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THE CANADA LUMBERMAN

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CROSS-CUT BAND SAWS.

THE cross-cut band saw is designed to take the place of the drag and circular saws for cross cutting. As is shown by accompanying cut, the saw passes over the pulleys, A A, as in ordinary band saw rigs. At the points B B are rotary guides made similar to a small circular saw arbor. The tooth edge is turned down, the back passing between these collars on guide, giving the saw a quarter twist from the band wheel to the first guide, and between the two guides the teeth are turned down at right angles to the blade when it passes over the pulley again. After passing the second guide it twists back again to pass over the driving pulley.

At the point C is a guide that prevents the frame from moving out of a perpendicular line while moving up and down. The frame D is pivoted at the point E, and is balanced by the weight F, so it will remain in any position, and is easily moved up and down by the operator. The makers claim for this cross-cut band saw rig that, it will cut double the amount of any drag saw rig, with half the power, the saw safe being only 1-16 inch. It is easily set up—requiring no foundations—runs perfectly still, no shaking or jerking. They claim that it cuts the block smoother than can possibly be done by either drag or circular saws; that it requires less filing than a drag saw to do the same work, as the plate is so very thin (21 gauge); and lastly, that it is a pleasure for a mechanic to operate it, it does its work so nicely. This saw is manufactured by the Eastman Lumber Co., Eastman, Que.

ELECTRICITY AND WATER-WHEELS.

THERE is no doubt that the growing use of electricity will, in the end, say the American Machinist, materially help the trade in water wheels that has been rather hardly pushed by the steam engine. Water powers are being, and will be, turned to account that would remain dormant but for electrical distribution of power. Where mills and factories can not be well located the energy of the falling water may be taken by electricity to convenient positions, and to some extent this is being and will be done. This will, however, cut but a small figure in the manufacture and sale of steam engines—probably not enough of a figure ever to be noticeable. It will in some instances provide for locating shops and factories that would not otherwise be built, and provide for the lighting of places that would otherwise grovel in the darkness of gas, or oil lamps. Electricity will help the water wheel without, to any appreciable extent, injuring the steam engine.

THE STEAM GAGE.

IN placing the gage on boilers, says Power, it should be so connected as to take steam from a part which will be as free from vibrations of pressure as possible, that is, away from the outlet to the engine, and a siphon should never be omitted. It is also necessary that the gage shall not be placed at or near the lower level of a connecting pipe which has a drop of any extent, which will create an excess of pressure on the dial by the weight of water on the column. In a battery of boilers there should be a gage on each boiler and not one gage for the whole.

Too much tension tends to destroy the elasticity of a belt, and when its tension is gone the belt is useless. Then, too, useless tension makes useless friction, and friction wears out journals and boxes, while it consumes more power,

BY THE WAY.

TIME works many changes. It is hardly safe for a man to be too dogmatic in these days of quick living and thinking. The fancy of to-day may be the fact of to-morrow. A suggestion to establish schools of forestry would, not far back in the present decade, have been laughed out of court by every lumber journal in the country. To-day, however, we find the lumber press and lumbermen seriously considering the question of establishing chairs of forestry in our universities, and of giving the subject a place upon our school curriculum.

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In other lines of commerce there is nothing very new in the technical school or academy for the special training of men and women in the trades that they may be following. One of the most conservative trades to take hold of work in this line has been that of flour-milling. Without getting out of the realm of level-headed business practice, why should we not have schools of for-

the Biltmore forest in North Carolina. This forest is the property of Mr. Geo. W. Vanderbilt, and his purpose is to treat the Biltmore forest systematically on the lines of forest management. The experiment so far may be said to have been fairly successful and with perseverance along that line something practical is likely to be attained. In remarks, suggested by Mr. Vanderbilt's experiment, a writer in the Lumber Trade Journal, of New York, expresses the opinion that there is an opportunity, owing to the similarity in many of the forests in the United States and Canada, for the effecting of an arrangement for a system of forestry schools suitable to the wants of either country. Such schools might be established at the east on the dividing line between Canada and the United States, where common teaching might be had for young men from either country, who were desirous of learning forestry.

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Our cotemporary, the Northwestern Lumberman, of Chicago, who does not usually throw much sentiment

into his views of lumber matters, speaks out in an article a week ago, saying that nothing is plainer than that the American people must be educated up to the importance of forestry, and thinks it would be an excellent idea for the teachers in our public schools to give their pupils a little talk whenever they could handily do so on the beauty and importance of trees. \$50,000 is granted by the Washington authorities for the maintenance of the forestry division of the United States government, a sum which the Northwestern Lumberman does not hesitate to say is paltry and insignificant in contrast with the importance of the subject. Harper's Weekly of late date strongly advocates the giving of needed attention to the question of forestry. Prof. E. G. Houston, of New York, has just delivered a lecture on forestry, in which he advocates making elementary forestry a study in the lower schools, and is of the view that the tree planting practice, common now both in the schools of the United

States and Canada, furnish an excellent opportunity for the inculcation of thousands on the subject.

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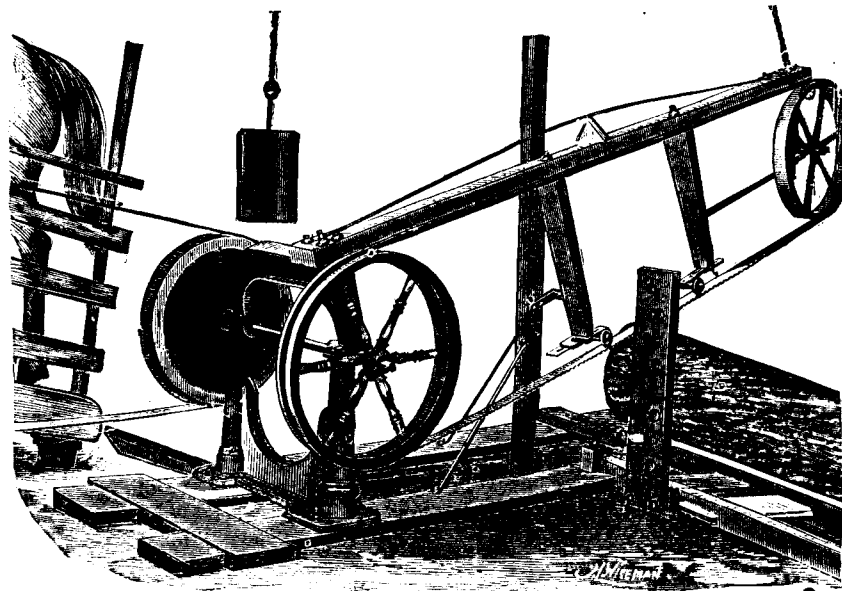
Where does Canada stand on the subject? In the person of the late forestry commissioner Phipps, no country had a more enthusiastic and intelligent student of this question, and he never lost an opportunity to keep the matter to the front. It is to be hoped that his successor, the Hon. C. F. Fraser, will see his way to, probably, further develop work on these lines, and devise plans, possibly, that will bring the question in more practical shape into our public schools. We are ourselves no sentimentalists on the question, but the necessity for greater care to the forests of Canada is becoming growingly noticeable to all who give unprejudiced thought to the question. We shall be glad to know what LUMBERMAN readers think of the subject.

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ONE of the most enterprising American firms owning limits in Canada is J. W. Howry & Sons, Michigan. Though severe depression has existed with lumbermen in the States, and things here have been sympathetically slow, this firm is showing very little restriction in business operations. Their mill at Fenelon Falls is now in operation, and they are already engaging men to start fresh camps at once. They will run two camps on the north shore of Georgian Bay and several near their mills at Fenelon Falls. What stock will be cut in Georgian Bay waters will be towed to Saginaw.

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The question has come suggestively to the front in the United States through a little pamphlet, giving an account of the treatment and results of the year's work on



CROSS-CUT BAND SAW.

TALKS WITH WOOD-WORKERS.

A PAPER of some length, but of more than ordinary interest, on progress in the art of woodworking, has recently come under my notice. The writer, Mr. C. R. Tompkins, M. E., will be known, no doubt, to many readers, as a frequent and always able contributor to the trade press. The art of woodworking is believed to have been one of the earliest practiced by men, and its importance is shown by the fact of its continuing to exist under conditions of constant development.

* * * *

Previous to the introduction of the saw mill, the cutting of lumber into boards or planks, both in America and England, was performed by hand by the process known as pit-sawing. The log was placed upon a pair of saw-horses high enough to allow one man to stand beneath the log, while the other stood upon it, the two working a saw of sufficient length. Improved machines and appliances in woodworking have had to run the gauntlet of strong opposition, as has been the case with every new invention. When the first attempt was made to introduce the saw mill in England, the hand sawyers by their opposition practically placed a veto upon it. It is stated that in 1663 an enterprising company employed a Dutchman to erect a new saw mill in London, but that the enterprise had to be abandoned on account of the opposition of the hand sawyers. In 1767 a saw mill was erected and operated by a windmill at Limehouse, Eng., but it was soon destroyed by a mob. Another erected in the south of Scotland about the same time shared the same fate. Time, however, overcame prejudice, until to-day in England or America the saw mill is a feature of the age, until something better comes along.

* * * *

Next to the saw mill the most important machine that has been introduced, and one that has had more effect upon the progress of building than any other, is the planing machine, which dates from the invention of William Woodworth in 1826. Not only did the work of the planing machine of itself give a great impetus to the art of woodworking, but its introduction demonstrated that lumber could be dressed rapidly by the action of rotary cutters, leaving the inventors to apply the same principle to machines for other purposes.

* * * *

When the planing machine was introduced among British workmen the same spirit of opposition was manifested as against the saw mill. Excitement with journeymen carpenters ran high. They claimed that if machines of that kind were allowed to come into general use they would soon be thrown out of employment and their families would suffer for the necessities of life. In some cities they refused to lay flooring that was planed and matched by machinery. But again time overcame prejudice.

* * * *

The moulding machine with its modern improvements has had much to do with progress in woodworking. Before the invention of this useful machine all mouldings were worked by hand, and only the plainest and simplest style of mouldings were used, but the demand for more artistic woodwork has brought the improved moulding machine into general use. But still the demand for artistic woodwork continued, and it has led to the invention of many other complicated and useful machines. Not only intricate carved work, but irregular-shape mouldings of the most elaborate kind, which were formerly worked only by hand, are now produced by special machines, which perform their work more accurately and in less time and more cheaply than hand labor. This change has demanded not only more accurate and skilfully-constructed woodworking machines, but a more skilful and intelligent class of woodworkers to operate them. In machine-stuck mouldings especially there is a great change as compared with those stuck at the present time and those of a few years ago. Architects and builders are more exacting than they were formerly. Once they were satisfied with mouldings provided they were of the correct shape and an even thickness, and if the surface required smoothing down by the liberal use of sandpaper, or sometimes the moderate use of a hand plane, no objection was heard. Even with the imperfect state of the art, the moulding machine was far preferable to the hand.

Probably no other branch of the art of woodworking has made more rapid advances than the manufacture of furniture by the use of machinery. It does not require a very old man to remember when most of the furniture was manufactured by hand, and the village cabinet maker, who was also an undertaker, was an important personage. When a young couple were married, the cabinet maker was called upon to furnish the necessary furniture for housekeeping, when baby was born, none but the cabinetmaker could furnish him with a suitable crib; and when death invaded the domicile, his services were again called into requisition to furnish a suitable casket and assist in consigning the body to its last resting-place. But the rapid progress in the art of woodworking has wrought a complete change. The village cabinet-shop has changed to the furniture store, and undertaking has become a distinct branch of business, the supplies in both cases being obtained from the factories, where machinery performs the work more cheaply and accurately than hand labor. It is within comparatively recent years that the makers of woodworking machinery have turned their attention to the construction of machinery specially adapted to the manufacture of furniture. Formerly it was thought that the same class of machines used in planing mills and sash and door factories were also adapted to the manufacture of furniture. The use of such machinery tended to reduce materially the cost of production, but the pressure of competition in the furniture trade created a demand for better facilities in order to increase the output, while reducing the cost of production.

* * * *

The whole history of woodworking machinery goes to illustrate very strongly the advancements of invention in mechanical lines. I suppose that a study of progress in invention in many other departments would show equal advances, but this much is sure, that the woodworking trades have been the means of drawing forth some of the cleverest inventive spirits of the age.

JAS.

BAND SAWS.

SAWS may be divided into four general classes—reciprocating, circular, cylindrical, and band or ribbon. The office of a saw is to sever by removing or wasting material, hence the thinner a saw can be had the more economy of power and materials. There is certain limit of thinness beyond which a Mulay saw cannot go without bending, as long as it has a thrust instead of a pulling cut. The sash (or gang) saw can be made thinner than a thrust-cut Mulay, on account of being strained from both ends. The circular saw commences to limber out and wave at too high velocities, and (except for veneer cutting) must be thinner at the centre than at the circumference, to give clearance and to prevent binding and heating. Some economy of kerf and power is gained by the "double circular" mill, when two small circulars running in opposite directions, one cutting from the top and the other from the bottom of the log, in the same plane, are used instead of one large one. Something partly answering the purpose of straining is gained by the "side guides" of the circular saw, but still they waste stuff and power. As the cylinder saw never comes into competition with the Mulay, sash, circular or band saw, it may be left out of the present consideration.

The band saw has the advantage which the sash saw has over the Mulay, in being strained; and that which the circular has over both the Mulay and frame saw, in having a continuous instead of a reversing motion. The latter property makes it steady, running like the circular, and the former permits of its being thinner than the circular, and making, in consequence, less kerf, and taking less power to run it. It has the additional advantage over the circular, that it will cut other than in straight lines or flat planes.

