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# THE CANADA LUMBERMAN

Wood-Workers', Manufacturers' and Millers' Gazette

TORONTO, CANADA, OCTOBER, 1901

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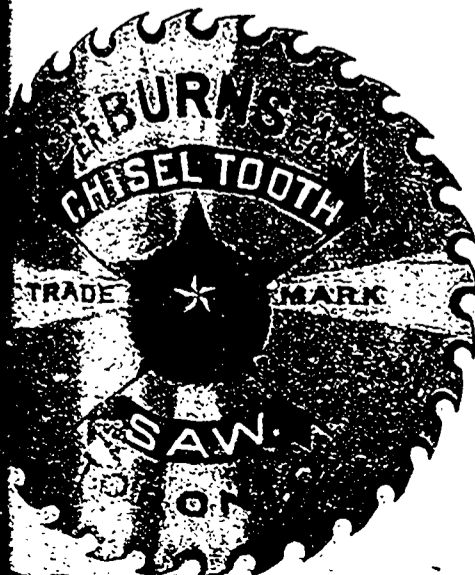
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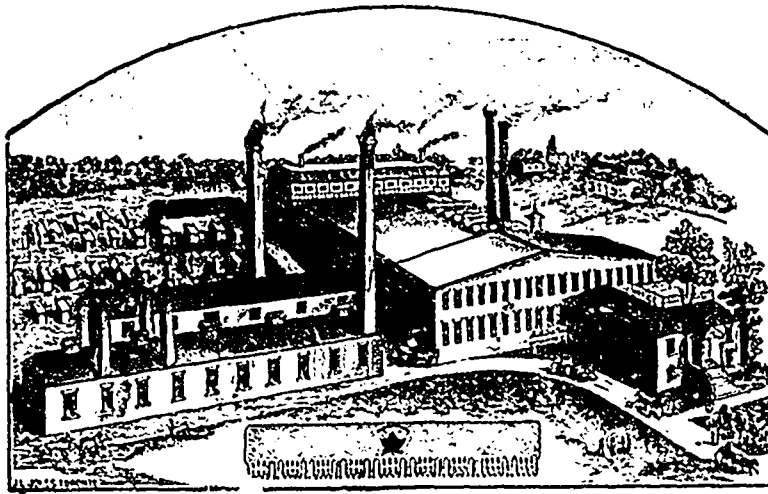
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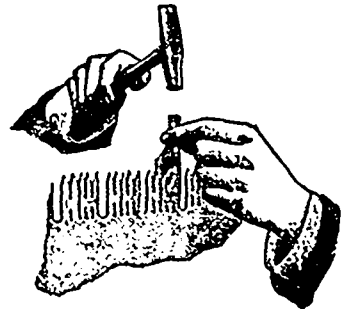
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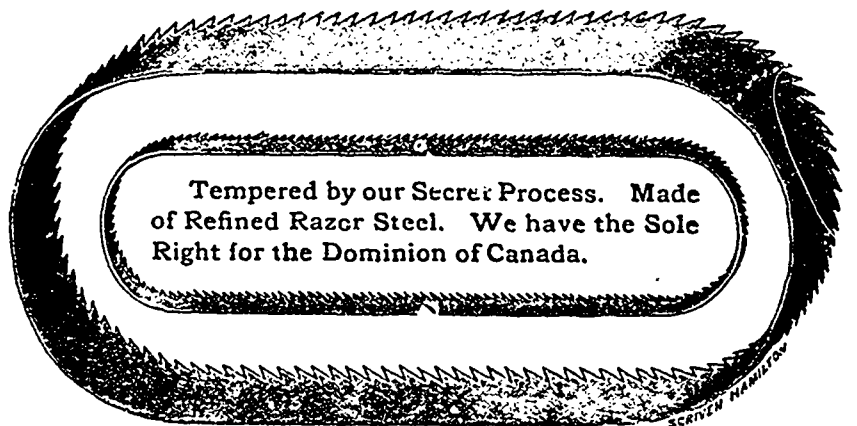
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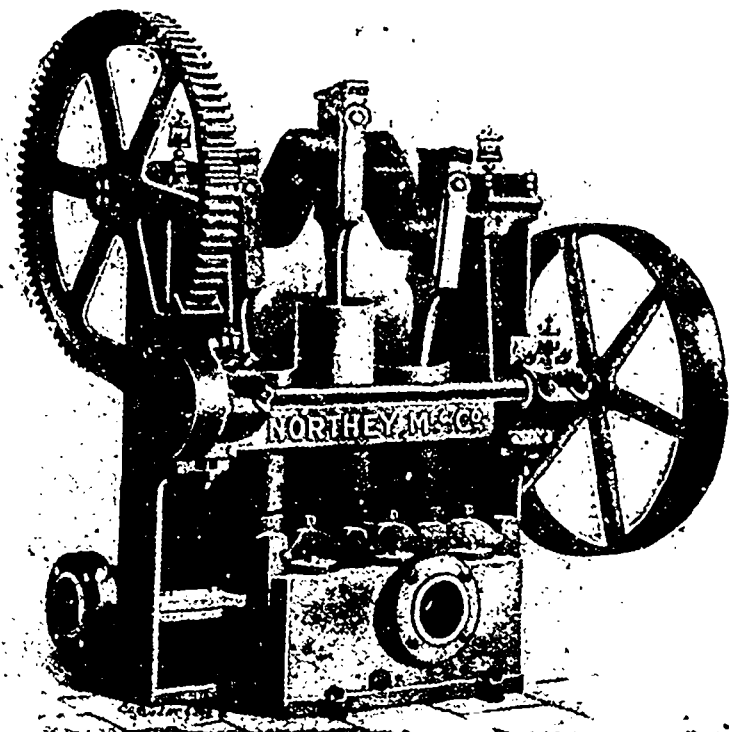
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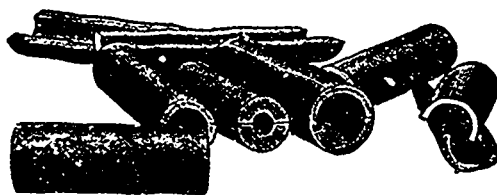
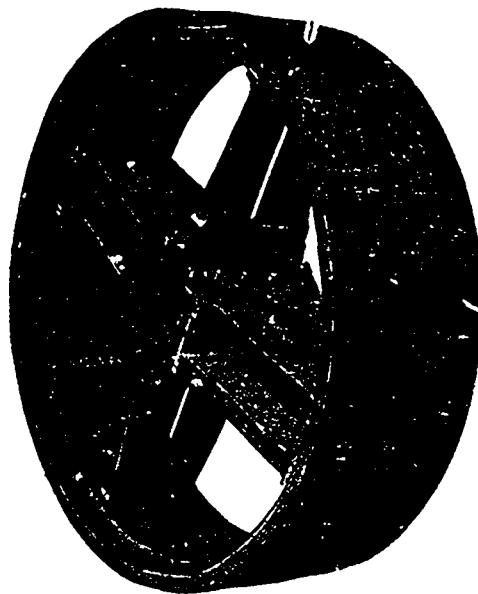
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# THE CANADA LUMBERMAN

VOLUME XXI.  
NUMBER 10.

TORONTO, CANADA, OCTOBER, 1901

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## LUMBERMEN'S RECEPTION TO ROYALTY

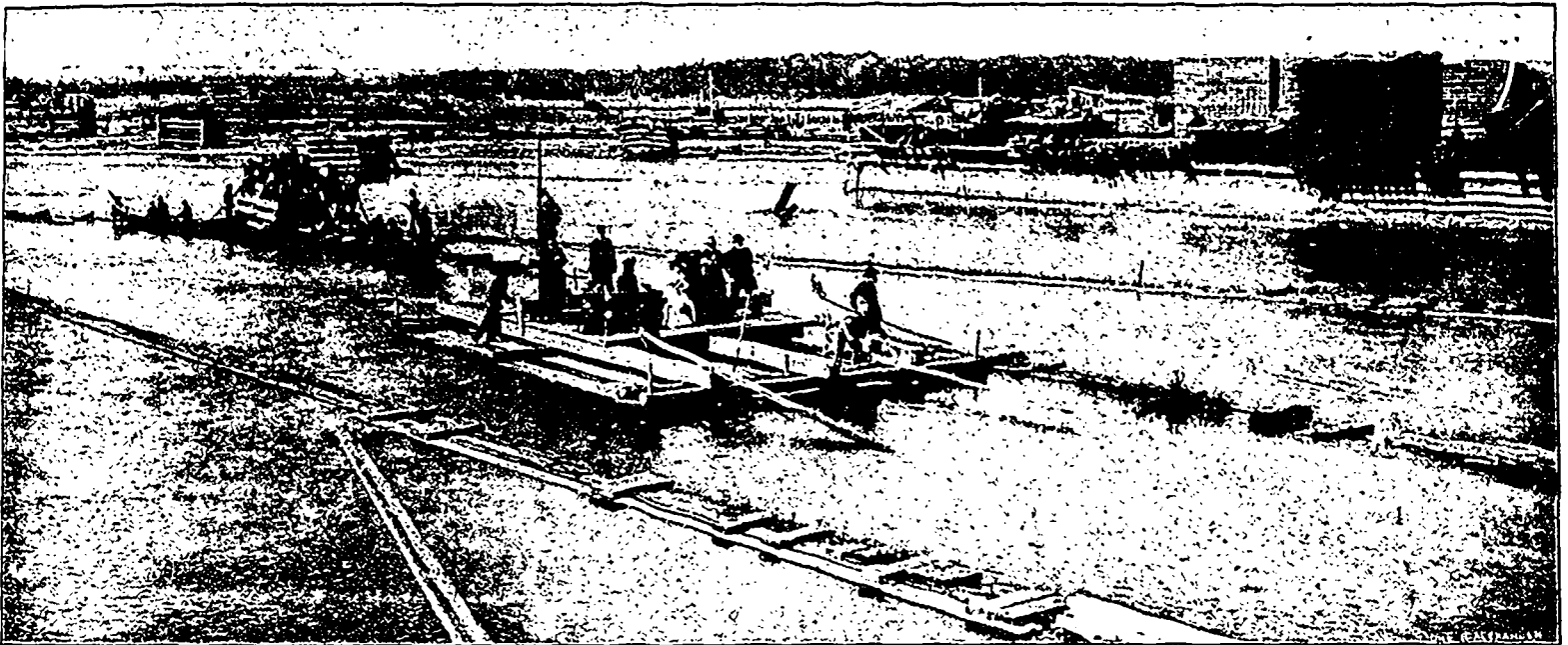
The Hewers of the Forest Give a Practical Demonstration of Lumbering The Most Unique Event of the Royal Trip Expressions of Appreciation by the Duke

In the reception and entertainment tendered their Royal Highnesses, the Duke and Duchess of Cornwall, and suite, in Ottawa, the lumber kings of Ottawa Valley took an important and interesting part. For weeks previous to the visit of Royalty, the lumbermen had been preparing an entertainment. This was to provide an interesting and profitable series of object lessons in Canadian lumbering. That the

guest of the open-hearted lumber kings of the city and valley. The first feature of the entertainment was the running of the slides. Rafts, strongly built and comfortably fitted, were provided. They were manned by tried and trusted rivermen. The trip from Government House to the riverside above the slides, four miles distant, was made over the Ottawa Electric Railway in a magnificent car, newly

A large Royal standard caught the breeze from the crib whereon the Duke and Duchess made the trip. Hardy rivermen in typical costume, red flannel shirts, blue Jean overalls, flowing sashes and slouch hats, guided the raft. Mr. William Wade, one of the pioneer pilots of the Ottawa, was on board, and others included G. Garnett, A. Williamson, A. H. Hough, T. Weldon, I. Cropley, D. Frost, John Hudson, D. Wade, O. Robillard, S. Coger, W. Hudson, A. Blouffe, H. Byrnes, P. Dorresty, P. Fobear, E. Laflamme, E. Lachapelle, T. Owens, W. Cooke and many others.

Each section of the raft was preceded by an advance party of voyageurs in bonnes. On the first crib were English, American and local



LUMBERMEN'S RECEPTION AT OTTAWA--THE ROYAL PARTY DESCENDING THE CHAUDIERE SLIDES.

committee was eminently successful, was proven by the heir apparent's words of approval and appreciation.

On the occasion of King Edward's visit to the young capital forty-one years ago, the lumbermen received him as their guest and entertained him in a manner that still brings a look of pride and word of praise from the older residents. The heir apparent, then Prince of Wales, was met on the river below Rockcliffe by a flotilla of canoes bearing five hundred jauntily attired rivermen, raftsmen and Indians. The Royal steamer was escorted to the landing. Afterwards the above mentioned advance guard acted as his escort through the city. The Prince was also given a thrilling trip on a raft of square timber through the slides at the Chaudiere. Mention is made of this fact to establish a precedent for the latter day doings.

On September 23rd another heir apparent, accompanied by His Gracious Consort, was

built and specially fitted up. Their Royal Highnesses and party were received at the foot of Oregon street by Sir Wilfrid Laurier, Messrs. J. R. Booth, Alex. Barnett, C. Jackson Booth and George H. Perley. The Duchess of York was escorted down the landing by Mr. Perley, followed by the Duke and Countess of Minto. Lord Minto and Sir Wilfrid Laurier followed with the rest of the party, which included Prince Alexander of Teck, Lady Mary Lygon, the Duke of Roxburghe, Viscount Crichton, Hon. Mrs. Derek-Keppel, Sir Arthur Bigge, Commander Winsloe, Commander Godfrey Faussett, Major Bor, Lord Wenlock, Capt. Graham, Capt. Bell, A.D.C.'s, Lady Ruby Eliot, Lady Aileen Eliot, Mr. Sladen, private secretary to the Governor-General, Major Maude, Lt.-Col. Sherwood and Chief of Police Powell.

The raft was built on the old accepted plan, fashioned from medium sized timber, neatly hewed. It was divided into five cribs,

newspaper men, all of whom enjoyed the novelty immensely. On the second crib were the children of the vice-regal household and members of the entourage of the Royal party. On the third crib were the Duke and Duchess of Cornwall. The bridges and approaches were lined with spectators, who broke into cheers as the Royal crib hove in sight and passed through. Following the Royal crib came two others bearing Sir Wilfrid Laurier and a party of lumbermen and newspaper men. The fact that the water in the slides was very low, detracted from the zest of the trip, and the cribs several times narrowly escaped grounding.

At the foot of the slides the heir apparent and his consort and suite transferred from the cribs to canoes. The largest, 35 feet long, were the regulation Hudson Bay Company's trading canoes. Each carried nine passengers, besides a crew of eight men. The latter were Indians and half-breeds brought from Abitibi,

the height of land, by Mr. Colin Rankin, the well-known Hudson Bay Company's factor at Mattawa. Mr. W. C. Edwards, M.P., also brought a party from the Desert, in the northern Gatineau district. In the canoes the Royal visitors were taken to Rockliffe, where from a point of vantage, they witnessed an exciting war canoe race for the championship of Canada, and a log rolling contest.

