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THE CANADIAN LUMBERMAN

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PUBLISHED SEMI-MONTHLY.

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

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VOL. 4.

PETERBOROUGH, ONT., JANUARY 15, 1884.

NO. 2.

HODSON'S SHINGLE MACHINE.

The manufacture of shingles has become an important interest in Canada, the value of the annual product, as given in the last census, being \$766,938, and the present rapid development of the country will create a still larger demand. Under these circumstances lumbermen will be deeply interested in any improvement in machinery used in their manufacture, and we invite their attention to a shingle machine recently brought out by Mr. T. Hodgson, of Amherst, N. S., a cut of which is shown at the head of this article. It is heavy and substantially built, the ironwork weighing nearly 1,100 pounds, and the whole machine 1,550. The frame, which is made of well seasoned hardwood, is heavy, and securely put together with bolts, and carries not only the shingle machine proper, but also the jointer which is driven by a belt from the saw arbor. The whole machine when it leaves the shop is put together and ready for work, except putting on the bolts and filing and setting the saw. It can be belted from above or below, or from either end, and requires no fastening of any kind to the building in which it stands, except a light cleat nailed to the floor at the end of the machine towards the driving shaft.

The carriage is pivoted on a stout iron stud near the floor, the upper part of it being kept steady in its movement to and from the saw by slides working on a planed iron guide plate, a segment of a circle, bolted to the upper part of the frame, an arrangement that secures a rigid and yet free motion to the carriage. The set rolls are made each of a single piece of cast steel. The frame carrying the upper set roll is held between the sides of the carriage by a rod passing through them and through lugs on the rear part of the frame, allowing the front of the frame, with the set roll, to rise to put in a bolt, and to fall to hold it in place. There is a weighted lever at the foot of the carriage, and from it a link, hidden in the cut by the shingle bolt, extends up to the frame carrying the upper set roll, so that the weight, operating through the lever and through this link exerts a heavy pressure on the set roll, and grasps the bolt with such force that it is impossible for it to work loose. To put in a bolt the operator places his foot on a lever seen near the floor, the other end of which extends under the weighted lever. This raises the weighted lever, and with it the upper set roll, leaving him both hands free to handle the bolt. When it is in place he lifts his foot and the set roll comes down with a force that grips the bolt like a vise. The value of this device will be better understood when we say that the carriage can be stopped, the old bolt taken out, a new one put in, and the carriage started in five seconds. The bearings of the set rolls are large and long, and a constant and even pressure on them is obtained by means of vulcanized rubber springs.

The set gear is very accurate and reliable, and not liable to get out of order, and the feed gear, which is driven from a cone pulley on the edger arbor, is of the same character.

The saw which is 36 in diameter, is tapered from gauge 10 at the collar to 14, 15, or 16, as may be required at the rim, and is stiffened by a collar 20 in. in diameter, to which it is fastened with screws. The saw and collar can be taken from the arbor to grind, or to use one saw while another is filed. A strong iron guard covers the back and top of the saw to prevent accident.

The jointer, as shown in the cut, is placed within a few inches of the saw so that the operator has not to turn around with each shingle, but can be jointing one and throwing it away with the left hand while he is taking the next

other modifications of the crank motion, in which the run of the carriage is always the same, be the bolt large or small.

The bearings are very large and long, and are lined with the best Babbitt metal, those of the saw arbor being self oiling. All of the running parts are carefully balanced, and the saw can be run at 1,700 to 1,800 without a jar. As the carriage is steady in its movement, and as the saw is well supported by its large collar it is capable of carrying a heavy feed, and of running at a high speed, which, with the devices already described for keeping the saw constantly in its work, gives the machine a very large capacity. One of them owned by Messrs. B. Yeung & Co., of River Hebert, N. S., cut 1931 M inside of three months, the cut of the day shift running from 18 to 22 1/2 M., two men putting in the bolts

dry, and the logs consequently had to be brought down by rail or wagon, which would add very considerably to the cost. In consequence of this state of things fewer cargoes will be coming forward, and prices are already firmer, with an advancing tendency.

Of course a plentiful supply of rain, such as often happens in those latitudes, would materially alter the present prospect, but without some such assistance prices will not only continue to rise, but we understand there will be a difficulty in finding cargoes for the ships already chartered.

The supplies in hand here in London, which at one time wore, in deals, especially, far in excess of the demand, under present circumstances will happen rather fortunately for those who deal largely in wood of this kind, and the low prices recorded a sale or two since will probably be materially altered the next occasion when similar goods come on the market.

There is, however, as already stated, the probability of heavy rains making the means of transport easy, and this contingency will doubtless prevent pitch pine values from reaching very extravagant proportions.

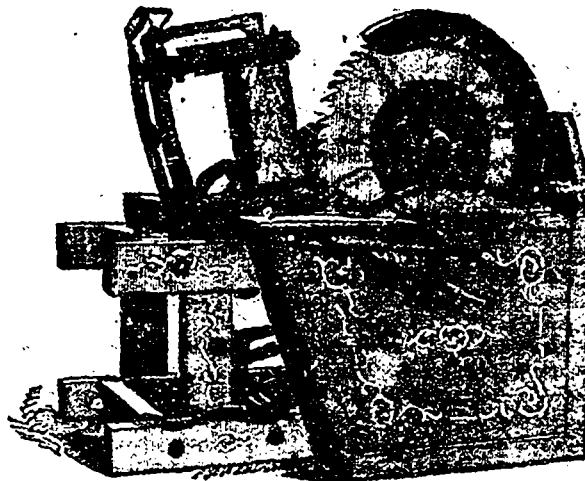
Under the most favorable conditions, it must be a long time before the logs hung up by the drought can be got forward, and though the rivers should be swollen with water, the time already lost must necessarily retard the shipments from all points; therefore the prospect for prices is highly favorable.

It seems only the other day the trade were lamenting the heavy stocks here of pitch pine as depressing prices, but if the reports from the southern ports are substantiated by later advices, the supply in hand will all be wanted to meet the requirements of consumers.—*Timber Trades Journal.*

A Thousand Year Old Bridge.

Engineers at Mayence have found the remains of the bridge that Charlemagne built on the Rhine near the close of the eighth century and have already removed over 50 of the piles, from 15 to 18 feet long, on which it rested. The timber is so well preserved that it is still fit for building purposes, while the iron that was riveted to the piles has only a thin coat of rust to show the lapse of more than a thousand years.

THE London Free Press says a letter writer is informed that the firm in Quebec which has made the most money this year in wood is one which sends a member to South Africa, who goes from place to place picking up small orders, which have been shipped, so Quebecers say, at prices which have been made the business a small bonanza for the firm. Enterprise brings its own reward, always. Quebec would not be the "sleepy hollow" it is were its citizens generally more enterprising.



HODSON'S SHINGLE MACHINE.

from the saw with the right. This is a valuable feature, enabling the operator to joint a great many more shingles than is possible with the jointer placed in the usual manner.

One of the hand levers shown on the front of machine throws the feed into and out of gear, and the other regulates the distance that the carriage runs. If the bolt in the carriage is a large one the handle is placed in the highest notch and the carriage traverses its whole distance, but if the block is smaller the handle is put down one or more notches and this causes the carriage to run just far enough to cut what-over sized bolt is in it, and no farther. The run of the carriage is often changed once or twice in cutting the same bolt as the change is made in a moment, and while the machine is in its work. This device is a great saving of time over those machines that use the lever feed and

and jointing the shingles, and three men constituting the whole gang. For further particulars as to price, probable freight to any point, &c., address the inventor and patentee, T. Hodgson, Amherst, N. S.

PITCH PINE.

At the Gulf of Florida pitch pine ports stocks are stated to be only nominal, there being next to nothing available. At some of the places the drought is quite alarming, notably Mobile and neighborhood, where drinking water is so scarce that the inhabitants were paying 25 cents a bucket for that essential of life. All over the country the water in the rivers was very scanty, and the rafts had to be broken up, the timber being floated down to the loading ports in single pieces. Some of the rivers were completely

FORESTRY.

SIR.—Perhaps you will allow me the use of your widely circulated journal on a topic not uninteresting to many who view with concern the too complete disforestation of older settled Ontario.

At present, according to much correspondence I receive on the subject, very many of our farms have no forest left; while a great number have but few acres. In many neighborhoods the average is not more than ten acres of bush to the hundred, and while of course other sections have much more, the axe is over at work, and the small average first mentioned will probably soon be that of a very large portion of our country indeed. One farmer is apt to think his bush will last his time, another thinks he will clear his and buy wood of his neighbour, a third that he will chop down his and use coal. Very many admit that it's a pity the woods are going so fast, but think that unless some general effort were being made to preserve them their own individual assistance can effect little, so that they themselves might as well chop down nearly their last ten acres which is in wood and might grow wheat.

A letter writer in your columns lately was kind enough to desire an article on political economy from my "ready and facile pen," instead of a long dissertation on trees, which he thought of lesser consequence. I must decline his request and disagree with his estimate. I get half a dozen such long dissertations by post every morning, and always wish them longer and more of them. Let me here take this opportunity of thanking my correspondents for the interest add trouble they take.

There are notes of warning in these letters it might be well to re-echo. Some farmers who, out of wood, are using coal, find the annual bill greater and the comfort less than they anticipated. Some complain that over clearing now exposes them to wintry tempests, severe to cattle and consumptive of fodder, blowing the snowy covering of the winter wheat from the centre to the sides of the field, freezing out some portions of the crop and drowning others, rendering all human life less comfortable, and that of the drift-impaired traveller peculiarly so. Many, too, state that in consequence of the same operation the living springs on the farms—once their greatest comfort and satisfaction—are fast drying up.

The Ontario Tree-planting Act of last session is being adopted in many sections, and the resultant lines of trees will do much to provide wind-breaks, but they will not provide timber. The roadside wind-break grows well, indeed—densely branching of head, and excellent of shade—but the forest is the genial birth place of the forest tree, which, drawn upward by the forcing process of its own attempts to reach the light above the high, overshadowing foliage, rises rapidly, tall, straight, and almost branchless, till you will often see healthy and beautiful young trees sixty or seventy feet in height, while but five or six inches through at the ground. These tall columns, then, in a few years enlarge into your barn timber, your cordwood, your rails-cuts, your anything that the forest will give you. But the tree of the roadside would never have done this.

There are yet small patches of timber dotted over the whole of Ontario, and every one of these, or a portion of them would form an excellent nursery for forest re-production. It is but a small matter, it is but, if it could be done, to induce farmers to fence in and utterly exclude cattle from a portion of their woodlands, and a young growth will presently cover the soil. Though every leaflet be now bitten to the ground, in four years you will have a miniature forest, perhaps a couple of yards in height—little basswoods with trunks of red and olive, small beeches, white and blue black ashes, now beautiful stems of yellow grey, white oaks, now reds of mottled white-bone, elm, hickory, maple, and many another one, all crowding together, emulously rising to the light above. These also preserve the older forest, for at the edge these trees will be like those of the roadside, grown in the sun, immovable by the wind, and acting as wind-breaks to the inner trees.

For the continuance of the forest in a re-productive state, the presence of this undergrowth is absolutely necessary. Without it, grass gets

in, overpreads the earth, injures the larger trees and prevents the growth of any smaller ones. The drying winds sweep through the bush, the roots are loosened, the soil appears to shrink from them, and many trees fall. There is no more vivid contrast than that of a piece of forest left unfenced, and another better protected. I had opportunities lately of seeing many such as they stood side by side. On one side of the fence all was life, the bright strength of farvid life, everywhere the small buds of infant saplings just rising from the earth, above them the interspersing underwood, high above them many a magnificent tree, old and ready for the axe, and many a younger one closely at hand to replace them. But all had an air of health and of brightening verdure. On the other side of the fence the leaf-stem soil was bare of vegetation, every earth-springing leaflet had been destroyed, the wind whistled shrilly over the denuded ground and among the moss-covered trunks of the old trees; for there was nothing but old trees; no young ones had grown to replace them, and they, themselves, the earth below them deprived of their natural covering, seemed sickly and many of them tottering to their fall.

If every farmer could be induced to preserve rigidly in forest but ten acres of his hundred, besides what bush (it need not be much) he wishes for his cattle, the good resulting to himself and to the country would be incalculable; for a few acres of dense forest thickly undergrown holds and distributes much moisture, and is of more climatic benefit, especially to the surrounding farms, than a far greater surface of woodland dried up and impoverished by the destruction of its undergrowth. For his own benefit, too, and that of his successors, especially in the too probably coming scarcity of timber, it should be remembered that this patch will yield a valuable amount yearly. Timber of many descriptions which may be taken from it, tree by tree, as needed, and yet the remaining bush be all the better.

Let, in the face of this knowledge, we find many farmers, instead of preserving, destroying their last patch. In this state of affairs it is probable that legislative aid could do much. It is indeed the farmer's own interest to preserve a portion of the forest, but he is apt to think that the principal benefits to be obtained can only be secured by the co-operation of many individuals—a co-operation which legislation, even if only permissive, would give him.

Let us think of the manner in which this might be secured. A suggestion has been made that a Government enactment might permit any farmer to say to the assessor, "I intend to fence and keep cattle from this piece of bush, five, ten, fifteen acres or so, as he might choose." Let it be then the duty of the assessor to look at this portion every year. As long as it is properly fenced and cattle excluded let that portion be free of taxes; but if the farmer choose to cease preserving it, or to chop it down, let it be understood that he is to pay the back taxes which were remitted to him. As years passed on each owner of such a portion would find himself bound under penalty of a considerable sum, to preserve the portion properly, and yet he could by no means grumble, for he would actually have received the money. He would in fact have accepted a certain amount on condition that he should do himself good with it.

This would, of course, slightly reduce the amount of assessable property in each township, but nobody would, at this day, object; in fact everyone who understands the matter would be well pleased if the Government had reserved some timber land in this township for this very purpose, which reserved land would not have been assessable. Then, in the newer and better forested sections, the assessment on wild land is light; while in the older counties, nearly at the end of their timber (for how they could replace their barns, many people write to me they do not know), the benefits resulting would almost immediately be very great. We should shortly have on every farm, a reservation closely resembling the original forest, retentive of moisture, prolific of timber, and of great climatic benefit to the country at large.

These reservations would answer another purpose, which would please many who remember

former Ontario, who like life in a landscape, and do not care to see the country becoming destitute of every untamed thing, game, and many birds beneficial to the farmer would live there, a thing which, in the absence of undergrowth, but few of them can do.

I would be much obliged if any persons throughout the country would write me their views concerning the suggestion, or any changes they think might profitably be made in it, and I would be much gratified to see the subject discussed at the various county councils, as I intend shortly to take the liberty of asking the various county authorities their opinion in the matter.

R. W. PHIPPS,

233 Richmond street West, Toronto, Jan. 3.

HOW A BOAT WAS BUILT

Last summer Captain James Smith, for some years in command of the Saskatchewan steamer Lily, was sent to Fort Chippewyan to superintend the construction of a steamer suitable for the navigation of the inland waters, and the result of his labors is the boat now under notice. Her dimensions are as follows: Length, 130 feet; breadth 24 feet; draft when wooded up for a trip, 15 inches. She is propelled by a pair of first-class engines of sixty-five horse-power, of the same pattern as those of the Marquis which runs on the Saskatchewan, and which are said to be the finest on any of the northern steamers. These and the boilers were taken overland from Edmonton to the Athabasca thence to their destination by water.

Some idea of the difficulties overcome by Captain Smith may be inferred from the fact that every board and every piece of timber used in the construction of the craft was taken out by hand, and that the only skilled labor at his command was that of one of the Hudson Bay Company's boat builders, the bulk of the work being done under the Captain's direction by Hudson Bay Company's employees and Chippewyan Indians. From the taking out of the timber in the forest to the cutting of boards for finishing the cabin, all had to be done by manual labor. It must not, however, be inferred from this that the boat is built of small stuff, or that anything of her construction has been slighted. Three-fifths of the boards used were fifty-five feet in length and of proportionate breadth, and laying the ways on which to launch her, timbers 60 feet long and a foot square were freely used. The captain took a stick 80 feet in length, and a foot square out of one tree, and could have made it one hundred and thirty feet long had he desired it. The possibilities of a country producing such timber as this are really illimitable, and to the railway first bringing it within reach of the prairie market there is assurance of an unbounded traffic.

All the lumber used was cut with a pit-saw and the men who undertook that part of the work became so expert that the boards made by them would compare favorably with mill-cut lumber. Boards of twenty-four inches in width were cut. At the outset of the work, when Capt. Smith spoke of what was to be done, he was told it was impossible; but when they saw that he always accomplished what he undertook, they received his orders quietly, and believing that nothing was impossible with him, waited and watched to see how he would overcome the difficulties which to them appeared to be insurmountable.

