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THE CANADA LUMBERMAN

Wood-Workers', Manufacturers' and Millers' Gazette

VOLUME XXIII. NUMBER 10. | TORONTO, CANADA, OCTOBER, 1903 | TERMS, $1.00 PER YEAR. Single Copies, 10 Cents.

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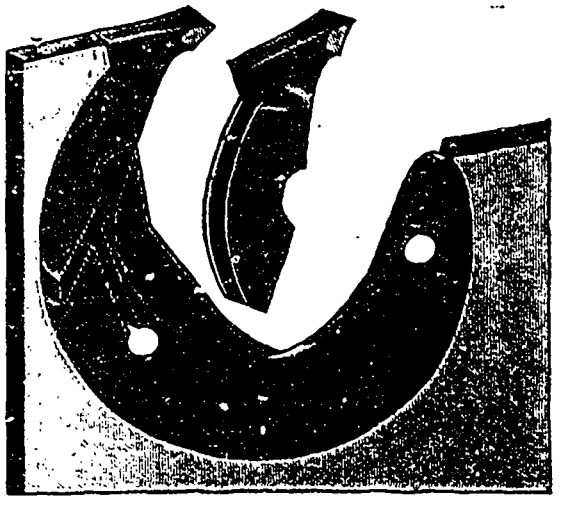

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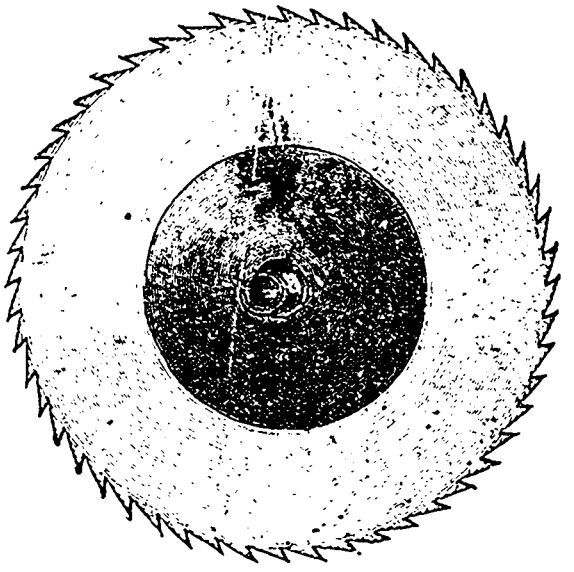

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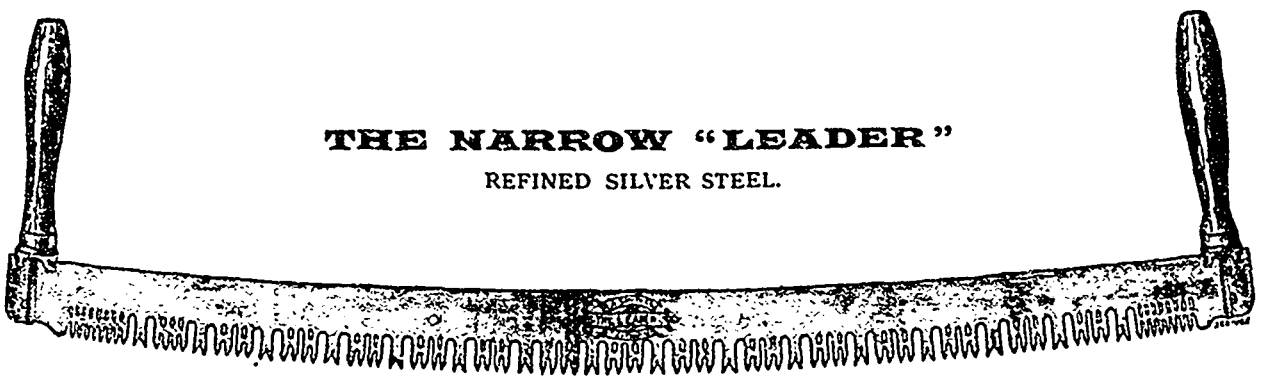

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THE CANADA LUMBERMAN

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THE FORESTER AN ENGINEER.

By Prof. B. E. Fernow.

The first task of the forester, in beginning the management of a forest property, is to provide cheap and efficient means of transportation for the removal of a bulky crop, of which much is inferior, and if possible to so arrange this harvest that it may be made gradually and continually, logging over the same area for a number of years.

Here, in the harvest, logger and forester have similar, yet not identical interests, for the logger lacks the requirement of logging over the same area gradually and continually, of having to remove cordwood, weeds and debris, of caring for the young aftergrowth. Nevertheless, the forester must naturally do much the same as the lumberman, and utilize the engineering skill which has been developed in the logging business.

According to the size and location of his property and the working capital at his disposal, he will resort to old fashioned methods of logging—skidding the logs by horses or mules to skidways, and hauling them on wagons or with sleds on ice roads to the landings; or using lumber slides and water flumes to bring the material either to rivers, which he may have to dam and regulate in their course in order to float and drive the softwoods, or to rail if hardwoods; or else he may benefit from the development of steam logging devices in connection with steam railroads.

Burnt Pines, Carson Lake, Renfrew County, Ont.

Whether the transportation is by rail or water, or by sled or wagon, the locating of the roads is one of the most important functions of the logger. Be it that temporary winter roads or permanent summer roads are to be used, a well planned system of main roads and branches must be located. So important, for financial reasons, is the question of road location considered in German forests, that a permanent road system forms most important initial investment—on our undeveloped lands the only plan is temporary roads.

In logging operations, as now conducted, engineering structures and operations are constantly employed.

Even the felling of such trees as the great western pines is a piece of engineering requiring the greatest skill and judgment. The long shaft must fall so as to clear the surrounding trees, and not destroy its own value and that of others by crushing or lodging. Skidding is now in some forests done by an engine and wire rope. First successfully applied in the cypress swamps of the South, then on the mountains of the Pacific Coast with the ponderous pines and firs, these steam skidding methods promise to supercede the old-fashioned horse and mule wherever large enough masses, especially of hardwoods, are to be lumbered, and where railroads can be profitably employed to bring the log harvest from the forest to the mill.

The present steam-skidding system, first suggested by Mr. J. H. Dickinson, relies upon a stationary hoisting engine, and brings the logs from shorter or longer distances to the cars by wire ropes running over drums, the ropes being disposed in various ways according to the lay of the ground. One of the essential devices is the cast steel nose or cone (Baptist patent), which caps the log automatically when the rope is pulled taut, and steers the log over any stumps, stones, or other impediments.

There are now four different methods of steam skidding used. The simplest, applicable to flat lands, consists in snaking the logs over the ground and assembling them at the cars by means of a hoisting engine and drum, a horse returning the rope with a grappling hook or tongs at the end; the loading is done by a separate rope and drum.

The distance to which this skidding may be done is, of course, dependent upon the length of rope which it is practicable to wind on the drum or drums and to have the horse return. Usually this is not more than 800 to 1,500 feet, when the machine may make from 150 to 250 pulls per day, the cost on the average with a crew of eleven men and three mules being about $24 per day, and the output, of course, dependent on the character of the timber and the log size, which determines the number of feet coming with each pull.

Where the ground is less flat and simple in contour, and where it is preferable to return the rope and grapple automatically, the "slack rope system" may be employed. In this system a wire cable is strung from a head tree near the engine to a stump in the woods, on which travels a carriage (Miller patent), with a specially designed block (Butler's patent) through which the skidding rope with logging tongs works, so as to allow sidewise extension; an outhaul rope, running over a separate drum of the hoisting engine, returns carriage and tongs to the woods, where the tong men pull the rope slack and attach the tongs to the logs lying along the line shorter or longer distances.

The loading on cars is done by a separate set of drums and rigging. To use this system, which may extend to a longer distance than the snaking system satisfactorily, the ground must be tolerably free from rocks and obstructions. According to conditions and distances, from 80 to 120 pulls may be made in a day. A later improvement provides for a number of side lines working simultaneously, by which the efficiency is greatly increased; otherwise horses or mules gather the logs to the pulling line.

In the cypress swamps, where this method is largely used, the machine is placed on a large scow, moving in canals prepared to float the logs. Here the distance to which the skidder works is 2,500 to 4,000 feet, the ponderous logs moving at the rate of 500 to 600 feet a minute, breaking through the timber with thundering noise. Such a pull beat is capable of landing 30,000 to 50,000 feet per day in the water.

In more mountainous districts, where narrow valleys and coves with steep slopes are to be lumbered, the log-gathering system finds its conditions. In this a cable is stretched from slope to slope across the railroad track in the valley, and the logs are gathered to the track by the skidding rope and carriage. The distance to which the system may work, depending somewhat on the degree of slope, may be up to

* Abstract of a lecture delivered at the School of Mining, Kingston, Ont., preliminary to the establishment of a Department of Forestry.

1,000 feet, when from 120 to 150 pulls per day may be made.

In these last two systems up-hill skidding is, to be sure, as easy, or even easier, than down-hill. According to conditions, either of these systems, or any combination of them, or a combination of skidding by horse and steam, or a relay system with several engines placed one after the other reaching out long distances, will give the best results.

The first steam logging railroad was built in Michigan in 1878 by W. S. Gerrish, who was called a hare-brained enthusiast for his innovation, which however, proved successful. Ten years later many such logging roads of 25 and even 45 miles in length, and altogether over 3,000 miles were in existence; in Michigan alone over 720 miles. Now the logging railroad has become so general that the mileage may be estimated to exceed 25,000 miles.

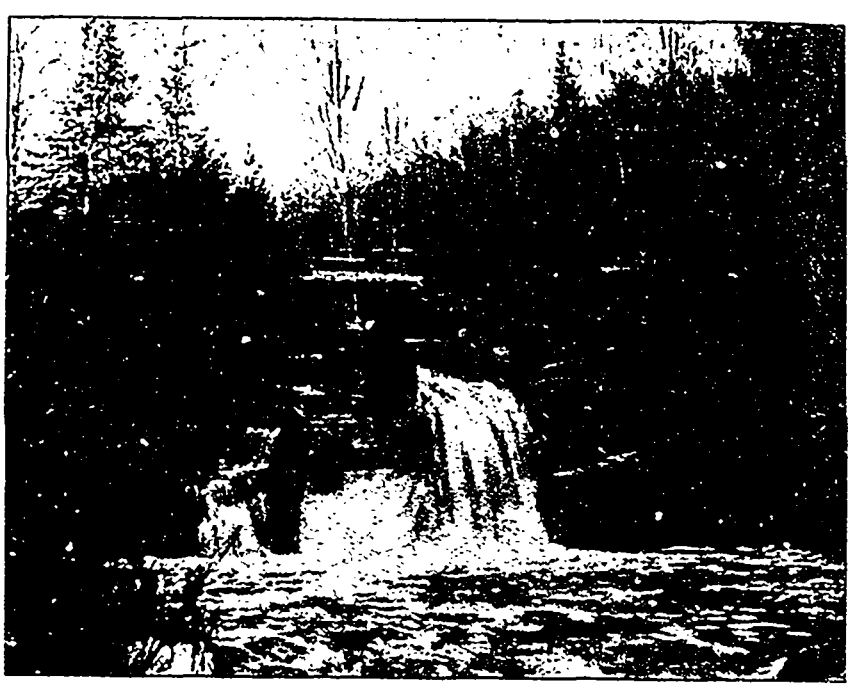
There are still three different kinds of logging railroads in use: The pole road, the tramway with sawed wood rails with or without strap iron capping or flat bar iron rail, and the iron or steel T railroad. Each road has its merits and advantages of its own in given situations, although the regular steel T railroad, all things considered, seems to have found most favor.

In the Cornell College forest a standard gauge with 40-pound steel rail has been used on spurs, and a 46-pound rail on the main road, with a 27-ton engine.

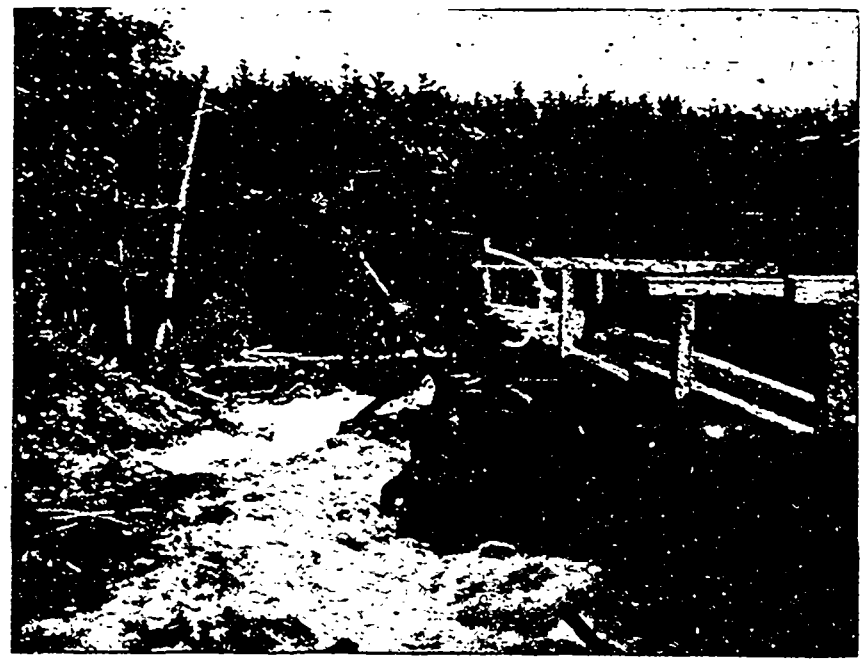
The economical construction of logging roads which are designed to serve only a temporary requirement is one of the engineering problems which more and more interests lumbermen, and even to a greater extent foresters, who are forced to secure even greater economy, since the margins from their business are for a time at least necessarily smaller. In such roads cuts and fills must to avoided as much as possible, while heavy grades, numerous and sharp curves are necessarily to be extensively used, and it takes a careful weighing of saving in cost of first construction against losses in maintenance and efficiency, such as no engineer is called upon to make in constructing standard roads. It stands to reason that to secure the least expensive logging roads, the main effort must be made in the location of the road, for this influences not only the cost of constructing but of operating it. No rules but engineering gumption must determine. Where wood is cheap and right at hand, it is often indicated to use imperfect and unmarketable logs instead of earthwork, or matting of brushwood and cribbing for crossing swamps, and similar devices which do not commend themselves for main line.

In Europe portable tramways and wire rope ways are much employed—the longest, five miles, being in the Alps. Portable railways are sometimes employed in connection with more permanent roads, 2 rails attached to steel ties; each yoke, 10-15 feet long, with 10-24 lb. rail, weighing 75-100 pounds, hook into each other. The newest type has been invented by a forester, and is laid without rails. The log-slide, with or without water, is a device

A Lumbering Railway.



Dam and Timber Slide, McGillivray Lake, Coulonge, Que.



Cataract and Timber Slide, Whitefish River, Algoma.

General View of Logging Operations.

well-known in mountainous or broken regions where water is available. One such in the Sierra Nevada is an incline 4,000 feet long and with a 1,400 feet elevation. It delivers 10,000 cords a day.

Altogether landing places and terminals must be located with circumspection, to take care of the bulky material and secure the cheapest handling of it, which, with cordwood even more than with logs, depends upon the character of the landings.

There are now very generally employed steam loaders; hoisting engines with outhaul ropes running over drums, which pick up the logs alongside the track. Various devices are resorted to to facilitate the passing of cars and to locate the loader with reference to cars and landing places.

In the "Barnhart" and in the "American" loader this is accomplished by having rails laid on the cars on which the loader travels, pulling itself along as needed, the latter on two short portable sections of track, the former on permanent track. Such a loader of the Barnhart type as used in the College forest, will pick up and load from 600 to 800 logs per day, the logs being banked to within 100 feet or so from the track. It is able to move on a pivot in all directions, and the character of the landing place is of little importance.

In the "Decker" log loader the clearing of the track for bringing empties to the loader is accomplished by allowing them to pass underneath the loader over a three-rail section of track, which rises from the main track and is carried by the loader on its lower story.

In forestry work, where the care for the young aftergrowth must be taken into consideration, modification of the methods of procedure will be required. They are, however, directly

Steam Skidding and Loading.

applicable where clearing with artificial planting is practiced, or where the strip system is used, which consists in clearing strips and securing the reproduction by seeds from the neighboring old timber which is left standing. When the forester shall be a fully recognized and established institution in Canada we may expect that he will develop these methods of exploitation to suit the additional requirements of silviculture.

