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WOOD FINISH.

The patented preparations known as wood fillers are prepared in different colors for the purpose of preparing the surface of wood previous to the varnishing. They fill up the pores of the wood, rendering the surface hard and smooth. For polishing mahogany, walnut, etc., the following is recommended: Dissolve bees-wax by heat in spirits of turpentine until the mixture becomes viscid; then apply by a clean cloth, and rub thoroughly with a flannel or cloth. A common mode of polishing mahogany is by rubbing it first with linseed oil, and then holding trimmings or shavings of the same material against the work in the lathe. Glass paper followed by rubbing also gives a good lustre. There are various means of toning or darkening woods for decorative effect. Log-wood, line, brown soft soap, dyed oil, sulphate of iron, nitrate of silver exposed to the sun rays, carbonate of soda, bichromate and permanganate of potash, and other alkaline preparations are used for darkening the wood; the last three are specially recommended. The solution is applied by dissolving one ounce of the alkali in two gills of boiling water, diluted to the required tone. The surface is saturated with a sponge or flannel, and immediately dried with soft rags. The carbonate is used for dark woods. Oil tinged with rose madder may be applied to hard woods like birch and a red oil is prepared from soaked alkanet root in linseed oil. The grain of yellow pine can be brought out by two or three coats of Japan much diluted with turpentine, and afterward oiled and rubbed. To give mahogany the appearance of age, lime water used before oiling is a good plan. In staining wood, the best and most transparent effect obtained by repeated light coats of the same. For oak stain a strong solution of oxalic acid is employed; for mahogany, dilute nitrous acid. A primary coat or a coat of wood fillers is advantageous. For mahogany stains the following are given: 2 oz. of dragons blood dissolved in one quart of rectified spirits of wine, well shaken; or raw sienna in beer, with burnt sienna to give the required tone; for darker stains boil half a pound of madder and 2 oz. of logwood chips in one gallon of water, and brush the decoction while hot over the wood. When dry, paint with a solution of 2 oz. of potash in one quart of water. A solution of permanganate of potash forms a rapid and excellent brown stain.—*Amateur Mechanic (London)*.

THE DULUTH SQUABBLE.

Mr. R. C. Mitchell, the newly appointed receiver of the government land office at Duluth, was arrested by United States Deputy Marshal Brackett, at Duluth, on July 14, charged with fraudulent pre-emption of pine lands in Vermillion lake district of Northern Minnesota. Mr. Mitchell is editor and proprietor of the

Duluth Tribune, and supported the Hon. Knute Nelson, member of Congress elect, in his famous fight with Kindred in the late congressional campaign. A warrant was issued for the arrest of H. L. Gordon, who enjoys the title of "Thundering" Gordon in the upper country, and is alleged to have been a partner with Mitchell in the pre-emption grab. The charges were brought by ex-Gov. Marshall, of Minnesota, special agent of the United States land department, and in the main are to the following purport: It is alleged that H. L. Gordon and R. C. Mitchell did conspire, combine, confederate, and agree together, with A. K. Lovejoy, Frank C. Gordon, G. Blades, W. Peak, W. F. Harley, Walter Gordon, Amos Malder, J. Malder, L. B. Draw, Proctor Morgan, Gus Marden, and nineteen others, to defraud the government of lands in township 68, range 16 west; that arrangements were made by Gordon and Mitchell with the others mentioned, whereby they were to proceed, and did proceed to the township indicated, and to took up lands under form of the pre-emption law. These lands were afterwards turned over to Mitchell and Gordon for a sum of money that had been agreed upon before the pre-emptions were made.

Mr. Mitchell says that he will be able to refute these charges, and prove what he has done in acquiring lands is at least technically legal. He waived examination, and gave bonds in the sum of \$5,000 to appear in the United States district court at Winona, Minn., in October. Gordon could not be found at time Mitchell was arrested.

This legal action against the land grabbers at Duluth caused much excitement in pine land, newspaper and political circles in northern Minnesota. It is the culmination of a fight that has been going on over the receivership of the Duluth land office, and involved the politics of the 5th congressional district. When Knute Nelson was elected to congress, Receiver Spalding had to submit to the decapitating process, while R. C. Mitchell, who had worked hard for Nelson by means of the Duluth Tribune, was appointed in Spalding's place. But Mitchell has not yet received his government commission, and his arrest is said to be a movement to prevent his ever getting it and being confirmed in office. It is alleged by the anti-Mitchell partisans that Gordon and Mitchell failed to pay the men whom they hired as pre-emptors for the service rendered, and that they have openly charged their employers with bad faith.

The Duluth Times has an old score to settle with Mitchell of the Tribune, and the Times takes this opportunity to get even with its adversary. It says that it is known that Mitchell has for years been engaged in fraudulent pre-emptions. He was receiver in the land office when the pine boom first struck the Duluth district, and he had the opportunity to become

familiar with the workings of the office. M. C. Russell succeeded Mitchell, though the latter tried hard to retain the place. He became interested with H. L. Gordon in land-grabbing schemes, and they employed Scandinavians and Finlanders in large numbers to pre-empt lands for them. The Times declares that at one time a representative of that paper counted twenty-seven Finlanders in Gordon's and Mitchell's office all waiting for their pay for pre-emption service. There are charges enough, if they can be proved, to convict Mitchell and Gordon of fraudulently obtaining pine lands, but without a doubt the defendants will appear in court with a formidable array of counter-testimony. Mitchell has a powerful political influence to back him, and great moneyed interests are involved on both sides. It is doubtful if either party in the contest can really afford to have the courts tear off the mask that covers the means whereby pine lands have been acquired in northern Minnesota.—*Northwestern Lumberman*.

ABOUT THE BIG CALIFORNIA TREES.

A correspondent of the Philadelphia Bulletin thus descants upon the size and antiquity of some of the California big trees: "We have seen so many illusions. What we take for little hills a half mile away, we find on walking toward them are mountains twenty miles off—and so we go till the dazed traveller is almost ready to take off his clothes and swim, when really the ditch may be jumped across. So with the big trees. "Not so large after all," several of the party said, but when the tape line showed a fair 100 feet round, there was no use in disputing any longer. Imagine a tree standing in one of your 30 feet streets and going right straight up, so that you could only see down the sidewalks on each side, and it will give a fair idea of the enormous size of these trees. There was no room to doubt the size. Then I took to questioning the height, and here I think there is room to question whether they can claim to be the monarchs of the forests by any great degree. I find no measurements in print of the sugar, yellow or balsam fir of these regions. Prof. Whitney had taken a few of the larger trees by triangulation with an instrument. There are about 600 of these monsters, besides innumerable younger ones coming on, and most of them have been singled out for special names. I took one that had been named after our celebrated college, "Harvard," and, by the same process which gave me the figures already noted for the sugar and yellow pine, I had 249 feet as the height of this tree. I have been on the other side, but am now converted. The age has been computed from the annual rings of wood. But some trees make more than one circle of wood a year. We would not compute the age of a cottonwood by its annual rings—and so we said of

these trees that probably they made more than one circle of wood a year—and so said I. Now all our known conifers make but one circle. Why should this be an exception? Well, we wanted the exception to account for its enormous size, as against its supposed age. Well, I found a comparatively young one which had fallen across the wagon road and had to be sawed across. A fire had just scorched the surface cut across and made the rings easy to count. I first estimated the age by the annual tiers of branches, which, however, are not so easy to count in the giant trees as in the true pines. I was sure by this examination, however, that the tree ought to be less than 200 years old. It had 189 rings and a diameter of four feet. This would give about 1,300 years for the largest trees. Thus, though I am not yet persuaded that these trees were growing when the Saviour was on earth, as some have asserted, an age approaching this must be conceded.

ONTARIO FORESTS.

There are, according to Mr. Phipps, in his lately published report on the preserving and replanting of forests, four elevated plateaux or ridges in Ontario. The first of these is that which is known as the Oak Ridges, about thirty miles north of Toronto, and which passes round to the west, coming at Hamilton close to the lake, then going around the head of it and oying away in the Niagara peninsula. If this height of land had been retained in timber, he thinks the benefit to the Province would have been incalculable. The second watershed is that which extends, with a slight curve to the north, from Kingston to Nipissing. To the east of it all streams flow into the Ottawa; to the west into Lake Ontario. Much of the land is still in the hands of the Government, and it would be well he suggests that large masses of forest were preserved along the whole line. Hundreds of thousands and even millions of acres of it might, indeed, well be left in forest, which would be a reservoir of moisture and ensure fertility to the whole of Eastern Ontario. The third watershed is the height of land of Western Ontario, the locality of the great Canadian swamp. Much of it might be reserved for timber. Its central point is one thousand feet above Lake Ontario, and from its sides rivers run into Georgian Bay and lakes Huron, Erie, and Ontario. The Blue Mountains, at the extreme north of the Ontario peninsula, extending from near Collingwood, past Owen Sound, to the north of promontory between Lake Huron and Georgian Bay, is the fourth Plateau, and, as much of it is still in the Government's hands it could be easily preserved in timber. The forest left standing on these ridges would be much more efficacious as storehouses of moisture than a larger amount scattered through the country.—*Montreal Gazette*.

LUMBERING IN THE ADIRONDAKS.

Much has been said and is being written—says a correspondent of the *Daily Advertiser*, Boston, who contributes the following interesting facts about the lumbering operations of this most romantic section of country—of the desecration of the Adirondack region by the building of railroads, the despoliation of its forests by lumbermen, the pollution of its waters by saw mills and tanneries. If an enterprising man enters within its sacred groves he is immediately assailed, anathematized and spoken of as enemy to man and defrauder of posterity. However pertinent these warnings may be to other regions, they are wholly inapplicable to the Adirondack region, and I believe to most lumber regions, for reasons that are patent to all who can or will study the subject. Like all primeval forests, ours consists of trees of every age and size, from the tiny sapling up to the mature tree that has defied the storms of a century, and its more venerable congeners that are passing down the other slope of the antinatal of life. Some having lived their allotted time, converted all their vital energies, died, and are falling *par passu* to their mother earth, reticulating it with their prostrate forms in every state of decomposition.

