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THE CANADIAN LUMBERMAN

WOODWORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

TORONTO, CANADA, JUNE, 1900

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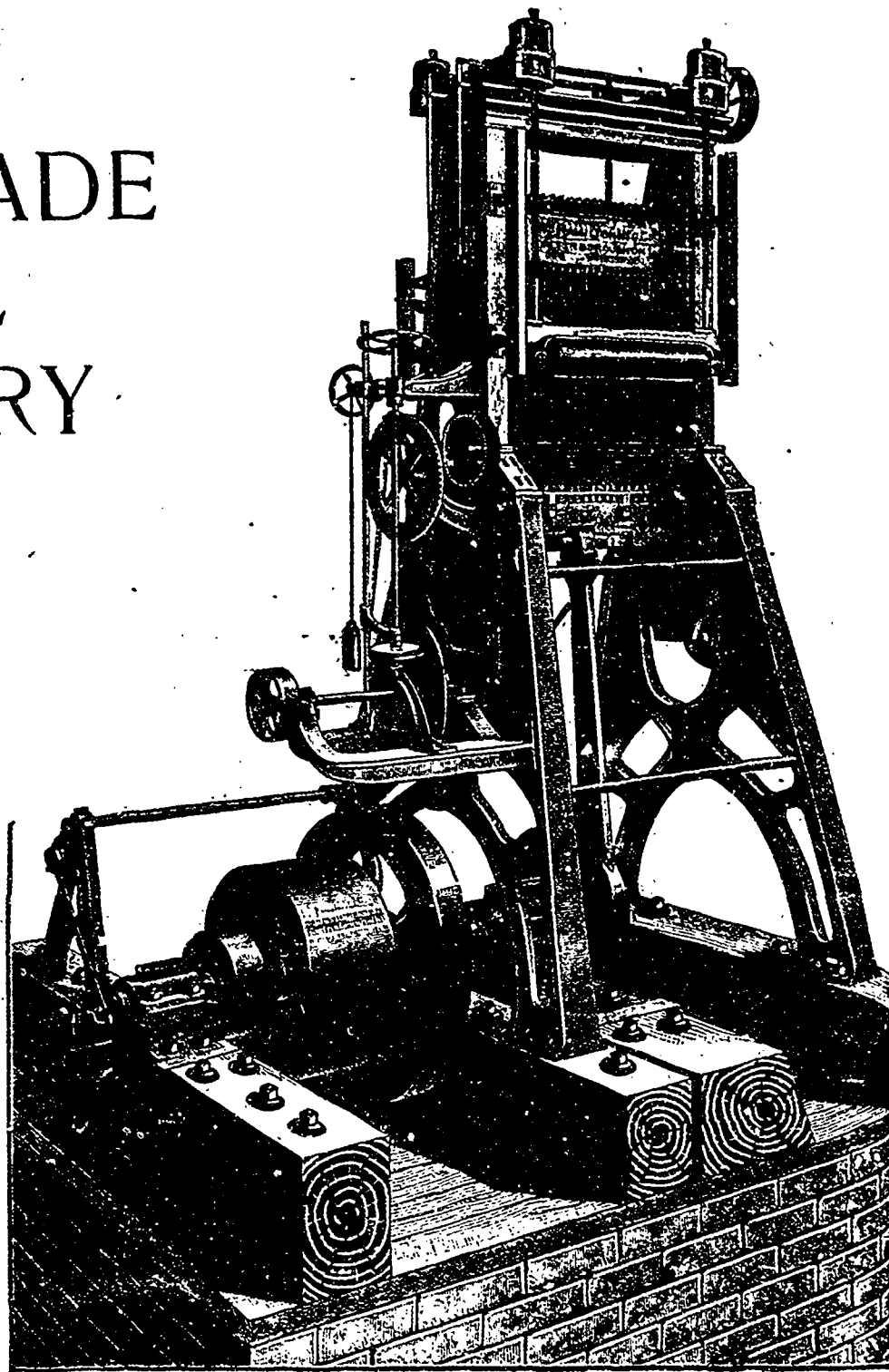
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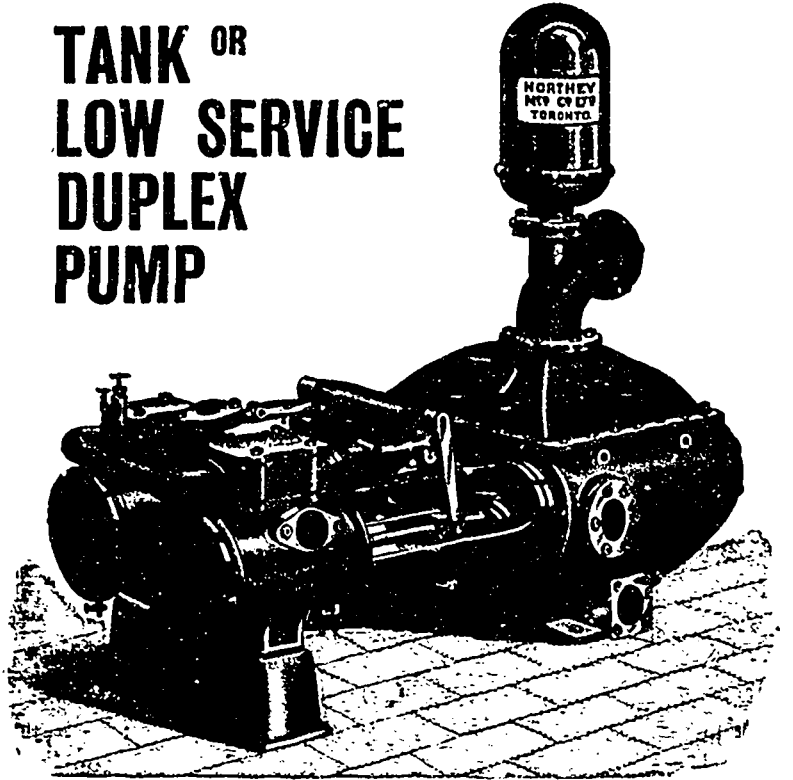
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THE CANADA LUMBERMAN

VOLUME XXI
NUMBER 6

TORONTO, CANADA, JUNE, 1900

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AFTERMATH OF THE FIRE.

(Continued from the CANADA LUMBERMAN.)

The accompanying photographs will enable the reader to form a reasonably correct idea of the magnitude and extent of the lumber industry of the Chaudiere which was fire-swept in the great Ottawa-Hull fire. A true portrayal of the work of destruction when at its height is given. Where the Quebec and Ontario shores of the Ottawa river loomed up imposing in their flanking of dense lumber piles, there is now but a vast area of desolation—even the crib work on the river front was swept away, leaving the naked limestone foundation exposed, a darkened wall and waste. It is only a question of months, however, until the Chaudiere resumes, in part at least, its former importance as a lumber centre. The output of the mills is as great as ever, and the adjacent woods are being piled high with it. The Bronson mill,

Thackray, manufacturers of doors, sashes, etc., states that the building operations will tax the output of his mill. The class of buildings proposed is of more substantial character than those destroyed. The advance in the price of lumber is held in part accountable for this, and fireproof structures will be more in evidence.

Although complaints are heard that the drives on the streams running into the Georgian Bay are progressing slowly, the mill owners in the Ottawa valley are said to be experiencing no trouble in this direction. Owing to the late spring, the streams tributary to the Ottawa and Gatineau rivers are high, and the drives are progressing satisfactorily. On the Gatineau, Ottawa, Lievere, Rouge, Coulange, Black, Snake, Dumoine, and other streams, the logs are being well handled, and present indications are that the mills will be kept running continuously all season.

Mr. John Gilmour, member of the well known Ottawa lumber firm of Gilmour & Hughson, has just received letters from his two sons, Allan and Felton, who are serving with the Canadian troops in South Africa. Allan has been promoted to the position of corporal in the first Canadian contingent, and Felton has been appointed to a position on the regimental staff of Strathcona's Horse. Mr. W. G. Cameron, member of the well known lumber firm of that name in Ottawa, has also heard from each of his three brothers who are serving their Queen and country. Gunner Harry Cameron, of D Battery, second contingent, was through the long desert march. Pte. Russell Cameron is now with the first contingent, and Capt. George Cameron is attached to Strathcona's Horse. All these young men are serving with distinction. The Cameron and Gilmour boys are well known in Ottawa valley lumber circles, having been identified with the trade for some time.



GENERAL VIEW OF THE CHAUDIERE LUMBER DISTRICT, SHOWING SEAT OF THE RECENT FIRE.

Photo by Lancefield, Ottawa.

required by the Hull Lumber Company, has been fitted up and cutting operations will commence next week. The company is already cutting high grade lumber at the Mason mill, and the Ritchie mill at Aylmer is also contributing to the cut, which promises to be even greater than heretofore. It has not been definitely decided when the Hull Lumber Company will rebuild, but this will be known shortly. This company own valuable water power and limits.

The E. B. Eddy Company has already started rebuilding and a saw mill, pulp mill and paper mills will be completed by November of this year.

The Ottawa city council has thrown out the proposed by-law restricting the piling of lumber, but nevertheless J. K. Booth has expressed his intention of complying with the terms of the rejected by-law as far as possible, so much as he will pile only within certain areas and at a certain distance from streets and structures. His action was favorably commented upon in the city, where the action of the council in rejecting the by-law was strongly condemned.

The Ottawa lumber market has not yet recovered from the depressing effects of the fire, nor will it for some time. The price of lumber will undoubtedly advance, as the extensive building operations in Ottawa and Hull will increase the local consumption. At present considerable lumber is being shipped in from Aylmer and the Gatineau mills, while the local mills will also increase the cut of lumber.

Ad. James Davidson, of the firm of Davidson &

Almost all the better class of lumber will be required for the European and American markets, while much of the cheaper class will be kept for local use. There will be a falling off in the American demand for the latter, and hence the carrying business will suffer.

The local dealers expect an early and brisk demand for lumber and lath for building purposes, but as yet no marked change has been experienced in prices. Summing up, it may be predicted that the lumber industry of Ottawa will recover its lost footing, and though a temporary agitation in the market may be looked for, prices will soon reassert themselves to a normal standard.

Word was received in Ottawa to-day of the death, at his home in Boston, Mass., of Mr. Otis Shepard, President of the Shepard & Morse Lumber Co., of Ottawa. The deceased was well-known in lumber circles, and was esteemed for his upright character and business principles.

The government dredges being built at Ottawa are nearing completion. They are constructed throughout of British Columbia fir, and are considered the finest yet built at this port.

The assistance lent the sufferers of the Hull-Ottawa fire by the leaders in the lumber business in Canada, United States and Great Britain is very favorably commented upon here. Its position and prominence as a lumber centre has given Ottawa a prestige it would not otherwise enjoy in as great a degree as it does in the outside world. This prestige is in part responsible for the generous relief fund piled up by large-hearted people throughout the English-speaking world.

Contracts have been let for most of the paper-making machinery for the E. B. Eddy Company's new works. The paper machines will be of special design and large capacity. It is expected that they will be installed and paper manufactured inside of four months. Work is also being pushed ahead rapidly on the addition being built to the Eddy pulp mill, which alone escaped the recent fire. When the improvements are completed the output will be 40 tons of pulp a day.

The handsome new fireproof factory and warehouse being erected on Queen street, Ottawa, by Mr. J. W. Woods, manufacturer of lumbermen's supplies, tents, etc., is being pushed ahead at a good rate. When completed the building will present an imposing appearance, and house a thriving industry. Mr. Woods will branch out in his business when located in the new establishment. He reports a marked increase in business for the past year, and looks forward to a steadily increasing trade.

Hurdman & Elmitt, lumber dealers, of Ottawa, are now established in new and larger quarters in the Central Chambers, Elgin street, Ottawa.

The smaller mills along the Ottawa river are being put in shape for the season's business. They will cut quite extensively.

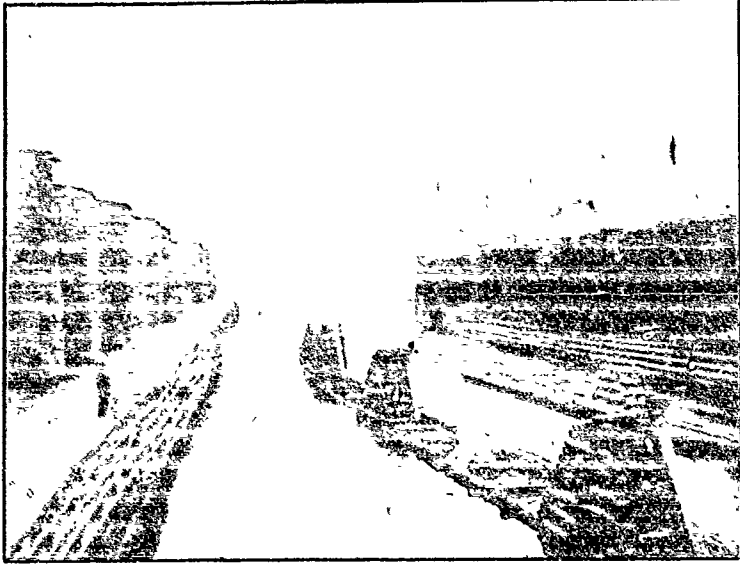
Mr. Robt. Cameron, member of the firm of Cameron Bros., lumber dealers, of Ottawa, has again resumed work after a prolonged illness.

Ottawa, May 23rd, 1900.

MILL-BUILDING EXPERIENCE.

PINE KNOT, IN WOOD-WORKER.

We have had at times in these columns a discussion of the merits of planing mills with shafting under the floor and shafting overhead. I am now building a planing mill with shafting under the floor. The mill, when complete, will have a capacity of 50,000 feet per day. From observation, and not from experience, I was one of



GOVERNMENT LUMBER FLUME AND PILES, OTTAWA. Photo by Lancefield

the advocates of shafting overhead, with loose belts and swing tighteners, and while I concede that there are some very excellent reasons why a shaft under the floor is desirable, as a general thing it is a close place and a tight fit all around.

One of the strong claims was low cost as compared with the overhead system. That doesn't hold good all the time, for this one reason: This plant is on the side of a hill, with an incline of six feet in fifty, and as the plan showed bents of framing in the foundation, it required 17 excavations, 54 feet long, averaging 18 cubic yards of earth, that had to be wheeled two hundred feet away from the mill site, and to make room for the shafting, engine, edger, countershaft, cut-off saw and cut-off counter, required an additional 620 cubic yards.

The building is at the ground level on the upper side and the floor level is 34 inches above the car floor level on the loading side. This of itself is not a fault, as down loading is preferable to level or up-grade loading. That is speaking from a loading view of the matter. But as all of the lumber comes to the mill in the rough, and is dried, ripped and dressed, and has to be unloaded from the same track level, it begins to look as if it might not be so handy. More particularly is this the case when the lumber to be dressed will be large dimensions, car sill or timber.

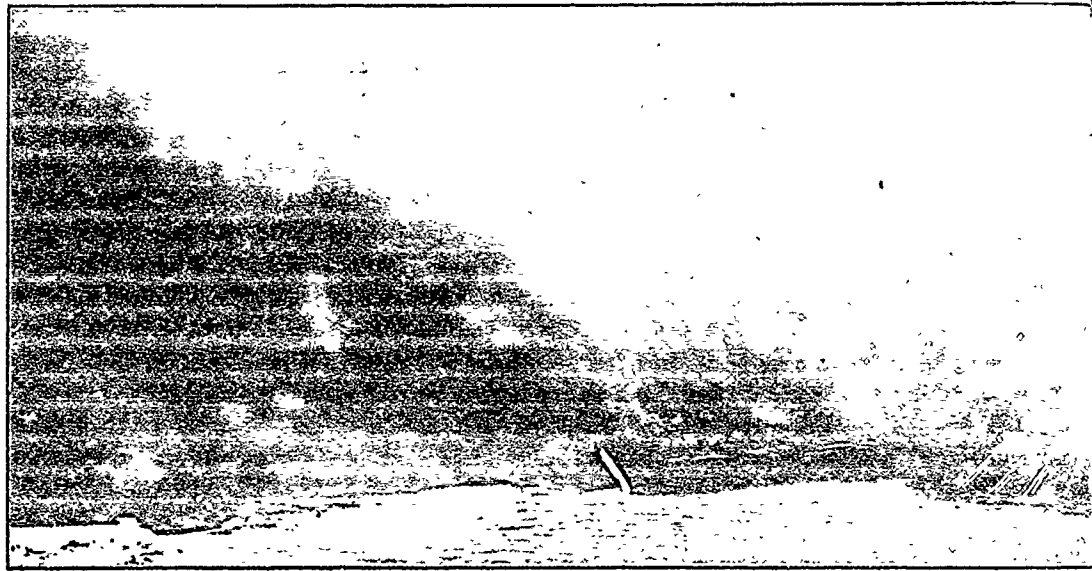
It has been suggested that the track could be higher, but the railroad people will not put cars on a switch that has a down grade to the main line, so that is entirely out of the question. Nor would it do to have the mill machinery in a pit in a country where rain sometimes falls so fast that it will almost flood on a hillside and the soil is so sandy that it puddles over ever so little, will wash off in a body. As to cost, I think the excavating more costly than the slight additional cost to make the roof strong enough to carry the shafting. This roof span is 54 feet in the

clear, without a post, except directly under the exhaust fan.