But great as the difficulties were, midsummer found the boat ready to take its place on the waters that were soon to bear it to regions seldom visited by white men other than those interested in trade, or the zealous missionary whose footsteps carried the message of love to the inhabitants far ahead of the crowd of what we are pleased to call civilization, and one bright summer day it was successfully launched, amid the rejoicings of those who could understand the results sure to follow the enterprise, and the wonder of those who looked at it as something beyond their comprehension—as the work of some one more than human. As the boat gracefully glided into the water the usual ceremony of christening it was performed by Mrs. Macfarlane, wife of the Hudson Bay Company's officer in charge of that district, who named it "Grahame," in honor of the Chief Commissioner of the Hudson Bay Company.

Encouraged by their success with the Grahame, the company contemplate putting a deep draft steamer on the Mackenzie River, the building of which will probably be offered to Capt. Smith.—Globe.

EXTENDING TIMBER GROWTH IN IRELAND.

Considering the large amount of attention periodically directed to a solution of the problem as to what shall be done to restore the condition of Ireland to the state of prosperity that existed within its confines in centuries past, and even in later times, it may fairly be matter of surprise that the pecuniary, social, and permanent advantages accruing from an extended growth of forest timber have not taken rank amongst the innumerable and varied remedies suggested. Time was when Irish timber was of such admitted excellence that it was at a premium throughout the continental and European market generally, and was much prized for the purpose of naval construction. Properly considered, the growth of timber—on the uncultivated wastes of this country—is of the highest importance. In a few years forests would furnish the material for re-housing the tenant farmers and labourers, and for the construction of all kinds of buildings required in agricultural pursuits. The fuel supply, too, would be extended, and the privations now experienced when the turf harvest is scanty be no longer possible. The improvement of soil and herbage by the fall of leaves, and the retention of fine clay now swept away, would give an abundant and rich pasturage in the vicinity of forests. Planting is essentially the poor man's question, and when the tenant farmers realize this they will recognise the utility of "planting loans" to enable them to enclose and shelter a hill slope by judiciously placed belts of trees for the protection of their stock.

Along the range of the Galtees, and amidst the wooded slopes, extensive saw-mills are in constant operation. The great feature of timber growth here lies in its commercial importance as an article of export. The principal sources of our foreign timber supply are becoming rapidly exhausted, and the time must come when the Baltic and Canadian forests will no longer be available. It is computed that at least 12,000,000 acres of forests have been consumed within ten years in the United States alone. Their 100,000 miles of railways use up forest at the rate of 5,000 miles per annum in sleepers and fuel. In the face of this, it is no matter of surprise that the Dominion should be anxious to treat with Her Majesty's Government for the importation of able-bodied Irishmen to re-afforest her wastes and mountains. But with a more genial climate, capable of producing oak, pine, and birch, that can vie, as in the past, with the best forests in Europe, there is ample work for all Irish hands at home. Mr. Howitz (the forest Conservator of Copenhagen), who made a survey of Ireland, and who is now engaged in the consideration of the problem of the control of floods by forests, observed: "We have found the key to open a paradise of wealth and prosperity for Ireland." The member for Dublin is negotiating with the Treasury to get the planting loans adjusted to the deferred nature of the problem, as a financial operation, while the security of the state for repayment in full of principal and interest is amply preserved.—Timber Trades Journal.

BANDS of music are forbidden to play on most of the large iron bridges of the world. This is due to the well-known phenomenon that a constant succession of sound waves, especially such as come from the playing of a good band, will excite the wire vibrations; at first, these vibrations are very slight, but they increase as the sound waves continue to come.

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TRENT VALLEY NAVIGATION

The following circular as to the deputation to Ottawa, on Feb. 5th, in reference to the Trent Valley Navigation, has been sent to the various localities along the route:—

PETERBOROUGH, JAN. 10TH, 1894.

DEAR SIR,—As few, if any, of the friends and advocates of the early completion of the Trent Valley Water Route will question the propriety of as large and representative a deputation, as can conveniently be got together, visiting Ottawa for the purpose of impressing upon the Minister of Railways and Canals, and his colleagues, the desirability and importance of their obtaining from Parliament, during the session about to open, the authority necessary to enable them to place under construction during the present year another link in this most important chain of navigation; and as any attempt to consult with those whose sympathy and support entitle their views to the fullest consideration would necessitate a delay which might involve the loss of a whole season, I have, after consulting with some friends here, determined to assume the responsibility of naming Tuesday, Feb. 5th next, as a suitable time for waiting upon the Minister of Railways and Canals, and his colleagues, with reference to this matter and of inviting the Municipalities and persons interested in the early completion of this most important work to join in sending to Ottawa on that day as large and representative a deputation as possible for the purpose already stated.

I trust, in doing so, I need use no argument to impress upon all the importance of each and every one of them (*sans ceremonie*) doing his full duty in this matter at the present time. If the people along the Trent Valley route desire that their past efforts should be crowned with complete success they must keep their shoulders to the wheel—proving their earnestness by their works—and I can conceive of no better way of doing this, in the present case, than by a repetition of the large and influential deputation to whose visit to Ottawa may be largely attributed the fact that we have now in course of construction, and in several instances well advanced towards completion, works which will add materially to the mileage already continuously navigable on this route.

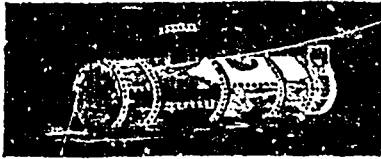
I may add, that with the view of curtailing as much as possible the expenses of those going upon this deputation, I have written Mr. Arthur White, Manager of the Midland division of the Grand Trunk, asking for reduced fares for the members of the deputation over these lines, and should his response be favorable (as I have little doubt it will be) I shall make a similar application to the authorities of the C. P. R. for a similar reduction of that part of the route between Brockville and Ottawa.

In order that I may be able to complete details as they arise, and to communicate with members of the deputation when necessary, it is desirable that I should be informed of their names and post office addresses as soon as possible.

Yours Respectfully,
JOHN CARNEGIE.

P. S.—My post office address will be "Peterborough" up to the 22nd instant, after that "Legislative Assembly, Toronto."

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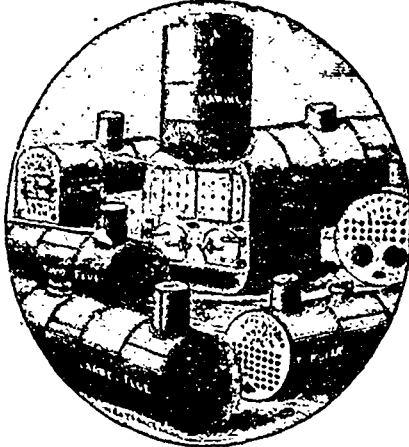
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HUGH GIBSON,

MANUFACTURER OF

KNIGHT'S PATENT "EXCELSIOR"

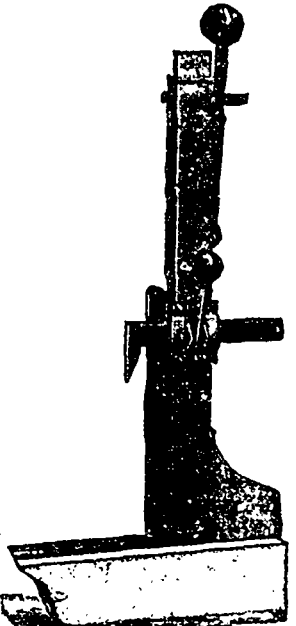
SAW MILL DOGS

The Sawyer's Favorite

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

MISSISSIPPI, June 7th, 1883.
HUGH GIBSON, ESQ.—Your Patent Excelsior Mill Dogs give entire satisfaction, and is certainly up to your recommendation. They are the best Mill Dog in the market. I am very much pleased with them.
Yours Respectfully,
PETER McLARREN.

BARKLEY, April 20th, 1883.
HUGH GIBSON.—Sir,—The Dogs I bought of you give satisfaction. They beat any Dog that I ever saw for ripping or edging lumber on carriages. They are just the thing for scantling. I would not take \$50 for them to-day and have to wait for another pair to come from you, because I believe they make two dollars a day for me.
Yours truly,
GEO. S. BROWN, JR.



Manufactured by HUGH GIBSON, CHATHAM. EXCELSIOR DOG.

THE TRADE

Will always find a Large Stock of

SHANTY BLANKETS

In every Size and Weight, and

HORSE BLANKETS

AT LOWEST MILL PRICES.

JOHN MACDONALD & Co.
TORONTO.

A Magnificent Line of All Wool Fawn Blankets.

SAMPLE ORDER WILL HAVE OUR BEST ATTENTION.

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LUMBER AND TIMBER.

Building & Bridge Timber Sawn to Order.

Pine, Spruce and Hemlock Lumber by the Cargo.

Steam Saw Mills, Box Factory and Yards.—342 to 390 William St., and 130 St. Constant St., Montreal.
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GOLD for the working class. Send 10 cents for postage, and we will mail you free, a royal, valuable box of sample goods that will put you in the way of making more money in a few days than you ever thought possible at any business. Capital not required. We will start you. You can work all the time or in spare time only. The work is universally adapted to both sexes, young and old. You can easily earn from 50 cents to \$5 every evening. That all who want work may test the business, we make this unparalleled offer, to all who are not well satisfied we will send \$1 to pay for the trouble of writing us. Full particulars, directions, etc., sent free. Fortunes will be made by those who give their whole time to the work. Great success absolutely sure. Don't delay. Start now. Address SIMSON & Co., Augusta, Maine.

DIFFERENT KINDS OF WOOD, AND WHERE THEY GROW.

The following communication appears in the *Northwestern Lumberman*.—Perhaps a few observations on how to choose wood for the different purposes to which it is applied, and where to look for the different kinds, might be of use to some who may not have the opportunity to see for themselves. With that object in view, I propose to give a few facts as I have seen them.

To begin with, in Maine, perhaps the oldest and best lumber country east of the Rocky Mountains, and, taking everything into consideration, as good as any in the world, we find the different soils and locations producing a variety of woods, varying in quantity and quality according to the circumstances. There is probably an impression among many that the pine timber lands were occupied exclusively by the pine, but such is not the fact, except in certain locations. The immediate sea coast, and back from the sea from 10 to 20 miles is very rocky—in many places almost or quite solid rock—yet there are valleys and spaces between and among the rocks where there is good soil; also sandy places. This formation was once mostly covered with pine, with a very little hardwood mixed. Where the timber has been cut off it is inclined to grow up to the soft woods again. Occasionally the white and yellow birch take the places of the soft woods.

It is a curiosity to see how little earth or soil in the crevices of the rocks will answer to support a pine or cedar tree. It is a common thing to see trees growing on the side of almost perpendicular cliffs, where there is hardly room for the roots. These trees never grow to much size, nor are they of much value; still it shows how nature utilizes everything. As you went back into the country there was less pine and more hardwood. The pine was extra in quality and very large in the old growth; also very durable, as the old stumps testify to this day. There are old roots and remnants of stumps still in existence from which the trees were cut 60 or 80 years. The pine has no tap root, so that when the stumps become decayed enough they can be turned up and set on the roots. This fact causes the farmers to utilize them for fencing, making an impassable barrier for any animal larger than a dog. I have seen fences of that kind a hundred rods long. It was not very ornamental and an adage sprung from its looks, in common use in my boyhood, of "as homely as a stump fence."

The mixed timber was composed of pine, spruce, rock or hard maple, beech, birch, ash, hemlock, and some other kinds of not much value, with a heavy growth of brush and small trees, making it very difficult to get through the woods without cutting roads; very different from the old timber lands of the West, where a wagon can be driven in almost any direction without having to cut anything. This fact, in connection with the accumulation of dead timber and brush, which lie on the ground sometimes for years, is what makes forest fires so terribly destructive in the eastern states. Fire started in a very dry time will sweep everything before it. A forest fire of this kind burned over about 20 acres of my father's farm 60 years ago, cleaning up nearly everything. He let the land lie idle to grow up to timber again, and a thrifty young growth of hardwood came on, the largest trees 10 years ago being six or seven inches in diameter. Another fire a few miles away burned over a tract two miles square, about 40 years ago, where a good deal of cord wood and ship timber had been cut. This fire had also swept everything before it, not leaving even stumps.

The white oak growing on the rocky lands is very tough, and makes excellent timber for wagon or carriage work. The beech growing in the open land is also extra good for plane and other tool stocks, being very close-grained and hard. The fact that timber growing in the open land makes better timber where strength is required is perhaps not generally known, but such is the case. To have good timber to work easily, the closer it grows the better. The soil has a great deal to do with the growth as well as the quality. This is more marked in the west than in the eastern states. We frequently see entirely different kinds of wood divided by

a small stream. This country is a very fine illustration of this fact. A creek running through it has poplar, maple, beech, walnut and the more valuable woods on one side, while on the other the oaks, black and sweet gums and the less valuable woods occupy the lands. There are large tracts of land through this region called "flat wood land," being very flat and wet. This land produces a very scrubby quality of timber, mostly black gum, black jet oak and other scrub oaks. The black gum is about as worthless a species of wood as the earth produces. The best use I have ever seen it put to is making large rollers for moving houses, as its toughness well fits it for this purpose. The texture is more like a woven fabric than like dry wood. The poplar is a high land wood and requires a dry foot. The beech, larch and maple also require dry land. The walnut will grow from the highest to the lowest land, being well adapted for planting in waste places. This fact should be taken advantage of by land owners having land not available for cultivation, such as the borders of rivers, creeks and low bottom lands. Such places planted now would, in a few years, be worth more than the best land.

To make long-bodied timber it must be planted close, as trees growing in the open land are inclined to be short in the body, with large branching limbs. The cypress and tamarac are water plants, or at least always grow in the low lands, sometimes in the water. The cottonwood and willow are also found in low, wet lands, though they grow on high ground. The tamarac is a northern swamp timber, while the cypress is a southern swamp growth. The term "swamp" in the different locations has a description peculiar to itself. A northern swamp is generally a low, springy bog or accumulation of vegetable and sedimentary matter, in many instances having a tough mass of roots, and soil unfit to trust with a heavy weight. This crust can be shaken by jumping or running across it. There are all grades of these swamps, the very wet ones producing alders, cranberry bushes, etc. As they become more firm, other aquatic woods spring up. In this kind of earth the tamarac or hackmatack delights to grow, and like its southern brother, the cypress, is inclined to have large roots, a wise provision of nature, especially for the ship-builders. The hackmatack knee is a standard article in the building of wooden ships. The "knee" is simply a very large root growing from one side of the stock of the tree, so that when hewed they can be made square, to fit the side of a beam and the ship's side, the angle being formed of straight-grained wood as it would be if bent, thus making a very strong brace. I know of no other timber that will answer the purpose, without taking very large trees. Vast quantities of hackmatack knees are taken from Nova Scotia to Maine and Massachusetts, for use in ship-building.

The southern swamp is pure and undefiled mud, formed as all the bottom land is by the accumulation of sediment, but by the changes in the river courses these places are not filled as other parts of the bottom, consequently they hold water and should be called ponds, while the land is covered with timber, but when drained and cleared they are dry and solid, producing enormous crops of everything. I might qualify the word solid by saying that there is very little solid ground in the West during the wet seasons. The bottom lands dry out quicker than the up lands and can be worked much sooner and easier than high ground. The cottonwood is in its glory in this soil, taking possession of every available spot as fast as the water courses change their beds. It is a sight worth seeing to see long stretches of new formed land, sometimes miles in length, with a growth of cottonwood from a few feet to 100 feet high, the tops stepping up in an inclined plane almost as straight as a line. If the paper makers could get to this timber, or get the timber to them without too much expense, they could get an inexhaustible supply of stock.

The black locust is another valuable wood, easily raised, of very quick growth, and can be grown in waste places to good purpose, for fence posts or railroad ties, and is one of the most durable kinds of timber grown in the west. It

is also valuable and much used for tree nails for fastening the planking to outside of vessels. The tree nail is a locust pin one and a quarter inches in diameter and from 10 to 24 inches long. These pins are turned in a machine made for the purpose, and are driven through the outside plank, the frame and inside plank, at distances of 18 to 24 inches apart. This constitutes an item in the building of a large ship. For fuel, locust is equal to hard maple, so that it could be profitably raised in locations that are treeless, for that purpose. Thus we see climate, soil and location govern the productions of wood, in species, qualities and quantities.

There seems to be a diversity of opinion as to the time when wood should be cut to get the best use of it. From the best data I can get my opinion is that the time when wood is at its best is when it is ripe. That point is reached in November or December. At that time the year's growth is complete. The wood takes a rest and will last better and wear better than when cut at any other time. It also has time to season before insects can bore it. The hickory, ash and oak are liable to become "powder posted" or worm eaten if cut in the early part of the season because the wood is full of sap and green. The tree cut at that time is like an animal killed in hot weather and is attacked by flies that deposit their eggs, producing the worm that eats the wood. Another reason for cutting in the fall or early winter is the fact that the tree in the early part of the season is full of sap, which ferments and commences to decay immediately. Before the wood has time to season the sour sap destroys the life of the wood. Hickory is peculiarly liable to be worm eaten, and when the worms once start to work in it they never leave it until it is all consumed, literally ground to powder.

