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WOODWORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

TORONTO, ONT., AUGUST, 1897

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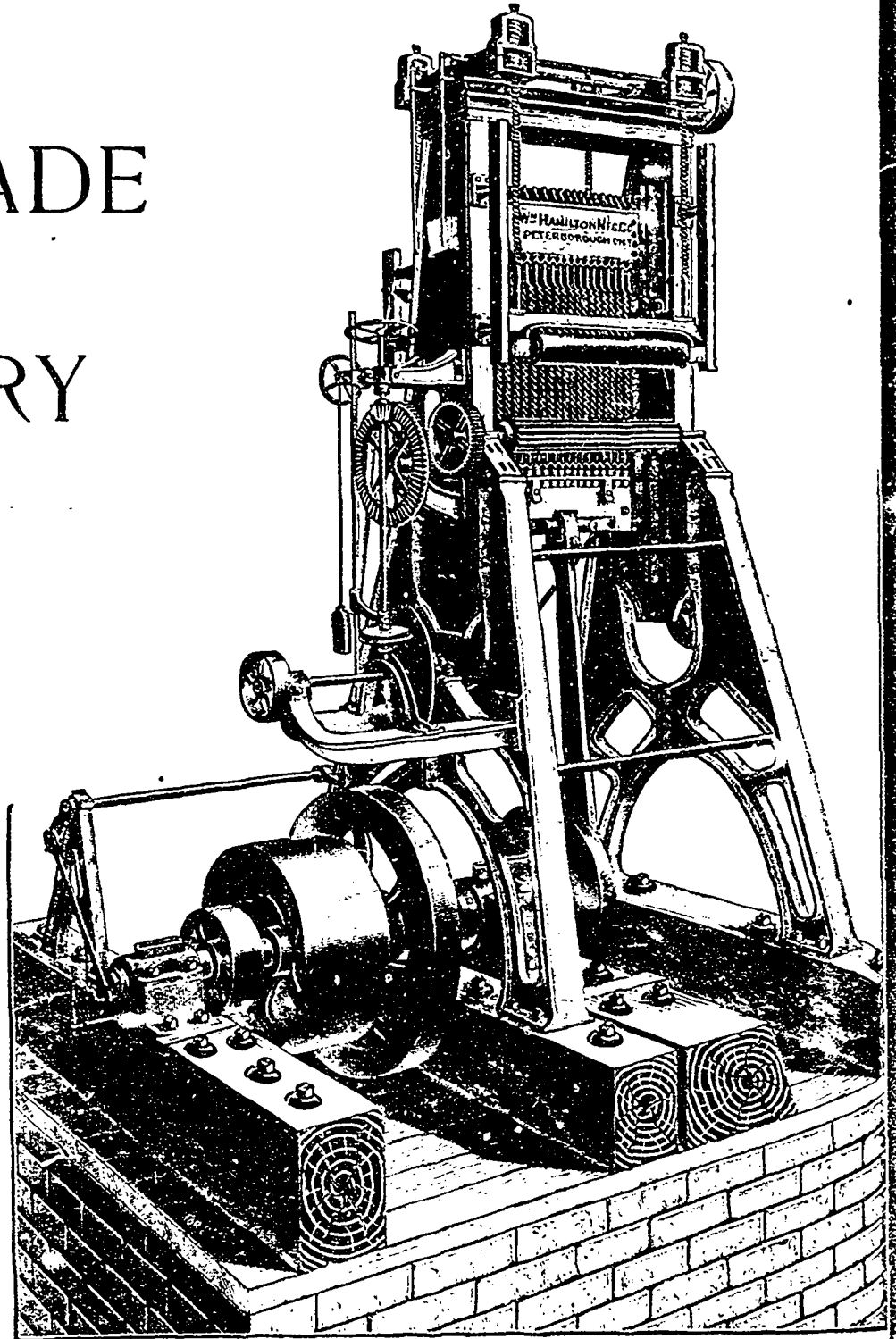
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SAW MILL OF MR. HUGH BLACK.

THE mill which is shown in the accompanying illustration was erected at Fergus, Ont., in the year 1886 by Mr. H. Black, just one year after he commenced business in that town. It is located on the Grand river, which affords splendid facilities for floating logs. The mill is fitted with the usual saw mill machinery and improved shingle machines, a special feature being the arrangement of the machinery to facilitate work with a minimum amount of handling of material. All sawdust and shavings are conveyed direct to boiler room by chutes. Power is provided by a 65 h. p. engine and boiler.

There are commodious yards and sheds in connection with the mill which are well stocked with lumber.

Mr. Black states that this season's drive of logs has been very satisfactory both in quantity and quality.

He gives a keen personal supervision to all details of the work, and this has greatly assisted in building up his business.

CARE AND ERECTION OF SHAFTING.

A FEW simple rules for the erection and maintenance of line shafting may be interesting to manufacturers who are looking for strict economy and the best results obtainable in this department. In erecting new shafting, says G. P. Clapp in the Canadian Engineer, adjustable hangers should be selected strong enough to do the

work required without springing. The width of bearings should be three times the diameter of the shafting. Where a number of pulleys and belts are used bearings should ordinarily be ten, eleven and twelve feet between centres, for 2, 2½ or 3 inch shafting.

When large driving belts, from six to twelve inches wide, are to be used, a strong bearing should be placed on each side of the pulley. A neglect to provide for this important item will result in springing the shaft and causing it to heat in the bearings, besides the liability of breaking from the constant vibration and eccentric motion, which always occurs when shafting is sprung out of line by stress of tight and heavy belting. Shafting should not be fully lined up until all machinery on upper floors is in position. When hangers are attached to floor timbers or ceiling, and the floors are then loaded down with machinery or material, the shafting will always be found badly out of line from the effects of springs floor and timbers. By all means

avoid making a storehouse of buildings where line shafting is extensively used.

When convenient, shafting should be hung on posts having a good foundation in the ground cellar and running directly through the various floors; by this plan the floors may be sprung by varying loads and still the shafting will not be affected. Tallow or grease of any kind should never be used on bearings unless it comes in direct contact with the shafting. Piling grease on the box of a vertical shaft, stuffing it in the oil holes, or in the recess around the oil holes, in the caps of horizontal shafting, is a delusion and a snare. Only the grease that comes in direct contact with the shaft will melt and bearings become so hot that damage is done. The person whose duty it is to look after the shafting will usually depend upon the grease doing the work that he should do with his oil can. Where the writer is employed no one is allowed to use grease as cited above, without risking his posi-

metals, heating is the result. If any good lubricant could be kept between the metals, heating would be almost an impossibility, but when the pressure becomes so great that the lubricant is excluded by an oil-tight joint then the trouble begins. The best and most economical results are obtained by running the main or driving shaft, at as high a rate of speed as is consistent with safety. Experience teaches the fact that the source of power, such as engines and water-wheels, should be driven at the highest convenient speed. The following memo. for the proper size of shafting to transmit a given h.p. at varying speeds may be interesting to some of your numerous readers. Size of shaft 1 1/2 in.:

Speed of shafting...	100	125	150	175	200	225	250
H. P. developed.	10½	13	16	19	21	24	26

ONTARIO FORESTRY COMMISSION.

MEMBERS of the Forestry Commission have recently returned from their initial trip, having visited the townships of Harvey, Burleigh and Galway, in the rear of the County of Peterboro'. The party consisted of Mr. M. J. Butler, representing Mr. E. W. Rathbun; Mr. Thos. Southworth, Clerk of Forestry; Mr. John Bertram, Toronto, and Mr. J. B. McWilliams, of Peterboro'.

Mr. Southworth reports that they found far better prospects for a second crop of pine than they expected. In one block of about 10,000 acres, which is quite unsuitable for cultivation,

they found at least 250 pine trees to the acre. This land was originally free grant land and was burned over 23 years ago. Following the fire came a thick growth of poplar, and in the course of a year or so more the young pine began to appear. The poplars served as a shade for the pines until the pines outgrew them; now they are from 30 to 40 feet high and will average not less than eight inches in diameter. In addition to the pines there are now quite a number of fine young hardwood trees to the acre, and providing this block can be preserved from fire for another 25 years it will be a very valuable timber berth.

The next visit of inspection will be made to the Georgian Bay district.

W. Richardson & Co. Elora, state that their cut this season will be ahead of the two previous years.

An American company has bought out a match factory in Japan, introducing modern machinery, and has begun operations on a large scale. It employs child labor at 12 cents a day. The company claims to be able to drive out all competition.



SAW MILL OF MR. HUGH BLACK, FERGUS, ONT.

tion. More damage has been done to shafting and bearings by this practice than by any other known.

The size of shafting in its relation to its liability of heating and springing is one of great importance. Shafting too small for the work required leads to bad results, not simply from the width of bearings and size of shaft. Insufficient bearings, with a heavy tension on belting, causes the shaft to spring, and this brings the greater part of the strain on the edge of the bearings nearest the tight belt, consequently heating and cutting is the result. Writers on this subject often overlook the fact that there are other causes for hot bearings besides narrow boxes and small shafting. The fact is, bearings are not likely to heat providing oil can be kept between the two metals composing the shafting and bearings. With small shafting and tight belts, so much strain in proportion to the size of the shaft is brought to bear upon the bearings that the pressure makes an oil-tight joint, and the oil failing to penetrate between the two

TWO DOLLAR DUTY ON LUMBER.

THE CONGRESS OF THE UNITED STATES FINALLY ADOPTS THE DINGLEY BILL. — A COMPARISON WITH THE MCKINLEY BILL.

At four minutes past four o'clock on Saturday, July 24th, President McKinley affixed his signature to the Dingley tariff bill, and exactly at that moment it became law. The excitement at the customs houses at the time is said to have been intense, and at many ports vessels heavily laden with goods arrived only a few minutes after the bill had become law.

The wood schedule, as adopted, is much the same as that of the McKinley bill, which was operative between October, 1890, and August, 1894, and was subsequently succeeded by the Wilson bill, placing lumber on the free list. A couple of weeks ago an amendment was passed in the Senate reducing the duty on white pine to \$1 per thousand feet, and many were of the opinion that the bill would become law in that form, but a conference committee of the two houses afterwards restored the \$2 duty, which was finally adopted. The Michigan lumbermen interested in securing Canadian timber made a strong fight against the duty, apparently fully convinced of the results likely to follow. The retaliatory clause adopted provides that in case any country imposes an export duty on saw logs, the amount of such duty shall be added to the import duty on lumber.

For the purpose of comparison, we print below the bill as adopted, together with the McKinley bill passed in 1890:

DINGLEY BILL — ADOPTED JULY 24TH, 1897.

WOOD SCHEDULE.

Timber, hewn, sided or squared (not less than eight inches square) and round timber used for spars or in building wharves, 1 cent per cubic foot.

Sawed boards, planks, deals and other lumber of white wood, sycamore or basswood, \$1 per thousand feet board measure; sawed lumber, not specially provided for in this act, \$2 per thousand feet board measure; but when lumber of any sort is planed or finished, in addition to the rates herein provided, there shall be levied and paid for each side so planed and finished, 50 cents per thousand feet board measure; and if planed on one side and tongued and grooved, \$1 per thousand feet board measure; and if planed on two sides, and tongued and grooved, \$1.50 per thousand feet board measure; and in estimating board measure in this schedule no deduction shall be made on board measure on account of planing, tonguing and grooving, provided that if any country or dependency shall impose an export duty on saw logs, round unmanufactured timber, stave bolts, shingle bolts, or heading bolts, exported to the United States, or a discriminating charge on boom-sticks or chains used by American citizens in towing logs, the amount of such export duty, tax, or other charge, as the case may be, shall be added as an additional duty to the duties imposed upon the articles mentioned in this paragraph, when imported from such countries or dependencies.

Paving posts, railway ties, and telephone, trolley, electric light and telegraph poles of cedar, or other woods, 20 per cent ad valorem.

Kindling woods in bundles not exceeding one-quarter of a cubic foot each, 3-10 of 1 cent per bundle; if in larger bundles 3-10 of 1 cent for each additional quarter of a cubic foot or fractional part thereof.

Sawed boards, planks, deals and all forms of sawed cedar, lignum vitæ, lancewood, ebony, granadilla, mahogany, rosewood, satin wood and all other cabinet woods not further manufactured than sawed, 15 per centum ad valorem; veneers of wood and wood unmanufactured not specially provided for in this act, 20 per cent. ad valorem.

Clapboards \$1.50 per thousand.

Hubs for wheels, posts, heading bolts, stave bolts, last

blocks, wagon blocks, oar blocks, heading blocks and all light blocks or sticks, rough, hewn, sawed or bored 20 per cent. ad valorem, fence posts 10 per cent. ad valorem.

Laths, 15 cents per 100 pieces.

Pickets, palings and staves of all kinds, 10 per cent. ad valorem.

Shingles, 30 cents per thousand.

Casks, barrels and hogsheads (empty), sugar box shooks, packing boxes (empty) and packing box shooks of wood, not specially provided for in this act, 30 per cent. ad valorem.

Chair cane or reeds, rough or manufactured from rattan or reeds, 10 per cent. ad valorem; ozier or willow prepared for basket makers' use, 20 per cent. ad valorem; manufactures of ozier or willow, 50 per cent. ad valorem.

Tooth picks of wood or other vegetable substance, 2 cents per thousand and 15 per cent. ad valorem; butcher's and packers' skewers of wood, 40 cents per thousand.

House or cabinet furniture of wood, wholly or partly finished, and manufactures of wood, or of which wood is the component material of chief value, not especially provided for in this act, 35 per cent. ad valorem.

MCKINLEY BILL — ADOPTED OCTOBER 1, 1890.

WOOD SCHEDULE.

Timber, hewn and sawed, and timber used for spars and in building wharves, ten per centum ad valorem.

Timber, squared or sided, not specially provided for in this act, one-half of one cent per cubic foot.

Sawed boards, planks, deals and other lumber of hemlock, whitewood, sycamore, white pine and basswood, one dollar per thousand feet board measure; sawed lumber, not specially provided for in this act, two dollars per thousand feet board measure; but when lumber of any sort is planed or finished, in addition to the rates herein provided, there shall be levied and paid for each side so planed or finished fifty cents per thousand feet board measure; and if planed on one side and tongued and groove'd, one dollar per thousand feet board measure; and if planed on two sides, and tongued and grooved, one dollar and fifty cents per thousand feet board measure; and in estimating board measure under this schedule no deduction shall be made on board measure on account of planing, tonguing and grooving; provided, that in case any foreign country shall impose an export duty upon pine, spruce, elm or other logs, or upon stave bolts, shingle wood or heading blocks exported to the United States from such country, then the duty upon the sawed lumber herein provided for, when imported from such country, shall remain the same as fixed by the law in force prior to the passage of this act.

Cedar: That on and after March first, eighteen hundred and ninety-one, paving posts, railroad ties and telephone and telegraph poles of cedar shall be dutiable at twenty per centum ad valorem.

