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NO. 8.

MANUFACTURES OF WOOD.

Canada has been called a "wooden country." How far this is properly a term of reproach we cannot say; but seeing that wood in the raw stage of squared logs or lumber, forms \$25,000,000 worth, or say a fourth in value of our yearly exports, and that we send abroad a considerable aggregate of manufactures of wood besides, we may well bear the nick-name. Let us, however, eschew such wood goods as wooden nutmegs or hams. We ship to Europe, already, tool handles, broom handles, carriage spokes, hubs and felloes, spools or bobbins, brush backs, &c., &c., in considerable quantity. We might do more in the direction of wooden ware export and indeed it seems to us that, in this, as in other lines, Canadian manufacturers will have to look about them for foreign markets, since the means of production, over-stimulated as they have been are outstripping the home demand.

A recent article in the St. John Sun deals with the subject of "a market for wooden ware," and alludes to the extensive business done in Great Britain and the Continent by American makers of wood goods, as an encouragement to New Brunswickers to go and do likewise. Some of them have gone, and have done well. Others in that province as elsewhere, being less prudent or less fortunate, have not found any bonanza in the venture. But here are the facts: Great Britain and other European countries use enormous quantities of wooden goods, and they are largely made in the United States and shipped from Boston and New York. Why should not Canada, whose supplies of timber are nearer the sea-board compete successfully? It can be done; but it is not likely to be done in a day. Nor is it to be done without observation and pains. Some of the requisites are thus set forth in the Sun's article:

"A knowledge of the English market is essentially necessary at the outset, no matter what kind of wooden manufacture may be decided upon, and in no way can this be more accurately secured than by personal observation and investigation; indeed it would be advisable for our manufacturers to place a practical man in England, one thoroughly acquainted with our woods," to meet the deals and manufacturers there. Such a man, it is contended, could settle all preliminaries and put the Canadian and home manufacturers in direct communication with each other, for much of the supply of such wares will be required in an unfinished state, to be put together after their arrival in England.

"Goods must invariably be consigned to people who understand this special branch of trade, one great cause of failure in the past being due to the fact that our New Brunswick manufacturers sent their wares to personal friends, such as ship brokers, etc., who were to-

tally unacquainted with what was going on outside of their own lines, and who did not know how to dispose of the goods when received, to the best advantage. Pieced goods, such as boxes of all kinds, etc., must be packed in the smallest possible compass, so as to reduce freight charges to a minimum, and should be consigned to parties who can put them together before placing them on the market. In all cases, samples must be secured from England, and when received must be carefully reproduced, the slightest deviation often ruining their sale."

In this, as in other business, it is a fatal mistake to employ as salesmen persons who have not a practical acquaintance with the market. The other circumstance referred to, which we have italicized, is one of great importance. The English, the Scotch, the Australians, and the Brazilians, when they grow accustomed to a certain style of shoe, shape of butter tub, description of rocking chair, will use no other. The lack of a certain tiny flourish on a shoe-top, made in silk with a sewing machine, as per sample, has been known to spoil the sale of a thousand pairs. And Brazilian firms will refuse to buy, or even to sample, the choicest lard or good kerosene, simply because it lacks a customary brand or is put up in unaccustomed packages. Therefore, specimen articles must be reproduced with the utmost exactness, and the fancies of the foreigners must be catered to in respect of package.

Mr. James L. Fellows, a public-spirited citizen of St. John, has been making enquiry abroad in the interests of his province, about wood pulp and other products of Canadian wood for export. And he has furnished valuable data. Mr. Ira Cornwall, jr., who is at present in this country, has been doing likewise, and gives the result of his enquiries to the journal we have quoted. Says Mr. Cornwall, he is speaking of New Brunswick:

"Chief among the articles that can be manufactured here with profit are packing boxes of all sizes, our woods being really better suited for this work than those found on the continent. Salt and fish boxes are also required in endless quantity. Window sashes, casings, doors, and door casings of the better class of woods can be sent to England at a good profit, though it is doubtful if it would pay to compete with the United States in sloop work of the cheaper wood.

Laundry and kitchen tables and patent folding tables are in demand; also cloth boards, pastry boards, rolling pins, potato mashers, wooden bowls of all kinds, clothes horses, wringers, towel rollers, ice-cream freezers, knife and fork boards and boxes, wash boards (a very large item), pails, tubs, churns, and handles for brooms, mops, hoes, rakes, hammers, hatchets and edge tools generally.

There is a large demand for common wood bedsteads, much of the supply of which article

is now received from Boston; while chairs and furniture in parts, hat and clothes wall racks, step-ladders, folding and patent ladders, bench screws, bobbins and spools are standard articles in unlimited request. There is a limited demand for shoe pegs. Toy or miniature washtubs, pails, chamber sets, wagons, wheelbarrows, log cabins, bureaus, sand mills, and fancy boxes, with some taking novelties, from a special line that could be sent to England with profit to all concerned.

House fittings and furniture made according to the architects plans, open up a line for the higher class of wood work which could be operated by a competent agent on the spot, supplied with sample woods, etc., who could negotiate directly with the architects. Indeed the present is a most favorable opportunity for initiating this industry, as mahogany and dark wood generally are now considered bad form in England, the lighter woods taking their place. A factory could here find a field for the manufacture of immense quantities of the better class of flooring, borders and base boards, wains cottings, window sashes, doors, carved mantels, etc.—the furniture of the house to correspond with its woodwork from designs by the architect. * * *

Special attention must be paid to the manufacture of spools and bobbins. The very best seasoned woods must be used, and the articles made to an exact gauge. As silk, etc., is reeled not measured, the necessity for accuracy in the size of the spool is obvious. There is tremendous demand in England just now for Venetian blinds; while ships' furniture presents another line in which very much can be done.

Mr. G. Flowwelling, a New Brunswick manufacturer, who has devoted much time and care to obtaining a knowledge of the English and West Indian market for wooden ware, in speaking of the vastness of the field awaiting the enterprise of New Brunswickers, says:—"Properly worked, this business is large enough to keep every mill in New Brunswick, and many more, running full time to supply the orders that would come to hand."—*Monday Times*.

LUMBER TRADE OF FRANCE.

In viewing the lumber trade of France during 1883, the *Marchand de Bois*, of Paris, says the lumber dealers generally did not regret to see the year's business brought to a close, as it had been for the most part an unprofitable one, and the number who did profit by it were quite limited.

The year had opened with excellent prospects; with stocks moderate; but the anticipations were early in the year dissipated by unexpected complications in the industrial affairs of the country. Those who had made purchases at the beginning of the season had every prospect of selling at a profit, but the status of the out-

put was of such a character as to alarm the larger dealers; they forced their goods on the market and disturbed values. The fall in prices was hastened without apparent cause, but was in the main attributable to the general stagnation of affairs throughout the country, especially the department of building. This stagnation seriously manifested itself in Paris, where the excess of construction was first felt.

To show the extent of the decline in prices, it is necessary only to quote comparative prices of a few dimensions. White wood timber which brought a remunerative price at the close of 1882, declined in one month from 20 to 25 francs per standard (\$2 to \$2.25 per 1,000 feet); and battens of good ordinary quality, that brought 120 francs (about \$23) fell to \$90 to \$95 francs, and planks which were readily sold at the beginning of the year at 120 to 140 francs, fell to 85 francs. Notwithstanding this heavy decline in values, failures in the lumber trade were very rare.

The year 1884 opens with cheerful prospects. Stocks are small, and if the affairs of the country generally does not receive a back set the lumber trade of the year promises to be satisfactory. In the import trade steam was largely used, but there is always a demand for sailing vessels, as a number of the French ports do not possess sufficient water for steamers. During eleven months of 1883 there were imported into France from the Baltic, Canadian and pitch pine ports, 135 million tons, against 155 million for the month of 1882.

Redwood.

Humboldt county contains 450,000 acres of redwood, which is estimated to cut on an average, 100,000 feet to the acre. On this are at work about fifteen mills, with a capacity of 20,000 to 30,000 feet each per day; altogether probably near 600,000 feet of lumber a day is cut in the county. The whole amount of redwood in the State is estimated by the Census Bulletin at twenty-five billion, five hundred and fifty million feet, and as an idea of how much is consumed it may be of interest to know that 186,735,000 feet were used up in the year ending May 21, 1880. This consumption has increased enormously since then, and the amount must be now very much greater, as they are now supplying a very large foreign as well as domestic demand.

The Uses of Paper.

There seems to be no limits to the manufacture of articles made of paper. Houses, smoke stacks, steamships, are among the recent products, and now we are told in earnest that experiments are carried on to make boots and shoes from paper. Well, there is no telling where invention will stop in our present age, and although we may doubt the success of this attempt, we cannot deny its possibility.

AN INDESTRUCTIBLE TIMBER.

The Western Australian timber is attracting the attention of European manufacturers and builders on account of its strength and durability, and the *Timber Trades Journal* has undertaken to collect all reliable data, bearing upon the subject, from which we learn the following:

Analyses made by Prof. Abel, in England, show the valuable property of the timber which enables it to resist decay, and at the same time form a vegetable poison to insect life. Prof. Abel says: "In accordance with instructions received, I have made a qualitative analysis of sundry specimens of the Jarrah, with a view of obtaining from its chemical composition, actual proof of the principle which renders the timber impervious to the action of dry rot, and proof against the attacks of the *teredo navalis* and the white ant.

"I find that the duramen contains from sixteen to twenty per cent. of an astringent gum, somewhat resembling the gum kino of commerce, sparingly soluble in alcohol, but completely so in boiling distilled water.

"Upon further analysis, this gum was found to consist almost entirely of coloring matter, and a highly astringent vegetable acid, which may be termed 'Jarrah tannic acid,' inasmuch as it possesses some of the characteristics of tannic acid, together with other relations peculiar to itself.

"I have failed to discover an alkaloid or organic base (although several different processes have been adopted), since, after the separation of the gum, albumen and coloring matter, I obtain nothing more than traces of saccharose and glucose with fatty matter, which in the present inquiry are of little or no importance. It is therefore evident that the active principle of the Jarrah is the powerfully astringent acid, which, uncombined with any base, is suspended in the gum, and thereby uniformly diffused throughout the tissues of the wood in a thin section, of which innumerable translucent particles of the gum may be seen by the aid to a small convex lens."

The following is an extract from a communication forwarded to India, by H. C. Victor, Esq., C. E., of Perth, in reply to inquiries made by some gentlemen engaged in the carrying out of several large contracts for public works in Scinde, Rajpootana, and Central India:—

"Undoubted authority is unanimous in declaring that the timber of the Jarrah under certain conditions, is indestructible. His excellency, Governor Weld, in a communication to Earl Kimberly, on the subject of Jarrah for marine purposes, expresses himself to the same effect, his positive declaration being based on strict inquiry, and the collection of information from all sources likely in any way to set at rest doubt, and to introduce to the world its true character. Prof. Von Mueller, the Government Botanical Director of Victoria, a gentleman well acquainted with the Jarrah, says:—Its wood is indestructible, is attacked neither by chelura, teredo, nor termites, and is therefore so much sought for jetties and other structures exposed to sea water. Vessels built with this timber have been enabled to do away with all copper plating. It is very strong, of a close grain, slightly oily, and resinous in its nature, works well, takes a fine finish, and is by shipbuilders in Melbourne considered superior to oak, teak, or any other wood for this purpose. The committee of Lloyd's, under the authority of their secretary, after the representations of his Excellency, Governor Weld, informed the Earl of Kimberly, that they had determined to rank this timber with those named in line No. 3, table A, attached to the societies' rules for the construction and classification of ships. Among the facts arrived at by the Government of Western Australia, in submitting this timber for acknowledgment at Lloyd's, are several of a very interesting and valuable character. The Imperial Government clerk of works at Fremantle, speaking from twenty years' experience, and use of considerable quantities of this timber, says:—It is remarkably free from all decay incidental to woods which are in contact with, or buried under ground, under water, at mortises or other joinings, in piles in sea jetties, and in planking sea-going vessels, without sheathing or other protection, it has proved

sound and enduring to an extent which appears to denote exemption from decay, so far as evidence can be derived from observation on timber, exposed for upwards of thirty years. I have recently taken up piles that were driven for a whaling jetty in the year 1834 or 1835, making a period of at least thirty-five years; the timber is small, but perfectly sound and free from insects, although the place is swarming with teredo.

"The purposes to which Jarrah timber may be applied are innumerable; it fills the place where oak and teak could not be admitted, as well as where they are used; and as the material can be supplied at a price somewhat less than the timbers named, in the log, at half their price in scantling, it should be employed where hitherto timber has been considered undesirable—for instance, in sea-facing, dock-lining, landing-stages, break-waters, and beacons; kerbs, road-paving, block-flooring, weather-boarding, and wainscot-partitions; wallings, ceilings, and roof-coverings. As a substitute for the roofing usually constructed in India, I believe shingling with Jarrah, only requires to be known to be appreciated. At a distance these shingles might be mistaken for grey slates; they lie so close and regularly; thin as they are, they make a remarkably cool roof, and when once set require little or no repairs for years. I have seen here, where many roofs are of this material, houses that have not cost \$5 in roof repairs for twenty five years. Their lightness admits of a considerable saving in the roof framing, and yet with all these advantages, the shingles do not readily catch fire, burning charcoal thrown on them chars a hole, but does not flame them. It is one of the most unflammable timbers that can be found. A fair trial cannot fail to make the Jarrah very popular."—*Ex.*

THE PLANTING OF TREES.

A new word, forestry, formerly a mere dictionary word, and hardly that even, has come into common daily speech, and we hear of forestry congresses, schools of forestry, and other applications of it which indicate altogether a change of sentiment on the subject of trees. For centuries the dweller on this continent looked upon the forests that overspread so much of its surface as a barrier in the way of his progress which had to be removed. So, with might and main the pioneers everywhere assailed them, and ruthlessly to right and to left a path was hewn out for advancing civilization. It was long before any practical man discovered that such indiscriminate slaughter of the trees of the forest was a mistake, and those who first uttered words of warning received small attention. Only when the great treeless plains of the west, overswept by icy blizzards, made the new comers regret the grove shelters of the east, did men begin to realize the blunder of making havoc among those natural protectors. Other regrets followed in time as it was discovered that not only for warding off storm in winter and heat in summer, not only as fuel in building material, but as serving an admirable purpose in connection with climate and temperature and the distribution of rainfall and other features of the wonderful economy of nature, the destruction of the trees in the usual wholesale fashion was a waste of resources of which the consequence could not fail to be widely injurious. During the last few years this conviction has gradually spread over the whole of North America (not to speak of other countries) and with it has come a desire to repair, as far as possible, the mischief done, as well by putting restrictions on the cutting of timber and taking other measures for its preservation as by giving all possible encouragement to forest renovation and tree-planting, where needed.

It is not necessary to recount all that has been done in this direction during the past few years. Suffice it to say that both in the United States and our own provinces governments and people have fully awakened to the advisability of vigilance in preventing further waste, and of fruitful effort in reforestation, and what the public now require to know is exactly what and how to plant, so as to effect most good. Anyone who would compile a handy volume or manual on the subject, giving intelligibly and concisely all needful directions on those points would surely, one might think, be performing a

task of universally recognized utility. Nor, perhaps, could any one be found better fitted to undertake it than the zealous and active chief of the forestry division in the department of agriculture at Washington. For years Mr. N. H. Egleston has, by reports, addresses at conventions and articles in magazines, been advocating the cause of forestry and recommending the course to pursue in actual conditions and circumstances. His name is as familiar in Canada as in the United States to all those who have given the subject any attention, and there is no one whose authority on any forestry question is likely to have more influence than his. It is, therefore, with pleasure we announce that Messrs. Appleton & Company have just published a little work from his pen entitled a "Hand-book of Tree-planting" which is at once concise and comprehensive and thoroughly practical. And as it deals with the whole extent of American territory, it is almost as well adapted for use in Canada as in the United States.

Mr. Egleston says that a high civilization is impossible without trees and, therefore, no time should be lost in covering, if possible, the treeless regions of the continent. The wheat fields of the plains are made far more productive when supplied with tree shelter. For these and other reasons he does not hesitate to place the treeless western regions first in giving his answer to the question, where to plant? Of the practicability of tree planting there, even in masses, he writes hopefully basing his judgment on experience. The hill sides and mountain slopes of the north and east and the Pacific region, stony, sour, sandy or otherwise sterile lowland tracts, lines of railroad, and the country roads and streets of cities and towns, follow in the order named as localities on which trees might be probably planted.

On the question, what to plant, Mr. Egleston begins by saying that in general it is safe to advise the inexperienced tree-planter to plant native trees—that is, such as grow spontaneously in the region where the planting is required. On that point the decision of nature herself may be accepted as to the best choice to make. It may be added that, as Mr. Gibb and Prof. Budd have shown, the trees of the old world may generally be expected to thrive when planted in like climates and conditions in the now. But how about those treeless wastes where it is so important to have both a speedy and permanent covering of woody vegetation? In such case let the puzzled experimenter go to the nearest stream or wherever a few trees have been spared from fiery devastation or are struggling into life amid surrounding desolation and take them as his sure indication. Seeds or sprouts from those trees he may plant with confidence and after he has covered the nakedness of the ground and made himself a little shelter, he may persevere with still greater confidence, making new trials with suitable exotics till the injuries of the past have been repaired. On this continent, both in the United States and Canada, there is ample variety from which to choose, whether for fuel or building, or ornament or shelter be the object.

We cannot, of course, attempt to summarize the valuable information that Mr. Egleston gives his readers on the manifold stock of native and domesticated trees, nor can we pretend to give the substance of his instructions as to the mode of tree-planting. We have called attention to his work as one likely to create and deepen the interest in a most important movement—one of the most important in which the statesman or the citizen can be engaged at the present time.—*Montreal Gazette.*

FORESTRY.