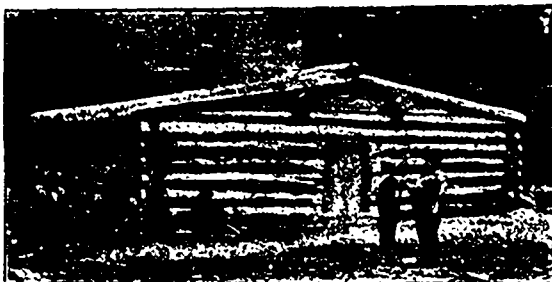
At the canoe club house the Duke and Duchess were received by Hon. Peter White, the well-known Pembroke lumberman, and Mr. W. C. Edwards, M.P., another extensive operator. In the park a typical lumbermen's shanty had been erected to which the distinguished visitors were escorted. The shanty, shown on this page, was constructed of neatly trimmed round pine covered with regulation "scoops." It was one of hundreds erected in the last half century in the Ottawa Valley lumbering districts. The scions of Royalty were received by the brawny armed red-shirted shanty men, who stood at "attention" with pike pole in hand. Pike poles, axes, saws and cant hooks lay about ready for use. They were soon brought into action on the neighboring pines which have made Rockliffe famous. Saw logs were shaped and skidded to the accompaniment of lusty shanty songs. Luncheon was partaken of in the log cabin. The Royal party and the committee men and members of the press were banqueted in typical lumber style on pork and beans. There were no frills at all, and their Royal Highnesses drank and ate out of tin cups and plates. The great fire place was situated in the centre of the room, where the smoking beans were roasting. The smoke was emitted through a hole in the roof of the shanty. Only a few at a time were admitted, and the Duke and his wife with their immediate following entered first of all. The French-Canadian cook was immensely tickled, particularly with the way in which Her Royal Highness appreciated the viands. Some of the train were a little more fastidious; but the Duchess rallied them on their poor appetite, and put them to shame. After this primitive feast, the whole of the guests adjourned to a neighboring tent, where something more lavish was in evidence.

The succession of events from the boarding of the cribs to the shanty luncheon were true in detail and coloring. It was entertainment distinctively Canadian. It told the Royal visitors the secret of Ottawa's wealth and of Ottawa's industry. The Royal visitors were received at the lumber shanty by Mr. W. H. Fraser, Mr. A. Lumsden, M.L.A., Mr. John R. Booth and Mr. J. C. Browne. The Duke was convulsed with laughter by a humorous and impromptu speech delivered in broken English by Wm. Whissel, one of Mr. W. C. Edwards' employees who superintended the construction of the shanty. Upon command of Mr. Edwards the lusty lumberman stood forth to address himself to the King's son. Twice he essayed to speak and then with an effort began in the French language. Loud cries of "Anglais," "Anglais," resounded in the forest. The gigantic lumberman smiled and waved his hand deprecatingly. "I cannot," he said, but at the words a cheer broke forth and he went

on in the same language telling in simple words the story of the lumberman's joy to see the son of the King and Lis Duchess, and what simple shanty men had done that day had been done in all honour and affection for the Royal visitors. "Well," he said, "me born in shanty, and live long time; see much money Mr. Edwards make; think me make plenty myself likewise, too. So I start out to make much money myself. First year I make seventeen thousand dollar debt. Then go to church on the Sunday and say to good Lord 'Oh, Lord Almighty, you know Wm. Whissel can't pay all that debt; Oh, Lord, I give it to you.' After that me work for Mr. Edwards, and now make much money."

The Duke and Duchess were much amused. They shook hands with the honest-hearted, hard-handed woodsman. Before departing the heir apparent said: "The Duchess and I since we left England have seen many interesting things in various parts of the world, but we saw nothing that gave us more pleasure than what we have witnessed here to-day."

On Saturday, September 21st, the Royal visitors drove through Hull, where they received an enthusiastic welcome. A holiday had been proclaimed at the Eddy works, and the employees and their families numbering in all over 2,000 souls greeted them right royally. The far-reaching Eddy buildings were lavishly decorated. Mrs. E. B. Eddy presented the Duchess with a basket of roses. Work was also sus-



THE LUMBER SHANTY,  
Where Luncheon was served to the Royal Party in typical camp style.

ended in Mr. J. R. Booth's mill. All the lumber waggons, about 50 in number, were drawn up in line, the horses facing Bridge street. The employees from points of vantage on the waggons, buildings, cars and lumber piles waved flags and cheered enthusiastically. The Booth offices were tastefully decorated, as were the offices of the W. C. Edwards Company and other local lumber firms.

The following were the members of the Lumbermen's Committee, of which J. R. Booth was chairman and J. C. Browne secretary: Wm. Anderson, F. W. Avery, Samuel Bingham, R. M. Beckett, C. Jackson Booth, L. Blackburn, E. H. Bronson, F. P. Bronson, Robt. M. Cox, Levi Crannell, Hon. R. R. Dobell, H. K. Egan, Alex. Fraser, J. B. Fraser, Allan Gilmour, John Gilmour, G. B. Greene, Ward Hughson, Robt. Hurdman, Alex. Lumsden, David MacLaren, C. A. McCool, M.P., Wm. Mackie, John Mather, Edward Moore, Capt. Murphy, G. B. Pattee, George H. Perley, Chas. E. Reid, Hiram Robinson, Peter Whelen, Walter White, Ottawa; Gillies Bros., Braeside; J. and A. Gillies, Claude McLachlin and Hugh McLachlin, Arnprior; George Gor-

don, Thomas Mackie, J. V. Munro and Hon. Peter White, Pembroke; James B. Klock, Klock's Mills; A. Barnett, James Carswell and Allan Francis, Renfrew; George Bryson, Fort Coulonge; Robert. Combs, Aylmer; E. B. Eddy, Hull; W. C. Edwards, M.P., Rockliffe; John Ferguson, Adamston; Hon. R. R. Dobell, Lorenzo Evans, W. M. Dobell, John A. Cameron, H. W. Todd, Gordon Edwards.

THE MARITIME BOARD OF TRADE

The seventh annual convention of the Maritime Board of Trade was held in Chatham, N.B., on August 21 and 22. Among other questions discussed was fire insurance rates. On this subject Senator J. B. Snowball, of Chatham, said: "We live in the district in which in 1825 was the greatest fire since the destruction of Sodom and Gomorrhah. I refer to the great Miramichi fire, whose smoke, it is said, could be smelt 700 to 800 miles away. Instead of saying where is the remedy, I would say, where is the evil? The trouble is there are too many needy people going about the country trying to make a living out of insurance premiums. The companies pay too much in commissions. I cannot say whether any of them get 20 per cent., but I know some of the agents get as much as 15 per cent. I believe that more than half the fires in the Miramichi districts during the last fifty years have been due to carelessness. Out of the lumber mills on the Miramichi river the fire insurance companies have made a handsome profit. I do not think I am exaggerating when I say they have made 100 per cent. The old Cunard mill was in existence for 50 years, and during all that time regularly paid insurance rates. True, it was eventually burned down, but consider the amount of money that had been taken out before that took place. As I said before, there are agents who take too many hazardous risks. You should combine to expose them. That is the remedy."

Mr. M. G. DeWolfe brought up the subject of "Forest Preservation," and introduced the following resolution, which was unanimously passed:

Whereas the subject of forestry is a most important one, and there is no question but that it has been long neglected in Canada, and,

Whereas the manufacture of lumber has been one of the most important industries in the Province of Nova Scotia and New Brunswick, and it is now anticipated that pulp mills will consume a very large quantity of standing timber, and,

Whereas, it is apparent to everyone that the depletion of the standing timber of all kinds of wood by forest fires and the axe is fast denuding our forest lands, rendering them of no value, and,

Whereas, it is believed that with the prevention of fires, protection to the rapidly-growing timber and systematic cutting of trees for lumber, our forests will be of value for many years to come; therefore,

Resolved, that in the opinion of this Board of Trade the Government should take immediate steps to employ that suitable overseers or inspectors be put in charge of the timber districts of Nova Scotia and New Brunswick, as an incentive to owners of private lands to guard and protect all Government timber lands, and reforest any suitable area that may be found fit for that purpose.

The secretary introduced the subject of "More Permanent Material for Public Wharves and Breakwaters." He explained that owing to the attacks of a worm called the teredo

the piles and other timber, on the wharves and breakwater of northern New Brunswick, and the limoria on the wharves and breakwater along the Atlantic coast, these structures had to be frequently replaced after being in use three or four years. He said that by creosoting the lumber it would be preserved against the depredations of the worms in question. At present the creosoted wood that had been used had been imported from Virginia. He advocated the establishment of a Canadian creosoting industry and submitted the following resolution:

Whereas, the natural timber which is mainly used in the construction of Government wharves and breakwaters on the waters of the Straits of Northumberland and parts of the Atlantic Coast of Nova Scotia is rendered very perishable owing to the ravages of the limoria and limoria worms, and,

Whereas, the creosoting of such timber is the only discovered method of preserving it from the operation of those destructive agencies, and,

Whereas, there are no creosoting works nearer to the Maritime Provinces than New York and Norfolk, Virginia, therefore,

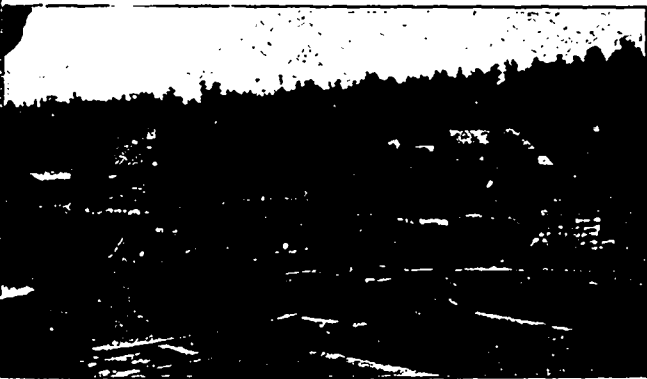
Resolved, that this Board begs respectfully to suggest to the Dominion Government the desirability of aiding in the establishment of such works at some point in the Maritime Provinces where suitable timber is convenient and may be obtained and creosoted economically.

Mr. DeWolfe seconded the motion, and Mr. W. A. Black spoke in favor of the Government assisting in the establishment of such works

#### THE PEARCE COMPANY.

The business of The Pearce Company, Limited, at Marmora, Ont., is a continuation and extension of that established by the late T. P. Pearce in 1867. The present company was incorporated in 1893. Mr. J. D. Pearce is president, Mr. F. S. Pearce, vice-president and general manager; and Mr. J. W. Pearce, secretary-treasurer.

The mills of the company are located at the village of Marmora, Hastings county, where the company controls an entire water power, by which they operate their saw, shingle, bath, planing, roller, flour and woolen mills, as well as an electric light plant. The mills are equipped with modern machinery and appli-



THE PEARCE COMPANY, MARMORA - SAW MILL, FLUME, WOOLLEN MILL, ETC.

ances. The yards extend one-half mile along the water front, which is owned exclusively by the company. A branch of the Central Ontario Railroad runs through the yards, with siding to mill platform, thus providing first-class shipping facilities.

The company deal extensively in ash, elm and basswood, most of which is shipped to the United States. They also manufacture a considerable quantity of white cedar shingles and make a specialty of hemlock mill stuff. In addition to the above they turn out a large number of railway ties, cedar posts and telegraph

posts. The capacity of the mill is 50,000 feet per day.

The company contemplate building a saw and heading factory. Their limits extend over a great part of two townships and will provide the raw material for their mills for many years to come.

#### NEWFOUNDLAND AS A LUMBER FIELD.

The timber possibilities of Newfoundland are now attracting much attention. A prominent Scotch lumberman, operating in Sweden for 20 years past, having exhausted his forest reservations there, has removed to that island, where he has secured 800 square miles of forest, which will enable him to supply, without any dislocation of trade, the markets of England and Scotland, where he has sold his produce for years. He proposes to cut 80,000,000 feet of lumber every year, but it is not as much in the quantity as in the novel minor phases of the industry that it may form an instructive example.

In Sweden and other European countries, where the extinction of the lumbering business is within measurable distance, the most drastic economies have to be practised in order to make lumbering pay. For instance, the saws are of the thinnest razor steel, and the heavy cut made by the thick saws used on this side of the Atlantic causes the Swedish operator to term our methods a "slaughter of wood." The fineness of the cut with them frequently enables the getting of an extra board or two out of a large log. Again, the slabs, or outside cuttings and end pieces, are put to use, being disposable for many purposes. Yet, again, the fragments left over from these are converted into kindlings and sold as such in the cities of Europe, a small but welcome addition to the profits being thus provided.

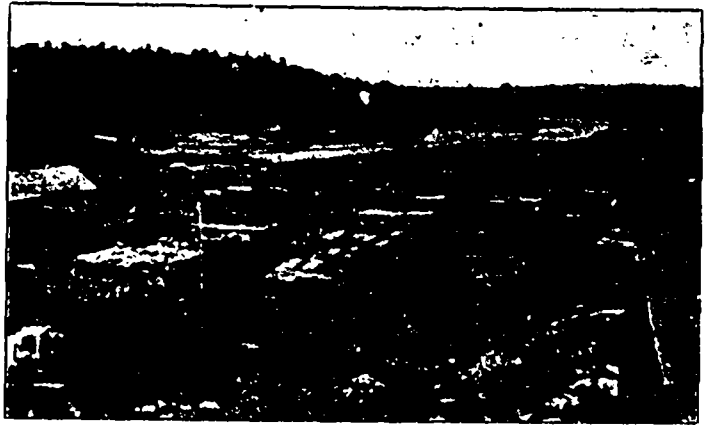
In addition to producing lumber in the form of deals and boards of usual grades, this Scotch gentleman will turn out immense stocks of spruce staves and headings to be manufactured in Scotland into barrels for the famous Scotch herrings. At all the leading fishing centres in Scotland there is a great demand for such material. To Hamburg will be shipped steamer loads of small wood to be worked up into packing boxes.

Another venture will be the providing of immense stocks of similar material for bicycle crates. The growth of the trade in this class of product has been amazing in recent years, and Sweden, the chief centre of the traffic, has latterly been unable to supply the demand.

For the staves pieces of wood from 2½ to 5 inches thick can be used, while for the boxes pieces as small as 2 by 4 by 6 inches are available. Practically everything, indeed, can be turned to use, the wastage being almost nil. Expert Swedish lumbermen and mill hands are

employed, and some of the product is to be shipped even to the Canary Islands.

The colony contains large tracts of pine, besides great areas of splendid spruce, suitable for pulp alone and fir, which is as tough and hard as American and Canadian spruce, is also being used for pulp-making. This fir has been found by exhaustive tests to make almost as good pulp as spruce. The fibre is as fine and regular, and the ease of working the same. The utilization of fir trebles the area available for pulp purposes, and makes the island destined in a few years to be one of the great pulp centres of the world. Several American con-



THE PEARCE COMPANY, MARMORA - SHINGLE SHEDS, PINE AND HEMLOCK PILING YARDS AND ROOMS.

cerns are already seeking pulp concessions in the island, and it is expected that before long they will be establishing factories here.

A further advantage the island has is its nearness to the European markets. Newfoundland is but little over half the distance that Montreal is from Europe, and its products have to be carried only half the way that those of Canada must be borne. This means a great cheapness of freight, and then all classes of workmen there are paid lower wages than in the United States and Canada. There are, likewise, no taxes imposed upon the industry, save a royalty of 50 cents per 1,000 feet on sawed lumber, and the conditions are therefore so favorable that it is not surprising the forest wealth of the island is being noted by outside capitalists as a promising means of building large and productive enterprises.

#### TIMBER REGULATIONS.

By order in council, dated 19th of January, 1899, the regulation governing the granting of yearly licenses and permits to cut timber in Manitoba, the North-West Territories and the railway belt in the province of British Columbia, were amended so as to permit owners of timber berths in the railway belt to sell timber thereon to mill owners, the regulations having previously provided that the timber must be manufactured at the saw mill or the licensee to be operated in connection with the berth.

There is, therefore, no provision in the regulations as they exist at present to prevent the exportation of logs out on Dominion lands in the railway belt in the province of British Columbia. The minister, therefore, recommends that the regulations be again amended so as to provide that all timber cut on berths in the railway belt in British Columbia shall be manufactured within the limits of the Dominion.



# THE Canada Lumberman

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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 free discussion by others.