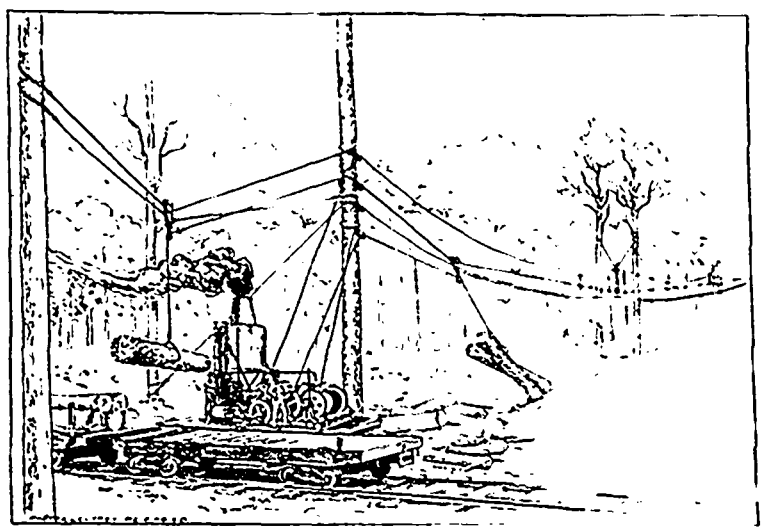
In mechanical engineering, also, there is still a wide field unoccupied, the development of which would aid the business of the forester. We are still relying on brute force for felling trees, sawing them into logs and cutting and splitting cordwood. Attempts to apply steam or electric power in tree felling have so far failed to bring out any practical method. There are now on trial cordwood cutting machines, but they are so far only applicable for very special conditions which can be rarely met.

In entirely different direction is engineering skill demanded, and a special line of forest engineering has developed in connection with the reclamation and reforestation of sand dunes and denuded mountain sides. This has been especially developed by the French foresters, the French government having spent many million dollars in covering the lands and sand dunes of Gascony, and in safeguarding Southern mountain ranges against torrential action induced by deforestation. This forest engineering is now practiced in all countries where forestry is developed and the necessity for this work has been recognized.

The fixation of sand dunes has also been begun in the United States by the Harbor Commissioners of Massachusetts at Cape Cod and elsewhere. It is a simple operation, which consists in first quieting the sand by mechanical means, fences and brush, or turf cover, and by cutting off or breaking the force of the wind by means of an artificially induced forward dune. Then grasses and other deep-rooting and root-creeping plants are used to bind the sand together, and finally tree growth can be established to give permanent protection.

On the denuded mountain slopes it is also first the mechanical quieting of water and soil movement which must precede the work of the forester. This work must begin at the top of the mountains, where the waters gather their momentum into torrents which carry soil and debris to lower levels. By fascine works, revetments and retaining walls the waters are obstructed in their direct descent, and the violent rush over steep slopes is changed into gentle falls, when the pockets behind the breastworks are filled up with the debris and soil. Then when the waters are directed into proper channels and the soil has thus become quieted, sodding and sowing with grass restores the meadow on the gentler slopes, while on the steeper slopes a forest growth is planted and the equilibrium of nature's forces, which man had disturbed to his own detriment by the reckless devastation of the mountain forests, will be gradually re-established.

These glimpses into the problems of an engineering character which are presented to the forester will suffice to justify the claim that he is in need of a considerable amount of engineering knowledge and gumption, which is to be applied under conditions in which it is not usually practicable to employ an engineer.



Method of Logging.

While for main constructions it may be advisable to call in an engineer, at least in consultation, in smaller constructions and in operating roads, railroads, etc., the forester can hardly afford not to be his own engineer. He must have the knowledge which will make him independent of the professional engineer. Students of forestry, therefore, need a course in engineering which will make them acquainted with principles and methods of construction of special interest to them in their business. On the other hand engineers may find a field in solving engineering problems for the forester, and in improving his methods, without becoming professional foresters.

REDWOOD A SUBSTITUTE FOR STEEL.

Although it seems incredible, it is claimed that California redwood has certain qualities which render it, for some purposes, more durable than steel. According to an official report from San Francisco, redwood can more than hold its own against metal as a material for water pipes and certain other purposes.

The engineer of the Niagara Falls Power Company has substituted redwood for steel in the new water tunnel which is now under construction, the reason given for the preference being that when water is passed over the wood a surface of a soapy and pasty nature is formed, which is proof against the corrosion which is said to destroy steel linings in an incredibly short space of time. Pipes formed of redwood are also cheaper than steel, and although the wood is combustible, it burns so slowly as to form a very fair protection against fire in house building.

Joseph Jolette & Fils have registered as saw millers at St. Didace, Que.

DEFINITION OF LUMBER TERMS.

Having been asked for an interpretation of the terms "Mill Run, Culls Out," and "Mill Run," we submitted to a number of lumber manufacturers and dealers throughout the Dominion the following questions :

(1) What is generally understood by the term "Mill run, culls out" in hardwood lumber.

(2) What grades of lumber can a buyer of hardwood demand under a contract reading "Mill run, culls out."

(3) What grades of lumber can a buyer of hardwood demand under a contract reading "Mill run."

The answers received up to the time of going to press will be found below :

J R. Eaton, Orillia, Ont.. (1) Common and better (2) Common and better. (3) All lumber, with dead culls out.

Leak & Company, Toronto, Ont. : (1) We would take a everything above mill culls. (2) Everything above mill culls. (3) Everything but mill culls and dead culls.

Gall Lumber Company, Toronto, Ont. : (1) All culls must be out (dead culls, mill culls and shipping culls). (2) Common and better. (3) This would mean the whole log, dead culls and all.

Maitland, Rixon & Co., Owen Sound, Ont.: (1) We would say "mill run, culls out" would be firsts, seconds and common, mill and dead culls out. (2) Firsts, seconds and common. (3) The product of the log, same as log run

John Harrison & Sons Company, Owen Sound, Ont. : We would understand the term "Mill run, culls out" to mean "mill culls rejected," and would also understand a contract for "mill run" lumber to mean "mill culls out," whether specified or not.

McBean & Verrall, Toronto, Ont.: On account of having no standard set of rules governing Canadian inspection of this grade, we do not recognize the term "mill run" at all. We would say that the interpretation of "mill run, culls out" would mean all culls out, or common and better.

Meaney & Company, Toronto, Ont. : (1) We understand the term "mill run, culls out" to mean all lumber above the grade of mill culls, or in other words it means common and better ; no grade between mill culls and common (2) "Mill run, culls out" means all grades above and including common. (3) "Mill run" means all grades above and including "mill culls."

Laking, Patterson & Company, Hamilton, Ont. : (1) We presume that the terms "mill run, culls out" and "log run, culls out" are the same, and imply all the cut of the log except culls. (2) We think that under the term "mill run, culls out," the buyer is entitled to all the product of the log except the culls, which would imply common and better. (3) As far as we know there is very little, if any, lumber bought or sold as mill run without the term being qualified in some respect.

Hurdman & Elmitt, Ottawa : (1) It is generally understood among mill men that the term "mill run, culls out" means mill run with dead culls out. (2) He can demand common and better, i. e , mill run; dead, mill and shipping culls out. (3) The term mill run is generally understood to mean mill and dead culls out, but under . contract reading "mill run" a buyer cannot demand other than the total output of log—dead culls and better.

A Manufacturer : Regarding the term "mill run, mill culls out" in hardwood lumber, the way I understand this grading, and which is also the way I inspect my lumber, mill run means the full product of the log, also the logs taken as they are in the raft, that is, there would be no grading of the logs. The grade of lumber that a buyer of hardwood lumber would get would be shipping culls, common and better. This would also cover your third question. I have sold all my hardwood stock this year in this way and this is the inspection I intend to give.

Reid & Company, Toronto, Ont. : (1) "Culls out" means to us "all" culls out. (2) Under contract reading "mill run, culls out" a buyer can demand lumber that will grade common and better, that is, the product of the log with all culls out. (3) A buyer should get under this contract all the log produces if he were slack enough not to make provision for the dead culls at least to be left out. No man understanding his business would make a contract of that kind unless he got the lumber for a very low price and it were understood that he was to take it that way.

The Knight Brothers Company, Burk's Falls, Ont. : (1) The full run of the log excepting mill culls or dead culls (by dead culls we mean lumber that contains less than 50 per cent. of sound cutting). The Americans appear to call this mill cull or No. 3 common (2) No. 1 and 2 common and mill culls or under N. H L. Association rules firsts, seconds, No. 1 common and No. 2 common. (3) No. 1 and No. 2 common and mill culls. Further, we wish to observe that the te "mill run, culls out" without reference to any particular inspection rules is not sufficiently definite and may lead to all sorts of misunderstandings and difficulties between buyer and seller.

Davidson & Thackray, Ottawa . (1) The term "mill run, culls out," means that anything that will not make a piece of clear flooring one side is a cull, such as hak es or knot holes or unsound knots. Very often in a hardwood board, say 10 inches wide, you will find a heart that is 2 inches, in a case of that kind we generally measure it 8 inches wide and make it so. (2) That is a matter not easily settled, what one man might call a cull another would not. (3) A buyer of hardwood can only demand mill run, which means everything in the log In pine lumber it is generally specified mill culls out, but where it distinctly states mill run we would think a buyer would have to take it just as it comes from the log.

Keenan Bros., Owen Sound, Ont.. As to the definition of the term "mill run, culls out" in hardwood lumber, would say that we think this is only a catch term, as we believe it to be an established rule of the hardwood trade that mill culls are not marketable except by special agreement. Consequently the term "mill run, culls out" would mean the full run of the log with mill culls out, and this is the grade that we would accept under a similar agreement, although we would, we think, be particular to specify the grade of culls that we would expect to throw out. We think the fact that mill culls are only marketable by special agreement answers the three questions.

J S. Findlay, Owen Sound, Ont. : (1) Were a contract worded in this manner, I would take it that it was the intention of the seller to have buyer take stock, shipping culls and better, but on the other hand a sharp buyer could contend that he was only entitled to take common and better, ann leave the shipping culls on the seller's hands. From the seller's point of view, the contract should read, "Mill run, mill culls out." This answer will cover questions No. 1 and 2. (3) In a contract reading thus, I would say that the buyer would be entitled to take the entire run of the log, with the exception of what is called "Dead Culls"—pieces of lumber that are of no marketable value as lumber, and for which no permanent market is known. These questions have always been a subject of more or less dispute, and partake somewhat of the nature of the question, "What colour is red ?" and "What colour no colour at all."

Rhodes, Curry & Co., Amherst, Nova Scotia : (1) Our understanding of the term "mill run with culls out" is that the purchaser gets all the merchantable lumber in the log ; that all the clears and better grades are to be left in, the only thing taken out being the culls, or, as we would call it in the Lower Provinces, refuse ; and we would say that if a mill man sold on above specification and kept out any portion of the better lumber, he would be violating the contract. (3) If the buyer agrees to take mill run, it would mean that he would take all the lumber made from the log, including the refuse, and it would naturally be inferred that the buyer in any of the three cases would get a fair average of all the logs on hand ; that is, the mill man would not be allowed to select the poorer classes of logs to saw under a mill run contract.

R. E Kinsman, Hamilton, Ont. : Considering that the regular grades of hardwood lumber here are No. 1 and 2, common, culls and dead culls, I maintain that "mill run, culls out" means all the better end, that is, No. 1 and 2 and common, with culls and dead culls out. "Mill run" I consider includes everything except dead culls. I have run across a few men who claim that there is a grade between common and culls, which they choose to give the name of shipping culls, that should go in when "mill run, culls out" is bought, but I do not agree with them. Buying lumber either mill run or mill culls out is very unsatisfactory for the simple reason that nearly all of the mills cut the best of their lumber into dimension stuff or the thicker sizes. I never yet met a mill man who sold his lumber "mill run, culls out" or "mill run." When this dimension stuff and thicker sizes are taken out of the best logs and the best cuts of all the logs, what is left to be sawn into 1 or 1¼ inch is not "mill run, culls out," nor "mill run." This is one of the worst features about the hardwood business that exists at the present time. It would do a man's eyes good to see a stock of lumber sawn honestly as mill run.

J. D. Shier Lumber Co., Bracebridge, Ont. : (1) The Canadian inspection has only recognized two grades of culls, viz., dead culls and mill culls, and "mill run, culls out" is an American term for hardwood inspection, as they put up what is termed firsts and seconds, No. 1 and 2 common ; the No. 2 common is sometimes called shipping culls. Their term of mill run, culls out, would therefore be firsts and seconds and No. 1 common. If a Canadian hardwood man were interpreting this he would style it common and better, which would mean mill culls out. (2) It would altogether depend as to whether the contract was made in Canada or in the United States, as you can readily see from our answer to the first question. We would say mill run, culls out, would mean common and better, mill culls out. (3) It has been pretty well answered in both the first and the second question, although some people might interpret it to mean mill culls and better, with the dead culls out. In our opinion there should be a reconstruction of the grading of hardwood lumber, as we consider it the greatest farce that was ever imposed on the public.

George Rathbone, Toronto, Ont. : (1) The lumber supplied under that heading would require to be common and better, as it states that the quality is to be mill run with the culls out, and this would make the grade common and better when the culls had been taken out of the product of the log. (2) I would consider that the buyer would be entitled to a grade of common and better, as it distinctly states that the culls are to be taken out. (3) This question is liable to different constructions, but as far as my experience goes, all the lumber I have purchased under this heading, it has always been implied, though not distinctly stated, that the culls would be out, and I have found very little difficulty with the inspection of lumber upon orders given in that way. The American inspection, as adopted by the National Hardwood Association, is better defined than our supposed Canadian inspection, and "log run" comprises four grades in hardwoods, firsts and seconds, common and culls, with the mill culls out, the mill culls being classed in a separate grade. In my opinion steps should be taken by our Canadian hardwood lumber manufacturers to form an association similar to the American one, and adopt a proper code of inspection rules that would be suitable to the trade. At the present time we really have no standard inspection, but each mill man makes his own grade, and in a great many cases the grades are very unreliable. As hardwoods are coming into use extensively it would be an advantage to manufacturers and consumers if we had a better system of grading our hardwoods in Canada.

The Knechtel Furniture Co., Hanover, Ont.: The term "mill run with mill culls out" is generally applied to a log run, and it should be called "log run," not "mill run." A log run includes the following grades : No's. 1 and 2, No. 1 common, No. 2 common, or shipping cull, and all of the better grades must be included. It would seem to be necessary that an intelligent buyer should see the logs before they are sawn in order to determine the price according to the quality. If, however, that is neglected, the buyer can have no redress as against an unduly large proportion of common and cull or No. 1 and 2 common in the log run. Hearts are considered of no market value in hardwood, and must be sawn out. If, however, any of them are left in the lumber, the inspector may measure them out or reject the piece as a dead cull. The technical term of "mill run" means quite a different thing. It includes practically everything (no matter how bad) a saw mill man may see fit to pile up. He is under this term not even bound to put the whole of the upper grades into this run. "Mill cull" means a piece of lumber spoiled in the milling, or all mis-sawn lumber. Anyone buying lumber under this term should first ascertain how much, if any, of the upper grades were taken out and sold or held for sale at a higher price, and only after this information is obtained, set the price on the lumber. "Pile run," we think, would be a better term for this class of lumber. Unless stated "mill culls" or "dead culls out" on the order, we presume that everything will have to go. In common and better not less than 50 per cent. are expected to be No. 1 and 2.

Alex. McKee, buyer for Massey-Harris Co., Toronto : (1) A question of this kind would be misleading and would leave a loop hole for litigation if either of the parties to the deal were inclined to be crooked. (2) A contract made in this form would in my opinion give

the buyer the right to throw out everything up to a common grade. (3) I think under this clause a contract drawn in this way and mutually agreed to by seller and buyer would compel the buyer to take everything the log produced except the heart. Contracts should be drawn in this way, "mill run, hearts and dead culls out." This would only throw out such lumber in hardwood as would not be worth the freight to the buyer. Contracts are often made to read "mill run, mill culls out." Mill culls are boards in hardwood which, while valueless for manufacturing purposes, are often used for rough planking or boarding up; the next grade would be called shipping culls, out of which grade manufacturers of furniture could cut many small clean pieces suitable to their trade. To avoid legal quibbles and chances for dishonesty in inspection all contracts should be worded as outlined above. Some time ago I was called as a witness in a lumber suit re. Stinson vs. Purdy. Stinson made a contract with Purdy for 200 M feet, the contract read "mill run." When he went to ship it he was throwing out all the mill culls; Purdy stopped him saying that he sold it to him mill run. Stinson brought suit to recover damages. He brought many witnesses who swore that in basswood "mill run" meant mill culls out. I was called for the defendant and explained that we always specified in our contracts "mill run, dead culls out," or if we bought it "mill run, mill culls out," it was so specified. Judge Morgan after reserving decision decided the case in favor of the defendant "Purdy."