We also observe the fact that each climate has its productions governed by certain limits. The white pine is in its glory at about the forty-fourth degree of latitude. The poplar ranges from the thirty-fifth to the fortieth. The yellow pine or the hard pine, as all the southern pine is called, seldom grows north of the thirty-fifth. There is no white pine, except on mountainous land, south of the fortieth parallel that is of any value. The vast timber forests of Ohio, Indiana, Illinois, and the most of Kentucky had not a single pine tree in the original forest as far as I know. The evergreens have been set as ornamental trees but they never thrive very long.

Mt. Vernon, Ind.

CHICAGO PROSPECTS.

The *Northwestern Lumberman* of Dec. 29 says:—The lumber business at large is nearer to a stand-still now than it has been for three years past. No note that indicates activity comes from any quarter. It was to have been expected that December, especially during the holiday season, would be a quiet time for trade, but the extreme dullness that has characterized the present month is so much of a contrast to the briskness of November, both in receipts at the wholesale markets and distribution from the yards, that the reaction is almost too much for the philosophy of lumbermen. The season's business swelled out full and large in November, but the sudden stoppage of navigation and building by cold and stormy weather chopped it square off. Lumber merchants and manufacturers are keeping their minds cheerful with the reflection that this is a dull season, and nothing but a quiet trade is to be looked for. Many of them are doing more than that; they are making themselves believe that they do not want a lively business just now. They want to rest, take account of stock and get ready for next season's tussle. They are evincing a good deal of independence. In the Northwest they are holding for firm prices, and asserting that they will not sell for less than the list figures, nor will they make a move or an offer to stimulate the demand, when such a course would tend to weaken prices. A reaction against the weakness of the past year's values seems to have set in. How long the present attitude will be maintained is a question. A fair demand after January comes in would serve to preserve the present strength. But if the existing lack of

demand should be prolonged till towards spring there would be some letting go of grip. Lumbermen, like all other merchants, don't like to bottom chairs long at a time, and are apt, after waiting a while for trade, to get up and dust about for business. It is a fact that all over the country there is a surplus of coarse lumber, and it is a question if present prices could be maintained under long-continued dullness.

There is, however, no question about good common, and even cull inch lumber, in the country tributary to this market, neither about selects and uppers. Much of this stock is as good as sold now, for before spring even a dull trade would absorb all that will be decently dry. But dimension lumber is in ample supply, and if it should not move liberally before March it would likely become tired. There is an abundance of coarse stocks of all kinds at Saginaw, and plenty of coarse and a fair supply of good lumber at Albany. There is considerable lumber at Oswego, Burlington, Buffalo, Tonawanda, Cleveland, Toledo, Detroit, and other points to the eastward, but nowhere, except at Albany, is there a claim made that choice stock is in ample supply. The same is the condition on the Mississippi and in Wisconsin. Of course at the mill points around Lake Michigan the merchants here, and at other accessible places, have left no good stocks to amount to anything, so that what is piled at the mills is mainly common and cull lumber.

Under this general condition of things, it is likely that a continuance of a meagre demand would create uneasiness among holders, and after a while concessions would be made in order to coax trade. But the springing up of a fair inquiry in January and February would have the opposite effect.

Four Million Pails.

The pail and tub industry of Keene, N. H., consumes more timber than all others carried on in Cheshire county. There are forty pail and 90 tub lathes in operation in the county: each lathe turns out on an average 100,000 pails a year, consuming 450 cords of sapling, which gives a product of 4,000,000 pails from 18,000 cords of pine. The 20 tub and bucket lathes use a proportionately large quantity, and as great quantities of staves are sawed and sold for use outside the county, it is probable that 40,000 cords of sapling pines are cut every year. Besides much hardwood that is cut for manufacturing purposes, a vast quantity is used for fuel. Yet many competent judges think the yearly growth equals the amount cut and that there is as much growing wood and timber in the county as there was 30 years ago.—*Lumberman's Gazette*.

Advice to Mothers.

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

On Thirty Days' Trial.

The Voltaic Belt Co., Marshall, Mich., will send Dr. Dye's Celebrated Electro-Voltaic Belts and Electric Appliances on trial for thirty days to men (young or old) who are afflicted with nervous debility, lost vitality and kindred troubles, guaranteeing speedy and complete restoration of health and manly vigor. Address as above.—N.B.—No risk is incurred, as thirty days' trial is allowed.

HOW TO TREAT WEAK LUNGS—Always breathe through the nose, keeping the mouth closed as much as possible. Walk and sit erect, exercise in the open air, keep the skin scrupulously clean, and take Eschard's Pectoral Balsam for coughs, colds, and bronchial troubles.

BE CAREFUL WHAT YOU EAT—The best medical authorities declare that worms in the human system are often induced by eating too freely of uncooked fruit and too much meat, cheese, etc. Whatever may be the cause, Freeman's Worm Powders are speedy and safe to cure; they destroy the worms, and contain their own chathartic to expel them.

A LOG SUIT.

An interesting case has just been decided in the circuit court at Muskegon, Mich. The North Muskegon Lumber Company brought suit against Roys & Co., of East Saginaw, for \$30,000 damages, on account of a failure to deliver a lot of logs sold by defendants to the plaintiff in the spring of 1882. They were to be got in to the river at a specified time, but the big strike rendered it impossible for the firm to fulfill their contract except in part. When the boom men struck, the mill men released the company from damage by the non delivery of logs, and Roys & Co. set up that the North Muskegon Lumber Company was a party to that agreement. Consequently the defendants in the suit met the action for damages by asking for a judgment of \$10,000 for the logs which had been delivered to the company and disposed of by it. The case occupied several days in court, and resulted in a verdict in favor of Roys & Co. for \$6,102.02.

Kimwood Blocks.

Mr. Wm. White, F. S. A., in a recent letter to the *Bulder*, says, in reply to an inquiry made as to the use of elm for wood-block floors, "I introduced this material in the floor of the new church at Morrifield, near Torpoint, fifteen years ago; and the blocks have lasted and worn perfectly. But they were two inches thick, and were burnitized before laying, which process does not seem to afford any certain protection from decay, though it seasons the wood by driving out the sap, and makes it less liable to the same amount of shrinkage. With elm, again, there is not the same danger of decay from a damp bed as there is with other wood. They should be laid, nevertheless, in a waterproof composition, so as not cause the wood to swell in the laying and shrink in the drying. The floor above alluded to has been kept in a fine condition by rubbing with wax and turpentine, and is quite ornamental."

The Horse in Winter.

Care should be taken that the horses are so shod that a sudden icy spell will not confine them to the stable from fear of slipping. Too many valuable horses are strained and injured by carelessness in this matter, or are kept in the stable without opportunity for healthy exercise. Remember also that they now have their winter coats of hair on, and after a smart drive the roots of the hair will be moistened with perspiration, which should be rubbed off before allowing them to stand in a cold stable, to avoid danger of sudden colds. Especial care should also be taken to clean and dry the feet and ankles, as snow, ice and frozen mud allowed to remain there over night is a severe drain upon the vitality of the animal, and a frequent cause of thrush, grease and rheumatism. Horses should never stand where a current of cold air can strike them while in the stable. Particular care in this respect is needed when they come into the stable warm after being exercised.—*American Cultivator.*

A Big Tree.

The *Pembroke Observer* says:—A big white pine tree was recently cut down and made into logs at George Car's shanty on Messrs. Bronson & Weston's limits on the *Piic du Grand*. They were cut up into twelve good logs of the following measurement: 16 feet log, three of 19 inches in diameter, one of 20 inches, one 21, one 33, and one 41; 13 feet logs, one 13 inches, two 14, one 15 and one 17. These twelve logs measured made 18 standards and 75 parts. The value of the tree may be conceived when it is known that each standard is worth about a dollar and a half in Pembroke. A wood of trees of this kind would make a very valuable crop.

SNOWSHEDS are a feature of Western mountain railroads. Charles Croker, vice-president of the Central Pacific road, first suggested them. Some have steep and some flat roofs, and the cost ranges from six thousand dollars to twelve thousand dollars per mile. Snow accumulates on them in places to the depth of fifty feet. In a shed ten miles long a locomotive, with tank, etc., is kept, ready to flood any portion in which a fire may break out. Automatic electric fire alarms are provided.

The Building Boom.

In Bradstreet's list of the valuations of new buildings constructed or started so far this year are these: Chicago, \$12,780,000; Cincinnati, \$11,000,000; St. Paul, \$9,580,000; Minneapolis, \$8,310,000; Cleveland, \$3,760,000; Detroit, \$2,680,000; Kansas City, \$2,000,000; Toledo, \$1,490,000; Pittsburgh, \$1,420,000; Indianapolis, \$1,250,000. The estimate for Chicago is considerably less than the total last year, though by general acknowledgment the number of new structures this year is about equal to the number in 1882. This can be said, however, that a large proportion of the houses built in Chicago this year are of the small store and residence kind. The year has not closed yet, while building permits are being issued in large numbers weekly.—*Northwestern Lumberman.*

Lumbering in Arkansas.

In Arkansas the lumber industry has been developing very rapidly. In 1880 there were 319 saw mills in the state, and the number has more than quadrupled since then. The whole state is heavily wooded, the short leaved pine alone being estimated at 40,000,000,000 feet. Manufacturing is receiving considerable attention. There are now several cotton mills, while the cotton seed mills are the most important in the state, and produce the finest qualities of refined oil. There are also large mineral resources, as coal, iron, copper, etc. Building and real estate are making rapid progress.

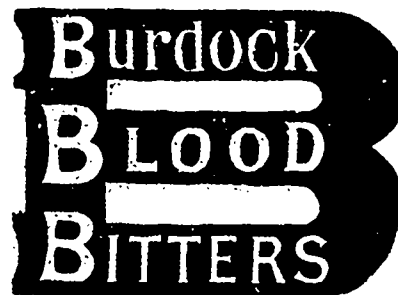
The Forestry Exhibition.

Amongst the names of the members of the General Committee of the International Forestry Exhibition to be held at Edinburgh in 1884, we notice those of Sir Charles Tupper, K. C. M. G., High Commissioner for Canada, Prof. George Lawson, L.L. D., Halifax, Nova Scotia, and W. D. Dimock Esq., B. A., (late secretary, Canadian Court, London Fisheries Exhibition, London,) Ottawa.

RAILWAY ACCIDENT.—Frank Splink, Wilton Avenue, Toronto, some time ago received a bad injury by an accident on the G.T.R. The severe contusions were quickly healed by the use of Hagar's Yellow Oil.

A PARALYTIC STROKE.—W. H. Howard, of Geneva, N. Y., suffered with palsy and general debility, and spent a small fortune in advertised remedies, without avail, until he tried Burdock Blood Bitters. It purified and revitalized the blood, caused it to circulate freely, and quickly restored him to health.

THE BEST PROOF.—THE GLOBE.—"I sell more Burdock Blood Bitters than I do any other preparation in stock," says B. Jackson, druggist Toronto. If the reader will ask any druggist in the city he will get a similar answer to his query—a proof that it is the most popular medicine for the blood, liver and kidneys known.



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WHOLESALE AND RETAIL
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Orders for Lumber and all kinds of Factory Work promptly attended to. Lumber Kiln dried to order.
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A New and Direct Line, via Seneca and Kankakee, has recently been opened between Richmond, Norfolk, Newport News, Chatham, Atlanta, Augusta, Nashville, Louisville, Lexington, Cincinnati, Indianapolis and Lafayette, and Omaha, Minneapolis and St. Paul and intermediate points. All through Passengers Travel on Fast Express Trains.
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Vice-Pres. & Gen'l Mgr., Gen'l Trk. & Pass. Agt.
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The CANADA LUMBERMAN is filed at the Office of Messrs. SAMUEL DEACON & Co., 154 Leadenhall Street, London, England, who also receive advertisements and subscriptions for this paper.

PETERBOROUGH, Ont., JAN. 16, 1884.

The value of the lumber shipments from Ottawa to the United States during 1883 was \$610,108, against \$500,281 in 1882 an increase of \$109,827.

A CURIOUS incident occurred in Dallas, Ga., recently. A bale of cotton was taken to a compress to be weighed and stored. When put on the scales it was observed that the bale was warm. The trier was inserted and the bale found to be on fire in the centre. It was taken out, and when opened burst into flames. Some considered it a case of spontaneous combustion, others that a spark might have fallen into the bale from the gin. At all events, the occurrence was uncommon.

A FOURTH in the series of lumbermen's and land lookers' excursions to Mississippi (over the Illinois Central railroad will start from this city on the evening of January 15th. It is expected that a large number will take this opportunity to visit the south. A round trip ticket to Jackson at \$20 will be furnished the excursionists. For information and maps of the timber and agricultural regions to be visited, apply to M. S. Baldwin, agent for Phillips, Marshall & Co., 123 La Salle street, this city.

The Monetary Times says:—The Pembroke manager of the Quebec Bank writes us on 27th December:—"Business promised well hereabouts last spring for lumbermen, but sales were few and considerable disappointment in prices was experienced; and the outlook at present is not encouraging—the local trade fair but less than previous year; payments not easily; wages high with outlook for next summer fair." Writing from St. Ann de Bellevue, Quebec, on the subject of the timber trade, Messrs. J. & B. Grier tell us "that our dimension timber business has been very satisfactory, demand being good and prices about the same as last year's. The Lachine timber market has been very active, prices all around equal to last year's. Our Upper Ottawa timber arrived in Quebec somewhat late, and we concluded that it would be better to hold till next season than to sell at prices offered last fall."

The importance of the Glasgow shipping trade may be gathered from the printed list of ship-owners entitled to vote for the election of the Clyde Trustees. Five hundred and seventeen ship-owners are voters. Several own fleets of steamships worth millions sterling, while no voter owns less than 100 tons. The estimated value of vessels owned on the Clyde is £26,000,000 sterling, or, in round numbers, \$130,000,000.

We learn that French ingenuity has hit upon a plan to substitute other woods for mahogany, by the following process, and which might be practised on birch, ash, lime, and &c., with every prospect of success. The first operation is to plane the surface of any species of close-grained wood until it is perfectly smooth, and then rub it with diluted nitrous acid, to prepare it for the materials to be subsequently applied. These consist of one and a half ounces of dragon's blood, dissolved in a pint of spirits of wine, and one-third of that quantity of carbonate of soda, mixed together and filtered; the liquid in this state is then laid upon the wood with a soft brush, and when dry the application is repeated, with very little alteration, till the wood possesses all the appearance of mahogany.

The Ottawa Citizen says:—That the condition of the square timber trade at the close of 1883 was unsatisfactory, not only to producers but as well to the merchants of Quebec, is no news to any person in the trade. This unfortunate state of one of our most important industries is, however, not consequent upon anything that could be remedied in this country excepting, perhaps, by a reduction in the quantity produced. In the early part of the season the prospects of a fair season's business were, by the more sanguine, considered very promising, but these anticipations were unfortunately not realized. Doubtless some lots of Ottawa timber were sold at good prices, which amply repaid the producer the high prices of production of last winter, and gave a good profit on the year's business, nevertheless a very large quantity of our timber remains in first hands at Quebec.

FORESTRY.

The letter by R. W. Phipps, which we publish in another column, deserves thoughtful consideration by those who wish to see our forests less wastefully ravaged, and even a re-production of woodland, where the denuding process has been carried too far. Mr. Phipps suggests one means by which this desired end can be attained.

HOW TO LOG.

There are two methods of logging. One is to cull the best timber, and the other is to cut it clean. Each way has its advocate. When the first named way is pursued the operator has choice stock to offer for sale, and such stock is always wanted. But some day there is sure to come deterioration. At the end the grades cut from the leavings must necessarily be poor. The lumber on dock in the Saginaw valley is an illustration of this. When pine was everywhere plentiful the operators picked out the best. The lumber manufactured was good, and, as a rule, found ready sale. To-day the docks are piled with coarse lumber which is a drug. This lumber was sawed largely from timber which had been left. The operators who cut their timber clean as they go may not at any time have as much first class stock on hand as they may desire, but their grades are even year after year. The dealers who buy of them know what to expect. When such operators are about to clear up their lands there is no tail end to the business that will be unprofitable. We believe that more operators understand this than there did a few years ago. A steady business is now what is desired, and such a business is dependent on grades that can be easily marketed.

THE PROSPECT.

The Monetary Times of Jan. 4th, says:—The state of the timber trade, one of Canada's chief industries, is not encouraging. In J. Bell Forsyth & Co.'s latest circular, we read:—"The spring business opened with a feeble

demand as the shipping houses were holding over stocks from 1882 ample for their requirements, so that a very few sales were then effected and at prices slightly under the close figures of the previous year. During the summer months the market remained in a drooping state, only an occasional raft being disposed of with difficulty, while early in the autumn several sales were effected at fair rates; since that period everything has been stagnant, even the local market is exceedingly dull, and at present we can discern no signs of recovery from this unfortunate state of things."