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

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 75 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.

## AMERICAN COMPETITION.

Publicity is being given to what is claimed to be the opinion of a prominent lumberman to the effect that the ultimate result of the Ontario saw-log legislation will be the capture of the Canadian lumber trade by American lumbermen and the crowding out of Canadians. On what ground the opinion is based is not stated, but we presume that the alarm has been caused by the number of large mills that are moving from Michigan to Canada. Canadian lumbermen, however, are not at all concerned lest their business should be ruined by competition from the Americans.

The removal of the Michigan mills to Canada is just the result that was hoped for when the Ontario law was passed. The Government simply said: "If you wish our timber you must establish your manufacturing industries in this country and contribute to our welfare." It matters little whether the timber is manufactured by native-born Canadians or Americans now doing business in Canada, so long as the country derives benefit from its manufacture. The policy of the country is sufficiently cosmopolitan to welcome any person who is prepared to assist in the development of its natural resources. Where the Americans establish saw mills thriving settlements will no doubt grow up, as is the custom. The transfer to Canada of industries conducted by such well-known capitalists as Arthur Hill, Edmund Hall and the Eddys, is a source of gratification rather than of regret.

We think the unanimous sentiment of Canadian lumbermen is expressed in the statement that they do not fear disastrous competition from Michigan lumbermen who may locate in Canada. In business capacity our lumbermen are the equal of those of the United States, and in equipment our mills do not take a second

place. Perhaps the agitation for an import duty on lumber has created a wrong impression in the mind of the public. What Canadian lumbermen ask for is not protection, but equal rights, in the taxing of lumber brought into Canada to the same extent as lumber shipped to the United States.

The effect of the increased production in Ontario will not be to demoralize the Canadian trade. It should be remembered that the output of the Michigan mills located in Ontario will not be greater than when the mills were in operation in Michigan, consequently the total output of lumber will not be increased. The consumption by the Canadian market represents but a small portion of the output, and a large percentage will continue to be marketed in the Eastern States and foreign countries. No doubt the Michigan concerns will capture a certain portion of the Western Ontario trade, but at most this is not a serious matter.

The argument that Americans are crowding out the Canadian lumbermen would seem to be well answered by referring to the sales of timber limits. During the last five years the Government has held two important sales. At the one in 1899, 360 square miles were disposed of, of which only nine miles were secured by Michigan lumbermen, and this was by a concern that had been operating in Canada for several years. At the sale held last month 362 square miles were purchased by Canadians and 37 miles by Michigan parties. At both of these sales a large representation of Michigan lumbermen was present.

## WOOD SPECIALTIES.

The opportunities that exist in this country for the manufacture of wood specialties have been taken advantage of only to a limited extent. It is strange that more money has not been invested in this branch of industry, as it offers prospects of excellent returns. Throughout Northern Ontario there is to be found an abundance of white birch specially adapted for the manufacture of articles such as tack barrels, spindles, egg cups, pill boxes and similar goods. There are districts where as much as 3,000,000 feet of white birch can be secured within a radius of five miles, and there is little difficulty in finding a suitable water-power by which means would be provided of operating the plant at the smallest possible cost. We mention birch in particular because it is well adapted for turning purposes and is not in as great demand as lumber. Large quantities of other hardwoods, however, may be obtained.

In the manufacture of these small articles there is practically no waste timber, and a small quantity of logs will furnish the raw material for a large output. We understand there is a large market in Canada for such articles. The users have in the past been compelled to import their supply, but if industries were established in Canada they could doubtless compete with the foreign article and would be given the preference. Taking the prices now ruling, there would be a satisfactory margin of profit.

Picture-backing is another branch that might profitably engage the attention of more of our manufacturers. There is a large demand on

both local and export account. We are informed that the Dwight Lumber Company, of Detroit, utilize 2,500 plans per week in the manufacture of picture-backing, keeping several machines constantly working on the trade.

The manufacture of excelsior has been investigated by one or two Canadian firms, who were evidently not satisfied with the prospects. The home demand is not large, and the excelsior trade of Great Britain is so tightly in the hands of the Germans that Canadians are not likely to secure much business except they can offer very low prices, and heavy carrying charges are against this.

It is desirable that the hardwoods of Canada should be manufactured within the country to the greatest possible extent, and we believe there are opportunities for investment which should be investigated by our lumbermen.

## THE USE OF NATIVE TIMBER.

With the quantity and character of timber in this country, the question might well be asked, are the imports of timber not greater than they should be? There seems to be a disposition in some quarters to import timber and disregard the claims of home industries. No particular fault can be found with the person who imports a foreign article because of inability to obtain what is required at home, but there have doubtless been instances where Canadian timber would have met the requirements equally as well as that which has been imported.

Almost unconsciously perhaps, from the force of custom, some architects specify foreign timber for buildings without giving any consideration to the question of obtaining a supply in the country in which the building is to be erected and which is providing the funds for its erection. Harbor work, such as wharves and piers, is also often built of southern wood when Canadian timber would answer. Perhaps the qualities of Canadian timber are sometimes overlooked or forgotten. It might be of advantage for our lumbermen to appoint a committee to have distributed pamphlets showing the uses to which Canadian timbers may be applied and the results of tests of strength which have been made at the Universities and elsewhere. This same committee might be empowered to arrange for the carrying out of further tests.

An illustration of the neglect of native wood is furnished by the regents of the University of Michigan, in calling for the use of yellow pine flooring in a new hospital building at Ann Arbor, totally ignoring the fact that Michigan is the home of as fine white maple as grows.

At the present time tests of Pacific Coast fir and Texas yellow pine are being made at Bremerton, the naval station on Puget Sound, to determine the relative merits of the woods for use in the construction of naval vessels. These tests are made as the result of a complaint by the Pacific Coast Lumber Manufacturers' Association that Texas yellow pine was being used in naval vessels constructed on the coast when the native fir was better adapted for the purpose. In the transverse tests thus far made the native wood has been shown to be superior.

side should be taken in our home industries and support given them accordingly, even if it is necessary to abandon the theory of preference to the limit.

#### EDITORIAL NOTES.

It may not be amiss to call attention to the merits of spruce timber as a box material. It has not been used to a greater extent in the past is doubtless due to the lack of familiarity with the wood. For box-making purposes it is superior to white pine; in fact, there is no better box material to be obtained. Boxes for butter, fruit, etc., it is very desirable, as it does not taint the contents. There would seem to be good reason to expect large consumption of spruce in box-making in the near future.

When wages are high and employment plentiful there is more or less difficulty in retaining the services of employees. In no other industry is this felt to a greater extent than in the lumber trade. Lumbermen report that they are unable to keep their men working in the woods; they are very unsteady and will leave upon the slightest provocation, saying that their chances of securing employment elsewhere are good. In some districts lumbermen have been compelled to close down their shifts owing to the scarcity of good workmen. These conditions are likely to have the effect of materially reducing the output of lumber next season.

A representative of the CANADA LUMBERMAN, who recently visited the Georgian Bay district, said that the question of uniform grading of lumber is much talked of, and that there is a strong feeling in favor of such a system. The LUMBERMAN has always recognized the advantages to be derived from the adoption of a standard system of grading by manufacturers, and we believe that before long steps to that end will be taken. A majority of the manufacturers already admit the necessity of a change from the present system, which consists of each manufacturer defining his own grades. What is wanted is that two or three energetic persons take the matter in hand, and have no doubt that they would receive the support necessary to carry it to a successful issue. If some action is not taken Canadian lumbermen are likely to lose in competition with the United States, where standard grading of both pine and hardwoods is now recognized.

At a recent convention of box-makers, held at Rochester, a gentleman made the surprising statement that the quantity of lumber imported from the United States from Canada was now about one-eighth of what it was under the old tariff. He also said that the price of lumber in Canada is now very much lower than in the United States—the result of the new duty. These remarks are so far from the facts that they make contradiction almost unnecessary. Statistics show that our exports to the United States last year were almost up to the average of the years before the imposition of the duty, while the price of lumber in this country is quite as high as in the United States, and higher than

it was before the duty. The duty was imposed in the summer of 1897. In the spring of that year two-inch picks and uppers were selling in Toronto at \$34, dressing and better at \$22, and mill culls at \$10. To-day prices for these grades in Toronto are: Picks and uppers \$38, dressing and better \$24, and mill culls \$13. Instead of lumber selling lower than before the United States duty was imposed, there has been a substantial advance. This, of course, is due in part to improved commercial conditions.

#### THE GOVERNMENT TIMBER SALE.

It was a distinguished gathering of lumbermen that waited patiently in the Legislative chamber of the Parliament Buildings on the 17th ultimo for the limits with which they hoped to enrich themselves to be placed under the hammer. Before the arrival of the auctioneer, Mr. Peter Ryan, every desk in the room was occupied. Every white pine district of the province was represented, and there was a goodly quota from the once famous pine state of Michigan. Altogether about 400 square miles were offered. The conditions governing the sale contained the now customary manufacturing clause and also provided that the pine on the Algoma and Thunder Bay berths should be taken off within ten years and that on the three forfeited berths within five years.

The sum realized for the berths sold was approximately \$733,000, or an average of about \$1,842 per mile. Considering the quantity and character of the timber, the result was no doubt satisfactory to the Government. The opinion was freely expressed after the sale that the prices were high although not exorbitant. They are regarded as another proof of the growing appreciation of the value of pine timber.

The bidding from the outset was quite brisk, so brisk indeed that the auctioneer could not have felt the necessity of calling upon his abundant fund of humour in order to encourage bidding, as is his wont. The large plums were secured by Messrs. Dymont, Beck, Spohn, Barnett and Munro. The familiar voice of Mr. John Waldie was occasionally heard, but it was not his lot to secure any of the coveted property. He showed, however, that he still had abundant faith in pine limits.

It was a source of satisfaction that a limit of 13½ square miles was knocked down to Mr. J. E. Murphy. Mr. Murphy has been known in the past as a hardwood lumberman, but as his timber supply has become pretty well exhausted, he is evidently turning his attention to pine.

Considering the number of American lumbermen present, it was expected that they would secure a goodly portion of the limits. Their presence was surely not the result solely of curiosity. The limits sold were all in the Georgian Bay district and in the vicinity where the Michigan lumbermen are operating.

Those present at the sale included the following: J. B. Fraser, H. K. Egan, Lieut.-Col. W. G. Hurdman, R. J. Blackburn, Ottawa; W. A. Chariton, M.P.P., John Waldie, J. B. Miller, W. P. Bull, Joseph Oliver, R. Laidlaw, H. M. Weller, Hugh Munro, George Cook,

W. B. McLean, John Gray, H. Hancock, W. Ryan, Thomas Southworth, Toronto; Thomas Mackie, M.P., J. W. Munro, M.P.P., J. R. Munro, Robert Booth, P. Shannon, A. B. Gordon, B. C. Bahnsen, Pembroke; H. S. Brennan, Hamilton; Hon. John Charlton, Lynedoch; James Playfair, D. L. White, jr., Midland; R. McConnell, Mattawa; G. R. Dupuy, A. Trotter, Wallaceburg; H. C. Hamilton, John Collins, Sault Ste. Marie; P. McDermott, South River; A. Barnet, J. A. McFadden, Renfrew; W. J. Sheppard, Waubaushene; N. Dymont, Barrie; C. Beck, Dr. Spohn, Penetanguishene; J. E. Murphy, Hepworth Station; Peter McArthur, Quebec; J. Whitesides, Huntsville; R. Vigars, Port Arthur; A. E. Dymont, Thessalon; George McCormick, M. P.F., Orillia; C. A. McCool, M.P., Geneva Lake; Selwin Eddy, J. O. Fisher, A. E. Eddy, J. Boyle, Bay City, Mich.; Maurice Quinn, Matthew Slush, Arthur Hull, Saginaw, Mich.; E. W. Sparrow, Lansing, Mich.; James M. Rankin, St. Clair, Mich.; A. McIntosh, Cheboygan, Mich.; J. W. L. Galloway, Hillsdale, Mich.; J. Mullin, Duluth, Minn.; J. S. Gage, Vineland, N.J.; J. C. Spry, C. O. Hotchkiss, Chicago, Ill.; F. J. Arpen, D. Scott, Grand Rapids, Wis.

#### DUMPING SAW-DUST IN RIVERS.

In June, 1897, an act was passed by the Dominion Parliament forbidding the dumping of saw-dust into the Ottawa river, the Ottawa lumbermen having previously been exempt from the working of the Fisheries' Act in this respect by special legislation. In order that the lumbermen could make other arrangements for consuming the saw-dust, the time for the enforcement of the act was, upon representation to that effect, extended to January 1st, 1898, and subsequently one year later. It seems that since that time the law has been ignored by some parties, who have continued to dump saw-dust into the river. The first prosecution took place on September 10th, when Mr. J. R. Booth, the millionaire lumberman, of Ottawa, was fined \$20 and costs. Afterwards Mr. Booth stated that it had been his intention to build a burner to consume the saw-dust, although this could not be done within perhaps six months. He continued to discharge the saw-dust of his mill into the river. A second prosecution was the result, the fine in this case also being \$20 and costs. It is reported to be the intention of the authorities to continue to prosecute Mr. Booth until the act is complied with, while Mr. Booth is said to be considering the removal of his mill to another point. The outcome will be watched with some interest, as the removal of the mill will be a great loss to Ottawa and Hull.

The state of Michigan has just appointed half a dozen officials and scientists to report as to the best method of reforesting a tract of 57,000 acres in the great pine belt, which had been burned over.

Attention is directed to the advertisement of the Dominion Leather Company, 528-530 Front street west, Toronto, which appears on front cover page of this issue. This company manufacture "Hepburn's" pneumatic belt, made of specially prepared canvas, gutta percha and balata, they being sole representatives for the Dominion of Canada. This firm make a specialty of lumbermen's leather mitts in all sizes.

### THE CHEMICAL PRODUCTS OF WOOD.

Frank H. Mason, consul general at Berlin, Germany, has in response to a request from a resident of Michigan, transmitted through the state department, furnished an interesting and valuable paper upon the production of wood charcoal and recovery of the by-products, from which the American Lumberman has condensed such portions as are of most practical interest to lumbermen.

Coincident with the development of coke manufacture in Germany by the use of retort ovens, which recover the ammonia, gas, tar and its valuable derivatives that are wasted by the primitive "beehive" oven process, has been the improvement in methods and apparatus for wood distillation, through which the production of charcoal has been raised through the archaic, wasteful, earth-kiln process that recovered only charcoal and tar, to an intelligent, scientific system by which every valuable element in the wood is saved and added to the wealth producing power of the forests. So far has this been carried that special patented processes have been devised for using even sawdust and the rough outer bark of trees as material for the manufacture of charcoal and other products.

The apparatus for wood distillation, which will be briefly described in a later section of this report, includes cast and plate iron retorts of various types, as well as ovens of masonry, together with pipes, coils, tanks and pans for condensation and rectification of the several distillates and utilization of the gases. Retorts are either heated by direct firing from beneath or by superheated steam introduced in coils. Retorts with direct heating by fuel or gas flame are most in use, and they are of two general classes the horizontal and the vertical.

#### 1—THE PRODUCTS OF WOOD DISTILLATION.

These form four primary groups, which, with their derivatives, may be synopsisized as follows:

- (1) Uncondensed gases, which may be burnt as fuel, or, after certain treatment, used for illuminating purposes.
- (2) Tar, from which are derived benzol, naphthalene, paraffin, rosin and phenyl acid (creosote).
- (3) Pyroligenous acid (wood vinegar), from which are derived acetic acid, acetone and methyl, or wood alcohol.
- (4) Charcoal.