The circular should not be used for work thicker than one-third the saw diameter. A 20in. square cant hence necessitates a 60in. circular, with a thickness of $\frac{1}{2}$ in., and a kerf of 5-16, or two 30in. saws, 3-16in. thick, cutting out a $\frac{1}{2}$ in. kerf. If we are cutting 1in. stuff with single saw we need nearly 21-16in. of wood to make a 16-16 board, which looks very much like 5-16=thirty-one and a quarter per cent. kerf, compared with the

board, or 5-21=23 8 per cent. of the entire square cant wasted.

Using the double mill and thinner saws, we find about 5-4in. of wood necessary to the production of a 4 4in. board, being 25ft. of kerf for every 100ft. of board, or twenty per cent of the log turned into sawdust.

A band saw to effect this same work need be but 1 16 in. thick, and cut a kerf of but 3 32in. This means that an inch (32-32in.) board takes but 35-32in. of wood to cut it, being 3-32 as much kerf as board, and 3 35 in., or 8 $\frac{1}{2}$ per cent. of the log wasted in sawdust. In other words, the band saw cuts 3-32in. kerf to the single circular's 10-32in., which looks as though it made 10 $\frac{1}{32}$, or 333 $\frac{1}{3}$ per cent. as much in kerf as the band (and consequently in power). A 20in. cant which is 320 16in. thick, will cut about 320-21= fifteen 1 in. boards if a circular be used, but if a band saw be used it would cut about 640-35 or eighteen 1in. boards. The band saw is hence 3-15=twenty per cent. more economical as regards products. If the same saws were set to cut 1in. stuff out of a 20in. squared log, the circular would take 8-16 + 5-15 = 13-16 = 26-32 of wood to cut a $\frac{1}{2}$ in. board, and the band would take 16-32 + 3-32 = 19-32 of stuff to cut out the same. The circular would hence take 26 $\frac{1}{32}$, as much stuff for a given product as the band, its excess of stuff required being 5-18 or 26.3 per cent., 20in. square cant would cut 320-13 or about twenty-four $\frac{1}{2}$ in. boards with the circular, while with the band it would cut about 63-19=thirty-three. Producing $\frac{1}{2}$ in. stuff the band would turn out 33-24=129 per cent. as much stuff as the circular.

It will be seen that in re-sawing the band presents special advantages in economy of stuff and power. As regards quality the band saw should scratch less stuff than the circular. The band offers for some timber cutting the best advantages of the circular in smooth and continuous action, and that of the scroll (or "jig") in capacity to saw at an angle, curve or bevel. Polytechnische Revue.

HIGH SPEED ENGINES.

WE are very apt to think only of our own particular branch of engineering, says the Tradesman, when discussing any problem pertaining to it and this seems particularly so in the case of the high speed stationary engine. In stationary practice we see in first class engine rooms the high speed engines guarded with particular care and the room as free from dust and dirt as it can be made, so as to give all the bearings as little grit or foreign matter as possible. And on a 12 x 18in. high speed engine for sample, running perhaps 300 revolutions per minute, we think it wonderful that it runs and keeps cool, think the piston speed enormous, and hardly dare breathe while near it for fear of a hot blast. Yet in locomotive practice we have speeds exceeding this in many instances, and have the engine without any foundation, so to speak, the main boxes never in line (going up and down over the frogs and crossings, and Jersey sand blowing around the engine until the running parts are almost white as snow, yet the engine runs, and gives comparatively little trouble. So it seems foolish to brag so much about our high speed stationaries, when if run under the same conditions as the locomotives, they would be apt to give unending trouble.

On the other hand, it is very probable that if a locomotive was pinned down to a foundation it would be a little better, as the freedom of motion to all its parts must be in a measure responsible for their running all, the swinging and shaking absorbing jars which might be noticed materially if on a solid foundation.

THE GEAR BUSINESS.

THE gear business has grown to be quite extensively much so that one of the firms in this line has decided to secure a patent on bevel gears with plain surfaces for the flanks of the gear teeth. It may be that this firm has a special curve of their own to run with a straight tooth, but if they will look into the theory of the matter they will find that there is only one form that will run properly with a straight flank, and that form is determined by the flanks themselves, without any discovery needed from any source.—Journal of Commerce.

VIEWS AND INTERVIEWS.

A Destructive Insect.

A report that has recently been issued gives some valuable particulars of the so-called spruce-destroying insect, which has done great damage to the spruce trees in the Adirondack region. Upon cutting down one of the infected trees for examination, longitudinal furrows were found, varying from 1 in. to 6 in. in length under the bark, each occupied by one or two insects. The eggs are deposited along both sides of the upper part of the furrow. They lie close to each other, almost or quite in contact. When the larvæ emerge from the eggs they begin to feed upon the soft cambium, and to work their way under the bark at right angles to the main furrow. At first they are so minute, and work so close together, that they make no distinct furrows, but seem rather to devour entirely a very thin layer of the cambium. As they increase in size they gradually begin to form distinct furrows, and to take directions more divergent from each other, and from their original course. In this way colonies from contiguous furrows at length run together, and in time the whole trunk is surrounded by multitudinous pathways, and the death of the tree is accomplished. It is considered pretty evident that the trees are attacked all along during the months of June and July, and possibly as late as August. It is also suspected that the parent insect, after having established a colony in one place, may emerge from her furrow to repeat the operation in another place, either in the same trunk or another one; but this point could not be ascertained definitely.

Hints to Sawyers.

The following practical suggestions to sawyers are made by one who writes as though he knew his business:—First, acquire sufficient knowledge of machinery to keep a mill in good repair. Secondly, see that the machinery and saws are kept in good order. Thirdly, it does not follow that because one saw will work well, another will do the same on the same mandrel, or that even two saws will hang alike on the same mandrel. No two saws can be made that will run alike. Fourthly it is not well to file all the teeth of circular saws from the same side of the saw, especially if each alternate tooth is bent for the set; but file one-half the teeth from each side of the saw, and of the teeth that are bent from you, so as to leave them on a slight bevel and the outer corner a little the longest. Fifthly, never file any saw to too sharp or acute angles under the teeth, but on circular lines, as all saws are liable to crack from any sharp corners. Sixthly, keep your saw round so that each tooth will do its proportional part of the work, or if a reciprocating saw, keep the cutting points jointed on a straight line. Seventhly, the teeth of all saws wear narrowest at the extreme points; consequently they must be kept spread, so that they will be widest at the very points of the teeth, otherwise saws will not work successfully. Eighthly, teeth of all saws should be kept as near a uniform shape and distance apart as possible, in order to keep a circular saw in balance and in condition for business.

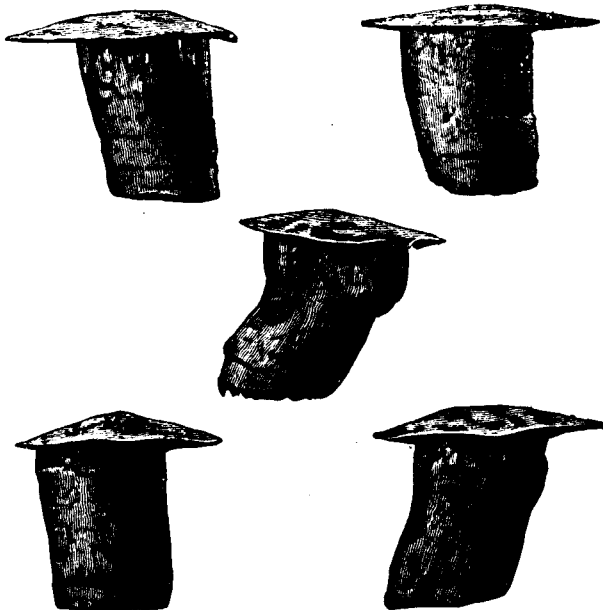
Getting Out Mahogany.

Mahogany, we are told by a writer in the London, Eng., Carpenter and Builder, though a very valuable wood is hard to get out of the forest where it grows. The way to go about the work of getting out mahogany logs is, first, to get a concession from the Nicaraguan Government. You must stand in, as the saying goes, if you get a concession; but an enterprising citizen from any country can go there and establish himself in the favor of the officials, and if he has a good record at home as a man able to attend to business, they grant him a privilege. But that is only the beginning of the trouble one has in cutting and exporting the wood. You then proceed to make bargains with the natives to cut and haul logs out of the forests. If you treat them kindly they will work for you—for a time at least. The best Indian labour costs about 2s. per day. It is often hard, however, to get them to work, as they live on fruits, and can sustain themselves without labour of any trying kind. Half of the year is called the rainy season, and it rains from May to October. It is then so wet, that one finds it impossible to get out any timber, and no

one will work during the wet season. When the dry season opens they commence operations if you can get enough labour. You have to be careful with them, as they become easily misled, and often think you are taking some advantage of them. When they become convinced that something is wrong, whether they have cause to believe that such is the case or not, they get angry, and the feeling spreads among all the tribes. The woods are so dense and the work so trying on men brought there from other countries that they cannot stand it, and there is no profit in paying them what they require to risk their lives among the snakes and in the swamps where the mahogany grows. When the timber is cut they haul it, one log at a time, on a two-wheeled ox-cart especially made for the purpose. It is a very slow process, but it is the only practicable way to get the timber out. There are 400 and 500 logs to the acre, and the price of the wood is so high, partly because the timber is so hard to obtain. The average price for a good mahogany log is £25. The trade market for mahogany is in France. The price paid there is better than in the United States, where some logs are shipped and the money is paid as soon as the logs arrive in port. There are not so many fortunes in mahogany as some people imagine, as the wood is difficult to draw from the tangled forests of Nicaragua. When a man from the North goes to Nicaragua he stands the climate very well for a year and is very energetic, and wonders at the spirit of laziness that prevails among all the people. But after awhile he is overcome by the climatic conditions, and gets lazy, and is unable to work three good hours a day—if he doesn't die in the meantime.

A CASE OF DEFECTIVE RIVETING.

THE driving of rivets, says The Locomotive, is such a comparatively simple operation that it might be supposed that it would be almost always well done. This is far from being the fact, and bad riveting is one of the commonest defects reported by our inspectors. The rivets may be too short, or too long, or too small;



SOME DEFECTIVE RIVETS.

they may have heads that are too flat, or they may have projecting "fins," or they may not fill the holes, or the holes may not come "fair" with one another. There are many ways in which riveting may be bad. A case that recently came to notice seems to deserve special mention. The rivets in question were in a vertical pulp-digester, 10 feet in diameter and 30 feet high, which was to be so constructed as to be safe under a pressure of 90 pounds to the square inch. The plates were of steel, $\frac{3}{8}$ -inch thick, united by lap joints which were triple-riveted on the straight joints and double-riveted on the girth joints. The pitch of the rivets in each case was $3\frac{1}{2}$ inches, and the distance between the parallel rows was 2 inches. The rivets were $\frac{3}{4}$ -inch in diameter. Before the digester was accepted, we were called upon to inspect it and pronounce upon its safety. The inspector found the rivets "driven very low," that is, the heads were entirely too flat, as shown in the accompanying cuts, which are made directly from photographs

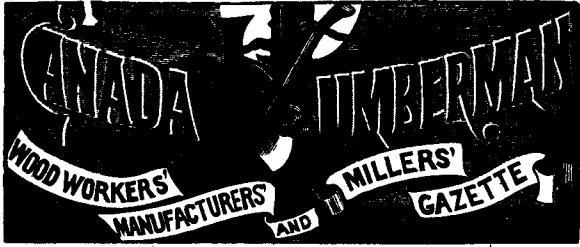
of the rivets. He had a number of these taken out and found that the holes in the two sheets did not come opposite one another fairly. This defect is a common one, and it is very serious, both because it reduces the shearing area of the rivet, and because it greatly increases the difficulty of making the rivets fill the holes perfectly. A shop that turns out work of this kind is particularly censurable, not only because the work itself is poor and weak, but also because the defect is not easy to discover, after the rivets are in place, and the owner of the boiler is therefore likely to be deceived by a fair external appearance and to carry more pressure than the boiler can safely withstand. The inspector also found that the heads were not driven evenly over the holes, the centres of the heads often lying well towards the side of the rivet. This defect, although not so dangerous as the unfairness of the holes, would not be tolerated in a good shop having any pretensions to turning out first class work. It is very easily detected, even by one who has little experience in inspecting, and there is no excuse for it, whatever. The rivet holes were not countersunk, as they should be in all good work, and, taking everything into consideration, we think this case presented the finest example of notoriously bad work that we have seen in some time. The only thing that could be done to it, in the way of improvement, would be to cut out all the rivets, ream out the holes until they should be true, and rivet them up again with larger rivets. The most reprehensible thing about the job, perhaps, is that the builder used rivets that he knew to be too short. At least, we presume he knew them to be so, for any one who had the smallest idea about the business would know it. A boiler ten feet in diameter, to carry 90 pounds of steam, and with five or six men working about it, cannot be built too carefully; and any such reckless performance as putting in rivets that are too short and too small comes very near being criminal negligence. The joint used in this digester is far from being beyond criticism. To begin with, a lap joint should not be used at all; a butt joint would be much safer and better in every way. Taking the tensile strength of the plate at 60,000 pounds per square inch, and the shearing strength of the rivets at 38,000 pounds per square inch, a little calculation will show that in the joint that was actually used the rivet area is far too small, so that with $\frac{3}{4}$ -inch rivets and a factor of safety of 5 the safe working pressure is only about 56 pounds. If a triple-riveted lap joint were used at all, the rivets should be an inch in diameter (holes 1 1-16 inch), and the pitch should be about $3\frac{3}{4}$ inches. This joint gives an efficiency of 72 per cent. and a safe working pressure (with a factor of 5) of just 90 pounds per square inch. But a double-welt butt joint is the proper thing for this case.