In the annual address of the President of the Fruit Growers' Association for Ontario we find the following remarks on forestry:—

In the important department of forestry, which now comes within the scope of our Association, much useful work has been done. The report of the delegates appointed to attend the meetings of the American Forestry Congress last year, which was published as an appendix to our report, was full of useful information; and has done much towards bringing about a healthy sentiment in favor of tree planting. Early in August last a delega-

tion from this association, consisting of your Secretary and President, were sent by the Commissioner of Agriculture to represent the Province of Ontario at the meeting of the Forestry Congress held at St. Paul, Minnesota. The assembly was presided over by the United States Commissioner of Agriculture, Dr. Geo. B. Loring, and some important business transacted. Our sister Province of Quebec was represented by the Hon. Mr. Joly, of Quebec, and Mr. Stewart Thayne, of Ottawa. At the close of the meeting the delegates of your association accompanied by the Hon. Mr. Joly, visited Manitoba where they were joined by Mr. Gibb, of Abbotsford. At the instance of the Deputy-Minister of Agriculture, a public meeting was called at Winnipeg, at which the Lieut-Governor presided; where the visitors were glad to give a large and deeply interested assembly, all the information at their command. As one of the results of our visit, a Provincial Association was there and then formed for the promotion of Horticulture and Forestry, and an order for hardy Russian fruit for Manitoba is now being forwarded along with that for Ontario.

REVIEWS.

SHAVINGS AND SAWDUST.—We have received from the publishers of the *Lumber World* of Buffalo, N. Y., a very interesting and instructive work called "Shavings and Sawdust," by Mr. John Kane. It treats in a very practical and yet lively manner of the designing, construction, care and operation of woodworking machinery. Some of the chapters were published in the *Lumber World* under the name of "Observer," but they have been extensively revised, and much has been added. To the millowner, to the manufacturer of machinery, and to the mechanic, whether employed in the making or using of woodworking machinery, this work will suggest ideas that may be of the utmost value to them. Some chapters such as those on belts are even of more general application. The book is well printed and got up. A portrait of the author forms the frontispiece.

Testing Steel Rivets.

The following are the test instructions issued by the British Admiralty for testing steel rivets. The rivets are to be made of steel bars, having an ultimate tensile strength of not less than 58,000 pounds per square inch of section, nor more than 67,000 pounds, with a minimum elongation of not less than twenty per cent. in a length of eight inches. A portion of one bar in every fifty to be taken for testing before being made into rivets. Pieces cut from every bar, heated uniformly to a low cherry red, and cooled in water at 82° F., must stand bending in a press to a curve of which the inner radius is equal to the radius of the bar tested. Rivets are to be properly heated in making, and the finished rivets allowed to cool gradually. The rivets to stand the following forge tests:—(1.) The shank to be bent double cold, without fracture, to a radius equal to the radius of the shank. (2.) Bent double hot, without breaking, to as small a radius as possible. (3.) Flattening of the rivet head while hot, without cracking at the edges—the head to be flattened until its diameter is 2½ times the diameter of the rivet shank. (4.) The shank of the rivet to be nicked on one side, and bent over to show the quality of the material. One rivet in every hundred to be forge tested as a sample.

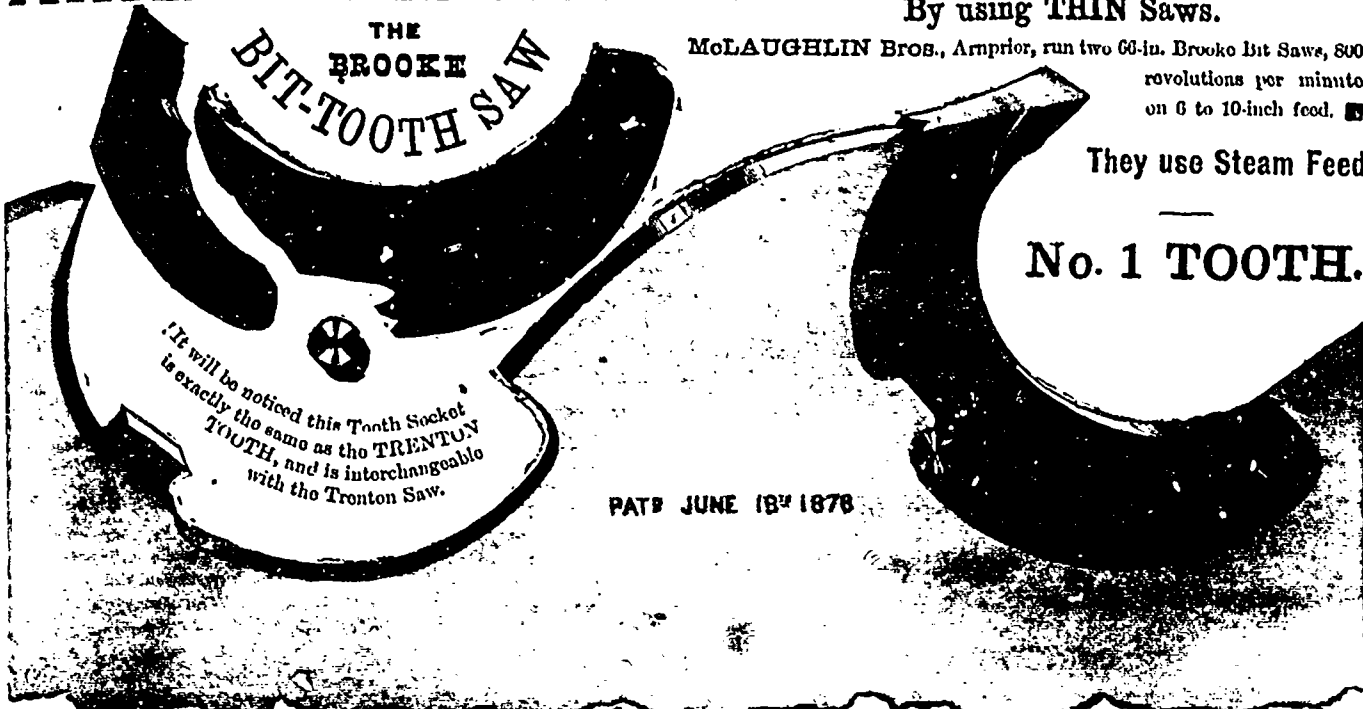
CURE FOR RHEUMATISM.—Sufferers from either acute or chronic rheumatism will find no more ready relief or better cure than Hagedorn's Yellow Oil, the popular household remedy for external and internal use in all painful affections.

NAMES, FACTS AND FIGURES.—Will be cheerfully given by the proprietors of Burdock Blood Bitters, regarding the many certificates of wonderful cures made by that medicine in chronic diseases of the blood, liver and kidneys, revealing proof that it is beyond the possibility of dispute by the most incredulous.

A QUESTION TO THE POINT.—Reader, have you a languid, weak and tired feeling, with nervous exhaustion, especially in the early spring? Then your liver is inactive and circulation poor. Arouse the torpid liver, cleanse the sluggish blood and regulate the secretions with that purifying tonic Burdock Blood Bitters.

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SAVE YOUR TIMBER
By using THIN Saws.

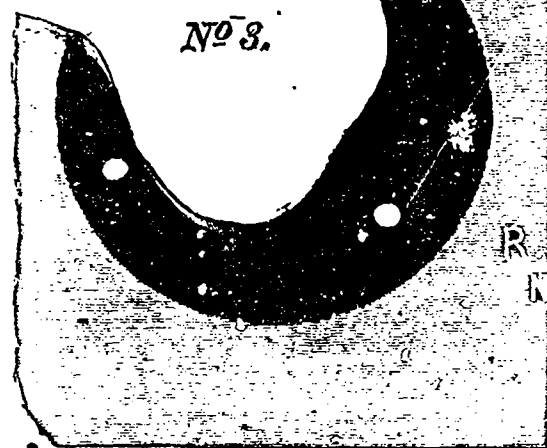


VIZ.
AMERICAN SAW Co.
Emerson, Smith & Co.
R. HOE & Co.
Hubbard, Bakewell & Co.
Inserted Tooth,
BIT TOOTH,
AND
SPECIALLY THIN SOLID SAWS

With this Saw you have either a Bit Tooth Saw or ordinary Inserted Tooth Saw, with teeth two-and-a-half inches long, both fit same socket and are interchangeable in a few minutes. These Bits require no gumming, and very little filing; are so firmly held that they will stand all necessary swaging, and can be worn down to dotted line shown in cut; they rest on lugs, saving the strain on the rim of the saw. For these reasons they will cut more and better lumber at less cost than any other tooth. **EXTRA BITS (per 100) No. 1, \$9; No. 2, \$8.—(per 1000), No. 1, \$80, No. 2, \$70.**
Two sets No. 1 Bits have cut 500 m. feet pine, in 60-inch saw, running 800 revolutions per minute, on 6-inch feed. E. E. PARSONS, Armprior.

We run 60 inch to 72 inch Solid Saws, as thin at center as 10 gauge at rim—saving, over a 7 gauge saw—1000 feet of lumber in every 25,000 cut.

McLAUGHLIN Bros., Armprior, run two 60-in. Hoe Saws, on 6 to 10-in. feed, 800 revolutions per minute. Write them.



HOE'S PATENT BIT SAWS.
One of the best Bit Saws made, above cut represents usual size tooth, one size larger and smaller made. Send for particulars and prices.

SAVE TIMBER



GROW RICH

EMERSON'S EXTRA THIN SOLID SAWS

Having special facilities for the manufacture of extra thin saws for board mills, we are prepared to receive orders for Circular Saws as follows:—64 inches in diameter, as thin as 12 gauge at rim and 11 at center, 64 to 66, 11 gauge at rim, 10 at center, 66 to 72: 10 at rim, 9 at center. Our unparalleled success with thin saws during past few years has induced us to recommend them to our customers. Our superior facilities are:—1st, Evenness of Temper; 2nd, Perfect Accuracy in Thickness, Saw balances perfectly; 3rd, Properly Hammered, to have equal strain in all its parts and at same time run true. This department is under the special supervision of J. E. Emerson, who has had 30 years experience and is without doubt the most successful circular saw maker in the world.

NO EXTRA PRICE FOR THIN SAWS.

EMERSON'S LUMBERMAN'S CLIPPER SAW

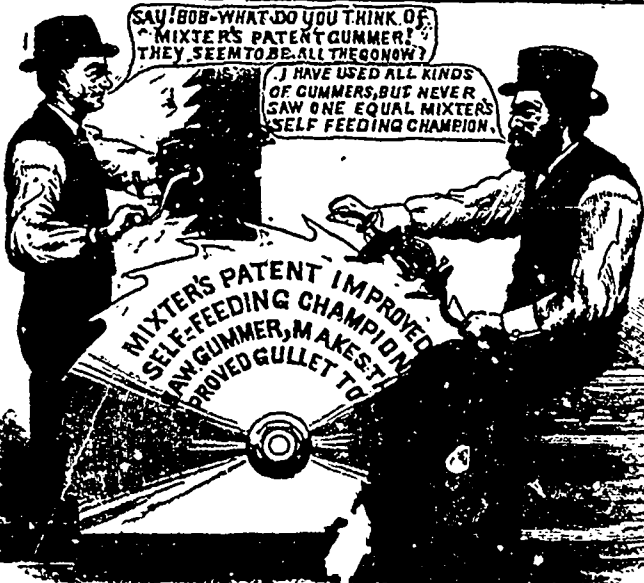
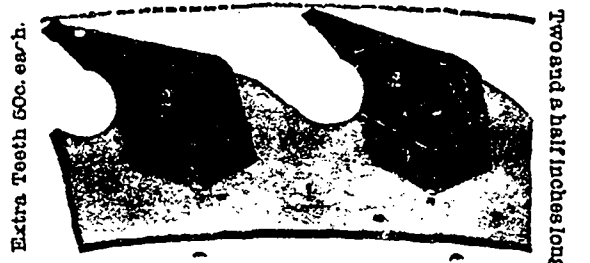
Can insert one tooth for every inch in diameter of Saw.



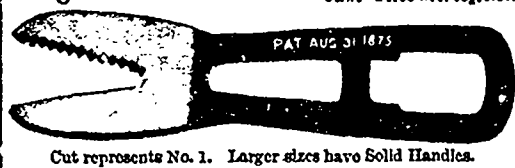
Designed specially for Thin Saws not thicker than 6 gauge at rim, or thinner than 16 gauge at rim.

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JARECKI'S PATENT SCREW, PLATE, and PIPE CUTTER, 1/2 inch to 2 inches, \$28.00; smaller ranges in proportion. Band Saws, Scroll Saws, Rainbow Saws for felling trees, American Shingle Saws, Lace Cutters, Cant Hooks, Flue Scrapers, Leather, Cotton and Rubber Belting.
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Ewart's Detachable Chain For Log Jacks, Rope Carriers, Sawdust Carriers, all sizes, Live Rolls, Trainers, Slow Speed Driving Belts, Tie Loaders, Slash Tables, Trimmers, Lumber Sorters, Shingle Block Elevators, and many uses about a saw mill.

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WE KEEP IN STOCK ALL KINDS OF

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SAW GUMMERS:—Stone's Original, large and small size; Mixer's Self-feeding Champion; Emery Wheels and Stands.
SAW SWAGES:—Hoe's, Emerson's, Mixer's, and American Saw Co.; from \$1.50 to \$6.00.
SIDE FILES, BELT STUDS, Detachable Belt Fastners.

WASTE IN THE LUMBER INDUSTRY.

Among all the wastes of the lumbering interests there is perhaps none as important as the sawdust. The reasons for this assertion are more than one. The waste of lumber during its cutting is more apparent, undoubtedly, but less expensive, because it does not need any extra handling and transportation. Unless parts of the trees remain on the ground or are burned, if necessity requires it, but, at any rate, the labor involved in its riddance is comparatively small. With the sawdust it is entirely different. All the waste resulting from this source in the manufacture of lumber has been paid for more than once. As it formed part of the original tree, it was paid for in cutting, then in the various modes of transportation, and finally the time is coming when its removal has to be paid for again, unless somebody will devise ways and means for its economic transformation into something else. The manufacture of gas from sawdust will hardly meet with favor at present, because the larger saw mills are more or less remote from cities where the gas could be utilized, and the bulky form will exclude any distant transportation unless its volume can be reduced so that the transportation charges will compare favorably with those of coals for the gas industry. The very instability of the lumbering districts, which change from place to place as timber is cut, will exclude the erection of any costly establishments for the utilization of sawdust in the neighborhood of saw mills, and the question, what to do with it assumes larger and larger proportions, not only from a pecuniary, but also from a hygienic point of view. It is now believed that malaria on the banks of the streams where saw mills are located, is largely due to the decomposition of the sawdust and other wastes thrown into the water by the mills. Fishermen complain that fishes either die or forsake their home waters as soon as the streams are made the receptacles of saw mill waste. In New York State, we are told, a proposition is on foot to prohibit by law the throwing of wastes into the streams by mill owners. Public opinion, that all important factor in the formulation of laws, has had, by constant agitation and discussion, its attention directed to the subject, and saw mill owners will do well to act on the principle "forewarned is forearmed" and encourage the inventors of the country to exercise their genius towards an economical disposal of the sawdust. A prize, high enough to be worthy of competition, could easily be subscribed for by the large number of saw mill establishments, and the successful inventor would be the benefactor of a large community of people in more than one sense of the word.—*Buffalo Lumber World*.

THE SAW AND ITS ORIGIN.

The Phœnicians, says the *Miller and Manufacturer*, are among the earliest of the races credited with using the saw, for these skilful mechanics are supposed to have erected the temple of Solomon, "stone-sawed within and without." The wasp may be said to have been the first sawyer, and probably initiated his next of kin, the mosquito and bee, into the secrets of his trade. Grecian mythology tells us, that the inventor of a saw once found the jaw bone of a snake, and used it to cut through a piece of wood, then imitated it by jaggung an iron plate and thus made a saw. The uncle of the inventor became jealous, and is said to have murdered his nephew. It may have been that the uncle wanted to secure the patent exclusively for his own benefit. Saws of the bronze age have been discovered in Germany and Denmark, but not in Great Britain, the metal of which was cast thin, and probably serrated by chipping and grinding. In the stone age, obsidian was used in Mexico, a kind of glass produced by volcanoes, usually of black color and opaque, except in thin splinters. It was so named according to Pliny, after Obsidianus who discovered it in Ethiopia. Saws and knives of obsidian have been disinterred in the alluvial ground of New Jersey beneath the recent gravel. They are held to prove extensive coast-wise trade, as no obsidian has been found closer than Mexico. The ground referred to as alluvial, is made by deposits of sand, clay, or gravel, formed by river action or by sweeps of

waves over the land, and as no authority is given us to believe that obsidian saws were actually used except in Mexico, it is presumed they were swept to these shores by the action of the waves, being cast into the waters by accident or design.

The saws of Lacustrians, and other early inhabitants of Europe, were of jagged flint; those of the Caribs or West India Islands, of notched shell. Japanese saws are shaped like butcher cleavers, the handle flattish, as if whittled from a piece of inch board, and the shank of the saw driven into the handle, the whole secured, by being wrapped with fine split cane. The teeth are narrower than those of our saws, giving more of them to the inch, much longer and pointed toward the handle. A saw discovered by Mr. Burton, and now in the British Museum, represents a long thin blade, tapering slightly at the end, with a thick, short, and awkward handle, the blade rudely driven into the wooden hilt. It is supposed to be of Egyptian make, and was discovered in Thebes. The saw is an ancient device, and probably as old as a knife with a ragged edge; they are of various designs, and different material according to the use to be made of them, and have been improved upon and modernized with each succeeding age, until they have attained the acme of perfection; skill and ingenuity can hardly devise a finer implement than the modern saw, made of best tempered metal, light and easily handled, and of graceful workmanship.

