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The only Newspaper devoted to the Lumber and Timber Industries published in Canada

SUBSCRIPTION  
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VOL. 5.

PETERBOROUGH, ONT., DECEMBER 15, 1885.

NO. 24.

**FORESTRY IN ILLINOIS.**

The following letters were published in the Toronto Globe:—

SIR,—Passing from Chicago, thirty miles to the north, along the lake, we reach Waukegan, the home of the leading tree-planter in North America, whose trees I have found growing by the thousand on the distant Atlantic coast, in the far south and over the eastern prairies. I think of all the localities I have visited, trees seem to flourish here the best. It is not the soil, for that is evidently but poor and sandy. It may be that the atmosphere—from which, in fact, trees derive most of their nourishment—is the cause. Here, on the shores of Lake Michigan, exposed to the full force of the eastern winds, the lake breezes meet and mingle with the air of the prairies. Whatever the cause, the maple foliage now autumn reddened stands from the tree with a bolder and a wider spread. The pine and cedar are of richer green than I have seen elsewhere.

Here, on the extensive grounds of Mr. Douglas, are great masses of closely-standing young pines, spruce, and larch, acres in extent, illustrating the principle on which he has commenced, throughout the States, many large and thriving plantations. Let me first state the object for which trees cultivated in this manner are planted:—1. To grow wood more rapidly than any other process will give it. 2. To grow that wood in straight beams. 3. To obtain much more wood from the same ground than an equal space in the natural forest would give. 4. To create such a plantation as will, in exposed situations, act as a complete and impervious shelter and will give dense shade on every side, so as to benefit cattle without the necessity of allowing them to enter and injure it. 5. To create one which will also act as a reservoir of moisture, preventing rain from passing too rapidly away, and giving it out gradually by feeding springs, and otherwise—a most valuable quality, especially where the plantation can be located on the higher portions of the farm. 6. To plant so that the trees will never need pruning, but will prune themselves so that after two or three years no cultivation will be necessary and no weeds appear.

All this is secured by planting trees not more than four feet apart each way. For two or three years they are cultivated to destroy weeds, and after that the depth of shade they cast prevents future growth. This great mass of trees then, growing up closely together, presents always on the upper surface of the grove a succession of bright, green-leaved, and healthy tree tops, while inside the grove the appearance will be very different. There will here, especially in the case of evergreens, be many decaying and falling branches. In fact the shade will kill off all branches but the upper ones. As the grove gets taller, and the trees larger, there will be too many trees, and the weakest

of those will in turn be killed by the strongest depriving them of light and air, till the proper number of trees is left on the ground.

Nothing need be done so far to assist nature. But if the trees have been properly selected this process of crowding can be made convenient to the uses of the owner of the plantation. If every here and there among the trees at proper distances have been planted such as are of slower growth, the quicker growing may be taken out as they mature, and those of slower growth left to continue the grove; or those whose timber is the most valuable can left, those least valuable removed. For instance, say we take the black walnut (where it will grow), ash, cherry, and yellow birch, all of which are very valuable timber. Plant them 8 by 8 feet apart. Let us then take maples—soft maple or sugar maple—and box elder, and fill up till all is planted 4 by 4 feet apart. Planted altogether they will soon cover and shade the ground, will all grow up together to a dense grove, and will, when the maples and elders are taken out (doing which will give a great deal of timber), leave room for the more valuable trees, which in their turn will be taken out when mature. For instance, you will get the cherry in half the time you would have to wait for the black walnut. Evergreen and larches are planted the same distance apart, but plantations of these are better by themselves. Plantations of this nature will fulfil the previous description.

When the ground is well-prepared and mellow they can be planted easily and rapidly, and by persons who have had no previous experience. Two men generally perform the planting, or a man and a boy, the latter holding a bundle of young trees under, takes one and stands it in place when the other has opened the ground for it by removing one spadeful of earth. This is then placed again in the cavity, against the root, which is held by the other firmly against the back of the opening. The earth is now pressed against the root with the foot, and the tree is planted. Very few fail to take root. The trees are, of course, small, from one to two feet high, but being grown in nursery beds have generally good roots. Two people plant nearly a thousand a day. The cost of these young trees is small, in large quantities—say twelve thousand—they are quoted here, most of the varieties mentioned mixed, at two dollars a thousand; and I have no doubt that if a large demand existed they would also be cheaply obtained in Canada—perhaps can now. In a few years no part of our farm will pay as well as some acres so planted, counting wood alone. It is surprising how many cords of wood, in mere cuttings, can be taken from a small plantation, while, in yielding shelter and improving the adjacent soil by its retention and distribution of moisture, the advantages would be very great.

Waukegan, Ill., Oct. 25th. R. W. PHIPPS.

**LETTER FROM HON. H. G. JOLY.**

SIR,—I read with much interest Mr. R. W. Phipps's letter published in your issue of the 4th inst., and his description of tree culture in the prairies of the West, noticed especially the great losses entailed by frosts. The protection of young plantations against frost is a question of vital importance to all planters of trees, either fruit or forest trees in the north, and the wind breaks and hedges recommended by Mr. Phipps are certainly the best protection but it is important ascertain how they act. The tree planter whose opinion is quoted by Mr. Phipps appears to think that those wind breaks and hedges protect the trees against the frost by sheltering them from the wind. It is not out of of any love of contradiction that I find this explanation insufficient; I think they protect the trees by stopping the snow and causing it to cover the ground at the foot of the trees.

If I may be allowed to quote my own experience, you will perhaps admit that it is more important than would appear at first sight, to ascertain exactly how and why those wind breaks and hedges protect the trees against frost; in fact, it is the only way to arrive at a reliable system of protection.

Until this summer the experience of the last 12 years appeared to justify the conclusion that the black walnut (whose timber ranks, in commercial value, next to mahogany) can stand even our Quebec winters with impunity. The result of last winter's exceptional severity compels me to speak with less assurance, as it killed about three hundred of my young walnuts which had safely stood the ordeal of several winters. However, I do not regret the loss as it has shown me how to prevent its recurrence and provide against more serious loss in the future.

When the spring opened these young trees showed no sign of decay. The buds began to swell like those of other trees, a few even opened. It took some time to realize that vegetation was at a standstill within them. The stem and branches looked healthy, the bark fresh and the underbark green. A few bore marks of sunburn, but the same marks were found on some of the growing trees. I was quite puzzled as long as I looked above ground. It was under ground, when digging up the trees, that the explanation was found the bark of the roots was all mildewed, burt, and completely separated from the wood, for a depth of from 12 to 14 inches from the surface of the ground; below that it was quite sound, adhering closely to the roots.

It was evidently the result of frost acting on the water contained in the soil and the roots. But why out of several thousand walnuts, growing on the same soil and with the same

conditions of moisture, did we lose only three hundred?

The answer was easily found. All the trees killed by the frost stood in parts of the plantation where the first snow did not remain (as there happened to be no obstacles to prevent its being swept away by the wind) and where the unusually heavy rains of last December left a coating of ice around the foot of the trees.

The trees growing where fences or hedges arrested the snow and caused it to remain on the ground, escaped, without one single exception, though many were just as much exposed to the force of the wind as those that were killed, as they stood on the same side of the hedge but where the ground was covered with snow the snow protected the roots from the frost and prevented the formation of ice around the foot of the tree. Three different plantations, widely apart from one another, and on different soils, gave the same results.

It is easy to cause the snow to remain where it is wanted, especially with willow hedges; they cost next to nothing, just the trouble of sticking the cuttings into the ground at the proper season and never fail. Those hedges are as useful in summer as they are in winter. A knowledge of the direction of the prevailing wind will help to place them where they can be most effective in collecting the snow, which I consider as the really protector of young trees against the severity of our winters. It is not too late to try the remedy even now; fence rails, branches, stones, any temporary obstacle that will arrest the snow would answer to the purpose, until the permanent hedges are ready.

We know very little of forest tree culture here. We can learn a great deal from the scientific foresters of France and Germany, but we must not lose sight of the difference of climate laws and customs between them and us, which will make it necessary for us to modify their systems in many instances.

For the present we must look to experience as our teacher; its lessons are useful but somewhat expensive. We can lessen the cost for one another by contributing our little share of experience to the common stock, with the generous help of the press, which has never been refused to the cause of forestry.

H. G. JOLY.

Point Platon, P. Q., Nov. 10th.

BIRDSELL & BARKER'S saw mill, Bay City, was totally destroyed by fire on Dec. 2nd. The loss is placed at \$150,000; insured for \$100,000. It was built in 1872 and was the largest on the river, having a cutting capacity of 40,000,000 feet of lumber per season. The mill employed 150 men, and at the time of its erection in 1872 was the largest concern of its kind in the world.

## MATERIAL AND FORM OF DAMS.

The weirs or dams thrown across the beds of rivers have been constructed in a great variety of shapes and of different materials, some of them too costly for general use in a country where small mills are chiefly needed. In cases where the supply of water is large and a high fall is not demanded, a temporary dam composed of boulder stones is sometimes thrown across the stream in a diagonal breadth. The water is thus partly forced into the conduit or race above the dam, and the remainder passes over the surface of the dam in a shallow sheet. Being hastily and cheaply built, a dam of this kind may be repaired without much outlay, but the inconvenience of doing this after every heavy raise of the stream is a material drawback on its value.

In contrast with this comparatively rude species of dam are those of more solid structure, substantially built of stone, and stretched across the river in the form of a bow, the curve being against the current—the middle of the dam, in other words being higher up the stream than the two ends. A dam of this sort, if provided with massive stone abutments, present a firm resistance to the onset of a flood, and will stand any test ordinarily experienced. It may be made with a gentle slope from the crest both up and down the stream; or with a steep descent on each side, making its walls almost perpendicular; or again with either a steep or sloping front on the upper side and on the lower a curved apron, the wall rounding downward from the top like the lower half of the letter C, by which arrangement the fall is made gradual and its force abated.

In a stream of moderate size, a form of weir has sometimes been adopted resembling the letter V, with the apex or point directed up stream. If built upon piles, with a frame of timber forming an inclined plane upon the face of the dam, and filled up with gravel surmounted by a mass of bolder stones well packed in, the dam will be nearly impenetrable by water. The position of the two arms of the V distributes the force of the water in passing over, and as the currents descending from either side tend toward the centre of the stream, the banks are less liable to be washed away. If timber is abundant, the frame instead of having a uniform slope downward on the face of the dam, may be made in a series of steps like a wide stairway, breaking the water into cascades. The piles for such a dam may be placed at right angles, with the current, stayed and covered with plank, and made watertight with sheet piling supported with foot piles. Constructed in other respects like the one last described, a dam of this kind will possess great durability and admit of no leakage.

An undue accumulation of water above the dam may be remedied by a channel and sluice gate in one of the side walls, by which the surplus water may be drawn off before reaching the crest of the dam. A self adjusting dam of heavy planks strongly framed together is sometimes stretched across the stream, connected by hinges to the crest of the permanent dam, and held in an upright position by weights passing over wheels on the abutments. In case of a flood the weights give way partially to the increased pressure and the auxiliary dam is let down toward a horizontal position, allowing the water to pass unobstructed. In place of an appendage of this kind, movable flash boards are often used, being held in place by pins and other supports along the brink of the dam, and tightly fitted to each other. In time of low water, the flash boards are of important service in obtaining sufficient head. When the stream rises, the boards are removed (though the supports may often remain) and the crest of the main dam being below high water mark, the surplus water escapes freely.—*Lefell's Construction of Mill Dams.*

## THE GROWTH OF LONDON

Some remarkable facts about the growth of London during the last thirty years are contained in the opening address of the President of the Surveyors' Institution. The president has set down in tabular form the number of building operations, including new buildings and alterations to old buildings since 1856

In that year the works were 14,654 in number, and they gradually increased until 1868, when they reached 91,915. About this time there seems to have been a glut in the building trade, for building operations commenced to fall off, and decreased steadily until 1873, when they numbered 17,354. After this dull season the builders commenced to be busy again, the number of works increasing by hundreds and thousands yearly, until in 1881 it reached its height with 29,271. Another dull season seems to have set in for the builders, for though the last figures only apply to 1883, and these show a decrease of nearly 3,000, it is understood that the building trade has not yet recovered from the congestion of 1881-82. We note that while in the earlier years the number of new buildings exceeded that of additions and alterations, the balance has recently swung round the other way. During the seven years 1876-83 the number of new buildings constructed in London was 80,657, and of additions and alterations to buildings 80,399. But while the proportions in 1877 were 10,052 new buildings to 8,930 alterations, in 1883 they were 8,750 new buildings to 11,100 alterations. The main building construction is that of houses for artisans and people of small incomes in the suburbs. Land about Clapham Common has been augmented in value from about £1,000 to £3,000 an acre. In the outlying parts of Battersea it is £3,500. In North London the increase in the value of building land is even more marked, and the health-giving slopes of many a green retreat are marked for future streets. The president of the Surveyors' Institution thinks the growth of this class of habitation means more comfort and better health for workpeople. We hope that may be so; but if builders continue to throw up houses as they do just now, running them up from start to finish, without sufficient inspection, in less than a fortnight, those who inhabit them may, after all, gain neither in comfort nor sanitation.—*Timber*

## THE OUTLOOK FOR 1886.

The old saying, "Tip one brick and it tips all the rest," has been fully verified during the past three years. But, "Raise up one brick and it encourages or sets all the rest to raising," is the phrase now most interesting. In the industrial world each industry is dependent upon the rest, and all must be successful if one would be. The farmer and producer of raw material buys more when he sells more, and sells more when he buys more, gets better prices, and like the old fable of the clock when each hand and wheel and pendulum began to move, the whole started and was prosperous. One cannot move without the rest. There is no healthy circulation when even a hand is paralyzed. No special industry can force itself into the highest permanent prosperity except as it assists and makes possible the highest permanent prosperity of all. The raw material must move, the railroads must move, and all unitedly. It is fortunate that a necessity always exists in all highly intelligent communities for every possible species of product of farm, mine or mill, and this necessity must at all times compel the movement of the wheels of industry, if not arbitrarily enjoined. When the United States imported more than it exported, and were continually shipping gold and bonds to meet the balance of trade and indebtedness, and were oversupplying the markets with foreign products, depressing prices, reducing freights, and destroying manufactures and their ability to afford employment, there was a cause for disaster, and the wheels must stop until the over-stuff was worked off. The patient was very bilious.