TRANSMITTING POWER.

IT is generally known that a shaft will transmit power in proportion to its running velocity, and therefore, the faster the shaft runs the lighter it should be within reasonable limit. 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 and tenable mechanical position, unless tempered with sound judgment and much wisdom, sufficient of both to select properly. That there should be an 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.

THE COMMON-SENSE WAY.

THE common-sense way of preventing the slipping is really the only one object to which we ought to direct our attention; there is the relation of the pulley to the belt, the method of placing a belt on a pulley, the question of speed, tightness of belts, all of which, with other points, require careful consideration. Oak tanned leather belts are best for general use. Cotton belts are best for dry places. It is economy to put on a wider belt rather than a narrow one too tight. Vertical belts should only be moderately tight.



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— BY —

C. H. MORTIMER

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

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

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

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

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

EXPORT LUMBER FIELDS.

WITH lumber holding a position as one of the richest of our natural resources, it is well that we should consider all possible fields of outlet for this product. We state a very simple truism, when we say that the main market for Canadian lumber is to be found abroad, and not at home. Already large quantities of lumber from this country find their way, not only to the United States and Great Britain, but to Australia, South America, China, Japan, the West Indies and other points. But with the wealth that we possess in this direction and the high character of our forest products, there is no reason why our field of exports should in any way be "cabin'd, cribb'd or confin'd" to any particular territory.

A recent publication issued by the State Department of the United States shows to what a wide extent the lumber of North America is valued by the peoples of almost all parts of the world. We are told that nearly all the building lumber imported by Africa comes from North America; that Japan buys it, and that no other lumber enters South American ports. In Samoa 4c. a foot is paid for real Oregon pine and California red wood. Australia buys \$1,000,000 worth every year, and would, it is said, take as much more if it could be bought readily. The great difficulty is one of transportation.

This pamphlet points out that the principal rivals of the United States in the world's lumber trade are Canada and Norway, excepting England, where Russia and Germany are competitors and in Austria, which is supplied by countries on the Mediterranean.

This information indicates very clearly that there is hardly a point where, all other things being equal, Canadian lumber may not find a market. So far as white pine is concerned, it is known by everyone, who has studied the question, that Ontario possesses the most desirable white pine to be found in any country. When a reference is made to Oregon pine, or to the redwoods of California, it has been demonstrated beyond any question that in British Columbia we have parallel woods to these, in Douglas fir and red cedar, which have a preference even by experts in the United States, over their own timber.

The entry of Canadian woods into foreign countries will be helped in so far as satisfactory commercial treaties may be made with foreign nations. Whilst some prejudice has existed in France against Canadian and United States woods, it is known that from the lower provinces considerable quantities of pine, spruce and oak are exported to France, and with the new treaty just consummated between Canada and that country an impetus ought to be given to the lumber trade with France.

The completion of the Nicaragua canal will, in point of transportation, be a great help to the export lumber trade of British Columbia.

The figures given in the official paper of the United States, to which we have here referred, do not fairly represent the division of lumber products from North America as between Canada and the United States, and the error is one that is sometimes repeated by our own press. We refer to the fact, pointed out in these columns only two months ago, that many shipments of lumber, as well as other exports from Canada to foreign markets, sent in bond through the United States, are credited altogether to the latter country. Our government cannot too speedily see that this error is rectified.

TARIFF CONDITIONS OF THE MONTH.

No new developments in tariff matters, as affecting lumber, have shown themselves since our review of the situation a month ago. Senators at Washington continue to wrangle over the Wilson Bill, and the developments of the past week would indicate that legislation has reached a dead-lock, extrication from which may not be easy, and will possibly lead to the complete destruction of the Wilson Bill. The Senate and the House of Congress can find no common ground of cleavage. The sugar question would seem to be the serious bone of contention, but out of it grow issues touching other phases of the tariff. A House and Senate favorable to free trade were supposed to have been elected a year ago, but it looks as though Democratic free traders were just as thoroughly saturated with protection principles as could possibly be the most straight-out Republican. Self interest is evidently the governing motive with the majority of these legislators, and it is the old story of each one being influenced according as whether it is his own ox or his neighbor's ox, that will be gored. The most hopeful feature of the case, viewing the question from the point of view of free trade, and it is here that lumbermen are most interested, is found in the resolute stand taken by President Cleveland, and reflected in a letter to Mr. Wilson on the dead-lock. His intimation is clear that unless some reasonable attempt is made to stand by the election pledges of the Presidential year he will veto any bill that is too absurdly inconsistent. While legislators are making uncertain the future course of the lumber trade, lumbermen in different parts of the country are discussing the outlook. Southern lumbermen are opposing free lumber in any shape with the utmost energy. Saw-mill and planing-mill men in the east appear to have made up their minds to accept free lumber so far as rough lumber is concerned, but the voice of other sections is expressed in the resolution of the Buffalo Lumber Exchange in placing themselves on record as opposed to the free admission from Canada of dressed lumber. It is not alone, however, United States lumbermen who fear that their interests may be injured by free lumber. From what we have to say elsewhere it will be noted that British Columbia lumbermen are not so sure that free lumber will be a good thing for them. A boom is on in the Rainy Lake section of Minnesota, and a local journal there points out what a benefit it will be to that territory to receive all the Canadian cut timber free of any duty. There is also this feature of the case when we consider the possibility of Michigan lumbermen establishing mills on the Canadian side. Some of these say, and with a good deal of force, that even though they are American citizens they have invested their capital in timber in Canada and if the plan seems the most practicable, why should they not saw this timber near their own limits in place of rafting it many miles with all the attendant risks?

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EDITORIAL NOTES.

A CRITICAL time with men of commerce is when their business is developing rapidly. Few things are more difficult than for a man to hold in the reins when he seems to see an opportunity to expand his business. The trouble just here is that in this expansion so many men bite off more than they can chew. We have seen abundant illustration of this in the past year or two of financial depression, when the record has proven that it is the big concerns that have been doing the risky business and little concerns the safest business, and paying their bills the quickest.

THE destruction by fire of Mr. J. R. Booth's large mill at Ottawa has created a blank in Canadian saw-milling, that cannot easily be filled. The hope is that Mr. Booth, who is known to be a man of enterprise and courage, will see his way to rebuild, but from what is stated by our Ottawa correspondent, it seems to be among the possibilities that this step may not be taken. The loss in the meantime is a serious one from whatever point of view we consider the recent disaster. It is computed that directly, as between the total loss and the full amount of insurance, Mr. Booth will suffer to the extent of not less than \$100,000. This, however, is but one small part of the loss. A large season's cut was before him and the profits on this must necessarily be sacrificed now. About 1000 workmen are thrown out of employment. Then come the lumber jobbing firms, who had placed their orders with Mr. Booth for supplies with which to fill their orders this season. These in turn are going to suffer a loss. That the valuable water power that has operated the Booth mills can long remain idle is hardly to be expected, but the universal wish and hope is that none other than Mr. Booth himself will utilize this.

RAFTING operations in the vicinity of French River are being carried on with not a little activity this season, despite the depression in the lumber market. It is given out, that there are 8,000,000 ft. of logs in the different drives, on the way down. These in the main are as follows: Moore Lumber Co., Bay City, Mich., three rafts; Hardy Lumber Co., Alpena, Mich., four or five rafts; Beck Lumber Co., Penetanguishene, Ont., four rafts; Ontario Lumber Co., French River, 5,000,000 ft.; A. T. Bliss & Co., Saginaw, Mich., one raft; Emery & Holland Lumber Co., Tawas and Bay City, Mich., have a jam of 14 miles on the Wahnapiatae, which will make ten rafts; in all about 14 rafts. Rafts representing, probably, 60,000,000 ft. have already left the north shore this season for Michigan. The high water in the district has been favorable to the taking out of logs and it is not anticipated that there will be any logs "tied up." Lumber in considerable quantities is to be found at various piling grounds along the north shore waiting a market. The Ontario Lumber Co., have, it is said, in its French river yard 18,000,000 ft. in good condition. Operations are to some extent effected by the delay in the final passing of the Wilson Bill.

THE London Timber Trades Journal is puzzled over a statement printed in a recent sale catalogue describing some oak by steamer, as being "from Quebec via New Orleans." The Southern Lumberman says, that in this country we would easily get over such slips by putting the blame on the proof reader or "the intelligent compositor," and tells the story of an agricultural association, that went for the publisher of their annual catalogue, because it reported them as offering a large premium of the "best bushel of cats," when they meant "oats," but the publisher's attorney had no difficulty in convincing the jury that it was simply a mistake made by an irresponsible printer. The "poor printer" is certainly made the scape-goat for a good many queer blunders; but with our friend John Bull, when it is a geographical mistake, we are not so sure that it is the "intelligent compositor" who has mixed things. Even authorities like the London Times and the Saturday Review have marked up against them some very wild blunders made, when occasion has required them to speak of this country geographically. They seem to forget that America covers rather more ground than "the tight little island" across the sea. We are a country of great distances, and distance counts.

BRITISH COLUMBIA SHINGLES.

PRESENT CONDITION OF THE TRADE. CAUSE OF THE DEPRESSION
OUTLOOK FOR THE FUTURE. - WHAT A LEADING
MANUFACTURER SAYS.

WITHIN a few years the manufacture of red cedar shingles in British Columbia has developed to a degree to make the subject one of importance to every intelligent lumberman. Though it is within comparatively a few years, that any large share of attention has been given to the lumber interests of this most westerly province of the Dominion, yet in the compass of this period these have taken a foremost place in the lumber world. There can be no mistaking the fact, just as Ontario has become famed, especially for its white pine, so British Columbia has made a place for itself as the home of the red cedar and Douglas fir.

Not more, perhaps, than ten years ago the manufacture of red cedar shingles began to engage the attention of lumbermen. It is no disparagement to the white pine shingle to say that the red cedar shingle possesses features of durability and character that are specially its own. The mistake was made there, probably, that is too often made when a country commences to show strength in some particular line, of too many rushing into the field at once and over-production becoming the result. This was the case in that near neighbor of British Columbia, Washington Territory, where similar woods find their native home. Shingle manufacturing was entered into in the Puget Sound district on the boom line. Just as speculators rush into building operations when a real estate boom is on, so all sorts and conditions of men thought they saw a quick fortune in the manufacture of red cedar shingles. Like some of the men who had entered building operations in Winnipeg at the time of its unfortunate boom, and not unlike a similar class of people who pursued this calling in Toronto a few years ago, it did not occur to them, whether they knew anything of the business or not. Money was to be so easily made, they thought, that any novice might be sure of striking good luck.

But business does not run for any time simply on luck and the Puget Sound people have discovered this to-day. A result is that they find it was a terrible mistake to run up their strength of shingle manufacturing from 75 to 300 mills in hardly two years. A policy of cutting prices has been the natural sequence, and the effect of this has been to react on our British Columbia shingle manufacturers.

On this question the LUMBERMAN has had a good deal to say from time to time. Something is known of the various efforts made in the Puget Sound district by the level-headed men of the trade to form an organization and prevent this policy of cutting prices. But the competition of unprincipled men has been too severe, and combinations were formed only to be quickly broken again. Prices, it was said at one time, had got down so low in Puget Sound, and shingles had become so plentiful, that they were made to pass as current coin on the church plates of that Territory. However that may be, it is well known that prices were cut beyond possible cost of manufacture. The British Columbia manufacturers for some time had been selling shingles, if not at a loss, practically without a profit, and in the effort to help over this trouble an association was organized within the past year. It unfortunately could not hold together for reasons that were explained in an interview in the LUMBERMAN last month with Mr. F. N. Tennant, who has been doing a large trade in British Columbia shingles. Prices were again broken. On top of this has come the likelihood of free lumber, and with it competition in the eastern markets of Canada, between British Columbia and Puget Sound shingle manufacturers. The situation altogether suggested many questions of importance to the trade and it has been with the idea of placing before our readers as clear a statement of the case as possible, that a month ago we set on foot an enquiry concerning this matter.

Following these remarks we are in this issue of the LUMBERMAN, enabled to present a comprehensive account of the conditions that govern the manufacture, sale and shipment of red cedar shingles in Canada. In our letter of enquiry we asked certain leading questions and we think our readers will grant that Mr.

Spicer has answered these both fully and in an exceedingly frank manner.

MR. H. H. SPICER'S VIEW.

Mr. H. H. Spicer, of Vancouver, B. C., in answer to a letter of enquiry sent out by the LUMBERMAN has this to say. If the Puget Sound shingle manufacturers can continue for any considerable time longer, to sell their product at the prices they have been selling at this year, this branch of business in Canada will become altogether unprofitable, when the Canadian Government responds to the Wilson Bill by putting shingles on the free list. I firmly believe, however, that this year will see the end for some time to come of the Puget Sound manufacturers selling their shingles at such ruinously low prices. Without assuming the role of a prophet I will venture to say that those parties on the Sound who have been selling their shingle this year as low as \$1.10 per M will not be in the business another year, unless they have been, and continue stealing their timber, and not paying their labor. Without separately mentioning the value of timber, and the cost of manufacturing, it is a well-known fact (amongst those manufacturers who have figured with any degree of care) that it costs \$1.30 per M to produce shingles 16 inches long, 6 butts measuring two inches after being kiln dried. There are possibly 10 to 15, of the mills in Washington situated along the lines of railway in the woods that get their timber cheap enough so they can produce at a cost of \$1.20 to \$1.25 per M. These are, however, only small mills with a capacity of 30 to 60 M per day, and mostly of a temporary nature, with very inferior and out-of-date dry kilns, whereby they lose about as much on account of excessive freights, as they gain through getting their timber cheaper than their competitors. This matter of over-weights to points as far east as Ontario is a most important one, since an excess of 2½ lbs. to the bundle makes a loss of 7½c. per M on the present all rail rate to Ontario, which is a very considerable amount in the face of the over production and consequent price of cutting that has been the rule so far this year.