Not least in the varied collection of saws, and one that has been most useful in ancient and modern times, is the stone saw. According to Manetho, Sesostris is credited with having introduced the art of building with heavy stone. Heavy masonry previous to his time, is supposed to have been cyclopean; that is, heavy blocks were fitted together by adapting to each other in the wall, such faces as they already possessed. In the sixteenth century, marble became common in English architecture. Pliny give an account of cutting marble with the saw, and states the different kind of sand used. "For it is the sand," he says, "that does the work, not the saw."

Oliver Evans, of Philadelphia, in 1803, had a double-acting high-pressure steam engine at work grinding plaster and sawing stone. He drove "twelve saws in heavy frames sawing one hundred feet in twelve hours."

WOOD-CHOPPING IN RUSSIA.

In some parts of Russia, a European exchange tells us, there exists a decided feeling against foreigners; or one is nearer the truth in saying that the Russians hate strangers, and with the dim idea they have of what is right and what is wrong, they consider it their duty to persecute them as much as ever lies in their power. Cunning and intrigue seeming to form their character, they can no doubt do a great deal of harm to any one coming down here who is unprepared, and not knowing what sort of people they are.

In the end of 1882 a wood-exporting firm in Finland made an agreement with a Count v. M., in St. Petersburg, who was the owner of a large estate with extensive forests in this neighborhood, to take out the value of the woods for joint account. The forests contained about a million of trees, ripe for cutting, and these were to be made into money in as short a time as possible. Plans were made; a saw-mill with six frames and a planing mill were to be built, and 80,000 trees were ordered to be felled the first year. The trees were felled, the saw-mill was built, workmen were collected from Sweden, Finland and Riga. Last summer the saw-mill was so far ready that sawing began, when the firm in Finland unexpectedly came into difficulties. Money was not sent to pay the workmen. Some time after the firm in Finland was made bankrupt, and the owner left for America. The Count v. M. stopped payment in the real sense of the word, and there the poor workmen were left with their wives and children in utter want of money, in an exceedingly dangerous climate, where fever and illness came more more regularly than the daily bread, without means to buy medicine and without a medical man to attend them. Death visited them through typhus, and they had to bury their dead themselves, the Roman Catholic clergyman

asking an impossible price to read the service.

To tell of all the intrigues, all the unfulfilled promises, and the mean behavior on the side of the Russians against these poor people would be of no use. Suffice it to say that by their mutual efforts they got over the first part of the winter, and now, through the help of the Swedish Ambassador and the Finnish authorities in St. Petersburg, they were sent home to their respective countries, penniless. The business is entirely wound up, and the very fine saw-mill with its first-rate machinery and every now improvement, is standing waiting for a new owner who may have sufficient means to make himself independent of Russian intrigues, and be able to continue a business which began so hopefully a little more than a year ago. Strangers should not try their luck in Russia without being backed by people whom they thoroughly know and can have entire confidence in.—*Buffalo Lumber World*.

TREES IN THE SHETLAND ISLES.

Efforts have been made at various times in England to grow tumber trees in the Shetland Islands, but the success which has so far attended these experiments is not very encouraging, certainly not sufficient to warrant any special effort in that direction. The plantation prospered in the beginning, being fenced in by high enclosures, but as soon as the trees grew above the fences, the cold and powerful gales blasted the larger number. The largest tree found is stated to be only three feet in circumference at the ground, while the tops are stunted. *Forestry* in an interesting account of the Island says:—"The prize plantations of Shetland are situated in a little valley, near Lerwick, whose Norse designation would sound strangely in southern ears, for Englishmen have forgotten the sound of their original language, though proud of their Scandinavian blood. On this spot there are two well-sheltered small groves, whose planter, Dr. Arthur Edmiston, received a premium adjudged by the Highland Society of Scotland in 1824, "for having planted the greatest number of trees on the largest extent of ground, between February 1st, 1822, and November 1st, 1824, of any proprietor or tenant in Zetland." The writer then informs us that these groves are entirely of sycamore and adds rather humorously, "I admired but did not measure the trees; they are probably as high as an undersized farm house, and equal in circumference to a benighted clergyman—that is, considerably beyond the girth of a curate, and less than that of a grazier in good times."

A NEW BRANCH OF TRADE.

The Postmaster-General has issued a notice to the public calling attention to the spring season and the growing custom of sending flowers, &c., by post. He points out that in all cases these flowers should be securely packed in boxes or cases of wood, and that boxes of pasteboard should not be used, owing to the liability of the wet flowers to reduce them to soft pulp in transit.

For boxes connected with the growing business of the letter and parcel post, pasteboard, although unsuitable and much disliked by the authorities, occupies a prominent position. This place bids fair to be usurped by wood; but a new branch of box making should be started for the purpose; by this we mean that light wood boxes should be placed at the disposal of the Post Office authorities and the public at a price that would compete with pasteboard. Such boxes, in our opinion, should be made to fit one in another, and be of stock sizes, such as perfect cubes, ranging by half lengths into double or treble cubes.

It would, perhaps, not be impossible, as the postal and railway authorities are anxious to increase the parcels business, to arrange with them to sell boxes to the public, as such a movement could not fail to prove profitable to them and a boon to tradesmen and private individuals. Failing this, the servants might be permitted to sell such boxes to the public on an agreed commission.

Take the case of a person in a strange town wishing to send flowers or fruit to his family at a distance, he cannot do so because of the difficulty presented by the box. He goes into the

market, where there are flowers and fruit galore; but he cannot purchase the necessary box. Again, take the private residents, they buy their flowers and fruit, and take them home, where they perforce remain, for they have no knowledge where to purchase a post-box, with which to send them to their friends. The same difficulty in some degree presents itself to the tradesman.

If post offices, parcels offices, railway parcel offices, or receiving offices were the depots of these wooden envelopes, the difficulty would at once be removed, and a great and lasting trade would, no doubt, spring up in this department.

Failing this the tradesmen themselves might become the custodians of these parcel boxes, as also stationers or dealers in post envelopes. If such dealers were to place notices like the following before the public:—"Flowers, fruit, and other damageable goods packed here and sent by post"—we have no doubt they would do a lucrative business.

To us it occurs that this box trade is a natural outgrowth of the development of the postal system in the direction of parcels. Compared with pasteboard, there is no reason why wood should not be freely used; it is cheap, and has the advantage over pasteboard of being more durable and being a favored material in every household, if for no other purpose than fire-wood.

As to the making of such parcel boxes, we can only suggest the free use of machinery. We believe it would be possible to dovetail the corner without adding to the cost of otherwise nailing them, and to lace or stitch them through the angles with soft wire.

Softened wire, such as that used in bottling aerated waters, might be freely used in connection with these boxes.—*Timber Trades Journal*.

Wooden Pavements.

It seems that European countries are experimenting with wood pavements. For instance, in France we are told that the wooden pavements laid down last winter by an English company and English workmen in the Champ Elysees, Paris, has given such satisfaction that the system is now being applied to the Avenue de l'Opera. In addition to this a report reaches us from England that at a special meeting of town Council at Norwich, a report was received from the Wood Pavement Committee, recommending that certain streets, roads, etc., be paved with wood, and that application be made to the local Government Board for sanction to borrow a sum not exceeding £20,000 for carrying out the work. The amended scheme included a number of streets, covering 54,475 yards super, at an estimate of 7s. a yard; total, £18,766 5s. After lengthy discussion, an amendment that further consideration be deferred for a month in order to ascertain the cost of maintaining the roads and streets during the past two years, for comparison with the probable cost of the same when paved with wood, was agreed to.

The Southern Bald Cypress.

The southern bald cypress is a remarkable tree in many respects. It is perfectly hardy to the north, and, although a conifer is not evergreen. The branches look peculiarly dead until late in the spring, not showing signs of life until most other trees are putting out leaves. In summer it is as beautiful as it is odd in winter. The tree often attains a great size and age. A section of a trunk in the botanical gardens at Cambridge shows the tree to have been 545 years old. The largest tree of the species known is in girth larger than the largest redwoods in California. It is only 120 feet high, however.

A Large Apple Tree.

On the farm of Delos Hotchkiss, Marion, Conn., is an apple tree, the largest we ever heard of. H. C. Hovey gives its measurement in the *Scientific American* as follows:—"Circumference near the ground, 15 feet 3 inches; at the fork, 16 feet 2 inches; height of tree top, 104 feet. A peculiarity of this tree is, that five limbs have borne one year and four limbs the next. The usual yield from five limbs is about 85 bushels, and the four limbs vary from 35 to 40 bushels. The age of this venerable tree is estimated at from 175 to 180 years."

THE WEATHER IN SWEDEN.

STOCKHOLM, March 8th, 84.—The weather of the last 14 days in the north of Sweden has been more reasonable than heretofore this winter. This circumstance, in conjunction with the comparative absence of snow, has strengthened the ice at the entrance to the various timber ports in a marked degree; so much so, in fact, that the opening of navigation will be considerably retarded. It is yet too early to express a decided opinion as to when the lower Gulf ports may be expected to be clear of ice, but should we have cold weather up to the 20th current, then first open water cannot fail to be late.

The scarcity of snow in the timber regions supplying the lower ports is at length interfering with the getting of logs. Up to the present, however, I do not consider that the want of snow has been nearly so much felt, as far as the driving out of logs is concerned, as some of my friends would have me believe. On the contrary, the absence of an excess of snow in the high lands of Dalecarlia and Dalarna, as well as some other districts, has more than counterbalanced the inconvenience experienced through the want of it. After this date the scarcity of snow may be expected to make itself felt, not only in the getting of logs, but what is more, in the probability of there being insufficient floating water the ensuing spring. There is yet time to change all this, but should we not be favored with either a heavy fall of snow at an early date, or with a wet spring and summer, a partial failure in floating is quite on the cards. With the waterways almost bare of logs, the result of the excellent floating weather of the last two seasons, the bare possibility of even a partial failure of the floating operations will constrain more than one importer to cover some of his wants.

SQUARE TIMBER.

The Ottawa Citizen contains the following letter:

Sir,—I am an old stevedore, and for more than 40 years loaded ships with square timber at Quebec and elsewhere. Having been at the C. P. R. station several times lately when trains loaded with white pine, owned by Messrs. R. H. Clok & Co., were lying there, and feeling some interest in such matters, I have examined the timber, and after doing so I cannot refrain from giving publicity to the result of my examinations. The timber is without exception the best I have ever seen, and the gentleman who own it deserve credit for the admirable manner in which they have had it made. It will average as near as I can judge, 78 or 80 feet and is all butted—in fact ready to be loaded into the vessels, and comes from Widow River near Lake Nipissing. Owing to the many facilities afforded by the C. P. R., the three or four hundred car loads that are to come will be at Papineauville to go thence to Quebec on the opening of navigation. I thank you, sir, for the use of your valuable paper,

THOS. O'NEILL.

Ottawa, March 27th, 1884.

Wood v. Asphalt.

At the fortnightly meeting of the Commissioners of Sewers, held at Guildhall recently, Mr. Altman brought up a report from the Streets Committee relative to the paving of Houndsditch and cutler street, and stating that having considered the memorial referred from the last court in favor of paving the said places with wood, they adhere to their recommendation that the said places should be paved with asphalt (estimated cost about £3,127). He said, after reconsideration, the committee had come to an almost unanimous opinion that Houndsditch would be better paved with asphalt than with wood.

Mr. Philips thought it was almost agreed at the last court that Houndsditch should be paved with wood in accordance with the wishes of the deputation from the ward. He asked whether it was right to push down the throats of 84 men living in that street this villainous asphalt. (Laughter.) It was the most confounded muck that ever was laid down. (Laughter.)

Mr. Deputy East moved to strike out the word "asphalt," and substitute the word

"wood." (Hear, hear.) He admitted that the committee had listened with great attention to what he had said on the subject, but the fact remained that only one gentleman in Houndsditch was in favor of asphalt. ("Name," Mr. Hopkins. (Laughter.) He thought such a strong feeling on the part of the ratepayers ought to be considered by the Commission.

Mr. E. Bell seconded the amendment, and complained that the petitioners had not been asked to attend the committee, who, he thought, would have convinced them of the desirability of paving the street with wood.

The chairman replied that there had been no discourtesy to the petitioners. The Clerk had adopted the usual course, and had written to the first gentleman whose name appeared on the petition, Mr. DeFries.

After an animated discussion the amendment, on being put, was lost, and the report agreed to. —*Timber Trades Journal.*

Black Gum.

A gentleman just returned from New York says he noticed there a very pretty furniture wood, of a greenish color, close grain, with here and there a streak of old gold running through it, and asked its name. He was told that it was olive wood, he asked further questions and was finally told that that the olive wood is made of black gum brought from southern swamps. The manufacturers claim for it a beauty of fibre and of polish, and a cheapness, which makes it one of the best known woods for the manufacture of furniture. Now, as this southern country abounds in black gum, here is a source of wealth not before noted. Day by day such discoveries are made. The new uses of magnolia wood in making shooks have been commented upon. Southern ash also has quite a run in the handle factories recently established. In very truth, southern forests offer extra inducements to manufacturers, and no doubt this fact will very soon find its way into the brains of northern capitalists. —*American Lumberman.*

Building Exhibition.

The 5th annual building exhibition which opened at Islington, London, Eng., on the 24th ult., closed on April 5th. Speaking of it, the *Timber Trades Journal* says:

"The value of these exhibitions and their beneficial effect on the trades interested in them cannot be over-estimated. They form a ready means of bringing manufacturers and buyers into communication, and they are interesting as showing the improvements introduced in the manufacture of the materials employed for the exterior and interior embellishment of buildings.

Sanitary science has received great attention in recent years, and the most approved methods for rendering our homes free from impure air was a leading feature in this exhibition.

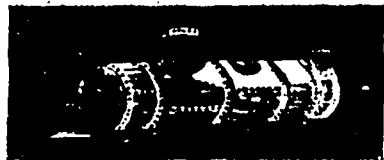
Force of Wind Storms.

A striking proof of the force of the wind storms in December and January last was afforded in the 2nd week in March at the annual sale of timber on the Clumber-Park and Worksop Manor estates of the Duke of Newcastle. The catalogue contained no fewer than 67 lots, which included 2,512 trees which had been uprooted in Clumber Park, and 673 trees and 159 poles blown down in Worksop Manor. Among these were between 600 and 700 oaks, many of noble dimensions. No previous storm has ever proved so destructive in this district.

Advice to Mothers.

Are you disturbed at night and broken of your rest by a sick child suffering and crying with pain and cutting teeth? If so, send at once and get a bottle of Mrs. Winslow's Soothing Syrup for children teething. Its value is incalculable. It will relieve the poor little sufferer immediately. Depend upon it, mothers, there is no mistake about it. It cures dysentery and diarrhoea; regulates the stomach and bowels, cures wind, colic, softens the gums, reduces inflammation, and gives tone and energy to the whole system. Mrs. Winslow's Soothing Syrup for children teething is pleasant to the taste, and is the prescription of one of the oldest and best female nurses and physicians in the United States, and is sold by all druggists throughout the world. Price 25 cents a bottle.

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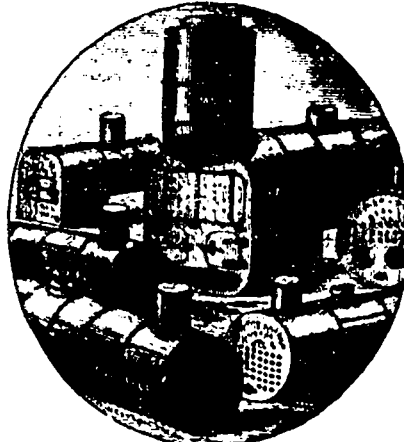
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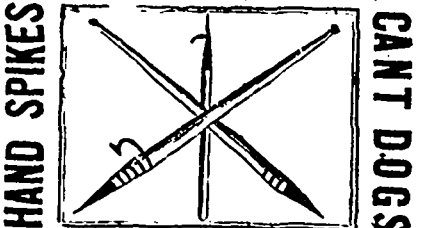
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Communications intended for insertion in the CANADA LUMBERMAN, must be accompanied by the name of the writer, not necessarily for publication, but as a guarantee of good faith. Communications to insure insertion (if accepted) in the following number,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

The CANADA LUMBERMAN filed at the Offices of Messrs. SAMUEL DEACON & Co., 164 Londonhall Street, London, England, who also receive advertisements and subscriptions for this paper.

PETERBOROUGH, Ont., APRIL 16, 1884.

THE yield of lumber in the Maine and New Brunswick districts this year is 263 million feet less than last year.

IN the Mississippi river district of the Northwest, 231 mills—consisting of 91 gangs and 140 circulars—cut 1,290,000,000 feet of lumber in 1883. This averages 5,365,000 feet for each circular, and 5,793,000 feet for each gang for the year.

THE Messrs. Klock are daily shipping large trains of lumber south from Pembroke, of what is said to be a very fine cut, and according to those who have seen it as clean, well made and large stuff as can be found in the market, and has never been under water.

THE Midland Free Press under the head of "McLeod & Cameron's Mill," says the boom at Sunnyside mill has commenced. They are cutting a large bill of timber 12 by 12, 30 feet long furnished by the Ontario Lumber Co. for the Canada Pacific Railway.

THE Hamilton Spectator says—The opposition to the cedar block scheme is being gradually dissipated, as the estimated cost of the pavement becomes known. The introduction of block pavement will be particularly welcome to dry goods merchants, who now lose more in a week from dust than they will be required to pay in a year for the pavement.

THERE appears to be a great unanimity of opinion in regard to the indications for a building boom in the east. Albany, New York, Philadelphia and other lumber distributing centres are all expecting unwonted activity in the near future, their expectations being based on real, tangible reasons, rather than suppositions. Inquiries are already coming in, and contracts for extensive building improvements are being made on a scale of magnitude not hitherto equalled. The same indications are noticeable in Buffalo; and eastern dealers are already beginning to stock up, preparatory to the commencement of operations, and to be in readiness to meet the demand which is anticipated.