The opinion of the CANADA LUMBERMAN is that the term "mill run, culls out" would imply common and better, and "mill run" the entire product of the log excepting dead culls, which are considered to be refuse and not marketable lumber.

THE CANADIAN MANUFACTURERS' ASSOCIATION.

The thirty-second general annual meeting of the Canadian Manufacturers Association was held in Toronto on September 16th, 17th and 18th, the headquarters being the King Edward Hotel. It was a most successful and important meeting, about 300 members being present from all parts of the Dominion. The report of the secretary showed that the membership had grown from 132 in 1899 to 1,272 in 1903, and for the first time in several years a surplus of receipts above expenditures was shown.

The Association adopted resolutions demanding an immediate and thorough revision of the tariff upon lines which will more effectually transfer to the workshops of our Dominion the manufacture of many of the goods which we now import from other countries, but giving a substantial preference to the Mother Country and also to any other part of the British Empire with which reciprocal preferential trade can be arranged; recommending the establishment of a permanent commission of experts to have constant supervision of tariff policy and changes; urging the Dominion Government to enact a general Dominion insolvency act; and urging the amendment of the present preferential regulations as applying to British goods so as to increase the required percentage of British labor from 25 to 50 per cent. of the value of the goods, with the object of preventing foreign manufacturing firms from taking advantage of the preference through fraudulent means.

The registration list included the following persons: C. H. Carrier, Carrier, Laine & Co., Quebec; R. O. McCulloch, Goldie-McCulloch Co., Ltd., Galt; C. W. Leonard, E. Leonard & Sons, London; C. Howard Smith, Kinleith Paper Co., Toronto; O. N. Scott, Morris Field Rogers Co., Listowel; Geo. W. Watts, Canadian General Electric Co., Toronto; F. B. Polson, Polson Iron Works, Toronto, Dan. Wilson, Wilson Bros., Collingwood; Jas. Maxwell, D. Maxwell & Sons, St. Mary's; J. E. Murphy, Owen Sound Portland Cemen Co., Owen Sound; E. Guillet, E. Guillet & Co., Marietville, Que.; W. B. Tindall, Parry Sound Lumber Co., Toronto; W. J. Barchard, Barchard & Co., Ltd., Toronto; E. G. E. Folkes, Wilkinson Plough Co., Toronto; H. P. Coburn, Sawyer & Massey Co., Ltd., Hamilton; John McClelland, Parry Sound Lumber Co.; W. H. Merritt, National Table Co., Ltd., Owen Sound; William Hamilton, William Hamilton Mfg. Co., Peterboro; T. H. Hamilton, Grant-Hamilton Oil Co., Toronto; H. D. Eby, Eby, Blain Co., Toronto; George F. Haworth, Sadler & Haworth, Toronto, A. S. Rogers, Queen City Oil Co., Ltd., Toronto, Fred Mallison, Canadian Skewer Co., Ltd., Hespeler; C. H. Waterous, Waterous Engine Works Co., Brantford; W. T. Thomas and E. H. Thomas, Thomas Bros., Ltd., St. Thomas; W. R. Pringle, Rolland Paper Co., Toronto; G. F. Cleveland, J. L. Goodhue & Co., Danville, Que.; John J. Main, Can. Heine Safety Boiler Co., Toronto; Scott Chisholm, Alfred Dickie, Halifax, N.S.; C. N. Candee, Gutta Percha & Rubber Mfg. Co., Toronto; W. J. Green, Canada Wood Mfg. Co., Farnham, Que.; J. D. Flavelle, Flavelle Milling Co., Lindsay; F. S. Pearce, The Pearce Co., Ltd., Marmora; J. J. Turner, jr., J. J. Turner & Sons, Peterboro; John R. Barber, Toronto Paper Co. and William Barber & Bros., Georgetown; O. E. Fleming, Windsor Turned Goods Co., Windsor; Samuel and H. S. May, Dodge Mfg. Co., Toronto.

The "Alex. Fraser," one of the finest steamers of the Upper Ottawa Improvement Company's fleet, recently sunk about five miles up the river from Pembroke, while aiding the alligator in getting a tow in position. The accident was caused by striking a rock, knocking a large hole in the side of the vessel.

THE CANADIAN CASUALTY & BOILER INSURANCE COMPANY.

This company, as its name implies, has been founded for the purpose of a general accident business as well as boiler insurance and inspection, and has in the short time of its existence already established itself well in the insurance world. This is scarcely to be wondered at in view of the fact that the directors of the company have spared no endeavors to make the staff of the company a thoroughly competent and efficient one. The managing director, Mr. A. G. C. Dinnick, himself a man of great business experience and ability, has a special gift of choosing good men for the various departments of his institution. The chief engineer of the company, Mr. A. M. Wickens, is a gentleman without a peer in his profession. Until recently he held the position of chief engineer of the Public Works Department of the Ontario Government, as well as Inspector of Boilers in the Government Institutions. He resigned this position in order to accept the appointment offered to him by the Canadian Casualty & Boiler Insurance Company as their chief engineer. With an expert like Mr. Wickens at the head of the engineer's department it is safe to say that the interests of the insurers will be well looked after, as everybody knows how important is periodical inspection by a competent and experienced engineer. As an engineer erecting and operating steam plants, Mr. Wickens brings expert practical knowledge to bear upon his deliberations as chief of the engineer's department of the Canadian Casualty & Boiler Insurance Company.

The efficiency of the engineer's department enables this company to extend its operations in a way few other companies can follow. The company is in a position to give expert advice upon the erection of any kind of steam or electrical plants, a feature which interested parties will presumably be quick to take advantage of.

The public have been quick to recognize the advantages offered to them by this company, and the amount of policies already written is the best proof of this contention. With the energetic management and the practical knowledge combined, the Canadian Casualty & Boiler Insurance Company is sure to take a leading place in its class of business.

The value to steam users, lumber, planing and saw mills, of The Canadian Casualty & Boiler Insurance Company, cannot be over-estimated. Their services are in demand, and we are given to understand from the managing director that many unsolicited letters are being received at the head office, appreciating the satisfactory methods adopted in the desire of this corporation to make their services effective and of practical value to steam users. In many instances savings have been effected in fuel consumption which insurers have acknowledged have been more than sufficient to pay for the small premium charged for boiler insurance for the full term of the policy.

Such service as this is being looked upon with increasing favor, and the courteous readiness of the management in promptly attending to all matters in connection with steam plants under the company's care, cannot help but increase the already large clientele which this company enjoys.

In one case brought to our representative's notice, a saving of one month's fuel paid for a three years' policy.

The Canadian Casualty & Boiler Insurance Company do not under any circumstances make suggestions which occasion steam users unnecessary expense; such minor suggestions as are at all times economically beneficial are in many cases carried out at the company's instance.

MR. A. M. WICKENS, Chief Engineer. MR. A. G. C. DINNICK, Managing Director.
THE CANADIAN CASUALTY & BOILER INSURANCE COMPANY.

THE
Canada Lumberman

MONTHLY AND WEEKLY EDITIONS

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ADVERTISING RATES ON APPLICATION.

THE CANADA LUMBERMAN is published in the interests of the lumber, wood-working and allied industries, being the only representative in Canada of these important interests. It aims at giving full and timely information on all subjects touching these interests, and invites free discussion by its readers.

Especial pains are taken to secure for publication in the WEEKLY LUMBERMAN the latest and most trustworthy market quotations throughout the world, so as to afford to the trade at home and abroad information on which it can rely in its operations. 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.

Advertisers will receive careful attention and liberal treatment. For manufacturing and supply firms wishing to bring their goods to the attention of owners and operators of saw and planing mills, wood-working factories, pulp mills, etc., the CANADA LUMBERMAN is undoubtedly the cheapest and most profitable advertising medium. Special attention is directed to "WANTED" and "FOR SALE" advertisements, which are inserted in a conspicuous position on front page of the Weekly Edition.

THE NEW TRANS-CONTINENTAL RAILWAY.

Political prejudice has been responsible for many of the opinions offered respecting the proposed trans-continental railway project for Canada. So far has this been the case, apparently, that the public have refused to accept the statements of even the most unbiased and independent person. That we need greater transportation facilities for the Dominion, and particularly for the west, is certain, but it is a question whether the building of a new road across the entire continent is warranted, at least at the present time.

The proposed road will extend from Moncton to Port Simpson and will be 3,300 miles long. From Moncton to Winnipeg the distance is estimated at 1,800 miles, and from Winnipeg to Port Simpson, on the Pacific Ocean, 1,500 miles. The eastern section from Moncton to Winnipeg will be built by the Government and leased to the Grand Trunk Pacific for a period of fifty years. From Winnipeg to the Pacific Ocean the road will be constructed by the Grand Trunk Pacific within seven years. The Government will guarantee 75 per cent. of the cost of construction up to a maximum of $13,000 per mile on the prairie division between Winnipeg and Edmonton, and $30,000 per mile for the mountain division between Edmonton and the Pacific Ocean.

It has been contended that in the northern part of Ontario and Quebec the road will pass through a desert section, but this is scarcely correct, for the greater portion of the route in these provinces will open up for the first time vast timber areas. Mr. Thomas Mackay, M.P. for North Renfrew, than whom there is no better authority on the timber resources of the Ottawa valley, states that there is sufficient timber to keep the railway supplied with freight for ten years. It is probable, therefore, that the building of the road will stimulate the lumber industry and that many saw mills will be established along the route.

SAFEGUARD YOUR PROPERTY.

The lumbermen of Canada have for some time past been protesting against high insurance rates. The underwriters have gradually increased their premiums until the charge has become very burdensome, and now steps are to be taken, at least in Ontario, to endeavor to obtain insurance at more reasonable and equitable rates. This is proposed to be done by the incorporation of a company composed chiefly of lumbermen, which will accept risks on lumber and lumber property exclusively. The progress already made gives assurance of success, and judging by the experience of similar companies in the United States, whose announcements regularly appear in this paper, it should result in a considerable reduction in the premium rate.

This co-operative plan of insurance will encourage lumbermen to perfect means of effectively protecting their property from fire. No doubt carelessness and lack of necessary precautions have been responsible for many fires in the past, this disposition, perhaps, being engendered by the knowledge of the fact that any possible loss would be covered by the insurance. Co-insurance creates an incentive to reduce the fire hazard to the minimum.

A saw mill is naturally a place where inflammable debris will accumulate very quickly and be a great source of danger. It follows, therefore, that proper attention should be given by the mill man to cleanliness, which is next in importance to providing adequate fire-protective appliances. Another necessary precaution is to remove the lumber piles a sufficient distance from the mill.

UTILIZATION OF HEMLOCK BARK.

A recent request from a British Columbia lumberman for advice concerning the possibility of profitably utilizing the hemlock bark accruing from his lumbering operations suggests the large quantity of this material that is now wasted for lack of a market. Considering the vast amount of hemlock timber which is cut annually throughout the Dominion, and the fact that hemlock bark is the most generally used material for tanning purposes, it should be possible not only to produce all the tannic acid required by the tanners of this country, but also to build up a considerable export business in this article. At the present time a considerable quantity of tannic acid, extracted from oak, hemlock and other timber, is imported from the United States.

The present method of hauling the bark to the local tanneries to undergo the necessary treatment for extraction of the acid is a costly undertaking, and if the tanning ingredients could be separated from the bark at the source of supply a large saving in the cost of transportation would be effected. To our knowledge no tanner or lumberman in this country has established a plant solely for the purpose of producing the hemlock extract, but it would seem that an enterprise of this kind might be profitable. In the United States large permanent extract plants have been established which make tannin and dyewood extracts from materials gathered from all parts of the world. Something less pretentious would be required in this country.

For suggestions we must look to Germany. In that country there have been established a number of small plants, consisting of a cheap portable power, a bark cutter or grinder and wooden extraction vats, set up near the source of supply. These make a fairly concentrated extract.

Mr. J. A. DeCew describes the process of manufacture as follows: After the bark is peeled it should be treated as soon as possible and consumed the same year. It may be cut into fine shavings by being fed from the end against a serious of revolving knives, and as each shaving is a thin transverse section of the bark cells the tannin is extracted without difficulty. It is now placed in a series of ten wooden tanks, which are arranged in a circle, the bottom of each being connected by a pipe to the top of the other. Steam from the boiler is now turned into No. 1 and passes through each in turn, until it is drawn off from No. 10 as a quite concentrated extract. A number of these vats are employed because the extraction of the tannin depends upon the laws of diffusion. Thus, in boiling water, the tannin will leave the bark and become diffused throughout the solvent until equilibrium is established. If the solution is now removed and more solvent added the tannin remaining in the bark will become diffused, forming a weaker solution, and if this process is continued all of the tannin will be finally extracted. Therefore, if hot water is passed successively through ten vats, in which the bark of No. 2 is richer than No. 1, and No. 3 richer than No. 2, etc., it is evident that the solution must become continually stronger as it passes through each in turn, and when discharged from No. 10 is a quite concentrated extract. When the tannin in tank No. 1 is exhausted it is refilled and then becomes No. 10.

It is evident from the above that the extraction of tanning material is not an elaborate process. The possibilities in the development of the industry should appeal to lumbermen, as it could be carried on in harmony with lumbering operations. A merchantable tanning extract may be obtained from oak, ash and birch as well as hemlock.

EDITORIAL NOTES.

More than a year ago the CANADA LUMBERMAN called attention to the danger of an overproduction of red cedar shingles on account of the rapid increase in the number of mills. This condition has already arisen, much to the discomfort of many firms engaged in that industry. Following the increased production came a decline in prices, and some manufacturers, being unable to dispose of their output at a fair margin of profit, have been badly crippled financially. It seems most difficult to regulate the production of shingles, inasmuch as a shingle mill equipment is comparatively inexpensive, and when prices are good outsiders are attracted to the business. It is hoped that

a plan now being worked out to regulate the production in British Columbia and Washington will prove successful and confine the output more nearly to the demand. The plan involves the apportioning of the output, according to the demand, among the various mills, with an agreement that no mill shall manufacture more than the specified amount. If the manufacturers hold together as they should some benefit will doubtless accrue from the plan; if not, the market will continue to be glutted.

Experience seems to have demonstrated that close piling of dry lumber is the most satisfac-

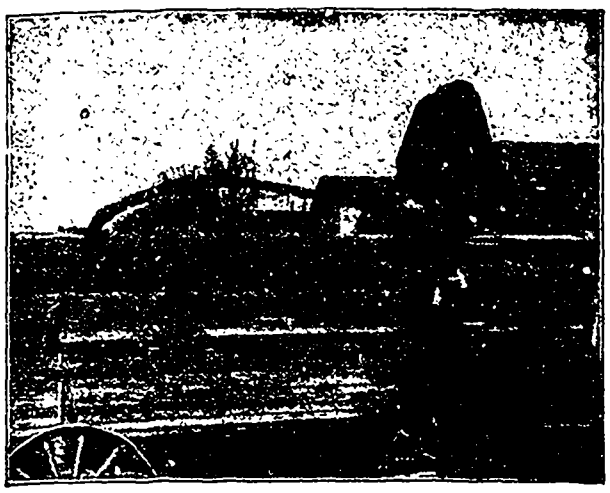


Fig. 1.—What if the Pole Should Break?

tory method. The lumber should be properly covered in order to exclude rain, but if this is done and the lumber is dry before being placed in the pile deterioration will be prevented by this method of piling. Loosely piled lumber, and particularly hardwood, is likely to suffer in quality and color and to be marked by damp cross-bars. Another advantage of dead piling is the saving of room. Most lumbermen make the piles level, with the ends even or slightly carrying forward. Dressed and matched lum-

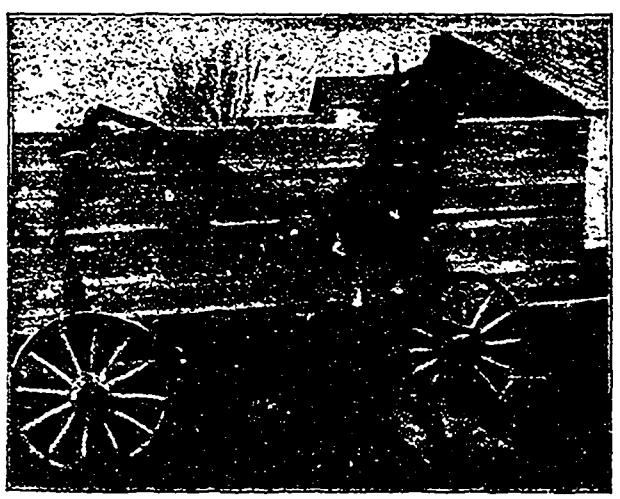


Fig. 2.—I Told You So.

ber frequently becomes seriously damaged by being open piled for any length of time.

