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CANADA LUMBERMAN

WOOD WORKERS' MANUFACTURERS AND MILLERS' GAZETTE

VOLUME XIV.
NUMBER 8.

TORONTO, ONT., AUGUST, 1893

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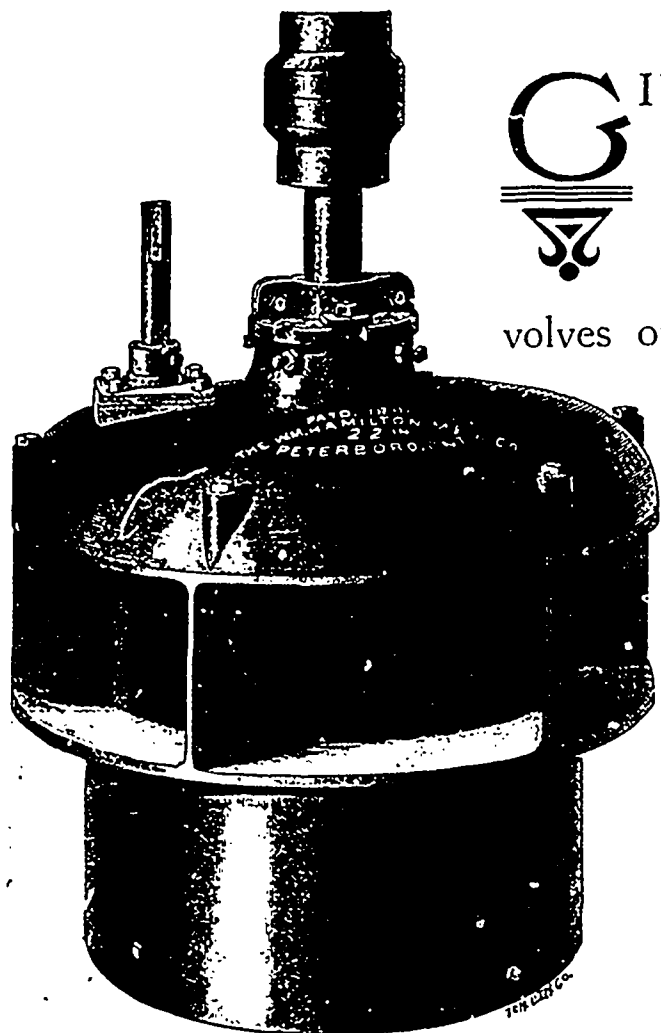


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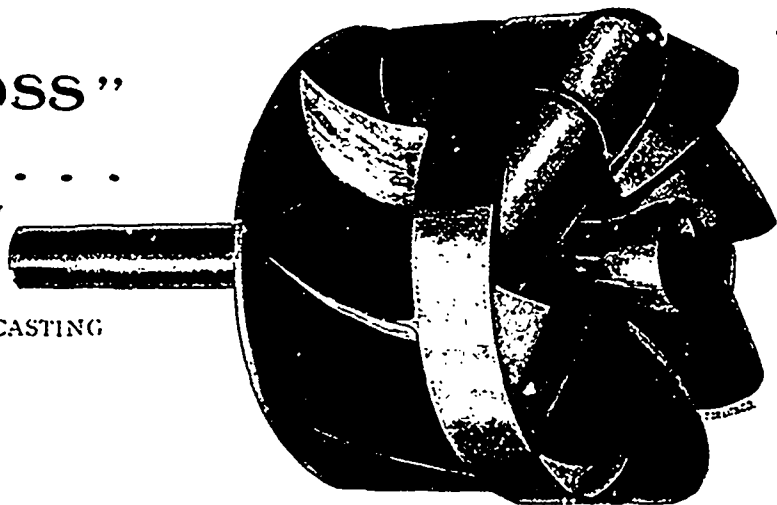
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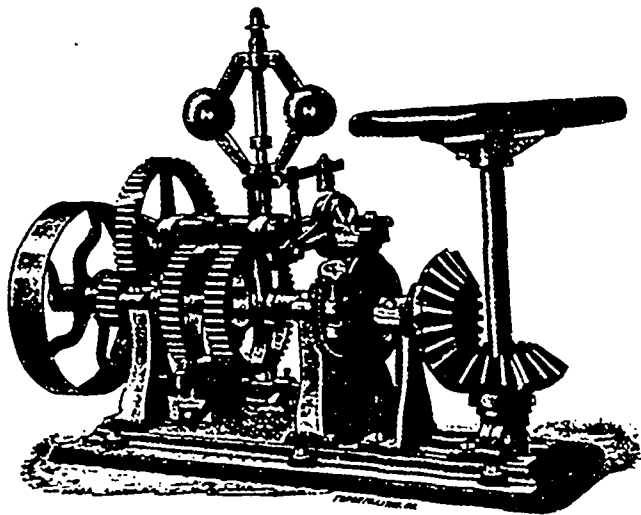
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SHARP SAWS.

THE saw is of very early origin in the history of man, as many of the ancient structures could not have been built without it. The British Museum contains saws known by their stamp to have been made two thousand years before the Christian era. They have frequent mention in Scripture, noticeably in Samuel, 1083 B. C., and in Isaiah, 742 B. C. In the Stone Age saws were made by securing pieces of flint for teeth in wooden handles, with bitumen, and similar articles have been used by other people. The Japanese make their saws like cleavers, with their teeth pointing toward the handle. The circular saw and other improvements probably came in late in the eighteenth century.

All work in wood is done either by sawing or cutting, and sawing is only a different way of cutting. The teeth of a saw work like a series of chisels, and a chisel-shaped tooth is the best for a rip saw in theory. In practice, however, the slender point of such a tooth will break away before knots of hard wood. A very different tooth is needed for cutting across the grain, as the work here is more difficult, requiring the teeth to be filed well back for cutting from the sides of the point, in order to sever across the grain of the wood. The length and size of saw teeth must vary for the various kinds of wood, requiring to be shorter and smaller in harder wood. Seven to ten teeth to the inch is about the right size for general purposes in hand saws.

The same rule applies to the angles of the teeth, the angle being less thrown forward for harder woods, either in crosscut or rip saws. The set of the teeth should be no wider than is required to make the saw run smoothly, as more than this makes needless work. The set must be wider in green or sappy or soft and springy woods than in the opposite. Rubbing the saw with an oily rag helps by lessening the friction, also by preventing rust, and further, a saw should be chosen which tapers thinner to the back. In buying a saw get from the make of some reputable firm, one with a thin blade, dark color, hung right and tight in handle, one that rings clearly when tapped, and bends evenly when sprung to either side, and with handle thoroughly dry and unsprung, as that springs the blade out of true.

Get all your set from the tooth and none from the blade, as this strains and distorts the blade. A good saw set is better than hammer and punch in the hands of a beginner. Set the saw before filing, and in cold weather warm the saw to prevent the teeth breaking when set. The back saws have very small teeth and generally need no setting, as the filing gives sufficient. Backed saws frequently become warped and buckled if used roughly. This is caused by a blow on the centre of the back, causing the blade to slip into the back at that point. Remedy by tapping lightly on the ends of the back until the ends are drawn in even with the centre.

Lay the stuff on benches; if thick rule on both sides and turn frequently to prevent the saw wandering. Keep your eye above your hand, or you may be misled. Keeping open the crack with a wedge assists both in the cutting and steering process. The teeth should have been filed evenly, as if longer on one side they mislead the saw in that direction.

The rip saw is easiest to file, as being level on the points of the teeth it is simply filed straight across the blade, with the file held level from point to heel, and at the proper sidewise tip to give the upper angle or pitch to the teeth. Take hold of the tip of the file with the left hand so as to secure steady work, and file only on the push stroke, as this will give you better work and greatly save the file. The crosscut saw is harder to file than the rip, owing to the teeth requiring a point. With file in hand, as above, and saw in trim, proceed as

above, only with the file at the proper sidewise angle to the blade to give the point required by the tooth. File one side first, then reverse the saw in the clamp and proceed as before, giving the same pitch to the teeth, and the work is done. The great requisite of a filer of saws is carefulness in all the particulars.

As soon as the tooth is brought to its proper level stop at once, or you will do much harm to your work. No definite rule can be given for size of teeth, as wood that is either soft, green, or in a large stick or log, requires a larger tooth for clearance than is needed in the reverse conditions. In hand saws the farmer will get the best use from the smaller teeth, as they will saw in both soft and hard woods. Compass saws and all of that class do better work filed square on back of teeth as in the rip, and a slant in front as in the crosscut saws, as they are required to part wood in all directions. The V tooth in large crosscut saws should be slightly longer than wide. The M tooth of itself cuts powerfully into the wood, but is regulated in its depth by the alternate cleaner, which is filed enough shorter to give the tooth a proper hold and no more.

In selecting a file, choose one with an even, whitish color, as this denotes evenness of temper. Also choose one with the name of the maker upon it if you want the best, as the makers only put their names upon their first-class files. If there is a difference in weight between those of the same size, select the heavier, as they are generally better. The boards for filing should be about four inches wide, hollowed out to fit over the handle, top edge rounded to give room for filing, and long enough to permit screwing them together just beyond the point of the saw. Saw sets for general use are best provided with a set screw to regulate width of set. The cheapest form, next to the hammer and punch, which are entirely to be recommended, is simply a little square of steel with handle of the same, and with different sizes of notches along the sides. Where care is taken to use this on each tooth alike, no better set is required.

LINING UP AN ENGINE.

By ROBERT GRIMSHAW IN MILLING.

THERE are few things which show the care and ability of an engineer or of a machinist more than this matter of lining up. Some call to mind the old proverb that every hair of a carpenter's head is an eighth of an inch in diameter, owing to the fact that the average carpenter will work to an eighth of an inch where almost every other mechanic would work to a hair's breadth. Others seem to appreciate the fact that a very slight variation at the cylinder end of the engine may amount to a great deal at the crank pin.

The first thing to do is to see that the foundation is level and firm, second that the engine bed is as nearly level as is practical to get at with the aid of levels and sighting strips. The bed must be leveled, both lengthwise and crosswise. If it is so in these two directions it will be in every diagonal direction also. The longer the level used, the more accurate the result that can be got. For cross leveling, where there is not a chance to use a long level, the sighting strips will often come in very handy. They are simply long and absolutely straight and parallel strips of wood (preferably cherry) of equal width and used in pairs. Being laid crosswise on the engine on the guides, at opposite ends, as far apart as possible, and one of them being shown to be perfectly horizontal by the application of the level, the other should sight fair with it at both ends. A very slight twist will bring one end or the other, or both, of one of the strips, out of line with the other.

The circularity and parallelism of the cylinder bore having been proved by a piece of stout wire, pointed at both ends, and just as long as the diameter of the bore,

the cylinder must be shown to be level, if it is a horizontal engine (and we are talking now only of horizontal engines), by the application of the level. The truth of the flanges may be tested by a steel square and the level; this is desirable in those cases where the guides are on a distance-piece bolted to the cylinder. The flange faces may be plumb, yet skew horizontally with the cylinder bore; this cannot be shown by the plumb, square or level; and either of these faults is a most serious one, which does not happen once in a hundred times, but which, when it is found to be the case, gives so much trouble at first and afterwards as to call for being remedied by the builders—that is, in those cases where the guides are bolted to the flanges, or the cylinder bolted as in the Porter (so-called tangye) pattern. The guides may be tested for level by the level. If they are level and the cylinder-bore is circular, parallel and level, the guides, if level lengthwise and crosswise, will be parallel with the cylinder axis and at right angles with the cylinder-flanges. If the guides are higher at one end than at the other, it will be shown by the level. If they are askew, that may be shown by the sighting strips.

To be sure that the guides are in line with the cylinder-bore there are two ways, one to be sure that they are square with the face of the flange which bolts to the cylinder and which constitutes one cylinder head. If the cylinder flanges are square with the bore and the guides are square with the face of the head, then the guides will be parallel with the cylinder bore.

Where this distance-piece construction is not followed, the guides will have to be lined with the cylinder bore by a cord passing through the centre of the bore, being there held at the rear or "out" end by a strip wedged into the bore, and passing at the other end of the bore through a spider made of metal for the purpose, or of wood for the special occasion, this line being prolonged as far as possible beyond the crank.

If the shaft when laid in its bearings is higher at one end than at the other, that may usually be shown by the level, or by a plumb held against the crank web or disk this last, however, assuming that the crank is truly at right angles with the shaft centre. If the shaft is no higher at one end than at the other, but is out of square with the cylinder-bore in a horizontal plane, that may be shown (assuming that the crank is at right angles with the shaft) by applying a sighting-strip horizontally to the face of the crank web or disk and sighting a point at a known distance from the cylinder-bore; this being determined by T-squares from the centre-cord. The crank-pin will show, by being further from the centre line when on one of the dead centres than on the other, whether or not the crank is at right angles crosswise to the cylinder-bore in the horizontal plane. The shaft-bearings can be tested independently of the shaft, with the latter removed, by drawing a cord through the centres. The piston head must be made exactly central with the cylinder-bore, and the cross-head made at the proper height with the latter, and also square with it and with the guides.

To recapitulate. The following are the points to which suspicion must be directed and where correction must be removed for them if they are not found correct.

Cylinder-bore—Level.

Front Cylinder Flanges—Plumb and at right angles with the cylinder-bore.

Guides—Level lengthwise and crosswise; parallel with the cylinder-bore; at right angles to the cylinder-bore; at right angles to the cylinder flange.

Crank—Level; at right angles with the cylinder-bore; at the same height with the cylinder bore.

Piston—Central with the cylinder-bore.

Crosshead—Central with the cylinder bore, at right angles throughout, and at the proper height.

WOODS OF THE WORLD.

THE papers read at the Forestry Congress of the World's Fair have been the means of imparting a large amount of information concerning various woods from many divergent parts of the world.

British Guiana.

British Guiana, according to Hon. J. J. Quelch, has 9,000 square miles of forests, and some of the trees grow 300 feet high. Among the specimens shown were 150 different kinds of woods, but only four of these are known commercially in America. One admits of a very bright polish closely resembling gilt. Greenheart is valuable for ship wood, as is also mora, the latter growing 300 feet tall, and almost universally hollow. Wal-latia is used for shingles and cooperage, the natural oil in the wood protecting it from the water. Hitherto British Guiana has imported considerable white pine from America, but native woods are now taking its place.

Mexico.

The paper on Mexico was written by Lauro Viadas and Romulo Escobar, and says that walnut, cedar, ebony, oak and mahogany are found in abundance in that country. A very common tree is the soap tree, the fruit of which is used for soap. Colonel Ameer, who read the paper on Mexico, showed the photograph of a big tree, and told the story that an Indian once climbed 50 feet up the tree and was drowned in the water that had collected between the branches.

Australia.

The total forest area of New South Wales, said Hon. J. P. Hudson, superintendent of the exhibit from that country, is estimated at about 21,000,000 acres, and we have 1,013 forest reserves proclaimed covering a total of over 5,600,000 acres, sub-divided in 25 districts each having resident foresters and travelling inspectors whose duty it is to safe-guard these forest reserves. In 1891 the forest department expended \$119,375 upon the northern reserves for the conservation of red cedar and for other purposes. As in the United States, so also in New South Wales, Arbor Day has been appointed on which the children of all the public schools plant trees. We have also a state nursery consisting of over 1,200,000 trees, representing over 250 kinds of timber.

We have practically three classes of timber country, divided into open forest, scrub and brush, these forests producing no less than 650 different kinds of timber of economic value. The finest description of hardwood timbers grow on the ridges and hill sides.

Iron bark has a tensile strain about twice that of English oak and is extensively used for girders, bridges, wharves and whenever great weights are to be carried, and for railroad ties it has no equal.

Spotted gum thrives the best on poor soil. It is a handsome wood, capable of high polish, bends readily and is used for joists, etc., and in ship building. The heart wood is also very valuable for paving purposes.

Blue gum and blooded gum are especially prized for wheelwrights' works. It is also good for paving blocks, wharf decking, etc.

Stringy bark, so called from the fibrous nature of its bark, is a good building timber and is used extensively for paving blocks and is expected to some day play a part in paper making.

Tallow wood is a grand tree, growing to a great height and size and makes excellent framing. It is a favorite timber for making floors, shipdecks, wharves, etc.

Mountain ash is especially adapted to coopers' work, being free from taste or stain, white and easily worked.

Turpentine timber is unequalled for wharf-piles, being proof against marine worms and not affected by salt water.

These are but samples of our many valuable timbers which grow in what I call open forests.

The red cedar is our royal wood and is beautiful enough to adorn any building erected in these days of great architectural triumphs, and will hold its own with any wood of the world. It is extremely durable, as shown in the Forestry Building by a section of a large cedar log which had been felled and exposed to floods and the elements for more than twenty years without

appreciable decay. The cedar fitches shown in the Forestry Building are merely of the ordinary quality and not selected for any other purpose than to show it in its ordinary commercial aspect.