ACCORDING to Joshlin, fishes have been caught at depths where they must have sustained a pressure of eighty tons to each square foot of their bodies.

AMONG other satisfactory signs of the growing interest in, and more intelligent treatment of, the important subject of the preservation of our forests, is the legislation by the Dominion Government for the maintenance of a forest belt at the foot of the Rocky Mountains.

A COMMITTEE has been appointed by the Royal Society of London to collect the various accounts of the Krakatoa volcanic eruption and attendant phenomena. This committee may be able to prove or disprove the theory that the red sunning and sunsets have been caused by volcanic dust.

THE benefits of manufacturing enterprises are beautifully illustrated in the case of Owosso, in the State of Michigan. Five years ago she gave a bonus for a manufactory, and now, although devoid of water transportation, she has twenty different kinds of enterprises of the character alluded to, and during that time they have increased her population over 2,000 souls.

AT a recent meeting of the American Society of Civil Engineers, F. L. Griawold described a chimney 160 feet high, which had been erected for a cotton factory in Mexico, and which has been in use for over twelve years. It is built of apparently sun-dried bricks, 10x3x7, by the Indians; is very symmetrical and well made, and seems to be now in good condition.

THE Parry Sound North Star says:—A prominent timber dealer of Essex county says that there cannot be found a car load of square oak timber in the county for sale. He also says that the elm, of which the county a few years ago had abundance, is being rapidly manufactured into staves, and in the course of two or three years will be as hard to get as the hardwood is now.

NICOLET.

To the Editor of the Canada Lumberman.

GENTLEMEN,—Inclosed please find \$2.00 in payment of my subscription to the CANADA LUMBERMAN up to Jan. 1884.

There will be about 20 million feet of hemlock and spruce cut this year at Nicolet, specially by M. M. Ball, McCaffrey and O'Shaughnessy's mills. The operations will commence about the first of May next.

Yours truly,
GEO. BALL.

Nicolet, March 27th, 1884.

USE AND CONSTRUCTION OF CRANES.

AT the meeting of the Society of Arts, Institute of Technology, last evening, President F. A. Walker in the chair, a paper was read by Henry R. Towne, of Sanford, Conn., on the subject of "Cranes; their Constitution and Uses." He illustrated by means of 50 lantern slides the various forms of cranes in use in this country and Europe and the respective adaptations for hoisting and locomotion. The distinctions between jib cranes and derrick cranes were pointed out, and mathematical estimates were given for the requisite ratio of strength required in the masts booms and jibs to resist perpendicular and lateral strains. In the line of cranes attached to cars the lecturer illustrated a very ingenious German contrivance for counteracting the weight of the suspended load by means of a movable weight, the leverage of which is automatically lengthened or shortened according to the perpendicular strain of the load. The power travelling cranes in use in locomotive works in Pennsylvania, are among the most elaborate and advanced contrivances in this line; a single derrick, by means of lateral and longitudinal rails for transfer, being capable of picking up a locomotive in any part of a large building and transferring it to any other. The lecturer stated that cranes have not yet been utilized in this country to the extent that they have abroad, particularly in Holland and Germany. He claimed that in many cases the cost

of using cranes is scarcely ten per cent. of what hand power would cost for the work done; while in many others the cranes are absolutely necessary, and the cost of manual power cannot enter into the consideration.—Boston Journal.

PUBLIC SAFETY IN THE USE OF STEAM ENGINES.

THE following bill to provide for the public safety in the use of steam engines was passed to be engrossed by the Massachusetts senate:

Section 1. The inspector of buildings of the city of Boston and such persons as the aldermen of other cities and the selectmen of towns may appoint therefor, may issue certificates of qualification, to run for the term of three years from their date, to persons to have charge of a steam engine or steam boiler in such city or town.

Section 2. On the application of any person and the payment of the sum of \$3 the officers authorized to issue such certificate shall designate two competent persons to act as experts and make an examination of the applicant with reference to his qualifications for such charge, and on the favorable report of said experts may issue the certificate. If the report shall be unfavorable the fee shall be returned to the applicant.

Section 3. Any owner of, or person using a steam engine or steam boiler, who shall employ any person not possessing such certificate to have charge of such engine or boiler, shall be punished by a fine not exceeding \$100. But such person may have his license suspended or revoked by the authority granting the same, upon satisfactory proof being given, and upon conviction thereof, of negligence, unskillfulness, or intemperance. The person or persons making complaint in any case shall subscribe the same and shall testify under oath.

Section 4. Engineers employed upon any vessel propelled by steam, and holding a license under authority of the United States, or any other treaty-making power, or persons having charge of boilers used for heating dwelling houses, or for cooking or steaming food or fodder, shall be exempt from the provisions of this act.

Section 5. Owners or lessees of stationary steam engines or steam boilers complying with the provisions of this act shall not be held responsible to any person suffering loss or damage by reason of neglect or incompetency on the part of said licensee.

THE FLOODS ON THE SAGINAW RIVER AND THEIR CAUSE.

THE recent floods on the Saginaw river which has been higher than ever before known, furnishes food for reflection, and has raised the question as to the cause. The waters have poured down the tributary streams with resistless fury, the Tittabawassee being one of the principal feeders, until the Saginaw has swollen to unnatural proportions, and spread over the low lands around the Saginaws and between those cities and Bay City, until it resembles one vast lake. It has also flooded the sewers at East Saginaw, and set the water back until the basements have been filled, and the inmates driven from them. It has even necessitated the removal of perishable goods from the first stories of the business blocks adjacent to the river to save them from destruction, and the wooden pavements on some of the streets were necessarily weighted with lumber and iron to prevent them floating from their foundations. The docks not only at Saginaw, but for ten miles north have been overflowed, and thousands of barrels of salt piled thereon suffered destruction. Each succeeding year when the melting of the snows in the swamps is accompanied by heavy warm rains, without the usual nightly frosts these freshets are becoming higher and more destructive; and inquiry as to the cause develops the fact that practical, thoughtful men are reaching the conclusion that it is measureably at least, the result of the destruction or removal of the timber along the banks of the Tittabawassee, Shiawassee, Salt, Chippewa, Tobacco and other tributary streams. Large tracts of the land adjacent to these streams are not only being denuded of their timber for lumber, but are being converted into farms and devoted to agriculture. This to be

successful necessitates drainage, which gives uninterrupted and speedy passage of the water which was formerly held back by the timber until its simultaneous discharge into the Saginaw floods it beyond its capacity to carry it to Lake Huron, flooding its banks and spreading over the adjacent low territory, increasing year by year until it is a question of serious consideration as to the future. To add to the difficulty, the annual discharge of decaying vegetable matter by the Tittabawassee and other streams find lodgment in the bed of the Saginaw, raising the same, and thereby constantly decreasing the outlet; and notwithstanding the vast outlay which has been expended for dredging, the difficulty has been constantly on the increase, until the bars at Carrollton and other points have made them impassable barriers for the larger class of loaded lumber and salt carriers during the summer months.

Considering the fact that more lumber and salt leaves the Saginaw river annually than any other stream on the continent, this question is one of serious and momentous importance not only to the citizens of the enterprising cities on its banks but to the country at large. And when the fact is taken into consideration that the rapid settlement and development of the country which is taking place, will annually increase the difficulty, providing the causes assigned are tangible, and susceptible of substantiation, as we believe they undoubtedly are, it behooves not only those personally interested but the government to seek a remedy before an unexampled flood shall spread havoc and destruction in its path, which will cost millions of dollars, and perhaps hundreds of lives. Whatever the remedy may be, we are firm in the conviction that the causes assigned are the real explanation of the difficulty, and that to the denudation of the timber to the south and west, we may unhesitatingly attribute the annually increasing floods on the Saginaw.—Bay City Lumberman's Gazette.

OTTAWA NOTES.

Messrs. Proctor & Co., of Ogdensburg, N. Y., have purchased Messrs. McLachlin Bros., coming summer's cut of lumber for the United States market.

About 200 men are employed at the Booth yards in Hull repairing barges.

Messrs. Kirby & Bangs' barges are nearing completion and will be ready for the water next month.

A contemporary stated that nearly all Messrs. Perley & Pattee and J. R. Booth's lumber would be shipped by rail hereafter. This is incorrect. Their Boston lumber, of course, has to go by the Canada Atlantic, but New York, Whitehall, Burlington, Montreal and Quebec goes by boats. Out of 500,000,000 feet shipped last season from this district only 124 of it went by rail.

Rumour has it that Mr. Grier, of Montreal, is now in England working up a syndicate with a capital of \$2,000,000 to stock Mr. E. B. Eddy's business. Three or four lumbermen from this district have signified their willingness to subscribe \$100,000 each if Mr. Grier is successful.

A bill will shortly be brought before Congress repealing the tonnage dues on American canal boats. This will effect a saving to those boats carrying Canadian lumber to the extent of from \$15,000 to \$20,000 yearly.

Freights this season will open at \$1.10 to \$1.15 to Montreal, \$1.85 to \$2.00 to Burlington, \$2.00 to \$2.19 to Whitehall, \$3.50 to New York, \$3.50 to Albany, \$1.75 to Quebec.

The wages of barge crews will be the same as last year.

Mr. Geo. W. McCullough has been appointed Ottawa agent for the Northern Boatmen's Transportation Company.

Two large scows are being built in the canal basin. Five of George A. Harris' barges and two steamers are undergoing repairs in the basin, opposite Easton's sheds.—Ottawa Citizen.

AMERICAN FORESTRY CONGRESS.

The following circular letter has been sent out by the American Forestry Congress:—

DEAR SIR,—The Executive Committee of this Association has deemed it advisable to call a

general meeting to be held at Washington, D. C., on May 7th, at 10 o'clock, a. m., in the rooms of the Department of Agriculture, at which your presence is requested.

Time and place have been chosen contrary to precedent, in order to find an opportunity of calling attention by our active work, and impressing upon Congress then assembled, the needs and requirements of forestry in this country.

It is therefore desirable, that such meeting should be well attended, and no individual effort should be spared by the members and friends of this Association, and its aims to make the same particularly interesting and effective.

The following subjects have been selected as leading topics of discussion, referees having been appointed to prepare papers in regard to them:

1. Value of American timberlands.
2. Management of timberlands and timber in Canada, and legislation thereon.
3. Value and management of Government timberlands.
4. Best method of planting trees on unoccupied Government lands.
5. Influence of forests on climate and health.
6. Insects injurious to trees. Causes and dangers of their excessive multiplication, and how to meet them in their wholesale ravages.
7. Growing forests from seed by farmers.
8. Preservation of forests on head waters of streams.
9. Planting of trees by railroad companies.
10. Irrigation in connection with tree planting.
11. Experiment stations and forest schools.
12. How can we best promote the interest in, and knowledge of, forestry among all classes of this country?

Your participation in the discussion of these subjects, and other papers of interest are solicited; abstracts of these must be sent to the Secretary for classification two weeks before the meeting.

Particulars of arrangements will be made known in due time.

Please notify as soon as convenient, whether you are likely to be present at this meeting.

B. E. FERNOW,
Corresponding Secretary.

New York, March, 1884, 9 Pine Street.

Fierce Forest Fires.

RALEIGH, N. C., April 4.—The greatest fire ever known in North Carolina broke out on Wednesday, and swept through the vast forests of yellow pine, which stretch from Stanford, 50 miles from Raleigh, to points north, west and south for 60 miles in South Carolina. The fire was caused by burning brush. Large masses of fire were actually forced through the air by the sweeping gale, and tops of half grown pines were thrown great distances. The flames towered to an amazing height. At Blues Crossing and Keyser the people gathered in large numbers and fought the flames with desperation. A dozen turpentine distilleries were destroyed, as well as large quantities of resin, turpentine, and other naval stores. Many persons lost their clothing, and some were badly scorched. The town of Manly was in evident danger of destruction. The railroad warehouse caught fire several times. The Methodist church, five guano and cotton warehouses, and the town guard house were burned at two o'clock yesterday morning. Hamlet was surrounded by fire, and many farm houses have been consumed, but no loss of life has been reported. For ten miles east of Hamlet everything is destroyed.

Killed by a Log.

LUCAN, April 3.—Mr. W. N. Hodgins, a farmer residing on the third concession of Bidulph, one mile and a half from Lucan, father-in-law of Mr. J. W. Orme, of the Lucan Enterprise, was engaged to-day skidding some logs in the woods, assisted by his son, when one of the logs accidentally rolled upon him, and remained there until drawn off with the team by the boy. The unfortunate man's ribs were crushed into his lungs, and he was otherwise internally injured in such a manner that his life is despaired of.

LIST OF PATENTS.

The following list of patents upon improvements in wood-working machinery, granted by the United States Patent office, March 23, 1884, is specially reported to the CANADA LUMBERMAN by Franklyn H. Hough, solicitor of American and foreign patents, No. 617 Seventh St., N. W., Washington, D. C. —
 235,223.—Borer hand—W. E. Clough, assignor of one half to P. Pethick, Concord, N. H.
 235,521.—Boring machine—W. E. Clough, assignor of one-half to P. Pethick, Concord, N. H.
 235,589.—Cabinet-makers clamp—W. E. Sheldon, jr., Medford, Mass.
 235,628.—Chuck latho—J. S. Gilmore, Philadelphia, Pa.
 235,536.—Gearing for changing speed—S. N. Gallup, Macedon, N. Y.
 235,649.—Log turner—S. T. Haviland, Jamison, Ala.
 235,726.—Mouldings, machine for dressing—J. O. Brandon, Detroit, Mich.
 235,515.—Nailing machine—E. F. Barton, Ravenna, Ohio.
 235,610.—Pavement wood—R. Albrecht, Tilsit, Prussia, Germany.
 235,792.—Saw guide—T. J. Neacy, Milwaukee, Wis.
 235,791.—Saw mill—D. F. & J. T. Milne, Rochester, N. Y., and Clay City, Kansas.
 235,572.—Saw mill head block—V. Martin, & C. W. Metcalf, said Martin assignor to W. J. Graham, Hopkinsville, Ky.
 235,649.—Saw tooth—R. W. Kellen, Albion, Cal.
 235,833.—Screw wood—G. A. Stiles, West Gardener, Mass.
 235,722.—Shingle sawing machine—S. L. Bitting, Big Creek, Miss.
 235,541.—Shingle shaving machine—A. Gould, Bangor, Me.
 235,793.—Wooden tubing, smoothing the inner surface of—M. F. Wilcox, Bay City, Michigan.

PATENTS ISSUED APRIL 1.

295,091.—Barrels, manufacture of—G. B. Washburn, Minneapolis, Minn.
 295,933.—Box-trimming machine, packing—F. Myers, New York, N. Y.
 295,922.—Handle attaching device for tools—J. T. Hood, Philadelphia, Pa.
 296,268.—Machine brace—S. Beal, Elmyria, Ohio.
 296,207.—Plane, joiners'—G. D. Moshier, & W. H. Ford, Birmingham, Conn.
 296,270.—Plane, bench—A. Fales, Denver, Col.
 295,967.—Saw—J. D. Abbott, assignor of one-third to A. M. R. Fitzsimmons and J. W. Chapman, Reading, Mich.
 295,964.—Saw guide—W. Williams, Lumberton, N. C.
 295,991.—Saw mill circular—O. Esplin, Minneapolis Minn.
 296,220.—Saw mill, portable—W. C. Rodgers, Owlet Green, Texas.
 296,241.—Saw, pruning—W. K. Stansbury, Middletown, N. H.
 296,123.—Saw vice—G. W. Burton, Bordertown, N. J.
 296,077.—Woodworking-machine knife—S. J. Shimer, Milton, Pa.

More Forest Fires.

RALEIGH, April 5.—The fire in the turpentine forests is nearly under control, save near Fayetteville. East of there it is spreading. An immense amount of damage has been done. The house of N. C. Nott was burned yesterday; the family barely escaped. At Broadway two churches, a foundry, and a number of houses were burned. At Lemon Springs many families are homeless. The turpentine business in large portions of five or six counties is said to be ruined.

COLUMBIA, S. C., April 5.—Forest fires are raging in many sections of the State, originating in farmers burning the brush to clear the planting grounds. Near Killian's station a distance of twenty miles has been swept, burning houses, mills, barns and fences. Jones and Killian lost their mills and 400 barrels of rosin. Many people have been rendered homeless by the fires.

The forest fires continue with destructive

effect in Lexington, Kernhaw, Sumter, Colleton and Chester and counties. Near Georges' station several large houses, barns, and outbuildings containing provisions have been destroyed. The flames are rapidly approaching this village. In the northern part of Sumter county a number of late plantations have been burned over and many negro cabins with a year's supplies destroyed.

A Useful Instrument.

A useful instrument, which will doubtless become a necessity in certain lines of manufacturing, is being introduced in England. An electric system is established through a factory, which through the agency of an indicator placed in the office, shows at a glance whether the different looms or machines in the building are in operation.

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 White Leads, Putty, Shot. Also, Gang, Circular, and Cross-Cut Saws of all kinds. Prices furnished on application.

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NOTICE.

VALUED TENDERS addressed to the undersigned, and endorsed "Tender for Indian Supplies," will be received at this office up to noon of THURSDAY, 1st MAY, 1884, for the delivery of the usual Indian Supplies, duty paid, in Manitoba and the North-West Territories, consisting of Flour, Bacon, Groceries, Ammunition, Twine, Oxen, Cows, Bulls, Agricultural Implements, Tools, &c.

Forms of Tender and full particulars relative to the Supplies can be had by applying to the undersigned, or to the Commissioner of Indian Affairs at Regina, or to the Indian Office Winnipeg.

Parties may tender for each description of goods separately or for all the goods called for in the Schedules. Each tender must be accompanied by an accepted Cheque of a Canadian Bank, for at least five per cent. of the amount of the tenders for Manitoba, and ten per cent. of the amount of the tenders for 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 are required to make up and attach to their tender the total money value of the goods they offer to supply, or their tender will not be entertained.