The quantities of these several products which can be obtained from the distillation of a certain quantity of wood vary considerably according to the species or kind of timber used, its dryness, and especially the time consumed by the process of distillation, it being a general principle that, within reasonable limits, slow distillation yields larger percentages of distillates than are recovered when the process is quickened. All this has been reduced to exactly demonstrated results by the German chemists, and these have been tabulated by Professor Fisher, in his "Chemical Technology," to show the comparative yield, by slow, and by quick distillation respectively, of the seven species of wood that are most employed for charcoal manufacture in Germany. The table shows for

each kind of wood two lines of figures, the first of which (slow distillation) shows the products obtained when the wood was put into a cold retort and heated for a period of six hours; the second line (fast distillation) shows the results when similar wood was put into a glowing retort and exposed to a fierce heat for a period of three hours:

WOOD, 100 PARTS.	Total Dis- tillates.	Tar.....	Hydrated Wood Vinegar (raw)....	Pure Ace- tic Acid.	Charcoal (dry)....	Uncon- densed Gases..
<b>Hornbeam (Carpinus betulus)—</b>						
Slow distillation	52.40	4.75	47.68	6.43	25.37	22.23
Fast distillation	48.52	5.55	42.97	5.23	20.47	31.01
<b>Birch (Betula alba)—</b>						
Slow distillation	51.05	5.46	45.59	5.63	29.64	19.71
Fast distillation	42.98	3.24	39.74	4.43	21.46	35.56
<b>Beech (Fagus Silvatica)—</b>						
Slow distillation	51.65	5.85	45.80	5.21	26.69	21.66
Fast distillation	44.35	4.90	39.45	3.86	21.90	33.75
<b>Poplar (Populus tremulas)—</b>						
Slow distillation	47.44	6.90	40.54	5.10	25.47	27.09
Fast distillation	46.36	6.91	39.45	4.36	21.33	32.31
<b>Oak (Quercus robur)—</b>						
Slow distillation	48.15	3.70	44.45	4.08	34.68	17.17
Fast distillation	45.24	3.20	42.04	3.44	27.73	27.03
<b>Larch (Larix decidua)—</b>						
Slow distillation	51.61	9.30	42.31	2.69	26.74	21.65
Fast distillation	43.77	5.58	38.19	2.06	24.06	32.17
<b>Spruce (Picea excelsa)—</b>						
Slow distillation	46.92	6.93	40.99	2.30	34.30	18.78
Fast distillation	46.35	6.20	40.15	1.78	24.24	29.41

These figures show the yield in pure, hard charcoal, which, on exposure to the air, absorbs moisture to an extent of from 4 to 10 per cent. of its weight, according to the kind of wood from which the charcoal was made. Of the above varieties, the English hornbeam is practically similar to the "blue beech" (*Carpinus Americana*) of the United States; and the beech, birch and spruce are nearly so identical with American woods of the same name that the foregoing table of distillates will be found substantially correct for the woods mostly employed for charcoal manufacture in our country. It will be seen that the charcoal yield is about one-fourth of the entire weight of wood, the total distillates one-half, and the greater portions of these is hydrated wood vinegar, which in its crude form contains about 12 per cent. of crystallized acetic acid.

#### 2—NATURES AND USES OF THE SEVERAL DISTILLATES.

This section of the report abounds with chemical technicalities and terms, and only a portion of it is reproduced.

Taking up these several by-products in their order, the second in commercial importance is probably the wood tar, which is found more or less in all kinds of timber, but most plentifully in the larches and other conifers.

#### A—THE TAR PRODUCTS.

Wood tar is composed mainly of several hydrocarbons, some of which have only a scientific interest. The tar which contains them is expelled from the wood at a temperature exceeding 360° Celsius. The higher the temperature and the more rapid the process of distillation, the greater the percentage of tar and gas produced and the smaller the yield of acetic acid. The tar obtained as a by-product of charcoal manufacture from hardwoods is mainly used for the production of creosote and applied to the antiseptic treatment of wood, such as posts, railway ties, paving blocks, etc., to protect the fiber against decay. When used as a raw material for producing any of the hydrocarbons, that forms a

separate chemical industry. The best known of them are:

Benzol; boils at 82° Celsius; specific gravity, 0.85.

Tulol; boils at 111° Celsius; specific gravity, 0.87.

Xymol; boils at 139° Celsius; specific gravity, 0.875.

Cumul; boils at 166° Celsius; specific gravity, 0.887.

Cymol; boils at 175° Celsius; specific gravity, 0.85.

By reason of these sharply defined characteristics they can be rather easily separated, and when treated with ammonia produce bases which, being oxidized, yield aniline colors. Industrially, however, anilines are mainly produced from the cheaper benzol and other derivatives from coal tar. The principal value of these elements when derived from wood tar is that they serve for a vast range of interesting researches for new and valuable shades of colors. Naphthalene and paraffin are hydrocarbons occurring in small proportions in wood tar. The paraffin is characterized by a remarkably high melting point—300 to 400° Celsius—but is of small industrial importance for the reason that it can be obtained so much more abundantly and cheaply from coal tar. Of the oxidized, and therefore acid, combinations in coal tar two have been isolated and have some scientific interest, containing carbolic acid; but are usually left in the liquid creosote and add to its antiseptic properties for the treatment of wood.

#### B—THE ACID PRODUCTS.

By far the most important by-product of wood distillation in charcoal manufacture is the pyroligenous acid, or wood vinegar, which in its raw state, as it comes from the still, is an impure hydrated solution, a colorless, inflammable liquid, with a sour, pungent smell and, as already stated, 12 per cent. of pure acetic acid. It boils at 117.3 Celsius and at 4° the acid solidifies in laminated crystals which fuse at 16° C. From the table previously given it will be seen that the yield of pure acetic acid is highest in the hardwoods. Pure acetic acid is derived from raw wood vinegar by several processes, the simplest of which is as follows:

The raw distillate is first left standing for a certain time to permit the tarry elements which it contains to separate by settling. The clarified liquid is then put into a retort, with rectifying apparatus attached, and heated until the methyl alcohol and other light and volatile elements are expelled and pass over into a distillate, which is reduced by subsequent processes to alcohol and acetone, as will be elsewhere described in this report. The heating is continued until the areometer shows a specific gravity of 1.000 (same as water), indicating that the lighter elements have been eliminated. The acid solution is then drawn off and neutralized with a base, usually lime or soda. This takes up the acid, forming an acetate, which on being decomposed yields acetic acid. The cheapest base for this process is limestone, but it should be pure, or as nearly as possible freed from organic impurities.

C—DIRECT DERIVATIVES FROM THE ACETIC ACID.

The most important is acetone, a colorless liquid which is used as a solvent in aniline and several other branches of chemical manufacture, especially in the production of smokeless powder and other explosives. Acetone is obtained by separating acetic acid into three elements—acetone, carbonic acid and water. For this purpose the acetic acid is neutralized with lime, and the acetate thus formed is heated in a retort with a steam leading to a coil condenser. On account of the low boiling point of acetone (56°), this coil must be kept at a very low temperature in order to produce complete condensation. In the industrial process the acetate of lime is dried, finely pulverized and then put into the retort, where it is heated until the acetone has passed over, when the residuum is withdrawn and again used for making fresh acetate of lime, with which the operation is repeated. Acetone of 56° to 58° purity is now worth about 50 cents a kilogram (22.6 cents a pound), and, like acetate of lime, is a standard commercial product.

The next valuable derivative for acetic acid is wood alcohol or methyl alcohol, called in German "Holzgeist," a colorless, volatile and inflammable liquid, which boils at 66.3° C. and has a specific gravity of 0.800. It burns with a bluish flame of low illuminating power, dissolves resins, gums and essential oils and is extensively used in the manufacture of lacs and varnishes and for the denaturalization of spirits which are to be used for industrial purposes (in order to render them unfit for imbibation). The exports of wood alcohol from Germany in 1899 amounted to 6,703,620 pounds, valued at \$652,354.

Among the other useful products of wood distillation is oxalic acid, an important substance used in dyeing and cloth printing, which was formerly prepared by oxidizing sugar, but is now much more cheaply obtained from sawdust by the action of alkalis.

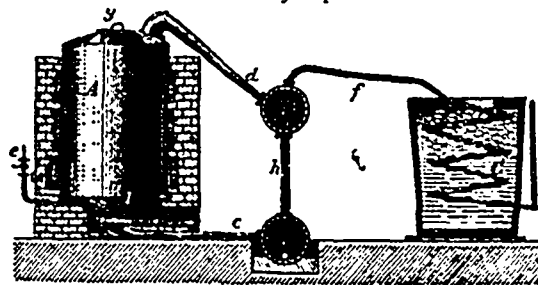
III.—APPARATUS FOR WOOD DISTILLATION.

Since the commencement of wood distillation as a practical industry nearly fifty years ago many changes and improvements have been made in the machinery employed, which for economical practice requires to be adapted to the kinds of wood to be worked, the quantity to be treated at each operation, and according to which of the distillates, tar or acid, is regarded of first importance. Wood is a bad conductor of heat, so that, in the construction of all retorts, the problem is to secure as prompt and as thorough a distribution of heat as possible throughout the mass, combined with such dimensions as will render the charging of the retort with wood and the withdrawing of the charcoal reasonably convenient. All plants for wood distillation combine substantially the features which are shown in the following model, which is a simple, upright retort, with a capacity of 8 cubic meters (about 2½ cords) of wood.

In this figure, the retort A is made of ordinary or of galvanized boiler plate, set in brick masonry, with a spiral flue b, so that the fire introduced at the furnace a is drawn by the chimney draft round and round the outer shell of the retort, which is filled with wood, and the charcoal discharged through the manhole y. To quicken the heating of the charge to 100° C.—at which temperature the development of gases begins—superheated steam is turned in through the pipe c. The crude inflammable gases which are first generated are discharged downward into the fire through a pipe not shown in the drawing. As the heat increases the steam and gas pipes are closed and the distillates begin to pass over. The tar flows downward through the pipe c, the acid gases pass upward through

the beak d into the drum B, where the tarry vapors condense and are carried downward to the tar tank (lower B), which is kept cool by partial immersion in water. The pyrolygenous acid gas, nearly freed from tarry impurities, passes on through f and the cold coil C, where it is condensed and pours out in the form of raw wood vinegar. These are the rudiments of the process.

In anticipation that the European process of making charcoal with recovery of the tar and acid products might have a practical interest for charcoal manufacturers in the United States, an engineer familiar with this industry has been consulted, and he has obtained from several German manufacturers of apparatus and fixtures for these purposes, estimates of the cost of equipment for a plant of the standard capacity, viz., 75 cubic meters (2,640 cubic feet) of wood daily. In practice it has been found most economical to set up the distillation plant as near as possible to where the wood is cut; in other words, at the point where all conditions of transportation for raw material and products are most favorable. The ordinary practice involves



APPARATUS FOR WOOD DISTILLATION.

the distillation of hardwoods—beech or oak—and the recovery of charcoal, tar, raw wood vinegar and methyl alcohol. The charcoal, or first product, is ready for market upon being withdrawn from the retort. The tar is sent as raw material to chemical factories, where it is worked up as a separate industry. The methyl alcohol is also a commercial product and is usually sold in its crude state, but the wood vinegar is usually consumed on the spot for the production of acetate of lime, which, as already explained, is a convenient vehicle for recovering and transporting the pure acetic acid contained in the wood vinegar, which for this purpose is treated with ordinary limestone. Assuming, therefore, that a firm or company in the United States should wish to establish a modern German plant of this kind, and for that purpose to obtain the necessary machinery in this country, the calculation would be somewhat as follows.

Distilling apparatus, complete, without buildings, for treating 75 cubic meters of wood daily, would cost here 105,000 marks (\$24,000). If the capacity were increased to 100 cubic meters the cost of plant would be about 130,000 marks (\$30,000). If greater capacity is desired it would be advisable to duplicate the same apparatus instead of further increasing the size of the unit.

If beech wood is used, the raw vinegar obtained will be from 40 to 45 per cent. of the weight of the wood, and the vinegar should yield 9 to 12 per cent. of acetic acid. Assuming that this is to be recovered on the spot, a plant for the daily production of 1,200 kilograms (2,640 pounds) of acetate of lime would cost, exclusive of buildings, about 15,000 marks (\$3,570). This assumes that the raw pyrolygenous acid is to be treated with ordinary limestone, a process which involves no technical difficulties. So far as can be ascertained, the apparatus for the industry involves few or no essential features which are covered by patents, so that a modern scientific plant, once established and its success demonstrated, could be duplicated to any extent which supply of material and the market for its products might require.

which would, until eliminated, injure the quality of the acetate. Acetic acid is sufficiently powerful to expel carbonic acid in limestone, but the neutralization process causes thereby a strong effervescence, so that it must be accomplished in large, deep tanks in which the effervescing nature will not boil over. If instead of lime-burnt lime is used, the effervescence is greatly reduced; but in either case it is important that the amount of basic material (lime) be not in excess. In other words, it should be sufficient to neutralize the acetic acid—when it does first—and not enough to take up toward the acid elements of the tar, which, being lighter than the acetate of lime, rise to the surface during the reaction and should be removed by skimming. The clarified solution when evaporated in large shallow pans, yields as a residuum crude acetate of lime. Overheating during the evaporation decomposes the acetate, so that a slow, steady and uniform process is necessary, and for this purpose the off-gases from the retorts in which the wood is distilled are used whenever practicable. The residue residuum is a gray, odorless mass, containing about 75 per cent. of pure calcium acetate, and forms a standard article of commerce. It is purified by dissolving in water, passing through bone black, and concentrates by evaporation to a specific gravity of 1.16, when the salt crystallizes in small, odorless scales, which are principally used as material for the production of acetone. Acetate of lime appears in commerce in three grades of purity, the highest of which is worth in large quantities 2.50 marks a kilogram (27 cents a pound); the medium, 1.60 marks (18 cents a pound), and the lowest grade 1.38 marks (15 cents a pound). Its commercial importance as a commercial product will be inferred from the fact that the exports of acetate of lime from Germany in 1898 were 539,300 kilograms; in 1899, 1,005,700 kilograms, and in 1900, 15,378,600 kilograms (3,395,000 pounds), of which last 1,382,140 pounds went to the United States. When soda is used as the neutralizing base the product is acetate of soda, and the process throughout is in general similar to that when lime is employed. The acetate of soda has various uses, but its crystals disintegrate when exposed to the air, and for this and other reasons it is less important in Germany than acetate of lime. Both are, however, used as a means of extracting acetic acid from the raw wood vinegar, after which they are decomposed by various processes to obtain the crystallized acetic acid. When pure acid is to be obtained on a large scale the soda acetate is preferred, the acetic acid obtained from calcium acetate contains impurities which are difficult to separate. In other cases, however, the acetate is decomposed by the action of a mineral acid sufficiently powerful to displace the acetic acid from combination with the base, by which process the former is isolated. Pure acetic acid is used for many purposes, amongst others making edible vinegar. When prepared for this purpose it must be carefully cleansed from empyreumatic impurities, which give it a disagreeable, smoky flavor. It is then made into table vinegar by dissolving in twenty times its volume of water.

## CONVENTION OF BOX-MAKERS.

The fourth semi-annual meeting of the National Association of Box and Box Shook Manufacturers of the United States opened in Rochester on August 21st. The attendance was large and the proceedings interesting. The report of the committee on Shooks for Import created a lively discussion. It stated that some progress had been made, and the basis of paying duty increased from \$7 to \$11 per thousand. The appraisers met with some difficulty in securing a basis, owing to the fact that some Canadian manufacturers were manufacturing stock very cheap and making a basis from a waste standpoint as to lumber manufactured, rather than box material at the basis at which stocks should be sold. Mr. James Innes said that no doubt the party in question was working deals, and had more or less waste in cutting them off, which made their material for manufacturing shooks on a cheaper basis than some other parts of Canada or the United States. Mr. Miller said that although labor was cheaper in Canada, 90 per cent. of the manufacturers in that country were in sympathy with the box-makers of the United States. It was decided that the Export and Import Committees should be continued for another six months and a report presented at next meeting. To the question, "Are you in favor of the \$2 tariff?" a member replied in the affirmative, adding: "Only one-eighth of the lumber has been coming in since this tariff was placed on it. The prices since have been going down in Canada, while the eastern lumber has been going up."