The following prices for the last two months are based on actual sales at Quebec, except in some cases where no sales have taken place:

White pine in raft, for inferior and ordinary, according to average, quality, &c., measured off.....	\$0 18	\$0 20
For fair average quality, according to average, quality, &c., measured off	0 20	0 25
For good and good fair average, according to average, quality, &c., measured off	0 25	0 26
For superior, according to average quality, &c., measured off.....	0 27	0 36
In shipping order, according to average, quality, &c.....	0 20	0 25
Waney board 18 to 19 inch, according to average, quality, &c.....	0 31	0 34
Waney board 19 to 21 inch, according to average, quality, &c.....	0 34	0 36
Red pine, in the raft, measured off, according to average and quality....	0 12	0 18
In shipping order, 35 to 45 feet, according to average and quality.....	0 16	0 22
Oak, Canada, by the dram, according to average and quality.....	0 40	0 43
Oak, Michigan and Ohio, by the dram, according to average and quality .	0 47	0 49
Elm, by the dram, according to average and quality, 45 to 50 feet.....	0 34	0 35
Elm, by the dram, according to average and quality, 30 to 35 feet. No sales	0 00	0 00
Ash, 14 inches and up, according to average and quality.....	0 32	0 35
Birch, 10 inch average, according to average and quality.....	0 23	0 26
Tamarac, square, according to size and quality.....	0 12	0 13
Flatted, according to size and quality.	0 10	0 12
Staves, merchantable pipe, according to quality and specification.....	\$350	\$360
Staves, W. O. Punccheon, merchantable, according to quality and specification.....	\$30	\$35
Deals, bright, according to mill specification, \$108 to \$110 for 1st, \$63 to \$70 for 2nd, and \$32 to \$34 for 3rd quality.	\$308	\$334
Deals, bright, Michigan, according to mill specification, \$125 to \$127 for 1st, and \$36 to \$33 for 2nd quality.		
Deals, dry floated, according to mill specification, \$104 to \$106 for 1st, \$66 to \$68 for 2nd, and \$32 to \$34 for 3rd quality.		
Deals, bright spruce, according to mill, specification, \$36 to \$33 for 1st, \$22 to \$24 for 2nd, and \$10 to \$21 for 3rd quality.		

The timber trade is subject to periodical inflations and depressions; and periodically, production is greatly in excess of demand. When heavy stocks have to be carried over a year or two, the interest of the weakest holders is apt to drop out, and the banks become the parties chiefly interested. This experience is not lost on the banks. At present they are drawing the reins tight on lumberers; and productions will consequently be greatly decreased this winter. Still Messrs. J. Bell Forsyth & Co. express the opinion that the supply, greatly restricted as it will be, will exceed "the present very limited requirements." Of course, it is not exactly the present, but the near future requirements that will control prices; and the important question is what next year's demand is likely to be? A question more easily asked than answered.
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Low prices and a feeble demand in England will affect production on the Baltic, as well as in Canada. The Timber Trades Journal prints a letter from Riga, in which it is stated that shipments to England have only been made to clear off large stocks before next spring. Only small quantities are expected to come on the market next spring. Exporters are unwilling to enter into contracts at present prices. The cut will consequently be restricted there as well as here. These facts read the Riga correspondent to express the opinion that higher prices may prevail next spring.

We learn from the same journal, of the 22nd

December, that the London dock deliveries for the previous week had been unusually heavy. But in dock stocks the difference is not great; and the small difference between present stocks and those of past years is attributed to cheap freight. So much stress is laid on this fact that the opinion is expressed that "with the normal rate of freight ruling for the fall, probably the difference between the 1883 and 1882 stocks in the docks here would have been several million pieces in favor of the latter on deals alone, while the augmentation to the flooring stocks, which has turned the scale against those of 1882, is also due to cheap rate of tonnage." From this, the conclusion would seem to be fair, that any sudden impulse given to the demand might, next spring, send up prices. But that impulse may be found to be wanting.

Returning to the Forsyth circular, we find the export of the year from Quebec of the following woods exceeded that of 1882.

		WHITE PINE.	
		Supply.	Export.
1883	{ Square.....	7,412,034	10,427,000
	{ Waney.....	3,789,523	
1882	{ Square.....	8,053,066	7,912,160
	{ Waney.....	3,127,123	
Stock.			
		{ 7,780,620 } Square.	
1883		{ 2,768,840 } Waney.	
		{ 6,822,162 } Square.	
1882		{ 3,554,913 } Waney.	

Of red pine the quantities that now come forward are very small compared with what they were formerly—about one tenth. The Irish market that takes much of this timber cannot now be depended on—

		Supply.	Export.	Stock.
1883	.....	498,111	1,048,960	1,510,925
1882	.....	1,474,581	1,024,630	2,562,624

The sources of supply of oak for the Quebec market seem to be approaching exhaustion; the quantity found there has greatly decreased in the last decade. And the quantity wintering at Garden Island is less than usual:

		Supply.	Export.	Stock.
1883	.....	1,916,322	2,182,880	1,203,347
1882	.....	1,816,719	1,957,820	1,862,163

There is encouragement to cut more elm, since the demand for it last season seems to have fully equalled the supply. And in Great Britain the stock is exceedingly small. The stock at Quebec is unprecedentedly light:

		Supply.	Export.	Stock.
1883	.....	309,631	730,920	87,424
1882	.....	714,649	778,360	630,611

Ash, too, has been in good demand; and the stock on hand is light:

		Supply.	Export.	Stock.
1883	.....	283,448	346,320	135,222
1882	.....	310,769	297,040	212,422

For birch there is a good demand, with a light supply; and manufacturers will of course take these facts into account:

		Supply.	Export.	Stock.
1883	.....	152,624	233,040	6,622
1882	.....	251,920	212,630	78,413

American competition has of late interfered with the trade in staves at Quebec; exports thence having greatly fallen off:

	{ Pipe.....	630	549	470
1883	{ Punccheon.....	663	933	805
	{ Pipe.....	565	450	293
1882	{ Punccheon.....	1,430	850	1,007

The Quebec trade in deals is increasing:

		Supply.	Export.	Stock.
1883	.....	3,228,622	3,993,072	1,543,359
1882	.....	4,611,875	3,148,633	2,607,704

The quantity of deals wintering at Ottawa is about the same as last season. In spruce deals the Quebec market is represented by these figures:

		Stock.	Export.	Stock.
1883	.....	2,569,440	2,729,635	1,752,725
1882	.....	3,229,960	2,737,309	1,912,920

This kind of wood, largely obtained in New Brunswick, is greatly over-produced; and it is believed this winter's cut will be, as it ought to be, small.

It may be fairly concluded, from these facts, that over-production will not be pushed dangerously far this winter. The future prospect of the timber trade is gloomy, but not hopeless. A brisk demand falling upon a moderate supply would cause a much desired revival; and even with a moderate demand, it ought not to be difficult to carry the stocks that will be marketed next spring.

THE SAW MILL IN EARLY DAYS.

Lumber, wood, or timber, in its various forms enters largely into the industry of this country, and its rapid and economical conversion from forest to factory, and then into articles of good utility is of paramount importance. The conversion of wood into articles of use by machinery, has, during the last quarter of a century, made great strides, but these still remains an unlimited field for further progress. The great cost, and in many cases, the inferior quality of work turned out by hand, have rendered the increasing introduction of labor-saving machinery absolutely necessary, to keep pace with the general progress of the times, and it has been found that in doing this the wages of skilled artisans have been increased; as cheaper production creates greater demand. The value of the yearly products of the forests is larger than the iron production, gold and silver mines, and the grain crops combined, and enters every path and channel in domestic and commercial economy. This interest so intrinsically important, necessarily extended, and susceptible of influences favorable or adverse from the chief centres of financial activity, so sensitive to climate changes, tempests, floods, and droughts, but still more affected by the sayings, and doings, and purposes of the great motive combinations which insure it a market, has developed from small and crude beginning, and encountered, in its early days, violent opposition from the ignorant.

Wherever the axe is heard it is the great precursor of civilization. It has cleared our forests, and made what was before a barren waste, smile as a garden, with flowers and plenty. After the axe comes the saw mill, another great civilizer. The saw has ever played a conspicuous part in the economy of manufactures, and its importance will readily be admitted when we consider how essential a bearing it has upon everyday life, and how conducive it is to the development of those useful arts upon which, to a great extent the very existence of civilized humanity depends. Its extended and universal employment in the higher class of industrial art, has, in a great measure, contributed to the advancement of civilization, and prosperity, by administering to the production, not only of those things which are necessary to our being, but of those who tend to cultivate the taste, and refine the mind. The invention of the plumb-line and the saw are ascribed to Dædalus and Talus, the latter having found the jaw bone of a snake, cut a piece of wood in two with the teeth, and from this originated the saw, so we are told, and it is much easier believed than to go seek the truth, as it matters little to us at the present time. It is recorded that the discovery cost the young man Talus his life.

The modern saw mill is said to be a German invention; away back in the early centuries. In 1824 the city of Breslau had a saw mill. In 1490, the magistrates of Erfurt purchased a forest and built a saw mill. In Norway, a country covered with wood there was built in 1530. This mode of treating wood was called the new art, and because the exportation of deals was by that means increased, a royal impost was introduced by Christian III, in 1545, called the deal lithe. Soon after Henry Rauzan caused the first mill to be erected at Holstein. In the year 1555, the Bishop of Ely, being Ambassador from Princess Mary, of England, to the Court of Rome, observed a saw mill in the neighborhood of Lyons. He describes it as being driven by an upright wheel, "and the water that makes it go is gathered whole in a narrow trough, which delivereth the same water to the wheel. This wheel hath a piece of timber put to the axle tree end like the handle of a brooch and fastened to the end of the saw which turned with the force of water, hoisteth up and down the saw, that it continually eateth in and the handle of the same is kept in a rigall of wood from averting. Also the timber lieth as if it were upon a ladder, which is brought by little and little to the saw with another device." Such is the description given of a saw mill at this early date. In the sixteenth century there was a grand improvement made on this machine by which timber could be cut in several planks or boards of any thickness. There was one of these at Ratisbon on the Danube in 1785. Saw mills were received in England with

as little encouragement as printing was in Turkey, and from the same motive when the attempt was made to introduce them, it was said that the sawyers would be deprived of bread, and for this reason says a writer in the *Mechanics Magazine*, it was found necessary to abandon a saw mill, erected by a Hollander near London in 1663.

"However in the year 1700, a gentleman named Houghton laid before the nation the great advantages to be derived from them, but he expressed his apprehension that it might cause a commotion among the people, and what he feared actually came to pass, for on the erecting of one by a wealthy timber merchant, by the desire of the society for the promotion of arts in 1707, to be propelled by the wind, under the direction of James Stanfield, who had learned the method of constructing them in Holland and Norway, a mob assembled and pulled it to pieces. What great strides have been made, both in the arts and education of the people, since that time, may be attributed to the civilizing influence of popular governments.

HOW TO ADVERTISE A TOWN.

A correspondent of the *Chattanooga Tradesman*, writing from Hantsboro, Miss., says: "I hereby make a brief statement of some of the wants of this vicinity—this place in particular. Hantsboro, Harrison county, Mississippi, is a small manufacturing town, of about six hundred inhabitants, one mile back from Mississippi City, a station on the Louisville & Nashville Railroad, and midway between the cities of New Orleans and Mobile, seventy miles either way. Here we have direct rail, water, mail and telegraphic connection to any or all points. We have a favorable locality—said to be the healthiest of the country; a congenial climate. Labor is cheap, and fuel cheap and abundant, also crude material for manufacturing is abundant and cheap.

A furniture factory to make cheap furniture of the native woods, as bay, magnolia, black jack (gum) and pine.

A furniture factory to make fine furniture, as fine woods can be brought here cheaper than to any part of the country. We ship large quantities of our yellow pine to Mexico and Central America; the native would be glad to give fine woods in payment and the vessels eager for return cargoes.

We have a fine harbor at our doors at Ship Island. One or more canning factories to put up fish, shrimp, oysters, vegetables and fruits.

A factory to make packing boxes and broom-handles.

The products of these are all such as this section of the country depends for altogether on the West and North. We will gladly welcome any one coming in our midst, whether in pursuit of business, health or pleasure.

Spindle Making.

"On a recent visit to Taunton, we were permitted to inspect the spindle making machinery in the Mason Machine Works. To one who is old enough to look back on bygone ways and methods, and especially on the honored "hand made" article of our grandfathers and fathers, this machinery is a wonder indeed; especially to see a boy put his rods in the fire, and when the proper heat is attained put one of the rods into a gauge trip hammer, striking nearly a thousand blows per minute, and from one space to another, so that without apparent effort, a perfect spindle is formed in less than one minute of time, and so perfect that all are just alike, and so near perfect that grinding is now a thing of the past, and only a surface polish is necessary. By this method the hardened shell is not removed by grinding, and an absolutely perfect spindle is the result. But the steel is made so dense, and the process of hardening is such that if dropped on a hard surface they are liable to break like a pipe stem. The object of all this is to get a spindle that will bear the immense strain of speed brought to bear on it without detecting the slightest vibration. The ordinary observer would say that it is "only a spindle," which is very true, and yet that little spindle made Great Britain the richest nation on earth, and if wise councils prevail in our legislative assemblies, and the little spindle is properly cared for, America will become richer

and stronger than all the nations of the earth combined."—So says the *Cotton, Wool and Iron*.

Another Timber Preserving Method.

A new way of treating timber is thus stated: One of the most encouraging among the various methods which have been brought forward for the preservation of bridge timber and railroad ties would seem to be that which, in the first place, subjects the finished timber to an adequate dry heat, and then immerses it in a hot bath composed of certain proportions of asphalt and carbolic acid. The effect of this treatment is, that on cooling, the solvent of the asphalt evaporates, leaving a skin of coating of asphalt on the surface of the wood, which resists water and keeps the antiseptic material fixed securely within the pores of the wood. The exterior of the wood, on the completion of this process, presents a smooth and dark surface requiring no paint.

Birch in Wisconsin.

An item in a Door County, Wis., paper states that a man from this city had been in the neighborhood of Jacksonport purchasing all the birch logs that could be had in that section, \$6 a thousand feet, delivered at the mill, being paid. Recently a lumberman of this city, who had been along the Milwaukee, West Shore and Western railroad, discovered that there was a large amount of Black birch in the new sections traversed by that road, in Marathon and Lincoln counties. As yet this birch is not valued as highly as the merit of the wood demands, as the owners of it up there have not taken adequate measures to secure a market for it. It is possible that a birch buyer might find it to his advantage to investigate the quality of this timber in that part of Wisconsin.

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Also, a stock mill-run, mill culls out, from A Million to Million and a Half of Lumber, and Two Million Shingles

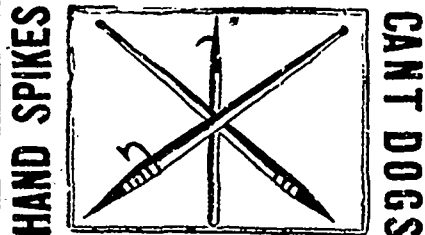
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THE UNDERSIGNED having largely extended their raceway at Lakesfield, are desirous of corresponding with parties who wish to go into manufacturing, and they are prepared to sell or lease water power on the most favorable terms, or would erect buildings of any size suitable for factories.

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Co., Portland, Maine. 6nd145-17w51

COSTLY WOODS.

The finest and most costly of veneer woods is French walnut—a wood that does not come from France, but from Persia and Asia Minor. The tree is crooked and dwarfed, and is solely valuable for the burl that can be obtained from it. In these the grain is twisted into the most singular and complicated figures. The intricacy of these figures, combined with their symmetry, is one of the elements that determine the value of the burl. Color and soundness are other elements of value, which varies very widely. Burl worth from \$500 to \$1,000 each are not rare, and at the Paris Exposition for 1878, one burl weighing 2,200 pounds was sold for \$5,000, or upwards of two dollars a pound.

In buying burls much care is necessary to guard against fraud. Often decay or malformation results in leaving hollows in the very centre, which, of course, greatly lessens the value. These hollow places are sometimes filled by fraudulent dealers with substances resembling the wood, and the whole is sold at a very much higher price than it is worth. Compressed manure is one of the materials used for this purpose. An even worse fraud than this is that of placing stones in the hollows to increase the weight and thereby enhance the value of the burl. This not only cheats the buyer, but is liable to ruin the valuable knives used in cutting the veneers. There are rosewood and mahogany burls, but, unlike those of the French walnut, they are but of little or no value. In these woods it is the trunk of the tree that is prized; the knots are discarded.

Next to French walnut, ebony is probably the most valuable of the cabinet woods. Occasionally a fine piece is found that brings even a better price than the French walnut. For a particularly large piece, even \$5 a pound might be paid. In ebony the main thing is size. It is difficult to get large pieces that can be used without cutting. Rosewood and mahogany are always in demand. The best mahogany is that of San Domingo. Next comes the mahoganies of Cuba, Honduras, Mexico and Africa. There is much less difference in value between different mahoganies and rosewoods than between different specimens of ebony and French walnut. Fair rosewood will sell in the log for 5½ and 7 cents per pound.—*Lumber World.*

REDUCED SUPPLIES.

