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# CANADA LUMBERMAN

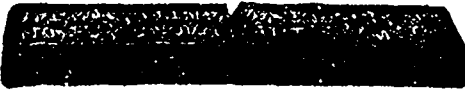
WOOD WORKERS' MANUFACTURERS AND MILLERS' GAZETTE

XXI. } TORONTO, CANADA, SEPTEMBER, 1900 { TERMS, \$1.00 PER YEAR. Single Copies, 10 Cents

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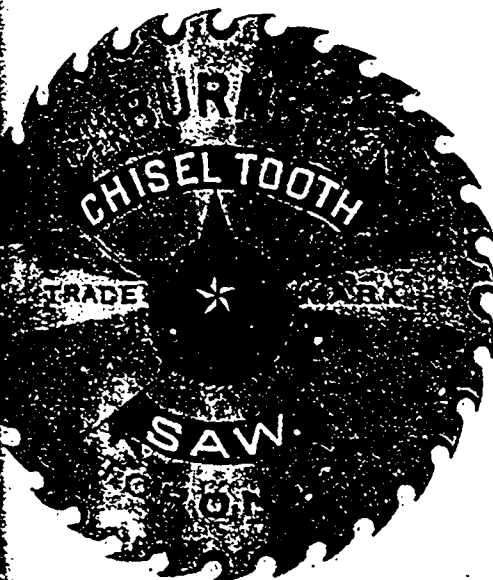
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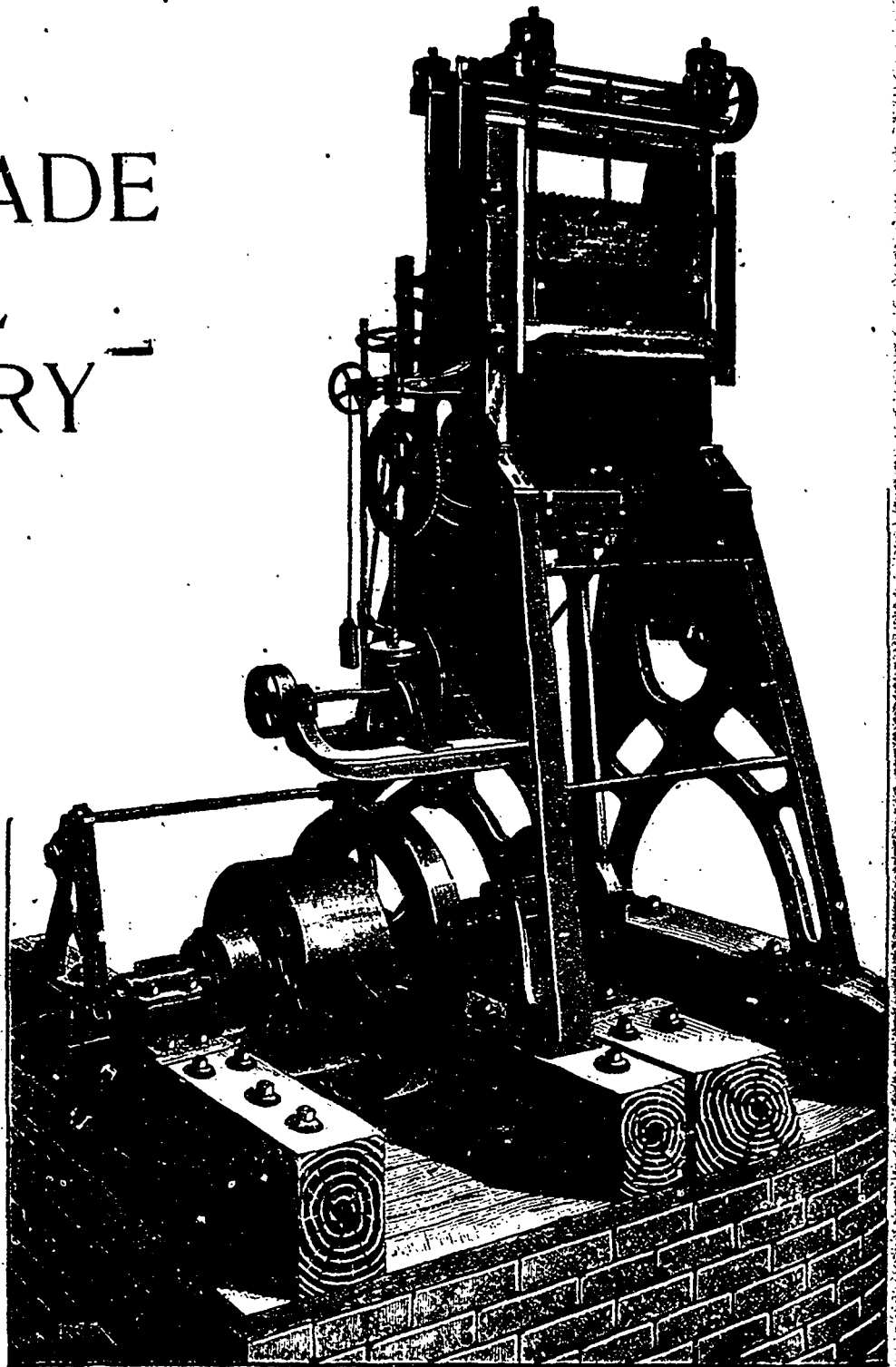
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There is no process its equal for tempering circular saws. Other makers recognize this fact, as some of them, in order to sell their goods, claim to have the same process. All such Claims are FALSE, as the patentee in the U. S. and ourselves are the only firms in the world who use it.

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DEAR SIR, Driving a 20 in. 13 gauge saw into frozen hardwood, using a 9 in. 4-ply belt, if it can be done satisfactorily, is a very severe test. Your saws have stood that test better than any I have tried. I have been experimenting with different makes—both home and imported—during the last five years, and give yours the preference. Last order is just to hand and will report on them by and bye.

Yours very truly, JAMES MCKINLAY.

CAMPBELLTON, N.B., Nov. 17th, 1894.

R. H. SMITH CO., LTD., St. Catharines, Ont.

DEAR SIR, In regard to your Shingle Saws, you can say that I have been using Shingle Saws of your make (Simonds) for the past four years, and they have given good satisfaction. I am running nine machines and use a good many saws, but have never had a saw yet that did not work satisfactorily. Before using your saws I used saws of American make, which worked well, but after giving your saw a trial have continued to use yours, as they are cheaper, and in regard to working qualities are all that is needed.

Yours truly, KILGOUR SHIVES.

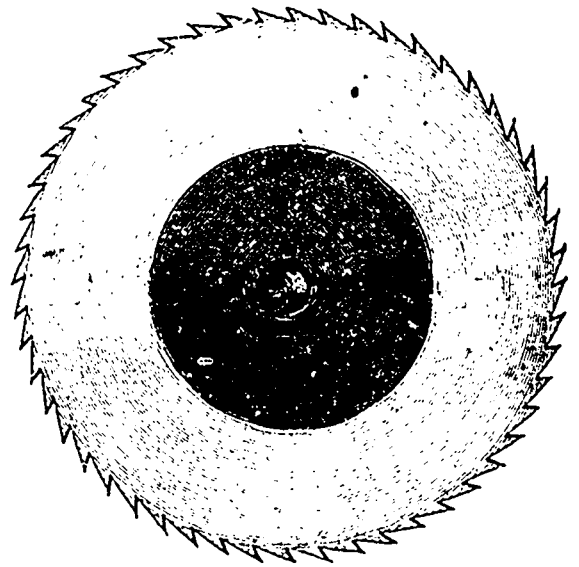
CLAVERING, ONT., May 3rd, 1897.

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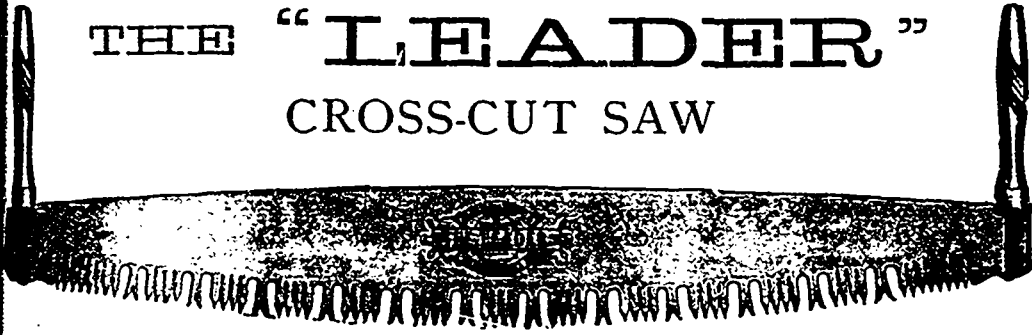
GENTS,— In reply to your letter asking me how I liked the 62" SIMONDS Saw, I must say in all my experience I never had a saw stand up to its work like the one purchased from you last month. Having used saws for the last 22 years, and tried different makes, I can fully say it is the best saw I have ever had in my mill, and would recommend the SIMONDS' Process Saws to all mill men in need of circular saws.

Yours truly, W. G. SIMMIE.

P.S.—I am sending you my old saw to be repaired; please hammer to same speed as new one. W.G.S.



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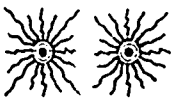


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They are tempered by the Simonds' Patent Process, insuring a perfectly uniform temper throughout the plate, and stand without a rival as the BEST, FASTEST, AND EASIEST-CUTTING SAW KNOWN. A gauge to regulate the clearing teeth is furnished with each saw.

Directions for Setting and Filing are plainly Etched on every Saw. None genuine without our Registered Trade Mark as shown in cut.

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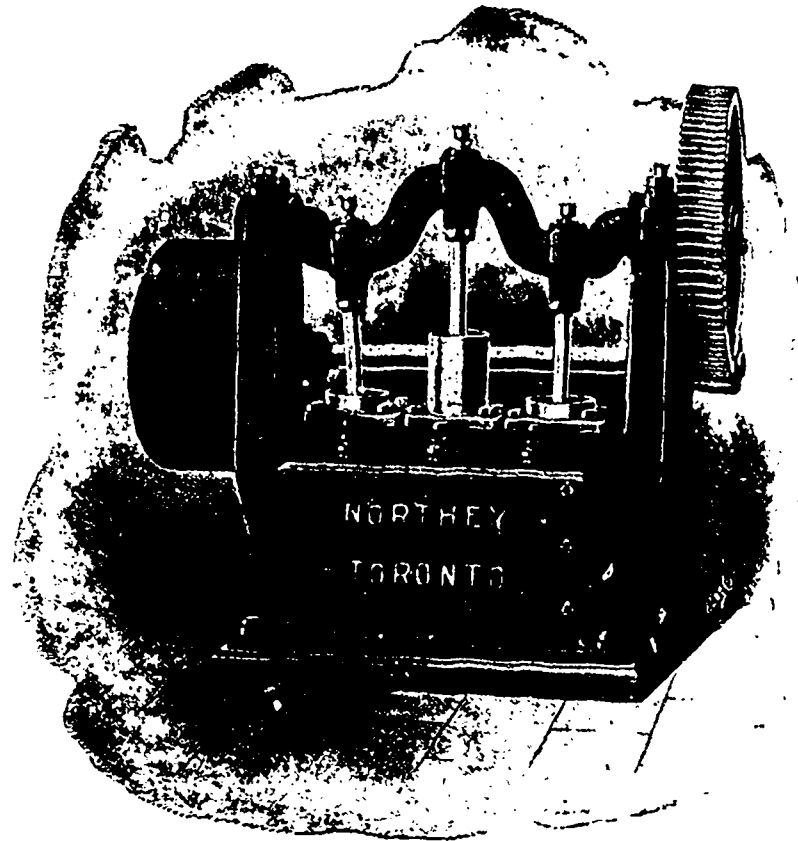
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We are also manufacturers of the Northey Gas and Gasoline Engine which has proved to be the handiest and most convenient power for small or intermittent power users in the market. Suitable for machine shops, pumping and electric light plants, etc. Write for illustrated descriptive booklet.

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# THE CANADA LUMBERMAN

VOLUME XXI.  
NUMBER 9

TORONTO, CANADA, SEPTEMBER, 1900

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## BRITISH COLUMBIA BUILDING AT WINNIPEG EXHIBITION.