Sawed boards, planks, deals and all forms of sawed cedar, lignum vitæ, lancewood, ebony, box, granadilla, mahogany, rosewood, satinwood, and all other cabinet woods not further manufactured than sawed, 15 per centum ad valorem; veneers of wood and wood unmanufactured, not specially provided for in this act, twenty per centum ad valorem.

Pine clapboards, one dollar per one thousand.

Spruce clapboards, one dollar and fifty cents per one thousand.

Hubs for wheels, post, last blocks, wagon blocks, oar blocks, gun blocks, heading blocks, and all like blocks or sticks, rough, hewn or sawed only, twenty per centum ad valorem.

Laths, fifteen cents per one thousand pieces.

Pickets and palings, ten per centum ad valorem.

White pine shingles, twenty cents per one thousand; all other thirty cents per one thousand.

Staves of wood of all kinds, ten per centum ad valorem.

Casks and barrels (empty), sugar box shooks, and packing and packing box shooks, of wood, not specially provided for in this act, thirty per centum ad valorem.

Chair canes, or reeds wrought or manufactured from rattans or reeds, and whether round, square, or in any other shape, ten per centum ad valorem.

House or cabinet furniture, of wood, wholly or partly finished manufactures of wood, or of which wood is the component material of chief value, not specially provided for in this act, thirty-five per centum ad valorem.

Mechanically ground wood pulp, two dollars and fifty

cents per ton dry weight; chemical wood pulp, bleached, six dollars per ton dry weight; bleached, seven dollars per ton dry weight.

ONTARIO CROWN TIMBER AGENTS.

THE accompanying portrait and particulars of Mr. P. C. Campbell, Crown Timber Agent for Algoma, came to hand after our July issue had been printed:

Mr. Campbell was born in Aldborough, County of Elgin, on December 2nd, 1833, his parents being among the pioneer settlers of that township, having emigrated from Argyleshire in 1816. He, with the rest of the family, experienced and went through all the vicissitudes and hardships incidental to a pioneer life at that time, when the only roads were blazed paths and there were no mills, no churches, no schools. His education was such as could be obtained at home, with occasionally a few weeks at a school which his father and two neighbors maintained at their own expense. Higher education was out of the question, as it could not be obtained nearer than Little York, and neither the time nor the money could be spared for that purpose. Though largely self-educated, he has filled many positions of trust and importance in the community in which he has lived.

From 1853 to 1860 Mr. Campbell's time was divided between farming and lumbering. From 1860 to 1868 he was engaged in lumbering in conjunction with Mr. George Campbell, of Windsor. From 1868 to 1872 inclusive he was employed as



MR. P. C. CAMPBELL.

overseer of colonization road building in Muskoka and Parry Sound, being for the last three years acting inspector, and during the winters of these years engaged in wood ranging. Resigning his employment under the Crown Lands Department in 1872,

he again engaged in lumbering, meeting with heavy disaster in 1873, in common with all engaged in the lumbering business that year. In 1876 he opened a conveyancing, loan and insurance office in Wardsville, in the county of Middlesex, combining with it next year the purchase and shipping of all kinds of produce, and from 1878 to 1881 he also managed a private bank in the same village for Fawcett & Livingstone, of Mitchell, Ont. Towards the close of the latter year he went to Winnipeg, along with many others, and was one of the victims of the collapse of the boom of 1881 and 1882.

Mr. Campbell has always been a pronounced Liberal, and has taken an active part in political life, having been repeatedly urged to become a candidate in different ridings where he has been in business, but he has never been ambitious in that direction. He was elected Reeve of his native township in 1867 by a large majority. He was at the front with the volunteers as ensign of the Wardsville Infantry Company in 1865-6, being stationed at Sarnia during the Fenian Raid. In 1883 he was offered the position of Crown Timber Agent for the district of Algoma, which he accepted and still occupies.



NOTICE that the methods of a new firm of wholesale lumber dealers have lately been attracting much attention in the Boston market. Coming into existence without any known previous connection, they posed as lumber dealers and sent out circulars stating that they were in the market for quarter and plain sawed white oak, and that they could also use some good white ash. The first shipper to open up correspondence was an Indiana manufacturer, from whom the new firm ordered one car of quartered and two cars of plain oak. Before shipping, however, he wrote as follows: "Not finding you rated, will attach 30 days' sight draft to bill of lading." To this the dealer replied, "Reason we are not quoted, did not commence business till after first of year. All right, ship lumber, attach draft." The lumber was shipped, and the bill of lading forwarded to a Boston bank, with draft attached. The papers were to be delivered only on payment of the draft, but disregarding this admonition, the bank turned over the bill of lading upon acceptance of the draft, and it is understood that the shipper hopes to hold the bank liable. The lumber being secured by the dealers, it was disposed of in the Boston market at from five to six dollars less than they had agreed to pay the shipper. These conditions leave no doubt in the minds of the public how the new aspirants for patronage proposed to transact their business, and emphasize the necessity of shippers of lumber taking every possible precaution to escape the clutches of such sharks, who are also a source of injury and annoyance to reputable wholesale dealers.

* * *

How the proposed duty on Canadian lumber will affect the lumber trade of this country is shown by the statement made by a Toronto wholesale dealer that he would do the buying for his American trade in the American market. This, he said, would necessitate no greater, if as great, travelling expenses than at present, and would enable him to compete with wholesalers across the border. "Of course," he remarked, "I would prefer to handle Canadian lumber, but by force of circumstances we must adapt ourselves to the new order of things." Another dealer with whom I talked, and who deals in hardwoods almost exclusively, stated that he would remove to Michigan, from which point he thought he could conduct his trade equally as well as from Toronto. He considered it a foregone conclusion that the Dominion government would impose an export tax on saw logs, in which case the duty on lumber would be \$4. Thus for a time following the imposition of the duty the Canadian trade would suffer, but I confess that I cannot see any other way out of the difficulty but to put on a bold front and await results. Surely the government of this country cannot be condemned for taking action to protect her rights when practically compelled

to do so by the infamous tariff law of the United States. It may seem a hardship to some, but in law individual interests cannot be considered, and as a nation no other course now seems open. Should the export be added to the import duty, we must accept the situation, and take early steps to learn the possibilities of the export trade.

* * *

THE name of Mr. Arthur Hill, of Saginaw, Mich., has been prominently before the public of late in connection with the question of a duty on lumber. As a large holder of Canadian limits, he has been a strong opponent of the duty, and his labors have probably carried more weight at Washington than those of any other individual person. The portrait which herewith appears shows that Mr. Hill is yet in the prime of life, and quite good-looking. It will, I am sure, be very acceptably received by readers of THE LUMBERMAN, and especially by those who have interests



MR. ARTHUR HILL.

in common with Mr. Hill, but who have not yet had the pleasure of meeting him personally. Although residing on the American side, his interests are almost entirely in Canada. During the tariff fight he has spent the greater portion of his time at the United States capitol, seeking and imparting information.

* * *

"Eli" happened to be in the office of a lumber dealer the other day when the principal was called to the telephone by a manufacturer who had been requested to quote prices on certain stock. "Oh," said the dealer, "you are too late; that order has been filled over a week ago." This suggested to me the thought that much business was lost to mill men by dilatoriness in answering correspondence. In this case the dealer wanted certain stock, and the mill man had the stock that would fill the bill, but no deal was consummated between the two parties, as a prompt reply to the letter of the dealer was not forthcoming. Saw mill men are not usually expert at office work, but as it has an important bearing upon the results of the year's business, many of them could with profit pay more attention to this detail. The system which prevails in the saw mill should to the same extent be found in the office.

A BUSINESS HELP.

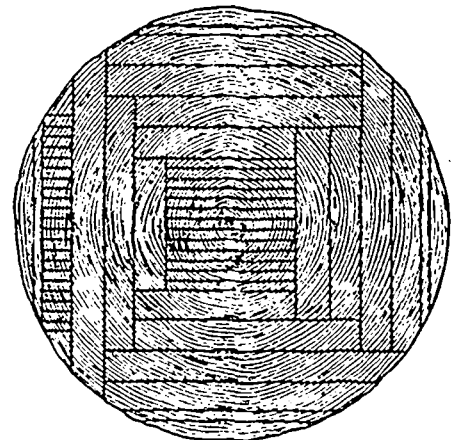
Messrs. Bowman & Co., Dundas, Ont., in renewing their subscription to THE LUMBERMAN, state that they find it very interesting and profitable reading, and that it has put them in communication with several firms with whom they now have business relations.

SAWING VERTICAL GRAIN LUMBER.

A SUPERIOR quality of lumber may be obtained by sawing the log vertical with the grain, or growth rings of the tree, a fact that should be known, not only by sawyers, but by mill owners as well, says a writer in "Lumber." Of course, it requires the turning of the log a few more times, therefore taking a little more time, but this loss of time is more than made up by the quality of the lumber obtained, and also by the quantity of clear lumber that may be cut out of a log that has a few knots in it.

Lumber cut in this way is far superior to any other. It will not warp in drying, at least not one-half as bad as lumber sawed the other way, which alone is worth more than it costs in extra time by sawing it vertically. Most kinds of wood are liable to check in drying, a difficulty that is largely overcome in lumber sawed vertically. Another advantage is that lumber sawed in this way will retain paint much better. But the principal advantage is to be found in its superiority of warping qualities. Lumber used for flooring should not be cut any other way. It will wear more even and not splinter up as it will if cut from the side of the log in the usual way.

As to the way of cutting lumber vertically, the illustration given will convey to the reader the idea more readily than I could explain it in many times the space. But a sawyer must be governed by the size of the log he is sawing, the amount of clear lumber there is in it, and also the width of the lumber he wishes to make. He will readily see that it would not be practical to try to get ten or twelve-inch vertical lumber out of a small or medium-sized log. In fact, it does not pay to cut much wide lumber vertically, but chiefly from four to six-inch, as used for flooring and siding. My plan in sawing is, after taking off the slab, to take off one or two one-inch



METHOD OF SAWING VERTICAL GRAIN LUMBER.

boards, then take off one or two cants the thickness of the width of the boards required, then turn the log and continue cutting and turning until the log is cut into where it is too knotty for clear lumber. This part of the log can then be cut up into common lumber, the cants to be laid one on top of the other, and cut into the required thickness.

The extensive saw mills of the Royal Paper Mills Co., at East Angus, Que., were destroyed by fire during the past month, entailing a loss of \$200,000, only about one-third of which is covered by insurance. The saw mill was a comparatively new building constructed two years ago at a cost of \$40,000. The pulp mill was recently overhauled and was probably worth \$125,000. Mr. F. B. Buck, of Sherbrooke, the president of the company, states that rebuilding will be commenced at once.



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

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

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

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

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

TO VISITING LUMBERMEN.

Lumbermen visiting Toronto are invited to use the office of the CANADA LUMBERMAN as their own. We shall take pleasure in supplying them with every convenience for receiving and answering their correspondence, and hold ourselves at their service in any other way they may desire.

CEDAR BLOCKS AS A PAVING MATERIAL.

AN agitation has been going on for some time past in many Canadian and United States cities against the use of cedar for paving purposes. In Toronto the material is being unjustly decried, and defects attributed to it for which it is not responsible. Thus we feel prompted to say a few words in defence of cedar blocks.

Some fifteen years ago Toronto, among other cities, found that the old broken stone or macadam road was not only costly to build, but also to maintain, and some other style of pavement was looked for. The Nicholson or sawn block road, made first of three-inch oak plank and then of pine, was tried, but although making a nice-looking road, it did not last as long as was expected. This was not so much the fault of the material as the neglect to properly care for it after it was laid. No sooner was a new pavement laid on a street than it would be torn up to lay gas or water mains or private drains, thus allowing water to penetrate the joints between the blocks and cause decay. The specifications also called for white oak, but strange to say, the authorities permitted over fifty per cent. of red oak to be used—a wood that is very inferior for

the purpose. This material was therefore discarded.

Next the round cedar blocks were adopted, and have since been largely used for residential streets. They have, we believe, given general satisfaction, when the lower cost as compared with brick or asphalt is taken into consideration. It has been demonstrated that when properly constructed and not disturbed by excavations they will last for ten years, when they can again be relaid at a very small cost. No person would for a moment claim that cedar will make a better roadway than the materials we have just mentioned, but it certainly is better than some of the asphalt and brick laid in Toronto within the last few years, and costs only about one-quarter as much. The bricks laid on College and Dundas streets are going to pieces; the edges are chipped off, and the road will soon be as bad as a cobble stone road.

In Toronto we have a large number of cedar block pavements, to which members of the medical profession have attributed the cause of much disease which we believe was, instead, the result of bad plumbing of the "boom" days, poorly constructed sewers, or careless people. A cedar roadway will certainly never retain odors like the primitive gravel roads they are now trying to force on the people. In proof that the cedar roadway is not unhealthy stands the fact that Toronto stands second in point of health among the large cities on this continent.

There is in Ontario much cedar available for paving purposes. The paving of the streets of Toronto with cedar would mean the employment of a large number of men both in cutting the timber and saving the blocks. The imposition by the United States government of a duty on lumber will probably lead to the shutting down of many saw mills, thus throwing a small army of men out of employment. Some of those men at least might find employment taking out cedar for paving. The pavements in Toronto must be renewed, and the question is, "What material shall be used?" Cedar has certainly given good value for the money expended, and has lasted for ten or twelve years.

We do not desire to depreciate other and more expensive pavements, but between gravel and cedar blocks there can be no doubt as to which is the best material. As being interested in wood goods, we would ask the authorities of Toronto and other cities to consider the good points of cedar, and not discard it until it can be displaced with something that is better and cheaper.

CARE IN HANDLING STOCK.

FREQUENTLY in the columns of THE LUMBERMAN the attention of manufacturers has been drawn to the necessity of exercising care in the cutting and handling of lumber. The matter is one of great importance to manufacturers, more especially in view of the increased export trade likely to be done in the near future. From the time the log reaches the mill until the lumber is loaded on the car every precaution should be taken against damage which would depreciate the value of the stock.

In the first instance, the sawyer should bear in mind that there are good and bad sides to the log. You can make many dollars in a season by watching this.

The sawyer should use his "nigger" canter

carefully. Do not jam and tear the whole face out of a clear plank just to gain a minute or two. You can spoil more clear lumber in a few seconds than you will make in many hours. Some canter-jab their cant hooks into the face of a clear cut and tear large slivers out, apparently forgetting that good lumber meets with ready sale at a high price, and is much to be desired.

Tail sawyers should handle wide clear planks from the saw with care. Do not slam them down on the rollers and split them. The value of a lot of lumber often depends on the percentage of wide stock it contains. You can materially assist in keeping up the average by careful handling.