Now, after nearly three years of a better, although a very rigid economy in importing, the wheels are again beginning to move. On all sides we hear that the stocks are reduced, and that something to wear is needed as well as something to eat. The old plough and the old coat have been mended and patched until there must be new ones. To make the plough, the furnace and foundry must blow, one miner must dig the ore and another coal, the railroad must haul them, the lumberman must prepare the timber, and the mechanic must put all together. To make the coat the sheep is shorn, the woollen

mill and the clothier, the sewing girl, the button-maker and the trimming maker find employment. In the same way the wheels of the industrial enterprises are now steadily beginning to show increased activity. Some articles of home manufacture are reported scarce and advancing in price, and this for the first time since the latter part of 1882. There are no more people or no more capital in the States than can find profitable employment, if we will only stop employing from outside, and develop our own resources. The imports of goods from other nations this year are less than our exports, while stocks have been reduced and must be replenished from some source. The cost of manufacture is, also, so far lessened that goods cannot at present be imported in competition, and large part of what is now consumed here is being produced here, and the nation is convalescing, but slowly. If the sick man's appetite does not so far overact as to cause a relapse there are good hopes for a new prosperity to all the varied industries of the nation.

In various quarters of the West and Northwest there are a number of new railroads projected, and a better demand is springing up, and better prices are obtained. Steel makers are at work more generally, producing tool steel and rails, and a variety of other kinds. But, as intimated above, the iron interest must wait the readiness of many other industries for its genuine prosperity. The hum of the cotton and woollen spindles, and the confidence the activity imparts is necessary to the starting of the iron manufacture, and these are beginning to respond to a better call for goods, and in many quarters we learn of considerable activity. As merchant after merchant calls for new supplies of merchandise, it begets hope and confidence that the dawn is at hand—the dawn of better and brighter days.—*Chicago Lumber Trade Journal.*

## INTERNAL SCREWS IN STOP VALVES.

A very faulty detail in the construction of steam and water stop valves is the internal screw and nut on the valve spindle. It may give the valve a neater and simpler appearance, and it is a cheaper job than the external pillars and crossbridge type of construction, but otherwise we fail to observe anything commendable in it. The condition of the thread cannot be ascertained without taking off the covers, and this, in case of boiler stop valves can only be done when the boiler is laid off. A writer says:—"We have recently been troubled with our boiler feed valve, which is constructed with the internal screws. We are blessed with dirty and gritty feed-water, which plays sad havoc with the valve threads. The valves are always sticking and will not shut tight, and when taken out and examined the threads are invariably found to be badly burred, and require to be filed and made an easy fit before being replaced. Not long ago one of the attendants was about to shut off one boiler in a range when to his surprise he found the valve spindle thread stripped. This was very awkward, as he wanted to blow off the boiler, and to shut the other boilers meant, of course, stopping the engine. Now, supposing an accident had happened to this boiler, which required its being quickly shut off from the rest of the range, the quickest way we could have done it would have been to shut every junction valve, and what might not have happened in that time? If the valve had had an external thread its condition could at any time be seen, and if failing, renewed or remedied, but being inside the box its condition could only be ascertained periodically." Apart from the serious drawback of the screw being always in contact with any impure or corrosive matter that may be passing through the valve, the internal nut is a fallacy, and it is pleasing to record the fact that it is fast disappearing.—*Boston Journal of Commerce.*

## WOOD-WORKING PATENTS.

The following list of patents relating to the wood-working interests, granted by the United States Patent Office, December 1st, 1885, is specially reported by Franklyn H. Hough, solicitor of American and Foreign patents, 925 F. Street, N. W., Washington, D. C.

331,633.—Chuck, lathe—G. A. Barnes, New Haven, Conn.

331,590.—Saw feed, gang—J. H. Watson & C. H. Hubbell, East Tawas, Mich.  
331,619.—Saw mill dog—A. Delaney & J. M. Bond, Richmond, Va.  
331,653.—Saw mill, portable—J. N. Richey Wayneborough, Pa.

## PATENTS ISSUED DEC. 8.

331,790.—Cutter head—A. Hoppins, Kingston, Ontario, Canada.  
332,124.—Hoop planing machine—A. F. Ward, Detroit, Mich.  
332,065.—Lathe boring tool—D. Evans, Sharpburg, Pa.  
332,066.—Lathe tool holder—B. B. Keyes, Chelsea, Mass.  
332,213.—Lumber elevator—H. T. Runyan, Chicago, Ill.  
332,161.—Saw mill—J. S. Millar & E. Lapham, Cadillac, Mich.  
331,887.—Saw set—R. F. Gibbs, San Francisco, Cal.  
332,184.—Saws, device for holding circular—J. Prickett, Marinette, Wis.  
331,839.—Shingle slicing machine—O. H. & J. B. Spencer, Niantic, Conn.

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The Department does not bind itself to accept the lowest or any tender.

By order,

A. GOBIEL,  
Secretary.

Department of Public Works,  
Ottawa, 7th December, 1885.

3w50

## Health is Wealth



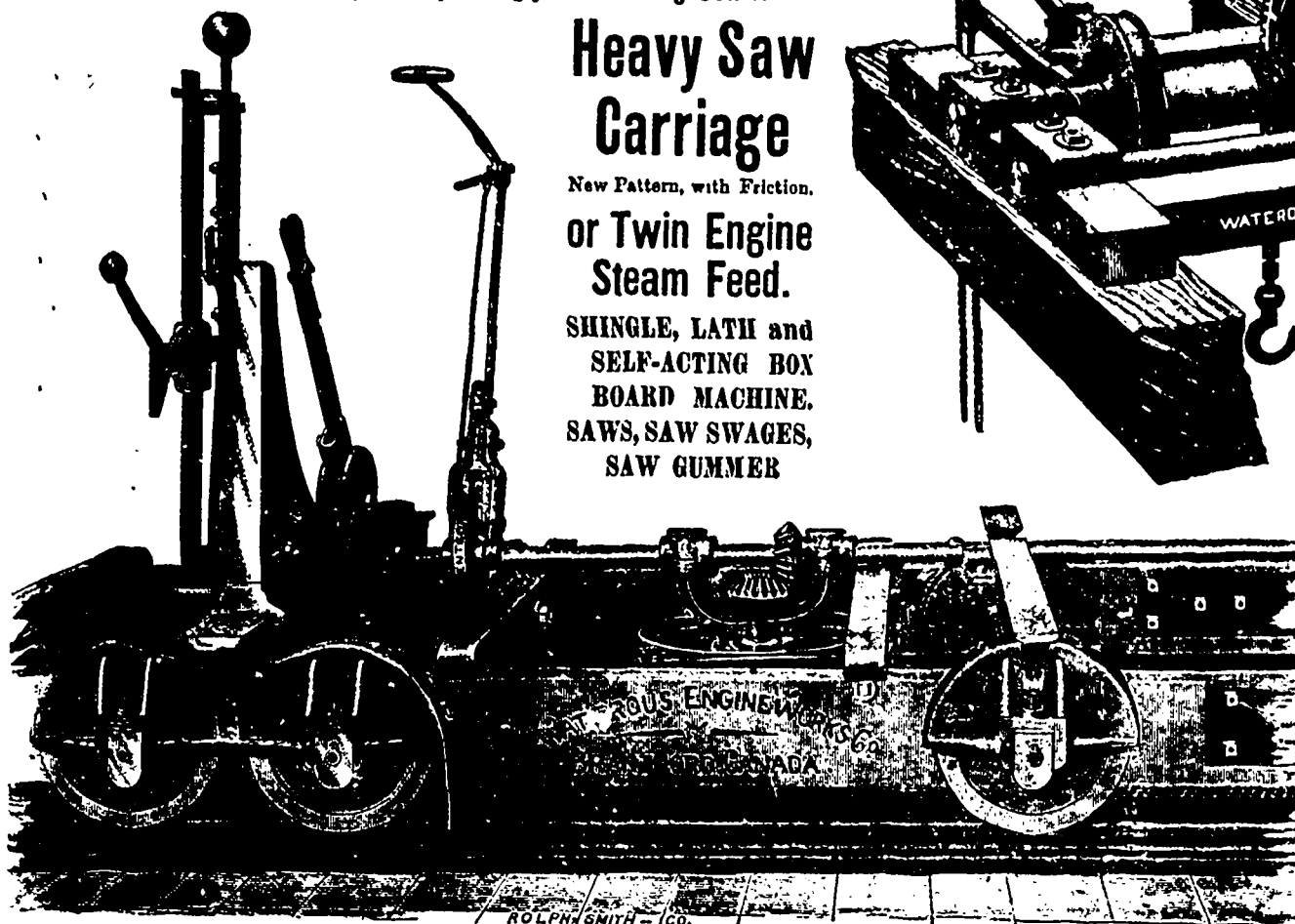
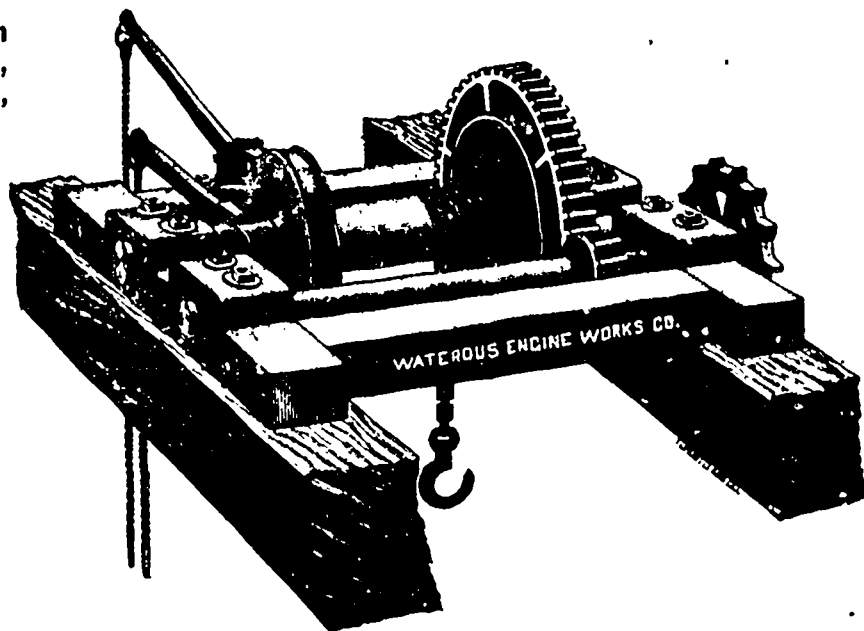
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### UTILIZING PETRIFIED WOOD.

The petrified wood that is so abundant in the United States Territories of Arizona and Wyoming and the Rocky Mountain regions, is rapidly becoming utilized. In San Francisco there is now a factory for cutting and polishing these petrifications into mantle pieces, tiles, tablets and other architectural parts for which marble or slate is commonly used. Petrified wood is said to be susceptible of a finer polish than marble, or even onyx, the latter of which it is driving from the market. The raw material employed comes mostly from the forests of petrified wood along the line of the Atlantic and Pacific Railway. Several other companies have also been formed to obtain concessions of different portions of these forests. Geologists will regret the destruction of such interesting primeval remains, and some steps ought to be taken to preserve certain tracts in their original state.

### BUSINESS CHANGE.

Henry Ward Powis is among the Canadians who have deservedly made a name and standing in the old world as well as the new. Having gained his knowledge of the timber trade mainly in Quebec, Mr. Powis was so fortunate as to form, some years ago, a connection with the prominent and wealthy English house of Bryant & May. The firm of Bryant, Powis & Bryant was formed and has been very successful in the wood trade. Since the recent death of one of the Messrs. Bryant, it has been decided to form a joint stock concern under the name of Bryant, Powis & Bryant, Limited, to continue a business of wood brokers and importers. Messrs. Wilberforce Bryant, Fredrick C. Bryant, and Mr. Henry Powis, the principal proprietors. The authorized capital is £200,000 in shares of £1, and £100,000 is the

first issue. They take fully paid 33,333 shares of the present issue. The transfer of the business is to include the leasehold offices and premises belonging to the firm in London, Quebec and Montreal, with all fixtures, furniture and fittings therein. We are told that the shares, to use an American expression, "are going off like hot cakes."—*Monetary Times.*

### AN INTERESTING CASE.

The case of Queen v. St. Catharines Milling and Lumber Company was commenced on Thursday before the Court of Appeal in Toronto. The Plaintiffs in the action are the Ontario Government, who sue the St. Catharines Milling and Lumber Company to restrain them from interfering with certain timber. The defendants are licensees from the Dominion Government of the timber upon an area of land covering 55,000 square miles, situated in the neighborhood of Lake Wabigoon in the district of Algoma, and under their license have been cutting the timber. It is claimed, on behalf of the defendants, that the land in question belonged originally to the Indians, that by the Northwest Angle Treaty No. 3, in consideration of certain reservations then made to them, and of the payment of perpetual annuities, the Indians ceded the territory to the Dominion Government, and it is now theirs to dispose of, and further that the lands are undisposed of by the British North America Act, and therefore go to the Dominion. On the other hand the Ontario Government contends that the Indians never had any title, and that even if they had, the cession by them would make the lands Crown Lands, and so they would go to the Province. It is contended further that the lands are within the limits of the Province and are public lands of the Province subject to provincial rule. The case was tried in the first instance some months ago by

Chancellor Boyd, who decided in favor of the claims of Ontario. Mr. McCarthy, Q. C., opened the case for the defendants. With him are Messrs. A. R. & W. Cresman, while the plaintiffs are represented by the Attorney-General, and Messrs. Caseels, Q. C., and D. Mills, of London. The Dominion Government is not a party to the suit and hence is unrepresented.—*Mail.*

### LARGEST CUT ON RECORD.

The Au Sable Saturday Night gives the following particulars of the big day's work of the Pack, Woods & Co. mill at Oscoda:— Since the breaking of the mill cut record by the Gratwick, Smith & Fryer mill two weeks ago, Pack, Woods & Co., of Oscoda, had been making preparations to eclipse all previous performances, and last Wednesday was the day set for the work. The logs cut were choice white pine and averaged about 2½ to the 1,000 feet. The days run was on one and one-half inch stuff. The number of logs cut was 1,063, which scaled 442,830 feet. The logs were scaled by Ed. Donigan, one of the Boom Company's scalars. It is estimated that the lumber will overrun the log scale about 30,000 or 35,000 feet, so that the amount of lumber sawed would be about 475,000 feet. The lath mill, run by Horace Beacon, on the same day cut 76,000 pieces. The mill had a number of break-downs during the day so that the actual running time was less than 12½ hours. The circular sawyers were Frank Pierce and Sam Utley, and the gang sawyer Jas. McDonald. This is the largest day's cut ever made by a mill of the same capacity.