The Tender for Beef must be a separate tender, if it includes any other article it will not be considered. The lowest or any tender not necessarily accepted. (No newspaper to insert without special authority from this Department through the Queen's Printer.)

L. VANROUGNET,
 Deputy of the Superintendent
 General of Indian Affairs,
 DEPARTMENT OF INDIAN AFFAIRS,
 OTTAWA, 19th March, 1884.

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MAITLAND & BIXON, Owen Sound,
 Or S. C. KANADY & CO., Toronto.

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THE NORTHWEST CUT.

We learn that during the year there was an increase of 78 in the number of establishments, and an increase of 103 in the number of saws in use. We also learn that this increase has been in the upper peninsula of Michigan, and in the States of Wisconsin and Minnesota, in which regions the census reports locate 63 of 82 billion feet accredited to the Northwest, and that the other or older sections of the pine regions show an actual decrease in the number of establishments and in the number of saws.

In regard to the cut of the various districts, if we take what is known as the west of Chicago district, and add to it the Green Bay district, which belongs to the three pine regions enumerated above, we will have for a series of years a total output as follows: 2,678 million feet in 1880, against 2,987 million, an increase of 409 million in 1881; against 3,519 million, an increase of 662 million in 1882, and 3,821 million, an increase of 272 million in 1883. Deducting the Green Bay district from the cut of the lower peninsula of Michigan, the portion of the state shows a decline in the amount cut in 1883 of 25 million feet as compared with 1882, against an increase of 122 million feet in 1882 over the cut of 1881. The returns from the lower peninsula are not all reported, but will probably show a heavier decline.

The increase may be attributed to the extension of the railway lines and feeders into the pine forests, as three railroads in Wisconsin, alone, show an increased cut of over 200 million feet, or 80 million feet more than the entire increase shown by the reports which, in 1882, covered 90 per cent of the entire cut.

The conclusion to be deduced from these reports is that the milling interest of the Northwest is gradually shifting its ground from lower Michigan into the newer forests of the upper peninsula, Wisconsin and Minnesota, which sections will furnish over one-half of the cut of 1883—considerably more than the entire cut of the Northwest for any year previous to 1879, and twice as much as cut in the same section in 1879.—*American Lumberman.*

AUSTRALIA.

We take the following from the monthly circular of Lord & Hughes, timber brokers, of Melbourne, dated 15th February, 1884:

Since our last on 16th ultimo, we have to report large arrivals of every description of lumber, timber and large offerings at auction, sales being fully up to expectations, and prices are not materially altered from those prevailing last month, although at last sales a marked improvement was visible in Baltic deals and flooring, whilst American white pine shelving was weaker in consequence of heavy arrivals, other descriptions of American lumber remaining about the same. Slates also show an improvement on last sales.

Trade from the yards continue active, there being no falling off for building purposes.

The arrivals have been—Zola, from Christiania, with flooring; Gurli, from Umea, Topdahl, from Skutskar, Storken, from Gothenburg, with deals; Highlands and Hallgerder, from Canada, with spruce deals, boards, laths and pickets; Fleetwing, from Humboldt bay, with Oregon timber, laths and pickets; Henry S. Sanford and Paramita, from New York, Black Adder, from Boston, with clear pine, white pine shelving, doors, slates, laths and plaster; Drumblair, Sherwood, Kent, Star of Russia, Antiope, Sussex, Lock Katrine, Duke of Sutherland, Port Phillip, and Roman Empire, from Great Britain, with flooring, plates, and galvanized iron; Sydney, from Marseilles, with galvanized iron; Cheviot, Buninyong, Gabo, Nemesis, Letra, and Konoowarra, from Sydney, with cedar; Mercury, from Launceston, with slates; Victorian and South Australian, from Adelaide, with plaster and slates.

RED DEALS.—Imports: 580 standard, from Baltic; 436 pieces, from Great Britain. The arrivals have been Gurli, from Umea; Topdahl, from Skutskar; Storken, from Gothenburg; and Lock Katrine, from Glasgow. On 8th inst., the cargo ex Topdahl was sold by auction:—A Crown S brand 9x4, realising 6d.; 11x3, 6jd. to 6 3/4d.; 9x3, 5jd. to 5jd.; A + 3, 9x4, 5jd. to 5 7/8d.; 11x3, 5 3/4d., 9x3, 5jd. to 5 3/4d. Sales have also been made during

the month, ex Vanadis, Helene, Leto, and Concordia.

SPRUCE DEALS.—Imports: 38,703 pieces. The arrivals since our last have been—Highlands, from St. John's; Hallgerder, from Quebec; Black Adder from Boston. Sales by auction have been confined to the cargoes ex Geraldine and Augusta, on 29th ult.; 11x3 realising 3 1/4d. to 2jd., and 9x3, 3 1/4d. to 3jd.

OREGON TIMBER.—Imports: 650,000 feet super. This parcel arrived in the Fleetwing, and has been sold privately. Sales by auction have been made of the cargoes ex Hesper and Martha, at prices ranging from £6 15s. 6d. to £6 2s. 6d., showing a still further decline on previous rates.

LUMBER.—Imports: Clear pine, 847,668 feet super; white pine, 858,430 feet super; T. and G. Ceiling, 36,416 feet super. The arrivals have been Henry S. Sanford, and Paramita, from New York; Hallgerder, from Quebec, and Black Adder, from Boston. The parcels ex H. S. Sanford were all sold at auction on the 29th ult., and on the 5th instant the shipment ex Paramita was offered, the clear pine being all sold, but only a portion of the shelving.

PITCH PINE.—Imports: Nil. Auction sales. Nil.

REDWOOD.—Imports: 330,938 feet super. This parcel arrived in the Remijio, from San Francisco, and was offered at auction on 29th ult., resulting in the purchase of about 200,000 feet, at £10 per 1,000 feet super.

FLOORING AND WEATHERBOARDS.—Imports: 2,574,701 feet lineal. The arrivals have been Zola, from Christiania; Drumblair, Loch Katrine, and Roman Empire, from Great Britain. Sales by auction have been cargoes of Baltic flooring, ex Concordia and Juno and small parcels of spruce flooring, ex Augusta and Geraldine, from Canada. The following are prices realized:—Red, 6x1 1/2, 11s. 4d. to 11s. 3d.; 6x3, 8s. 9d. to 8s. 6d.; 6x3 1/2, 6s. to 5s. 6d.; 6x3 1/2, 4s. 9d. to 4s. 8d.; 4-out weatherboards, 7s. 3d.; white, 6x1 1/2, 9s., 6x3, 7s. 9d. to 7s. 6d.; 6x3, 5s. 10d. to 5s. 6d.; 6x3 1/2, 4s. 7d. to 4s. 4d.; 4-out weatherboards, 6s. 9d. to 6s.

KACHU PINE.—Imports: Nil. Sales by auction comprise the cargo of flooring boards and slitches, ex Peerless; and slitches, ex Robbin Hood and Palace, the following being prices realized:—6x1 1/2, 10s. 6d.; 6x1 1/2, 10s.; 6x1, 8s. 9d. to 8s. 6d.; 6x3, 8s. 3d.; 4x1 1/2, 9s. 6d.; 4x1 1/2, 9s. 3d.; 4x1 1/2, 9s.; sawn slitches, 14s. to 14s. 3d.; heavy logs, at 11s. 9d.

CEDAR.—Imports: 232,873 feet super. The arrivals have been various coasting steamers from Sydney. Sales by auction have been made of the cargo ex Lady Franklin, and parcels ex coasting steamers, prices ranging from 49s. to 21s. according to size and quality.

RED AND WHITE PINE (Colonial).—Imports: Nil. Auction sales. Nil.

DOORS.—Imports: 300. Auction sales.—Nil.

LATHS AND PICKETS.—Imports: Laths, 4, 528 bundles; pickets, 7,414 bundles.

PALINGS.—Auction sales.—18th January—ex Camilla, 5,000 5-foot palings, at 10s. per 100 8th February—ex Xema, 4,000 5-foot palings, at 8s. 6d. per 100.

THE CULTURE OF WALNUT.

Mr. D. B. Wiser, of Lacon, Ill., gives in the *Prairie Farmer* his views on walnut planting as follows:

"The black walnut is, without doubt, the most valuable tree we have for rich lands of the corn belt West, and one which is very easily grown everywhere if the farmer will only learn how to get it started. How few we see growing on our prairies. Why? Simply because to have it we must grow it from the nuts. It is nearly impossible to plant black walnut trees of any size and have them live; although it is a fact that whenever a non-professional attempts to grow them from the nuts he is almost sure to fail, it is also a fact that there is no tree that is more easily grown from the seed than this, if we only know how to do it. It is my purpose in this article to tell how to do it, and also how not to do it.

"In the first instance we will suppose a man lives where he can gather the nuts in the woods. When the nuts begin to fall let him plough

deeply the plat of ground he wishes to plant, and furrow it off three or four inches deep, the distance apart he wishes the rows to be. He will then go to the woods and gather what nuts he wishes to plant, and plant them at once, just as they come from the tree, covering them just out of sight in the furrows. This is all there is of it; simple, is it not? But it will not do to gather a great wagon box full, and let them stand until they heat, or to throw them in a great heap and let them lay there until they heat. It will not do, either, to hull them and let them lay in the sun a week or two, or hull them, dry them and keep them until spring, and then plant them; none of these plans will do if you want trees. Of course if the nuts are hulled and planted at once they will grow; but this hulling is entirely unnecessary. Besides, the hulls seem to act as a special manure for the young seedlings, causing them to grow more vigorously.

"Next, we will suppose one wishes to plant walnuts where they cannot be had from the woods, but must be shipped in. There seems to be only one plan by which this can be done safely every time which is as follows: Gather the nuts as they fall from the trees—of course when they begin to fall naturally all may be shaken down at once—and spread them not over a foot deep, on the bare ground under the shade of trees. Cover out of sight with straw or leaves, with some sticks to hold in place, called a rot heap; then after they are frozen and will stay so, they may be shipped in bags, boxes, barrels, or in bulk by the car load, and then, again, placed in rot heaps, as above, until so early in the spring as the soil is in workable condition. Then plant as directed in the fall, except the soil should be finally packed around the nuts. Keep free from weeds by good cultivation, and in due time you will have a splendid grove.

"There was an immense crop of walnuts in this district last fall, and thousands of bushels were put up carefully in this way, all ready for shipment before the weather became warm; many more thousands were planted to grow seedlings from, for, notwithstanding the walnut transplants poorly when of considerable size, the one year's seedlings transplant with as little loss as the average trees.

"There is no tree better adapted for planting to secure timber claims with than the black walnut, and none more valuable when the timber is grown. For this purpose the land should be plowed deeply, then harrowed to fineness and firmness, and furrowed out in rows four, six, eight or ten feet apart. The nuts may then be planted as directed. It is best to plant thickly in the rows, then if too thick they can be thinned out, transplanting the thinnings, or selling them to the neighbors. They should be thoroughly cultivated, until large enough to shade the ground, and thinned out as necessary as they grow larger. A walnut grove thoroughly cultivated, until large enough to shade the ground, and thinned out as necessary as they grow larger. A walnut grove thoroughly cultivated the first ten years will grow at least 20 feet high, while one not cultivated at all would only grow two or three feet in that time."

AMERICAN WOOD MANUFACTURE.

Perhaps in no branch of American industry has greater progress been made within the last thirty years than in the vast and varied manufacture of wood. We have not only distanced all rivals in this branch of industry, but have gained a firm foothold in foreign markets, especially for our agriculture implements, furniture, and a variety of labor-saving machines. The perfection to which our wood-working machines have been brought by unrivaled ingenuity has given American manufacturers of wood a world-wide reputation. For, as nine-tenths of the cost of articles included under the head of "woodenware" consists in the labor necessary to their manufacture, and as the wages of labor in this country are comparatively high, it could hardly have produced successfully its own woodenware without the aid of machinery. With this aid, however, the home market has not only been supplied by home dealers, but American woodenware has found its way into various foreign markets. For instance, the exports of

woodenware for the year ending June 30, 1883, were valued at nearly half a million dollars. The manufacture of furniture increased in value from \$17,633,000 in 1850, to \$75,539,000 in 1870, while the estimated increase in the last thirteen years has been very large. The growth in the manufacture of agricultural implements has been still greater. With woods of all kinds in abundance and easily accessible, with improved machinery for the purpose, there seems to be no reason why the exportation of woodenware should not yearly increase.—*Ex.*

THE EVILS OF FOREST DESTRUCTION.

The following graphic picture of the irremediable disasters following the reckless and imprudent destruction of woodland, should very forcibly impress itself upon the understanding of all intelligent persons. The paragraph is from Sinclair Tousey's "Travels in Southern Europe."

"Much of France, nearly all Spain, and large portions of Italy are entirely destitute of forests. The tourist can travel day after day in these countries without seeing a standing tree, or a single tree large enough to make a decent sized barn. The people in those sections are bothered to get the very little fuel they need, depending upon the trimmings of shade and fruit trees and vines for what they get; while the damage done the country by heavy rains is beyond estimate, especially in the hilly regions, where the rain, falling on the ground, finding no trees with their wide-spreading roots to check its passage off the surface, rushes with tremendous force into valleys, carrying all before it.

"So destructive are these torrents, and so suddenly do they come down the river bed, that in many places heavy stone walls are erected to keep the sweeping floods within bounds. Within a few hours after one of these torrents has swept down a valley, the bed of the river will be as dry as if water had never wet it. Another evil is the scarcity of small running streams for the use of cattle and for manufacturing purposes.

"The unchecked rain finding nothing in its way, hastily passes from the surface and gets to the sea; whereas, if the land were sprinkled with forests, much of it would be absorbed by the ground, and by gradual percolation finds its way to the streams and keep them alive to aid the work of man and give drink to animals.

"I earnestly implore the owners of forests in our favored land to be careful and waste none. We can leave our successors no better legacy."

Jarrah Timber.

The English *Timber Trades Journal* had an article recently on the wonderful enduring power of Jarrah timber, which is said to resist all kinds of insects and is impervious as well to the action of dry rot. A suggestion has been made to pile and elab the banks of the Suez Canal with this description of timber, which would enable vessels to travel at their ordinary speed without any danger of washing away the banks. This might be done with the prospect of the timber lasting for years, and one effect it would have would be that of increasing width of the canal considerably, so that two vessels could pass one another without causing any delay. When the virtues of the wood become fully realized, we shall hear more of it as a saleable commodity.

Sale of White Pine.

QUEBEC, March 31.—An important sale of white pine has just been concluded in Quebec. The transaction involves about 100,000 feet of 1 1/2 inch average, and the price obtained is 32 cents per foot measured off.

IT SHOULD BE INVESTIGATED.—If any of our readers suffer from chronic diseases of the stomach, liver, kidneys, or the bowels, they should investigate the merits of Burdock Blood Bitters. It is making the most remarkable cures on record.

A VALUABLE HINT.—Artisans, actors, sports men, mechanics and laboring men, in that all who unduly exert muscular strength, are subject to painful contractions of the cords, stiff joints and lameness; to all such Haggard's Yellow Oil is a prompt relief and perfect cure.

PINE EXTRACT FOR BATHING.

It has long been recognized that the atmosphere of pine forests has an invigorating and beneficial effect upon people with weak constitutions and suffering from pulmonary disorders. At some of the watering places of Germany the very simple prescription of the physician is that the patient should spend several hours a day walking or riding through the pine wood. This simple treatment is sometimes supplemented by the taking of pine baths, and in the case of kidney diseases and for delicate children this is claimed to be highly beneficial. The bath is prepared by simply pouring into the water about half a tumblerful of an extract made from the fresh needles of the pine. This extract is dark in color and closely resembles molasses in consistency, and when poured into the bath gives the water a muddy appearance with a slight foam on the surface. The repugnance one feels to enter into such a muddy looking fluid is dispelled as soon as the delightful aroma which arises from the bath is inhaled. Although there may be some doubt whether pine baths act upon the system in any other wise than as a tonic, still as an adjunct to the daily bath, infusion of the pine extract induces a most agreeable sensation. It gives the skin a deliciously soft and silky feeling, and the effect upon the nerves is quieting. It is a matter of some surprise to us that the business of manufacturing and bottling the extract for private use and public bathing establishments has not been tried in this country, where pine forests abound so extensively. The extract when properly bottled and securely corked will not deteriorate for a long time, and the cost for gathering the pine needles and extracting their tarry substance would not be very great, while the demand for it would likely increase to large proportions when the public became accustomed to its use.—*Scientific American.*

Milkweed Fiber.

In a late issue we published a suggestion to microscopists by President Spitzli, of the Textile Microscopic Society, of Boston, in regard to the fiber of the *Acletoleas* and *Acerates*, the milkweed or silkweed. We have succeeded in dyeing the fibre of this plant a bright red, a brilliant green, deep blue, bright yellow, and a delicate pink, by the use of Thomas' one-dip dyes. We have recently added to our facilities for examination a first-class microscope, with all the accessories and apparatus for the examination of cotton, wool, silk and other fibers, and shall be pleased to receive from our friends who are interested in their manufacture such samples as they may be pleased to send us of fibers which show peculiarities in their treatment, or specimens which have been injured in any of the processes which they undergo. Specimens of the milkweed fiber show a simple tube with a very thin transparent cell wall, easily ruptured and without convolutions, imbrications or contents. The section is a plain ring showing a very thin wall and no internal matter. This wall is very fine and brittle, and we doubt if it can ever be utilized for textile purposes, although its appearance when dyed is beautiful in the extreme, from the silky glossy appearance of the fiber. We trust that President Spitzli's suggestion may receive the attention of microscopists, and that, if possible, a use may be found for this fiber, which at present, though growing wild, is not to our knowledge utilized in any way.—*Cotton, Wool and Iron.*

The Pine Region of the Northwest.