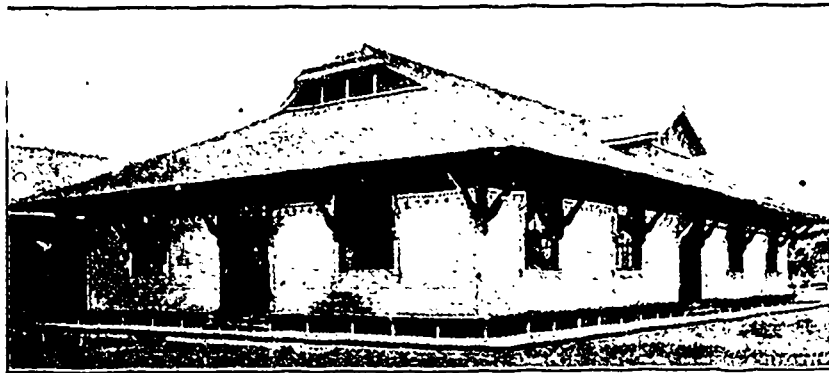
THROUGH the generosity of the lumber manufacturers chiefly, the exhibits of British Columbia at the Winnipeg Exhibition will in future be housed in an attractive building devoted exclusively to the products of that province. Exterior and interior views of the building which has just been erected for the purpose are shown on this page. It will be of some interest to readers of THE LUMBERMAN to relate the steps which led to the erection of such a building and to give a few particulars of its construction.

Last spring the Winnipeg Industrial Exhibition Association instructed their manager, Mr. F. H. Henbach, to visit the province of British Columbia with a view of securing a large exhibit from the coast. The leading lumber and shingle manufacturers, always on the alert for an opportunity to make known the excellent qualities of British Columbia lumber, met together and generously donated material to the value of \$1,100 f.o.b. mills for the purpose of erecting a building entirely of Douglas fir and red cedar, which in addition to showing the excellent quality of their lumber and shingles, could be used annually for the exclusive accommodation of all British Columbia exhibits. The Dominion Government granted the sum of \$1,000 to aid the project, and the result was that Mr. Henbach secured for his association a particularly handsome and useful addition to their already extensive buildings for an outlay on their part of some \$1,100. The cost of the completed structure was about \$3,200, which cost would have been increased to \$4,200 had not the C. P. R. generously carried the material, seven cars, from New Westminster to Winnipeg free of charge.

The building is an attractive looking structure and is located almost directly in front of the new grand stand. It is 80 by 48 feet, and is sided with one-half inch bevel cedar to a height of ten feet, above which is a ten-inch cedar band, studded with four-inch rosettes, and above that again a three-foot course of red cedar shingles, oiled. The main roof is shingled with random width red cedars, stained a moss green, relieved by a ten-foot belt course of band-sawn dimensions of lighter tint. The roof projection, which extends six feet all around the building, is lined with clear Douglas fir, V joint, oiled, and the interior lining of the entire building is of the same mat-

erial, with ceiling panels, doors, sash, casings, aprons, etc., of red cedar, all of which have been given three coats of oil, enhancing, if possible, the natural beauties of the wood. The flooring is of clear fir, all vertical grained, four inches wide and in length from 20 to 32 feet, which makes very few joints and a floor that is practically indestructible.

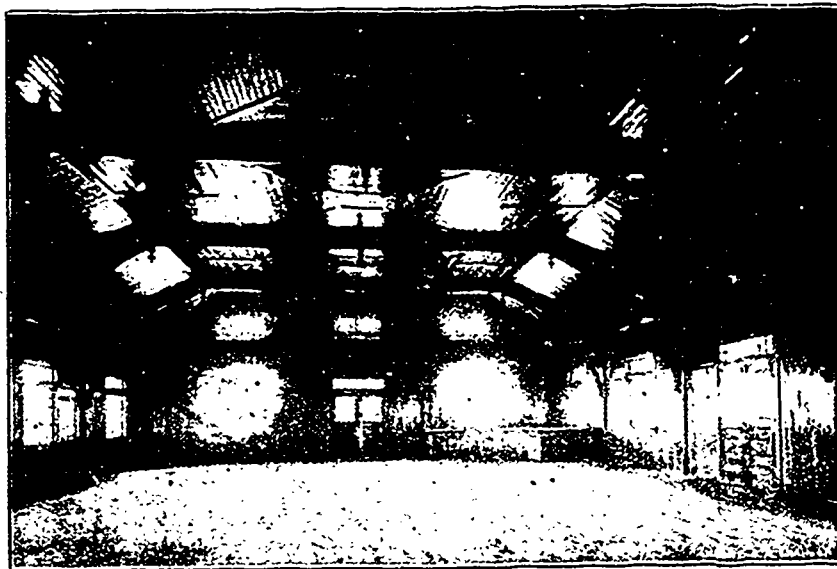
The building was erected under the supervision



BRITISH COLUMBIA BUILDING AT THE WINNIPEG EXHIBITION.

of the directors of the Exhibition Association, aided by Mr. A. F. E. Phillips, Winnipeg representative for the Brunette Saw Mill Company and the Pacific Coast Lumber Company, of New Westminster, and by Mr. G. W. Campbell, representative for the British Columbia Mills, Timber & Trading Company, of Vancouver.

The British Columbia lumber manufacturers



INTERIOR OF BRITISH COLUMBIA BUILDING AT WINNIPEG EXHIBITION.

and their Winnipeg representatives are doing much to promote the interests of Douglas fir and red cedar lumber and shingles, and are to be commended for the enterprise and generosity shown in erecting this building.

—The Yale Columbia Lumber Company have established a large saw mill at Cascade, B. C.

## ADVANTAGES OF ELECTRICAL TRANSMISSION.

WHAT is to be gained by electrical transmission of power in a paper mill over the ordinary method of belts and ropes?

This is the question asked by a correspondent of the Paper Trade Journal, and the answer given is as follows: A well designed electrical outfit will carry power from water wheel to machine cheaper than it can be done by either belt

or rope connections. This is true within certain distances, depending upon surrounding conditions. Probably a belt would carry 50 horse power to a pulley 50 feet from the water wheel cheaper than it could be done by a generator and motor. But were the distance 1000 feet the electrical method would be much cheaper. There is, then, around every prime mover, an imaginary circle, beyond which it pays to put in electrical transmission. But when once the circle area is passed and a generator and motor is installed, then it pays to drive electrically all the machines inside the circle as well.

To pay, the generator must be directly connected to water wheel or engine. The efficiency of a good generator is above 95 per cent., and a motor equally efficient cuts the loss of power due to transmission down to 90 1/4 per cent. This is as can be done by a single countershaft transmission, for each drive of that kind consumes 10 per cent. of the power delivered. Thus, for a drive that requires six beltings the loss would be nearly 47 per cent! Exactly figuring, the power transmitted through six beltings would be a trifle more than 53 per cent., and six beltings between water wheel or steam engine and machine are frequently found in a paper mill. Another point in favor of the motor is, when a machine is to be idle its motor is promptly stopped, and all power consumption ceases save a very small percentage consumed by the generator and chargeable as its share to the idle machine. With belt transmission the countershaft losses are permanent, they go on all the time, whether work is being done or not. In more than one n. of ancient engineering 50 per cent. of the power generated is consumed in running shafts, etc

—The Ottawa Saw Works have secured the large building of the Ottawa Investment Company on Victoria Island, Ottawa, and expect to be in operation by the 15th of this month. The output of the factory will be considerably larger than the previous one.

## ARE LUMBER PRICES TOO HIGH?

By JOHN CHARLTON, M.P.

(Written for the CANADA LUMBERMAN.)

Complaints on the part of consumers of lumber are made that prices are maintained at too high a figure, and an expectation seems to be entertained that prices now current will recede. The belief that prices are too high is ill founded; whether a reduction will be forced upon lumber producers remains to be seen.

Lumber prices have advanced from thirty to forty per cent. above the low rates current from '95 to '98. This is a smaller proportionate advance than has taken place during the same period in the prices of iron, steel, hardware, various structural materials, etc. This percentage of advance is not in excess of the percentage of advance in wages paid in the woods, in saw mills, on lumber drives, and in other departments of lumbering operations. There has been an increased cost in the various kinds of supplies used by lumbermen; this advance in many cases being in excess of the percentage of advance in lumber. The cost of mill machinery and mill repairs has also increased very materially during the past two years.

Another element bearing upon the cost of lumber production is the constant tendency to increased cost of logging, in consequence of operations being pushed further from the main streams and the points more distant from the mills. The supply of timber in Canada, on the main rivers, such as the Ottawa, Gatineau, Coulouge and others, if not entirely exhausted, is of so small account as to be scarcely worth considering. Year by year old limits are exhausted, and new operations are commenced at more remote points. Many of the Ottawa lumbermen are obliged to put in their supplies to their distant camps in the winter preceding the one when the logs are to be cut, and banked upon the driving streams, and it requires two years, and in some cases three years, from the time supplies are sent to their camps before the logs reach their mills. The cost of the logs to these mills, and in fact to all mills in Canada, is constantly increasing. Many of the Ottawa mills lay down their logs at a cost exceeding \$9 per M, exclusive of crown dues and stumpage.

Another feature of the lumber trade having to do with the cost of production, is the constant tendency to increase in the price of stumpage. The stock of white pine in Canada is rapidly diminishing. A popular illusion is the generally entertained belief that we have a boundless supply of pine. The truth is that the end is in sight, and the utmost care should be observed in husbanding our timber resources. The opinion is expressed by some gentleman, quite conversant with the question of timber supply, that we have not in Quebec and Ontario a materially larger amount of white pine than to-day is standing in the States of Michigan, Wisconsin and Minnesota, where it is estimated the present rate of consumption will exhaust the supply in the next seven to ten years.

The cost of logging in Canada is largely in excess of the cost of the same kind of work in the American lumbering states, with the same length of haul and stream drive. When in Washington upon the Joint High Commission, in connection with my investigations upon the lumber question I addressed letters to a great number of lumber firms both in Canada and in the United States white pine states, as to the cost of lumbering, and the result of the investigations then instituted proved that the excess of cost in Canada over the cost in Michigan, Wisconsin, and Minnesota, on the same length of haul from stump to stream, and drive from stream to mill, was on the average somewhat in excess of 30 per cent. This was due to the rough character of the country in Canada, and to the broken nature of the streams, which required extensive improvements by way of construction of slides and dams.

The prices paid for lumber from 1895 to 1898 furnish no proper basis for estimating what would be a reasonable and proper scale of prices at the present time. During that period lumbermen were almost invariably losing money. Those who secured the return of a new dollar for an old dollar invested were the fortunate exceptions. Our lumbering concerns in Canada were kept afloat through the liberality and broad-minded policy of the banking institutions which stood at their backs. The interests of the bank and the lumberman were mutual, for the failure of one would impair securities and inflict loss and trouble upon the other.

At a conference held by lumber representatives of the

Canadian and American lumber interests, which I was instrumental in arranging for at Washington during the sitting of the Joint High Commission, in February, 1898, the American lumbermen assigned as a reason for their determination to secure the continuance of the \$2 duty, the fact that their business under free lumber had been a losing one. The Canadian representatives asserted that the same had been the case with themselves, and a comparison of notes between these representatives of the lumber interests, from the two countries, revealed the fact that almost if not all the firms represented upon that conference had been heavy and continual losers during the period of depression from 1895 to 1898. It may be asked, "Why should these firms continue to prosecute their business under these adverse conditions; and, if losses were being made, why not suspend operations?" In answer to this query, it may be said that lumbermen hoped from year to year for an advance in prices that would at least cover the cost of production. To suspend lumbering operations involves many serious consequences. A great lumbering firm gathers together a staff of woodsmen, among them men of capability and energy, to take charge of running camps, making logs and timber, scaling logs, running drives and other work of that description, also skilled sawyers and a competent saw mill staff of book-keepers, foremen, yardmen, inspectors, engineers, filers, etc. Farms have been opened at the camps, which must be kept up or the labor and expense bestowed upon them will be lost. Teams have been transported to the scene of operations in the woods at great expense, and to suspend operations simply means the complete disorganization of the complicated business, which it has taken years to build up and place in an efficient condition. To allow such disorganization by suspension would involve loss of time and money in again placing these extensive operations on a working basis, and so the lumbering firm naturally decides to hold together and keep on, trusting that times will take a turn for the better, and that the article which they produce will command in the market a price adequate at least to the cost of producing it.

For the last year prices have been satisfactory to the lumber trade, because they have afforded a moderate and reasonable profit. The impression that profits have exceeded this limit is unfounded, and in answer to the question, "Are the prices of lumber too high?" I answer most emphatically that they are not; that they now stand upon a basis which covers the cost of production and affords a reasonable profit only, and that the great lumber industry of Canada, which has struggled for years with adverse influences and disastrous conditions of the market, is entitled, now that it has its head above water, to keep it there, and go on with operations which under present prices are reasonably successful, and minister most effectively to the general prosperity of the country.

LYNEDOCH, August 21st, 1900.

