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VOL. 6.

PETERBOROUGH, ONT., MARCH 15, 1886.

NO. 6.

#### A TERRIBLE WARNING.

In its issue of Feb. 22nd the Ottawa Free Press tries to frighten those who advocate an increase of the export duty on logs by publishing the following:—

"The people who want to protect the lumber industry of Canada, by increasing, and rigidly enforcing the export duty on logs, have a warning in an incident which comes from St. Lucia, in the West Indies. A correspondent says there is a mountain near the southwestern end of the island called Souffriere, the remains of an old volcano whose crater is full of sulphur. Some years ago two gentlemen from Antigua bought this mountain and set up works for extracting the sulphur. The first year they sent away nearly 600 tons of purified sulphur. But the natives thought they were doing entirely too well for a couple of mere foreigners, so they put an export duty of \$4 a ton on sulphur and so put an end to the business, and from that time the sulphur mine has lain idle. A heavy export duty on logs would probably have the same lamentable effect in this country as happened in the illustration given of another export duty."

This warning does not warn. It would not be considered a calamity by many in this country if the business of exporting logs did cease entirely. It will be noticed that the foreigners who exported the sulphur from St. Lucia purified it before exporting it—they manufactured it. But the United States dealers who export logs do not manufacture them and they, through the operation of the United States import duty on lumber, are given an advantage over Canadian dealers. An export duty on sawn lumber would be analogous to the action of the natives of St. Lucia, and it would be suicidal, but an export duty on logs is different and would be beneficial to the lumber business and to the country.

#### LUMBER TRADE IN NEW YORK.

A reporter of the New York Herald has been among the dealers of the metropolis and reports the outlook for the lumber trade this spring as decidedly bright. Although the business has been generally dull throughout the winter, there have been many firms who have done a large trade, and an improvement in the business of all is now becoming noticeable. As long as the weather remains cold and inclement the masons and carpenters cannot do their work and building has to be abandoned, and for this reason a depression in business during the winter months is expected by all lumbermen. At present the stock of all kinds of lumber and timber in the markets is smaller than it has been for some years, and in view of the good demand and brisk building outlook there is every prospect of an active season ahead.

To be impressed with a sense of the extent of New York's lumber trade one has only to walk down Eleventh Avenue, from Forty-second street to Fourteenth street. He will find lumber yards all along, on both sides of the way, and lofty piles of lumber meet the eye in every direction. These woods are of all kinds and come from all parts of the country. From the common Maine spruce, which is properly timber and not lumber, to the finest mahogany and rosewood, all kinds of lumber are to be had at all kinds of prices.

#### WHAT MR. ATCHISON SAYS.

At the foot of West Twenty-first street is the establishment of the New York Lumber Auction Company (limited), and here a Herald reporter stopped the other afternoon to inquire about the present state of the trade. Mr. Atchison, the general manager of the company, was in his office adjoining the yard.

"The spring trade is just opening," he said, "and the prospects are very good. New York is a good lumber market, but it is not an attractive one, and this is due to its system, or rather lack of system, concerning the rules of inspection. There are no determined rules. Each dealer has his own, and the lumber, when it arrives from the south and west, may be inspected leniently and fairly, or the inspection may be rigid and 'cut-throat,' according as the dealer chooses. This renders the shipper very suspicious about sending his lumber here. It may be appraised at half the value it would elsewhere receive, and dealers often do not sell by the same rules upon which they buy. To avoid all this we have published a list of set rules of inspection, by which we both sell and buy, and this gives the shippers and manufacturers a confidence in our market. The best lumber is brought to New York and the highest prices obtained here, but the consumers suffer

"There is another peculiarity about the New York trade," continued Mr. Atchison, "and that is the number of lumber firms which deal only in special woods. By purchasing large quantities of one kind of wood they obtain it for a low price and are enabled to sell dearer. I tell you, some of our dealers are called cutthroats in the west, and would not escape lynching if they went there."

Mr. L. E. Jones, the secretary and treasurer of the company, entered while Mr. Atchison was talking, and assented to what he said, adding an account of the Boston system, where there is a surveyor general and a fixed rule of inspection by which all lumber is both sold and bought. Much good lumber that comes here is sent west first to be inspected.

#### AMONG THE SPECIALISTS.

On the corner of Eleventh Avenue and Twenty-first street the yards of Bell Brothers, who deal only in common spruce, or timber. In response to the reporter's question a member

of the firm said that the prospect for the spring trade was never better. At the present time of year the wholesale price per cargo is from \$15 to \$18, which is a better showing than that of last year. The spruce comes mainly from Maine and the provinces, and at present the freights are high.

Three blocks above, on Eleventh Avenue, is the large establishment of Eben Peck, who who deals exclusively in yellow pine wood. Mr. Peck was out when the reporter called, but one of his associates gave the necessary information. Some of the wood comes from Georgia, but the most of it from Florida. It is used for all building purposes, but principally for flooring, ceiling and wainscoting and all inside house trimmings. Its popularity has greatly increased in the last few years. In spite of its being the dull season for building and all masons' work the yellow pine is fair and prospects alluring.

With the specialists who deal in the fine, or hardwoods, such as mahogany, rosewood, and all cabinet woods, success is dependent upon different circumstances. They have little to do with the ordinary lumber interests, as they cater to an entirely different class—the furnisher, not the builder. Their woods, besides, are many of them foreign, the mahogany coming from Mexico and the West Indies, and some of the other woods from Africa. The cherry and oak woods are in great demand now, and there is a steady call for mahogany. Mr. J. T. Williams said to the reporter that his business fluctuated with that of Wall street.

#### PINES AND POPLARS.

Mr. George F. Norton, of the firm of Norton & Christman, spoke of his present business and future prospects with complacency. The freights were high, something like \$12 per M feet on hardwoods from the south. "One feature of the season," said Mr. Norton, "is the the large demand for whitewood which is coming more and more to take the place of pine. What is called white wood is really yellow poplar. It holds paint well and it stains better than any other wood, and hence is much used for weather boarding in fences and all exterior walls and planking. It is also largely used for coach panelling. Pine is becoming scarcer every day and the same quality of poplar is much less expensive. Desirable lumber is always saleable, and there is always a market for it in New York at a fair price. It is a rare thing to find a good firm with a yard full of dry lumber."

In Mr. Norton's office was Mr. Norcross, a southern manufacturer of lumber, who has come on here to build up a trade for his firm. Mr. Norcross has been very successful, and spoke of the excellent condition of the trade. In spite of the severest inspection he said that New York got the finest lumber and Boston the next best. The poorest lumber is sent

to Philadelphia, Baltimore and the South. "Lumber," he said, "is a staple product and prices do not vary much. I do not know of any business which can show as small a record of failures"

Mr. George M. Grant, of the firm of George M. Grant & Brother, cabinet and building lumber merchants, was next seen by the reporter. Mr. Grant deals largely in white pine from Michigan and some parts of Pennsylvania, and in all the other fine and rough woods with the exception of spruce. He said that the weather was disadvantageous at present, but that business was not bad and the spring prospect was very good. Mr. Grant's manner was not enthusiastic, but his haste testified that his business was beginning to feel the influence of spring already.

#### LUMBER AND LABOR.

Making his way up the mud-swamped Avenue the reporter next called at the large lumber yards of Messrs. Crano & Clark. Mr. Clark was walking about the yard, and the reporter tackled him and walked with him.

"Well," said Mr. Clark, "trade with the builders, I should say, has been good this winter; but with the manufacturers, those who grow and saw lumber in preparation for the market, it has been dull. In our own case, the business of this year shows a marked increase over that of last year, and this in the general field, as we keep both hardwoods for furniture and pine, hemlock and spruce for building. And speaking of building reminds me of a very important matter. Very many more people would build if only the price of labor was fixed. The trouble is not with the lumber but with labor. Now, I read in the papers the other day that the painters and framers had agreed upon a fixed price and a fixed number of working hours. If this is so, it will prove a very good thing and indicates a very good tendency. In my opinion it is lack of confidence in the laborer that makes the men hold off from building. They fear strikes when their houses are half finished. If they could be certain of getting the labor at a price fixed beforehand and not subject to change, the building trade would receive a great impetus. It is not the highness of the price which deters them at present, but its uncertainty. As it is, the prospect for the spring is first rate."

A HALIFAX paper states that Messrs. I. H. Mathers & Co. have contracted with mill owners between Weymouth and Ohio for from 5,000,000 to 7,000,000 feet of spruce deals, &c., to be carried over the Western Countries Railway and shipped from Yarmouth to Great Britain.

The Beaumont Lumber Company, of Texas, recently received 1,500 logs that measured two to the 1,000 feet.

QUEBEC PUBLIC LANDS.

Mr. R. LANIGAN has published a letter on the public lands in Quebec Province that contains much of interest to lumbermen, and we therefore give the following extract from it:—"The Government has about fifty thousand square miles of timbered lands licensed to lumbermen. What does it know about these lands? Very little indeed. The purchaser of a timber berth has no title. Only the right to get his license renewed year by year till 1889. There is no inducement to husband his timber. The inducement is to cut it off, and realize his outlay, and this often to detriment of the timber market. Another reason for haste, is the fact that new townships are being surveyed, often in the heart of timbered territory, and if he does not cut his timber at once he will lose it. Strange, this selling to bogus or other settlers of the best timbered lots in his territory. These to retain their lots must clear land, and start free. This is done in the face of the law which insists that, "no person shall, at any time, set fire or to cause to burn, any tree, shrub, or plant growing, or standing in any forest, or at a distance of less than one mile from any forest." But you will say, "if he cuts it down he may burn it," just so. But he must not do so at any time between the 1st July and the 1st September. What does this law do to prevent forest fires? nothing, for it is never enforced.

"Every one who has thought of the preservation of our forests, claims that what are usually known as timbered lands, should be reserved forever as such. It is ruinous to bring settlers into a pine country. They cut down and burn more timber than would pay the price of their lands three times over. Fires started to clear, run and go into the forest, and as a result, the explorer for timber often meets with miles of burned country in the vicinity of such new settlements. Legislation, as long ago as 1875, provided for the isolation and protection of timbered or forest lands, but up to the present day scarcely anything has been done to carry out the law. It is to be hoped that, in consideration of the increasing value of our timbered lands, the Department which has such matters in charge, will, before long, give the provisions of this law some practical effect.

"After all is said, it must not be forgotten that Quebec does not own a very large extent of pine bearing territory. Ascend any of the northern rivers which empty into the St. Lawrence or the Ottawa, for a distance of eighty or a hundred miles, and see where is the pine, and what is it like? As the height of land is reached the white pine grows short and shrubby, while further north you meet only with hard red pine or spruce, and at such a distance, these woods are not of any market value. It is presumed by those who have pretty fair facilities for judging that all the really valuable timbered lands of the Province are under license. It also pretty well known that large portions of these lands are completely denuded of pine. In fact, it has become so difficult of late years to bring timber and logs to driveable streams on account of the increased distances to haul, that it costs the lumbermen one-half more to-day than it did twenty-five years ago. The Government has no more unlicensed, or virgin timbered lands for sale that are worth the buying, yet with these facts staring him in the face, one of those at the head of the Public Lands Department complacently exclaims, "happily for Canada we have not to create forests, only to preserve them." Holders of timber licenses to day know that three years hence, some change will take place, both as to the renewal of licenses, and the tariff on stumpage. In the uncertainty how Government will act after 1889, present occupiers of timber territory are hastening to cut all they can, with, it is to be feared, very disastrous results to the lumber market. It is very difficult to get the Government to show its hand; and with our short lived Cabinets, it is difficult to say who is in power in 1889. However, in the interim, it would not be injudicious for the present Government to give the holders of license some assurance as to the course likely to be pursued by the C. L. D. after 1889. In fact, it would be only fair to our lumber merchants and the entire Province, that this were

done without further delay. It is supposed that our mines are a source of wealth to the Province. We have gold, silver, galena, copper, asbestos, iron, phosphato, nickel, cobalt, antimony, graphite, mica, and all the materials for building, and the arts. What are all these worth to the Government? Why in 1884 and 1885 the Government received the enormous sum of five hundred dollars, and expended four thousand. This is about as good as expending ninety cents on an acre of land, and selling it to the settler for thirty cents.

"The fisheries did somewhat better, and yielded a revenue of three thousand two hundred dollars. Why not continue re-stocking our magnificent lakes and rivers, and thus multiply their value three fold? Our game, and fur bearing animals, grow scarcer year by year. Cariboo are about extinct. Red deer are seldom seen; while the bear, otter, and other fur bearing animals, are rapidly diminishing. If an efficient cordon were established around our forest reserves, and settlers kept out of these timbered territories, our game and our fur bearing animals would rapidly increase, and ultimately become a source of revenue to the Government, instead of an expense. However, these latter are but minor considerations, compared with the management of our woods and forests. This will at once become evident when we take into account that the revenue derived from these alone, amounted in 1884-5 to \$660,757.13. Our neighbors south of forty-five are buying up our timbered lands and carrying off our saw logs to cut them up at their own mills. A small export duty was imposed on saw logs. Now, our neighbors tell us sawed lumber will not be admitted free into the United States from any country which imposes an export duty on the unmanufactured article. This is a bid to induce us to remove our export duty on saw logs; and strangely enough, at this very juncture, a paragraph appears in our Canadian newspapers saying it is almost impossible to collect this small export duty. Very well, remove the export duty, but impose a double tariff on stumpage, and let our Government give a rebate of one-half on all saw logs manufactured in Canada. The Canadian Government will not thus break faith with "limit holders, as regards saw logs, and some suitable arrangement could easily be come to with our square timber men. In any case, I hope our Government will not yield one inch to brother Jonathan."

SEASONING TIMBER.

The importance to the engineering the allied trade of being able to obtain a good and sufficient supply of thoroughly dry and well-seasoned timber is very great and yet is urgently wanted it can at times be hardly obtained at any price. The construction of railway and private carriages, for shipbuilding and Government military requirements, such as gun carriages, carts, ambulance and other wagons, with their wheels, and the manufacture of Mansell wood railway wheels, agricultural implements, etc., are a few out of many instances where large quantities of dry timber are wanted often at short notice. In the periodical cases of war there are large contracts, thousands of pounds in value, often given out by the War Department for some of the above named articles to be made in the shortest possible time. As may be imagined, under these circumstances, the country is scoured in all directions by the timber buyers of the various contractors who will give almost any price that may be asked for well-seasoned planks, suitable for their purpose. Every little dealer in out-of-the-way places is visited and their small stock purchased, but, notwithstanding every effort, the stipulated time in which the work should be delivered often expires before the material is brought together from which they are to be manufactured. The most severe inspection, too, is exercised by the arsenal officials, both of the contractors' work and after delivery at their destination, and all the woodwork showing the least signs of shrinkage, dead knots, sap, or oven discoloration is at once condemned, and has to be taken out and replaced by other. The amount of waste is therefore very considerable, often being twice as much as the part really serviceable—even after the greatest care is taken to select suit-

able planks for which the highest prices are given.

Most of our large railway companies keep immense stocks of timber, both in logs and planks, which supply their own requirements, being kept sometimes for seven or eight years seasoning before being used. The Midland Company for example, at Derby, have usually from seven to eight thousand logs of Moulmein Honduras mahogany, New Zealand kauripine, oak, ash, and other woods, besides immense stacks of Baltic redwood and other deals in stock, the total value being something over £100,000. The way usually adopted for seasoning timber is to cut the logs into planks at once, and stack them upright in racks in a drying shed, through which a current of air can freely pass, the sides and ends of the shed being constructed of narrow boards ranged vertically with a space of two or three inches between. The planks are kept apart from one another by pegs in the rack and are placed with the root end upward. If ranged horizontally in piles a space of about three fourths of an inch is left between each board by means of pieces of stick upon which they rest. Thin boards and panels are generally kept in this way, and they are cleaned and shifted from time to time, as at stock taking periods so that they do not stop too long in one position and allow fungus to accumulate upon them. Much timber is kept in the open air for sake of room, but the ends are more apt to split than if kept under cover, owing to the alterations of wet, dry and, sunshine.

Although naturally dried timber is without doubt superior and much to be preferred, it is, from its scarcity and the time taking for seasoning—from three to seven years, often supplemented for many purposes by quicker methods of drying, such as by stoves, kilns or steaming—many processes of which exist. In the United States most of the railway companies and carriage builders use kilns into which piles of planks placed upon trolleys are wheeled upon rails running into the interior. The Pullman Palace Car Company, for instance, have a range of eight of these kilns, or "lumberdriers" on their premises under the Curran & Wolff patents, which has a storing capacity of 30,000 feet of one-inch plank, and which is capable of drying eight thousand feet every twenty-four hours.