WILL YOU SUFFER with Dyspepsia and Liver Complaint? Lallo's V. Salter is guaranteed to cure you. For sale by Ormond & Walsh druggists, Peterborough.

### THE OLDEST AMERICAN LOG SCALER.

The oldest scaler on the Saginaw river, and perhaps in the United States, is S. B. Brown, of East Saginaw, who has been at the business 35 years, having commenced in Maine 35 years ago, and has continued in the business since that time. While in Maine he sailed on the ocean in summer and scaled logs in the woods in winter. Mr. Brown has resided in Michigan about 28 years, and has scaled logs during that time, summer and winter, in the vicinity of Port Huron, St. Clair, and of late years on the Saginaw river, where has scaled, perhaps, twice as many logs as any other man. He once scaled 500,000,000 feet of logs in 200 days—a feat never before accomplished on the river. Of course he does not measure every log with a scale rule. So accustomed has he become to the business that he can tell the amount of lumber there is in a log by measurement of the eye, and he has the reputation of being unusually accurate and reliable in his figures. Though Mr. Brown is verging close on to 80 years of age, he appears at least 15 years younger, and is still in active service. If there are any young fellows in the Saginaws who can "get away with him" in a day's scaling they have failed as yet to show up.—*Exchange.*

### 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 for sale by all druggists throughout the world. Price 25 cents a bottle.

### VALUE OF LUBRICANTS.

A system of collect and purification of the oil running of the ordinary journals into the drip pans may, in nearly all cases, be easily adopted. At once reducing the cost of lubricant and making its first cost a matter of less consequence. Suppose a grease used in the shop under consideration, and such as now costs 25 cents per pound, and assume that it is given as a sample, costing the proprietor nothing, but bringing up the coefficient of friction, as an average of 0.10. The cost of power is now the total expense, and this becomes \$3.33 per hour, or \$10,000 per annum, while the loss to the owners of the establishment on their bargain is \$5,000 per annum.

It will next be asked, What price represents the limit which may not be exceeded, without loss, in the purchase of the oils proposed to be substituted for that first used in this instance? By a proper equation we find the second oil causes a loss of \$10.78 for every gallon used, and hence cannot be used without loss, unless the user is paid that sum to take it and apply to his machinery. Comparing the first two cases named in last week's article, it is found that the second disposition of the poorer grades of oil is of such advantage that it is as well worth well worth 84 cents per gallon as is the better oil worth 50 cents, used as at first proposed. But it would be a still better investment to purchase the better oil. Comparing the first and last cases, using equal amount per gallon, the equation shows the heavier lubricant as subjecting the user to an expense amounting to over \$10 for every pound used. It must not, however, be inferred from this that it is always wasteful to use the greaser. They are often advantageous where exceptional pressures are used, or troublesome bearings are met with, and are sometime absolutely indispensable, saving large amounts by their reduction of expense in the cooling and preservation of journals, and in the renewal of bearings. As an illustration, assume a cotton mill to use a good oil averaging 70 cents a gallon, at the rate of 0.7 per hour, with a coefficient of friction 0.10, on machinery demanding 400 horse power, of which 120 horse power is required to overcome the friction of surfaces lubricated by the oil. Taking the value of the power at \$45 per horse power per annum, and 3,000 working hours, we have one element of the equation. If it is proposed to substitute for the oils used in this mill others averaging a cost of 40 cents per gallon, giving a mean coefficient of friction of 0.12, and of which one gallon will be used per hour, and a proper equation shows a gain of nine cents per hour, or \$270 per annum, in buying oil, which is to be set against a loss of 52 cents per hour, or \$1,560 per annum, in increased expense on the account of operating mill, the net loss amounting to above \$1,000 per year. Had the coefficient of friction increased to a greater extent, the loss would have been correspondingly greater. The differences among the lubricants sold for mill purposes in the market are sometimes enormously greater than assumed above, and a loss of \$10 per horse power annually is probably not an unknown case, and this is equivalent to about double that sum per horse power expended on the friction simply.

Thus the owner of a mill could not afford to accept the second lubricant in substitution for the better oil as a gift. The substitution of an engine oil on the spindles for the best spindle oil might readily double the expenditure of power absorbed by the spinning machinery, and thus increase the cost of both lubrication and power, the former having both a higher coefficient of friction and greater price than the latter.

The conclusions to be drawn from the principles and theory which have been presented in last week's issue and in this, and from the examples of application to practice which have been introduced, are obvious and definite:—

1. To secure the highest possible efficiency of machinery and maximum of economy in the operation of establishments in which it is employed, lubricants must be carefully selected with reference to the precise conditions as to pressure and velocity of rubbing met with in the individual case. Where, as in machine

shops and mills for example, there exist great differences in these respects, it will be found best to use different oils, as heavy oils on the engine-bearings, special cylinder oils in the steam cylinder, lighter oils on the shafting, and the lightest of the better class of lubricating oils on light machinery, as on spindles.

2. Differences in the price of oils or other lubricants are usually of exceedingly slight importance in comparison with differences in cost of power, and the value of the coefficient of friction is therefore of vastly greater consequence than either the price of the lubricant or its endurance.

3. The best oil for specified purpose should be taken as a rule, whatever their market price; while the oils which are not well adapted to the purpose in view cannot be economically purchased at any price. It will often be found that the best quality of oil is not necessarily the best oil for any one specified purpose. An oil may be intrinsically excellent, and may be a very expensive oil, but may, nevertheless, be absolutely worthless for the purpose in view. A good engine oil would, for example, be quite unfitted for use as a spindle oil, and though several times as high in price, might be the cause of such considerable waste of power on light mill machinery that the mill owner, as has already been seen, might find it to his interest to decline using it, even if it were offered to him as a gift. The heavy oils are the most costly, and in this case the better oil is, therefore, also the cheaper in the market.

4. The cost of using a lubricant which is not well adapted to the work is so great that unguents should always be tested, and their adaptability to the special case determined, by a correct system of chemical and physical tests, and by trial upon a good testing machine, if possible under the exact conditions of the intended use. The determination of the quality of any lubricant is an easy task; but the identification of the real conditions of use, as proposed, may sometimes be difficult. The difficulty arises, however, not from faults of method of test or uncertainty of results, but from defects of design or construction, or sometimes of management, of the machinery upon which it is proposed to use the oil. Where journals are kept in good order and properly proportioned, no difficulty need ever arise in the attempt to find the best possible lubricant for them. As a rule, there is no excuse for a condition of machinery which gives rise to such uncertainties. As a rule, in all successfully conducted departments of business, such uncertainties do not exist; they do not arise with sufficient frequency to invalidate the above rules. Testing machines are now made in sufficient variety of form and of a simple range of application, and of such satisfactory accuracy that there is no longer necessity of accepting the risks, and of meeting the enormous expense involved in the application of lubricants of unknown quality to valuable machinery.

5. Where lubricants of the precise quality desired are not found in the market, it is advisable to secure the right grade by mixing. This can always be done by mixing a series of mixtures of good oils, such that, at the one side, the gravity and other qualities shall be too high, and, on the other side, too low, for the special application had in view, and thus working out—after determining by trial the law of variation—the mixture must prove suited to the purpose. The assayer has often been called upon thus to determine the best of a series of mixtures for a cylinder oil, for example, or for an engine or a spindle oil. By this method the quality of the oil has sometimes been improved for a special kind of work more than one hundred per cent.—*Mr. Robert H. Thurston in Ex.*

GROUND pine shipped from Hersey, Mich., to Detroit, for holiday decorative purposes, brings \$50 a ton.

W. E. SKILLINGS, of Bethel, Me., spool manufacturer, has a contract to ship 2,000,000 feet of spool wood to Scotland.

FOR the first time in many years, when the mills shut down at Alpena, Mich., the river there will be nearly cleared of logs.

### STEEL SLEEPERS.

The President of the Civil Engineers of Ireland, in his annual address to the Institution remarked:—"The introduction of steel sleepers on our railways is one of those modern improvements which is gradually coming forward. The success of both iron and steel sleepers has been so complete in other countries, where they have been in use in large quantities for lengthened periods, that it seems almost strange that their adoption here should have been so long delayed, and that we should have continued to import vast quantities of timber from the Baltic when we had within our own shores the means of making a better and more lasting article, and further of creating a demand at home for materials at a time when foreign competition has made sad havoc with our steel manufacture. The method of fastening the rail to the sleeper has formed the subject of numerous patents, but nearly all of those which depend upon the use of bolts and nuts have been found to shake loose in time. A wrought-iron chair riveted to the sleeper seems to withstand the effects of vibration, and enables the rail to be held in position by means of the ordinary key. There are also several forms of sleepers in which a portion of the sleeper itself is turned up to receive the rail, and thus to form a kind of chair into which a wedge can be driven. On some of the Indian railways where the iron sleepers are used, a wooden wedge has been driven under the rail, with the idea of giving additional elasticity."

### ARTIFICIAL WEATHERING OF WOOD.

In an article on the preparation of wood for our finish, the *National Car Builder* mentions a Japanese method of treating wood for backgrounds of ornamental work which it regards as well worthy of attention. It consists, it says, in moving the softer portions of the fibre so as to leave the remaining grain in high relief—a sort of artificial weathering by which the softer portions are worn away. The method has not been very clearly described, but it appears from the information given that materials like Dutch rushes are employed to scour or grind away the surface. The boards are sometimes quarter-sawn, but more frequently they seem to have taken nearly through the heart, and at a small angle with it. This gives long sweeping curves to the grain. After the required relief has been attained the wood is filled. The final coats seem to be a hard wax finish without a polish. For panels the effect is superb. As a background for metal work in relief, or for carving it would be difficult to find anything richer. To produce such work does not appear very difficult. Although the cost of such panels in Japan is very great, they need not be expensive here. The hand labor necessary for wearing down the wood may be easily replaced by machinery. The desired effect would then be obtained as well as easily. Probably the same results can be obtained by the use of the sand blast or with steel brushes. The first car builder who introduces this style of ornamentation will have something not only unique but beautiful. In many respects it would be more attractive than the stamped leather and the lin crusta now so fashionable. As patterns for stamped leather, these wood designs would be very desirable, and if we cannot have the original, it might be possible to get an imitation by the electrotype process which would answer every purpose.

### REDUCTION OF THE SWEDISH EXPORT.

The management of Stockholm Wood Export Union has again begun its labors, says the *Swensk Travarar Tidning*, to endeavor to bring about the absolutely necessary agreement among exporters for a diminished output for next year. So far the union has not definitely decided on the means for the reduction, but as the work is already begun, all might well be settled before the meeting in January.

As it is well known what great trouble the managers had to bring about the last convention, and how nearly it was upset by the attitude of a few members, we hope that exporters, seeing the use of the reduction this

year, will meet the management, and as much as possible lighten its work. The advantages obtained by this reduction are for every right-minded individual evident enough, as the prices obtained would hardly have been got had not foreign buyers known that a seriously-meant agreement had been entered into, and that stocks would be reduced. If one compares wood prices with those of other goods, it will be found that although the wood trade cannot boast of a really good year, yet it has been relatively a fairly good one. From all consuming countries the news has been continually reaching us that building schemes are neglected, and that the disposal of wood goods was extremely limited; further that houses which formerly speculated are now compelled to buy only just what they want. But in spite of all this prices have been tolerably good, and those who carefully and justly think over things must certainly be bound to admit that it was the confidence this last convention of wood exporters inspired abroad that has been the cause.

With such conditions before our eyes we hope that exporters as numerous as possible will support the proposition the management shortly intend to bring forward.

From several quarters in Finland we have heard that exporters there have partly decided on coming to an arrangement about reducing the export next year, and partly intend to support the Swedish exporters' convention. Should, therefore, the Swedish Export Union be supported by the Finns we believe the management would spare no efforts to attain such an object. Certainly the Finnish export up to the 31st of August last shows a reduction of 31,000 standards, as compared with the same time last year, but compared with 1883 the reduction is only 1,173 standards, and one cannot yet judge fairly, as shipments as not yet over, and the figures for September and October are wanting. We, therefore, take the liberty to exhort our Finnish friends to carefully consider the necessity of reduction, and it possible to meet the Stockholm Export Union on other way.

### THE ECONOMY OF FUEL.

K. K. Clark in his work upon the economy of fuel says, "that only two methods present themselves, by which the supply of air and the wants of the furnace can be made to correspond—either both must be made constant and regular or the fluctuations of one must be made to coincide with those of the other," and he proposes to achieve the desideratum sought by an increased supply of air at the cooling by throwing open a sliding valve in the face of the door which immediately commences closing slowly and automatically, and affords a greatly diminished supply of air to the furnace in harmony with the greatly diminished requirements of the fuel. The area valve, and the period of time throughout which the act of closing is to be prolonged being adjusted according to the nature of the coal and the average quantity supplied at at one time. The outer furnace should be double and the air should pass into the furnace through a series of perforations in the inner plate. By this arrangement three important points are secured. First, the heating of the air; second, its subdivision into minute jets; and third, the keeping of the outer surface comparatively cool and thereby both economizing heat and preventing its radiation outwardly to the attendants.