Discussing the subject of "Reciprocity," Mr. Chaffee, of New England, said he would like to know how Canadians who make prices at much less than \$17 could do it; provided their lumber cost \$11, waste and work bill \$6.40, how could they sell stuff for \$14?

Mr. W. D. Sturm read a brief paper on "Piling Lumber for the Box Trade," and was followed by Mr. B. S. Atwood with a paper on "What has the Association done for the Box Trade." Mr. Cristadore introduced the subject of "Low Prices of the Past Six Months." Some of the reasons for the low prices, he said, were that No. 3 pine boards at \$15 and \$16 had been substituted by hemlock, and slabs, too, have had their sway in substituting for a better grade of stock. To-day we have a No. 5 board, which was substituted for No. 4 and No. 3 stock. Of course, the rapid advance for two or three years made the box user think a little, and he was not so particular about the one piece ends and whole sides as in days when he could buy almost a clear box for the same price he would pay for a poor one. Then, we find that cotton-wood has taken considerable of the white and yellow pine trade. One of the greatest barriers to reasonable prices, he thought, was the scalper.

The subject of "Waste in the Box Trade" was brought up by Mr. R. L. Jones, of Saginaw. Mr. Jones urged that more attention be given to the question of waste. "How," he asked, "shall we figure waste? One man says ten, another fifteen, another twenty per cent. One man is using scoots, another culls, another sound lumber, and the percentage of

one will not apply to another. Take 1,000 feet of lumber, cut it up into boxes; if you get 800 feet of boxes your waste is 200 feet. Now, make the purchaser of the 800 feet of boxes pay for 1,000 feet of lumber and you are safe. Then if you happen to get a few feet of boxes out of the 200 feet of waste, don't sell it to the next man below the market value, because there is no reason why he should buy boxes any cheaper than the first man, and the chances are that the extra cost of manufacture will make it an unprofitable sale to you.

On the same subject Mr. Cristadore said: "A few years ago when lumber was fairly good, about 15 per cent. was considered a fair per cent. of waste for pine lumber. In the old days, wormy, shakey lumber went into the refuse burner, and now it goes into boxes or anything it can be sold for. In the old days the boxmaker used to use some No. 1 boards and some No. 2 boards, but now they are not considered. Occasionally No. 3 is used, but this is too expensive. When you get to making boxes of No. 4 there is an increase or decrease in waste according to quality of boxes made. I have known boxes made of No. 4 boards where the waste was as high as 30 per cent. Of course different mills make different grades, but the waste problem of No. 4 will come out from the surfacer to the printing machine. You have 20,000, say, in a car, you find the amount of waste 5,000 feet to the car, and you should figure the cost of manufacture as well as of labor on the same. Except on printing you should extend the cost of manufacture the same as on the lumber. You can not dispose of the cost in handling waste. If the cost is much less on lath yarn and printing why should you give the customer the benefit of this cost of labor? It is a legitimate part of your cost in figuring shooks, and the proper way to divide the matter is to divide 800 into 20,000, and you have the cost. If you have been in the wrong in the past, why not add this item of cost on your labor? You can start anew and you will fill the leak, and it is the leaks that do away with the profits of manufacturing."

## SIZE OF BARRELS.

It appears that there is a lack of uniformity in the sizes of apple barrels in the States and those of Canada. An exchange says: The Canadian Parliament lately passed a law for the regulation of the size of barrels for packing apples, pears or quinces, which requires that these packages shall be made good and strong, of seasoned wood, having dimensions not less than 26 $\frac{1}{4}$  inches between the heads, inside measure, a head diameter of 17 inches, and a middle diameter of 18 $\frac{1}{2}$  inches, representing, as nearly as possible, 96 quarts.

The apple barrel adopted by the United States Apple Shippers' Association is required to have a head diameter of 17 $\frac{3}{8}$  inches, staves 28 $\frac{1}{8}$  inches long, and a bilge of not less than 64 inches, outside measurement.

The capacity of the Canadian barrel is calculated exactly at 96.51 imperial quarts, or about 100 quarts, dry measure, or equal, approximately, to our standard barrel for pears, quinces or potatoes, which is required to "represent a

quantity equal to 100 quarts of grain measure."

The new Canadian standard barrel, incidentally, is about six quarts in capacity less than the New York standard barrel for which was adopted by the Apple Shippers' Association.

There is a penalty of 25 cents per barrel for apples, pears or quinces exposed for sale in Canada in a barrel smaller than that specified by the new law.

## EXPORTS OF FOREST PRODUCTS.

The following figures showing the exports of forest products are taken from the unrevised monthly statement of the imports and exports of Canada compiled by the Department of Customs at Ottawa:

Article.	Month of June	Value.
Elm logs.....	\$ 27,947	\$
Hemlock logs.....	60,217	
Oak logs.....	2,146	
Pine logs.....	97,487	
Spruce logs.....	6,391	
Tamarac logs.....	240	
All other logs.....	23,079	
Battens.....	12,841	
Basswood lumber.....	6,813	
Pine deals.....	317,402	
Spruce deals.....	1,610,914	
Deal ends.....	75,916	
Laths.....	95,049	
Palings.....	585	
Pickets.....	11,206	
Planks and boards.....	1,471,614	
Joists.....	115	
Scantling.....	59,699	
Shingles.....	183,990	
Box shooks.....	47,084	
Other shooks.....	28,748	
Standard staves.....	.....	
Staves and heading.....	27,494	
Lumber not elsewhere specified.....	24,240	
Match blocks.....	110	
Masts and spars.....	160	
Piling.....	27,594	
Hoop poles.....	185	
Telegraph poles.....	7,146	
Other poles.....	675	
Cedar and tamarac posts.....	3,173	
Shingle bolts.....	90	
Sleepers and railroad ties.....	29,674	
Stave bolts.....	1,453	
Ash timber, square.....	1,603	
Birch timber.....	44,053	
Elm timber.....	52,674	
Maple timber.....	525	
Oak timber.....	60,242	
Red pine timber.....	9,501	
White pine timber.....	395,430	
Other timber.....	15,816	
Pulp wood blocks.....	17,668	
Other articles of the forest.....	1,148	

## LAST CANADIAN LOG.

The last pine log to go from Canada to the United States reached the Saginaw River on August 29th, on a raft containing three and a half million feet and from Little Current, Ontario, consigned to the Saginaw Lumber and Salt Company. This company took this season between twenty-two and twenty-five million feet, and a raft of three million feet went to Detroit. This finishes the rafting of logs from Canada to the Saginaw mills. The logs brought over this season were cut from the Indian Reserve lands, with the exception of the Detroit raft, which was cut from dead timber. The Ontario authorities have shut off taking over more Indian reserve logs. Since the rafting of logs from Michigan mills was inaugurated one billion six hundred and forty-one million feet have been taken over.

It is said that a planing mill and shingle mill were erected at Blind River, Ont., this fall.

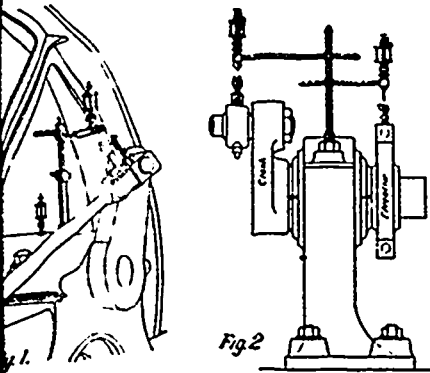
CRANK PINS, WRIST PINS AND GUIDES OF STEAM ENGINES.

By W. H. WAKEMAN.

of oiling a bearing that is in motion (like pin of an engine) from a stationary oil cup, is commonly practised that it attracts little or no attention among engineers in large cities. But this is always so; even now there are hundreds of engines running without this great improvement, and still a few engineers who do not appreciate the value of such a device. The word "few" here means thousands, for it is used in a comparative sense of the total number of engineers in this country is...

the time that I first opened the throttle valve of the engine until the present day, it has been my ambition to keep my engine running at full speed for the number of hours, whatever that might be, from ten to twenty but five hours without a stop to a run of six years of this time I did not have any way of oiling a crank pin while in motion, except a cup that was attached to the crank. I am free to admit that the necessity to keep that pin from heating was more than that caused by all the other bearings combined. I could fix them while running, but any mistaking that crank pin oiler was sure to bring the mill to a standstill before the appointed time. The oiler consisted of a common brass cup screwed to the connecting rod, with a tube in the middle through which a piece of lamp wicking was drawn. When this was new it would feed too fast; but after it had been used a few weeks it fed just right, and when it fed too slowly, provided it was not taken so that the adjustment consisted in manipulating a piece of wicking every morning and noon so as to overcome its exasperating tendency to feed too much or too little; but the rule followed was made up from experience, so that it is impossible to repeat it here.

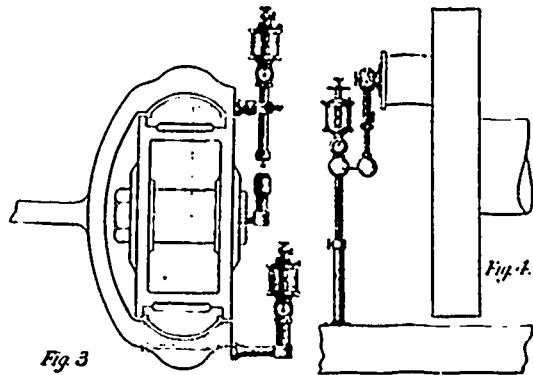
The second engine that I engaged to run, a very different device was used for the crank pin. I soon discovered that this shop contained machinery that could be stopped at pleasure without damaging the stock, and since the crank pin became more important than any other part of the engine, I decided that a "wiper" was necessary, but wipers were expensive at that time, and I was anxious to make as good a record as possible out of running the plant, I had one made. A blacksmith forged out a piece of iron and drilled a large hole in it, so that by taking one of the bolts out of the main bearing, putting it through the hole and returning capscrow to its place, I had a



that answered the same purpose as that shown in Fig. 1. A piece of sheet brass was fitted into the hole of the strap, a sight-feed oiler put on the standard, and the details attended to that made it possible to run an engine as many hours as required without stopping to oil the crank pin. I am not advocating the idea of making such devices to the exclusion of others on the market by reliable parties, for the ones that are better than any "home-made" device. The price is a cheaper, too, all things considered. It is in sympathy with the man who uses \$6.00 worth of time and \$1.50 worth of stock in making an oiler that he could buy for \$5.00, and then boasts of his sagacity. I do claim, however, that where an oiler can not be purchased to purchase some other appliance is justified in making it, provided it is patented.

The wiper shown in Fig. 1 has a piece of flat lamp wick stretched in a horizontal position underneath the sight-feed oiler; as the oil is dropped on this it filters through and is wiped off from the under side by the moving cup. Fig. 2 is all metal, the oil falling through a slot and hanging underneath until the wiper comes around and takes it off. This illustration shows the same device in use on the eccentric of an engine. While this is not absolutely necessary on a slow-speed engine, it is a very good thing to have in use.

Fig. 3 shows a wrist pin oiled in the same way, also a cup that feeds oil to the lower guide. The dotted lines show how the oil rises to both edges of this circular guide, thus insuring lubrication for the highest parts of it, after which the oil is sure to work downward to the lower part without further attention. Fig. 4 illustrates another device for oiling a crank pin while in motion. The principle on which it operates is the use of centrifugal force. The sight-feed oiler drops oil into the hollow ball beneath it, out of which it flows to the right and drops into the hollow ball which revolves opposite the center of the crank shaft. So long as it



remains at the center there is no tendency to go in either direction, but when the crank is down the oil moves away from the center, and once started on its journey it quickly travels toward the crank pin without regard to the position of the crank. It is quite a job to apply this form of oiler to an engine in a mill, as two holes must be bored in the crank pin, but it is very satisfactory in practice, because it throws the oil less than any other device. The same principle is utilized on some center-crank engines, where oil is taken from oilers on the shaft bearings, and used in the same way.

Having described these oilers, I wish to call attention to their great value to steam users, not only on account of preventing lost time in shutting down during working hours, but because they deliver oil to the rubbing surfaces in small quantities and at regular intervals. It is quite possible for these surfaces to wear much more than is necessary without heating or giving any outward indication except that the keys need frequent adjustment and the boxes are worn out sooner than they ought to be. Some mill owners regard such devices as luxuries, therefore they can be dispensed with; but this idea is not wholly correct, for while a mill can be run without them it does not pay to do it. It seems rather inconsistent to find a mill in a city, near machine shops and other places where repairs are made, fully equipped with oilers that prevent friction and wear, and then to find another mill located several miles from the nearest machine shop (which may be a primitive affair at best) fitted with oilers that do not prevent the bearings from becoming warm every day. In such places repairs are always expensive, since it takes so long for one or more machinists to reach the place.

The only objection to wipers on the crank pin and wrist pin of an engine is that they call for oil cups, or rather oil-catchers, that are open on the top, and when located in a dusty mill there is a chance for some of the flying dust to get into the open cups and clog them, or work down into the bearings and damage them. This objection may easily be overcome, however. A small piece of waste put loosely into each one will allow the oil to filter through it, but will catch the particles of dust. It is necessary to renew these pieces of waste frequently in order to prevent them from becoming hard enough to stop the oil from filtering through fast enough to keep the bearings well lubricated. This is but a small job, and need not be done more than twice each week.—The Wood Worker.

THE HARDILL COMPOUND ENGINE.

The town of Mitchell, Ontario, presents an example of Canadian enterprise in the possession of a company who are meeting with success in the manufacture of a compound steam engine invented and perfected by purely Canadian genius.

Mr. Joseph Hardill succeeded in January, 1899, in obtaining the Canadian and United States patents on a new design of cylinders and valves for a compound engine which had occupied his attention for a number of years. Considerable interest was hereby manifested among experts, who recognized in this design the possibilities of an inexpensive, yet complete and serviceable engine presenting promise of increased economy, besides other features heretofore unobtainable, at a price which would be within the reach of all steam users, and at the same time be so free from all complicated parts and gears that it could be operated by anyone capable of handling an ordinary slide valve engine.

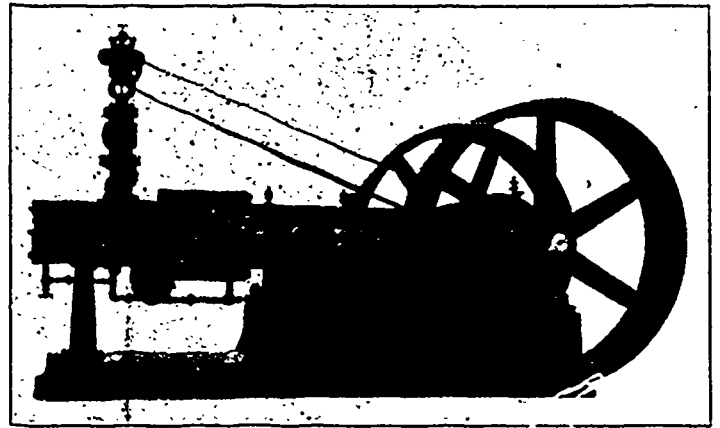
An engine was accordingly built and sent to McGill University, where it was subjected to an unusually thorough and practical test, and although the engine was the first of its kind, the results, we understand, were gratifying beyond the fondest expectations of its builders, who were congratulated on their possession of a most valuable invention.