Lumber pilers should see that the foundations of their piles are level to start with, then see that they are sufficiently high off the ground to ensure proper ventilation, and then pile the lumber evenly, so that the crossers are immediately over one another. By this means the weight of the pile is evenly distributed, and there will be no warped lumber. Let the front end crosser project sufficiently so as to shade the ends of the boards or planks as much as is necessary. This will prevent checking on the ends. Pile each length by itself as far as possible. Go to a little trouble even to do this, as it will pay to do so, both in the appearance of the stock and in preventing checking, while it is much easier to ship from.

When it is necessary to pile different thicknesses of lumber in one pile, always get the thickest planks on the outside, and as many of the same thickness as possible at intervals between, so that the crossers of the next course may rest on these and make a uniform bed for the next course. Avoid, when possible, doubling up thin boards to make a uniform course except in very dry lumber. Cover your piles, especially your good thick lumber, every night. There are plenty of culls made at every mill, and they are worth very little. There is a much smaller quantity of clear, which is valuable. It is manifestly to the interest of the manufacturer to save every piece of good lumber he makes. A pile left uncovered over night means checked lumber if the sun comes out strong the next day. If it is pine, basswood, maple or oak it may mean stained lumber as well as checked, or a difference in value of from \$10 to \$15 per M feet. When the pile is finished, roof it carefully, so that the stock may be kept bright and allowed to dry in good order. Some mill men think that the very best lumber they have is none too good to roof their piles with, and cover the clear piles with clear lumber. This is rather expensive, as a roof of clear lumber will not keep out the rain or snow any better than good common boards.

Lumber should be carefully loaded on cars. This is usually looked after by the inspector, but sometimes it happens that the inspector is called upon to explain a discrepancy between his inspection at the shipping point and the inspection at receiving point. Some of this can often be traced to splitting, warping and careless loading. Each piece should be placed perfectly flat. If there is a space that you have not a board to exactly fill, it is a good plan to angle the piece you put into the space, so that the boards in the following course will bear on some part of the piece thus angled. In loading stock boards where they do not exactly fill the space, either alternate them and break joints or pile exactly

top of one another and put enough pieces on edge to fill out the space.

Employers should teach their employees the necessity of careful handling and neat piling. While in this era of cheapness it may be necessary to keep the cost of handling down to the minimum, yet it is the clear, bright, carefully handled stock that brings the most money and meets with ready sale.

A DECLARATION WANTED.

In another column will be found the wood schedule of the Dingley bill as finally passed by the United States congress. The two dollar rate on both pine and hardwoods has been maintained, while the duty on shingles and other classes of wood goods is equally protective. The result of the imposition of this duty cannot well be foreshadowed. It will not, we believe, prove to be in the best interests of the United States, which is to a large extent dependent upon Canada for raw material, and that it will cause a transformation in the Canadian trade may safely be predicted.

The lumber interests of the two countries are closely allied. The United States is looking to Canada for her supply of saw logs and pulp wood, while in the United States Canadian lumbermen find their natural market. But by means of a tariff wall, initiated by the American government, the two countries are to be separated, probably to the detriment of both. The president's signature has been affixed to the Dingley bill, and it now remains for the Dominion government to declare whether we shall meekly submit to the injustice of the bill or adopt retaliatory measures.

Whatever course may be decided upon, the lumbermen of this country are entitled to an early declaration from the Governor-General, to whom has been given the power to impose an export duty on saw logs. The time is drawing near when preparations must be made for operations in the woods, and lumbermen desire to know just where they stand. The government should therefore lose no time in making a declaration regarding the imposition of an export duty.

EDITORIAL NOTES.

THERE is manufactured in Ontario each year several million feet of oak lumber, most of which is flat sawn. We would suggest for the consideration of manufacturers the advisability of quarter-sawing a greater quantity, which could be done by the addition of a little machinery, and the outlay would soon be returned by the higher prices obtained for the stock. By quarter-sawing the beauties of the grain are shown to much better advantage, and the boards are not likely to warp. Opinions differ as to the expediency of quarter-sawing, but we believe that no mistake can be made in cutting the best logs at least in this manner.

AN insect, called the spruce gall louse, is said to be working its way into the spruce forests of Ontario, and unless steps are taken looking to its extinction, destructive results may follow. It is said to be a native of the old world, and was imported into the United States in 1867, since which time it has gradually been working northward. The eggs are laid about the end of

July on the small green spines, and remain exposed to the weather all winter and hatch out in the spring. The annual report of the Ontario Clerk of Forestry, which will shortly be published, will contain a paper on the pest prepared by Mr. William Brodie, of Toronto, who has given the matter some attention. If taken in time, it is said to be possible to save a tree by nipping off and burning the affected twigs.

THE maxim that "In Unity there is Strength," has been strikingly illustrated in connection with the question of taxing Canadian lumber. After the tariff bill had passed several stages in the United States Congress with lumber at the \$2 rate, a large meeting of Canadian pine limit holders and dealers was held at Ottawa to protest against the proposed duty, and to urge the Dominion government to retaliate by means of an export duty. Influence was brought to bear on the United States government, and the rate on pine was reduced by the Senate to \$1, but the reduction of the duty on hardwoods was apparently never thought of. In all the deliberations one would suppose that pine was about the only lumber in Ontario. The reason of this is found in the lack of organization in the lumber trade. The pine men have large interests involved, and are therefore given consideration, but unless the hardwood manufacturers combine their interests they cannot hope to secure justice.

IN the past objections have been raised to the red cedar shingles of the Pacific coast on the ground that they were over-dried in order to lessen the cost of transportation to the eastern markets. The folly of this over-drying has gradually become recognized by the manufacturers, and to-day the western shingle is looked upon much more favorably by both dealers and consumers. Partly on this account there has sprung up in the east a demand for red cedar shingles almost unprecedented in the history of the trade, and after several years of heavy stocks manufacturers now find themselves in the somewhat enviable position of being unable to fill orders. The shipper now controls the market, a complete reversal of the conditions which have existed during the past few years. Whether prices will be advanced in the eastern markets it is difficult to say, as cypress shingles, which can be purchased at a lower cost, are also coming in favor, and may influence the market in this respect.

REPAIRING A PORTABLE MILL.

A CORRESPONDENT of the Woodworker thus relates his experience in overhauling a portable mill purchased at an administrator's sale:

"The engine was a 15 horse power center-crank. An examination disclosed the fact that there was a half-inch play in the crank, and both brasses burnt in two. The wrist was corrugated to the depth of one-fourth inch. I was informed by the engineer that when it first commenced heating it would hang up sometimes, but they would 'prize' it off the dead centre with a scantling, and go at it again. He also said the governor belt had broken once, and all hands had taken to the woods, but he had ventured back and stopped it after it had gotten down nearly to its normal speed again. He said no one could

run it, and when I found the eccentric slipped back a sixth of a revolution, I was ready to believe him. The boiler was in fair condition.

"Turning my attention to the mill, I found it to be of the latest variable-feed design, and in fair order except the saw. It was an Emerson, Smith & Co., planer tooth, twenty-eight teeth, twelve of which were out, and each of the other sixteen setting on a separate and distinct angle. The Sawyer, who was also an itinerant preacher, had informed the natives that the mill was no good, and the boiler was liable to 'bust' at any time. This had the effect of scaring off most of the would-be purchasers, and the mill was knocked down to me at one-third of what it had cost a year before.

"Now came the question of repairs, and as several men wanted sawing done where the mill was and that was sixteen miles from the nearest railroad depot, and forty miles thence to a shop I concluded to tackle the job myself. I found the wrist would dress to two and one-half inches, it being originally three; so I ordered a pair of brasses from the makers, bored to two and one-half inches. Then I made a template of sheet iron with a two and one-half inch half circle, being careful to get it perfect. I first cut off the ridges with a cold chisel, then finished it with files, referring often to the template. I left the ends round, instead of bringing to a square corner, to guard against a crack starting, as it was considerably weaker than at first.

"The saw was easy to repair, it being necessary only to let the teeth down one-eighth of an inch in the mouthpieces, and after dressing the plate to suit it was equal to a new saw. For a wonder the tension was all right, and the saw did good work until I broke it in a frozen log.

"I suppose some of the readers of this will ask why I did not send the shaft to the shop to be turned. It would have cost time and money, and I had neither. I worked just two days on the wrist, and started up with a pair of babbitt 'brasses' for temporary use, and by recasting them several times sawed 50,000 or 60,000 feet. When the brasses came and were fitted, my troubles were ended, as it has given no trouble since.

"I sold the mill last summer for \$550 more than it cost me, and thought my steam mill days were over, for a portable mill man sees a hard life of it; but with the return of spring and the flowers that bloom therein, I can feel that fascination for the steam mill working into my bones again, and it will not be many moons ere I will be piloting the festive saw again."

PERSONAL.

Mr. John Allan Cameron, manager of the W. C. Edwards Company, Ottawa, and Mrs. Cameron, have returned from their European wedding tour.

Mr. James Lemay, of New Westminster, B.C., has been appointed crown timber agent for the Dominion Government in British Columbia, in lieu of Mr. Higginson, resigned.

The death is announced of Mr. F. B. Robb, secretary-treasurer of the Robb Engineering Co., of Amherst, N.S. Deceased was bathing at Fox Harbor, when it is supposed he was overcome by the heat.

Mr. Parent, Commissioner of Crown Lands for Quebec, left last week for Lake Temiscamingue, in company with Mr. G. Bryson, M.L.C., and Mr. D. Gillies, M.P.P. The object of the commissioner's visit is to settle some difficulties between the owners of timber limits and the settlers there.

THE MARKETING OF LUMBER.

The problem of disposing of lumber after it is manufactured is one that seems to become more difficult and complex every year. Formerly there was but one way open to the producer of hardwoods—to sell his output to the wholesaler in bulk, most commonly as mill run, or common and better, and often in a single transaction covering the entire product of the season. A great deal of hardwood is still sold in this way, and there are many who contend that it is the best way for the mill man to handle his lumber. Advice is sometime given to the saw miller to cut all he can, and as soon as it is shipping dry load it up and forward it to some responsible wholesaler at the nearest available point, with instructions to inspect it and return to the shipper its value in current funds. Such ideally simple methods are, it must be noted, advocated chiefly by those whose interest lies in fostering the trade of the wholesalers, some of whom still adhere to the theory that the mill man ought to be entirely satisfied with whatever the buyer may be disposed to allow him. If such faith in the strict honesty and fairness of buyers were justified by experience, this method would present advantages of which mill men would be glad to avail themselves. It is economical, involving the minimum of expense in selling; it is quick, enabling the producer to realize promptly upon his output; but unfortunately it is successful only when the entire business is conducted with absolute fairness on both sides, and when neither party to the trade seeks to gain an undue advantage over the other. It is a practical failure in a general sense because of the inherent weakness of human nature. The average of honesty and fairness is doubtless the same in the lumber business as in other lines, and it involves no special condemnation of this trade, or any part of it, to affirm the impossibility of satisfactory dealings based wholly upon the good faith of the parties. Deviations from the golden rule are inevitable, and these make it necessary that both buyers and sellers should not trust too much to the honesty of those with whom they trade—that, in fact, they should take such measures to protect themselves and their interests as have been found necessary in other lines. Experience proves that, while between parties who know each other thoroughly, some of the ordinary rules of business caution may be relaxed, the only safe principle is to leave as little room as possible for fraud or for mistake.

In the effort to diminish the chances of loss arising from the incompetency or dishonesty of buyers, and to make it practicable for mill men to safely ship their products to market subject to a determination of their value on arrival, systems of inspection have been devised, designed to prevent fraud in grading and measurement and to secure to shippers the actual values of their consignments. These have done much to make the business safer and more satisfactory, but everybody knows that they are not so completely successful as to do away with complaint, or as to make it absolutely safe under all circumstances for mill men to ship to all markets, or to all buyers in any market. The careful shipper must still pick his customer, and often must follow his consignment most carefully to insure that he gets paid for what he ships. He can not safely depend altogether upon inspectors.

It must be granted, however, that this is no less true on the other side. Buyers have as much to contend with as sellers, and they are required to be as cautious and as watchful to secure what they pay for. All the incompetency and dishonesty is not to be found among the wholesale dealers, who are often the victims of the sharp practices of the country mill men, and who perhaps still oftener escape the snares laid for them only by their care and their thorough knowledge of their business. Indeed, mill men themselves have contributed much to produce the existing condition of insecurity, and to make the simpler methods of handling timber unsafe and unsatisfactory on both sides. Too many of them are intentionally dishonest, while many more are such poor judges of lumber that they are really unable to estimate fairly the value of what they are selling. It often happens that a mill man does not know what lumber really is, and in consequence ships stock that is below grade in the belief that he has selected an extra good lot. Few people in the country have any idea how often this happens or how many mill men there are who have been cutting lumber, it may be for years, who really know little about grades or the average quality of stock. They judge everything by what they handle themselves, and the product of their own mills, or even of the district in which they are located, may not show a fair average of lumber as it appears in a market drawing its supplies from all parts of the field. Ignorance of this character, or of any character, is not always distinguishable from dishonesty, and when it is, is usually harder to deal with.

In view of all the difficulties which surround the movement of lumber, and especially hardwood lumber, in its journey between producer and consumer, it is not surprising that the method, now so common, of selling at point of production should have grown up, and should still be increasing in favor. The advantages of it are many; the chief disadvantage is that it involves extra expense in inspecting, the buyer being obliged to send his man to the mill to take it up. But this has of late been largely offset by the avoidance of yard expenses, and the direct shipment of lumber, so that in all large transactions the carload dealer who will inspect and measure his purchases at the mill can usually pay as much as the yard man who relies upon consignments to be measured and inspected in his own yard.

That the tendency of the business is toward inspection at point of shipment rather than at destination is proved by the fact that all yard dealers buy some of their stock that way, and many of them all of it. The difficulty of securing a satisfactory system of public inspection, which must be recognized, will likely drive the trade into this method of buying entirely in the near future, which will naturally cut consignment business down to a small figure.

The development of what is commonly called the carload trade is rapidly involving the yards as well as the exclusively carload dealers, and evidently means that eventually, and probably before very long, nearly all the hardwood product will be shipped direct from the mill to the user. There is a lack of economy in rehandling large lots of lumber which make a wholesale yard an expensive luxury, and which must

ultimately force the yard business into the retail trade entirely. It is more nearly there now than is commonly supposed, or than many yard dealers like to admit. But the fact is that there are practically none that do not make most of their wholesale shipments direct, reserving their yard stocks for their retail trade. That they will do so more and more until they supply only team trade from their yards is already a foregone conclusion.