The latest invention for drying timber, in common with many other things, is that claimed by Mr. Jennings, of Boston, Mass., a description of which has recently appeared in one of the daily papers. By the "Cool Dry Air Process," as it is termed, the materials are placed in a chamber through which a continuous current of dry air passes. This current is previously drawn through a furnace in which it is heated to a temperature of about 600° F., which dries up all moisture contained in it, and afterwards cooled by a vigorous circulation of external air around the pipes containing it to about 90°, when it is propelled by fans through the drying chamber. In one of these chambers fixed at the saw mills of Messrs Smith and Co. Pimlico, it is stated that a quantity of birch weighing 45 cwt. 2 qrs. when put in was subjected to the process for 94 hours. It was then taken out and said to be thoroughly seasoned, its weight being reduced by the operation by 10 cwt. 2 qrs. 24 lbs. In the case of ash planks, too, out of 47 cwt. 3 qrs. of this wood, 21 cwt. 1 qr. of moisture was extracted, while 22 cwt. of mahogany gave up 5 cwt of moisture in 96 hours. It is stated that planks of English oak two inches thick were finished in nine days that would have taken three or four years by natural drying. All the above effect were accomplished by a current of 62,000 cubic feet per minute, the temperature of which never exceeds that of blood heat. Should the wood dried by this system be equally free from shrinking, warping, or other defects, and be found to stand the test of time as well as that of naturally-dried timber—which, however, we very much doubt, as hitherto all attempts in this direction have proved much inferior—a great future lies before it, as it will furnish a much needed supply of seasoned timber.—Mechanical World.

GILMORE & Co.'s cut of logs this year is 740,000 pieces, and Rathbun's 650,000 pieces. The two cuts represent 115,000,000 feet of lumber.

THE CHAUDIERE.

It has been a well known fact for some time that the Shepard & Morse Lumber Company have been large buyers in this market for lumber to be cut during the ensuing season. The purchases of this company, as near as can be found from reliable information is about as follows:—

- Lord, Hurdman & Co., 33,000,000 ft.
Grier & Co., 18,000,000 ft.
E. B. Eddy, 10,000,000 ft.
McLaren & Co., 8,000,000 ft.
Hamilton Bros., 4,000,000 ft. and about 5 to 10,000,000 ft. in different small lots, making the purchases of the S. M. L. Co. in this vicinity in the neighborhood of about 70,000,000 ft.
The Chaudiere mills output is estimated at 400,000,000 ft., made up as follows:—
J. R. Booth, 60,000,000 ft.
E. B. Eddy, 65,000,000 ft.
Bronson & Weston, 60,000,000 ft.
Perley & Perley, 55,000,000 ft.
Grier & Co., 20,000,000 ft.
Lord, Hurdman & Co., 45,000,000 ft.
McLaren & Co., 20,000,000 ft.
W. McClyment & Co., 15,000,000 ft.
Gilmour & Co., 65,000,000 ft.

This does not include the output of the following concerns, which rightly belong to this district, viz.:

- W. C. Edwards & Co., Rockland, 50,000,000 feet.
Buckingham mills, (McLarens and Ross's) 35,000,000 ft.
Hamilton Bros., at Hawkesbury, 50,000,000 ft.—Ottawa Journal.

A TERRIBLE ACCIDENT

The Perth Courier relates particulars of a fatal accident to John Hamilton, who was in the employ of Mr Peter McLaren, he had been driving Mr. McLaren's family round the town, and then proceeded to take the horses back to the stables at the farm. Here other workmen were engaged in cutting wood with a circular saw driven by steam, and Hamilton requested one of them to put the horses up while he fed the saw, a work to which he was unaccustomed. He had not fed in more than two or three sticks when, probably owing to too much pressure being used, the saw burst. One piece struck Hamilton on the breast, and rent up his bowels, stomach and breast cutting into his heart, and, of course, killing him instantly. The laborers were horror struck at the sight, and could do nothing but carry the dreadful news to their employer and the victim's family. The wife of the unfortunate man fainted away on hearing the fell tidings, and, even now has hardly recovered full consciousness. Deceased was only out from Scotland a short time, and was a steady good workman. He leaves a wife and two children.

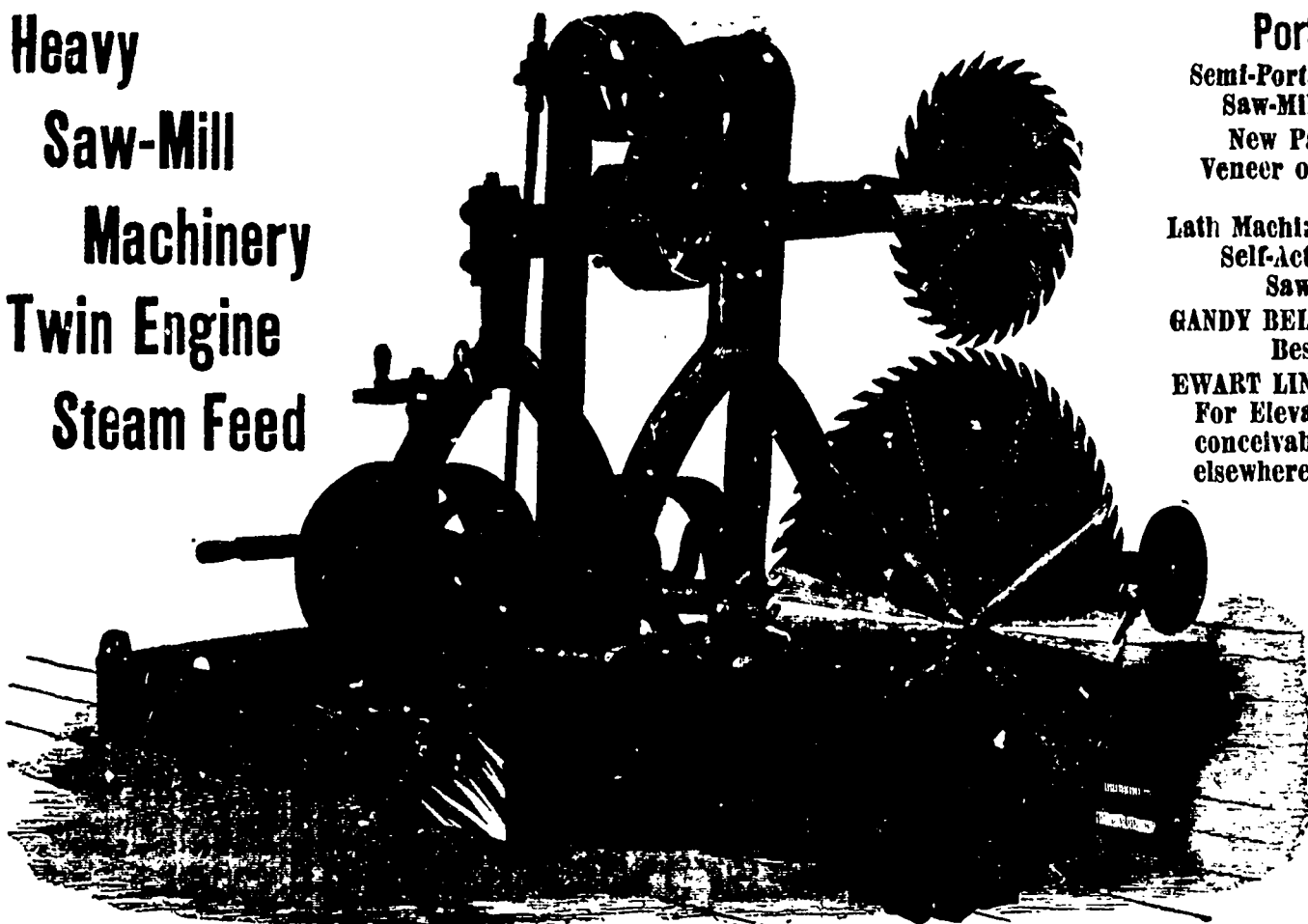
THE MUSKOKA CUT.

The cut of pine timber in Muskoka this winter, says the Herald, so far as we have learned, been 80,000,000 feet, as follows:—

Table with 2 columns: Name of company and quantity in feet. Includes Oneario Lumber Company (18,000,000), Georgian Bay Lumber Co. (22,200,000), C. Mickle (10,000,000), Thompson & Baker (7,000,000), T. B. Tait (Draper Mill) (1,500,000), T. B. Tait (Gravenhurst) (1,800,000), J. Taker (2,320,000), Jas. Dollar (2,000,000), C. King (1,200,000), Lehman & Peery (2,000,000), John Collins (1,000,000), John Whitehead (1,000,000), Muskoka Mill and Lumber Co. (10,000,000).

THE Deseronto Tribune says that there are indications that the coming summer will witness brisk times in Deseronto. A very large force is at present engaged in the shipyard on the steamers Quinte, Armenia, Nile, etc., and on Mr. Evan's new venture, the construction of railway cars, a new department added to the shipyard. The large orders for lumber necessitate the employment of many men loading cars and sorting lumber in the yard department. Although the season is just commencing the ash and door factory is working to its full capacity to fill orders, and the cedar mill has a large staff at present on its pay list.

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**JAMES EPPS & Co., Homoeopathic Chemists**  
London, England

**Wanted to Purchase**

On Line of Canadian Pacific Railway, (Ontario and Quebec Division), between present date and Mar. 1, '96

**CORDS 2,500 CORDS**

First-class Green Hardwood, Beech and Maple.

Highest Prices paid. Apply to

**P. BURNS**

Cor. Bazaar and Front Sts., TORONTO

**A GIFT** Send 10 cents postage, and we will mail you free a royal, valuable, sample box of goods that will put you in the way of making more money at once, than anything else in America. Both sexes of all ages can live at home and work in spare time, or all the time. Capital not required. We will start you. Immediate pay for sure for those who start at once. **BRINSON & Co., Portland, Maine.**

## WILL NOT REDEE.

The current opinion in this neck-o'-woods is, that the men who are deferring their purchases of lumber for a more convenient season, or are expecting more advantageous figures later in the season, will, in the vernacular of the street, "get left." It may be put down as an almost absolute certainty that prices are not going to recede, and those who wait for such conditions in the trade, will have some dearly bought experience before the close of the season, that they are doing business with less profit than if they had purchased earlier. "The early bird catches the worm," will be a pretty safe motto for the retailer as well as the wholesaler at the distributing centre to adopt in securing stock for the season's operations. The reasons for the faith that is in us as regards the maintenance of prices, if not an advance, are that the logging season has been a very disadvantageous one. Too much snow or an insufficiency of it have been the ruling features of operations in the woods, and the strong probability is that it will be no better until the final break-up and cessation of operations in the pines, and the log crop is destined to be insufficient for the full mill capacity on the Saginaw river, which has been decreased to the extent of about 75,000,000 feet by the destruction of mill property by fire. Added to this fact is another, that the stock of lumber and available logs at the close of operations last season was about 200,000,000 feet short as compared with the close of the season of 1884. This will leave a comparative shortage of 275,000,000 feet or thereabouts. This immense shortage must inevitably have a perceptible effect in stiffening prices which leaves any prospect of a decline very improbable to say the least. It will be observed therefore, that there is very little danger of the purchaser getting left through hasty action in securing stock for the coming season's business, but a very strong probability that delay may result seriously disadvantageous. — *Lumberman's Gazette.*

## SOMETHING NEW IN FANCY VENEERS.

The New York correspondent of the *Cabinet-maker* says: A continuous and perfect strip of veneer from 3 inch to 30 inches in width and 300 or more long is an accomplished fact. E. Katz is the gentleman to whom the trade is indebted for the perfection of the idea. After much trouble and expense Mr. Katz has at last hit upon the necessary machinery, which he has now in running order, and is in position to turn out a large quantity. The advantages rightly claimed for these veneers are numerous and we will mention a few of them. The veneer being stripped in "rolls" instead of "fitches" takes up less room and is more easily handled. The time and labor ordinarily required in piecing, patching and cutting of corners, etc., is saved, it being only necessary to take a strip of any desired width and cut any length required, the saving is the point alone being considerable. The figure of these veneers is equal, if not superior, to that of other veneers. When laid on, the absence of all piecing and patching is evident in the uniformity and unmarred beauty of figuring. To the experienced the many advantages of this mode of cutting will at once be evident that we do not doubt that there will be a great and increasing demand for these veneers as they become more widely known.

## WHO MADE THE FIRST BARREL?

Few inventions have had a wider or more varied usefulness than the barrel; few give such promise of perpetuity. Unique in principle, simple, yet singularly perfect in plan and structure, the barrel is little less than a stroke of genius. Who set up the first one? Who first conceived the happy thought of making a vessel tight and strong out of strips of wood bound together with hoops. And when and where did he live?

No history of inventions; none of the encyclopedias in our great libraries; no historian of human progress, so far as we know, gives any information on the subject, unless we accept the Roman author, Pliny, who mistakenly attributes the invention to the Gauls who inhabited the banks of the Po. We say mis-

takenly, since there is the best of good reason for believing that the barrel was in use long before the Gauls took possession of their Italian home, perhaps long before the Gauls existed as a people.

The monuments of Egypt furnish proof of the early use of hooped vessels, though no date is given for their invention. In one of the inscriptions copied by Wilkinson may be seen two slaves emptying grain from a wooden vessel made with hoops, while a scribe keeps tally, and a sweeper stands by with a broom to sweep up the scattered kernels. Close by an unfortunate is undergoing punishment by bastinado for short measure, perhaps, or, as Mr. Wilkinson suggests, for petty theft. The measure is barrel shaped, and precisely like the *kayl* of modern Egypt. It would hold, apparently, about a peck. Unfortunately, the age of this inscription is not indicated. Measures of that sort would seem to have been in common use very early in Egypt, though not for the storing of liquids, for which purpose skin and earthen vessels were employed.

At first thought, Egypt would be the last place to look for the invention of hooped vessels its arid climate making it specially unsuited for their employment. Possibly, however, that may have been the compelling cause of their invention.

Throughout the East the bamboo is largely used for making hollow vessels, a section of the stem through a node securing a solid bottom, and one between the nodes an open mouth for a natural tub or bucket. In well wooded regions nothing would be more natural than the employment of hollow tree trunks for the same purpose, or sections of tree stems hollowed out by fire or otherwise. In drying such vessels would split and spoil, and it would require no great genius to repair them by means of withes or wooden bands, the primitive form of the hoops.

If the users of such natural barrels should migrate to a more barren region where timber was scarcer, economy of lumber would be likely to suggest the building of barrels from pieces artificially split, in short the use of staves, by means of which the primitive cooper would be able to make several barrels out of a block that would suffice for a single dug-out.

But this is speculation merely. It is enough to know that the cooper's art, like the potter's, is one of extreme antiquity. We had no suspicion of its age until we undertook to tell who made the first one. — *Scientific American.*

## FLOUR AND FEED MILL.

A reliable and durable mill for the durable purpose of making flour and grinding feed is almost indispensable on large farms and to stock men, and can very often be run very profitably in connection with a saw mill. The "Union" flour and feed mill, manufactured by the Freeport Machine Co., of Freeport, Ill., meets the requirements in every respect. We present a cut of the mill and a description taken from the company's circular:—

This mill combines a principle with which coarse and fine meal, graham flour, chop, etc., can be ground more rapidly, and with much less power than with other mills, for the reason that we use annular cast steel rings in connection with best French buhr stones. The hard steel grinding rings are placed close to the centre, and are so arranged and adjusted as to crush the grains at or near the centre of the grinder, and to do it with much less power because of this, as it will be observed that the grain is first broken by the hard steel rings, and afterwards, by continual pressure, ground fine by the buhr stones, thereby reducing the frequent necessity of dressing the buhr stones, as is the case in other mills, hence the great value to planters, farmers, millers and users of our combined steel and buhr stone mill, which we can positively recommend to do better work and more of it, with less power than any other mill known. The 12 inch "Union" weighs 500 pounds, and when packed for export 650 pounds (and measurement 28 cubic feet); the driving pulley is eight in diameter, 5½ inch face, for 5 inch belt; 6 to 12 horse power is required to run the 12 inch "Union." The 16 inch "Union" net weight is 350 pounds; driving pulley 9 inches in diameter, 6½ inch

face for six inch belt; requires six to fifteen horse power. Our "Union" mills have adjustable feed, and should 800 to 1,200 revolutions per minute. Just the mill for those having steam, water, tread or horse power. We believe our "Union" mills are indispensable to planters, farmers, diarmen and stock raisers. We furnish mills with or without a shaking bolt, and of a size sufficient to bolt as fast as the meal is ground, which works to perfection.