A company was then formed and incorporated under the name of the Hardill Compound Engine Company, of Mitchell, Ont., Limited, who immediately made preparations for placing the engine on the market, and have been working quietly for a little more than two years, perfecting designs and building patterns, so that to-day, as all who attended this year's Exhibition at Toronto will agree, they have succeeded in producing an engine which for performance and appearance is of exceptional merit.

In the meantime a number of engines had been sold, and may be found doing almost every conceivable kind of work, and giving such general satisfaction that the success of this engine seems assured. The company are now prepared to supply this engine in all sizes, from 15 h. p. to 100 h. p., with the assurance that every engine will fulfill the claims made for it.

A company has recently been organized in Buffalo who are building the same engine and meeting with the same degree of success. One of their engines was tested at Cornell University, and its performance was such as to call for the most flattering commendations. It is hardly necessary to state that these two universities are equipped with special facilities for making such tests in a most thorough and vigorous manner and that their reports are comprehensive and absolutely impartial.

The Hardill compound, of which an illustration is shown, is a compact, self-contained, medium speed engine of the tandem compound type. It may be operated as a double-acting or single-acting compound as may be required. The peculiar feature is the two-valve chests, one on each side of the cylinders. These



THE HARDILL COMPOUND ENGINE.

chests form the bulkhead and are cast in the same piece with the cylinders, giving great rigidity to the structure. Each valve is complete in itself and independent of the other, being operated by separate eccentrics so that either may be shut off at discretion without impairing the operation of the engine, in cases where half or less than half the usual power is required. The valves are extremely simple and compact, and themselves form the means of conveying steam from the high pressure cylinder to the low pressure cylinder without the aid of a receiver or any other connections. This is in itself a strong recommendation, in addition to the fact that the steam from the high-pressure cylinder, before being admitted to the low-pressure cylinder, must pass through the valve which is at all times surrounded by live steam, thus preventing condensation and insuring the desired result of greater economy.

The makers are desirous of having the public become acquainted with this new engine, and will gladly correspond with all who are interested in a reliable and economical engine at a reasonable cost.

## THE NEWS

The new mill of James Leigh & Sons, in Victoria, B.C., has commenced operations.

Lequime & Powers, saw millers, of Midway, B. C., have purchased a mill at Curlew, Wash.

F. Goodwin, of Moncton, N.B., has moved his saw mill to Bathurst, where he will operate this winter.

A scheme is on foot to organize a company to establish a large lumbering industry at Fort Frances, Ont.

The new saw-mill of the Cleveland-Sarnia Lumber Company at Sarnia, Ont., will be completed this month.

George F. Burpee, of Avondale, N.B., is manufacturing a large number of butter boxes. Spruce timber is used.

The Conger Lumber Company have completed their new saw mill at Parry Sound, Ont. It is up-to-date in every respect.

Rhodes, Curry & Company, of Amherst, N.S., recently received a large cargo of oak lumber from Richmond, Virginia.

The new mill of the British Columbia Shingle Manufacturing Company at Vancouver, B.C., has just commenced operations.

It is reported that a syndicate of Michigan parties is considering the erection of a large saw and shingle mill on Burrard Inlet, Vancouver, B.C.

The Crow's Nest Lumber Company's mill at Michel, B. C., has been closed down and will likely be removed to Sparwood, a point six miles further west.

The Hawkesbury Lumber Company, of Hawkesbury, Ont., have just added a new band mill, thus increasing their cutting capacity to 200,000 feet per long day.

W. H. Nugent, of St. John, N.B., has leased from A. W. Hatfield the saw mill at Hatfield's Point, Belle Isle, and will put the mill in operation about December 1st.

A. E. Alexander, of Campbellton, N. B., is building a storage shed for shingles. It will be 130x42 ft., and is expected to be found of great advantage in making shipments.

A by-law was carried recently by the ratepayers of Port Arthur, Ont., granting the Pigeon River Lumber Company the necessary land on which to build a saw mill and establish yards.

No. 4 saw mill of the Rat Portage Lumber Company cut during the month of August 3,800,000 feet of lumber. This is claimed to be the largest cut ever made by one mill in the district.

R. A. Estey, lumber merchant, of Fredericton, N.B., with other eastern capitalists, have organized the James Barnes Construction Company, to build railways and do a general contracting business.

William A. Kribs has purchased 3½ acres of land in the town of Hespeler, Ont., and intends to build a planing mill and box factory. The building will be 56 x 140 feet and will be equipped with a modern plant.

Judgment was recently given compelling James Playfair, of Midland, Ont., to purchase certain timber limits valued at \$45,000 from James L. Burton and Martin Burton, of Barrie. The defendant has appealed against the decision.

Charles J. Willis & Company recently loaded the steamer Dordrecht at Sheet Harbor, N. S., with 1,873,000 feet of deals and scantling. The time occupied in loading was seven and one-half days, which is regarded as quite an accomplishment.

S. B. Frick has recently purchased Messrs. Stephens & Argue's mill at Norland, Ont., and will add new machinery and other improvements. Mr. Frick has purchased a small timber limit (mostly hardwood), in the locality and proposes to buy more.

A branch of the Canadian Manufacturers' Association for the Province of British Columbia was recently formed at Vancouver. The membership includes nearly all the large saw-mill owners in the Province. At the organization meeting the question of an import duty on lumber and shingles was discussed.

An examination of cullers of timber was held at Arnprior, Ont., last month. The candidates numbered 39, 32 of whom were successful. The examiners were S. M. Johnson, of Arnprior, William Russell, of Pembroke, and J. B. McWilliams, of Peterborough. The names of the successful candidates are not given out for publication.

In a recent forest fire south of Windermere Station, Algoma, 200,000 feet of jack pine timber was burned. An area about four miles by two miles was burnt over, the cause being evidently a fire left by campers. A heavy rain has since fallen in the district, and the indications are there will be no more fires there this season.

W. B. Russell, chief engineer for the proposed Government railway from North Bay to Temiscamingue, reports that the timber passed through on the now completed twenty miles is the finest to be found in New Ontario, both as to quantity and quality. It comprises black and yellow birch, tamarac, maple, ash, hemlock, spruce and white pine.

In the District Magistrate's Court at Sherbrooke, Que., George Bolter, Henry Morten, Joseph Hill and William Gervais, all of Richmond, were fined last month for having appropriated a quantity of logs belonging to the Royal Paper Mills Co., of East Angus, that were carried down the river some time ago on account of high water.

The new saw mill of J. D. McArthur at Lac du Bonnet, Man., is operating very satisfactorily. The capacity is 50,000 feet per day. The power plant consists of three 60 horse power boilers and a 125 horse power engine. Sawdust is used for fuel and is fed automatically to the furnaces from the saws. The machinery for this mill was supplied by the Stuart-Arbutnot Machinery Company, of Winnipeg.

German capitalists, with headquarters in Chicago, are negotiating for the purchase of the timber lands in British Columbia owned by the Toronto & British Columbia Lumber Company. William O'Donnell, of Baker City, Ore., is acting for the company. It is said to be the intention to build a large saw mill to cost \$500,000, and to manufacture largely for export to South Africa, Australia, Japan and China. The mill will likely be located on one of the numerous harbors between Alberni and the coast.

### TRADE NOTES.

The works of the Globe File Manufacturing Company, Port Hope, Ont., are announced to have been purchased by Mr. Payne, of New York city.

The Durham Rubber Co., of Bowmanville, are sending out samples of rubber belting and making of excellent quality, made at their factory at Bowmanville, Ont.

Messrs. Shurly & Dietrich, Galt, Ont., had a large exhibit of circular, gang and cross-cut saws, mill saws, maple leaf saw sets, bed-steads, etc., at the Ottawa Exhibition.

At the Central Canada Fair at Ottawa last month Thomas Pink, of Pembroke, made a very attractive display of lumbering tools in the main building. Mr. Pink recently made several shipments of tools to Australia and New Zealand.

James Warnock & Company, Galt, Ont., manufacturers of axes, cant hooks, peavees, edge tools and special lumbermen's supplies, had a very attractive

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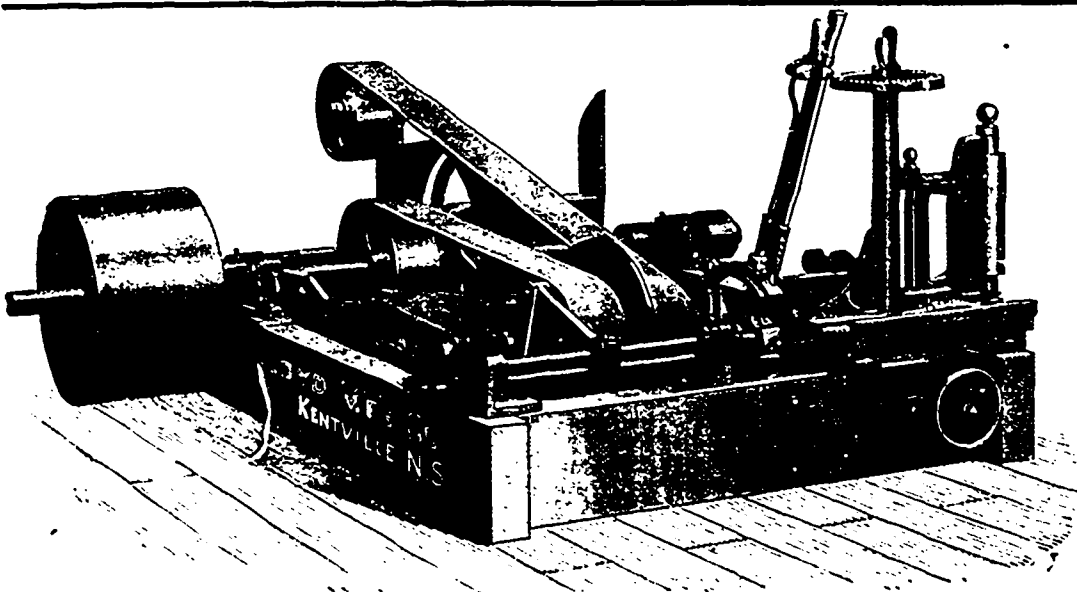
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KENTVILLE, N.S.

about at the recent Ottawa Exhibition. Messrs. J. B. ... and T. Kennedy were in charge.

We have pleasure in noting the evidences of ... progress being made by the Durham Rubber ... Company, Limited, Bowmanville, Ont. This enter- ... concern is steadily working its way to the ... They have been in business but a short time, ... already the expansion of their trade has compelled ... to add large extensions to their original factory. ... their present additions are now well under way, and ... completed will more than double their capacity. ... the new battery of boilers and the machinery which ... are now installing, are of the most modern and ... to-date types, and no expense is being spared in ... bringing their plant to a state of highest efficiency. ... they report business in excess of last year, and ... anticipating a large trade in the coming season, ... which they have already closed some large con- ... tracts. In belting and packing they claim especially ... to be in a position to offer better values than any on ... the market. They are certainly turning out nice goods ... in these lines, and the trade would do well to see their ... samples before placing orders. In visiting their ... factory one receives a cordial welcome and cannot ... fail to be impressed with the air of a healthy business.

PERSONAL.

Mr. Henry Powell, the well-known river and shanty ... man, of Arnprior, Ont., died of lung trouble last ... month, in his 48th year.

Mr. William E. Hutchinson, of Huntsville, Ont., is at ... present in England in the interest of his handle and ... mill factory purchased last spring from Mr. William ... Macklock. The product of this factory is entirely for ... export, and Mr. Hutchinson hopes to bring back a large ... number of orders.

The death occurred early in September, after a ... lingering illness, of Mr. Robert Ferguson, M. P. P. for ... East Kent. About forty years ago he came to this ... country from Scotland and engaged in the lumber busi- ... ness, building up an important trade at Thamesville,

Ont. He was first elected to the Legislature for East ... Kent in 1885, and has held the seat continuously ever ... since.

Mr. Thos. Southworth, Clerk of Forestry for Ontario, ... lately returned from a ten days' trip of inspection to ... the Temagami forest reserve. Mr. Southworth says a ... number of very threatening fires have been extinguished ... by the rangers during the present season, and the ... action of the Government in maintaining an extra force ... of men has been justified many times over. The sea- ... son has been exceptionally dry, and the water lower ... than for twenty years, a fact which has made the ... danger of bush fires much greater than usual.

Hon. Dwight Cutler, for more than half a century ... identified with the lumbering interests of Michigan, died ... at his home in Grand Haven on August 30th. He set- ... tled in Michigan in 1850 and became identified with Mr. ... Hunter Savidge, and in 1854 the Cutler & Savidge ... Lumber Company was incorporated. In 1881 Mr. ... Savidge, who was president of the company, died and ... Mr. Cutler was chosen to succeed him. In 1891 their ... timber supply had become exhausted and attention ... was turned to Canada. Limits were purchased in the ... vicinity of Cutler, on the Georgian Bay, where opera- ... tions have since been carried on. Mr. Cutler was ... seventy years of age.

FOREST FIRES.

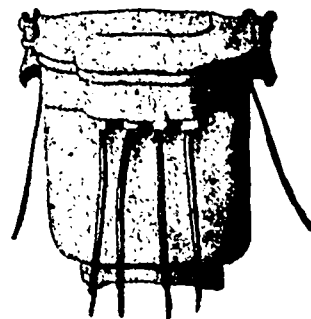
Forest fires in New Brunswick and Nova ... Scotia have done considerable damage during ... the past month. Although the details are not ... to hand, it is believed that considerable timber ... in the vicinity of Musquash, Grand Bay and ... Spruce Lake, in New Brunswick, and in the ... vicinity of River Herbet in Nova Scotia, have ... been destroyed. A dispatch from Glace Bay, ... N.S., dated September 6th stated that there ... was a forest fire at least two miles across the

front running through the back part of Cape ... Breton county from the Mira district towards ... Sydney.

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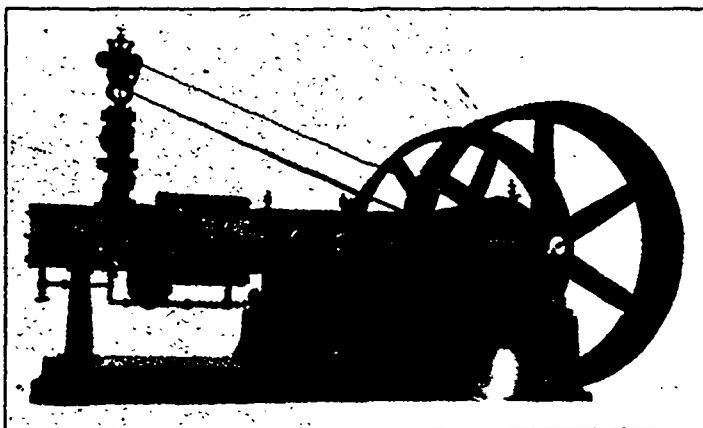
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# WOOD PULP ~

# DEPARTMENT

## THE WOOD PULP MARKET.

The wood pulp market has been depressed for some time. There is now a more hopeful outlook and prices seem to be on an upward move. The drouth in Scandinavia is said to be seriously affecting the production of mechanical pulp, and should this trouble prove to be as serious as is reported, it is likely to materially strengthen the pulp market. In Canada, however, production is proceeding along normal lines, although the mill of the Maritime Sulphite Fibre Company at Chatham, N. B., has suspended operations.

A combination of the chemical pulp manufacturers of Norway, Sweden, Germany and Austria is talked of, the object being to bring about a decrease in the production. On the other hand American sulphite manufacturers are considering proposals to increase their exports, and it is thought that in view of this the proposed combination of European manufacturers will be found impracticable.

