natural scenery and is possessed of splendid water power for manufacturers.

MUST NOT BE COUNTED OUT.

A fair number of replies have been received in response to the request in advertising pages of the LUMBERMAN re "Canadian Lumberman's Directory." We do not wish to leave a single lumberman out of its directory pages, and yet we can afford to do so better than any lumberman can afford to be found missing in a book of reference of this kind. Examine advertisement again, and at once sit down and fill in the blanks complete and forward to this office. It costs you nothing to do this much. The book will be the first one of the class published in Canada, and will be invaluable to every lumberman.

COMING SALES.

One of the most important sales of timber berths that will have taken place in Ontario for a considerable time is that of the Muskoka Mill and Lumber Co., advertised for 23th inst. at Toronto. See this month's LUMBERMAN.

Readers will find it advisable to peruse carefully the advertisement in this month's LUMBERMAN of the sale of valuable timber and mill property at Parry Sound offered by Wm. Hearty. This is believed to be one of the cheapest timber properties placed on the market for many years.

The timber limits of Alex. Fraser, of Westmeath, situate on the Georgian Bay waters, are to be sold by auction on Thursday, 27th inst., by Dickson and Townsend, trade auctioneers. The property consists of three parcels; particulars in our advertising pages. The sale will be conducted by Mr. Dickson, who has become known to lumbermen through the clever manner in which he handled the hammer in the Mossom Bay sale a few months ago.

NOTES AND QUERIES

Questions and answers are inserted under this head free of charge, and all are invited to avail themselves of this column. Correspondents need not give their own name for publication, but it must be made known to the editor. Anonymous communications will find space in the waste basket.

No. 29. SETTING A SLIDE VALVE. D. H. Welch, in Master Steam Fitter, says: Suppose you are called upon to adjust a slide valve on an upright engine 1/32-inch lead on top and 1/16-inch lead on bottom; after ascertaining by the usual means that the eccentric rod connection is the right length, adjust the valve so as to equalize the lead on both ends, then increase the lead 1/64-inch on the bottom, revolve the eccentric around on the shaft until you decrease the lead on the bottom to 1/16-inch; you will then find you have 1/32-inch on top. For instance, you have 3/8-inch on both ends; you increase the bottom 1/64-inch by lengthening the rod; you then have 9/64-inch lead on the bottom and have decreased the top to 7/64-inch. If you now revolve the eccentric on the shaft, away from the crank enough to decrease the lead on the bottom to 6/64-inch, you will find 2/64-inch or 1/32-inch on top and 1/16-inch on the bottom. If this rule is strictly adhered to it will simplify the setting of valves requiring more lead in the bottom than on the top.

No. 30. CONCERNING WEAK BOILERS.—A correspondent, N.Y.Z., takes no stock in the theory that old and weak boilers give way easily. This is risky doctrine—as risky as the weak boiler. If he wanted a bomb-shell that would explode with great violence he would not take the shell of an egg nor a scooped-out pumpkin-shell to serve as a covering for his dynamite; he would take the strongest material he could get, so that when the break should come it would come all at once. A few grains of powder in his gun-barrel behind a leaden ball makes a great explosion and may cause sad destruction; but he may hold the same amount of powder on the palm of his open hand and touch it off with a coal, producing only a s-w-i-s-h—and no damage at all. A weak boiler is like the famous buzz saw and the advice is applicable: "Don't fool with a buzz saw." Don't fool with a weak boiler.

No. 31. A FOAMING BOILER.—We would like very much to know the cause of a "foaming boiler," as we are nearly handicapped with ours. We have tried everything we can think of, such as "blowing off" the boiler, changing river water for well water, putting fat pork and potatoes in the boiler, but the last state seems worse than the first. Perhaps some of your subscribers can help us out of the difficulty. We should be everlastingly grateful to those who can name a cure for it.—T. & J. Gilson, Wroxeter, Ont.

No. 32. ECONOMY IN FUEL.—Could you or some of your subscribers who use steam for motive power give the writer some information about improvements in building in boilers with a view to economy of fuel. I understand there are several patents held for improved boiler settings, but do not know where to obtain information regarding them; also where any of them are in use successfully. This is a question which I presume a good many millers are interested in, and the information may be of general use to all.—G., Richmond, Ont.

No. 33. LOCAL LUMBERMAN. Can any of your readers give me a concise plan for tallying logs brought into a country sawmill by its customers? Our customers are the neighboring farmers, who may bring in during the season all kinds of timber, maple, elm, bass, hemlock, pine, etc., and as the number is large at times, a plan that would save much turning of the leaves of a book outside in stormy weather would obviate the difficulty.

NEW BRUNSWICK CROWN LANDS.

ACCORDING to the commissioner of Crown Lands for New Brunswick, whose annual report has recently been placed before the Legislature now in session, the total receipts from crown lands for 1892 were \$128,319.60, of which \$96,072.74 was stumpage fees and \$18,843.83 mileage on timber licenses. The total revenue of the province is less than \$700,000, which makes the revenue from timber sources about one-fifth of the whole. \$8,741.96 was expended during the year for scaling, collection and the protection of crown timber lands.

A THREE CENT STAMP DOES IT.

ON receipt of a three cent stamp we will mail free to any address a copy of our little hand-book entitled "Rules and Regulations for the inspection of pine and hardwood lumber," as adopted by the lumber section and sanctioned by the Council of the Board of Trade, of Toronto, June 16, 1890. Address, CANADA LUMBERMAN, Toronto, Ont.

STEAM PUMPS



Duplex AND SINGLE Steam AND POWER Pumps

If you require a pump for any duty, of the latest and most improved pattern, and at close prices,

WRITE US



NORTHEY

M'FG CO.

← LIMITED

TORONTO - ONT.

FIRES AND CASUALTIES.

FIRES.

—Our old friend P. O. Byram, of Grand Falls, N.B., has had his grist and sawmills completely destroyed by fire. In a letter to the LUMBERMAN he says: "I lost all in this world except the clothes I had on, boots and overalls, no coat or hat, but enough of life and courage to try again." That is genuine grit.

—Adam Clark's sawmill at Alvinston, Ont., was burned to the ground a few weeks ago.

—The sawmill of Jas. Covert, of Belmont, Ont., was destroyed by fire a fortnight ago.

CASUALTIES.

—Gottlieb Klages, while working in the woods near Neustadt, Ont., was struck by a falling tree and killed.

—Theodore Beaudoin, of Hull, Que., met with a serious accident in Booth's mill by a piece of shafting falling on his shoulder and breaking his shoulder blade.

—A farmer named Daniel McKae, living near Cornwall, Ont., met his death in a fearful manner. He was driving home with a load of lumber, and his team ran away, throwing him off, but he held on to the reins and the lumber fell upon him. He was literally torn to pieces under the sleigh and lumber.

—John Hayter, an employee of the stove mill at Alvinston, Ont., whilst endeavoring to arrange a belt or pulley was thrown with much force through the building and alighted in close proximity to one of the heading saws. Beyond a few bruises and a sprained ankle he was not hurt.

—John McGillivray, a former Canadian lumberman, and a native of Dalesville, Que., was accidentally killed at a railroad crossing in Staples, Minnesota, a fortnight ago. Deceased removed from Canada to Minnesota in 1879.

—Malcolm McLean, of Glamis, Ont., while felling timber a few days ago, was struck with a tree that came backward striking him on the leg and pinning him fast till such time as he was released by the other men. Fortunately he was not seriously hurt.

—Albert Townsend was killed a week since whilst loading logs in Hardy township, Parry Sound district, Ont.

—Harlin Burns, a Nova Scotia lumberman employed in the yard above Eastis, near Farmington, Me., was killed by the logs rolling on him. His age is 55.

—A man named Solomon Haine, of New Canada, N.S., dropped dead in the woods a week ago. He had been engaged in hauling logs.

—Arthur Oston, of Newton Robinson, Ont., while drawing logs from the bush last week had the misfortune to have his feet badly crushed.

—A fatal accident took place at the lumber shanties of Messrs. Beland & Martineau, Tewkesbury, Que., a heavy log fell on a man named Jos. Noel, killing him almost instantly.