The largest tree that has ever been manufactured into lumber at the Champion Mills was sawed up recently. The tree made six logs, each log being 16 feet. The first log scaled 4,786 feet. The tree was sugar pine, and made a fine quality of lumber. The total number of feet in the tree was 22,632.—*Marysville, Cal., Appeal.*

BUT very little hardwood lumber has been manufactured by the Saginaw river mills this season, the condition of the market not offering sufficient encouragement to operate extensively. In 1882 the hardwood cut of the Saginaw river mills was 24,640,900 feet; in 1883, 32,741,870 feet, and in 1884, 14,061,829 feet. At the close of last year there was on hand 12,051,500 feet of hardwood stock.—*Courier.*

**CARE OF BELTS.**

Karl Morgenroth, a mill-owner at Pfanzwibach, Germany, warns millers against cleaning their belts with warm water after taking them off the pulleys. Belts treated by him that way, though profusely greased immediately after the process, shrink so much that it was impossible to replace them, and a piece of leather had to be inserted by means of "Harris" braces. Little by little the belts would expand to their former length and the inserted piece had to be removed. The whole thing was very annoying and much time was wasted. Therefore Mr. Morgenroth recommends, when belts require being cleaned and greased, just to leave them where they are. Some day, when the mill does not run, the dirt sticking to the belt is removed with a blunt knife and a sharp brush. Then the miller will make the belt run slowly, and while in motion grease it thoroughly by means of brush on both sides. The pulley will become beamed with grease by this method, but it will soon recover its polish by rapid running. The oiled belt will perhaps slip at first, but that need not trouble the miller. As soon as the grease has been absorbed in some degree by the belt, the slipping will cease at once. Mr. Morgenroth used to grease a pretty long belt, fourteen centimetre wide, even while the mill was in motion; but the grease must be applied only in small quantities.

**THE HENDERSON LUMBER CO.**

On the 4th of September, 1885, letters patent were granted by the Quebec Government, incorporating the following gentlemen as the Henderson Lumber Co (Limited):—D. H. Henderson, C. H. Walters, Norman Henderson, Selkirk Cross, of Montreal, and A. H. Henderson, of Baltimore, with full powers to own saw and lumber mills, timber limits, etc. They began operations at Montreal with a paid-up capital of \$100,000, where they have secured the premises formerly owned by Henderson Bros., and are now carrying on the business in all its branches. The mill property is situated on William street and is bounded on the West side by Guy street and St Thomas street on the east; the rear extends to the canal. The office, 342 William street, is a brick building, almost in the centre of the property, where a large staff of clerks are employed. Adjoining the office are several dwelling houses owned by the company and occupied by some of their workmen, where they furnish accommodation for a large number of horses, wagons, sleighs, etc. All their wagons, sleighs, etc., are manufactured on the premises. Turning the corner, an extensive timber yard is seen which is presently stocked with a valuable assortment of flat and square timber, of all sizes, ready to be cut into "dimensions" as ordered. Proceeding onward, we come to the canal, where the company has a basin, where barges are loading and unloading their cargo of lumber at the docks, and where large quantities of logs are "boomed" convenient to the mill. On facing north the mill is brought into view. The first point of interest on the ground floor is the immense engine, 200 horse power, said to be one of the finest of its kind in the city. It is certainly a beautiful piece of mechanism, working noiselessly, without jar of any kind, and turning the case one of the largest driving wheels ever made in this country. An idea may be formed of its size by the following figures: 32 in face and 14 feet 6 in. diameter. Steam is generated within three huge boilers and the fuel used is the sawdust from the various saws, conveyed by a patent apparatus to the boiler house. Within the building on the first floor is to be heard the whizzing sound of several planing, moulding, and other machines at work, while overhead the huge logs are brought up by an endless chain from the canal basin, and introduced to several circular saws revolving rapidly, and very soon fashioned into planks of the required dimensions, and so carefully is the business conducted that almost every particle of waste is utilized in some way. The rough sides of the huge logs are passed to a boy who selects the best and cuts them into lengths for the shingle machine, and others unsuitable for that purpose are thrown aside to be used in the factory, while other portions, too small, or

would think, to be of any use, are made up into angles for rolling barbed wire upon. Opposite the main building stands the box factory where quite a number of men and boys are at work, making boxes of all sizes and shapes. This building is also full of machinery, circular, band and other saws, and here also are manufactured large quantities of headings. Adjoining this is the blacksmith shop, where all their horses are shod, and a wheelwrights' and painters' shop are in close proximity. The premises are carefully guarded against fire, and a further precaution is taken by having a hydrant in the yard with hose hanging beside it, sufficient to direct a stream towards any part of the building. The buildings and yards cover nearly 20 acres of ground and for some distance on each side of the mill nothing but lumber meets the eye. In addition this company have a lumber yard at 130 St Constant street, where local orders are filled without the necessity of going down to the mill. The company employ from 150 to 200 hands, so that some idea can be formed from this as to the extent of their operations. At Roxton Falls they own another mill which is well furnished with perfect machinery. Steam engine 65 horse power, gang, circular and other saws. Shingle and store machines and clap board machines turn out large quantities of sawn lumber. They have here a siding connecting with S. E. Counties Railroad, for shipping lumber, so that it can be sent to all parts of Canada or the United States. Such enterprise as this deserves especial mention as it cannot be denied that the lumber interest is one of the utmost importance to this province especially, and it is satisfactory to note the progress being made in this direction, and from the energy, business ability and enterprise connected with this, the Henderson Lumber Co., it is fair to predict for them a successful career. The Messrs. Henderson are well and favorably known as lumber merchant of long standing, and Mr. C. H. Walters, the Sec. Treas., is acknowledged as one of the ablest financiers of Montreal. Having received his business training with the well known house of Cuvillier & Co., "it goes without saying" that he is thoroughly posted in his particular duties. We wish the new concern every success in their enterprise.—*Montreal Herald.*

**CANADA FOR THE CANADIAN.**

Under the above heading the *Montreal Star* thus refers to a question of importance:—  
"A correspondent of a Hamilton paper says that wide tracts of lumber land in Western Ontario have been bought up by Michigan firms, who intend denuding them of their pine, which is to be rafted across Lake Huron and sawn into lumber at the Michigan mills.  
"In this way the value of these forests to Canada will be minimized. All the employment given by the mills in transforming this raw material into lumber will go to Michigan, and the products of our own woods will be brought into competition with the material turned out by their own mills.  
"As long as the Ontario Government persists in selling in place of preserving its forests, Americans cannot be prevented from buying Canadian timber limits, but the Federal Government can place an export duty on rough timber and force the Americans to either get their logs sawed by Canadian mills or build mills of their own this side of the line."  
On the same subject the following letter is published in the *Toronto Mail*:—  
SIR,—It is an established fact that the American saw mill owners in Michigan are outbidding us for timber limits in Ontario with the view of rafting our saw-logs to their mills, there being only \$1 duty, I understand, on logs, whereas the duty on lumber going into the States is \$2 per thousand feet. The effect of this is that our mills, which give employment to a very large number of workmen, mechanics, etc., are being deprived of the logs, and in a few years will not be in a position to give employment to these men, and when this time arrives they will have to go to the States to earn their living.  
Now these Michigan mill owners represent the party that opposed the duty being taken off Canadian lumber and will continue to do so as

long as they have lumber to sell. As a large manufacturer of lumber, I look forward to the time when the supply of logs in Michigan will not be equal to the demand, and then the mill owners in that State would have no object in opposing the removal of the duty on lumber. That time had nearly arrived when I found I was to be disappointed, as they are getting their logs from Ontario. I think that the Dominion Government are not protecting the manufacturer in this case, and that they ought at once to put an export duty on logs going into the States equal to the duty put by the States on our Canadian lumber.

Yours, etc.,  
**MANUFACTURER.**  
Lakefield, Dec 2nd.

**HOW AXES ARE MADE.**

In the manufacture of axes, says the *Pittsburg Times* the material passes through twelve different operations before it is ready for labeling and boxing. At first it is a rectangular piece of iron, about three-fourths of an inch thick, three and one-half inches wide, and about six inches long. The bit is of steel, and in some instances is inserted in a slit made in the iron, and in others it is drawn over the edge of the iron. There is a growing demand for axes made entirely of steel. The most important part of the process of manufacture is tempering. "This is really where the axe is made," said a manufacturer. The grinding and polishing is the most laborious part of the process. It is here that the rough, irregular shaped semblance of an axe is ground and polished until it is as bright as a mirror. It is said that the work will prove fatal within five years to any man who pursues it steadily. The air is filled with imperceptible dust from the stones, and many of the workmen tie small sponges saturated with water over their nostrils.

If your children are troubled with worms, give them Mother Graves' Worm Expeller: safe, sure, and effectual. Buy a bottle and give it a trial.

**SNOW DRIFT**  
**BAKING POWDER**

*The Peoples' Favorite.*



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**THE PERRY DAVIS PAIN KILLER** acts with wonderful rapidity and never fails when taken at the commencement of an attack to cure Cholera, Cholera Morbus, as well as all summer complaints of a similar nature.  
**For Sudden Colds, Sore Throat, &c.**  
A teaspoonful of PAIN-KILLER taken at the beginning of an attack will prove an almost never failing cure, and save much suffering.  
**For Toothache, Burns, Scalds, Cuts, Bruises, &c.**  
The PAIN-KILLER will be found a willing physician ready and able to relieve your suffering without delay, and at a very insignificant cost.  
**For Colic, Cramps and Dysentery in Horses** the PAIN-KILLER has no equal, and it has never been known to fail to effect a cure in a single instance. It is used in some of the largest livery stables and by so infirmaries in the world. To recuperate young lambs or other stock chilled and dying from cold, a little PAIN-KILLER mixed with milk will restore them to health very quickly.  
The PAIN-KILLER is for sale by Druggists, Apothecaries, Grocers and Medicine Dealers throughout the world.

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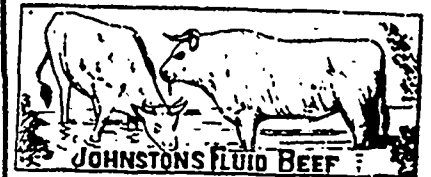
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**SAW MILL PROPERTY.**

THE SUBSCRIBER WILL SELL HIS TIMBER LIMITS and saw mill property, at Cowichan, British Columbia, and if purchased by a Company, will invest a large amount of capital in shares.  
The Limits are supposed to contain about two hundred millions superficial feet. (An estimate is now being made.)  
The Timber is mostly Oregon Pine of an excellent quality. The average haul, only about half a mile to floatable water. The run thence to mi l. 30 miles.  
Full particulars furnished on application.  
W. SUTTAN  
Walkerton, Ont.

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

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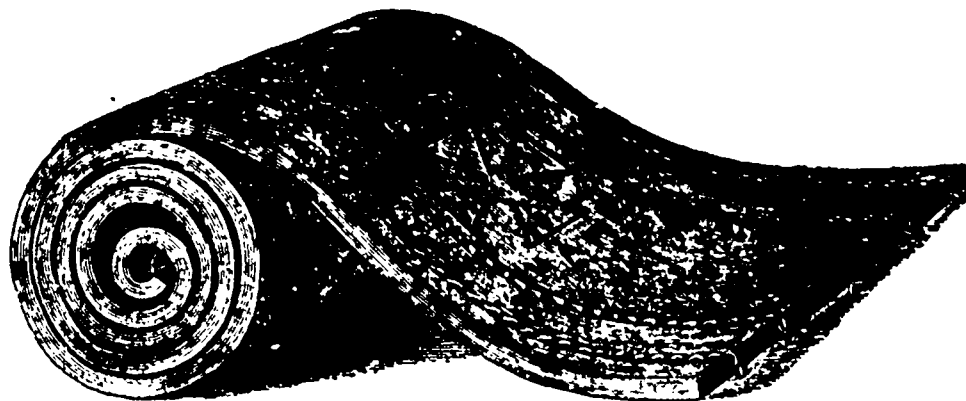
# HARRIS, HEENAN & Co.

124 AND 126 QUEEN STREET, MONTREAL.

## Patent Stitched—Steam Power Pressure Stretched—Oak Tanned

**TESTIMONIAL**

ISA GOOBS & SONS, CITY MILLS, Nov. 19th, 1884.  
 Messrs. Heenan & Co.  
 Dear Sirs—Your Patent Sewed Belt has been in use in our City Mills for some time. We are thoroughly convinced of its superiority over any belt, American or Canadian. We have used in an experience of over 25 years. It stretches so little, and gives so little trouble, that compared with riveted belting, the sewed belt saves double the price in time and labor saved. We heartily recommend it to manufacturers as the cheapest and most satisfactory belt in the market.  
 Yours respectfully,  
 W. C. MARSHALL, Mills.



**TESTIMONIAL**

FRAN. BERRY & Co., CANAL HOUSE STREET AND NAIL WORKS, MONTREAL, 15th Nov. 1884.  
 Messrs. Harris, Heenan & Co., Montreal.  
 I have pleasure in recommending the belting manufactured by Messrs. Harris, Heenan & Co. of this city. After thoroughly testing it, I find it greatly superior to any belting that has come under my notice and fully equal to all they claim for it, and certainly without an equal for cross or double belting.  
 CHAR. R. KILACOFF,  
 Supr. H. S. & H. N. Dept.

# LEATHER BELTING!

*The Best, therefore the Cheapest, Belt in the market.  
 Replaces, when used, all others.  
 More Pliable and Durable, especially at the splices.*

*Stretches but little, always retains its original width.  
 Superior for Cross or Double Belts.  
 Runs straight and true, does not start at the laps.  
 Single equals medium double.*

25 per cent Stronger, 33, More Lasting, and 12½ Heavier, than any other Leather Belt.

**AUSTRALIA.**

Messrs. Lord & Hughes' monthly circular regarding timber and building materials, dated Melbourne, Oct. 20th, says:—

Since our last on 15th ultimo, we have to report a further decline in nearly every description of timber, owing to heavy arrivals and the desire of importers to realize, thus Baltic deals, Oregon and American lumber, show a decline as indicated in our report of public sales, Baltic flooring showing no improvement.

We are happy to report that the deliveries from yards continue, showing but little, if any, falling off in consumption, while the continued sales of properties cut up into building allotments, which are made weekly, seem to indicate that consumption will continue; for this purpose money is easily obtainable through building societies and other financial institutions.