The *Timber Trades Journal* of Dec. 15, says: Writing from Riga our correspondent says:—The hopes of an improvement in the timber trade which were raised by the unfavorable weather during the spring and summer have unfortunately not been realized. Although the shipments of boards have been large they have not been very remunerative, owing to the low prices ruling on the Continent and England, and they have for the greater part only been made to clear the large stocks before the coming spring. The extraordinary state of the weather this autumn, which has hitherto prevented nearly all forest work, and when now at last the winter really commences there can be no doubt that owners will cut less wood than usual, particularly with reduced prices before them. Several of the smaller saw-mills have been stopped for want of raw material, and the larger mills have greatly reduced their production. The fact that only comparatively small quantities will come on the market next spring seems to justify the expectation of higher prices. There are here large stocks of sleepers of all dimensions, but they are held in strong hands. The unwillingness of exporters to enter into any large contracts during the present slackness of the trade will no doubt also cause owners to cut less liberally, and this is another reason why we may look forward to considerably smaller supplies next spring compared with what they were this year.

COULDN'T BELIEVE IT.

During a recent conversation with Mr. Dwight Cutler, president of the well-known Cutler & Javidgo Lumber company, of Grand Haven, upon the subject of improvements in saw mill construction and operation, that gentleman told a newspaper reporter of a visit he paid, some few years ago, to what was then

considered a model and modern saw mill somewhere down in New England. Mr. Cutler was at that time visiting the neighborhood of his old home, and, being a lumberman, was invited to look over what was considered a crack saw mill, located upon a rapid stream of water which furnished the power to operate it. He found a single circular saw attached directly to the water wheel and making, of course, the same number of revolutions. He was introduced to proprietor as a lumberman from Michigan. The proprietor was operator of the mill himself, and would saw off a board, walk around to the end of the carriage, pick it up and carry it out to the end of the mill, when he would return and saw off another. After operating a while in this manner he accosted Mr. Cutler with "what do you think of that? Got anything out worse than that will beat that?"

"How much can you saw in a day?" asked Mr. Cutler.

"Twenty-five hundred feet," promptly and triumphantly answered the satisfied sawyer-proprietor.

"Well," said Mr. Cutler, with the deliberated utterance characteristic of the man, "just before I left home some St. Louis men came up to see how a circular mill invented by one of my townsmen would work. It was started up and operated for one hour and cut a trifle over 5,360 feet."

"That's a damned lie. It can't be done!" said the New England saw miller with energy and decision. Mr. Cutler tells this story with an evident relish of the recollections it evokes.—*Lumberman's Gazette.*

HOW TO RECOGNIZE GOOD WOOD.

Rankine says that there are certain appearances characteristic of good wood, to what class soever it belongs. In the same species of wood that specimen will in general be the strongest and most durable which has grown the slowest, as shown by the narrowness of annular rings. The cellular tissue, as seen in the medullary rays (when visible) should be hard and compact. The vascular or fibrous tissue should adhere firmly together, and should show no wooliness at a freshly cut surface; nor should it clog the teeth of the saw with loose fibres. If the wood is colored, darkness of color is in general a sign of strength and durability. The freshly cut surface of the wood should be firm and shining, and should have somewhat of a translucent appearance. In wood of a given species the heavy specimens are in general the strongest and most lasting. Among the resinous woods, those having the least resin in their pores, and among the non-resinous woods those which have the least sap or gum in them, are in general the strongest and most lasting. Timber should be free from such blemishes as "clofts," or cracks radiating from the centre; "cup shakes," or cracks which partially separate one layer from another; "upsets," where the fibres have been crippled by compression; "wind galls," or wounds in a layer of wood, which have been covered and concealed by the growth of subsequent layers over them; and hollow or springy places in the centre or elsewhere, indicating the commencement of decay.

DESTRUCTIVE GALE IN MAINE.

The recent gale in Maine was of a widespread and destructive character. It continued for 24 hours, doing damage in almost every part of the state from Piscataquis to the St. Croix, and from Aroostook to the sea. The forests were injured in Oxford, Franklin, Somerset, Piscataquis and Penobscot counties, the damage being especially great in the two latter counties. The hardwood growth generally withstood the fury of the gale, but the softwoods, particularly of a small growth, readily succumbed; spruce, pine, hemlock and poplar were felled with almost a clean sweep, where the gale was raging most severely. The birch was too firmly rooted to be brushed away so readily, and little of it was blown down. In places where timber was left standing it was so matted with blown down trees and underbrush as to almost ruin it. Nothing could be done toward bringing partial order out of chaos in the woods till the arrival of snow, and then the down timber will be so buried that little can be done. In the spring the fallen timber will be the prey

of worms and borers. Consequently the timber that is blown down is regarded almost a total loss, to say nothing about an existing danger of a culmination of disaster by the breaking out of fires during the summer months. It is not known how great the general loss has been, but the timber on thousands of acres of land has been ruined. In Long A township the timber on 22,000 acres, mainly owned by O. G. Starna, of Bangor, was destroyed. Before being damaged the tract was valued at \$60,000, and operations to the amount of about \$10,000 had been planned for this winter. Much damage was done to logging camps, and operations were generally obstructed, roads being blocked, and outfits destroyed. No loss of life had been reported up to a late date.—*Northwestern Lumberman.*

Development of Forest Trees.

There exists a great diversity among trees in their periods of development, some have a brief rotation. The coppice growths in European forestry are often utilized in periods of ten or fifteen years; in our own country, too, we have many trees of short rotation, and some of the most useful and profitable trees are of this character. Dr. Warder, of Ohio, in a paper on "Forestry," says:

The black locust may be harvested after it has grown from twenty to thirty years.

The catalpa speciosa in the same period will make good cross-ties and fence posts.

The alanthus very soon attains a useful size, and for certain purposes has been highly commended, both in this country and in Europe. Professor C. S. Sargent is advising its extensive planting, and some years ago it was spoken of as the sweet promising tree for the arid plains of the southwest.

The forests of Scotch pine in Germany are allowed sixty years to reach their useful size for fuel and for timber.

The birch there reaches its maturity in about half a century.

The willow used for charcoal needed in the manufacture of gunpowder may be cut after growing twenty years or even less.

Chestnut, in its second growth, is most profitably cut every twenty or twenty-five years.

The beautiful wood of the wild cherry soon reaches a profitable size for many purposes, though for saw logs and lumber the tree should be larger.—*Southern Lumberman.*

The Eucalyptus.

Where there is surplus moisture to dispose of as for example, a cesspool to keep dry, a large eucalyptus, states the *Pacific Rural Press*, will dispose of a vast amount of house sewerage. But if you have water which you do not wish to exhaust, as in a good well, it would be wise to put the eucalyptus very far away. Daniel Sweet, of Bay Island Farm, Alameda County, recently found a curious root formation of the eucalyptus in the bottom of his well, about sixteen feet below the surface. The trees to which the roots belonged stand fifty feet from the well. Two shoots pierced through the brick wall of the well, and sending of millions of fibres, formed a dense mat that completely covered the bottom of the well. Most of these fibres are no larger than threads, and are so woven and intertwined as to form a mat as impenetrable and strong as though regularly woven in a loom. The mat when first taken out of the well was water soaked and covered with mud, and nearly all a man could lift, but when dry it was nearly as soft to touch as wool, and weighed only a few ounces. This is a good illustration of how the eucalyptus absorbs moisture, its roots going so far to find water, pushing themselves through a thick wall, and then developing enormously after the water is reached. Mr. Sweet thinks one of the causes of the drying up of wells is the insatiable thirst of these vegetable monsters.—*Scientific American.*

Petitioning for Forest Preservation.

NEW YORK, Dec. 29.—The canal boat owners and Commercial Association, comprising 600 members, considered the subject of the destruction of the Adirondack forest and its effect on the canal last evening. The secretary said that canal men had long observed that the

cutting of timber in the Adirondack woods had a tendency to lessen the supply of water in the canal. A member said if the ravaging of the forest were not checked the State would be put to the expense of millions in building reservoirs to supply the canal with water. It was resolved to memorialize the legislature to put a stop to the destruction of the forests.

BOARD OF TRADE RETURNS.

The following are the returns issued by the Board of Trade, for the month of Nov., and for the first eleven months of the year:—

MONTH ENDED 30TH NOV., 1883.	Quantity Loaded.	Value.
Timber (Heaven).		
Russia	18,065	34,412
Sweden and Norway	55,201	85,029
Germany	35,800	92,030
United States	5,825	23,804
British India	700	8,433
British North America	49,012	232,798
Other Countries	29,249	82,022
Total	191,444	614,082
Timber (Sawn or Split, Planed or Dressed).		
Russia	83,385	102,110
Sweden and Norway	161,638	327,500
British North America	152,073	330,523
Other Countries	20,000	61,407
Total	407,500	967,340
Staves, (all sizes)	13,023	65,100
Mahogany (tons)	7,130	60,080
Total of Hewn and Sawn	609,260	1,481,392

MONTHS ENDED 30TH NOV., 1883.	Quantity Loaded.	Value.
Timber (Heaven).		
Russia	209,427	533,427
Sweden and Norway	600,593	933,801
Germany	327,394	843,230
United States	104,831	403,015
British India	40,303	503,150
British North America	312,123	1,433,243
Other Countries	351,804	472,117
Total	1,900,623	5,242,587

MONTHS ENDED 30TH NOV., 1883.	Quantity Loaded.	Value.
Timber (Sawn or Split, Planed or Dressed).		
Russia	1,023,927	2,300,309
Sweden and Norway	1,042,593	3,070,459
British North America	1,110,298	2,851,100
Other Countries	324,145	1,034,292
Total	4,111,263	9,010,200
Staves (all sizes)	132,309	572,657
Mahogany (tons)	47,763	472,812
Total of Hewn and Sawn	5,111,835	15,158,787

Not too Cheap.

Further difficulties in the lumber trade give emphasis to the view recently advanced in these columns, that the present ought to be a good winter for curtailing production. It would really be a good thing for the trade should the weather prophets prove right, and the winter's fall of snow be so light as to discourage heavy slashing in the woods. It is the rarest folly for Canada to waste her timber, cutting more than people abroad will buy, and so pulling down the price. It used to be said of the American cotton crop that a light crop brought as much money into the country as a heavy one, for the simple reason that the price rose with the former and fell with the latter. For instance, four million bales exported at \$50 per bale came to just the same money as five millions at \$40 per bale. Something to the same effect may be said of Canada's annual timber crop. The world outside does not thank us for making our greatest export too cheap.—*Canadian Manufacturer.*

Average Weight of Lumber.

An Indiana hard wood lumber manufacturer gives the average weight of lumber per foot as follows:—Green walnut, 4½ pounds dry, 3½; green poplar, 3½; dry, 2½; green oak, 5; dry 4½; green ash, 4½; dry, 3½; the weight of cherry is the same as walnut, and hickory the same as oak.

GERMAN technical journals recommend the following method for the preservation of wood: The boards are put into a large receptacle and are covered with quick-lime, which is then gradually slaked by a slow addition of water. Wood to be used for mining purposes is kept in the receptacle for about a week until thoroughly saturated, other woods need less time. The wood obtains by this treatment a remarkable solidity without losing anything of its elasticity.

Chips.

It is estimated that 1,000,000 feet of logs, mostly belonging to Snoqualmie loggers, went out to sea in a late froshot. The loss amounted to about \$2,500.

THE Chicago, Milwaukee & St. Paul railroad has used 5,000,000 feet of lumber this season in building snow fences to the extent of 15 miles on its northwestern line.

THE Winnipeg Times says:—The St. Albert Mission authorities will get out 1,000 logs, about 100,000 feet of lumber, from their limit at Egg Lake this winter to be worked up in the Sturgeon mill next summer. Mr. Mijean, of St. Albert, is the contractor.

A LARGE belt was made in Lowell, Mass., this winter. It was of leather, 160 feet in length, 54 inches wide, three ply. It took the backs of 209 hides to make this belt, its weight is over a ton, and the cost over two thousand dollars. The belt was for Pillsbury, of Minneapolis.

THE total packing of salmon on all the rivers on the northwest coast of America in 1882, amounted to 941,187 cases, each of which contained the equivalent of 48 pounds of canned fish, or at least double that amount of fresh fish, equal to about five million individual salmon of ten pounds each.

THE ship Portland, from Quebec to Greenock, laden with lumber, was abandoned by the crew November 16, and became a total wreck. The last seen of the crew was in a boat struggling against a wave toward a point where it seemed impossible to land. No tidings from them had been received up to a late date.

PARTIES at Caribou, Maine, are gathering the cedar bark about the shingle mills and other places and ship it to Massachusetts, where it is manufactured into a coarse paper to be used under carpets to keep away moths and other insects. Here is an idea that may be valuable to owners of cedar in this vicinity.

A LARGE pile of lumber fell in D. J. Carroll's yard, New York city, November 24. One man, Martin Cunningham, was crushed to death instantly, and several injured. Three were taken to the hospital, and may not recover. The pile of lumber was 16 feet square, and the men were running it up 30 feet high.

A FINE tree lately cut for Cade & Elya Brothers, near Frederickville, Mich., which was nearly six feet in diameter at the stump. It was cut into five logs, three 12 feet and two 16 feet long, and contained 8,216 feet of stuff, so good that it was estimated to be worth \$30 a thousand. The total value of the tree, at this rate, was \$245.48.

NEW buildings have recently been erected in Tokenhouse Yard, London, for Messrs. Spiers & Pond as a restaurant, covering altogether an area of 11,800 square feet; all the ornamental woodwork is of American walnut. It is worth recording that Tokenhouse Buildings, which have been erected at a cost of about £80,000, stand on ground left in trust to the Mercers' Company by Lord Mayor Whittington.

THE uses to which paper may be put at some future day cannot be told at present. From the simple writing and printing paper we have slowly ascended to artificial parchment, water pails, bath tubs, boxes, houses, chimneys; and the latest use of paper has been made in St. Petersburg, Russia, in the construction of a paper vessel, 25 feet long and five feet wide. She is driven by steam and the trial trips have proved quite successful. The recent trials made for the purpose of using paper for railroad purposes has led to this experiment.

A specimen of extra quick work in the line of bridge construction was mentioned at a recent meeting of the Engineers' Club of Philadelphia. The following notice was read from the Mexican National of Laredo, Tex.: "On the sixth day of September, the anniversary of the loss of the bridge last year, the Mexican national railroad bridge was carried away by high water. On the 16th of September the first pile was driven for the new structure, which was completed on the 23rd, and trains were running regularly after that date." This is pretty quick work, the erection of a bridge six hundred feet long in seven days.

A MANUFACTURER of logging sleighs and wheels at Grand Rapids, Mich., is of the opinion that large wheels will supersede sleighs for logging purposes. In his business of supplying the means for hauling logs he finds that the demand for sleighs is diminishing as compared with the requirements for wheels. Snow is becoming a precarious surface for locomotion, and summer logging is becoming more in vogue each year.

MR. E. JACK of Fredericton, N. B., leaves for Edinburgh, Scotland, in April to attend the Forestry Exhibition. He goes at the instance of the New Brunswick Land and Lumber Company. The Quebec Chronicle urges the appointment of the Hon. H. G. Joly to represent the interests of Quebec province. The Star backs the Chronicle's nomination. Why not appoint him for the Dominion? So asks the Ottawa Free Press.

THE Clyde Trustees, on account of increase of traffic for several years past, but last year especially, have decided to take steps for the erection of new wharves on north and south sides of the river, two on the north and two on the south (west of Kelvin), the entire length of the whole amounting to about 3,000 lineal yards. There is also to be erected a passenger wharf at Dalmuir. Mr. Deas, engineer to the Clyde Trustees, has furnished all the plans.

THE London Free Press says:—A letter writer is informed that the firm in Quebec which has made the most money this year in wood is one which sends a member to South Africa, who goes from place to place picking up small orders, which have been shipped, so Quebecers say, at prices which have made the business a small bonanza for the firm. Enterprise brings its own reward, always. Quebec would not be the "Sleepy Hollow" if it were its citizens generally more enterprising.

THE application of a spring or suspended weight to shutting a door keeps that shutting noisy. To remedy the evil, two German mechanics have invented a pneumatic device, wherein the act of opening the door moves a piston away from a suction valve, causing air to be drawn freely through the latter. As the door is closed the piston returns, and the air has to escape, but can only do so by an aperture much finer than that through which it entered; hence a brace-like action on the door.

THE following number are a fair illustration of the progress of our plant knowledge: Hippocrates described 234 species; Theophrastus followed with 500; Pliny knew 800. Tournefort, at the beginning of the last century, described 10,146. Many of these were bad species and as such rejected, so that at the death of Linnaeus 7,294 were accepted. De Caudolle made in his "Theory of elementary botany," 30,000 species. Lindley, in 1853, gave the number as 92,920. Now nearly 150,000 species are known, with possibly an equal number not yet known.