—Geo. Freclarn, an English youth, from Dr. Barnardo's home, was killed by being drawn on a log at McAlpin's saw mill.

—Fred. Lawson, of Toronto, who had been working in the lumber camps at Magnetawan died suddenly in the stage while on the way home.

—Information has been received by Alex. Belliveau, of Ottawa, Ont., that his son had met with a terrible death in a Michigan lumber camp by being eaten with wolves. As far as can be learned he, in company with a friend, while out hunting were attacked by a band of wolves, and although they discharged their rifles into the pack, the wolves overpowered them. Belliveau's companion climbed a tree to escape them and from there he saw his companion torn to pieces by the wolves at the foot of the tree on which he was perched. He fired several shots among the pack, killing five wolves, and then his store of ammunition gave out. For several hours the wolves kept around the tree and did not leave until a number of men from the camp came and drove them away.

LUMBER OF THE SOUTH.

COMPETING WITH THE PRODUCTS OF NORTHERN WOODS.

A TONAWANDA, N.Y. lumberman draws a doleful picture of the lumber future of that town. "Our sales," said he to a Buffalo interviewer, "were less in 1892 than in any year during the past twelve that I have been connected with the business. In my opinion Tonawanda has seen its best days as a lumber distributing point."

The lumberman went on to tell how people bought car lots, where formerly ship load lots were sold, and said the practice of shipping direct from Western mills and from the South was cutting into the home trade. He also mentioned that the World's Fair Commissioners had made a heavy drain on the Western supply to the extent of 800,000,000 feet, which had had the effect of reducing stocks and keeping up prices.

The South, in his opinion, is going to cut a large figure in the lumber business. He says: "The supplies of poplar, cypress, cottonwood, long leaf and short leaf yellow pine from the Southern States is yearly on the increase. The variety and cheapness of Southern lumber is making an impression on the market, and although there is something of a prejudice against it here, it is, nevertheless, making headway. The public schools and other public buildings in Buffalo are now being floored with Southern pine—rift sawed it is called in the specifications. North Carolina short leaf pine is also being used extensively for inside finish, while the long leaf maintains a pre-eminence, it being one of the strongest woods that is grown, containing more rosin than any other. Poplar, the best varieties of which come from Kentucky, Tennessee, Mississippi, Alabama, and some from West Virginia, has also cut into the hardwood trade the past few years. This wood is found to take the stain better almost than any other. It is used for rosewood and mahogany quite extensively, and when properly stained only an expert can detect the difference. Rosewood coffins are largely made in this way. It is also made to simulate walnut, oak, quartered oak, cherry, and mahogany, and being cheaper than white pine finds a ready sale."

Asked the question: "Have these Southern woods the lasting qualities of the northern varieties," the reply was: "Cypress will last longer than any other known variety. The statue of Jupiter, one of the wonders of Italy for the past six hundred years, is made of cypress, and in one of the cathedrals of Rome, is a door of the same material said to be 1,100 years old. Cypress shingles are always reckoned good for 200 years."

"How about the cost?"
"Well, I don't pretend to give the exact figures, but white pine has been selling at \$45 to \$50 a thousand feet. Against this you have the Southern yellow pine, the best of which you can buy at \$20 a thousand feet. The best varieties of poplar can be had at \$35 a thousand, inferior kinds calling for less. Cypress sells at from \$35 to \$36 a thousand, the best quality coming from the Gulf States, the Mississippi and its tributaries. It is also grown in North Carolina, South Carolina and Virginia, but the superior grades are located further south."

"In North Carolina short-leaf pine is sold at from \$8 to \$27 a thousand; largely used for inside finish and for boxes. But the best of all woods for boxes, aside from the cypress, is the cottonwood, which sells at from \$16 to \$23 a thousand. The cottonwood tree grows in the short space of four or five years suitable for lumber, and is, in my opinion, the coming wood. Gum wood, the best of which is found below the 35th parallel, when properly kiln-dried, makes the most chaste of hardwood trimmings, and for artistic work is coming into demand. The product of the South also includes oak, beech, sycamore, ash, and cherry in considerable variety."

WANTED AND FOR SALE

Advertisements will be inserted in this department at the rate of 15 cents per line each insertion. When four or more consecutive insertions are ordered a discount of 25 per cent. will be allowed. This notice shows the width of the line and is set in Nonpareil type. Advertisements must be received not later than the 27th of each month to insure insertion in the following issue.

WE WANT ALL KINDS OF HARDWOODS. Will pay cash. ROBERT THOMSON & CO., 103 Bay Street, Toronto.

HARDWOOD LUMBER BOUGHT, SOLD OR received on consignment. TUCKER DAVID, lumber commission merchant, 202 Eleventh Ave., N.Y.

FOR HEMLOCK, DIMENSION LUMBER, hardwood flooring, cedar shingles, piles, sawdust, etc., write J. E. MURPHY, lumberman, Hepworth station, Ont.

WANTED—A SITUATION AS FILER IN A sawmill. Have had nine years experience with gang and round saws. Address "H," 3 Maitland St., Halifax, N.S.

WANTED—BY YOUNG MAN—SITUATION as book-keeper, cashier or correspondent; rapid worker; energetic, and thoroughly reliable and experienced; competent to take charge of manufacturer's office. Address: "Accountant," care CANADA LUMBERMAN, Toronto.

FOR SALE.

ABOUT A MILLION FEET OF LOGS (AT mill) suitable for bill stuff, etc. Mill can be leased to cut them. Address "Lumberman," care CANADA LUMBERMAN, Toronto.

LUMBERMEN

EXPERIENCED SHIPPER OPEN FOR ENGAGEMENT middle of May. Good book-keeper and correspondent. Competent to take charge of mill. References furnished. Address "Inspector," care CANADA LUMBERMAN, Toronto.

RAILS FOR TRAMWAYS

NEW AND SECOND-HAND STEEL AND iron rails for tramways and logging lines, from 12 lbs. per yard and upwards; estimates given for complete outfit.

JOHN J. GARISHORE,
49 Front St. West, Toronto.

TO EASTERN STATES LUMBERMEN.

AN EXTENSIVE HANDLER OF PULP wood, fir, spruce, canoe birch and poplar, is desirous of finding a market for same in the Eastern States—New York or Boston preferred. Is prepared to ship any size required per schooner from Quebec. Parties handling same should communicate with I.C.L., care CANADA LUMBERMAN, Toronto.

TO LET

LARGE PLANING MILL, WITH SHOP, MACHINERY, Kilns, etc., in full running order, corner Niagara and Tecumseth streets, formerly occupied by Call, Anderson & Co. Mill 60 x 160; two-storey shop 70 x 75; Kilns 2 x 105. Power supplied. Railway sidings into premises. Apply—N. V. KUHLMAN, 107 Niagara St., Toronto.

FOR SALE

A WELL-ESTABLISHED, THRIVING LUMBER business, being one of but two yards in a rapidly growing manufacturing city of 20,000 inhabitants, surrounded by a well-to-do farming class. Sales the past year over \$70,000, which can be doubled. Capital required about \$15,000. Terms easy. Reason for selling, illness of Manager. Address "Good Opportunity," care CANADA LUMBERMAN, Toronto.

WANTED FOR CASH

Ash and Soft Elm

MOSTLY ONE-INCH, SOME ONE-AND-A-quarter and one-and-a-half inch, strictly first and seconds; also commons. Furthermore, Ash and Oak squares from one-and-a-half to four inches thick. Red Birch Lumber, 1 and 11, all thicknesses; also Red Birch Squares 3 x 5 and 6 x 6, ten feet and over long. Address all particulars as to dryness, quality, quantity on hand and price, to P.O. Box 2144, New York, N.Y.

SAW MILL AND TIMBER LIMITS For Sale.

THE UNDERSIGNED OFFERS FOR SALE his Mill Property, situated in the town of Peterborough, known as the Point St. Charles saw mill, together with piling grounds, pond, booms, chains, anchors, ropes, horses, harness, wagons, sleighs, slanting and driving outfits. Also, the Galway limits and about 15,000 pieces of logs on Noyes' Creek and Swamp Lake, composed of pine, cedar and hemlock. For all information apply to

A. McDONALD,
Point St. Charles,
Peterboro, Ont.

VALUABLE

Timber Lands

—AND— Saw Mills

FOR SALE

AT PARRY SOUND

THE MILL IS SITUATED ON THE WATERS of Parry Sound, and has good shipping facilities. The largest vessels or steamers on the lakes can load at the lumber docks. The mill will cut about twenty thousand feet of lumber and twenty-five thousand shingles in ten hours.