The resources of the pine region of the Northwest are surprising to those who looked upon it years ago as a waste of forests. During the last ten years the lumber and shingle yield of these forests has sold for more than the assessed valuation of the real estate and personal property of the state of Michigan, and more than the valuation of both Wisconsin and Minnesota. This is not taking into consideration the hardwood trade, which, especially in Michigan, has been heavy. In the latter state salt, mineral springs, iron and copper have been found in such quantities that the future revenues from them cannot be calculated. It is safe to say that portions of Wisconsin are rich in iron, and now there are strong hopes, at least in the mind of the gentleman who has invested in

"diamond land," that diamonds will be one of the productions of the Badger state. What Minnesota may produce is to be known. She will have to do well if she goes the sister states one better, but the possibilities of the great Northwest are so great that no one will be astonished if she does.—*Northwestern Lumberman.*

The Foreign Trade of the United States.

The imports for the first seven months of the fiscal year as published by the Treasury Department, show a falling off from \$428,000,000 to \$389,000,000, almost wholly in dutiable goods. Chemicals have fallen off 60 per cent., cottons 25 per cent., earthenware 50 per cent., pig iron 40 per cent., steel rails 93 per cent., woollens 25 per cent. Sugar and jewelry are the only articles showing a heavy increase. Our total exports for the same time show a decrease from \$495,000,000 to \$462,000,000, but hops, raw cotton, and wheat have fallen off more than enough to account decrease. Pork products have all increased in the value of exports over last year as have dairy products. The value of cotton manufacturers exported for the seven months ending January 31st, was some \$6,870,000, against about \$8,000,000 for the corresponding period a year ago. The exports of woolen manufactures for the corresponding periods show an increase, being about \$400,000 against \$192,500. The imports of cotton manufacturers a decrease of about \$1,100,000.

A Long Straight Edge.

An absolutely exact straight edge of more than 36 inches is a wonder of mechanism. One of six feet was not recently believed possible, although several had been made on different plans of web-like and truss construction. It has been claimed, however, that almost absolute exactness has been secured by a straight edge 12 feet long. The appliance looks like an arch-rod truss, the highest spring of the arch being only 20 inches in a length of 12 feet. The space between the chord and the spring is filled with diagonal lattice work; the whole is a coating on which no peening with the hammer is allowed. Three of these straight edges have been made, one remaining in the establishment where built and two going to technical colleges. Each of them has been tested by each other, and proved to be practically perfect. Such a tool is invaluable in testing lathe and planer beds.—*Scientific American.*

Decreasing the Amount of Sawdust.

Speaking about sawdust, it seems to us that, with regard to the best way of counteracting the evil tendency of its wholesale accumulation, a reduction of the quantity produced would have the most beneficial results. We have decreased the size and thickness of structures as we successfully used cast iron, wrought iron and steel; we have substituted stronger for weaker material in various parts of almost every industry; why should we despair of finding some metal or alloy stronger than the steel of which our present saws are made. Anything which could by some means or other reduce the thickness of the saw blades one-fourth or one-third, would reduce the quantity of the resulting sawdust in a corresponding ratio, and would increase the quantity of lumber by just as much.—*Buffalo Lumber World.*

Forest Preservation.

The bill introduced in the Senate by Mr. Macpherson to amend the Dominion Lands Act provides for the preservation of trees on the crests and slopes of the Rocky Mountains to secure the proper maintenance throughout the year of the volume of water in the rivers and streams which traverse the Northwest Territories. The Government propose to reserve from sale, lease, or license, portions of land in the Northwest Territories, and appropriate such lands for forests, parks, and officers will be appointed for the preservation of such reserves and forest parks. Heavy penalties will be imposed upon persons convicted of wilfully and unnecessarily destroying forest trees in the Northwest. This is a wise and much needed measure. Had the same policy been adopted in Ontario, a great benefit to the public would have resulted, and even yet it is not too late.

Chips.

The mills at Moss point, Miss., are running day and night.

The Red Cedar river in Wisconsin will furnish 110,000,000 feet of logs for the approaching sawing season.

The Dubuque Iowa Herald says:—"In this prairie state it would be a wise movement if every man, and especially every farmer should on a certain day, set apart for the purpose, set out one or more trees."

The Ottawa Free Press says:—"It is reported that G. B. Hall & Co.'s extensive mills at Montmorenci are going to saw for Gilmour & Co., of this city, this year. Contracts for freight from this city, have been made about 10 cents less per 1,000 feet than last year's rates

It is estimated that about 5,000,000 cubic feet of cottonwood, sycamore, basswood, and elm, have been cut this winter in Essex county, along the shores of Lake St. Clair, for manufacture in hoops and heading. It will all be rafted next summer, and floated down the river to Detroit and Trenton mills.

A. W. LOBDKILL & Co., of Mecosta, have a team of horses weighing 2,400 pounds, which they claimed hauled the biggest load of shingles ever hauled by one team in this state. The load consisted of 50 M. of 18 inch shingles, and the distance was three and a half miles, including one sharp hill. The load weighed about 9 1/2 tons.

The Mobile and Ohio road hauls timber into Mobile from Kushla for four cents per hundred. The road offers similar inducements from more distant stations; consequently large amounts of timber is being sent from Mobile for export from points along the road. Sixteen carloads of heavy navy timber was received in one day recently from one point.

The cuneiform inscriptions of Nebuchadnezzar have lately, says the *Antiquary*, been discovered by M. Pognon, French Assistant-Consul, on the rocks in the Wady Briaas, a wide valley on the eastern slope of the Lebanon. They contain an account of buildings in progress at Babylon, and are supposed to make the site of a timber yard in that locality.

REGARDING operations on the Susquehanna river in Pennsylvania, a correspondent says that "the stock was secured, and we have probably about the same stock of pine as last year, with probably from 30,000,000 to 40,000,000 feet less hemlock. The booms are hung, and we are waiting for a flood, with the drives all very well along in the small streams.

The value of lands in the Southern States aggregate but twenty per cent of the land values in the Union, but the annual products of Southern soil rank at thirty per cent of the whole. In other words, says the *Boston Commercial Bulletin*, one-fifth in money value of the land lying in the South produces one-third of the productive values of the entire country.

The destruction of black walnut trees in some parts of the United State has been enormous. Whole forests of valuable trees have been destroyed by farmers ignorant of their value. Of late an English syndicate through American agents have been buying all the black walnut they could get their hands on. In some cases they secured it at a merely nominal price.

ABOUT 500,000 feet of logs went rushing out into Lake Michigan recently, at Grand Haven, through the breakage of the Sisson & Lilly boom. Lumbermen at least occasionally are practically reminded that the removal of the timber adjacent to streams is conducive to destructive floods, whether "wise-in-their-own-conceit" lumber journals will have it so or not. They had a lesson at Grand Rapids last year.

MR. J. GALLIMORE, ex-mayor of Newcastle-under-Lyme, builder and contractor, twenty years ago, through circumstances over which he had no control, was compelled to arrange with his creditors. Since that time great success has attended his business undertakings, and a few days ago he surprised all his old creditors, or their representatives, by paying them in full. The balance remitted amounted to nearly 10s. in the pound on the original liabilities.

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Market Reports.

MONTREAL.

From Our Own Correspondent.

APRIL 9.—Business in this city has been rather sluggish during the past two weeks, building operations are not proceeding very fast as the weather has been very unfavorable, and no activity is now looked for till navigation opens. A fair amount of business is reported as being done in Ottawa, and prospects here are good for business as the season advances. Prices here are about the same as last quoted only we reduce quotations for lath:

Table listing lumber prices in Montreal for various types like Pine, Spruce, Hemlock, etc., with prices per 1000 ft.

CONDWOOD.

There has not been much demand for wood and until navigation opens and plentiful receipts are coming in by boats no change in price need be looked for. Receipts are fair by the G. T. R., indeed wood would have been scarce enough here this winter had it not been for supplies brought in by that railway. We still quote ox cartage at the railway station:

Table listing prices for Long Maple, Long Birch, Long Beech, and Tamarack.

ST. JOHN.

A leading lumberman supplied the St. John News with the following figures, showing the extent of lumbering operations in various parts of the Province this winter as compared with those of last year. They include, also, operations on the Aroostook and Upper St. John waters, and in Maine, where the logging is mostly conducted by parties from this Province. Here are the figures, superficial feet being implied:—

Table comparing lumbering statistics for 1883 and 1884 across various regions like Upper St. John, Aroostook River, etc.

Total... 380,000,000 293,000,000 Falling off over 47 per cent.

TORONTO.

From Our Own Correspondent.

APRIL 9.—Trade from all the retail yards continues brisk, extra teams having been set to work by some dealers, their ordinary compliment of horses not being able to keep pace with the requirements of customers. Figures on bill stuff are also a shade firmer, and may now be safely quoted at figures given you with this letter, with a strong probability that former quotations will be reached before many weeks are past. XXX sawn shingles are selling slightly lower, the ruling figure being \$2.90 per M; one firm I learn are sending out of their yard at \$2.75, but as soon as the season is fairly opened and the usual demand springs up in Western Ontario, prices will advance to the old figure again.

There are no shipments from our docks as yet. A few vessels have arrived here, and those now in winter quarters are actively fitting up for the season's trade, although it is quite certain that the quantity of lumber to be shipped from here this season will fall short of that of former years, and in square timber nothing worthy of note will be rafted here. A few cars are coming in over the C. V. and G. T. R. roads, but nothing as yet over the N. & N. W., and so far as I am able to learn nothing is likely to come over that road in the timber line. It is slightly premature to speculate as to

what will be the figures realized on the various grades of lumber in this market during this season, but this much may be taken as morally certain, good lumber will command remunerative prices, and the coarser grades of boards and plank will rule low; and so low, I fear, as to prove quite unremunerative to the manufacturer. This must continue to be the case to a greater or lesser extent so long as the present duties on foreign shipments remain as at present, and the only redeeming feature in the manufacturers' favor this year, is the fact that their stocks of logs have been more carefully selected this season, so that the proportion of good lumber will be considerably larger than for some years past. This fact combined with the prospect of an earlier cut and consequently fit for market sooner than last year, are points somewhat in the millmen's favor.

Table listing prices for Mill cull boards, Shipping cull boards, Scantling and joist, etc., with prices per 1000 ft.

WINNIPEG.

The Commercial of the 1st inst. says:—Although there has been some stir in the lumber trade during the week matters are perversely slow still, and intending builders hang back very much. Contrary to expectations prices have not reached that level at which reliable quotations could be given. Should the weather continue mild a very great improvement in business must naturally take place within ten days.

Table listing prices for Pine lumber, Sheathing, Dimension and joists, Fencing, Boards, etc., with prices per 1000 ft.

BUFFALO.

Table listing prices for Buffalo cargo lots: Coppers, Common, Culls.

BOSTON.

Cotton, Wool and Iron of March 5, says:—General trade is moving along fairly and is rather improving, although the variable weather has been more or less of a retarding feature. A good deal of building is in contemplation, and operations will be lively as soon as the ground gets into a proper condition. Orders for spruce are coming in rapidly, with prices lower than last year. The demand for western pine is looking up, and prices are firm for desirable grades. Southern pine is moving quietly and steadily. There is a good demand for hard-

woods, especially walnut. Ash is going well, and cherry and whitewood fairly.

CANADA PINE.

Table listing prices for Canada Pine: Selects, Dressed, Shelving, Dressed, 1st, 2nds, Dressed Shippers, Dressed Box, Sheathing, 1st quality, 2nd.

ALBANY.

Table listing prices for Albany: Quotations at the yards are as follows: Pine, clear, Pine, fourths, Pine, select, Pine, good box, Pine, 10-in. plank, etc.

OSWEGO, N. Y.

Table listing prices for Oswego, N. Y.: Three uppers, Pickings, Pine, common, Culls, Mill run, etc.

TONAWANDA.

CARGO LOTS—SAGINAW INSPECTION.

Table listing prices for TONAWANDA cargo lots: Three uppers, Common, Culls.

LONDON.

The Timber Trades Journal of March 29, says:—At Messrs. Churchill & Sim's sale this week it struck us that there was not the usual bustle and excitement that we have been accustomed to witness at this time of year, when unreserved goods have been plentifully distributed over the pages of the catalogue, nor did the room seem so crowded as has been the case at the early spring sales of previous years. What this apparent indifference is a sign of is not easy to pronounce, but a great many reasons for it might be assigned, though possibly none of them might be the right one. A likely cause of this position of affairs would be that the dealers are already supplied with all they want, and hold as much stock as they care about while the prospect of business reviving is still so doubtful.

The principal feature of this week's sale was the large quantity of first quality goods which were submitted without reserve, as well as the numerous lots of best planks from St. Petersburg and other ports which the catalogue contained. The Swedish parcels offered in the sale without reserve appeared to be in slightly better request, though these etc. did not seem to be appreciated to the extent which the limited dock stocks would appear to warrant.

Amongst the other Swedish parcels submitted the values realized were hardly up to expectations, and in most cases would barely cover cost. The general expectation was to see a more active demand for Gulf of Bothnia deals

than was exhibited in the room on this occasion, but it is evident from the result that, if stocks in first hands are nominal, the trade at any rate experience no dearth of Swedish wood.

The various lots of timber sold seemed to realize fair values, but it is reported the market for wood in the log is holding and in the cargo trade we learn that most business done as yet has been in hewn timber.

The present disadvantage of sawn timber is its general inferiority, the extra labor being in that way counterbalanced.

Thursday's proceedings were notable for the low prices spruce realized, 2nd Quebec regulars going at about the ordinary price of 3rds, and for the parcel of Craie the major portion went at £7 5s. There was certainly plenty of bidding for these goods, but the effect on prices of this apparent activity was not perceptible. The goods ex Blaydon, also Quebec went better, but the prices for these were very poor, £6 15s. to £7 5s. for the 3rds, and £8 15s. to £9 for the best can hardly be satisfactory to sellers of this class of wood. The few lots of best yellow pine went at fairly good prices, and the 2x11 Quebec 1st bright ex Ottolina, 12 ft which fetched £27 5s., were well done by, nor could much fault be found with £20 for the 10 ft.

This size is somewhat scarce, we understand, but a reason for the big price might partly be found in the lots being confined to only a hundred pieces or so. The buyers, however, were influential firms, to whom a few hundred pieces more or less would in the usual way be reckoned of no moment, but when trade is slack and prices unsettled the size of the parcels in expensive wood becomes a consideration.

LIVERPOOL.

The Timber Trades Journal of March 22, says:—The arrivals of timber-laden vessels still continue to be light, though at the same time they are sufficient for the meagre quantity of business now in progress, if indeed the word progress can be applied to its present condition, which is perhaps more nearly represented by stagnation than any other epithet.

The retail orders in the market are few in number and unimportant in quantity, and even these are keenly competed for at low prices; whilst in the importing part of the trade buyers are unwilling to entertain proposals for contracts unless at prices ridiculously low. There has been very little business done in contracting for pitch pine cargoes, and although the rumours of short supplies in the shipping ports are still put forward as was mentioned last week, they appear to have little or no effect upon the market, and the disposition to purchase for arrival seems to be as strong as ever.

Several steamers have been chartered for spruce deals from St. John, N. B., at 50s. per standard, and as this low freight will enable shippers to get nearly their f.o.b. values, some cargoes have been placed on c.i.f. terms at low prices, both to Liverpool and adjacent ports. This will prevent any advance being obtained for the yarded stocks of these goods for some time to come, and evidently they will be hung up until a decidedly improved demand sets in or unemployed steam to cargo becomes scarcer. The probabilities of the latter alternative taking place seem rather remote; it is reported that freight, Quebec to Liverpool, have been done at 24s. per load.

GLASGOW.

The Timber Trades Journal of March 22, says:—Dealings in whitewood for the week have been on a limited scale, and meantime sawmills here generally are doing a quiet business. There have been few new works of importance in the building way started lately, such as would give a decided impetus to the trade.

One auction sale has been held since last writing, Messrs. Alison, Cousland & Hamilton, brokers. It took place at Yorkhill Wharf, Glasgow, and the catalogue comprised about 400 logs United States black walnut (being salvage of wrecked cargo), also a varied assortment of deals. The walnut was cleared out at from 2s. 10d. to 6s. per c. ft., averaging 3s. 10d. It was evident that the company, which was a large one, had been attracted principally by the sale of walnut. The bidding for the

other goods offered being languid, and not meeting brokers' views, that portion of the catalogue was withdrawn.

There is one lot of about 90 logs United States black walnut remaining at present in Yorkhill Yards here, in first hands. Recent deliveries of deals from these yards show a falling off. In February there were 101,190 pieces delivered, and for the past month only about 70,000 pieces.

The stocks of wood (all sorts) in Clyde ports, at 31st March, will be shown in an early number.

THE MUSKOKA SLIDE, DAM AND BOOM COMPANY.

From a return laid before the Legislature we learn the following facts with regard to this company:

Amount of Capital Stock.....	\$ 50,000 00
Number of Shares.....	2,500
Amount of stock paid up.....	\$ 49,558 30
Amount of expenditure during 1883.....	61,547 68
Cost of work and material.....	29,424 87
Expended for repairs.....	1,261 14
Tolls received.....	10,474 90
From driving.....	43,700 71
Debts due by company.....	17,703 27

LIST OF STOCKHOLDERS.