Rosewood is most beautiful for furniture and interior finish and is destined to become extremely valuable.

Black and red bean are fancy timbers, especially desirable for fine joiners' work, which are exemplified in the door and architraves in the Forestry Building which have withstood changes of climate and been transferred for thousands of miles without affecting the joints. There are suites of furniture in the Manufacturers' Building made of these woods.

The beech is a tree of noble proportions and is in great demand for house building and the fitting up of railway carriages, etc.

Our brush forests cover a considerable area of the country along the coast and contain tall and graceful ferns reaching a height of 60 feet. They also contain cabbage palms, fig trees and some of the most useful as well as ornamental hardwood trees, such as silky oak, tulip wood and ash. One of the principal trees is colonial pine, which grows to a height of 200 feet and is used for building purposes.

Grey Iron Bark has a resistance to breaking strain 50 per cent. higher than English oak. Full grown trees usually average 100 feet clear of limbs. Although our timber resources are so great, we import considerable quantities chiefly from New Zealand, South Australia, the United States, Canada and the United Kingdom.

West Africa.

In the opinion of Alfred B. King, commissioner from Liberia, some time will go by before much will be known of West African forests. The coast territory had been completely devastated and was now covered with a new growth of timber. The palm, which is said to be the "shittim" wood of Holy Writ is very abundant. For commercial uses this wood is of little account, the fibre being used for certain purposes. Thirty-seven different kinds of hardwood grow in the forests of West Africa. Mahogany, black gum and rubber hold a foremost place.

Canada.

The forest interests of the Dominion were presented in an address by Prof. Wm. Saunders, of Ottawa.

"In order to gain an intelligent insight into the subject of tree growth and forest distribution in Canada with its enormous area and great diversity of climate," said Mr. Saunders, "a brief description of the present conditions of the several provinces and territories must be given."

"Beginning at the eastern extremity, we have the province of Prince Edward Island. It is about 150 miles long, deeply indented by bays. A large proportion of the land is under cultivation. In the wooded parts, the principal trees are white and black spruce, and American larch, with some elm and oak. The uncleared land is found chiefly at the northern end of the island where some lumbering is carried on. No tree planting has been undertaken here beyond that of tests of a few varieties of western trees, most of which appear to do well.

"In Nova Scotia, with 20,600 square miles of land and New Brunswick with 28,200 square miles, there are large quantities of spruce, hemlock, larch, pine, oak, elm, maple, beech and birch. With so much wooded land, it is not to be expected that any very general feeling in favor of tree planting should exist. Lumber makes up about two-thirds of the total exports.

"Continuing westward, we have the province of Quebec, covering 228,900 square miles. This has vast tracts of forest lands and a large proportion of the trees which form the staple of the woods in the eastern and central states flourish in Quebec. Laws have been enacted to regulate the cutting of timber, which prevent the felling of small trees. Stringent regulations are also enforced for the prevention of forest fires. Inspectors appointed by the provincial government visit the lumbering camps from time to time and see that the forest laws are enforced. No very general sentiment in favor of tree planting exists.

"The province of Ontario has an area of 228,000 square miles and contains large forests which are a source of much revenue to the provincial government,

and timber forms one of the most important articles of export. The trees are cut under regulation and supervision of forest inspectors. In many of the older settled districts sentiment in favor of tree planting exists. Many years ago a law was passed in Ontario which provided for the payment of a bounty for all trees planted on the highways. Arbor Day is also observed.

"Manitoba is situated in the centre of the continent and covers an area of about 74,000 square miles. The principal timber is poplar, with some white elm, green ash, box elder, mossy cup oak, the latter forming a scrubby growth in most parts of the province. White spruce is also found over a limited area. The northern part of Manitoba is covered with trees large enough to be used.

"The northwest territories, which adjoin Manitoba and in many respects resemble that province, consist of four provincial districts: Assiniboia with an area of 90,000 square miles; Saskatchewan, with 107,000 square miles; Athabasca, with 105,000 square miles, and Alberta, 106,000 square miles. The greater part of the southern portion, from the United States boundary north for about 200 miles, is flat or rolling prairie, a large proportion of it being treeless. Wherever the settlers have located in this great stretch of about 1,000 square miles there is an eager desire to obtain and plant trees and tree seeds, and it is within this area that the chief efforts of the government have been exerted to encourage tree planting.

"The Province of British Columbia contains some 380,000 square miles, a large proportion of which is heavily timbered. Within the part west of the coast range 100 to 150 miles wide and 700 miles long, with its mild and moist climate, the annual growth is much greater than it is in most parts of the world; hence there is no likelihood of any scarcity of timber for generations to come and there is not much sentiment among the people in favor of tree planting except in certain lines. There is a little hardwood of any sort, and with a view to supplying this want, experiments are being carried on in growing hardwoods of the east, especially hickory, ash, elm, cherry, black walnut, butternut and white and red oak.

"Reference will now be made to the methods which have been adopted to stimulate tree planting on the western plains through the Agency or the Dominion Experimental Farms. Seven years ago parliament passed an act which gave the government power to establish free experimental farms in different parts of the Dominion. The chief of these was to be near Ottawa and the other four were to be branches, or subsidiary farms; to be located, one in the maritime provinces, one in Manitoba, one in the northwest territories and one in British Columbia. The areas of these farms range from 310 acres to 1,100 acres.

"While experiments are being carried on in every department of agriculture and horticulture, tree planting has claimed a large share of attention. Extensive shelter belts and clumps of trees have been planted on the experimental farm at Ottawa to ascertain the rate of growth of the different varieties in that part of Canada and the conditions under which they thrive best. The site selected for the location of an experimental farm in Manitoba is near the town of Brandon in the Assiniboine Valley.

"The site of the experimental farm of the northwest territories is at Indian Head in the district of Assiniboia, 183 miles west of Brandon. The land was flat, bare prairie, on which no trees grew whatever. On both of these farms shelter belts 100 feet wide have been planted along the western and parts of the northern boundaries. Large clumps have also been put out at other parts of these farms. The trees have been planted five feet apart each way.

"To demonstrate the advantage of shelter for the growing of small fruits and tender crops, hedges and wind breaks are formed of from two to three rows of hardy trees. These are of box elder, elm, ash and several varieties of Russian poplar and willow. Nearly all of these are attaining good growth and under their influence a much larger quantity of snow is collected each winter on the land adjacent which protects tender plants from the winter cold and supplies to the soil in

the spring considerable quantities of needed moisture. The box elder is perhaps the best tree for this purpose. Seed planted early in the spring will germinate the same season, and after the second year the growth is very rapid and they soon make a close shelter belt.

"To enlist the co-operation of the farmers settled on the north-west plains it was decided to distribute through the mails to all who would apply for them packages containing 100 assorted seedling trees for tests. The distribution of packages of trees and bundles of cuttings of Russian poplar has been continued each year, and as a result 8,000 to 10,000 settlers have received packages.

"Tests of a large number of European and eastern trees on the western farms result in a very few of them succeeding, as they succumb to draught or cold and their places have been filled by the hardier native woods. After much experience the following trees and shrubs are among those recommended for planting on the plains. Box elder, white spruce, Russian poplar, European elder, white and yellow birch, willows, poplar, American elm and mountain ash.

American Hardwoods.

A valuable and most comprehensive paper on American hardwoods was read by Mr. O. S. Whitmore, editor of *Hardwood*. He found an excuse for the relentless war waged upon the hardwood forests of the country when the country was first being peopled, but he deprecated in vigorous terms the shameless waste and destruction that has gone on of late years in many leading states. There is less danger of an early extinction of the pines and other conifers than of the hardwoods, for the real destruction of the former only began with the advent of the circular saw, 50 years ago, while that of the hardwoods began two centuries and a quarter earlier and has been continued ever since with ceaseless energy of a great and growing nation. The vast forests of native hardwoods are being depleted at an alarming rate. The New England and the four old middle states have practically been stripped of the original forest. Ohio and Indiana have been practically cut over in 50 years. Southern Michigan and southern Wisconsin have shared the same fate. But these four states, being mainly agricultural, lack the recuperative power of the eastern manufacturing ones. While the hardwood area of New England is at present apparently on the increase, through the decline of agriculture, the remaining hardwood forest of the four last mentioned states are rapidly disappearing, with little or no sapling growth taking their place. The land once cleared remains so. A quarter of a century ago those four states, with Illinois added for some species, supplied the entire markets of the country, save the meager quality of sapling stuff cut in the east, and sent no inconsiderable amount to Europe. To-day they are importing from the south more than they export to other states.

Plant trees, Mr. Whitmore said, should be the national injunction; plant them upon the millions of acres, of unclothed or denuded lands unfit for any other purpose, and plant even the less valuable kinds—the basswood and the cottonwood. All lovers of our beautiful hardwood forests must acknowledge it is none too soon to begin this work if we would save the land from the unlovely aspect of a treeless waste.

Other Papers.

A paper on the woods of the Northwestern United States was read by Prof. L. F. Henderson, of Washington; on the Argentine woods by the commissioner of the Argentine Republic, and cultivation of the cocoa by Hon. Harry Vincent, commissioner for Trinidad. The subject of Forestry from various standpoints was discussed in several different papers presented to the congress. Of these we shall have something to say elsewhere in the LUMBERMAN.

TELEPHONING OVER TELEGRAPH WIRES.

AN apparatus has been constructed for telephoning simultaneously over telegraph wires. The system has been in operation for some time on the telephone line from Budapest to Szegedin, a distance of 121 miles. The results were satisfactory. The apparatus can easily be inserted in a telegraph circuit and used at once. It is said that simultaneous telegraphy along the wire does not in the least interfere with telephoning, and that the effects of induction and all disturbing noises are completely removed.

VIEWS AND INTERVIEWS.

Big Schemes.

This is an age when the enterprising citizen sees or believes he sees "millions in it." At any rate he is ready to take his chances on some scheme with the hope of extracting the millions. It is an age of gigantic schemes, and, as the American Artizan remarks, the advancing years seem to produce an increase rather than a diminution in the number of such schemes. "We have all heard," this journal says, "of the scheme for expending \$40,000,000 in the construction of a monster dam in the vicinity of Newfoundland that would turn the gulf stream back on itself and give New England a tropical climate so that the Granite State boys could climb palm trees to shake off the succulent coconut on their own bleak hill-sides, while the Rhode Islanders would offer scant encouragement to the peripatetic Italian banana vendor, as each and all of them would have a banana tree in close proximity to his own back porch. A more recent scheme is the bridging of the English Channel between Dover and Calais. It is said that this scheme has gone so far that a company has been formed to secure the necessary concessions from the British and French Governments. The cost of the bridge is some such bagatelle as \$240,000,000. The latest scheme is one for roofing London and other large cities, and thus doing away with the umbrella trust. The projector has not yet considered any such vulgar and insignificant detail as the matter of cost, and hence has not enlightened the public on this point. Such schemes are, of course, largely visionary, but they indicate a tendency to grapple with the most stupendous undertakings that is in a manner characteristic of the nervous and progressive age in which we live."

Blasting Holes For Trees.

Engineers engaged in irrigation are often called upon to carry out strange projects, among which blasting holes for trees is the most peculiar. All trees send their roots after moisture, and in places where the surface of the ground is dry, water can only be found some distance below the surface. The soil, in such cases is sometimes loosened to a depth of 8 or 10 feet, to enable the underground development of the trees to proceed more easily. The holes are made generally by means of 30 per cent. dynamite, in charges of about half a pound each, where the ground is nothing but earth. A hole about six feet deep is first made in the ground with a crowbar or a 2-inch augur. A piece of fuse is connected with a stick of dynamite and the latter placed in the bottom of the hole, which is then filled with dry sand. If no sand is at hand, any soil may be used, provided it is tamped well into the hole with a wooden stick. When the charge has been fired the ground will be loosened some distance below the bottom of the hole and for many feet around. There is little or no danger from the explosion, as the ground only heaves a little and no dirt is thrown. After the explosion a hole about two feet square and deep is dug and filled with surface mold and some fertilizer, in which the trees are planted. When water from an irrigating ditch is allowed to freshen the ground it naturally collects in the parts loosened by the dynamite, forming little reservoirs, from which the trees absorb moisture long after the surface layers are dry.

Humanity's Debt.

The one stupendous problem before which the student of social problems stands appalled is the deplorable condition of the masses. There is much in these conditions to test his faith in the final happiness of humanity. Perhaps we should not wonder that in his hours of desperation a sigh goes up for a return of the days that have gone. But what of these days? Here is one view of the situation given by Engineering, of London, Eng.: "It is when we compare the condition of the poor of to-day," says Engineering, "with that of previous ages, that we see how much the inventor has done for humanity. To know how hard life must have been before the advent of machinery, we have only to imagine a family set down on an island, and called upon to provide all their food and clothing without the aid of modern mechanical appliances—to plow and reap; to thrash, winnow and grind; to raise cattle, to kill and dress them; to shear, card, spin and weave their wool;

to make and mend their clothes, to provide soap, candles, tools, cutlery, earthenware, paper, pencils, nails, medicines, leather, boats, ropes, and the thousand and one things that are needed in a home. Evidently it could not be done, even if labor were continued from dawn to eve, and then extended far into the night; and this under favorable conditions of a yeoman's family, without rent to pay. How much worse must it have been under the exactions of a feudal landlord! Two-thirds of what we consider necessities must have been omitted from the list of that day, and to sore toil must have been added scanty fare and insufficient clothing."

Blood in Tree Culture.

"Blood will tell," so physicians say of the human family. Mr. H. B. Wetzell, in the *Tradesman*, discusses the relationship of blood, or good breeding, if you will, in the trees of the forest. He leans to the view that there is an explanation to be given for the peculiarities to be found in trees, and that the nature of cultivation and the haps and mishaps that have sometimes overcome the parent tree will have their influence on the progeny that shall come from this tree. Mr. Wetzell says: "Not long ago I sawed a poplar log, and after taking off the first slab noticed that the wood had a dark purplish color, growing deeper in color as we entered further into the log, until the whole centre of the log was almost inky black. The log was free from wind shakes and cracks, and I could not understand what was the cause that produced this strange thing. We turned the log over, and after entering nearly half way through found distinct marks of an edged tool, for a piece of the tree had been cut out and removed, and fermentation and decay followed. Afterwards the wound healed over and new wood to a depth of nearly two feet had covered the spot. My belief is that an Indian or early pioneer more than a hundred years ago had cut this wedged shaped hole with a tomahawk—for a common sized axe could not have done it—and possibly with such an instrument, and at a certain season of the year when the sap of the tree was vigorous, the tree became poisoned. Now it would be a matter of interest to know what influence, if any, that tree had upon the trees of which this was the parent. The things of nature are constantly undergoing change. Evolution is the order of natural law. New types, races and species appear and then disappear, and others take their place."

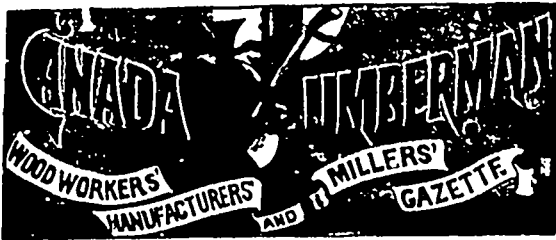
Does not Shrink.

The quality of shrinking in dry air and swelling under the influence of moisture is so intimately connected with our ideas of all kinds of wood that it is very difficult to accept suddenly the idea of a timber that is unaffected by water, as far as dimensions are concerned, either when absorbing or evaporating it, says the *Indian Textile Journal*. Such, however, is the case with a description of timber known as "Billian," which grows plentifully in Borneo, and is famous for its strength and durability both on sea and on land. Without being the heaviest known wood, for it weighs 60 pounds per cubic foot, against lignum vitae 83 pounds, boxwood 80, ebony 74, and African oak 62 pounds, it has a breaking strain 1.52 times that of English oak, while its weight is only 5 per cent. greater. Compared with Burmese teak, it is 62 per cent. stronger transversely, and 11 per cent. heavier. Billian or Borneo ironwood is a hard, durable wood of a dark-brown color. When seasoned it turns to a deep red, and with long exposure becomes as black as ebony. It resists the toredo navalis (so destructive to timber in salt water) and the white ant, and is almost indestructible. Its breaking strain is the highest of any known wood, and it is extensively used for sleepers, beams, piles, and for any construction requiring strength and durability.

EXTENSION OF THE TROLLEY.

THE legislature of New York has appropriated \$10,000 for the purpose of conducting experiments on the Erie Canal to determine the feasibility of the application of the trolley system to canal transportation.