There are about seven thousand five hundred acres of timber pine, hemlock, birch, ash, oak, spruce, basswood, etc.

The timber is free of dues.

Parry Sound is the terminus of the Ottawa, Amprior and Parry Sound Railway, now in process of construction.

Price: Twenty-five thousand dollars.

Terms as may be agreed upon.

WM. BEATTY,

Parry Sound.

DICKSON & TOWNSEND

TELEPHONE 2972

SALE OF TIMBER LIMITS

THE FOLLOWING TIMBER LIMITS ON Georgian Bay waters will be sold by public auction at Toronto, at No. 22 King Street West (Manning Arcade), at 2.30 p.m.

Thursday, April 27th, 1893

PARCEL NO. 1.—Berth No. 5 in the Township of Patterson, on Lake Nipissing, near head of French River, 25½ square miles, more or less.

PARCEL NO. 2.—Berth No. 22 (sale of 22nd Oct., 1883), Township of Dowling, on Vermillion River, known also as No. 87 on map of 10th July, 1872, 36 square miles, more or less.

PARCEL NO. 3.—Berth No. 16 (sale of 22nd Oct., 1883) on French River, known also as No. 11 on map of 10th July, 1872, 36 square miles, more or less.

Terms and conditions made known on day of sale.

DICKSON & TOWNSEND, Auctioneers.

For other information apply to

ALEXANDER FRASER,
Westmeath, Ont.

Sale of CANADA PINE TIMBER LIMITS

ON THE NORTH AND EAST SHORES OF LAKE HURON.

THE unmentioned Timber Berths and Mill Property will be offered for sale separately, at Public Auction, in the City of Toronto, Canada, on

Tuesday, 25th day of April, 1893

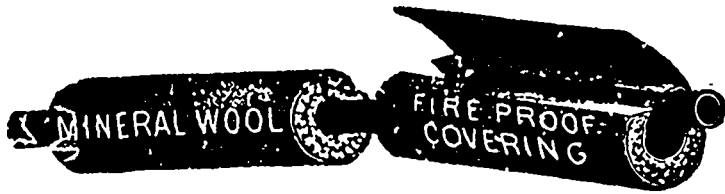
viz.: Berths Nos. 10 (sale of 1883) 69, 82, 136, 137 and 174 (the Township of Montgomery), containing in all 247 square miles of Pine Timber Limits in the District of Algoma, which have not been cut upon; and parts of the Townships of Gilson, Wood and Medora, containing 77 square miles of Timber Limits in the District of Muskoka, which have been cut over in parts; and the Saw Mill property situated on the Georgian Bay, at the mouth of the Muskoka River.

And also (by arrangement with the Collins Inlet Lumber Company) the two following Timber Berths, viz.: Township of Goshen, and Berth No. 59 in the District of Algoma and Nipissing, containing in all 72 square miles.

All the above Timber Berths water to the Georgian Bay. Maps and full particulars of each of the above properties may be had on application to

THE MUSKOKA MILL & LUMBER COMPANY,
Toronto, Canada.

24th February, 1893.



MINERAL WOOL

STEAM PIPE AND BOILER COVERING

Saves enough fuel to pay for itself in one season.

Is Fire-proof, Frost-proof, Vermin-proof and Indestructible

CANADIAN MINERAL WOOL CO., LTD. † 122 BAY ST., TORONTO

THE RATHBUN COMPANY

DESERONTO, ONT.

MANUFACTURERS OF

TERRA COTTA FIRE-PROOFING

For use in Old and New Buildings

Endorsed by leading Architects
Absolutely Fire-proof Deadens Noise
Does not Crack on application of Heat or Water

About as Cheap as Wool or Brick
Weight one-third that of Brick

..... Gives Warmth in Winter; Coolness in Summer

Cable Address
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CANADIAN WOOD GOODS

HAMBURG, GERMANY:
Office
Kl. Reichsstr., 17-19



LONDON, ENGLAND:
8 Union Court, Old Broad St., E.C.
and 80 Bishopsgate St., E.C.