The 12 inch "Union" has 12 inch best French buhrs, and will grind from twelve to thirty bushels of meal per hour; the 16-inch "Union" mill will grind from 25 to 60 bushels per hour, depending upon the speed given.

## CHARCOAL MAKING.

Kilns or ovens for reducing wood to charcoal are generally made of brick, and are of two kinds, the conical and the rectangular. Charcoal is sometimes produced in open air pits, covered with earth. Our average New England forests will produce from 1500 to 2000 bushels of charcoal per acre, in addition to some spruce and hard-wood logs. It is estimated that after the first cutting, provided young trees are preserved thrifty woodlands will yield a crop sufficient to produce 1500 bushels to the acre every twenty or twenty-five years. Hence every acre well wooded land has a large and positive money value, even after one crop is removed. Whatever may be realized from the forests produce of an acre to-day, we may rest assured that in twenty-five or forty years the same amount of wood or timber will fetch more than the present selling price. The yield of charcoal varies but is usually thirty-five to forty-five per cent. of volume of the wood, and from eighteen to twenty-five per cent. by the ordinary methods, when the wood has been exposed two or three months in the open air after cutting. Well-made charcoal retains the form and structure of the wood, is brittle, somewhat cracked and very sonorous. If not burned enough, it is not black nor in the fracture bright. One cord of wood yields about forty bushels of charcoal. Common kilns for burning 1200 bushels at one time cost about \$400 each, where bricks can be obtained at reasonable prices. About 160 bushels of charcoal required to produce one ton of pig iron from the ore. A block of land measuring from 25,000 to 30,000 acres if well cared for, will permanently supply wood sufficient to manufacture all the charcoal needed for a common-sized blast furnace, say 3000 to 4000 tons per year.—*Ex.*

## THE ONE-STAVE BARREL.

From the *Journal*, of Detroit, Mich., is taken the following concerning the one stave barrel:

"On the west side of the river Rouge, about three miles beyond the western limits of Detroit, on a site embracing between fifteen and twenty acres of land, the Anchor Manufacturing Company has built and is erecting several buildings for the manufacture of barrels by a new process. Hugh Mattulath is at the institution, and associated with him as stockholders, are Alanson Sholey, A. R. and W. F. Linn, A. S. Brooks, the Chandler Brothers, Peltier & Belanger, George W. Moore, Chas. E. Qottrell and William P. Fuller. The company has a paid up capital of \$500,000. The establishment is now turning out 6,000 barrels per day, and will soon be making twice that number. While the size and shape of this barrel are the same as the ordinary one, the body of the barrel consists of a single sheet of timber held by hoops. The timber used is elm, which is cheap and abundant. Canada is the main base of supplies, and timber hunters sent there have already arranged for a year's supply for this establishment. The logs will be rafted over during the season of navigation, and brought by rail in the winter time. The logs are taken from the boom or yard into the saw mill, and cut into two barrel lengths. Thence they go into a steam chest, where they remain until thoroughly steamed. In this condition the log is converted into thin sheets, or veneering, used in the body of the barrel. By a special process, a two-foot log becomes rolls of wooden sheeting in a minute's time. There remains upon the mandrel an eight inch core, which is utilized in making barrel heads. The sheets go next to a sanding machine, by which

both sides are made perfectly smooth. After passing through a cutting and grooving machine, they are so cut by a goring machine as to adapt them to the shape of a barrel. Thence they go to the drying-house. The latter is a building 50x400 feet, heated by steam. From the dry boxes they go to the sizing saws, where they are cut the desired length, when they are ready for the cooper shop or for shipment. They are shipped in bundles and in the 'knock-down' to be put up at their point of destination. Three thousand of them can be stored and forwarded in an ordinary box car. The headings are shipped in barrels. The factory is full of the finest machinery, and not a little of it is the product of Mr. Mattulath's ingenuity."

## AN EXTRAORDINARY OFFER.

## To all Wanting Employment.

We want Live, Energetic Agents in every county in the United States and Canada, to sell a patent article of good merit, on its merits. An article having a large sale, paying over 100 per cent profit, having no competition, and on which the agent is protected in the exclusive sale by a deed given for each and every county he may secure from us. With all these advantages to our agents and the fact that it is an article that can be sold to every householder it might not be necessary to make an "extraordinary offer" to secure good agents at once, but we have concluded to make it to show, not only our confidence in the merits of our invention, but its saleability by any agent that will handle it with energy. Our agents now at work are making from \$100 to \$500 a month clear and this fact makes it safe for us to make our offer to all who are out of employment. Any agent that will give our business a thirty days' trial and fail to clear at least \$100 in this time, above all expenses, can return all goods unsold to us and we will refund the money paid for them. Any agent or general agent who would like ten or more counties and work them through sub-agents for ninety days and fail to clear at least \$750 above all expenses, can return goods unsold and get their money back. No other employer of agents ever dared to make such offers, nor would we if we did not know that we have agents now making more than double the amount we guaranteed, and but two sales a day would give a profit of over \$25 a month, and that one of our agents took eighteen orders in one day. Our large descriptive circulars explain our offer more fully, and these we wish to send to every one out of employment who will send us three one cent stamps for postage. Send at once and secure the agency in time for the boom, and go to work on the terms named in our extraordinary offer. We would like to have the address of all the agents, sewing machine solicitors and carpenters in the country, and ask any reader of this paper who reads this offer, to send us at once the name and address of all such they know. Address at once or you will lose the best chance ever offered to them out of employment to make money.

KENNER MANUFACTURING CO.,  
110 Smithfield St., Pittsburg, Pa.

Wear's WORLD'S WONDER of family liniment has proved to be one of the greatest blessings of the age. It is a never failing remedy for rheumatism, cuts, sprains and bruises. Call on J. D. Tully for a trial bottle and you will use no other.



## NOTICE.

SEALED TENDERS, addressed to the undersigned, and endorsed "Tender for Indian Supplies," will be received at this office up to noon on TUESDAY, 20th APRIL, 1886, for the delivery of Indian Supplies during the fiscal year ending 30th June, 1887, consisting of Flour, Bacon, Beef, Groceries, Ammunition, Twine, Oxen, Cows, Bulls, Agricultural Implements, Tools, &c., duty paid, at various points in Manitoba and the North West Territories.

Forms of tender, giving full particulars relative to the supplies required, dates of delivery, &c., may be had by applying to the undersigned, or to the Indian Commissioner at Regina, or to the Indian Office, Winnipeg.

Parties may tender for each description of goods (or for any portion of each description of goods) separately or for all the goods called for in the Schedule.

Each tender must be accompanied by an accepted Cheque in favor of the Superintendent General of Indian Affairs on a Canadian Bank for at least five per cent of the amount of the tender for Manitoba and the North-West Territories, which will be forfeited if the party tendering declines to enter into a contract when called upon to do so, or if he fails to complete the work contracted for. If the tender be not accepted the cheque will be returned.

Tenders must make up in the Money column in the Schedule the total money value of the goods they offer to supply, or their tender will not be entertained.

Each tender must in addition to the signature of the tenderer be signed by two sureties acceptable to the Department, for the proper performance of the contract.

In all cases where transportation may be only partial by rail, contractors must make proper arrangements for supplies to be forwarded at once from railway stations to their destination in the Government Warehouse at the point of delivery.

The lowest, or any tender, not necessarily accepted.  
L. VANIKOUGHNET,  
Deputy of the Superintendent-General  
of Indian Affairs.

Department of Indian Affairs,  
Ottawa, 2nd March, 1886.

**AUSTRALIA.**

Messrs. Lord & Hughes' monthly circular, dated Melbourne, Jan. 23rd, says:—

We commence this year by issuing our regular monthly circular for the San Francisco mail, instead of the English mail as heretofore, as the information contained will be of later date for our American constituents, while it will suit our English and Baltic friends just as well; consequently, this circular will embrace all information in relation to building materials from the date of our last circular on 14th December last.

Trade, since our last, has been exceedingly languid, consequent on the heavy arrivals of all descriptions of timber, and the disinclination of the trades to purchase beyond their immediate requirements, except at very low prices offered by speculators to store, waiting for a remunerative market. The season of the year has also operated prejudicially as the trade are busy with usual stock-taking, and have not wished to increase their stock until that is over.

We regret to have to advise lower prices in nearly every description of building materials—Oregon, Baltic, Canadian and American dressed and clear and Kauri pine. We can hold out no prospect of an improvement in the immediate future, as large stocks here, and known to be on the way, will prevent any advance for some time to come, except for exceptional lines that may be in demand.

Our land and property sales appear to have met with a relapse for the present, which also helps to prejudice the timber trade.

There is a fair business reported from the yards, and the trade do not report any falling off in business. We have to notice the retirement from business of Mr. Henry Mills, who for thirty years has been one of our most enterprising, plucky, and most respected buyers, and it is satisfactory to state that he retires with a competence.

**RED DEALS.**—Imports: 705 standard, 72,492 pieces from the Baltic, 5,421 pieces red pine from Canada. The arrivals have been Hama, China, Soudre, Inchgreen, Solid, Midnatsol, Magnet, Elizabeth, Bengal, Anthon, G. S. Homer, Tirade Tarabochia, from Baltic ports, and Malvina, from Montreal. The principal auction sales during the past six weeks was the cargo ex Hama, on the 12th inst., MB brand, when the following prices were realized:—1x3, 6 1-16d; 11x4, 6 3/4d; 9x4, 5 7/8d to 5 7/4d; 9x3, 5 3/4d to 4 3/4d; 9x2, 5 1/2d to 4 3/4d; 7x3, 5d to 4 3/4d 7x2 1/2, 5 3/4d to 4 3/4d; all per foot of 9x3. The cargoes ex Solid, Bengal, and Tirade Tarabochia have been placed privately.

**SPRUCE DEALS.**—Imports: 19,457 pieces. The arrivals have been Inchgreen, Midnatsol, and Elizabeth, from Baltic ports; Paul Jones, from New York; Malvina, from Montreal; and Sovereign, from Saguenay. Sales by auction comprise parcel ex Steinvara, at 3 1/2d to 3 1/4d; shipments ex Palmerston, at 3 1/2d to 2 15-16d; and parcel ex Midnatsol, brand FWT, at 4 1/2d to 3 3/4d; and brand TWF, at 3 3/4d per foot of 9x3.

**OREGON TIMBER.**—Imports: 7,112,267 feet super. The arrivals have been California, Gerard C. Tobey, Makah, Estella, Colusa, Sagamore, General Butler, and C. C. Funk. Sales by auction have been cargoes ex California, at £5 15s to £5, average £5 3s 2d; ex Kitsap, £5 10s to £4 15s, average £4 19s; ex Gerard C. Tobey, £5 5s to £4 15s, average £4 16s. The following cargoes have been sold privately:—Estella and Colusa.

**LUMBER.**—Imports: Clear pine, 1,100,921 feet super; White pine shelving, 1,156,606 feet super; T. and G. Ceiling, 113,169 feet super. The arrivals have been—Ragna, Chas. Dinnis, Glensk, and Kamfjord from New York; Paul Jones, from Boston; Delphine Melaine, and Jorsalfarer, from San Francisco; and Swift, from Adelaide. Sales by auction have been parcels ex Steinvara and Jorsalfarer. Michigan clear realized £15 5s. to £14; dressed clear pine, £12 12s 6d to £12 15s; shelving £10 10s to £9; carpenter's clear, £11, sugar pine, £13 7s 6d to £12 15s.

**REDWOOD.**—Imports: 317,297 feet super. The arrivals have been—Jorsalfarer, California, and Delphine Melaine, from San Francisco. The parcel sold at auction during the past six

weeks is that ex Jorsalfarer, at £9 to £7 17s 6d.

**FLOORING AND WEATHERBOARDS.**—Imports: 21,220,076 feet lineal from the United Kingdom and Baltic ports; 120,914 feet lineal from Canada. The arrivals have been—China, Soudre, Inchgreen, Thilatta, Telefon, Midnatsol, Ganli, Magnet, Elizabeth, Summerlide, Friggs, Anthon, George S. Homer, and Waldimir, from Baltic ports; Malaysia, Loch Etive, Lisamore and Loch Katrine, from United Kingdom; and Konoowarra, from Adelaide. Sales by auction comprise portions of cargoes ex Muncaster Castle, Soudro, and Midnatsol. We report prices as follows:—Red, 6x1 1/2, 10s 3d; 6x 3/4, 8s 6d; 6x 1/2, 7s; 6x 1/2, 5s 3d; 4-out weatherboards, 5s 3d. White, 6x1 1/2, 9s 6d; 6x 1/2, 8s 6d; 6x 3/4, 6s 6d to 6s 9d; 6x 1/2, 5s to 5s 3d.

**KAURI PINE.**—Imports: 1,288,000 feet super. Arrivals have been—Kullarnoy, Myrtle, Buster, Parnoll, Calindin and Grassmere. Sales by auction have been flooring, ex Hands Isle and Buster, and dressed shelving and boards, ex Myrtle, and hewn logs ex Ansdell. We report sales, flooring 6x1 1/2, 12s 6d; 6x 3/4, 10s to 9s 9d; 4x1 1/2, 10s to 9s 6d; dressed shelving, 21s 6d to 19s 6d; hewn logs, 12s to 10s.

**PITCH PINE.**—Imports: Nil.

**CEDAR.**—Imports: 14,000 feet super. Arrivals have been per coating steamers. There have been no auction sales since the date of our last report. We quote present value at 35s to 40s per log, according to size and quality.

**DOORS.**—Imports: 4,503. Arrivals have been Jorsalfarer and Delphine Melaine, from San Francisco; Paul Jones from Boston; Swift from Adelaide. The parcel of redwood doors ex Jorsalfarer was sold at auction on the 15th inst.

**LATHS AND PICKETS.**—Imports: Laths, 22,227 bundles; pickets, 19,008 bundles. Prices show a decline on last month's rate.

**SLATES.**—Imports: 1,109,396. The arrivals have been—Alliance, Borrowdale, Lake Superior, Halewood and Duñcow, from United Kingdom; Ragna Paul Jones, Charles Dennis, and Glensk, from United States of America; Orson, from Tasmania. In consequence of heavy arrivals, prices are easier. Several parcels have been sold privately, prices withheld. We quote American Bangor, 24x12, £11; 20x10, £8 Welsh Bangor, 24x12, £13; 20x10, £9 10s.

**PLASTER.**—Imports: 1,847 barrels. Stocks are heavy and prices lower. We quote 11s to 12s per cask.

**CEMENT.**—19,660 barrels. Arrivals are far in excess of requirements and prices lower; we quote 12s 6d for best brands, and for inferior 11s.

**GALVANIZED IRON.**—Imports: 1,881 tons. Owing to heavy arrivals sales are difficult to effect, except at lower prices on last month's rates. We quote best brands at £10; other brands, £15.

**EXPLANATION.**—Red deals and spruce deals are sold at per foot of 9x3; T. and G. flooring at per 100 feet running; Oregon timber, Redwood, clear pine, shelving, ceiling, per 1,000 feet super; Kauri pine and cedar logs at per 100 feet super; laths, pickets and slates at per 1,000 pieces. Shorts are all lengths under 12 feet.

**PREVENTING THE ENDS OF TIMBER FROM CHECKING IN DRYING.**

Some English authorities have recently been making experiments upon the subject of drying timber without allowing the ends to check. After making a variety of tests, they report that by painting the ends of the stick with thick glue, and allowing it to harden, they succeeded in drying several kinds of lumber without having end checks make their appearance. The theory of the action was that they succeeded in forcing the glue far enough into the pores of the timber, so that the ends were to a certain extent cemented together, and at the same time prevented from drying more rapidly than the body of the stick itself. Very little more has been made known in regard to this system, and we have been unable to get any particulars in regard to the kinds of wood employed, or the length of time they were subjected to the drying processes. Mr. F. D. Adams, the General Master car

builder of the Boston & Albany railroad, writing to us in reply to a query in regard to this system, says:—"I have never heard of glue being used on ends of timber to avoid checking. In fact, I should not think it would be of any use, as both the moisture from the timber and the rain, where lumber is stacked out doors, would in a short time destroy its strength. Possibly it might be of service, if timber was under good cover. We have been for years in the habit of covering the ends of our timber with a heavy covering of thick oil paint. This keeps the ends of the wood full, and prevents the water getting in. Almost any kind of paint will answer the purpose."

In many of the lumber yards where foreign timber is received, it is the habit in stacking wide boards, to nail narrow pieces of laths over their ends. This prevents the too rapid drying of the end, at the same time binding the board and preventing it from splitting. Even this, however, is not always sufficient to keep wide mahogany lumber from cracking badly.