This is in effect putting the consumer nearer the stump, and a good many wholesalers are apprehensive that in its final outcome it will result in bringing producer and consumer so close together that the merchant's occupation will no longer exist. Of what use will the wholesaler be if consumers are to get their stock in unbroken carloads from the mill which cut it? The obvious answer of this question is that the function of the wholesale merchant is a larger and more important one than that of a salesman for the producer. It is and will be, as it always has been, the dealer's work to gather up a variety of stocks and to make them available to buyers whose diversified wants no single mill, or group of mills, can supply. The average user of lumber wants it of various kinds, qualities and dimensions, and often such a peculiar assortment of the three as to make it necessary that he should draw his supply from many sources. He cannot buy anybody's mill cut, to either his own or the seller's advantage, nor can he profitably buy his assorted stock in small lots of mill men here and there. He requires a uniformity of grading impossible to so obtain, and a familiarity, on the part of the person who selects his purchases, with his peculiar requirements that it would be impossible to impart to a number of different mill men. He must either employ his buyers and inspectors, and to that extent become a lumber merchant himself, or he must avail himself of the services of those who make a business of merchandising. Which is he most likely to do is best indicated by what he has done and is doing now. The flourishing condition of the carload trade in hardwoods sufficiently shows what this is.

From the mill man's standpoint the merchant is even more of a necessity. He needs him, not only to find an outlet for his production, but to aid him in marketing it, and in preparing it for market. The merchant's capital, his knowledge of grades, and of buyers and their wants, are indispensable to the mill man. He cannot organize and operate a selling department in his business that will enable him to do what the merchant will do at anywhere near what the latter will accept for the work, nor could he in many cases successfully job out his product in such fashion even if the question of economy did not arise. We see manufacturers who do this right along, but upon investigation it will be found that they are men whose experience and capital enable them to combine the two departments of the business. Often they are larger operators as merchants than as manufacturers, buying more than they produce. Their success, and the manner of it, but emphasizes the importance of the wholesaler's position, and, indeed, proves that he is an essential factor in the business.—Hardwood.

THE RETAILER AND Wood-Worker

HARDWOOD FINISH.

COUNTRY builders who have always been accustomed to finishing their houses with pine or other soft woods experience some difficulty in getting a proper estimate of the extra labor required to finish in hardwoods. It is safe to say that the cost of labor in finishing off a room in cherry, black birch or white ash, is about double what it would be if finished in white pine. Black ash or elm finish takes about 50 per cent. more time to put in proper shape than pine, and oak, red or white, costs a trifle more to finish than cherry or black birch. Lumber cut from the butt logs of the black birch is one of our handsomest woods, and is strong and durable and will take a polish as high as the best cherry or mahogany. For newels, hand-rails and balusters it is superior to walnut, and much stronger, works better in the lathe and is less apt to chip or splinter under the carver's tools. If not quartered when sawn, it has the fault of warping, and will be affected more or less by atmospheric changes, but on fixed work this may easily be prevented by proper fastenings, and in freework, such as doors, sashes, venetian blinds, etc., quartered stuff should be used, or the doors and sashes should be "built up" with the grain reversed, which will prevent warping and twisting. This latter method is expensive, but insures lasting and satisfactory work, but when economy is the rule, quartered stuff worked solid answers very well. The working of hardwood of any kind requires more skill, a better class of tools and more exact workmanship than the working of pine or other soft woods, and these items alone entail extra cost. Where hardwoods are to be finished in a natural state great care should be taken to prevent lime stains, consequently it is better in all cases to put no finish until the plasterers have fully completed their work, for a lime stain on cherry or birch can never be taken out or completely covered without staining. In the absence of birch or cherry red beech makes a very handsome finish—in fact, beech has some beauties no other wood has, and when quartered and properly finished has a metallic sheen that is charming and unique.

THE whole trouble with line shafting is that too many incompetent people think they know how to make it and how to put it up. In truth, however, a line shaft is a comparatively delicate piece of machinery, and its making, erection and maintenance all require good engineering sense. With this its friction ought to fall far below that which many experiments show to exist. But the average line shaft, it must be remembered, is a wriggling, squirming body, trying hard to preserve a straight line against the evil efforts of uneven bearings and injudiciously placed driving pulleys.

MR. JOHN PIGGOTT.

IN the accompanying cut is portrayed the countenance of one of the leading lumber dealers of Western Ontario, in the person of Mr. John Piggott, of Chatham, Ont. His first connection with the business was about forty years ago, as the following particulars of his life will show.

Mr. Piggott was born in Oxfordshire, England, in the year 1842. Emigrating to this country in 1848, he settled at Woodstock, Ont., spending his school days there. In 1859 he removed to Thedford, Ont., where he was engaged in the square timber and stave business. In 1869 he decided to leave that section of the country, and located a lumber yard at the corner of King and Forsyth streets, Chatham, where his office is at the present time. Then there was very little pine lumber used in that section of the



MR. JOHN PIGGOTT.

country. His first stock of lumber was purchased from the late Peter Christie, of Toronto, and the first year's business was confined to about 500,000 feet. Steadily since that time his trade has increased, and last year's turn-over aggregated over 5,000,000 feet.

In the year 1884 Mr. Piggott found that to run a lumber business successfully it was necessary to have a planing mill, and at once set to work to erect the present factory at the corner of King and Second streets. Three years ago he purchased the lumber yard, planing mill, stock and wharf property of W. G. Nutson, in Windsor. In July of the following year this factory was destroyed by fire, but in nine weeks a more modern structure was erected and in operation. Upon purchasing the Windsor property Mr. Piggott admitted his sons as partners, under the name of John Piggott & Sons. The money invested has been earned entirely by the business. The firm make a specialty of turning out fine house finish in white pine, Norway pine,

Georgia pine, red oak, black ash, cherry, birch, and all kinds of native woods. At present they are getting out the interior wood-work in quartered red oak for a fine residence in Winnipeg, Man. They manufacture mantles, office and bank fittings in wood.

The subject of our sketch has been given many positions of honor in the city, having served as a member of the Council and as president of the Agricultural Society. At the present time he is president of the Board of Trade.

WOOD WARPING.

WOOD, particularly hardwood, that has not been properly sawn, is almost sure to warp or twist some extent in the seasoning. A board cut from the side of a log has the grain rings of the wood lying in circles having a greater length on one side of the board than on the other, and it is quite natural that these rings will endeavor to close as their circumferences get shorter by seasoning, and in closing they bend the board over, or, in other words, warp it. If the rings at one end of the board are out of line with the rings at the other end, which is frequently the case where the log was originally crooked, then the board will both warp and twist, as the rings do not shrink uniformly. Much can be done to prevent warping and twisting in the piling of the stuff. The boards should be laid on their flat side with the side down that shows the concave or hollow curve of the rings; battens or weather strips should be laid across the pile at regular intervals, and always directly over the corresponding battens below; then put another tier of boards on these again, and so on, until the pile is completed. The pile should have an inclination to carry off the rain, and should be topped off with rough boards enough to keep the pile dry. It is not best to pile the lumber where it will get too much sun or drying winds, as lumber seasoned too rapidly is apt to crack and check. Of course the best boards, boards that will not warp or twist, are "quarter sawn." It makes no difference what the lumber may be, whether it is pine, oak or ash, if it is quarter sawn it will not warp in drying nor yield so readily to changes of the weather. It has the disadvantage of being more expensive, as in sawing each quarter a narrow board is first taken, then one a little wider, and so on until the whole quarter is cut. Quartered oak, of which we here so much now-a-days, never changes its shape after it is worked, "it stays where it is put," as the carpenters say, a quality that is very valuable. Another advantage of "quartering" is that you get all the beauties of the grain shown up to better advantage than if the boards were just "sliced" from the round log.

An old wood-worker says maple is not fit to make a top of, whether quarter-sawn or not. Quarter-sawn is better for the weather, but quarter-sawn maple will shrink in thickness, and common sawed will shrink in width. The one is almost as bad as the other. The grain is so hard that glue will hardly penetrate it. It is very cheap, and the supply is greatly in excess of the demand. Log-run maple is offered at \$10 and \$12 per thousand. In many cases it is maple, beech and birch together.

AN EXPERIENCE ON THE DRIVE.

The following story, the veracity of which we do not vouch for, comes from Bangor, Maine:

BANGOR, Me., June 19.—There has been much rain of late, and the streams and lakes of Maine are so full that the drives of logs have come early from the hands of the operators into the charge of the lumbering associations, which handle the drives from the mouth of North Twin Lakes, seventy miles away, to the booms in this city. Thus the men who have been working in the woods all winter cutting spruce are now either out or on their way out.

Bangor is a centre for these fellows when they finish with their drives, and spend cash so freely that within a week they are generally ready to go to work again, drained to the bottom of their pockets.

One of these men, who came out Thursday of last week, had an adventure that will make him be talked of in all the camps of Maine. His name is Joe, he does not know what his other name is, because nobody ever told him; he cannot read or write, but his heart is in the right place, and he has many friends among the crew with which he has passed the winter.

Joe's crew was at work on Rainbow Lake last winter. The route to it lies away up the line of the Bangor & Aroostock Railroad, seventy miles, then across two lakes, and then up a mountain torrent to Rainbow Lake, which is so much higher than any neighboring body of water that the stream, named as is the lake, Rainbow, which connects it with the chain below, is a foaming rapid throughout its entire length.

The firm that was lumbering at Rainbow last winter cut a big lot of spruce. In order to get it down into the lake below they had to do a lot of hard work. At the outlet of Rainbow Lake, where the stream begins, was erected a dam, which held the water back from the stream below. Then two more dams were built at intervals down the stream, with gates to be lifted when a free flow was necessary. The fall in one mile, from Rainbow Lake to Nahmakanta Lake, the next below, is more than 500 feet. In some places the stream is almost like a cataract. The river runs between high rock walls that make passage along the waterway exceedingly difficult and dangerous.

With the gates in the three dams the lumbermen were able to control the flow, so that when they desired it the thundering rush could be converted into a babbling brook, and again transformed into one of the most wonderful natural water chutes in the world.

The plan was to collect the logs at the outlet, get on a big head of water with the dams, and then let them go suddenly. The two intermediate dams were to hold the water at various points when jams occurred along the narrow way. When all was ready the order was given and up went the gates of the first dam. The water sucked through in a fearful whirlpool, and with it went the first of the logs, scoting at a terrific speed down the narrow stream towards Nahmakanta.

Joe and the other men were out on the yarded logs, starting them on their way from the jam at the outlet, when some one got nervous and called, "Look out!" Instantly the men started

for shore. The whole jam was moved together and there was death in the stampede.

Every man but Joe got ashore in safety, and Joe, just as the jam caught on a rock and lodged a few yards within the dam, leaped from what he thought was safety to an immense pine "butt," the lower end of a tremendous tree trunk, which immediately separated from the jam under his weight and went sailing toward the dam, where the flood was swirling angrily and boiling through the big hole under the gates.

Joe wore boots with steel spikes in the soles, like all woodsmen, so that he could hang to the logs all right, and he still carried his pick pole with which he had been working on the jam. The frightened members of the crew shouted all sorts of orders at the man as he floated away, and the boss screamed frantically, but the roar of the waters drowned it all, and away went poor Joe.

The orifice under the first dam was ample, and in three seconds the man and the log had gone through it and were spinning away down the narrow toboggan chute of the stream toward dam No. 2. When the crew last saw Joe that morning, he was still on the butt erect and alert, with his pole as a balance, going toward eternity at a rate to beat the Empire State Express.

Everybody shuddered when he thought of the second dam, where the passage was too small to allow the passage of the man and the log too, and where Joe's brains must be dashed, along with his mangled body and the splinters of the butt, against the projecting timbers of the structure.

But Joe was looking after himself. He weighed various chances to leap ashore between the two dams, but the rock walls, lifting high in the air above his head, gave him little comfort. He knew the second dam and that both the log and himself could not pass under its gates. Whether or not the signallers had the gates lowered made no difference with his chances; his momentum could not be checked, and to be dashed against the dam at the rate he was going would mean a horrid death.

Now the second dam was in sight, the gates wide open underneath and the low wooden structure over them. Joe saw one chance for life and took it. He had been to the circus with his brother once, up in the Canadian provinces, and there he had seen an equestrian ride a swift horse and leap over a bar as the animal passed under it.

The log was running at the speed of a train. When it had reached a point six feet in front of the dam, Joe lifted his pole high above his head and gave a mighty leap. The momentum of the log sent him flying through the air, over the dam by three feet, and across to the other side. Joe hardly dared to look as he began to come down, for fear his log had caught and that he was going to drop into the current and be killed under water.

Good luck was with him. He met the butt coming through the gates and landed on it neatly. The pole steadied his fall and the spiked boots held him firmly in place. Joe sighed with relief. But dam No. 3 was still to be passed.

On went the log at increased speed as the grade grew steeper. In twenty seconds the third dam was in sight, and Joe made another

splendid leap, clearing the timbers like the jettile from a rifled gun, and catching the at the other side as handsomely as any rider.

From there to Nahmakanta was easy. Joe held to the log until he reached clear of the foot, and until his momentum had carried him out into the lake for almost a quarter mile. Then he sat down on the log, straddled and poled her ashore with his pick.

NEW BRUNSWICK LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

THE month of July has been one of the most active in the history of the lumber trade of the port of St. John. The harbor has been alive with vessels and all available help has been employed in loading the same. This season has been brought about partly by the strength of the British market and partly by the fear that an import duty would be imposed by the United States Government. A fortnight ago there were in port fifteen ocean steamships, totalling 25,655 tons, and sixteen sailing vessels, totalling 13,582 tons, all loading for English and continental markets. It required not less than 25,000 stowards, or in round figures 50,000,000 superficial feet to load these vessels, making a record of shipments for a month within a few millions of being half as much shipped during the previous year, viz., 100,000,000 superficial feet. During July, 1895 and 1896, the shipments to the British market were 18,070,000 and 25,000,000 feet respectively.

At the time of writing much attention is directed to the action of the United States Senators with regard to the tariff. In the vicinity of the city there are fifteen mills. Four of these are owned by Canadians and eleven by Americans. The Canadian mills are those of Messrs. Randolph & Baker, George Barnhill, W. H. Murray, Hillyard Bros. The American mills are those of S. King & Sons, Andre Crushing & Co., C. F. Woods, two mills, Charles Miller, Stetson & Cutler, two mills, Dunn Bros., E. D. Jewett, Purvis & Murche, J. R. Hamilton and J. R. Warner. It is not to be wondered at therefore, that an effort has been made to secure an insertion in the tariff act of a clause providing that lumber cut in the Province of New Brunswick, when owned by American citizens and manufactured by American labor, should be admitted free of duty. The shingle mills in St. John are owned by Charles Miller, C. F. Woods and S. T. King.

The Hammond River Lumbering Co., of Roberts is being incorporated, with a capital stock of \$25,000.

The last instalment of the corporation drive has passed into the boom limits. A prominent lumberman states that the past season has been the most successful for road driving in the history of lumbering on the St. John river. He thinks that the Messrs. Moore, whose driving contract terminates this autumn, will make at least \$20,000 on this season's operations.