The sawmill dogwood bark at everything, and it made the mistake of its life when it tried to chew up a steam nigger. Were it alive now, it would do so any more.



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J. S. ROBERTSON,

EDITOR.

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

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

Special correspondents in localities of importance present an accurate report not only of prices and the condition of the market, but also of other matters specially interesting to our readers. But correspondence is not only welcome, but is invited from all who have any information to communicate or subjects to discuss relating to the trade or in any way affecting it. Even when we may not be able to agree with the writers we will give them a fair opportunity for free discussion as the best means of eliciting the truth. Any items of interest are particularly requested, for even if not of great importance individually they contribute to a fund of information from which general results are obtained.

Advertisers will receive careful attention and liberal treatment. We need not point out that for many the CANADA LUMBERMAN, with its special class of readers, is not only an exceptionally good medium for securing publicity, but is indispensable for those who would bring themselves before the notice of that class. Special attention is directed to "WANTED" and "FOR SALE" advertisements, which will be inserted in a conspicuous position at the uniform price of 15 cents per line for each insertion. Announcements of this character will be subject to a discount of 25 per cent. if ordered for four successive issues or longer.

Subscribers will find the small amount they pay for the CANADA LUMBERMAN quite insignificant as compared with its value to them. There is not an individual in the trade, or specially interested in it, who should not be on our list, thus obtaining the present benefit and aiding and encouraging us to render it even more complete.

RAILROADS AND LUMBERING.

THE railroad, though not an uncommon affair to the eyes of the present generation, is yet comparatively a modern invention. In some parts of the world, India and Russia, for example, where railroad building is one of the developments of recent years, the railway tram is almost as great a novelty as was Stephenson's "Puffing Billy" in the days of the first construction of the locomotive. And railroad building on anything like a stupendous scale, where the network of the iron rail has wormed its way into the most distant parts of the country, is confined largely to this newer world, whose enterprise and growth is being heralded to all parts of the civilized globe to-day by the medium of the big fair in the big White City of the west.

The lumberman owes much to the railroad for the facilities it affords in moving the products of the forest. The growth in this direction is such, as is shown by the shipping returns from important lumber centres like Saginaw, as to make its inroads into shipping by water, a matter of serious concern to vessel owners. In the twelfth annual review of the Saginaw Board of Trade we are told: "Ten years ago the lumber output was moved almost exclusively by water, while at the present time the railroads carry the greater portion of it. In 1892 more than \$50,000,000 feet of lumber were moved out of the Saginaw river on lake craft, while for the season of 1892 the shipments only reached 347,000,000 feet." And the figures for the present season so far would indicate that the falling off will be still more marked.

Railroads are now built into the interior of the forest and are proving a valuable means of lessening the labor of logging operations to an appreciable degree. But railroads serve the lumberman not only in the transportation of his products and in opening up new and extending markets already established, but they are one of the large consumers of lumber in every country where railroad building is carried on. Just what the consumption

of lumber is in the building of railroad carriages themselves it is a little difficult to say, but we can understand that the figure must be very large. In answer to circulars sent out lately to railways in the United States we learn the round total of timber consumed for ties alone in that country is 516,000,000 feet, and 80,000,000 are annually required for renewals. Including bridges and trestle work the annual consumption of timber on railroads is computed at 500,000,000 cubic feet, requiring the cutting of the best timber from 1,000,000 acres of forest land a year. To meet this demand, it is computed, that the area to be preserved for this purpose would probably exceed 50,000,000 acres, or more than 10 per cent. of the present forest area of the United States. As railway managers prefer "hewn" ties, and "one to the cut from small trees" the lumber consumed by railroads, or 20 per cent. of the total annual consumption, is taken from the young growth. Then 60 per cent. of all the ties are oak, the most valuable of all timber. Reliable investigation shows that in the Kentucky forests, where 40 per cent. of the natural growth is white oak, the new growth of oak is only 5 per cent. after the land has once been cut over for ties.

This is one phase of the railroad question in its relationship to the lumber trade, and shows where, at least, part of the lumber goes. The railways of the country are good customers of the lumbermen; the lumbermen are good customers of the railways. The railways do not always treat their lumber customers in the most liberal spirit, especially if there is no competing railway to give them trouble. But this is another phase of the railroad question in its relations to lumber, which, however, we shall not follow up in the present article.

BEFORE TOO LATE.

THE words of caution to business men expressed by Mr. Clouston, general manager of the Bank of Montreal, in his annual address to the shareholders, are worthy of being "posted up in some conspicuous place" in every office, store, factory and mill, or wherever men do business. They are not the words of an alarmist. No attempt is made to shake confidence in the commerce of the country. On the contrary, it is very clearly pointed out that Canadians have large ground for encouragement in the shape they find trade and commerce. But we are simply warned that these conditions can be spoiled if we do not take into consideration other conditions that also have an existence. "The coming year," Mr. Clouston tells us, "must be a year of caution, also a period of economy, and that applies to governments, cities, and municipalities as well as the commercial community, for we have been spending too much money; too much in subsidies to railways; too much in expensive works; and there has been too much good money wasted."

Around about us financial affairs are perturbed. In Australia no release comes to the stringency in money, and wreckage of monetary institutions that have brought disaster, broad and deep, to that country within the past twelve months. Not since 1873, their own journals tell us, have financial conditions in the United States been in a more depressed and uncertain state.

There, troubles might to a large extent have been obviated, if "governments, cities and municipalities, as well as the commercial communities" had conducted their affairs on the lines that it is suggested will prevent Canadians from falling into a similar snare.

No matter how bright may be the prospects, if the drain on current capital is too large, a crippled treasury soon follows. This is where Australia stumbled. She has been spending money as a government and municipally for years far in excess of her ability to realize on the expenditure in any reasonable period. And when this is the policy of governments the individual citizen is invariably led into similar extravagances.

Canadians have not themselves been free from these faults, though we have not been hit in the manner of other countries. Let us see that we do not invite the disaster which in being forewarned we may escape.

EDITORIAL NOTES.

THE department of justice at Ottawa has decided that the Dominion government has no right to grant exemption from the general law against the pollution

of rivers. Just what effect the decision may have on the sawdust in the Ottawa it may be interesting to watch.

THE lumber region about Ashland, Wis., has something of a reputation for waney pine. A fortnight ago, the Mississippi Valley Lumberman says the Canadian steamer Orion reached that port from Kingston for the express purpose of loading up with Ashland pine, taking away with her some 35,000 feet of timber. These timbers are to be taken directly to Liverpool, from Kingston, to be used in the construction of English merchant vessels and men of war. The captain of the Orion stated that he could take the timber directly from Ashland to Liverpool were it not that the Orion would require more coal than could be put on there. Some of the timbers loaded were not less than sixty feet long and two feet square.

THE shingle business on Puget Sound is in bad shape, fully one-third, if not one-half, of the mills in the state of Washington being idle. A correspondent of a lumber cotemporary puts it that "They are idle, because it pays them to be, not because there has been a slump in the demand." There is good reason to believe, however, that there is a slump in price. This is what has been the matter with the shingle business on the Sound for some time. There are, as this same correspondent admits, too many shingle men who are "between the devil and the deep sea." Shingle manufacturing has been overdone. The effort to keep up prices by means of a combine has proved a failure, and now, with a heavy stock, ye Pacific Coast shingle man is going to try and round things off some by closing down on manufacturing for a while and dispose of the stocks already manufactured.

THE British Columbia correspondent of the LUMBERMAN tells us this month of the hopeful possibilities of the lumber trade on the Coast. In several new directions, it would appear, a demand for coast lumber will, before long, be secured. A likely development that is not mentioned by this correspondent is contained in a step taken through the Rathbun Company agency in British Columbia. Mr. J. B. Spence, of Ceylon, has been making an examination of various woods that might be thought suitable for tea boxes. Out of these he has selected Douglas fir, which, in his opinion is a long way superior to the wood now obtained in Japan. A trial shipment of shooks has been placed with the Rathbun company to be used for this purpose. Shipments can be made direct from British Columbia to Ceylon, and as the tea trade requires about 1,000,000 boxes yearly, there are large possibilities in the trade.

THE impression is general among United States lumbermen that if the booms in which logs are to be towed from the Georgian Bay to Michigan are to be made subject to duty when coming into Canadian waters that the practice will have a serious effect on towing operations. Controller Wallace, when the matter was laid before him, held that the booms, if of United States construction, should pay duty on their first entrance, but agreed to leave the decision to the department of justice. The Marine Record, of Cleveland, Ohio, commenting on the case, says: "Should the ruling be enforced, it will drive American tug owners, and to a large extent American lumber dealers, out of the Canadian trade." Mr. E. F. Carrington, who visited Ottawa on behalf of Bay City lumbermen, is reported to have said on his return, that "it is simply a matter of opinion whether the booms are dutiable or not. The law of both countries, Canada and the United States, provides that a duty must be paid on manufactured timber when taken from one country to another. The Canadian government is disposed to look upon log booms as manufactured timber, inasmuch as they have been bored to make chain holes. The matter is held in abeyance until representatives of the two countries can come to some agreement. If this agreement is not reached, logging from Canada will be seriously handicapped." On the question of whether United States tugs should be allowed to do sorting work in Canadian waters the Controller has decided that such work must be done by Canadian tugs.



anything, would be done until the financial clouds roll by. Money for large deals is difficult to be had even if operators were inclined to invest and just now they are not."

* * * *

A lumber dealer from Albany, N.Y., in conversation with a newspaper correspondent told the following story of the growth of the Albany lumber market. "Fifty years ago," he said, "there were hardly more than half a dozen lumber dealers in Albany whose business entitled them to be called wholesale merchants. One of our modern lumber firms will do more business in one season than all of those did in the aggregate forty or fifty years ago. From a small beginning Albany developed into one of the leading lumber marts of the country. In the early history of the business the Albany dealers received their supplies in the shape of logs. These came down the streams of northern New York in rafts and were sawed into lumber by Albany mills. The principal sources of supply now are Canada and the northwestern states of Michigan, Wisconsin and Minnesota. A few years ago Saginaw supplied the bulk of the white pine handled in Albany, but now supplies come from the Lake Huron shore, from Georgian Bay, upper Michigan, Ashland and Duluth. Forty years ago the gross annual sales of Albany dealers did not exceed \$1,500,000; now there are single houses that do business to very nearly if not quite that amount. Then a dealer felt supremely happy in a little six by nine shanty, furnished with \$20 worth of fixtures and would consider a man a prodigal who would invest \$500 in a structure for business purposes. Now the dealer sits in his Gothic or Corinthian office, elegant and commodious, with modern conveniences that his predecessor never dreamed of. This is the way of the world in this modern age of progress."

* * * *

It has been alleged that the towing of logs in the Georgian Bay to the extent that has become a practice for a few years past is having a hurtful effect on the fisheries of that district. In one way this is not a lumberman's question and yet clearly if the statements that are made be correct the government in giving full consideration to the subject cannot but take cognizance of them. I have always believed that in the consideration of any question nothing is gained by hiding facts, or even what may only be alleged facts. Common sense, like water, finds its level, and is quick to scent a line of argument that is weak or false. Taking this view of matters I give here certain statements recently made by a writer in the News regarding the subject of towing and fishing: "The greater part of the rafts in which these logs are taken across Lake Huron are made up near French river. In heading for the gap leading into Lake Huron from Georgian Bay they cross longitudinally a reef covered with shallow water extending eastward from Lonely Island. About that reef there existed at one time the best fishing grounds in Georgian Bay. But for five or six years past immense rafts consisting of fifty to sixty thousand pieces have been passing over this section of the bay. When the logs left French river they were covered with the natural bark; but in crossing the water every particle of bark had rubbed off and a great portion of it was deposited in the fishing grounds referred to. So great is the deposit left that the worms on which the white fish feed have been largely destroyed by it and the fish have either died in consequence or removed elsewhere. But this is not all. The bark, while held in suspense in the water, plays havoc with nets of fishermen. So great is the damage thus caused, indeed, that fishing operations are practically suspended on the first of September in each year, although the close season does not begin until November first, because the bark driven about by the equinoctial gales ruins nets left in the water while the fall storms are on. As a result of the shortening of the season and destruction of the fishes' food the catch at Squaw Island station, which eight years ago went as high as 800 tons in a season, now barely reaches 350 tons. Allowing logs to be sent away in the round is not only ruining the Canadian sawmilling interests, but destroying the upper lake fisheries as well. The government should re-impose the export duty on logs and thus protect two great natural industries of the country."

NEWS AND NOTES.

A loss of \$1,200 by fire, was incurred at Bartlett's planing mill, Cambellford, Ont., on 25th ult.

The Canada Eastern railway, running between Chatham and Fredericton, N.B., is now managed by Mr. Alex. Gibson, the well-known lumberman.

Jerry Cowick, a shanty foreman in the employ of Mr. J. R. Booth, Ottawa, Ont., was drowned in the river Dumoine, Upper Ottawa, a week ago.

The Sutton Lumber & Trading Co., of Euculet, B.C., has been organized with a share capital of \$100,000. W. J. Sutton, Wm. Sutton and J. E. Sutton are the first trustees.

Wm. Beatty's sawmill at Parry Sound, Ont., was totally destroyed by fire on Sunday, 23rd ult. The lumber docks, tramways and houses in connection were all saved. Loss, about \$10,000; partly covered by insurance.

George D. Prescott, who recently bought an extensive tract of timberland in Albert county, N.B., is building three large driving dams on the West river. It is estimated that the property contains 12,000,000 feet of standing timber.

An office provided for at the last session of parliament, and to be known as Dominion government inspector of timber cutting and timber shanties, has been filled by the appointment of Mr. George L. Chitty, who was for twenty years in the employ of the Calmours, and is spoken of as a capable man.

A Bank of England note is not of the same thickness all through. The paper is thicker in the left hand corner, to enable it to take better and sharper impression of the vignette there, and is also considerably thicker in the dark shadows of the center letters and under the figures at the ends. Counterfeit notes are invariably of one thickness throughout.

It is estimated that over 2,500,000 logs are on their way down the Ottawa to the Chaudiere. The Kippewa is one mass of logs for two miles from its mouth, and they are passing down to the main stream at the rate of from 30,000 to 40,000 a day. The counting of these logs is all done by one man, who it is said can count 30,000 logs a day with ease, and when put to it can count 40,000.

News has been received at Ottawa of the drowning of a young raftsmen, of Hull, Mr. Theophile Cabana, together with a companion at Des Roches Capitaines on the Ottawa river between Des Joachims and Two Rivers. The rapids at that place are said by old rivermen, to be far the most dangerous on the whole Grand river. Cabana with five other men was on a crib of square timber when it suddenly was caught in the current running over the falls. The other four managed, in some miraculous manner, to escape.

Next month, for ten days, commencing September 4, the Toronto Industrial Exhibition will be in full swing. Recently Manager Hill has visited the World's Fair and various American cities, and has bagged the strongest attractions to be found on the continent. The industrial, mechanical and agricultural departments will be largely augmented this year. Altogether a very special effort is being put forth to make the exhibition vastly superior to anything hitherto attempted by the Toronto Industrial. It is to the credit of President Withrow and his associate directors to say that they do not attempt anything without success.

Mr. Chitty, of the Indian department and Mr. L. Laughran, of Ottawa, left last night for Bay City, Mich. They are sent by the government to measure a boom of logs at that city got out in the Indian reserve on Vermillion river. It seems these logs were taken out by a man named Robinson and sold to an American firm who commenced towing them away. No return was made to the Dominion government as should have been done as the logs were cut on the Indian reserve, and Indian reserves are completely under the control of the Dominion government. When the fact of the logs having been taken to the United States, without any returns became known, the government at once placed a seizure on them until their exact measurement could be ascertained.

Mr. Hector McKae, of Ottawa, has acquired the control of a patent, from a German, of a process for the treatment of beech and birch woods, which is likely to prove of very great value. It consists in the treatment of birch and beech wood, in plank and otherwise, by which the heart and texture are preserved solid, safe from splitting, by which at least 40 per cent. of wood has been hitherto lost during its seasoning. The process also includes a thorough staining of the wood, in color from a bright oak to mahogany. The process takes from three to four days. There are thousands of acres of birch and beech lands in Eastern Canada which will be largely increased in value by this important discovery. Mr. McKae has had erected a structure on the mill premises of Mr. D. O'Connor, Bank street, Ottawa, for the treatment of wood for cabinet purposes. It is now in use on the first supply.