## LEGAL DECISIONS.

**PIGGOTT v. ROACH.**—Judgment on appeal by defendants Roach and Simpson, from the judgment of the County Court of Essex in favor of the plaintiffs in an action for replevin of a carload of lumber. The plaintiffs were the vendees and the question was whether the property had passed to them. The contract was with the defendant Roach, but the defendant Simpson got out the lumber, and the defendant Roach gave him a bill of sale upon it. The lumber was piled at the place agreed, and was there called by the plaintiffs' agent, and was then placed on cars by the defendant Simpson, who subsequently had it consigned to his own banker and drew on plaintiffs for the price. Plaintiffs refused the draft, asserting a debt due them by the defendant Roach, but on the defendant Simpson ordering the goods to be returned to him the plaintiffs replevined. The question was whether the property passed by delivery to the culler. The appellants contended that nothing took place when the agent of the plaintiffs came down to cull which deprived defendant Simpson of the property, and that the reservation of the right of disposition over the goods prevented the property passing. Held, that the property in the lumber passed to defendant Simpson. He took a receipt for the lumber from the railway company in his own name, and consigned it to the order of his own agent. (Rogers v. Devitt, 25 O. R. 84.) Appeal allowed with costs and action dismissed with costs.

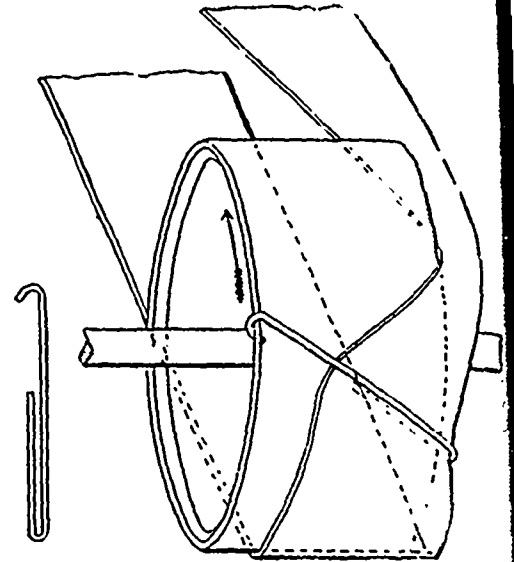
## SPEED OF LOG CHAINS.

What is the proper speed at which to run a log chain for taking logs from the water, or carrying them into or through the mill? The answer given is:

For long logs a chain should run at 70 to 100 feet per minute. Some chains will run 100 feet per minute, but that is pretty fast for long logs. The shorter the average length the faster they can be handled. Where the average length is between 16 and 60 feet, a chain had better not travel more than 80 feet per minute. When, however, 4 foot wood is to be handled, the chain may run at 200 feet per minute with excellent results.

## FOR HANDLING HEAVY BELTS.

The accompanying sketches show a very simple device for putting on heavy belts when it is necessary to shut down in order to do so, and when a rope is usually employed for the purpose. Take a piece of 5-16 or 3/8-inch round iron and bend it as shown in the small sketch at the side, and hook the short end over the edge of the rim of the pulley and the long end under the belt as indicated. Start up the engine slowly, and when



FOR HANDLING HEAVY BELTS.

the belt is on it is not necessary to stop, as is when a rope is used, because the short end of the hook will always straighten out and disengage itself. It is a good plan to use a bar of light iron for the purpose as will answer, since it will straighten out and free itself with less strain on the belt. I have never used this method on iron pulleys, but presume it would be necessary to file a little notch in the rim to allow the hook to catch in. It works admirably on wooden pulleys.—A. C. Mills, in American Machinist.

## PREVENTING BOILER INCRUSTATION.

UNITED States Consul Hughes sends the following from Cobourg, under date of May 17, 1900.

A. Reis, of Antwerp, has patented the following method for preventing incrustation in boilers: A mixture of sugar, tannin extract, silicate of potash or soda, and boric acid is added to the boiler water to keep the salts in solution; when the water attains a density of about 15° to 25° Be, the boiler is "blown off." The working periods range from a fortnight to three months according to the quality of the water in use. Glycerine and alkaline sulphates are sometimes used in the mixture.



It seems pertinent to dwell for a moment on the subject of lumber limit values. Recent events suggest an enquiry, has the appetite for pine timber bids been appeased? Or may it be that so much has been heard of late regarding the magnificent fortunes awaiting the holders of pine limits that it has created a desire on the part of owners for an immediate realization of this unexpected wealth, and they have fixed their reserve bids beyond what others have considered to be the market value of the property. The fact remains that several auction sales of good timber properties have recently fallen flat. Going to one of these sales a few days ago, a few minutes after the appointed hour, about a dozen persons were seen departing from the chambers, and an inquiry from the auctioneer elicited the response "no bid." This is in striking contrast to the results of similar sales held in the fall of last year, when every one seemed to want limits and excellent figures were received. What is the deduction?

\* \* \*

Few men of his years have had a wider experience in the lumber business than Mr. J. M. Thompson, now on the road for Meaney & Company, Toronto. About ten years of his experience was gained in the Eastern States; for some time he was manager at Calendar for Robert Thompson & Company, of Hamilton; and for a few years was in charge of the business of the late Hon. A. R. Dickey, at Sheet Harbor, Nova Scotia. He knows the business from start to finish. When at Sheet Harbor Mr. Thompson had considerable to do with British trade, of which he has very pleasant recollections. "The first specification submitted to me" said he, when relating some incidents, "was not easily deciphered, but I soon became accustomed to the trade and found it very satisfactory. Once you get a connection with a British house," he added, "you can rely on their business, provided you fill your orders properly. Their specifications call for different sizes than are generally used in this country, but it is not a difficult matter, with the specifications before you, to cut the stock as desired." Mr. Thompson is one who believes that Canadian manufacturers might easily supply a much larger quantity of stock to the British market if they would push for the business and give the Britisher what he requires. He does not think that they are as hard to satisfy as is generally supposed.

\* \* \*

One who is laboring earnestly for the extension of Canadian trade is Mr. Thomas Moffat, whom I met in Toronto recently. Mr. Moffat is the Canadian Government agent at Cape Town, South Africa, and has spent the past few months in Canada securing information from manufacturers, and incidentally renewing old acquaintances. Mr. Moffat believes that if our manufacturers would advertise themselves in South Africa it would be the means of bringing them consider-

able business. Another suggestion made was that samples be sent to the Canadiana buildings in Cape Town, which are under the control of the commission firm of Moffat, Hutchins & Company, of which he is a member. They would there be inspected by importers. Speaking more particularly of lumber, Mr. Moffat stated that a considerable quantity was now being received at Cape Town from British Columbia, whereas a few years ago almost the entire importation from the Pacific coast was from Washington and Oregon. And I believe Mr. Moffat was largely instrumental in changing the course of trade from the Western States to British Columbia. It was a source of satisfaction to learn that the British Columbia product has now a firm hold on the market, and is believed to be better than the Washington production, there being a difference in grain. The western fir meets with favor in South Africa on account of its large size. The demand there for large timber has been a drawback to shipments from eastern Canada. Quebec pine deals, for instance, would average perhaps sixteen feet in length, while the building trade in South Africa calls for an average length of about twenty-two feet. The reason of this is that the rooms there are made larger than in this country. Mr. Moffat spoke very emphatically as to the desire of importers to get consignments direct from the manufacturer. He sees no reason why the manufacturer cannot ship direct. In proof of this statement, he referred to a commission which had been given him to purchase a cargo of deals direct from some of the Canadian mill owners, the object being, of course, to secure the stock at the lowest possible cost by eliminating middlemen's profits. Mr. Moffat returns to his home in Cape Town some time this month.

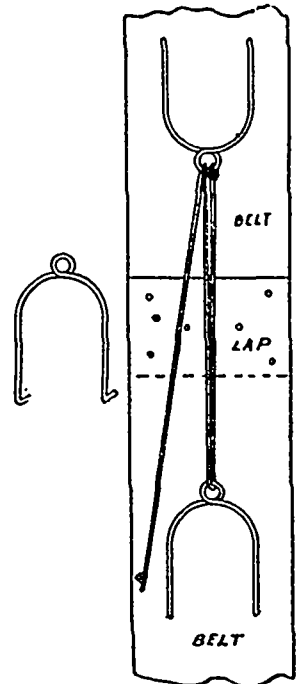
#### WOOD PRESERVATION.

Another addition to the numerous existing processes designed to prevent decay in wood is now being introduced into Great Britain by the Xylosote Company in the shape of the Hasselmann system. In this the timber to be treated is enclosed in a cylindrical vessel in which a fairly high vacuum can be produced by a suitable air-pump. When the sap has been drawn out of the pores under the diminished pressure a solution of metallic and mineral salts is allowed to flow into the vessel, and the wood is steeped in this for some hours under a certain pressure of steam and at a temperature of about 130 deg. C. Then, after being dried, it is ready for use. The impregnating liquid is a solution of the sulphates of copper and iron, whose preservative properties are generally acknowledged, together with some aluminium, potassium, and magnesium salts. The inventor of the process maintains that the copper destroys any germs of decay that may be present, while the iron combines with the cellulose, or woody fibre, to form a compound which is insoluble in water and hence cannot be washed out by the action of rain. The salts in this way are made to permeate the substance of the wood, and are not merely deposited mechanically as minute crystals in the pores by the evaporation of the solvent. It is claimed for the process, which, apart from the drying, takes about four hours, that it greatly reduces the inflammability of the wood, enables it to take a brilliant

polish, and increases the hardness of certain soft woods to such an extent as to render them available for purposes to which formerly they could not be applied. Another advantage attributed to it is that it saves the expense of seasoning in the ordinary way, since perfectly green wood after treatment neither shrinks nor warps. The process appears already to have gained considerable recognition abroad; thus it is stated that the Bavarian State railways and post office have contracted to have all their sleepers and poles up to 1905 treated by it, while the Swedish Government has adopted the system and ordered 600,000 sleepers preserved by its use.

#### A HANDY BELT STRETCHER

"REX," in the American Miller, describes a belt stretching device he has used for ten years past and considers the most convenient tool, barring saw and hammer, that he has in the mill. The forks are made out of  $\frac{1}{4}$  to  $\frac{3}{8}$ -inch round iron. The turned points should be one-half inch long



and slightly hooked so they will not pull out of the belt.

Punch holes in the belt far enough above and below the lap or lace so they will not be too close together when the belt is drawn tight. Tie the rope in the eye of the upper one, bring it down and through the eye of the lower fork and then up and through the upper one again. Now, pull down on the rope until the belt is sufficiently tight, then take a loop hitch with the loose end around the taunt rope below the upper eye and you are ready to splice.

With this simple arrangement a miller can take up an elevator or other belt with less labor and time than by any other method I have seen.

The rod for making each fork should be 16 to 18 inches long and the eye should be at least one inch in diameter, so the rope will pass through without riding. The cost will not be over 25 cents.

The Orillia Export Lumber Company write: "The Export Number has come to hand, and we think you have succeeded in getting out a very nice number indeed."

W. H. McAuliffe, of Ottawa, has purchased property on Duke street in that city, on which he is building several residences. He will open a lumber yard in the year,





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

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

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

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

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

COST OF PRODUCTION IN RELATION TO  
LUMBER PRICES.

Much has been heard of late of the excessive cost of lumber, and many projects, we are told, have been postponed until such time as they could be carried out at a lower cost. These opinions have been formed, no doubt, as the result of the sharp advance in the price of lumber which took place during the winter of 1899-1900, but without a study of the actual situation. True, lumber is high when compared with the prices ruling three or four years ago, but it should be remembered that these were years in which the industries of the country were operated at little profit, if not at an actual loss, and lumber was no exception to the rule. Indeed, it may fairly be said that from the year 1893 to 1898 there was no profit in the lumber business, and many of our lumbering concerns which struggled through these years of depression were only enabled to do so by the assistance of the banks.

The present selling prices of lumber are no higher than will afford a reasonable margin of profit to manufacturers, and the conditions of the lumber industry are such as to render it extremely improbable that prices will decline to the low point of four years ago. The one reason for this is found in the increased cost of production. The advance in lumber as compared with four years ago is equal to about \$4 per thousand feet, or say 25 per cent., while the cost of production has increased almost as much. Unfortunately,

it is the law of supply and demand, rather than the cost of production, that fixes the price of any manufactured article, yet the desire, if not the necessity, of realizing a profit from investments cannot but exert an influence on the price of the article, even if some time should elapse before this effect is visible.

The cost of producing lumber may be divided into four items: First, stumpage; second, supplies and woodmen's wages; third, transportation of logs to the mill; fourth, manufacture of the lumber, in which is included saw mill equipment.

Regarding the first item it cannot well be disputed that there has been a marked advance in the cost of stumpage, probably equal to one dollar per thousand feet of lumber. This has been brought about, not by an extraordinary demand for lumber, but by a more general realization of the fact that our timber supply, although yet large, will soon become depleted if not properly husbanded. It does not appear, therefore, that it will be possible for lumbermen to purchase standing timber in the future at a lower price than at present.