It is the intention of Scott Bros., who recently purchased the Victoria saw mill at Fredericton, N.B., to make improvements thereto and erect a rotary mill at Sand Cove, on Magaguadivac Lake. It is probable that the business will be turned into a stock company, under the name of the Scott Lumber Company.

THE GOODYEAR PATENT LOAD BINDER.

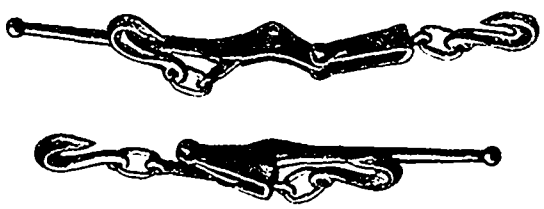
"Just like father did" has been the manner of binding loads to wagons ever since that useful vehicle was invented. Time with our fathers seemed to be no object. It was a tug and a pull; cut and try; and cuss words—as numerous as the sands of the sea or the stars in the heavens.

Many accidents like this finally did set one fellow to thinking and he conceived the idea of using a piece of gas pipe about three feet long to twist up the chain like an improvised tourniquet. The only reason this method has not killed and maimed as many people as the old pole of our grandfathers is because it has not been in use so long.

The use of these crude instruments, making teaming almost as dangerous as going to war, induced a blacksmith to do some thinking. He had the skill to perfect with his hands what his brain conceived, and the result was the Goodyear patent load binder.

Thousands of these have been sold and they are in use in nearly every part of the United States, in Canada and Australia. Not only are they used to bind loads of logs, but lumber, pipe, poles, hay, straw and almost every conceivable thing is securely fastened with this handy device.

It binds by simply taking up the slack in the chain after the latter has encircled the load. Being made of malleable iron through-



This Is It.

out, it may be drawn as tightly as desired, having ample strength to break the chain. The strength required to close the lever to bind an ordinary load is so little that a small boy can easily close it. A large load, or one requiring to be bound extra tight, requires more power, but always within the limit of a teamster.

The binder fits any chain from one-fourth to eleven-sixteenths of an inch. The amount of slack that can be taken up can be varied from nothing to about five inches, and the latter amount is enough to bind any load. With lumber or logs three inches is sufficient. The time required to apply it is practically nothing, only a few seconds being necessary to secure any load.

With any manner of binding, a load often works loose on a long or rough haul, and here is where the Goodyear load binder is particularly a great time saver, because a link or two can be taken up and the team started before the pole or bar of iron could have been loosened.

Returning with empty wagon, the binder may be attached to the chain—which is usually wrapped around the bolsters, and a little slack taken up, insuring not only its safe return, but preventing the chain from working loose and becoming lost.

With the chain in any position, from straight and taut to sharply curved and loose, this binder may be applied, making it practicable for binding a single timber or pole as well as the largest load. Being capable of regulation it is recommended for binding loads of soft or finished lumber, because just enough slack may be taken up to insure the load from slipping and yet not injure the

Fig. 3.—The Goodyear Way of Binding.

lumber by imbedding the chain. The price is $2.00 each.

A trial is recommended and no matter how thorough, the manufacturers provide for the refund of money if the binders do not prove entirely satisfactory. Eugene C. Stacy, Bloomdale, O., U. S. A., is general agent for the Goodyear Load Binder.

DEATH OF J. W. MUNRO, JR.

J. W. Munro, Jr., eldest son of the late J. W. Munro, M.P.P., of Pembroke, Ont., died

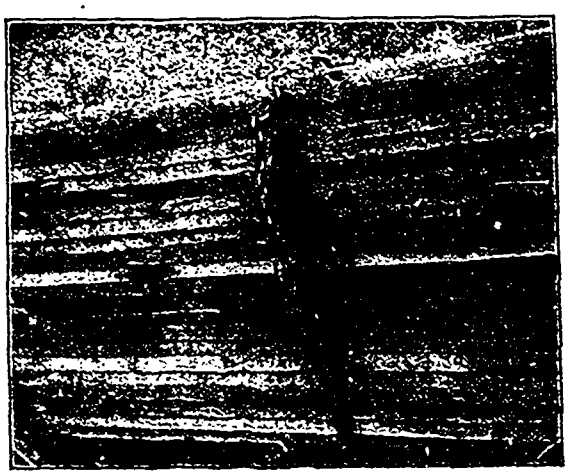


Fig. 4.—Bound.

at his home on September 18th, after a somewhat prolonged illness. He was twenty-five years of age and had for several years been engaged with his father in the lumber business. He was a young man of great ability, and his death has removed one who, had he lived, would have been of great benefit to the community.

G W. Schneider has sold his saw mill near Listowel, Ont., to Charles Neilson, of Sault Ste. Marie, and Dr. Turnbull, of Goderich.

J. B. Dorfman, timber cruiser for A. W. Wilson & Company, of San Francisco, states that it is probable that a large saw mill will be built at Nanaimo, B.C., the company named having acquired large timber limits in the vicinity of Comox.

THE TORONTO EXHIBITION.

The recent Dominion Exhibition held in Toronto under the auspices of the Industrial Exhibition Association was very successful from the standpoint both of attendance and character of exhibits. An attendance exceeding half a million persons is indeed a splendid record and must be a source of encouragement to the management. The new buildings are attractive in appearance, of massive construction, and well adapted to the purposes for which the are intended.

Speaking for the lumber trade, it is to be regretted that there was not a more extensive display of saw milling and woodworking machinery and appliances which would interest and instruct the mill man. Many of our largest manufacturers were not numbered among the exhibitors. It might be suggested that the directors endeavor to devise some means of securing for future exhibitions a greater representation of manufacturers from all parts of the Dominion.

In the Machinery Hall were found four exhibitors of belting.

D. K. McLaren, of Montreal and Toronto, showed English oak-tanned leather belting, balata and rubber belting, as well as card cloth, cotton mill supplies and belt hooks.

The Dominion Belting Company, Hamilton, have been in business but a short time, but their display indicated that they are strong competitors for the belting trade. They showed the "Maple Leaf" brand of stitched cotton duck belting, also " Maple Leaf " belt dressing, claimed to add materially to the life and efficiency of a belt.

Several pyramids of oak-tanned leather belting were shown by the J. C. McLaren Belting Company, of Montreal and Toronto. This firm have been making leather belts for forty-seven years, and manufacture only high grade English oak-tanned stock.

A large Goldie & McCulloch engine operating the shafting on the north side of the hall was driven by a 20 inch 3-ply belt manufactured by Sadler & Haworth, of Montreal and Toronto.

The Hart Corundum Wheel Company, of Hamilton, successors to the Hart Emery Wheel Company, had an attractive exhibit of corundum and emery grinding wheels, planer and paper knife grinders, saw filers and gummers, and machinery for corundum grinding and polishing. They showed a new machine for grinding saws of all kinds but particularly adapted for circular saws, claimed to be the only automatic cross-cut filer ever shown at Toronto Exhibition. The Craig Mine crystal corundum wheels and the specimens of crude ore and grain corundums attracted much attention. In addition they showed a new line of heavy grinders for metal work.

The Goldie & McCulloch Company, of Galt, had their usual exhibit of engines and iron and wood-working machinery, including a double surface planer and matcher weighing 11,000 pounds. This machine was fitted with the patented Philbrick matcher heads. Adjoining it stood a four-sided moulder, a power feed cutoff saw and one No. 18 and one No. 9 planer. One of their high speed "Ideal" engines operated the shafting on the south side of the building, and a "Wheelock" engine operated that on the north side.

The exhibit of the A. R. Williams Machinery Company, Toronto, comprised a number of up-to-date wood and iron working machines such as are manufactured by Clark & Demill and McGregor, Gourlay & Company, of Galt, and Major Harper & Son, of Whitby. The latter firm manufacture the "Eclipse" planer and matcher, a large number of which are in use in all parts of Canada. It is especially adapted for cutting small stuff, its construction and operation being such as to produce a perfectly square joint. Major Harper built the first planing machine ever made in Canda. In the A. R. Williams exhibit was also shown a number of circular saws from the factory of the well known firm of the E. R. Burns Saw Company, Toronto.

A large band saw attracted attention to the exhibit of the Bradley, Levy & Weston Machinery Company, Toronto, who are dealers in iron and wood-working machinery, engines, boilers etc. They had also on view mandrils, planers, Crown valves, and an automatic smoke preventer. They handle the "George" lumber registers and the Crowell saw swages.

In the Agricultural Hall were to be seen several wagons from the factory of the Milner Petrolea Wagon Company, of Petrolea, Ont. This firm make a specialty of heavy lumber wagons, sawdust wagons and log trucks, their trade in this line having increased very rapidly within the past year. The Adams Wagon Company, of Brantford, and the Chatham Manufacturing Company, of Chatham, Ont., also exhibited wagons and trucks.

The Queen City Oil Company, of Toronto, had an exhibit in the Manufacturers' Building which was much admired, every product shown being made from crude petroleum. Of great interest to visitors was the Genealogical Tree of Products, the process of manufacture being illustrated by samples of crude oil and comparative quantities of the different products during the process.

In the Manufacturers Building there was one exhibit which particularly interested lumbermen and users of lumber. It was that of the E. D. Albro Company, manufacturers of and dealers in veneers and thin lumber, Cincinnati, Ohio, who exhibited this year for the first time. They showed finished and rough veneers and seventy-five varieties of native and foreign woods, both finished and unfinished. The display of woods was intended solely as an educational exhibit, as the firm do not sell lumber except in veneer form. They manufacture 138 varieties of foreign woods, which are imported in the log, besides handling the native woods of the United States and Canada. Wherever they have exhibited they have always received first prize for their display of finished and rough woods. The exhibit was in charge of Mr. Charles J. Kammer, who looks after their Canadian business.

Near the above exhibit was to be found a small sanding, rubbing and polishing machine exhibited by the Maddox Machine Company, of Jamestown, N.Y. It is intended for the sanding and polishing of wood, brass, metal, etc., and while having the regular hand motion makes 300 strokes a minute and gives an even pressure of 100 pounds. The one shown was a model only, the standard machine being 6 feet long by 4 feet wide and weighing 1400 pounds. It is claimed that it will produce a better finish and do the work of five or six men.

The New Ontario Building attracted many visitors. Upon entering from the south was seen a display of the products of the Algoma Steel Company, of Sault Ste Marie, Ont., including limestone, charcoal, coke, pig iron, and finished rails. Adjoining was the exhibit of the International Lumber Company, of Sault Ste. Marie, made up chiefly of birch and mahogany veneers from one-half inch thick down to the thinnest stock which can be produced. This company make a specialty of birch veneers, single ply and glued panels, having thousands of acres of birch timber to provide the necessary raw material. They claim that their veneer mill is adequate to supply the entire Canadian market.

The Canada Corundum Company had a striking exhibit of Craig Mine crystal corundum grains showing the different sizes from 200 to 14, also the finished wheels made from Craig Mine corundum.

HOO-HOO ANNUAL.

At the ninth second of the ninth minute of the ninth hour of the ninth day of the ninth month of the year A.D. 1903, in the city of Buffalo, the twelfth annual Hoo-Hoo concatenation was declared open. The members of the local committees had distinguished themselves in providing for the entertainment of the Hoo-Hoo brethren, and the fine weather which Nature provided left nothing more to be hoped for. The large club room of the Genesee Hotel was taxed to its utmost to accommodate the large number present. Addresses were delivered by members of the city council warmly welcoming the visitors.

The Snark of the Universe, W.H. Norris, in his annual report, made several important recommendations for the benefit of the Order, one of which was the appointment of another salaried officer to devote his time to travelling about the country and aiding vice-gerents in their work.

Some interesting facts were brought out by the report of the scrivenotor. There had been held during the year 109 concatenations, with an aggregate enrollment of 1721 regular, one honorary and eight life members. A statement of initiates for each year in the Order's history showed that in 1892 fifteen members were initiated, and in 1902 1,131 members. There had been very few resignations and comparatively few members expelled, the total membership at the present time being approximately 8,400.

The next annual will be held in the World's Fair City of St. Louis. An invitation for 1905 was received from Portland, Oregon.

Three candidates were placed in nomination for the office of Snark of the Universe, Edward M. Vietmeier, of Pittsburg, being elected on the first ballot. The other officers chosen were: Senior Hoo-Hoo, Frank N. Snell, Milwaukee, Wis.; Junior Hoo-Hoo, John S. Bonner, Houston, Tex.; Bojum, Charles D. Rourke, Petersburg, Ill.; Scrivenoter, James H. Baird, Nashville, Tenn.; Jabberwock, Karl Isburgh, Boston, Mass.; Arcanoper, John F. Feist, Buffalo, N.Y.; Custocatian, J. E. Fitzwilson, Columbia, S. C.; Gurdon, James A. Clock, Portland, Ore.

The Canadian contingent included James Innes, Chatham, Ont.; R. W. Douglas, Montreal; W. A. Laidlaw, J. G. Cane, S. R. Higgins, W. J. MacBeth, H. P. Hubbard, F. C. Boak, William Hogg, Gilbert S. Lay, and P. J. Edwards, Toronto.

CONCATENATION AT TORONTO.

The Toronto Hoo-Hoo lay dormant since August 7th. It was planned to arouse him for a few manoeuvres in the "Onion Bed," and the date of August 28th was named. Difficulties arose about getting Toronto Hoo-Hoo and candidates together, so the proposed concatenation was deferred, and the Great Black Cat slumbered on.

Saturday evening an awful caterwaul went up from the Toronto Hoo-Hoo. At 9.09 o'clock the "Onion Bed" bloomed in sudden and fascinating fragrance. Six candidates were coralled, and the "Gardens" were shown to them. They breathed heavily into the "Lungtester," and labored well in convincing the doubting Snark of their fitness to walk in the "Light" — pressed lips burning with promises to the Great Book there unsealed to their adoring gaze, and later discussed it all over a collation which satisfied the inner man.

The officers: H. P. Hubbard, Snark; S. R. Higgins, Junior Hoo-Hoo; A. R. Riches, Senior Hoo-Hoo; W. J. Hetherington, Bojum; W. C. Laidlaw, Scrivenoter; Hugh "Slabslasher" Munro, Jabberwock; W. J. MacBeth, Costocatian; Geo. M. Nickels, Arcanoper; Richard Locke, Gurdon.

The candidates: A. J. McFayden, Bracebridge; N. V. Kuhlman, Jas. G. Cane, A. "Lathyarn" Eckhart, P. J. Edwards, F. C. Boake, Toronto.

THE EXPORT LUMBER TRADE OF BRITISH COLUMBIA.

At the annual meeting of the Pacific Coast Lumber Manufacturers' Association, held at Tacoma, Wash., on August 22nd, an interesting address was delivered by Mr. R. H. Alexander, of Vancouver, B.C., who reviewed in an able manner the conditions governing the lumber trade of British Columbia. Mr. Alexander's remarks were as follows:

"When we get together we realize that there are troubles other than our own and I think the mere fact that the other fellow—who has been selling our customer lumber—has troubles of his own, in some subtle manner reconciles us to ours.

"When the formation of the Pacific Lumber Manufacturers' Association was first proposed I was not very much impressed with it, as I did not see in exactly what way we would be interested. Since its organization, however, I have been enlightened. In the first place we have our indefatigable secretary, Mr. Beckman, and all of our members know how he has helped us by compiling statistics and getting up price lists and furnishing us with information that we could get in no other way. It was only a short time after our organization that it appeared to several of us on the coast that through this association work could be done and something accomplished that had not been accomplished in all the years that we had heretofore been at work. Scheme after scheme had been tried with reference to the cargo business and after a very short time every one of them collapsed. It was only after the formation of this association at Seattle that some means could be devised to get the export mills into line and get them into the association, as well as those mills catering to the local and rail trade, but that has been done and has worked well, and while all these other schemes which generally originated with what had formerly been the headquarters of the export trade failed, the work put on foot three years ago by the founders of this association has proved a success—not only in the foreign trade, but I think the same can be said with reference to the local and rail trade, though perhaps the improvements have not been so marked.

"Before the association was formed everyone was working in a haphazard manner. Now, since the manufacturers have changed their views, wonderful changes have been made. The price list alone would show that. I can remember when everything in piece lumber from a 1 x 12 to a 24 x 24-40 feet was sold at the same price. By bringing the manufacturers together in this association the price list has been worked up which sets the price of the different sizes of dimension lumber at a figure commensurate with the relative cost of manufacturing it. I think in that line a wonderful advance has been made that has resulted in a great amount of good and profit to the manufacturer. The price list we have is the result of a tremendous amount of work on the part of those who have been instrumental in making it, and we now have something like a rational price on our product.