Protection for the ends of all kinds of timber stacked so as to be exposed to the weather, is very essential, and the rough oil paint is probably as cheap and as satisfactory as anything that has yet been thoroughly tried. In connection with this perhaps the most satisfactory investment of labor and material is found in the system adopted on the Lehigh Valley Road, by Mr. Lentz, also on a few other roads. This is to erect at the corner of each lumber pile four uprights which carry a light roof sufficient to shed the rain and pretty thoroughly protect the pile beneath. In some cases, we have seen these roofs made like the roof of a hay rick, to be raised or lowered to suit the height of the pile beneath it. The cost of a construction of this kind is merely nominal and on some roads amounts only to the labor of putting up, the necessary timber being derived from rejected stuff which the lumber dealers do not consider worth removing—*Journal Railway Appliances.*

Wonderful is the instantaneous effect of West's Pain Kug in relieving cramps, colic and all bowel difficulties. Worth its weight in gold and costs but 25 cents. Should always be kept in every household. Sold by J. D. Tully druggist.

Perhaps the most extraordinary that success has been achieved in modern science has been attained by the Dixon treatment for Catarrh. Out of 2,000 patients treated during the past six months, fully ninety per cent. have been cured of this stubborn malady. This is none the less startling when it is remembered that not five per cent. of the patients presenting themselves to the regular practitioner are benefited, while the patent medicines and other advertised cures never record a cure at all. Starting with the claim now generally believed by the most scientific men that the disease is due to the presence of living parasites in the tissues, Mr. Dixon at once adapted his cure to their extermination; this accomplished the Catarrh is practically cured, and the permanency is unquestioned, as cures effected by him four years ago are cures still. No one else has ever attempted to cure Catarrh in this manner, and no other treatment has ever cured Catarrh. The application of the remedy is simple and can be done at home, and the present season of the year is the most favorable for a speedy and permanent cure, the majority of cases being cured at one treatment. Sufferers should correspond with Messrs. A. H. DIXON & SON, 205 King street west, Toronto, Canada, and enclose a stamp for their treatise on Catarrh.—*Montreal Star.* 17122.

Get out your Complexion use White Head Cream \$100 REWARD

For any preparation that will equal White Head Cream to remove Tan, Freckles and Pimples.

Softens the Skin and Beautifies the Complexion. Every bottle guaranteed to be as represented or money refunded. Price, 60c. and \$1.00 per bottle. For sale by all druggists, or address the HARTLAND CHEMICAL CO., 27 Wellington Street East, Toronto. Stamps taken.

TROR, N.Y., Jan. 4, 1885.

GENTLEMAN,—I have much pleasure in saying that I have used your White Head Cream for my complexion some time past, and I find it superior to anything I have ever used for the same purpose. It softens the skin and imparts a fresh and delicate bloom to the face and hands unobtainable by the use of any other preparation. Sincerely yours, ELLA LOMANE.

To the Hart and Chemical Co. 400711

**J. K. POST & CO. LUMBER MERCHANTS**  
And Shipping Agents.  
OSWEGO, N. Y.

The American Hotel,  
BARRIE, ONT.  
Collier St., Adjoining Market.

RATES REASONABLE, CENTRAL LOCATION,  
FREE BUS TO AND FROM ALL TRAINS.

Every accommodation for Commercial and LUMBERMEN.  
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Lumber and Commission Agent.

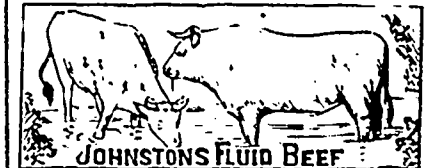
ORDERS FOR DIMENSIONS AND ALL OTHER KINDS AND GRADES OF

**American Lumber**  
PROMPTLY ATTENDED TO.

Timber Limits and the Square Timber Trade a Specialty.

Office, Wellington Street, OTTAWA. 1111

**Johnston's Fluid Beef**



The nourishing, palatable and warmth giving qualities of Johnston's Fluid Beef has caused this invaluable preparation to become a favorite and fashionable beverage for the winter season. It is now obtainable on draught at the leading hotels and restaurants throughout the Dominion 1887

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# THE CANADA LUMBERMAN

DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

PUBLISHED SEMI-MONTHLY BY THE Peterborough Review Printing and Publishing Company (Limited), Peterborough, Ont.

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Communications intended for insertion in the CANADA LUMBERMAN, must be accompanied by the name of the writer, not necessarily for publication, but as a guarantee of good faith. Communications to insure insertion (if accepted) in the following number, should be in the hands of the publishers a week before the date of the next issue.

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PETERBOROUGH, Ont., MAR. 16, 1886.

## BRIDGES.

Written for the Lumberman.

Bridges are structures made to span a void, and are as old as history. From the Greeks we have accounts of bridges built by Semiramis, Darius, Xerxes, and Pyrrhus, principally made of timber and flat stones. Sometimes boats moored in the stream served as piers; such was the bridge built by Xerxes across the Hellespont. The principle of the arch was first applied to bridge building by the Romans. The Ponte de Ritto, or Senators' Bridge, erected by Caius Flavius, (127 B.C.) is supposed to be the first instance of its application to bridge building. In the course of the great engineering works of the Roman Empire, the application of the arch for bridge building became general and bridge building became an art. After the decay of the Roman Empire, it made no progress for several centuries, but was again revived in the Eleventh century, but we find little was accomplished until the beginning of the Eighteenth century, when a large number of splendid bridges were erected in England and France.

One of the first applications of iron, to the building of bridges, was about the year 1775, by Mr. Pritchard, of Shrewsbury, England. This was a cast iron arch bridge, which proved a very valuable style of construction, and has since been largely used in all parts of the world. During the present century wrought iron and steel have been very extensively used for bridge building, and are taking the place of all other materials. Among the earliest applications of wrought iron to long span bridges, were the Britannia and Conway bridges, these were what are called tubular bridges, their cross section being in the form of a rectangular tube. The Victoria bridge, of Montreal, is another example of this type of bridge. The total amount of iron used in the two former bridges was 2,892 tons. The greatest span in the clear is 460 feet. Since that time the use of wrought

iron and steel for building of bridges has been very extensive, until to-day we have a bridge at New York of 1,600 feet in one span, and another now being erected across the Forth, in Scotland, that the spans will be 1,760 feet long. The Niagara bridge is 1,200 feet, and the Cantilever bridge across the same stream is a later example of modern engineering skill.

The essential elements of a good bridge consist in so applying the materials of construction to a given design as to have all parts of the structure equally strong under the greatest loads that can ever come upon it. At the same time the material should not be strained to more than one-fourth to one-tenth of their ultimate strength, depending on the kind of materials used, and the nature of the stress the materials are subjected to. Bridges so constructed are said to have a factor of safety of 4, or 6, or 8, etc. Ordinary iron highway bridges are usually constructed with a factor of safety of four, which is ample, unless built in large towns or cities, then they should be constructed with a safety factor of five. Railroad bridges, as now built, have a factor of safety of five, and some of the members of the bridge that are subject to sudden shocks have a much higher factor of safety.

Bridges are subject to two kinds of loading besides their own weight, such as a uniform weight distributed over the whole length and width of the structure, and by concentrated loads such as heavy loads of timber, stone, machinery, threshing machines, and in the near future bridges will have to carry heavy traction



THE NEW PIGEON CREEK BRIDGE.

engines, and this should not be overlooked by city and county engineers in their future bridge designs—more especially in short span bridges, on which the shocks from heavy loads are more severe than on long span bridges—therefore, they should be designed to carry heavier loads, or the factor of safety increased. The general standard for loading a bridge is to consider it crowded with people. This would not exceed eighty pounds per square foot of bridge flooring. The following loads per square foot for different lengths of span were recommended by a committee of bridge experts in the U. S. A. to be adopted for the building of highway bridges:

60 feet spans and under 100 lbs. per square foot.	
60 " to 100 ft. span..	90 " " "
" " "	for cities and large towns.
" " "	80 lbs. per square ft.
" " "	for county roadway.
100 " to 150 ft. "	80 lbs. per square ft.
" " "	for cities and large towns.
" " "	65 lbs. per square ft.
" " "	for county roadway.
150 " to 200 ft. "	70 lbs. per square ft.
" " "	for cities and large towns.
" " "	60 lbs. per square ft.
" " "	for county roadway.

The proper strength of floors for all spans may be arrived at by taking into consideration the greatest loads that are likely to be concentrated on one pair of wheels for each roadway. For Cities and large towns we can consider this not to exceed five tons, and in county roadway bridges three tons. This may appear extreme, but the writer thinks the error, if any, is on the side of safety. The floor beams of all bridges should be constructed for the above mentioned loads. The longitudinal stringers or joists should receive the same attention and should be of sufficient strength to carry half the above

mentioned loads on one wheel concentrated in the middle of its length.

In the construction of iron bridges great care should be taken in the selection of the materials used for that purpose, as the whole structure may fail through some defect in one of the members, and as thousands of people intrust their lives on such structures daily, it is a point of vital importance, and cannot receive to much attention, not only by the engineer of the works where the bridge is manufactured, but by every workman engaged on the work, who should immediately report any defects he may discover no matter how trifling.

Iron is a material, the qualities of which are as variable as the different ores from which it is produced; it may be good, or very bad, or a mean between the two, and to a person who is not familiar with the material, and its mode of manufacture, all would appear alike. Iron is a material the most sensitive to treatment of any metal known in art. The least and often the smallest variation in the quantity or quality of the fuel, ore, or working, will result in several grades of iron at the same cast, but each grade suitable for some purpose. The writer has frequently seen four and five grades of iron produced at the same cast, although the same quality and quantity of ore and fuel had been used during the melting. The pig iron is commercially graded, and called Nos. 1, 2, 3 and 4. Nos. 1 and 2 are always selected for foundry use, and are sometimes called grey irons, whilst the higher numbers are used for the purposes of manufacturing wrought iron, and are sometimes

called white iron or forge iron. Foundry pig iron may be recognized, when broken, by the fracture presenting an open, crystalline texture with a grey color. Forge pig iron is hard, fine-grained, and generally has a white appearance, and sometimes a mottled one.

The operation of producing wrought iron from the pig iron, as now practiced, is by extracting the carbon, and other impurities, by means of the flame and heat in a reverberatory furnace. The process is called puddling and is thus conducted: The sole, or centre part of the furnace, is filled with broken pig iron, rich slag, or iron scale, the doors are fastened up tight, the fire is then kept up until the whole mass of iron, slag, etc., are melted by the flame passing over the metal, (no fuel is allowed to be in the chamber with the metal). When the metal begins to melt the puddler begins to stir the same with iron bars made for that purpose, (a small hole about six inches square being left in the bottom of the door to admit of these bars being readily taken in and out). After it has all become melted the whole mass is rapidly stirred up. After a time the mass will boil and the carbon in the iron, in the form of carbonic oxid, comes to the surface, and comes in contact with the flame from coal in the fire chamber, and burns off with a blue flame. The stirring of the mass is kept up until all, or nearly all, the carbon is burnt out and the metal becomes pasty. The temperature of the furnace is now lowered by a damper in the stack, and the particles of the pasty iron gathered together and made into balls, about five or six balls at each charge, after the balls have been sufficiently worked they are taken to a heavy hammer or squeezer and there hammered or squeezed until a large quantity of the slag and other impurities remaining in the iron are forced out, it is then taken, whilst hot, to a set of rolls and rolled into bars about four inches wide and one inch

thick. After remaining till cold it is cut up into short pieces, the several pieces are piled one on top of the other until they make a pile of sufficient dimensions to make a bar of iron of such merchantable size as may be required. The pile is then reheated and brought to a welding heat, about 18,400 degrees F. and again rolled into bars,—this is the ordinary merchant bar iron.

Upon this first process of puddling the quality of the iron almost entirely depends, that is supposing the pig iron has been made from good ores, (good iron cannot be made from poor ores, but bad iron can, and is made from the best of stock.) If the iron is not properly worked it will not have that toughness that good wrought iron should have. Again, if the charge is left too long in the furnace, the iron will be injured from over-heating, bars or plates made from either iron would be of bad quality, but both irons would not have the same granular appearance when broken.

The chemical operation performed during the puddling process is called decarburizing, and if it was possible to perfectly accomplish it, and the pig iron contained no impurities, the result would be pure metallic iron. This has never been accomplished so far, therefore the different grades and qualities of iron to be found in all parts of the world.

But with all the difficulties met with in the manufacture of iron, metallurgists have been able to produce a good and reliable quality of wrought iron by a judicious mixture of the various brands of pig iron, and by testing the puddled bars and selecting such as are fit for the quality of bars or plates required. Therefore, if an inquirer knows what quality of iron he wants, he should have little difficulty in procuring it if he deals with a reliable manufacturer. At the same time it is necessary that iron should be tested, and one of the best and simplest forms is what is termed the cold-bend test. It consists in bending the bar under examination, over an anvil by repeated blows from a hammer until the sides approach each other within a distance equal to the thickness of the iron. Iron that will stand this test without fracture is of the very best quality, possessing ductility, toughness and elasticity, and highly suited for bridge building. Some high grade irons will stand a severer test than this, by the sides being closed down upon each other, but these are exceptional cases and not the rule. Under no circumstance will iron stand to be bent over the sharp edge of a vise without fracture. The test piece should be bent over something that will allow the inner fibres to upset at the time the outer fibres are extending. Thousands of tests have been made which all go to show that for bridge purposes a bar one inch square should be able to withstand a pulling strain of 50,000 to 54,000 pounds before breaking, and that it should stretch at least 1½ inches to the foot before rupture.

Timber for bridges should be sound, free from shakes, heart-cracks, loose and black knots. Well seasoned timber will wear much longer than unseasoned, but bridge plank is seldom kept in stock, therefore it must almost always be procured fresh cut from the mill. Sapwood will not wear good, and will decay faster than heartwood, but it is practically impossible to get all heartwood. Wane edge should be laid downwards, and if more than one wane edge in a plank it should not be used.

The timber for stringers, or joists should be selected with more care than plank. The kinds of timber most in use are oak, white and yellow pine; for plank sometimes hemlock, beech, birch and tamarack.

The principal kinds of iron bridges now in general use are the girder bridges, for short spans up to 30 to 40 feet, sometimes longer. Next comes the bowstring, the arch, suspension, truss bridges, and lately the cantilever bridge has been brought forward very prominently. This last mentioned type will be more extensively used in the future than in the past for long spans; although the principle has long been understood by engineers it is only of late years that such gigantic structures have been built where the principle could be applied with economy.

The truss bridge is the most in use, and

bridges have been built on this principle, in spans ranging from 30 feet to upwards of 500 feet long. There are several types of trusses, such as the King post truss, the Queen post truss, the triangular or Warren truss, the double triangular truss, the trapezoidal or "whipple" truss, the Fink truss, the Bollman truss, &c. The two former types are only used in the shortest spans. The trapezoidal or whipple truss is most in use and some magnificent structures have been built up to 525 feet spans. The illustration given is of the whipple type and is called a low truss bridge. The length of span is 68 feet, width of roadway 18 feet, with a sidewalk on each side four feet wide. The bridge is designed to carry a rolling load of 100 pounds per square foot of the roadway, and 80 pounds per square foot of sidewalk, besides the weight of the superstructure itself. No member in tension to be strained to more than 10,000 pounds per square inch, and compression members 8,000 or less, depending on the ratio of length to diameter of the member. The sidewalk railing is made of wrought iron lattice work bolted to cast iron posts, said posts being bolted to the iron cross beams, the flooring is entirely of pine, roadway plank three inches thick, sidewalk plank two inches thick, the whole superstructure is erected on a cut stone substructure and crosses Pigeon Creek, in the town of Omemeo, Victoria County, Ontario. In long span bridges, from 90 feet and upwards, the trusses are of sufficient height to be braced laterally on the top, these are called high truss bridges. Sometimes the roadway is carried on the top of the trusses, and this is called a deck bridge.

Before building a bridge all corporations should consult a competent engineer, who would be able to select the most economical and best type to suit the location, and also to examine the designs and plans presented, to ascertain if they are designed on correct and recognized principles, and to ignore any plan that is not, or cannot be analyzed as to the kind and amount of strain the members of the bridge would be subject to when loaded. It is almost criminal to build a bridge, or any structure, on plans that no one can tell approximately anything about, when there are plans that are thoroughly understood and the strains can be correctly calculated.

There is another point to consider and one of the most vital importance, namely, the details, or connections, of the different members of the bridge, if these are weak the whole structure will be measured by their strength. On these points the knowledge of the practical engineer is of great value, it enables him to select the best design, and prevent incompetent and unscrupulous parties from palming their death traps on the public, besides saving large sums of public money.