Next we come to the largest item in the expense of producing lumber, namely, wages for men and teams. A conservative estimate of the advance in this item would be 35 per cent. A well-known Ottawa firm is authority for the statement that wages of woodsmen are 70 per cent. and that of teams 50 per cent. higher than they were four years ago, so that the estimate of 35 per cent. is extremely low. For the coming winter's operations foremen are being engaged at \$60, log-cutters at \$28, teamsters at \$26, road-makers and shanty-hands at \$23, and cooks at \$45 per month. And even at these figures difficulty is being experienced by the lumbermen in securing sufficient men. In the Maritime provinces also the increased cost of labor is reported to be from 25 to 50 per cent., and it would seem that these conditions apply throughout the Dominion. Until this year the advance in the cost of camp supplies had not been correspondingly large, and did not represent more, perhaps, than 15 to 20 per cent. The supplies for the coming season's operations promise to cost considerably more than last year, as there has been an all round advance within twelve months equal to about 12 per cent. Sugar and raisins are nearly 30 per cent. higher, currants 60 per cent. higher, Japan tea 25 per cent. higher, and molasses 12 per cent. higher. Flour, pork and peas are selling at the same figures as last year. There has been a slight advance in other supplies, while scarcely an article required by lumbermen has declined in price. The principal advance in hardware and iron goods has been in axes, which are quoted about 20 per cent. above the prices ruling last season. From these figures it will be seen that so far as supplies are concerned the cost of logging operations during the coming winter will be considerably higher than for many years past.

The third item, namely, transportation of logs to the mills, is each year becoming a more important factor in the cost of producing lumber, although it is a question which is seldom given consideration by the public. When it is stated that in some instances the logs are driven five hundred miles to the mill, and frequently great difficulties are encountered in the process of raft-

ing, it will be admitted that this question should receive some attention. While the drives usually start in April, the first of them do not arrive at the mills until July, and during that time considerable expense is involved in the process of driving. Ottawa mills once near the limits now get their supply from the headwaters of the Ottawa and Gatineau rivers. This reminds us that while the value of timber limits is increasing, the quality of the timber is in many cases much inferior to that which lumbermen would purchase some years ago. This is proved by the policy of the lumbermen, who now cut on what are called white pine limits, spruce and red pine that years ago would be passed by.

Lastly, we come to the question of manufacturing the lumber. A saw mill cannot be built to-day nearly as cheaply as it could four years ago, nor can the expense of repairs be kept at a low limit. But, as with logging operations, labor is the largest item of expense around the saw mill. We doubt if there is a manufacturer in Canada who is not paying higher wages to his employees than he paid four years ago. This advance is probably equal to 20 per cent.

Considering the above conditions, is it reasonable to expect that lumber prices will materially decline? With one or two exceptions, the prices at which lumber is now being held are warranted by the cost of production, and there is no reason why they should not be maintained. It rests with the lumbermen to take a firm stand on the subject of lumber prices, and to secure for themselves the profit to which they are entitled. Their action thus far in this respect is to be commended, as while in the United States some of the lumbermen have given away and thus broken down the market, the Canadian manufacturers almost universally have refused to dispose of their stock except at the figures asked. The past two months have witnessed a rather slack demand, but there are indications that the trade is now picking up, and that all the lumber manufactured in Canada in the next few years will be wanted at reasonable prices.

EDITORIAL NOTES.

As time goes by, the advocates of the legislation prohibiting the export of saw logs from Ontario are finding more and more reasons to congratulate themselves on the wisdom of their policy. A number of Michigan saw mills have already been placed on Canadian soil, and others will follow as necessity demands. It may reasonably be expected that in a very short time the Georgian Bay district will not only outrival the Ottawa valley as a lumber producing centre, but that it will be the seat of extensive wood-working plants also. The true-value of our raw material can only be obtained by working it up to the fullest extent in this country, and there are indications that this will be done in the near future.

THAT the Canadian exhibit of timber products at the Paris Exposition should have been awarded the grand prize is an honor of which we, as common with every reader of THE LUMBERMAN, should feel proud. It is a forcible reminder that we possess a forest wealth greater than that of any other country in the world. Much credit is due Mr. Macoun for his efforts to secure a representative exhibit of Canadian timber products, notwithstanding that in some instances it was

found necessary to purchase the goods. Yet this exhibit is not the best that Canada can produce, and it is hoped that at the Glasgow exhibition next year an exhibit will be made which will surpass both in variety and quality that made at Paris. It is the duty of the Dominion and Provincial Governments to defray the expenses of the exhibit, but the goods should be supplied by the manufacturer, and in such a manner that every line of wood goods made in this country will be represented.

The approach of the fall season is apt to remind lumbermen of the inconvenience which they experienced about a year ago owing to a shortage of freight cars. During the months of October and November considerable loss was occasioned manufacturers and dealers owing to

awaiting shipment last fall. It may not be amiss for lumbermen to take time by the forelock and endeavor to prevent a recurrence of the difficulties encountered last year.

THE CANADIAN FORESTRY EXHIBIT.

The accompanying illustration of the Canadian exhibit in the forestry exhibit at the Paris Exposition is reproduced from the Timber Trades Journal. Speaking of the exhibit this journal says: "In contradistinction to some of the other exhibits which have been organized to illustrate the theoretical and scientific operations of forest growth rather than the practical employment of the various woods, the Canadian exhibit is to all intents and purposes a "timber trade" one, and the commercial side of the ques-

thick. Amongst the manufactured goods are elm hubs, maple skewers (which were the subject of much curiosity to French visitors, they not being used in France), staves, hickory and red oak spokes, oak and hickory handles, &c."

CIRCULATION IN STEAM BOILERS.

The important facts regarding circulation in steam boilers, as viewed by Engineering News, are summed up in a recent issue of that journal as follows: Circulation in a boiler is of value, and should always be secured to a sufficient extent to keep the heating surfaces bathed in water and to prevent their undue heating and the injury of the boiler through unequal expansion. The more rapid the circulation the better will this end be attained; and some gain is also to be secured



CANADIAN EXHIBIT IN THE FORESTRY PAVILION AT THE PARIS EXPOSITION.

their inability to obtain cars with which to make shipments. Whether this fall will witness a repetition of this condition cannot yet be known. The cause was said to be that the cars were being used for the movement of grain from the west. The wheat crop this year is above the average in Ontario, perhaps slightly below the average in the United States, but somewhat short of the average in Manitoba and the Territories. Thus, it may be expected that the quantity of wheat to be moved this fall will be almost as great as a year ago. We do not think that the railways are in much better position in respect to rolling stock than they were last year, and we would not be surprised if something in the nature of a car shortage was again experienced by the lumbermen. It should be said, however, that the volume of lumber to be moved during the next three months is certain to be less than that

tion has been kept well to the fore. Of course, we find the usual display of big trunks, notably the giant Douglas fir, the sample of which is 7 ft. in diameter, but the bulk of the specimens are in the form in which they are known to commerce, and there is also a large display of manufactured articles. The space devoted to this exhibit, which is almost at the end of the Palais des Forêts, on the left hand side, is about 1,000 ft., and many specimens are also to be found in the Canadian Pavilion at the Trocadero. To relieve the monotony of the wood specimens, there are a number of interesting photographs illustrating lumbering operations, and a few natural history specimens and plants of various firs and pines. There are some fine samples of Canadian white pine, and in addition to the Douglas log we have referred to, we noticed a magnificent plank of the same wood 25 ft. long, 4 ft. wide and 4 in,

through the reduced tendency of sediment to deposit on the heating surface. It is in these directions, and not in any increased evaporative efficiency, that the gain from good circulation is to be found. While in theory rapid circulation should very slightly improve the economy of a boiler, the gain is too slight to be discernable.

Business for Minnesota lumbermen in Manitoba and the northwest provinces has shrunk tremendously in the past few years of good times. During the hard times the business of handling Minnesota lumber across the line was very profitable to those who knew how to handle it well. But to-day better prices can be had on this side for all the lumber made here. When the balance of prices turns again Minnesota lumbermen will practically have to work up a new business with the prairie Canadians.—Mississippi Valley Lumberman.

## HANDLING SHINGLE SAWS.

J. W. BALL, IN THE WOOD-WORKER.

The shingle saw is one of the many tools that requires much and better care than the ordinary filer gives them. There are so many different sizes and styles of shingle saws, also so many different machines and kinds of timber to be worked, that the same rule may not apply to all, but there are many "helps" for this kind of business which are of value to nearly all who follow it.

It would be a fine thing if there could be a standard speed for saws, also a standard size and thickness, but as there is not we must reach out for the experience of others; as one idea leads to another we may gain by its products.

If we could all learn to make a saw there would not be so much trouble in running these thin-rimmed saws, as we could determine the quality of the steel much better, understand the weak parts better and learn to doctor them. So many mills depend upon their filer that he should get the best of knowledge and practise it on his saws.

Now, as a shingle saw differs from a board saw so much, it must be treated so much differently. I will give a few rules that work well on 15 to 18 gauge saws by 8 to 10-gauge centres, from 42-inch down to 36-inch diameter. I think to speed a shingle saw 16x9-gauge up to 16,750 circular feet per minute, or in other words a 40 inch saw to about 1,600 revolutions per minute, is not too much speed, nor is it too slow for the good of the saw plate or cutting qualities, and can be strained to that motion very easily.

I do not approve of a real thin saw, say 18-gauge on rim and 8-gauge at collar, for it is rather wedge-shape and requires so much speed to teeth. Why not reduce the centre to 10 and rim to 16 or 15-gauge? I have run such saws and like 9 or 10-gauge centres instead of 8 or 7-gauge. A 40-inch saw works well with a 25-inch flange or collar, with not less than 16 to 19 screws to hold saw solid to it. Some like 16 screws around edge of collar and three at centre. Either three or none at centre is all right if saw is properly hammered and flange true. As to shape of teeth, as well as number, for hemlock and pine, 80 teeth is plenty.

For 40-inch saws of 16 gauge I use teeth 9-16-inch to 5/8-inch in length, with either spring set or swaged full. Spring set is very good and is the easiest. Use set or cramp very close to point of tooth, but be careful and not disturb extreme inside corner, as most all pressure sets mash the point of tooth and then an upset must be used to get inside corners. Without it the teeth will sprawl or straddle, which will cause the saw to heat and make thick and thin shingles. I saw one sawyer using his saw this very way. He shortened the teeth because his saw would not stand hard timber, not knowing that the teeth were spraddling and jerking extra set to his saw every time he would crowd it too fast. Examine this; it is a common occurrence with many.

Run just enough hook so that saw will not snatch or grab. Too much hook will have a tendency to lead the saw with the grain of the timber, and not enough will simply scrape instead of cut. The back of tooth should be beveled a trifle where you run with spring set. This will leave the outside corner of tooth the highest and will stand to run easier and longer than if filed squarely on

back. I would not advise any one to bevel face of teeth, as it is too fine a job for practical use without an automatic filing machine, and I am treating on hand fitting; so file the face of tooth square.

Do not let backs of teeth get high; keep them cut down well in order to have sufficient dust room and clearance. I give the shape of teeth that I find give the best satisfaction where a file is used instead of an emery wheel. Notice the bevel on the back of teeth Nos. 1 and 2. Only



No. 1.

No. 2.

run the bevel back about 3/8 of an inch and a little less if tooth is real slim, and leave the balance of the tooth square as possible. No. 1 tooth can be gummed with round file, hurr, or emery wheel, using 7 inch flat file to dress the tooth with. This will leave a fine edge. The saw should be kept perfectly round so as to permit each tooth to do its share of the work. Be sure to joint your saw often enough to have good full corners. It is bad to joint a saw real heavy, as you will file it out of round if it requires too much dressing. Better joint or round your saw often and not too much at a time.

I claim that in order to have a perfect cutting saw that after jointing it file the backs of the teeth thin. That takes off most of the wire edge and will allow the gauge to be used all right. Then set it, if spring set is used, and after that file the face of the teeth square. Some file backs and fronts of teeth first, then set the saw, but that does not leave a perfectly square face after setting or springing the point of the tooth, as some teeth may get twisted at extreme points just where the saw does its work.

As to lead, run just enough lead to clear the saw plate and no more. Always determine the amount of lead you carry when your shingle saw is under full motion, as the tension in it may cause it to dish a little when standing still. There is lots to learn about hammering shingle saws and it comes under a little different heading, but should be well understood by expert filers as well as by saw makers.

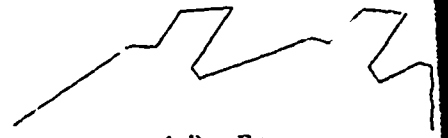
In setting a shingle saw use a gauge with small screw to adjust it with. File the ends of screws that come in contact with the points of the teeth down to about 1-16 inch diameter; they will wear off more evenly than a gauge using the full size of screw bolt, say 3-16 inch, thus allowing more even spread to the teeth. You must have a saw set correctly in order to have it do smooth work.

There is a certain feed for every saw that does best. On hand feed machines do not jam, but start into the cut carefully and then increase to a good, strong, even feed. Do not hold the saw in the cut too long, as it may cause too much friction on rim of plate. Do not feed too slowly nor let your saw simply scrape and heat and dull the points. This is often done. When the saw becomes a little dull, stop and sharpen it. You would not whittle with a dull knife long at a time.