Mr. George Upham has completed his new mill at Fredericton. The machinery is driven by a 100 horse power engine with large boiler, sawdust being used as fuel. The mill is fitted with Connell Bros. rotary mill, capable of sawing 40,000 feet per day, Mc Donald edge planer and lathe machine. Mr. Upham is superintendent. C. E. Parker, sawyer and foreman, and F. Dibble, etc. About thirty men will be employed and the output will be chiefly deals. The logs come from the Tobique river.

ST. JOHN, N. B., July 23rd, 1897.

Let me ask, says Mr. Andrew Carnegie in a recent address, under what conditions does the employer of labor make profits and become prosperous? Only when labor is prosperous, is his reply, and in great demand; when wages are the highest, and when the demand for his products are the greatest. Then, and then only, is the employer prosperous. On the other hand, when labor is not fully employed, and can be obtained for the lowest wages; when there is little demand for his products, then the employer can never be prosperous. In most cases he must not only make profits, but he must see his capital repaired month after month; he cannot gain, he must lose. Before the employer can be prosperous, prosperity must exist throughout the land.

DEVELOPING THE EXPORT TRADE.

er in the Toronto Globe, on the subject of developing the export trade, says:

Norwegians use all kinds of ships, big and little. The water is too shallow for a large vessel, then and a cargo on the small sized craft. I presume a sailing craft, laden with lumber, would cross the safely. Such a vessel could deliver Canadian at many ports more cheaply than it could be As it stands now, the Norwegians convey direct small ports, whereas Canadians convey to the ports and let small vessels transfer and distribute. Norwegian lumber is loaded and unloaded once, Canadian material is loaded and unloaded twice. I do not mean to apply this statement to all our or to the greater portion, as I have no means of comparison. But it is true in special cases, and the species we should watch.

Canadians have not studied how to cater for the market in small lumber. To watch the Norwe-unload their vessels, and see how they have adapted the material to the purchaser's needs, is to that they have studied closely. When in Australia fully examined into this matter, and there I saw the ships unload, as well as the Norsemen, and in cases I was forced to admire their methods. Doors windows partly made, boxes of soap, fruit cans and parts of things partly made. I say "partly" because means they escape tariff on manufactured goods, yet secured most of the advantages accruing from manufacture. Instead of selling in lump, our people seek to do all the work at home they possibly can furnishing the more labor for our people. And this is one of the best ways of favoring immigration.

I have written on the subject of paper pulp to Canadian papers, notably the Vancouver Daily World, would add a few words in this connection. I have seen many large paper mills in England and find that they furnish most of the "wood pulp." Where the coasters cannot land direct, barges are extensively used. The paper mill men assure me that they would purchase from Canada, if it would pay them to do so. And yet there has been no real test of the Canadian paper. When a large concern is running along evenly business men do not care to go through the ordeal of getting out of the ruts. One manager said the way to make a severe test would be for Canada to buy a large amount—say enough for a full day's run of a mill in some cases would mean several hundred tons. This amount the mill men and some of their best customers could make a thorough trial. Then if quality, quantity and delivery could be regulated so as to there would be a fairly clear road to success.

THE SOFT ELM SUPPLY.

One of the peculiar happenings in connection with this lumber trade is the disappearance of the bulk of the soft elm supply in Michigan. The finest soft, or gray, in the country grows in the northern counties of the peninsula of Michigan, and especially in the counties clustering around Grand Traverse bay. A few years ago this wood came into great prominence as a furniture material, especially in the line of parlor frame making. It was wide and clear, was soft and easily worked, and the ideal lumber to cut up economically in the factory. Of course, it was understood that it was not a fine wood, or capable of being employed in high-grade furniture. But as a common and good material for working furniture within the reach of all, and good enough anybody when well finished, gray elm was a valuable and available kind of lumber. After the use of it gained popularity it was in great demand, all dealers in Michigan lumber bought it, and it stood next to oak in this respect, at Grand Rapids and other furniture centres, in some of the best and consumption. When the panic broke and the furniture trade began to run down, the call for soft elm diminished. Still, since it had been a wood of important operators continued to buy logs and cut it up.

The furniture trade continued to shrivel up as the years succeeded one another, until the demand for elm seriously declined, and prices fell so low that there was no money in handling elm. In the meantime manufacturers of cooper's stock and fruit packages continued to use up material, and had largely utilized

elm. Several stave, heading and hoop factories had been erected up in the elm district, so as to be near the supply. These and the fruit basket manufacturers bought up elm logs in large quantities, and thus made a market for the timber to such an extent that a comparatively small quantity was converted into the thick lumber used in furniture factories.

This diversion of elm to the cooper stock and basket factories was more pronounced last winter than ever before. The absorption went on while dealers and consumers in other lines of manufacture were indifferent, because there was little call from the furniture trade for elm. Nobody was hunting for it, and stocks were left to other courses. But it seems that elm did not go begging amid this indifference. Every available log was bought up. Prices went up, too, so that reports of logs being sold at \$8 and \$11 a thousand are frequent. The cleaning up of the log supply has induced a lively sale of such lumber as could be found at the mills, and it seems that the quantity obtainable at any price is very small, while such as is for sale is held at prices so high that dealers in this market cannot touch it. It looks as if the remaining elm supply will have to be left for the stave and hoop makers and the basket weavers, and that consumers in other lines will have to resort to something else in the shape of lumber. One dealer in this city suggests that the scarcity of elm will give black and white ash a chance to come to the front as market factors. Northwestern Lumberman.

CAMPBELLTON AS A LUMBERING CENTRE.

THE town of Campbellton, N.B., must no longer be regarded merely as a railway divisional point. It has become a very important lumbering centre, and of the new houses that have gone up recently quite a number are for the families of men engaged in the lumber industry, who work in the woods in winter and find employment in the mills in summer.

The growth in importance of Campbellton, N. B., as a lumber shipping centre has been rapid. Time was, and not so long ago, when Dalhousie had all the business. But the erection of mills at Campbellton, the provision of terminal facilities, and some necessary dredging in the channel have changed that, and already this season three steamers and four square rigged vessels have loaded deals at Campbellton, Kilgour Shives and D. Richards shipping each in the vicinity of 5,000,000 feet. Kilgour Shives has a large mill running night and day. W. P. Doherty has a mill above the town cutting deals for Richards, and also a shingle mill. The latter has a shingle mill of his own. W. P. Gray, A. E. Alexander and John Mayor have shingle mills. J. & E. H. Harquail have a sash and door factory. The boom company employ a lot of men. Over the river at Oak Bay, J. D. Sowerby is running a deal mill night and day and also has a shingle mill. The lumber industry is therefore a very important one.

There has been great activity in the shingle mills, and large shipments have gone to the States. With the imposition of a duty, however, the quantity going forward will decrease, and it is thought a considerable quantity of cedar logs will be held over.

Lumbering on the Restigouche differs from the conditions on the Miramichi and the St. John. The logs on the latter streams have been pretty well cleared for a long distance, and each year sees the operator going further away from deep water. On the Restigouche the annual cut has never been very large, though gradually increasing. Most of the timber lands are held by a comparatively few operators, who will be in no hurry to deplete the available supply. This year they had great success with their drives, and except a couple of millions owned by Geo. Moffatt, of Dalhousie, practically all the logs were got out safely. There will be more deals shipped than last year.

MATCH BLOCKS.

THE casual user has little idea of the high class of white pine lumber, and the great quantity thereof, that is used in the manufacture of matches. In former years match blocks from which matches were made were cut entirely from straight-grained white pine uppers. Nowadays, more economy has entered into the deal, and soft white pine timber is cut into bolts of 16 inches in length. The soft and straight-grained and clear portions of these bolts are resawn to a thickness of two inches on shingle

machines. The hard-grained, cross-grained and knotty or defective portions of the bolts are made into shingles. These two-inch pieces are then loosely piled out of doors like so much cordwood, for air-drying. The match-maker will have nothing to do with kiln-dried stuff, as it renders the match stick too brittle and brash for satisfactory results.

When thoroughly dry, these pieces of straight-grained lumber are cross-cut into sections 17 to 24 inches in length (the various lengths providing for various-sized matches) and the pieces are then split into sections of from three to six inches in length, thus producing match blocks. Any piece in which the grain for the length of the block varies more than one-half the thickness of a match from being straight-grained is rejected as being unsuitable for the purpose. Likewise, all pieces showing hard or gummy grain are rejected. The waste, after all the care taken to secure the original two-inch pieces of straight-grained, clear lumber, varies from 25 to 50 per cent.

CLAPBOARDS.

THE word clapboard is a word used in the New England States for a thin, narrow board used to cover the sides of the houses and placed so as to overlap the one below; it has been supposed to be an Americanism, but, like many other Americanisms, it was brought over to this country by the early English colonists. According to very old dictionaries published in England, clapboards were thin boards formed ready for the cooper's use for the manufacture of casks. They were originally "cloveboards," because they were "cloven" out by hand and not made with a saw as other boards are. In course of time the word was abbreviated to "cloveboards," "clapboards" and "clapboards." In the law of the Massachusetts Colony, in 1641, the price of these articles was three shillings for "clapboards" five feet in length. The legal price for the work performed by hired labor was: "If they cleave by the hundred, they shall be paid six pence per hundred for five-foot boards. In other parts of the country the term siding or weather-boards is used to designate this particular product.

PIANO CASES.

ONE of the most important uses for soft elm in a limited way is for piano cases. It is used for the heavy frame in the back of which the action is fastened. This frame must be firm and solid and of good material. The piano case factories buy the soft elm log run, mill cuts out, of course, and two inches thick. Strange as it may seem, considering the slow improvement in business, the piano case makers report the business as fairly lively, much better than it has been for nearly two years.

It is a fact that the majority of piano cases made in this city are made of native wood, black walnut and white oak taking the lead. Red birch with mahogany finish and cherry are used somewhat. Nearly all the black, or so-called ebony, cases are made of good solid Michigan hard maple, colored to stimulate ebony. There is an occasional real ebony case made, but the real wood is hard to work and keep in place. Some rosewood is also used, but it is not as popular as it once was.

Next to black walnut and white oak the wood most used is mahogany. This, as well as all other foreign woods is used mostly in the shape of veneers, with solid native wood, poplar being the favorite. Occasionally a costly case is made of solid mahogany, or some other choice foreign fancy wood. Some use is made of prima vera, or white mahogany, and there are a number of native woods, which are rather rare, used, such as white holly and myrtle. Curly birch, curly and bird's eye maple, burls of various native and foreign woods, in fact all sorts of attractive accidental growths of wood are sought after by the case makers, and are used for panels and ornamentation, if not for the entire case.

The pin boards of pianos, for holding the pins over which the wires are strung, are generally made of quarter sawed hard maple, the quarter-sawing rendering the wood less liable to split from the powerful pull of the wires. One hardwood lumber firm in this city makes a specialty of furnishing this quarter sawed maple by the cargo, nearly monopolizing the trade in the west. Hardwood.

Messrs. J. & P. Ament, of Brussels, Ont., are at present turning out 4800 barrel heads per day at their mills.

THE NEWS.

—A saw mill is being erected at Mossy River, Dauphin District, Man.

—Geo. F. Beech is erecting a steam saw mill at Meadows, Ont.

—Jones & Finch have secured a large timber grant at Fort Steele, B.C.

—Grant & Kerr's new saw mill at Ladnor, B.C., has been completed and put in successful operation.

—Mr. William Mackay, of Ottawa, has taken square timber to Quebec for fifty-three successive years.

—Five steamers are chartered to carry white birch spool bars from Bangor, Maine, to the Scottish thread mills.

—Sequime & Powers, who operate a saw mill in Midway, B. C., have been succeeded by the Boundary Creek Lumber Co.

—Messrs. Thomson & Blakeley have purchased a planing mill property at Port Credit, Ont., and intend putting in additional machinery.

—James McLean, of Bryson, Ont., has lately added new machinery. He purposes enlarging his premises and engaging in the manufacture of furniture.

Ritchie Bros., of Aylmer, Que., will put in a band saw for next season's operations. They are cutting a quantity of dimension timber for Klock Bros.

—Geo. W. Upham, the Tobique lumberman, is erecting a saw mill at Fredericton, N. B. The machinery from his Tobique mill will be transferred to the new mill.

—As the result of a reduction of ten per cent. in wages, the employees of James Murchie & Sons, Calais, Me., recently went on strike, but have since returned to work.

—The lumber business employs more persons than all other industries in the United States. By the census of 1890, it is shown that 373,085 are receiving a livelihood from it.

—Messrs. DeCew, late of Essex Centre, Ont., have made application for 160 acres of timber property at Arrow Head, B.C., with a view of erecting a saw mill at that point.

—In the ten months ending June 30, 1897, Mexico imported lumber and timber from the United States valued at \$1,618,506, a gain of \$367,620 gold value over the previous ten months.

—The large iron smoke stack of Gillies' saw mill at Braeside, Ont., recently gave way. About thirty feet broke off at the top and fell on the platform below. A horse belonging to the firm was killed.

—A writ has been issued against Harriet Murray, as an executor of the estate of the firm of Murray & Cleveland, to recover the sum of \$739 for lumber sold to the firm by the Casselman Lumber Co., of Ottawa.

—An electric light plant has been installed in the Aberdeen Mills at Fredericton, N.B. The proprietors are well satisfied with their investment, which makes it possible for the mills to almost double their former capacity.

—The Rat Portage Lumber Co., of Rat Portage, Ont., find such a demand for their lumber, doors, sash, etc., that they are obliged to run their mills night and day. The principal demand is from the west, while the town orders and those from the district of Rainy River have exceeded those of any former season.

—Mr. Robert Ward, of the Victoria Lumber Co., Chermannus, B.C., has returned from England, after an absence of two years. Mr. Ward states that for the Jubilee celebration over 76,000,000 superficial feet of lumber—an amount that would represent 75 shiploads—was used for putting up the stands and seats for spectators.

—A person by the name of McAlphine, representing himself as an agent of Smith & Elger, a reputable firm of Webbwood, Ont., recently engaged about thirty men in Toronto to go to the lumber mills at that place. He exacted some \$50 from the men as commissions, but when they reached the Union Station McAlphine could not be found.

Mr. Greenway is credited with having made the statement that American lumber can be laid down at Manitoba points at \$5 or \$6 per thousand feet less than would be paid for the Canadian material of like grades

and dimensions. This statement is disputed by Mr. D. C. Cameron, of Rat Portage, a gentleman well versed in lumber matters.

CASUALTIES.

—Winfield Harrison, while rolling logs at Griffith's cheese box mills at Thornbury, Ont., accidentally fell into a vat of scalding water.

—Robert Veitch, of Clarksburg, met with an accident in Peter's lumber mill at Parry Sound which caused his death. A board, falling from the top of a lumber pile, struck him in the body.

—J. A. Hadley, of the S. Hadley Lumber Co., Chatham, Ont., was superintending the loading of some shingles, when the pile fell upon him, burying him under the heap. Fortunately he escaped without serious injury.