At present, the only means of transporting lumber of this region is by floating it, in the round log, down the streams to mills located on one of the railroads that skirt every side of it. None but coniferous trees, pine, spruce and cedar, will float well, therefore none other are cut, and of these none of less than 27 to 30 inches in circumference are marketable. The result is that the lumberman takes, on the average, ten or fifteen of the largest and most mature trees from an acre. When railroads are built through the region, which will be done sooner or later, probably an equal number of deciduous (hard wood) trees will be cut for the market. Even in this case no more trees (and those the maturest) will be cut than a scientific forester would take out, had he no other view than the health, beauty and vigor of those that are left—young trees that are awaiting their turn. Is it not better that those mature trees should be utilized by the present generation of men, than that they should fall and decay uselessly, except to generations of trees that may revel in their elements a hundred or a thousand years hence? When this subject was discussed in the New York Legislature last winter, a trustworthy expert stated that if he could take the whole assembly over the Adirondack region in a balloon, not one in 50 of the members could tell where the lumbermen had cut all the saleable trees and where he had not. He was right. None but an expert, and one, too, that had viewed the premises before the despoliation, could tell; and then by only missing the black tops of the firs. In 10 years these will reappear, and the territory can be profitably lumbered again.

That fire may follow the woodsman's axe is possible, but not so probable, nor are its effects half so deplorable as that of a virgin forest. The conditions favorable to the former are more so for the latter. The largest and most destructive conflagrations have occurred where the green timber was still standing. When a fire is once started in a resinous group it does not wait for dry food, but leaps from conifer to conifer, and from base to top with electric speed, incinerating the living with the dead. That prince of explorers, Baron Nordenskiöld, in his "Voyage of the Vega," in speaking of the pine forests that he discovered on the Veneset, within the Arctic circle, in Northern Siberia, says: "It is of enormous extent, a primeval forest nearly untouched by the axe, but in many places devastated by forest fires." The most thrilling and awful sight I ever witnessed was a grove of terebinthine trees on fire, lighted from a match that had lit my cigar. Almost instantaneously each was a writhing pyramid of flame. It was Shelley, I think, who called the lightning the laughter of the clouds. This seemed like the revelry of the demons, in which the four winds joined and outvoiced the roar of the ocean.

I have said that the logs are all floated down the stream. They go principally to the mills at Potsdam on the Raquette and Glen's Falls on the Hudson. The current and gravity take all

but a small percentage to the latter, in the course of three years, mostly in the first year, while owing to the wide bays, narrow gorges and rocky rapids only a small percentage would ever reach the former without other aid. A drive of about 750,000 logs, all just 13 feet 8 inches long, belonging to half a dozen owners, sufficient to make 50,000,000 of manufactured lumber, passes down the Raquette annually occupying several months. That which passed this place in April has not reached Potsdam yet. The cutting and running of these logs is an industry of some magnitude, the picturesque and novel features will be interesting to those not familiar with the subject. About the time the sun crosses the line in the autumn, gangs varying from 25 to 75 stout men may be seen passing from her genial rays into the shade of the great wilderness, like flocks of hybernating birds and, like birds, they do not reappear into force until the sun has recrossed the line and the vernal season is at hand. They go in with dampers down and in silence, but come out with throttle open, jostling the air with the outpourings of their long pent-up exuberance. When they reach the territory from which they are to cut marketable trees, they build a log shanty, with two communicating apartments, covered with long spars hollowed out trough-like, with the axe, laid side by side, the space between them covered by others inverted and locked into them, making a water-proof, and, when calked on the inner side with moss, a warm roof. One apartment is used by the men, who sleep in berths or bunks built, in tiers of three, against the wall, of saplings fastened with withes, and filled with fragrant boughs for mattresses. These berths are made without the use of nails or tools save the axe. The other apartment is used for a storeroom and kitchen, where the food is cooked and served to the men, which is otherwise considered sacred to the uses of the women cooks, scullions, etc., and their families.

The most approved plan for these logging shanties is one inherited from early civilizations, but better adapted to the wants and health of its occupants than any modern conception. It is oblong, with an aperture some 6x12 feet in the centre of the roof, beneath which, on the earth, a fire fed by logs 8 to 10 feet in length is kept burning night and day, affording a genial heat and perfect ventilation, and around which the men, wet from melting snows and dripping trees, sit, dry their clothes, smoke their pipes, and while away the long evenings, and then turn into the surrounding bunks and sleep, without being assailed with fetid air or unwholesome draughts, there being no other opening for light or air. The men in these camps are very rarely affected by the colds, coughs, sore throats and neuralgic pains that afflict almost constantly men in camps warmed by stoves and lighted by windows.

The most classical, best preserved and most superb specimen of the early style of construction, which these lowly huts follow in a very distant and feeble manner, is the Pantheon, in Rome,—

The shrine of every saint, the temple of all gods,
From Jove to Jesus.

Built 27 years before the birth of the latter, the opening in the dome (which is its only means of admitting light, or air) still bears the marks of sacrificial fires kindled to pagan gods almost 1,000 years ago. But I have wandered far from and far above my subject. Some of the logging camps on the Ottawa in Canada are so distant and inaccessible to wheeled vehicles that supplies for the autumn have to be hauled in on sleds the previous winter. This is rarely done on this side of the St. Lawrence. Late teams begin to run regularly after the moon goes in.

The logs are cut and placed on skidways, ready to be rolled on the sleds, in the autumn and early winter. As soon as there is sufficient snow, teams are sent in with large sleds that will carry from 15 to 20 good sized logs to the load, the roads are broken down and sprinkled with water, until they become, if the weather is favorable, sheets of glare ice. The logs are hauled on the river, where they remain until the ice breaks up in the spring. Every operator has his mark or brand registered in the county clerk's office. The die is cut upon the face of a hammer and indented upon both ends of the logs while they are on the skidways.

They float at random, mixing with other logs, until they reach the assorting booms at the mills of their owners.

A gang of river drivers consists of a boss, a cook, choro boys and 40 to 60 men, who must be young and sinewy, as the work is rough and dangerous. They have to leap from log to log, and sometimes ride one ashore on the crest of a cataract or be carried over it; only experts can ride a log. It consists in balancing one's self on a log, keeping it from rolling and propelling it in the required direction, by a peculiar undulating and rocking movement, without paddle or other implement. Floating logs lodge upon projecting rocks and in narrow gorges, and pile upon one another until they form what are called jams, many feet high and extending back miles. A jam is not usually broken until the rear of the drive approaches, as the water thus held back helps the operation. It is a thrilling and sometimes fearful sight to see these jams broken and see the logs plunging down precipices of one hundred feet in as many rods, leaping, like a flying fish, entirely out of the watery abyss below, into the air, and bury themselves in the white foam of the next fall.

To return to the matter of preserving the sylvan beauties of the Adirondack region. The legislature of New York enacted a law at its last session restraining any further sale of the state lands, and I think I have shown that it is clearly not beneficial to the private owners of timber lands to despoil them, and self interest is a powerful motor in the conduct of men. But there is another, a meteorological reason, why this region is not likely to be shorn of its forests. No considerable area is ever deforested or (in the vernacular) "cleared," unless it is adaptable to agricultural uses. It has been demonstrated that in consequence of the long cold season of the Adirondacks, no land lying more than 1,500 feet above tide-water in that region can be cultivated profitably, or without frequent disaster. Nearly all the wilderness proper lies above this line; its finest and most interesting scenery, all its rock-riven and romantic passes, its affluence of lake and river systems, most of its summer and hygienic resorts, and its chief attractions lie above the line of profitable cultivation of the soil.

A LOST TIMBER SHIP.

Among the shipping casualties of the week, the most conspicuous and worthy of note is that of the abandonment of the Dublin timber ship *Westminster*, in the Atlantic Ocean, some 20 degrees of longitude westward of Cape Clear, on the 12th ult. It appears that the ship was caught in a heavy gale, increasing, it is said, to a hurricane on the 9th, when homeward bound with a cargo of timber from Quebec, and was struck by a heavy sea, which carried away the deck-houses, the boats, and the deckload, and also damaged the rudder, so as to render it useless; while up aloft the sails were blown out of the bolt ropes, after which the vessel became unmanageable, and apparently water-logged, as the crew of 23 hands, under the command of Captain Morris, could find no place to occupy but the poop or the rigging, while the ship wallowed helplessly in the trough of the sea, which washed over her like a half-tide rock.

Five men, it seems, were at the steering gear when the sea first broke on board, and the second mate and several others were severely injured, apparently by the loose timber and wreckage flying about. This state of things continued until Thursday afternoon, and doubtless the sufferings of the men, especially those that were injured, must have been very great, from their want of shelter and being reduced to a biscuit a day and some lime juice, as they could not get at any fresh water or provisions. Fortunately, on Thursday afternoon the steamer *Australian* hove in sight, and her commander, observing the signals of distress flying on board the *Westminster*, bore down to her, and extricated all hands from their perilous and almost desperate condition, and brought them to Liverpool. The published accounts are very meagre, but there does not appear to have been any life lost, nor is mention made of any case likely to prove fatal among the injured men, so that it may be anticipated that all will recover and become again able seamen, whose lives were

worth preserving for themselves and others. Nor is it found that the recollection of pains and perils past has any uncomfortable effect on the future lives and spirits of those who have suffered them if their health was not permanently damaged thereby. Neither are they discouraged from following their usual calling, and facing the same dangers whenever in the way of duty they chance to encounter them. They even obtain a sort of prestige among all their friends and acquaintances as heroes who have passed through a trying ordeal, and have a stirring tale of the sea to tell.

Now the *Westminster* was rather an old timber ship of 1,426 tons register, built at Quebec as long ago as 1867, and belonging to Mr. W. Murphy, of Dublin. But the trouble she fell into does not appear to have had anything to do with her age. There is no mention of her having sprung a leak, and the water that got into her seems to have come from above instead of below. In tearing away the deck houses and cargo, rents would be made through which water bursting in huge masses over the decks would find its way below in tons at a time; and the pumps in such a case would have been useless, even had the crew been able to keep the main deck and work them. Here, therefore, was a case where the worst perils of the sea befell a timber ship, whose only merit was—and an immense one it turned out to be—that in the last extremity water could not sink her. Everything was lost but the lives of those she carried, and, whatever they suffered, they no doubt feel thankful that they are now safe in Liverpool, and that the old timber ship kept them up till succor arrived to redeem them from the jaws of death.

It is so much the fashion to deride wood built ships as something obsolete and out of date, that we are glad of an opportunity to show where they have an advantage over their iron competitors, and when it is a question of saving lives no one is indifferent to the incident.

In the last fatal collision in the Channel between two iron ships belonging to the same company, the *Waitara* was said to have sunk in four minutes after she was struck, and to have carried down with her twenty-six of the people on board, some of whom had not time to get on deck before she filled. A very shocking thought to follow out, which need not be done here, and which could not have happened to those on board the *Westminster*, which saved her people when all else was past saving, and gave them another chance for their lives.