W. H. LAW,  
Central Iron Bridge Works, Peterborough.

**THE DUTY.**

To the Editor of the Canada Lumberman.

MR. EDITOR,—Mr. Joly's letter in your number of the 15th, with your remarks in answer to the *Free Press*, give valuable information on our lumber interest. I have often wrote and wondered the reason why the export duty on our cedar, spruce, and pine logs are not exacted on the river St. John, N. B., when one steam mill on the American side manufactures about 50,000,000 of cedar shingles, besides the spruce and pine for clapboards, furnished yearly from our forests free of export duty.

It seems astonishing that we have been, for the whole of the Nineteenth century, living alongside of a smart shrewd people who have thrown off the old John Bull bigotry over one hundred years ago, and we yet inherit it to such an extent we must butt our brains out against obstacles to progress before we can see them.

If we had a few more Mr. Joly's, with an independent press, who takes the interest of our country at heart, the Government might condescend to open their eyes and look after our local interests and protect them. And unless we encourage and protect all the feeders, to keep up our revenue, our progress must be retarded; and lumber is one of our natural and most

valuable feeders. Costing us nothing is the reason why it is so neglected, and the day is not far of when our future generations will curse the neglect and those causing it.

I see that the Morrison tariff, if it passes in the United States, throws a sprat at Canada to catch a salmon. It reads to admit all wood and lumber, *not dressed*, on the free list from a country where no export duty is charged; consequently all our shingles and clapboards, when a planer has been used on them, would be subject to duty, and nowadays all our shingles are edged with a planer, and nearly all our clapboards are planed at the mill where they are manufactured. So it stands our Government in hand to not let go with their right hand before they get a good hold with their left, for they will learn there is no friendship in trade with Uncle Sam.

And about our New Brunswick stumpage few of your readers know nearly all our lumber lands are locked up by monopolists who charge \$1.50 per M feet stumpage, and what little lumber we have left, if not preserved more strictly, the reckless slaughter now carried on by Americans, and our own lumbermen, we will soon have none to growl over.

Respectfully yours,  
P. O. BYRAM.

Madawaska, February, 1886.

ENTERING the townships of Melbourne we are impressed with the rapid growth of wood. In places that were cleared, since our personal recollection, and cultivated for years, there now appears a strong and healthy growth of maple and other varieties of wood. Some of the trees are nearly large enough for sugar trees. If the country were left for fifty years, the landscape would be converted into an unbroken forest again. If people would only husband the wood growing patches that remain, keeping the cattle and fire out of them, there will never be a scarcity of wood in these townships. —*St. John, Quebec, News.*

WE learn from the Brandon, Man., *Sun* that Mr. Jas. Kennedy, son of Mr. D. Kennedy, of Campbellford, Ont., is manager of the Brandon saw mills, which the proprietor, Mr. Christie, lately purchased. 800,000 feet of logs are now in the Fort Ellice booms, and will be sent down as soon as the ice breaks in the river, and arrive there ten days after. It is the intention this season to cut one and a half million feet of lumber. Forty men will be placed in the woods above Fort Pelly this week. This will be pleasing news, the *Sun* says, to the people of Brandon.

The *Pembroke Observer* of February 26th says:—"The timber shipping traffic for the season of 1886 has opened under the most favorable auspices and a busy season is predicted. Mr. Klock, the well known lumber merchant, of Aylmer, has started a force of men to load cars with lumber cut this season on the Veuve river. The timber will be launched on the ice Papineauville, where it will be rafted up as soon as navigation opens in the spring and driven to Quebec for the early market.

Mr. FLOOD, the agent for Messrs. R. R. Dobell & Co., is at present taking out square birch in the vicinity of Lac Sept Isles, near St. Raymond. Already 12,000 feet have been sent down by the Quebec and Lake St. John railway, and have been piled on the Louis embankment. Eight thousand feet more have to be delivered. The average of this birch was 16 inches and 11 feet in length.

ALLEN OLMSTEAD has been appointed forester for the Adirondack region, N. H., by the state forestry commission. He is an old hunter and a thorough woodsman. His duty will be to see to the preservation of the forests under his jurisdiction from wanton destruction and spoliation.

WHILE engaged in surveying lumber at Malone for the Rathbun Company, Mr. Thomas Pidgeon slipped off a lumber pile and fell against a log sustaining very severe internal injuries which have entailed much suffering. He was taken to his home in Deseronto.

DURING 1885 car loads of lumber and box shooks were forwarded from Potadam, N. Y., to the number of 1,463; car loads of butter tubs, 165; bark, 29.

A MAN was hit in the right eye by the bursting of a log bind, in a shanty at Mattawa, and taken to Ottawa last week. He has sustained fearful injuries about the face, and it is feared that the eye is totally destroyed.

THE *Cobourg Sentinel-Star* says that the hickory wood in the buggy which John Boyd, of Baltimore, has sent to the Colonial Exhibition, London, England, was taken from a tree planted by the late Hon. Asa A. Burnham, over 50 years ago.

A SYNDICATE of Quebec gentlemen, including J. E. Ross, E. Beaudet, H. J. Boemer, Andrews, O. Turgeon and others, are about to erect a large saw and shingle mill and furniture factory at River Pierre, on the line of Lake St. John railway, province of Quebec.

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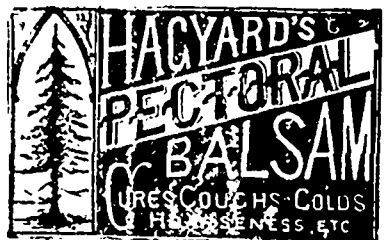
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T. MILBURN & CO., Proprietors, Toronto.



**JIM AS AN ENGINEER.**

Jim's a good-natured happy-go-lucky; he served his time in the machine shop, knows all about blacksmithing, and as for a stationary engine, why bless your soul, he's designed more than you ever saw. His uncle was a big stockholder in the company, and Jim was sent up to make himself generally useful, and show the country bumpkins a thing or two.

When he came all the places were full, so Jim swept up the shop and did some helping. To be sure, he left some chips under the laths and the bench was not very clean; but you know, Jim was an engineer and machinist, and not a roustabout.

At last business picked up and Jim was set to work running the engine nights. Then he was in his glory. First he thought the globe valve on the feed-pipe ought to be shut. Of course he forgot to open it when he started the pump. Well now you just ought to have seen that packing come out, and the water squirt over the engine and machinery. Jim caught a good mouthful and then left, and never stopped till he was out-doors. It rather scared him, but in a night or two he was ready to try another dodge.

The pump didn't leak, but Jim thought it needed packing, or anyhow that gland must be screwed up, and up it went; and the first thing he knew the plunger stopped, stuck tighter than a drum. Well, the engine went on serenely, and the set screw that was to have held the crank cut a nice little groove around the shaft.

Now that valve and motion is all of a kilter, and needs resetting. So one night while the men were at lunch, off comes the steam-chest cover, and the valve is reset. Engine starts a little lame, but Jim knows she will soon get over that. But pretty soon there is a rattle, the engine limps worse and worse, and then with a final rattle she stops. Investigation showed a nut off the valve stem. It had dropped into a steam port, been blown out into the exhaust and up the smoke stack, till it struck the elbow, when it dropped back upon the vertical boiler, where it was found next day.

Then Jim thought that perhaps it was not the valve after all. The pound must be in the eccentric straps and I'll just tighten them up. Well, now, almost before he could put that monkey-wrench down on the bench there was a loud snap, and a broken eccentric rod went whirling around with the shaft. This time the eccentric and strap were both cut and the rod broken. Jim smokes away and says the engine is no good. Manager thinks about the same of Jim's engineering qualifications, and gives him a job where he won't have quite so good a chance to raise Cain, but Jim was still alive, and didn't fail to let us know it.—*Power.*

**CARE OF EMERY WHEELS.**

It is common custom when an emery wheel is removed from its spindle to abuse it. Some hang it up on a nail, with one side exposed to the air of the room and the other side against a damp brick or wooden wall. Others lay it about on an uneven bench, and others, again, take the trouble to put it under the bench, one edge against the damp ground and the top side leaning against the back of the shop. When they want to use it again they find it all out of balance, perhaps warped out of flat and with its corners clipped or damaged. Then they write the maker that the wheel doesn't run true, and they want another one for it, without charge, or they will, notwithstanding its damaged condition, mount it on the machine and go to work with it; when it bursts and maims the user, emery wheels will be called dangerous tools.

To much care cannot be taken of an emery wheel by the man who uses it. Emery is, as before stated, a silicate of alumina and iron, emery contains water enough to make it have an affinity for water, and to a certain extent oxidize or rust, and therefore swell in size. If, then, a solid, but porous wheel is subjected to dampness, or to unequal action of air and dampness, it may become injured. It certainly is injured by having the corners clipped off by lying about under a bench with old junk, and it should get more sensible treatment.

A good plan for keeping all emery wheels would be to lay them in a box or drawer, in dry sand or sawdust, keeping them with as much care as one would with an edged tool or razor. Too much care would do no harm.

If, upon receiving an emery wheel from the maker, the user would tap it lightly with a hammer, he will find it has a note or sound. Now, if when he uses the wheel after an interval of repose, he would again tap it lightly with his hammer in the same way, he will notice readily any change of sound, or ring. If the wheel, on being tapped, sounds dead, or if it is cracked, he will readily notice the change in sound. This change is the only intelligence any solid wheel possesses; the man who uses it must govern himself accordingly.—*Mechanical Engineer.*

**CARE FOR CIRCULAR SAWS.**

The care we take of a circular saw makes it possible to do either the poorest or the best work. We may have the very best table, the finest gauges, and the best saw the market affords, but unless they are well taken care of it is utterly impossible to do a nice piece of work with them; while on the other hand, if we keep them in fine condition, even with inferior tables and appliances, they will show their care by the superior work done. Even under imperfect conditions aside from the saw, if we keep it sharp it will cut easy, and if set perfectly true, with the teeth of an even length, it will cut smooth, though it stick up through a rough board instead of a table made of alternate strips of walnut and ash, shallacked to perfection and polished until you can see your face in it. There is a combination of things that makes a saw run well, as much as there is a combination of letters to make a word, or of figures and signs to make a problem in arithmetic; and unless the combination is perfect we fail to make good work.

Let us see what the combination is then if we agree to the conditions specified: 1st, a true plate; 2nd, an even set; 3rd, the teeth all of an even length, so that each tooth shall do its share of cutting; 4th, the teeth filed to a uniform level both front and back, so as to give all the points the same shape; 5th, and last, though not by any means least, to give all the teeth the same size and shape without regard to the level. The reasons why we should have a true plate are obvious to the most casual observer. The stiffness of the plate depends on its being true, for just as soon as it is the least sprung, it has lost its backbone, and it will be dished first on this side and then on that, and we cannot trust it for anything, even the very plainest kind of sawing.

There is a wide difference of opinion about a sawyer straightening his own saws; while one may be able to do it there a thousand who cannot do it well. This is a part of caring for saws that if one cannot do it well he had very much better not try to do it; and yet every sawyer should be able to tell when a saw is sprung, and have it taken to a professional in that business and have it made right, for it is very much cheaper to have it right in the first place than have some one try to learn how to hammer a saw and almost ruin it and then be obliged to have to take it to some one in the business. This is a poor way to save money, and if any one is just starting and with a small working capital, he has little time to spare to teach his workmen how to hammer saws. But you want to know just when a saw needs straightening, and have it well done, and you want to know enough about a saw to know when it is well done. This is one part of caring for saws, and whether one can straighten a saw himself, or can tell when it ought to be hammered, he in either case is properly caring for it. It is needless, perhaps, for me to say it, but it is nevertheless a patent fact, that not one in ten sawyers in the country properly understands this part of the business or has the right kind of tools to do either the one or the other.

We would now come to the second part, a true, even set. A saw perfectly round and each tooth as long as the others might perhaps come in first, but as I have taken up setting we will go on with it and take the length of teeth in its turn.

There are a very few persons in this world

that can set a saw by their eyes and never use a gauge, but those persons are almost as scarce as hen's teeth, and the best way to use a good gauge and have each tooth come just to it, and not almost to it and another a little too much out, for these two littles make a "mickle" and will surely tell on the stuff being sawed.

On ordinary coarse work, like ripping up plank for studding, or for any stuff to be planed and jointed in a machine, I would certainly use an upset, as this keeps the outside points of the tooth full and sharp, which is a very necessary point in making a saw run well. As soon as the outside points become rounded, no saw can be trusted to do good work even in the coarser kinds of sawing, but they do very much better even than if they are properly set by having every tooth set just alike. I know this point of setting is held in high esteem by many who call themselves good sawyers, but I hold that it is one of the positively essential points to make a saw run both easy and well.

Now we come to the third count, keeping a saw round, and every tooth exactly the length of all the rest. How many shops and mills throughout the country can we go into where saws are used and not hear that confoundedly annoying sound, gig-gig-gig of saws that are running out of round. This comes from two causes, one of which is the hole in the saw is a little too large, and the saw is put on regardless of this fact, and if a saw be even so round, if put on the arbor this way, it is impossible to cut both sides alike, for it becomes an eccentric just as soon as put on and, pitiful to relate, always remains so. Very many, it is true, have a mark and always put it on in the same place—the marked side up, but this only half remedies the fault, for it will crowd one way or the other and is never exactly round. There is only one way to remedy this fault, and that is, by some means make the saw fit the arbor nicely. The other course is the common one. Saws are run week in and week out and are never trued, and a saw should be faced or trued up once a day if it is doing anything at all. Keep a nice piece of common grindstone and hold it up to the saw till it just touches, and then pass it carefully across the face of the saw till every tooth is hit. Now take off and file up nicely till the points come up to a fine edge without turning a burr if possible. Don't file and file till a burr is turned up like the fingers of a Hindoo devotee, because if you do the saw is out of shape again and needs truing up as much as it did before you touched it. A little care and the light falling on the point of the tooth so you can see what you are about, will give you a habit of filing just enough and no more.—*Cabinetmaking and Upholstery.*

**CEDAR.**

It occurs to us that if red cedar was properly introduced in this market, and its merits once thoroughly known to the consumer, it would become a very important factor in the lumber interest of the city. It is a matter worthy of comment that red cedar fence posts and red cedar dimension is in less demand in this market than in any other of the country; and this, too, in the very face of the fact, of all timber that grows, there is none possessing such lasting, such imperishable properties, if you please, as red cedar for fence posts. We recognize the fact that it cannot be secured in this market, so as to be sold to the consumer at anything like the prices for which white cedar is offered, but we see no economy in paying 15 cents for a white cedar post that will last but five years, when for 30 cents a red cedar one can be had that will last a generation of years. We were not a little surprised to know that some time since a couple of Tennessee gentlemen shipped a carload of red cedar posts to this city, and came in person to dispose of them and, if possible, lay a foundation for the future trade, but their experiment resulted in a deplorable failure, not only to receive a consideration for them that justified them in bringing them to this market, but in making any arrangement for future trade.

We cannot understand why it is that a wood possessing such valuable merits, not only for

posts, but for the building of clothes closets in dwellings, is so little in demand. Where cedar is used in interior work vermin and moth will be unknown; and it is susceptible of beautiful finish that adds to its value as a wood for house building purposes.—*Lumber Trade Journal.*

**TIGHT BELTS.**

A large quantity of belts is required to transmit a little power. The sooner we investigate and believe the above fact, the better it will be for our shafting, machinery and coal-heap. We may look at the fact as we please, it will bear it, and find that a slow running belt to carry a given power must be very wide. If running at high speed, we must have the same number of square inches of belt passed over the pulley, but the belt need not be as wide to do it.

When a belt slips, the most natural action on the part of the attendant is to throw a handful of powdered rosin between belt and pulley. The next move, when rosin fails, is to tighten the belt. Often we find belts strained up until they are tight enough for fiddle strings, until hangers are pulled out of line, boxes cut and shafting sprung.

A certain machine company drive their works by long loose belts which claim attention from their very looseness. These belts are 10" to 12" wide, about 16 feet from pulley to pulley, and are slack enough to permit the upper or slack side of the belt to "bag" down 12' or 18', a plane passing through the two shafts being about 45° from the perpendicular.

If this machine company had followed the example of many power users, they would have used belts 5" or 6" wide, strained them very tight, and have been continually troubled by the belts breaking and wearing out. The belts above described, ran upon large pulleys (from 24 to 48) having a speed of 250 or 300 revolutions per minute.

Probably these belts would have done one-half more work than was put upon them but from the fact of being loaded light, they did their work with very little wear and tear. They needed very little looking after, save to keep them oiled and cleaned.