This kind of fitting and style of saws and speed will stand about all any sawyer cares to give them in hemlock or pine timber. If your saw is

soft, do not feed as hard as on a hard saw, will loose its tension too soon.

The reason I caution filers about the shingle saw teeth so much is because it is necessary to give the shape of tooth I saw a young filer give his saw. It was beyond anything I ever looked at. You may judge for yourself. It is



A BAD EXAMPLE.

good example. The sketch shows two such teeth. Look at that notch in the back of the teeth. Look at the backs at or near the point. They are so high that they would rub and not allow much feed. Do not use lots of hook and hold it back with the back of the teeth. Always have tooth strong at the point where these teeth are lacking.

## ELECTRICITY FOR PLANING MILLS.

The J. P. Will Co., of Louisville, Ky., for a while operated a part of its planing mill with electricity, in a letter to The Wood-Worker says: "Our experience has been that where constant service is required, and considering the advantages and disadvantages of both kinds of power, the expense of operation by steam and electricity is about equal. A decided advantage resulted, however, in using the electricity during the winter season of depression, incident to planing mills generally, in that the motors could be started at any time to do little jobs which could not be handled as readily if steam had to be raised to run the plant, and also bear the expense of an engineer. To enable us to use the electric power thus, periodically, we had an agreement with the company supplying our current, to allow us the greatest discount, regardless of the quantity of current consumed during the month, hence our ability to get out a small job at the same rate of expense as a larger one. Another small advantage was the reduction in insurance rate, owing to the risk being less, because no fire was needed in the mill. Another item to consider is the sale of refuse, which meets with ready demand, owing to the scarcity of good kindling wood and bedding for stock, and, of course, is not required when fuel is not needed to provide steam. As stated above, we did not use the electric power long enough to determine definitely as to the relative merits of same compared with steam, but from our estimate we believe it would be cheaper to operate a plant requiring 50-h. p. with steam; but if less than that capacity is needed we believe electricity would be the most advantageous and economical, especially so if as low a rate can be obtained as our rate here in Louisville, which is 10 cents per 1,000 watts, less 70 per cent. discount."

O. H. Camirand & Company, saw millers, Gravel, Que., have formed a partnership.

Constructed of solid brick, on stone foundation, three stories high, and 50 by 100 feet in size, the new planing mill of G. W. Murray, at Winnipeg, Man., is one of the most substantial and complete establishments of the kind in Canada. The first floor is devoted to interior finishing work in pine and other soft woods, on the second is placed all the heavy machinery, and the third will contain the hardwood finish and cabinet work.

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**E EASTERN PROVINCES.**

(By a  
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manufactured by Messrs. McFar-  
son, of Fredericton, is one which  
It is of the well known Dunbar  
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ry has lately been working over-

ell, the well known hardware merchant of  
on, received many orders the past season for  
men's driving calks from all over the Domin-  
manufacture them in his factory near St.  
Mr. Neill handles all sorts of lumbermen's sup-  
cluding belting, Dodge split pulleys, etc.

abbitt & Son, Gibson, turn out about 1,500,000  
als, and between two and three million shingles.  
consists of a rotary, two shingle machines and  
They ship shingles and hemlock boards to

& J. H. Hay, of Millville, York county, took  
and a half million feet of logs last season. They  
water power mill, with rotary, clapboard, shingle  
machines and two planers. They sell mostly  
er to the American market. John McAdam is  
p 400,000 feet for J. Hallid, of Millville, at his  
ll four miles from Millville. J. Hallid got out  
00,000 feet of logs from the Keswick this year.

Price, of Lower Hainesville, is cutting between  
three million feet on the same river.

W. Fleit will next winter double the capacity of  
dy good sized mill at Nelson, on the Miramichi.  
in the past been rushed with business. An en-  
25 horse power and boiler of 150 horse power  
ot in. Mr. Fleit turns out a great deal of box  
which he has been cutting with a kicker resaw  
and Drake shingle machine. He will put in a  
ing machine, made by the Garland Company, of  
y, Michigan, with a capacity of 12,000 superficial  
day. Mr. Fleit claims that he could not get a  
machine in Canada to do the work.

ed joke is told on himself by one of our New  
ick shingle machine manufacturers, of whom the  
MAN'S readers have recently heard. It was in  
s of long ago when he was new in the shingle  
business, but well versed in the mechanical arts.  
e machines were few and far between on the  
St. John, and the shingle business was but just be-  
g. None were made within a great distance and  
ration was slow. Our friend's reputation for  
out mechanical combinations had gone abroad,  
was one day requested to manufacture a shingle  
e for early use. As he had never before seen such  
le, he based his following calculations and actions  
criptions given him in the rough and brief view af-  
him of the various parts of a machine which had  
is a knocked down condition at the wharf in the  
his way up the river. The building of the new  
e went on satisfactorily and was successfully ac-  
hed. There seemed but one drawback on the day  
rial, though two or three had previously suggest-  
ely that something looked wrong, and that draw-  
as, that the machine was built left-handed. Its  
history is not recorded.

ments during last year to Spanish ports from St.  
amounted to seven cargoes, all sent by Andre  
& Co. Six of these cargoes went to Las  
being made of white pine and spruce lumber,  
and laths, and aggregating 3,000,000 kilo-  
es. Two cargoes went to Lineriffe, one to Val-  
nd one to Barcelona. The only shipment in the  
ar from Spain to Portugal was one sent last  
consisting of spruce and pine boards, cedar and  
shingles, and having a total value of  
00. The Consular consul here thinks that manu-  
of boxes could work up a good business  
country in that line.

The Yarmouth Steam Cooperage & Box Factory is  
doing a rushing business in cooperage stock at present.  
This factory is run by G. F. Allen & Co., who have a  
steam mill at Brazill Lake and a water power mill at  
Pleasant Valley. They ship about 1,000,000 feet per  
year to South America. Their factory in Yarmouth  
turns out barrels, casks, boxes, shooks, house framing  
material, etc.

D. R. Saunders last year remodelled his saw mill at  
Lake Aunice, N. S., and substituted steam power, putting  
in engines of about 50 h. p. It is a circular saw mill and  
cuts from 1,500,000 to 2,000,000 feet of South American  
stock per year. This mill was originally owned by D. A.  
Saunders, who sold out to his son. D. A. Saunders has  
been in the lumber business about 15 years and now has  
a mill at Salmon River about 7 miles from Yarmouth,  
where he cuts about 1,000,000 feet a year of South  
American stock. Another mill which he owned at Nor-  
wood was burned.

The Blackadar Milling Co., of Nova Scotia, do a large  
business in their section. They have a water power  
gang saw mill at Metaghan, N. S., and a steam power  
circular at Hectanooga. They cut South American  
stock, deals and laths, and ship from four to five million  
feet a year. Another mill at Meteghan, owned by Par-  
ker, Eakins & Co., of Yarmouth, and managed by Mr.  
N. J. Raymond, is a water power circular, cutting from  
two to three million feet a year of South American stock.

Campbell's lumber mills and store buildings at Wey-  
mouth Bridge have recently been equipped with electric  
lights, supplied by a dynamo in the engine room. The  
same dynamo will also supply light to business houses  
and residences in the vicinity.

Chas. Burrill, the lumber insurance broker of Wey-  
mouth Bridge, N. S., and the managing director of the  
Sissiboo Pulp & Paper Co., is recovering from the effects  
of an accident while out driving.

Three hundred and fifty car loads of lumber have been  
shipped from Hartland, a small village on the Upper St.  
John, so far this year. This is largely the output of the  
Sawyer mills there.

Messrs. Tabor & O'Neill, a new wood working concern  
in Fredericton, which is getting to be pretty well known,  
have secured a large order from Donald Frazer & Sons  
for interior finish required in the erection of some 20 or  
25 new cottages and buildings near their new mill on  
Temiscouata Lake.

Mr. O'Neill, a lumber merchant of Cardiff, Wales, who  
was on a business trip up the St. John river at the time  
of the railway accident on the Grand Falls bridge, and  
was severely injured thereby, has settled with the C. P. R.  
authorities for a sum said to be in the vicinity of \$4,000.  
He has recovered sufficient to travel again.

Jas. Porter, M.P.P., is adding to his saw mill at An-  
dover, N. B., a new roller wheat and grist mill. The  
new structure is about 35x50 feet and of three stories.

**CANADA'S COMMERCIAL AGENTS.**

FOLLOWING is the official list of Canada's Com-  
mercial Agents in Great Britain, British possessions and  
foreign countries:

- J. S. Larke, Sydney, N.S.W., agent for Australasia.
- G. Eustace Burke, Kingston, Jamaica, agent for Jamaica.
- Robert Bryson, St. John, Antigua, agent for Antigua, Montserrat and Dominica.
- S. L. Horsford, St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.
- Edgar Tripp, Port of Spain, Trinidad, agent for Trinidad and Tobago.
- C. E. Sontum, Christiania, Norway, agent for Sweden and Denmark.
- D. M. Rennie, Buenos Ayres, Argentine Republic, agent for Argentine Republic and Uruguay.
- In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders.
- J. G. Colmer, 17 Victoria street, London, S.W., England.
- Thomas Moffat, 16 Church street, Cape Town, South Africa.
- G. H. Mitchell, 15 Water street, Liverpool, England.
- H. M. Murray, 40 St. Enoch Square, Glasgow, Scotland.
- Harrison Watson, Curator, Imperial Institute, London, England.

**POWER REQUIRED FOR CIRCULAR SAWS.**

A circular saw with 900 revolutions per minute, and having a feed of 60 feet, operates upon the timber being converted at the rate of fully 1 in. per revolution. A saw having 60 teeth, under these conditions, cuts about 1-50th of an inch per tooth.

The feed speed above mentioned for a circular saw—provided that the machine is of efficient construction—when in action upon soft wood may be accepted as correct and considerably under the possible degree. Some may imagine that a circular saw, when cutting at the rate of 60 feet per minute, absorbs double the power the same tool would need when acting at 30 feet in equal depth and kind of timber, but such is not the case. Five-horse power may be necessary to give effective power to a saw when acting at the rate of 30 feet, but ten horse power is by no means absorbed when cutting the same wood and depth at 60 feet per minute. It may be safely assumed that the power in this case at 60 feet travel will not require more than 7½-horse.

These conditions or results arise from the action of saw teeth. Double cutting with a certain machine does not imply two-fold power. The action of a saw tooth may be compared to that of a paring chisel on end wood. With a chisel, 40 lbs. may be sufficient to pare 1-32 of an inch, but 80 lbs. is not necessary to pare 1-16 off the end of the same material, 60 lbs. will in all probability accomplish the latter operation. Saws of all descriptions are governed by the same law, and with keen cutting tools the ratio of power is not increased in equal proportion as production.

Generally all band and reciprocating saws operate on the timber at right angles. That this is the best position for saws to be placed is not practically correct. Of course, it is a very difficult matter (I may add impossible) in many cases for saw mill engineers to alter this state of things. To cut and convert timber at an oblique angle is much the more practicable method, i.e., at an angle of about 30 degrees with the grain or fibre of the wood. With this system less power is expended, and the work produced much more satisfactory and smooth. Besides, saws are not so liable to run out of truth or deviate from their assigned track. To adopt this method with vertical log or deal frames may be deemed impossible, but could with much advantage be practised by the horizontal band mill and saw frame.

The action of the straight-faced saws is the same, irrespective of the depth or width of cut, but the action of circular saws is vastly different, and is governed by the depth of cut. Thus, while a circular saw is in action on a piece of timber the full depth of saw, it is cutting at all the angles contained in a quarter of a circle. The action of teeth at the top is quite different from their action at the lower portion of the timber. For instance, a saw cutting a deal 12 in. deep, the lower half is cut at a position approaching right angles, but the upper half is cut more obliquely, or at the average angle of 45 or 50 degrees. To assert which half requires the more power exceeds the discrimination of most men, but as the circular saw in this case is invariably acting against the fibre of the wood more so than the lower part of deal or log, it may safely be assumed that the power necessary to drive the saw in the various arcs of cutting contact is closely the same.—Saw Mill Engineer, Liverpool, England.

**PERSONAL.**

—Mr. Alex. McDougall, of the Fernie Lumber Company, Fernie, B. C., has recently been on a visit to friends in Eastern Ontario.

—The news has been received of the death of Mr. John L. Murray, of Doaktown, one of the best known lumbermen in the province of New Brunswick.

The CANADA LUMBERMAN was recently favored with a call from Mr. J. J. Whaley, of the firm of Cockburn, Whaley & Company, lumber merchants and exporters, Guelph, Ont. This firm deal in white pine and almost every variety of hardwoods. Mr. Whaley reports a steadily increasing business.

—Mr. J. E. Murphy, of Hepworth Station, Ont., returned about one month ago from a trip to British Columbia, whither he went on a prospecting tour with a view to engaging in the lumber business on the coast. Mr. Murphy is well satisfied with the situation there. An abundance of timber can always be depended on, but prices of lumber, he says, are lower than they should be, considering the excessively high wages. He expects to remove to Vancouver next spring.