It may be argued that with a Quebec timber cargo on board an iron ship would not sink, but that is very doubtful, and at all events she would be too near total immersion for any one to live on board of her if once the water got the better of her. Also the loss of the *Westminster* may be attributed to her deckload, which of course rendered her deeper in the water and less buoyant than she would have been without it, and it being summer time more would be carried that way, because bad weather is not anticipated to the same extent as in the wild winter months, and long dark nights when more caution in loading is supposed to be exercised. But any way the deckload seems to have disappeared with the first heavy sea that broke on board, and in that way the ship was relieved of her superincumbent weight, and the people on board thereby found means to get at some food to avoid being washed off the wreck. All we profess to show in this brief allusion to the catastrophe of the *Westminster* is that timber ships wood laden are not liable to the same sudden destruction by accidents of the voyage as befall iron ships so often and so fatally if they come into collision with each other or are overpowered by stress of weather at sea.

In conclusion, we need only observe that too much praise can hardly be given to the captain of the steamer *Australian* (whose name by the way was not mentioned in the newspaper reports) for his prompt and efficient assistance in the hour of need to the crew of the *Westminster*. We so often hear of vessels hurrying past others in distress, like the *Levite* in the parable, that when we hear of a Good Samaritan at sea he ought to be made to feel by general acknowledgment that he has deserved well of his country.—*Timber Trades Journal*.

PROGRESS OF PAPER MAKING.

That the great bulk of paper now is not as good as it used to be is, I suppose, universally admitted. One reason is obvious. Far greater quantities are used every year; the best paper is made from linen rag, and there is less linen rag available since the larger wear of calico and woollen goods. Ultimately, of course, paper is now what it always was since first it was made from the fibers of the rush and papyrus. It was at first manipulated in no degree; the outer peel was stripped off the rush and the strips were fastened together. Gradually it was discovered that the vegetable fiber, beaten and disintegrated into pulp, then allowed under certain conditions to settle into a film and dried, was better. But the more the fibers can be disintegrated the better the paper; and no process is so complete as the making it in the first place into another material, and allowing it to be worn and broken, as the completest mode of destroying its stringiness. Every kind of material has been tried, especially those on which St. Paul said it would not do to lay a foundation—"wood, hay, stubble"—the most common being the coarse form of vegetable fiber known as Esparto grass, a species of broom. In Sweden, previous to 1866, a newspaper was printed for some considerable time on a paper made from horse-dung. It is not wholly fanciful that human wear and use has something to do with the excellence of paper, as with all other things of art. Mechanism is fatal to the higher and more spiritual qualities which make art. It has its great uses in cheapening and rendering plenteous much which is valuable and in a limited degree beautiful. But just as a chromo-lithograph is vile compared with an oil painting, just as a photograph of a picture compared with a beautiful print of it, so in exact proportion as in human work and human wear to bear on paper and printing you will have it, of its kind, supremely good, or only tolerable. This brings us to another reason why old paper was better than all but the best to be now procured. It was all hand-made; there was no machinery. The best paper now made, such as Whatman's in England, or the best Dutch, which is all still made by hand, is better, or at least as good, as was ever made since the world was; but the greater part of cheap paper is bad.—*Fortnightly J. view.*

SUICIDAL BUSINESS.

When Norway lumber is sold for \$8.25 per thousand, and the seller has paid \$7 per thousand for the logs, how much money is there in the transaction for the manufacturer? This query is suggested by the report from Alpena of a transaction of that character by O. E. Avery. Such childish business is not confined to Alpena, as we are aware of some of Saginaw river which will compare with it, and yet the "bears" in the lumber trade at many of the distributing centers are wondering why lumber don't come down, and persist in asserting that the manufacturers allow the dealers no chances for profit and are virtually driving them out of the trade. In regard to this Norway lumber foolishness and its influence on the white pine market, we have heretofore expressed ourself, and still maintain that it has been not alone detrimental, but destructive to the standing and demands for the coarser grades. There are many uses to which Norway can be applied, for which it is equally as good as pine, and in fact preferable to the coarser grades, and while men persist in slaughtering the former at ruinous rates, in order to get rid of it, they can only expect the influence of such folly to effect the latter. There has not been a time on the Saginaw river the present season when the finer run of lumber did not find ready sale at good prices, while the coarser grades have been slow to move; and but for the almost unflinching attitude and persistence of the manufacturer, a break would have resulted months ago. This state of affairs is more directly traceable to the Norway lumber folly alluded to above, than to any or all other sources combined. Men who own Norway timber will display vastly more sound judgment by letting it stand than by putting it on the market in the shape of lumber, under present conditions, and owners thereof may rest content that Norway timber will in the not very distant future be excellent property to have, unless the

suicidal policy of the present season is persisted in to its natural, inevitable and logical conclusion.—*Lumberman's Gazette.*

DESTRUCTIVE FIRE.

OTTAWA, Aug. 8.—To-night the citizens on the street about ten o'clock were startled by seeing the sky in the north-east suddenly becoming red and filled with smoke. A few minutes later the alarming sound of the Hull firebells told that the conflagration was on the Quebec side of the river, and going in the direction of the fire Gilmour's extensive steam saw mill, about a mile down the river from Hull, was seen in a mass of flames. The mill is situated on a point between the river and bay to the north, and is surrounded by large pile grounds, where millions of feet of lumber are piled. The fire was first discovered about 9:45, and a few seconds later covered the whole building. The water supply of the mill was at once brought into requisition, as was also the Hull steam fire engine, and the flames kept from spreading to the lumber piles. All attempts to put the fire out were useless, and all efforts were put forth to confine to the building. By 11 o'clock the roof had fallen in, and the fire began to abate, while the piles were still untouched. The mill is the largest in the vicinity and run entirely by steam, and was rebuilt for the second time a few years ago. The value of the mill, machinery, approaches, etc., burned will be in the neighbourhood of \$100,000, and is believed to be covered to a great extent by insurance.

QUEBEC CULLERS' OFFICE.

The following is a comparative statement of Timber, Masts, Bowsprits, Spars, Staves, &c. measured and culled to Aug. 2:—

	1881.	1882.	1883.
Waney White Pine..	999,603	912,719	1,450,020
White Pine.....	2,970,935	3,211,300	1,396,350
Red Pine.....	653,759	561,414	131,191
Oak.....	1,721,613	643,069	999,071
Elm.....	782,845	441,893	242,609
Ash.....	270,420	156,168	147,133
Basswood.....	3,069		1,357
Butternut.....	937	1,060	835
Tamarac.....	6,706	1,859	2,765
Birch & Maple.....	123,850	262,179	136,404
Masts.....	— pcs	33 pcs	— pcs
Spars.....	— pcs	— pcs	— pcs
Std. Staves.....	186.3.0.14	237.3.2.15	360.3.3.0
W. I. Staves.....	301.6.0.25	664.1.0.0	371.7.1.21
Brl. Staves.....		10.0.3.4	871.7.1.21

JAMES PATTON,

Supervisor of Cullers.

Old Building Material.

An extensive trade in second hand building material has been carried on uninterruptedly in this city for fifty years, and is largely supported by builders and joiners. The stone and brick of an old building is used in the construction of a new one, the lime-whitened bricks making the inside of the outer walls and the partitions, and the stone going into the foundations. But it is not generally known that the inside wood work is used again, frequently without radical alteration. Many builders prefer this old timber because it is thoroughly seasoned, having been defended from the weather and been subjected to the influences of a measurably even temperature for years. The richer woods which are admired for their color acquire mellow tones by age and become more valuable as the years pass. Everybody knows that furniture of mahogany and rosewood that outlived several generations is much handsomer than that made from new wood. But it has an added value as mere material. An article made from the old wood will retain integrity in all its joints; its shrinking days are over. For the same reason timbering, wainscoting, and flooring of old buildings has an added value, although its selling price is less than that of the new material.

Masts and Spars.

A correspondent asks about the Quebec inspection of masts. An extract from the Act in regard to the culling and measuring of timber, masts, spars, etc., reads as follows: "Masts, bowsprits and red pine spars shall be sound, free from bad knots, rents and shakes, and the heart shall be visible in spots, at or near the partners. The following is given as to dimensions: "White pine masts, 23 inches



THOS. GRAHAM & Co.,
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 ETC.,
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 TORONTO.

FILES FOR SALE. FILES RE-OUT.

SAW MILLS!

Having POLE ROADS to their Timber keep up the Mill Stock and run the year round.

Pole Roads are Cheap, Durable and Speedily built. The Cars can be built by any handy man in a couple of days, and will carry 2,000 feet of Hardwood Logs at a Load, drawn by one Span of Horses.

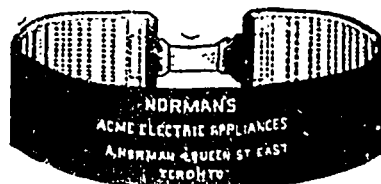
The Wheels are adjustable on the Axles to accommodate themselves to any bend in the poles.

The Iron Work complete, including Bolts and Washes, with a diagram of Car, are supplied by the undersigned. Prices on Application.

As to cost and utility of Pole Roads we will refer without permission to E. WATT, Gesto, P.O., W. EDGAR, Kilroy, P.O.; DUNSTAN & LEWIN, Essex Centre, and JAMES NAILOR, Oil City, who are now running respectively 10, 8, 5 and 3 miles, and are stocked with our Cars.

C. NORSWORTHY & CO.,
 ST. THOMAS, ONTARIO.

Patentees and Manufacturers of Moore's Improved Taper Cone Feed Saw Mills



Established 1874.

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Spinal Complaints, General and Nervous Debility, Nervousness, Rheumatism, Gout, Liver, Kidney, Lung, Throat and Chest Complaints, Neuralgia, Bronchitis, Inopient 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.

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and upwards at partners, shall be three feet in length to the inch in diameter: 22 inches, three feet in length to the inch in diameter, and two feet extreme length: 21 inches, three feet in length to the inch in diameter, and three feet extreme length: 20 inches and under, three feet in length to the inch in diameter, and four feet extreme length." The bend must not exceed six inches for every 70 feet, and in proportion for any greater length.

\$72 A week made at home by the industrious. Best business now before the public. Capital not needed. We will start you. Men, women, boys and girls wanted everywhere to work for us. Now is the time. You can work in spare time, or give your whole time to the business. No other business will pay you nearly as well. No one can fall to make enormous pay, by engaging at once. Costly outfit? None. Money made fast, easily and honorably. Address Tatz & Co., Augusta, Maine.

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 And MANUFACTURERS,

227 Dealers in WALNUT, BUTTERNUT, CHERRY, CHESTNUT, ASH, OAK, WHITEWOOD, and all kinds of Hardwood and Pine Lumber. PICTURE BACKING, HOLLY, EBONY, LIGNUM VITAE, RED CEDAR, &c. American and French VENEERS.