"At the commencement of the year we took up the department of inspection referred to, and I am glad to say as one of the committee that it has met so far with gratifying results. Now, when a purchaser has been in the habit of buying a cargo and being able to grade it when it arrived, the man who sells it is going to have very little chance. At the same time the purchaser is not going to give up his former privilege in this matter without a struggle, and in consequence we must expect that there is going to be a certain amount of kicking before he takes the inspection of some one else, where before he had the whole say himself. So far, we have met with success. There have been fewer complaints with reference to the grade of lumber than there were formerly, and if there is a complaint you know that there must be something very queer about it, and it gives the mill shipping the lumber a chance to examine into the matter carefully.

"I trust that our inspection system will grow to the dimensions of that of the Yellow Pine Association, and I think by persistent effort we can make our inspection the standard. Work that has been done has shown the wonderful progress that has been made along these lines, and we are now inspecting practically all of our cargo business and our inspection is being recognized in most of the markets to which we ship.

"Referring to the statistics which were read by Mr. Griggs and prepared by Mr. Ames, there was one part that appealed to me especially and which was decidedly true, I am sorry to confess, and that was, that he could not get reliable information about the shipments. The trouble in British Columbia is that we are so far apart, some on the coast and some on the mountains. There is very little intercourse between the two and it is hard to get information that can be depended upon. As far as we can make out we have an annual capacity in British Columbia somewhere between 525,000,000 and 550,000,000 feet, and yet our shipments show only 275,000,000 to 300,000,000 feet. You see, therefore, there is much unused capacity there and the problem is what to do with the capacity. If hard times come, and there is a question that prices are not going to be so good as lately, I think the members of this association should recognize their friends and not bring the association into disrepute and possibly cause a great falling off in the price and make it difficult to get good prices. We certainly have to face the question that the mere fact of selling a little below the price will not increase the total consumption, and it merely means that A is taking such means to secure some of the business that was being done by B, and when B finds it out he puts his price below that laid by C, and C comes back at A and so it goes on and no one is the better for it.

"I think the manufacturers on the Pacific coast do not realize now that there is a value in standing timber which a few years ago was not thought of. The only question a short time ago was to manufacture as fast as you could get it into timber and you were all right. The manufacturers are now getting the capacity so far ahead of the consumption that the consumers are unable to take what is offered, and the thing to do is to curtail the output and wait until the markets revive. There is no sense in giving away the wealth of our timber or in cutting it up and selling it and not making any money. If we can enlarge our territory by getting lower rates from the railroad so we can increase the consumption in that way, or if we can get lower rates on the common classes of lumber produced on this coast and can market it in localities from which we are excluded at present, I do not think there is any need for a decreased production. The great difficulty is that the heavy demand to the east of us is for the higher grades of lumber. We all know that we manufacture a good deal more of the common than we do of the higher grades and the problem is being continually forced upon us as to what will become of the rough lumber.

"The foreign business is restricted. It is true that it has increased but it has not kept pace with the increased capacity of the mills. In some countries you will find a gratifying increase in the records for this year, but if you look back you will find that the same country for the year before and probably two years before has taken very little from us and the increase for the one year is simply taking what they did not buy before. In Australia, which is one of our heaviest customers, the trade fell off something like 40 per cent. during last year. Of course that was on account of the hard times and next year Australia can show a gratifying increase; but it is not an increase on the whole, but merely evening up the trade with that country. Our great distance from many of the markets operates against us and it is difficult to send our lumber to those markets in time to satisfy the requirements of the dealers. They can get it from much nearer sources and they do not care to wait six months or a year for us to fill their orders. Our business has developed and our markets have broadened, but it has been a slow development and in the meantime the mills are increasing their capacity and there must be an outlet for their product.

"In reference to this I would like to say that I think there should be some respect shown for each other's territory. We are meeting severe competition from mills in this state that are sending lumber into Manitoba. The difficulty with us is the same as that with the mills located here. We have more common lumber than we can readily sell, and if you do send your lumber up there, we are both members of the same association, and I think we should respect each other's locality.

"They can take their share of it, but if they do, they should sell it on the same terms and at the same price that it is sold by the Canadian lumbermen.

"I am sorry that I cannot give you better statistics and more information in regard to the output of British Columbia mills, because it is just as I have stated."

"How to Measure up Wood-Work for Buildings" is the title of a book by Owen B. Maginnis, of New York, the price of which is 50 cents. It describes the simplest and most accurate methods to be followed when figuring up the wood required for either brick or frame houses, and is thoroughly illustrated. The publishers are the Industrial Publication Company, New York.

A TRIP TO THE MARITIME PROVINCES.

[BY OUR TRAVELLING REPRESENTATIVE.]

No person in Ontario can get a conception of the vast extent of our Dominion unless he makes two journeys. To go either to the Pacific coast or to the Atlantic coast is looked upon as quite a trip.

When I packed my grips at Toronto in August I had a run of 1175 miles to reach Halifax via the Intercolonial. But the actual fact was that I put in nearly two thousand miles of travel, with side journeys, before I reached the sea.

The trip from Toronto to Quebec was uneventful. At the Ancient Capital I had the pleasure of meeting several of the best known lumbermen, amongst whom were Dobell, Beckett & Company, Goodday & Company, Carbray, Routh & Company, Sharples & Company, Calvin Company, the McArthur Export Company, and J. J. Murphy. Other offices at which I called showed that many had not returned from their summer holiday. The timber industry is a real live one at Quebec. Whilst not so many ships loading as in former years, there is a steady demand and a steady export.

Whilst at the Capital I had the pleasure of visiting the British cruiser "Ariadne," the German cruiser "Gazelle, and the French man-of-war "Tage." These war ships carried considerable quantities of lumber and timber for their own use. I noticed it was nearly all South American teak or British oak.

At Bathurst, on the Baie des Chaleurs, I found over one hundred men thrown out of employment by the collapse of the foundation under the engine in Sumner's big saw mill. The foundation sinking caused the accident which closed the mill for a week or more.

A pleasant run brought me to Newcastle, on the Miramichi river. All the saw mills were running full blast and a big cut is promised for this season.

Considerable talk was going on at this point over the big deals made by American capitalists. Mr. E. H. Sinclair, representing the late Edward Sinclair, is reported to have disposed of the Sinclair limits in Northumberland county, along with all the mills, tow boats and plant, for a sum of $400,000. The Sinclair property covers over 150,000 acres, with large lumber privileges. The Americans propose to increase the output of deals and improve the plant.

I was informed that a considerable quantity of logs was still "hung up" on the upper reaches of the Miramichi.

Chatham, N.B., appears to be dead as regards progression in the lumber line. The pulp mill has closed down, but the one across the river is running. The town possesses a very progressive firm in the Ruddock Bros., proprietors of the Miramichi Foundry, manufacturers of saw mill machinery. Their specialty is a compound saw edger. Their 4-saw edger is used very extensively in the Maritime provinces, and, in fact, exclusively in many mills. The ease with which saws are changed, the freedom from getting out of gear and the ease of running the machine, are features that commend themselves to those who desire the best that the market affords. Taking a walk through the extensive works of this company I saw a busy scene, and I predict for the new company just being formed a successful career in the line of manufacturing mill machinery.

At Richibucto J. & T. Jardine's new band saw mill was nearly completed and they expected to have it in operation by the 15th of September. This mill is much larger and better than the one destroyed by fire last fall. The latest improved machinery installed makes it one of the finest mills in the province.

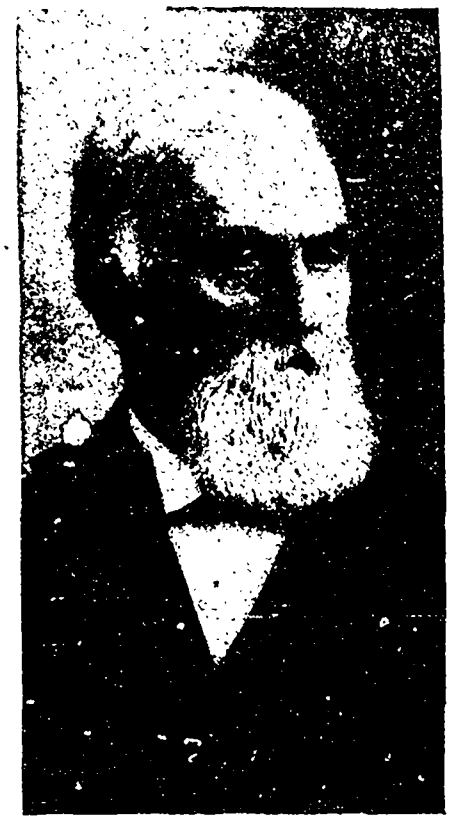
The Miramichi river and valley has always been a great lumber centre, and there is talk of a deal being arranged with capitalists to take over the mills and lumber lands of the Richards Company at Boiestown, Campbellton and Chatham. There is, however, talk of contesting the will of the late Wm. Richards and this will set back the negotiations, it is feared.

At Moncton, the Intercolonial workshops use up an immense quantity of lumber each year. Moncton is getting quite a bustling town, the chief attraction for visitors being the phenomena of a tidal wave, coming in twice a day from the Bay of Fundy, and locally called "the bore." As I stood on the quay and watched this wonderful sight I could well understand why tourists came thousands of miles to see it.

A run of ninety miles brought me to St. John, N.B., the natural winter port of Canada. Whilst there I saw vessels chartered to carry lumber to Buenos Ayres in South America at $7 per thousand, whilst the rate to Bermuda was $9.

Considerable diversion of opinion exists all through the Maritime provinces as to the advantage to be gained by the new Grand Trunk Pacific route. Mr. T. Lynch, the well-known lumber operator, said that if it came by the route that was partially surveyed some eight years ago it would run right through the field of his lumbering operations, but he does not want the railway through there. Unless some new plan is discovered, sparks from locomotives will burn up the forest. Another operator told me that a route through the woods is practicable, and would work up some traffic in lumber.

In St. John I also visited the Howe Woodworking Company, who make a specialty of mantels and fine interior finish; the Campbell Bros. axe factory, well and favorably known throughout the province; the Christie Woodworking Company; Jas. A. Likely, timber dealer;



MR. ALEX. GIBSON,
Lumber King of the Nashwaak, Marysville, N. B

Emerson & Fisher, and a number of others interested in the mill trade.

The lumber and timber trade at St. John is quite brisk, and being a seaport, naturally there is considerable export business done. The St. John Sulphite Company were asking for pulp wood and under-sized saw-logs such as batting and spiling.

There are considerable quantities of logs still "hung up" on the Miramichi, St. John, Oromocto and Nashwaak rivers. Seeing is believing, and I personally saw in many places the logs on the banks—high and dry. The "sweepers" are waiting for a rise so they can clear the logs off the shoals and banks.

I had the pleasure of meeting many at Fredericton who are in close touch with lumbering, amongst others being Mr. R. A. Estey, the genial proprietor of the West End Mills. His cut this season will run over five million feet. Whilst I was there, Mr. Fred Estey left with a large crew of men and some horses for the woods to make preparations for the next season's lumber cut. Mr. Jas. H. Crockett, the obliging editor and manager of the Fredericton Daily Gleaner, gave me much information regarding past, present and future conditions of the New Brunswick lumber trade, upon which he is well posted.

Mr. Geo. W. O'Neill, the manager of the J. C Risteen Company, Limited, told me that every year sees an increasing quantity of other lumber substituting pine. The Risteen Company are doing a big business in interior fittings, furniture, etc.

The well-known machinery firm of McFarlane, Thompson & Anderson are still doing a rushing business, being one of the best known firms among the mill men throughout the Maritime provinces.

John Palmer & Company continue to manufacture and supply for lumber camp use a special line of larrigans and other footwear for which this company's "Moose Head" brand is famous.

If St. John is on hills and tiresome travelling on foot, Fredericton is on the "flats" and looked very pretty in August. Near the city is the renowned Fort Nashwaak, the headquarters of Acadia in 1696. Oromocto was formerly ship-building headquarters, but this industry has to a large extent moved down and even out of the river.

Whilst standing on the bridge at Fredericton I saw the side-wheeler "Hero" tow under a large pine timber raft. I counted 112 cribs, four abreast. This timber, from the upper St. John waters, was composed of small and large sticks, but the majority would not be over 12 inches in diameter.

The local lumbermen told me that men for the woods are now in large demand, the wages good, and prospective cut large. The demand for labor will be keen, as there are several large tracts of partially burned timber land which must be cut this year.

R. Aitken & Son, Donald Fraser & Sons, and John Lynch have already sent up several large gangs to the woods. Mr. Lynch had just returned from a cruising trip on the headwaters of the Miramichi. He said that the majority of men were not anxious to go into the woods so early in the year. The Aitken firm had a large crew at the headwaters waiting for a rise of water so they might be able to bring out their drive which was hung up since spring.

The Aberdeen Mills at Fredericton, under the management of Mr. Donald Fraser, are running full time. Mr. Murray McGuire, formerly of this mill, has left for Portland, Oregon, to manage a mill there for another company. Others I heard were also about to leave for the west. Mr. David Monahan, formerly with the Gibson Company's saw mill at Blackville, N.B., has accepted the position of manager in the Rat Portage Lumber Company's mill at Vancouver.

Jas. M. Scott, of Dumfries, W. J. Scott, owner of the Springhill mill, and Ald. John S. Scott, of Fredericton, have purchased what is known as the Victoria mill property, Fredericton, formerly owned and operated by the firm of Hale & Murchie and more recently by John R. McConnell, of Marysville. The property is a very valuable one, comprising a large and well-equipped saw mill, with good shipping facilities, wharves with good depth of water, and also a siding from the C.P.R. Besides the mill there are thirteen dwelling houses on the property, and there is also a large and valuable farm of 160 acres. It is understood that the price paid for the property was considerably under $10,000. The mill, which has been standing idle this summer, owing to the fact that Mr. McConnell did not get his drive out last spring, will not be operated the remainder of the season, but will be started full blast next spring. All the interests of the firm of Hale & Murchie were also secured. The deeds of the property were filed and possession taken on September 1st.

Scott Bros. intend erecting a large rotary saw mill at Sand Cove, on the Magaguadavic Lake, which it is expected to have ready for sawing operations next spring. Here also are good shipping facilities, as the mill is on the line of the Canadian Pacific. This firm is going into the lumber business on a very large scale and with these two mills, in addition to their industry at Springhill, all in operation next year, they will have an important position in the lumber industry of the province.

Just outside the city of Fredericton is Marysville, called "the Industrial Hub of the Province." Here is the home of the man who established the town, Mr. Alexander Gibson, millionaire and lumberman, president of the Alex. Gibson Lumber, Railway & Manufacturing Company. He is widely known as "the Lumber King of the Nashwaak." His ambition is to see Marysville with a population of ten thousand before he dies. He is the principal owner of the Canada Eastern Railway, 132 miles in length, and has great interests

in the cotton mills of Marysville, which industry he first started.

At St. Mary's, in York County, N.B., is the large factory of the McFarlane-Neill Manufacturing Compary. This company is wide-awake and progressive, having one of the largest up-to-date plants on this continent for the manufacture of cant-dogs, peavies, etc. The works are beautifully situated, overlooking the St. John river. The president of the company is Mr. Jas. S. Neill, who has associated with him an energetic general manager, Mr. M. A. Tweeddale. The high standing of

JAS. S. HENDERSON, Parrsboro, N. S.,
Inventor of the Improved Lumberman's Larrigan.

this company is a guarantee that their business transactions are satisfactory. In showing me through the extensive works the manager said that half a million feet of the best rock maple was used in the making of peavies alone each year. Steam is the motive power used to run the machinery and the fuel is entirely shavings from the workshops. Amongst the new machinery recently installed in this plant I noticed Wright's band saws, Perkins hot presses, Beecher & Peck's drop hammers, etc. All the tools are made from the best drop forgings. On the premises is a new dry house to hold 30,000 handles; 100,000 handles are constantly kept in stock, being thoroughly seasoned before being sent out. The timber used is got within twenty-five miles of the place. The socket for the peavey is a patent forged steel one used exclusively by this firm. The cast steel used is from Johnstown, Pa. This company make peavies from 2 feet to 7 feet in length and ship to all points in Canada, as well as to the United States. As they have never been able to supply the demand heretofore, the company intend to run a whole year on the manufacture of peavies alone. The electric light is generated by their own dynamo on the premises. There is also an available water supply brought from an artesian well situated on a mountain a mile away. As a temperance man I like water and after sampling the article here I pronounce it a particularly fine brand. For shipping facilities the company have a railway at their back and the river St. John in the front of their premises, and, as they appear to get the orders, they apparently lack nothing.

Up at Woodstock, N.B., near the Maine frontier, the works of Alex. Dunbar & Sons are situated. They make saw mill machinery of all kinds, including three sizes of rotary saw mills, clapboard sawing machines, clapboard planing and finishing machinery, shingle machines, steam engines, etc. This firm is doing an increased business, not only in the Maritime, but in the upper provinces as well.