WHO is there that cannot join in the refrain of the old song, "The mistakes of my life have been many?" We all make mistakes, only some blunder more frequently than others. I am not going to tap this question, however, from the moral side, though a layman, as much as a preacher, might say a good deal from this point of view. I have had the thought come to me at this time through a suggestion from a cotemporary that a blunder account might, with interest and profit, be opened in the ledger of most business men. "A blunder account," this writer remarks, "should, if properly kept, throw light on a good many things in connection with a business. Some travelling men might not seem so valuable if all their mistakes were charged up to them, and the factory might be held to a stricter account if the mistakes of the foreman were properly entered up, while the proprietor himself might sometimes have a particular entry against his name." I believe readers will go with me when I say that such an account could find an appropriate place in the ledger of those engaged in lumbering in almost any branch. It would prove valuable in intelligently explaining many items that get on to the unfortunate side of the profit and loss account.

* * * *

J. S. Larke, executive commissioner for Canada at the World's Fair, writes the LUMBERMAN as follows: "I had a short visit from Mr. A. de Haan, of the firm of Haan & Zoon, Beltweg, Amsterdam, Holland, who are very large box-makers and consumers of lumber in that city. I took him down to our exhibit of lumber and timber, and he seemed to think there would be a very considerable market in Holland for our cheaper grades of lumber, such as spruce, tamarac and balsam, with some hemlock. The competition would be between the pine of Norway and this lumber, which would be suitable for boxes and other purposes. The firm will be glad to hear from any lumbermen in Canada who may see a prospect of business."

* * * *

Mr. W. R. Noss, representing Herman Noss, lumberman, York, Pa., was in Toronto on business a fortnight ago. Mr. Noss is a regular visitor to this city, his firm doing considerable business in Canadian lumber. He says there can be no doubt that the financial disturbances in the United States are being felt in lumber circles. He instanced the case of a considerable quantity of lumber placed on one of the piling grounds in his own state which it was impossible to move just now. The lumber was not, as the term is generally understood, a drug on the market; nor was there any depreciation of price, but simply no one was in a humor to do business until the financial horizon became clearer. Bankers were pursuing a very conservative course, and in the case of dealers who leaned too largely on the banks, they would of course feel the pinch.

* * * *

It is quite useless, I take it, to close one's eyes to the fact that the money troubles of our neighbors across the border are having a depressing influence on the lumber trade of both Canada and the United States. If nothing worse is happening, and I do not think values have declined to any large extent, these troubles are having the effect of staying operations that would otherwise be active. As the old adage runs, it is money makes the mare go, and when there is little money moving there is little go in the business mare. "One effect of the financial depression," says an American lumberman, "is noticed in the suspension of pine land deals. It is said that the bottom of the stumpage market has suddenly dropped out, and that there is scarcely a deal on the tapis. This is particularly noticeable in Canadian stumpage. It is stated that there is not a crew of land-lookers in the woods in Canada, and that very little, if

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

A. L. BINGHAM is enthusiastic over the quality of logs that are coming from the drives this season. He says that in his 19 years' experience on the Gatineau he never saw such fine logs as those now on the way down to be sawn in Gilmour's mill at Gatineau Point. There are thirty thousand logs 16 feet long, and their diameter at the small end is about 27 inches, almost double the size of the ordinary log. Edwards & Co. have a lot of fine logs coming down, but they are not so large as Gilmour's, which were cut in a virgin limit.

INDIFFERENT LENGTHS.

W. C. Edwards & Co. are enlarging their piling grounds.

Gilmour & Hughson's new mill at Hull Point will commence running, it is expected, about the 15th of next month.

The E. B. Eddy Co.'s large planing mill at the Chaudiere is rapidly being transformed into a paper mill.

The Hawkesbury Lumber Co.'s drive of logs are running out at the mouth. The first boom was commenced on 10th inst.

Wm. McBeth, of Saginaw, Mich., is in the city superintending the placing of machinery in Gilmour & Hughson's new mill at Hull Point.

Death has claimed Mr. Robert S. Montgomery, one of the early residents of Ottawa, and who at one time was engaged in lumbering in these parts.

A large raft of 187 cribs of fine square timber of Klock's is one of the river departures of the month. Old rivermen say it is one of the best that has come down the river for some time.

Ed. Bourque, a bright Ottawa boy, son of Mr. S. Bourque, of this city, has been appointed lumber inspector of the West Bay City Manufacturing Company, Mich., a concern which does a very large business.

The Bronson & Weston Lumber Company have all their drives out of the tributary streams in the Ottawa, except that from the Madawaska. There are a large number of logs belonging to McLachlin Bros., and other companies, which will be sorted out in the deep water before being sent down the Ottawa. This drive is never out before August. Men are also employed under Mr. David Ring constructing a little railroad line from the shores of one of the lakes.

George Richardson, a man who came down from the woods a week ago, and who was stopping with friends on Lisgar Street, accidentally fell over the cuff at Major's Hill Park, directly opposite the old brewery. He rolled down the slope a distance of about 25 feet, and then dropped almost straight down fully 30 feet, to the road beneath. Some bushes and stones broke his fall, and thus he was saved from a terrible death. His head was badly cut and his body severely bruised, but he was not unconscious when picked up.

Shipping in lumber at the Chaudiere yards is becoming more brisk. A new dock is being constructed at the wharf opposite Booth's large mill, which will afford better facility to barges loading in that place. Since the floods in the spring this wharf has not been used for shipping, but now that it is built up with fine new lumber, barges will be brought up there instead of crowding into the little inlet on the Hull side of the Suspension bridge. The repairs will be finished in a short time. A large number of barges are waiting for loads of lumber. There are eight American barges below the Queen's wharf, and about the same number on the Hull side.

OTTAWA, Can., July 27, 1893.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

ONE is hardly wrong in the opinion that for a year or more the lumber trade of the Pacific Coast has in several important respects been restricted. I need only refer to the financial disturbances in the markets of South America, and the more recent and severe and continued financial depression in Australia as material causes producing these results. A little time, however, is all that is required to restore these markets to their old-time life and importance. But what pleases British Columbians most, perhaps, when the question of their lumber resources is under discussion, is the undoubted possibilities that the future will certainly develop. Reference has been made several times of late in these letters to the very favorable impression our lumber is making in the British markets. And the better it becomes known the stronger this impression grows. We are again reminded of this fact from an article that appeared in a recent issue of the Western Weekly News, of Plymouth, Eng., bestowing unstinted praise on the good qualities of British Columbia lumber that has reached that port. The News says: "Probably the best timber ever imported into Plymouth arrived last week in Cattewater from Vancouver, British Columbia. The timber varies in length

from 30 to 90 feet, is sawn all four sides, and is perfectly straight and even. It is admirably adapted for the construction of ships and yachts and building purposes. The vast forests which fringe the western coast of North America produce the finest timber in the world, and they are 'worked' by companies with as much energy as Cornish mines."

A SIGNIFICANT SHIPMENT.

The recent arrival at Montreal of the bark Highlander, from Vancouver, with a cargo consisting of 697,000 feet of Douglas fir, and 200,000 feet of cedar boards, has, I am informed, created unusual interest in lumber circles in the Eastern metropolis. The cargo was consigned to J. & B. Grier, of that city, this firm retaining about two-thirds of the cargo, and the balance will be shipped to Glasgow, Scotland.

NEW WESTMINSTER, B.C., July 22, 1893.

NEW BRUNSWICK LETTER.

[Regular Correspondence CANADA LUMBERMAN.]

IT is a long way around from British Columbia to the Maritime Provinces. Lumbermen from the Pacific Coast, however, do not intend to allow distance to be a barrier in placing their splendid timbers in these provinces. The story has already been told in LUMBERMAN columns of the arrival of British Columbia timber, for ship-building, in this section of the Dominion, and this trade we are hoping has only commenced.

Another indication of trade between these two corners of confederation is found in the visit here this month of George Cassidy, a large lumberman, of Vancouver, B.C. Mr. Cassidy is a native of Miramichi, and some six years ago operated a small mill at Chatham. This fact gives a pleasurable zest to his coming among us just now. Mr. Cassidy is anxious to see the woods of his adopted province take a good hold in his old home. He is showing miniature samples of doors, sash, etc., made of cedar that are quite captivating in their beauty to the trade here. Mr. Cassidy has already done business in New Brunswick, and also in Boston, and trusts his present visit will lead to a larger development of this trade.

SEASIDE SPLINTERS.

Seeley's Mill, at Greenwich, recently destroyed by fire, will be rebuilt.

Vessels are in great demand to take cargoes of sawed lumber from points at head of Bay of Fundy.

Coastwise freights have advanced 25 cents on lumber to Boston and 5 cents on laths to New York.

Four cargoes, embracing 4,206,635 superficial feet of deals and 293,851 feet of ends, were shipped to Great Britain, from Parrsboro, N.S.

The sale of timber licences of crown timber lands, which is advertised for August 29th is being looked forward to with much interest by lumbermen. It is not unlikely that lumbermen from the other provinces may take a hand in the sale.

ST. JOHN, N.B., July 25, 1893.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

ASTUDY of the business situation at the leading lumber points in this State shows no little stagnation. Mills, it is true, are fairly busy, and logs are arriving in large quantities, but selling and buying are at a low ebb. This is a reaction from the bright conditions at the opening of the season, and is chargeable to the generally disturbed financial conditions throughout the country. We may expect that commercial operations will be conducted on a limited scale, certainly, until after the action of Congress in August is clearly understood. This does not mean any serious collapse in lumber. Disaster will doubtless occur to some extent, for in every trade there will be found some who cannot withstand even a slight storm. Happily the lumber trade is at the present time in a healthy and vigorous condition, and while the shrinkage in operations that will take place will be a disappointment to everyone, it is not anticipated that any trouble in lumber will go beyond this.

BITS OF LUMBER.

The mills at Menominee are running overtime.

450,000 feet of deals have been loaded at Manistee, for Quebec. Rather better than a dollar in excess of last year's prices for similar stock was secured. The steam barge Clinton takes a load of Elm timber for Quebec. This makes five loads shipped from this point this season.

Sibly & Beringer have been successful, after much labor, in securing a raft of 2,000,000 feet of logs that went ashore last fall in a gale at North Point, near Alpena, while being towed from Georgian Bay. The logs have been towed to Alpena and will be used by the Minor Lumber Company.

Three towing associations are employed in bringing logs from up our own lakes and from Canada. The rate on logs from Georgian Bay is \$1.50 a thousand, and no losses have been incurred so far this season.

Thomas Pitts, of Bay City, is an addition to the many lumbermen of this State, who are this year securing their supplies of logs from Canada. The Saginaw Lumber and Salt Company have received some large rafts this month from the Georgian Bay territories. Albert Pack, of Alpena, has received over 8,000,000 feet of logs so far from the Canadian North Shore.

E. Jennings's shingle mill at Pinconning is cutting 35,000 a day, and during the last six months the output has been 9,000,000 shingles. A new heading mill has just been built to be operated in connection with the shingle mill at a cost of \$5,000 dollars. An excelsior mill with 26 machines is also operated in connection with the shingle and hoop plant. Mr. Jennings operates a force of 57 men. He has recently purchased 3,680 acres of timber near Vanderbilt, which will stock the plant for a number of years.

SAGINAW, Mich., July 28, 1893.

BOILERS.

THE causes of deterioration in boilers is varied. In some districts, the feed-water contains an excessive quantity of salt, or of acid or it is taken from copper mines or artesian wells. All these are detrimental to the good condition of a boiler. The feed-water should be the best obtainable, and many explosions have been caused by negligence in this respect. Boilers should never be set in damp places, for external corrosion is injurious. The introduction of a fresh supply of water is, owing to the rapid generation of gases and the sudden excess of pressure, another fruitful cause of explosions. For the same reason an explosion sometimes takes place when the engineer, discovering low water, raises the safety-valve and starts the engine; it relieves the pressure of steam, causes the water to rise and strike the heated parts, and steam in consequence is heated over-quickly.

It would materially decrease the risk of explosions if the following points were always observed:

There should at all times be a sufficient quantity of water.

There should never be a higher pressure of steam than can be helped; the pressure allowed by the inspector should under no circumstances be exceeded.

The boiler should be allowed to cool down before being refilled.

Before starting the fire, it is well to try the water gauges and to see that the water is at proper level in the glass gauge.

Glass gauges and gauge cocks should be kept in perfect order; the openings should never be allowed to stop up. Otherwise, owing to the quantity of scale and sediment, one is apt to be deceived as to the real water-level.

The safety-valve should be kept in perfect working order, be lifted and oiled at short intervals, to prevent corrosion, and occasionally it should be ground in.

If the steam gauge and safety valve are found not to correspond, the former should be tested, and if defective, repaid without delay.

The steam gauge should not be exposed to much heat. The pipe should be so arranged that the condensed water will act on the gauge and not the steam direct. There should be a small cock to prevent the freezing of condensed water in cold weather.

The boiler should be cleaned often, and after each cleaning, it should be examined internally so that any defectiveness in the braces, fire-box, crown-sheet, or other part should be discovered and rectified at once.

Water should not be put into a boiler at low temperature. It is best to use feed water heaters or injectors, which, in the long run, are economical, and add to the boiler's lease of life. The feed-pumps should be kept in good order.

A stop-valve should be put between the check-valve and the boiler, so that the former may be easily examined at any time.

Finally, the best safeguard against the risk of an explosion is to take great care in keeping every part of the boiler thoroughly clean and in good working order.

THE NEWS.

CANADA.

—A new sawmill is to be erected at Warren, Ont.
—C. Young, of Young's Point, Ont., is running his mill night and day.

—Alex. Dubruil, lumber jobber, Matawatchan Tp., Ont., has assigned to F. M. Devine.

—The lumber mills of the Sanderson Company, Brandon, Man., are running a large business.

—Campbell & Ferguson, lumber, Melita, Man., have dissolved; Campbell & Campbell continue.

—Alex. Fraser, of Westmeath, Ont., has a fine lot of timber running out at the mouth of the Petawawa, and has commenced to raft up.

Messrs. John Smith & Sons, lumber merchants, Callendar, Ont., have installed an arc and incandescence electric light plant for lighting their mills and yards.

—H. W. Freeman, of Jordan River, N.S., has purchased all the personal and real property of the firm of S. Freeman, of that place and intends carrying on a lumber trade in the vicinity.

—Booth & Hale's square timber shipped by rail from Sturgeon Falls is now being rafted up at Papineau. It consists of two rafts and it will be on its way to the Quebec market about August 10.

—An Ottawa dispatch says: Messrs. Carswell, Barnett & Mackey have a large raft of square timber lying at the mouth of the Petawawa. They intend to keep it there until they can get a market for it at good prices.

—The Central Counties railway has moved 21,000,000 feet of lumber from Hawkesbury to Glen Robertson, to go forward to the American market by Canada Atlantic railway during the past seven or eight months. The lumber comprised about half of last year's cut of the Hawkesbury Lumber Company. The remainder of the cut was shipped by boat.

—The Katrine Lumber Company, with a capital of \$55,000, is applying for a charter to the Ontario government. The operations of the company are to be carried on in the city of Hamilton, and in the district of Parry Sound, Ont. Robert Thomson, William Wallace Belding, Joseph Charteris Thomson, Thomas Meaney and Albert Waters Belding are to be the first directors of the company.

—"We have it on good authority," says the *Rat Portage Record*, "that the water power now used by Dick & Banning's sawmill is to be purchased by a United States company, who intend to build one of the largest sawmills in this vicinity. Four members of the firm have been exploring the Rainy River district for timber, and have, it is said, located over 200,000,000 feet of timber since the first of May and they say there is lots more in sight. They intend to build their sawmill in the course of next winter, and will start work early next spring."

—Judge Deacon had an interesting case before him at Pembroke a few days ago. Mr. Alex. Gordon, lumberman, of Pembroke, Ont., sued Lawrence Ryan, who lives near Almonte, for \$200 for breach of contract. Ryan hired Gordon seven teams at \$1.25 per day to work in the shanty, drawing logs. Gordon paid railway fare to Mattawa which cost him \$95. The men and horses reached the shanty on Saturday, but left the work on Monday following, of their own sweet will and hired with another man. The teams were engaged for the winter. After a two days' hearing Gordon won, getting \$165.

—The Canadian Lumber Company, of Elmira, N.Y., who applied a month ago for a temporary receiver to take charge of the business, find their affairs in a very satisfactory shape. The trouble arose directly out of the failure of the Elmira National bank, where the concern kept their account. The liabilities are only about \$150,000, whilst the assets are \$208,000, and of a character that cannot, it is claimed, lose by shrinkage more than \$10,000. The president of the company is Mr. W. H. Pratt, the principal of the Conger Lumber Co., who with his fellow directors undertakes to see that every dollar owing is paid. A better assurance of a successful outcome of the trouble need not be given. The business will be continued as usual.

GENERAL.