## THE NEWS.

—John Humberstone has purchased a saw mill at Ripley, Ont.

—It is reported that another pulp mill is to be built at Thorold, Ont., by American capitalists.

—The business of E. W. & O. A. Miller, saw mill owners, Woodstock, N. B., is being wound up.

—The new mill of the Victoria Harbor Lumber Company at Victoria Harbor, Ont., has commenced operations.

—The assignment is reported from Sherbrooke, Que., of E. F. Krone & Company, saw millers, with mills at Keene's Siding.

—The Rathbun Company, of Deseronto, are building a new saw mill at Bancroft, on the extension of the Central Ontario Railway.

—James C. Wright's steam saw mill at Hopewell Hill, N. B., closed down about August 1st, after cutting 600,000 feet of lumber.

—The Wm. Tytler Lumber Company, of Vancouver, has been dissolved, Wm. Tytler retiring and E. C. Cargill continuing the business.

—C. & I. Prescott, of Albert, N. B., are offering for sale their timber limits in Restigouche county, consisting of 129 square miles.

—The Blind River Lumber Company, of Blind River, Ont., are installing a new electric light plant for lighting their mills and docks.

Mr. D. K. McLaren, of Montreal, has been awarded a silver medal at the Paris Exposition for his exhibit of oak tanned leather belting.

—The King mill property at St. John, N. B., has been purchased from Stetson, Cutler & Company by Randolph & Baker, of St. John.

—The William Tytler Lumber Company has applied for foreshore rights to establish a saw-mill on the water front at Vancouver, B. C.

—Eddy Bros. & Company, of Bay City, Mich., are moving their saw mill to Blind River, Ont., a result of the Ontario saw-log legislation.

—J. F. Maunder, of Little Britain, Ont., has made important improvements to his planing mill, and has put in a new Goldie & McCulloch Wheelock engine.

—The Knight Bros. Company, of Burk's Falls, Ont., have made application to the town authorities for a bonus to assist them in enlarging their saw mill and wood-working factory.

—The Rouge Boom Company expended last season on improvements on the booms at the mouth of the Rouge river over ten million dollars, and to facilitate driving over twelve million dollars.

—J. R. Booth, of Ottawa, has purchased the water lots on the north side of the Chaudiere bridges at Hull. The erection of a large sash and door factory on the property is said to have been spoken of.

—The Hadley Lumber Company, of Chatham, Ont., have just put in a new boiler, purchased from Hunter Bros., of Kincardine. Wm. Newman, of Warton, has installed in his mill a new boiler of the same make.

—The Burrill Johnston Iron Co., of Yarmouth, N.S., has been building a flume for the Sissiboo pulp mill which will be 200 feet long, tapering from 19 to 15 feet and weighing about 115 tons. A railway car could run through it as through a tunnel.

The Royal City Mills, of New Westminster, recently made a large shipment of timber to Sorel, Que., to be used in the construction of Government work there. Many of the pieces were from 16 inches to 2½ feet square and from 50 to 96 feet long, requiring three flat cars to carry them.

—The imports of lumber into the United States from Canada in 1899 were 673,622,000 feet, valued at \$6,990,175, against 348,876,000 feet, valued at \$3,464,718, in 1898, and 674,851,000 feet, valued at \$6,795,376, in 1897. The shingles imported by the United States last year were 545,484,000, valued at \$999,862, against a valuation of \$830,298 in 1898, and \$431,232 in 1897.

—Price Bros. & Company, of Quebec, have purchased the timber property of the Rimouski Lumber Company at Rimouski, Que. The mills are situated about two

miles up the Rimouski river, and contain a rotary saw, planer, eight shingle machines, etc. The limits comprise 350 square miles. It is the intention of Price Bros. & Company to build a steam saw mill at the mouth of the Rimouski river.

—A meeting of the citizens of Chatham, N. B., was to have been held last week to consider a proposition made by John Moravec to erect a pulp mill at Morrison's Cove, adjacent to the town. The plans of the proposed mill have been prepared, the cost of construction being estimated at \$200,000. Mr. Moravec was formerly associated with the Maritime Sulphite Fibre Company, of Chatham, but severed his connection with that company a short time ago.

According to the American Consul at Nantes, M. Eugene Harang, of No. 1, Place du Commerce, Nantes, wishes to be placed in direct correspondence with dealers in certain lines of goods. He wishes to obtain prices on "sapin blanc," or white pine. This wood is used in the manufacture of wood pulp. Last year the mills at Nantes, the largest in France, consumed 52,000,000 pounds of pulp made from Norwegian pine. The wood used is cut from trees having a diameter of not less than four inches, usually larger, but too small for good lumber. It is cut in lengths of 42 inches. The gentleman also wishes to correspond with parties exporting stave timber used in the manufacture of casks.

—A meeting of persons interested in forestry was held in Vancouver on August 8th to consider the formation of a branch of the Canadian Forestry Association. Interest in this matter was aroused by an address given in the council chamber by Sir Henri Joly de Lotbiniere, Lieutenant-Governor of British Columbia, who has always taken a deep interest in forestry. The chair was occupied by Mr. Hewitt Bostock, M.P., and there were present J. R. Anderson, Deputy Minister of Agriculture, Major-General Kinchant, Acting Mayor McQueen, Colonel Falk Warren, T. Wilson, T. Duke, Fruit Inspectors Cunningham and R. M. Palmer, J. J. Banfield, M. C. Nelson, A. Philip, T. C. Keith and H. G. Ross. It was decided to form a provincial association, Mr. Hewitt Bostock being appointed convener, Col. Warren treasurer, and Mr. T. Wilson, of Farview, secretary. A vote of thanks was tendered to the Lieutenant-Governor for his interesting address.

### CASUALTIES.

—John D. Gorman, an employee of the Hastings saw mill at Village Bay, B. C., fell off a boom of logs and was drowned on July 12th.

—William Burke, an employee in Black's saw mill at Fergus, Ont., was found dead in the boiler room on July 18th. Death is supposed to have resulted from heart failure.

—The explosion of a boiler in Gordon & Company's saw mill at Cache Bay, Ont., resulted in the death of Andrew McQuinn, second engineer. Low water is said to have been the cause of the accident.

### PUBLICATIONS.

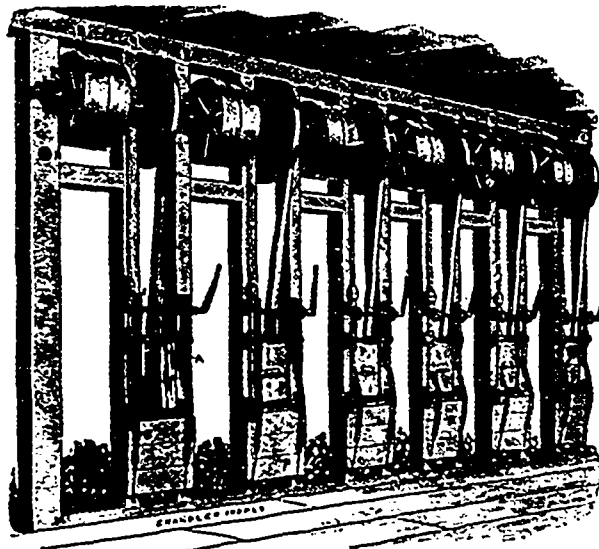
THE remarkable growth in the popularity of metal building purposes is well illustrated by the new catalogue just published by the Metallic Roofing Company, Toronto. This catalogue is the most artistic and complete one ever issued by any firm engaged in this line of business. It comprises 150 pages and is handsomely printed and substantially bound. The edition of the catalogue weighs over ten tons and its production cost upwards of \$7,000. It illustrates and describes the various lines of metal ceilings, corrugated iron ceilings, doors, steel clap boards, fire proof laths, etc., manufactured by the company. The Metallic Roofing Company were the pioneers in the manufacture of the above class goods, having started sixteen years ago by manufacturing only one line of metal shingles. They are supplying large quantities of their material for the construction of saw mill pulp mills and wood-working factories.

### THE WASTE OF FUEL FROM BOILER SCALE.

THE waste of fuel supposed to result from raising steam in lime crusted boilers has been made the subject of many a paragraph in text-books and other publications and most readers are quite familiar with the statement that a film of ordinary scale, not thicker than a sheet of writing paper, would cause the loss of a very appreciable percentage of the coal burned under a boiler—something like 10 per cent.; scale a thirty-second of an inch thick would cause 25 per cent. loss; a sixteenth of an inch 50 per cent., and so on. Referring to this matter in a lecture at Cornell University, Mr. Walter M. Farland, formerly an engineer officer in the United States Navy, said that to any engineer who went to sea in the old days when the working conditions caused an increase of scale on the heating surfaces, the utter truth of truth in this statement ought to have been made. His own experience having shown that a considerable thickness of clean uniform scale made apparently no difference. On the United States ship Vandalla, for example, there were two boilers which were used only for distilling, under normal conditions, and after a little experience these boilers were run alternately until scale had been accumulating for about three months, and yet it was found that the amount of water distilled for a given amount of coal burned was practically the same at the end of three months when the scale was nearly a quarter of an inch thick as when the heating surfaces were clean. It is, of course, true that under these circumstances the boilers were being worked at only a fraction of their full power. On one occasion, however, when there was a little discussion about this point, some one suggested a very simple test, and when one end of a piece of scale about eight or ten inches long from one of the tubes was held in the flame of a lamp it was found that the other end heated up with astonishing rapidity, thus showing that the statements which had been made about the conductivity had been greatly exaggerated.—Casey Magazine for August.

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**THE GREAT TORONTO FAIR.**  
 As there seems to be a feeling of general prosperity throughout the country this year, the attendance of visitors at the Toronto Exhibition, which opened on the 28th ultimo, promises to exceed that of any previous year. Many who have never been to this great fair before are talking of going, and those who have been before are going again. The entries in all departments, especially that of live stock, are the largest in its history, and this is a pretty good indication that the exhibition will score another great success. Although some of the manufacturers of reapers and mowers have decided not to exhibit at any fair in future, there will still be a good exhibit of other farming implements at

this exhibition. The special attractions, which will to a great extent be of a patriotic character and up to date, promise to be most interesting, including, among other things, a representation of the siege and relief of Mafeking, in the present South African war. Many interesting trophies, brought back by the returned members of the Canadian contingent, will be on exhibition. It is astonishing the great interest that is taken in the Toronto Fair throughout the country, and the present one is no exception. The usual cheap excursions are given on all the railways.

An interesting case has just been decided in one of the United States law courts. The owners of a saw mill in

Illinois, which was burned last May, sued an insurance company under the following somewhat novel circumstance. The case hinged upon a fine point, as to whether certain parties were agents of the mill owners or of the insurance company. The mill burned upon the date that the policy, which was sent for cancellation, was received through the mails by the agents who had procured the insurance for the mill owners. These agents were insurance agents, but, as they could not place that particular insurance, they had obtained it through other agents. The agents have now decided that agents No. 1 were the agents of the mill owners and not of the insurance company, and hence the policy was still in the hands of the owners when the mill burned. Insurance and Finance Chronicle.

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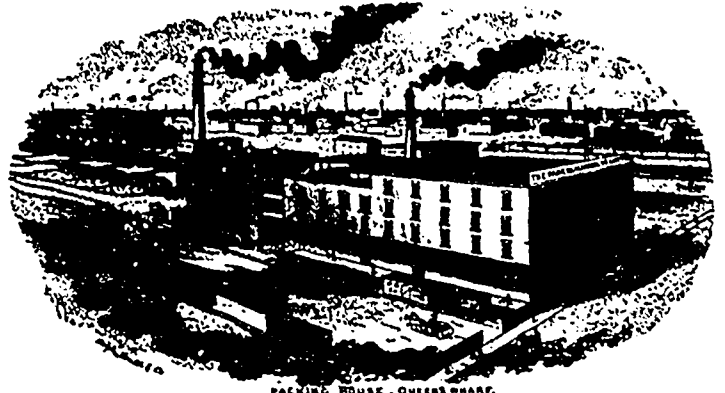
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# WOOD PULP DEPARTMENT

## A PULP MILL PROJECT.

RECENT developments bring the prospects of a new pulp mill near St. John nearer realization, and it is now thought that the erection of one at Musquash, about 15 miles from the city, will soon be proceeded with.