Back I went to St. John. Most of the mills on the Bay of Fundy are running at full capacity, and lumber shipments are up to the average. A feature of the business just now is the revival of the South American trade, for which spruce is in demand. I should also mention the shook trade to the Mediterranean and the export of spool wood and deals to England.

Down at the town of St. Andrews, N.B., is situated the headquarters of Wm. A. Holt, well known for the excellence of his brand of shoepacks, larrigans and moccasins. He confines himself exclusively to this line of goods, having an up-to-date tannery and a splendid trade with the lumbermen.

Sackville was my last point of call in N.B. Here I found the Standard Manufacturing Company, who are preparing to enter extensively into the supply of footwear to the lumber camps and jobbing houses. This company have bought out the J. R. Ayer Company and have an efficient manager in Mr. Black.

At Amherst, N.S., I called on Rhodes, Curry & Co., who make bank and office fittings and school desks a specialty. This company manufacture nearly all kinds of building materials. In addition to their large stock of native lumber they are now carrying over one million feet of foreign lumber, including oak, walnut, ebony, mahogany, etc. At this lively town is also situated the Robb Engineering Company, who make the Mumford Standard boiler. The works of this company are extensive and the large industry has helped the town grow considerably.

The Amherst Foundry & Heating Company have just got into their magnificent new building and will soon be in shape to take care of all the trade that will no doubt come their way.

I visited the shops of Mr. George M. Doull, who employs quite a number of skilled workmen making interior decorations and office fittings.

At Springhill they tried to induce me to go down and inspect the coal mines, 2870 feet underneath the ground. I declined with thanks—having failed to recognize myself after a similar exploit down a soft coal mine in Michigan.

The Cumberland Coal Company's railway took me down to the pretty little town of Parrsboro, on the Bay of Fundy. Then I made a bee-line across the river to the fine plant of the J. S. Henderson Company, Limited. This plant consists of six buildings employing from 75 to 125 expert workmen, all engaged manufacturing the

COMPOUND 4-SAW EDGER, MANUFACTURED BY THE MIRAMICHI FOUNDRY.

celebrated Henderson larrigan. The company have their own fire department with fire station, engine, hose reels, etc. The company have taken good precautions against another fire, having been burnt out last winter. Four of the buildings are new. Inside everything is beautifully neat and clean, even to the appearance of the workmen. The Maritime province is famous for its larrigans, and Mr. James S. Henderson is now well known as the inventor of the improved lumberman's larrigan. Besides being an expert tanner understanding the chemical curing of hides, he has had twenty years' practical experience as a manufacturer of larrigans. The J. S. Henderson Company have a capital of $75,000—the best men in Parrsboro being at the head of the company. They are building up a magnificent and permanent business.

Across the Bay of Fundy, at Bridgetown, is situated the larrigan factory of McKenzie, Crowe & Company, who cater to the demands of the lumber camp.

A considerable part of the lumber exported from the Maritime Provinces goes out of the Bay of Fundy. While I was there, two Digby vessels loaded with lumber in Annapolis and started on the same day in a race to Buenos Ayres, Argentine Republic.

At Newville, on the Parrsboro River, I noticed a large saw mill which was burning a lot of cuttings, slabs and shavings. These were all run on a conveyer and taken to a stone wall on the side of a hill, over which they were dumped onto a good sized fire. Much of the stuff consumed here could have been sold were it in a city, but the cheapest and quickest method to get rid of it was by means of fire. On the very top of the long mill building I noticed a platform running the whole length of the roof. On this platform were large barrels placed a few feet apart. On inquiry I learned that it was a device intended for fire protection service, the barrels being kept full of water.

A big deal took place at Bridgewater recently. The Davison Lumber Company have sold to an American syndicate their limits, mills, etc. A tramway is to be constructed by the new company, I was told, and timber cut on a large scale.

In Truro there is the Condensed Milk and Canning Company, who do an increasing trade with the lumber camps, particularly in the west. The company are now putting up another plant at Huntingdon, Que., in order to fill their western orders.

Truro is a nice place, with broad level highways, but not much of a lumber centre. I took the Sydney branch of the Intercolonial here and went up to Stellarton and New Glasgow. At none of these points was there anything new to the lumber trade.

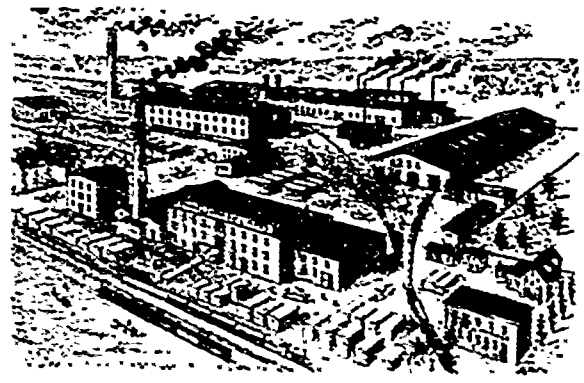
Logan & Company, at Shubenacadie, said the demand for lumber sleds and wagons was on the wane in that section. One of the sights I saw at Shubenacadie was four oxen hauling large sticks of timber up from the river to loading platforms alongside the railway. These oxen belonged to Mr. Henry A. Benjamin, a well-known lumberman, and he said they were worth a dozen horses for pulling large sticks of timber out of a difficult position.

The large saw mill at Dickey's Siding, near Stewiacke, was running full time with a good crop of logs in the pond.

It was a glorious day as our train swung around Bedford Basin, and took us to Halifax. Halifax is the same old place. The citadel is there, with its entrancing view of the harbor; the old town clock, erected by Queen Victoria's father, still indicates the correct time; the military patrol on the streets tell you that Tommy Atkins is "on deck;" and the fleet of war vessels in the harbor flying proudly the Union Jack of old England.

The steamer Viking took a gang of about forty lumbermen from Ship Harbor and Salmon River to the Labrador coast. These men go to the Dickey camps to replace men who have been there and are now returning home. All the gang sign contracts for one year.

While there is very little lumber shipped direct from Halifax, there is quite a lot coming in, principally Southern yellow pine and pitch pine. I saw a cargo that came in from Savannah by the steamship



THE RHODES-CURRY WORKS AT AMHERST, N.S.

"Nyassa." It comprised 12,656 pieces, containing 1,937,790 feet of pitch pine, consigned to McLean, Kennedy & Company.

A number of the Halifax lumbermen complained of the serious effect on business caused by the harvest excursions to the North-west. The Maritime Provinces are being drained of their strongest young men, and this makes the labor question a very serious one. The Rhodes-Curry works at Amherst were twenty-five per cent. short of workmen after the harvest excursions, and it was impossible to fill their places. Other firms with heavy contracts find it now difficult to fill their orders.

At Halifax I met a lumberman from Newfoundland, who said that the export of sawn lumber from the island this season would exceed fifty million feet. The Henry M. Whitney concern, of Boston, will put out about half of this, and will have loaded twenty steamers besides several barques before the latter part of October. Labor is scarce on the island, and it is said that there are fully 2500 men now permanently engaged in lumbering in the colony.

Whilst I was at Chatham, N.B., the Head Line steamship "Teslin Head" put in there from Quebec. She was loaded with a cargo of lumber consigned for the Imperial Government.

An all-night run took me through the Metapedia valley and past the famed summer resorts of Bic, Little Metis, Cacouna, and Riviere de Loup. I arrived at Quebec in time to see the brilliant spectacle of the illumination of the British and French fleets of warships and the departure of the vice-regal party.

One word before I close this trip. The Intercolonial Railway deserve praise for their fine service. The parlor, sleeping, and dining car appointments are perfect—equal to anything I have seen on the biggest U.S. lines. The trainmen are the politest I have ever met, and although the journey is long it is one filled with pleasure, and at times, entrancing beauty.

I arrived in Toronto safely. My mileage book showed 3,127 miles of railway travel and about fifty miles by electric road and boat, an average of about 160 miles for every working day. I was tired out by the rapid journey, but like the Great Sacred Black Cat, "still in the ring."

J.R.H.

DEVELOPMENT OF THE CIRCULAR SAW.

By D. W. Baird.

The publication of some reminiscences of old-time saw mills in a recent issue of the Southern Lumberman served to bring out a great deal of information, more or less reliable, in regard to the primintive methods of converting timber into lumber. While the saw was one among the earliest tools to be used, the degree of perfection attained in saws of all description in use at the present time was arrived at by slow process of evolution and progress that extended over many centuries. The first users of the saw doubtless realized at a very early date that its efficiency, that is, the amount of work the tool would perform, depended upon the rate of travel of its cutting edge. This proposition is so apparent that we are forced to assume that even a primitive people possessing sufficient intelligence to pull a saw back and forth would readily catch on to the idea. Starting with this assumption, it is astonishing that it required more than thirty centuries for a people constantly increasing in knowledge of mechanical laws to discover the immense superiority of a rotary over a reciprocating motion when applied to a saw, or to many other cutting tools. A large proportion of mechanical force, or power, expended in operating a reciprocating saw or other machine is absorbed in overcoming the impact. Equally as astonishing are the crude devices resorted to some six or seven decades ago in the effort to produce a circular saw. In this connection we present cuts of two of the earliest forms of the circular saw used in Tennessee that are fairly well authenticated.

Cut No. 1 represents a saw that was operated by one Thomas Scarborough in Bedford

Fig. 1.—The Scarborough Saw of 1840.

county, Tennessee, about the year 1840. It was simply a strip of iron about eight inches wide and probably half an inch in thickness, with steel ends in which the teeth were formed. The hole for the mandrel, or arbor, was square. This saw was used for hewing house logs, cutting floor beams, joists, and squaring timber for various purposes. As no other of its kind has ever been reported it is fair to presume that this saw was not a pronounced success.

Cut No. 2 is from a sketch by John H. Whitson, of Goodrich, Tenn. It represents a saw that was in operation on Hatchie river, West Tennessee, near the line between the counties of Hardin and Hardeman during the last half of the fifth decade of the past century. This saw strongly suggests the circular saw of to-day, but had only four teeth. It was driven

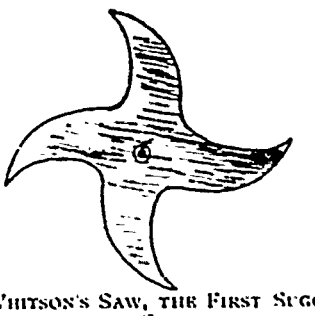


Fig. 2.—Whitson's Saw, the First Suggestion of the Circular.

by horse power applied to a draught wheel of the "ground-hog" pattern, except that it was made almost wholly of wood, and was used for cutting pine lumber. Mr. Whitson, who was a half grown boy at the time when he saw it, says that according to his best recollection and belief this saw threw chips fifty feet high.

These two instances will serve to show by what slow process the circular saw of the present was evolved. The step from the circular to the band saw was shorter and more rapid, but still it was brought to its present degree of perfection only through tedious and costly experiments. Few of the present generation realize how much they owe to the patient and slow development of inventive genius among the generations now gone.

WOOD PULP DEPARTMENT

POWER TRANSMISSION PLANT FOR A PULP MILL.

One of the recent accomplishments of the Dodge Manufacturing Company of Toronto, Limited, which is of considerable interest is the installation of a complete power transmission plant for the Price-Porritt Pulp and Paper Company, of Rimouski, Que., of which we show some pictures herewith.

SHOWING A PORTION OF POWER TRANSMISSION PLANT INSTALLATION FOR PRICE PORRITT PULP AND PAPER CO., RIMOUSKI, QUE.

In designing this new plant the power transmission equipment throughout was specially designed by the Dodge Company and the illustrations we reproduce show how extensive a task the company had to perform.

From the main drive through to the smallest drive to individual machines the Dodge Company furnished the entire equipment, which is of the very latest and approved type made by the Dodge Manufacturing Company.

Shafting, belting, hangers, bearings, couplings, friction clutches, Dodge wood split pulleys, iron pulleys, special castings and everything that was needed to make a perfectly operating transmission plant were designed, built and installed by the Dodge Company, which is daily coming more and more into notice as designers and builders of high-class power transmission appliances and as designers and builders of complete plants.

Col. Mulloh, an English millionaire, and J.J. Palmer, of Toronto, recently spent some time in British Columbia in connection with a pulp mill project, the syndicate which they represent having purchased limits in the vicinity of Princess Royal Island. Acting for them, W. A. Bauer, C.E., appointed 32 timber cruisers to inspect the limits, and acting on their report the syndicate are said to have decided to erect pulp and paper mills costing about $1,000,000, to be operated by water power.

THE SOO PULP MILLS.

Mr. Cornelius Shields, President of the Consolidated Lake Superior Company, is reported to have made the following statements regarding the operation of the pulp mills :

"The Sault Ste. Marie Pulp and Paper Co. has been losing money heavily on its pulp. With logs at several dollars per cord below the price other mills are paying and making money, these mills ought to be making good profits. I have hardly been here long enough to get down to the bottom of this matter, but the profitable operation of these plants seems to be wholly a question of management. The losses on the sulphite mill appear to have been due to the attempt to get gas from the roasting of pyrrhotite, which has not yielded enough gas to enable the mill to make more than 18 or 20 tons of pulp per day on a rated capacity of 50 to 60 tons. The substitution of pyrites, or sulphur when pyrites could not be had, has resulted in increasing the output to about 40 tons per day. The fourth dry machine, which has just been installed, completes the equipment of this mill as planned. The ground wood mill has lost much time on account of shortage of logs, which should have been provided against. The operation of the mill seems to have been unnecessarily expensive, and the cost of pulp has therefore been too high. Both the ground wood and sulphite mills have been gradually reducing their costs until they are now about equal to the prices obtained for the pulp. Still further reductions must be made and no doubt can be made. The price of pulp is advancing, and as the output has been sold a long way ahead, there is a chance to turn the past losses into a good profit. It is hard to tell what these mills ought to return, but I should say that both of them ought to show not less than $75,000 for next year. Either of them ought to make more than that if the costs can be brought down where they should be."

The St. George Pulp & Paper Company, of St. George, N.B., has entered upon the production of pulp.

BRITISH IMPORTS OF WOOD PULP.

The figures below show the imports of wood pulp into Great Britain during the past five years. It will be seen that last year the total value of all classes of wood pulp imported into Great Britain amounted to £2,398,215, and supplies received from Norway represented 43·2 per cent., from Sweden 39·3 per cent., and from Canada 10·6 per cent. In 1898 the total value was £1,894,395, Norway's share being 51 per cent. ; Sweden's 29·2 per cent.; and Canada's 9 per cent. Whilst Norway's participation of the total value last year fell off 7·8 per cent., compared with 1898, Sweden's increased 10·1 per cent., and Canada during a period of five years has succeeded in supplanting other countries to the extent of 16 per cent.

TOTAL IMPORTS.

1902	525,799 tons	£2,398,215
1901	448,455 "	2,406,084
1900	487,742 "	2,617,789
1899	415,113 "	1,989,703
1898	404,843 "	1,894,395

The following is a list of the principal countries supplying the British market :—

NORWAY.

1902	279,361 tons	£1,037,092
1901	150,394 "	1,049,171
1900	286,960 "	1,323,105
1899	248,256 "	961,563
1898	232,620 "	946,191

SWEDEN.

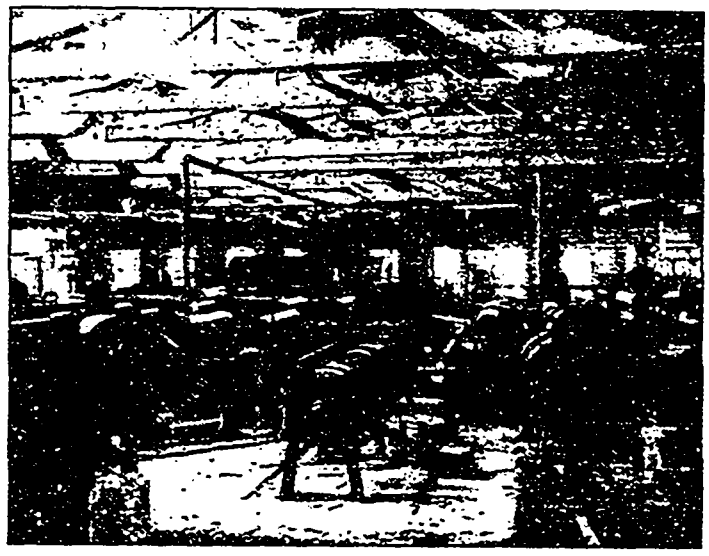
1902	142,732 tons	£942,883
1901	103,562 "	842,652
1900	113,067 "	830,001
1899	100,305 "	704,938
1898	87,375 "	554,258

CANADA.