—David Dobie, West Superior, Wis., has contracted to put in 25,000,000 of logs a year for the Weyerhaeuser syndicate. The contract is to run ten years, and it is reported the compensation will be \$4.50 a thousand. The pine is in Douglas county, and it will require the building of 25 miles of railroad to transport the logs to St. Croix Lake.

—John B. K. Blain, a prominent lumber merchant of Washington, D.C., while suffering from a hallucination, climbed to the roof of his house and took a running jump into the street

below, apparently under the belief that he was diving into a pool of water. His death was almost instantaneous. He leaves an estate valued at over \$200,000.

—Curly pine is to be had by the millions of feet in Western Louisiana, and at very cheap prices. Its use for lining a lady's boudoir, a smoking room, or a dining room in a private house, or in saloons or public halls has been practically demonstrated.

—A great many of the finest foreign oaks are said to be planted in Delaware. A large Spanish oak, eight feet in diameter at the base, was recently cut down near Georgetown, that state, and from this giant was squared a stick of timber sixty feet long and two feet square from end to end.

—"The smallest in years," is the remark applied to the shipments of lumber by the water route from the Saginaw river during June. Only 16,952,000 feet went by water from Bay City as compared with 39,780,000 for the same month in 1892; and 9,610,000 feet went from Saginaw against 16,600,000 in 1892. Saginaw shipped 2,100,000 lath and 1,000,000 shingles, and Bay City shipped none of either.

FIRES AND CASUALTIES.

FIRES.

The McLaurin sawmills at Lachine, Que., were destroyed by fire.

Thomas Burns' sawmill at Kingston, N.B., was burned on 12th July. No insurance.

The sawmill of A. E. Cullis, Auburn, Ont., was completely destroyed by fire a fortnight ago.

July 10th, the sawmill of John Whiteside, Huntsville, Ont., was burned to the ground. Loss, \$10,000; insurance, \$3,000.

A disastrous fire occurred in the stavenmills of D. H. Taylor & Sons, on July 7th, destroying a large quantity of staves and lumber.

A fire broke out in McGarvin's sawmill, Chatham, Ont., on 18th ult., reducing the building to ashes. Loss about \$6,000; insurance, \$500.

The statement that has appeared in the press that the Davidson & Hay mill at Cache Bay, Ont., was partly destroyed by fire a month ago is wholly incorrect. On the contrary the firm are about to put in an electric plant and will run their mill night and day.

CASUALTIES.

D. Clarke, a sawyer at Masson's mill, Ottawa, Ont., lost two of his fingers by a saw a week ago.

Rufus Manning, of Fenelon Falls, Ont., was drowned at Kinmount, while at work on a drive of the Rathbun Company.

Patrick Dwyer, while engaged on a drive for the Dickson Company, Peterboro, Ont., slipped into the water and was drowned.

Pat Keough got his jaw splintered when at work in Richardson's sawmill, Elora, Ont., being struck with a piece of broken machinery.

John McGee, employed in a mill at Chatham, Ont., lost two fingers and the thumb of his left hand by carelessness around a buzz saw.

A. Melvin, a pioneer settler of Chaffey, Ont., while at work in McConachie's mill on the Portage, lost his entire right hand by coming in contact with a saw.

A workman named Amyot got his hand caught in the knife of the buzz planer in Thackray's mill, Ottawa, Ont., and lost the end of his thumb.

Gottlieb Dunhausen, when working a planer in Wilson's sawmill at Louise, Ont., caught his clothing in the machinery and received frightful injuries of the bowels.

Samuel Rufflub had his left arm nearly torn off at the shoulder, and his left leg badly lacerated by being caught in a belt at Ferguson's mill, near Nipissing Village, Ont.

Jos. McKenzie, of Deux Rivieres, Ont., a hand on one of the Sheppard & Morse Lumber Co.'s rafts, was struck by a train and mangled in a fearful manner, dying from his injuries.

Matt. Conely, engaged as logman on the steamer Victoria, while getting out a boom of lumber on the Safety Bay Lumber company's mill, Norman, Ont., was drowned by falling off the boom.

Alexander McDonald, employed in a Gravenhurst sawmill, was caught in a belt and received severe injuries, all his clothing being torn off and his body badly bruised. It is thought he will recover.

While bathing in the Petawawa on the afternoon of 18th ult., Alexander Barnett, second son of A. Barnett, lumberman, of Renfrew, Ont., was seized with cramps and was drowned in five feet of water.

Nelson Sanderson, a shantymen, who had been on a heavy spree, while sitting on a bench in front of a hotel in Ottawa, Ont., rolled off the bench on to the sidewalk and expired almost immediately.

PERSONAL.

Mr. Andrew Miscampbell, M.P.P., the well-known lumberman, of Midland, Ont., has again been nominated to contest East Simcoe in the Conservative interests.

Wm. H. Depencier, an aged and well known citizen, of Kemptville, Ont., is dead. For many years he was an active lumberman and spent much time rafting on the Rideau.

A pretty wedding took place in Ottawa a fortnight ago when Mr. H. J. Friel, of the department of public works, was married to Miss Aggie, youngest daughter of Mr. Richard Nagle, lumberman.

Mr. Wm. J. Mathers, of Neepawa, Man., a well-known lumberman of the Prairie Province, has joined the benedictines. The happy bride was Miss Ada M. Wittsie, of Brockville, Ont. Congratulations.

THE NORTHEY MANUFACTURING CO.'S NEW PREMISES.

The Northey Mfg. Co., of this city, manufacturers of pumping machinery, have just completed and equipped a new factory at the King street subway. A representative of *THE LUMBERMAN* recently paid a visit to the new works, and was taken in hand and escorted through the premises by the courteous secretary-treasurer of the company, Mr. J. E. Pell.

The main building is laid out on the most approved modern lines, and divided into three wide bays of about 30 feet each. This building is 250 feet long, and the pattern shops, brass foundry, boiler house, pattern storage, offices and subsidiary buildings are on a proportionate scale. The side bays are to be used for the small tools, and the centre bay for the heavier tools, erecting, testing, etc.

This division is equipped with surface and overhead transportation machinery of the latest and best description, working in connection with private switches from the Canadian Pacific and Grand Trunk railways. The handling and shipping facilities are thus most complete.

The tool equipment includes the best special modern machines for single and duplex pump manufacture, turning and boring machines, gang milling machines, screw and turret machines, etc.

Fuel gas is used for boiler firing, heating of factory, forges and brass melting pots; electricity for lighting factory and working travelling crane.

This is by far the best equipped and largest hydraulic works in Canada, and turns out work which commands a large and increasing sale.

HOW FIRES START.

THE origin of fires is often mysterious, and in mills and factories, when no other cause can be assigned they are usually charged to "spontaneous combustion"—usually another name for somebody's carelessness. But fires do sometimes originate curiously. Thus, it is related that in one instance, where some waste, which had been used with mineral oil, had been thrown into a safe place, an insect crawled through it, and then, carrying some pieces of the oily fibre sticking to his body, made his way to a gas jet. The cotton fibers which adhered to him caught fire, and he dropped, blazing, to the floor, setting the building on fire. In another case, a quantity of waste was said to have been ignited by the friction of a belt running close to it. This, however, may be considered doubtful. The friction of a belt against soft cotton is by no means of a nature to produce great heat, and a much more rational explanation is to be found in the supposition that an electric spark passed from the belt to some conducting substance through the cotton, which is ignited on its way, as sparks of frictional electricity can easily do. In fact, the electrical effects accompanying the running of large belts are quite important, and it is probable that more than one fire has been due to them. Sparks can be taken by the finger from almost any large belt in motion, and an instance is related where an ingenious engineer, by fixing a metal comb near the belt, succeeded in drawing off enough high-tension electricity to enable him to light the gas jets in and about the engine room without matches, by simply touching them, after turning on the gas, with a wire connected with the comb.

The sawyer certainly should always have a saw-age look on his face and be fond of saws-age.

TRADE REVIEW.

Office of CANADA LUMBERMAN, July 31, 1893.

THE GENERAL SURVEY.

THE individual mention that we have given below of the United States and foreign lumber markets reflects quite fairly the condition of the lumber situation at home and abroad.

Summarizing local conditions in different parts of the Dominion, it may be said, that in Ontario dullness prevails; in Quebec, shipments are less than a month ago, lumber that is ready for shipment at Montreal is being held back because of dull trade abroad.

FOREIGN.

In their wood circular of current date Farnworth & Jardine, of Liverpool, Eng., say: "The arrivals from British North America during the past month have been 26 vessels, 20,530 tons against 16 vessels, 16,261 tons during the corresponding month last year, and the average tonnage to this date from all places during the years 1891, 1892 and 1893 have been 135,095, 120,989 and 107,217 tons respectively."

UNITED STATES.

The lumber trade of the United States is meeting with not a few commercial vicissitudes as a result of the continued monetary depression. Quite a few failures are reported, and it is feared that others are yet to come, if there is not a speedy easing of money matters.

TORONTO, ONT.

TORONTO, July 31, 1893.

CAR OF CANADIAN LUMBER.

Table listing various lumber products and their prices, including items like 1 1/4 in. cut up and better, 1 1/2 in. dressing and better, etc.

YARD QUOTATIONS. Table listing various lumber products and their prices, including items like Mill cull boards and scantling, Shipping cull boards, etc.

OTTAWA, ONT.

OTTAWA, July 31, 1893.

Table listing various lumber products and their prices in Ottawa, including items like Pine, good sidings, per M feet, Elm, soft, etc.

QUEBEC, QUE.

QUEBEC, July 31, 1893.

Table listing various lumber products and their prices in Quebec, including items like White Pine in the raft, Red Pine in the raft, Oak-Michigan and Ohio, etc.

BOSTON, MASS.

BOSTON, Mass., July 31.—Prices have shown a slight advance during the month. Western pine is in good demand. Shingles are dull.

EASTERN PINE—CARGO OR CAR LOAD.

Table listing various lumber products and their prices in Boston, including items like Ordinary planed boards, Coarse No. 5, etc.

OSWEGO, N.Y.

OSWEGO, N.Y., July 31.—Trade is holding up fairly well under generally depressed financial conditions.

Table listing various lumber products and their prices in Oswego, including items like Three uppers, 1 1/2, 1 1/4 and 2 inch, Pickings, etc.

BUFFALO AND TONAWANDA, N.Y.

TONAWANDA, N.Y., July 31.—The labor troubles between lumber shovers and employers, which have dragged along for some months, are now happily ended, and have resulted in a complete cave in of the men.

WHITE PINE.

Table listing various lumber products and their prices in Buffalo and Tonawanda, including items like Uppers, 1 1/2, 1 1/4 and 2 inch, Shelving, No. 1, 13 in, etc.

ALBANY, N.Y.

ALBANY, N.Y., July 31.—Lumber business is decidedly dull. That is a blunt way of stating the situation, but it is a fact. Prices nevertheless keep firm and there is little attempt to force sales.

Table listing various lumber products and their prices in Albany, including items like 2 1/2 in. and up, good, Fourths, etc.

SAGINAW, MICH.

SAGINAW, Mich., July 31.—The situation is a wonderful change from that of the opening of the season. Then buyers were full of anxiety to buy, and sellers

could not meet their wants quickly enough. Now stolid indifference is the rule. No one seems anxious to buy.

FINISHING LUMBER—ROUGH.		SHINGLES.	
Uppers, 1, 1½ and 1¾.....	45 00	18 in. N (cull).....	1 00
3 in.....	46 00	XXX shorts.....	2 25
Selects, 1 in.....	41 00	XX.....	1 50
1½ and 1¾.....	41 00	18 in. c. b.....	1 25
2 in.....	41 00		
TIMBER, JOINT AND SCANTLING.		LATH.	
2x4 to 10x10, 12, 14 and 16 ft.....	11 00	1 in. No. 1, white pine.....	2 35
18 ft.....	13 00	1 in. No. 2, W. pine, Norway.....	1 65
For each additional 2 ft. add \$1; 12 in. plank and timber \$1 extra; extra for sizes above 12 in.			

NEW YORK CITY.

NEW YORK, July 31.—No one is running after business. The wholesaler is careful to whom he sells, and buyers are just as careful in buying. Such is the influence of the financial stringency upon the lumber markets here.

WHITE PINE—WESTERN GRADES.		CUFFIN BOARDS.	
Uppers, 1 in.....	\$44 00/45 00	Cuffin boards.....	20 00 22 00
1½, 1¾ and 2 in.....	46 00 47 00	Box, in.....	\$17 00/17 50
3 and 4 in.....	55 00 58 00	Thicker.....	17 50 18 50
Selects, 1 in.....	40 00 41 00	Ceiling, base, fig. No. 1.....	40 00 42 00
1 in. all wide.....	41 00 43 00	No. 2.....	35 00 37 00
1½, 1¾ and 2 in.....	43 00 44 00	No. 3.....	24 00 26 00
3 and 4 in.....	57 00 53 00	Shelving, No. 1.....	30 00 32 00
File common, 2 in.....	36 00 37 00	No. 2.....	25 00 27 00
1½, 1¾ and 2 in.....	38 00 40 00	Molding, No. 1.....	30 00 32 00
3 and 4 in.....	46 00 48 00	No. 2.....	34 00 36 00
Cutting up, 1 in. No. 1.....	28 00 30 00	Level sid'g, clear.....	22 50 23 50
No. 2.....	21 00 23 00	No. 1.....	27 00 28 50
Thick, No. 1.....	29 00 32 00	No. 2.....	20 00 20 50
No. 2.....	24 00 26 00	No. 3.....	16 00 17 50
Common, No. 1, 10.....	22 00 23 00	Norway, c'l. and No. 1.....	23 00 25 00
and 12 in.....	22 00 23 00	No. 2.....	20 00 22 00
No. 2.....	20 00 21 00	Common.....	18 00 19 00
No. 3.....	17 00 18 00		

EXPORTS.

UNITED STATES Consul General J. B. Riley, has recently completed a statement of the exports from the Ottawa district to the United States for the fiscal year ending June 30. The report shows the lumber exports during that period to be as follows: Bark, \$23,320; curtain sticks, \$3,590.08; lath, \$43,914; lumber, \$1,990,419; lumber in bond for export, \$174,440; match blocks, \$168; pickets, \$8,910; poles and ties, \$2,041; pulp wood, \$4,702; railroad ties, \$13,685; shingles, \$12,590; wood, \$4,971; wood pulp, \$123,664.

BELT INJURIES.

SO many people are injured or killed while "fixing a belt," that one is led to ask whether it is the fault of the injured man or the mill owner in not providing suitable appliances for "fixing belts"—by which is meant, usually, throwing them on pulleys. Belts do not often hurt anybody while being laced, or while at rest; running belts do, of course, but probably more men are hurt in the act of starting or shifting belts than in any other acts connected with them. It is but slight comfort to tell the maimed man, or the family of the dead man, that it was his own carelessness. More than likely it was, for without carelessness there would be but few belt accidents. It is the duty of every mill owner, every foreman, and every workman, to persistently point out the dangers attending carelessness in handling running belts. The owner's carelessness may cost him a large sum in damages awarded by court, but the workman's carelessness inflicts a different penalty.

NOISE FROM A GAS ENGINE.

AMONG the various engineering investigations which for some time have been engaged the attention of mechanical experts is that having in view some ready method for deadening the objectionable noise made by the puffs from the exhaust pipe of the gas engine, but only an indifferent amount of success has hitherto attended these efforts. The most recent contrivance of the kind is a device described in a French journal, and claimed to be simple, efficient and inexpensive. Briefly, a pipe split for a distance of about two metres is attached to the end of the exhaust, with the split end upward, and, beginning at the lower end of the cut, which may best be made by a saw, dividing the pipe into two halves, the slotted opening is widened out toward the

top until it has a width equal in extent to the diameter of the pipe. Under this arrangement the puff of the exhaust spreads out like a fan, and the discharge into the open air takes place gradually, the effect produced depending somewhat on the flare of the tube.

COUNTERSHAFTS.

A WRITER in the Mechanical News says that, though independent countershafts are sometimes necessary, they are usually a nuisance, and with proper calculation can be dispensed with. He further says: "I say independent countershafts to distinguish them from those that belong to the machines, which are attached to the frame, and are really an indispensable part of the machine itself. In some instances it would seem as though the main shaft were put up without reference to the machinery that is to be driven from it, and it is often the case that the speed is such that it is impossible to use a pulley large enough to give the machine the requisite speed, and the result is that an intermediate countershaft becomes necessary. It is not only the first cost of the extra countershaft, pulleys and belts in the first instance that constitutes the principal objection, but the extra care required in keeping it in running order, besides the extra power consumed in running it. Where the several machines that are to constitute the outfit of a mill are known, it is an easy matter to calculate the speed of the line shaft, so that suitable-sized pulleys may be used so as to belt each machine directly from the line shaft."

FROM THE LUMBERMAN'S STANDPOINT.