The engine has a six-foot drive wheel that just clears the floor one inch, and is one inch clear of the ground. With the exception of being in close quarters the engine is in a good position, compact and solid, but will have to take steam about ninety feet from the boilers. There will be a steam main four inches in diameter from the

boilers to a line from the kilns to the engine, 60 feet long, and this main is 170 feet from the engine to the kilns. This means excessive condensation, unless means are used to avoid it. Right here I am going to use one of the best non-conductors that I have ever seen tried, and that is plain cottonseed hulls and air-slacked lime. As the doctors put it, here is the Rx: Air-slacked lime, water (acqua pura,) mix, and add cottonseed hulls sufficient to make to consistency of mortar. Have pipe in a box two inches larger than external diameter, and fixed permanently in place, then

apply, working in corners compactly, level off, put on cover, and let it go at that. A covering of this sort will allow just enough warmth to get through to bear your hand on it with steam at 125 pounds. It is first-class for covering boilers on top and in any exposed place. It can be put on when pipe or boiler is hot or cold, and is equally as effective. In fact, it is as good for the purpose indicated as any patent medicine



VIEW FROM PARLIAMENT HILL OF THE OTTAWA-HULL FIRE WHILE IN PROGRESS. Photo by Lancefield, Ont.

is for "that tired feeling." And one of its by no means small merits is its cheapness and ease of application. I don't mean that any boy can apply it. Let your engineer see that it is properly done, and it pays. Too much of this "boy" work is what keeps the junk stores supplied with machines and material that ought to yet be in the prime of their usefulness.

Will tell you something further about this mill next month.

USES FOR PINE NEEDLES.

Oregon pine needles, or those long, slender spears that grow on sugar pine trees in lieu of leaves, have fallen on the ground for countless ages, to be converted into soil by the slow process of decomposition, or into ashes by the quicker medium of fire, without a thought being given to their commercial value, says the Portland Oregonian. This condition is now to be changed, according to D. A. Cords, president of the Pacific Pine Needle Company, of Grant's Pass. Mr. Cords says the pine needles of Southern Oregon are now worth \$5 a ton delivered at his factory, and that, as the enterprise grows, white families may engage in picking pine needles, as they pick grapes in California vineyards.

The uses to which pine needles may be put are many, but Germany has hitherto had a monopoly of the business. The needles are first boiled, and then run between horizontal wood-rollers, where the juice is extracted and called "pine-needle oil," which is supposed to possess medical properties. The pulp becomes a medicated material for upholstering, and is said to be a good substitute for horsehair. No bugs or insects of any kind will live in furniture that has been upholstered with pine needle wool.

The Germans make flannel under-clothing from the fibre, as well as socks for men and stockings for women, while knee-warmers, knitting and darning yarn, cork soles, quilts, wadding, deaning paper for walls, pine-needle soap, incense and even cigars made from this raw material have been imported from Germany for forty years.

Bathing resorts have also been established for the thrifty Teutons at points where the pine needles are crushed, and these resorts have been popular with people afflicted with rheumatism, consumption, etc. Mr. Cords hopes to make Grant's Pass a Mecca for afflicted people, as the climate is mild and equable at all times of the year, while the winters are simply superb for their freedom from high winds or severe frosts, and Grant's Pass has more sunny days than any other portion of Western Oregon.

At present the factory uses only half a ton

of the needles a day, as the enterprise is still in its infancy. When in full blast, Mr. Cords thinks he can use several tons, with an upward tendency as the market for pine-needle products expands.

Another point in Oregon where a pine-needle factory may be established in the near future is Hood river, as the location affords an unlimited supply of pine needles, while better rates of transportation can be obtained on account of Hood river's proximity to Portland. Oregon, says, has a monopoly on the needles, while California has a monopoly on the manipulation.

ONTARIO FOREST LANDS.

The annual report of the Commissioner of Crown Lands of the Province of Ontario for the year 1899 has been issued. The report states that the total revenue of the woods and forests branch was \$2,848,848.64. Of this \$296,752.79 was on account of bonus, \$69,713.44 ground rent, and 520 transfer fees, leaving the net revenue from timber dues \$726,362.41. The gross revenue was larger than that of 1898 by \$111,002.19. The receipts from timber dues were less by \$30,071.93, but there was an increase in bonuses of \$137,054.05, and in ground rent of \$4,000.07.

The year was the first under the legislation requiring sawlogs to be manufactured within the province, and the figures submitted show that the new order has been beneficial to the province.

In previous years no charge has been made on the transfer of a timber license from one person to another, but a regulation was passed on December 1st, 1899, fixing a bonus or fee of one dollar per square mile on all limits transferred after that date.

The export of logs in the summer of 1899 is shown to have been 29,000,000 feet. According to the opinion of the Commissioner the increase in the cut of logs in the winter just closed would be about 300,000,000 feet greater than the cut of the previous winter.

The number of licensees having fire rangers on their limits during the year was 73. There were 90 rangers employed on licensed territory, who cost the department for wages \$17,795.33, and for expenses in connection with extinguishing fires \$1,060.40, and the licensees like amounts. There were twelve rangers employed on Crown territory in Rainy River and the Temagaming country, which latter region is well timbered and is becoming a favorable resort for tourists. The fire service, it is stated, continues to meet with the approval of all those who are acquainted with the valuable work that is being done. The Commissioner is of the opinion that the service should be extended on lands of the Crown and efforts put forth to see that rangers are employed on all licensed territory. It is not fair that large sums should be expended by lumbermen to protect their timber, when this expenditure may be rendered useless by fire running over from territory on which the licensee was either too careless or too penurious to employ rangers. Litigation arising between individuals as to the payment of rangers and involving their duties and powers, it is recommended that the service should be placed on a statutory basis, so that such doubts may be set at rest and the service itself strengthened and more efficiently organized.

The statement of timber shows that the following quantities were cut on Crown lands during the year:

Pine saw logs.....	498,607,068 feet B.M.
Other saw logs.....	15,396,393 "
Pine dimension timber.....	29,361,695 "
Other dimension timber.....	2,180,098 "
Square white pine timber.....	1,723,274 cubic feet.
Birch timber.....	13,384 "
Ash.....	1,238 "
Elm.....	18 "
Maple.....	134 "
Tamarac.....	207 "
Cedar.....	88,230 lineal feet.
Cordwood.....	18,067 cords.
Tan bark.....	1,267 "
Posts.....	3,079 "
Shingle bolts.....	2,024 "
Pulp wood.....	29,238 "
Railway ties.....	453,855 pieces.
Telegraph poles.....	3,231 "

THE LATE A. T. WHITE, M.P.P.

Andrew T. White, member of the Ontario Legislature for North Renfrew, died suddenly at his home in Pembroke, Ont., on May 15th last. Although it had been apparent for the past year or two that Mr. White's health had been failing, no one expected that the end was so near at hand.

The late Mr. White was born on December 3rd, 1835, in the White homestead in which he resided at his death. He was the third son of the late Peter White, one of the pioneers of Pembroke. Settling in Pembroke, he while a young man engaged in lumbering, and followed that occupation all his lifetime. For many years he did much to develop the timber resources of the Ottawa Valley. In 1858 he formed a partnership with his brother, Hon. Peter White, under the firm name of A. & P. White, a name which has been the synonym in the lumber trade for honest dealing and business uprightness. The firm has existed for 42 years, and is still doing a large local and export trade. Mr. A. T. White was also a director of the Pembroke Lumber Co., one of the largest lumbering concerns



THE LATE A. T. WHITE, M.P.P.

in the Ottawa Valley, and he was closely associated with the industrial development of Pembroke and vicinity.

Besides being a lumberman, Mr. White was one of the foremost agriculturalists in the north riding of Renfrew, having an excellent farm on the borders of the town of Pembroke.

Mr. White entered public life in 1884, when he was elected reeve of the township of Pembroke. That he continuously held that office up to the time of his death is an evidence of his great popularity. In the general elections for the local legislature in February, 1898, he was elected as the representative of the Liberal-Conservative party by a majority of 153. He gave every promise of a useful career, and his death will prove a distinct loss to the party.

Personally Mr. White was very much esteemed. Broad-minded and deeply interested in everything that tended to help his fellow-men, he enjoyed an unusual measure of public regard and affection. His charities were unostentatious, while his free easy manner made him a great favorite with the masses. He was a member of the Methodist church. In 1871 Mr. White married Miss Mary, daughter of Mr. Richard Ranson, Deux Rivieres, who survives him, together with a family of four daughters and five sons. In his

death the town of Pembroke loses one of its best citizens and the lumber trade an esteemed member.

QUESTION FOR LUMBERMEN.

"Woodman," Guelph, Ont., writes: Would you kindly inform me as to the correct method of measuring sidings 6 inches and wider, 1 inch thick, 10 to 16 feet long. I have been taking tally and classifying them into lengths and widths, making a total of the number of pieces of each length and width and extending that into feet. Some people, however, assert that the proper way is by rule, and marking down the number of feet in each piece. Please state which is correct, also what is the correct method of measuring a piece 1 x 7 x 11 feet, 1 x 8 x 11 feet, 1 x 11 x 10 feet, 1 x 9 x 13, etc., by rule. I will give an illustration of the two methods. By rule one piece 1 x 7 x 10 feet long 9 feet, and 40 pieces would be 360 feet, but to take it the other way and extend, the 40 pieces 1 x 7 x 10 feet = 373 feet. Again, one piece 1 x 8 1/4 x 10 feet measured by rule equals 11 feet, and 40 pieces 440 feet, but in measuring the other way this would be put down as 40 pieces 1 x 8 x 10 feet equals 427 feet. It has been customary with me when measuring boards of various widths to put any board measuring under the half inch as the inch below, that is 7 3/8, 7 1/4 and 7 1/8 inches wide would be called 7 inch, and those above the half inch 8 inches. But here all lumber is sold of an even width, as 1 x 6, 1 x 7, 1 x 8, etc. The 8 1/4 inch board goes as 8 inch, but I am not allowed to put in a 7 1/4 inch board as an 8 inch.

The CANADA LUMBERMAN asks its readers to give their views as to the correct method of measuring sidings.

SAW MILL PRACTICE.

A correspondent writes to Modern Machinery as follows:

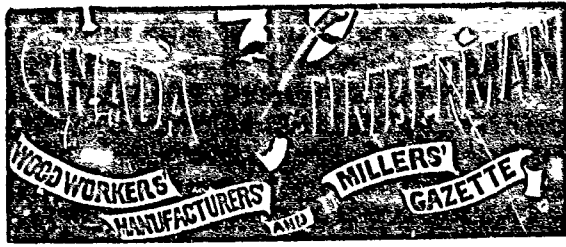
I need the advice of a practical man on the subjects of "Back Drafts from a Furnace," and "Damper Regulator for a Saw Mill Plant." I am in charge of a plant where shavings and sawdust are used for fuel. Occasionally the fireman gets what we call a "back draft," which fills the fire room with smoke, and as the flames are forced out of the furnace there is danger of serious accident.

- (1) Can you suggest the cause and a remedy?
- (2) Will it improve matters if a deep combustion chamber is excavated back of the bridge wall?
- (3) Is it practical to use a damper regulator where shavings are burned?

(1) It is caused by putting in too much fuel at once, so that the fire is partially smothered, then when the draft is put on it begins to burn and form explosive gases, and when they ignite and explode, they cause the trouble you mention. If you never put on enough fuel to cover the fire, but always leave some flames in sight, you will have no further trouble.

(2) No, it will not. This has been tried to the extent of making it seven feet deep, without curing the evil.

(3) There is no reason why a damper regulator should not be used where shavings are burned, and if it is used it will save fuel there as well as elsewhere. It may be necessary to prevent the damper from closing tight, for that might fill the room with smoke, but it may be closed tight enough to control the fire.



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ADVERTISING RATES FURNISHED ON APPLICATION

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

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

AN EXPORT NUMBER.

The first special number of the CANADA LUMBERMAN to be devoted exclusively to assisting the development of the export trade in Canadian timber products is now in course of preparation, and will be published about midsummer. The proposed publication of this number is the result of a constantly increasing number of enquiries from foreign countries regarding the timber resources of Canada and her ability to supply wood products of various kinds. The present is undoubtedly an opportune time to make our products more widely known abroad, and to bid for a larger share of the foreign trade.

The contents of this export number will include illustrations and descriptions pertaining to the Canadian lumbering and pulp industries, and information regarding the requirements of foreign markets. It is proposed to issue two thousand copies for circulation abroad. These will be placed in the hands of the leading importers and consumers of timber, and also on view in the Chambers of Commerce, the offices of the British Consuls, and the leading hotels in foreign countries, carefully selected lists of the above having been obtained by the publishers.

A considerable proportion of the issue will be distributed in Great Britain, at present the largest

wood consuming country, but it is intended to cover also Germany, France, Spain, Australia, South Africa, China, Japan, South America and the West Indies, all of which countries import Canadian wood products.

As an advertising medium for Canadian manufacturers and exporters of timber products, this number should prove of incalculable value, since it will afford them an excellent opportunity of bringing their goods to the attention of probable buyers in foreign markets. An announcement in this number might prove to be the means of building up an extensive and profitable foreign trade. Already some of our manufacturers and exporters have arranged for announcements, but as it is desired that every person seeking export business should be represented in this number, the publishers would be pleased to be advised regarding the space desired at as early a date as convenient. Full particulars as to rates will be gladly furnished upon request.

THE PRODUCTION OF LUMBER.

THE recent inflated prices for lumber have given a stimulus to production throughout Canada. Coming after an extended period of depression, the natural tendency of mill owners is to increase their production to the greatest possible extent, in the hope of securing such returns as would in a measure recompense them for the years of unprofitable business. While the present commercial prosperity is not, to our mind, in the nature of a boom, we think that the limit of high values has almost been reached, and that in the near future prices of all building materials will show a slight decline. In fact, although lumber prices have not yet receded, there has been a material reduction in the price of steel and iron and certain other classes of building materials. During the next three or four years we look forward to a period of prosperity, but with the average of prices slightly lower than at present.

In view of the above conditions, a word of caution to lumber manufacturers may be in season. In order to maintain prices at a profitable basis, it should be the aim of manufacturers not to unduly crowd their mills, but rather to pursue a policy of caution, restricting their output to such an extent as to prevent a collapse of the market even should the lumber demand suddenly fall off. The result of over-production will be to bring down the price of lumber, making it necessary to produce a large quantity of stock in order to obtain the same returns as if a small cut were made and disposed of at a profitable price. It should also be remembered that the world's supply of standing timber is gradually becoming diminished, and that there is no more valuable asset to-day than an area of timber lands.

The future condition of the trade may be greatly improved by the exercise of a little foresight on the part of lumbermen. It should be their policy to take advantage of the present period of prosperity to seek new markets for their stock, so that they will be less dependent upon the local demand. It is the usual custom to wait until the period of depression is at hand, then to exploit

new fields and to find that considerable time is required to form a business connection.

There is an enormous demand for wood products in Great Britain, France, Germany, Spain, Australia, etc., and as we have previously pointed out, a much greater share of the trade may be secured by Canadian manufacturers and dealers if properly sought for. Now is the time to get in communication with foreign importers.

THE ALGOMA CENTRAL LAND GRANT.

THE provisions of the measure extending assistance by a land grant to the Algoma Central Railway, adopted at the late session of the Ontario Legislature, are of general interest to the business community, as they involve an important new departure in the conditions on which such aid is extended which may probably form a precedent for future action. They have in addition a particular significance for the lumbering interest on account of the conditions laid down as regards the timber embraced in the grant. The Algoma Central Railway, opening up a large area of "New Ontario" and connecting Sault Ste. Marie with the C. P. R. and Michipicoten harbors is one of the undertakings set on foot by a group of interests of which Mr. Clergue, of Sault Ste. Marie, is the head and front. In consideration of receiving a grant of 7,400 acres of land, the companies included in the agreement undertake, not merely to build the road, but to settle 10,000 male emigrants upon the land within ten years (1000 each year), to build an additional 40,000 horse power canal at Sault Ste. Marie, and to erect smelting and reduction works, chemical works and a pulp mill at that town, in addition to the industries they have already established there. They also contract to maintain a line of not less than four steel steamships for traffic between Sault Ste Marie, Michipicoten and other points. The freight and passenger rates of the road are to be subject to the approval of the Governor-in-Council.