COST OF MANUFACTURING AND SHIPPING.

As to whether the Puget Sound manufacturers can afford to sell a 6 to 2 x 16in. clear shingle at \$2.35 delivered at the different railway points in Ontario should our Government take the duty off, when the Wilson Bill is made effective, a few calculations will show. We will assume that all the mills on the Sound, both large and small, can produce a 6 to 2 x 16 shingle for \$1.20 per M. We will also give them the benefit of the lowest possible weight for a 6 to 2 shingle, namely 160 lbs. per M. Now as to rates. During the season of navigation on the lakes the Sound mills, and also those in B. C., can reach the lake ports, such as Sarnia, Windsor, St. Catharines and Toronto, on a 60 cent rate. The average rate to interior points in Ontario is not less than 10c. per 100 lbs. This rate on a weight of 160 lbs. to the M makes the freight \$1.12 per M shingles. The usual terms being 60 days from shipment, the cost of discounting bills must be considered, which is about 3c. per M. We now have cost of production \$1.20, freight \$1.12, discount 3c., making a thousand 6 to 2in. shingles cost \$2.35 delivered in Ontario. In connection with freight rates it must be remembered that the season of lake navigation only lasts about five months in the year, and that during the balance of the year an all rail rate of 75c. per 100 lbs. has to be paid, which makes the freight \$1.20 instead of \$1.12. Reverting again to the cost of production, I have no hesitation in saying that a large proportion of the shingle manufacturers on the coast really don't know how much it is costing them to produce their shingles, which makes them as long as they last dangerous competitors.

B. C. AND PUGET SOUND SHINGLES COMPARED.

In answer to your question as to whether the B. C. manufacturers are able to meet Puget Sound prices of \$2.35 delivered in Ontario, we know they cannot; and as to whether the Sound manufacturers can afford to sell at that price, we have shown that they are unable to do so. As to the comparative value of B. C. and Puget Sound shingles, it is a well-known and acknowledged fact by disinterested persons from the Sound that our shingles are much superior to theirs.

We believe when the time comes that we will have to

compete with our neighbors on the Sound, that the lumber dealers in Ontario will give from 15 to 25c. per M more for our shingles. Possibly the greatest superiority in B. C. shingles is that they are manufactured from bolts taken from the largest and best trees, whereas the most of the shingles on the Sound are made direct from the log, the best part of which is first sawn into lumber, and the balance of the rough and coarse portion is put into shingles. This fact, as to the superiority of the timber the B. C. mills put into their shingles as compared with those on the Sound has been pointed out to the writer by wholesale dealers in Buffalo and Boston.

When free trade in lumber and shingles finally becomes law in Canada and the U. S., it will be found that the B. C. shingle manufacturers will hold the largest proportion of their trade in the Northwest and Ontario, and at the same time secure considerably more new trade in the U. S. than the Puget Sound manufacturers have taken from them in Canada. I will give 3 reasons for this claim: 1st, it is, as has been shown, a financial impossibility for the Sound manufacturers to continue much longer at present prices; 2nd, the superior quality of our shingles; 3rd, our ability to make more prompt shipments to Northwest and Ontario points—having one continuous line of railway, whereas Puget Sound shingles are handled by two and sometimes three different lines.

REASONS FOR PRESENT DEMORALIZATION.

The question will naturally be asked what has brought about the demoralized condition of the shingle business. This can be about fully answered—so far as the Sound mills are concerned—in one word, viz. Overproduction. There have been other contributing causes, such as the general stagnation of business which has prevailed in the U. S. and Canada during the last 18 months, and also the tie-up of the transcontinental railways on account of the floods and strikes.

It may not be generally known in the East, especially in Ontario, that a perfect craze took place during the spring of 1892 in Washington and Oregon to manufacture cedar shingles. The excitement was kept at fever heat through 1892-3, until the number of mills in those two states had increased from about 75 to 300. During the shingle craze all sorts and conditions of men embarked in the business, and all thinking, I presume, they had discovered the way to wealth and prosperity. It is safe to say that the largest percentage of these men had very little or no capital to work on, and a great many more had no experience, and the balance acted as though they had not much common sense; and judging from the present condition of the shingle business in Washington and Oregon, one is warranted in saying that a large proportion of them were lacking in these three prime requisites of success in any line.

In the light of these facts is it any wonder that the shingle business on the Sound is in such a demoralized condition to-day? There has been, however, a weeding out process going on for the last eight months, and it is reasonable to expect that by next spring the business will be much more in the hands of legitimate manufacturers.

A HEALTHY REVIVAL COMING.

While the present condition of the lumber and shingle business on the coast is unsatisfactory, there are more reasons than one for expecting a healthy revival by next spring. It is generally thought, I believe, that the business depression cannot last much longer, and that at the furthest the beginning of next year will see a great change for the better. During this long stagnation of business the lumber dealers in the territory reached by Pacific Coast manufacturers have let their stocks run down until it would take a number of their lumber yards bunched together to make an ordinary sized yard.

A greatly increased trade is expected for Pacific Coast shingles and lumber upon the completion of coast extension of the Chicago, Burlington & Quincy Railway, which will take place by the last of this year.

It is said that this road will deliver Pacific Coast lumber and shingles in nine different states on a transcontinental rate, without any local rates added. In fact, it is expected that the Burlington Road will do more to open up new territory for Pacific Coast lumber products than any other excepting the Northern Pacific.



ONE of the manufacturers of the province, who keeps himself in close touch with lumbering operations, and who is an old-timer in his visits to the lumber regions of almost every part of the Dominion, is Mr. Shurly, of the extensive saw manufacturing firm of Shurly & Dietrich, of Galt. I had the pleasure of meeting Mr. Shurly a few days ago, on his return from the east. I asked him how he found lumber in the vicinity of Ottawa, and his reply was, that trade was somewhat quiet. He told me that McLachlin & Co., of Arnprior, had sold their season's cut, principally to United States buyers, but they were still holding it, waiting orders for shipment. This meant that their piling grounds were being crowded a little more than they care for. Mr. Shurly has been a close observer for years of the methods of lumbering adopted in the various sections of the Dominion. Some time ago he visited British Columbia and was much interested in methods of lumbering on the Pacific Coast in contrast with methods in Ontario. For example, he tells me, that they do not pile their lumber there as we do here. The lumbermen have placed in their hands orders for export shipment and the large timbers are taken direct to, and loaded on, the vessels. The principal export trade in that province is with South America, China, Japan and Australia, countries where a large business is done, when depression and internal troubles do not upset things generally. "The felling", said Mr. Shurly, "of the large timbers that grow in British Columbia is a sight full of interest to anyone who has a knowledge of lumbering operations. Douglas fir, for example, grows to a great size and height and the trees are cut some feet up from the ground. The woodmen cut into the tree, so that they manage to get room for working; then they get their saws going, and it is a sight to see these men cutting into the heart and through these big trees, which will run five or six feet in diameter. There is a large amount of resinous matter in Douglas fir and the saw has to be constantly oiled in order that the work may be done with any speed. When the tree is pretty well cut through the men insert a wedge so as to cant it over to the side where it is intended to fall. I tell you when one of those big fellows go there is a crash, and a noise as of thunder. One day I went into the woods with Mr. R. H. Alexander, manager of the Hastings Lumber Co., to study shanty life in British Columbia. We sometimes take our fun out of the shantymen, whose fare is pork and beans, with ginger bread for dessert, but there is nothing of that kind on the Pacific Coast. I have seldom sat down to a better meal than was furnished that day to the shantymen on Mr. Alexander's limits; and it was only the ordinary meal, no extras because there happened to be a visitor there. The best of roast beef was served up, with well browned potatoes and all the extras of modern day living. The cook was a Chinaman, and everything was as clean and nice as you could get in your own home. I said to Mr. Alexander, this is pretty good fair for shantymen. His reply was, 'it pays us.' Lumbering here is different to what it is in Ontario, and we cannot give too much attention to the physical condition of our men, otherwise they could not do the work. In contrast to this I was reminded of a visit I paid to the Georgian Bay lumber district one time. The men were being well loaded up with gingerbread and I remarked to the foreman that this would spoil their meal. 'Oh' he said, 'this is just what we want; gingerbread fills them up and they have not so much appetite for their regular meal.'" In answer to my enquiry as to the condition of business among the saw mill and planing mill men, whom Mr. Shurly meets frequently, he said, trade was fair, but there was room for improvement. He had met a prominent Michigan lumberman who owns large limits in Canada, and his belief is that when lumber becomes free, there will be an extension of the saw mill business in this country.

The early history of that portion of our province lying back from the St. Lawrence, and which is now largely covered by the counties of Carleton and Russell necessarily includes many interesting reminiscences of lumbering and lumbermen. Back in the early days of the century, along about 1825 the larger part of that district was marked by a dismal swamp, "but", as one who has written on the subject has said, "swamps form no obstacle to winter lumbering and if the streams could float the lumber or logs the wealth of the timber crop could be secured. Lumbermen noted the higher portions of the land and kept them in view for the future." One of the residents of that section of the province, who afterwards became famous in Ontario history, was the Hon. John Sanfield McDonald, a former premier of the province. He hailed from Glengarry, and if not a lumberman himself, the country was well stocked with McDonalds and Mc Donalds, and surveyor Mc Donald made the Pettie Nation and the Castor the field of his lumbering operations for some time. He drove a span of horses down the Nation and up the Castor on the ice to the plane of his habitation where his offspring still reside in peace and plenty. His were the first pair of horses in the province, as he was the first settler there. In 1829 Robt. Grant became a resident of that section. Peter McLaren, whom there have been few lumbermen in Ontario better known and more highly respected, came to where Kenmore now is about 1830. Lumbermen sailed by the Nation to the great river with their rafts in cribs or loose as they could. They knew nothing of the upper Ottawa. They went to mill on the Nation only when they must go from necessity. They were not aware that the canal was budding until it was over. They heard no blasting of logs in the distance or if they did they mistook it for thunder, isolated completely on the banks of their river high-way with their magnificent stocks of fishes, fowls and fur-bearing animals. They had not even heard of the birth of the little hamlet that was to be the great future capital of this vast Dominion, nor heard the whir of the machinery that was to saw the lumber to build the future cities of this vast continent. They made timber, cut wood, enjoyed life in their shanties, raised a pig or two, made their own butter, knit, spun, wove and made most of their clothing and moccasins. The good ice served them as a fine clear road in winter away round about to the front, even to the mill at Long Sault in the St. Lawrence the first and second winters after that, to the station. Dickinson's Landing now seems a long way to the mill, but they went. Then Chrysler's mill was comparatively close by when it was built. Then Peter McLaren built a grist mill on the Castor at Kenmore, 1835. Hugh McKenna and James Telford used to tell a good story of a grand discovery they made once. Each was rich enough to own a good steer. The two made a working yoke of oxen. In the summer they strayed out on the road newly cut to the Johnson-Fenton settlement; then held a high feast in the forest leaves till they were missed and the owners gave chase. In following their tracks on the road and in the bush they, after a long run on the track not by scent, came to where they found other tracks, and when about despairing they came at length to the clearing of Col. McDonell where they found them with his cattle. Glad and astonished to find their new neighbors, they stayed Mr. McDonell to gather his friends and four or five families and they cut a road to meet the one described, and hence their first road from Osgoode to Bytown, for their winter driving.

"The lumber and timber trade of Quebec," says Mr. Th. J. Boulanger of that city, "has been very dull, although prices for good stock are maintained fairly good. Purchasers, however, are only buying what they actually require for immediate shipments. I was told a few days ago by a lumberman, who had been down in New Brunswick, that a good many of the mills there are going to close down for the present, as the prices they are getting are altogether too low. They say they are losing money."

This makes the 50th year of the lumbering operations of Mr. William Mackey, of Ottawa. "I have taken rafts," he says in answer to a question, "down past Ottawa for the last fifty years—ever since 1844;

some years only one raft and other years three and four, besides taking out sawlogs several years." Mr. Mackey is the only lumberman in Canada continuously in the square timber business for half a century. In reply to a question, Mr. Mackey said he came to Ottawa in 1838 and joined the volunteers and was billeted on Barracks Hill where the library now stands and his captain was Capt. G. P. Bake, who was afterwards first postmaster of Ottawa. In 1841 Mr. Mackey went shantying with the late Hon. James Skead on the Bonaventure river. "I made my first raft of red pine during the winter of 1844-45 on the Madawaska river, there being no demand for white pine in these days," said Mr. Mackey. "I have held the license and paid the ground rent on the limit on which I made my first raft for nearly fifty years." "Was it difficult getting timber to market when you commenced?" "Yes, at that time the rivers were not improved and there were no slides or booms as there are now." "You must have seen many changes in your long business experiences." "Yes, prices for timber and supply have varied much. When I commenced first I paid as high as 25 per cent. interest on money advanced to purchase supplies, etc. The average wages for men were from \$10 to \$14 per month. Hewers got \$20 per month and these were the highest priced men. There was far more square timber taken out then than now, for this was long before the era of sawlogs. I have known of 100 rafts passing here in one season. This year ten rafts will be the limit." "Are there many men in the trade who commenced when you did?" "I know of no one alive who was in the lumber business when I commenced except Mr. N. V. Noel, now manager of the Quebec Bank here who worked on the Madawaska river at that time, and Richard McConnell of the Aylmer road, but I think I am the only one who has continuously made square timber for that length of time. Prices have varied very much. I have sold timber as low as four pence per foot and as high as 36 cents per foot for no better timber. The raft that has just passed Ottawa" concluded Mr. Mackey, "is as good a raft as ever I took to market both in manufacture and quality." This raft was taken out in the Amable du Fore river, a branch of the Mattawa river.