MUCH that is very sensible, and greatly needed, has been written on the subject of forestry. It is likewise true that in a good deal that is written there has been a tendency to get away from the sensible and become lost in the labyrinth of the sentimental. At the forestry congress of the World's Fair, a few weeks ago Editor Desebaugh, of the *Timberman*, read an instructive and comprehensive paper entitled, "Forest Culture from the Lumberman's Standpoint."

Mr. Desebaugh said the lumberman has just as acute a perception of the needs of posterity as anyone living. He who lives by converting timber into a commercial product is no less a man than he who for a salary, delivers lectures on climatology or botany. He deplores the blackened wastes which follow the operations of his logging crews as heartily as anyone. He is heartily in accord with all movements looking toward the welfare of coming generations as anyone can be who owes nothing to past generations but has to make his living in this. Talk to him as a citizen or a philanthropist and you at once gain cordial attention and arouse his interest, in a way which, as far as the exigencies of his business will permit, will be reflected by his actions, but as a lumberman he is face to face with the hard actualities of life. The present is an overpowering fact, while the future has but a shadowy influence.

The stress of competition forces the lumberman to cut his land clean as he goes. Everything which will pay for transportation and manufacture must go through his mill. The timber owner is threatened not only with the danger of fire, but other perils which are entirely natural and exist in any primeval forest. He, therefore, in a majority of cases cannot, if he would, conserve his possessions, but must transfer his forest holdings as rapidly as possible into commercial products, which in turn can be transformed into gold or bonds.

The principal portion of Mr. Desebaugh's paper was devoted to the question of governmental control of forests, showing how the lumbermen would and should desire such control.

"But to accomplish what you wish," he said, "and what we all in our hearts desire, you must have all the assistance possible. Do not, therefore, professors, lecturers and students of the scientific phases of forestry, alienate, by too fervent manifestations of your devotion to your cause, the support of the lumbermen who are dealing every day with that phase of the forestry question which to you, for the most part, has been a sealed book. The lumberman who is generous and public spirited in public matters will aid you in all practical work."

STEAM PUMPS



Duplex AND SINGLE Steam AND POWER Pumps

If you require a pump for any duty, of the latest and most improved pattern, and at close prices,

WRITE US



NORTHHEY

M'FG CO.

LIMITED

TORONTO - ONT.

TIMBER 1,000 YEARS OLD.

EXPERTS seem to be divided as to which of the two hardwoods—jarrah or karri—of Western Australia is the most durable. A scientific journal says that jarrah wood piles two feet two inches square, driven 33 years ago at the Large Bay pier, were found, on examination, to be as sound as the day they were put in. Some specimens of karri wood taken from a fence were recently sent to London, and, though the wood has been underground for 25 years, it was perfectly sound. A specimen of jarrah wood under similar circumstances showed serious decay.

Timber of tamarisk wood has been found perfectly sound in the ancient temples of Egypt in connection with the stone work, which is known to be at least 4,000 years old. In some tests made with small squares of various woods buried one inch in the ground, the following result has been obtained: Birch and aspen decayed in three years; willow and horse-chestnut in four years; maple and red beech in five years; elm, ash, hornbeam, Lombardy poplar in seven years; oak, Scotch fir, Weymouth pine and silver fir decayed to the depth of half an inch in seven years, larch juniper and arbor vitae were uninjured at the expiration of the seven years.

The redwood of California has the quality of being nearly fireproof. The root of the brier is the only wood which does not burn when exposed to the fire. Cocus-wood is the hardest known wood; oak is the strongest. The heaviest British wood is that of the box-tree, which sinks in water. Hornbeam is the strongest and toughest wood for mechanical use. The strongest American wood is the nutmeg hickory; the most elastic, the Tamar oak; the heaviest, the blue wood of Texas.

In situations so free from moisture that we may practically call them dry the durability of timber is almost unlimited. The roof of Westminster Hall is more than 450 years old. In Stirling Castle are carvings of oak, well preserved, over 300 years of age. Scotch fir has been found in good condition after a known use of 300 years, and the trusses of the roof of the basilica of St. Paul's, Rome, were sound and good after 1,000 years' service.

Wood constantly wet in fresh water is equally as durable. Piles were dug from the foundations of the old Savoy palace in a perfectly sound state after having been down 650 years. The piles of old London bridge were found sound and perfect 800 years after they were driven.

A BIG BARREL.

THE biggest barrel in the world, made of staves of wood, is at Heidelberg, undoubtedly, but in Arizona there is a larger barrel carved by Nature and from soft stone. It is a peculiar rock formation, about 200 feet high, and the top of it is at least 2,000 feet above the valley. It can be seen for miles before the traveller gets to it, and its appearance is most deceiving. A large fissure on the side forms a hughole. It does not look like a barrel unless seen from the plain. On all other sides it is simply a rugged rock. It is a soft granite formation of volcanic origin, and is crumbling to pieces. But it has had its present form for centuries.

FIVE THOUSAND SHINGLES AN HOUR.

AN attraction for lumbermen at the coming Toronto Industrial Exhibition will be the exhibit of shingle machinery to be made by F. J. Drake, of Belleville, Ont. Lumbermen say it is hard to beat the Drake shingle machines, and Mr. Drake is going to put the question to test by running his machines daily and will undertake to cut not less than 5,000 shingles in a given hour. A gang of men will be on the grounds throughout exhibition week for the purpose of showing these machines in operation.

HOW TO OBTAIN DRY STEAM.

WHEN putting up a steam pipe between boiler and engine, says the Stationary Engineer, it should be made to slope slightly toward the engine, so that all the water and condensed steam will be carried forward, as it cannot be made to run back against the flow of steam: for water once in the pipe must flow forward, and if no outlet is provided it must travel through the cylinder of the engine. The water can be kept from the engine by putting a separator or water catcher in the horizontal pipe near the last end before it reaches the engine. A small pipe will lead from this back to the boiler, trapping the water before it reaches the cylinder.

By the use of this simple arrangement, the steam supplied to the cylinder will be much dryer and give better results in doing the work: it will also remove the injury to the engine on account of entrained water. The pipe leading back to the boiler need not be larger than 3/4 or 1 inch for engines of 100-horse power or less. If a water glass forms a portion of the return pipe it will show that a surprising amount of water is returned from the steam pipe to the boiler, the water would otherwise have gone through the cylinder, requiring a greater amount of lubrication, assisting or causing leaks, and presenting a possibility of great danger to the engine. In boiler tests, the steam which is condensed in the pipe and the water carried off by priming, is often credited to the coal, when a large portion of it is due to priming effects.

The condensation of steam in the steam pipe is much greater than is generally supposed, and is always so much that great economy in fuel would be obtained if the pipes were covered with some good non-conducting substance. The different forms of separators employed in steam pipes serve an excellent purpose in providing dry steam only to the engine, but if the steam pipes were well covered, the work required of the separator would be reduced, in many cases, much more than one-half.

HOW CIRCULAR SAWS ARE MADE.

THESE saws are now made of cast steel specially manufactured for the purpose. An ingot heated to the requisite temperature is reduced to the proper thickness in powerful rolls. The plate is then centered and a circle inscribed upon it, after which it is passed to the shearer, who reduces it to a circular form. The centre hole, says Work, is then bored. It is then handed to the toother, who punches out the teeth round the edge, after which they are rough filed, or ground on an emery wheel, to take off the burr left by punching.

The rough saw is now again heated in a large furnace until it is of a bright red color. It is then plunged in a bath of sperm oil, which makes it hard and brittle. The oil is then partly cleaned off, and the rest burnt off in the furnace to give the saw the required temper. When cold the saw is hammered on a steel-faced anvil until it is straight.

It is next ground between vertical grind stones revolving in opposite directions, and then polished with emery on a large revolving disc. Once more the hammer-men take it, and strike it with smooth-faced hammers on an anvil, as before, until it is absolutely straight and true and has acquired the proper tension which allows for expansion while the saw is revolving at work. The teeth are now set, alternately right and left, to allow for clearance when sawing timber. They are then sharpened by being filed on the fronts and tops of the teeth, which operation completes the manufacture.

WHAT GIVES OUT.

THE arms of pulleys as they are usually constructed have but little to do with the centrifugal strain upon the rim, and so far as observation may go, it is quite evident that when a pulley is thus broken the rim is the part that first gives, and but few cases have come under observation where it was otherwise.

WANTED AND FOR SALE

Advertisements will be inserted in this department at the rate of 15 cents per line each insertion. When four or more consecutive insertions are ordered a discount of 25 per cent. will be allowed. This notice shows the width of the line and it is set in Nonpareil type. Advertisements must be received not later than the 27th of each month to insure insertion in the following issue.

WE WANT ALL KINDS OF HARDWOODS. Will pay cash. ROBERT THOMSON & CO., 103 Bay Street, Toronto.

FOR HEMLOCK, DIMENSION LUMBER, hardwood flooring, cedar shingles, piles, sawdust, etc., write J. E. MURPHY, lumberman, Hepworth station, Ont.

WANTED—A SITUATION AS FILER IN A SAWMILL. Have had nine years' experience with gang and round saws. Address "H," 3 Maitland St., Halifax, N.S.

WANTED—BY YOUNG MAN—SITUATION as book-keeper, cashier or correspondent; rapid worker; energetic, and thoroughly reliable and experienced; competent to take charge of manufacturer's office. Address: "Accountant," care CANADA LUMBERMAN, Toronto.

WANTED BASSWOOD LUMBER, BY CAR OR CARGO. Offers invited. Address "Basswood," care of CANADA LUMBERMAN.

COMMISSIONS THE ADVERTISER CAN SECURE HIGH prices for black ash, basswood, elm and maple in New York and surrounding markets, best of references given. Send lists of stock on hand. No shipment on consignment. Bona fide orders sent you before shipment. Address "Commissions," care of CANADA LUMBERMAN.

SAWYER WANTED. ONE used to cutting Dimension Timber. Must be used to Automatic Saw Sharpener. Mill runs summer and winter. Apply with references to SHEARER & BROWN, Montreal, Que.

BRITISH COLUMBIA STEAM, SAW AND PLANING MILL FOR sale at a bargain. Inland country business. Capacity ten thousand feet per day. Machinery all in good order and new in 1889, by Goble & McCulloch and McGregor & Gourlay, Galt. The whole, including 4 acres, mill, dwelling and boarding houses, smith shop, and over \$2,000 worth of stock, tools, etc., for sale for \$2,000, being far less than value. For particulars apply to A. J. HORILL, Langley Prairie, B.C.

LUMBERMEN EXPERIENCED SHIPPER OPEN FOR ENGAGEMENT. Good bookkeeper and correspondent. Competent to take charge of mill. References furnished. Address "Inspector," care CANADA LUMBERMAN, Toronto.

RAILS FOR TRAMWAYS NEW AND SECOND-HAND STEEL AND iron rails for tramways and logging lines, from 12 lbs. per yard and upwards; estimates given for complete outfit. JOHN J. GARTSHORE, 49 Front St. West, Toronto.

TO EASTERN STATES LUMBERMEN. AN EXTENSIVE HANDLER OF PULP wood, fir, spruce, canoe birch and poplar, is desirous of finding a market for same in the Eastern States—New York or Boston preferred. Is prepared to ship any size required per schooner from Quebec. Parties handling same should communicate with I.C.L., care CANADA LUMBERMAN, Toronto.

FOR SALE A HANDLE LATHE FOR MAKING FORK and rake handles. Inch squares are cut out of slabs, piled one on top of the other in the machine, and it automatically takes the lowest, runs it between the knives and produces the handle without any more attention. Contracts can be secured for all the handles that can be produced with the machine. WATERLOO, BRANTFORD, CAN.

FOR SALE A STEAM CIRCULAR SAWMILL WITH DOUBLE EDGER AND BUTTING saw, capacity 15 to 20 M feet per day; 40 horse power boiler and engine, lumber and wood cars, steel rails on lumber track, horses, wagons, harness, sleighs, blankets, boom chains, driving plant; blacksmith's anvil, forge, bellows, vice, with all necessary tools for repairs. Everything in good order and as good as new. Also 100 acres of good land, with dwelling and boarding house, office, stables, sheds, etc. This property is situated on a good navigable stream, with an almost unlimited supply of black ash, basswood, soft elm, red birch, maple, hemlock, pine, etc., and is a rare chance, there being no opposition in buying stock, present stock being run low. For full particulars apply to M. C. H.

CANADA LUMBERMAN, Toronto, Ont.

WANTED FOR CASH.

ASH AND SOFT ELM DIMENSION STOCK cut to exact sizes. Apply for specification. prices, etc., to P.O. Box 2144, NEW YORK.

WANTED FOR CASH

Ash and Soft Elm MOSTLY ONE-INCH, SOME ONE-AND-A-QUARTER and one-and-a-half inch, strictly first and second; also common. Furthermore, Ash and Oak squares from one-and-a-half to four inches thick. Red Birch Lumber, 1 and 1 1/2, all thickness; also Red Birch Squares 5 x 5 and 6 x 6, ten feet and over long. Address all particulars as to dryness, quality, quantity on hand and price, to P.O. Box 2144, New York, N.Y.

AUCTION SALE

— OF — CANADA PINE TIMBER LIMITS

IN ORDER TO WIND UP THE AFFAIRS OF "The Georgian Bay Consolidated Lumber Company," the following Timber Berths will be sold by public auction in the City of Toronto, during the early part of August next.

Berths Nos. 44, 45, 60 and 61, each containing 9 square miles, more or less, tributary to the Wabigoon River.

Berths (south halves of 41 and 49), each containing 18 square miles, more or less, situated on Lake Wabigoon.

These Limits are in the District of Nipissing, on the North Shore of the Georgian Bay. The waters of Lake and River Wabigoon empty south into the French River, thence into the Georgian Bay. The licenses give the right to cut all kinds of timber. The ground rent is \$200 per square mile, and the Crown dues are \$100 per thousand feet b. m. for pine saw logs.

Notice will be given later on of the time of sale, and the terms and conditions will be made known on the day of sale.

THE GEORGIAN BAY CONSOLIDATED LUMBER CO., 24 King Street West, Toronto, April 2nd, 1893. Toronto, Canada.

CANADA (PROVINCE OF NEW BRUNSWICK)

SALE OF TIMBER LICENSES

Covering a large portion of the Crown Lands of the Province.

THE RIGHT OF LICENSE TO CUT AND carry away all classes of timber or lumber from the principal timber lands of New Brunswick, will be offered for sale at the Crown Land Office, Fredericton, N.B., on

Tuesday, August 29th, 1893 and following days.

The timber licenses to be sold will cover an area of about 4,000 square miles (or 2,000,000 acres) of Crown Lands.

These Licenses will be for one year, with the right of renewal for a term of 25 years from the 1st day of August, 1894, on fulfillment of all conditions of License.

Licenses will be offered at an upset price of \$2.00 per square mile, and conditions being complied with, may be renewed from year to year during the term, on payment of \$4.00 per square mile; this mileage being in addition to stumpage dues.

The stumpage payable on lumber to be cut has been fixed for the present at the following rates:

Table with 2 columns: Item and Price per M. Items include Spruce, Pine and Hardwood Saw Logs, Cedar Logs, Hemlocks, and Other lumber as per regulations.

Copies of the regulations to govern this sale, and any further information required, may be had on application to

L. J. TWEEDIE, Surveyor General, or W. P. FLEWELLING, Lumber Agent, Crown Land Office, Fredericton, New Brunswick, 14th July, 1893.

FOR SALE 50,000 Acres well-selected Timber Limits

IN COAST DISTRICT OF BRITISH COLUMBIA, close to tide water, together with a complete Saw Mill Plant. This valuable property can be bought at a bargain and on easy terms.

For information apply to or correspond with H. H. SPICER, Vancouver, B.C.

3½ Cents a day—

That isn't much money, is it?

About twenty-five cents a week or so.

And a man must be pretty hard up if he hasn't that much to spend every week.

Times are hard, they say; but if they are hard now to your family and yourself, what will they be to your family without you?

That's worth thinking about.

We think that no man should be without life insurance when it can be had at such a low rate as 3½ cents a day from the Manufacturers' Life, Yonge Street, corner Colborne, Toronto.

Write to us and we will give you all particulars.

DONOGH & OLIVER

WHOLESALE DEALERS IN

LUMBER

OFFICE
Nos. 213, 214 and 215
Board of Trade Building
Toronto, Ont.