The land to be granted the company is to be laid out in alternate blocks, each containing as nearly as may be 148,000 acres, the railway passing through the centre of each block. The company is to place a station in the centre of each block, whether on its own land or that reserved for the public, when requested to do so by the Commissioner of Crown Lands. They are to survey a town plot in the neighborhood of each station on their own blocks, and to build school houses and public halls when the government declares it necessary for the wants of the population.

The grant includes all ores and minerals and also pine timber, but the latter is to be paid at prices to be fixed by public competition in the following manner: When the land is surveyed the Crown Lands Department are to offer the sale by public auction the right to cut the timber on the reserved alternate blocks, subject to the usual conditions. Instead, however, of being sold by area, it will be disposed of in quantity, that is, at so much per thousand feet by measure. The price paid per thousand feet of right to cut by the highest bidder for the timber on reserved blocks, will be the price charged the company for each thousand feet cut on the land granted to them, and they will in addition be required to pay the Crown dues. A part of the pine

block is to be cut each year and the whole ten years from the time of the sale on the reserved blocks. The purchasers of pine on the reserved blocks are also to cut a part of it each year and to remove the whole within ten years. In case of non-payment by the company for pine, timber on the company's blocks reverts to the Crown, and may be sold in the usual manner adopted in the case of pine reserved in patents. All nickel and copper ore found on the company's land is to be subject to such regulations as to treating or mining in Canada as are applied to other lands under the general law. It is also provided that neither the pine nor spruce shall be exported in an unmanufactured condition. The pine is to be manufactured into sawn lumber square timber, as provided by the general law adopted two years ago respecting the manufacture of pine cut on the Crown domain, and the spruce is to be made into pulp or paper in Canada.

EDITORIAL NOTES.

We are told that in the June number of the Inland Printer, of Chicago, there will be published a leading article on wood pulp and forestry. A growing recognition of the important relation of the timber supply to the paper trade no doubt accounts for the interest shown in the subject by the publishers of the Inland Printer. Upon the perpetuation of the forest supply depends the future of the printing and publishing business, at least unless there should be discovered a satisfactory substitute for wood for paper-making, and the present outlook does not seem to promise hopeful of this result. The Inland Printer will point out the importance of forestry in utilizing non-agricultural lands, in assuring the permanency of a lumber supply, to the regulation of water supply, etc.

The Ontario Government have passed an order-in-council prohibiting the exportation of tan-bark taken off hemlock trees cut on Crown lands. This legislation was asked for as a protection to the tanning industry of the province, which has increased very materially of late. It was contended by the tanners that if exportation was not soon prevented the future of the industry might be seriously jeopardized. In the United States there is but a limited supply of hemlock timber, and consequently large importations of tan-bark were made from Canada. Although, perhaps, the action of the government will not be in the immediate interests of lumbermen, it is one which meets with our approval, as being a further step to encourage the home manufacture of raw material and in line with the legislation respecting the exportation of saw logs from the province.

So far as we are aware, the credit of introducing the first floating saw mill in Canada belongs to Mr. J. H. Dansereau. This mill, which has already been described in THE LUMBERMAN, was operated last season at Calumet, a small town on the Ottawa river, near the city of Ottawa. It is learned that the operation of the mill has been eminently satisfactory. The cost of its construction, including barge, machinery, etc., was in the neighborhood of \$18,000. Last season Mr. Dansereau saved in 97 days 4,500,000 feet of spruce lumber. The combined cost of sawing and shipping the lumber to Montreal

is said to have been about \$1.75 per thousand feet, while the corresponding cost to the large Ottawa mills is nearly twice this amount. It should be explained, however, that the lumber was loaded on barges direct from the saw. This could not be done, of course, in the case of pine lumber, which would require to be piled for seasoning purposes. We do not expect that the floating saw mill will become very generally used, but it no doubt possesses some advantages over the stationary mill, and might, we think, be employed to a greater extent in certain districts of Canada.

MAHOGANY VS. WHITE PINE.

Some people are seriously considering the possibility of African mahogany taking the place of the better grades of white pine for miscellaneous lumber uses. It may seem somewhat far-fetched, but it is not impossible that but for one or two considerations this could be done. It is understood that African mahogany is a comparatively soft and easily worked wood, and, except in color, would answer every purpose for which pine is used. The timber can be bought for practically nothing, and, if the conditions are as we understood them to be, it could be cheaply gotten to milling points along the coast and the freight would be no more than from the United States or Canadian ports to Great Britain or the continent. So far, so good, but to establish saw mills on the west coast of Africa is impossible. White men cannot live and do efficient work in that climate and the blacks cannot be depended upon. Even logging is conducted with difficulty and becomes expensive merely because of the class of labor that has to be employed. It is thought by some that there is more mahogany in the world than any other variety of timber; and furthermore that it is accessible as far as location is concerned; but the climate in which it grows is the obstacle which will never be so overcome that mahogany can be as cheap as would be warranted by the supply and cost of standing timber.—American Lumberman.

BELTS AND PULLEYS.

The following questions are asked by a correspondent of Modern Machinery:

(1) How shall I determine the exact amount to cut out of a belt where a small pulley has been substituted for a larger one? (2) Is their gain or loss of power where two large pulleys are removed from shafts that run at the same speed, and a smaller one substituted, keeping the speed constant? (3) Which side of the belt should be put next to the pulley, and why?

The answers are as follows: (1) We advise you to use a tape line or a cord that will not stretch, and draw it over the pulleys, thus finding the exact length needed. If the new pulley is not much smaller than the old one, their respective circumferences may be calculated, and one-half of the difference taken, but if the diameter is very much less than before, the change in the angle of the two sides of the belt will affect the result. Therefore, the tape line method is the safest. (2) If you mean to ask whether more or less power can be transmitted, we should say less, for the belt speed is reduced and less surface is in contact with the pulleys, both of which are factors in the calculation. If you mean to ask which will require the most

power to drive, there will be a slight difference in favor of using the smaller pulleys. (3) When a double belt is made, the hair or smooth sides are always put outward, so that it makes no difference which way the belt is put on, except on account of the rivets, and this shows plainly what the belt manufacturer thinks about it. If a single belt is examined it will be found that the rivet heads, which should run next to the pulley, are on the hair side, thus showing that the maker intended this side for the pulleys. The matter is in much dispute among machinists and mill men, and it probably always will be.

TREATMENT OF DRIVING BELTS.

The Werkmeister Zeitung gives directions on the best treatment of driving belts, whose faultless working is of great importance in every factory. The good drawing of a belt increases with the friction between belt and pulley. Hence it is obvious that the belt must surround as large a portion of the pulley as possible. For this reason crossed belts always pull better than open ones. If in any way practicable, open belts should cover at least almost half the pulley. If the circumference of one pulley be very small in proportion to the other, thus allowing the belt to cover only a small portion of the smaller pulley, a sliding of the belt frequently takes place, especially if the distance between the two pulleys be slight. It is plain, continues the Werkmeister Zeitung, that a skv running of the engine makes a strong stretching of the belts necessary. For this reason a tightening-pulley is frequently placed midway between the two pulleys, so as to avoid a repeated resewing. If a large power is to be transmitted at little velocity, a broader belt should be employed than would be necessary with greater velocity, or else two belts are made to run on top of each other. If one does not care to tighten the belts still more or use one of the many belt lubricants, the best makeshift is to cover the pulley with sail cloth. This is done by cutting the sail cloth so exactly that it is difficult to get it on the pulley. By thoroughly moistening the sail cloth on the pulley with warm water it clings more closely to the pulley, as the water causes it to shrink. It is still more practical in the long run to fix, instead of canvas, a leather strip of corresponding breadth on the middle of the pulley, by having a few holes bored into the rim of the pulley which are tightly filled up with wooden wedges, in order to be able to nail the strip of leather on it. This process is said to have proved useful with ordinary proportions of the size of the belt to the effect of power to be transmitted. If all is unavailing, the belt is too weak and must be replaced by a broader or double belt. Of great advantage in such cases are the wooden belt pulleys, which increase the driving power.

PERSONAL.

The sympathy of a wide circle of friends is being extended to Mr. Wm. Margach crown timber agent at Rat Portage, Ont., upon the recent death of his wife.

Mr. J. G. Henderson, of the firm of Henderson & Craig, London, Eng., was a recent visitor to Canada. His firm are large importers of pulp, and his mission was with a view to increasing the imports from Canada. He states that with some slight improvements in the method of manufacture Canadian pulp will be superior to the Scandinavian article.

FRICITION IN STEAM PACKINGS.

BEFORE the meeting of the American Society of Mechanical Engineers in December, 1899, Mr. C.H. Benjamin, of Cleveland, Ohio, read a paper on the above subject, describing some experiments made at the Case school with several varieties of packings. He gives four tables showing the results, which we reproduce, together with his comment and general conclusions.

TABLE I.

Kind of Packing.	No. of Trials.	Total Time of Run in Minutes.	Average Horse-Power Consumed by Each Box.	Horse-Power Consumed at 50 Pounds Pressure.	Remarks on Leakage, etc.
1	3	22	.091	.085	Moderate leakage
2	4	40	.049	.048	Easily adjusted; slight leakage.
3	3	24	.037	.036	Considerable leakage.
4	4	25	.159	.176	Leaked badly.
5	5	25	.095	.091	Oiling necessary; leaked badly.
6	5	25	.353	.400	Moderate leakage.
7	7	25	.067	.067	Easily adjusted and no leakage.
8	8	25	.82	.082	Very satisfactory; slight leakage.
9	9	15	.200	.182	Moderate leakage.
10	10	25	.275	.172	Excessive leakage.
11	11	25	.177	.172	Moderate leakage.
12	12	25	.265	.330	No leakage; oiling necessary.
13	13	25	.162	.230	Moderate leakage; oiling necessary.
14	14	25	.176	.276	Difficult to adjust; no leakage.
15	15	25	.233	.255	Oiling necessary; no leakage.
16	16	25	.292	.210	No leakage.
17	17	25	.128	.054	No leakage.

TABLE II.

Kind of Packing.	Horse-power consumed by each box, when pressure was applied to Gland Nuts by a 7-inch wrench.						Horse-power before and after oiling rod.	
	5 Pounds.	6 Pounds.	10 Pounds.	12 Pounds.	24 Pounds.	26 Pounds.	Dry.	Oiled.
1	.129	....	.136	..	....	....	.055	.023
2303	....	.399	.154	.123
3248	....	....	....	....	.055	.023
4220	....	....	....	....	.055	.023
5348	.439	....	....	....	.271	.154
6126	.228	.20	.30	.340	.067	.053
7264	.500	.515	.540	.531	.533	.215
8176	....	....	....	....	.666	.635
9425	.414	....	....	....	.454	.122
10161	.242	.359	.454	....	.454	.122
11117	.294	.582	....	....	....	....
12
13
14
15
16
17

TABLE III. VARYING STEAM PRESSURE

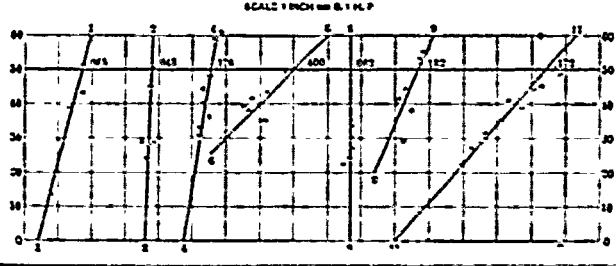


TABLE IV. VARYING STEAM PRESSURE

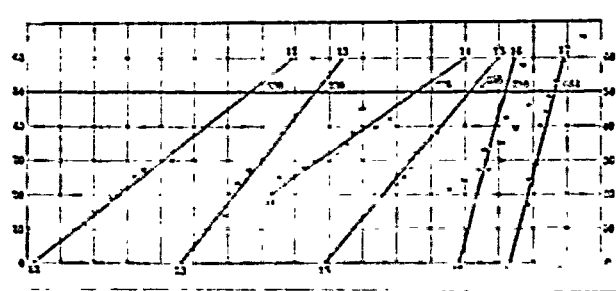


Table I gives a summary of the results, showing the average horse-power consumed by each packing box at varying pressures, and, for purpose of comparison, the power at 50 pounds pressure of steam. The friction of the machine has been deducted.

Table II shows the effect of tightening the gland nuts on the friction of the packing, and also the effect of oiling the rod.

In most of the experiments detailed in Table I the nuts were tightened with the fingers only, and then just enough to prevent leakage, and no

lubricant was used except that incorporated in the packing itself. With some of the dry rubber packings it was necessary to use oil from the first. A good quality of cylinder oil was applied.

The effect of varying the steam pressure is best shown graphically, as in Tables III and IV. The numbers at the ends of the lines correspond to numbers used in the other tables. The ordinates indicate the steam pressures observed, while the abscissas represent the horse-power consumed by each box. The points where these lines cut the line of 50 pounds pressure are those used for comparison of the different packings. It will be seen that the friction varies with the pressure in approximately straight line ratios in many of the cases.

GENERAL CONCLUSIONS.

1. That the softer rubber and graphite packings, which are self-adjusting and self-lubricating as in Nos. 2, 3, 7, 8, and 11, consume less power than the harder varieties. No. 17, the old braided flax style, gave very good results.

2. That oiling the rod will reduce the friction with any packing.

3. That there is almost no limit to the loss caused by the injudicious use of the monkey-wrench.

4. That the power loss varies almost directly with the steam pressure in the harder varieties, while it is approximately constant with the softer kinds.

The diameter of rod used—two inches—would be appropriate for engines of from 50 to 100 horse-power. The piston speed was about 140 feet per minute in the experiments, and the horse power varied from .036 to .400 at 50 pounds steam pressure, with a safe average for the softer class of packings of .07 horse-power.

At a piston speed of 600 feet per minute, the same friction would give a loss of from .154 to 1.71 with a working average of .30 horse-power, at a mean steam pressure of 50 pounds.

THE CARE OF WOODEN PULLEYS.

Wooden pulleys are very good things to have in the mill. They hug a belt very tight and stay in place pretty well if decently taken care of; but it will not do to let them go year after year without attention. A wooden pulley which is not properly taken care of will soon begin to squeak; and once a wooden pulley gets to squeaking, all the tightening up that can be done will not prove a cure. When a wooden pulley begins to squeak the usual thing is to tighten up the clamp bolts under the idea that the pulley is slipping on the shaft.

Even when tightened up sufficiently to draw the nuts and washers into the wood the squeaking will continue. In such a case the squeaking is not between the pulley and the shaft, but between the parts of the pulley itself. Some of the joints have become loose and the parts thereof rub together, and, under the heavy belt pressure, cause the squeaking which proves so annoying. To make good pulleys which are in this

condition, take them partly to pieces, remove any loose or partly detached segments that have started up in the joints. Make a small dry room either by putting a coil of pipe in a big air-tight box, or by inclosing some boxes coils at a number of radiators. If there is a room for lumber near, say in a neighborhood of a mill or furniture factory, it will be just the thing and should be utilized. Otherwise, the packing box large enough to contain the pipe in steam, and slowly heat the partially polished pulley two or three days, or until it has been slowly heated entirely through. Then take the pulley into the shop and work every crack and crevice full of thin hot glue. The wood is now hot, the glue will penetrate to the inner portion of each crack without becoming cold as would be the case were it attempted to cold pulley with glue.

After giving the pulley all the glue it will absorb, replace the portions removed, tighten the iron braces, castings or screws thereon, then put the pulley back into the dry house for at least twenty-four hours more, but do not let the heat too great—say at least 160°—and there be good ventilation to the dry house. After removing the pulley from the dry room, give it two coats of good orange shellac inside and out to keep the dampness that may be in the atmosphere from again getting into the wood. As long as moisture is kept out and the load on the pulley is not too great, there will be no squeaking. Pulleys which for any cause have been exposed to the weather for some time, those that have been exposed to water in a mill or at a fire, may be heated in the manner indicated, and they will come out nearly as good as new.

There are usually a number of wooden pulleys around the mill which are not in use. These pulleys should never be allowed to remain in the shafting. Although very slight, it still does something to impart motion to idle pulleys, therefore it is an expense to keep them in the shafting. Gather up all such spare pulleys, look them over and make such repairs as are necessary. Usually only a little glue is used. Then give each pulley a good coat of orange shellac, and place in a dry room, there to remain until wanted. Mark each pulley with its diameter and face width. White chalk will do this effectually. Pulleys thus marked and arranged up side by side are as good as cash in the shop of a mill. When a pulley is wanted it can be found in an instant by the chalk marks upon it; it is certain that the pulley is in good repair, all ready for instant use without any delay for repairs. When iron pulleys are wanted, arrange them in a similar manner in a room, mark in the same way, but also add the diameter to the sixteenth of an inch. Mill.