The Lancaster Pulp and Paper Company was incorporated by a special act at the last session of the legislature, and among its promoters are some well-known gentlemen. They have secured the Knight property at Musquash, consisting of some 36,000 acres of land in fee simple and 9,000 acres of land in form of license, having eighteen years to run. The property controls ten large lakes and all other water privileges which are contained in an old grant given over 100 years ago. The water supply is said to be perpetual, having a very firm reservoir capacity capable of development at a very low cost. The growth of timber has been stated by experts to be the finest in quality to be obtained. The timber experts, Messrs. Andrew Hammond, of Milford, Me., and Geo. T. Crawford, of Boston, claim that the property and its opportunities for the making of pulp are superior to any known by them. One of the company's promoters claims that the annual growth of timber on the property will equal nearly 30,000 cords, and that on account of the numerous driveable streams in all directions the pulp wood can be delivered at the mills for about \$1.50 per cord. Musquash is about 15 miles along the northern Bay of Fundy shore west of St. John. The site of the proposed pulp mill immediately adjoins the saw mill of J. & B. L. Knight. Being so near the winter port of Canada, the mill will have great advantages in receiving supplies and in making shipments at all seasons. Mr. B. F. Pearson, of Halifax, one of the best known business promoters in Eastern Canada, is interested in the project. Mr. Chas. Burrill, Weymouth Bridge, N. S., is also interested.

The pulp mills in Nova Scotia are reported to be working to their utmost capacity, and the shipments of this year promise to exceed those of any previous season.

## WOOD PULP IN FRANCE.

THAT section of the French Agricultural Society which concerns itself with forest products recently communicated with Messrs. Darblay, of the Essonnes Paper Mills, asking them a series of questions with a view of discovering why wood pulp cannot be made as well in France as in any other country, and if so, why, assuming the necessary material to be procurable locally, the great bulk of that commodity at present used in French paper mills comes from Scandinavia, or at any rate from foreign countries?

The firm, in their response to the queries indicated, went into the matter at considerable length. Dealing with mechanical pulp, it was stated that about 400,000 tons per annum of this material were consumed in the French paper mills, and it was pointed out that in order to turn out mechanical pulp profitably a very large amount of motive power was necessary, say 60 to 70 horse power to produce one ton of pulp in a working day of 24 hours. An annual consumption of 400,000 tons means in round numbers 11,000 tons per day, the production of which would necessitate consumption of power to the extent of 5,000 h.p. In the Scandinavian countries, and in fact in the north of Europe generally, water power to this extent can be easily found, but in France it would be practically impossible to do so. Even the expenditure of an enormous amount of money would not suffice to provide what is necessary. For instance, an outlay of from nine to ten millions of francs at Bellegarde, on the Rhone, has only resulted in providing a maximum of 3,000 horse power at a cost of about 3,300 francs per horse power.

In Norway, on the contrary, power can be obtained at a fourth of this rate, and further, there is practically nothing to be paid for the carriage of the wood, it being floated down the streams from the place where it is cut. In default, therefore, of finding the necessary water power in France, it is evident that the profitable manufacture of mechanical wood pulp is almost an impossibility. Even assuming that in certain cases

steam power to the required amount could be raised, it would cost from 250 to 300 francs per horse power per annum; that is to say, from 10 to 50 francs per ton of pulp made. The manufacture of this quantity would consume about 100,000 steres of wood (1 stere is equal to about 35 cubic feet), and taking the price per stere at 15 to 20 francs, the total cost of production works out at about 100 francs per ton.

So far as chemical pulp is concerned, its production, of course, requires less motive power, but nevertheless a good deal of steam raising is necessary, the wood having to be dealt with at high temperatures. The manufacture of this class of pulp must, therefore, resolve itself into a question of wood and coal, and the latter is very high priced just now. Messrs. Darblay consider that fir and aspen are the best wood from which to prepare pulp, especially the latter, which is thought to be, as regards the quality of its fibre, quite equal to the best rags. These varieties of fir that are generally found in France are usually very knotty, and this is a condition that produces impurities in the pulp. Even when from this the timber is not grown locally in sufficient quantities to enable wood pulp to be made out of it to any extent worth speaking of.

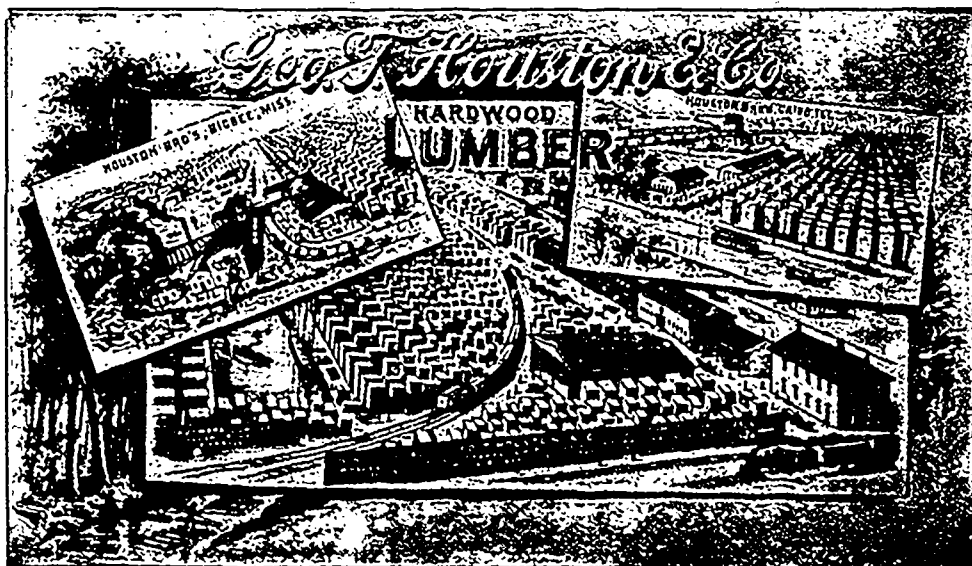
If the total amount of forest land in France is taken as nine millions of hectares (1 hectare equalling nearly 2½ acres), not more than 270,000 of these are devoted to the growth of fir. This quantity would produce perhaps 400,000 cubic metres (or steres), of wood, one-fifth of which, having regard to the quantity which is used for other purposes, would be available for the manufacture of pulp. The pines that grow in the Maritime districts could no doubt be made available for the manufacture of pulp destined for use in the production of common papers, but this would not be so profitable a business as the manufacture of a better class of pulp for use in white paper, such as printings, etc.

The cost of transport has also to be considered, and in France this is generally very heavy, having regard to the relatively low value of such material as timber. For instance, the carriage of wood from the district of Poitou to the neighborhood of Paris would cost practically as much as its freight from Norway to Rouen. The legislation of 1892, the outcome of which was the imposition of a duty on wood pulp representing nearly 10 per cent. of its value, was designed to promote the possibility of the French paper maker manufacturing his own pulp, and of

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course, where the flow of his doing prefers this to building a pulp mill as a paper manufacturer. Circumstances mentioned above, together with many others to be taken into calculations, must be considered in detail.—Paper Trade Review.

**PULP NOTES.**

Col. McCaskill, of Niagara Falls, Ont., is considering the erection of a paper mill at St. Catharines.

The pulp mills of the National Paper Company, at Indian Lorette, Que., were destroyed by fire last month, at a loss of \$15,000.

The act to incorporate the British American Pulp, Paper & Railway Company has been assented to by the Governor-General.

C. E. Fish, of Newcastle, N. B., sent a wood pulp stone to the Paris Exposition, and has received word that his exhibit has been awarded a medal.

A pulp mill promoter recently examined available sites at Newcastle, N. B., for a pulp mill, and it is possible that one may be located there in the near future.

A despatch from Quebec states that Wm. Hutt has leased the water power at Fraserville Falls for thirty years, and that he will erect large pulp and paper mills.

The St. John Sulphite Fibre Company, of St. John, N. B., have sold their output of pulp for this year and over half of next season's production. The manager, Mr. M. F. Mooney, recently closed a contract for 5,000 tons to be shipped to Great Britain next year.

Incorporation has been granted to the Michipicton Falls Power Company, Limited, with a share capital of \$40,000. The company will engage in the manufacture

of lumber and pulp wood and the generation of electrical power. Wm. Thoburn, woollen manufacturer, of Almonte, and Frederick Francis, lumberman, of Pakenham, are directors of the company, the head office of which will be in Toronto.

Wm. Power, of Quebec, has purchased from the Estate Kidston, of Glasgow, an extensive timber limit situated in Stoneham and Tewkesbury, on the Jacques Cartier river, Province of Quebec. The limit is heavily timbered with spruce, and Mr. Power will probably erect a pulp mill thereon.

T. G. McMullen, M.P.P., of Truro, N.S., last year began the erection of a large dam on the Salmon river, at Union, about ten miles above Truro, with a view of building a pulp mill. During a freshet last fall the dam was washed away, but it has now been rebuilt and work on the pulp mill will be commenced at an early date. Mr. McMullen proposes to operate the mill by electric power transmitted a considerable distance.

The Dominion Government has been advised that pulp wood forwarded to France from Canada, via New York, will no longer receive the benefit of the minimum tariff. The reason given for excluding shipments via New York from the privilege of the low tariff is that there now exists a direct steamship connection between France and Canada.

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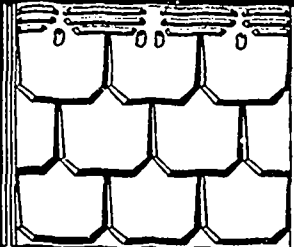
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**WOOD FLOUR.**

MR. HARRISON WATSON, Curator of the Canadian section of the Imperial Institute, London, England, writes that wood flour is an article about which there are constant inquiries. It is a very fine powder used in the production of explosives, and also in the manufacture of linoleum, oilcloth, etc.

So far it would appear that no Canadian firm is producing the material, the reason given being the heavy cost of the special machinery required, and the stringent regulations made by buyers. Several Canadian firms have taken up the matter with the idea that the material

was saw-dust. This, however, is incorrect, as it is a fine white meal, requiring special production.

There appears to be a very considerable demand for the material both in the United Kingdom and on the Continent, and there is scarcely any doubt but what it would pay Canadian manufacturers to buy the special plant to produce this article in large quantities for these markets.

Use a sight-feed oiler for the purpose of dropping oil upon the piston rod of your engine as it travels to and fro; it will save packing and reduce friction.

**PILING HARDWOOD LUMBER.**

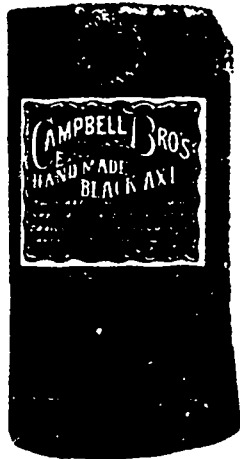
END-PILING under sheds, says the Wood-Worker, is probably the best method of stacking hardwood for seasoning. A Michigan concern has used this method several years, and finds it very satisfactory. Its sheds are 30 feet wide, 200 feet long, and high enough to hold in a 16-foot board. The capacity of such a shed, the stock being end-piled, is 200,000 feet. The sheds are, of course, built especially for such work. End-piling costs 15 to 25 cents per thousand feet more than cross-piling, but the results are claimed to more than counterbalance this.