At the Novelties Exhibition at Philadelphia, a centrifugal pump was shown raising a very large quantity of water, and being run with a 1 1/2" belt. Here, high belt-speed was used as a factor, but the little belt was strained very tight. It will soon give out and need constant patching.

When putting up a machine to run by a high-speed belt, don't make the mistake of cutting down the width of the belt too much. Let it go wide enough to transmit the required power without being too tight.

A certain builder of gauge lathes built a lathe to make button-hook handles. The handles were about 3/8" or 1/2" in diameter, and 1 1/4" long. When the belt was at its highest speed it ran over 4,000 lineal feet per minute, yet the belt was made four inches wide. Just think of it; a round sewing machine belt would almost have done the work, yet here was a four inch belt. The builder of that lathe says he would do the same thing again, for the belt service was complete, there was no slip of belt, no excessive friction, and the lathe spindle always ran true and cool.

When we see a man putting on a 14" belt with clamps, and using a 24" monkey-wrench wherewith to screw up the clamp bolts; then we can say to ourselves that this man is doing a poor job.—*American Machinist.*

A TELEGRAM from Washington in regard to the Morrison bill says:—The imports of articles of timber and lumber named in the bill as affected by the proviso as to export duty are imported from Canada, which country as far as learned imposes no export duty on the articles named, therefore the proviso has little or no effect." If pine and spruce are not included in the proposed free list, as Mr. Little believes, then this statement is correct; and it would appear to confirm the impression that Mr. Morrison does not propose to place pine and spruce lumber on the free list. If, however, he wishes the provisions of the bill regarding lumber to be of benefit to anybody those kinds of lumber should be included.

### Chips.

It is said that Pack, Woods & Co., Americans, own 600,000,000 feet of timber in Canada.

W. W. SUTHERLAND, Saginaw, handled 4,000,000 feet of hardwood lumber last year.

THE Mississippi Valley Lumberman does not think there are more than 49,000,000 feet of old logs in sight in the booms or along the Mississippi river.

THE latest from the Menominee district in Wisconsin is that the estimated cut of 400,000,000 feet would be realized, over 200,000,000 already being banked.

THE steam saw mill owned by Mr. O. Dufrene, situated about four miles from South Durham, Que., was totally consumed by fire on Feb. 19th; fully insured.

A LUMBER firm in Ottawa estimates that it will cost \$4,000 to make alterations, if the bill providing for the increase in width of tires of heavily laden wagon, passes the Ontario Legislature this session.

MR. T. H. DECREW has leased the Hanlan mills from the Essex Centre Manufacturing Company, and will go at once into the extensive manufacture of staves.

THE N. & A. Barnard Lumber Company have sold to E. R. Phinney, of East Saginaw, 3,800 acres of pine land in town 17-2 west, Gladwin county; consideration \$24,000 cash.

WINDSOR is resolved to have an electric railway, from Ouillette avenue to Walkerville. Capital of the company, \$30,000, length of road 1 1/2 mile, rolling stock one motor and one ordinary car.

IT is reported that never before were there so many small operators at work in the logging district of the Menominee as this winter. It is probable that the same is true in all the leading districts.

MR. SCHWARTZ, of the Royal Swedish and Norwegian Consulate, at Quebec, has favored us with a pamphlet on lumber shipments prepared by a gentleman residing at Helsingfors, Finland.

THE Victoria, British Columbia, Colonist says:—The George E. Star took away the immense plank sent from the Province to the Colonial Exhibition. It is nine feet in width and twenty feet long.

MR. C. YOUNG, of Young's Point, Ont., has had a new cast and track from Wm. Hamilton's foundry, Peterborough, put in his saw mill, and new saws put in his saw and shingle mill. He closed his mills on January 1st, but was compelled to start work again.

SILAS H. RAYMOND, of Grand Rapids, Mich., has invented and applied for a patent on a machine which he claims will set up a common stove barrel, both ends at once, using four tree hoops, in less than one minute. He says the machine is very simple, needs no power, and can be operated by one boy.

THE Muskegon News says:—News from the woods is, that notwithstanding no snow in December, so much in January, and soft weather thus far in February, the log cut will be nearly the amount expected, namely 400,000,000 feet. This showing is made possible through the activity of a large number of small operators who have pushed their work with more than usual energy.

#### NORTH WESTERN ONTARIO.

The Banner says a party of young men consisting of T. Brooks, S. Brooks, F. Hogue, whilst cutting shingle bolts near Riley Lake a few days ago, discovered a bear's den inhabited

by an old she bear and her two cubs; the boys had no fire arms and were proceeding to demolish the two cubs when old mother bear rushed to the rescue and attempted to give them an affectionate hug, but a few well directed blows with the axes soon put an end to her amorous intentions and settled her prospects for any closer alliance. The whole trio was captured and carried home in triumph.

#### THE FOSSIL WOOD OF THE WEST.

An interesting paper has been communicated to one of the California scientific societies on the fossil wood which is found in different localities throughout the state.

This silicified wood is stated to be a variety of quartz; the wood fiber is gradually replaced by quartz, leaving the form of the wood intact, so much so that the sections cut and placed under a microscope show the characteristic grain of the wood, by which the genera may often be determined, and sometimes the species. In what is known as the petrified forest in Colorado, there are stumps of trees several feet in height and some 12 or 15 in diameter, and one stump seemed to be fossilized while in a charred state, and from it fossil charcoal was obtained. Many of the specimens of wood are encrusted with layers of crystallized chalcedony of an opalescent tint, so beautiful that sections have been mounted and worn as jewelry. In Wyoming there have been found sections of trees 20 inches in diameter and several feet in length, like hollow tubes, with the interior surface entirely studded with pure quartz crystals, presenting a most beautiful appearance.—Scientific American.

#### AUSTRALIAN WATTLE FOR TANNING.

The American Consul at Sydney has forwarded to the United States Government a lengthy report on the leading industries of New South Wales, in the course of which, describing the the leather trade of that colony, he says the great bulk of the material used for tanning leather in Australia is obtained from the wattle or mimosa bark, the produce of various species of the acacia. This bark yields a higher percentage of tannin than any other vegetable material in the world, with the single exception of the celebrated tanaka bark of New Zealand, a product peculiar to that colony. An interesting feature connected with the mimosa bark is that its percentage of tannin increases after a year or two when the bark is kept in a dry place. The bark is usually gathered in the spring, which begins in New South Wales in the month of September—the colony being south of the Equator, the seasons are of course reversed. The bark is so highly prized for tanning that considerable quantities are exported to England, the annual exports being about 9,000 or 10,000 tons. Occasionally the exports have reached as high as 20,000 tons per annum. The demand for it has been so great that at one time it was thought the trees would disappear altogether. The New South Wales Government, however, has taken very active measures to promote the growth of these trees, and has caused vast numbers of them to be planted all over the colony, and especially on railway reserves. Strong efforts are also being made to encourage planting these trees by private enterprises. There are many varieties of the wattle, some of which have beautiful wavy and graceful feathery foliage. Wattle barks are usually found in commerce in four forms. 1st, in narrow strips about three feet long, pulled off the tree. 2nd, in small pieces 1 in. in length, and about the same in breadth. 3rd, ground bark having the appearance of retted fibre. 4th, powdered bark, forming a very fine powder. The wattle bark forms a hard and heavy tannage when used strong, but when weakened it produces soft and pliable leather. Extracts are now made from the wattle, and they are extensively used by the English tanners.

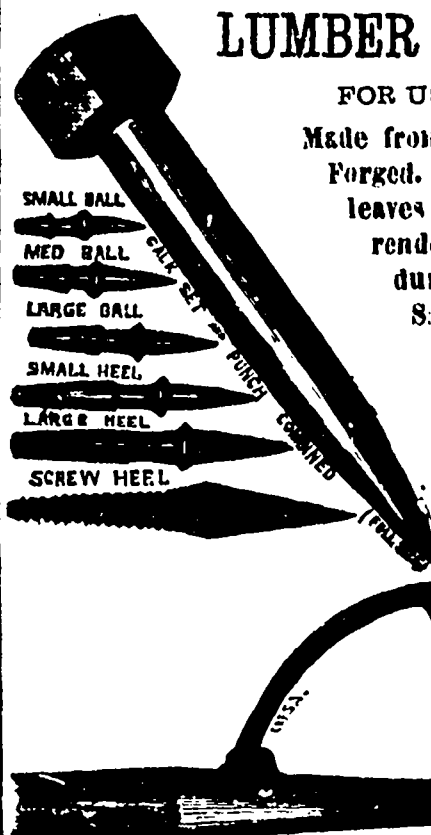
#### Horseman's Attention!

When your horse is galled or cut, or has an ugly sore, bathe twice daily, and apply McGregor & Parke's Carbolic Ointment. It is undoubtedly the finest healing and cleansing for it. Be sure you get McGregor & Parke's. Sold for 25c per box at John McKee's Drug Store.

## LUMBER DRIVERS' CALKS

FOR USE IN STREAM DRIVING.

Made from the Best Refined Tool Steel and Forged. The method used in tempering leaves every one of the same temper rendering them stronger and more durable than any other Calks made. Samples and prices free on application to the undersigned.



### Orono Cant Dog

Strongest and Lightest in the market. Made of Best Cast Steel by drop forging process. The Handles are made of best quality straight grained split and turned Rock Maple, 5 to 6 feet in length, bored specially to suit the pick. Prices on application.

MANUFACTURED BY

## T. McAVITY & SONS,

ST. JOHN, N.B.

A FULL LINE of all Size Single and Double Belting constantly in stock.

ALL ORDERS Filled same days as received.



## TORONTO

WARE ROOMS

86 King Street East

Factory and Warerooms:—2518, 2520 and 2522, Notre Dame Street.

## MONTREAL, QUE.

GET YOUR STATIONERY SUPPLIES

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MARKET BLOCK, GEORGE STREET.

Noted for BEST QUALITY GOODS at LOW PRICES!

PAPER, ENVELOPES, PENS, INK and PENCILS,

And every house and office requisite always kept in stock, and sold retail in

BOTH SMALL OR LARGE QUANTITIES.

A LIBERAL DISCOUNT will be allowed to Bankers, Lumbermen, Manufacturers, Clergymen, School Teachers, Township Officers and others buying their Stationery in large quantities, and also to cash buyers. Estimates given and contracts made for yearly supplies at lowest rates.

Market Reports.

TORONTO.

From Our Own Correspondent.

MARCH 9.—Building operations have now commenced to open out and the yards may expect a good trade shortly, as all differences with the carpenters, plasterers and bricklayers, will be amicably arranged before work is fairly started, so that the difficulties encountered last spring by master workmen will this season be avoided.

A large quantity of lumber is now entering our city, but nearly all of inferior grades, and the same may be said of the larger portion now piled in the railroad yards. Good lumber fit for immediate factory use meets with ready sale at fair prices, and it may with a certainty be predicted that before the first day of June next there will be a great out cry for dry lumber and the cry will be in vain, no dry stuff fit for dressing purposes will be held in stock by that time. The large stock now just sold at Gravenhurst will find its way by rail to Boston, and any dry lots to be had will soon be bought up for shipment to the other side, so that our manufacturers will wake up and find, to their astonishment, that there is not enough dry lumber left for their requirements until the new cut is in a fit state for use.

The present season's cut will be a large one without a doubt, so that no famine need be feared. The difficulty to be anticipated is getting in a fit state for use by the time it will be needed, as it has been found that lumber placed in dry kilns, while perfectly green does not come out in good shape for use.

The demand for shingles and lath is not brisk, but will mend as soon as the season fairly opens, and now that the G. T. R. Co. and the N. & N. W. Co. have brought their rates to the same figures, western shipments from the latter road will commence once more. Had this taken place sooner a large portion of the shingles now in stock would have been shipped out some time since, however, better late than never.

Prices at the yards have not as yet advanced on bill stuff in proportion to the advance demanded on car lots, so that it may be fairly assumed that retail dealers are selling at a less profit than formerly. Competition is intensely keen in all the branches, manufactured as well as in the unmanufactured state.

Mill cull boards and scantling.....	\$10 00
Shipping cull boards, promiscuous widths.....	12 00
Stocks.....	13 00
Scantling and joist, up to 16 ft.....	13 00
" " " " 18 ft.....	14 00
" " " " 20 ft.....	15 00
" " " " 22 ft.....	16 00
" " " " 24 ft.....	17 00
" " " " 26 ft.....	18 00
" " " " 28 ft.....	19 00
" " " " 30 ft.....	20 00
" " " " 32 ft.....	21 00
" " " " 34 ft.....	22 00
" " " " 36 ft.....	24 00
" " " " 38 ft.....	27 00
" " " " 40 to 44 ft.....	30 00

Cutting up planks to dry.....	20 00
boards.....	20 00
Round dressing stocks.....	16 00
Picks Am. inspection.....	30 00
Three uppers, Am. inspection.....	35 00

B. M.	
1 1/2 inch flooring, dressed.....	25 00
" " " " rough.....	14 00
" " " " dressed.....	23 00
" " " " undressed.....	14 00
" " " " dressed.....	16 00
" " " " undressed.....	12 00
Beaded Sheeting, dressed.....	18 00
Clapboarding, dressed.....	12 50
XXX sawn shingles, M.....	2 75
Sawn lath.....	2 25
Red oak.....	20 00
White.....	23 00
Hardwood, No. 1 & 2.....	18 00
Cherry, No. 1 & 2.....	50 00
White ash 1 & 2.....	25 00
Black ash 1 & 2.....	20 00

OHIOAGO.

AT THE YARDS.

The Northwestern Lumberman of March 6th says:—The increase of movement, so plainly seen last week, has almost swelled to a full spring trade since then. Though there has been a slight snow storm this week, and a moderately low temperature part of the time, there have been several sunny days, so that weather conditions, on the whole, have been favorable to shipment. Long trains are now to be seen on the yard tracks, and great activity is manifest. One going about the district now-a-

days is led to mentally inquire if it is really a fact, as some assert, that the Chicago white pine trade is losing ground from year to year. If such is the truth, appearances are deceiving. It is seldom that the volume of trade expands to its present proportions so early in March. It may be that the Chicago trade is making its last rallying effort before yielding to the grim messenger. But it is more than likely that it will make several drying efforts hereafter which shall be such displays of tenacious life as will be very disappointing to outside rivals.

A healthy feature of the present revival of trade is that it has come naturally, and without any extra endeavor on the part of the dealers. Travelling salesmen were sent out late, and many houses have not yet put men on the road. It is true that some solicitation by mail was employed, but there was little done in the way of offering concessions in price. Several houses are now letting their customers weight or go elsewhere rather than cut prices. The determination all along the line of yards is to stand firm for values, even if the country trade does not readily respond. In view of this attitude the rapid rise of demand, and the large volume of shipment now witnessed, is an encouraging feature of spring business. It is an indication of the truth of what has, since last fall, been pointed out by the Lumberman, namely, that stocks in the country were low, and that when trade did start up in the spring it would manifest unusual strength. No doubt the knowledge that prices certainly cannot go lower, while in some instances they are already higher than last fall, with a tendency to advance, is inducing large handlers in the interior to put in stocks early.

The weather in Kansas, Missouri, southern Nebraska and further southwest, is now sufficiently warm to permit of the use of lumber in housebuilding, and the promise of great activity in this line is bright. The certainty of a large amount of railroad construction this season in Kansas and Nebraska makes it plain that there will be much improvement in these states, and a large consumption of lumber. For this reason dealers are putting in stocks for the expected demand.

Yet the trade now prevailing is by no means dependent on the trans-Missouri and southwestern requirement. Orders are coming in from all directions. The eastern trade is fairly good. Lumber is being shipped to new points. As was said last week the reach of the Chicago trade is lengthening, as a result of the extension of railway systems contriving here. Larger orders are being placed in eastern and southern cities, as a result of their thrift and growth. It looks as if another period of prosperity would swell the volume of trade at this point to proportions never before witnessed.

It was previously stated that prices of piece stuff averaged about a \$11 a thousand, excepting for long joists, which sold for higher and special prices. It is safe to say now that \$11 50 is the ruling price on 2x4, 4x4, and short 2x12. Stuff 2x6 and 2x10 of ordinary lengths sells for \$10.50 to \$11. Long joists sell for higher prices than any named, 2x12 or 14 and 3x12 or 14 range upward almost indefinitely, according to length and difficulty of securing the lumber. Pieces 4x4-20 and 2x4-20 are scarce and in demand, in common with all other 20-foot lumber. No. 2 boards are wanted in excess of dry stock in pile. Assortments of nearly all kinds of lumber that is dry enough to ship are becoming seriously broken, so that if there is no check in shipments during the month there will be a lively hunting around for specialities before the first of April.