Replying to certain articles and correspondence, that have appeared in the daily press on the value of Ontario lumber, Mr. Quinn, of Saginaw, Mich., whose lumbering operations bring him frequently to this country, says that any practical lumberman, who understands his business knows that it costs for \$3.00 to \$4.00 for a 1000 feet of lumber in Canada more than it does in Michigan or Wisconsin. "I will venture to say," says he, "that the logs delivered at Ottawa from any of the streams now in Canada will cost not less than \$7.00 a 1000 feet, \$3.00 to saw lumber, \$1.00 for profit and loss, and I will ask anyone of ten lumbermen if the average price will be \$12.50 mill run, mill culls or, and then see what they say. This is what they call by profit. The risk to any individual is from 10% to 15% a year, and the larger the owner the more risk he has run. There is also about 5% of risk from windfalls. Let these men who do so much writing about the lumber business go into the woods and see the disadvantages that lumbermen have to contend with now, and let them get some timber at the price the government sells them for. If the fortunes are so easy made they ought to be in the business."

A curiosity in tree growth in Georgia is attracting some attention with students of forestry. It is a tree which bears persimmons on one side and wild crab apples upon the other. Of course, as a matter of fact there are two trees, but it takes a very close examination to convince a person that there are. They have grown so closely that each has lost his identity, so far as appearance is concerned, and the people in the neighborhood insist that it is but one tree. The persimmon side is the most fruitful and produces a fairly good yield of fruit which is not in the least affected by the presence of the crab-apples. The other side does not bear very well and it is only an occasional year that there is a yield of crab-apples, but both sides have been known to bear good crops in the same year. The roots have never been examined, so far as I know.

The Muskoka Mill and Lumber Co.

OF TORONTO

are offering for sale by Auction on the 27th inst., at Barrie, Ont., five of their Timber Berths in the Townships of Gibson and Medora.

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

TO a measurable extent, at least, all lumbermen live in anxious dread of an outbreak of fire. There is so much material of an inflammable character about a saw mill that only the very greatest precaution prevents many more serious conflagrations than even now take place. It is seldom, however, that in Canada we are called upon to chronicle the destruction of so large an amount of valuable saw mill property, as was the case in the burning of Mr. J. R. Booth's great mill on the Chaudiere, just a week after I had written you my last letter. The mill was known the lumber world over as the largest saw mill on this continent, and undoubtedly one of the most perfectly equipped mills in the world. There does not seem to be any explanation of how the fire occurred; the one unfortunate fact stares its owner and the people of Ottawa in the face, that at least, \$250,000 of property has been destroyed. The mill is a complete wreck. The loss is covered by insurance to the extent of \$143,500, leaving, it is carefully estimated, a net loss over the insurance to be borne by Mr. Booth of at least \$100,000. We in Ottawa, from a citizen's point of view, are hoping that it will not be the case, but it is very much feared that Mr. Booth will not rebuild the mill. About 1000 hands, all told, were employed in connection with this enterprise, representing at least, families of 3,000 persons. No comment is necessary to show how seriously will such a loss of labor fall upon Ottawa. Great disappointment and loss will also come upon many shippers who were depending upon the cut of this mill to enable them to fill their export orders for the United States, South America and other points. The loss too, of the season's cut, will be to Mr. Booth a severe blow.

INDIFFERENT LENGTHS.

A protest has been served by Mr. Frank Stafford on the executors of the estate of James McCready against the sale of timber birth, lot No. 7, range 1, block A, lake expense, which is advertised with other properties for sale by auction at Peter Ryan's big sale in August next. Mr. Stafford claims he is entitled to one-half interest in the profits of this limit under a deed to him from the late James McCready, and that the sale is sought to be made without any intimation to him or to the public of his interests.

John Major, a shantyman from Greenville, while wandering in his sleep some nights ago in his boarding house, fell from a first storey window, some 18 feet, to the sidewalk. He has suffered severe bruises but will likely recover.

Mr. Z. C. Whitney, of Minneapolis, and Mr. E. N. Briggs, of Saginaw, two well-known lumber capitalists, have been in the city. They are reported to represent the advance guard of a monied concern, who purpose erecting a huge mill on the Ottawa and Parry Sound road in the vicinity of Eganville.

The amount of lumber being shipped this year to the United States is falling far short of the shipments of a year ago.

Logs coming down the Gatineau are making slow speed, and the mills which depend upon these for supply may have to close down for want of sufficient logs.

The Railway Committee room of the House of Commons was the scene of a lively discussion a fortnight ago over the bill which proposes to incorporate the French River Boom Co. Proposed incorporators are: Messrs. H. H. Cook, John Wallace, H. W. Welsh and E. B. Ryckman, of Toronto, and F. W. Geoffrey, of Midland. Capital stock is named at \$50,000, and Toronto is to be headquarters of the company. The privileges asked are to do a general boom business, rafting, towing, shafting and transmitting all lumber, timber and saw logs in the French and Wahnapiatae and its tributaries and in Le Boueuf Lake, and to levy and collect reasonable toll dues and charges herefore. The bill was opposed chiefly by Michigan lumbermen, who were represented by Mr. W. R. White, Q. C., of Pembroke. After full argument the committee decided to grant the charter of incorporation, but with certain modifications in order to meet the views of the objectors.

OTTAWA, Can., July 20, 1894.

NEW BRUNSWICK LETTER.

[Regular correspondence CANADA LUMBERMAN.]

LUMBER exports from St. John for the month of June are placed at \$367,837. The chief items are: Long lumber and lath, \$325,286; shingles, \$22,650; birch timber, \$7,100; pine timber, \$1,725; piling, \$3,789; tan bark, \$2,758.

Shipments to Great Britain are running somewhat light, and is also the case with shipments to the United States.

The new mill of G. T. Prescott, at West River, is about ready to commence work.

A pest of flies has compelled the engineering party who started out to survey Muskoka Co. limits at the head of the Estigouche to postpone their work until September.

Kinney & Co., of Albert county, have assigned, with liabilities

of \$4,000. The trouble has been caused through inability to get their logs out.

A small saw mill of E. B. Betts, of Wentworth, has been burned. Loss about \$1,000, insurance \$200.

St. JOHN, N. B., July 15, 1894.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

AT this late day I do not need to say how much suffering and difficulty to everyone has occurred through the terrible floods that visited us a short time since. It will not be easily estimated what has been the loss to the lumber industry, and it becomes a serious question what it will mean to lumbering in this province if there should be a repetition of a water deluge anything approaching the scale of this one. One of the greatest sufferers among the lumbermen by the late flood is Knight Bros., of Popcome, who had logs, lumber, shingle bolts and several cords of excelsior wood carried away.

COAST CHIEFS.

The Burrard Inlet Red Cedar Lumber Co. are using band saws in their sawing, turning out good work.

A recent addition to the plant of the Brunette Saw Mill Co. is a timber planer capable of dressing a stick of timber 3x16 inches on all four sides by once passing through.

William Munsey, of the Shawnigan Lake River Co., has gone to Japan for a trip.

The Hastings Mill Co. is buying up large quantities of logs, which have already run into several millions of feet, in the Puget Sound district.

Among the last arrivals at B. C. ports is the ship Drammen, 1,347 tons, from Honolulu, and will load at Hastings mill for Queenstown, U. K. The British ship, Verejean, 1824 tons, from Shanghai, is under charter to load at Hastings mill for Alexandria, Egypt. Among other vessels loading lumber at these ports for foreign points are: At Moodyville mill—Am. schr. Wm. Bowden, 727 tons, for Sydney; Ital. bark Elisa, 915 tons, for Valparaiso; Br. ship Borrowsdale, 1,197 tons, for Valparaiso for orders. At Hastings mill—Br. schr. Grace Hawar, 1,750 tons, for Queenstown for orders; Am. bark Olympic, 1,412, for Callao direct; Nic. bark Don Carlos, 694 tons, for Noumea, New Caledonia; Br. bark Villalta, 866 tons, for Adelaide. Am. bark Southern Chief, 1,219 tons, for Santa Rosalia. At Sayward mill, Victoria—Br. ship Benmore, 1,460 tons, for Adelaide. At Vesuvius Bay—Am. ship Guardian, 1,073 tons, for Santa Rosalia.

NEW WESTMINSTER B. C., July 17, 1894.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

WHAT branch of trade has not felt the hurtful effects of the great railway tie-up? Here in Michigan the yard trade on the river has had much to contend against on this account. Fortunately, perhaps, in one way, trade has not been so rushing that lumbermen felt that they had lost a great deal, and so they take the matter philosophically. At the same time the annoyance is provoking, and even though shipping business is small, there is a loss.

We have reached the end of the first six months of the year and we must go back a good many years to find a period that for downright dullness will compare with it. To borrow an expression from a contemporary, trading has been practically little better than in wheelbarrow lots and the man who was so fortunate as to sell an occasional car lot has had to put about a dozen different grades in each car. We have all talked so long about nearing the end of this kind of thing and been fooled, that for my part I am disposed to go out of the prophecy business.

BITS OF LUMBER.

\$100,000 was the sum paid not long since by Sibley & Baringer for a tract of timber in Minnesota, which they have since sold for \$180,000. Who says there is not money even to-day in lumber?

It is believed that Mr. R. G. Peters, of Manistee, who suffered financial embarrassment lately, will be able to pull through, pay everybody, and have a surplus.

A committee consisting of S. O. Fisher, A. M. Switzer and S. Eddy, is to visit Washington with a view of influencing legislation against the final passing of the Wilson Bill, making dressed lumber free. It is not thought by many that the mission will be a success.

Large quantities of Canadian logs are coming across to this side, the weather being quite favorable for rafting. A raft from Georgian Bay, making the fifth this season, and containing 4,000,000 logs, has reached Alpena. Shipments of lumber from Alpena up to July 1st, show a falling off of 3,154,000 feet, compared with the same period of 1893.

During June there was shipped from Cheboygan 13,088,103

feet of lumber, 1,301,300 lath, 1,500,000 shingles, 47,500 cedar ties and 26,790 posts. There was received 6,700,385 ft of Canadian logs.

SAGINAW, Mich., July 18, 1894.

"BOTTLING UP STEAM."

ANOTHER matter revealed frequently by the recording-gauge chart is the practice indulged in by many attendants, of "bottling up steam." Its time of most frequent occurrence is a few moments before starting time in the morning and at noon, and in some cases just before clearing fires. Of course it is the simple outgrowth of ignorance concerning the limited amount of steam in quantity they can so bottle up, and the very small service it can render, compared with the injury which the practice, when persisted in, ultimately does the boiler. Aside from this objection, the habit is exceedingly pernicious, because only a few moments, neglect would cause the pressure to accumulate to the point at which the safety-valve is supposed to open; and then, if it happens to be inoperative, an accident is almost certain to follow. No excuse should be taken in any shape, under any kind of reasoning, for "bottling up steam." If the generating capacity of the boiler is not equal to the current demand, it cannot be helped by simply bottling it up: in fact, it has been my experience that where the recorded line has been extremely crooked upon the first introduction of the recorder, the effect of such introduction has been to cause a much more uniform line from day to day, until the nearest approach to uniformity had been reached, consistent with the vicissitudes of the demands for steam. A steam-user once apologized for the appearance of his record, saying that the steam was drawn from the boiler at irregular periods by persons in the mill, and consequently the firemen could not carry any very regular line; that this use of steam was different from that in most places, etc. Noticing, apparently, my incredulity, he asked if I disagreed with him. My reply was: "Do you suppose that the steam necessarily falls as low as this record indicates?" In other words I called his attention to the fact, that, where a fireman is on the keen lookout for his boiler pressure and water level, he will readily detect the pointer-hand of his gauge the moment it begins to rise or fall, and govern himself accordingly. For instance, if he sees the hand indicating that the pressure is falling he will avail himself of the opportunity to slow down his feed, and perhaps open his damper wider, and if his fires are in prime condition, withhold fresh coal for a few moments; then when the onslaught upon his boiler has ceased, and the hand of his gauge is stationary, or starts to move upward, he will at once set about to replenish his coal and water, and so have his conditions favorable in a few moments for another attack upon his steam supply. When his steam is raising, he can afford to feed and to fire, and his thought should be to have everything in prime condition while he had surplus power and opportunity. Then he will not be caught so badly when these extreme attacks were made upon him. These extreme fluctuations, then, are largely due to the fact of his being unprepared to meet such emergencies; becoming alarmed when his steam has fallen 20 or 30 pounds, he attempts to get up by replenishing his needy fire with coal, which only tends for the time being to reduce the pressure still more, until it has become capable of delivering its gases, ready for combustion.

After this little explanation the proprietor shook his head, and said he had never thought of it in that light, and that he would have to call John to him and have a talk with him. Now, the result of this was, that from that time on, the man's record never fluctuated in the same manner again, and the average steam line maintained was one which showed constant firing frequently in small quantities, and keeping himself in shape to meet these emergencies. Undoubtedly the man had to work a little harder at first, but afterwards it was easier when he properly understood the matter and manipulated his fires accordingly. The suggestion from the proprietor was exceedingly valuable. It resulted in teaching his man, and in mutual regard between them afterwards, because it showed that the man was capable of being taught, and willing to be, and that the proprietor had evidence of resulting fidelity. The dissemination of knowledge among firemen can certainly do no harm.