Jas. Balfour, W. E. Edinburgh.....	\$ 3,000 00
British Canadian Lumbering Co. Toronto.....	20,000 00
A. H. Campbell, Toronto.....	500 00
H. H. Cook, do.....	5,000 00
J. M. Dollar, Midland.....	5,000 00
Robt. Dollar, Marquette, Mich.....	1,000 00
Fred. King, England.....	3,000 00
J. S. Lockie, Toronto.....	500 00
Hon. A. McKenzie, Toronto.....	1,000 00
W. J. Menzies, W. S. Edinburgh.....	2,000 00
Miss Campbell, Midland.....	1,000 00
J. S. Playfair, Toronto.....	1,000 00
R. Power, Barrie.....	3,000 00
Jas. Scott, Toronto.....	2,000 00
O. W. Taylor, Gravenhurst.....	550 00

Total.....\$ 49,558 30

According to the return, this company does not propose to do any driving in 1884, and it accordingly asks the authority of the Commissioner of Public Works to charge the following TOLLS FOR 1884.

Between	Section.	Tolls to Georgian Bay.	Tolls to Gravenhurst.
Bala.....	1	8 c.	
Any point on Muskoka Lake.....	2	8	
Any point on Peopau Lake.....	3	8	
Any point on Joseph Lake.....	4	8	
Port Sydney.....	5	20	18 c.
Any point on Vernon Lake.....	6	27	19 c.
Any point on Buck Lake.....	7	30	22
Eastern boundary Chaffey.....	8	30	22
Eastern boundary Sinclair.....	9	30	22
Oakley Bridge.....	10	25	17
Eastern boundary of McLean.....	11	20	18
West of Bobcaygeon Road.....	12	20	18
Any point on Hollow Lake.....	13	25	27
Bobcaygeon line north branch.....	14	30	22

The above rates include sorting at mouth of Muskoka River and at Georgian Bay. Sorting at all other points to be charged at actual cost. Saw logs calculated at 200 feet B. M. each. Tolls on other kinds of lumber and timber to be in proportion to the above.

The Cut in Maine and New Brunswick.

The lumber cut for the State of Maine and the Province of New Brunswick will be very much less for 1884 than it has been for some years past. We have had access to some figures which conclusively prove this fact. The cut on St. Croix River will be 20,000,000 short of last year; on the Penobscot and its branches the shortage this year will be 65,000,000 and on the Aramoosuk, Upper St. John, North Shore of New Brunswick and Bay Shore of New Brunswick, the shortage will be 183,000,000—showing a total fall short over 1883 of 268,000,000 feet. Of course, owing to the extensive drought of last summer a considerable stock of logs has been wintered over; but even taking this into consideration, the stock that will be on hand at the beginning of this year's sawing

season will be very materially less than that of last year. With anything like a demand at all, the price of our great staple article should increase, and we cannot but think, in the face of the figures given above, that this will be so.—*St. John Globe.*

Exhibition of Machinery.

An International Exhibition of Motors and Implementary Machinery for the smaller industries will be held at Vienna in the grounds of the Imperial Royal Horticultural Society by the Industrial Corporation of Lower Austria, under the patronage of his Imperial and Royal Highness the Archduke Carl Ludwig.

The Exhibition will be opened on the 24th of July, and will close at the latest by the 12th of October, 1884, and will contain the following groups:—1. Motors (up to the three-horse power). 2. Transmitters. 3. Tools, Implementary Machinery, and Working Appliances. 4. Physical and Chemical Apparatus. 5. Means of reproducing Graphic Impressions. 6. School and Teaching Appliances for Technological Instruction.

Applications should be addressed, not later than the 1st of April, 1884, "An den Niederösterreichischen Gowerhoverschein, I., Eschenbachgasse, 11, Wien, Austria," on forms obtainable from the mentioned quarter.

There will be no prizes awarded, but each exhibitor will receive a memorial medal and certificate of participation at the exhibition.

Motors and machines will be examined and tested by a special Commission, which will give certificates of the result of such trials.

An Ingenious Device

An ingenious device to prevent boiler explosion has recently been patented by two New York engineers. It consists of an electric battery, placed on the wall near the boiler, connected with a gong by negative and positive wires. These wires run to the water gauge and connect with a glass bulb filled with mercury. When the water falls below the point of attachment the steam rushes into the space surrounding the mercury bulb, and the mercury expands. As it rises in the tube it comes in contact with a platinum wire, thus closing the electric circuit and ringing the alarm bell. When water is pumped into the boiler it forces the steam back, breaks the circuit and puts the alarm in working order again. The invention recommends itself on account of its simplicity.

Dwarf Trees.

The dwarf trees of China are curiosities of forestry. Every child knows how the Chinese cramp their women's feet by bandaging them when they are infants, and thus render it impossible for them to walk. It is, however, wonderful to see miniature oaks, chestnuts, pines and cedars growing in flower pots, 50 years old and yet not a foot high. To do this take a young plant, cut off a tap root, and place it in a basin in which there is good soil kept well watered. If it grows too rapidly, dig down and shorten in several roots. Every year the leaves grow smaller, and the little dwarf trees make interesting pets.

Preserving Montana Forests.

WASHINGTON, March 12.—A bill introduced in the Senate to-day by Edmunds provides that a tract of land in the territory of Montana, of about 6,900 square miles, be reserved and withdrawn from settlement, occupancy, or sale, and set apart for ever as a national forest reservation for the preservation of the national forests, protecting the head waters and tributaries of the Columbia and Missouri rivers.

When You Catch Cold.

Dr. J. Mortimer Granville, writing to the *London Daily News*, says:—
There are two lessons to be learnt and laid to heart by those who would treat a chill successfully and spare themselves the consequences of a cold. Secure a full reaction quickly, but avoid over-stimulation. Nature's remedies for a chill are sneezing and shivering. By these commotions, which are essentially mechanical, she rouses panic-stricken centres. A good fit of sneezing keeps off many a cold, and the man who carries a snuff-box and uses it at once

J. S. MAYO

IMPORTER AND MANUFACTURER OF

MACHINE OILS

OF EVERY DESCRIPTION.

9 Common Street, Montreal.

AMERICAN LUBRICATING OILS A SPECIALTY.

As I carry the LARGEST and BEST assorted Stock of OILS in the Dominion, I am prepared to fill all orders Promptly and at LOWEST MARKET PRICES.

COLQUHOUN, DRUMMOND & CO.,

IMPORTERS AND DEALERS IN

Machinery, Mill, Steamboat and Foundry Supplies, OILS, ETC., ETC.,

OFFICE:—16 Custom House Square, MONTREAL.

N.B.—Second-Hand Machinery, Boilers, &c., Negotiated for.

may generally feel safe—that is, if he sneezes violently immediately after the chill. Brisk exercise, short of fatigue which exhausts, will also prevent a "cold" supervening upon a chill. The recourse to stimulants is bad. Attention should be directed to the nervous system, not to the circulation of the blood. The heart will take care of itself if we will only see that the nerves are quickly roused to action. When the hunting man feels chilled he should mount a fresh horse, and take a short but brisk trot to rouse his nerves. When the home-stayer thinks he has "sat in a draught and caught cold," he should quickly put on his hat and take a rapid walk or run. The aim must be, not to warm, but to revive energy. A very little consideration will show that these two aims are different, and common-sense will generally suggest the best mode of treatment within reach at the moment. This effort of self-cure by exertion will have the additional advantage of setting the brain in action. The brain is the great head-centre of the nervous system, and when the will acts powerfully at the instant of any impression which has a tendency to depress the lower-nerves centres the activity of the higher, the supreme cerebral, the intellectual centres, generally wards off the attack. The man whose brain or mind is powerfully excited at the moment of exposure to a chill seldom takes cold. I make no apology for placing these technical details before your readers, because they ought to be known to every one. The prevention of a cold is a matter of self-hold.

Spring Care of Breeding Sows.

On many farms the breeding sows are perhaps the most profitable stock. But the profit is largely dependant upon the safe rearing of good sized litters. We know so well how much depends upon practical experience in the safe rearing of large litters that we shall not attempt to give minute instructions for the novice in such a case. It is recommended for safety, if the weather be cold, to take the pigs from the sow as fast as they are dropped, in a warm basket to a warm room, and keep them warm till the sow is ready to suckle them. When the sow is done farrowing a warm bran slop with a gill of boiled flaxseed stirred in, should be given her.

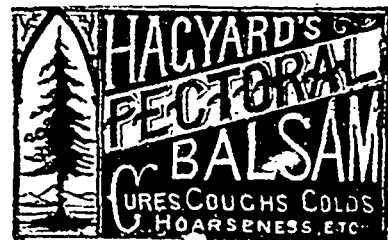
When she has taken this the pigs may be brought to her to suckle, and they will usually commence their work with activity.

The sow must be fed sparingly for a few days, so as not to produce or keep up a feverish condition of the system. But when this danger is

past she must be fed with special reference to a large secretion of milk.

Suppose she has eight pigs to feed, few have considered what a draft this is upon her system. After they are ten to twelve days old, they will drink three pounds of milk each per day. This will require the cow to produce twenty-four pounds each day—as much as an ordinary cow. To do this she must be fed on the most nutritious food, two hundred pounds of oats and one hundred pounds of corn ground together, with one pint of linseed oil-meal added to each day's feed, the whole cooked and given in a thin slop, will be as good a diet as can be found.—*National Live-Stock Journal.*

WEATHER PROBABILITIES.—Forecasting the weather is uncertain at the best, but it is certain that if you catch cold in this changeable climate you can beat break its ill effects by Haggard's Pectoral Balsam, the most reliable and pleasant remedy for coughs, colds, bronchitis, and lung complaints. It is so agreeable that even a child may take it.



FREEMAN'S WORM POWDERS.

Are pleasant to take. Contain their own Purge. Is a safe, sure, and effective destroyer of worms in Children or Adults.

MACHINERY.

STEAM ENGINES, STEAM PUMPS, STEAM BOILERS, SAW MILL MACHINERY, Of Every Description.

RUBBER BELTING, LEATHER BELTING, MILL SUPPLIES.

SHAFTING, HANGERS, PULLEYS, &c.

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Corner Bleury & Craig Streets, MONTREAL.

ROBIN & SADLER

Have been awarded Three Years in succession at the Provincial and Dominion Exhibitions in Montreal, First Prizes for

LEATHER BELTING

LEATHER BELTING

Fire-Engine Hose, &c.

Send for Price Lists and Discounts to the Factory

594, 596, 598, St. Joseph Street,

MONTREAL.

HUGH GIBSON,

MANUFACTURER OF

KNIGHT'S PATENT "EXCELSIOR"

SAW MILL DOGS

The Sawyer's Favorite

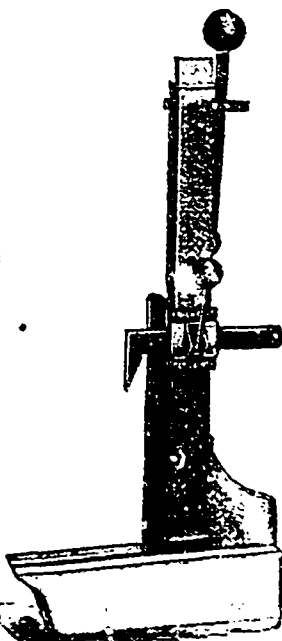
For Holding Logs upon a Saw-Mill Carriage while being Sawn into Lumber.

MISSISSIPPI, June 7th, 1882.
HUGH GIBSON, ESQ.—Your Patent Excelsior Mill Dogs give entire satisfaction, and is certainly up to your recommendation. They are the best Mill Dog in the market. I am very much pleased with them.
Yours respectfully,
PETER McLAREN.

BRANTFORD, April 20th, 1882.
HUGH GIBSON, ESQ.—Sir,—The Dogs I bought of you give satisfaction. They beat any Dog that I ever saw for ripping or edging lumber on carriages. They are just the thing for scantling. I would not take \$50 for them to-day and have to wait for another pair to come from you, because I believe they make two dollars a day for me.
Yours truly,
GEO. S. BROWN, JR.

117

Manufactured by HUGH GIBSON, CHATHAM. EXCELSIOR DOG.



H. WILLIAMS, SLATE & GRAVEL ROOFER

MANUFACTURER OF AND DEALER IN

Tarred Felt, Roofing Pitch, Sheathing and Building Papers, Carpet and Rosined Waterproof Paper, Ready Roofing, &c. All orders promptly attended to at LOW PRICES.

H. WILLIAMS, 4 Adelaide Street East, Toronto.

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Lumber Drivers' Calks

TEMPERED IN OIL.

25 BALL and 5 HEEL to Set

The Calks are now used by all the principal Drivers in Maine and New Brunswick.

Kept by Dealers in Lumbermen's Supplies

FOR SALE BY

T. McAVITY & SONS

Dealers in Lumber and Mill Supplies,

ST. JOHN, N. B.

Samples sent by mail on application.



SMALL BALL

MED BALL

LARGE BALL

SMALL HEEL

LARGE HEEL

SCREW HEEL

CALK SET AS PITCH COMBINED

(FULL SET)

EAGLE FOUNDRY!

GEORGE BRUSH

14 to 34 King and Queen Sts, MONTREAL,

MAKER OF

Steam Engines, Steam Boilers, Hoisting Engines, Steam Pumps,

CIRCULAR SAW MILLS, BARK MILLS, SHINGLE MILLS,

Water Wheels, Mill Gearing, Shafting, Hangers and Pullies,

Hand and Power Hoists for Warehouses &c., &c.

Also, Sole Manufacturer of BLAKE'S CHALLENGE STONE BREAKER.

AND AGENT FOR

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"Water's" Perfect Steam Engine Governor, and "Heald & Sisco's" Centrifugal Pumps

EXTRA HEAVY AMERICAN

Oak Tanned Leather Belting.

RUBBER BELTING, RUBBER PACKING, RUBBER HOSE, LINEN HOSE and COTTON HOSE.

A Full and Complete Stock always kept on hand. WRITE FOR PRICES and DISCOUNTS.

We have the Largest and best equipped RUBBER FACTORY in the world for the manufacture of VULCANIZED INDIA RUBBER GOODS for Mechanical Purposes.

Our trade here has increased to such an enormous extent that in order to keep up with the demands, we have purchased from Major John Gray, M.P.P., Parkdale, the plot of ground situated on West Lodge Avenue, adjoining the Credit Valley, Toronto, Grey and Bruce, Northern and Grand Trunk Railways, for the erection thereon of a BRANCH RUBBER FACTORY, works to be in full operation January 1st, 1884.

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO.

T. McILROY JR.

WAREHOUSE:—10 and 12 King Street East,

P.O. BOX 556.

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TORONTO.

The William Hamilton Manufacturing Co'y

MANUFACTURERS OF (LIMITED)

SAW MILL & GENERAL MACHINERY

We make a Specialty of Heavy Saw Mill Machinery.

OUR SAW MILL ENGINES are made Strong, Neat, and Durable, knowing well the ever varying strain they are subjected to in driving a Saw Mill.

We wish to call the attention of our Canadian Lumbermen to our First Class HEAVY SAW MILL MACHINERY for CIRCULAR MILLS and CIRCULAR and GANG MILLS of the most improved designs. We are prepared to submit Plans and Specifications, together with any information that our many years of close application to the Saw Mill Business may have suggested to us, also when required to enter into contract for building and supplying the machinery complete, superintending the starting of the same, and handing over the mill to its owner in first-class running order.

OUR HEAVY SINGLE CIRCULAR SAW RIG, Complete, with or without Top Saw, Rack, Rope or our Improved Steam Feed (Patent applied for), is acknowledged by our leading lumbermen to be a first-class article, got up in the best manner possible, and furnished with Headblocks and Dogs to suit our Customers. We also manufacture a lighter Circular Rig for the smaller class of mills (or where there are two circulars required in the same mill), which is exceedingly smart in its movements, and supplies a long felt want in this direction.

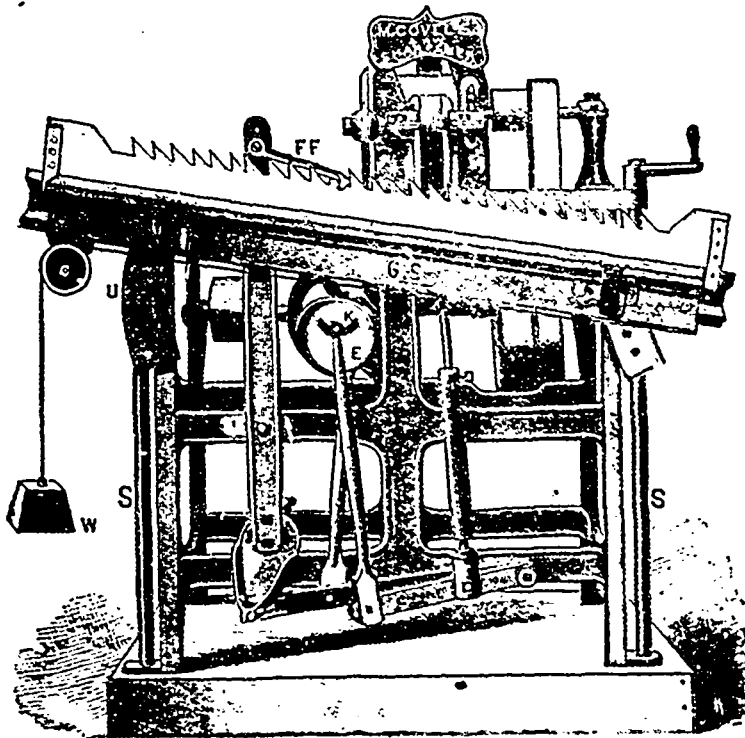
OUR PATENT TWIN CIRCULAR RIG with Rack, Rope, or our Improved Steam Feed (Patent applied for), is now the favourite Machine for Slabbing Logs, and is acknowledged by all to be the smartest and the best Machine for this purpose in the market.

OUR IRON FRAME OSCILLATING SLABBING and STOCK GANGS are fitted up with the most improved Machinery, which for Strength, Class of Workmanship and Design cannot be excelled.

OUR DOUBLE EDGER is the best, most useful and most substantial article of the kind in the Market, which is proven by the number we are called upon to supply; we put on any desirable number of saws on the Spindle; they can be arranged to suit the work especially required to be done. We also furnish them with one or two Guages for sawing Scantling or re-sawing Lumber.