HOLDERS of thick lumber report a good inquiry for it, and firmness of prices. Two-inch stuff is the scarcer, and consequently most urgently wanted. There is considerable inquiry from the factories, and it is expected that thick and clears will be in good demand throughout the season.

The grade called variously shop common, shop stock, cut-ups, and C select, is growing in favor. Some dealers want it added to the list. It is made by picking out from selects, common or culls, inch or thick pieces that are mostly clear, but are marred by slight shakes, rotten spots or knots. Such lumber can be cut up to

advantage in shop or factory work with but little waste. It is a grade made much at Ohio points and in the East. An interesting distinction is made on it in the article appearing in the Lumberman on "Dry Uppers." It is probable that it is more successfully made in the yards of this city than anywhere else, because it is only done to make a profitable use of lumber that would do no good to ordinary grades and does not injure them when selected out. The shop common grade sells here at about \$20 a thousand. Lumber from Wisconsin that is mainly wide and clear, is said to contain a considerable portion of stuff that can be best devoted to the shop common grade. This is on account of the fact that north Wisconsin pine has large knots in it, but wide apart, with clear intervening wood. Wolf river pine has this characteristic, the peculiarity being no serious matter in the factory work at Oshkosh.

The local building requirement is increasing as the season advances. Building permits are daily issued in augmenting numbers. There is no reason to suppose that there will not be as many medium and small buildings erected in the city and suburbs this season as there was last year, and such structures are those that consume lumber. There are also several factory buildings going up, and many business blocks.

Receipts of lumber and shingles for the week ending March 4th, as reported by the Lumberman's Exchange:—

RECEIPTS.		
Lumber. Shingles.		
1886.....	5,808,000	734,000
1885.....	4,540,000	1,403,000

FROM JAN. 1, TO FEB. 25 INCLUSIVE.		
RECEIPTS.		
Lumber. Shingles.		
1886.....	37,514,000	9,961,000
1885.....	23,234,000	7,282,000
Increase.....	9,230,000	2,699,000

STOCK ON HAND MARCH 4.		
1886.		
1885.		
Lumber & timber.....	584,767,582	659,442,064
Shingles.....	418,839,205	833,839,025
Lath.....	77,020,482	57,824,292
Pickets.....	5,297,063	2,927,264
Cedar posts.....	444,462	478,454

EASTERN FREIGHT RATES.  
FROM CHICAGO AND COMMON POINTS ON CAR LOAD LOTS OF HARD AND SOFT LUMBER.  
IN EFFECT NOV. 1.

To New York.....	30c.
Boston.....	35c.
Philadelphia.....	35c.
Baltimore.....	35c.
Washington.....	35c.
Albany.....	35c.
Troy.....	35c.
Buffalo and Pittsburgh.....	15c.
Schenectady.....	35c.
Wheeling.....	15c.
Suspension Bridge.....	15c.
Salamanca.....	15c.
Black Rock.....	15c.
Dunkirk.....	15c.
Erie.....	15c.
Toronto.....	15c.

OTTAWA.

From Our Own Correspondent.

FEB. 25.—Since the opening of the Canada Pacific railway to Winnipeg and the Northwest quite a trade in lumber has sprung up, the Chaudiere mills here supplying all orders. The Canadian Pacific Railway Company, in order to encourage this, have settled upon a very reasonable tariff of carrying charges in the matter of lumber, which will undoubtedly be a benefit to both the lumber manufacturer of this portion of Canada and settlers and others in the Northwest, who may require lumber for building or other purposes. Not only has the opening of the road created a new market for the product of the Chaudiere mills, but it has been an incentive to other enterprises, as now many saw mills are spoken of being erected along the line, and close to the timber belt so that prices for lumber may be less and the carrying distance much shortened between the point of supply and demand. This, as it may be expected, has had a cheering effect upon those in the trade, and the future in this direction holds out many bright promises. The great Northwest land must be settled and settlers must have buildings, and where is there a more natural place to look for a supply of material for such purposes than the older provinces, with a great transcontinental line of railway connecting them with an iron band. The Northwest has the land for settlement and the Provinces of Ontario and Quebec the means

of making such settlement one of comfort, as far as the necessary supply of lumber is concerned. Men in the trade here say there is no question but in a few years a great and growing trade in lumber with the Northwest will grow up, thus making a fresh marketing field for the enterprise of those engaged in the business. It is easy to contemplate with a certainty that such will grow up as the Northwest territories become more settled. That land must have lumber for building, and the readiest and handiest place to get it will undoubtedly be the Ottawa Valley.

Rumours of sales are reported every day, the chief buyers being Americans. There is no question but that prices of first-class lumber the coming season will be much in advance of that of last year. The indications now point to that as a foregone conclusion.

The export duty on logs, an export duty that will equalize things, is a subject much debated among limit holders and mill owners here. They say that they expect that the Federal Government will give them protection in this matter, and that they will agitate for it until some scheme is inaugurated whereby the lumber industry of this great centre is protected.

MARCH 10.—As the season of spring advances the prospects in the trade grow brighter and brighter. As an indication of what may be expected in the latter sales, it may be told that Messrs. Shepherd, Moose & Co., of Burlington, Vt., have invested to the extent of one hundred and seventy million feet, bought at good figures from a number of lumber manufacturers in this vicinity. In conversation with Mr. John Bromley, the popular manager of the extensive lumber business of W. R. Thistle & Co., he said that he had sold some one hundred thousand feet of samples to an Oswego firm a short time ago, and at good figures. And this was the first purchase this firm had ever made in the Ottawa Valley, and they intimated to him their wish of taking all the lumber which the large mill would cut for the season.

At Hull and the Chaudiere, early as the season is, shipments are going forward briskly, and the C. P. R. have been pressed for cars within the past few days, to take away all the shippers desire to send. In a letter from E. B. Eddy, recently received from Europe, where that gentleman is at present travelling, he says the indications point to a good demand from that quarter, and that lumber dealers in Canada need have no fear, but that their stocks of sawn lumber will meet with a rapid sale and a good price.

In the Upper Ottawa region everything is going on rapidly and well, and already there is a demand for men for the spring drives at fairly good wages. In conversation with Mr. Alex. Gordon, of the firm of Booth & Gordon, he stated that lumbermen on the Kippewa and Lake Temiscaninque are pushing things forward at a good rate, and anticipate a good supply of water for the spring drive. Logs, he says, that were stuck on the Kippewa and Gordon Creek last year, will be got out this year. Mr. Gordon is down here to wait upon the Postmaster General to urge the establishment of a post office at the firms depot on the Blanc France River.

LONDON.

The Timber Trades Journal of Feb. 27th says:—Messrs. Churchill & Sim, as we fully anticipated, had an excellent room to their sale on Wednesday last; not only were the seats fully occupied, but the tone of the bidding was better; things hung a bit at times, but on the whole better prices were obtained than when Mr. Churchill last held the hammer.

The £15 10s. to £15 15s., which the Archangel deals, ex Sea Gull, fetched could not be complained of; it is true that the shipment was Russianoff's, but even so, we think they were well placed. At any rate, no White Sea Deals this year have touched those figures.

The planks, ex Clomatin, we think went rather poorly, being very nice goods and perfectly dry, and at £16 was undoubtedly cheap to the buyer. The deals by this ship at £4 10s. and £4 15s. might also have gone another 10s. higher, and yet been a bargain to the purchaser. Why this shipment was not more favored by the room we cannot quite understand.

The pine parcels were all well treated, and the broads ex Earl King at £30 a standard, was about the best sold lot that we have had to record for a long time; it was not as if they were all wide stuff, many of them being narrow, but the unusual width of 30 in. helped the bidding greatly. The 10 to 15 ft., 8 to 27 in broad, were proportionately well done by at £27 6s., as were the 2nds at £23; in fact, the whole parcel was evidently wanted by those who sustained the bidding. Michigan pine is not—now at least—so well esteemed as Quebec. This special shipment had nothing specially attractive about it, nevertheless it compared favorably with the reshipped Quebec goods subsequently submitted, for such the outside price for 10/16 ft. 3x14 to 16 in. was £24.

The influences operating to give these topping values to bright pine will, as our remarks indicate, be rather strengthened than otherwise, the increasing demand for the wood in the United States and the Dominion itself having a strong tendency in that direction.

LIVERPOOL.

The *Timber Trades Journal* of Feb. 27th says:—There has been a slightly better tone in business during the past week, although the continued severity of the weather retards building operations most materially, and it is to be hoped that this improvement, however slight it may be, is an indication of a return to that improvement in business which has been long expected and so often deferred. We hear that considerable sales of spruce deals have been made for future delivery, not only for this port, but round the coast, though prices are reported to show no advance upon those made during the past season.

Something also has been done in Quebec goods, but not, it is understood, to the extent of previous years. In the meantime, freights are quoted low, owing to the comparatively few orders for tonnage in the market. A large and influential deputation from Manchester waited upon the President of the Board of Trade on Tuesday last to endeavor to enlist his support to the Bill promoted by the Manchester Ship Canal Company, authorizing them to pay interest out of capital during the construction of the works. Mr. Mundella replied in a non-committal speech, but the result of the interview is looked upon by those interested as being favorable for the object in view, and sanguine opinions are now being held by many ardent supporters of the scheme that they will succeed in their endeavors, and, these being obtained, one of the greatest difficulties they have had to contend with in raising the necessary capital will vanish. Should they succeed in getting the works started, it would be of considerable importance to the timber trade of Liverpool, as not only must a vast quantity of timber be required in the construction of wharves, piers, &c., but, when eventually successful, it will relieve the pressure from the trade here, which is often seriously cramped and hindered from the want of sufficient space in which to carry on a large and cumbersome business.

Rapids progress is now being made with the buildings of the Liverpool International Exhibitions of Travel, Commerce, &c., to be held here during the summer months, and from what we can here it is likely to be a success.

Extensive as are the buildings, the applications for space have been, according to the public statements of the secretaries, five times as greater than the capacity of the floor space will allow. We understand, there will be an interesting exhibition of various kinds of timber imported into this city.

GLASGOW.

The *Timber Trades Journal* of Feb. 27th says:—As will be seen from report of the sale of Quebec timber at Greenock, and cedar at Glasgow, transactions by auction within the past week have been pretty heavy. Arrivals to note since last writing have been unimportant.

In the Glasgow Town Council, last week, there was some conversation with reference to the erection of artisans' or laborers' dwelling-houses upon the vacant ground belonging to the City Improvement Trustees, and it was decided that in the meantime the matter be allowed to remain in abeyance, in consequence

of the opinion got from Dr. Marwick, town clerk, to the effect that, although the trustees might agree to erect laborers' and artisans' dwellings as proposed, the parliamentary powers of the trustees did not warrant the contracting of new obligations for such a purpose.

At the annual meeting of the Glasgow Ship-owners' Association a few days ago, Mr. Alex. Allen, in moving the adoption of the report, advised against the additions to tonnage being made especially in sailing ships, until the tonnage afloat is more in proportion to the carrying needs of the world than it is at present.

It has just been brought out in connection with the depression in the shipbuilding trade that, owing to the number of vessels lost, an actual decrease is taking place in the registered tonnage of the country. Tonnage of steamers added last month amounted to 13,708; those removed, 14,460; and sailing vessels respectively 8,545 and 17,080, although in the latter case 4,200 tons sold to foreigners have to be taken into account.

These facts point to an improvement in freights.

AUCTION SALES.

On 18th inst., at Greenock, Messrs. Edmiston & Mitchells, brokers:—

Quebec waney boardwood—	s. d.	Per c. ft.
40 logs 44 c. ft. avg	1 6	
20 " 48 "	1 10 1/2	
20 " 71 "	2 1/2	
20 " 31 "	1 0 1/2	
63 " 42/44 "	1 0	
103 " 36/12 "	1 0 to 1 3/4	
11 " 62 "	1 4 1/2	
Quebec square boardwood—		
20 logs 33 c. ft. avg	1 7	
Quebec yellow pine jointerwood—		
62 logs 35 c. ft. avg	1 3 1/2	
Quebec yellow pine (B quality)—		
20 logs 55 c. ft. avg	1 2 1/2	
Quebec yellow pine jointing—		
60 logs 50 c. ft. avg	1 1	
20 " 50 "	1 0	
Quebec yellow pine—		
20 logs 30 c. ft. avg	1 2	
14 " 50 "	1 1	
Quebec red pine—		
60 logs 35 c. ft. avg	1 0 1/2	
5 " 40 "	1 4	
Quebec birch—		
20 logs 18 "	1 5 1/2	
Quebec oak—		
11 logs 60 "	1 1 1/2	
Quebec elm—		
1 log 38 "	1 10	
Quebec maple—		
1 log 59 "	1 0	
Sawn pitch pine—		
20 logs 40 "	1 1 1/2	
Quebec 3rd yellow pine deals—		
14 & 15 ft. 7/11 x 3	1 0	
13 " 1 x 3	0 10 1/2	
12 " 6/11 x 3	0 10 1/2	
9 to 11 " 4/11 x 3	0 9 1/2	

On 23rd inst. at Queen's dock, Glasgow, Messrs. Wm. Congal & Co. sold a cargo of Mexican (Minatitan) mahogany and cedar.

The following prices were obtained for the wood, which was all cleared out, viz., 510 logs mahogany, at 2 1/2d. to 1 1/2d. (2 lots at 2 1/2d.), averaging 4 5-32d. Liverpool sale measure; 52 logs cedar, at 2 1/2d to 1 1/2d., averaging 3 5-16d.; 2 lots mahogany log ends at 3 1/2d. and 2 1/2d., one lot cedar log ends at 2 1/2d.

There was a numerous company, and demand was good, especially for the larger squares. The cargo consisted chiefly of small logs.

After the above, Messrs. Edmiston & Mitchells offered by auction several parcels of walnut, ash, and birch. Sales were as under:—

Quebec black walnut—	Per c. ft.
22 logs 24 1/2 in. avg. sq.	3s. 9d. to 6s. 1d.
(averaging 5s. 1 1/2d. per c. ft. string)	
Quebec waney ash—	
40 logs 15 1/2 in. avg. sq.	1s. 5 1/2d. to 1s. 9d.
Quebec birch—	
15 1/2 in. avg. sq.	1s. 5d.

TYNE.

The *Timber Trades Journal* of Feb. 27th says:—The arrivals of the past seven days are a little larger and more varied, but do not amount to much. The regular steamers from Gothenburg and Christiania, have brought their usual complements of pit-props, mining timber, and some manufactured wood. One cargo of

Norwegian battons from Kragaroo has come forward, and several smaller lots of pit props will also be found in the list.

The weather remains very wintry, and entirely prevents any outdoor work going forward. Falls of snow have been very heavy, with more or less frost, while in the country districts many roads have scarcely been opened since about Christmas. An immense number of masons, plasterers, laborers, and others dependent upon the building trade, are thus thrown out of employment, and the distress on all sides is most severe.

A little more hopeful tone may be reported as to the prospects of a settlement in the shipbuilding trade, but it does not yet amount to a settlement. Both sides having now slightly modified their demands it is earnestly to be desired that, at the ensuing meeting, now arranged for, the unfortunate strike will be brought to a conclusion.

It need scarcely be said that the demand for wood goods has not all improved. Work is as slack as it has been at any time for several years, and on all sides the lookout is of the gloomiest description.

ALBANY.