Two little boys, sons of Mr. Blanchard, employed in Adam & Burns' mill at Bathurst, N.B., were playing around the mill, when they got into the sawdust shoot, were carried some distance and terribly injured.

TRADE NOTES.

A shingle machine, manufactured by the Lloyd Manufacturing Co., of Kentville, N.S., was recently shipped to Huntingdon, Que.

The Waterons Engine Co., of Brantford, Ont., are installing a 40 horse power engine and boiler in the lumber and planing mills of Thomas Bros. at Jerusalem, Ont.

The new lumber mills and grounds of Messrs. D. & J. Ritchie & Co., at Newcastle, N.B., have been equipped with an electric light plant by John Starr, Son & Co., Ltd., Halifax. This installation consists of about 200 incandescent lamps of 16 and 32 c.p., and by it the output of the mill will be much increased. Messrs. Starr make a specialty of installing electric plants in lumber factories, and many of these in Nova Scotia and New Brunswick have been equipped by them.

The Dodge Wood Split Pulley Co., with works at Toronto Junction and head office and sales rooms at 74 York St., Toronto, report being quite busy and running full handed on wood pulley outfits for saw mills and power plants throughout the Dominion. The company have equipped the Montague Paper Co.'s saw mill at Lake Megantic, Que., with a full set of pulleys, including some very large sizes for heavy power. They are also supplying the pulleys for the new saw mills at Fenelon Falls and for Gillies Bros.' mill at Sand Point, and have some very large and heavy wheels in work for the electric plant at Rat Portage. The Dodge Co. patent split friction clutch is also becoming well known among the large mills and repeat orders are coming in. The company say that the large users throughout Canada are becoming more familiar with the merits of the Dodge pulley, with the result that the demand is increasing from that quarter. The Dodge Co. have issued a most complete 300 page catalogue covering their full line of power transmission specialties, which every mill man should have. It will be mailed free on application.

PUBLICATIONS.

We have received a copy of a valuable book, entitled "Credits, Collections and Their Management," which contains many department forms, and is published by the Lawyer and Credit Man, of 178 Fulton Street, New York. The author is Mr. W. H. Preston, president of the National Association of Credit Men of the United States, which fact alone is a guarantee of its usefulness. The subjects embraced by the book are treated in a very able manner, the author adding to his own experience a study of the methods and forms in use in many of the best departments of the country.

Mr. James Dollar, of San Francisco, California, at one time a resident of Ontario, has favored THE LUMBERMAN with a handsome souvenir of the timber industry of California, entitled, "The Home of the Redwood." It is published by the Redwood Lumber Manufacturers' Association, and the letter press and numerous half-tone illustrations which it contains convey to the reader a fair conception of the methods of lumbering on the Pacific coast. Testimonials of the good qualities of redwood and comparative tests of pine and redwood for paving purposes are also given.

WOOD PULP DEPARTMENT

THE MASTERMAN PULP MILL AT CHATHAM, N. B.

(COMMUNICATED.)

THE Masterman Sulphite Fibre Company's pulp mill, which has recently been sold to Mr. Albert E. Reed, of Maidstone, England, for \$185,000, is situated at Mill Cove, on the Miramichi river, opposite the town of Chatham, N. B., and comprises nine massive buildings of wood, resting on stone foundation, all covered with iron, and most substantially constructed. The store room is 100 ft. x 50 ft.; the paper room, 150 ft. x 50 ft.; the tubular boiler house and machine shop, 104 ft. x 44 ft.; the Galloway boiler house, 50 ft. x 40 ft.; the digester room, 90 ft. x 31 ft.; the wood room, 70 ft. x 50 ft.; the acid plant, 70 x 60 ft.; the sulphur burning room, 70x40 ft., and the riffler building, 100x20ft.

In the paper room is a fine cylinder paper machine, with twenty-one dryers 36 inches in diameter, built by John Bertram & Son, Dundas, Ont., and which works beautifully. Immediately behind this machine are ten noiseless suction screens for screening the pulp, built by J. M. Ruddock, of Chatham, N.B., and behind these is a 60 h.p. Leonard Ball automatic cut-off engine, which drives the screens and paper machines, and which was built by E. Leonard & Sons, of London, Ont. Everything in this room is very handy, and when the rolls of pulp are taken off the winder they are in the store room. The foundation for another paper machine was also completed in this room.

From the paper room we pass into the machine shop and tubular house, which is a stone structure. Here is a 40 ft. gap lathe, with a 22 ft. bed, an 18 in. x 8 ft. bed lathe, a 30 in. vertical drill, and a 30 in. x 8 ft. planer. A large portion of the machinery connected with the mill was built in this shop. At the other end of this building are two tubular boilers of 110 h.p. each, which supply the steam for the paper room, wood room and acid plant, and were built by Leonard & Sons.

Next we come to the riffler building, in which the pulp ruffles over boards 6 in. high, 4 ft. wide, and 4 ft. apart, for 100 ft., there being three of these boards. These boards catch a large quantity of dirt which settles from the pulp as it flows gradually along and into the screens in the paper room. At the head of this room are two screens which catch quite a quantity of dirt from the pulp before it enters the rifflers. Below these rifflers are two stock tanks, into which the pulp is pumped from the blow tanks, and from these tanks the pulp can be used as required.

The next building is the Galloway boiler house, where the steam is generated for cooking the pulp. Here there is a large Galloway boiler of 7 ft. in diameter and 32 feet long, which carries 100 lbs. pressure, and was also built by Leonard & Sons.

From the boiler house we pass into the digester room, where the pulp is cooked. Here are three large digestors, built by Leonard & Sons, 9 ft. in diameter and 32 ft. long, built of 7/8 in.

1897

and lined with tile. It was in these digestors that the finest sulphite pulp ever produced on this continent was cooked in twelve hours. They were built from drawings by Mr. T. R. Allison, the chief engineer of construction. Above the digestors is a large chip bin for holding the chips when prepared for the digestors. Large pipes extend from the chip bin floor to within 3 feet of the neck of the digestors, so that when filling a digestor a light wooden chute is pushed in between the hopper and the neck of the digestor, a pipe is drawn, and the chips fall from the bin into the digestor in a remarkably quick manner. One of these digestors can be blown off, filled with chips and acid, and started cooking in the short time of thirty minutes. The wood room is next reached. In this room the wood is prepared for the digestors; logs are drawn up the haul-up from the wood room into the wood room, then rolled onto end-chains and drawn up against the saws, cut into lengths of 30 in., then barked on the bark-machines, the bark dropping into a conveyer and being carried into the furnaces of the tub-boilers. After the bark is taken off, the chips go to the wood splitter, where they are split, then to the boring machines, where all the chips are bored out, then to the chipper, where they are cut up and fall through the floor into the chip breaking machine, which breaks all the chips up to a uniform size; from the breaker they fall onto the shaker or screen, where all the saw dust and long slivers are shaken out. This shaker shoves the chips on to a short conveyor, which carries them into the chip bin above the digestors. It will readily be seen how well this machinery was planned, by having the material drop from one machine to another, thus doing away with all elevators and a large amount of machinery and expense. From the wood preparing room we pass into the acid plant and sulphur burning room, where the acid is made for cooking the pulp. It is all run

by gravitation, doing away with all acid pumps, which are very expensive to keep in repair in a sulphite mill. Starting at the top of the upper floor, the lime is slacked in an iron tank, then run into two mixing tanks, where water is added to bring it to the proper gravity, and it is ready to enter the acid absorbing tanks, of which there are three in each system (there being two systems.) When the lime and water is let into the first or upper absorbing tank, it continues its flow into the second and third ones, then flows into the settling tanks and from these into the storage tanks, where it is ready for use. From these storage tanks it is drawn off as required in the digester room, all flowing by gravitation. During the flow of the lime and water through the acid absorbing tanks it is met by the sulphur gas from the burners, which is drawn through the liquor by large vacuum pumps, which brings the lime and water up to the proper acid test.

The heavy wood room machinery, such as the barking machines, splitter, chipper and grinder, was built by John Bertram & Sons, of Dundas, while the shatting, boring machines, acid plant, etc., were built on the premises by Mr. T. R. Allison, who designed the mill. The complete mill, with property, cost in the vicinity of \$100,000, and was built in ten months. The buildings are sufficiently large to manufacture thirty tons of pulp in twenty-four hours, the machinery having a capacity of fifteen to eighteen tons. It is estimated that the additional machinery required for a thirty-ton mill could be installed at a cost of \$30,000.

PULP NOTES.

The Chicoutimi Pulp Company are making rapid progress with the construction of its mill at Lotbiniere Falls, Que. From 250 to 300 men will be employed.

Mr. J. S. Larke, trade commissioner in Australia, writes that the first orders for Canadian pulp wood are being filled, and he is sure there is a better opening for Canadian paper.

The St. Raymond Company, with a capital of \$50,000,

has been incorporated at Montreal. One of the objects of the company is to manufacture wood pulp and articles made therefrom. Among the promoters are John Macfarlane, Walter Drake and George Finley.

The Laurentide Pulp Co., of Grand Mere, Que., will at an early date add a three machine paper mill to their pulp plant, with the object of cultivating an export trade with Great Britain. It is reported that an order for the machinery has been placed with American manufacturers.

A rumour is current that in the near future the erection of a large pulp mill at St. John, N.B., will be commenced. The amount to be invested is variously stated from \$100,000 to \$150,000. Should the proposition be carried out, it will certainly prove a profitable investment and of great benefit to the city.

An exchange says that the first raft of pulp wood from Canada by way of the great lakes is expected to arrive at the Long Tall Point docks of the Pulp Wood Supply Company, near Green Bay, Wis., in a few days. The raft will contain 5,000 cords and others will follow in rapid succession from the Georgian Bay district.

In Germany and Russia railroad rails have been successfully made of entirely paper material. The mode of making the rails consists in the employment of moulds and powerful pressing machines, the former for shaping the rail, and the latter for consolidating purposes. Wood pulp has not been tried with any marked success as yet, but ordinary pulp from rags, rope stock, etc., answers the purpose.

The Paper Trade Review of London, England, says: Scandinavian wood pulp prices continue to rule firm, but there is a feeling of uneasiness in the trade as to how long quotations will be maintained. Several makers view with concern the steady increase in the consumption of Canadian pulp on the part of English mills, and the starting up of new undertakings in Canada with British capital. Any diversion of trade is partly attributed to the action of certain British wood pulp firms, who also act as agents for Scandinavian mills. The latter fancy they have a grievance.

The Conference Committee of the Senate and House of Representatives of the United States Government have reported a retaliatory clause as follows: "That if any country or dependency shall impose an export duty upon pulp wood exported to the United States, there shall be imposed upon printing paper when imported from such country or dependency an additional duty of one-tenth of one cent per pound for each dollar of export duty per cord so imposed, and proportionately for fractions of a dollar of such export duty."

MANUFACTURERS

Of Pulp Machinery should place their announcements on this page. The pulp industry is a growing one, and a number of new mills are likely to be erected in the near future. Write for card of advertising rates.

THE CANADA LUMBERMAN
Toronto

PULP MACHINERY

We are prepared to supply Pulp Grinders, Wet Machines and Baling Presses. . . .

WRITE FOR ESTIMATES.

Robb Engineering Co., Ltd., Amherst, N.S.

THE MILLS GRINDER
THE CROCKER TURBINE
For Pulp Mills

The Jenckes Machine Co.

33 LANSDOWNE AVE.,

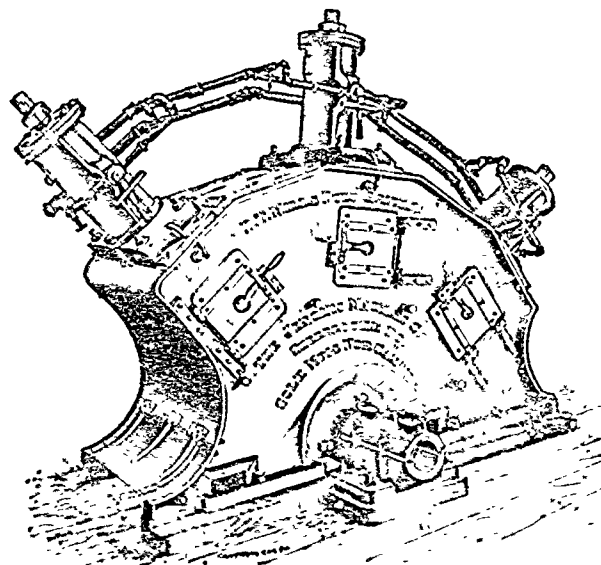
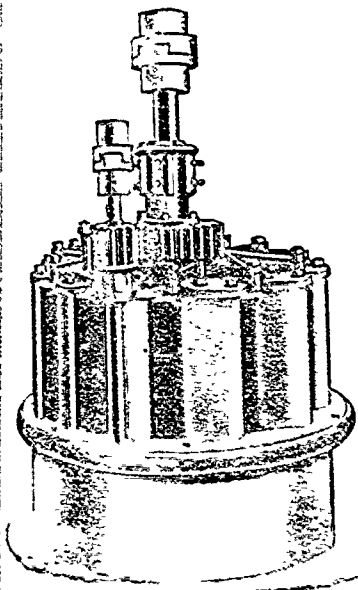
SHERBROOKE, QUE.

Builders of . . .

WET PRESSES - SCREENS

. . . AND . . .

GENERAL PULP MILL MACHINERY



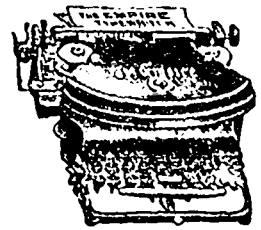
GIANT FIR TREES.

Mr. J. Sprott, superintendent of roads for the district of New Westminster, B.C., has received, for consignment to Kew Gardens, London Eng., the great botanical, horticultural and forestry display centre, officially maintained by the British government, a splendid cross section of one of British Columbia's giant Douglas firs. The section measures 6 feet 9 1/2 inches in diameter, and is without knot or blemish. The fir, whence it came, stood 268 feet high, and the selected specimen was sawn at a point 11 feet from the base. The tree grew in the valley of the Squamish in the Vancouver coast district. This section of giant fir will, at Kew Gardens, be seen during each year by several thousand visitors, including botanical and forestry experts from all parts of the world, and should, together

with the giant flagstaff of Douglas fir which is to float the Canadian flag over the rifle shooting camp at Bisley this year, give Englishmen a better notion of the magnificent timber of the Dominion's Pacific province.

The wooded area of British Columbia is estimated at 285,000 square miles, and includes 40 kinds of timber. These forests will increase in value year by year as the supply diminishes in the east.

Supplementary letters patent have been issued whereby the total capital stock of the Laurentide Pulp Company, Limited, is increased from three hundred thousand dollars to nine hundred thousand dollars.



Equal to the Best. Have the Best of other standard machines. THE EMPIRE. Price \$55.00. Send for literature. The WILLIAMS MFG. CO. Montreal, P.Q.