**RED DEALS.**—Imports: 1,310 pieces. These arrived in Broderfolket, from Christiania. Sales by auction have been made ex Felix, Veritas, Fritze, Frigga, and cut deals ex Broderfolket; DOM 11x4, realizing 5½d. per foot 9x3; 11x3, at 5 11-16d.; 9x3, at 5d.; DDD, 11x3, at 5½d.; 9x3, at 4½d.; CxxB, 9x3, at 3½d. We understand the last advices from England report engagements of deals comparatively light for the season, and as the first two cargoes of the season, ex Aracan and Anna, have arrived in Adelaide, and are landed there, values here would improve.

**SPRUCE DEALS.**—Imports: 1,330 pieces spruce; 1,202 pieces Baltic white. Arrivals have been Colorado, from Boston, and Broderfolket, from Christiania. Both these lines have been quitted publicly.

**OREGON TIMBER.**—Imports: 1,426,910 feet super. The arrivals have been Sir Jamsetjee Family and Imperator. Sales publicly have been cargoes ex Enterprise, on 22nd ult., and Sir Jamsetjee Family, on 16th inst., prices for the latter ranging from £6 15s. to £15 15s. The cargo ex Imperator is advertised for sale on 23rd inst.

**LUMBER.**—Imports: Clear pine, 309,270 feet super; white pine shelving, 655,112 feet super;

T. and G. ceiling, 44,238 feet super. Arrivals have been Wilhelm and Ivy, from New York; Colorado, from Boston; and steamers from Adelaide. Sales by auction have been made of parcels ex Wilhelm and Colorado, in addition to various lines ex Antioch, Llewellyn J. Morse, Penobscot, S. F. Hersey, and steamers from Adelaide. Prices are lower. The shipment ex Ivy is advertised for sale on the 23rd inst.

**REDWOOD.**—Imports: 20,000 feet super. This parcel arrived ex steamer, from Sydney. The cargo ex Alice Muir was offered on 29th ult., but only about 62,000 feet were sold at £10 15s.

**FLOORING AND WEATHERBOARDS.**—Imports: 6,706,850 feet lineal. Arrivals have been Thirza, Emerald, Guldregn, Subra, and Bertrand, from the Baltic, and steamers from Adelaide. Sales have taken place by auction ex Rigi, Subra, Broderfolket, Emerald, and Guldregn. Prices realized were as follows:—Red, 6x1½, 10s. 6d. to 9s. 9d.; 6x¾, 8s. 9d. to 7s. 9d.; 6x¾ bead, 6s. 6d. to 6s.; 6x¾ bead, 5s. 3d.; 6x¾ bead, 5s. 3d. and 5s.; 4-out weatherboards, 5s. 3d. to 4s. 7d.; white, 6x1½, 9s. 9d. to 9s.; 6x¾, 8s. to 7s. 6d.; 6x¾ bead, 6s. to 5s. 6d.; 6x¾ bead, 5s. 6d. to 5s. 4d.; 6x¾ bead, 6s. 6d. to 5s.; 4-out weatherboards, 5s. 3d. to 5s.

**KAURI PINE.**—Imports: 1,024,451 feet super. The arrivals have been, Killarney, Stanley, Grassmere and Albert the Good. Sales publicly have been cargo ex Eilian Donan, and Fitches ex Killarney, the logs ex latter vessel having been quitted privately. Cargo ex Stanley is advertised for the 23rd instant.

**CEDAR.**—Imports:—Nil. Sales have been made at auction of various parcels ex coasting steamers.

**DOORS.**—Imports: 2,360. No sales by auction have transpired since our last. The heavy arrivals have had a depressing effect on the market.

**LATHS AND PICKETS.**—Imports: Laths, 9, 903 bundles; pickets, 3,658 bundles. Various sales have taken place publicly.

**SLATES.**—Imports: 533,041 pieces. Arrivals since our last have been—Wilhelm and Ivy, from New York; Colorado, from Boston;

Darling Downs, from London; Beecroft, from Liverpool. The only public sale has been of one 22x11 blue Bangor Penrhyn slates, ex Langdale, at £11 5s.

**PLASTER.**—Imports: 1,485 barrels. Sale ex Wilhelm, 250 barrels King's Windsor Mills plaster, medium size, at 13s. per barrel.

**CEMENT.**—Imports: 12,862 barrels. The arrivals continue heavy and the market depressed. Favorite brands are quoted at up to 13s. 6d.

**GALVANIZED IRON.**—Imports: 1,303 tons. The market is overstocked, and parcels difficult to quit except at low rates. Best brands are quoted at £17 to £16 10s.

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

**GLASGOW.**

The Timber Trades Journal of Nov. 28th says:—For the past week there has been no auction sales of wood held here by brokers. At present while the elections are creating a stir in town, many buyers would be hindered from coming to the sales, and there would be small likelihood of strong competition in such circumstances.

The imports during the week consist of sundry parcels of wood goods (chiefly oak) per steam liners from New York, etc., and a large cargo of Canadian deals. The arrivals of pitch pine at Clyde ports since the beginning of this year, up to the present time, are not far short of last year's total at the corresponding date, the amounts being: 1885, tonnage employed in conveyance, 28,929 tons; and in 1884, 31,121 tons. At Grangemouth, on east coast, the imports of pitch pine during the current year are represented by a carrying tonnage of 5,270 tons, and in 1884, 5,971 tons.

It is gratifying to learn that a fresh impetus

has been giving to shipbuilding on the Clyde the industry on which the timber trade here chiefly depends.

Among orders recently booked have been the Spanish gun boat by Thompson, Clyde Bank, six large steamers (2,600 tons each) by Scott & Co., Greenock, and at Dumbarton various important orders have been secured, which will considerably relieve the depression that has been felt of late in that town. In the upper reaches of the river also a good many fresh orders have been received.

**LIVERPOOL.**

The Timber Trades Journal of Nov. 28th says:—It is hardly necessary to say that what business has been done during the week has been limited in extent and devoid of interest, if we except the mahogany and other hardwood sales of Thursday and Friday last.

The elections are for the present distracting attention from business, and to such an extent is this carried that whilst the contest in Liverpool were proceeding it was practically suspended, and it point of fact some markets were closed for the day.

It is therefore a matter for congratulation that the import continues to be upon a moderate scale, few cargoes of timber or deals having come to hand for the past few days, and it is daily becoming evident that we shall not have more than an average stock to carry at the end of the import season, which is now so rapidly approaching.

**Important Discovery in Steel Manufacture.**

An improvement has been made on the Bessemer steel process at the Edgar Thompson Steel Works, Pittsburgh, Pa., which, it is said, will have the effect of making Bessemer steel equal in quality to crucible steel, while it will cost only about one-tenth of the price. The change consists in thorough mixing of spiggle iron or manganese with molten iron in a ladle, so as to uniformly carbonize it. Bessemer steel can be produced at a cost of a cent to a cent and a half per pound, while that made in crucibles costs at least 11 cents per pound.



## NAVIGATION OF THE ATLANTIC.

About two years ago it was publicly stated that the Trinity Board had appointed a pilot cutter to cruise off the Scilly Islands, chiefly south-west of them, in order to intercept and telegraph arrivals of ships homeward bound, which had reached that longitude, the fee to be a uniform charge of £5 per vessel. But we do not remember to have heard of it since, nor seen mention of it in any publication, nor can we find any one who is able to say what measure of success has attended the experiment.

The event has come to memory again in connection with a much larger idea, which may be of considerable use to the timber trade as regards its shipping, and which is said to be under discussion in the United States of America, at the present time, as a feasible object. And what with the wonders of steam and electric (and who knows what besides may yet be discovered?), it is rash to pronounce anything impossible that science and mechanical art are disposed to take under their charge with a view to bring it into practical use. The talk in question is as to the possibility of stationing a number of lightships in a certain longitudinal line between America and Europe in connection with an Atlantic cable in order to report all vessels that pass near, or that in thick weather want to know their latitude and longitude, or to obtain assistance; also to pick up the crews of wrecks happening far at sea. Doubtless great good might be effected by such an arrangement, if it could be shown that its accomplishment were within the bounds of human knowledge and ingenuity. The proposition is to station the vessels at a distance of about 200 miles from each other, so that no ship in difficulties or needing assistance, keeping to that latitude, need be more than 100 miles from help, refuge, or communication with the land, at one end or the other.

But when we talk of stations, the one apparently insuperable difficulty presents itself to the nautical mind. There is a soothing suggestion in the mention of an ocean cable, it is true, but it will not bear a moment's investigation in reference to that which is used for telegraphing. As we might expect to tether an Australian bullock with a piece of spun yarn; and no device for anchoring with safety in the open sea, in 100 fathoms of water and upwards, has yet been discovered. Nor is it conceivable that any known appliances will keep a ship in a given point of latitude and longitude in all weathers. Of course by powerful steam machinery a good deal might be accomplished, and if driven from her regular position by a storm she might soon be brought back again. But in thick weather how would she find it? Then, again, there is the liability of these vessels being themselves run down by the mighty steamers rushing headlong through the tempest in thick as well as fine weather and their commanders thinking of nothing so much as how to make the quickest passage on record. The maintaining these vessels at their destined places in the ocean would be a service full of danger, compared to which that of coasting lightships is trifling, and the cost of the institution would swallow up a princely revenue, though by sub-division among the maritime nations chiefly interested that need be no barrier. There would be only about ten or twelve ships required, as the first one this side might be 200 miles to the westward of Cape Clear, which would be 15 degrees of longitude out of the 75 to New York, and another vessel stationed 200 miles this side of Long Island would run of nearly five degrees more. The remaining 55 degrees, allowing them to average 40 miles to a degree, would leave but room for ten more ships, or 12 in all. On the banks of Newfoundland the task would be easier, as anchorage can there be had 100 miles or more from land, and in the right track; but the lightship would have to be able to slip from her moorings in the not unlikely case of being, in the spring, liable to be overwhelmed by an iceberg. The Great Bank extends some 200 miles seaward from Cape Race, and the experiment might be commenced by fixing a suitable ship thereabout, which if there were no other on the proposed line would be of immense use to navigators from all parts of the world, as Cape Race is too much out of the regular track to

Europe for vessels from the southward to make, without deviating considerably from their true course. But if a lightship were stationed even 50 miles south of it, on the system presupposed, no doubt every homeward bound pitch pine ship would endeavor to sight such a beacon in order to make sure of her reckoning, and to know exactly where she was, especially in weather which precluded all celestial observation either of the sun or stars, and many would be likely to want stores or gear, which the institution would be prepared to supply, without their needing to look for a port on that account.

Near the outer edge of the Great Bank of Newfoundland, which is just in the fair way of homeward bound vessels via the Atlantic, 26 to 30 fathoms of water may be found, where a large ship might hold to her anchors through any weather with suitable ground tackle, about latitude 43 deg., longitude 60 deg. (see Norie & Wilson's chart of the Atlantic, in which the soundings on the Banks are minutely laid down.)

In the article to which allusion has been made, on introducing this subject, it was suggested that a ship of the largest size made be advantageously moored, within anchoring distance of Cape Clear, with similar object, and the Great Eastern was mentioned as the very thing for it, as being the nearest fabric yet afloat to a small island, or floating town, under the lee of which (600 feet in length) business might be carried on in almost any weather; and if we are not mis-informed some steps were taken to get up a company to buy her with that object, but on inquiry it was found that she had recently changed hands, and was not then for sale. So the matter dropped and was heard of no more. She has recently been again in the market, and was sold for a very inconsiderable price in proportion to her vast capabilities and appointments.

For rendering assistance to crippled steamers and other ships, supplying stores, communicating orders, and telegraphing arrivals, &c., without the need of ships going into port, such an institution, conducted on fixed scale of moderate charges, might become of great value to the mercantile as well as the shipowning community, and even to the Navy, and especially to Lloyd's and the other marine insurance offices, as every kind of nautical trade, even to ropemaking, might be conducted on board of her without interfering with the discipline of the ship, and in direct promotion of the objects for which she was stationed there. But would it pay? That is the question *ad rem*, to which an eloquent promoter would have to devote his attention. The concern might have to wait a little, possibly, for any important returns to the shareholders, but a very short time after the great ship taking up her position, well prepared for all exigencies, her fame might be expected to spread to the four quarters of the globe. And all shipmasters bound to England, or to either of the three channels, would, as a matter of course, receive instructions respecting her, as it might happen to many of them to save many pounds—in some cases perhaps many hundreds of pounds—by putting themselves in communication with her.

This is a mere *sketch* of the possibilities which such an institution might include in its system of ocean utility, and to no interest would it be of more importance, perhaps, than to that of the timber trade, as every ship may might receive her orders by signal, in answer to her own signals, while passing by, before a good breeze, and often without occasion of laying-to for a moment, or even of backing a topsail.—*Timber Trades Journal*.

## CARE OF BAND SAW BLADES.

The band saw blades are usually very much neglected; but they should be kept sharp and in good trim if nice work is expected from them.

For this purpose a straight file without any taper, slim and blunt, with round corners, will be found to answer admirably for the purpose, and will do tolerably straight and accurate work.

When filing a saw blade, the workman should try to file the teeth as uniformly as is possible;

each tooth should be filed to a sharp cutting point, and the throat thereof should be filed back, that the underside of the tooth is slightly diagonal from the cutting point, and terminating in a round corner at the base of each tooth; this makes the blade very much stronger and less liable to break, as a sharp corner at the bottom of the teeth is apt to and very often is the cause of starting a crack which ultimately causes the band saw blade to snap off and break. Another advantage obtained by filing the teeth in this way, is, that it gives them a slight lead and causes them to dig into, instead of crowding off from, the wood to be sawn.

When sawing with a band saw, do not crowd the saw, as it is injurious to the blade and shortens the life thereof.

Always select a blade suited to the work you want it to perform; if thick material is to be sawn, use a wide blade if possible; if thin scroll or bracket work is to be sawn, use a narrow blade, one that will readily allow small circles and the like to be worked with ease, and without too much binding on the blade.

Never work a saw blade after it is dull, but file at once, or substitute another blade until you have an opportunity to sharpen the same. It is a good plan to always keep several saw blades in such a condition that one can instantly be called into service without any tinkering whatever.