Quotations at the yards are as follows:—

Pine, clear, 1/2 M.	\$3 00-45 00
Pine, fourths.	45 00-45 00
Pine, selects.	45 00-47 00
Pine, good box	22 00-33 00
Pine, common box	11 00-13 00
Pine, 10-in. plank, each	00 42-00 45
Pine, 10-in. plank, culls, each	00 23-00 25
Pine boards, 10-in.	00 25-00 32
Pine, 10-in. boards, culls	00 16-00 20
Pine, 10-in. boards, 10 ft., 1/2 M.	25 00-32 00
Pine, 12-in. boards, 10 ft.	25 00-32 00
Pine, 12-in. boards, 13 ft.	25 00-32 00
Pine, 1 1/2 in. siding, select.	40 00-45 00
Pine, 1 1/2 in. siding, common.	35 00-40 00
Pine, 1-in. siding, select.	40 00-45 00
Pine, 1-in. siding, common.	35 00-40 00
Spruce, boards, each.	00 00-00 10
Spruce, plank, 1 1/2 in., each.	00 00-00 10
Spruce, wall strips, each.	00 12-00 13
Hemlock, boards, each.	00 00-00 11
Hemlock, joist, 2x6, each.	00 04-00 32
Hemlock, joist, 2x4, each.	00 04-00 14
Hemlock, wall strips, 2x4, each.	00 00-00 11
Black walnut, good, 1/2 M.	100 00-120 00
Black walnut, 3/4 in.	80 00-90 00
Black walnut, 1/2 in.	70 00-80 00
Scymore, 1-inch	25 00-30 00
Scymore, 8-inch	21 00-23 00
White wood, 1-inch and thicker	38 00-40 00
White wood, 8-inch	28 00-30 00
Ash, good, 1/2 M.	40 00-43 00
Ash, second quality, 1/2 M.	25 00-30 00
Cherry, good, 1/2 M.	60 00-65 00
Cherry, common, 1/2 M.	25 00-30 00
Oak, good, 1/2 M.	40 00-43 00
Oak, second quality, 1/2 M.	20 00-25 00
Basewood, 1/2 M.	25 00-30 00
Hickory, 1/2 M.	40 00-40 00
Maple, Canada, 1/2 M.	25 00-30 00
Maple, American, per M.	25 00-28 00
Chestnut, 1/2 M.	25 00-40 00
Shingles, shaved, pine, 1/2 M.	0 00-0 6 1/2
" clear,	0 00-0 5 00
" extra, sawed, pine,	4 30-4 50
" cedar,	0 00-0 3 00
" cedar, mixed	0 00-0 3 3/4
" cedar, XXX	0 00-0 0 00
" hemlock	2 25-0 2 50
Lath, hemlock, 1/2 M.	0 00-0 2 37
Lath, spruce,	0 00-0 2 13

MONTREAL.

From Our Own Correspondent.

MARCH 10. —Business in Montreal is moderately active, and distinct improvement can be noted during the past fortnight. The city trade is fairly good and quite a number of substantial country orders are coming in, which keeps up some activity at the yards in making the shipments.

Prices remain firm and payments are satisfactory.

The following are the quotations at the yards:—

Pine, 1st quality, 1/2 M.	\$3 00-40 00
Pine, 2nd "	25 00-30 00
Pine, shipping culls, 1/2 M.	11 00-12 00
Pine, 4th quality deals, 1/2 M.	10 00-12 00
Pine, mill culls, 1/2 M.	7 00-9 00
Spruce, 1/2 M.	10 00-13 00
Hemlock, 1/2 M.	9 00-10 00
Ash, run of log culls out, 1/2 M.	20 00-25 00
Basewood, 1/2 M.	18 00-21 00
Oak, 1/2 M.	40 00-45 00
Walnut, 1/2 M.	60 00-65 00
Cherry, 1/2 M.	80 00-85 00
Hickory, 1/2 M.	35 00-40 00
Hard Maple, 1/2 M.	25 00-30 00
Lath, 1/2 M.	1 00-0 2 00
Shingles, 1st, 1/2 M.	2 00-0 3 00
Shingles, 2nd, 1/2 M.	2 00-0 0 00

CORWOOD.

The cordwood market remains dull and neglected and prices are unchanged

Long Maple, per cord	\$ 6 00-7 50
Long Birch	6 00-7 00
Long Beech	5 00-6 50
Tamarack	5 00 00

OSWEGO, N.Y.

From Our Own Correspondent

Three uppers	\$12 00-16 00
Pleking	32 00-35 00
Cutting up	24 00-26 00
Five Common	22 00-25 00
Common	14 00-18 00
Culls	11 00-14 00
Mill run lots	10 00-12 00
Slidings, selected, 1 in	30 00-35 00
" 1 1/2 in	32 00-38 00
Mill run, 1x10, 13 to 16 ft	10 00-12 00
Selected	21 00-24 00
Shippers	14 00-16 00
Mill run 1 1/2x10	17 00-20 00
Selected	21 00-23 00
Shippers	14 00-16 00
Mill run, 1 & 1 1/2 in. strips	15 00-18 00
Selected	22 00-25 00
Culls	11 00-15 00
1x10 test for clapboards	25 00-35 00
Shingles, XXX, 18 in. pine	3 10-0 3 50
XXX Cedar	2 75-0 3 00
Lath 1 1/2, No 1	1 80-0 1 90
No 2	1 00-0 1 25

TONAWANDA.

CARGO LOTS—MICHIGAN INSPECTION.

Three uppers	\$12 00-14 00
Common	18 00-24 00
Culls	10 00-13 00

WOOD-WORKING PATENTS.

The following list of patents relating to the wood-working interests, granted by the United States Patent Office, February 23rd, 1886, is specially reported by Franklyn H. Hough, solicitor of American and Foreign patents, 926 F. Street, N. W., Washington, D. C.

- 336,782—Edger, gang—E. H. Barnes, Brooklyn, N. Y.
- 336,813—Lath for turning irregular forms—O. Kroner, Sandusky, Ohio.
- 336,674—Plane—J. A. Traut, New Britain, Conn.
- 336,637—Saw—G. N. Clemson, Middleton, N. Y.
- 336,730—Saw—J. J. Parker, Aitkin, Minn.
- 336,661—Saw hanging—T. W. Peck, Milwaukee, Wis.
- 336,671—Saw mill head blocks, nose guard for—C. Esplin, Minneapolis, Minn.
- 336,633—Sawing machine, band—J. J. Bowen, San Francisco, Cal.

PATENTS ISSUED MARCH 2.

- 336,933—Saw setting and gumming tool—D. McDonough, Eagle River, Wis.
- 337,083—Saw tooth—W. B. Risdon, Trenton, N. J.
- 337,103—Saw tooth—C. J. Wilson, Knoxville, Tenn.

THE PROSPECTS FOR THE TRADE.

As the lumber industry is of vast importance to the inhabitants of the Ottawa Valley, we have by inquiry in well-informed quarters procured the following information.

Some days ago we published a list of sales, showing that the trade, so far as the manufacturers were concerned, was in a healthy condition, but as a general impression prevailed that these sales were more of a speculative, than of a genuine nature, we decided to investigate the matter for ourselves, with the following result:—The American market, although not booming at present, is what a shrewd man would say in a most healthy state, as their stocks are low, and the dealers are confident of a good year's trade; and as the iron trade in the States is much healthier than it has been for some time, it is reasonable to forecast that they are about right. The English market is in much the same position, their stocks are also light, and although trade with them is now rather quiet, yet they too are looking for a good active year, and judging from the manner in which old and experienced dealers are buying up everything in the shape of deals, at sellers' prices it is only reasonable to expect a good trade from that quarter. The news from the South American is far from encouraging, and nothing like what it was at this time last year. The shipments there last year were greatly in excess of the requirements, and with the present unsettled state of the country, and the dread of cholera next season, the outlook in that quarter is, to say the least, very unsatisfactory. In any event neither our lumber kings, nor any of the parties in this section can be affected by a falling off of the trade in any of the above markets, as all of the cut of 1886 in the Ottawa Valley, is sold and in second hands, and at better prices than were ever procured in the previous history of the trade.—*Ottawa Journal*.

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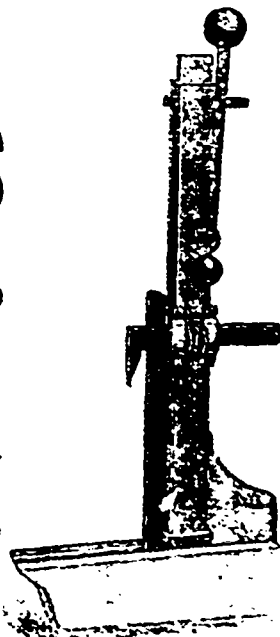
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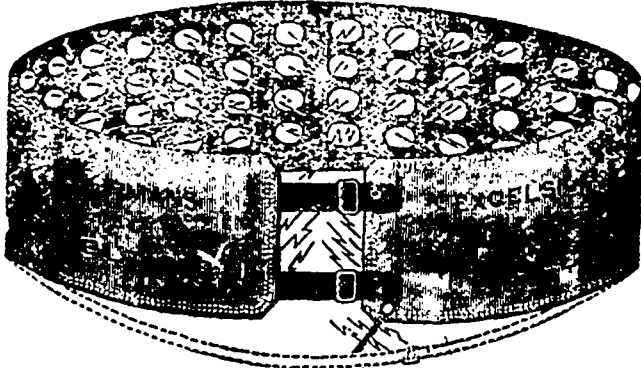
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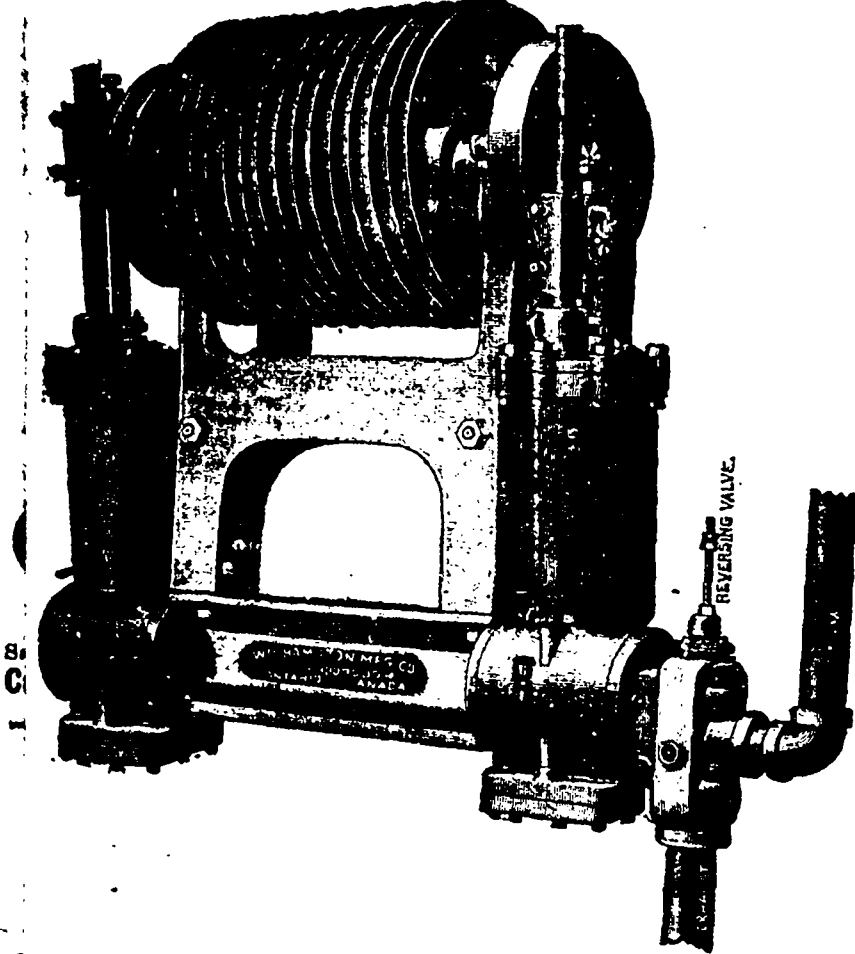
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FOR STEAM FEED IN CIRCULAR MILLS WITH RACK OR ROPE.

*This Engine has practically but two moving parts, aside from cranks and shafts. The whole array of eccentrics, valves, valve rods, connecting rods, cross heads, slides, levers, rock shafts, bell cranks, etc., is done away with, and the very perfection of simplicity, compactness, durability and cheapness attained.*



The above engraving illustrates the Twin Engine, 10x16, for Rope Feed, for Saw Mill Carriages. The spool is 27 in. diameter, 30 in. face, is grooved 2 in. pitch for 1½ in. rope. The shaft is steel, 4½ in. diameter, with disk cranks. No connecting rods, eccentrics or valve rods to get loose and out of order. The ports are in the trunions, and worked by an oscillation of the cylinders, and are held in their place in the downward motion by a steam cushion below. The sawyer's valve is a perfect balance, and by moving this valve the engine can be reversed, stopped or started almost instantaneously if necessary, as the sawyer has perfect control of it by his lever either to go fast or slow. Should the sawyer let go of his lever either by mistake or any other cause, it is balanced so that the valve will come to the centre and cut the steam off both cylinders and stop the feed. When standing, the lever is locked or fastened, so that it is impossible for it to start off itself. The engine stands upright below the carriage, and bolted to two upright beams, placed on the mill for the purpose. When a rack is preferred in place of the rope, we put on a steel wheel 30 in. in diameter, and the engine placed high enough to work into the rack on carriage bar, or if the beams come in the way, an idler wheel can be used between engine and rack segs; or, the engine can be placed at a distance and have a shaft

from it to the carriage; or it can be placed in the engine room, where it is under the control of the engineer for oiling, thence by shaft and pinion to carriage rack bars. These engines are well adapted for cutting long logs, or where the logs are mixed, the advantage of this feed will be apparent to mill men. When the carriages are used in two or more sections, the couplin and uncoupling of each section is quick and simple.

There were two of these feeds working this summer and giving the best of satisfaction, one with rope feed at James Playfair & Co's Mill, Sturgeon Bay, near Waubaushene, and one at the new mill furnished by us to Francis Carswell & Co., at Calabogie Lake, on the Kingston and Pembroke R. R. This mill is working with the Rack and Pinion feed, and drops from fifteen to seventeen stock boards per minute. We have also sent one to the Rathbun Company, Deseronto, to put in to feed their heavy Circular Mills. They will also commend themselves for various other cases, especially for running Elevators, hoisting Engines, and wherever a simple and easily reversible motion is required.

**We would also call attention to our Improved Hand Saw-Mill for cutting logs**

**We guarantee this to be the best Mill of its kind got up, and would ask any one wanting a good Band Saw-Mill to communicate with us. We would also call the attention of Mill Men to our new IRON GANGS, CIRCULAR MILLS and MILL MACHINERY. For further information, prices, &c., address the Manufacturers,**

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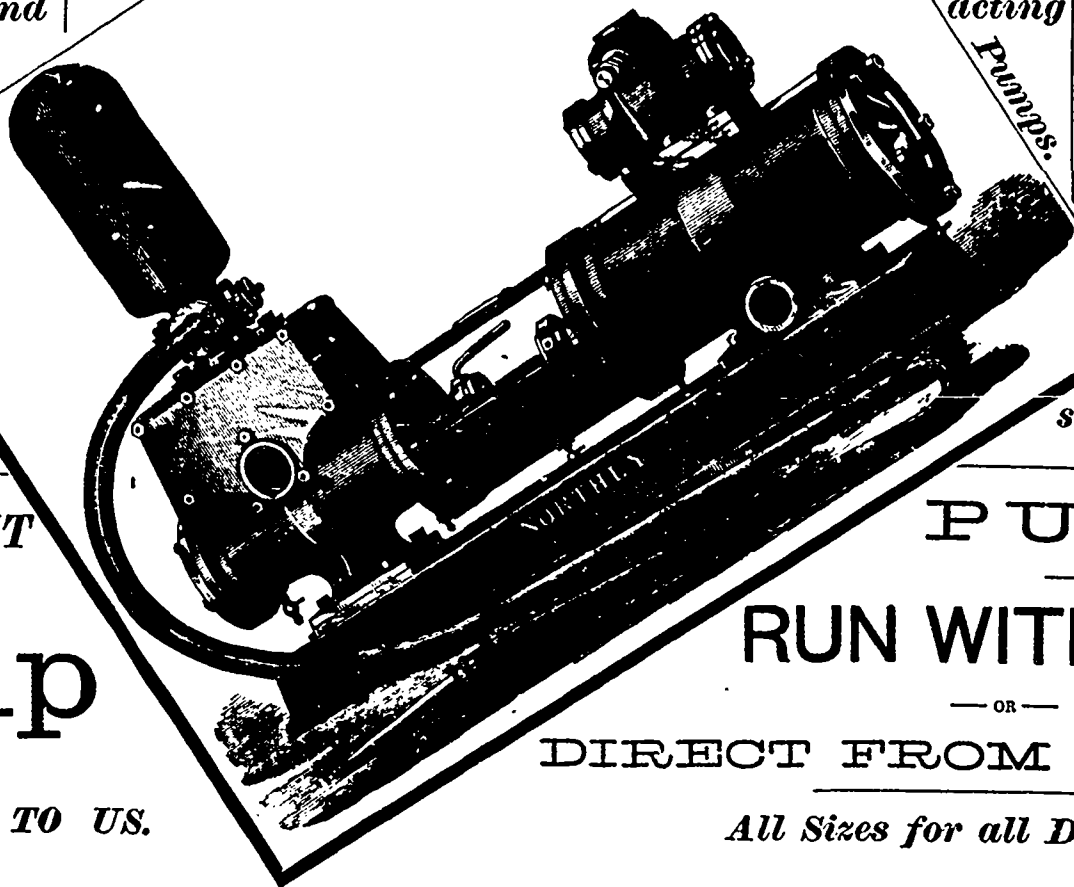
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