Representative Lumber Manufacturers and Dealers

Towns	Railway, Express, or nearest Shipping Point	NAME	BUSINESS	Power, Style and Daily Capacity
Ottawa, Ont.	Ottawa	Booth, J. R.	Lumber, Wholesale and Retail.	Steam, Circular and Hand Mill
Ottawa, Ont.	Ottawa	Bronson & Weston Lumber Co.	2 Sawmills, White and Red Pine, Wholesale.	Water, Gang and Band, 450m
Ottawa, Ont.	Ottawa	OTTAWA LUMBER CO.	Lumber, Pine, Spruce, Hemlock, Wholesale.	.....
Ottawa, Ont.	Ottawa	Perley & Pattee	Saw and Lath Mill, Pine, Wholesale.	Wat., Gang and Hand, Saw 400m, Lath 70m
Parry Sound, Ont.	Utterson	Conger Lumber Co.	Lumber, Wholesale and Retail.	.....
Parry Sound, Ont.	Parry Sound	Parry Sound Lumber Co.	Saw, Shingle and Lath Mills, Pine, Wholesale.	Water, Gang, Circular, Saw 90m, Shingles 70m, Lath 30m
Muskoka Mill, Ont.	Penetanguishene	Muskoka Mill and Lumber Co., Head Office, Arcade, 24 King st. w., Toronto	W. Pine Lumber, Lath and Bill Stuff, all lengths.	2 Mills, Water, 1 Band, 2 Gangs and 3 Circulars.
Alexandria, Ont.	Alexandria	McPherson, Scheil & Co.	Cheese Box Factory, Pine, Spruce, Cedar	.....
Almonte, Ont.	Almonte	Caldwell, A. & Son	Sawmill, Pine, Spruce, Hemlock, Hardwoods.	Circular, 3m
Harrie, Ont.	Harrie	Dymont & Mickle	Sawmill, Pine, Spruce, Cedar, Hardwoods.	Steam, Circular, 40m
Barrow Bay, Ont.	Warton	Barrow Bay Lumber Co., Limited	Saw, Shingle and Heading Mill, Pine, Cedar Oak, Oak Railway Ties, Paving Blocks	.....
Blind River, Ont.	Blind River	Blind River Lumber Co.	2 Saw, Sh. and Lath Mls., Pine, Hem., Bl. Birch	Steam, Circular, 16m
Hoboyzeon, Ont.	Fenelon Falls	Boyd, Mossom & Co.	Lumber, Wholesale and Retail.	Stm., Hand, Cir., S. 75m, Sh. 60m
Bracebridge, Ont.	Bracebridge	DOLLAR, JAMES	Lumber, Shingles, Wholesale.	.....
Harrie, Ont.	Harrie	Burton Bros.	Lumber, Wholesale and Retail.	.....
Waulaushene, Ont.	Waulaushene	Georgian Bay Consol. Lumber Co. Hd. office arcade 24 King st. w., Toronto	Pine only.	Waulaushene mill, stm., 200m; Pt. Severn mill, water, 120m
Calabogie, Ont.	Calabogie	Carwell, Thistle & McKay	Lumber, Wholesale and Retail.	.....
Callander, Ont.	Callander, G.T.R.	John B. Smith & Sons Head Office, Sirachan Ave., Toronto	White and Red Pine Lumber, Bill Stuff, Lath and Shingles.	Steam, 2 Circular, 80m
Collins Inlet, Ont.	Collins Inlet	Collins Inlet Lumber Co.	Lumber, Pine, Oak, Ash, Birch, Whol. and Ret.	.....
Comber, Ont.	Comber	Ainslie, J. S. & Bro.	Saw and Stave Mill, Pine, Hardwoods.	Steam, Circular, 6m
Glamis, Ont.	Pinkerton	McIntyre, N. & A.	Saw, Shingle and Lath Mill, Timber Lands, Hemlock, Pine, Lumber, Hardwoods.	Steam, Cir., Saw 14m, Sh. 20m
Hamilton, Ont.	Hamilton	BRADLEY, MORRIS & REID CO.	Lum., Tim., Pine, Hem., Hwds., Whol. and Ret.	.....
Huntsville, Ont.	Huntsville	Heath, Tait and Turnbull	Sawmill, Pine, Spruce, Hemlock, Hardwoods.	Steam, Circular, 25m
Hamilton, Ont.	Huntsville and Katrine	Thomson, Robert & Co.	Sawmill, Pine, Spruce, Hardwoods.	Steam, Circular, 4m
Keewatin, Ont.	Keewatin	Dick, Banning & Co.	Sawmill, Pine, Hardwoods, Wholesale.	Steam, Circular
Keewatin, Ont.	Keewatin	Keewatin Lumber & Mfg. Co.	Saw, Lath, Sh. and Pl. Mill, Moving Posts, Pine	Water, Hand and Circular, 100m
Lakefield, Ont.	Lakefield	Lakefield Lumber Mfg. Co.	Lumber, Wholesale and Retail.	.....
Little Current, Ont.	Sudbury	Conlin, T. & J.	Sawmill, Pine, Ash, Birch, Oak.	Steam, Circular, 25m
Little Current, Ont.	Sudbury	Howry, J. W. & Sons	Lumber, Wholesale and Retail.	.....
London, Ont.	London	Gordon, James	Exp. and dir. in Am. Hwds. made to specification	.....
Longford Mills, Ont.	Longford	Longford Lumber Co.	Saw and Plan. Mill, Hemlock, Hardwds., Whol. Cherry, White Ash, Hardwoods, Wholesale.	Steam, Hand and Circular, 100m
Mount Forest, Ont.	Mount Forest	Greensides, W. S.	Saw and Plan. Mill, Tim. Lands and Logs, Pine	.....
Norman, Ont.	Norman	Cameron & Kennedy	Lumber, Wholesale and Retail.	Steam, Circular, 40m
Norman, Ont.	Norman	Minnesota & Ontario Lumber Co.	Hardwoods, Shingles, Lath, Handles.	.....
Louise, Ont.	Elmwood, G.T.R.	S. B. Wilson & Son	Lumber, Wholesale	Steam, Circular, 20m.
Toronto, Ont.	Toronto	Campbell, A. H. & Co.	Lumber, Wholesale	.....
Toronto, Ont.	Toronto	F. N. Tennant	Lumber, Wholesale	.....
Toronto, Ont.	Toronto	Donogh & Oliver	1 Saw, Shingle and Lath Mills, White Pine, Whol.	Com., Cir., Gang and Hand, 140m
Toronto, Ont.	Toronto	Victoria Harbor Lumber Co.	Lumber, Wholesale.	Com.
Toronto, Ont.	Toronto	W. N. McEachren & Co.	Lumber, Lath, Shingles, etc., Wholesale.	Com.
Toronto, Ont.	Toronto	James Tennant & Co.	3 Sawmills, Lumber, Barrel Heads	Steam and Water, Circular, Portable and Stationery, 10m
Warton, Ont.	Warton	Miller, B. B.	.....	Circular, Gang and Hand, 180m
Huckingham, Que.	Huckingham	Ross Bros.	2 Sawmills, Pine, Spruce, Hardwoods	.....
Toronto	Toronto	DeLaplante & Bowden	Pine and Hardwood Lumber, Whol. and Retail.	.....
Cookshire, Que.	Cookshire	Cookshire Mill Co.	Saw, Shingle, Planing, Stave and Heading Mill.	Steam, Circular and Gang, 60m
Montreal, Que.	Montreal	Dufresse, O. Jr. & Frere	Sawmill, Pine, Spruce, Hemlock, Hwds., Whol.	Steam, Circular and Hand, 50m
Montreal, Que.	Montreal	Roberts, Joseph & Fils	Saw and Planing Mills, Sash, Doors and Blinds.	Steam, Circular, 200m
Montreal, Que.	Montreal	Shearer & Brown	Int. Fin. Spruce, Hardwoods, Wholesale.	.....
Montreal, Que.	Montreal	MOODYVILLE SAWMILL CO.	4 Sawmills, Oak, Ash, Elm, Pine, Hem., Dim.	2 Stm., 2 Wat., Hand, Cir., 40m
New Westminster, B.C.	New Westminster	Brunette Sawmill Co.	Sawmills, P. Fin. Spruce, Cedar, Hardwoods.	Steam, Circular, 20m
Canterbury, N.B.	Canterbury Stn.	James Morrison & Son	Saw and Planing Mills, Sash, Doors and Blinds, Fir, Cedar, Spruce, Hardwoods.	Steam, Gang and Circular
Hridgewater, N.S.	Hridgewater	DAVIDSON, E. D. & SONS	Sawmill, Pine, Hardwoods.	Steam, Circular, 35m
			1 Saw, Shgle. and Lath Mills, Pine, Spr., Hwds.	Water, Circular and Gang, 200m

LUMBER TRUCK WHEELS

The Montreal Car Wheel Co.

.... MANUFACTURERS OF

CHARCOAL IRON GILLED RAILROAD WHEELS

OFFICES:
NEW YORK LIFE INSURANCE BUILDING, MONTREAL

WORKS: LACHINE, QUEBEC
We make a specialty of Wheels suitable for the requirements of Lumbermen and Street Car Service, and can supply them Horel, Finished and Balanced.

CORRESPONDENCE SOLICITED

OAK TANNED BELTING

TORONTO 20 FRONT ST EAST TELEPHONE 475 THE J.C.McLAREN BELTING CO MONTREAL

Lumbermen desirous of being represented in this Directory can obtain information in regard to rates by communicating with the Publisher.

MACHINERY

FOLLOWING LIST OF NEW AND SECOND-HAND Boilers, Engines and General Machinery for sale by The Canada Machinery and Supply Co., Brantford, Ont., dealers in new and second-hand machinery and supplies:-

- ONE BOILER, TO BRICK IN, 44 IN. DIA. x 11 ft. 7 in. long, 41 3/4 in. tubes, in first-class order.
ONE BOILER, TO BRICK IN, 44 IN. DIA. x 11 ft. 8 in. long, 48 3/4 in. tubes, in first-class shape.
THREE 25 H.P. PORTABLE LOCO. FIRE BOX BOILERS, in good order.
ONE 20 H.P. RETURN TUBULAR BOILER, to brick in.
TWO 6 H.P. FIRE BOX BOILERS FOR cheese factories.
ONE 12 x 16 SLIDE-VALVE ENGINE, BECK-ett's make.
TWO 9 x 12 SLIDE-VALVE ENGINES, Goldie & McCulloch and Morrison makes.
ONE 6 1/2 x 9 SLIDE-VALVE ENGINE, COPP Bros. & Barry make.
TWO 5 1/2 x 9 SLIDE-VALVE ENGINES, BECK-ett's make.
ONE 4 H.P. ENGINE, UPRIGHT, with 3 H.P. boiler combined on one cast iron base.
ONE 15 H.P. ENGINE, English make.
ONE 14 H.P. LEONARD MAKE ENGINE, nearly new.
ONE 12 H.P. HORIZONTAL PORTABLE EN-gine and boiler on skids; Ames & Co., makers, Oswego, N.Y.

MACHINERY:-

- ONE 24-INCH MCGREGOR, GOURLAY & CO. make heavy surface planer, almost new.
TWO 24-INCH CAST, GOURLAY & CO. MAKE light surface planers, in good order.
ONE GOLDIE & McCULLOCH THREESIDE moulder.
ONE ONE-SIDE MOULDER.
TWO 11-INCH WHEELS BAND SAWING machines.
ONE ALMOST NEW VERTICAL SPINDLE boring machine, McGregor, Gourlay and Co's make.
ONE ALMOST NEW IRON TOP JIG SAW, Cowan and Co., makers.
ONE GOOD SHAPER.
SIX GOOD SAW TABLES.