Representative Lumber Manufacturers and Dealers

Towns	Railway, Express, or nearest Shipping Point	NAME	BUSINESS	Power, Style and Daily Capacity
Ottawa, Ont.	Ottawa	Booth, J. R.	Lumber, Wholesale and Retail.	Steam, Circular and Band Mill
Ottawa, Ont.	Ottawa	Bronson & Weston Lumber Co.	2 Sawmills, White and Red Pine, Wholesale	Water, Gang and Band, 4500
Ottawa, Ont.	Ottawa	OTTAWA LUMBER CO.	Lumber, Pine, Spruce, Hemlock, Wholesale	Wat., Gang and Band, Saw 4000,
Ottawa, Ont.	Ottawa	Perley & Pattee	Saw and Lath Mill, Pine, Wholesale	Lath 700
Parry Sound, Ont.	Parry Sound	Conger Lumber Co.	Lumber, Wholesale and Retail.	Water, Gang, Circular, Saw 900,
Parry Sound, Ont.	Parry Sound	Parry Sound Lumber Co.	Saw, Shingle and Lath Mills, Pine, Wholesale	Shingles 700, Lath 300
Muskoka Mills, Ont.	Penetanguishene	Muskoka Mill and Lumber Co., Head Office, Arcade, 74 King St. W., Toronto	W. Pine Lumber, Lath and Mill Stuff, all lengths	2 Mills, Water, 1 Band, 2 Gangs and 3 Circulars.
Alexandria, Ont.	Alexandria	McPherson, Schell & Co.	Cheese Box Factory, Pine, Spruce, Cedar	Circular, 3m
Almonte, Ont.	Almonte	Caldwell, A. & Son	Sawmill, Pine, Lumber, Hemlock, Hardwoods	Steam, Circular, 400
Barrie, Ont.	Barrie	Dymont & Hickle	Saw, Shingle and Heading Mill, Pine, Cedar	Steam, Circular, 16m
Barrow Bay, Ont.	Warton	Barrow Bay Lumber Co., Limited	Oak, Oak Railway Ties, Laying Blocks	Steam, Circular, 16m
Blind River, Ont.	Blind River	Blind River Lumber Co.	Saw, Sh. and Lath Mill, Pine, Hem., Bl. Birch	Steam, Circular, 4m
Bolton, Ont.	Penelon Falls	Boyd, Mossom & Co.	Lumber, Wholesale and Retail.	2 Mills, Water, 1 Band, 2 Gangs and 3 Circulars.
Braclenbridge, Ont.	Braclenbridge	DOLLAR, JAMES	Lumber, Shingles, Wholesale	Waukegan mill, 500, 2000,
Barrie, Ont.	Barrie	Burton Bros.	Lumber, Wholesale and Retail.	Pr. Severn mill, water, 1200
Waukegan, Ont.	Waukegan	Georgian Bay Consol. Lumber Co. Hd. office Arcade 74 King St. W., Toronto	Pine only	
Calabogie, Ont.	Calabogie	Carwell, Thistle & McKay	Lumber, Wholesale and Retail.	
Callander, Ont.	Callander, G.T.R.	John B. Smith & Son	White and Red Pine Lumber, Mill Stuff, Lath and Shingles.	Steam, 2 Circular, 80m
Collins Inlet, Ont.	Collins Inlet	Head Office, Simcham Ave., Toronto	Lumber, Pine, Oak, Ash, Birch, Whol. and Ret.	Steam, Circular, 6m
Comber, Ont.	Comber	Collins Inlet Lumber Co.	Saw and Stave Mill, Pine, Hardwoods	Steam, Cir., Saw 14m, Sh. 20m
Glanville, Ont.	Pinkerton	Ainslie, J. S. & Bio.	Saw, Shingle and Lath Mill, Timber Lands	
		McIntyre, N. & A.	Hemlock, Pine, Lumber, Hardwoods	
Hamilton, Ont.	Hamilton	BRADLEY, MORRIS & REID CO.	Lum., Lim, Pine, Hem., Maple, Whol. and Ret.	Steam, Circular, 25m
Huntsville, Ont.	Huntsville	Heath, Tait and Turnbull	Sawmill, Pine, Spruce, Hemlock, Hardwoods	Steam, Circular, 4m
Huntsville, Ont.	Huntsville and Kaituma	Thomson, Robert & Co.	Sawmill, Pine, Spruce, Hardwoods	Water, Band and Circular, 100m
Keewatin, Ont.	Keewatin	Dick, Banning & Co.	Sawmill, Pine, Hardwoods, Wholesale	Steam, Circular, 25m
Keewatin, Ont.	Keewatin	Keewatin Lumber & Mfg. Co.	Saw, Lath, Sh. and Pl. Mill, Moving Posts, Pine	
Lakefield, Ont.	Lakefield	Lakefield Lumber Mfg. Co.	Lumber, Wholesale and Retail.	
Little Current, Ont.	Sudbury	Conlin, T. & J.	Sawmill, Pine, Ash, Birch, Oak	Steam, Circular, 25m
Little Current, Ont.	Sudbury	Howry, J. W. & Sons	Lumber, Wholesale and Retail.	
London, Ont.	London	Gordon, James	Pls and dr. in Am. Hds, made to specification	Steam, Band and Circular, 100m
Longford Mills, Ont.	Longford	Longford Lumber Co.	Saw and Plan. Mill, Hemlock, Hardwks, Whol.	Steam, Circular, 40m
Mount Forest, Ont.	Mount Forest	Greensides, W. S.	Cherry, White Ash, Hardwoods, Wholesale	Steam, Circular, 20m
Norman, Ont.	Norman	Cameron & Kennedy	Saw and Plan. Mill, Tim. Lands and Logs, Pine	
Norman, Ont.	Norman	Minnesota & Ontario Lumber Co.	Lumber, Wholesale and Retail.	
Louise, Ont.	Elmwood, G.T.R.	S. B. Wilson & Son	Hardwoods, Shingles, Lath, Handles	Steam, Circular, 20m
Toronto, Ont.	Toronto	Campbell, A. H. & Co.	Lumber, Wholesale	
Toronto, Ont.	Toronto	F. N. Tennant	Lumber, Wholesale	
Toronto, Ont.	Toronto	Donogh & Oliver	Lumber, Wholesale	
Toronto, Ont.	Toronto	Victoria Harbor Lumber Co.	3 Saw, Shingle and Lath Mills, White Pine, Whol.	Com. Sim., Cir., Gang and Band, 1400
Toronto, Ont.	Toronto	W. N. McEachern & Co.	Lumber, Wholesale	Com.
Toronto, Ont.	Toronto	James Tennant & Co.	Lumber, Lath, Shingles, etc., Wholesale	Com.
Warton, Ont.	Warton	Miller, B. B.	3 Sawmills, Lumber, Barrel Heads	Steam and Water, Circular, Portable and Stationery, 1000
Buckingham, Que.	Buckingham	Ross Bros.	2 Sawmills, Pine, Spruce, Hardwoods	Circular, Gang and Band, 1200
Toronto, Ont.	Toronto	DeLaplante & Bowden	Pine and Hardwood Lumber, Whol. and Retail.	
Cookshire, Que.	Cookshire	Cookshire Mill Co.	Saw, Shingle, Planing, Stave and Heading Mill	Steam, Circular and Gang, 600
Montreal, Que.	Montreal	Dufresne, O. Jr. & Frier	Sawmill, Pine, Spruce, Hemlock, Hdwks, Whol.	Steam, Circular and Band, 500
Montreal, Que.	Montreal	Roberts, Joseph & Fils	Saw and Planing Mills, Sash, Doors and Blinds	Steam, Circular, 2000
Montreal, Que.	Montreal	SHEARER & BROWN	Int. Fin, Spruce, Hardwoods, Wholesale	
Moodyville, H.C.	New Westminster	MOODYVILLE SAWMILL CO.	4 Sawmills, Oak, Ash, Elm, Pine, Hem., Dim.	2 Sim., 2 Wat., Band, Cir., 400
New Westminster, H.C.	New Westminster	Branette Sawmill Co.	Sawmills, P. Fin, Spruce, Cedar, Hardwoods	Steam, Circular, 200
Canterbury, N.H.	Canterbury Stn.	James Morrison & Son	Saw and Planing Mills, Sash, Doors and Blinds	Steam, Gang and Circular
Bridgewater, N.S.	Bridgewater	DAVIDSON, E. D. & SONS	Fir, Cedar, Spruce, Hardwoods	
			Sawmill, Pine, Hardwoods	Steam, Circular, 38m
			15 Saw, Shingle and Lath Mills, Pine, Spr., Hdwks	Water, Circular and Gang, 2000

Lumbermen desirous of being represented in this Directory can obtain information in regard to rates by communicating with the Publisher.

LUMBER TRUCK WHEELS

The Montreal Car Wheel Co.

... MANUFACTURERS OF ...

Charcoal Iron Gilled

RAILROAD WHEELS

OFFICES:

NEW YORK LIFE INSURANCE BUILDING, MONTREAL

WORKS: LACHINE, QUEBEC

We make a specialty of Wheels suitable for the requirements of Lumbermen and Street Car Service, and can supply them Dressed, Finished and Baked.

CORRESPONDENCE SOLICITED

OAK TANNED BELTING

TORONTO
20 FRONT ST EAST
TELEPHONE 475

THE J.C.M^c LAREN BELTING CO MONTREAL

MACHINERY

FOLLOWING LIST OF NEW AND SECOND-HAND Boilers, Engines and General Machinery for sale by The Canada Machinery and Supply Co., Brantford, Ont., dealers in new and second-hand machinery and supplies:

- ONE BOILER, TO BRICK IN, 44 IN. DIA. 2 1/2 ft. 7 in. long, 41 3/4 in. tubes, in first-class order.
ONE BOILER, TO BRICK IN, 44 IN. DIA. x 11 ft. 8 in. long, 38 3/4 in. tubes, in first-class shape.
THREE 25 H.P. PORTABLE LOCO. FIRE BOX boilers, in good order.
ONE 20 H.P. RETURN TUBULAR BOILER, to brick in.
TWO 6 H.P. FIRE BOX BOILERS FOR cheese factories.
ONE 12 x 16 SLIDE-VALVE ENGINE, BECKETT'S make.
TWO 9 x 12 SLIDE-VALVE ENGINES, Goldie & McCulloch and Morrison makes.
ONE 6 1/2 x 9 SLIDE-VALVE ENGINE, COPP Bros. & Harry make.
TWO 5 1/2 x 9 SLIDE-VALVE ENGINES, BECKETT'S make.
ONE 6 H.P. ENGINE, UPRIGHT, with 8 H.P. boiler combined on one cast iron base.
ONE 15 H.P. ENGINE, English make.
ONE 14 H.P. LEONARD MAKE ENGINE, nearly new.
ONE 12 H.P. HORIZONTAL PORTABLE ENGINE and boiler on skids; Ames & Co., makers, Oswego, N.Y.

MACHINERY:-

- ONE 24-INCH MCGREGOR, GOURLAY & CO. make heavy surface planer, almost new.
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- One right hand 12 x 14, straight line engine, our make run a very short time.
One pair of engines, right and left, 16 x 20, can be used separately or together, with two large pulleys and fly wheel and connecting shaft.
Three boilers 48 x 14 with large domes, full front all fittings, fixtures and stack.
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One 55 x 14 boiler, comparatively new, has been in use less than a year.
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One 3-block heavy saw carriage, Newry's make, with loss dogs, V and flat track, frame and carriage are in good order, have averaged 35,000 to 40,000 ft. per day, only discarded to put in a hand mill and carriage suitable for same.
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Several portable engines from 12 to 20 horse power.

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Royal Mail Line of Steamers

CITY OF MIDLAND CITY OF LONDON
... FAVORITE... ... MANITOU...

Running in connection with the G.T.R. and C.P.R., will sail during the season of 1893 as follows:

THE CITY OF MIDLAND AND THE CITY OF LONDON will leave Collingwood at 1:30 p.m. every Tuesday and Friday on arrival of G.T.R. morning trains from Toronto and Hamilton, calling at Mesford. Leave Owen Sound same day at 10:30 p.m., after arrival of C.P.R. train from Toronto, connecting at Watton with night train from the south, and stopping at all intermediate ports to Sault Ste. Marie. Returning leave the Soo at daylight, making railway connections at Watton, Owen Sound and Collingwood.

The FAVORITE will leave Collingwood Monday and Thursday, at 1:30 p.m. for Parry Sound, Byng Inlet, French River and Killarney, connecting there with line steamers for Sault Ste. Marie. Returning stop at French River, Byng Inlet and Midland, making connection there with steamer MANITOU for Parry Sound and G.T.R. for south and east, and at Collingwood with G.T.R. for Toronto and Hamilton.

Commencing Thursday, May 4th

The MANITOU will make regular trips from Penetanguishene, connecting with trains from the south only at Midland, every Monday, Wednesday, Thursday and Saturday on arrival of G.T.R. from all points south and east for Parry Sound, making connection there with the steamer FAVORITE for Byng Inlet, French River and Killarney, where the latter connects with the line steamers for the Soo.

For tickets and further information see folders, or apply to all agents of the G.T.R. and C.P.R., or to C. E. STEPHENS, M. BURTON, Sec.-Treas., Collingwood, Mgr. Collingwood.

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CANADIAN

LUMBERMAN'S DIRECTORY

AND INDEX TO THE PLANING MILLS AND SASH AND DOOR FACTORIES OF CANADA.

THE Publisher is now open to receive subscriptions for the above Directory of the lumber trades. No effort is being spared to make this publication thoroughly complete and reliable in every detail, and it is hoped that all LUMBERMAN subscribers interested will fill in the following subscription blank and return to this office at as early a date as possible.

TO THE PUBLISHER OF

THE LUMBERMAN'S DIRECTORY

AND INDEX TO THE PLANING MILLS AND SASH AND DOOR FACTORIES OF CANADA:

1893

Please supply.....with.....copies of the above Directory as soon as issued, for which.....agree to pay Two Dollars per copy.

All owners of saw and planing mills, wholesale and retail lumbermen, coopers, etc., are earnestly requested to furnish information asked for in following blank and mail same as soon as possible:

Card of Enquiry to Lumbermen.

Manufacturers of lumber, shingles, lath, staves, headings, etc., will please fill in this blank:

Power, style and capacity of mill:
Class of manufacture:
Post Office: Shipping Point:

Dealers in lumber, shingles, lath, etc., will please fill in following blank:

Wholesale or Retail: Class of stock handled:
Post Office: Shipping Point:

Owners of planing mills, sash, door and blind factories, will please fill in following blank:

Power and style:
Class of manufacture:
Post Office: Shipping Point:

(Signed)

P.O.

Province.....