1902	83,771 tons	£254,370
1901	70,110 "	312,356
1900	54,507 "	246,435
1899	38,422 "	130,948
1898	46,685 "	171,388

GERMANY.

1902	3,933 tons	£33,146
1901	2,422 "	22,529
1900	6,781 "	54,146
1899	2,946 "	23,915
1898	3,224 "	28,128



SHOWING ANOTHER PORTION OF THE INSTALLATION FOR THE PRICE PORRITT PULP AND PAPER CO.

HOLLAND.

1902	6,173 tons	£55,262
1901	4,275 "	40,697
1900	4,776 "	49,688
1899	4,865 "	45,409
1898	4,909 "	45,724

BELGIUM.

1902	58 tons	£ 520
1901	1,624 "	12,721
1900	3,169 "	23,464
1899	4,196 "	32,819
1898	4,887 "	31,153

PORTUGAL.

1902	1,624 tons	£13,348
1901	1,782 "	15,125
1900	2,519 "	19,460
1899	1,775 "	13,984
1898	2,058 "	14,341

UNITED STATES.

1902	4,764 tons	£37,051
1901	11,384 "	91,491
1900	12,006 "	55,393
1899	10,525 "	62,922
1898	17,279 "	68,189

PULP NOTES.

The E. B. Eddy Company, of Hull, Que., recently installed two new grinders in No. 2 mill to increase the output of ground wood pulp to keep pace with the manufacture of paper.

The Spanish River Pulp & Paper Company have their mills at Webbwood, Ont., nearly completed They will take out a large quantity of pulp wood this winter, and will likely commence to manufacture pulp early in the spring.

An official of the Timber Estates Company announced when in Montreal recently that arrangements had been completed for the sale of extensive timber limits and mills in Newfoundland to Harmsworth Bros., of the London Daily Mail.

The pulp wood for the Trader's Paper Mill at Lockport, N. Y., has been obtained mostly by rail from Canada. It is now proposed to discard the rail service and have the wood shipped by boat across Lake Ontario to Alcott Harbor, and thence by trolley to the mills at Lockport.

The Price-Porritt Pulp & Paper Company have their new pulp mill at Rimouski, Que., in operation, turning out 30 tons of dry pulp per day. The mill is located on the Gulf of St. Lawrence. The pulp manufactured is carefully screened and is pressed with hydraulic presses, giving a uniform percentage of 50 per cent.

Charles H. Vogel, of Ottawa, is engaged on preliminary plans for the improvement of a water power in the Lake of the Woods district, estimated at 11,000 horse power and said to be one of the best in North America. It is the intention to utilize the power for the operation of pulp and paper mills to be built there.

The Canada Paper Company, of Windsor Mills, Que., have adopted a novel scheme to increase the interest of the employees in the business of paper manufacturing. They offer prizes for the most valuable suggestions touching the operations of the plant, such as suggestions for improving the bleaching and sizing, for improving the steam plant, and for paper-making methods generally.

The Year Book of Canada for 1902 shows that the wood pulp industry for the calendar year mentioned was carried on by thirty-five mills, which had an output of 240,989 tons of wood pulp. Of this quantity 155,210 tons were mechanical pulp, 76,735 sulphite, and 9,044 soda. The corresponding quantities for 1901 were : Mechanical, 169,360 tons; sulphite, 84,500 tons; and soda, 10,740 tons. This shows a decrease of 23,611 tons in 1902. The decrease is distributed : Sulphite, 7,765; soda, 1,696; mechanical, 14,150 tons. The total value of the output of 1902 was $4,383,182. Nine of the thirty-five mills manufacture sulphite pulp and four soda pulp. Twenty-five mills manufacture mechanical pulp and four make both chemical and mechanical. Taking the returns of thirty-two mills, the average time the mills ran during the year was ten months. The value of the exports of pulp in 1902 was $2,511,664, while the consumption in the domestic market was valued at $1,871,518. Canada exported about 57 per cent. of her production, Great Britain taking $976,192 worth, and the United States $1,518,139.

THE NEWS

—The Prairie Lumber Company are building a new warehouse in Winnipeg.

—John H. Marshall is offering for sale his planing mill at North Bay, Ont.

—The Red Cedar Lumber Company, Limited, has been incorporated by the British Columbia Government.

—R. McKinney & Company have sold their lumber business at Carman, Man., to the Manitoba Lumber Company.

—W. H. Hilliard, of Minnedosa, Man., has sold his Clan William lumber yard to the Prairie Lumber Company.

—The Pigeon River Lumber Company will this fall make further improvements to their saw mill at Port Arthur, Ont.

—The Prairie Lumber Company, of Winnipeg, has opened a lumber yard at Gainsboro, Man., with J. A. Telfer in charge.

—The Drummond Lumber Company has been formed at Daveluyville, Que. W. Mitchell is president and W. J. Noble secretary.

—Cowan & Company, who operate a saw mill at Trout Lake, B.C., intend building another mill with a capacity of 60,000 feet per day.

—G. H. Gilpin, of Cranbrook, B.C., has bought the saw mill of the Cedar Valley Lumber Company at Morrissey, B.C., from Hanson & Baker.

—William Button, of Wingham, Ont., has purchased a quantity of standing timber in the vicinity of Creemore, where he will establish a saw mill.

—The saw mill at Sydney, on Vancouver Island, B.C., has again resumed operations, after having been idle for a long time. The new operators are Seattle people.

—Fraser & Company's new saw mill at Deschenes, Que., was put in operation for the first time on September 1st. The mill is one of the most up-to-date in Canada.

Mott, Son & Company have sold their saw mill at Fernie, B.C., to the Elk Lumber & Manufacturing Company, who contemplate the erection of a mill at Hosmer.

—The town of Renfrew, Ont., propose to grant a loan of $18,000 to induce the Cumming Manufacturing Company, of Clarksburg, Ont., to locate a wood-working factory there.

—The new saw mill of the John Harrison & Sons Company, at Owen Sound, Ont., will have a daily capacity of 1,500 ties and will give employment to about twenty persons.

—The landowners of Langley municipality, in British Columbia, have petitioned the Government to construct a railroad through the Fraser River Valley, where there are large tracts of valuable timber. This timber is frequently burned by the settlers on account of the lack of transportation to enable them to market it.

—J. A. Hayden's new saw mill at Woodstock, N.B., was put into operation about September 1st, Mr. Hayden's eldest daughter standing at the lever and sawing the first log.

B. Wicket and Thomas Hunt, of Powassan, have gone to Arrowhead, B.C., to build a large saw mill for George McCormick, M.P. for Muskoka, W. R. Beatty, of Parry Sound, and others.

—The safe crackers, Johnson and Smith, arrested for the robbery of money from the safe of the Pigeon River Lumber Company at Fort William, Ont., were sentenced to ten years' imprisonment.

The Library Bureau of Canada has been incorporated at Ottawa, Ont., with a capital of $150,000. The company have taken over the hardwood department of the W. C. Edwards Lumber Company.

—It is said that the Hanbury Manufacturing Company, of Brandon, Man., have purchased the saw mill at Cranbrook, B.C., formerly owned by Leask & Slater, with a daily capacity of 50,000 feet.

— It is reported that the demand is starting very early this year in the Maritime Provinces for lumbermen's supplies, several large orders having been placed with local manufacturers for axes, peavies, etc.

British Columbia loggers are said to be considering the question of building a large saw mill, for the purpose of competing with the members of the British Columbia Lumber & Shingle Manufacturers' Association.

—The British Columbia Mills, Timber and Trading Company, of Vancouver, B.C., have made application to the city council for foreshore rights for the purpose of extending their saw mill and wood-working factory.

—The death occurred recently at Victoria, B.C., of George Cheetham, the leading man of the Songhees tribe He had worked in Sayward's saw mill for thirty years, and had won the respect of the whole community.

—The saw mill at Enderby, B.C., owned by S.C. Smith, of Vernon, has passed into the hands of the Okanagan Lumber Company, of which J Taylor, of Arrowhead, is the principal. The capacity of the mill will be increased.

—A. McTaggart, of Glencoe, Ont., recently visited Thamesford for the purpose of ascertaining the quantity of timber in the vicinity, the Sutherland-Innes Company, of Chatham, having in view the erection of a cooperage mill here.

—H. J. Hyne, of the firm of Hyne & Sons, lumber merchants, Maryborough, Queensland, Australia, was a recent visitor to Canada. He was making a tour of the world and collecting as much information as possible on business and educational matters. He expressed his belief that Australia was in favor of a preferential tariff policy.

—The old reliable lumber firm of M. M. Boyd & Company, of Bobcaygeon, Ont., is shortly to go out of business so far as operations in Ontario are concerned. Their limits have been pretty well cleaned up, and it is the intention to transfer operations to British Columbia, where the firm have an extensive saw mill, on Vancouver Island. The firm was one of the pioneers in Ontario lumbering, having a successful career of nearly half a century to their credit. Their mills were located at Bobcaygeon, Lindsay, and Fenelon Falls.

—Employees of lumber companies will do well to remember the case of Peter Barnum, of Trenton, who was recently fined $10 and costs for jumping his contract with the Turner Lumber Company to work in their logging camps, after having had his fare paid to his destination by the company. Having no money he was compelled to accept imprisonment.

—The J. E. Murphy Lumber Company has recently been incorporated by the Ontario Government, with a capital of $100,000. The provisional directors are J. E. Murphy, H. F. Murphy, O. A. Murphy, A. J. McPherson and Walter Miller. The head office of the company will be at Milford Haven, on St. Joseph's Island, where the company are now erecting a saw mill.

TRADE NOTES.

The business of Peter Hay, manufacturer of machine knives, Galt, Ont., is to be turned into a joint stock company.

The Robb Engineering Company, of Amherst, N. S., have just given out the contract for the erection of a large addition to their factory to cost about $30,000.

The W. J. Bradley Machinery Company has been organized in Toronto by W. J. Bradley, W J. Bradley, Jr., P. H. Bradley, and E. F. Bradley. The capital is to be $50,000.

It is reported that the Port Huron Thresher Company, of Port Huron, Mich., have received an order for a large number of portable saw mills for shipment to the Canadian North-West.

An artistic souvenir badge was handed to the delegates at the recent Hoo-Hoo convention in Buffalo by Joshua Oldham & Sons, the well-known saw manufacturers, of Brooklyn, New York. Needless to say, the circular saw was a prominent feature of the design.

A special tariff edition of the Canadian Manufacturer, just published, contains an accurate reproduction of the official texts of the tariffs of Canada, United States, Great Britain, the Commonwealth of Australia and British South Africa, and will be found valuable for reference.

Messrs. E. C. Atkins & Company, Incorporated, of Indianapolis, Ind., are sending to their friends and customers a new inserted tooth circular saw booklet, in the design of a circular saw. It is very handsome and unique, and should serve to emphasize the many good points of the Atkins' saws.

Messrs. Sadler & Haworth, of Montreal and Toronto, have for many years been engaged in the manufacture of leather belting. In their advertisement in another part of this number, they direct the attention of the readers of this journal to the high standard of merit which their product has attained.

The old Allan foundry at St. John, N. B., is now being operated by George H. Waring and William Bruchof, under the name of the Union Foundry & Machine Works. This new arrangement resulted in the retirement of Mr. Waring from the position of mechanical superintendent for the Cushing Sulphite Fibre Company.

HYMENEAL.

Mr. H. F. Terry, the popular lumber salesman for C. A. Larkin, of Toronto, and Miss Agnes Maud Addison, eldest daughter of Mr. W. F. Addison, were happily united in the holy bonds of matrimony at the home of the bride's father, 76 Harvard avenue, Toronto, on September 16. Rev. R. J. Treleaven officiated. The bride is highly esteemed by a host of friends, who attested their admiration by giving many beautiful presents. Mr. and Mrs. Addison will reside on Harvard avenue. We extend to them our congratulations and hope they may enjoy many years of happiness and prosperity.

DISPLAY OF TRANSMISSION APPARATUS.

Those who visited the recent Exposition in Toronto probably found no more interesting exhibit than that of the Dodge Manufacturing Company, of Toronto, Limited, for the display of this company attracted about as much attention as any individual exhibit at the Fair.

Connected from the main shaft in the building, there was shown a complete rope drive, after the famous Dodge Continuous System, which showed the splendid efficiency and remarkable simplicity of this method of driving and demonstrated its points of superiority to the eye of even the unskilled observers. In this connection the travelling take-up carriage was shown to splendid advantage in its relation to the rope drive.

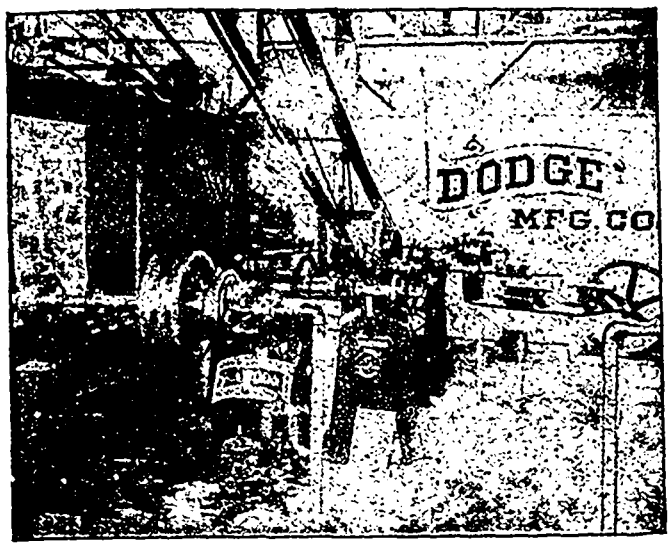


EXHIBIT OF DODGE MANUFACTURING COMPANY AT TORONTO EXHIBITION.

Forming the rail around the booth was shafting of the company's immense line which was fitted with the famous Dodge friction clutch, which attracted attention and admiration from everyone. Piled high in columns at one side of the exhibit were columns of the Dodge wood split pulley which was shown in all sizes from the small one three inches in diameter to the large and heavy ones.

Within this enclosure was displayed the complete line which the company manufacture—couplings, hangers, ring, chain and capillary self oiling bearings, machine moulded iron pulleys, clutches and a full line of grain and elevator machinery.

To see the remarkable ease and smoothness with which these appliances run, one would scarcely think that they were such important adjuncts in the manufacturing plant, yet nothing was demonstrated in the exhibit which the Dodge appliances will not perform in actual operation.

PERSONAL.

Mr. Jonas Howe, of St. John, N.B., who has for several years been prominent in the cruising of timber lands in the Maritime Provinces, left recently for British Columbia, to make an inspection of limits there in the interest of eastern capitalists.

The B. C. cargo branch of the Pacific Coast Lumber Manufacturers' Association presented Mr. R. H. Alexander, of Vancouver, with a $350 gold watch in recognition of his services to that association. The watch is a handsome example of the jeweller's art.

Mr. W. J. Hamilton, of Peterborough, Ont., has been appointed mechanical superintendent for the Owen Sound Iron Works Company, of Owen Sound, thus relieving Mr. Wilson, the general manager, of important duties and permitting him to give greater attention to business management.

The citizens of Parry Sound, Ont., were greatly shocked by the announcement of the sudden death at Sudbury of Mr. Frank Halliday, Crown Timber Agent for the Parry Sound district. Mr. Halliday was making an examination of timber limits when he contracted inflammatory rheumatism, his death taking place within a few days after being removed to the hospital. Before his appointment as Crown Timber Agent deceased was an active politician and once unsuccessfully contested Addington for the Legislature. Mrs. Halliday survives him.

CROWN TIMBER DUES.

OTTAWA, 14th September, 1903.

Editor CANADA LUMBERMAN

DEAR SIR,—Your correspondent "A New Brunswick Lumberman," in the September number of the CANADA LUMBERMAN, is in error as to the rate per thousand feet B.M. on white pine saw logs in the Provinces of Quebec and Ontario. He gives 65 cents for Quebec and $1.30 for Ontario. The rate of dues payable per thousand feet B.M. is: Quebec, $1.30 per thousand, and Ontario $1 on limits sold prior to 1892 and $1.25 on limits sold at that date and subsequently.

His remarks as to cutting regardless of size is in the right direction. Small logs should be restricted by the respective Crown Lands Departments of the different provinces, irrespective of the time limit to which the renewal of licenses may be subject. The Quebec regulations by section 12 restrict the cutting of pine trees less than 12 inches on the stump, but it is a question whether it is observed strictly.

Yours truly,
"SUBSCRIBER."

MEASURING LUMBER.