Paul Robarge, of Como Bridge, N. B., was killed near St. Leonard's, while in charge of Keswick log drive.

A distressing accident occurred at Goldthorpe mill near Dungannon, Ont., when Charles Carter, mill hand, was thrown on a circular saw and killed in pieces.

Messrs. J. F. Lillierap & Co., Lakefield, Ont., sold their planing mill business to Messrs. Moore & Co. of the same place, Mr. Lillierap retiring to give whole attention to the wholesale lumber trade.

FORESTRY EXHIBIT AT THE PAN-AMERICAN EXPOSITION.

In the prepared plan of the building on the lay of the Pan-American Exposition, which will be held at the nearby city of Buffalo in the summer months of 1901, the Architectural Board has placed the Forestry building in a prominent position on the grand court; this structure being connected with the Horticultural building by an ornamental colonnade, and balancing the Graphic Arts building, which also connects with the Horticultural building by a similar colonnade on the opposite side. The accompanying illustration of the Forestry building shows the importance the management attach to a proper classification and exhibition of the rare and interesting woods of Pan-America, for the building is beautiful in conception and amply large to make a display on a splendid scale.

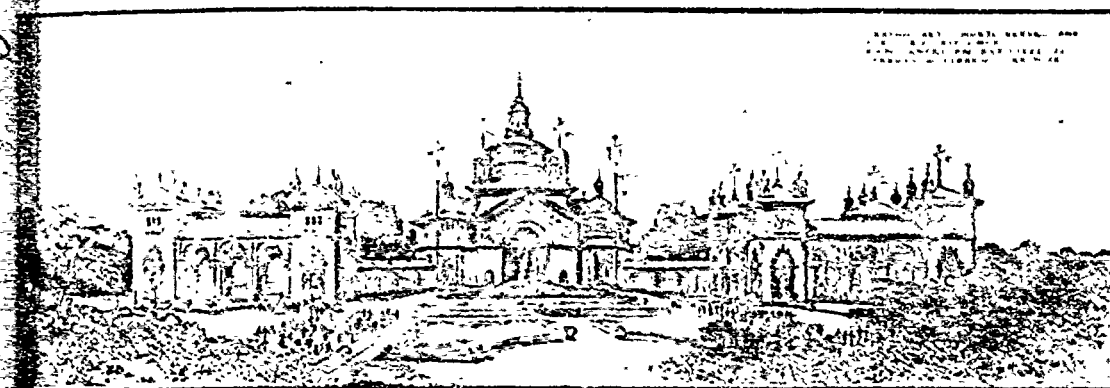
When one considers the scope of the coming great Exposition during the summer months of next year, it is not hard to imagine a forestry display of surpassing interest, as the western continent is at present the one section of the world where a magnificent forestry display could be secured. With the banyan trees of India and the giant swamp eucalyptus of New Zealand and Australia alone excepted, the rarest trees in the world are to be found in one or more of the countries of North and South America, or on the islands now dependent on the United States.

From far away Oregon and the upper portion of the Dominion of Canada the great pines and firs will be brought; their sections to repose within the Forestry building in competition with the polished sections of mahogany and ironwood from the forests of the Amazon

more, which, though sporadic, attains perfection in Arizona. From Virginia the red cedar comes, and the samples from there will be of interest when shown in connection with the machinery which annually reduces entire forests of the species into tiny lead pencils; for a majority of the countless millions of lead pencils used each year are cut from Virginia red cedar. Another species of the red cedar, harder, more ornamental and much more scarce than that used for lead pencil making, is found some hundreds of miles below the Virginia forests. These are called swamp cedars, and they grow in pools and swamps, many of them standing in from four to six feet of water, the pools and lakes being simply floored with countless thousands of these trees which have flourished, fallen and sunk below the surface.

The basswood of the far northwest lends itself readily to interesting displays, and a splendid showing will be made of hickory, that tough and wiry wood which, according to the late Leland Stanford, made the American trotting horse a possibility. Before the days of the bicycle sulky no wood except second growth hickory was light and strong enough to form the wheels and spokes of the old high cart, and without that material there would have been no Sunol and Maud S. records to amaze the country and show to breeders the wonderful possibilities of the American trotter.

In the showing of these and countless other varieties of woods which abound in the Americas, it will be the aim of the management to have the exhibit so prepared that interest will be felt by the casual spectator as well as by the forester or the lumber merchant. Of the rare woods these will be shown in the rough bark intact, as well as as cross and tangent sections showing the grades, grain



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and textures. There will also be samples of abnormal or unusual growths, and an effort will be made to procure a sample from the giant fir trees of Oregon in order to show the immensity of the trees. At the World's Columbian Exposition was shown a counter, the entire top of which consisted of one single plank 150 feet in length and over 3 feet in width. It is hoped that one equally large may be secured as Oregon's contribution to the forestry display at the Exposition at Buffalo.

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CANADA'S COMMERCIAL AGENTS.

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

- J. S. Larke, Sydney, N.S.W., agent for Australasia.
- G. Eustace Burke, Kingston, Jamaica, agent for Jamaica.
- Robert Bryson, St. John, Antigua, agent for Antigua, Montserrat and Dominica.
- S. L. Horsford, St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.
- Edgar Tripp, Port of Spain, Trinidad, agent for Trinidad and Tobago.
- C. E. Sontum, Christiania, Norway, agent for Sweden and Denmark.
- D. M. Rennie, Buenos Ayres, Argentine Republic agent for Argentine Republic and Uruguay.

In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders.

- J. G. Colmer, 17 Victoria street, London, S.W., England.
- Thomas Moffat, 16 Church street, Cape Town, South Africa.
- G. H. Mitchell, 15 Water street, Liverpool, England.
- H. M. Murray, 40 St. Enoch Square, Glasgow, Scotland.
- Harrison Watson, Curator, Imperial Institute, London, England.

LUMBERING OPERATIONS IN QUEBEC.

The annual report of the Commissioner of Lands, Forests, and Fisheries for the province of Quebec, states that during the year ending June 30th, 1899, the receipts from woods and forests were \$894,289.48. This includes the proceeds of a sale of 1,933 square miles of limits, which brought \$135,281.40. The area of timber limits under license is 45,889.4 square miles.

The report contains the usual statement of timber cut within the province during the year under review. This is as follows:

Pine, at dues of \$1.30 per M	105,722,426	feet.
Pine " " 80c " "	48,992,290	"
Spruce " " 65c " "	303,393,832	"
Boom timber.....	80,809	"
White pine timber.....	840,191	cub. ft.
Red " ".....	51,027	"
Birch timber.....	368,138	"
Cedar " ".....	293,700	m. ft.
Firewood.....	3,355	cords
Palp wood.....	3,800	"
Railway ties.....	466,368	pieces
Spool wood.....	1,107	cords
Shingles.....	11,864,000	"
Pickets.....	4,234	pieces
Telegraph poles.....	5,883	"

A comparative statement is also given of the quantity of different varieties of timber manufactured since 1866, from which we extract the following:

Seasons of Production.	Pine Sawlogs at \$1.30 per M	Spruce and Hardwood Sawlogs	Pine logs at Ex per M	White and Red Pine		Birch Elm Maple, Etc	Small Timbers Pine, Spruce, Boom and Flat Timber
				Pieces	Pieces		
1866-67	1,101,200	379,286		81,943	381		
1867-68	1,311,115	4,7624		44,456	2,694		
1868-69	1,514,206	35,947		77,838	4,838		
1869-70	1,671,462	44,119		77,831	3,222		
1870-71	1,678,832	52,675		74,687	2,145		
1871-72	2,010,862	435,575		87,677	4,473		
1872-73	2,241,714	80,112		80,673	2,638		
1873-74	2,337,368	1,102,100		79,338	11,741		
1874-75	1,474,747	67,114		77,771	16,595		
1875-76	1,181,976	78,519		111,879	17,758		
1876-77	1,177,644	842,794		80,825	14,74		
1877-78	1,337,830	797,440		65,238	7,735		
1878-79	1,179,745	445,872		59,514	9,456		
1879-80	1,779,811	1,465,842		34,601	6,722	19,978	
1880-81	2,418,953	1,323,311		18,527	2,572	23,247	
1881-82	2,610,956	1,411,671		17,727	1,111	47,640	
1882-83	2,641,248	1,311,382		17,873	1,579	28,952	
1883-84	2,704,775	2,111,779		27,81	9,841	18,121	
1884-85	2,187,608	1,388,937		6,48	5,874	14,680	
1885-86	2,591,119	1,352,270		21,445	2,110	37,371	
1886-87	2,391,795	973,302		12,804	325.5	31,360	
1887-88	3,301,61	1,614,595		12,717	2,717	31,071	
1888-89	2,502,317	1,121,322		45,944	2,072	3,013	
1889-90	2,147,447	2,611,997		61,670	18,321	8,401	
1890-91	2,207,814	2,527,721		15,768	8,101	6,362	
1891-92	3,121,956	2,749,476		47,972	59,766	14,178	
1892-93	2,441,434	2,741,357	648,644	41,201	12,730	17,794	
1893-94	2,004,551	2,292,159	717,63	35,881	631	7,644	
1894-95	2,114,702	4,377,215	1,446,774	1,275	1,275	15,051	
1895-96	2,181,049	4,594,839	1,508,227	9,113	1,113	0,341	
1896-97	2,082,676	6,000,005	1,048,327	37,551	1,928	4,064	
1897-98	1,471,041	5,431,719	823,576	19,921	9,183	12,184	

FROM THE TIMBER TRADE.

The great interest shown in Colonial affairs by Great Britain has been demonstrated by the numerous contributions from that quarter in behalf of the sufferers from the recent fire at Ottawa and Hull. THE CANADA LUMBERMAN acknowledges the receipt of contributions of \$50 for this purpose from Messrs. Irvin & Sellers, timber importers and merchants, Liverpool, Eng., and \$10.00 from Messrs. Sieveking, Podmore & Co., timber importers, London, Eng. Several other timber merchants and brokers in the Mother land have also contributed to the fund through the Ottawa banks.

The height of a chimney to create a draft for any kind of fuel will depend to a large extent upon the area of the flue. A chimney that is too high in proportion to its diameter will create no better draft than one that is not high enough, while the cost of the higher structure will, of course, be greater. The cause of chimney draft, that is the intensity of the draft, is due to the difference between the weight of the column of hot gases inside the chimney and the weight of a column of the external air of the same height.

INCREASING THE EFFICIENCY OF BAND RESAWS.

By A. J. BURTON.

A WRITER wants the opinions and experiences of expert band filers on how to increase the efficiency of band resaws. I do not consider myself expert, therefore will not give my opinion, but will tell some of my experiences and what has given me good results.

I think 75 feet a minute a slow feed for a 6-inch 19-gauge resaw. If he runs his saw 9,000 feet per minute, as he should do, and if the saw is the usual 30-foot length, the saw will go round 300 times per minute. Putting the stock through at the rate of 75 lineal feet per minute will only give him a 3-inch feed. If he will have his filer put up his saws according to the following instructions he can just as well make the feed 150 lineal feet per minute, the lateral movement of the saw at that speed will not exceed 1/4-inch, and will not reach that except in 20-inch cuts or over. Neither will the saw dart forward on the wheels when not in the cut, nor will it show a tendency to crack. How to do it:

First, get a good make of resawing machine, with perfectly balanced wheels and the face of wheels flat. Set the mill on a solid foundation. Pay as much attention to oiling the straining device as to oiling the bearings, so tension on saw will be entirely sensitive at all times. The



rolls must be in line with saw so stock will pass through straight and at even speed. Then comes fitting up the saws. Put a crown in back edge of saw equal to 1-32-inch in 5 feet 6 inches in length. Don't do this by guess or you will probably not get it even. Make a straight-edge 5 feet 6 inches long, then plane out the back edge until it shows proper concave on front edge. Now roll back edge of saw the length of straight-edge, then place straightedge against back edge of saw; by changing end for end you can easily see whether you have the proper concave or not. Now file it a little, or draw out back of saw as the case may be, until straightedge fits tightly to saw when held either end to. Fit back of saw to straightedge all the way round. Tension the saw to a 36-foot circle from one edge to the other. This must be well done. There must be no loose or stiff spots in the saw. All this should be done with the stretcher.

Next, level the saw by taking out all the cross-face lumps on the inside first, then the long-face lumps. Go over the outside in the same manner and repeat until saw is perfectly flat, with a true back and good, even tension. Space the teeth 1 1/4 inches, 1 1/2-inch deep, with good, large, round gullet made by a 1/2-inch emery wheel. Use 6 1/2-inch hook in 10 inches, which is equal to 3 1/2 inches in a 6-inch saw. Round or raise the back of teeth a little like 2 in sketch. You will observe that 1 has a hook of 35 degrees angle, which is 8 1/2 inches in 10 inches, while 2 has but 6 1/2 inches in 10 inches. Never raise back higher than shown by dotted lines. Sketch shows 1 1/2-inch teeth, but you can make 2 with 1 1/4 inch space. Swage with a face swage and side dress with a pressure side dresser or shaper. Don't use a side file at all, and don't use a heavy swage. Do all your sharpening with the grinder;

if the machine is properly adjusted it will do better work than can possibly be done by hand with a file.

If you put saws up according to these instructions they will not oscillate, but will run straight as a string, without a quiver, making no noise in the guides—you can take off the back guide and sell it if you wish, for your saws will not run back on the wheels in the cut. You can feed them until they snake or break, but they will not go back on the wheels. Have wheels in perfect line and use the tilt but not the crossline. Don't use a top swage on a band resaw unless you desire to date yourself back 15 years.—The Woodworker.

SOME INTERESTING FIGURES.

The wholesale lumber dealers of Buffalo and Tonawanda held a joint conference at the former city on January 20th. Close comparisons of stock with those of a year ago were made at this meeting, and it was shown that no accumulations existed.

A very interesting feature of the meeting was the table of prices on white pine uppers and culls, compiled by Mr. M. E. Priesch, vice-president of the Buffalo Lumber Exchange. Mr. Priesch first set out to show also the prices on common, but found this grade had changed so radically as to make comparison impossible. His figures are as follows:

		Uppers.	Culls.
1886	July	\$18 00	\$7 50
1887	January	19 00	8 50
	July	15 00	11 00
1884	January	30 00	13 00
	July	30 00	15 00
1885	January	38 00	16 00
	July	28 00	11 00
1886	January	30 00	12 50
	July	45 00	14 00
1887	January	45 00	14 00
	July	45 00	4 00
1888	January	45 00	14 00
	July	45 00	14 00
1889	January	45 00	14 00
	July	45 00	14 00
1890	January	45 00	14 00
	July	43 00	13 00
1891	January	49 00	13 00
	July	42 00	13 00
1892	January	51 00	16 00
	July	50 00	16 00
1893	January	50 00	17 00
	July	46 00	12 50
1894	January	44 00	12 50
	July	44 00	12 00
1895	January	42 00	10 00
	July	40 00	9 00
1896	January	37 00	9 00
	July	37 00	9 00
1897	January	37 00	9 00
	July	33 00	9 00
1898	January	30 00	9 50
	July	28 00	10 00
1899	January	28 00	10 00
	July	8 00	0 00
1900	January	26 00	12 00
	July	42 00	12 00
1881	January	45 00	12 00
	July	44 00	11 00
1882	January	46 00	13 00
	July	47 00	13 00
1883	January	47 00	13 00
	July	47 00	13 00
1884	January	47 00	13 00
	July	46 00	12 00
1885	January	46 00	12 00
	July	45 00	11 50
1886	January	45 00	11 00
	July	45 00	11 50
1887	January	45 00	12 00
	July	45 00	12 00
1888	January	45 00	13 00
	July	44 00	12 00
1889	January	44 00	12 50
	July	43 00	12 50
1890	January	44 00	12 50
	July	43 00	12 50
1891	January	44 00	12 50
	July	43 00	12 00
1892	January	44 00	12 00
	July	45 00	12 50
1893	January	48 00	13 00
	July	48 00	13 50
1894	January	47 00	13 50
	July	45 00	13 00
1895	January	45 00	12 00
	July	45 00	12 00
1896	January	44 00	11 00
	July	44 00	11 00
1897	January	45 00	11 00
	July	45 00	10 00
1898	January	45 00	10 00
	July	45 00	12 00
1899	January	46 00	12 00
	July	51 00	14 00
1900	January	57 50	19 00

Mr. Priesch pointed out that present conditions were similar to those of 1879—a reaction following a long depression. He said 1879 ushered in a period of five very prosperous years, and he drew from this the pleasing conclusion that present prices on lumber generally would persist for at least that long.