TRADE REVIEW.

Office of CANADA LUMBERMAN, July 25, 1894.

THE GENERAL SURVEY.

ATTENTION among business men in this country has naturally been directed during the month to the railway tie-up in the United States. Sufficient of our lumber is shipped to the other side to cause us to feel quite seriously a disturbance, as large as has arisen out of the Pullman trouble.

It is fitting to draw attention in this column to something we have to say on the editorial page concerning foreign export fields for Canadian lumber. It may be that a consideration of the matter is not going to put money in the lumbermen's pockets to-day, but there can be little doubt that a study of the conditions named in the article in question will bear good fruit in the future, and the time need not be very distant.

The drives in most parts of the country are coming along with less trouble this year than is usually the case. Reports from certain points along the north shore show that there will be few, if any, logs hung up in that district. To a good extent the same is the case in the Ottawa district. Just yet we cannot say how the volume of cut, as indicated by the logs that come along, will compare with other years.

The depression in the American market is having an effect on the New Brunswick mills, and several of these are closed down. Dealers in different parts of the province are careless as to making sales, believing that prices will advance shortly.

Prices of lumber have been reduced in Winnipeg by \$1.00 per 1000 feet. Competition from Minnesota lumber is given as the cause for this step.

Nothing cheery can be written of local lumber trade. Business, both in the country districts and the city, is slow enough.

UNITED STATES.

Trade this year has been going altogether in the wrong direction to give any necessity for such a disaster as has come to the United States during the past month in the shape of a great railway strike. Dull as business has been the strike has intensified the dullness.

told that operations have been practically stopped and thousands of employees thrown out of work. The Puget Sound and Washington territory have suffered through the strike from the fact that it was impossible for them to get supplies through to destination.

FOREIGN.

The second three months of the lumber trade in Great Britain did not keep pace with an encouraging movement that showed itself during January, February, and March. The consumption then improved, but to quote the Denny, Mott & Dickson circular: "The first half of the year closed with weak markets all round. Values being so low, there seems little room for a fall; but needy holders may be forced to realize and notwithstanding cheap money, there is little temptation for the stronger ones to 'hold the baby,' should large parcels be forced on the market."

HARDWOODS.

Attention is being drawn to the fact, that at present, at least, there is not very much encouragement for exporters of hardwood. Our Chicago cotemporary, Hardwood, says, it is simply absurd for any reasonable person to make promiscuous shipments of lumber to any foreign market, for to do so is about equivalent to giving away the stock.

TORONTO, ONT.

TORONTO, July 25, 1894.

CAR OR CARGO LOTS.

Table listing lumber prices in Toronto, Ontario, including items like 1-4 in. cut up and better, 1x10 and 12 dressing and better, etc.

Table listing lumber prices in various categories like 1 inch dressing and better, 1 inch siding mill run, etc.

YARD QUOTATIONS.

Table listing yard quotations for mill cull boards, shipping cull boards, and various types of flooring and shingles.

HARDWOODS—PER M. FEET CAR LOTS.

Table listing hardwood prices per M. feet car lots, including Ash, Elm, Birch, Hickory, Maple, Oak, etc.

OTTAWA, ONT.

OTTAWA, July 25, 1894.

Table listing lumber prices in Ottawa, Ontario, including Pine, good sidings, Pine, good strips, etc.

QUEBEC, QUE.

QUEBEC, July 25, 1894.

WHITE PINE—IN THE RAFT.

Table listing white pine prices in the raft, including For inferior and ordinary according to average, quality etc., For fair average quality, etc.

RED PINE—IN THE RAFT.

Table listing red pine prices in the raft, including Measured off, according to average and quality.

OAK—MICHIGAN AND OHIO.

Table listing oak prices from Michigan and Ohio, including By the dram, according to average and quality.

ELM.

Table listing elm prices, including By the dram, according to average and quality.

ASH.

Table listing ash prices, including 14 inches and up, according to average and quality.

BIRCH.

Table listing birch prices, including 16 inch average, according to average and quality.

TAMARAC.

Table listing tamarac prices, including Square, according to size and quality.

STAVES.

Table listing staves prices, including Merchantable Pipe, according to qual. and sp'ct'n—nominal.

DEALS.

Table listing deals prices, including Bright, according to mill specification, \$115 to \$123 for 1st, etc.

NEW YORK CITY.

NEW YORK, July 25.—Little new business is being done in this market. Certain contract orders are being filled, but even these are of a limited kind.

WHITE PINE—WESTERN GRADES.

Table listing white pine prices in New York City, including Uppers, 1 in., Coffin boards, Box, in., etc.

SAGINAW, MICH.

SAGINAW, MICH., July 25.—The one story of unusual dullness has been written of this market for some months, and the recent strike has pretty well paralyzed business altogether.

Table with columns for 'FINISHING LUMBER—ROUGH', 'SIDING', and 'TIMBER, JOIST AND SCANTLING'. Lists various lumber types and prices.

Table for 'SHINGLES' and 'LATH'. Lists shingle sizes and lath types with prices.

Table for 'BOX' and 'SHINGLES'. Lists box sizes and shingle types with prices.

BUFFALO AND TONAWANDA, N.Y. TONAWANDA, N. Y., July 25.—A comparison of trade this year with that of a year ago does not cast much sunshine into lumber offices.

Table for 'WHITE PINE'. Lists various white pine products and prices.

BOSTON, MASS. BOSTON, MASS., July 25.—The yards report fair activity in business, but the discouraging feature is the prices at which lumber is being sold.

Table for 'EASTERN PINE—CARGO OR CAR LOAD'. Lists eastern pine products and prices.

Table for 'WESTERN PINE—BY CAR LOAD'. Lists western pine products and prices.

Table for 'SPRUCE—BY CARGO'. Lists spruce products and prices.

SHINGLES.

Table for 'SHINGLES'. Lists shingle types like 'Eastern sawed cedar' and prices.

OSWEGO, N. Y.

OSWEGO, N. Y., July 25.—Though trade is dull a better feeling prevails than for a little while past.

Table for 'WHITE PINE' and 'SIDING'. Lists white pine and siding products and prices.

Table for 'IX12 INCH.' and 'IX10 INCH.'. Lists lumber products and prices.

Table for 'SHINGLES' and 'LATH'. Lists shingle and lath products and prices.

ALBANY, N. Y.

ALBANY, N. Y., July 25.—The circumstance can be taken as a hopeful one, that dealers here are receiving good quantities of lumber from the mills.

Table for 'PINE'. Lists various pine products and prices.

Table for 'SHINGLES'. Lists shingle products and prices.

ECONOMY OF SUPERHEATED STEAM.

THE economical advantages of superheated steam in small motors were shown by tests of a Serpollet motor conducted by M. Seguin.

coiled and has one end connected with a feed pump, and the other with the engine to be driven. The boiler used in the above tests had a heating surface of 26.8 square feet.

PULP MANUFACTURE IN CANADA.

A LATE number of Printer and Publisher comes out with a vigorous plea for greater protection to the pulp mills of Canada.

A QUERY.

SOMEONE has asked the question, why is it, that a man, as assignee, will successfully manage a manufacturing plant, who never distinguished himself as a manager until he was placed in a position where he was forced to account for every penny?

PUBLICATIONS.

The editor of Review of Reviews reports in his July number an interesting conversation with Mr. Samuel Gompers, President of the American Federation of Labor.

Midsummer literature of the scientific kind must be tempting, indeed, to hold the mind of the average reader.

TRADE NOTE.

The Ottawa Lumber Co. are sending out a novel advertisement in the shape of a shingle on which was mounted a thermometer.

THE NEWS.

—J. E. & R. S. Lawson, saw mill, Stanley, N. B., have assigned.

—Mr. W. G. Parish has closed down his mill at Arden, Ont., for the season.

—Wm. Busby has taken over the lumber business of Horne & Co., Reston, Man.

—H. Elderkin & Co., lumber, Port Greville, N. S., have dissolved partnership.

—A tow of 150,000 logs recently broke loose in Lake Winnipeg, but was saved.

—The Vancouver Sash and Door Co., Vancouver, B. C., has started a planing mill.

—Lumbering operations in the vicinity of Little Current, Ont., are reported as brisk.

—A large drive of logs reached Mr. John A. Christie's mill at Brandon, Man., on June 22nd.

—The village of Humberstone, Ont., is desirous of securing the erection of a planing mill.

—The firm of McLachlan & Wilson, lumber merchants, St. John, N.B., has been dissolved.

—J. Walter, of Edmonton, Alberta, is getting out lumber for the erection of a larger saw mill.

—The lumber business of the late Peter Atkins, Morden, Man., has been offered for sale by tender.

—Messrs. J. R. & J. Giles have disposed of their mills and property at White Lake to Messrs. Box & Slater.

—It is said that the firm of E. Davison & Sons have 9,000,000 feet of lumber in their booms at Bridgewater, N.S.

—A correspondent from Hartland, N. B., states that the village requires a saw mill and a wood-working establishment.

—Mr. Angus McKay is building a large saw mill at Dorset on Lake of Bays, and expects to have it running in a short time.

—The Muskoka Mill and Lumber Company are reported to have secured 360 square miles of fine lumber district in New Brunswick.

—The saw mill at Stewarttown, Ont., had a narrow escape from destruction by fire recently, but was saved by the prompt action of the employees.

—Major Bellasis' planing mill at Lakesfield, Ont., has been purchased by Lillierap & Moore. The new firm will no doubt secure a satisfactory business.

—The saw mill operated by Peter King at Buctouche, N.B., resumed operations recently, and the outlook for that section is reported as being somewhat bright.

—It is stated that Mr. J. R. Booth will not re-build his large saw mill recently destroyed by fire, but will replace it with a mill of much less capacity.

—Two large Canadian steamers recently carried 700,000 feet of white pine from Ontonogon, Mich., to Quebec, for George McBurney, from whence it goes to England.

—As a result of the probable abolition of the duty on raw and dressed lumber, local lumber dealers in Winnipeg are reported to have reduced the price of lumber \$2 per thousand.

—Young Bros' mill at Halfway River, near Amherst, N.S., will cut about five million feet this season. This will be the largest cut yet made by their mill in one season.

—R. Richardson & Son, Bedford, N.S., whose saw mills were destroyed by fire recently, are re-building, and have placed orders for a quantity of modern machinery.

—Sawdust shoals in the Ottawa river are becoming dangerous to navigation. New shoals are presenting themselves every summer, caused by the water in the river going down very quickly.

—James S. Hickman, the lumber king of Amherst, N.S., is making large shipments of lumber to the old country. For one week recently the shipments amounted to the value of \$32,000.

—The saw mill of John Geary in London township was entered by thieves a few days ago. Their booty consisted of a large driving belt, a steam gauge, and a pair of blankets, valued at \$40.

—The Barrard Inlet Red Cedar Company, of Port Moody, B. C., have secured a contract to supply 120,000 feet of lumber to the purchasers of the steamer Delaware, who are building extensive dredging machinery.

—The steam saw mill of C. F. and F. R. Eaton, at Eatonville, N. S., is said to be one of the best gang mills in the country. Recently, in one day, the cut averaged 65,000 feet of lumber. The mill is now sawing on the fourth million feet for this season.

—McLaren's saw mill at Colden, Ont., is to be run by electricity, generated over a mile distant at a water power made by damming up a small stream. The dam is made of solid masonry 25 feet high and very thick.

—By the destruction of Hamilton & Co.'s lumber mills at St. John, N. B., last month, noted in our July issue, about \$50,000 worth of lumber and machinery were ruined and 60 hands thrown out of employment. The mill will be rebuilt.

—The Flewelling Manufacturing Company have recently put in their mill at Hampton, N. B., a new "Allis" band mill. A test of the mill was made recently which proved very satisfactory, the toughest spruce being cut as smoothly as the clear pine.

W. D. Elliot, C. W. Robertson, A. M. Jackson, and G. E. Denison, managers for the lumbering firm of Thompson, Smith and Sons, Cheboygan, have left for the large limit recently purchased from Jas. Walsh & Co., and will build and equip two camps for this winter's operations.

—The Department of Crown Lands will hold an examination of candidates for licenses as cullers of saw-logs at Calendar in Muskoka, on Tuesday, August 14. The examiners will be Messrs. E. Garrow, of Webbwood, John Kennedy, of Pembroke, and Thomas B. Tait, of Burke's Falls.

—At Vivian Burrell's saw mill at Mitchell Station, near Carmel, Que., recently, the cut by one circular saw for 10½ hours was 48,079 feet, all one inch boards, the cut for 15½ hours being 70,446 feet. This is claimed to be the largest day's sawing done in that section of the country by one circular saw.

—The British Columbia Commercial Journal gives the following quotations for Douglas fir lumber in cargo lots for foreign shipment:

Rough merchantable, ordinary sizes, in lengths to 40 feet,	
per M feet	\$ 7.00
Deck plank, rough, average length 15 feet, per M	12.00
Dressed T. and G. flooring, per M	15.00
Pickets, rough, per M	8.00
Laths, 4 feet 6 inches, per M	1.50

—An Ottawa paper states that considerable square timber from the upper Ottawa, is being brought down from Annapolis and Pembroke by the Canadian Pacific railway this year to escape the expense which is involved in running the government slides at "Passage" other parts of the river. The timber is as a rule taken direct to Quebec, where it is ready for shipment to the English market.