Orders for Lumber and all kinds of Factory Work promptly attended to. Lumber Kiln dried to order. Yard - Cor. Wellington & Strachan Aves. Factory - Corner Soho and Phoebe Streets. Office: 39 Adelaide Street East, (First Floor, nearly opposite the Post Office.

15 TORONTO, ONT. 17

EXTENSIVE PURCHASES.

A syndicate of Eau Claire and Chippewa Falls, (Wis.) lumbermen and capitalists has recently purchased extensive timber limits in the British Northwestern territory. The Syndicate is composed of the following gentlemen: J. G. Throp, O. H. Ingram, V. W. Bayless, W. A. Rust, H. C. Putman, I. K. Kerr, J. B. and H. M. Stocking, H. D. Davis and Daniel Dolena, F. Holman of Eau Claire, and Alex. McLaron, A. Bruce, Irvine & McDonald, and L. E. Waterman of Chippewa Falls.

The nine berths purchased by this strong combination cover an area equal to about 13 townships and are estimated to contain 260,000,000 feet of pine, spruce and cedar stumpage. The limit is situated in the province of Alberta, on the Bow river, and its tributaries near the eastern footholds of the Rocky Mountains and some 700 miles west of Winnipeg. The conditions of these grants of timber limits from the Dominion Government are thus stated:—

According to the regulations governing the granting of yearly licenses to cut timber on Dominion lands under section 52 of the Dominion lands act of 1879, provision is made for the licensee paying a ground rent \$5 per square mile; for requiring that within 2 months after the date of the order in council granting a timber berth, the person in whose favor it is passed must pay the rent for the year in advance, the rent to bear interest at the rate of 6 per cent. per annum from that date until the same is paid; that when applications for licenses conflict, berths shall be laid off and described as the Minister of the Interior may direct, and tenders shall be invited for the same. Persons tendering are required to state the sum or bonus per square mile which they are willing to pay in addition to ground rent and a royalty of 5 per cent on the amount of the sales of all the products of the berth, and the limit is awarded to the person offering the highest bonus. Licensees are required to have in operation within a year from a date to be fixed in the license and to keep in operation for at least six months of each year of his holding, a saw mill capable of cutting daily at least 10,000 feet, board measure of lumber. It is further provided that when a licensee has complied with the conditions above enumerated, and where no portion of the berth is required for settlement or other public purpose, of which the Minister of the Interior is to be the judge, the license may be renewed for another year, subject to such revision of the annual rental and royalty to be paid; therefore as may be fixed by the Governor in council.

Several valuable timber limits in the same general region have recently been secured by Minneapolis capitalists, and the prospects for a large return upon the investment is excellent.—*Minneapolis Tribune.*

PREPARED FLOORING IN ENGLAND.

There is considerable discussion in England over the matter of importing prepared flooring, the dressed and matched article, furnished in bulk, being a comparatively new proposition to saw out a bill of lumber to order from the raw material, in the shape of deals. Assortments are hardly dreamed of, in the sense that is involved in the stocks of the Chicago lumberman. Recently a sample cargo of prepared flooring from Archangel was received at London, and bought by some merchant of a speculative turn of mind. On account of the high freights which obtain it is doubted whether a trade of any extent can be built up in prepared flooring. It is stated that the sample cargoes of such stuff which arrive, are generally the first and the last. The trade does not tackle kindly to the scheme. It is thought that if the extra freight and insurance could be offset by a lower free-on-board price, there might be a chance for White sea floor boards in the English markets. But in that event it is feared that competition would result in hammering prices till the Norway article would crowd out the new candidate for favor, and there would be necessity for insuring a supply of prepared flooring, if any considerable business in it was attempted. With Swedish flooring it is different, and the conditions will doubtless foster something of a trade with Swedish and Gulf of Bothnia ports. In this connection arises the question as to how American dressed and matched flooring will fare

in the English market, such exports having been sometime ago proposed. How many obstacles there are in the way has not yet developed but if the cost of yellow pine flooring, dressed and matched, is not excessive, when laid down across the water, it ought to compare favorably, in quality and service, with the foreign prepared article, since in what the preparation consists is a rather obscure proposition. The question of superior manufacture is an important one in this country, and doubtless is in England.—*North western Lumberman.*

THE CHAUDIERE MILLS.

A visit on Tuesday, July 31st, to four out of five of the "Chaudiere Mills," by a representative of the *Free Press*, revealed the fact that lumbering is not near as brisk as it has been for a few years back. Shipping is very dull, owing mainly to the stagnant condition of the American market, and in a measure to the greenness of the lumber. Matters may look up, however, as the season advances.

Mr. Booth's shipping is considerably ahead of that of last year, though his cut is behind. He hopes, however, to catch up before the season is out. The capacity of Mr. Booth's mill is 300,000 feet per day, and at that rate the cut for the season would be in the vicinity of 50,000,000 feet. He employs about 450 men inside and out, about thirty span of horses, 100 waggons, and about 30 shipping carts. There is in the mill amongst other new machinery added this year, a gang saw with a capacity of three logs at a time, or about 800 a day. There are also an innumerable number of "twin," "slabbing," "edging" and other saws. There are eight gates in this mill—the largest number in any mill on the Ottawa.

Closely adjoining Mr. Booth's mill is that of Messrs. Perley & Pattee, employing about 100 men night and day. The capacity of this mill is about 300,000 feet, for the day and night watches. The machinery in this mill is somewhat similar to that in Mr. Booth's. Near the large mill is a small one which turns out laths, pickets for window fixtures and such small wares. There are upwards of 90,000 laths turned out per day. In this mill are employed about fifty-three men during the day watch, and about 23 during the night. The wages of all these hands range from \$3 to \$8.50 per week. At the beginning of the season Perley & Pattee had on hand about 200,000 logs, and of this number about one hundred and fifty thousand are yet in the river.

The next mill visited was that of Captain Young, in which about 200 men find employment during the day and night watches. The capacity of the mill is about 100,000 feet per 24 hours. The season was opened with about 150,000 logs, and of this number about 50,000 are cut. There are three gates in each mill. Captain Young's mill is the only mill lighted with electricity.

The mills (2) of Messrs. Bronson & Weston are second to none on the Ottawa. The capacity of the two is upwards of 400,000 feet per day (24 hours.) Between 450 and 500 hands are employed. About 300,000 logs were taken out last winter, and of this number about one-half are cut. All the cuttings, edgings and slabs are run through another part of the mill, and come out either as laths, pickets, or boxing stuff. Thus scarcely anything else but the bark and the sawdust is wasted.

Mr. Eddy's and Mr. Rochester's mills will be referred to another time.

SWEDEN.

The Stockholm correspondent of the *Timber Trades Journal* says.—The aspect of affairs in Sweden shows at length that the modifications made by extensive exporters in their prices reported a few weeks ago have been taken full advantage of by buyers in Great Britain, and have also resulted in important transactions to London and other large ports, of which the somewhat heavy shipments by steam at present going forward bears witness. At the present moment exporters have relieved themselves of a good portion of their stock that had previously hung fire, and a degree stiffer in their quotations, and the general opinion seems to be that the worst is past. The reports from the prin-

cipal consuming districts, especially in England, are more favorable, while it is now seen that the aggregate production of the season must be considerably less than last year, even under the most favorable circumstances.

Notwithstanding the comparatively heavy shipments now taking place, all that I have been able to gather in respect to the probable export of the coming autumn leads me to the conclusion that the same will be decidedly less than last year, and that the total shipment of sawn and planed wood from Sweden in 1883 will, in all probability, be less by 50,000 standards than those of 1882, unless some of the smaller firms adopt the doubtful expedient of sending consignments.

A HILL OF TREES.

It is comparatively easy to render prairie farms beautiful by the judicious planting of forest and ornamental trees. A correspondent of the *Country Gentleman* writes: A friend of mine moved from the picturesque hills and lovely woods of western New York to a prairie country, treeless and level. Although at first he duly applauded his new home for its practical utility in being so level, and blessed his luck in having no stumps to pull, yet its monotony became unbearably wearisome, and he was homesick for a sight of rugged but beautiful Cattaraugus. Trees he had, for his first care was to plant windbreaks, and a ten-acre forest of soft maple and cotton woods; but hills were missing. Finally he told his wife that he was "going to make a hill at least 100 feet high," about 1,000 feet in front of the house. When I saw his hill it was nearly 75 feet high, and one of the most beautiful sights I ever saw. This is the way it was made: In the center of a circular land about 200 feet in diameter he set a cotton-wood tree, and 20 feet away a circle of six cotton-wood trees. The centre tree was much larger and thriffter than the circle. Twenty feet distant was another circle—this one of willows, set 15 feet apart. Then followed catalpa, alanthus, osage orange, and holly. These outer circles were closer, and the trees, being of smaller kinds, were set closer. By cultivation and manuring he endeavored to incite the central trees to a more luxuriant growth than the outer ones, and has succeeded in a remarkable degree. The result is a solid green hill of foliage that soon will be one hundred feet high in the center, and slopes down to about ten feet at the base. My friend tells me that he does not think he made the best possible selection of varieties, but could do better now in making a uniform grade. My friend is "building" another hill on a modification of this principle. This is to be an evergreen hill, and for the place of honor he has a white pine surrounded by spruces, and the varieties graded as to size to the edge. To secure a greater hill appearance he allows five years to elapse between the planting of the different circles, so that when the last circle is set the central tree will be twenty-five years old.

PRESERVED WOOD.

We have from time to time called attention to the different methods of preserving wood from decay and from insect enemies, and urged that the processes in use abroad should give equally good results in this country. Though at different times considerable quantities of timber have been treated in this country by various methods the use has been somewhat spasmodic, and but little has been kept until lately in the shape of recorded results.

Lately, however, the American Society of Engineers has agitated the matter, and the results of their investigations have already been presented in our columns. Their exhibit at the railway exposition of wood and timber, both treated and natural, as exposed to different kinds of service for greater or less periods, is most interesting. It will be beneficial in directing the attention of those interested in the use of timber to the advantages of systematic treatment wherever there is to be exposure to the elements. The four methods of treatment represented crossotting, burnettizing, kyanizing and the Thilmany process. The first, as is shown by the name, consists in using the heavy oils distilled from wood; the second in using chloride of zinc; the third is the chloride of mercury

process, while in the fourth system two salts are used, one being of zinc or copper and the other of barium.