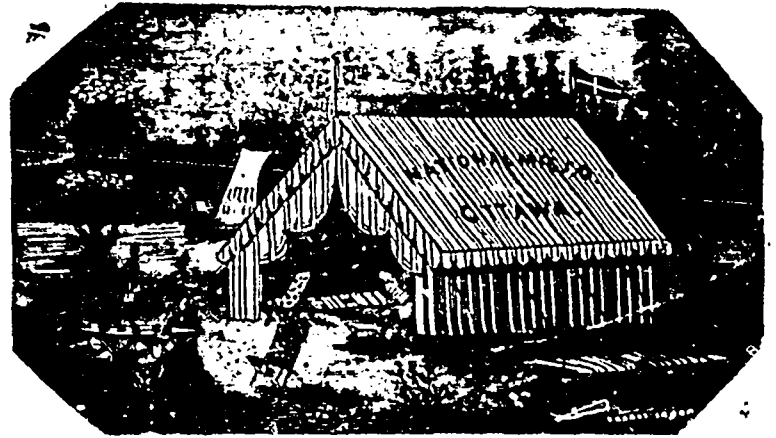
THE Lumberman's Gazette says:—The forest product of the United States exceeds in value annually any other single crop. The annual yield in raw material—such as lumber, fuel, bark, etc.—at a low average, reaches fully \$800,000,000 in value. In view of this enormous source of wealth, and the necessity of preserving and perpetuating it as far as may be possible, it is the duty of the general and state governments to use all the means in their power to preserve our forests, and prevent the useless waste and destruction of timber, especially on the public lands.

THE Copland system of asphaltic wood pavement, introduced in London, is claimed to meet some of the most important requirements for the purpose which have hitherto been unfulfilled and, though more costly at first than some other methods of roadway construction, its durability and satisfactory wear more than meet that point. The advantage of simplicity is at once presented, namely, a bed of concrete, with a layer of asphalt over it, upon which are laid transverse courses of red pine blocks, with intermediate spaces; those spaces are filled in partly with heated mastic asphalt, and then with coarse lime and gravel grout flushed with hot air, to the surface of the roadway. Finally, about an inch of rough gravel is spread over the whole, and left to be worked in and compacted by the ordinary effect of traffic.

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Market Reports.

TORONTO.

From Our Own Correspondent.

JAN. 9.—Trade is decidedly flat here, the holiday season combined with the severe weather have completely flattened out all building operations for the present, and it is doubtful if there will be much alteration before the opening of spring.

Table listing lumber prices in Toronto, including items like Mill cull boards, Shipping cull boards, Scantling and joist, etc.

MONTREAL.

From Our Own Correspondent.

JAN. 9.—Since last report we have had steady cold weather with plenty of snow for work in the woods. Some of the manufacturers still claim that there will be a much smaller quantity of logs turned out this year, and that the probability is that prices will stiffen a little by and by.

Table listing lumber prices in Montreal, including items like Pine, 1st quality, Pine, shipping culls, etc.

CORDWOOD.

There has been a fair steady demand for wood during the past two weeks at firm prices, which are likely to advance, as the Canada Pacific Railway have raised the rates of freight for wood from \$11 to \$15 per car load.

still quote prices from the wharves ex cartago as follows: Long Maple... Short... Long Birch... Long Beech... Tamarack...

WINNIPEG.

The Winnipeg Commercial of Jan. 1, says: There is very little doing and not likely to be much till towards spring. Quotations are as follows:—Pine lumber, 1st, common boards, dressed, \$26.50; 2nd, dressed, \$25.50; 1st, do rough, \$26.50; 2nd, do., \$25.50; sheathing, rough, \$25; timber, 16 feet and under, \$24; do. over 16 feet, for each additional 2 feet, \$1; dimension and joists 16 feet and under, \$24; do. over 16 feet for each \$1; fencing, \$25; 2 and 3 inch battens, \$30; A. stock boards, all widths, \$50; B. do., \$45; C. do., \$40; D. do., \$35; 1st clear, 1, 1 1/2, 2 in, \$60; 2nd do., \$56; window and door casings, \$50; base boards, dressed, \$50; 1st pine flooring, siding and ceiling \$40; 2nd do \$35; 3rd do., \$30; 1/2 inch split siding, dressed, \$30. Spruce lumber—timber 16 feet and under, \$22; do. over 16 feet, for each additional 2 feet, \$1; dimensions and joists, 16 feet and under, \$23; do. over 16 feet, for each additional 2 feet, \$1; boards, 2 1/2; 1st flooring, siding and ceiling, \$38; XX shingles, \$5.25; Star A shingles, \$3.25; X shingles, \$5.00; A do. \$4.50; lath \$4.50.

ALBANY.

Table listing lumber prices in Albany, including items like Pine, clear, Pine, fourths, Pine, select, etc.

BOSTON.

Cotton, Wool and Iron of Jan. 5, says:—The general market is seasonably quiet, and the recent snows have put a damper upon outside operations. Pine lumber is quiet and steady, with a moderate demand, and with dry uppers scarce and commanding a fair price. Clapboards are in good request. Hemlock boards are pretty steady, and spruce is well sustained. Southern pine continues low and dull, with a small call. Hardwoods are quiet, but not particularly changed.

CANADA PINE.

Table listing prices for Canada Pine, including items like Selects, Dressed, Shelving, Dressed, etc.

BUFFALO.

Table listing prices for Buffalo, including items like Uppers, Common, Culls.

CHICAGO.

The Northwestern Lumberman says:—Business is in about the same condition as that of last week. The outward movement is at a minimum. There is no expectation of any increase until after New Year's. Many are closing up the year's business and taking account of stock. The weather lately has been very much all sorts,

and unfavorable to doing anything in town or county. Christmas has broken up the week, and altogether affairs are as near a standstill as they could be and move at all. The side-tracks in the yards were never more bare of cars. A few yards report considerable shipping; one claiming to send out 25 car loads some days. One house reports a December business of 3,000,000 feet; another of 2,500,000. It will thus be seen that lumber still "do move," in spite of the average dullness.

TONAWANDA.

Table listing prices for TONAWANDA, including items like Three uppers, Common, Culls.

LONDON.

The Timber Trades Journal Dec. 22nd, says: The absence of any public sales of timber will be felt as a relief, just now especially, and the interval may greatly assist prices—it certainly can do them no harm. The holidays can be no obstacle to the market prevailing, although any lull in the activity of the dock deliveries will make the stocks all the more formidable when their comparative proportions are finally made up. But the reaction is sure to come, and the consumption be all the more rapid from the interruption. The winter so far has been an open one, and we apprehend that all the ships chartered a month ago have completed their voyages, and there is not much likelihood of stocks sold, at least in considerable quantities, wintering over at the place of shipment.

Don'tless all have been equally fortunate in selling out, but the expected low freights at the close of the shipping season greatly stimulated the demand, and gave those who had been holding through the summer another chance of meeting the market, of which it seems they were not slow to avail themselves. The small difference that now exists between the dock stocks of the present and past years, and which will probably be still further lessened ere the final summary is made, can be attributed almost entirely to the opportunity the cheap freights presented of sending goods forward at favorable terms. With the normal rate of freight ruling for the fall, probably the difference between the 1883 and 1882 stocks in the docks here would have been several million pieces in favor of the latter on deals alone, while the augmentation to the flooring stocks, which has turned the scale against those of 1882, is also due to a cheap rate of tonnage.

GLASGOW.

The Timber Trades Journal of Dec. 22 says: The imports of wood goods to Clyde during the past week have been about 8,000 loads, and comprise four cargoes of Quebec timber at Greenock.

There have been no public sales to record, which might be expected at this season, and especially as the result of recent auctions, showed there was little business to be done meantime.

There has been a larger import than usual, both of logs and deals, to the Clyde the year, and stocks on hand to be made up in a week or two will, it is expected, be comparatively heavy. The increase this year consists principally of Quebec pine.

The import of yellow and red pine logs to the end of last month was about 61,000 logs, as compared with 39,000 in 1882 (corresponding period) and 51,000 in 1881; of oak, elm, and birch this year, 16,000; 1882, 13,000; and 1881, 19,000 logs.

The number of deals imported this year from Quebec and lower ports showed a marked increase over the two previous years, but is under the import of 1880. The importation of pitch pine has been comparatively moderate, being represented by a carrying tonnage of about 35,000 tons to the end of November, which is considerably under the two preceding years.

NORWAY.

CHRISTIANA, Dec. 15th. 1883.—We have had an extraordinary mild autumn this year, with a great deal of rain. The fields have kept green, flowers have bloomed in the gardens as late as November 29th, and I have even seen a report in one of our newspapers to the effect that a strawberry plant in full bloom, and with one

berry nearly ripe, had been sent to the editor in the first week of December. However, this month commenced with frost, the thermometer showing on one or two occasions as much as 10 deg. Celsius below zero. This lasted for about a week, when mild weather again followed, with falls of snow and rain alternately. It is fortunate for the "driver" in the forests, when there happens to be a good frost before any fall of snow, because the marshes in that case more easily become passable than when a layer of snow (being a non-conductor) necessitates a severe cold to have the desired effect. In some parts it appears that the wished-for result took place, without having again been lost by the recurrence of milder weather, but it can hardly be said to be the case generally.

As the hay crops have been plentiful, both this year and the preceding one, horses for the transporting of wood are likely to be available on moderate terms, and I believe the case is similar as regards labourers for the forest work. Consequently the "driving" will be cheap, provided frost and snow are not going to strike. Another reason why cheapness is likely to prevail is this, that it is pretty certain that the number of logs will not be large, the cutting having begun very late.

If the production of this country had any serious influence upon the general wood market, it would be easy and safe to predict an improvement in prices for next year. Unfortunately it is not the case, but we must hope that our Swedish brethren will not again overload the market with an abundance of stuff next year; it is mainly on their own moderation in that respect that the earnest future of the wood market depends generally speaking.

The persual of the wood market reports from England for the month of November has not been cheering to the hearts of our shippers. Prices for floorings in the London auctions have been going from bad to worse, and stocks of planed wood are larger than the heavy ones last year, both in London and in Liverpool. It is not unlikely, under these circumstances, that our manufacturers of floorings and matchings will endeavor to decrease their production regularly, until more favourable times may return. This seems a better plan than to go on doing a large business with no profit, but perhaps at a loss occasionally. If we examine the results of the London public sales, during the present year, of Norwegian wood goods, it is impossible to repudiate the fact that there must have been losses on the same to a considerable extent, sustained either by importers, if the goods were sold beforehand, or by shippers, if they were consigned. I make out the average prices realized during the summer and autumn to be for floorings: 1st red, about £9 10s.; 2nd red, about £8 10s.; 1st white, about £8 7s.; 2nd white, about £7 17s.

As regards prices of Norwegian battens, those realized in the auctions have been ridiculously low, from £3 5s. to £6 per standard, and only in a few cases up to about £7 for 2 x 4 red.

Until quite recently sales of seasoned battens have been effected on the spot at fairly good prices, viz., about £5 15s. for red, £5 to £5 5s. for white 2nds and 3rd, with 4ths at about £1 reduction. These prices are delivered on railway trucks at Christiania, and the Fredrikstad and Dramman mills have to pay freights and charges in addition, I fancy, however, that it is now difficult or probably impossible to place battens at those rates, at the same time as some holders ask even a good deal more.

I have not heard of any sales of floorings for next year, and only of a very few cargoes of spars and poles having been placed at barely last year's prices.—Timber Trades Journal.

RAILROAD TIES.

"The railroads of this country," said an official of one of the trunk lines running out of New York, "pay nearly \$5,000,000 a year for cross-ties. The timber used is oak and chestnut in the East, and oak, cherry, locust, maple, and ash in the West and South. The best ties are made of white oak. More than 225,000 acres of forest are needed to supply these ties every year, and consequently the necessities of railroads in this one item alone form a considerable item in the destruction of our forests. The country along the line of our road alone annu-

ally supplies us with hundreds of thousands of oak and chestnut ties, and thus far we have not been compelled to go out of our own district for our supply. One county in Pennsylvania alone (Pike) furnishes a large proportion of our ties, and has for many years. There is not a station in that county that is not a supplying depot for ties. I have often wondered where they all come from, for the contractors who operate in that county, after more than 24 years' chopping and heaving in her forests, never hesitate to contract for the delivery of as many ties as are called for. They are brought in as far as twelve miles from the railroad. Besides the large number that we annually receive, there is a railroad on the other side of the county which also depends on Pike county for a large share of its ties. For more than 20 years also, up to the time that we adopted coal instead of wood as fuel, Pike county furnished the road with many thousands of cord wood every year—oak, chestnut, pine, beech, birch, maple and hickory. Besides these drafts on her woods, the county's best young chestnut trees have been cut for more than 30 years to help us in renewing our telegraph poles.

"Railroad ties need renewing every three years. In building a new road the estimate is 2,700 ties for the mile. It is safe to say that it will require 300 ties a year to keep a mile of road in repair. From 12,000,000 to 1,000,000 new ties are required by the railroads every year. In building the great Western railroads, the contractors, in many cases, purchase outright the timber along the route, or as near to it as possible. In that case they pay \$20 to \$25 an acre. Otherwise they pay from ten cents to twelve cents a piece to the owner of the land for the ties taken out. The average price paid to the tie contractor is 35 cents a piece, although we have paid 45 cents and even 50 cents for the best oak ties. We prefer hewn ones to sawed ones, and use no others, but many railroad men do not believe in the theory that they are any better. It may be only a superstition that the former last longer than the latter, but, if it is, it is so strong with us that we insist on having hewn ties. Of late years we have taken a great many hemlock ties, experiments proving that they can be used to advantage in many instances, on sidings and on tracks where the traffic does not require constant repairs."

TREES OF MADAGASCAR.

The soil of Madagascar is very fertile and produces rice, manok, sugar cane, pepper, cotton, indigo, tobacco, as well as a number of medicinal herbs. A chain of high mountains divides the country into several well-watered valleys. The most beautiful feature in the island is the imposing forests, which extend over a distance of 9,000 miles and contain fine and valuable trees, covered with rare climbers and orchids. Among the trees are found pandanus, acacia, sago and the coconut, but above all the ravinda (*Urania speciosa*), which of itself forms large forests. The Rev. W. Ellis says of this tree: "It springs up with a thick, juicy stem similar to the banana (*Musa sapientum*); in the centre of it are broad leaves which resemble the banana, but are less brittle. The leaves surround the stem in rows on opposite sides, and by increasing and leaning over those underneath the tree assumes the shape of a large open fan. I have counted on more than one occasion 20 to 25 leaves on one tree. The stock of the leaves is from six to eight feet long, while the broad leaf itself is from four to six feet long. The bright green leaves, extending themselves like a fan, form the most beautiful plant that can be imagined." But it is not only for its beauty that the tree is remarkable. It is used for many purposes in the same way as the palm tree in the Arabian desert; but one of its most important properties is that during the dry season it contains a large quantity of fresh and pure water, and is thus a refreshing spring for the thirsty traveller. The reservoir is situated at the base of the stock of each leaf, and upon being opened a stream of cool and sweet water appears. The natives use the leaves of the tree to cover the houses, and the bark for flooring. At most of the markets there are sold articles made from these leaves, comprising plates, dishes, tablecloths, napkins, etc., an

even spoons and tumblers, but for these last articles the leaves are specially moulded.—*India Mercury*.

A Nice Piece of Wood.

The widest piece of lumber that ever came into Chicago was recently received at the Lumberman's exchange. It is of California red wood, fifty-two inches wide, three inches thick, and fourteen feet long.

Forestry in the Disputed Territory.

A Winnipeg correspondent says:—When the Privy Council awards the disputed territory to our province or the other, among the earliest measures to be considered should be a way of enforcing forestry laws in north-western Ontario south-eastern Manitoba—which ever it may prove to be. The country is to a great extent so rocky that should the timber be once cleared away from its surface it will never grow again. No better chance for putting into practice the advice contained in Mr. Phipps' excellent pamphlet could be found. The saw mills returns for Manitoba and Keewatin, up to October 31st of last year, show some 30 huge mills in operation throughout the province and Keewatin during the year. The returns show 25,465,841 feet B. M. of lumber manufactured during the year, 6,442,182 feet of shingles, and of lath 2,251,100 feet. Gratifying as the returns are in themselves, there is no doubt that the country is being shorn of its timber indiscriminately, and will soon be deforested unless the milling operations are controlled. The country is at that stage when a law preserving alternate strips of forest, or presenting some limits to timber slaughter could effect what never can be accomplished when once the wood is gone.

Forests Reproduced.

Attention has lately been called to the fact that the numerous small prairies that were common in the Wabash basin at the time of its first settlement have become transformed into woodlands, and that owing to this gradual change of prairie to forest, the actual forest area of some of the counties of southern Illinois is greater at present than fifty years ago. Extensive woods of oak and hickory more than eighty feet in height, and with trunks of nearly two feet in diameter, are now growing on what was open prairie within the memory of some of the present owners of land. This is interesting as a slight indication of the solution of the mystery which involves the origin of the prairies, while the rapidity with which these new woods have sprung up shows that the reproduction of our failing forests can be accomplished in a shorter time than is generally supposed, if proper consideration and attention can only be given to the subject.—*Lumber World*.

New Michigan Logging Railroad.