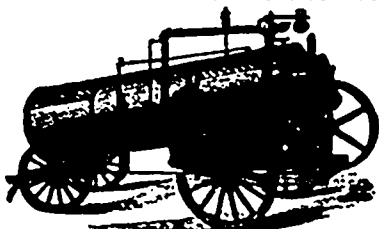
- ONE NEARLY NEW GOLDIE & McCULLOCH tenoner, with double copec.
ONE WOOD FRAME TENONER IN GOOD shape.
TWO UPRIGHT SWING SHINGLE OR or heading machines, with jointers.
ONE ALMOST NEW GENUINE "HAWLEY" gauge or handle lathe, with countershaft.
ONE ALMOST NEW SPINNING LATHE FOR making spun metal work, with countershaft.
FOUR DOWELL MACHINES.
ONE 20-INCH WATEROUS CHOPPER COM-plete with double elevators, equal to new.
FULL PARTICULARS CHEERFULLY GIVEN upon enquiry at the Canada Machinery and Supply Co., Brantford, Ont.

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One 16 x 32 square bed slide-valve engine, shaft 6 1/2 x 10 ft., fly wheel 108 in. diameter, 8 x 6 rim, iron pulley 108 x 24.
One pair of engines, right and left, 16 x 20. can be used separately or together, with two large pulleys and fly wheel and connecting shaft.
Three boilers 48 x 14 with large domes, full fronts and all fittings, fixtures and stack.
One 36 x 14 boiler, comparatively new, has been in use less than a year, and several portable engines from 12 to 20 horse power.

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The MONARCH BOILER (Patented) and HERCULES ENGINE



Portable from 6 to 20 horse power. Surpass portable steam power heretofore produced for strength, durability, compactness and the ease with which they can be moved.

The 20 horse power can be taken over the roughest roads, or into the forest, and set up as easily and quickly as an ordinary 20 horse power portable engine, and as firm as a brick-set stationary engine. Engines and boilers of every size and description. Rotary Saw Mills, Shingle and Lath Machines, Saw Grinders, Planers, etc. Mill machinery and supplies of every description. Every boiler insured against explosion by the Boiler Insurance & Inspection Co. of Canada.

Write for circulars.

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Successors to A. ROBB & SONS, Amherst Foundry and Machine Works, Amherst, N.S. ESTABLISHED OVER 40 YEARS.

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Canoe, Yacht and Boat Sails made to order. Perfect Fits Guaranteed. Every description of Lumbermen's Supplies and Waterproof Clothing.

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Limits looked after at Reasonable Rates

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Engineering Drawings Furnished.

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SCRIBNER'S LUMBER AND LOG BOOK OVER ONE MILLION SOLD Most complete Book of its kind ever published

Gives measurement of a kind of Lumber, Logs, Planks, Scantling; cubical contents of square and round timber; hints to lumber dealers; wood measure; speed of circular saws; care of saws; cordwood tables; felling trees; growth of trees; land measure; wages, rent, board, interest, stave and heading bolts, etc. Standard book throughout the United States and Canada. Get the new illustrated edition of 1882. Ask your book-seller for it. Sent post paid for 35 cents.

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MANUFACTURER OF

Lumber, Lath & Shingles

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USE SHOONERS BOX-METAL COPPERINE FOR SAW MILLS CIRCULAR SAWS PLANING MILLS AND HEAVY WORK. OLD MACHINERY MADE GOOD AS NEW. ALL SELL IT. HARDWARE STORES EVERYWHERE. PATENTED.

CANADIAN

LUMBERMAN'S DIRECTORY

AND INDEX TO THE PLANING MILLS AND SASH AND DOOR FACTORIES OF CANADA.

THE Publisher is now open to receive subscriptions for the above Directory of the lumber trades. No effort is being spared to make this publication thoroughly complete and reliable in every detail, and it is hoped that all MILLER subscribers interested will fill in the following subscription blank and return to this office at as early a date as possible.

TO THE PUBLISHER OF

THE LUMBERMAN'S DIRECTORY

AND INDEX TO THE PLANING MILLS AND SASH AND DOOR FACTORIES OF CANADA:

1893

Please supply.....with.....copies of the above Directory as soon as issued, for which.....agree to pay Two Dollars per copy.

All owners of saw and planing mills, wholesale and retail lumbermen, coopers, etc., are earnestly requested to furnish information asked for in following blank and mail same as soon as possible:

Card of Enquiry to Lumbermen.

Manufacturers of lumber, shingles, lath, staves, headings, etc., will please fill in this blank:

Power, style and capacity of mill:

Class of manufacture:

Post Office: Shipping Point:

Dealers in lumber, shingles, lath, etc., will please fill in following blank:

Wholesale or Retail: Class of stock handled:

Post Office: Shipping Point:

Owners of planing mills, sash, door and blind factories, will please fill in following blank:

Power and style:

Class of manufacture:

Post Office: Shipping Point:

(Signed)

.....P.O.

Province.....

Address all communications to

DIRECTORY DEPARTMENT, CANADA LUMBERMAN, TORONTO, ONT.

Do You Lack Steam? We Can Help You THE CANADIAN HOLLOW BLAST GRATE

A new and novel application of a principle centuries old. Step into the nearest blacksmith shop and see it in operation on a small scale.

The Hollow Blast Grate supplies the furnace fire with a blast of hot air sufficient at all times to insure the rapid and perfect combustion of fuel of every sort.

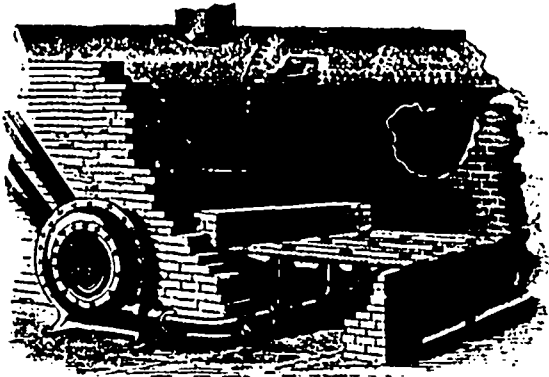
It is the only appliance that steams successfully with green or wet sawdust, tanbark or other refuse and waste.

It alone has solved the problem of steaming with the fine, compact dust of the band mill.

Regardless of the character of your fuel, we can greatly increase the volume of steam generated in your boilers.

IT COSTS YOU NOTHING TO TRY THEM

WE GUARANTEE SATISFACTION OR NO SALE



Furnace Fitted with Hollow Blast Grates and Apparatus.

HUNDREDS OF TESTIMONIALS LIKE THE FOLLOWING:

"Your Hollow Blast Grates have given entire satisfaction. They give us all the steam we want and effect a great saving in valuable fuel. We cannot recommend them too highly." - MICHIGAN STAVE & BARREL CO., LANSING, MICH.

"Their work is simply marvellous. They saved us the expense of an additional boiler." - DETROIT HOOP & STAVE CO.

"After nearly two years trial of your Hollow Blast Grates under so of our boilers we have experienced perfectly satisfactory results. We do not think any person or firm who lack steam can afford to be without them." - W. T. YOUNG & CO., Steam and Saw Mill, CRISTON, I.A.

"We are greatly pleased with your Grates. We can make all the steam we require, no matter how wet our fuel is. For burning sawdust they are unequalled." - STEINHOFF & GORDON, WATLINGTON, ONT.

"I do not consider a saw mill complete without Blast Grates." - AARON GORDON, DRUMMOND, ONT.

"I put in a set of your Grates a year ago, and they pleased me beyond expectation. I spent hundreds of dollars in various contrivances to burn elm sawdust, but without success. I now burn all my dust. I can keep up better steam pressure than I could before with dry wood." - C. E. NAYLOR, ESBY, ONT.

FOR INFORMATION, PRICES OR ESTIMATES, ADDRESS

THE CANADIAN HOLLOW BLAST GRATE CO., ESSEX, ONT.