A SIMPLE ELEVATOR.

This simple form of elevator for use in mills, furniture and chair factories, carriage wagon and agricultural works can be cheaply erected. The cable is operated between the corner wheels, A, A, the latter reaching from floor to floor. The cable passes around grooved wheels, B, C, D and E, as shown, and a sheet iron cylinder is connected in and filled with lead to counterbalance the weight of the cage.



Therefore, in shifting loads from floor to floor the weight of the load is required to be lifted by hauling on the cable. The cage is in place at a floor level by means of the shoe which presses against the upright at I, when the lever is drawn down with the hand piece J, spring K releases the shoe when pressure is withdrawn from the hand rod F.—Lumberman.

ABOUT CONDENSERS.

IN arranging for jet condensation with engines of any dimensions, it is necessary to use considerable care, says the American Machinist, as by reason of the short time required to overflow there is danger of backing up into the cylinder at stopping, or of the water running down, and in such a case a breakdown is likely to occur on again starting ahead.

It is not always convenient to arrange the injection valve within such range of the throttle that it can be once closed on slacking the speed, and even when it is so placed it is much more satisfactory to prevent against flooding in a way that allows the valve to be at normal opening, as the injection requires some attention to properly readjust after being once changed.

The best all-round method of accomplishing the desired result is to place a float in the condenser, an arrangement being operated by the lever when water rises above the safety point. This arrangement relieves the engine of all anxiety, his only responsibility being to see that the apparatus is maintained in proper repair and in good condition.

If a float cannot be used, a simple air cock, placed from near the engine throttle, will be found the best device, as by a turn of the hand wheel at slowing down air enters the condenser and holds the condenser water back without necessitating the closing of the injection valve.

The class of engine known as "high-pressure condensing," in which there is no vacuum under the piston conditions—the exhaust steam being simply directed into a tank of feed water for the purpose of heating the latter—should be supplied with a float and air cock, stopping the steam in cylinder on exhaust side if it is liable to condense, and in that case, unless provision has been made to prevent it, the feed water will block up in the engine and possibly freeze the cylinder head when steam is again turned on.

The use of a float in either type of engine prevents flooding due to the pumps failing to function properly.

Air-pump valves are often found broken, if of soft material, if of the soft rubber so often used, and in such cases the pump is likely to fail to clear the condenser.

Foreign substances, waste, chips, etc., are very liable to jammed in the passages, and where the valves are downward-hanging—held to their seats by springs—stud nuts are liable to work loose, letting the valves into the chamber below. For this reason pumps should be designed with lifting valves only, in which the springs can be much lighter, and the seating is more satisfactory than where both the weight of the valve and the column of water must be balanced by the spring wire coil.

George Dowding & Sons have made improvements to their saw mill at Kerwood, Ont.

The construction of a new saw mill at Princeton, C., has been completed by Hardwick, Martin & Co. Their dam gives a direct waterfall of twenty feet, twenty-eight inch turbine.

A MODEL WOOD-WORKING PLANT.

By GERARD LESLIE PARKER, in The Tradesman

Problems confront the builder of an up-to-date wood-working plant, and the subject requires for many reasons, considerable study. Careful thought should be exercised as to the character of the building, the amount of power to be employed, and the selection of the best machinery for the class of work to be manufactured. Excellent judgment should also be used in arranging each machine to the best advantage and to economize time and labor in handling material, as well as to avoid the use of double stands and twist or quarter turn belts.

The ideal building for a general wood-working plant should be, according to my views, a one-story structure, where all machines are placed on one floor. This does away with all vibration, with the expense of more than one foreman, and with carrying material up several stories, besides possessing many other advantages. The building should rest upon a substantial foundation about the height of a wagon body, to facilitate unloading and loading material. Provision should also be made for an abundance of light.

I think I can safely say that nine out of ten practice too strict economy when it comes

and create undue friction, while one 2 7-10 inches will run beautifully under the strain of any work it may be called upon to do. A slow running main line in a factory where machines require high speed necessitates the use of large driving pulleys and many times intermediate countershafts. As a result extra expense is incurred, slippage of belts and loss of power. To get perfect results the main line should run 350 or 400 revolutions per minute.

The next subject that presents itself is that of pulleys, and quite a difference of opinion exists as to which is the better kind, wood or iron. The wood split pulleys are preferable for the reasons that they cost less, are lighter and easier to put up, cause less friction on the main line boxes, present a better surface for the belt, and at the same time are equal to any demand that may be made upon them.

Cheap machinery is to be avoided, and is dear at any price.

The plan herewith presented represents a small sized one-story factory, 120 by 72 feet, with engine and boiler in a detached brick building, and a small dry kiln. It is arranged as I would recommend it for an up-to-date plant, and one which could be operated with the greatest convenience and profit to its owner. The main line runs lengthwise of the building and the machines are so set and arranged that no twist or quarter-turn belts are required.

With this arrangement the rough board enters at one end of the building to swing cut-off saw or to the self-feed rip saw and passes successively from these machines to each of the others until it comes out at the further end of the building in the finished product. Thereby the greatest economy is practised in the manipulation of the material worked.

The swing saw and self-feed rip saw are located in a group near the door where the lumber enters the mill. The material is here cut to an approximate length or ripped up into strips preparatory to being operated upon by the other machines.

The molder is conveniently situated at the side of the rip saw to receive from it the strips that have been prepared for the production of moldings.

Next comes the planer for smoothing the boards and for bringing them to the desired thickness.

The hand jointer or buzz planer is next in order. Following this are the band saw and shaper, with the combination saw by their side at the left in the plan. The latter machine is very convenient to the central and rear groups, to both of which it bears particular relation.

The tenoner and mortiser, which are even more dependent upon each other than the shaper is upon the band saw, are located in the rear group within close proximity to each other.

In this same group will also be found a boring machine of either the horizontal or vertical pattern, as may be preferred, and close to the side of the building, at the right of the plan, the wood turning lathe.

By reference to the plan here shown, twelve machines will be found to be represented and would cost from \$1,500 to \$1,800. The combined power for all, including a blower system, figures about forty-five horse power; consequently the plant should have an engine of at least seventy-five horse power. The entire plant, including building, engine and boiler, machines,

main line and a good blower system, could be built for about \$8,000.

In such a building as has been described, with good arrangement, first-class machinery, and an ample amount of power, the work will be accomplished conveniently, economically and satisfactorily.

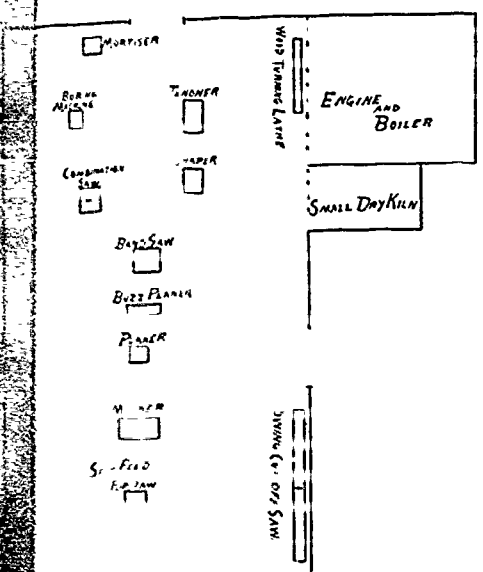
ENGLISH OPINION OF WOOD PULLEYS.

The makers of wooden pulleys claim that they (1) have much greater driving power than iron pulleys, (2) that they are much lighter; (3) that they are cheaper. As regards the first claim, it cannot be denied that a good wooden pulley is superior to an iron one in driving power, owing to the increased grip of leather driving bands on wood. The best wooden pulleys are also about 45 per cent. lighter than wrought iron pulleys, and 65 per cent. lighter than cast iron, which means a considerable reduction in the power required to turn them round and in pressure on the bearings.

Another point in favor of wooden pulleys, at any rate for light powers and high speeds, is the question of centrifugal force and its effects on the shaft and bearings. In the case of heavy cast iron pulleys, this is often a matter of considerable moment, as the centrifugal force is as the square of the velocity. In some cases, with the object of strengthening the rim of the pulley, its thickness has been increased, but this only accentuates the evil; as the centrifugal force increases with the weight, the pulley becomes more dangerous for high speeds, and the strain on the driving shaft and bearings is increased in ratio.

Although wooden pulleys have been considerably improved of late, inferior ones are still made, and some of these will be found to wear out of shape or warp, especially if used in a damp atmosphere. Many wooden pulleys are built up in ring segments, glued, nailed and doweled together and faced with poplar or maple, and it is claimed for this arrangement that as the wood alters only very slightly in the line of grain, the shape is maintained. *Timber Trades Journal.*

From a lecture delivered recently in the Sorbonne by M. Mangin, it would appear that Paris possesses about 80,000 trees in the streets and public places of the city. It is calculated there are 20,000 plane trees, 17,000 chestnuts and 15,000 elms, the remainder consisting of sycamores, maples, lindens, etc. Apparently there is only one oak and one mulberry. Although the trees add so much beauty to Paris, there is a large percentage of mortality among them. In the center of the city, they suffer from want of air. In the gardens of the Luxembourg, Tuileries, and in fact in all which are surrounded with houses, what M. Mangin calls the reverberation of the sun's rays is fatal to many trees. He maintains that the trees breathe not only by means of the leaves, but also by the roots, and consequently in streets where the ground is hard it is difficult for a tree to be in a healthy condition. Of late years the scavengers have cast salt on the pavement in order to dissolve the snow. The substance, he considers, is most prejudicial to the roots of trees. But M. Mangin believes the greatest enemy to the Paris trees is the engineer, who carries out excavations without regarding their existence.



A MODEL WOOD-WORKING PLANT.

...purchasing an engine. This is an important matter, and one that should be given careful consideration. An engine which can barely do its work, and which groans and grows weary under its load, is an expensive and unsatisfactory investment to have around; while an engine of generous running the same machines will give perfect satisfaction and accomplish the work with greater economy, both as to fuel consumption and wear and tear. Of course, in many wood-working plants every machine is not running all of the time, but to be on the safe side it should be prepared for an increasing business and for running additional machinery I advise purchasing an engine of at least 50 per cent. more power than what the combined power figures for the original bill of machines. The engine should be located if possible nearest the group of machines requiring the most power. This, however, is not always done, but it is a good rule to observe.

Another fault common in the wood-working factory concerns the size and speed of the main line shaft. A shaft 1 15-16 inches in diameter will in every case spring under its load

THE NEWS.

—James Dunbar is building a saw mill at Sundridge, Ont.

—R. F. Houston is building a sash and door factory at Tweed, Ont.

—Long & Thompson are reported to have sold their foundry at Orillia, Ont.

—A local paper states that J. W. Munro may build a saw mill at Pembroke, Ont.

—The Pembroke Lumber Company have lately put in an improved machine for filing saws.

—The Anderson Furniture Company, of Woodstock, are building a saw mill at Trout Creek, Ont.

—Nichols & Son have just completed a new saw mill on the north shore of the river near Almonte, Ont.

—It is reported that Grey & Riley, of Bay City, Mich., purpose building a saw mill in the Georgian Bay district.

—The Royal City Planing Mills Company have just completed a new shingle mill at New Westminster, B. C.

—Walker & Faulkner, lumber dealers, Grenfell, N. W. T., have dissolved partnership, John Walker continuing.

—The Rat Portage Lumber Company recently installed a new engine and boiler in their No. 1 saw mill at Rat Portage, Ont.

—A dry kiln in connection with the Royal City Mills at Vancouver, B. C., was destroyed by fire on May 4th, at a loss of \$5,000.

—Mr. Stout has changed the location of his saw mill at Columbia, B. C., and is building a spur line of railway to the mill-yard.

—The Firstbrook Company expect to commence the erection of their new factory at Penetanguishene, Ont. at an early date.

—It is rumored that Clark, Skillings & Co., of Boston, have under consideration the erection of a spool factory at Newcastle, N. B.

The Knight Bros. Co., of Burks Falls, Ont., will probably erect a large planing mill and woodworking factory at some other point.

—Spencer Bros., Turner & Logan, of Truro, N. S., have just completed an extension to their woodworking factory and installed several new machines.

—James Niblett, scaler of the St. Anthony Lumber Company at Whitney, Ont., is said to have scaled during six months 83,500 logs, representing 8,250,000 feet of lumber.

—R. & T. Ritchie, of Aylmer, Que., have secured a contract to saw a considerable quantity of logs for the Hull Lumber Company. They will operate their mill day and night this season.

J. W. Munro and Thomas Mackie, lumber merchants of Pembroke, Ont., have, with others, formed the Allumette Oil Company, to bore for oil and natural gas and to refine petroleum.

—Davidson & Thackray, of Ottawa, have announced their intention of building a saw mill outside of the corporation limits. The mill will have a capacity of ten million feet per annum.

—An effort is being made to induce several Michigan lumbermen to establish saw mills at Windsor and Sandwich, Ont. Mr. R. Y. Smylie, of the People's Saving Bank, Detroit, is interested in the matter.

P. G. Gordon & Co., of Montreal, have leased the old Mason saw mill at Hintonburg and will saw logs for the Hull Lumber Company. It is said that arrangements may be made whereby the mill will be operated during the entire year.

—The Ottawa Saw Works Company suffered the loss of their works by the recent fire in Ottawa, and consequently they have been unable to fill all orders. We are pleased to learn, however, that they are now rebuilding on a more extensive scale than before.

—For twenty-nine years Shaw & Dougall have carried on a saw and shingle mill business at Hallville, Ont., but on March 31st last James Shaw purchased the interest of his partner and became sole proprietor. R. J. Dougall purposes engaging in the mill elsewhere if a suitable site can be procured. In the year 1892 the mill and stock of lumber belonging to the above firm was destroyed by fire,

entailing a loss of \$10,000, on which there was no insurance.

—Mr. E. Stewart, Inspector of Forestry for the Dominion, has recommended that in order to protect the forest areas against fire the government should employ a number of fire rangers for at least four months in the year. He estimates that there would be required seven men in the British Columbia railway hills, twelve for the foot-hills and Edmonton district, and ten for the other districts of Manitoba and the Territories.

—The red mill at Little Current, Ont., has been completely refitted by the W. A. McArthur Company, of Cheboygan Mich. The building has been overhauled and a new iron roof put on. The improvements to plant consist of a steam log loader, three block carriage, edgers, trimmers, etc., as well as a new 48 inch Wick's gang saw furnished by Mershon & Co., of Saginaw. In the boiler room there are five boilers and the necessary engines for operating the machinery and for supplying power for the electric light plant situated on the premises. The refuse from the mill is carried to an iron burner 26 feet in diameter and 90 feet high. The yards are equipped with tramways and other modern improvements to facilitate the carriage and piling of lumber.

CASUALTIES.

—A young man named Cover was instantly killed in the saw mill at Ethel, Ont., by being struck by a board thrown from the saw.

—As a result of a boiler explosion in the shingle mill of Frank James near Hobart, Ont., Fred, son of the proprietor, was hurled about 75 yards and instantly killed. Another son, Albert, was severely scalded by escaping steam.

—George Kinsley, head sawyer at Gordon's mill at Thessalon, Ont., attempted to remove some bark under the saw when his arm was caught by the saw and almost cut in two. It was considered necessary to amputate the arm, and he died in a few hours.

—Paul Godin was employed in William Peter's mill at Parry Sound, Ont. A log having jammed on one side of the slide from the jackladder, he left a boy in charge of the lever and went down to start the log; while thus engaged, a log came up the ladder and the boy in charge moved the wrong lever, throwing the log over on the side where Godin was working. The log struck him on the head, resulting in almost instant death.

NEW BRUNSWICK NOTES.

(BY A TRAVELLING CORRESPONDENT)

Small & Fisher's machine shop and factory in Woodstock are well worth a visit at any time, and one finds them well managed and up-to-date in their equipment. The concern is one of the "old reliable," and their name is known particularly well throughout the Maritime provinces. They turn out a splendid make of shingle machine, and do a good deal of mill work, manufacturing rotaries to order. The shingle machine which they are now making is much heavier than that formerly turned out, having 2½ inch steel arbor and other parts in proportion. It is of eccentric gear and is fitted with self-oiling boxes. They have filled orders for this machine from Quebec, Ontario, and even as far west as British Columbia, and have also shipped into New Hampshire, Maine. In another column may be seen a cut of this machine. When the LUMBERMAN representative called a big order was being filled of bridge castings for the Hartland bridge. The Small & Fisher Company turn out great quantities of farm machinery, including threshing machines, plows and harrows, also some fine lines of stoves. Their machine shop is fitted with modern apparatus for manufacture, including four lathes, two planers, four drilling machines, bolt threading machine, etc. One lathe is 22 feet between centres and swings 40 inches. The foundry is a good one and the wood-working departments are well fitted up. Adjoining the machine shop is an electric plant of a capacity of 500 lights. This is a commercial plant which supplies the town to a large extent. It is well fitted up, there being two Maegher dynamos connected in series, driven by a Buckeye automatic engine. The machine shop engine is of E. Leonard & Sons manufacture. Mr. John Hastie, the foreman, whose services has but recently been acquired, is a Scotchman of good experience.