The most systematic exhibit in this collection is that from the works of the locks and canals on the Merrimac river, and represents the kyanizing process. The samples of timber displayed are of twelve different kinds, and each kind is shown as treated, and also in the natural state. The pieces were all treated alike as regards exposure, and the samples exhibited were taken near the ground line, where the strongest action of the weather would be shown. The time of the experiment was twenty years which is certainly long enough to decide the matter in the most satisfactory manner. It certainly has in this case, as in every instance the treated wood has lasted remarkably well, while in every specimen the natural wood is decayed so as to crumble almost at a touch. The effect of the preserving material has been clearly shown in the sample of poplar which after twenty years seems in as good, if not better, shape than some of the harder woods. If it is generally so susceptible to treatment it will greatly raise it in the estimation of engineers from its present low condition. The samples of kyanized timber from Fort Ontario after an exposure of forty years, are also interesting.

The exhibits of the other methods of wood preserving are valuable, though not showing such marked contrasts as that which we have just described, but all of them seem to show very good results under different circumstances and for long periods of time. The crossotied ties of fir from the English roads may be considered as good samples of that class of treatment.

The double salts methods, though newer before the public gives promise of good record.

A curious feature is an exhibit of portions of ties from the line of the Union Pacific, where the natural soil is of such character as to preserve the wood. A glance, however, at the analysis of this soil, which is attached to the samples, would seem to show "salts" enough to preserve anything.—*Railway Review.*

II. M. BRUCE recently cut a spruce tree, in Stowe, Vt., which made three logs 12 feet in length and measured 1,400 cubic feet, the butt log containing over 500.

E. HALL, of Detroit, is building a dam on the Tobacco river north of Clare, in order to run about 13,000,000 feet of Mr. Hall's logs which are hung up in that stream.

The *Lumberman's Gazette* of August the 1st, says:—The recent floods have destroyed numerous dams in this state, on which the only hope of securing logs from many of the tributary streams depended. Five dams on Hope Creek, a tributary to the Au Gres, went out last week, and over ten million feet of logs are thereby hung up high and dry. Some of our Bay City mill men will by this circumstance be considerably short in their expected log crop. Four dams on the Cedar were also carried away last week. It seems that the elements are persistent in their conspiracy to defeat any effort to overstock the lumber market on the Saginaw river.

The *Timber Trades Journal* of July 21, says: The torrent of wood goods from the Scandinavian and Finnish ports has abated this week and made room for our early North American fleet, as out of the sixty-six vessels arrived in London with timber about twenty are from the river and Gulf of St. Lawrence. But even with these the total arrivals for the week is 12 short of the number of either of the two preceding weeks, and under the circumstances it can hardly be considered an excessive supply. It is however numerically in excess of the corresponding week of last year by nineteen vessels. The difference occurs chiefly in the North American arrivals, only five being in the list of that from Canadian waters.

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.

Chips.

A STEAM coopers on the Scotch system has been built at Uddevalla by Swedish capitalists, and the manufacture is superintended by Scotch coopers. The coaks turned out are superior to the hand-made, and, although expensive, are likely to find a good demand.

WORKMEN have discovered a subterranean forest seven feet below the surface of the ground near the mouth of Savage river, in Chazy, Clinton county. Many of the trees are declared to be in an admirable state of preservation. One of them is a large oak over 40 feet in length.

MAKING of charcoal is a considerable industry a long the eastern division of the Flint & Pere Marquette railroad, in Michigan. Between East Saginaw and Holly these are a number of kilns. There are a few on the Otter Lake Branch, and between Wayne Junction and Monroe there about fifty kilns.

LEWIS PRAY, of Portland, Me., who turns out carriage and sleigh work, makes the statement that hickory can be raised in Maine from the seed in 15 years, to the size required for carriage stock, and believes such culture would be profitable. The elder trees are not so fine grained and valuable as the younger ones.

THE quantity of logs cut and floated down the provincial streams during the past season is estimated by a prominent New Brunswick lumberman as 345,000,000 feet. This includes the timber cut in Northern Maine, which floats into New Brunswick River. The amount cut on the Aroostook River is given at 65,000,000 and on the Upper St. John as 45,000,000 feet.

Mr. McAllister's drive of logs on Snake River has been abandoned owing to the impossibility of getting them through the enormous growth of weeds. The drive consisted of 40,000 logs and some dimension timber, and extends for eight miles along the river. It will probably remain there until next spring. Mr. McAllister had accepted several contracts for the supply of lumber, which he will now be unable to fill.

THE Indianapolis, Ind., Wooden Dish Company has perfected a machine, which takes the veneer from the mill, cuts out the blank, shapes and scores it, folds it up, makes, drives and clinches the wire staples, and throws the dishes off complete, at the rate of one a second. The company's works, burned last March, have been rebuilt, and \$12,000 worth of new machinery has been purchased. The works will start up August 15, and have a capacity of 200,000 per day.

THE Lumberman's Gazette says:—Opinions of great men sometimes prove no better than those of the most ordinary individuals. Twenty-four hours before the break of the great jam of nearly one hundred million feet of logs at Grand Rapids, Mayor Watson was quoted by the press as saying that for one thousand dollars he would insure the safety of the railroad bridge to the extent of twenty-five thousand dollars. That structure, was carried away with others standing in the way of the rushing, roaring flood of logs, and great damage followed.

THE Mining and Scientific Press says:—Don't over drive your machinery. The policy of driving our machinery is a losing one. When normal speed is on, and the machinery is running, all is well, but the moment the speed is increased beyond the natural bearing capacity, something must give way. It may not be at once, and the unnatural speeding may go on very well for a term, but the machine is wearing away faster than it should, and some of these days the man who runs it will be reminded of the old deacon's 'one-hoss shay.'

A FORTY mountain tramway is to be constructed up the famous Pike's Peak in the Rocky Mountains, Colorado, reaching to an altitude of 14,200 feet. It will be divided into three sections, the first worked by an engine at the lower end, the second by water power, utilized on the mountain side through a turbine wheel, and the third by an engine erected on the summit of the Peak. The supports will be made of trees about 24 feet high, on which a thick wire cable will be fastened. At intervals a large covered arm chair holding two persons, will be suspended about eight feet from the ground.

E. S. VINDIN,
Commission, Shipping, Forwarding and
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OR
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Permanently Cured—No Humbug—by one Month's usage of Dr. Goulard's Celebrated Infalible Fit Powder. To convince sufferers that these powders will do all we claim for them we will send them by mail, post paid, a free Trial Box. As Dr. Goulard is the only physician that has ever made this disease a special study, and as to our knowledge thousands have been permanently cured by the use of these Powders. We will guarantee a permanent cure in every case or refund you all money expended. All sufferers should give these powders an early trial, and be convinced of their curative powers.

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CONSUMPTION
POSITIVELY CURED.

All sufferers from this disease that are anxious to be cured should try Dr. Kisser's Celebrated Consumption Powders. These powders are the only preparation known that will cure consumption and all diseases of the Throat and Lungs—indeed, so strong is our faith in them, and also to convince you that they are no humbug, we will forward to every sufferer, by mail, post paid, a Free Trial Box. We don't want your money until you are perfectly satisfied of their curative powers. If your life is worth saving, don't delay in giving these Powders a trial, as they will surely cure you.

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BARRON'S
LUMBER DRYER

J. J. CURRAN, Inventor.
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39 & 41, Franklin Street, Chicago.

A. F. BARRON,
Patentee and Builder for the Dominion of Canada,
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Send for descriptive Pamphlet containing list of parties using this Dry Kiln in the United States.
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James Shearer, Montreal, James Crossen, (car builder), Cobourg, Ont., Canada Pacific R.R., Perth, Ont.; Kingston Car Works, Kingston, Ont.; Pike & Richardson (Cooperage Co.), Chatham, Ont., and in course of construction, Grand Trunk R.R., London, Ont.; Steinhoff, Schnoor & Co., Staves and Heading, Wallaceburg, Ont. 12112

Burdock
BLOOD
BITTERS



DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

PUBLISHED SEMI-MONTHLY BY
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All communications, orders and remittances should be addressed and made payable to TOKER & Co., Peterborough, Ont.

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

The CANADA LUMBERMAN is filed at the Offices of BRASS, SARGENT DEACON & Co., 154 Leadenhall Street, London, England, who also receive advertisements and subscriptions for this paper.

PETERBOROUGH, Ont., AUG. 15, 1883.

CHAUNCEY CARPENTER, a saw mill owner in Victoria, B. C., has absconded, leaving liabilities to the amount of \$40,000. It is believed that he carried \$20,000 away with him.

THE American Lumber Company is building a tug to tow logs up stream, on the Taquamenon river to the company's mill at Dollarville, upper Michigan peninsula.

THE pine forest along the Adriatic at Ravenna, Italy, celebrated by Dante and Byron, and which furnished the shipyards of Rome and Venice, is to be cut down, because an excavation for a railroad has so drained the soil that the trees have died.

BUSH fires have spread over Victoria, B. C., and everywhere flames and smoke reign supreme. The island is similarly affected. The sky is filled with smoke so dense that the sun's rays cannot break through it. There has been no rain for nearly three months.

THE Ottawa Citizen of August 4th says:—The American barge Marquis of Lorne took the unusually large load of 240,000 feet of lumber to-day from McClymont & Co.'s millyard, New Edinburgh, to New York. The barge James G. Blaine took a similar load from the same place to Whitehall, N. Y., at the same time.

THE Winnipeg Commercial of July 31, says: There has been no change in the lumber market since last week. The mills are busily engaged working up last winter's cut of logs, and the amount of lumber turned out will be very large, more than the demand will require. The old table of rates still holds, but cash customers can get a considerable reduction.

THE Chicago Lumber Trades Journal says:—From the reports of our lumber capitalists seeking the Canadian Northwest on speculative tours it is quite presumable that that region of timber lands will experience a boom. Explorations are being made which, from advices, will undoubtedly culminate in very extensive purchases by American buyers; in fact such has been the result in several instances.

SEVERAL cargoes of lumber have lately been shipped from Manistique, Mich., to eastern markets. There is a considerable accumulation of lumber at that point.

WE would call the attention of our readers to the important auction sale of valuable timber limits to be held at Ottawa on August 28th, the particulars of which may be found in our advertising columns.

A SIMPLE device for gauging weather or clap boards has been patented by Mr. J. C. McEwon, of Lochloosa, Fla. The device may be readily set for indicating the inclination and set for the board, and it is readily adjustable for boards of different widths. This implement may be provided with hooks upon which may be hung the various tools used by the workmen, which will thereby be always readily at hand convenient for use.