The Ludington, Mich., *Appeal* says that Butters & Peters' new logging railroad, lately completed, is doing excellent work. The road begins near the Crystal Valley postoffice, in Oceana county, and runs in a northeasterly direction to the south branch of Pere Marquette river, the whole distance being through an almost solid body of pine. For several miles the road runs through pine owned by T. R. Lyon, the right of way having been given provided the projectors of the road banked free of cost such timber as it was necessary to fell in order to construct the road bed. The banking ground of the road, on the south branch, is on a high bank, along which the rails are laid, so that it is only necessary to roll the logs from the cars, when they go pushing into the stream without trouble.

Manitoban Railways.

The following contract from the Winnipeg *Commercial* shows that Manitoba is not badly off for railways for a new country.—There are now 935 miles of railroad in operation within the borders of the Province of Manitoba. During the past season the Selkirk branch, 25 miles in length, has been completed and is now in operation; the O.P.R. Southwestern has been completed to Manitou, and a loop line constructed from Buffalo junction to Emerson, a distance of fourteen miles. The Manitoba and North Western Railway has been completed and is now in operation from Portage la Prairie

JONES & SON, Wholesale Lumber & Timber Dealers 39 Broadway, NEW YORK.

Oak, Ash, Cherry, Black Walnut, Poplar, Butternut

And all other Kinds of HARDWOOD LUMBER.

White and Yellow Pine Lumber and Timber.
Oak Ship Plank and Timber. Pine Deck Plank and
Ship Stock Generally.

J. S. MAYO

IMPORTER AND MANUFACTURER OF

MACHINE OILS

OF EVERY DESCRIPTION.

9 Common Street, Montreal.

AMERICAN LUBRICATING OILS A SPECIALTY.

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

1912

to, a distance of ninety-eight miles. About fifty miles of the Souris Rocky Mountain Railway between Melbourne and Rapid City have also been graded.

It has been estimated by lumbermen who have been on the upper Mississippi that not over two-thirds as many logs will be cut this year as last.

INDICATIONS from Wisconsin point strongly to the fact that there will be no reduction in the the lumber cut in that state. In fact many of the heavy lumber firms there will greatly exceed their former output.

Spider Life Wonders.

In a lecture in the Lowell Institute Professor Wood dealt with the phenomena of spider life. The female is larger and much fiercer than the male, who while paying his addresses is in constant peril, frequently losing some of his legs. In one tribe the female is 1,300 times as large as the male. The spider's thread is made up of innumerable small threads or fibers, one of these being estimated to be one two-millionth of a hair in thickness. Three kinds of thread are spun: One of great strength for the radiating or spoke lines of the web. The cross lines, or what a sailor might call the ratlines, are finer and are tenacious, that is, they have put upon them little specks or globules of a very sticky gum. These specks are put on with even interspaces. They are set quite thickly along the line, and are what, in the first instance, catch and hold the legs or wings of the fly. Once caught in this fashion the prey is held secure

by threads flung over it somewhat in the manner of a lasso. The third kind of silk is that which the spider throws out in a web which it suddenly envelops any prey of which it is somewhat afraid, as, for an example, a wasp. A scientific experimenter once drew out from the body of a single spider 3,480 yards of thread or spider silk—a length a little short of three miles. Silk may be woven of spider's thread, and it is more brilliant and glossy than that of the silk-worm, being of a golden color. An enthusiastic entomologist secured enough of it for the weaving of a suit of clothes for Louis XIV.

Twenty Labourers Run Down by a Train.

BRINTON, Pa., Jan. 10.—Fifteen or twenty men employed in clearing the snow from the railroad track were at work about seven o'clock last evening, in a cut just east of here, when an accommodation train rounded the bend. Before the men could get out they were run down by the train. It backed up, and the dead and dying were soon scattered along the track for fifty yards. The bodies of two men were found badly mangled, with life already extinct. Five others were badly injured and one has since died. After the accident the men crawled out of the snow in all directions. It is feared the bodies of others may be discovered. The accident was caused by the failure of the men to have a look-out to warn them of the approach of trains. It was dark, and locomotives near by with steam escaping made it impossible to hear the coming train.

A PRIZE Send six cents for postage, and receive free, a costly box of goods which will help you to more money right away than anything else in this world. All of either sex, from first hour. The broad road to fortune opens before the workers, absolutely sure. Address Taux & Co., Augusta, Maine.

The William Hamilton Manufacturing Co'y

MANUFACTURERS OF

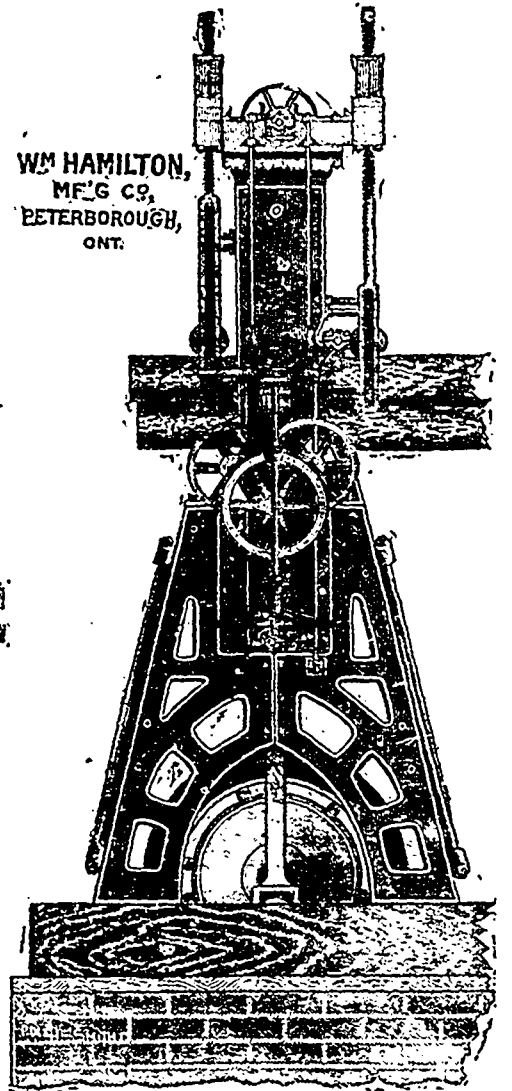
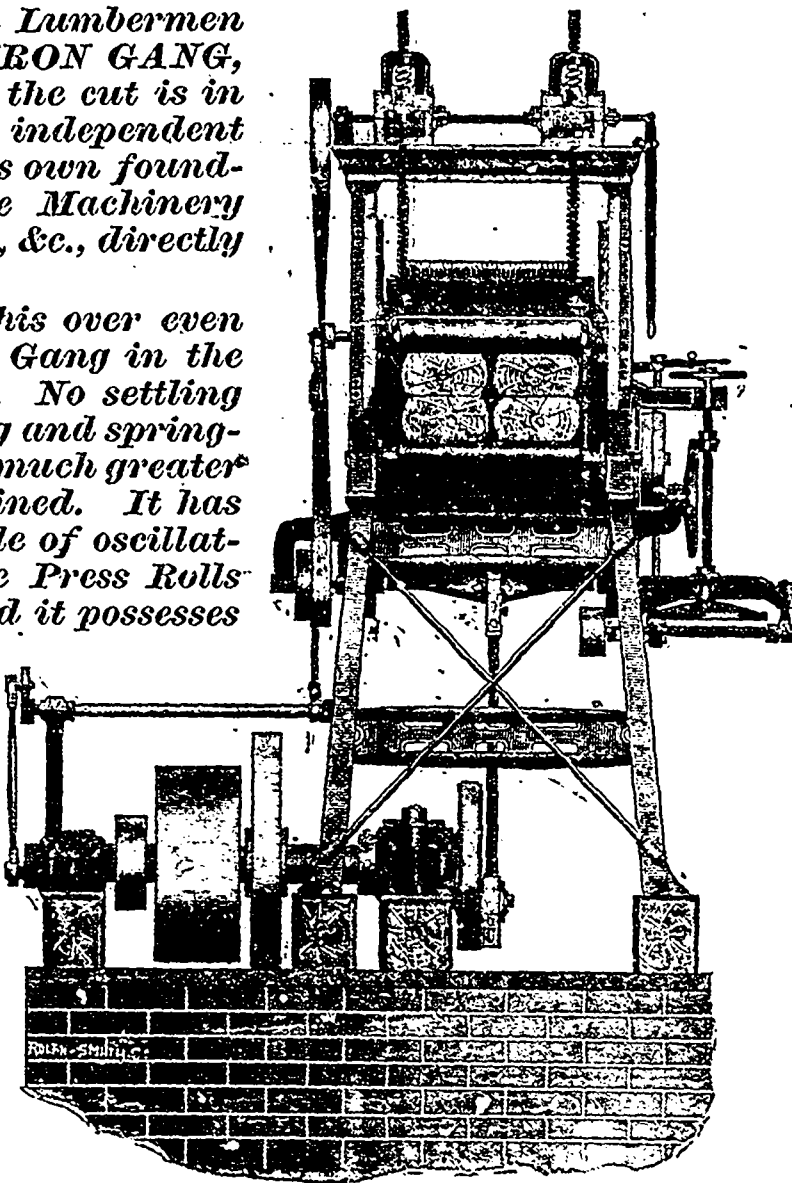
(LIMITED)

Saw Mills and General Machinery

PETERBOROUGH, - - - ONTARIO.

We introduce to the Lumbermen of Canada our New IRON GANG, which will be seen by the cut is in itself a complete and independent Machine, resting on its own foundations, having all the Machinery for operating, feeding, &c., directly attached.

The advantage of this over even a well built ordinary Gang in the mill frame is evident. No settling out of line, no yielding and springing of timber, while a much greater working speed is obtained. It has the most improved style of oscillating motion, it has the Press Rolls operated by power, and it possesses generally all the good features of best American Gangs, with heavier frame work and heavier shafting, all with a view to rapid, steady & correct working. A good look at one of these massive machines satisfies the sawmill man that they are in every way capable of continuously performing heavy duty throughout the season.

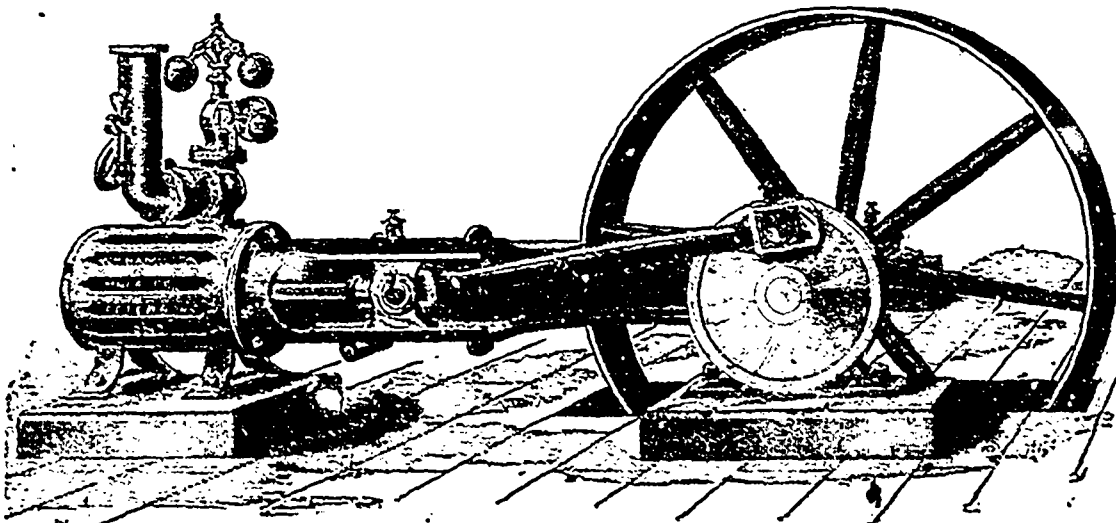


WM HAMILTON,
MFG CO,
PETERBOROUGH,
ONT.

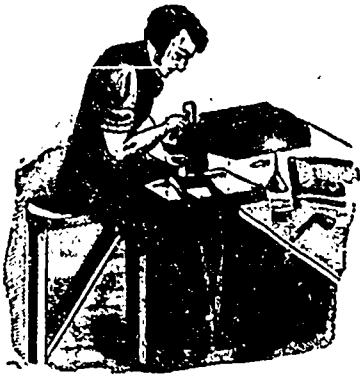
We make these Gangs one of our specialties and manufacture them of different sizes.

—ALSO—

ENGINES AND BOILERS.



This cut represents our SAW MILL ENGINE, of which we make the following our Standard sizes, 12x16, 16x20, 18x24, and 24x30, built Strong and Substantial for Heavy Work. The Piston Rod, Cross-head Pin, and Wrist Pin, are made heavy and of the best steel; the Connecting Rod has solid ends and is tightened up by screw and wedge, avoiding all danger of keys getting out; the Slide Valve has a simple balance valve, requiring no attention from the Engineer, as it is self-adjusting. The Engine Shaft and Fly Wheel made very heavy. Belt Pulleys put on when required in place of Fly Wheel, and all regulated by the Judson Governor.



THOS. GRAHAM & Co.,
File Manufacturers
 ETC.,
 150 FRONT STREET EAST
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FILES FOR SALE. FILES RE-CUT

F. E. DIXON & CO.

MANUFACTURERS OF

STAR RIVET
LEATHER BELTING

70 King Street East, Toronto.

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

EAGLE FOUNDRY!

GEORGE BRUSH

14 to 34 King and Queen Sts, MONTREAL,

MAKER OF

Steam Engines, Steam Boilers, Hoisting Engines, Steam Pumps,
 CIRCULAR SAW MILLS, BARK MILLS, SHINGLE MILLS,
 Water Wheels, Mill Gearing, Shafting, Hangers and Pullies,
 Hand and Power Hoists for Warehouses &c., &c.

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

AND AGENT FOR 11621

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

EXTRA HEAVY AMERICAN

Oak Tanned Leather Belting.

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

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

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

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

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO.

T. MCILROY JR.

WAREHOUSE:—10 and 12 King Street East,
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MONTREAL AXE WORKS

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St. Gabriel Locks, - Montreal,

—MANUFACTURERS OF—

AXES and EDGE TOOLS

OF EVERY DESCRIPTION.

Old and Reliable, the Best Axes made in Canada.

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Established 1874.

Established 1874.

NORMAN'S ELECTRO CURATIVE APPLIANCES

RELIEVE AND CURE

Spinal Complaints, General and Nervous Debility, Nervousness, Rheumatism, Gout, Liver, Kidney, Lung, Throat and Chest Complaints, Neuralgia, Bronchitis, Incipient Paralysis, Asthma, Sciatica, Sprains, Consumption, Sleeplessness, Colds and Indigestion.

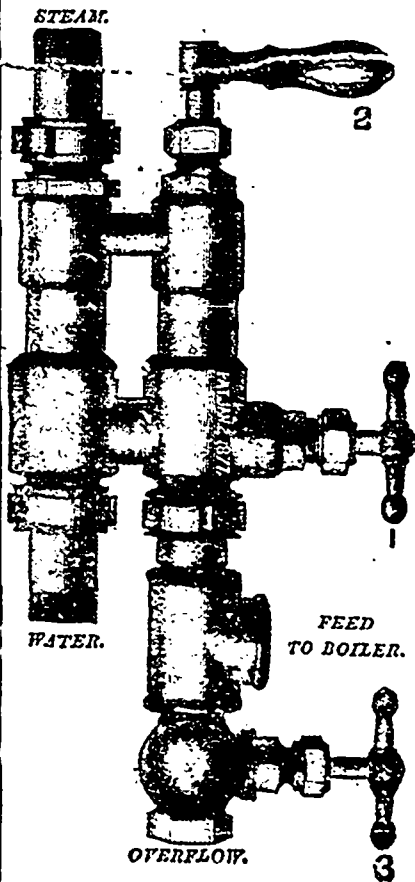
Ask for NORMAN'S ELECTRIC BELTS and you will be safe against imposition, for they will do their work well and are cheap at any price.

A. NORMAN, ESQ.—Dear Sir,—Please send me a waist belt. Enclosed find price. Head band I got for my wife has almost cured her of neuralgia. Yours truly,
 C. L. TILLEY, WATERVILLE, N.B.

Numerous of such testimonials can be seen at my office, proving that they are doing a good work and worthy the attention of all sufferers. Circulars free. No charge for consultation.

A. NORMAN, 4 Queen Street East, Toronto.

NORMAN'S ELECTRO CURATIVE TRUSS is the best in the world. Guaranteed to hold and be comfortable. Circular free. N.B.—Trusses for Rupture, heat in America, and Electric Batteries always on hand at reasonable prices.



THE

Hancock Inspirator

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

THE INJECTOR PERFECTED!

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

Over 50,000 Now in Use.

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Hancock Inspirator Co'y

5 CUSTOM HOUSE SQUARE,
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Manufacturers of Inspirators, Injectors, and General Jet Apparatus.