Maritime millmen are well acquainted with the Connell Bros., of Woodstock. They have a good machine shop and foundry, and turn out quite a quantity of shingle machines. They recently shipped three to Fenderson's mill at Sayabec, Que., where other machines of the same class have been in use for some time. Among other recent orders were eight for the Manufacturing Company, one for L'Itchen's mill, Rose, near Edmunston, one for J. J. Wheelock, St. N.B., and one for T. Crockett, St. Rose. They have quite a number to Quebec province, and state that about 70 in use there now.

The writer was shown, at the office of C. H. D. & Company in Woodstock, one of the best things of the way of larrigans ever brought out. This firm is into the manufacture of lumbermen's foot wear, and some fine samples. The Henderson patent larrigan is not likely to belie its name, and is guaranteed every way against ripping. Practical lumbermen know how the snow packs up under the ankle flaps and stubs catching in will tear the sewing. This is prevented by the new construction, which may be seen in the cut in Mr. Dickinson's advertisement in this column. The vamp overlaps the quarter, making it the same as a lace shoe, and the gusset being made it thoroughly waterproof. Mr. Dickinson has many testimonials from leading lumbermen and dealers in the Maritime provinces, all speaking in the highest terms of the waterproof and non-ripping qualities of the larrigans. Patents have already been secured in the United States and Canada. The firm's premises on Connell street are being refitted and doubled in size. They will also manufacture belt lacing, and their long experience in leather should guarantee the leather being of good quality.

J. W. Boyer & Co., of Victoria Corners, near Woodstock, tell of good business during the past year. They are manufacturers of lumbermen's boots and shoes, heavy harness. All their goods are the best of the kind made. This spring they made about 2,500 pairs of shoes and boots. Their books show large profits from the best concerns in eastern Canada. They are now extending their business into Quebec more and more.

Albert Hayden will shortly make improvements in his mill in Woodstock, making it practically a new mill, with the exception of the undergear. It now contains a shingle, lath, and clapboard machines and planer. Hayden cuts over 3,000,000 feet of long lumber per year and nearly as many shingles. He also has a sawing factory and intends putting in a new edger. It is intended to tear away the whole upper part of the mill and to raise the main floor one storey, bringing it on a level with the way tracks, thereby greatly facilitating the work of lumber.

Gilman Bros. & Burden, of Pokiok, are cutting 6,000,000 feet of long lumber this year. They have a gang and rotary mill and manufacture laths and shingles. Their wood-working factory turns out doors and floors, hardwood sheathing, mouldings, sidings, and kinds of house fittings.

Jas. Carr's mill near Woodstock is cutting 1,500,000 feet of lumber this year. He has 10,000 acres of timber land nearby, chiefly hardwood.

L. S. R. Lockhart will make considerable changes in his grist mill in Hartford, near Woodstock, this year. He will improve his wheat flour plant by putting in a gradual reduction system.

The St. John Sun, in recently estimating the output of lumber, undoubtedly exaggerated the amount given in the last issue of THE LUMBERMAN. The amount given, 2,000,000 feet, is about accurate. Hale & Murchie are cutting out over 7,000,000 feet at the moment, and are expected to be over 12,000,000 as the Sun states. R. A. Estey's cut is expected to be over 4,000,000 feet.

Jas Pinder has a good mill in Temperance Vale with a rotary, shingle and lath machines, planer and edger. He cuts about one-half million shingles per year. Quite a few of these are hemlock, but for trade supply only. They sell at \$1.50 per M.

Donald Frazer & Sons have 6,000,000 feet of logs in the way out of Green River, in Madawaska county. They do not, however, expect to get it all out until the first of June.

May 18th, 1900.

FORESTRY FOR INCOME.

When a person owns a piece of timber land every year cuts off the matured timber in a manner to secure an income without reducing the value of the estate, that is forestry practical forestry, with a view to a perpetual income. It is practised in all civilized countries to a more or less extent except in the United States. Even Canada, one of the great wooded countries, has regulations for timber that tend to perpetuate her forests and bring a large annual income to the government. In England, on private estates, and in most of the countries of continental Europe, a system of forestry prevails that not only permits of large annual incomes from forest products, but actually increases their forest resources, both in volume and value. A recent London timber paper contains this item:

The annual sale of timber on the Duke of Devon's Kiveton Park estate was held on March 1st by Mr. F. Bannister at the Kiveton Park Hotel, Rotherham. There was a good attendance of buyers. The sale was the most successful held for the last twenty years, the quality of timber being exceptionally good, and creating keen competition. There were twenty-nine lots offered, and the total proceeds exceeded £400."

\$7,000 income annually from the increased growth of timber on one estate is not a very small matter. It will require a pretty big cotton plantation or farm to equal it. Income from practical forestry is like pension money: it comes without effort or labor, only requires common-sense supervision and management. The land improves in fertility under proper forestry, and standing timber—the owner's capital—is unimpaired in value. Money from a cotton crop or grain crop comes mightily like digging it out of the ground with constant toil and sweat and discomforts, with a large and ever-present factor of uncertainty as to whether there will be any come at all.

Beside from any immediate or prospective monetary profit, it is apparent to any one with the least insight that the present rate of forest destruction is a menace to the future welfare of the entire country. If not done otherwise, the time will come

in the next century when the States or the Federal Government will be compelled to enforce laws for the protection and promotion of forest growth. Why not every timber owner begin now, even if on a very small scale, to conserve timber now standing and to plant more?—Lumber Trades Journal.

A BUSINESS NECESSITY.

The Goderich Lumber Company write: Kindly send to our address, Owen Sound, a copy of the CANADA LUMBERMAN. As we have bought out the Pickard & Rowan business, we think we need the LUMBERMAN there as well as in Goderich—in fact, we think we cannot do without it in our business, it is so full of useful information regarding the trade. We cannot see how anyone in the business can get along without it.

The stem of a globe valve should never be left in a horizontal position, unless for some cause it is absolutely necessary, as it causes a trap to be formed that prevents the water draining out.

A CEMENT FOR WOODWORKERS.—A cement recommended for fastening wood to iron is made by dissolving glue in boiling water, making it of the consistence of cabinet-maker's glue, and then, while stirring, add a sufficient quantity of wood ashes to produce a mixture resembling varnish. The surfaces to be united

are heated and covered with this cement and allowed to cool.

On the subject of "Power Transmission by Belting," a writer in the American Miller says: "The advantage gained in running the grain side of a belt next to the pulley is not, as some belt makers have claimed, that more power is obtained by running it in this manner, but rather in the saving of the belt. It is well known that if a piece of belting be split in the center and submitted to a tensile strain, that the part next to the flesh side will be found to possess nearly double the tensile strength of that of the side next to the grain. Now, while we claim that the difference between the fractional power of each half amounts to but little, if any, the saving in the belt by wearing it off upon the grain side by running it next to the pulley amounts to enough to make it an object to run belts in that manner."

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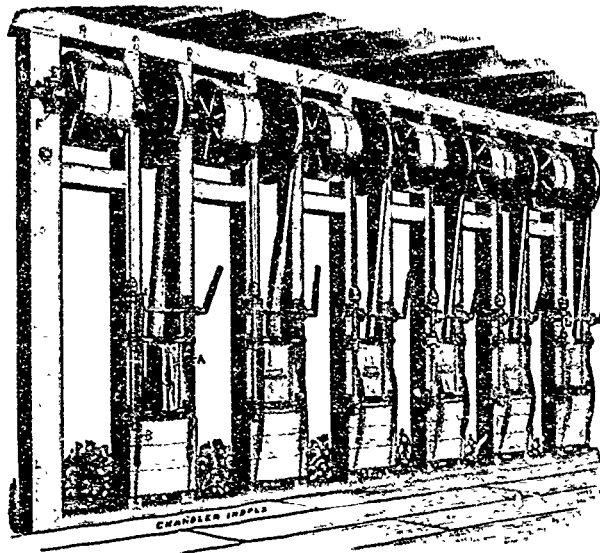
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WOOD PULP ~

DEPARTMENT

SODA AND SULPHITE PULP.

Dr. Max Muller, who has had a long experience in the manufacture of sulphite and soda wood pulp, states that 108.4 parts of sulphite pulp are obtained by the sulphite process from the same quantity of wood which yields 100 parts of soda pulp by the use of pure caustic soda. As this figure was obtained from many years'

the fluid at a high temperature is caused to impinge against any cast-iron part.

But perhaps the most serious objection to the sulphite wood pulp process is the foul odor escaping from the digester when the pressure is blown down after the digesting operation has been completed. This smell is so penetrating and offensive as almost to preclude the possibility

the sulpho-compounds becomes itself tasteless. Its disposal is quite as serious and a matter as the vapor itself. The best way of getting rid of the vapor is to first pass it through all steam associated with it, and then through incandescent fuel in the ordinary place of the recovery furnace. The sulphite compounds are then decomposed and the steam destroyed.

Notwithstanding this serious objection the sulphite process is the more frequently used, due to the fact that it yields a larger quantity of pulp from unit weight (or volume) of wood, that the fibre is stronger, has better bulking properties, and bleaches quite as well as soda pulp, and that the cost for alkali in



SPRUCE PULP WOOD PILED ON THE ICE.—THESSALON RIVER, ONT.

(From the Ontario Forestry Report)

manufacturing practice it is particularly interesting, and indicates clearly the advantages to be gained by pursuing the sulphite process.

The cost for alkali in the process is less than that in the caustic soda method. Salt cake is cheap and is easily decomposed into sulphides, but there is no doubt a larger proportion of alkaline salts to be dealt with in the sulphite process, which has a tendency to increase the labor account. Besides the presence of sulphide of sodium in the lyes, as well as the formation of this body in the furnace itself, gives rise to inordinate wear and tear. Lyes containing sodium sulphide act more severely upon cast or wrought iron than those containing pure caustic soda, so that the plates of the digester and tubes of the evaporator, if a multiple evaporator is used for soda recovery, are more or less acted upon and suffer injury in course of time. This is particularly the case in evaporators in which

of the manufacture being carried on in populous districts. In countries such as Norway and Sweden, where pulp works are, as a rule, far removed from centres of civilization, the manufacture can be carried on with impunity, but in England it would be practically impossible to do so, unless some special means were adopted to absorb or otherwise render harmless the vapors given off. The odor doubtless arises from the formation inside the digester at high temperatures of sulpho-compounds of the turpentine, and other closely allied bodies which exist in the wood, and which being of a highly volatile nature, pass away with the steam as the pressure is blown down.

Several schemes have been devised with a view to minimize the evil, such, for example, as passing the vapor through a scrubbing tower through which there flows a plentiful supply of water, but obviously the water which absorbs

aration is reduced to a minimum.—James H. Ridge, in *The Paper Trade Review*.

THE FIRE AT GRANDE MERE.

ON May 6th fire broke out in the mills of the Laurentide Pulp Company at Grande Mere. The first report of the fire was that the buildings of the company had been destroyed. This proved to be incorrect. The loss was confined to the pulp mill, chipper mill and saw house. Fortunately the magnificent paper mill and the saw mill of the company were saved by the shifting of the wind. An estimate of the loss places it at \$80,000.

The fire was caused by a heated shaft rope pulley leading to the pulp mill. Six days after the fire rebuilding operations were commenced.

The pulp mill contained a fine set of machinery made by the New England Machinery Co. of Sandy Hill, N.Y., with 300,000 gallons per hour capacity.

THE PAPER SITUATION.

destruction by fire of the extensive mills of the E. B. Eddy Company at Hull, Que., created a partial paper famine in Canada. The situation was further complicated by the destruction, one week afterwards, of a portion of the mills of the Laurentide Pulp Company at Grand Falls, Que. The Minister of Customs was requested by some of the newspaper publishers to suspend the duty on paper coming into Canada at such time as the demand could be supplied by the Canadian mills. It was claimed by the advocates of this action that the remaining mills were overcrowded with work, and that they could not supply the trade. The Minister of Customs, however, refused to remove the duty, on the ground that it would be an injustice to the Canadian paper-makers and might bring about unforeseen complications. This decision will no doubt prove to have been a judicious one, as it is said that already the supply is almost equal to the demand.

TO MAKE PULP FROM SHAVINGS.

A patent, covering a process of making pulp from shavings, has been issued to Joshua Norwood of Boston. The inventor says:—"My invention consists in utilizing shavings by subjecting them to a water-pressure sufficient to thoroughly saturate and soften them and then disintegrating them to the beating treatment of an ordinary beating-engine without any intermediate reducing treatment whatever. No attempt is made to destroy or remove the gum or other constituents from the shavings in this invention. I am aware that attempts have been made

to make fibre from sawdust and shavings by cooking in alkali, and my patent No. 496,275 treats sawdust, shavings and waste by both the alkali and sulphite processes; but I am not aware that pulp or fibre has been made from shavings by saturating and softening such material by water pressure and directly, without intermediate manipulation, introducing the same to the action of the common-beating engine."

PULP NOTES.

The Mayor of Parrsboro, N.S., states that London capitalists are still considering the erection of a pulp mill at that place.

Mr. George Johnson, statistician for the Dominion government, is engaged upon a voluminous report of the pulp wood resources of Canada.

Over two hundred men engaged in building the paper and pulp mills of the Lloyd Paper Company at Sturgeon Falls, Ont., struck for higher wages recently.

Arrangements are reported to be nearing completion for the purchase by, Montreal capitalists, of James Reid's paper mills at Lorette, Que., and their transformation into ground and sulphite mills, at a cost of \$100,000.

A meeting of the Labrador Electric and Pulp Company was held at Montreal recently, at which Raymond Prefontaine, Q.C., was elected president, Hon. A.H. Huberdeau vice-president, and Mr. A. V. Boivin secretary-treasurer.

Incorporation has been granted to the Nipigon Pulp Company, with a capital of \$250,000. Messrs. John Flett, W. N. Rowell and J. G. Shaw, of Toronto, F. S. Wylie, of Port Arthur, and Paul Weidner, of Detroit, are the provisional directors of the company.

Rumors are afloat that New York capitalists have purchased the option of a valuable water power at a point on the famous Saguenay river from its source at the Grand Discharge, at the foot of Lake St. John, to Wilson's Power, about twelve miles above Chicoutimi. It is

believed that the erection of a pulp mill is under consideration.

Previous to the destruction by fire of a portion of the Laurentide pulp works at Grand Mere, Que., the company had placed an order with the Bagley & Sewell Company for a 120-inch news machine. This machine, it was expected, would bring the product of the mill up to 80 tons of paper per day.

The Spanish River Lumber Company are laying out the site for their proposed pulp mill on the Spanish river. They have also had surveys made for a railway to connect the works with the Soo branch of the C.P.R. The works will be located near Webbwood, where there is a fall of sixty feet, capable of developing, it is said, twenty thousand horse power.

A meeting of the paper manufacturers of Canada was held in Montreal on May 18th, at which questions affecting the trade were considered. Although the press was not admitted, it is understood that the question of making an advance in the price of paper received some attention. Two committees, one for the west and one for the east, were appointed to make arrangements to entertain the delegates of the Paper Makers' Association of England, who will make a tour of the United States and Canada during the summer months of this year.

In a communication to the CANADA LUMBERMAN, the editor of Paper and Pulp, London, Eng., states that the term "moist pine" as used in Great Britain means ordinary mechanical pulp containing 50 per cent of moisture in which form the great bulk of mechanical pulp is shipped to that country. "Dry pine" is the same pulp in an air-dried condition. He says further: "Most of the mechanical pulp used here is imported from Norway, the quantity received from Canada being insignificant compared with the total. Canadian mechanical pulp has the reputation here of being better than that from Scandinavia, but it does not as a rule realize higher prices, so that the quotations in our market reports apply equally to Norwegian and Canadian. There is a great scarcity at present, and high prices are being realized, but for delivery onwards from July it is being quoted at from 60 shillings to 65 shillings per ton, 50 per cent. moist.

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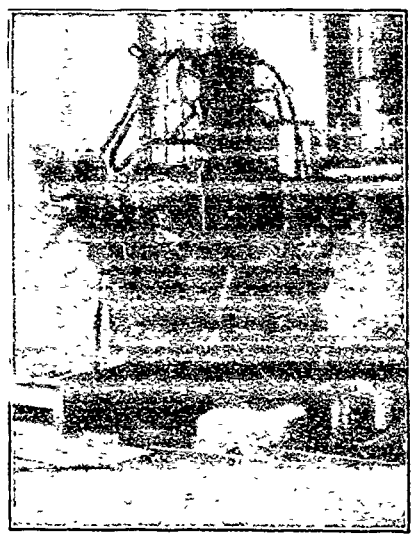
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DOMES ON STEAM BOILERS.