FOR SALE

PORTABLE ENGINES—1 Abell 16 h.p.; 1 White 14 h.p.; 1 Burns 14 h.p.; 1 L. D. Sawyer 13 h.p.; several others thoroughly rebuilt. Also Portable Mills, etc.

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RAILS FOR TRAMWAYS

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

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

JAMES W. WOODS

Manufacturer of

Lumbermen's Supplies

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A Few of Our Specialties

- BLANKETS—Cotton and Jute. OVERALLS—Etoffe, Tweed and Mac-kinaw. BAGS—Cotton and Jute. PANTS—Etoffe, Tweed and Mac-kinaw. CARDIGAN JACKETS—Etoffe, Corduroy, Tweed and Rubber. PIPES—Complete, including Case and Rubber. DRAWERS—Knit, Flannel and Kersey. SHIRTS—Under and Top, of Tweed, Kersey, Flannel and Mac-kinaw. GLOVES—Buck, Kid and Wool. SOCKS—Hand and Machine Knit, 4 and 6 lbs., Ribbed. RODGERS & SON. SOCKS—Long. MOCCASINS—Buck and Beef. Stockings—Long. MITTS—Buck and Leather. Smocks, Towels, Ticks, Toggles, and full line of Fancy and Dry Goods. MITTS—Hand Knit Woolen, 3 and 4 lbs.

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OUR EXTRA HAND-MADE AXE

This Axe stands better in frosty weather than any axe made. Send for sample. Can supply any pattern.

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If you are not satisfied with your present site, or if you are not doing quite as well as you would like to, why not consider the advantages of a location on the Illinois Central R. R. or the Yazoo & Mississippi Valley R. R.? These roads run through South Dakota, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Kentucky, Tennessee, Mississippi and Louisiana, and possess

FINE SITES FOR NEW MILLS BEST OF FREIGHT FACILITIES CLOSE PROXIMITY TO

COAL FIELDS AND DISTRIBUTING CENTERS AND INTELLIGENT HELP OF ALL KINDS MANY KINDS OF RAW MATERIAL

For full information write to the undersigned for a copy of the pamphlet entitled 100 Cities WANTING INDUSTRIES

This will give you the population, city and county debt, death rate, assessed valuation of property, tax rate, annual shipments, raw materials, industries desired, etc. To sound industries, which will bear investigation, substantial inducements will be given by many of the places on the lines of the Illinois Central R. R., which is the only road under one management running through from the North-Western States to the Gulf of Mexico. GEO. C. POWER, Industrial Commissioner I.C.R.R. Co., 506 Central Station, Chicago.

CANNED FRUITS 2 lb., 3 lb. and Gallon Tins. CANNED VEGETABLES 2 and 3 lb. Tins. CANNED MEATS 1/4, 1/2, 1, 2, 6 and 14 lb. Tins.

When in need of supplies TRY US. We are making a specialty of this class of business.

H. P. ECKARDT & CO. TORONTO Wholesale Grocers

Galt Machine Knife Works



MACHINE KNIVES OF EVERY DESCRIPTION FOR Woodworking Machines. ... Send for Price List ... PETER HAY Galt, Ont.

OAK TANNED BELTING THE J.C. Mc LAREN BELTING CO TORONTO 20 FRONT ST EAST TELEPHONE 475 MONTREAL

1897

LUMBER OF THE FUTURE.

It is difficult to conceive of anything for which lumber, or if you please, pulp lumber, cannot be adopted, says an exchange. Tubs and pipes are no novelty, but boards an inch thick and six inches wide are not so familiar objects, while they have been produced, and at a first cost scarcely above that of the price for which ordinary No. 1 common pine lumber will retail. It is some years since the writer has seen specimens of this lumber, but that it has been produced is evidence that as occasion demands it will come to

the front. So, too, with doors, which a recent patentee proposes to mould under great pressure from pulp, which is colored while in the soft condition, to give rich effects in paneling and in frame, while securing all the strength desirable in a door.

So, too, with wall brackets, picture moulds and balusters, including frieze and cornice, which can be moulded hollow, and with a waterproof cement which is incorporated in the pulp, is claimed to withstand the weather as well as the terra cotta, which forms so important an adjunct

to the steel structures for which our great cities are becoming noted. So, too, mosaic blocks for inlaid floors may be colored to represent marble, oak, or any other desirable appearance, and being compressed to great density, will present a good wearing surface. Pulp, moulded as a covering to steel or iron posts, is claimed, from its comparatively non-inflammable character, to be equally with terra cotta adaptable as a protecting and ornamental shield, which can be as highly finished as may be desirable to the most æsthetic taste.

SADLER & HAWORTH

FORMERLY

ROBIN, SADLER & HAWORTH

Manufacturers of

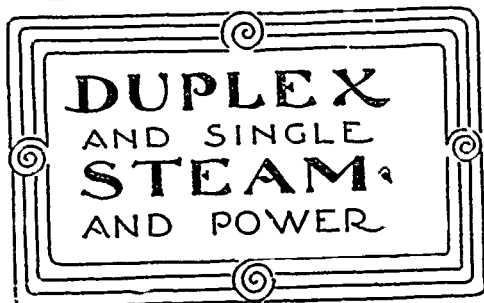
OAK-TANNED LEATHER BELTING

MONTREAL AND TORONTO

Orders addressed either to our Toronto or Montreal Factory will have prompt care.
Goods will be forwarded same day as order is received.

Pumps

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The Northey Mfg. Co. Ltd.
TORONTO

THE LAURIE ENGINE CO. - MONTREAL
SOLE AGENTS FOR PROVINCE OF QUEBEC.

THE STAVE INDUSTRY IN CANADA.

THE United States Consul at Chatham, Ont., commenting on the early extinction of the stave industry in Canada, says :

The only elm fit for cooperage stock found in British North America lies in the counties of Kent, Essex and Lampton, and of the original forest only 150,000,000 feet of stumpage remain. It has been depleted not only by the demands of the Sutherland, Innes Co., with its seventeen mills, but by smaller manufacturers, and millions of feet are yearly rafted to the United States. The rock elm found elsewhere in Canada will not do for staves, and with the exhaustion of the 150,000,000 feet above referred to, operations here must entirely cease. It is estimated by the company mentioned above that their mills will

be idle in three years, and 1900 will see the elm stave manufactured only in the United States. They claim, furthermore, that the end of the use of elm for staves is in sight and cannot possibly be deferred for more than a quarter of a century. The bulk of this timber left suitable for staves lies in Michigan and Indiana, and that gone, they expect to see the cottonwood used for headings and the gum and red oak for staves, unless some other form of barrel or package first comes into use.

made a mistake. I am of no use to body. I have failed for half a million, with assets.

"So I heard."
"You know it, and yet you say I can be service to you?"

"Yes, sir, I beg you will not refuse."
"But what can a miserable bankrupt do for anyone?"

"I want you to tell me, sir, how you get much credit?"—Timber Trades Journal.

HOW DID HE GET THE CREDIT?

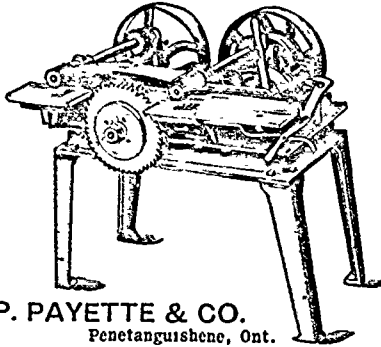
STRANGER Beg pardon, sir, but you have the power to do me a great favor, and one that I will repay.

Bankrupt (sadly) I! I am afraid you have

Cassier's Magazine for August is a special shipping and marine engineering number, in which the story is told of how a modern steamship is built, launched and fitted up with machinery. There are nineteen articles, amounting to over 300 pages of text, with nearly 400 beautiful engravings.

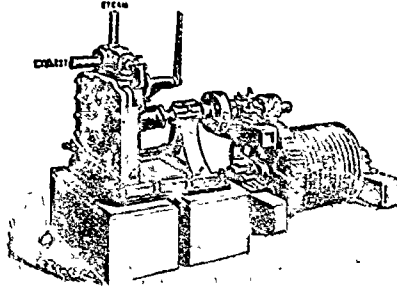


PAYETTE'S PATENT LATH MILL



P. PAYETTE & CO. Penetanguishene, Ont. SAW MILL MACHINERY

THE DAKE STEAM FEED



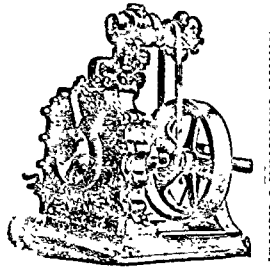
Embodies the following Advantages: SIMPLICITY OF CONSTRUCTION, POSITIVE AND EASY MANAGEMENT, ECONOMICAL USE OF STEAM, SMALL SPACE OCCUPIED, CHEAPNESS, EASY ADAPTATION TO EITHER NEW MILLS OR THOSE NOW IN USE.

The movement of the engine in either direction is under the absolute control of the Sawyer, thus accommodating the speed of the feed to the size of the log. Mill men who have used other makes of Steam Feeds comment favorably on the economical use of steam of our feed over others. Write for Catalogue and full particulars.

The Phelps Machine Co. - Eastman, Que

The Dake Engine

For Running Dynamios in



STEADY AND EVEN MOTION Also for Attachment Direct to Fans, Blowers, Centrifugal Pumps, Filing Room Machinery. Correspondence Solicited.

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CELEBRATED NICKEL-STEEL CROSSCUT SAWS

We lead all others in High-Grade Crosscuts and Saw Tools. A cheap, thick, clumsy saw is dear at any price.



We also manufacture Axes, Files, Saw Joints, Cant Hooks, Steel and Brass Bedsteads. We have a cheap bed with mattress attached suitable for shanties.

The price of a good saw is soon saved in the extra work it will do.

This SAW SET is the BEST EVER MADE. It is Simple and Strong, and is guaranteed to do its work perfectly.

Be sure you use Mc-MILLAN & HAYNES SAWS, They are all warranted to give entire satisfaction.

We handle the Famous KELLY'S AMERICAN AXES. Their Flint Edge guaranteed to stand cold, frosty weather better than any other axe made.

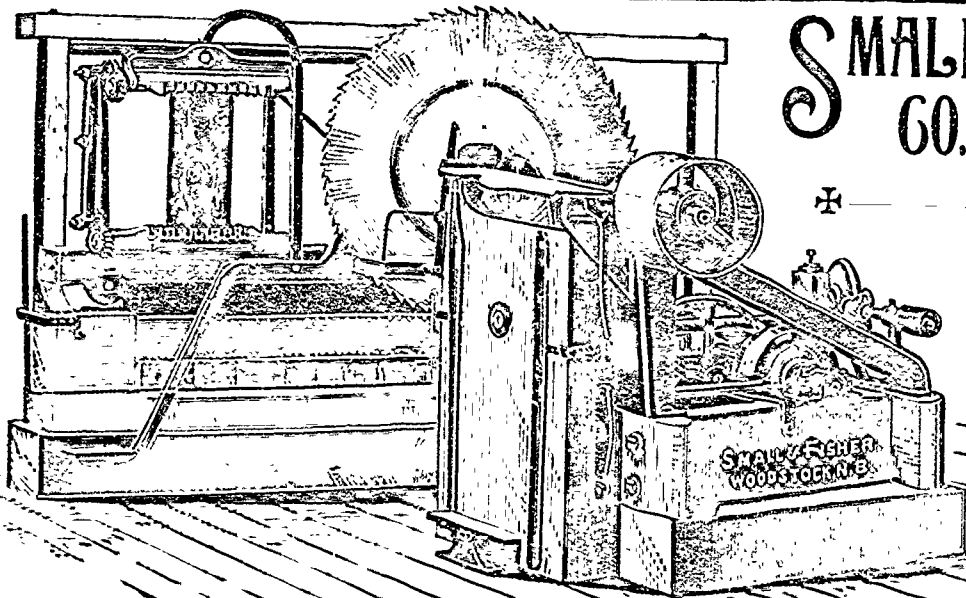
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- 2 150 Light Dynamios
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Complete with Rite... In the thing than Isolated Plant in a Factory or Mill. The Dynamios are perfectly new and guaranteed to give entire satisfaction.

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SMALL & FISHER CO., Ltd.

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Up-to-Date

Saw Mill Machinery

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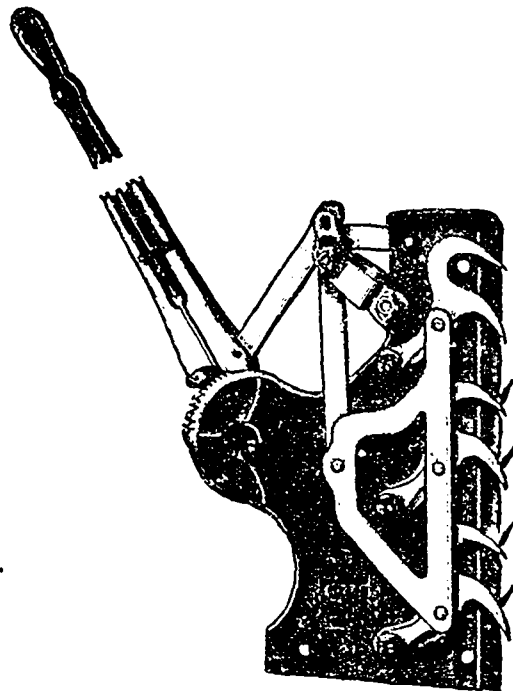


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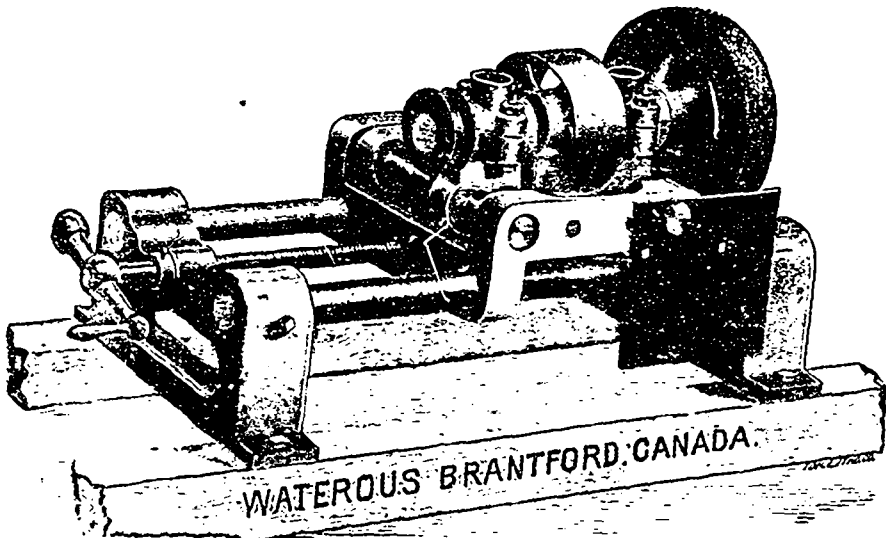
NEW ALLIS BAND MILL