A. ALLAN, President

J. O. GRAVEL, Secretary-Treasurer

J. J. MCGILL, Manager

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Canadian Rubber Company

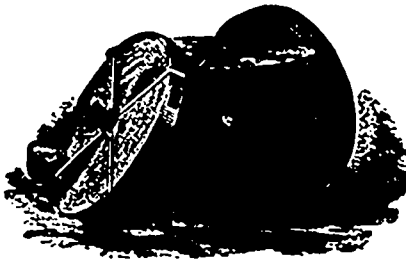
Capital, \$2,000,000.00

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**SUPERIOR QUALITY
RUBBER GOODS**
for Mechanical Purposes
RUBBER BELTING, PACKING, HOSE



FORSYTH.
Seamless Rubber Belting
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These Patents we control for Canada

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J. H. WALKER, - - Manager



... THE ... FLINT & PERE MARQUETTE RAILROAD

FROM
Port Huron and Detroit

Is the Short Line to
SAGINAW AND BAY CITY
(Centres of the vast lumber interests of Michigan)

MT. PLEASANT, CLARE, REED CITY
BALDWIN, LUDINGTON, MANISTEE

AND
MILWAUKEE AND MANITOWOC, WIS.

The last two named are reached by the Company line of Steamships across Lake Michigan.

The line thus formed is a short and direct route from
NEW YORK BUFFALO MONTREAL TORONTO
to ST. PAUL, DULUTH and Pacific Coast points.

Write either of the undersigned for Folders, which contain Maps, Train Schedules and much information of value to those contemplating a trip to any of the above-mentioned points.

W. H. BALDWIN, JR., General Manager. W. F. POTTER, Gen'l. Supt.

A. PATRIARCHE, Traffic Manager.

GENERAL OFFICES: SAGINAW, MICH.

Actual Results

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ONTARIO MUTUAL LIFE

on an ordinary Life Policy of \$1,000,
No. 1230 during its first 20 years,
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In 1872.... Paid \$36.47	In 1882.... Paid \$43.29
1871.... " 26.57	1881.... " 42.31
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1877.... " 19.16	1887.... " 42.19
1878.... " 17.32	1888.... " 42.82
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USE SPINDLERS HONOR BRIGHT
GOPPERINE
BEST MACHINERY BOOM-METAL EXTRACT.
CANADIAN MADE & SUPPLIES THE WORLD.
QUALITIES TO DO ALL YOUR WORK.
HARDWARES ALL YOUR WORK.
COOL BEARINGS, NO HOT BOXES.
EASY AS AN OLD SHOE.
GENUINE SAFEGUARD.
FOR ENGINEERS
HIGH CLASS
METAL

Rochester Bros.
COMMISSION AGENTS

Limits bought and sold on commission. Limits travelled and carefully prepared. Estimates given.

Some first-class berths on the North Shore of Lake Huron and on the Upper Ottawa now in our hands for sale.

Communications confidential. References given.

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"BUILD TO-DAY THEN,
STRONG AND SURE,
WITH A FIRM AND
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- Longfellow.

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WISH THIS TO BUILD
an advertisement
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will bring you
tenders from the
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MACHINE KNIVES
OF EVERY DESCRIPTION FOR
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Send for Price List

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MAITLAND, RIXON & CO.

OWEN SOUND, ONT.

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All kinds of Building Material kept in stock

WE MAKE A ... SPECIALTY OF LONG BILL STUFF IN ROCK ELM, PINE, CEDAR AND HEMLOCK
Quotations furnished on application

The Georgian Bay Consolidated Lumber Co.

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Wholesale and Retail Dealer in

ALL KINDS OF LUMBER

LUMBER SHIPPED TO ALL PARTS BY RAIL OR VESSEL

WHITBY, ONTARIO

The XXX Saw Gummer and Sharpener

HAS NO RIVAL FOR VARIETY, CAPACITY OR QUALITY OF WORK

OR FOR

SIMPLICITY, DURABILITY, CHEAPNESS

Will take saws from 6 inches to 6 feet diameter; sets the saw forward one tooth at a time automatically; sharpens any saw (rip or crosscut) perfectly, giving the teeth any desired pitch or bevel, and making all the teeth exactly alike. Will sharpen 20 teeth in an ordinary mill saw in one minute, or 100 teeth in a shingle saw in four or five minutes. The cut shows outline of mill saw 54-inch diameter.

GILMOUR & CO.
Lumber Manufacturers and Dealers

Trenton, Ont., 26th August, 1891.

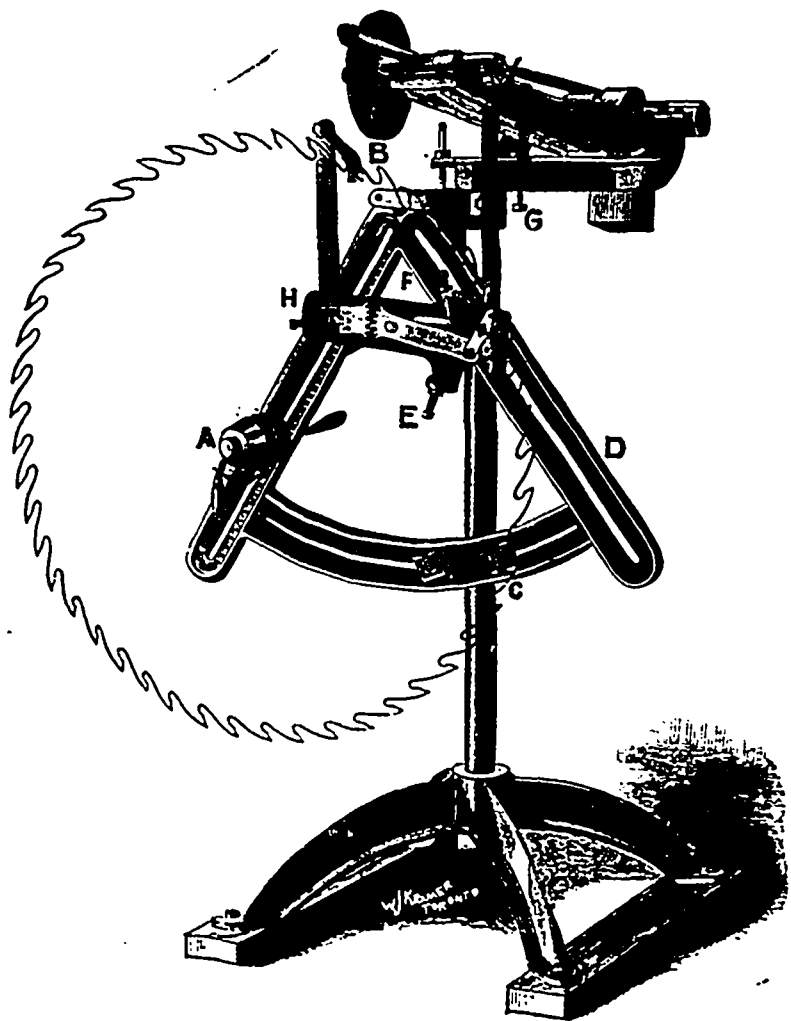
F. J. DRAKE, Belleville, Ont.:

Dear Sir,—Your patent Saw Sharpener is giving us good satisfaction. We average about 100,000 shingles per day and sharpen the saws for both automatic and hand-feed machines with your Sharpener. As it keeps the teeth all perfectly uniform it must be easier on the machine and sawyer too. It causes also a great saving in files. We now only use about one ten-inch file per week. Before putting in your machine we used about six per week. As regards your Improved "XXX" Shingle Packer—it works first rate and is the only machine we could get that would press tight enough. We consider it the best we ever had.

Yours truly,
GILMOUR & CO.