By W. H. WAKEMAN.

A few days ago I fired up a boiler that had not been used for about six months. After the air was forced out of it by the steam, through an open safety valve, the valve was closed and pressure allowed to accumulate. It was not tight, so I raised the lever and let steam blow freely through it. At first this steam was dry, but after about 30 seconds the discharge pipe was nearly half full of water that was coming out with the steam. As this boiler has no dome on it my attention was called by the incident to the difference between boilers that have domes and those that have none. In the above mentioned case the boiler was not flooded with water, as there was only two gauges, or no more than would be carried in practice.

The philosophy of the water coming out with the steam is as follows: When the safety valve was lifted enough to give the full capacity of pipe, there was a very great rush of steam through it, which lowered the pressure on the surface of the water immediately under the steam pipe. I do not mean to say that it was lowered very much, for it probably was not, but a difference of one pound is enough to cause trouble; for, as the pressure is maintained on the remainder of the water surface, it forces the water directly below the steam pipe out with the steam. Domes are put on boilers to obviate the evil, for they afford a very much larger opening for the escape of steam, consequently the velocity is less, and the water below the opening is not forced up with the steam. It is not assumed that the shell is cut away for the full size of the dome, as that would weaken the shell more than is necessary, but an opening that is twice the diameter of the steam pipe should be provided. Where there is a manhole

in the dome, the shell is cut away enough to make an opening as large as the manhole. Those people who object to domes point out the fact that an opening of this size greatly reduces the strength of the boiler, but there is no good reason for this remaining so.

A boiler without a dome is usually fitted with a manhole in the shell, and this is reinforced with a frame that is supposed to be as strong as the metal in the shell was before it was removed. Suppose it was decided to put a dome on his boiler, and to locate it over the top manhole. Could any boiler maker consider it necessary to remove the frame as useless? I think not, for he would say that it supported the shell and made the whole structure stronger than it otherwise would be. This being true, why is it not good policy to put on a supporting frame inside of the dome when a boiler is built? If this was done the claim that a dome weakens the shell of a boiler would no longer be tenable; and this is the principal objection to having one included in the specifications. The claim that it acts as a reservoir for steam, to be used when wanted, as presented by those who favor it, is not worthy of serious consideration on account of its small capacity; neither is the objection offered to it by the opposition, who say that it acts as a condenser, as the surface exposed is not large, and it should be protected by some good covering. The conclusion of the whole matter is, therefore, that a dome furnishes dry steam to the engine as above described, and it does not weaken the shell when properly constructed, any more than it does to put a manhole in the shell at some other point. —The Wood-Worker.

AN UP-TO-DATE CATALOGUE

We have received a copy of a handsome catalogue just issued by the Dodge Manufacturing Co., Toronto, entitled B 6 Catalogue for 1900. It is the most complete work, handsomely bound, and contains complete illustrations of the entire line of power machinery manufactured by the company, taking in all the various sizes used, as well as tables of horse power transmitted by the different speeds. Many up-to-date shafting couplings and types are also illustrated, also improved set screw pattern, a most complete line of the Dodge ball and socket adjustable hangers, open side all the most modern self-oiling types of bearings including the "Capillary," "Ring Oiling" and "Oil" improvements. The Dodge Co.'s system is to hanger in all drops for immediate shipment.

There are also illustrated a wide range of bearings for all mill purposes, and adjustable belt tighteners, the Dodge patent split friction pulley and clutch coupling. They show some of the latest improvements in a clutch pulley for powers as small as 1/2 horse power.

The Dodge system of rope driving is well known in many forms, and the Dodge Company are now equipped for the manufacture of iron ground rollers.

The work includes complete and handy tables covering link chain and sprocket uses, as well as the company's specialties for grain elevator feature of the work is the complete dimensions appended, making it invaluable to mill and factory superintendents laying out plants, a full line of all kinds, including up-to-date patterns in cast iron special iron centre wood rim pulleys, as well as the celebrated Dodge wood split pulley, which controls the manufacture of in Canada.

The Dodge Co.'s B 6 Catalogue for 1900 is sure to be welcomed by every mill and factory in Canada, and we are told will be mailed free on application.

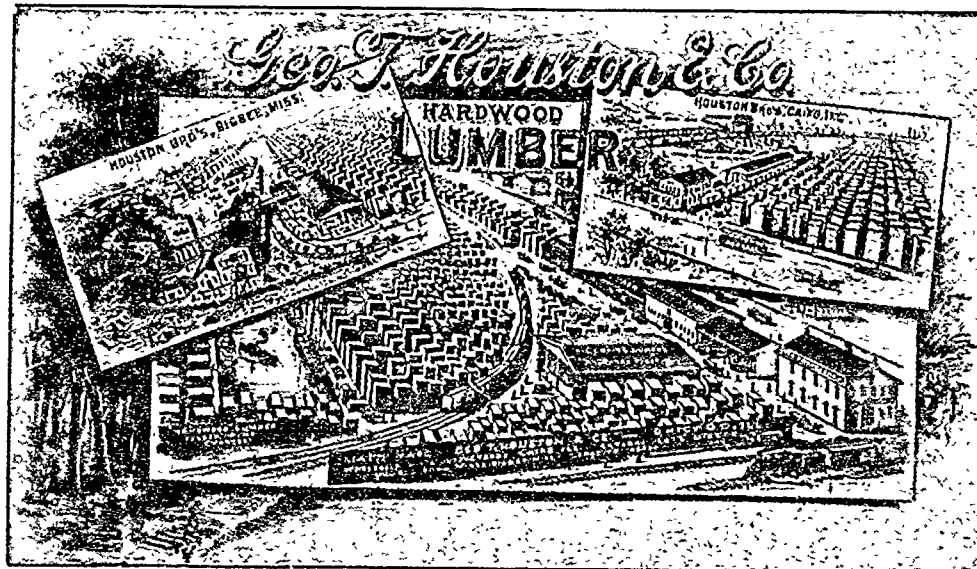
A charter was recently made from a British port to the United Kingdom at \$21 a thousand which pays that freight is worth something a delivery; but then there is nowhere else to get of just the size and quality that can be obtained on the Pacific coast, says the American Lumberman.

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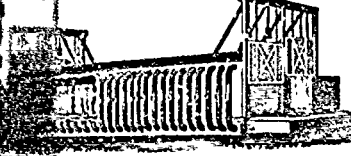
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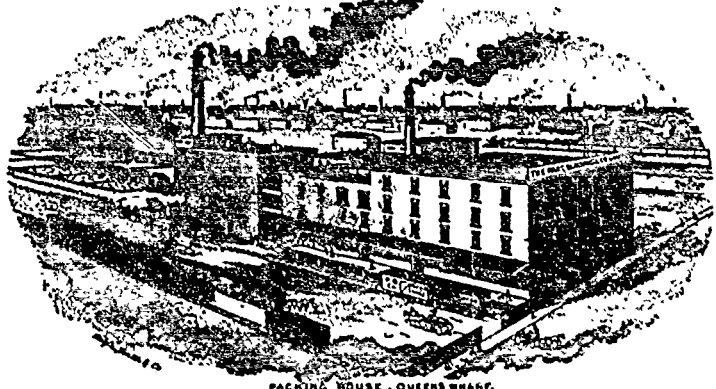
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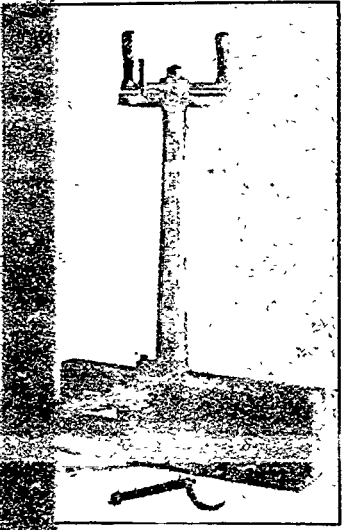


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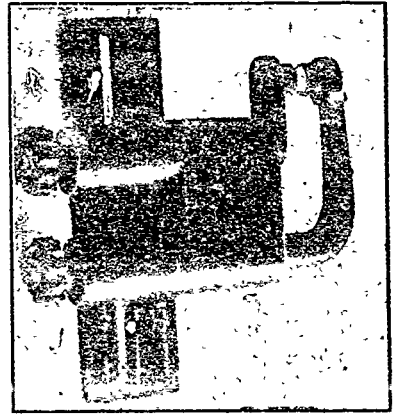
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Embodies all of the Advance Features of the heavier sizes. It is Light, Rigid and Durable. The carriage excels for handling long timber—can't cut anything but parallel with it, unless you want to.



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NOTICE this "Fairbanks" Roller Gauge, which is supplied with all Lane Mills Can be used on any Mill. The same applies to the "Gurnsey" Saw Guide here illustrated.



GURNSEY SAW GUIDE.

We don't like to miss a chance of telling water power owners about

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We've never gone back on us, and are guaranteed equally faithful to all purchasers. The catalogue that describes these Turbines, and gives their tabled powers under various heads, is an interesting matter on *Saw Mills, Lath and Shingle Mills, Pulleys, Gears, Hangers, Etc.*

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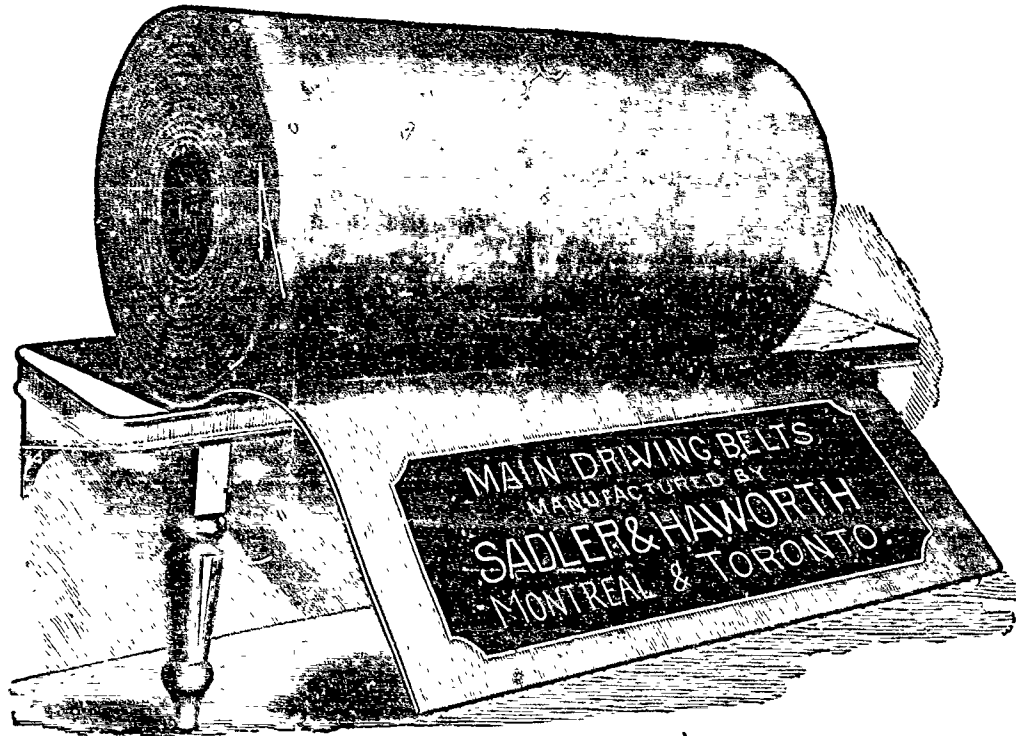
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The **XXX** Saw Gummer and Sharpener

Has No Rival →

FOR VARIETY, CAPACITY OR QUALITY OF WORK

... OR FOR ...

SIMPLICITY, DURABILITY, CHEAPNESS

Will take saws from 6 inches to 5 feet diameter ; sets the saw to one tooth at a time automatically ; sharpens any saw perfectly, giving the any desired pitch, and making all the teeth exactly alike. Will sharpen in an ordinary saw mill in one minute, or 100 teeth in a shingle saw in five minutes. The cut shows outline of mill saw 54-inch diameter.

Mr. F. J. DRAKE, Belleville :

PEMBROKE, ONT.

Dear Sir,—Re the conversation you had with our manager, I am instructed to you that the machine we purchased from you early last spring has proved to be a very piece of machinery. Our Mr. McCool, who uses it, is greatly pleased with it, and recommends it to any person who may require a Saw Filer. Wishing you much success with your business, remain,

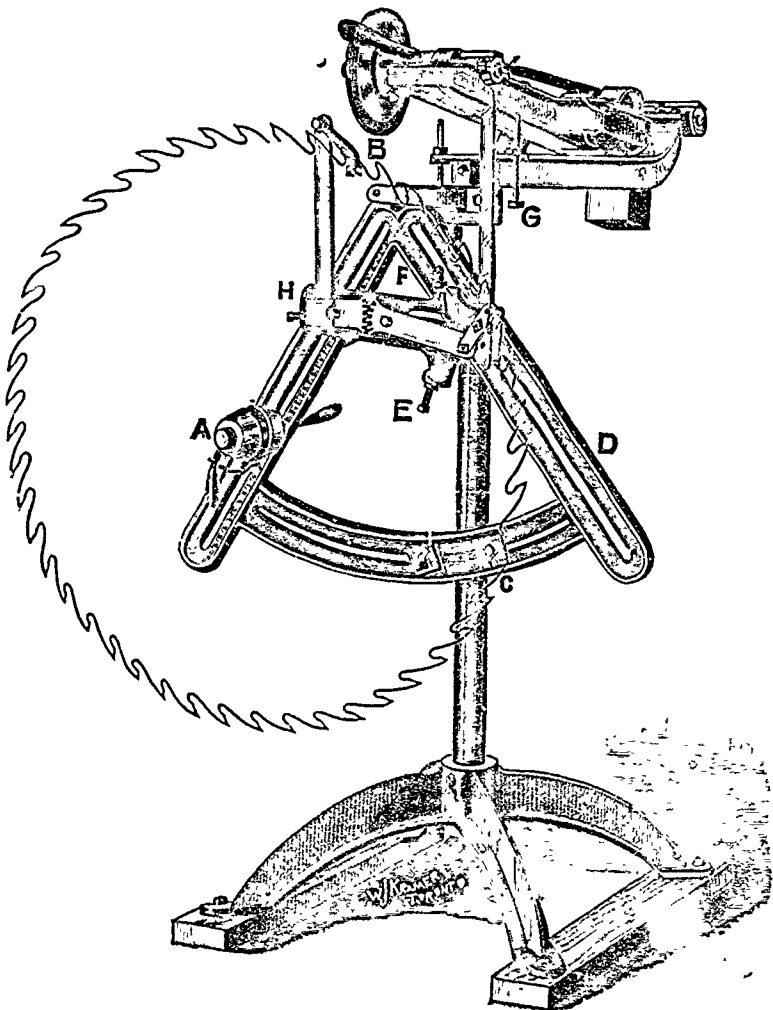
Yours truly,
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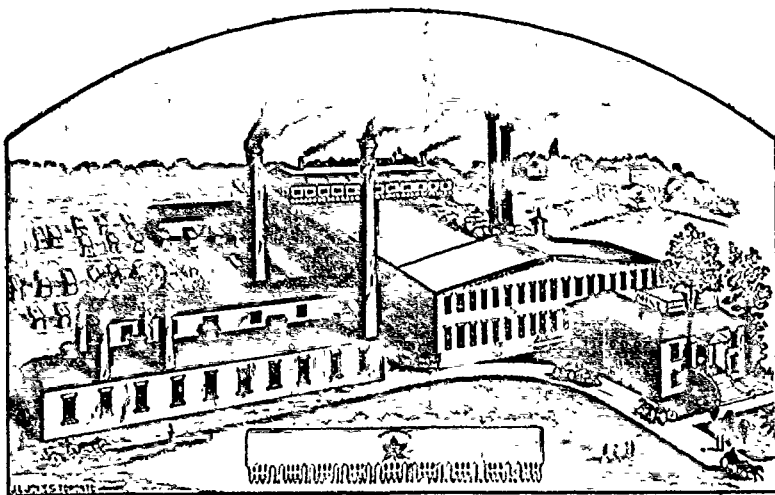
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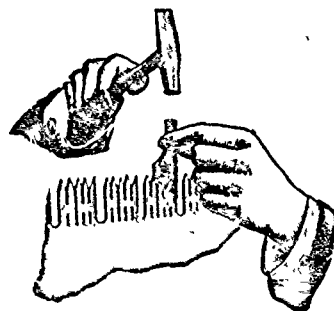
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PLASTERING TROWELS
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STRAW KNIVES, &c.