## PULP MANUFACTURE IN BRITISH COLUMBIA.

The province of British Columbia possesses excellent facilities for the manufacture of pulp, and it seems that they are shortly to be taken advantage of, as two companies have been formed for that purpose.

In 1899 two companies—the Industrial Power Company, of Nelson, and the Pacific Coast Power Company, of Victoria—were incorporated with power to engage in the manufacture of pulp and paper in all its branches. These companies have spent considerable sums in exploring for water powers and timber areas suitable for their purposes, and have at length succeeded in locating what they consider exceptionally good sites for their plants.

The Industrial Power Company has finally secured Clowhom river falls, Sechelt Inlet. Clowhom river empties into the sea over a series of falls, the altitude between the top of the highest fall and sea-level being 120 feet. Twelve thousand horse power is available from these falls, a special feature being the comparatively low cost at which the power can be developed, the ground being very favorably situated for that purpose. Mills can be erected practically at the edge of the ocean, thus securing excellent shipping facilities, and shipments can be made during the whole year without incurring the expense of railway haulage.

By an agreement recently entered into by this company with the Chief Commissioner of Lands and Works, a large area of timber lands situated on the north end of Vancouver Island and on the Mainland opposite, has been reserved for two years to enable the company to select the timber necessary for its undertaking.

One of the most important water powers of the province, viz., that at Powell river, has been secured by the Pacific Coast Power Company. Powell river forms the outlet of Powell lake and flows into Malaspina straits, about 80 miles north of Vancouver. The power available at this point is estimated at 18,000 horse power, and its situation is admirably adapted as a centre of industrial activity.

There is every reason to believe that in the near future mills of various kinds, utilizing this fine natural power, will be established. Important timber areas have been reserved at Kingcome and Tsaw-Watti rivers, and at Thompson and Wakeman Sounds, to assist the company in its selection of spruce and other

timber lands necessary for supplying pulp wood to the mills which this company propose to erect.

Speaking of the possibilities of the pulp industry in British Columbia, Gosnell's Year Book of British Columbia says: A special feature of British Columbia timber areas is their density—the yield being greatly in excess of that obtainable from equal areas in Eastern Canada. The average cut in Ontario is about 10 cords per acre, while upon the lands secured by this company the estimated cut is over 100 cords per acre. This density enables logging to be carried on to great advantage, and it is estimated that the cost of wood at the mills for many years will be at least one-third the average cost to Eastern United States mills.

Cheap coal of excellent quality can be obtained from Nanaimo or Union, about 90 miles distant, and shipments can be made direct by water to the mills. The markets that can with special facility be supplied from British Columbia are: British Columbia, Japan, Australia, China, New Zealand, Hawaii, Philippines, Fiji, Western Coast of South America, Western Coast of Mexico and Asiatic Russia.

The home market is a rapidly growing one, and with the steady growth of population, a correspondingly rapid increase of the requirements in the way of paper may reasonably be anticipated. The long distance from the eastern mills and the freight rates make competition from the east impossible.

Japan probably furnishes the greatest possibilities for the future, the imports of paper in 1900 amounting to over \$2,000,000, and that of pulp to about \$230,000. Both the demand for pulp and paper in Japan is increasing very rapidly and the pulp mills of this province will be in the best possible position to supply it.

There are no statistics available regarding the trade with China, still an importation of \$375,000 in 1900 from the United States alone shows that the market is a valuable one. The South and Central American republics also show a large increase in imported paper.

The Australian market is perhaps the most important at the present time. There are no suitable pulp woods on that continent and no water powers, so that Australia is almost wholly dependent upon outside sources for its supply of paper, its total importation for 1900 being about \$5,000,000.

Appropos of the above, it is interesting to learn from the annual report of the Minister of Mines for British Columbia that there are valuable sulphur mines on the Extall river, a tributary of the Skeena river. It is the first workable deposit of pyrites suitable for sulphuric acid making found in the province, and bears an important relation to the growth of the pulp industry.

## THE CANADIAN PULP INDUSTRY.

Mr. S. Charles Phillips, of London, England, proprietor of Phillips & Company's publications, The British Paper Trade Journal, Wood Pulp Maker, and others, has been in Canada recently. Mr. Phillips being an excellent authority on pulp and paper matters, we give below some facts as expressed to the St. John Sun.

Mr. Phillips said: I have taken a great deal of interest in the pulp and paper trade, and nothing has delighted me more than to promote the interest under our own flag rather than in any foreign country. I think I can safely say that in the past twenty years I have visited all the important plants in the world. Canada has a great future in front of her. From the beginning I said so, basing the statement on my experience. I may say that our people in Great Britain were very reluctant to believe what I told them, believing that the inexperience of Canadians combined with the high freight rates would preclude the possibility of a substantial trade being done with Great Britain. The facts have proved otherwise. Already the United Kingdom is taking one-sixth of its supply

of ground wood pulp from Canada. Fred Becker, of the enterprising firm of Becker & Co., of London, the largest importers of ground wood pulp, was led through the glowing reports I made during my visits to Canada of her suitability as a source of pulp supply, to come out to this country. His eyes were opened to such an extent that he placed contracts in different parts of the Dominion for 50,000 tons of ground wood pulp. Next year that firm's contracts call for over double that quantity. Mr. Becker was much struck with the methods employed over here and the prompt manner in which business is done. Other well-known houses are doing business with Canadian wood pulp producers, among them being W. G. Taylor & Co. (Ltd.), Henderson, Craig & Co. (Ltd.), and Harry B. Wood. Canadian pulp makers are willing to learn and benefit themselves by the advice gained by those in a position to suggest improvements. It is my firm belief that if Canada makes in the future such rapid strides in the pulp business as have been made in the past, only a few years will elapse till she will supply the greater part of the ground wood pulp supplied in Great Britain, and in addition to that a large percentage to European countries. I find the sulphite pulp industry springing up and making capital progress. Canada being young at the business, has taken up the threads of pulp making European makers left off, and owing to the interesting and scientific character of the industry, improvements in America are constantly being made. New plants have taken advantage of them. Capt. Partington, of the Cushing mill, who is the largest individual shareholder in that mill, is looked upon in the old country and Europe as one of the first and foremost men in the industry. He is a self-made man, which in itself reflects the highest credit on him. He has fought his way through insurmountable difficulties from the bottom rung to the top of the ladder by sheer merit. He has been through every department connected with the pulp and paper mill. He was the first British paper manufacturer to recognize the value of sulphite wood pulp, and about 20 years ago devoted much time and money towards exploiting the system. He made himself familiar with all the processes, which were then few and in their infancy, and evolved for himself a process which he considered the best. Mr. Partington took in hand paper mills in the country which were absolute failures and through his practical knowledge and perseverance, made them most prosperous concerns. He has up-to-date mills at Glossop, Cheshire, near Manchester, Barrow-in-Furness, Borggard in Norway, and Hollein in Austria. He was the first man to make sulphite pulp at Glossop. He has made money in the paper business, and is said to be worth \$1,000,000.

## PULP NOTES.

The Riordon Paper Mills Company, of Merriton, Ont., has been authorized to increase its capital stock to \$1,000,000.

F. M. Steadman has been appointed manager of the mills and stores of the Sissiboo Pulp Company, Weymouth, N.S.

The Pulp Plaster Company, of Toronto, has been incorporated, with a capital of \$25,000, to manufacture pulp and other plaster.

James Beveridge and Charles C. Springer, of Boston, have been selected to the directorate of the Cushing Sulphite Fibre Company, to succeed George S. Cushing and Joseph Allison.

The Wabigoon Star states that definite developments are likely to take place shortly regarding the establishment of a pulp mill at Dryden, Ont., and that Charles Wright will submit a proposition for the building of the mill.

The tender of S. R. Pearce and J. D. Clifford, of Lewiston, Me., has been accepted for the building of pulp and paper mills at Brompton Falls, Que., for the Brompton Pulp and Paper Company. The contract price is about \$190,000, which includes about 30,000 cubic yards of ledge and 10,000 cubic yards of masonry work.

F. J. D. Barison, president of the North River Lumber Company, states that his company will have a pulp mill under construction at St. Ann's, C. I., within six months. The mill will employ over two hundred hands

At present the company has a saw mill and a wood barking mill under construction.

A settlement has been effected in the arbitration suit between the Edward Lloyd Company and the Sturgeon Falls Pulp Company in which the adjustment of nearly three quarters of a million dollars was involved. The terms of settlement will be formally announced on October 10th. Briefly the facts of the case are:—Some three years ago the Sturgeon Falls Pulp Company, of London, Eng., purchased from a Canadian organization all their rights to land, timber, water power, etc., at Sturgeon Falls. The purchase was absolute, the Canadian concern relinquishing every title to rights or options. The company erected pulp mills and operated them for two years. The erection of extensive paper mills was also begun, and these buildings were also completed, at a cost of over \$500,000. The Lloyds then made overtures for the property and finally purchased. Some time afterwards they claimed that there was not in the district a sufficiently large quantity of pulpwood, and that the water facilities were poor. On

the other hand, the Sturgeon Falls Pulp Company contended that there was enough wood to supply enormous quantities of pulp for years to come, and that in all other respects also the property was satisfactory. This contention seemed to be borne out by the reports of the Government experts who investigated this and other districts for the Government some time ago. In this report specific mention was made of the large supply of pulpwood in the Sturgeon Falls concession.

What promises to be one of the largest pulp mills in Canada is about to be built at Seven Islands, on the north shore of the St. Lawrence. Thomas Meaney, of Toronto, in conjunction with Clarke Bros., of New York, have purchased a magnificent water power on the St. Marguerite river, seven miles from the village of Seven Islands, and have also secured about 500 square miles of excellent spruce limits in the vicinity. It is the intention to build a large pulp mill, to be operated by electricity generated at St. Marguerite river, and to construct a railway from St. Marguerite to Seven Islands. The bay of Seven Islands is a deep and commodious harbor, and will afford excellent facilities for the shipment of the product of the mill. The details

have not yet been completed, although surveys are being made by the engineer for the work, Henry Holgal C. E.

Canada's exports of pulp wood and wood pulp in the last year amounted to \$3,335,265, of which \$966,920 was sold to Great Britain, and \$2,302,215 to the United States, \$66,194 worth going to other countries. The total exports show an increase of \$616,477 over those of the preceding year. There is an advance of \$366,372 in our sales to Britain. Those to the United States are larger by \$244,321. The exports of pulpwood showed an increase of \$194,247, the United States taking \$500,744 worth more than in 1900, and Great Britain \$6,172 less. The increase in sales of wood pulp was \$122,230, the details being as follows: Increase to Great Britain, \$372,544; increase to other countries, \$6,109; decrease to the United States, \$256,423. Thus while the United States increased their purchase of pulpwood from us by over half a million dollars and decreased their purchase of the manufactured article by over a quarter of a million, Great Britain's decrease was in the pulp wood, and that but small, while in the manufactured article, involving greater labor and the employment of a greater capital, the mother country took from Canada an increased amount greater than the decrease of the United States by \$116,121.

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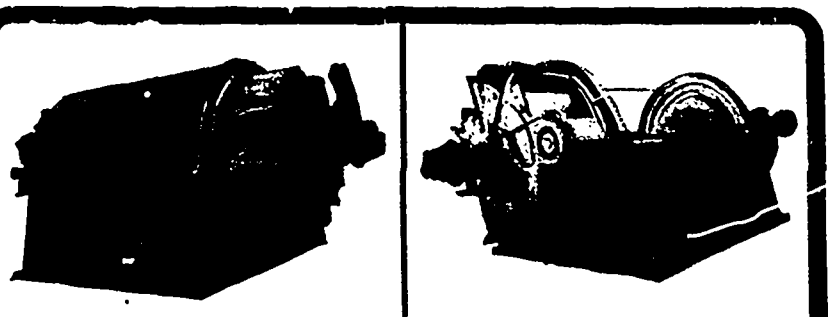
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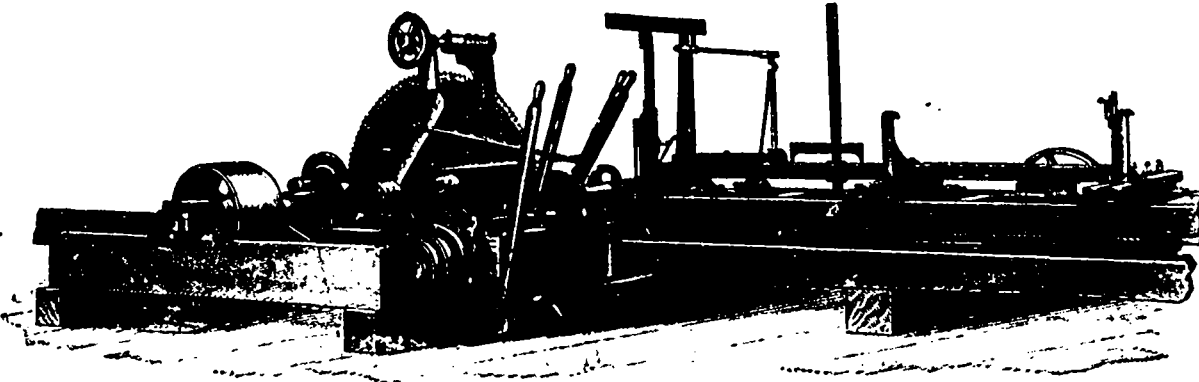
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### PORTABLE SAW-MILL AND OVER-LOG GUIDE.

Mr. F. J. Drake, of Belleville, Ont., who is well-known to many of our readers, makes a specialty of machinery pertaining to the manufacture of lumber. The accompanying illustration shows one of his portable saw-mills. It is designed throughout for hard and fast work. The arbor is extra large for this class of mill, and runs in three adjustable self-oiling boxes, each one 12 inches long. Each box is also provided with a tallow cup. The friction feed and gig pulleys, both

that when they swing up they spread apart in order to clear the points of the saw teeth. The upper parts of the guide are all steel castings, and are strong and light. The saw shown in cut is 60 inches diameter, 12 gauge, 120 teeth. This saw makes a little less than 3-16 inch saw kerf; a 7 gauge saw makes nearly 5-16 inch of saw kerf, and sometimes more. This would mean a saving in a little mill cutting say 10 thousand feet per day and fair run of logs, of quite 1,000 feet. That is where the profit comes in."



PORTABLE SAW-MILL AND OVER-LOG GUIDE.

iron and paper, have 6-inch face. The feed belt is 3 inches wide, and the cone pulleys have three changes of feed.

Mr. Drake thinks the only time a saw-mill pays is when the saw is cutting; he has therefore fitted the mill with a very fast "gig" or reverse movement for the carriage. The carriage is mounted on iron wheels or trucks, with steel axes and iron boxes. The wheels are turned true to fit planed V and flat iron tracks. The set works are generally arranged with lever or handle over the log, so the sawyer can set the desired thickness without leaving his post. A very powerful friction receding gear is also attached, so that it will run the head-blocks either backward or forward, as the sawyer may desire.

The track timbers are framed together in three sections, so designed and constructed that they cannot be put together wrong. The mill is arranged with rope feed, both ends of the rope being above the mill floor.

By far the most important feature about the mill is the over-log saw guide. This is designed for the purpose of saving timber, and there is no doubt of its being a success; in fact, it has been subjected to very severe tests. Every mill man knows that when a big saw gets heated it commences to wobble and run crooked. In this state it is impossible to do good work with it. The saw will enter the log a little out of line and get worse before it is through the cut. A very heavy saw, under these conditions, is not nearly as stiff as a much thinner one in its normal state. Then, why not put in a guide that will control the saw before it enters the log? Make your saw enter the log in perfect line, and stay in line, and you will remove the principle cause of its heating. Two guides are better than one; have one guide below the log as usual and have another one above the log.