MANUFACTURED ONLY BY

F. J. DRAKE, Belleville, Ont.

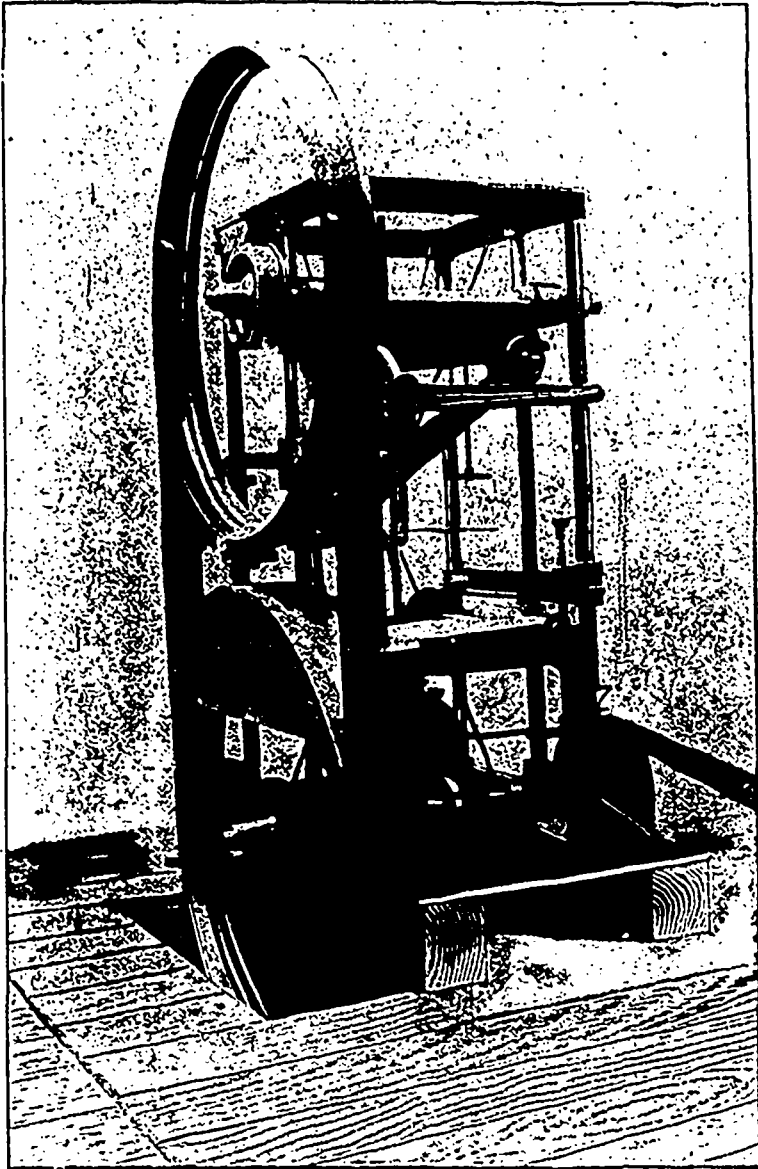


MAKE NO MISTAKE

ORDER

THE

Waterous No. 2 Band Saw Mill



From a photograph of a No. 2 Band Mill being tested in our works, saw running 10,000 feet per minute. Exposure 2 1/2 minutes. Although only set up on blocks, not bolted down, such was the perfect balance of wheels, and stiffness and breadth of bearing of frame, no vibration was perceptible to the eye, nor to the hand placed on the frame.

It has more special features to commend it than any other mill

GREAT STIFFNESS

From its breadth of frame running full size to upper wheel.

PERFECT STEADINESS

Under motion ; secured by special machinery for turning wheels, and wheels being a ground taper fit to shafts not keyed on. No loose supports to permit of adjustment as in mills with outer bearings.

TENSION

The most sensitive ; upper shaft being placed in connected boxes hinged to triangular frames, tension weights have only to support wheel shaft and boxes. No friction of bearings or extra weight to overcome.

STRAIN ON SAWS

25 % to 75 % less than usually put on by the weights.

SHORTEST SAWS

By three to fifteen feet.

FOOTSPEED OF SAWS

The highest attainable with consequent increase of capacity from reasons given above.

OFF-SETT

The most simple, applicable to almost any carriage, saving expense.

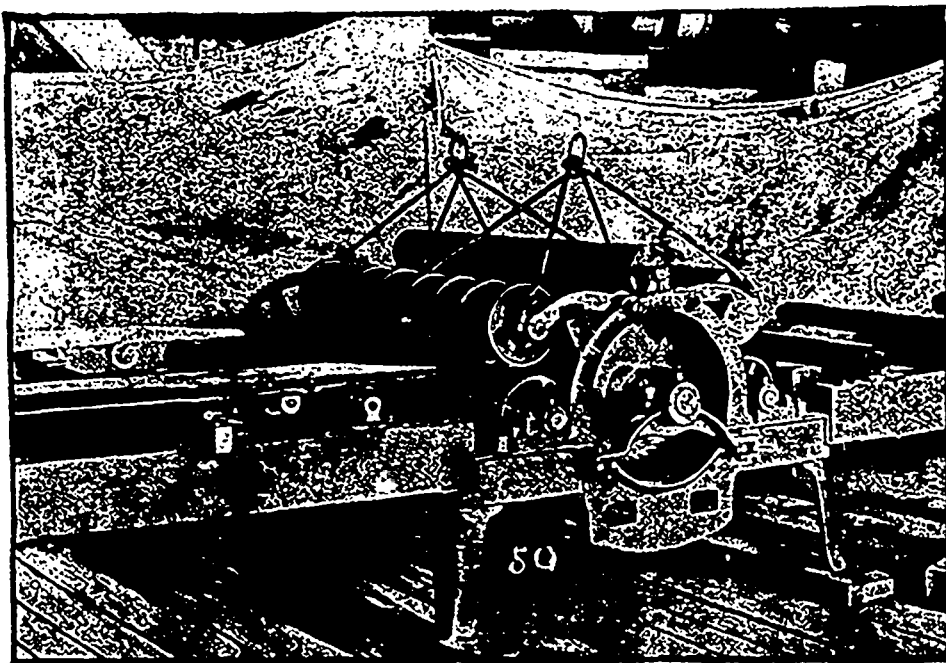
Nine—9—No. 2 Band

Mills sold this season to some of the largest Lumbermen in Canada. We can still fill a few more orders for early May delivery, as we are running our works 15 hours a day.

HAVE THE BENEFIT OF THE BAND ON THIS SEASON'S CUT

ORDER NOW. YOU WILL NOT REGRET IT!

**Waterous,
Brantford, Canada**



4 Saw Edger, iron guides with lever adjustment, iron rollers. Automatic device for crowding lumber against guides ; removable bridge tree, arranged with divided rolls to allow two men to edge at once. Best Edger in the market.

F. E. DIXON & CO.

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Star Rivet LEATHER BELTING

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OFFICE:

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Napanee Cement Works, Ltd.

NAPANEE MILLS, ONT.

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PARTICULARLY ADAPTED FOR DAMS, SMOKE-STACKS, FOUNDATIONS, CULVERTS, CISTERNS, CELLARS, ETC. LARGELY BEING USED IN THE ST. LAWRENCE RIVER CANAL. ENDORSED BY LEADING RAILWAYS AND CONTRACTORS.



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BREAKING STRAIN 6 IN. "CAMEL" HAIR BELT ----- 14,181 lbs.
" " 6 IN. ENGLISH OAK DOUBLE LEATHER ----- 7,522 "

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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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Dries Hard and Soft Wood Lumber Without Warping, Checking or Bluing

The...
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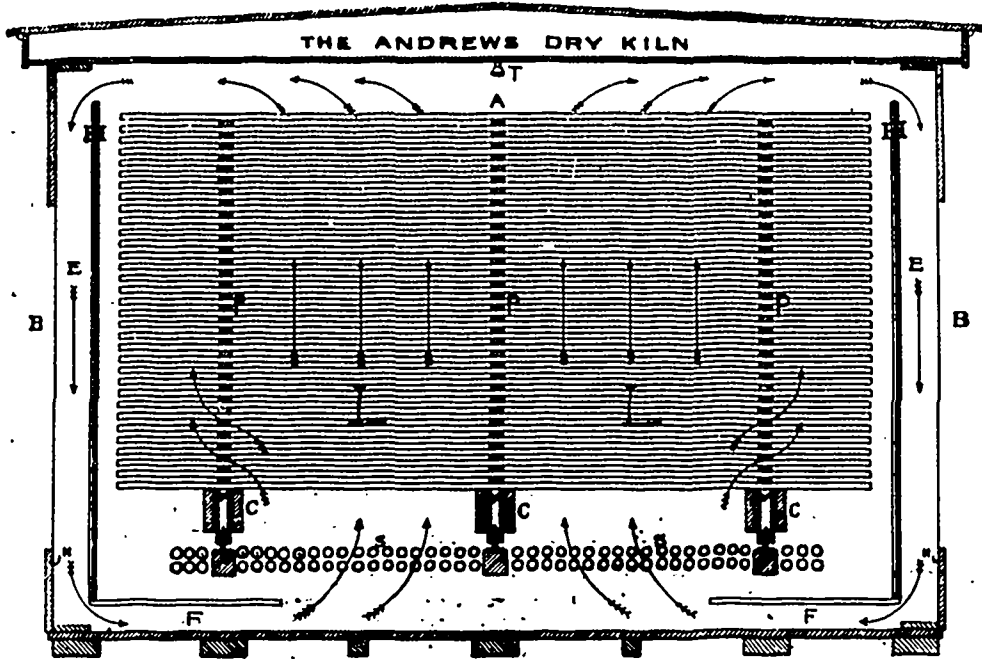
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GENERAL AGENT FOR THE DOMINION

THE ANDREWS DRYER

For Lumber, Shingles, Staves, Heading, etc.