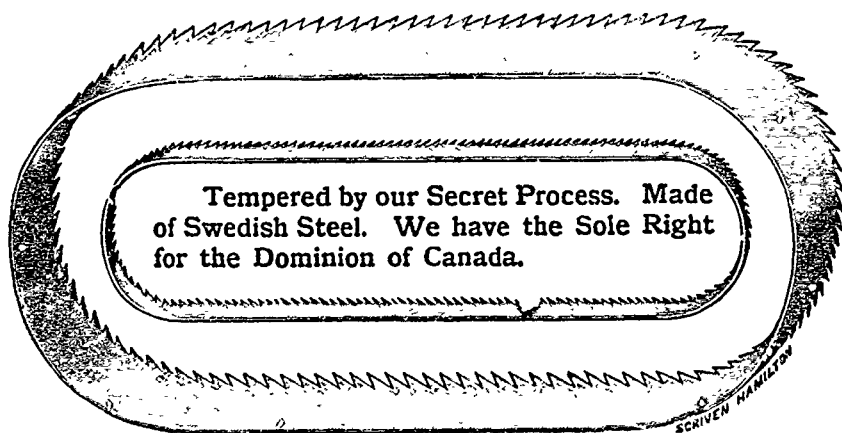
Maple Leaf Saw Set

MANUFACTURED BY
SHURLY & DIETRICH, Galt, Ont.

Directions. - Place the set on the point of tooth, as shown in the accompanying cut, and strike a very light blow with a tack hammer. If you require more set, file the tooth with more level. If you follow directions you cannot make a mistake. Be sure and not strike too hard a blow, and it will set the hardest saw. On receipt of 40 cents we will send one by mail.



We are the only manufacturers in the world who export Saws in large quantities to the United States.



We Manufacture
HIGH GRADE BAND SAWS
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These Saws are made of Refined Swedish Steel imported direct, and tempered by our Secret Process; for Fine Finish and Temper are not excelled.

GROUND THIN ON BACK

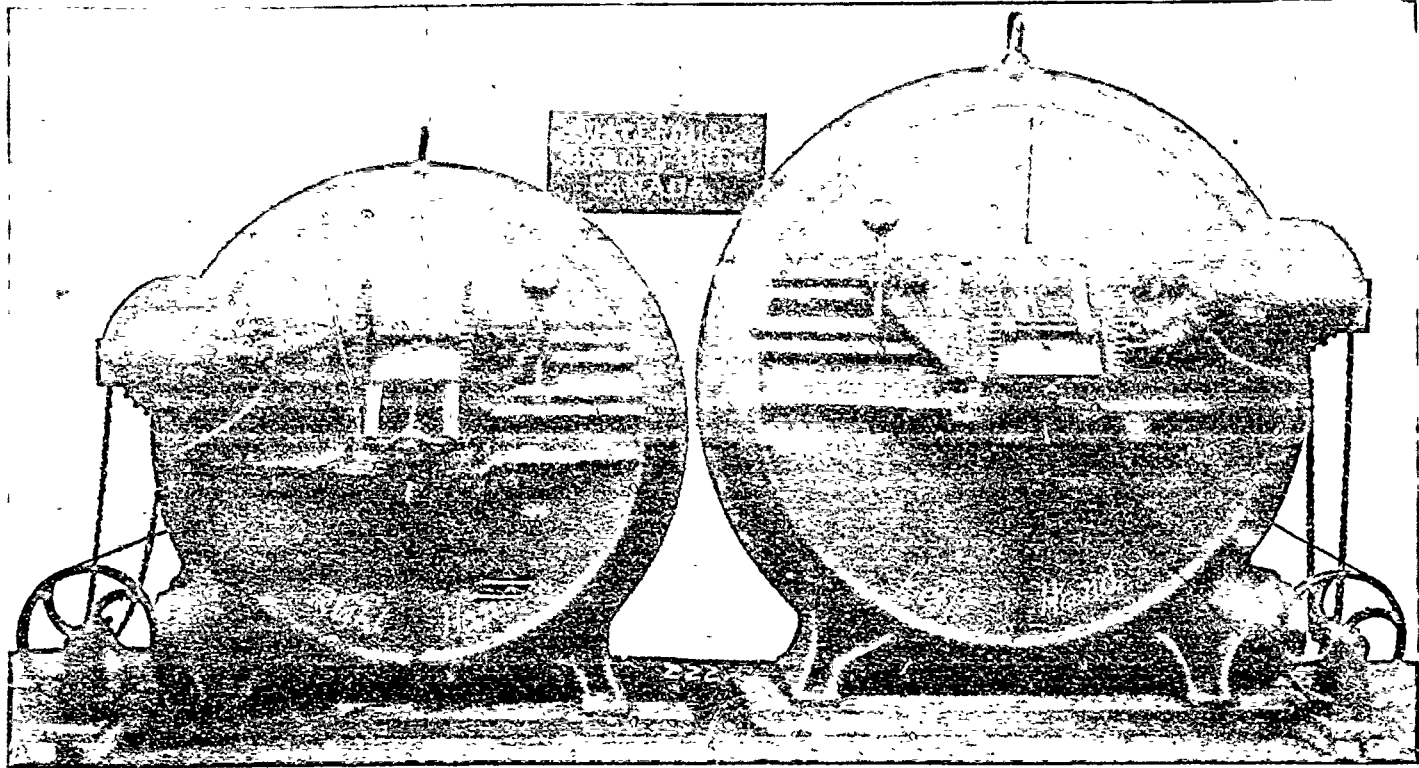
Save Labor Save Gumming
Save Time Save Files

This Saw Stands Without a Rival

AND IS THE
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Its Superiority consists in its Excellent Temper. It is made of "Razor Steel," which is the finest ever used in the manufacture of Saws. We have the sole control of this steel. It is tempered by our secret process, which gives a keener cutting edge and a toughness to the steel which no other process can approach.

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brackets they
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Butterfield's Patent Turning Attachment fitted to these machines.—Our cutting up handles 100 to 125 cords per day, taking logs from the water and delivering them cut into 26 inches, or any length, to the barkers.—Only 2 men required to operate this outfit.

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(Like cut) with adjustable take-up to bearings.

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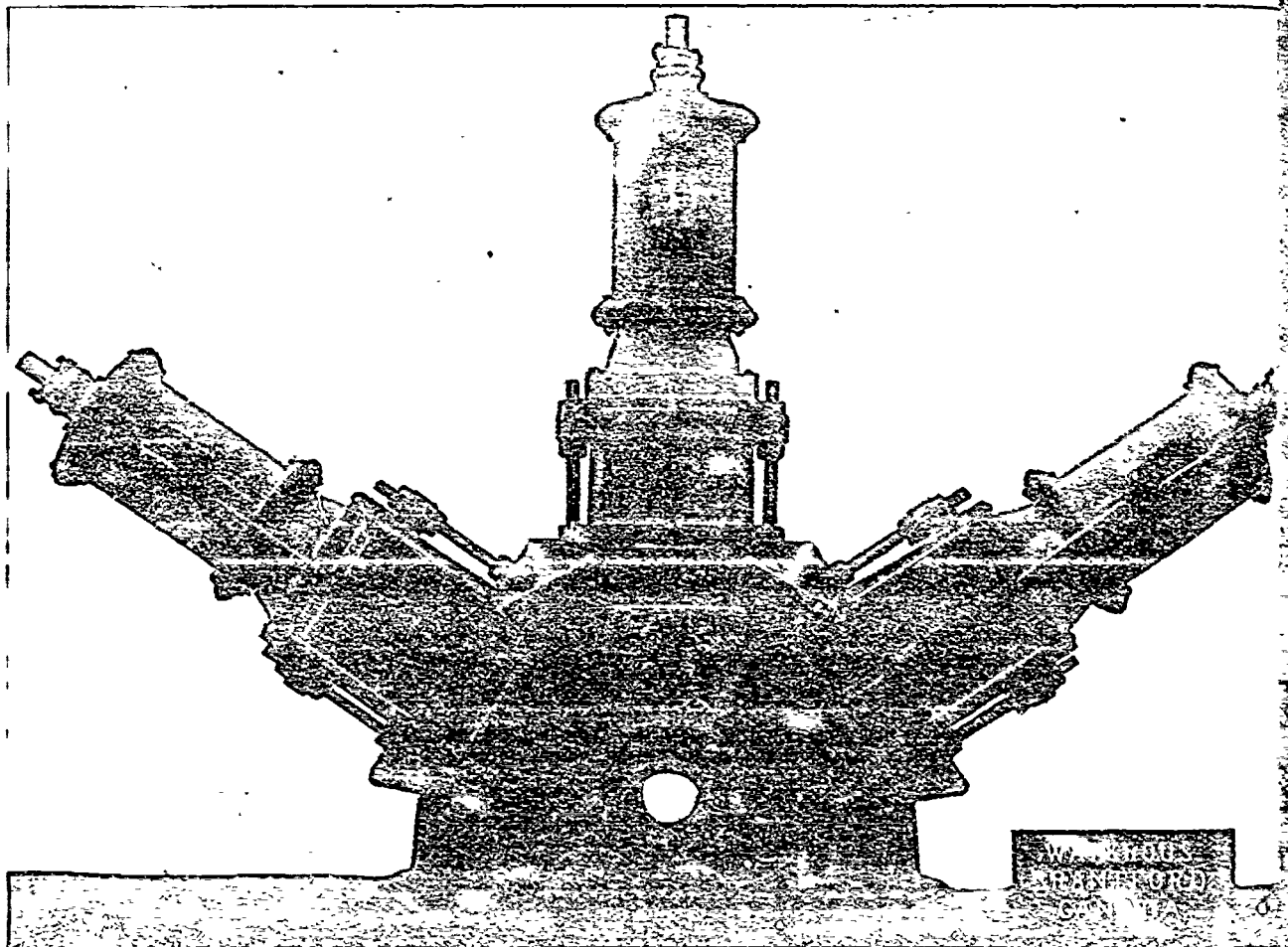
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Many valuable improvements.

Best grinder made.

Success Wet Machines

Success

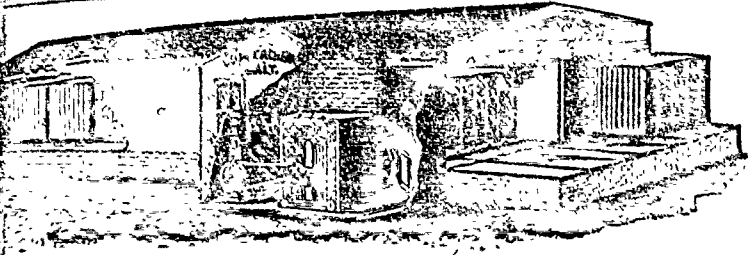


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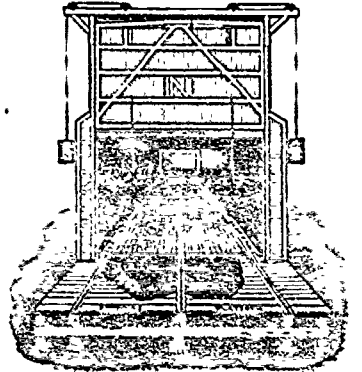
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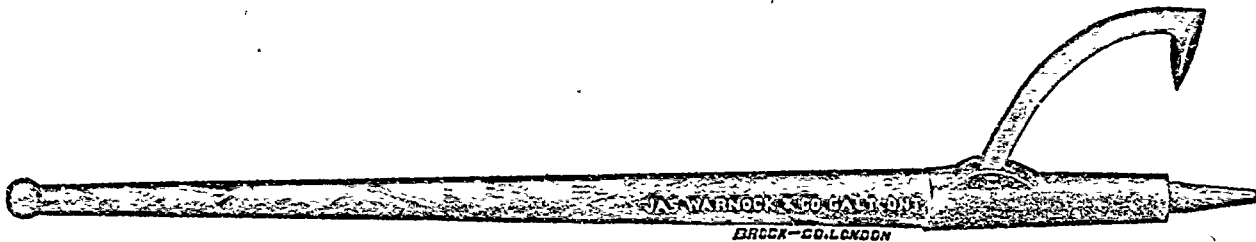
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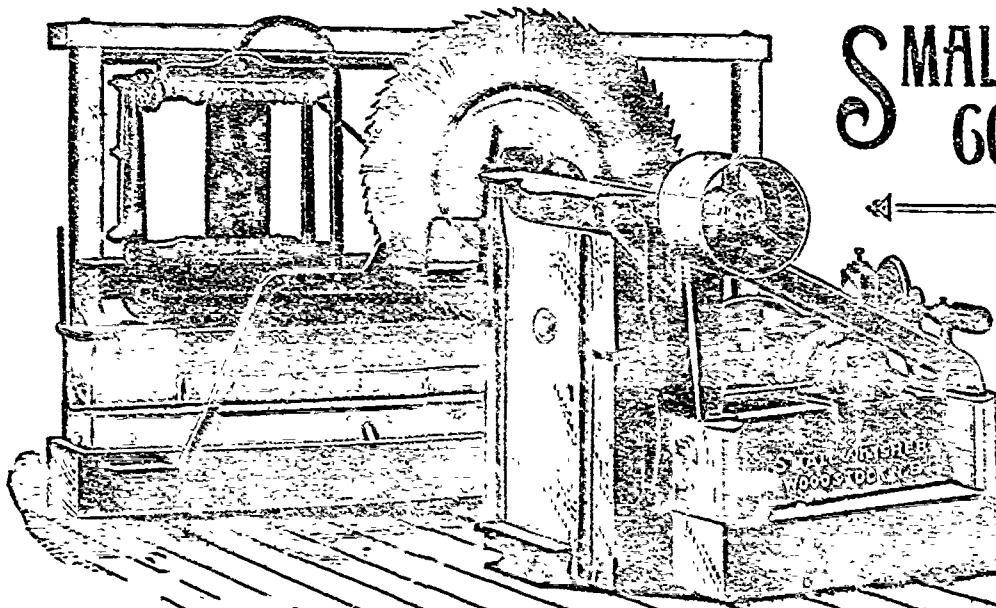
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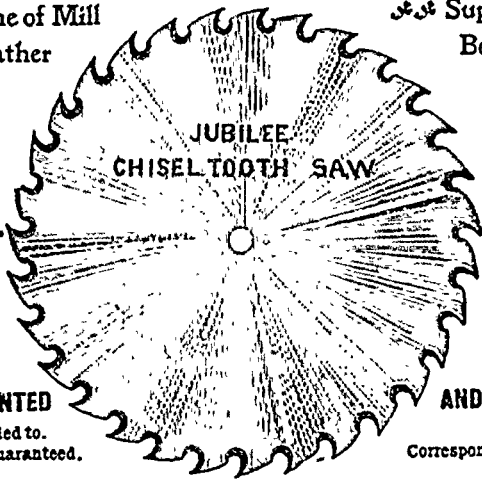
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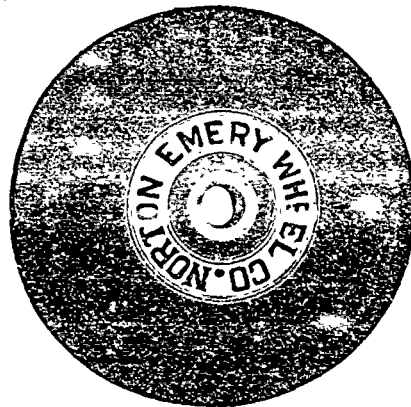
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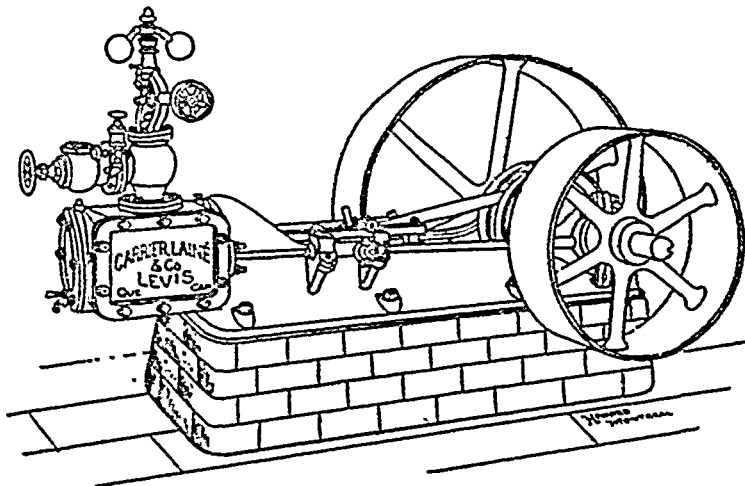
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