The side guides for the band saw blade should be set close to the saw, yet not too close, or it will cause much friction on the blade.

Above all things, avoid getting any oil whatever on the rubber bands of the saw wheels, as this causes them to decay very fast, and is highly injurious.

If the tension on your saw blade is controlled by a weight and lever, see that the fulcrum pin is kept free from dirt or gum and is well oiled, that the tension weight can act quick and easy. In setting the tension weight, use the common sense your Creator gave you; and remember that a narrow blade working on very thin material does not require as much tension as a wide blade which works on thick material; set your weight which governs this tension to suit the work, and the blade as above specified. Remember, that when you move the tension weight away from the fulcrum, toward the end of the lever, that you increase the tension on the blade, and by moving it toward the fulcrum, that you diminish the tension on the blade.

If the tension of your band saw blade is controlled by a spring, use your discretion likewise; so soon become accustomed to the proper setting of saw blades, and, when once acquired, will not easily be set aside.

Perhaps it is well to remark for the benefit of beginners, that the upper saw guides should not be set too far away from work; as close as convenient, is as good a rule as one can adhere to.—*Wood-Worker*.

## BOILER ROOM HINTS.

Do not force a boiler. If you do you are liable to soar upwards some fine day, and brick bats, hot water, steam and pieces of the overburdened boiler will go with you.

Many a man who is forcing his boiler should inspect the combustion chamber back of his bridge wall. He will often find it completely filled with dirt and cinders. To get into it he must get at a little cramped-up door behind the boiler. Let him cut a door directly out through the wall of the building. Then he can clean out the chamber comfortably and put water into it, while he takes out the dust. This should always be observed. Wet down ashes or dust and they will not fly up to clog tubes and lodge in the smoke stack.

Do not trust to steam for blowing out the tubes, nor trust to gum scrapers. Buy a first-class tube cleaner, and bribe the fireman to use it. Every fireman should know the value of clean tubes, yet many do not, or do not realize the full extent of them.

Clean up all the dirt around the boiler, scrape tubes and clean out smoke passages, and you can decrease the presence of the blast. It will not then throw coal out of the chimney. You can save 20 per cent by better care arrangement of even an old-fashioned plant, although, many

times, 40 per cent, may be saved by putting in a new boiler and new engine, and a new chimney where the motive power is overworked.

We have seen smoke vent up in an 8x12 chimney when it really required a 12x16 chimney, but such work never pays. It is always costly and runs a man behind. No matter how carefully a man may figure on everything else, here is a leak that is sucking good blood all the time.—*Hobart in the Cabinet Maker*.

## USING A SCROLL SAW.

The scroll saw has of late years become one of the most important tools used in the working of wood, and it is also one that few know how to manage properly. It is therefore possible that a few suggestions regarding its use may be of service to some of your readers. When we look at some of the wood as it comes from the scroll sawing machine, we find that the edges are quite rough and uneven, and the lines are very irregular and ill-shaped. If we compare the work with the original design we often find them very dissimilar. This is a serious fault and a man whose work shows it is also likely to be continually breaking blades, or getting the machine otherwise out of order. It takes considerable patience and practice to become a good scroll sawyer. It does not do for a man to become indifferent and careless when using this kind of machine. He must be alive to his work, and call all his artistic skill to his aid when sawing. If he is only cutting straight lines he must still be watching his work. He must hold the work solidly on the saw table, for much depends upon this. If the work is allowed to vibrate with the saw, it will not cut smooth and the blade is liable to break.

The work should be moved very steadily over the table, so that the feed will be as nearly uniform as possible. In sawing curved lines, the work should be held in such a position that the blade is not twisted, but is allowed to run free in the kerf. In sawing short curves and small circles we must not use too coarse a saw; in cutting a two-inch circle the blade should not exceed one-eighth of an inch width.

Sawyers often experience great trouble by the breakage of blades; this is due in a great measure to failing to give the blade the proper tension. If we stretch the blade too tightly a very slight movement of the work will cause it to snap, and if we leave it too slack it will bend back when it strikes the wood and will not cut fast. It will also bend sideways and catch in the work, when it is almost sure to break. Merely stretch the blade so that all side motion is taken up, and the danger of overstraining is avoided. If the work is held solidly on the table and in the right position, there is no necessity for putting a strain of half a ton on a three-sixteenth blade.

It is when doing inside work that the great trial comes. The hole for the saw to go through should be bored, if the case will permit, at least twice the size of the saw. This facilitates the putting of the saw through.

To save trouble and time, if the material is not heavy, we can put two or more pieces together when sawing, but we must be very careful to keep them from sliding over each other. It is best to lightly nail them on the outer edges and do the inside first.

In putting in the saw be careful to put the right end down. All saws are filed square on the lower edge of the tooth. The square edge should always be put down; this prevents the saw from raising the work in its upward motion. Be careful to keep the machine well oiled.—*J. W. F. in Saw Mill Gazette*.

On Nov. 18th Mr. Robert M. Ley's sawmill and bending factory at Watford, Ont., were totally destroyed by fire, started, it is supposed, by traps, as the mill had not been running for three weeks. Loss, \$7,500; insured for \$3,000.

It is reported that at Lake Megantic considerable lumber will be taken out this winter; G. B. Hall & Co. making three to four million feet, and Shaw & Sons, on the Dead River, about five millions.

**Chips.**

FOREST fires caused great loss south of Little Rock, Arkansas.

JOHN A. MORRISON, Frederickton, N. B., is rebuilding his mill, destroyed by fire a few weeks ago. The new structure will be 40x100 feet.

At the close of the season there will remain in pile at Manistique, Mich., several million feet of lumber more than last year at the season's close.

CHICAGO is to have a World's Fair in 1892 to celebrate the 400th anniversary of the discovery of America. A company has already been incorporated at Springfield, Ill., for this purpose.

It is estimated that the lumber left on dock at Muskegon, Mich., when navigation closes will not exceed 100,000,000 feet, as compared to 225,000,000 feet at the close last season.

The mill of the Calgary Saw Mill Company, Alberta, is nearly ready to run. A tramway from the mill to the timber is about completed, and when that is done the mill will start.

The shade of an oak at Yalaha, Fla., would cover 1450 men, standing in contact. The mammoth tree is 25 years old, and is still growing.—Savannah, Ga., News.

**Catarrh—A New Treatment.**

Perhaps the most extraordinary that success has been achieved in modern science has been attained by the Dixon treatment for Catarrh. Out of 2,000 patients treated during the past six months, fully ninety per cent. have been cured of this stubborn malady. This is none the less startling when it is remembered that not five per cent. of the patients presenting themselves to the regular practitioner are benefited, while the patent medicines and other untried cures never record a cure at all. Starting with the chain now generally believed by the most scientific men that the disease is due to the presence of living parasites in the tissues, Mr. Dixon at once adopted his cure. Other extermination; this accomplished the Catarrh is practically cured, and the permanency is unquestioned, as cures effected by him four years ago are cures still. No one else has ever attempted to cure Catarrh in this manner, and no other treatment has ever cured Catarrh. The application of the remedy is simple and can be done at home, and the present season of the year is the most favorable for a speedy and permanent cure. The majority of cases being cured at one treatment. Sufferers should correspond with Messrs. A. H. DIXON & SON, 30 King Street West, Toronto, Canada, and enclose a stamp for their treatise on Catarrh.—*Montreal Star*, 1912.

The Napier, Tim worth and Quebec railway will make application to Parliament for an amendment to their charter enabling them to change their original route.

**FOR SALE, TIMBER LIMITS & SAW MILL**

THE MASKINGONGE LUMBER COMPANY offer for sale their property consisting of Saw Mill at Maskingonge Bridge, P. Q., with a quarter mile of N. S. Ry. Station, also good facilities for shipping by water. Capacity of Mill 50,000 feet per day water and steam power; saws and belting all complete. Two hundred and forty square miles of limits situated about thirty miles from Mill, which are intersected by a number of good flowing streams, and are rich in Pine Spruce, Cedar, etc. Satisfactory reasons for selling out. For further particulars apply to

MASKINGONGE LUMBER CO. 615 Maskingonge Bridge P. Q.

**GRATEFUL—COMFORTING. EPPS'S COCOA BREAKFAST.**

"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette*.

Made simply with boiling water or milk. Sold only in packets by Grocers, labelled thus:

JAMES EPPS & Co., Homoeopathic Chemists, 171, St. Mark's Lane, London, England. Sole Agents for Canada: G. E. Colson, Montreal.

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has lately added some of the newest and most select style of Fancy Job Letters to its previously well supplied stock, and is prepared to execute the following, and other classes of PLAIN and FANCY WORK, in the best style

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are ample, and orders are pushed through with vigor so that work can be got out in short time.

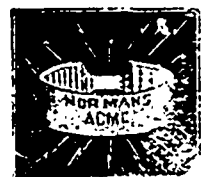
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attended to with promptness, and work forwarded immediately on completion.

**NORMAN'S ELECTRIC BELT INSTITUTION.**

ESTABLISHED 1874.

These Electro-Curative Belts, Insoles and Trusses are SUPERIOR TO ANY OTHER REMEDY.



And will Cure when all other remedies fail.

Circular and Consultation Free.

**CONSTIPATION**

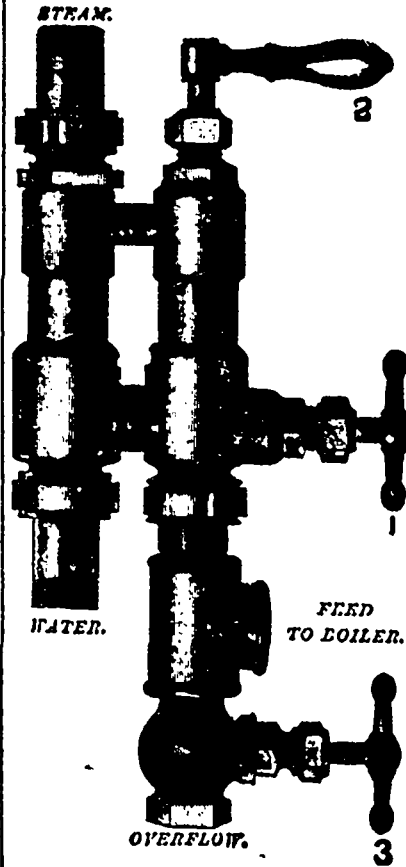
is entirely overcome by using NORMAN'S ELECTRIC BELTS. No injury can result, and they are pleasant to wear. Try one and be cured. Guaranteed genuine. Circular and consultation free. A. Norman, 4 Queen Street East, Toronto.

Peterborough, 29th September, 1894.

This is to certify that I have used one of Norman's Electric Shoulder Braces for my 107 years of age, for Spinal Curvature, with very beneficial results.

JONAS H. PASHLEY.

For Sale by J. D. TULLY, Agent for Peterborough.



**The Hancock Inspirator**

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 70,000 Now in Use.

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Manufacturers of Inspirators, Injectors, and General Jet Apparatus. 1911

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

ALL ORDERS Filled same days as received.



**MONTREAL, QUE.**

**Axes & Cross-Cut Saws.**

CANADIAN AXES. Both inlaid and overlaid steels, 10 patterns, from \$7.00 upwards per dozen.

AMERICAN AXES. Both inlaid and overlaid steels eight patterns, from \$10.00 upwards per dozen.

SILVER STEEL LANCE-TOOTH CROSS-CUT SAWS.

Warranted to be good temper or will be replaced. Special three square and extra fine cut flat files for these saws.

BLOCKING AND BROAD AXES

Of extra shape and quality. Samples of axes and saws sent to any address on approval and for selection.

Geo. Stethem

Importer of Heavy and Shell Hardware. Sole Agent for the B-C-ANY AREA.

**FILES—Now's the Time**

Collect and Ship them to be

RE-CUT

BEFORE THE SPRING OPENS.

DO NOT WASTE

Your Money on Buying new, when the old ones will do. We pay Freight one way.

SHIP THEM TO-DAY

—TO THE—

ONTARIO FILE CO.

168 FRONT STREET, EAST, TORONTO.

Agents Wanted Every where.

Market Reports.

TORONTO.

From Our Own Correspondent.

Dec. 9.—The wintry weather of the past week has made trade quiet. There is still, however, considerable lumber arriving by rail, which must find a market or go to swell the large quantity already piled off by the track side. The piles at the mills are now well thinned out, so that before the advent of spring we may reasonably expect that the quantity in stock here will be materially lessened. The kinds of lumber of which there will be no over stock during this winter will be cutting up 1 1/2 and 2 in. Sash and door factories use up but little clear lumber, as the prices obtained for such work will not warrant them in using such high priced material, and the consequence is that cut up is always in demand. The coarser grades of boards and plank will likely be in excess of the demand. There is a large amount of speculative building going on. This class of work had nearly dropped off, but is on the increase again. Cull scantling and boards is used chiefly in this class of buildings, and answers the purpose well enough if care is used in selecting good culls—dead culls are rarely brought here now, not realizing much over the cost of freight and handling. Retail dealers have had their tempers and horseflesh severely tried for some time past, by reason of the bad state of railway yards; many of those dealers have paid their share for block paving the roads leading to their yards, and now find it of little use, so far as hauling in is concerned, being unable to take out more than half a reasonable load from the car. Railroad companies seem to think that their duty is done when they deliver lumber on their sidings and collect freights therefor. It is hard to say what is the reason, but certain it is that anything is thought good enough for a lumberman. Coal men and others have the best and cleanest sidings given them, from which to haul their goods, and the lumber dealers are left to plough through the mud holes, often axle deep. The solution may possibly be found in the notable fact that lumbermen are proverbially a long-suffering and patient class, but even their good natures may be tried too much.

The last cargo of lumber has left our docks for this season, at least, and navigation may now be considered as closed. Quotations at the yards remain steady and fairly firm, not much cutting on bills for future delivery so far as I am able to learn, and there are so few mills running bill lumber cut to order will remain firm in price.

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

Table listing prices for 1 1/2 inch flooring, 2 inch flooring, Beaded Sheeting, etc. with prices per 1000.

CHICAGO.

BY THE CARGO.