THIS DRYER

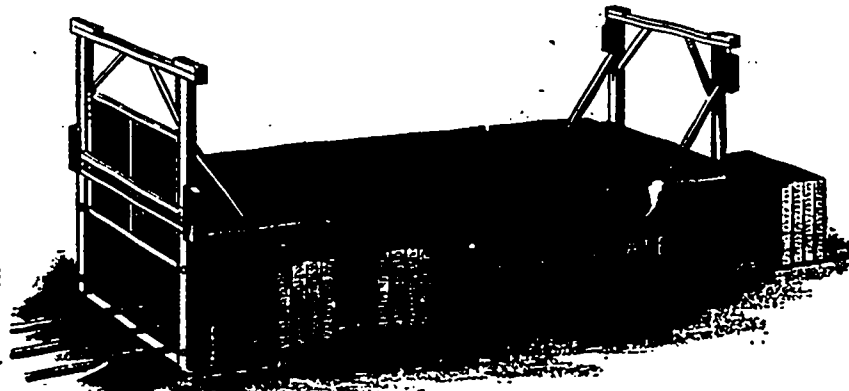
HAS PROVED TO PURCHASERS TO DO WHAT IS GUARANTEED IN SAVING THEM MONEY IN

Freight, Insurance, Time, Interest, Expense, Capital, Yard Room, Labor

There may be persons who do not appreciate the advantages of the artificial drying of lumber. But the shrewd men, in the manufacture of furniture and other woodwork where reputation would be sacrificed by a lack of proper material for good gluing and finishing, recognize a good system of drying as an important element of their success. High scientific authorities and thoroughly practical men are now agreed that the hot-blast and rapid-current systems ARE WASTEPUL, and that steam heat is the only safe means for artificial drying. The mode of applying steam heat most efficiently and economically is therefore now the essential point. The Andrews Dryer accomplishes this result more surely than any other known system.

This system and apparatus covered by letters patent.
 A-Drying-Room. BB-Brass Condensing-Walls. OOO-Lumber Cars. EE-Down Air-Flues. FF-Bottom Air-Flue. HH-Inside Walls, protecting meta' from heat. LL-Lumber on cars. NN-Brass Gutters for receiving condensed moisture. PPP-Sticks between lumber. SS-Double Steam-Colls. T-Automatic Steam Fire-Extinguishers. Arrows show direction of currents of air.

- NO FAN
- NO ENGINE
- NO SMOKE
- NO CHIMNEY
- NO SPECIAL FIREMAN OR FUEL
- NO EXPENSIVE BRICKWORK
- NO RISK OF FIRE
- NO CHECKING OR WARPING
- NO CASE-HARDENING
- ... NO EQUAL ...



Outside View of the Andrews Progressive Kiln, showing Lumber placed crosswise the building, on cars.

'WE PUT GREEN SPRUCE IN DRIPPING WITH WATER, AND IN EIGHTEEN HOURS IT WAS DRYER THAN LUMBER THAT HAD BEEN STUCK UP IN THE YARD ALL SUMMER.'

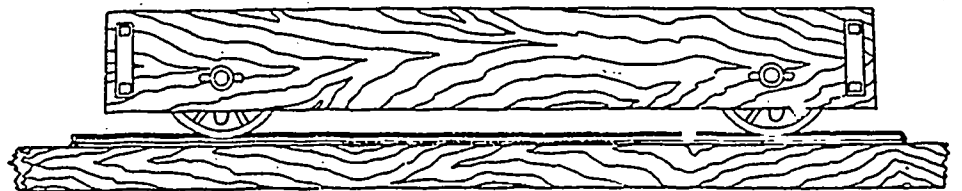
This is the verdict of a Quebec lumber firm, and we can give equal results every time.

The Andrews Lumber Dryer

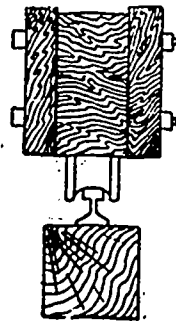
Has been proved to possess the following points of excellence:

- 1st. That its drying is rapid and perfect.
- 2nd. That external and internal checking and discoloration are entirely avoided by this method.
- 3rd. That the drying is done by a CONTINUOUS system and the temperature of the kiln is under absolute control at all times.
- 4th. That our Dryer is free from the varying air currents (always wasteful) incident to all fan and open-draft kilns.
- 5th. That our drying is done by the slow continuous movement of a large body of slightly-moistened air.
- 6th. That our condensing surface is so very large as to be adequate to precipitating the moisture of the saturated air with the least amount of movement.
- 7th. That our piping is tested by high pressure and every outfit is fully guaranteed.
- 8th. That by our improved system of drainage the freezing of pipes becomes impossible.

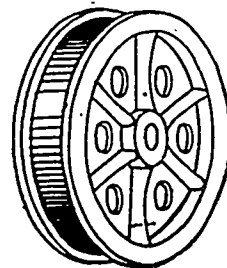
SEND FOR CIRCULARS



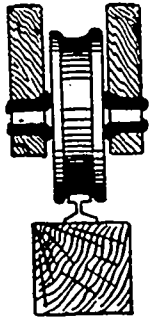
SIDE VIEW OF CAR AND TRACK.



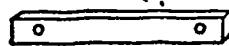
DOUBLE FLANGE WHEEL ON SINGLE TRACK



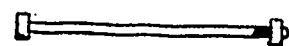
CAR WHEEL, DOUBLE FLANGE



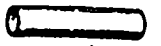
SECTION OF CAR TRUCK, SHOWING AXLE BOX.



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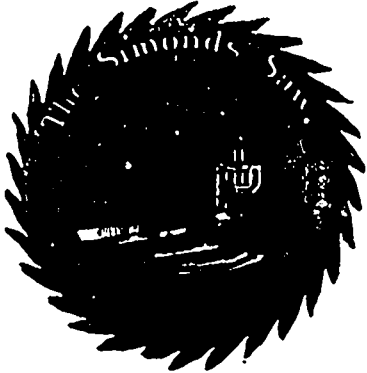
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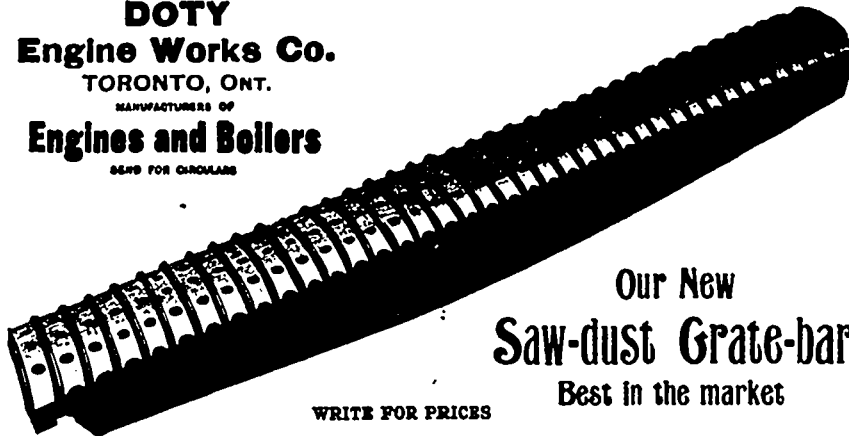
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