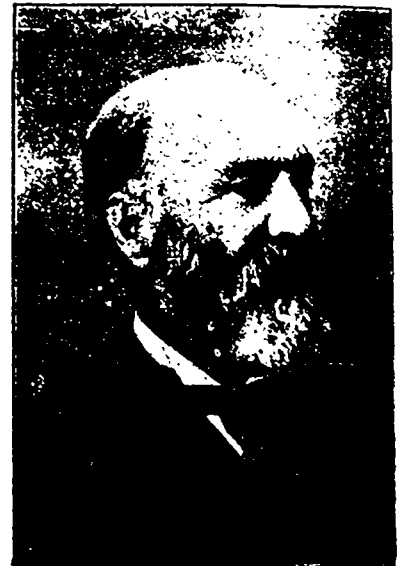
The "Canadian" over-log saw guide has now been put on the market and will no doubt fill a long-felt want. Concerning it the manufacturer says: "The guide can be made to fit any ordinary saw frame, and it is adjustable for saws from 36 to 72 inches diameter. A hand wheel makes the lateral adjustment for lining the saw either in or out both safe and positive. When sawing small logs or stocks the sawyer can with the lever bring the guide pins from their normal position, near the top of the saw, down around the periphery of the saw to a point within about 16 inches of the head block level—the upper and lower guides would then be less than 2 feet apart—then let it wobble behind if it wants to, it will come straight before it gets down to the work. The hangers carrying the guide pins are independent of each other, and so constructed that if a knot or other projection on a log strike either one of them it would swing it up clear until the knot, or whatever it is, goes by, when the hanger would drop back to its place and close in on the saw. The hangers are held in place by suitable coil springs and so constructed

a production which will not bring discredit upon the name of the company.

The "Rival" is of the very simplest construction possible, and is claimed to be so proportioned in every detail as to be beyond the possibility of accident through breakage. The frame is of a design, of the type known as "self contained," embracing the two main bearings which are in diameter nearly one-half the diameter of the cylinder. The slides or guides are of the circular form, and have a substantial flange at the end to receive the cylinder. The metal used in the frame is of the toughest nature, and is so distributed that all working strains are provided for in such a way that any spring or distortion whatever is rendered impossible. The cylinders are proportioned with mathematical exactness, so as to develop the greatest power with a given amount of steam, and are cast of the finest grained hard charcoal iron, and covered with real cast iron lagging. The valves are of the plain slide type, a type which retains many advantages over others, in clearances; the slide valve part is much shorter than the piston valve, thus reducing loss in clearance; the slide valve always wears tight, whereas the piston valve is always wearing smaller, and casting larger, thus causing leakage which has to be provided for in other ways. The crank shafts, which are made of semi-steel, are very much larger in diameter than what are used by engine builders generally. The crossheads are fitted with bronze slides of large area and hardened steel wrist pins. The piston rod is of mild steel, and is secured to the crosshead by fine threaded screw and lock nut. The connecting rod is of cast steel fitted with adjustable bronze bearings at crosshead end; and the crank pin end is of the marine type, lined with the best quality of babbitt metal. The parts throughout are made to gauge and are interchangeable. These engines will run quietly without jar, vibration or spring, and keep perfectly cool in journals. They are guaranteed as to workmanship and material, and should any breakage occur within a year after sale from defect in either of these points, a duplicate of the broken part will be furnished free of cost, f.o.b. Montreal.

### THE LATE MR. GEORGE MUNRO.

The citizens of Peterborough, Ont., were deeply grieved when they learned that Mr. George Munro, vice-president of the William Hamilton Manufacturing Company, of that town, had on the 18th ultimo



THE LATE MR. GEORGE MUNRO.

suddenly stricken with heart failure, from which he succumbed a few minutes afterwards. For some years Mr. Munro had been associated with the management of the William Hamilton Company, one of the largest and most substantial industries of Peterborough. He was widely known and much respected, and his death is a public loss as well as a sad bereavement to his family.

Deceased was born sixty-one years ago, at Glasgow, Scotland, and came to Canada when about thirty years of age. After a short time spent in Montreal he removed to Peterborough and entered the William Hamilton works, where he remained. Unostentatious in his life, he would never take any active part in public affairs. But, while discharging his duties as a citizen quietly, he gave the industrial interests of which he was identified his close and experienced attention.

In 1881 Mr. Munro married Miss F. Phenia Hamilton, eldest daughter of Mr. Wm. Hamilton, who, with his children, one daughter and three sons, is left to mourn his loss.

The deceased was a member of St. Paul's Church. He was also a member of Peterborough Lodge No. 155, A. F. & A. M., Corinthian Chapter, Royal Masons, and the funeral took place under Masonic auspices on September 21st.

### INTRODUCTION OF THE SAW-MILL.

Richard Neve, the author of a builders' guide published in England in 1736, refers to an attempt to introduce saw-mills driven by wind and water, as in Holland and other places abroad, but Parliament interposed for the sake of the families that would have been impoverished by the loss of the hand labor. "By this means," says our author, "a useful improvement is not only lost to the kingdom, but foreigners are thereby enabled to under-work and undersell us in all sorts of building materials that require the saw. Much better would it have been, as we humbly presume to think, if the Parliament, at the expense of the public, provided for the poor families some other way that would have yielded them equivalent maintenance for life, and suffered the public to reap the advantage of the improvement; and every builder might have been taxed what he would have saved by the mill-sawing, towards their provision. And as no more than a small limited number should have been brought up to the business for the future, this charge would have soon been over." The price of sawing up oak varied from 2s. 8d. to 3. 6d. per 100 superficial feet. The sawing of ash and beech was rather more in some places, touching 4s. per 100 feet. An experienced sawyer told him they sometimes cut ship-planks for 10s. the load. The lowest rate in Sussex was 6s. the load, but as they built at Tunbridge wells it was 7s. 6d. or 8s.

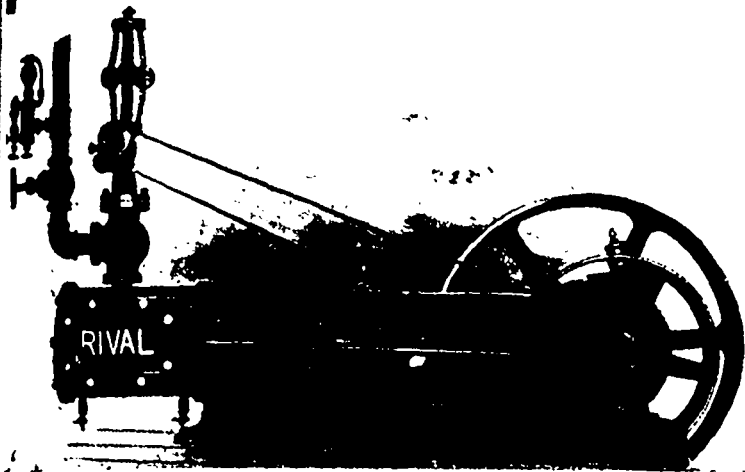
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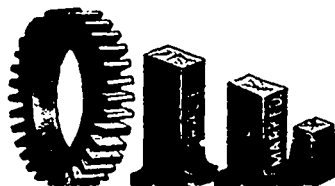
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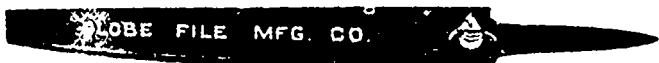
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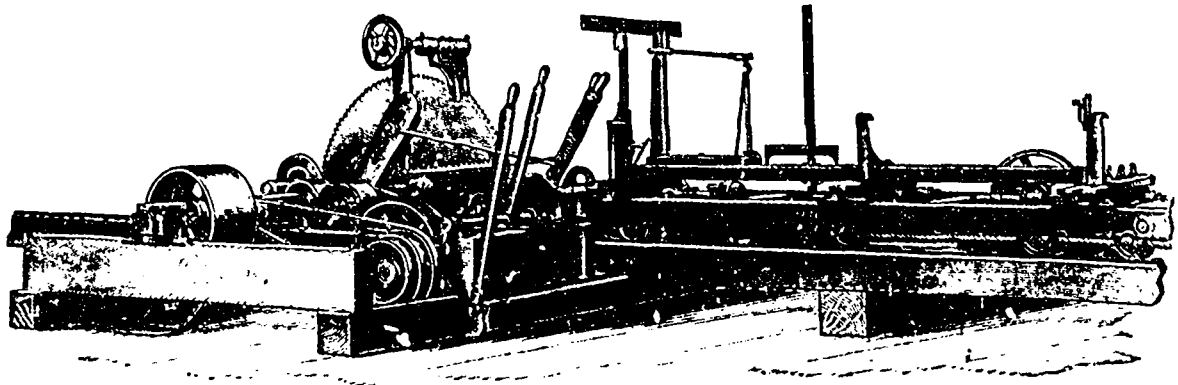
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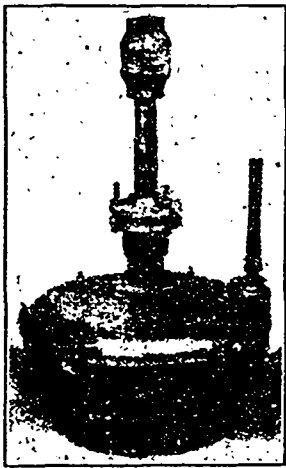


Your Mill would make more money if you would make more lumber from the same quantity of logs. You can do this by using a thinner saw, and you can use a thinner saw with one of my Patent Over Log Saw Guides. They are adapted for use on either Stationary or Portable Saw Mills, Re-sawing Machines, &c., &c. The illustration shows one of my Portable Saw Mills equipped with this Guide and carrying a saw 60 in. diameter, 12 guage. All my Portable Mills will take saws up to 72 in. diameter, and this guide will take saws from 36 to 72 in. diameter. It is adjustable every way. I am prepared to fill orders for complete Circular Saw Mill Outfits, or will make the guide to fit any ordinary existing saw frame.

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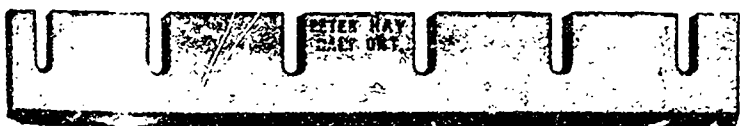
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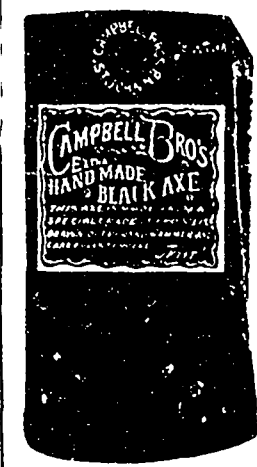
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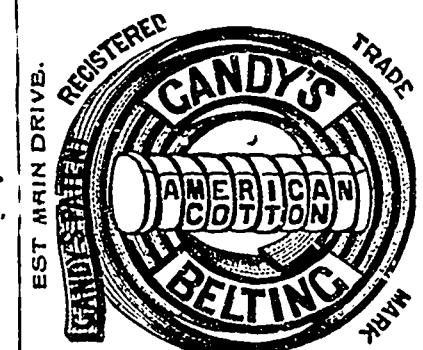
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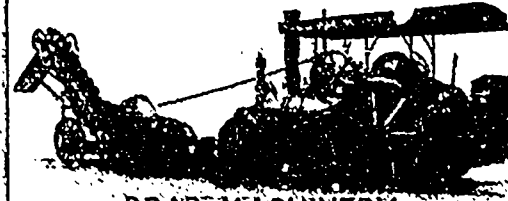
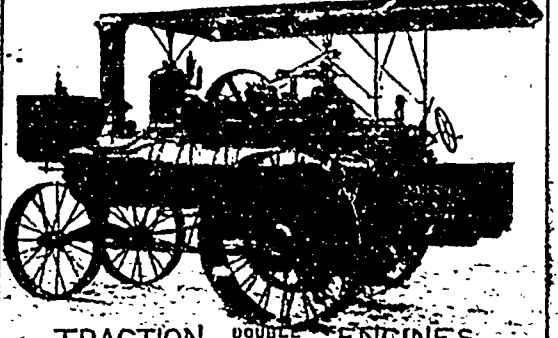
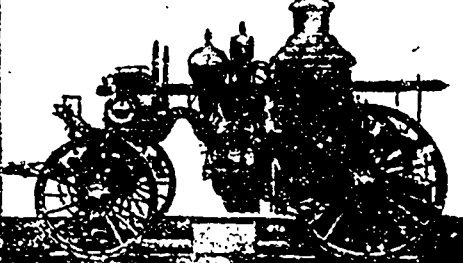
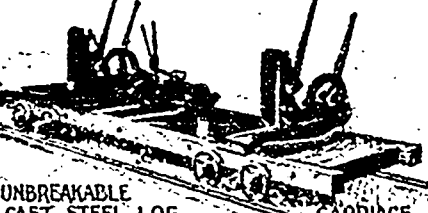
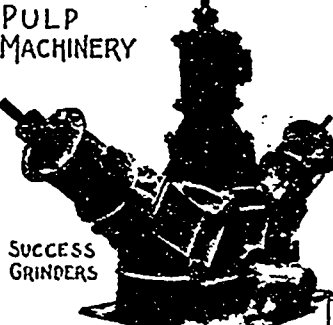
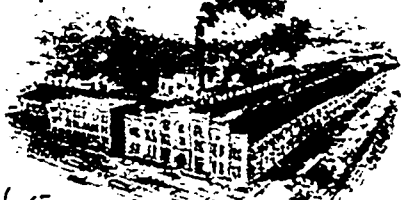
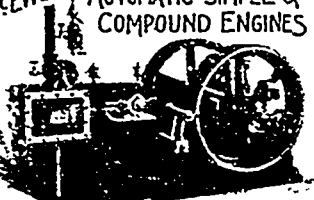
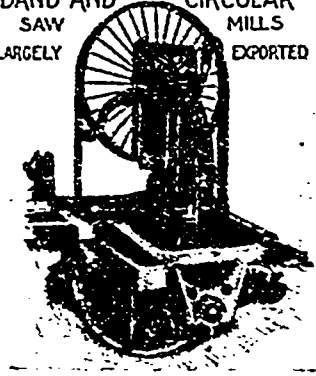
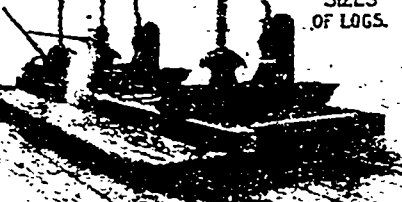
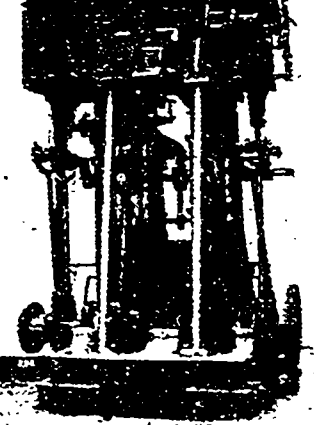
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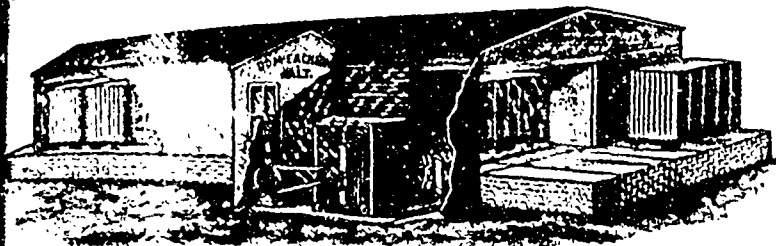
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