—The engine in use in Hamilton's steam saw mill, at St. John, N.B., recently destroyed by fire, is said to be one of the first, if not the first engine, brought to St. John. The mill was put into operation July 29, 1782, being the first steam saw mill started here, and the engine was built by the firm of Boulton & Watt, Birmingham, England, of which the famous engineer and inventor, James Watt, was the founder about the year 1775.

—It has been generally conceded that the lumber mills of Marysville, New Brunswick, the home of Canada's timber "king," surpass in cutting any other mills on this continent for the same kind of lumber. One gang has shown its ability to cut over one thousand feet in six minutes, the exact amount in one hour being 10,100 feet board measure. A day's work has been done of 144,000 feet for ten hours, one gang, and on Friday last the smallest gang of the five cut 680 logs in the ten hours, or more than one log a minute. Putting these logs at twelve to the thousand, this means something over fifty-six thousand feet for the day. — St. John Record.

—We learn from the Fredericton, N. B., Gleaner that Mr. Flisha Gilpatrick and other American gentlemen contemplate erecting a large saw mill somewhere along the line of the Canada Eastern railway. In the mill it is proposed to make use of hemlock logs. These logs will be sawn into boards, the boards will then be planed and dried, and shipped by rail to the United States market. The drying process will occupy about six weeks, and after they have been dried for that length of time the weight will be much less, and the expense of shipping will decrease accordingly. The capacity of the mill will be about 4,000,000 feet per year. The undertaking is in charge of Mr. Alex. Gilson, the lumbering king of Nashwaak.

FIRES AND CASUALTIES.

FIRE.

The saw mill of E. R. Betts, at Wentworth, N. S., has been burned. Loss \$1,000; insurance \$200.

J. Stewart's saw mill on the 11th line, Enniskillen, Ont., destroyed by fire. Loss, \$1,500; no insurance.

McKinnon's saw mill, near Guelph, Ont., has been burned. Two engines and a chopper were also destroyed.

James Bower's sash and door factory at Orangeville, Ont., was consumed by fire on the 3rd July. The loss is estimated at \$8,000 and the insurance \$2,000.

The large sash and door factory at Weston, Ont., owned by Mr. Edwin Shuttleworth, with lumber and machinery, was totally destroyed by fire recently.

News has reached us of the destruction by fire, about the end of June, of Mr. Brook's saw mill at Golden Valley, Ont. 100,000 feet of lumber were burned. Small insurance.

Fire in the lumber piles of J. R. Booth & Co., on the Rideau Canal, near Ottawa, destroyed 70,300 feet of lumber valued at \$12,000. The loss is almost wholly covered by insurance.

On the afternoon of July 5th, a fire broke out in Robert Thomson's lumber yard in Stewart street west, Hamilton. The lumber piled in the yard was saved, but the mill was completely destroyed. The estimated loss is \$1,000.

Byram & Murphy's saw mill at Sandison Station, Ont., was consumed by fire a fortnight ago, with all the unfinished stock of lumber, etc. The loss on the stock, on which there was no insurance, was \$4,000. The mill building was valued at \$9,500 and was insured for \$2,875.

Fire broke out in the large stove mills in Romney township, owned by Sutherland, Innes & Co., of Chatham, on the 20th July. The mill, dry kiln, several tram cars, and a quantity of logs were destroyed. One hundred men will be thrown out of employment. The loss will probably reach \$20,000.

CASUALTIES.

A young man named John Smart had the fingers of his left hand badly torn and cut while running a machine in J. C. Scott's planing mill on River Street, Toronto.

John Kitchen, of Hepworth, Ont., while working at Davidson Hay's saw mill at Tache Bay, had his right foot lacerated by a saw. He was taken to the General Hospital in Toronto.

Richard Langlois, who is a married man 50 years of age, and was recently employed at Fletcher's planing mill on Yonge Street, Toronto, had the misfortune, a fortnight ago, to have his left arm so severely crushed in a plane as to necessitate amputation. His right leg was also badly crushed.

A boiler in the saw mill of John Stevenson, at Cayuga Station, Ont., exploded on the 28th of June, killing the engineer, John Commer, and fatally injuring a Sawyer named Franks, whose skull was fractured. Two others were badly scalded. The mill is a total wreck.

One of the saddest occurrences which we have been called upon to chronicle, took place at Paris, Ont., on the 12th of July. James Crawford, a carpenter, working at a steam sawing machine, was placing a plank on the table which feeds the saw when he was caught by the belt and hurled across the saw, which severed his head from his body, at the same time cutting one of his legs and an arm off.

PERSONAL.

Mr. Hugh Monroe, crown timber agent, has returned to Port Arthur with his bride, having been married at Ke Portage.

Mr. Fred Moore, a popular lumberman of Woodstock, N.B., it is announced will be a candidate for the legislature in Carlton County.

Mr. Harvey Francis, lumberman, of Parkenham, Ont., was married recently in California, and accompanied by his bride is at present on a visit to Europe.

Mr. E. R. Eddy, the well-known lumberman of H.C., was married last month to Miss Shirriff, daughter of Mr. John Shirriff, High Sheriff of Northumberland County, N. B.

Mr. Eugene Rouillard, of the Quebec Crown Land Department, has recently been on a visit of inspection to the land agencies for the Chicoutimi and Saguenay districts.

A VALUABLE BOOK ON BAND SAWS.

THE Eastman Lumber Co., Eastman, Que., who recently obtained from THE LUMBERMAN a copy of the book entitled "Why Band Saws Break," write us their opinion of the book as follows: "We have found it a great help to us. Some of the reasons we have found out, but others we were not sure of, and in these cases did not know how to prevent breaking of saws. We can recommend this book to anyone using a band saw, and every man who has charge of band saws should have a copy of it."

The advantages of electrical transmission of power are largely those of the relation of the position of the machinery with the motive power of the establishment. Each room is entirely independent from other rooms, and any motor is always ready for service as long as the machinery from which it derives its electricity is in operation.

CABLE-WAYS FOR LOGGING.

THE work of hauling logs, as an important part of lumbering, has called forth some of the best engineering skill of the country. We have already described in these columns the piece of engineering enterprise put into operation within the past few months by Gilmour & Co., of Trenton, so that they might bring the logs from their Nipissing limits with the greatest ease and least expense. In this case the distance from the limits to the mill is somewhat over 200 miles, and there is at times a log haul of over 300ft. long and about 40ft. lift. Those who have personally inspected the Gilmour experiment say that it has worked charmingly.

Logging by cable is another method that has received a good deal of consideration from engineers. In a late number of the Northwestern Lumberman, Mr. Met L. Saley, in his chatty chapter, "Salmagundi," tells of what is known as Kelliher's system of moving logs by cable. Kelliher, it appears, is a Maine man, who has lost two or three fingers in his battles with logs, and this fact, combined with a considerable experience, no doubt, has set his mind thinking along these lines. It is not chronicled, however, that he has yet brought his cable system to a very high degree of perfection. It is described as being somewhat sluggish in its movements, and to quote Saley's description, "The cable was heavy, and when you tried to do it up in a coil so that it could be hauled away to another field of action, was the time when the men would become tired on short notice." Then there is a Glover & Chandler's steam logger, which made its debut in Northern Michigan about six months ago, but so far it has only met with indifferent success.

A cable-way on a more elaborate scale than anything that has yet been attempted proved the subject of a paper at the recent annual convention of the American Society of Civil Engineers at Niagara Falls in June last. The author of the paper is Mr. Richard Lamb, an associate member of the society. What he has to say we will let him tell in his own words, thus:

"The problem that confronted the writer was to design a cable-way that could be operated at least half a mile, and with the power placed upon a boat or car located at a navigable point. It should gather in the logs for at least 500 feet on either side of the cable-way proper, and by its means bring the logs to navigation at a reasonable cost for operation. It was necessary that such a system should be easily and cheaply moved from place to place as the total area of forest to be cleared at any one setting would not require much time. Trees had to be used as supports, as they are the only practicable foundation to be found in the swamp. It was evident that any steam system would have to be worked in a practically a straight line. To attempt to find trees in a straight line would be difficult if the distance apart was not great, but after running a number of lines it was found that in a forest of ordinary density a practically straight line could be gotten with trees at from 100 to 225 feet apart. The writer's system was designed for long spans in consequence.

"Iron brackets in the shape of a T are used for passing by the trees and for supporting the cable. The T iron bar straddles a 1 1/2 x 1/2 inch iron pipe driven into the tree at a height of about 13 feet from the ground. Dogs at the ends of the arms attached to the T iron bar are driven into the tree on either side, and a chain wrapped around the arms and held from slipping by upset knobs keeps the arms from spreading. The chain also serves to hold an iron snatch-block.

"A swinging sheave is hung from the end of the T iron bar on which is an iron band curved rearwardly and downwardly, which acts as a fender and also replaces the hauling cable should it become disengaged from the hanging sheave. The steel saddle at the end of the T bar is provided with boiler steel U plate. Two wedges pass through the U plate and saddle in opposite directions to each other. By means of these wedges the U plate clamps the main cable rigidly to the saddle. On the head tree two sheaves are placed, on either side, and on the tail tree a 2-foot steel sheave is chained.

"The endless 1/2-inch pulling cable, made of nineteen strands of steel wire, is passed through the sheaves on the head tree and on the brackets and around the large sheaves on the tail tree. Two turns are made around a two-foot elliptical grooved sheave, run by a twenty-five H. P. reversible engine for a 1/2-mile line. After the 1/2-inch cable is out, the main cable is hauled into the swamp by steam power by means of the hauling cable.

"The cars are made with a hanging frame supported by a horizontal axle passing between the wheels. By this arrangement the hanging frame can remain vertical even when the car is climbing the steep grade of the catenary on approaching the saddles and when passing over them. The hauling cable is attached rigidly to the swinging frame at a point located so as to clear the swinging sheave, and the hauling cable is practically parallel with the bearing cable at all parts of the line.

"It became necessary, however, to design a system that practically would not be limited as to the distance it could be operated. To this end an electric cable-way was built. As economy and ease in moving depended being able to use few supports, or, in other words, long spans in the forest, it was evident that no system of traction was available. The direction of the force should be parallel to the bearing cable. This suggested the use of a 1/2-inch cable, made fast at both ends, to be supported at the tree brackets by a narrow saddle, so designed as to enable the cable to change its course and not to become disengaged when the car passed over it.

"The motor is made with the car like the steam cable-way, with a hanging frame having attached to it an elliptically grooved sheave which is revolved by means of a newly patented worm or wedge gearing, driven by a 5-kilowatt electric motor with vertical shaft, all attached to the swinging frame of the car. By taking a couple of turns of the 1/2-inch cable around the elliptical grooved sheave, when the motor revolves the gearing, the sheave winds up, and at the same time plays out on the 1/2-inch cable, thus pulling along the car.

"When it reaches the bracket, the small cable is lifted from the saddle momentarily, and the car can take a new course. Hence we are not limited to running in a straight line. The main cable is used as the conductor. It is insulated at the brackets by micaite placed between the saddle and the iron T bar, and the current is prevented from passing down the frame of the motor by a micaite insulator at the point on the frame where the axle-box joins the frame proper. The points of the insulator are each provided in their construction with hoods to shed water.

"The worm or wedge gear deserves special mention. It was invented in 1891 by a Mr. Welsh, of the Glen Cove Machine Company. It differs from an ordinary worm gear in that it has 25 per cent. more contact surface, moves two teeth of the gear wheel at each revolution of the worm, and works on the principle of a wedge rather than an incline plane. The worm gear especially made for this electric motor is designed to work both

ways, and has ball-bearings at either end of the worm, to lessen the friction and thrust. The gear wheel, worm and ball-bearings are encased in a jacket filled with oil. Thus the minimum loss in power is effected between the electric motor and the elliptical grooved wheel. The electric motor is run at 1,340 revolutions per minute, giving a speed to the motor proper, with the gearing, of six miles per hour, which is the desirable speed for logging purposes. The current is taken from the main cable through the wheels, thence through the axle to the axle-box of the hanging frame. Here an insulated copper wire connects it with the rheostat. The return current is passed through the axle of the elliptical grooved wheel; thence on the 1/2-inch wire to the brackets; thence on a wire down the trees to the ground.

"In the system now built 220 volts are used. The trial was made at the works of the Trenton Iron Co., Trenton, N. J., along the banks of the Delaware and Hudson Canal. It was found that the heavy logs could be pulled from a distance up to the cable, by the same method as employed in the steam system. When two motors are used, the empty cars are switched off the cable and motors are exchanged, the motor which hauled the empties taking back the loaded ones, and vice versa. This system of electrical cable-way can be used for an endless variety of purposes."

THE MANUFACTURE OF LUMBER.

WITH all the progress that has been made in methods of manufacture of goods from other natural products, in the judgment of Hardwood, we are yet a long way behind in the matter of transmuting the trees of the forest into a product for merchandizing. The saws of the ancients, our co-temporary goes on to say, were blades of metal with serrated edges, the points of which were sharpened in the same way as now. There has been a certain amount of improvement in the blade by changing the shape of the teeth and making it thinner and of more uniform thickness, and perhaps of better temper. It is even problematical if these are not rather a return to an age of lost arts preceding an era of barbarism which held sway for a few centuries.

The up-and-down saw mill of to-day is built on precisely the same principles as the pioneer mill of Gottlieb Muller, erected on the banks of the river Rhine in the 13th century, though instead of one saw it carries two or more in a gang. The only new principle that has been applied to the gate saw mill is the oscillating movement in the gang. There have been great improvements in the application of power, and the gang edger and trimmer have been added. But these are all in the interest of speed and increased output rather than in the real manner of making the lumber or improving the quality of its manufacture.