The Northwestern Lumberman of Dec. 5th says:—For the week ending Wednesday the port list indicated about 60 arrivals of lumber cargoes, against 80 during the same period last year. On Wednesday a considerable fleet drifted in, the number not being included in

our report. Thursday morning there were several loads at the market, but by noon nearly all had been sold. The offerings consisted largely of green inch lumber from the north shore and Menominee, with some pick-ups from other ports. Green inch predominated, and sold hard at former figures. The yard men now have little occasion to buy green lumber. Their wants are mostly confined to dry lumber to go into assortments that are broken. They want desirable dimension and inch lumber that will run to good common boards, and strips that will make fencing. Short length piece stuff is still selling on a basis of \$9.50 for green, and will probably close at that figure. Strictly dry piece stuff, if an occasional cargo straggles in, will sell at a relatively high figure. There is no quotable change in shingles, though the season's market for the high priced grades closes a little tame.

At this time last year short green piece stuff sold for \$8.50 a thousand, and No. 2 boards and strips at \$9 to \$11 a thousand; so it will be seen that common lumber all around is fully \$1 a thousand higher than it was last year. Yet it is not as high by 50 cents a thousand as the commission men intended to raise it. They boasted hard to force the price of short green dimension to \$10, but it stuck 50 cents short and would not budge a notch higher. On the other hand the yard men grumble some because they have had to pay so much for their lumber. The Twenty-second street dealers charge the north side men with keeping prices up all the season, but the latter fling back the impeachment with scorn.

Quotations on lumber and shingles are as follows:—

Table listing prices for Dimension, short, green, No. 2 boards and strips, Medium stock, etc. with prices per 1000.

AT THE YARDS.

Only a moderate outward movement is now prevailing. The fall trade may be considered past, as indeed it should be, since we are well started in December, though the weather is more like that of October than the early winter. There was less than the usual stocking up during the fall, but such as there was has been accomplished. Hereafter the lumber called for will be to patch up assortments in the country and to supply the yet large consumptive demand in this city and country. The continuance of pleasant weather is favorable to trade. Building permits in large numbers for the season are being daily issued for local construction. This will go on while the weather will permit. If the winter should be mild throughout, or during a greater portion of the time there would be no cessation of active building. Contractors and investors are becoming aware that material is to rise in price, and there is also danger of disturbance in the ranks of labor. For these reasons such building as has been intended for the near future will be pushed forward as rapidly as possible, and an open winter will favor such a design. If the yard dealers desire to urge their winter sales a little, they should exercise their persuasive faculties in impressing the motive indicated on the minds of investors and builders.

The chief inquiry between yards is for 12-inch common boards, and 16 foot fencing. The late advance on 10, 20 and 18-foot 12-inch boards was considered by the dealers who did not attend the trade meeting as being in the right direction, only the thing was a little overdone. The selling price of these sorts of lumber is at the top when \$16 a thousand is named, though the tendency is upward. First quality of 16-foot fencing is selling at the list, which is saying much, and very encouraging, in consideration of the conditions prevailing during the past season.

Handlers of car strips are looking for an increased demand after January 1st. Inquiries are numerous, though sales have not yet greatly augmented. Most new business of this character will be delayed until the beginning of the new year, when a revival may be expected. Receipts of lumber, shingles, etc., from

Jan. 1st to Dec. 31st as reported from the Lumberman's Exchange:—

Table showing receipts for 1885 and 1884, including Lumber and Shingles.

Table showing receipts for 1885 and 1884, including Lumber and Shingles.

LAKE RECEIPTS FROM JAN. 1 TO DEC. 3.

Table showing Lake Receipts for Lumber and Shingles.

STOCK ON HAND NOV. 1.

Table showing Stock on Hand for Lumber and Shingles.

EASTERN FREIGHT RATES.

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

Table listing freight rates for various locations like New York, Boston, Philadelphia, etc.

ALBANY.

Quotations at the yards are as follows:—

Table listing prices for Pine, clear, Pine, fourths, Pine, select, etc. with prices per 1000.

OSWEGO, N.Y.

From Our Own Correspondent

No change in quotations; trade is very quiet.

Table listing prices for Three uppers, Picking, Cutting up, etc. with prices per 1000.

BUFFALO.

We quote cargo lots:—

Table listing prices for Uppers, Common, Culls.

TONAWANDA.

CARGO LOTS—MICHIGAN INSPECTION.

Table listing prices for Three uppers, Common, Culls.

QUEBEC CULLERS' OFFICE.

The following is a comparative statement of Timber, Masts, Bowsprits, Spars, Staves, &c measured and culled to date:—

Table comparing prices for various timber types like Wancy White Pine, White Pine, etc. for 1883, 1884, and 1885.

JAMES PATTON, Supervisor of Cullers.

LONDON.

The Timber Trades Journal of Nov. 28th says:—If trade is beginning to hold up its head again, and to shake off the lethargy that has so bowed it down of late how is it that the dock returns of the delivery department show no sign of more activity in the timber trade? The retrogression in comparison of last year at same period shows no abatement. In sawn and planed stuff we are again above 1,000 standards behind, and more than 600 loads of hewn timber, also on the week, at the Surrey Commercial Docks alone. When the trade see the scale going the other way, and not till then, we fear, will they believe that we have turned the corner.

As far as the London wood market is concerned we cannot yet detect any sign of revival. Prices at the Baltic saleroom show, if anything, a tendency to weakness, or remain, at best, about stationary. It can, however, hardly be expected that buyers will be disposed to operate in the very midst of a political struggle, and we think that those sellers are acting wisely who hold themselves altogether aloof from the market at the present juncture. In a few weeks' time a fairly accurate idea may possibly be formed as to the course prices will take, and we shall refrain until then from speculating on the probability of a rise or fall in values. In any case the task of buying seems likely to prove a difficult one, as so many contending factors have to be taken into account. On the one hand, it is contended by sellers that, apart from the possibility of a general revival of trade, prices free on board are so unremunerative that a rise in values must be established to enable shippers to continue working their mills, even on a modified scale. On the other hand, buyers state their belief that the present hard to mouth system of business must continue for some time, and they point to the fact that the building trade, both in London and the country, has been overdone, terraces of houses in many places remaining uninhabited.

The general trade of the country certainly shows some slight indication of improvement, although the reports from manufacturing districts are somewhat conflicting. In iron, however, the feeling is decidedly better, and Scotch pig has been very firm, a considerable quantity having changed hands during the last week in Glasgow, while a larger business has been transacted at Middlesbrough than has been the case for some time past. This activity springs chiefly from speculative purchases, based on the undeniable improvement in the prospects of trade in the United States, to which we alluded in our last issue, the upward tendency being, moreover, assisted to some extent by the agitation in the collieries for a rise in wages. A fair quantity of pig iron has been actually taken for American account, and it is believed that an order for 10,000 tons of hematite pig iron has been placed at Barrow, while the shipments

# Wrought Iron Shanty Cook Stoves

*The Best Article Ever Offered to the Trade.*

I have much pleasure in drawing attention to my **WROUGHT IRON COOKING STOVE**, for Shanty, Hotel and Boarding House use. These stoves are made of Heavy Sheet Iron, the top and lining of the fire-box being of Heavy Cast Metal and all the connecting parts of substantial Wrought Iron Work. The dimensions of these Stoves are as follows:

## SINGLE OVEN STOVE

Top surface contains six 10-inch holes, with ample room between, and one oven 23x24x19. Fire box takes 23-inch wood.

## DOUBLE OVEN STOVE

The Double Oven has a top surface containing twelve 10-inch pot holes, with two ovens, each 23 x 24 x 19. One fire-box of suitable size for area to be heated. Below will be found Testimonials from some of the leading Lumbermen, who have used my Wrought Iron Cook Stoves since I commenced manufacturing them. They are the names of gentlemen who are well known and reliable, and will carry more weight than any recommendation of my own could do.

*The Best Stove I have ever Used.*

PETERBOROUGH, May 31, 1880.

ADAM HALL, Esq., Peterborough. Dear Sir,—I have used your Wrought Iron Cooking Stove in our lumbering operations since its introduction here, and have no hesitation in saying that I prefer it to any other. For durability, economy and efficiency, where a large number of men are employed, it is the best stove I have ever used. You can, with confidence, offer it to hotels, boarding houses and lumbermen.

Yours truly, THOS. GEO. HAZLITT.

*The Stove for Lumbermen.*

PETERBOROUGH, June 1st 1880.

ADAM HALL, Esq., Peterborough. My Dear Sir,—We have used your Wrought Iron Cooking Stove and find it is very satisfactory for lumber operations, especially so on drives. We can recommend it highly.

Yours truly, J. M. IRWIN

In addition to the above I can refer you to the following lumber firms who use my Wrought Iron Range exclusively in their camps:—

|                                 |                    |
|---------------------------------|--------------------|
| THE GEORGIAN BAY LUMBER CO..... | Waubushene         |
| THE LONGFORD LUMBER CO.....     | Longford Mills     |
| MESSRS. GILMOUR & CO.....       | Trenton and Ottawa |
| MESSRS. RATHBUN & CO.....       | Deeronto           |
| THE MUSKOKA LUMBER CO.....      | Gravenhurst        |

## EVERY STOVE GUARANTEED.

All the necessary **TINWARE** and **CUTLERY** for Shanties Supplied at the Lowest Prices.

# ADAM HALL, Peterborough.

## THE HENDERSON LUMBER CO. Limited.

DAVID H. HENDERSON, *President*, NORMAN HENDERSON, *Vice-President*; CHAS. H. WALTERS, *Sec-Treas.*  
Dealers in, and manufacturers of, Dimension and Bridge Timber, Sawy Lumber, Clapboards, Shingles and Lath. Packing Cases and Boxes a Specialty.

OFFICE, MILLS AND YARDS: 342 to 396 William Street, MONTREAL, and at ROXTON FALLS, P. Q.

from the Tees show every prospect of continuous improvement. As yet, however, there has been no increase in the demand for home consumption, and the iron works have no more than a normal quantity of orders on hand. Until the home trade improves, the present firm tone in the pig iron market cannot be regarded with entire confidence.

Thursday was a very unfavorable day for a sale, the wet literally coming down in bucket-fuls, and those who had not previously taken a trip down to the docks to inspect the parcels they contemplated buying would have to rely entirely on the brokers' sale report. The seats were fairly well occupied, and from the appearance of the room pretty active proceedings might have been expected. The fact was, however, that the wet, which continued throughout the day drove many into the saleroom who would otherwise have patronized the approaches.

Prices throughout were not very tiptop, but the major portion of the goods submitted without reserve had nothing specially choice about them. For the pine boards ex Baumwall there was some good bidding though the prices realized read low. The classification of the 1st Ottawa pine was not very strict, and they fetched about 2nd quality price. For the Mon-

treal pine ex Suffolk the competition was not over brisk. The first lot of this parcel some 2x12 to 16 in. 2nd bright, hung at £9 10s., advancing by slow degrees to £11, at which they dwelt for some time, being eventually knocked down at this price. The 2x10 also experienced similar treatment, but fell at 5s., on the opening bid, the room evidently not being very anxious about them.

The battens from this port were very unfavorably treated; 2nd bright pine of any dimensions must be considered extraordinarily cheap under £9 if the quality is anything like the usual mill assorting.

Some there were who inclined to the idea that the elections, from the quiet way they are now conducted would have no influence on trade one way or the other, but we do not share that view. As far as the indications in the saleroom went, they pointed to a very serious influence being exercised by the political contest now going on, and considerable excitement was engendered by the cheering from the adjacent Baltic which rang through the building at intervals as the tape brought intelligence of the result of the metropolitan elections.

BEILOH'S COUGH and Consumption Cure is sold by us on a guarantee. It cures consumption. For sale by Ormond & Walsh, druggist Peterborough.

# MONTREAL SAW WORKS!

CHAS. M. WHITLAW, *Manager.* MONTREAL A. I.

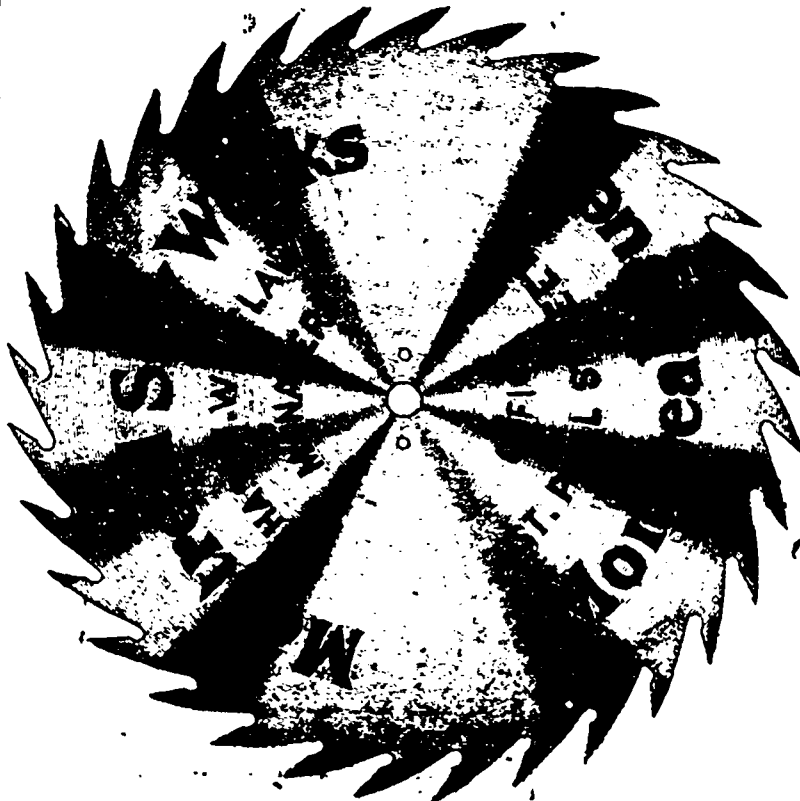
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—MANUFACTURERS OF—

CIRCULAR, GANG, SHINGLE, CONCAVE GROOVING,  
TOP, DRAG, CROSS-CUT AND BILLET WEB, PIT,  
ICE, AND ONE MAN CROSS-CUT SAWS,

—AND DEALERS IN—

BAND SAWS, BARREL AND HEADING SAWS, EMERY  
WHEELS, GUMMERS AND CUTTERS FILES,  
RUBBER & LEATHER BELTING, SWAGES, SAW SETS.