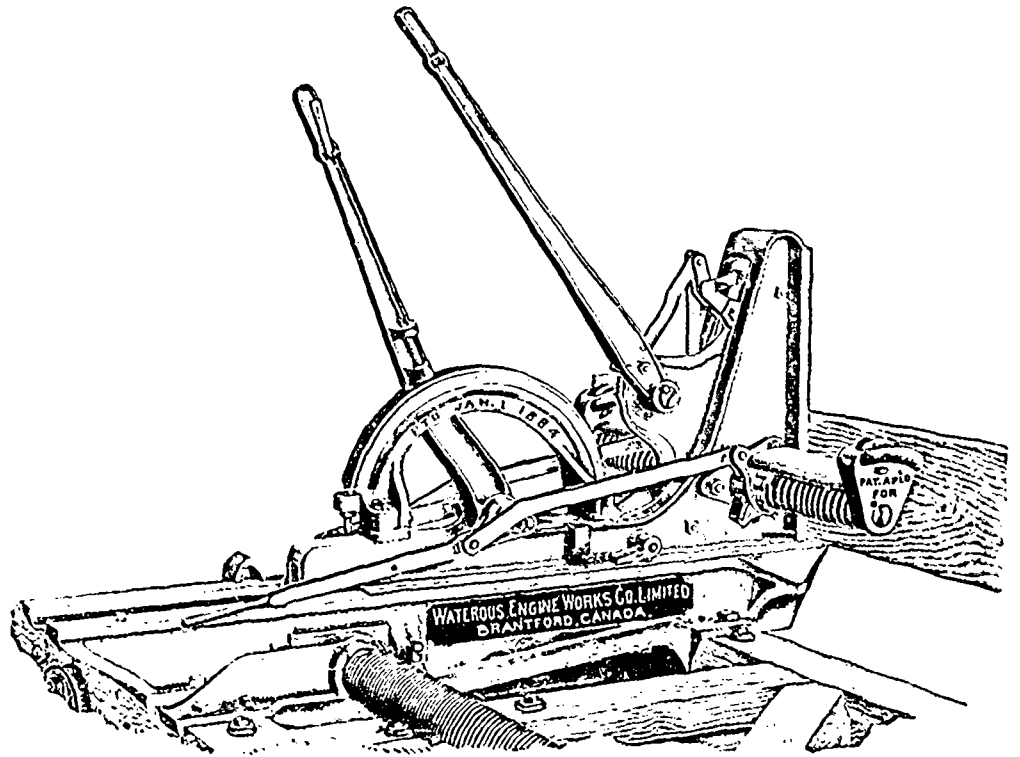
New safety device for holding upper
Guide on Band Mill to Guide
Arm. Can be applied
to any make of
Band Mill.



Improved Double Tooth "Reliance" Dog.
Made entirely of Steel.
Can be Bolted to the Knee or Standard of any Mill



Band Wheel Grinding Machine
For Grinding and Truing Up Face of BAND MILL WHEELS in Mill.



Automatic Dogging and Receding Wings.

PATENTED DECEMBER 17, 1895.
For Straightening and Holding Last Board.

Specialties

- Log Band Mills and Band Re-Saws.
- Circular Mills, single or double, and Circular Re-Saws.
- Improved Head Blocks.
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- Gang Edgers, for all classes of work.
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- Steam Log Rollers and Loaders.
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- Steam Feed, direct action, 7, 8, 9, 10 and 11' cylinders, any length.
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- Endless Detachable Chain Log Haul-up, best in use.
- Lath Mill and Bolters.
- Live Rolls.
- Saw Stretching Machines.
- Band and Circular Saw Tools.
- Band Saws, best quality, prompt shipments.

All kinds of Steam Appliances for the Economical Handling of Logs and Lumber

Pulpwood Machinery

- Cutting Off Machinery Two men will cut 60 cords per 10 hours and deliver to barkers.
- Barkers with automatic attachment Two men will take from carrier and four men will bark and deliver to carrier to car sixty cords per 10 hours.

FULL LINE OF PULP MAKING MACHINERY
WATER WHEELS, WATER WHEEL GOVERNORS

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Brantford, Canada

Correspondence Solicited.
Catalogue on Application.

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R. H. SMITH CO., LTD.

— St. Catharines, Ont. —

We are the Sole Manufacturers of Saws
under the

Simonds' Process

in the Dominion of Canada.

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.

MILL STREAM, QUE., on I. C. R'y, December 17th, 1894.

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

DEAR SIRS, - 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.

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

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

DEAR SIRS, 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.

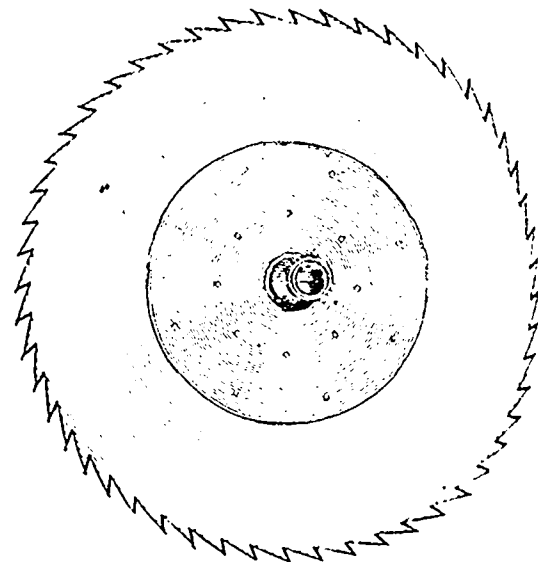
CLAVERING, ONT., May 31d, 1897.

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

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 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.



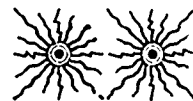
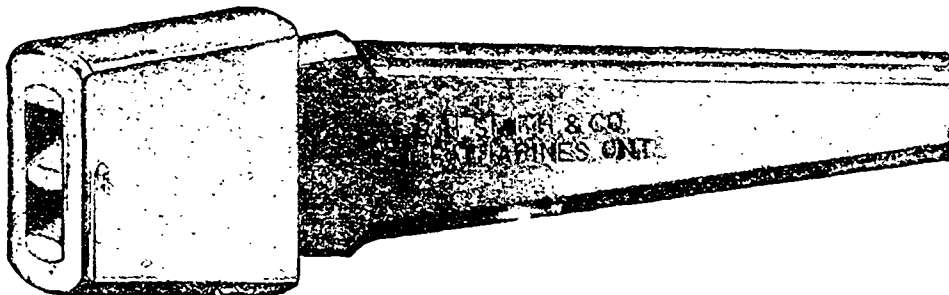
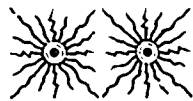
THE "LEADER"
CROSS-CUT SAW

These Saws are made from the best DUBIE REFINED SILVER STEEL, warranted four gauges thinner on back than front, and the only Saws on the market that are a perfect taper from the points of the teeth to the back, and require less Set than any other Cross-Cut Saw.

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.

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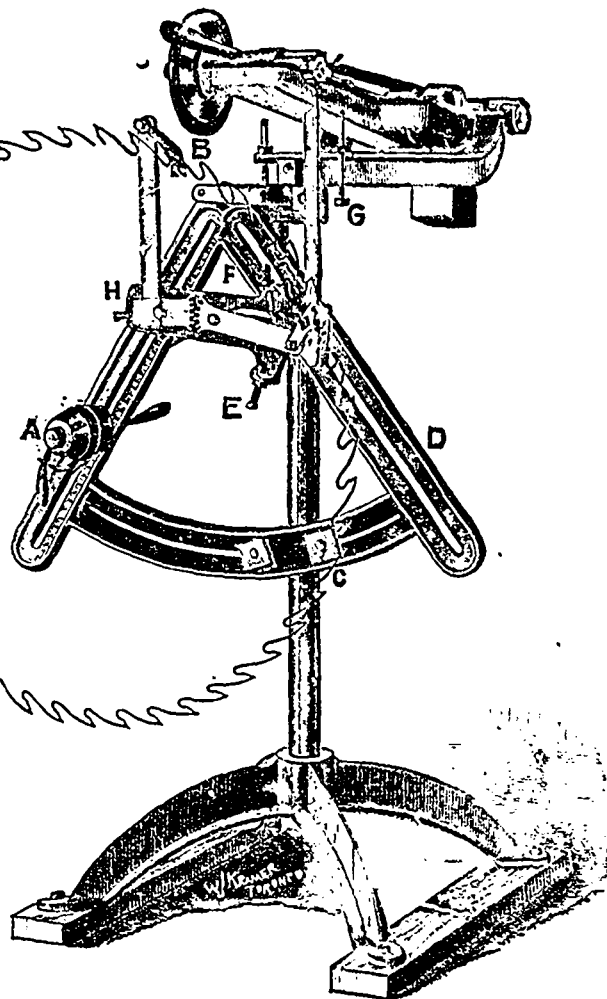
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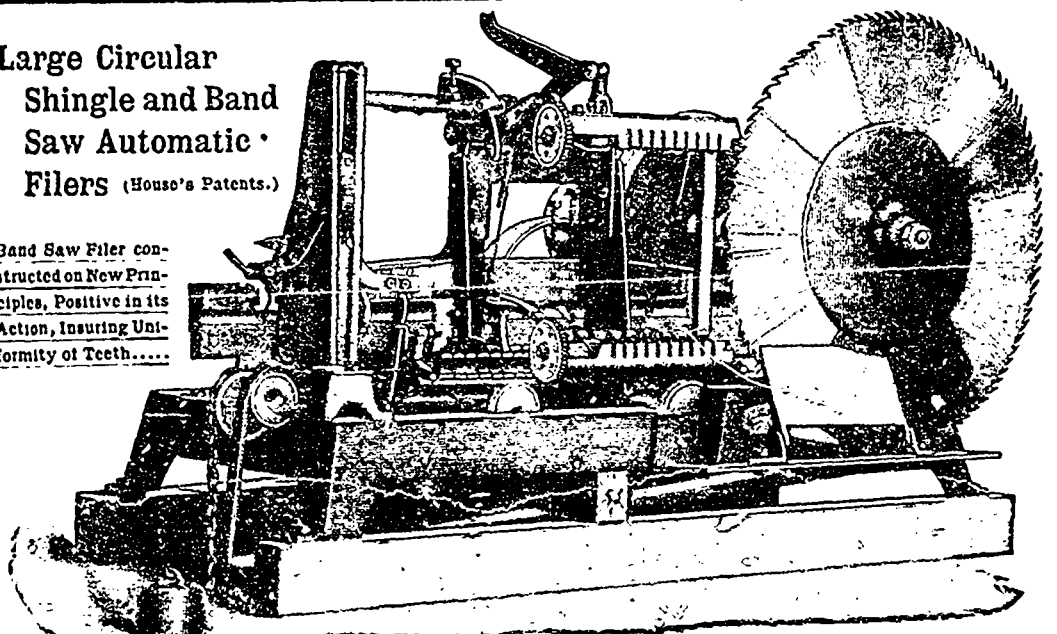
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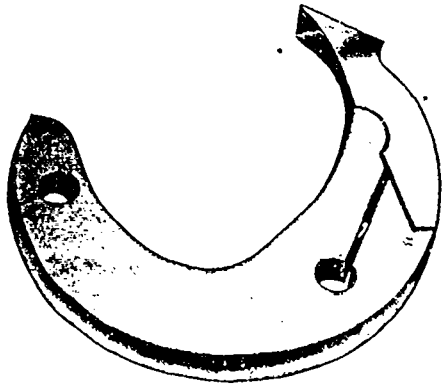
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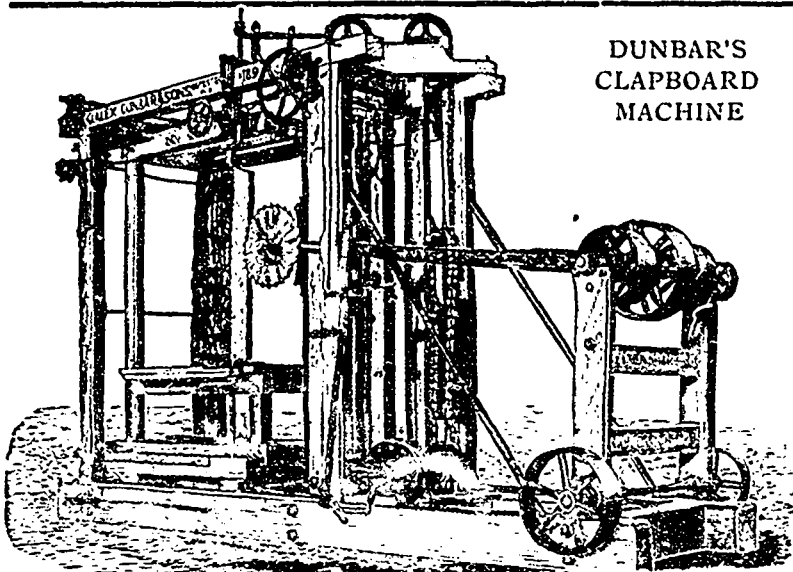
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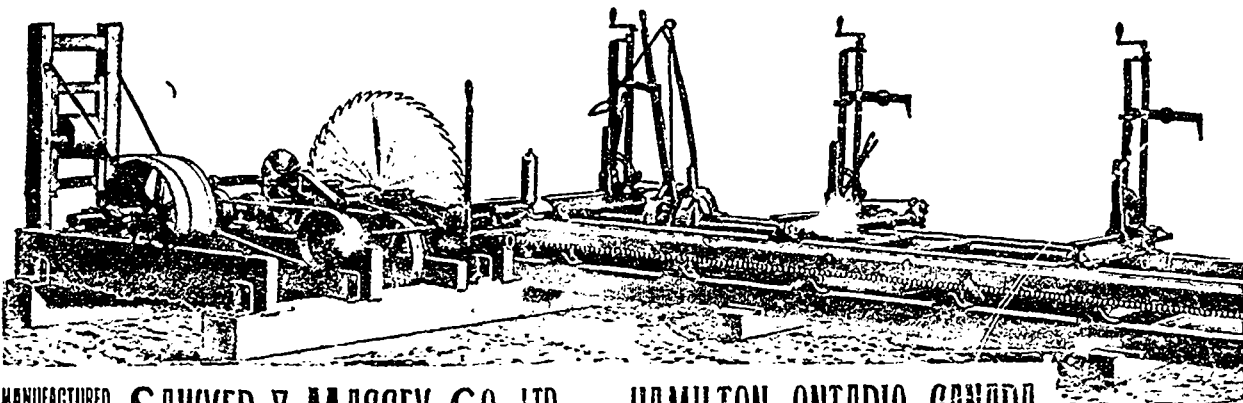
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