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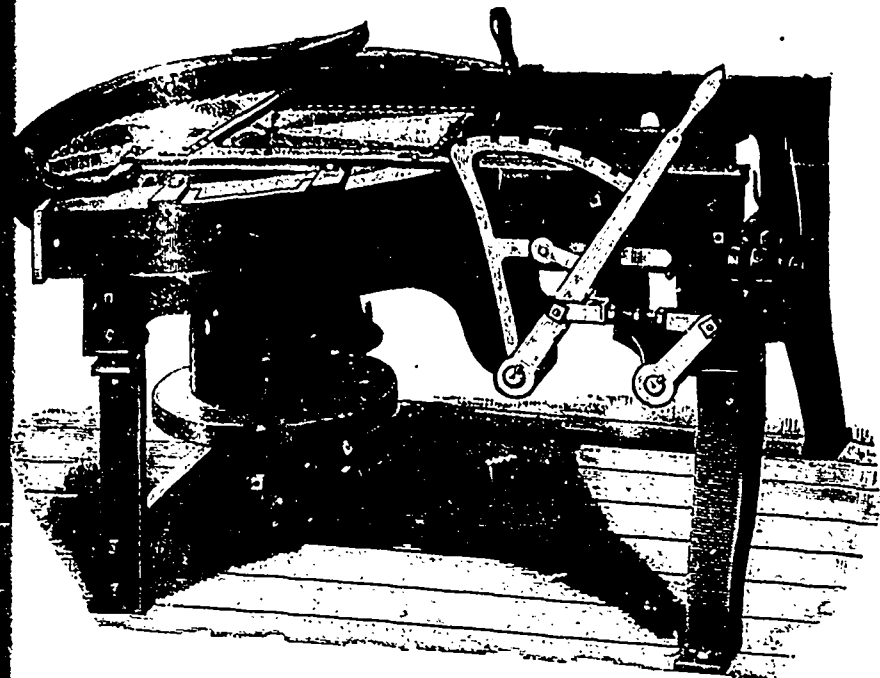
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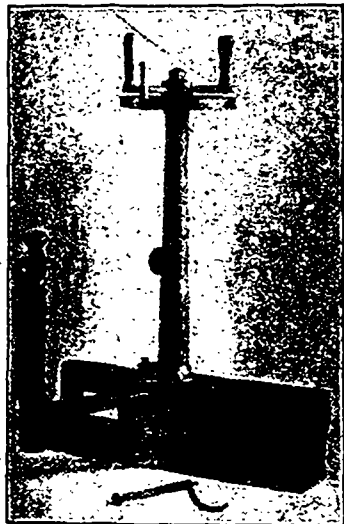
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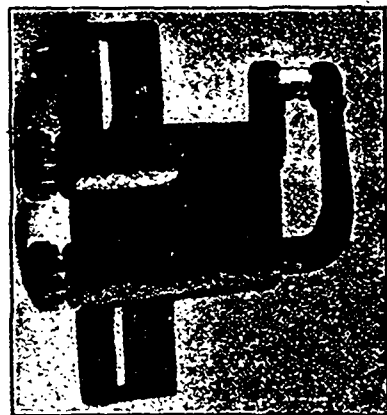
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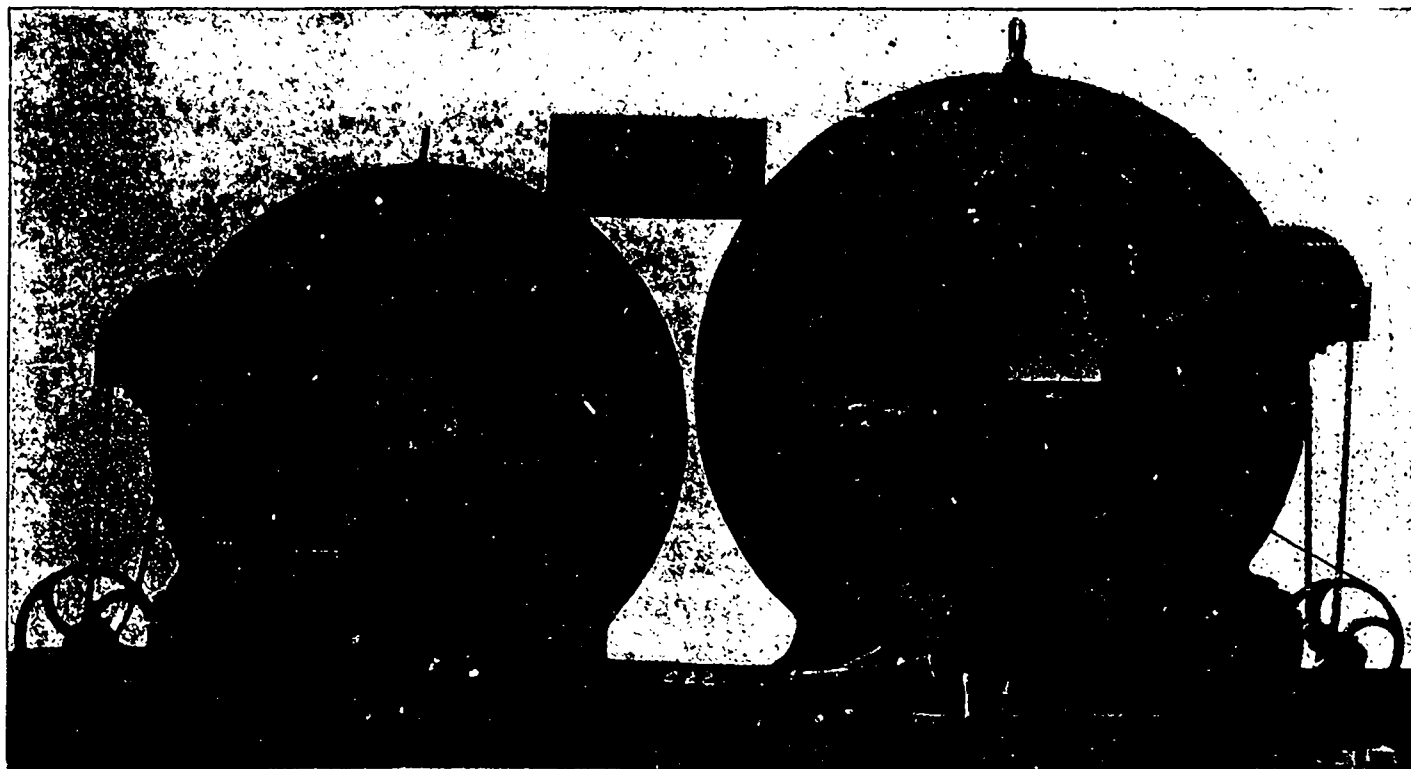
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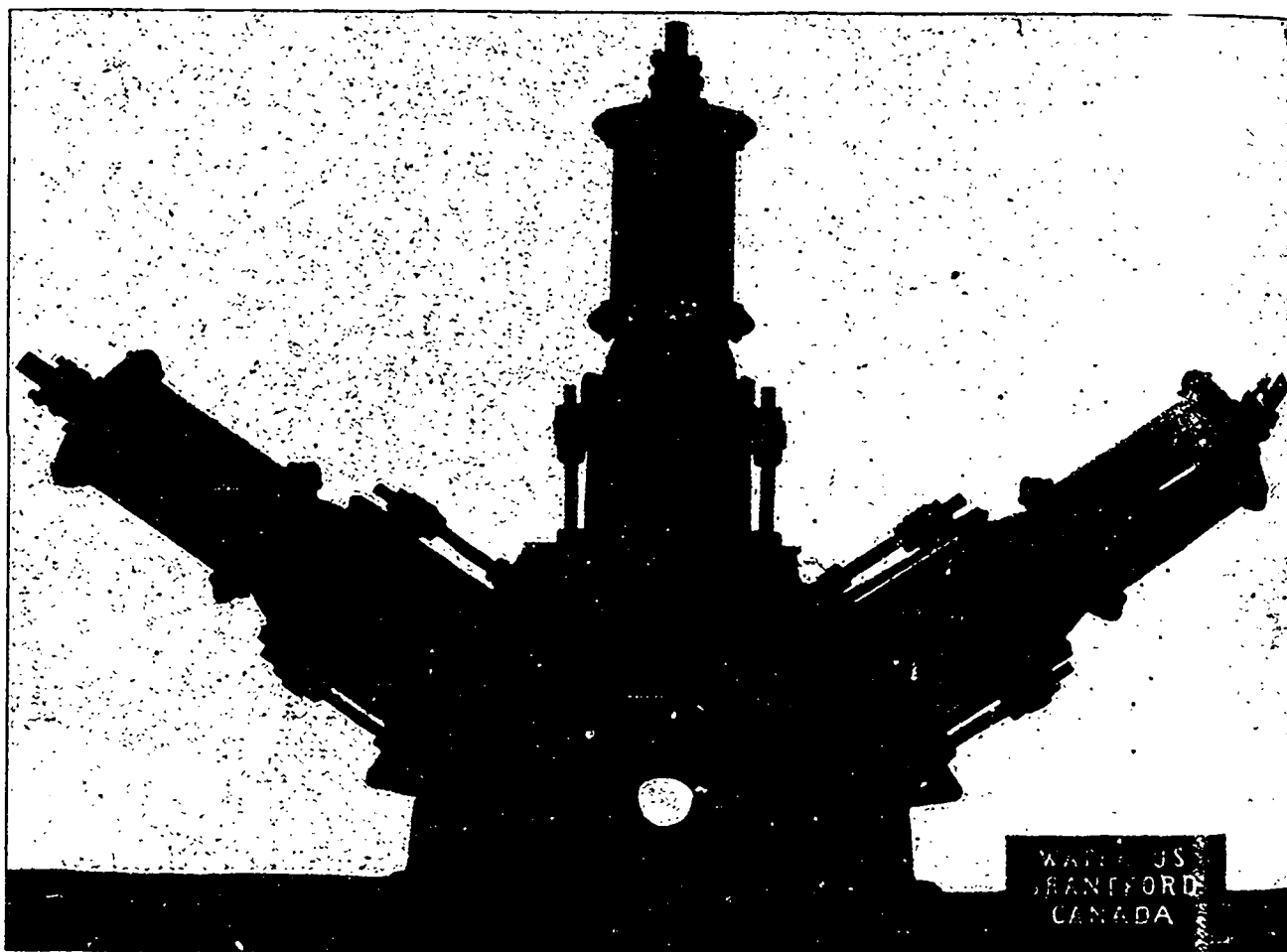
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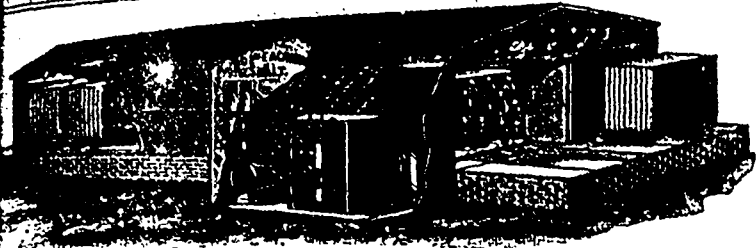
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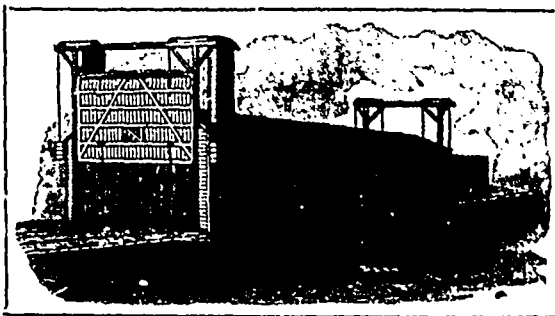
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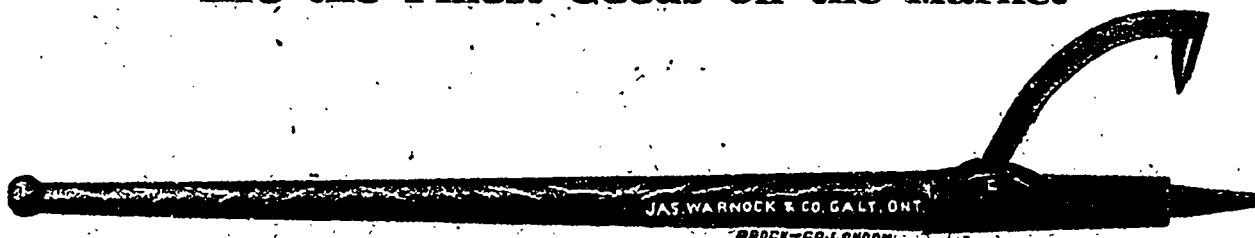
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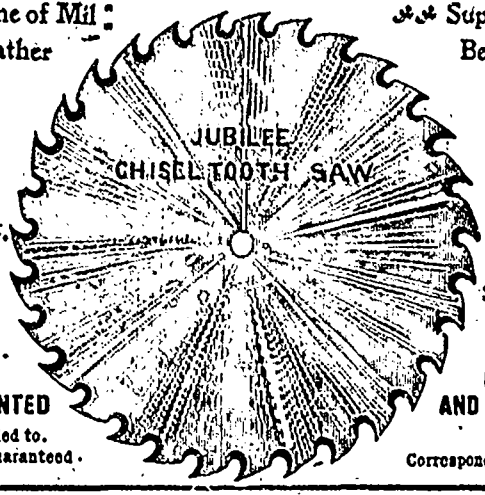
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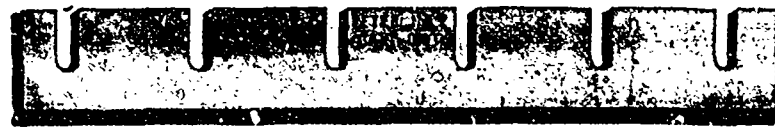
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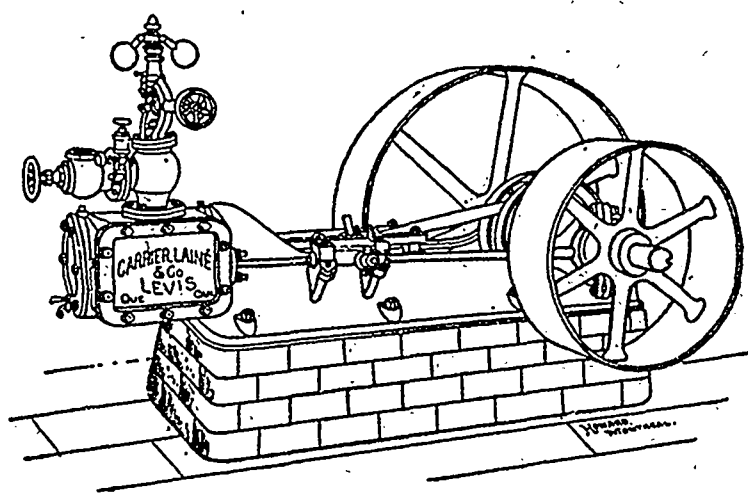
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