The question is raised whether there are half a dozen lumber manufacturers in the country who can tell, or even give an intelligent guess, as to the number of thousands of feet of their annual cut that is reduced by bad manufacturing. The only persons who have any adequate knowledge of this subject are the expert lumber inspectors who do actual grading by quantities, and many of them, while they know that it is considerable, have not given the subject sufficient thought to be able to say what the percentage really amounts to. The good judges assert that it is not less than 5%, and there are those who firmly declare it is more. Call it 5% of the entire cut of the country and think of the enormous amount this is.

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SWEDISH SAW MILLS.

IN this wooden country we certainly have attained to a high art in saw mill building. The Timber Trades Journal, of London, Eng., makes some statements, however, in regard to the magnitude of saw mills in Sweden, that are likely to be surprising to some on this side of the water. One institution, the Skutskat Company, manufactures and exports annually nearly 120,000,000 feet board measure; and there are several mills that ship 40,000 to 50,000 St. Petersburg standards per annum. A St. Petersburg standard or standard hundred, as it is more properly called, contains 1,980 feet; so that the export of 40,000 standard means 79,200,000 feet board measure.

Attention is called to the fact that these outputs are produced from small timber, not often exceeding 8 to 9 inches in diameter, and frequently as low as 6 or even 5 inches, making the result still more remarkable in comparison with the industries of the United States and Canada. The large saw mills in Sweden have sometimes upwards of 20 frames. Two are mentioned that are fitted with 24 frames. In Norway the largest concern is Saugbrugsforeningen, that controls 21 frames and a large plant of planing machinery that enables them in certain years to produce nearly 30,000 standards, the great part of which is "prepared," or worked in the planing mill. The biggest individual shipper in the old world is said to be A. Alstrom, of Hjerneborg, who, it is said, owns about 15 frames, capable of sawing upwards of 30,000 standards. The largest individual ship is P. Vikstrom, Jr., of Stockholm, who ships more than Mr. Alstrom, but does not exclusively own the different mills that turn out his product.

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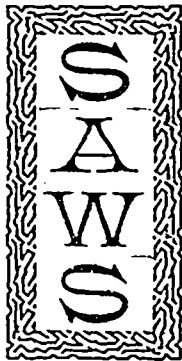
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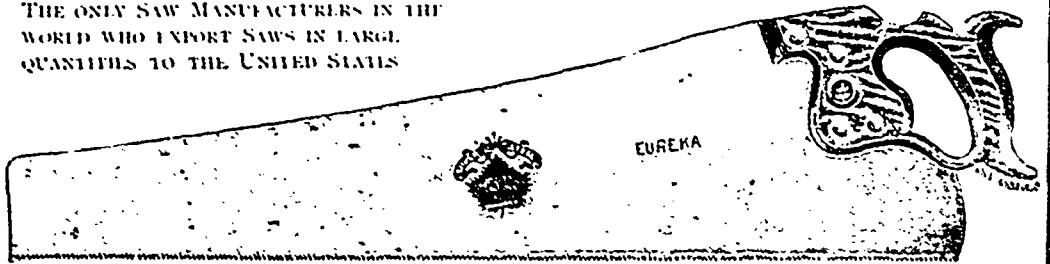


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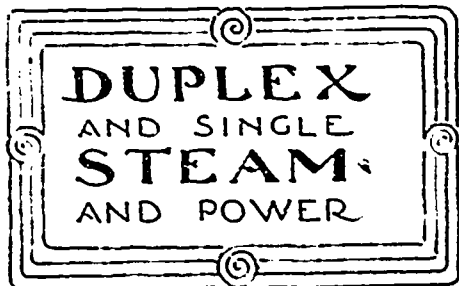
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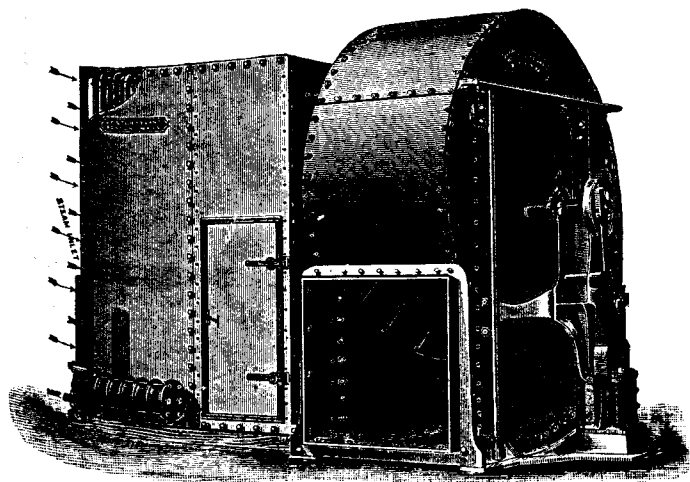
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TOWN	Railway, Express, or nearest Shipping Point	NAME	BUSINESS	Power, Style and Daily Capacity
Ottawa, Ont.	Ottawa	Booth, J. R.	Lumber, Wholesale and Retail	Steam, Circular and Band Mill
Ottawa, Ont.	Ottawa	Bronson & Weston Lumber Co.	2 Sawmills, White and Red Pine, Wholesale	Water, Gang and Band, 450m
Parry Sound, Ont.	Uttersen	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 Mills, Ont.	Midland	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, Schell & Co.	Cheese Box Factory, Pine, Spruce, Cedar	
Almonte, Ont.	Almonte	Caldwell, A. & Son	Sawmill, Pine, Lumber, Hemlock, Hardwoods	Circular, 3m
Barrie, Ont.	Barrie	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	
Blind River, Ont.	Blind River	Blind River Lumber Co.	Oak, Oak Railway Ties, Paving Blocks	Steam, Circular, 16m
Bobaygeon, Ont.	Fenelon Falls	Boyd, Mossom & Co.	2 Saw, Sh. and Lath Mls., Pine, Hem., Bl. Birch	Stm., Band, Cir., S. 75m, Sh. 60m
Barrie, Ont.	Barrie	Burton Bros.	Lumber, Wholesale and Retail	
Waubushene, Ont.	Waubushene	Georgian Bay Consol. Lumber Co. H.d. office arcade 24 King st. w., Toronto	Lumber, Wholesale and Retail	Waubushene mill, stm., 200m; Pt. Severn mill, water, 120m
Calabogie, Ont.	Calabogie	Carswell, Thistle & McKay	Lumber, Wholesale and Retail	
Callander, Ont.	Callander, G.T.R.	John B. Smith & Sons Head Office, Strachan 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.	Steam, Cir., Saw 14m, Sh. 20m
Glamis, Ont.	Pinkerton	McIntyre, N. & A.	Saw, Shingle and Lath Mill, Timber Lands, Hemlock, Pine, Lumber, Hardwoods.	
Hamilton, Ont.	Hamilton	BRADLEY, MORRIS & REID CO.	Lum., Tim., Pine, Hem., Hwds., Whol. and Ret.	Steam, Circular, 25m
Huntsville, Ont.	Huntsville	Heath, Tait and Turnbull	Sawmill, Pine, Spruce, Hemlock, Hardwoods.	Steam, Circular, 4m
Hamilton, Ont.	Huntsville and Katrine	Thomson, Robert & Co.	Sawmill, Pine, Spruce, Hardwoods.	Steam, Circular
Keewatin, Ont.	Keewatin	Dick, Banning & Co.	Sawmill, Pine, Hardwoods, Wholesale	Water, Band and Circular, 100m
Keewatin, Ont.	Keewatin	Keewatin Lumber & Mfg. Co.	Saw, Lath, Sh. and Pl. Mill, Moving Posts, Pine	
Lakefield, Ont.	Lakefield	Lakefield Lumber Mfg. Co.	Lumber, Wholesale and Retail	
Little Current, Ont.	Sudbury	Howry, J. W. & Sons.	Lumber, Wholesale and Retail	
London, Ont.	London	Gordon, James	Exp. and dlr. in Am. Hwds. made to specification	
Longford Mills, Ont.	Longford	Longford Lumber Co.	Saw and Plan. Mill, Tim. Lands and Logs, Pine	Steam, Band and Circular, 100m
Norman, Ont.	Norman	Minnesota & Ontario Lumber Co.	Lumber, Wholesale and Retail	
Louise, Ont.	Edmonton, G.T.R.	S. B. Wilson & Son	Hardwoods, Shingles, Lath, Handles.	Steam, Circular, 20m.
Toronto, Ont.	Warren, C.P.R.	The Imperial Lumber Co., Limited	Pine	80 M. per day, Stm., 2 Cir. Saws
Toronto, Ont.	Cache Bay, Ont.	Davidson, Hay & Co.	W. Pine, Lath, Shingles, Dim. Timber, Car Sills	Stm., 2 Band, Cir. & Gang, 140m
Toronto, Ont.	Lakefield	S. J. Wilson & Co.	Pine and Hardwood, Wholesale	Steam, Circular, 15m.
Toronto, Ont.	Toronto	F. N. Tennant	Lumber, Wholesale	
Toronto, Ont.	Toronto	Donogh & Oliver	Lumber, Wholesale	Com.
Toronto, Ont.	Toronto	Victoria Harbor Lumber Co.	3 Saw, Shingle and Lath Mills, White Pine, Whol.	Stm., Cir., Gang and Band, 140m
Toronto, Ont.	Toronto	W. N. McEachren & Co.	Lumber, Wholesale	Com.
Toronto, Ont.	Toronto	James Tennant & Co.	Lumber, Lath, Shingles, etc., Wholesale	Com.
Toronto, Ont.	Toronto	DeLaplante & Bowden	Pine and Hardwood Lumber, Whol. and Retail.	
Toronto, Ont.	Toronto	Lames McBain Reid.	Ry. and Ship Timber, any required dimensions	
Warton, Ont.	Warton	Miller, B. B.	3 Sawmills, Lumber, Barrel Heads	Stm., Wr., Cir., Port. & Sta., 10m
Montreal, Que.	Montreal	Dufresne, O. Jr. & Frere	Sawmill, Pine, Spruce, Hemlock, Hdws., Whol.	Steam, Circular and Band, 50m
Montreal, Que.	Montreal	SHEARE & BROWN	4 Sawmills, Oak, Ash, Elm, Pine, Hem., Dim.	2 Stm., 2 Wat., Band, Cir., 40m
Montreal, Que.	New Westminster	MOODYVILLE SAWMILL CO.	Sawmills, P. Fin, Spruce, Cedar, Hardwoods	Steam, Circular, 20m
New Westminister, B.C.	New Westminster	Brunette Sawmill Co.	Saw and Planing Mills, Sash, Doors and Blinds.	Steam, Gang and Circular
Canterbury, N.B.	Canterbury Stn.	James Morrison & Son	Fir, Cedar, Spruce, Hardwoods	
Bridgewater, N.S.	Bridgewater	DAVIDSON, E. D. & SONS	Sawmill, Pine, Hardwoods	Steam, Circular, 38m
South River, Ont.	South River, G.T.R.	South River Lumber Co., Ltd.	5 Saw, Shgle. and Lath Mills, Pine, Spr., Hwds. Pine, Spruce, Birch, Hemlock, Shingles.	Water, Circular and Gang, 200m Stm., Cir., 40m, Shingles, 35m, Lath, 15m

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

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The Montreal Car Wheel Co.

... MANUFACTURERS OF ...

Charcoal Iron Chilled RAILROAD WHEELS

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WORKS: LACHINE, QUEBEC

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Large Matcher and Planer combined, Band Saw, Power Mortiser, Shafter, Jointer and Sandpaperer.

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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.

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IN THE ROTUNDA OF THE

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IN THE

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— ON —

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commencing at 2 p.m. prompt, the following valuable timber limits:—

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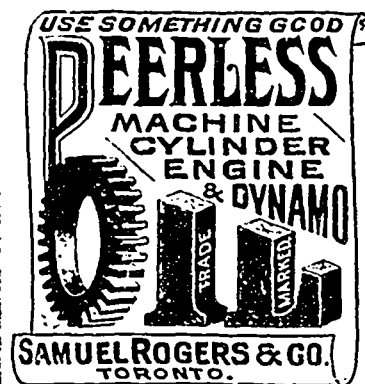
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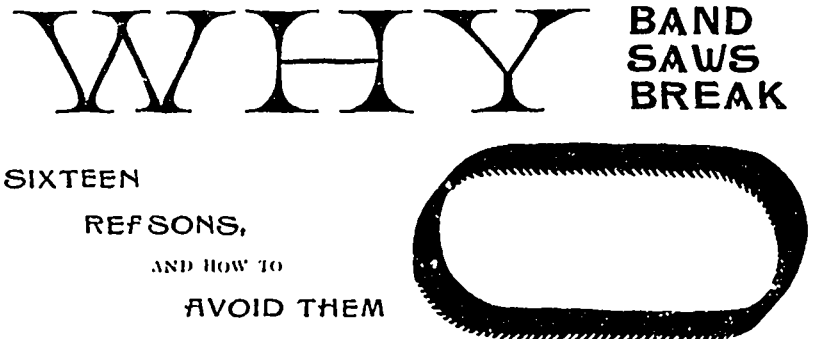
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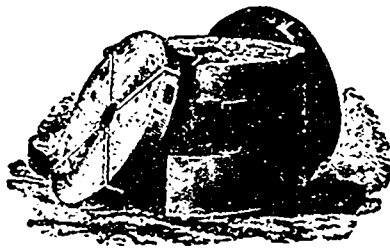
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Brantford
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Yours Truly
HUNTSVILLE LUMBER CO. Ltd.

Wm Turnbull Secy