A PULP mill at Yarmouth, Me., which consumes 10,000 cords of poplar annually, which is equivalent to 1,536,000 feet board measure, is having 1,800 cords furnished by James Irish, of Hartford. The pulp wood was cut on Swift and Ellis rivers, and is peeled before going into the water. The entire lot will be floated down the Androscoggin to Lewiston, where it is taken out at the rate of 50 cords per day, and transported by rail to Yarmouth.

THE Lumber World thinks the forestry associations should turn their attention to cyclones, which appear to have joined the ranks of the "denuders." A cyclone in Michigan, recently, leveled acres of timber, making so clean a sweep that hardly a tree was left standing. An excellent idea of the irresistible power of these storms may be gathered from the report from Wisconsin of the trunk of an oak two feet in diameter torn in two, and a hickory twisted into splinters.

THE Timber Trades Journal of July 21, says:—As far as the Quebec trade is concerned, although a considerable spring fleet is handy to our shores, we do not think the shipments this season will be very large. The market here offers but little encouragement to shippers, and very few cargoes we believe will be shipped on speculation. Spruce is said to be in somewhat better demand at Quebec, but the stocks of lower port are known to be large, and importers here will be in no hurry to advance on their previous offer as long as they think they have the whip hand.

THE Railway Review gives the following statistics as to the annual supply of cross ties required for the railways in the United States: There are about 119,000 miles of railway in operation in that country at the present time, which have an average of 2,816 cross ties per mile of track, making a total of 335,104,000 cross ties now in use. Allowing 160 as the average yield per acre of woodland, the number now in use upon the railways in the United States represents the stumpage of 2,094,400 acres of land, and during the next six years this amount of timber land will be levied upon to renew the existing 335,104,000 cross ties at a cost of \$187,552,000.

MR. FRASUS HIBBAED, of South Barre, N. Y., has recently patented a machine for finishing staves, so that when the barrel or tub is set up and trussed it is ready to receive the head without the use of the usual hand tools for leveling, chamfering, and crozing. Further, the object is to give uniform depth of croze in barrels having staves of varying thickness, instead of making the croze too deep in thin staves and too shallow in thick ones, as is generally the case in hand work. A revolving mandrel carries the tools, and a feed bed with travelling belts carries the staves. The parts are made adjustable and self-adjusting, according to the thickness of stave.

IRREGULAR DEALS.

To the Editor of the Canada Lumberman.

DEAR SIR,—We notice a great many deals shown by our circular saw to be $\frac{1}{2}$ of an inch thicker one end than the other. The thickest

end being where the saw enters the log. Can you or any of your numerous readers give us the reason of it?

Yours truly,
Rivor Ouelle, P. Q. A SUBSCRIBER.

WILL IT PAY TO PRESERVE AND REPLANT OUR FORESTS?

Now that more prominence is being given to the subject of forestry, there is no doubt there will be many asking: Will it pay to preserve and replant our forests?

As this is a practical and pertinent question; is, in fact, the key stone to the solution of what is and what is not the duty of the Provincial Government in the premises, let us briefly state a few of the facts given in Mr. Phipps' recent pamphlet bearing upon this particular point.

In Hannover the Government control 600,000 acres, the maintenance of which costs them about \$650,000 annually, while the annual revenue averages about \$1,500,000, leaving a profit of about \$850,000 per annum, or about \$1.50 per acre per annum.

In Prussia there are 20,000,000 acres under forest. One half of this is private property. The remainder is owned by the state, and commercial and ecclesiastical corporations and yields an income of about \$14,000,000 yearly against an expenditure of \$7,600,000, leaving as net income about 65 cents per acre.

In Saxony there are nearly 400,000 acres worked at an expense of \$500,000 per annum, and yielding a revenue of \$1,750,000, or a net yearly rental of \$3 per acre per annum.

Bavaria has 3,000,000 acres under forest, the returns from which, after paying all expenses (which includes the replanting of 30,000 acres annually), is about \$1.50 per acre per annum.

In Austria they have less than 2,000,000 acres of productive forest, and little attention having been paid to the subject in that country until recently, the net income is only a little over twenty-five cents per acre per annum.

These are the only figures given as to forests which have long been under government supervision, and managed with a view to their maintenance and the obtaining of a permanent revenue therefrom, but they certainly must be admitted as going to support the soundness of the views of those who are urging upon the Provincial authorities the propriety of adopting efficient measures for the maintenance and replanting of those public lands, which from their nature and situation are better adapted for the growth of timber than for tillage.

FORESTRY.

Dr. Nelles, of Victoria University, writes thus to the editor of the Globe:—

SIR,—I have read with very great satisfaction the pamphlet by Mr. R. W. Phipps, "On the Necessity of Preserving and Replanting Forests." It purports to have been prepared "at the instance of the Government of Ontario," and is full of the most valuable information on the important subject on which it treats, and it is high time that both our Legislature and the people at large were aroused to act with more intelligence and energy in reference to this great public interest. The old adage, "What is everybody's business is nobody's," seems to have been once more illustrated in this matter. Let us hope that a wiser policy is likely to prevail in the future, and that not only the Province of Ontario, but the entire Dominion will seek to remedy as speedily as possible the carelessness and mistakes of the past.

Mr. Phipps has evidently put forth a great deal of research, and has confirmed his own extensive experience by collecting from various recent and trustworthy sources a mass of information such as the general public sorely needs, which it could not otherwise have easily obtained. In fact, it is one of those cases in which it is not only necessary to provide the information, but to enforce its application by Governmental authority. In this matter, as in educational and sanitary measures, we encounter not only gross ignorance, but indolence, apathy, and selfishness, which together make up a stubborn *vis inertia* that only an enlightened and public-spirited Legislature can overcome. As we read Mr. Phipps' well written pages we get a vivid and rather melancholy view of the

power of popular stupidity, and feel that there are blunders worse than crimes, or at least equal to crimes in their evil effect. Some persons may consider this strong language to use in speaking about "trees," but the language will not be deemed too strong by those who have carefully weighed the facts and reasonings embodied in this most excellent report. For it is not, as some may imagine, merely a question of firewood and lumber. There are involved as well the important matters of climate, of soil, of comfort, of beauty, and of health, in fact the great agricultural and general interests of the people for centuries to come. Nor let any one foolishly suppose that it is entirely a providential affair which only He who made the forests can control. Those who read the pages of this pamphlet will learn that God has put us in trust with our forests much in the same way as that in which He has given us our cattle, our harvests, and our orchards. We may preserve or destroy, and within limits reproduce, the one as well as the other. And it is not too much to say that the former are almost as indispensable as the latter.

The Hon. S. C. Wood, the late Treasurer Ontario, deserves well of his country for having introduced his timely measure to encourage tree planting. That Act relates, I believe, entirely to ornamental trees, but it is worth considering whether some legislative enactment could not wisely be adopted to encourage the planting of trees in certain districts upon a larger scale. The practice of other countries, as shown by Mr. Phipps, should at least lead to some investigation on the part of our legislators, and the report now published may perhaps be intended as a step in that direction. It is well that so much space is given in the report to this branch of the subject, for, contrary to the popular notion, it does seem possible to rear a harvest of trees, and within such a limited time that he who plants the acorns may himself build a house or a ship with the oaks they produce. But if it be necessary that the father should plant and the children reap, it will only be another example of the great law of life. Numerous extracts from other reports and communications are furnished by Mr. Phipps to show the ease, rapidity, and success with which groves and forests of trees of various kinds have been produced in Canada and elsewhere. I have not space for lengthy quotations here, but will cite one passage, and trust the public journals in noticing this report will make other selections. The following extract is from the pen of Hon. J. Sterling Morton, of Eastern Nebraska:—

"Twenty years ago cordwood sold in Nebraska City for seven or eight and sometimes ten dollars a cord, and that, too, when her population was not one-fifth of what it is now; and, notwithstanding the demand for fuel is at least ten times greater than in 1857, it is a fact that good merchantable wood can be bought in our streets for from \$3.50 to \$4.00 per cord. The reason of this is simply from the fact that the natural groves have been protected from fire, and the artificial groves are turning out an abundance of good wood, such as the necessities of the country demand for fuel. It will agreeably surprise anyone not acquainted with the fact to know the amount of timber one acre of land will produce in the course of ten years. Mr. Richard Justice, who came here (Otoe county) in 1857, and planted about ten acres of cottonwood in 1859, has one or two outhouses built from hewed logs taken from that grove, and the family have all the fuel they need. Hundreds of such cases might be mentioned throughout the eastern portion of the State, did space permit."

On the whole the Government of Ontario is much to be commended for procuring and publishing the information contained in this document, and both the Government and the general public are to be congratulated on having found so competent a man to write and compile what is here published. The accomplished author I have not the pleasure of knowing, but it is seldom one finds in our "blue books" (as they are called) so much practical experience and scientific knowledge combined with literary taste and excellence of style. I have not attempted to give a minute analysis or extended review of the report, but I am deeply convinced of the importance of the subject which it dis-

cuses, and it is a pleasure to do anything that may help to bring it under public attention, though it be only by penning this hurried and imperfect notice.

S. S. NELLES.
Victoria University, Cobourg, Aug. 6, 1883.

WHAT IS TO BE DONE WITH THE SAW-DUST?

The following note of inquiry was recently sent to one of our regular contributors by one of our readers:

MARBLETOWN, N. Y., May, 1883.

We are running a small steam saw mill, cutting about 10,000 feet of lumber a day. We make plenty of steam by using the slabs made and some sawdust. But we cannot use all the dust and in very dry summer weather are afraid to use it at all, for fear of fire. Consequently it accumulates rapidly and is seriously in the way, requiring the labor of several men to wheel it off and burn it, at a very considerable expense to us. As we know of no consulting engineer in this vicinity, after reading your article in *The Millstone*, we write to you for advice. Please write and tell us what to do. Make your charge and we will pay it, but do not give us any guess work. We want a guaranteed plan, and are willing to pay for it.

Very truly yours,—

Answer: What to do with the sawdust has bothered more than our inquiring reader. In the large Wisconsin mills the surplus was formerly dumped into the stream near at hand. When that was forbidden by law large brick kilns or furnaces were made, conveyors were run to them and the surplus not needed for steam making was burned up. This, it is believed, is the general custom now. If any better disposition is made of it that any reader of this periodical knows of, he would do a favor by letting the public know through these columns. More sawdust and less slabs may be burned by making a better draft. This can be done by turning the exhaust steam into the smoke-stack, low down, or by increasing the height of the stack. Increased risk by fire by increased draft can be obviated by using a locomotive wire screening over the top of the stack, which should flare out funnel shape. This screen and the moisture from the escaped steam, will avert all danger from flying live sparks, and allow sawdust to be burned at all seasons, no matter how dry the weather may be.