Catalogues and Price Lists furnished on application.

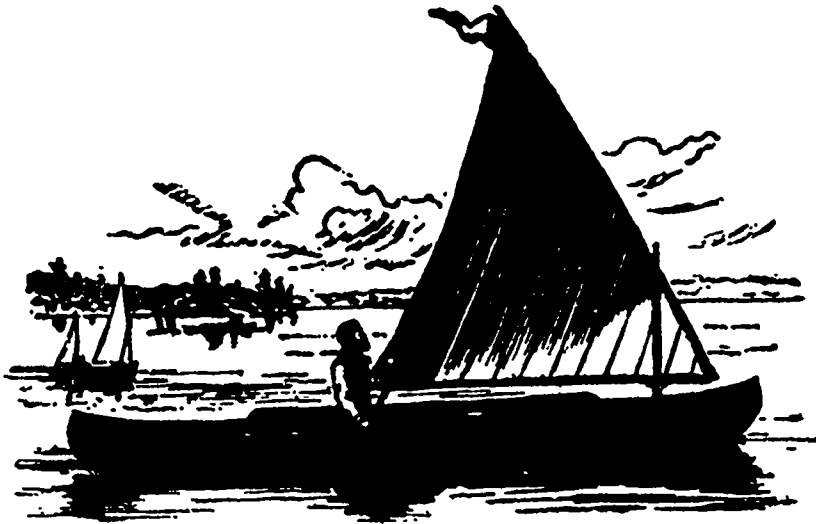
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PETERBOROUGH, ONTARIO,

Manufacturers of all kinds of PLEASURE, FISHING and HUNTING

## CANOEES

Patent Cedar Rib Canoes, Patent Longitudinal Rib Canoes, Basswood Canoes, Folding Canoes, Paddles, Oars, Tents, and all Canoe Fittings.



Gold Medal, London Fisheries Exhibition, 1883.

J. Z. ROGERS,

President and Managing Director

Send 3 cent Stamp for Illustrated Catalogue.

Canoes for Lumbermen, designed to carry any amount of goods and chattels and strongly built, made to order on short notice.

# HUGH GIBSON,

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KNIGHT'S PATENT "EXCELSIOR"

## SAW MILL DOGS

The Sawyer's Favorite

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

These Milldogs I guarantee to give satisfaction in every case. They will hold a frozen log as well as a soft one, for cutting Scantling, Square Timber, &c. These Dogs cannot be excelled, I sell them all on their own merits, give ten or fifteen days trial, and then, if not satisfactory, return them to my order, as I have no agents on the road this year, I will sell them at a reduced price. Send for Circular and price list.



Manufactured by HUGH GIBSON, CHATHAM. EXCELSIOR DOG.

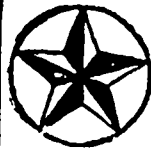
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Manufacturers of Patent Lap-Joint Star Rivet

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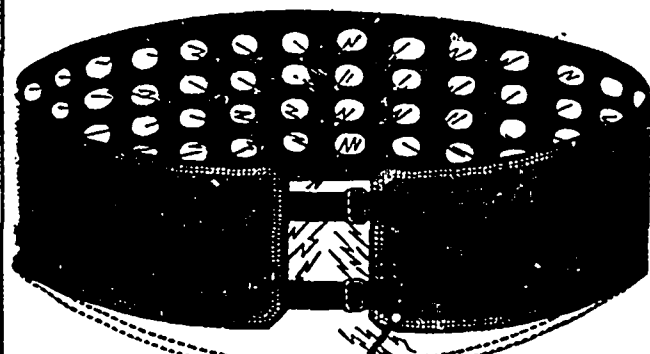
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To Mill Owners, Manufacturers & others requiring Leather Belting

Do not buy any Belting unless with DIXON'S PATENT LAP JOINT. It will last longer and do more service than any other. Please note the address. 70 KING ST. EAST, and send for Circulars and Latest Discounts.

## Norman's Electro-Curative Belt!

4 QUEEN ST., EAST, TORONTO.



This Belt is the last improvement and the best yet developed Curative Appliance in the world for

INDIGESTION, NERVOUS DEBILITY, RHEUMATISM,

and all diseases of men, and is a grand remedy for Female Complaints also. Circular and consultation free.

LUNG INVIGORATORS KNEE CAPS.

SPINE BANDS, SHOULDER BANDS.

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N. B.—Mr. Norman has had long experience in the Treatment of Diseases by Electricity, and will give his personal attention to every case, by letter or examination

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The Best Mills in the Country use it.

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IT WILL PAY YOU, BECAUSE :

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5. It costs only \$2.00 per year to have it sent, post-paid, to any address in Canada, and no land owner, lumber dealer, manufacturer or individual in any way connected with timber industries, can afford to do without it.

## TO ADVERTISERS.

It has a circulation among saw mill owners, manufacturers, lumber and timber dealers and all classes connected with the timber business.

Examine the field, count the cost, and you will at once decide that the CANADA LUMBERMAN is the

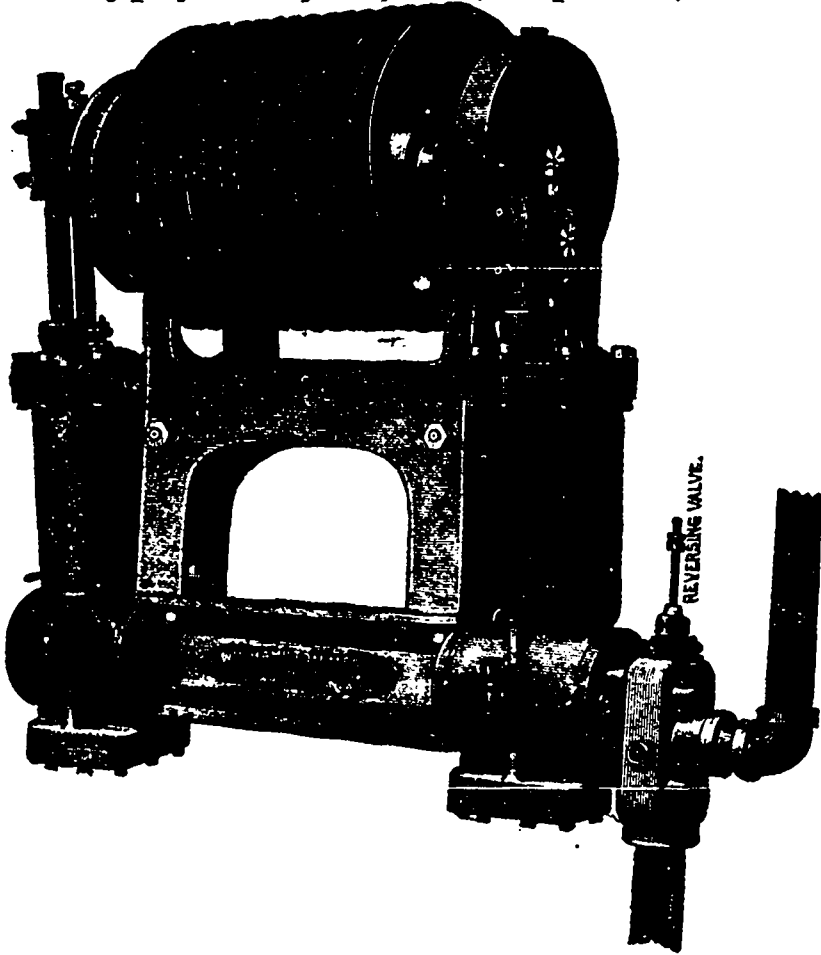
—CHEAPEST, BEST, MOST RELIABLE and ONLY TRUE MEDIUM—

for placing your goods or wares before the saw-mill men and lumber and timber dealers of the Dominion.

# CUNNINGHAM'S PATENT OSCILLATING TWIN ENGINE

FOR STEAM FEED IN CIRCULAR MILLS WITH RACK OR ROPE.

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



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

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

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

## We would also call attention to our Improved Band Saw-Mill for cutting logs

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

# The Wm. Hamilton Manufacturing Co'y, Limited

PETERBOROUGH

# NORTHEY & CO'S STEAM PUMPS, TORONTO, ONT.

*Pumps for Fire Protection a Specialty.*

## SAVE INSURANCE.

*Our Combined Boiler Feed and Fire Pumps are a NECESSITY IN EVERY WELL ORDERED STEAM MILL or FACTORY.*

### Cheap.

*Cheaper than any Pump built.*

*Our Independent AIR PUMPS and Condensers will effect a saving of 30 to 50 per cent. when applied to high pressure Engines.*

### Simple.

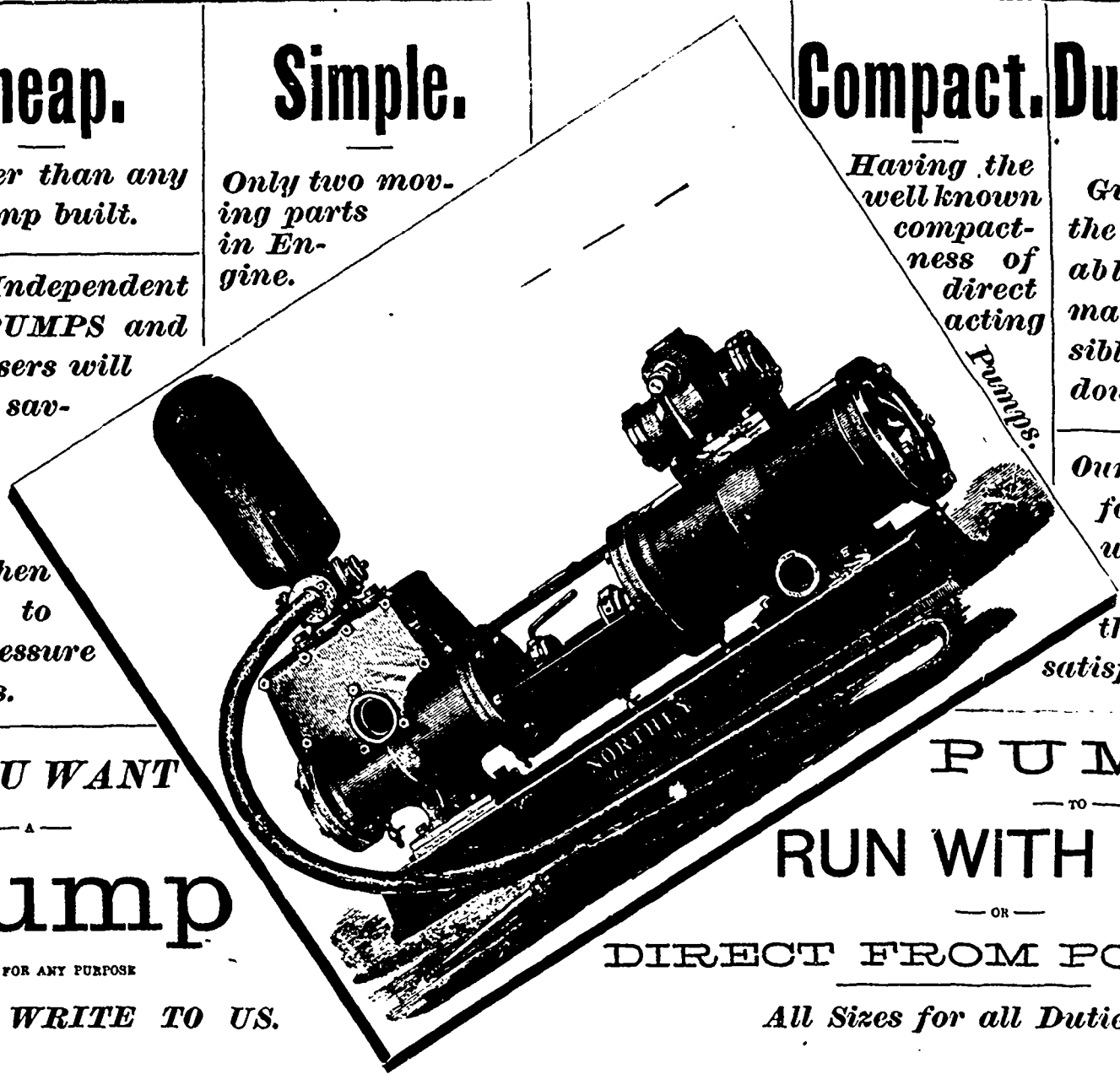
*Only two moving parts in Engine.*

### Compact. Durable.

*Having the well known compactness of direct acting Pumps.*

*Guaranteed the most durable Pump made; impossible to break down.*

*Our PUMPS for general water supply give the greatest satisfaction.*



IF YOU WANT

# Pump

FOR ANY PURPOSE

WRITE TO US.

# PUMPS

— TO —

# RUN WITH BELT

— OR —

# DIRECT FROM POWER

*All Sizes for all Duties.*

*Our make of Pump is specially adapted to Mills in out of the way places, as they can be absolutely relied on, and occasion no vexatious stoppages for repairs.*

WE INVITE CORRESPONDENCE ON ANY POINT CONNECTED WITH PUMPS.

SEND FOR CIRCULAR AND STATE YOUR REQUIREMENTS.

# NORTHEY & COMPANY,

Corner FRONT & PARLIAMENT STS,

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STROUDSBURG,

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MANUFACTURERS OF

## SOLID EMERY WHEELS

### AND SHARPENING MACHINERY.

*The products of the Manufacture of the Tanite Company have, for almost 18 years, enjoyed a great reputation, and have been recognized for a long while, in all the countries of the world as a type of excellence in this class of work. In order to increase in Canada their already widely extended use, the Co'y has recently added to the liberality of its terms and conditions, and has chosen the following Houses, so extensively known, to be its Agents:*

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| BEAUDET & CHINIC    | } QUEBEC. | MONTREAL SAW WORKS           | } MONTREAL |
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| A. R. WILLIAMS,     |           | TORONTO.                     |            |

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