Address all communications to

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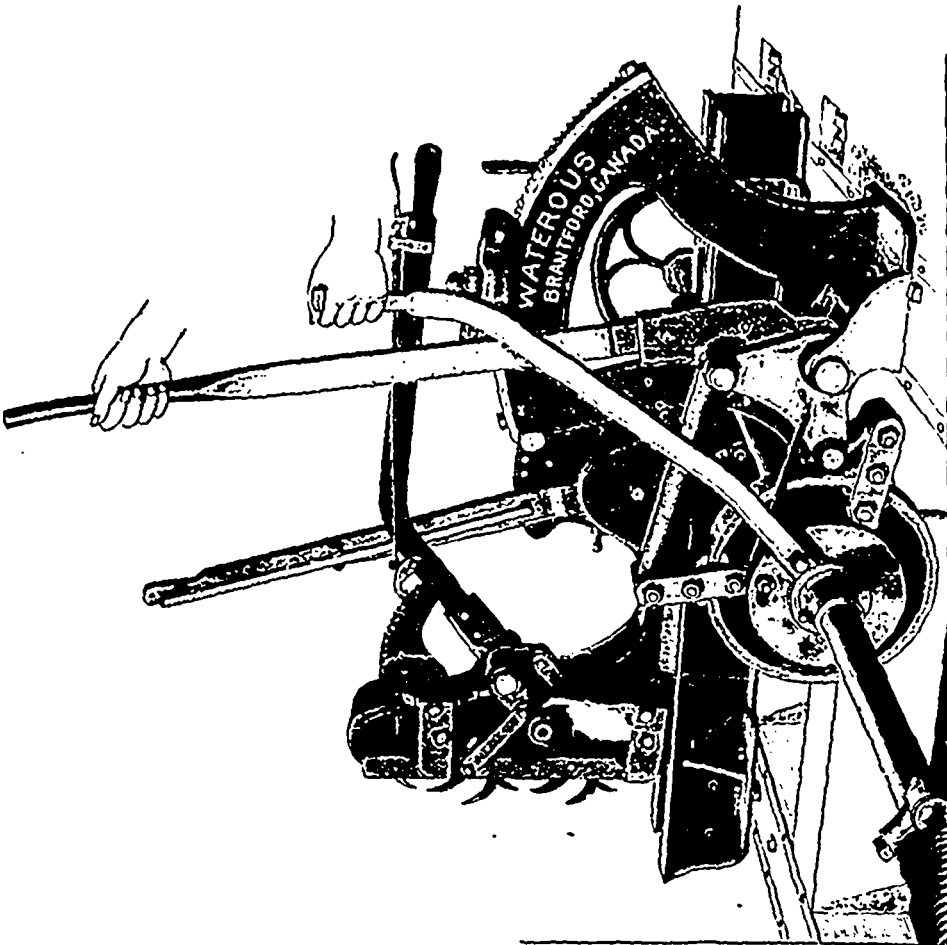
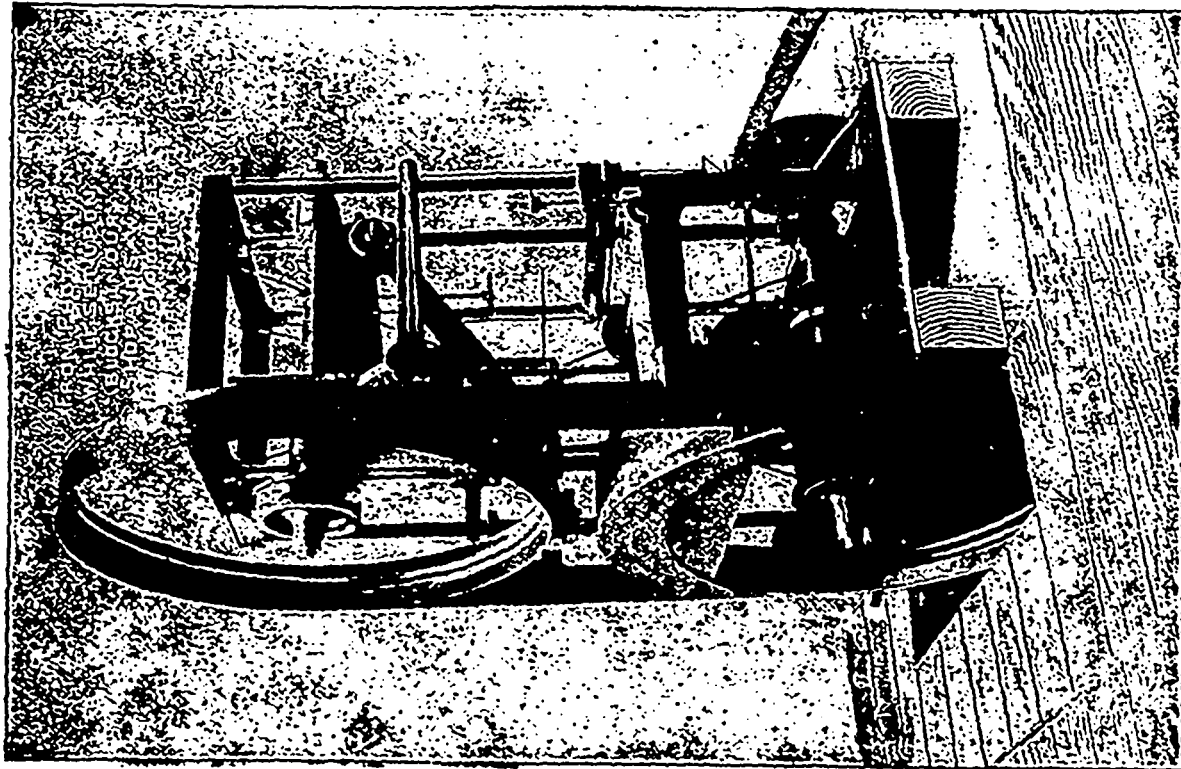
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"NONE SURPASS THE WATEROUS"

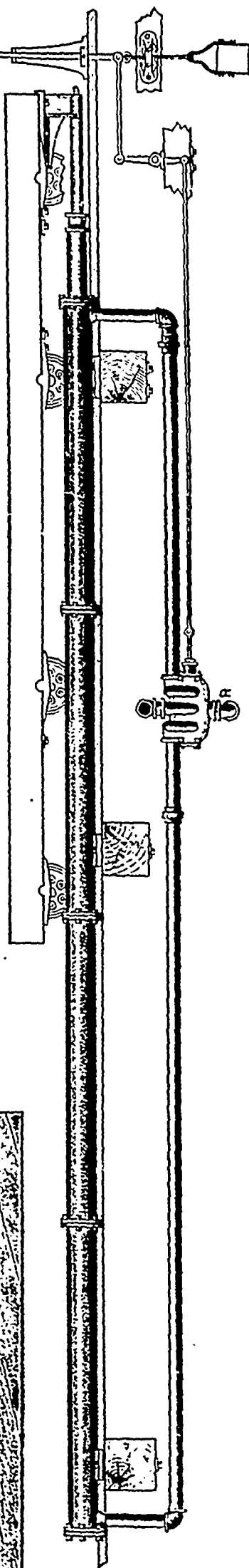
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Do You Lack Steam? We Can Help You THE CANADIAN HOLLOW BLAST GRATE

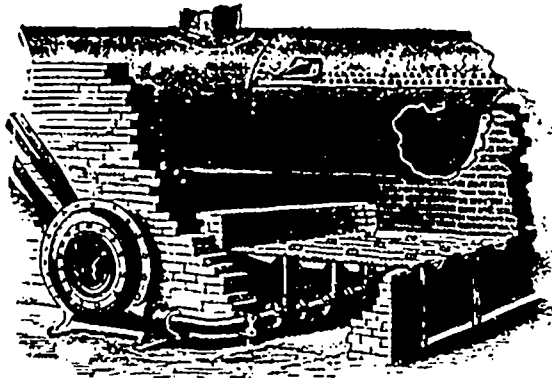
The Hollow Blast Grate supplies the furnace fire with a blast of hot air sufficient at all times to insure the rapid and perfect combustion of fuel of every sort.

It is the only appliance that steams successfully with green or wet sawdust, tanbark or other refuse and waste.

It alone has solved the problem of steaming with the fine, compact dust of the hand mill.

THEY WILL NOT BURN OUT LIKE OTHER GRATES. NO SAW MILL CAN AFFORD TO BE WITHOUT. THEY WILL SAVE THEIR PRICE IN THREE MONTHS.

REGARDLESS OF THE CHARACTER OF YOUR FUEL, WE CAN GREATLY INCREASE THE VOLUME OF STEAM GENERATED IN YOUR BOILERS.



Furnace Fitted with Hollow Blast Grates and Apparatus.

HUNDREDS OF TESTIMONIALS LIKE THE FOLLOWING:

"After having used your blast grates for one year we have much pleasure in saying that in our opinion they are THE INVENTION OF THE AGE. We would not be without them under any consideration." STEINHOFF & GORDON, WATSONVILLE, ONT.

"They are a complete success, doing more than you claimed for them. We now keep a full supply of steam using nothing but green elm sawdust, doing better than we could with dry wood using the ordinary grate bars." C. W. THOMAS, GORDON, ONT.

"They give us full satisfaction in every respect. We now turn out one third more stuff per day than formerly. They exceeded our expectations." McMACKON & COYLES, LINDSAY, ONT.

The blast grates started all right and gave us a real satisfaction. We can burn most of the sawdust and keep up steam now. I would not be without them for double the price. JOHN G. ROCK, BRANTFORD, ONT.

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I put in a set of your Grates a year ago and they pleased me beyond expectation. I spent hundreds of dollars in various contrivances to burn elm sawdust, but without success. I now burn all my dust. I can keep up better steam pressure than I could before with dry wood. C. E. NAYLOR, ESSEX, ONT.

IT COSTS YOU NOTHING TO TRY THEM

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J. O. GRAVEL, Secretary-Treasurer

J. J. MCGILL, Manager

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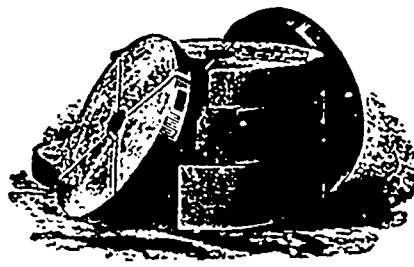
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Dauntless Shingle and Heading Machine

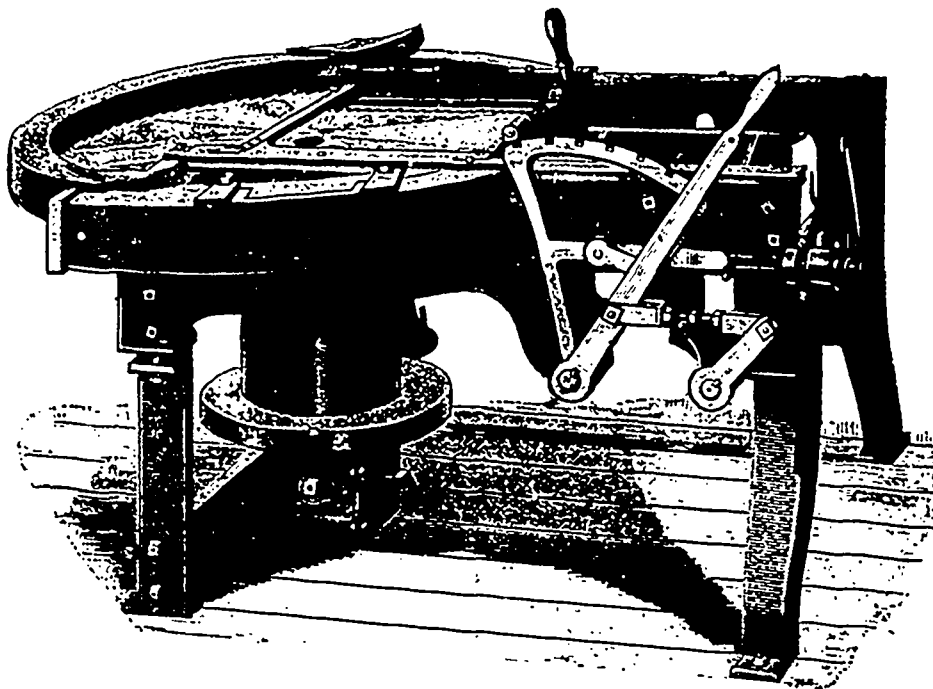
.. WILL make more Shingles per day than any self-acting machine with vertical saw in existence, and more Shingles from the same quantity of timber.

THE FRAME

... Is of Iron throughout, very heavy and rigid, strongly bolted and braced.

THE CARRIAGE

... Is very light and strong, made of forged Cast Steel Plate, running on steel ways or tracks. Will take in a block 18 inches wide and 19 inches long, adjustable for 16-inch or 18-inch shingles.



— CAPACITY FROM 25,000 TO 50,000 PER DAY —

[cont.]

LANSDAY, May 18th, 1893.

Mr. F. J. DRAKE, Belleville.
Dear Sir, The shingle machine we bought of you over a year ago is doing well. Last year we averaged over 37,000 shingles per day all through the season. We did not lose 15 minutes' time from all stoppages, and all repairs so far have not cost you. We expect to make a still higher average cut this year.

All our other machinery purchased from you is as good as the shingle machine. Your drag saw, with friction drive, cannot be beaten. We run ours 180 strokes per minute; with 6 1/2 ft. saw it would easily make blocks for two shingle machines. The splitter, with balance wheel 4 feet diameter, weighing 1,000 lbs., is perfect and runs without the least jar. The iron frame shingle jointer with 40-inch saw is the only good jointer we ever saw. In fact, all your machinery, line shaft, pulleys, etc., give us the best satisfaction.

We expect to require another mill in a few days, and, if we do, will send you the order for complete outfit.

Truly yours,
M. DAVIS.

P.S.—If any one wants to see a good working shingle mill send them to me. M. D.

F. J. DRAKE

PATENTEE AND ... MANUFACTURER OF SAW, SHINGLE AND LATH MACHINERY
BELLEVILLE, ONT.

A FEW SUGGESTIONS

..... REGARDING THE SUCCESSFUL

Drying of Lumber, Shingles, Heading, etc.

It is a difficult matter to set forth in a brief communication the reasons why some kilns are faultless and others worthless. Arguments may be convincing to those who have had experience, and yet bear no weight with those who have not. It is a fact accepted by all, however, that lumber can be dried without injury if the passage of the interior moisture to the surface precedes or keeps pace with surface evaporation. If the operation is uniform and extends to all parts of the material, uniform results will be obtained without warping, twisting or injury. Restrict the application of heat to one side or one edge of a board, for instance, and it will be unevenly dried and left in a warped, crooked and strained condition. Hasten the surface evaporation without expediting the escape of interior moisture proportionately, and the exterior will contract more rapidly than the interior, and checking and injury will result. Heat will drive the interior moisture to the surface, but too much heat or too little or an uneven application of it, is disastrous. If evaporation is properly controlled, most lumber one inch or less in thickness will stand a temperature of 100 deg. at the start and an increase of 1 deg. per hour until evaporation is completed. Time is saved by applying as much heat as lumber will stand. We pipe our kilns the entire length, graduating the heating surface so as to increase the temperature 1 deg. to the foot, measuring from cold end. In a kiln 100 feet long with a temperature of 100 degrees at the receiving end, this gives 200 deg. at the unloading end. Whether temperature be higher or lower, and kiln loaded or empty, the graduation of heat remains uniform. Pipes are so placed that the lumber feels the direct radiation of heat. The circulation is upward through the lumber, and downward at sides between brass condensing plates and inner partitions. Thus an absolutely even and progressive heating is secured. A circulation lengthwise of kiln is wholly avoided, a humid or saturated atmosphere can be maintained about lumber while heating up, and during the entire process heating precedes evaporation. As might be expected, the highest results are obtained, and never anything else. We avoid engines, fans, chimneys and additional heating rooms, having a natural and perfect circulation in a vertical direction, the only one that will secure even heating. The kiln is fire proof and more durable and slighty than any other. The last degree of economy is reached as we supply only the heat absorbed by the lumber, and that lost on the condensing plates. Among those who have bought and used all the kilns that have come upon the market, certain facts are accepted as satisfactorily proven.

1st.—That condensing kilns have a clear advantage over all ventilating systems of 30% to 50 % in running expenses—fuel and attendance.

2nd.—That lengthwise or horizontal currents of hot air in a long kiln cannot possibly be made to heat or dry lumber evenly. If entrance and departure is at top of kiln, the body of heat will be at top, and bottom lumber will mildew. If entrance and departure be at bottom under the two end cars, the heated current will rise in centre taking a rainbow shape. An augur would be better adapted to rounding and truing billiard balls than such a current to even heating and drying of lumber.

3rd.—That all fans, blowers and power methods of creating circulation are worse than useless, because expensive, dangerous and destructive to even circulation.

4th.—That properly graduated heating appliances placed the entire length of kiln so that lumber will feel direct radiation of heat, is the only stable or unvarying or satisfactory means of securing or maintaining a progressive system of heating in a lumber dryer.

In conclusion, we can say this, we are prepared to give a valid guarantee to each purchaser, that our kiln will do more work in less time, at less expense, and in better condition than any other. When any other kiln will fill this guarantee, we will refund the cost of ours. We shall be pleased to furnish plans and estimates. Believing that purchasers need no other inducements than our guarantee, our references and our prices, we leave them to call on us, if they desire an interview instead of sending an agent to them, unless in exceptional cases. We shall be glad to have you call on us, and if you will to have you make our offices headquarters while in the city.

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THE BEST SAWS IN THE WORLD

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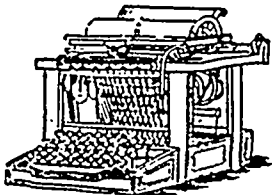
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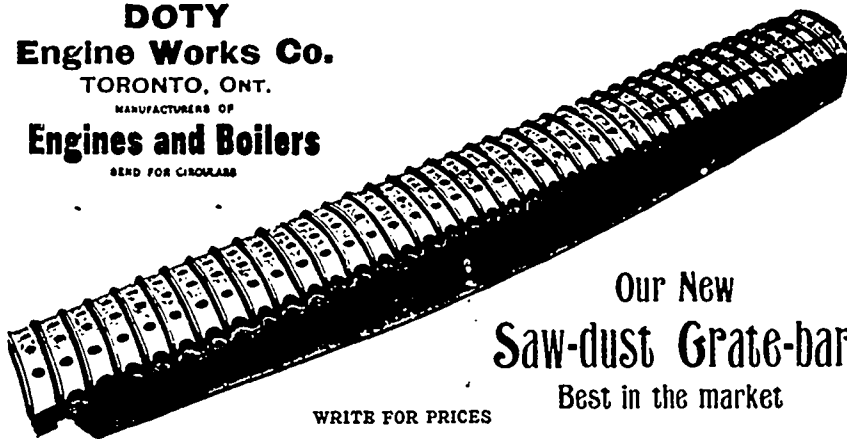
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