There are still a few concerns who measure their lumber by the old and expensive way of a man and a measuring stick, but the new improved way is by means of the little machine called the George Register. This is claimed to be the only perfect lumber register on the market, and weighs but ten pounds. No lumberman, either saw or planing mill, can afford to be without this device.

The George Register is offered to all free on thirty days trial. Every person who has lumber to measure should read the letter published in our advertising columns from the Knight Bros. Co., of Burk's Falls.

The points of advantage in this register are as follows:—It is easily attached to the planer; it measures either forward or backward and therefore cannot make a mistake; it is graduated with absolute accuracy; it will save the wages of one man measuring every day it is used; it will measure any length of board, regardless of thickness; it will not slip on smooth or icy boards; it has a capacity of 60,000 ft. lineal; it cannot get out of order, and needs no repairs.

We would recommend that lumbermen write to the Stouffville Brass & Steel Works, Stouffville, Ontario, and get one of these registers, which are inexpensive.

The Stouffville Brass & Steel works also make emery grinders which are said to be the best on the market, a splendid planer chuck, and the well-known Simplex gasoline motor for stationary or marine purposes. Lumbermen should write this company for prices and catalogues of the above.

FOREST FIRES.

At the recent meeting of the Maritime Board of Trade the following resolution in respect to forest fires was adopted:

"Whereas there have recently been devastating fires in our forests and timber lands, and whereas the laws against setting such fires are either insufficient or inoperative, and whereas so much depends upon the preservation of our lands; therefore, resolved, that in the opinion of this board the time has fully arrived when some practical measures should be taken by our local governments to prevent the destruction of our forests by fire, either by the appointment of special guardians, or such other means as they in their opinion believe will attain the desired object. And, further resolved, that it is most desirable that the laws made, or hereafter to be made, regarding cutting undersized saw-logs, be strictly enforced."

What is said to be the largest log ever floated in Puget Sound has been towed into the Capital Box Factory pond. It is a 40-foot spruce log, nine feet through at the small end and fourteen feet through at the large end. It was cut on the Skagit river banks.

SHAVINGS.

A firm in Germany is exploiting a process for staining timber, while in the log, any desired color. From samples exhibited this concern is apparently able to impregnate all soft-woods and some hardwoods with any desired shade, also to convert the lightest woods into tones as dark as ebony.

A builder of special wood-cutting tools says if it were not for the Canadian tariff he would sell five times as many machines in Canada as he now does. That suggests the idea, would Canadian or European builders sell any wood-working machines in this country if we had no tariff?—The Wood-Worker, Indianapolis.

A correspondent in Jamaica writes: "Sectional returns available show a marked increase in the importation of white pine lumber and deals, also in ready-made sashes, blinds, doors, buggy wood materials, etc, which I have satisfied myself are of Canadian origin; yet the probability is that the credit to Canada for these commodities will be insignificant."

South Africa has to import its hardwood sleepers. Tenders have just been invited for the supply of 120,000 hardwood sleepers 7 feet by 10 inches by 5 inches, to be landed in the Colony at the rate of 25,000 a month. It is a very surprising fact that not only South Africa, but East and Central East Africa have to depend on foreign sources for their timber supply generally.

A forest of camphor trees, covering an area of some 50,000 acres, has, according to the Anglo-Japanese Gazette, been discovered in the southern part of Talwan, containing, roughly, some 120,000 trees. The trees, which measure from eight to eighteen feet in girth, are estimated to produce 5,850 tons of camphor, worth 1,720,000 yen. In addition to camphor trees, the forest also contains a large number of oak trees of the "red-grained" variety.

There is reposing in the lumber shed of one of the navy yards a stick of lumber that is worthy of the attention it is receiving from the old-time sailors and navigators. It is a piece of live oak, 37 feet long, 4 feet 10 inches wide and a little over 4 feet thick, and has become so hard with age that it requires the finest grade steel to make any impression on it. Its weight is estimated at between twelve and thirteen tons. The stick was originally designed for the stern post of a sister ship to the Hartford, but for some reason was never used. Some of the old tars want the stick cut and sent to a wood-working shop to be turned into pillars to be used in the corridor leading to the officers' quarters on the new battleship Connecticut.—American Lumberman.

BEATS A BOOM-POLE.

THE GOODYEAR LOAD BINDER. MADE OF MALLEABLE IRON. WEIGHS TEN POUNDS. AMPLE STRENGTH. FULLY GUARANTEED. $2.00 EACH. RETURN IF NOT SATISFACTORY.

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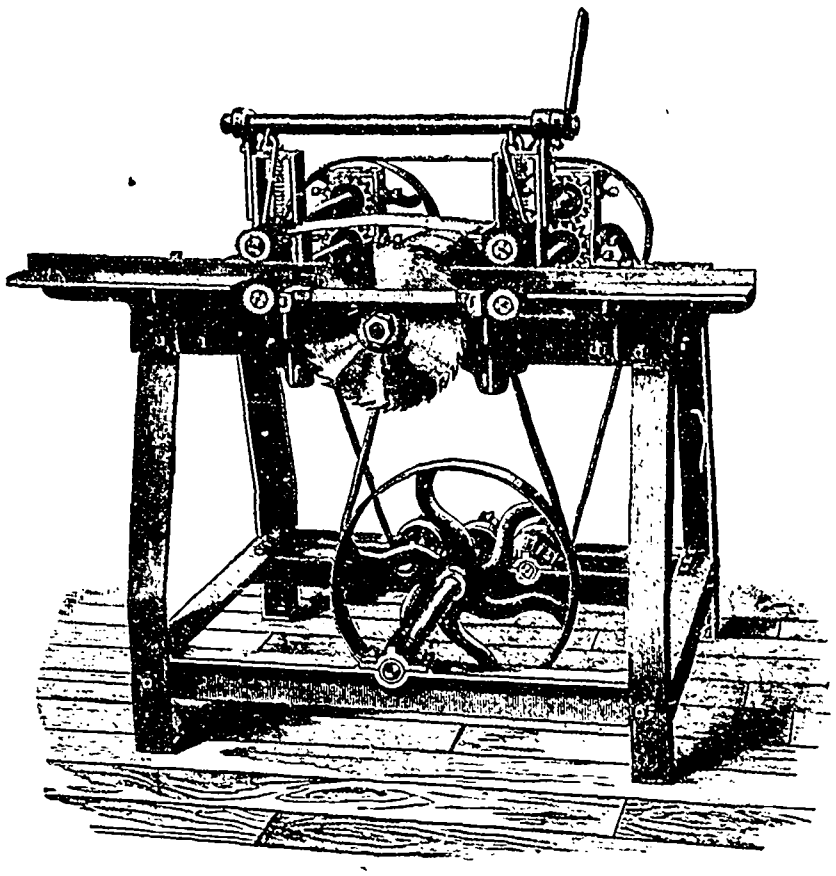
Improved Gang Lath Machine

This Machine has solid iron frame. The drive pulley, unless otherwise ordered, is 8 in. diam., 13 in. face. Feed and press rolls both front and back of saws are milled from solid steel bar and tempered very hard. As usually made it carries four 12 in. saws.

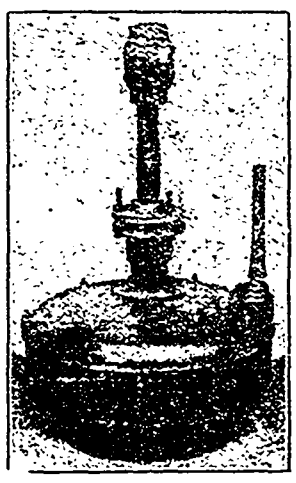
The machine throughout is thoroughly well made, designed especially for continuous fast work, and is capable of turning out a large quantity of work every day.

I manufacture other and heavier Lath Machines and Lath Bolters of various capacities, and have very complete line of both Stationary and Portable Saw Mill and Shingle Mill Machinery, and can quote very low figures to cash or short date customers.

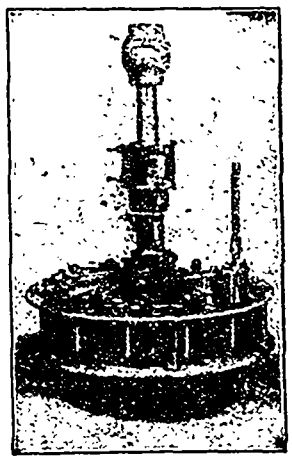


F. J. DRAKE, - Belleville, Ont.

Do You Need a Turbine?



Now is the best possible time for replacing your old, worn-out wheel with a new Turbine that will save Worry, save Time, and make Money for you. If you want a well built wheel, a wheel that will give you steady reliable power every day, a wheel that will save water, a wheel that will last you a lifetime, and that is sold at a reasonable price, then write us for catalogue and prices on the



Standard Leffel and Vulcan Turbines.

They are better developers to-day than ever before, and are growing in popularity, as our order books show.

We have now for distribution our new **SAW** and **SHINGLE MILL MACHINERY CATALOGUES,** with engravings and descriptions of our machines with their latest improvements. We will be glad to send you one on receipt of your address. You cannot buy a better Portable Mill than the "Lane Improved".

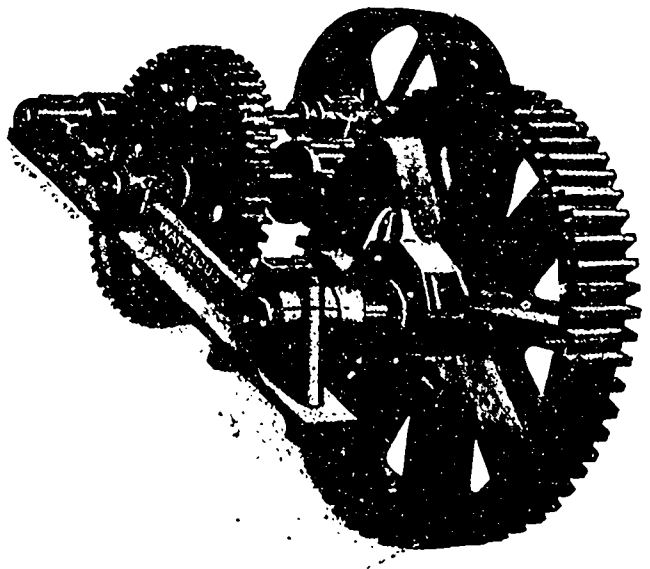
MADISON WILLIAMS, PORT PERRY, ONT.

H. E. PLANT, Agent,
Cor. Common & Nazareth Sts., MONTREAL.

SUCCESSOR TO
PAXTON, TATE & CO.

Winnipeg Machinery & Supply Co.
Western Selling Agents, Winnipeg

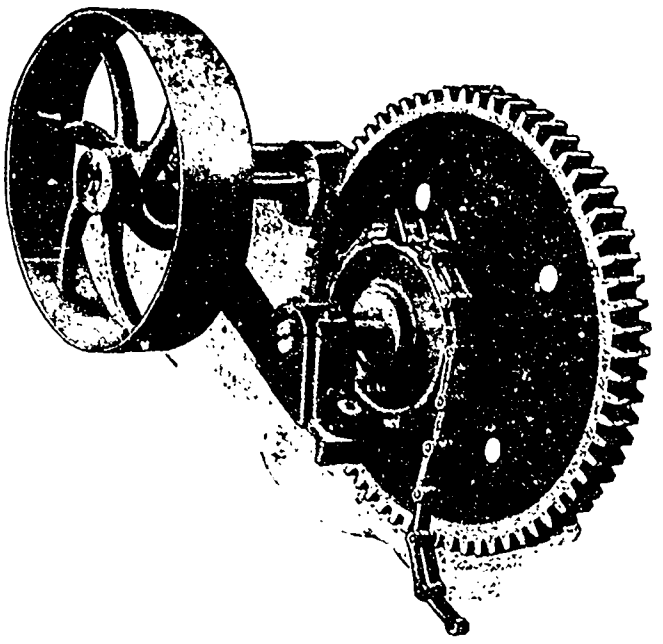
ENLDESS CHAIN BULL-WHEELS OR LOG JACKS



WATEROUS NO. 0 DOUBLE-GEARED LOG JACK

With spur gear to drive from shaft running across mill.

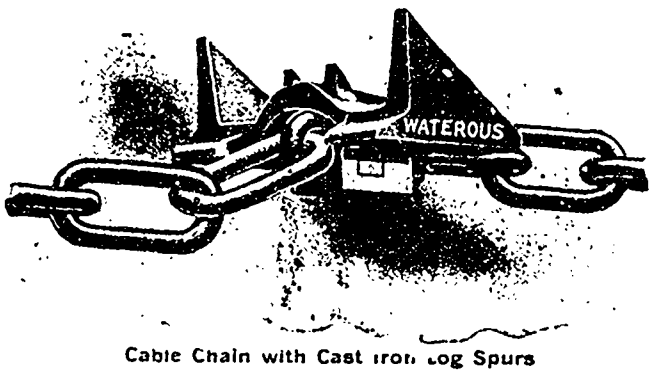
When needed to drive from shaft running lengthwise of mill, we replace smaller spur gears with bevel gears or frictions placed outside of iron frame.



WATEROUS NO. 1 SINGLE-GEARED LOG JACK

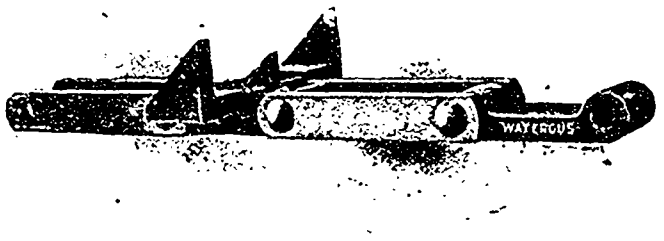
With No. 86 log chain. Cast steel spurs and centre links, steel side links, 6" pitch. No. 80 log chain is the same style but heavier with drop forged center links, 8" pitch.

PULLEYS CAN BE READILY REPLACED BY STRAIGHT FACE FRICTIONS.



Cable Chain with Cast Iron Log Spurs

Chilled wearing shoes 4x12" on each side round link. Made 10", 12", 14" wide for 1", 1¼" and 1½" chain. Can't turn on chain.



No. 86 Steel Chain (Cast Steel Log Spurs).

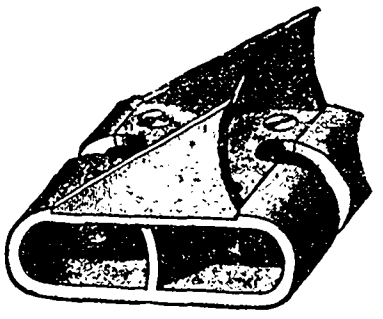
Rivets ¾", side bars 1¼x⅝", 8" pitch, center (cast steel) 2¼x6" pitch. Spurs 9" point to point.

No. 80 Steel Chain

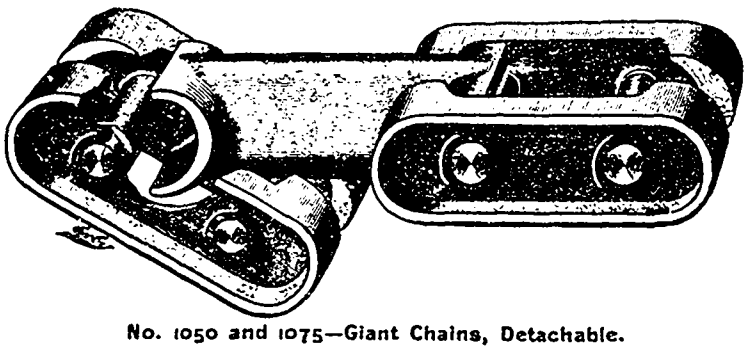
Is 8" pitch similar to above, except that solid link is a drop steel forging, the pin is 1½" in diameter (like illustration) and is fixed in position connecting side bars, presenting a large wearing surface for solid link. Side bars 2x1½"

Taking a safety of 4½" this chain gives a 10,000 lbs. working strain. Log spurs same as No. 86 or of heavy forged steel, any spread desired.

PIN OF NO. 80 CHAIN.



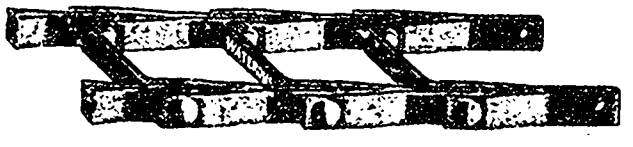
Malleable Log Chains—Detachable, readily applied.



No. 1050 and 1075—Giant Chains, Detachable.

Not recommended for salt water—but there is no better chain for fresh water.

Forged Refuse Chains



R. Double

Outside width 12½ in.—Made of 1½x⅜ in.

The 10 to 15 Tons of Ewart Detachable Link Belting we carry in stock insures prompt shipments.

WATEROUS ENGINE WORKS CO., Brantford, Can.