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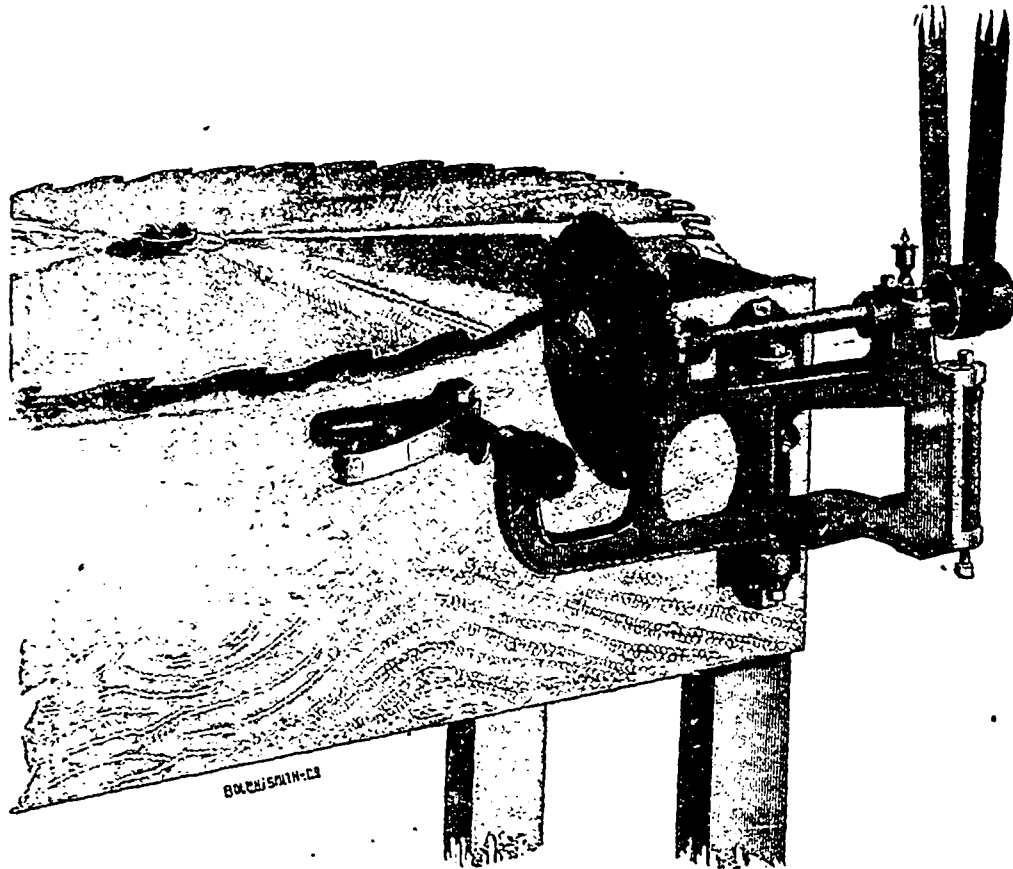
ROGERS' PATENT SAW GUMMER and SHARPENER

The Handiest Machine for these purposes ever Invented.

Don't Heat!

Cheap!

Very Simple!



Accurate!

Works Fast!

Complete!

Lumbering Season, 1884

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

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

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

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

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

ROBT. P. WEIR, Orillia, writes :—
"It works like a charm, and is very accurate in its work."

CRONE & PATTON, Hoc Roc Mills, Gravenhurst, says :
"The Rogers' Saw Gummer purchased from you gives good satisfaction, * * it cannot be beat."

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

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

ADDRESS ALL ORDERS TO THE

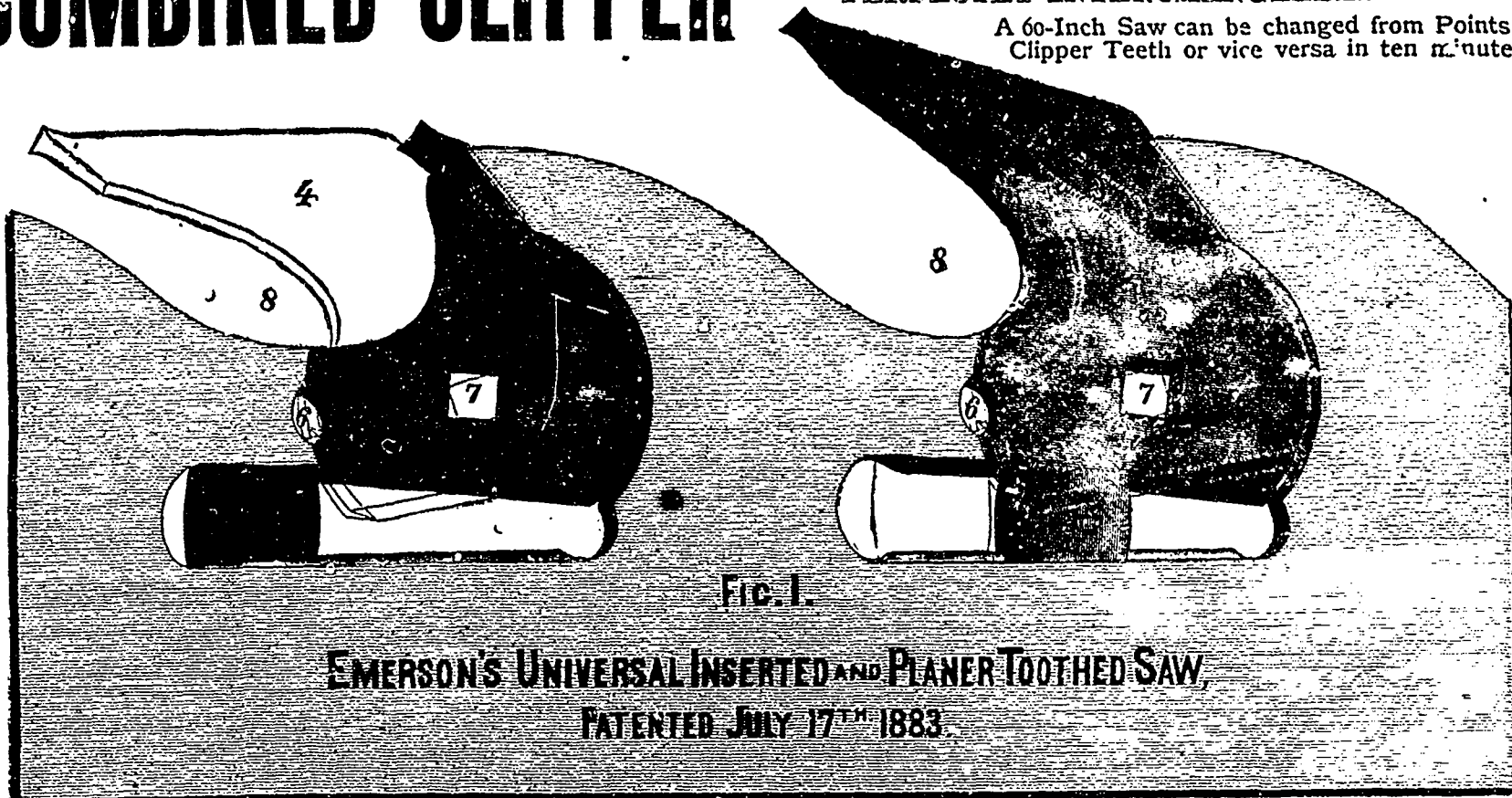
Hart Emery Wheel Company, Limited - Hamilton, Ont.

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

COMBINED CLIPPER AND PLANER TOOTH SAWS

PERFECTLY INTERCHANGEABLE.

A 60-Inch Saw can be changed from Points to Clipper Teeth or vice versa in ten minutes.



EMERSON'S UNIVERSAL INSERTED AND PLANER TOOTHED SAW,
 PATENTED JULY 17TH 1883.

Fig. 1 represents an *Exact Full Size* section of a 60-inch Circular Saw with 46 teeth four inches apart.
 2, 2 are the mouth-pieces for holding the Planer Teeth, one being represented in dotted lines over the Inserted Tooth.
 3, 3 shows the Planer Teeth, one of them being in position.
 4, 4 shows the Inserted Teeth, one in position and the other in dotted lines the position that the tooth will be in when it is being inserted into the socket.
 5, 5 shows the Wedges; one forced up into position for holding the Tooth or Mouth-piece; the other one is represented back in the recess as it will be when the Mouth-pieces or the Teeth are being inserted.

Fig. 6, 6 show recesses cut one-half through the Saw and the other half through the Tooth or Mouth-piece for the upper portion of the front end to pass through when inserting them in the Saw.
 7, 7 show square holes through the Mouth-pieces and teeth made to admit a Steel Lug attached to a Tapering Key for removing and replacing them.
 8, 8 show the full size of Dust Chamber when as an Inserted Tooth or a Planer Saw.
 It will be seen that the Dust Chamber in this Saw contains more space than any other Saw of equal size and number of Teeth, Solid Saws not excepted.

EMERSON'S NEW PATENT UNIVERSAL SAW.

Being adapted for both heavy and light feed for all climates, in both hard and soft timber (for our largest saws, teeth are inserted as close as 4 inches from point to point) possesses more advantages than any other saw in the world. We ask practical sawyers and lumbermen to carefully examine the above illustration and description. You will see there are no rivets to be headed up in fastening teeth, nor to be driven out in removing them. Neither teeth nor mouth pieces can fly out without breaking the saw, so that they are perfectly safe. If you buy an Inserted Toothed Saw of this kind, and at any time you wish to convert it into a Planer Saw, send us a set of worn out teeth, and for 15 cents each, we will make them into a set of mouth pieces for the same saw that they came out of, and for \$17.50 additional we will send you 500 extra bits, and you will have a Planer Saw with no further expense. Twenty-five years in manufacture of Inserted Toothed Saws, and ten years of it in manufacturing our Celebrated Planer Saws, have demonstrated to us that for Frozen Timber, Pitch Pine or Hardwood, our Planer Saw has no equal. And for the softer timber and Heavy Feed, our Clipper Saws have no superior. For fast sawing it has always taken the front rank.

When the Clipper Teeth are in the saw, it will be two inches larger than when the Planer Teeth are in, and the Clipper Teeth will stand more feed than when the Planer Teeth are in it. If you purchase at once a saw with both kinds of teeth and mouth pieces, with 500 extra Saw Bits, you are at once fixed up for a winter and a summer saw, and for both Hard and Soft Wood. A 60 inch Patent Combination Saw can be changed from a Planer to a Clipper and *vice versa* inside of five minutes. In short, it can be changed in less time than any Inserted Tooth Saw in the world. Another and important advantage is, that if you have a sawyer who is experienced with any kind of Inserted Toothed Saw, you can furnish him the saw that he wants. Again, it at any time you are not fortunate in having an experienced sawyer, you can put in the Planer Teeth, and an inexperienced man can go right along with the sawing, and no time will be lost. If you have mixed timber to saw requiring wider or narrower points, (i.e., more or less set in the saw,) you can change in less than five minutes and go right along. If by accident the Clipper teeth get damaged or badly dulled by running into iron or grit you can put in the Planer Teeth and go right along; and the damaged Teeth be put in order at any convenient time.

DAMASCUS TEMPERED THIN SAWS!

*American Manufacture! Solid or Inserted Tooth! 48 Inch Saws, 12 Gauge! 54 Inch Saws, 11 Gauge!
 60 Inch Saws, 10 Gauge! All a Pronounced Success in Hard and Soft Timber!*

PRICES REDUCED

OF DAMASCUS TEMPERED SOLID SAWS

On the 15th of January, 1884.

SEND FOR NEW DISCOUNT.

50 Inch 9 and 10 Gauge Damascus Tempered Solid Saw
 Used on 20 Horse-Power Ohampion Portable Saw Mill, running 400
 Revolutions per Minute.

Waterous Engine Works Co.

My new 10-gauge Saw works splendid; it saves for me (over the 7-gauge Saw) in every standard, 20 feet of lumber, and it runs smoother, cuts cleaner, can be run with one-half the pressure of steam that a 7-gauge requires, and is easier kept in order. I would use no other than 9 and 10-gauge Saws unless the saw is larger than 50 inches, then I would use thicker saws, according to their size. Several mill men have seen my saw run, and they pronounce it the lightest and smoothest running saw they have ever seen. I can save my labor for running the mill with a 10-gauge Saw over the 7-gauge.

SOUTH INDIAN, ONTARIO, December 6 1883.

Yours truly,
 S. F. CHENEY.

Address: Waterous Engine Works Co'y, Brantford, Canada.

AMERICAN SAWS: We represent Four of the Best American Saw Factories

SAVE YOUR TIMBER By using THIN Saws.

VIZ.

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



McLAUGHLIN Bros., Armprior, run two 66-in. Brooke Bit Saws, 800 revolutions per minute on 6 to 10-inch feed.

They use Steam Feed

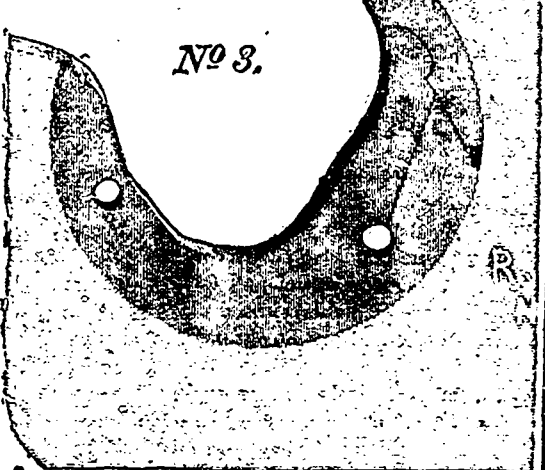
No. 1 TOOTH.

PATS. JUNE 1879

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

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

McLAUGHLIN Bros., Armprior, run two 66-in. Hoe Saws, on 6 to 10-in. feed, 800 revolutions per minute. Write them.



HOE'S PATENT BIT SAWS.

One of the best Bit Saws made, above cut represents usual size. One size larger and smaller made. Send for particulars and prices.

SAVE TIMBER



GROW RICH

EMERSON'S EXTRA THIN SOLID SAWS

Having special facilities for the manufacture of extra thin saws for board mills, we are prepared to receive orders for Circular saws as follows—64 inches in diameter, as thin as 12 gauge at rim and 11 at center, 64 to 66 11 gauge at rim, 10 at center, 60 to 72, 10 at rim, 9 at center. Our unparalleled success with thin saws during past few years has induced us to purchase of them by our customers. Our superior facilities are: 1st, **Evenness of Temper**; 2nd, **Perfect Accuracy in Thickness**; Saw balances perfectly; 3rd, **Properly Hammered**, to have equal strain in all its parts and at same time run true. This department is under the special supervision of J. E. Emerson, who has had 30 years experience and is without doubt the most successful circular saw maker in the world. **NO EXTRA PRICE FOR THIN SAWS.**

EMERSON'S LUMBERMAN'S CLIPPER SAW

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

Extra Teeth 25c. each.



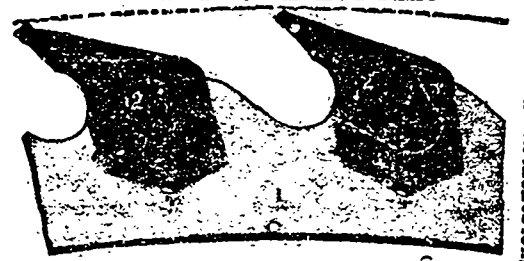
Extra Teeth 25c. each.

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

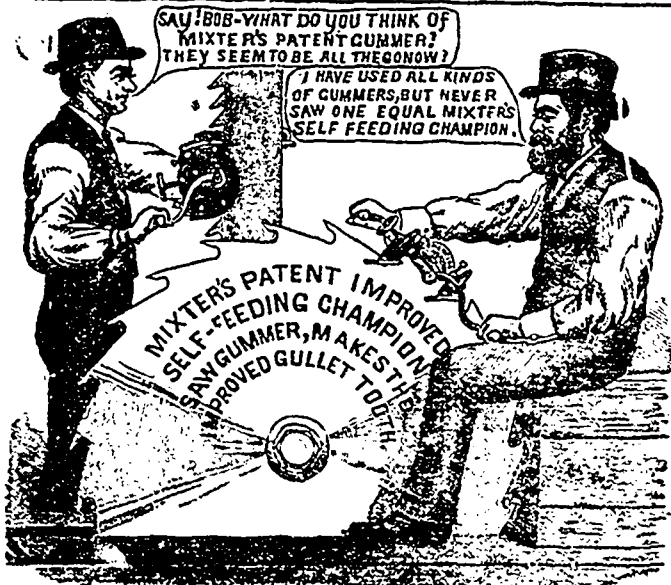
The CLIPPER FLANGE SAW

EXPRESSLY FOR HEAVY FEED.

Extra Teeth 50c each.



Two and a half inches long.



Alligator Jaw Wrenches

52 sizes, grip from 3 to 3 inches, Iron, Solid Steel Jaw. — Price 50c. to \$5.50.



Cut represents No. 1. Larger sizes have Solid Handles.

WE KEEP IN STOCK ALL KINDS OF

Saw Mill Furnishings

SAW GUMMERS: Stone's Original, Large and small size; Mixer's Self-feeding Champion; Emery Wheels and Stands.

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