Our PATTERN WROUGHT IRON ENDLESS LOG CHAIN for drawing up logs, keeping a constant supply of logs in the mill, and requires, from its construction, very little power to drive it. We have furnished the majority of the best Mills in Canada with this Chain, and many Mills in the United States are using it. We also supply when required Trout's Log Counter (Patent applied for), to count the logs as they are drawn into the Mill. By this simple device the proprietor is able at a glance to know at any time during the day how many pieces have been cut, thus enabling him to judge if the Mill is up to her work.

Our most improved LOG CANTERS for Turning Logs on Carriage. We also furnish them with Weirs' Patent Incline Attachment for rolling logs from Skids on to Carriage.



We still continue to manufacture
THE

Scovell Saw Sharpener

with all the latest improvements, which Machine has only to be known to be appreciated.

We also manufacture LATH MACHINES, LATH BOLT-ERS, LUMBER TRIMMERS, LUMBER MARKERS, SLASH TABLES, TIMBER CANTERS, LOG DECK CANTERS, SHINGLE MACHINES, KNOT SAWS, DRAG SAWS, SHINGLE JOINTERS, BOLT-ERS, WATER WHEELS, and a variety of the best kinds of Wrought Iron Refuse and Sawdust Carrier Chain (that can be relied on to do their work). Everything required in a first-class Saw Mill.

PETERBOROUGH, ONTARIO.

The Improved CLIMAX Sash Lock

MANUFACTURED BY MILLER BROS., GUELPE.

Holds the sash in any position so that it cannot be moved either up or down, can be put on by anyone, only requiring two screws.

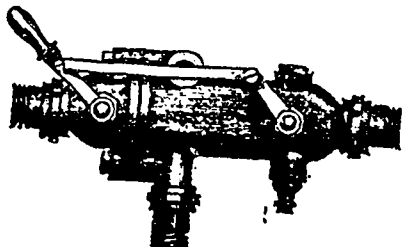
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ROBERT MITCHELL & CO.

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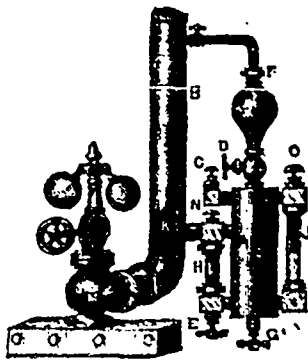
THE KORTING INJECTOR

Acknowledged to be the Best Boiler Feeder in the World.



Will lift 20 feet, and take water at 150 degrees. Only one handle to start and stop. No valve to regulate. CHEAPER than any other injector in the market. Also, PATENT EJECTORS for conveying Water or Liquids. CIRCULARS ON APPLICATION.

The Continuous Feed Lubricator
Saves 50 per Cent in Oil.



F. E. DIXON & CO.

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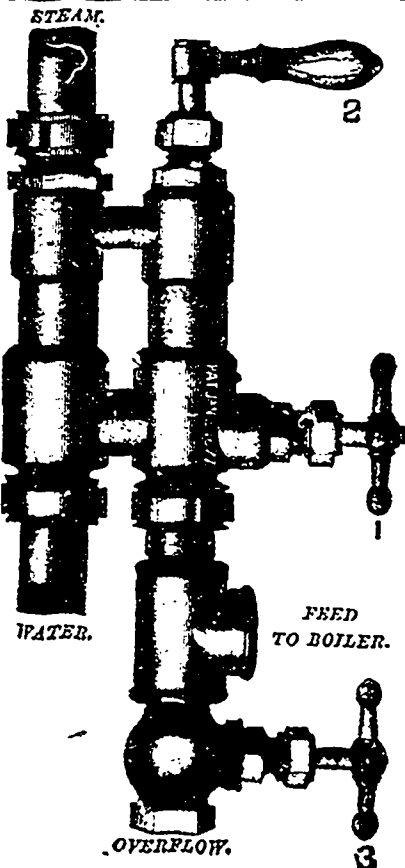
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LEATHER BELTING

70 King Street East, Toronto.

SPECIALTY: Belting made from J. B. HOYT & Co's American Oak Tanned Leather. Send for Price List and Discounts.



THE Hancock Inspirator

The Best Feeder known for Stationary, Marine or Locomotive Boilers.

THE INJECTOR PERFECTED!

All Sizes lift water 25 feet. No adjustment required for varying Steam Pressures.

Over 50,000 Now in Use.

MANUFACTURED BY THE

Hancock Inspirator Co'y

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Manufacturers of Inspirators, Ejectors, and General Jet Apparatus.

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THE INTERNATIONAL TENT & AWNING CO.

184 Sparks Street, Ottawa.

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First Prizes

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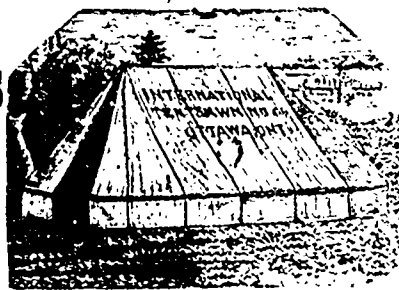
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LUMBERMEN'S TENTS

The Cheapest and Best in the Market!

Tents, Flags, Tarpaulins, Waterproof Goods, Camp Furniture, etc., etc.



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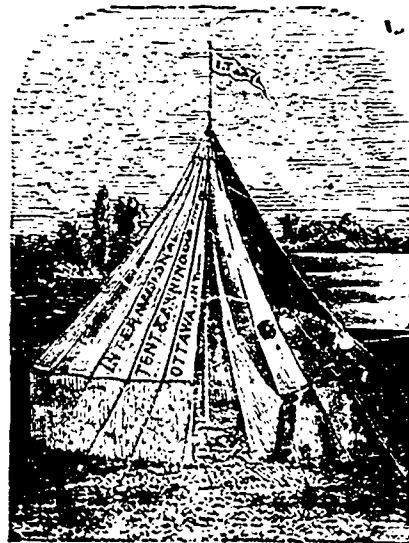
TORONTO,

1883.

Estimates for Circus Tents, Range Marquees, Hand-made Sails, etc., furnished on application. Liberal Discount to Large Buyers.

PORTABLE CANVAS BOATS MADE TO ORDER

SEE OUR NOVELTIES
IN
Camp Furniture!



Send for CATALOGUE
AND
PRICE LIST!

At Toronto, Ont., and St. John, N.B., we made the best Display of Tents ever shown in Canada—and we never substitute an article inferior to sample in filling orders.

We control "THE LATOUR PAT." for Camp Furniture, the best on earth. The only Gold Medal ever given for this class of goods was awarded to the Latour Camp Furniture at Toronto in 1882.

SAIL-MAKING.

We have secured the services of the best practical sail-maker in Canada. Orders in this line will receive prompt and satisfactory attention, as is usual with all orders entrusted to us.

Agency for the WILDERMUTH BED SPRING, the best in the Market.

A. G. FORGIE, MANAGER,

International Tent & Awning Co.,

184 SPARKS STREET, OTTAWA.

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The William Hamilton Manufacturing Company, Limited

MANUFACTURERS OF

SAW MILL AND GENERAL MACHINERY.

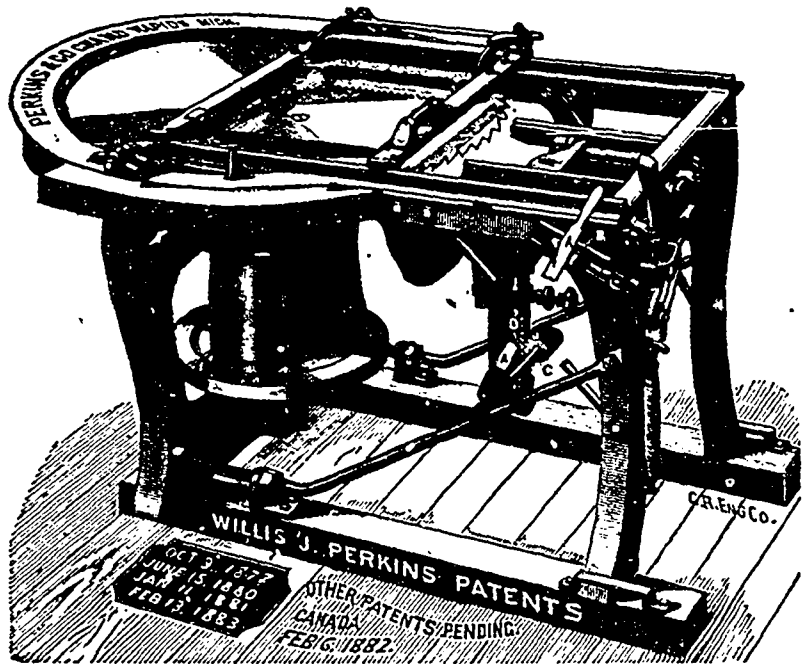
OUR SAW MILL ENGINES are made Strong, Neat and Durable, knowing well the ever varying Strain they are subjected to in driving a Saw Mill.

We wish to call the attention of our Canadian Lumbermen to our First Class HEAVY SAW MILL MACHINERY for Circular Mills and Circular and Gang Mills of the most improved designs. We are prepared to submit Plans and Specifications, together with any information that our many years of close application to the Saw Mill Business may have suggested to us, also when required to enter into contract for building and supplying the machinery complete, superintending the starting of the same, and handing over the mill to its owner in first-class running order.

Besides the variety of Machines we build for the manufacture of lumber we have added to our list the

PERKIN'S PATENT SHINGLE MACHINE.

having obtained the sole right to manufacture and sell for the Dominion. Also Drag Saws, Bolters, Sappers, Jointers and Packers.



GRAND TRIUMPH.

Willis J. Perkins' Drop Tilt!

The only Horizontal Saw Machine on which a thick slab can be cut from the bolt.

SECOND CUT ALWAYS A SHINGLE.

Knots, rots, hearts, bolt squared rift-ways, and all irregularities cut off at one clip. This improvement will pay the price of the whole machine every season by increase of quality and quantity cut.

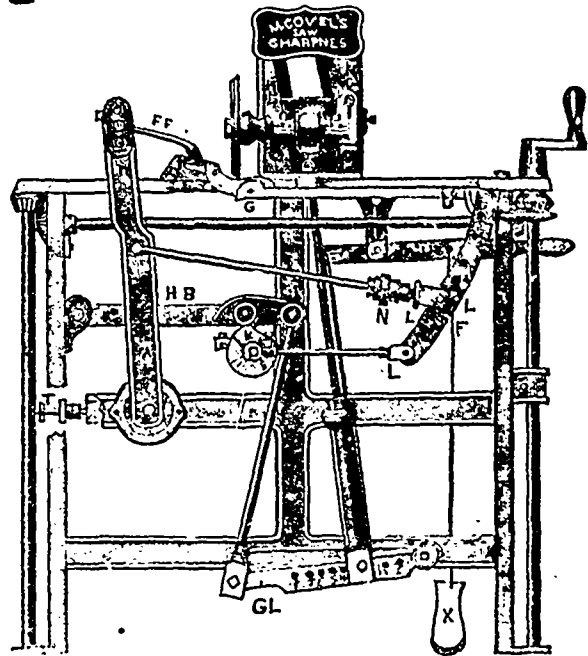
THE WILLIAM HAMILTON MANUFACTURING CO.

PETERBOROUGH, ONTARIO.

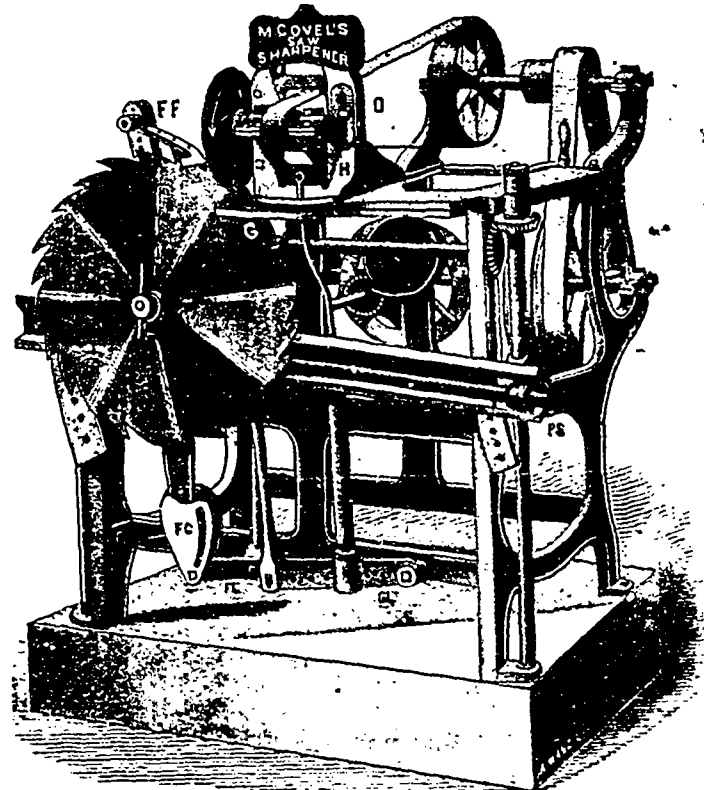
SOLE MANUFACTURERS AND AGENTS FOR THE DOMINION.

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THE M. COVEL PATENT SAW SHARPENER.

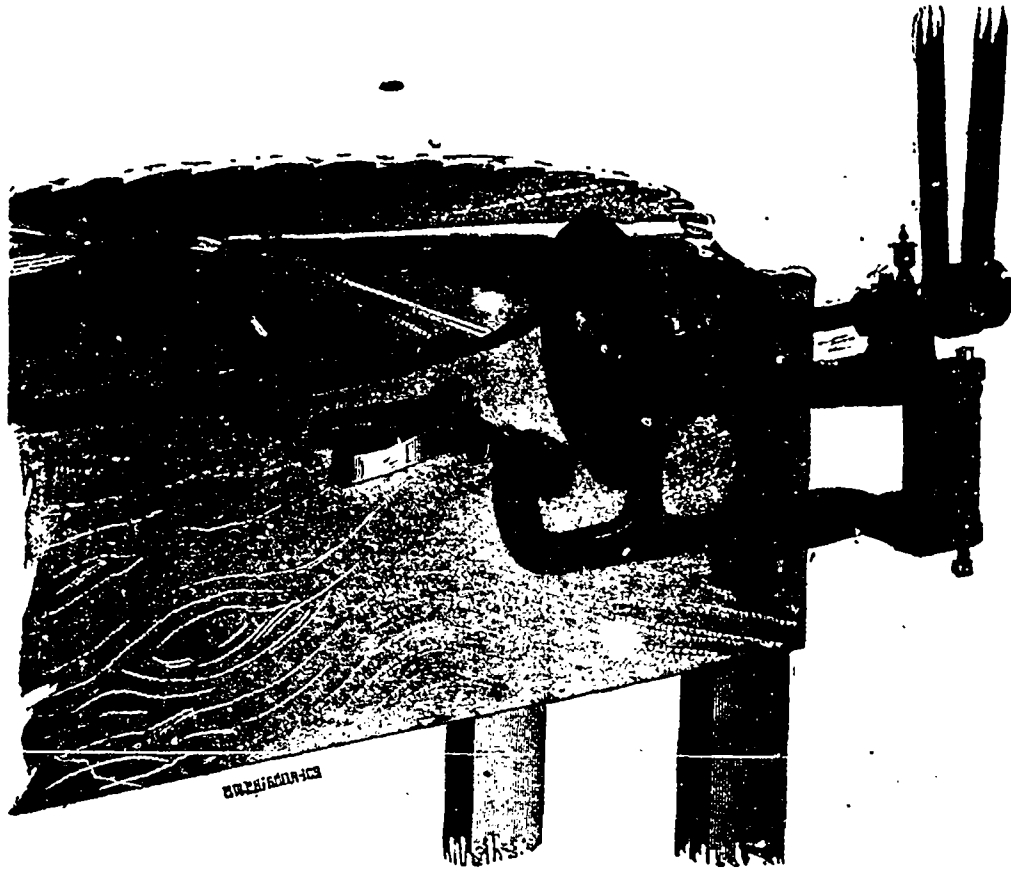


The above Cut No. 1 shows some very important changes that have lately been made, which makes the machines far less complicated for new beginners to operate. Cut No. 2 shows this machine with a circular saw upon it ready for operation.



ROGERS' PATENT SAW GUMMER and SHARPENER

The Handiest Machine for these purposes ever Invented.



Don't Heat!

Cheap!

Very Simple!

Accurate!

Works Fast!

Complete!

Lumbering Season, 1884

Saw Mill Owners in providing for the season of 1884, ought not to lose sight of ROGERS' SAW GUMMER for it will save them more money in proportion to the amount invested than any other machine.

Only \$30, including Emery Wheel ; Table and Countershaft, \$10 extra.

A few of ROGERS' SAW GUMMERS were put on the market last season, and we quote some of the commendations received :

JAS. HADDEN, Foxmead, says :—
"Your machine is all I expected."

CHAS. ANDERSON, Anton Mills, says :—
"I have given it a good trial, and am well pleased with it.
"I find it is one of the indispensables in a saw mill." * * *

ROBT. R. WEIR, Orillia, writes :—
"It works like a charm, and is very accurate in its work."
CRONE & PATTON, Hoc Roc Mills, Gravenhurst, says :
"The Rogers' Saw Gummer purchased from you gives
"good satisfaction, * * * it cannot be beat."

D. DAVIDSON, Pentanguishene, writes :—
"We are well pleased with the Gummer."

W. W. BELDING, Wyevalc, writes :—
"I have the Gummer running and it is giving good
"satisfaction."

ADDRESS ALL ORDERS TO THE

Hart Emery Wheel Company, Limited - Hamilton, Ont.

Manufacturers of Hart's Celebrated Patent Wire Strengthened Emery and Corundum Wheels.