But no other disposition of the surplus sawdust that may accumulate after all, is better than that made by the great mills of the north. A conveyor can carry this surplus a considerable distance from the mill by machinery, and the kiln can be built up close and tight, so a constant fire can be kept up, only requiring a little watching and care by the men employed outside of the mill.—*J. F. Tallant, in Millstone.*

New Zealand Forests.

The forests of New Zealand cover an area of not less than 20,000,000 acres. The forests on the crown lands alone are estimated at 10,000,000 acres; about 5,000,000 acres are the private property of the white or European population, and the remainder is owned by the Maori or native inhabitants. The kauri pine, found only in the province of Auckland, is one of most valuable trees in the colony. It often grows to a height of 200 feet and measures 12 to 30 feet in circumference. The annual output of Kauri timber is about 110,000,000 feet. Another valuable tree is the kahikatea, a species of pine. The totara, a hard, close-grained wood, is used a great deal, and lately it has been found to be very serviceable for wharf piles and telegraph poles. There are many other varieties of valuable wood in the colony and the forests are so vast that they must yield enormous wealth to the colony in the future.

A Plucky British!

A young lady, Miss Kato McDarby, recently ran the Calumet slides and chute on a crib. Only one lady has ever been known to do this before. Not a few river men have also been known to show the white feather at this place. Miss McDarby however was not in the least frightened and after she had passed through it, wanted to run it again.

Saw Mill Burned.

MIDLAND, Aug. 10.—The fine new mill belonging to the British Canadian Lumber Company here was totally destroyed by fire this evening. The yard was full of dry and green lumber, which is at present (9 p.m.) burning, with no hope of saving any. Loss fully \$100,000. Particulars of the insurance cannot be ascertained to-night.

ROCK ELM WANTED.

A Few Car Loads of good ROCK ELM, cut into 1, 2, 2 1/2 and 3 inches thick, 12ft. length preferred.

DUFRESNE & JODOIN,
Lumber Dealers,
6112 496, St. Joseph Street, Montreal

A RARE CHANCE!

Valuable Steam Saw-Mill

FOR SALE.

The Waba Creek Steam Saw Mills, situated on the Madawaska River, one mile from Arnprior. Capacity of Mill, Fifty Thousand Feet of Lumber per Eleven hours. Capacity of Boiling Pond, Thirty Thousand Logs. Has Sidings through piling grounds connected with main line of Canada Pacific Railway. The Mill is in good repair, having only run a short time, and is well found in all appliances required to run it to the above capacity. There is also a good water power connected with it from the Waba Creek, and good stabling, Barn, Boarding House, and other buildings. For information, price and terms, apply to John Robertson, 681, Seigneurs Street, Montreal, or to James McCuan, Arnprior, who will show intending purchasers the whole property, or to

J. T. LAMBERT,
Lumber Broker, 110 Wellington St., Ottawa.

How Many Miles Do You Drive!

ODOMETER
Will Tell.

This instrument is no larger than a watch. It tells the exact number of miles driven to the 1-100th part of a mile; counts up to 1,000 miles; water and dust tight; always in order; saves horses from being over-driven; is easily attached to the wheel of a BUCKY, Carriage, Sulky, Wagon, Road Cart, Sulky Plough, Reaper, Mower, or other vehicle. Invaluable to LIVERYMEN, PLEASURE DRIVERS, PRIVATEERS, FARMERS, SURVEYORS, DRAYMEN, EXPRESSMEN, STAGE OWNERS, &c. Price only \$5.00 each, one-third the price of any other Odometer. When ordering give diameter of the wheel. Sent by mail on receipt of price, post paid. Address

McDONNELL ODOMETER CO.,
2 North La Salle St., Chicago.
Send for Circular. 16110

SAW MILLS

AND
TIMBER LIMITS

WITH
Logs, Lumber, Store Goods, &c
FOR SALE

In the District of Algoma, Ont.

Eighty-Five Square Miles (54,400 Acres) of Limits. Good Pine, First-Class Water Power, Large New Water Mill, Steam Mill, Store and Dwellings.

Canada Pacific Railway now running through part of the property.

For full particulars address:—

WILLIAMS & MURRAY,
GODERICH, ONT.

WISE

People are always on the lookout for chances to increase their earnings, and in time become wealthy; those who do not improve their opportunities remain in poverty. We offer a great chance to make money. We want many men, women, boys and girls to work for us right in their own localities. Any one can do the work properly from the first start. The business will pay more than ten times ordinary wages. Expensive outfit furnished free. No one who engages fails to make money rapidly. You can devote your whole time to the work; or only your spare moments. Full information and all that is needed sent free. Address STURSON & Co., Portland, Maine.

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.

WATER POWER

TO LEASE.

THE UNDERSIGNED having largely extended their raceway at Lakefield, 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.

R. & G. STRICKLAND
1888 LAKEFIELD, ONT. W. 519

AUCTION SALE

VALUABLE

Timber Limits

I will offer for sale by Public Auction, on account of whom it may concern, at the Grand Union Hotel, in the CITY OF OTTAWA, on TUESDAY, the 25th day of AUGUST next, at the hour of 2.30 o'clock in the afternoon, Timber Limits as follows:—

PARCEL No. 1.

License—	No.	Location	Season	Area	Sq. Miles
No. 339	Kippewa	Season 1882-83	60	sq. miles	
890	do	do	do	40	do
891	do	do	do	20	do
898	do	do	do	6	do
899	do	do	do	60	do
897	Temiscamingue	do	do	60	do
355	do	do	do	6	do
400	River Ottawa	do	do	25	do
833	do	do	do	0 1/2	do
400	Coulonge & B River	do	do	7	do

PARCEL No. 2.

401	North of River Coulonge	30	do
402	do	30	do
403	do	30	do
404	do	30	do
405	do	30	do

PARCEL No. 3.

837	River Ottawa	do	17	do
888	do	do	43	do
892	River Coulonge	do	60	do
892	do	do	50	do

PARCEL No. 4.

Upper Ottawa	License 1878-4	No.	Containing	Miles.
do	do	431	do	48 1/2
do	do	532	do	42 1/2
do	do	533	do	52
do	do	534	do	47 1/2
do	do	535	do	32 1/2
do	do	537	do	46 1/2
do	do	537	do	50 1/2
do	do	538	do	47 1/2

PARCEL No. 5.

do	do	do	507	do	50
do	do	do	508	do	47 1/2
do	do	do	509	do	40
do	do	do	510	do	23
do	do	do	511	do	26

Also half interest in Licenses Nos. 343 and 844, season 1882-83, 87 square miles.

Timber cut on Kippewa Limits was sold in 1880, 800; 1881, 32c, and 1882, 32c. There is also a farm in connection with the limits which will be sold with a quantity of Clear Meat-Pork, Flour, Oats, Beans, Hay, Horses and other rigging requisite for shantying.

TERMS—Cash, or one-third cash, one-third in 6 months and one-third in 12 months, with interest at 6 per cent., approved notes. For further particulars apply to the Crown Timber Agent, Ottawa, or to

R. C. W. MacQUAIG,
Auctioneer.

Extensive Sale

OF VALUABLE

TIMBER LIMITS

For the purpose of determining the partnership existing between the undersigned, they will offer for sale by PUBLIC AUCTION at the RUSSELL HOUSE, in the CITY OF OTTAWA, on WEDNESDAY, the 12th day of SEPTEMBER next, at TWO o'clock in the afternoon (unless sooner disposed of by private sale), the following Valuable Timber Limits, or Licenses to cut Timber, in the Provinces of Quebec and Ontario:—

PARCEL I,

Province of Quebec.

License	No.	Location	Area	Sq. Miles
No. 85	of 1881-82	River Maganicippi	Area 25	sq. miles
86	do	do	do	60
87	do	do	do	60
88	do	do	do	60
89	do	do	do	60
90	do	do	do	60
91	do	do	do	30
92	do	do	do	17 1/2
93	do	Ottawa & Maganicippi	do	26
			do	60

Total area 348 1/2 sq. miles

PARCEL II,

Province of Ontario.

No. 129	of 1882-83	River Ottawa	Area 22 1/2	sq. miles
130	do	do	do	67

Total area 79 1/2 sq. miles.

Terms and conditions made known at time of sale. Further information may be obtained on application to JAMES ADAM, ESQ., Manager St. Lawrence Docks, Quebec, JOHN POUPRE, ESQ., Crown Timber Office, Ottawa, JOHN WALKER, ESQ., Manager Quebec Bank, Toronto, or at the office of the undersigned in Pembroke.

A. & P. WHITE.



Notice to Contractors.

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Post Office, Barrie, Ont.," will be received at this office until TUESDAY, the 7th of AUGUST next, inclusive, for the erection of

POST OFFICE

BARRIE, ONT.

Plans and specifications can be seen at the Department of Public Works, Ottawa, and at the office of Messrs. Kennedy, McVittie & Holland, Architects, Barrie, on and after TUESDAY, the 24th July next. Persons tendering are notified that tenders will not be considered unless made on the printed forms supplied and signed with their actual signatures. Each tender must be accompanied by an accepted bank cheque, made payable to the order of the Honorable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party tendering declines to enter into contract when called on to do so, or if he fails to complete the work contracted for. If the tender be not accepted the cheque will be returned. The department will not be bound to accept the lowest or any tender.

By order,
F. H. ENNIS,
Secretary.
Department of Public Works,
Ottawa, July, 1883.

FORESTS AND THE MANAGEMENT

We take the following from Mr. R. W. Phipps report to the Ontario Government:

To obtain knowledge on this head, no better source of instruction is available than the extensive report made on the subject by Captain Walker, a gentleman who passed nine months on the continent, by direction of the European Government, for that purpose. I cannot copy his voluminous report, but will give a short review of what refers to each country visited, and anything likely to be useful for our purposes here in Canada. The Captain first visits Hanover, describing the system in which territory to some extent describes all, for he tells us that the system there may be considered as typical. He gives then, the administration there, and a brief statistical record of the others, except in those points where they decidedly differ. Now, as to Hanover.

HANOVER.

Its forests under State management amount to 900,000 acres. Some are Government, some Church, some belong to municipalities or communes. Government manages the forests by officers appointed, while the community pay four cents per acre towards the pay of the officers. The method appears to be that of giving the owners as much wood, pasture, or litter for manure, as their original right to the forest entitled them to; but to give it at the hands of Government officials. If the forest is of sufficient extent to employ a special officer, the commune, instead of the four cents, are charged his pay and allowances, as well as other working charges.

The government forests are about 600,000 acres of the above, and the cost of working and all expenses is about \$650,000 annually, the receipts being \$1,500,000, and the profit therefore \$850,000, or, taking the actual figures, about \$1.60 per acre per annum. This, of course, takes no account of the value of the land, or what it might rent or sell for if cleared.

Hanover is a province of Prussia. The head office is therefore in Berlin. The forest establishment of Hanover consist of one director and over-forest master, who is also a councillor; twenty forest masters in charge of circles or divisions, forming also a board of management in all forest matters; one hundred and twelve over-foresters in charge of forest districts (*revier*) averaging seven or eight thousand acres each; four hundred and three foresters who assist the over-foresters, and have charge of portions of a district; three hundred and forty-three overseers, under-foresters, etc., employed in watching and protecting the forest, and supervising the work that is executed by hired weekly or daily labor, or on contract under supervision of the fixed establishments. A cash-keeper is attached to each over-forester, who receives and disburses all moneys out of the forest cash chest, with which the over-forester has nothing to do, although his accounts should, of course, tally with those of the cash-keeper. For payment of laborers, etc., he gives orders on the cash-keeper, whose books are examined by the forest-master in charge of the division, and accounts rendered to the head office in Hanover, and thence to Berlin.

All the forests have been surveyed, valued, and divided into blocks in this manner:—

Besides those already enumerated, there is, for the sole purpose of measuring, valuing, and framing working plans for the forest, a superintendent, draughtsmen, and clerks, generally practical foresters, and a staff of surveyors and forest valuers, who are generally candidates for the position of over-forester.

When a forest was about to be taken in hand and worked systematically, a surveyor and valuator were despatched to the spot, the former working under the directions of the latter, who placed himself in communication with the local forest officer and the inhabitants interested, and obtained from them all the information in his power. The surveyor first surveyed the whole district, then the different divisions, as pointed out by the valuator, who defined them according to the description of the timber standing, and any conditions affecting the nature of the trees to be grown in future. While the surveyor did this the valuator valued the trees, formed a register of rights with a

view to commutation, considered the best plan of working the forest, the roads, in fact, all which enabled him to form a plan for the head office, and a subordinate plan to be handed over to the executive officer as his "standing orders."

The valuator and surveyor return to head quarters, and prepare the maps and plans, which are submitted to the board of forest masters, the forest director and other councillors of the Finance Department, who are thus prepared to listen to any objections made by communities or individuals, which are very rarely made now, as the people have learned that the action of the officers is not adverse to their interests, and are willing to allow them to settle matters.

The executive officer has thus in his hands maps showing each division of the forest tract in his charge, and instructions—the quantity to be felled yearly, the extent to be planted, the state in which the forest should be ten, twenty or a hundred years after the plans were made, all calculated—so that the over-forester has only to carry out the instructions given him, allowance being made for unavoidable difficulties—failure of seed, occurrences of storms, and the like.

The forest-masters have no executive work, but control four to six over-foresters, of whose labor they make frequent reports to the Director (both in forest and office work). The over-foresters give annual report of operations. They spend most of their time in the forest, supervising the felling, planting, sowing, thinning, carting and selling of timber. The laying down of roads is done by a forest officer, but the actual work is carried out by the local officer, who has also much office work, giving grazing licenses, etc., and preparations of returns, but his work is out of doors compared to that of the forest-master, who has more office work; comparing operations and rates in the districts, collecting statistics, settling disputes, and as a member of the forest committee, revising working plans.

The main object aimed at in any scientific forestry is, to convert the natural forest, consisting of trees, young and old, good and bad, too thick and too thin, into blocks of trees of the better description, of the same age, and capable of being worked—that is, thinned out, felled, and reproduced, or replanted, in succession, a block being taken in hand each year. In carrying out such a system, considerations must be attended to, such as the relation of the block to the whole forest system; the needs of the people in timber, firewood, leaves for manure and pasturage; the soil, the situation as regards winds (which must be attended to in felling to lessen damage), and precautions against insects, fire, trespass or theft.

The plans need revising every twenty years, though it is marvellous to notice to what an extent the original scheme has generally answered.

After a forest has (to give some idea of management) by thinning, planting, and so forth, been gradually got into perfect order as described, the system of natural reproduction forms great part of the German method. It is as follows:—

The rotation and periods are fixed in the working plan. For beech "hochwald" it is in Hanover one hundred and twenty years, divided into six period of twenty years each, that is to say, when the forest has been brought into order there should be nearly equal areas under crop of trees in each of the six periods, that is from one year to twenty; from twenty years to forty, and so on. When a block arrives in the last period, felling is commenced by what is called a preparatory clearing, followed by a "clearing for light" in the first year after seed has fallen (the beech seeds every fourth or fifth year) with the object of—1st, preparing the ground for the seed; 2nd, allowing it to germinate; 3rd, affording light to the young seedlings. If there is a good seed-year and sufficient rain, the ground should be covered with seedlings in two or three years after the first clearing; but it is better generally to wait for a second seed year, and sid nature by hand-sowing, transplanting from the patches of many to the bare spots, and turning up the turf to give the seeds a better chance of germinating.

When the ground is well covered the old trees are felled and carefully removed, so as to do as little damage as possible to the new crop, and the block recommences life, so to speak, nothing further being done till the first thinning. The time allowed between the first and final clearings is from eight to fifteen years. But in many provinces they do away with this system, and remove the old trees so gradually that there can hardly be said to be any clearing at all, the new crop of trees being well advanced before the last of the old trees is removed.

In these forests can be seen all the periods of growth—nurseries and schools for seedlings, which are transferred thither, at the age of two to four years, from the seed beds, and are pruned and transplanted as often as seems required till finally planted out, sometimes not till twelve or fourteen years old. There are many methods of planting adopted here. The steepest and most rocky sides of the hills are covered with forests, which have been created by the labors of the Forest Department. In many such places, where even the few handfuls of soil placed around the young tree had to be carried some distance, it is not contended that the first plantation will yield a pecuniary profit, but the improvement in climate by the retention of the moisture, and reclamation of large tracts formerly barren and unproductive, is taken into account; besides which the dropping of leaves and needles from the trees will ere long create a soil and vegetation, and insure the success of plantations in future years, and consequent surplus.

PRUSSIA.

Prussia has twenty millions of acres of forests, ten millions of which are private, and the remainder, with which we have more to do, state, commercial, and ecclesiastical.

Of these the income is \$14,000,000, and the expenses \$7,500,000, leaving \$6,500,000 clear. This will not show much, in fact not more than 65c. per acre, but there are other returns of more than mere yearly revenue importance. When it is considered that this result is arrived at without trenching upon the capital or stock of timber in the forests, which, on the contrary, is being increased and improved in every province of the kingdom; and that the indirect value to the people of many forest privileges, which they exercise free of charge, must be very great, not to mention the benefit to all in the shape of public recreation grounds and an improved climate, some idea may be arrived at of the enormous value and benefit such a system of state forests must confer on Prussia.

The forests, as already stated concerning Hanover, form part of the Finance Department, and are presided over by an overland-forest-master, and ministerial director, aided by a revenue councillor and joint ministerial director, and a numerous council or board.

There are two forest academies, one near Berlin, and one in Hanover. The overland-forest-master is curator of the academies, and at the head of each is an overland-forest-master, who is aided by a numerous staff of professors and assistant-professors.

There are twelve provinces in Prussia, divided into thirty circles, and to each an over-forest-master, who is appointed to represent the forest department in the council of local administration, and is aided by councillors and by the forest masters as a board, to represent forest interests in the government. Next in order comes the forest-masters, numbering one hundred and eight, in charge of divisions with an average area of sixty thousand acres, and then the executive officers, seven hundred and six over-foresters, to each of whom is 7,000 acres, and to each of whom is attached a cash-keeper, and three thousand six hundred and forty-six foresters, or overseers, with ranges of a thousand to three thousand acres.

At the academy near Berlin are seven professors with assistants. There is an experimental garden attached, with an over-forester in charge of the technical portion, and professors for the meteorological, zoological, and chemical sections. The number of students averages sixty-five. The varied apparatus includes a building where the seed is dried and separated from the cones, large seed-beds of spruce, fir, and willow, full opportunities of transplanting

seedlings, and examples of every kind of trees for botanical study.

There is here a museum, rich in specimens of all sorts of birds, animals, and insects found in the forests. In cases where the animal or insect does damage to trees, specimens of the branch, bark, leaf, or cone, in a healthy state, and after being attacked, are exhibited close to each, so that the students can see at a glance the nature of the damage, and connect it with the animal which causes it. Thus we have squirrels, rats, beavers, and mice, set up gnawing at the barks, grubbing at the roots, etc. Insects are shown in the several stages of their existence—larvæ, chrysalis, caterpillar, moth, with their ramifications in the stem or branches of the tree. These, with specimen blocks of almost all descriptions of timber, form a most instructive collection. There is a forest district attached, remarkable for the growth of Scotch fir and spruce on a poor sandy soil, and in spite of repeated attacks by insects.

Nothing is more remarkable than the extent of study required from forest candidates, and the number of years they are content to spend in studying or waiting an appointment. The would-be over-forester, which is the lowest of the gazetted appointments, must pass certain terms at a Government school, a year in a district with an over-forester, an examination as forest-pupil, two years at a forest academy, an examination in scientific forestry and land surveying. He is then a forest candidate. Then two years practical study, nine months of it doing duty as an actual forester; then another examination. He is now an over-forester candidate. The first examination tests his theory; the second his practice. Then he will be occasionally employed in the academies, or in charge of a district, only then getting allowance. After five years of this he may look for steady employment.

Thus five years without pay are given in study; five in probation with but meagre pay when employed, and the time is often longer, before regularly installed. Yet so great is the desire for Government—especially forest—service, that there are numerous candidates.

The qualifications for admission into the subordinate grades—forester, sub-forester, overseer—have a military tendency. Candidates, after two years in the forest, enter a jäger battalion, and band themselves for twelve years' service. After three years they obtain leave, and are employed in the forest as huntsmen or game keepers. After eight years they must have passed the forester's test, which consists in six months' charge of a district, and an examination. At the end of twelve years they are discharged with a certificate entitling them to employment in the forest establishments. The appointments are much sought after, and in 1867 there were two hundred and twenty-one applicants for one hundred and forty-five vacancies, but many are absorbed by communal and private forests.

In some provinces the Prussian Government has certain rights concerning the management of even private forests—in others none.

While on the subject of Prussia, it may be well here to insert some extracts from a letter received from Baron Von Stauben, a Prussian nobleman, now Royal Chief Forester of the German Empire, by the Forestry Congress, at Cincinnati, in April of last year. He remarks:—

"There can be no doubt that every country requires a certain quantity of well-stocked woods, not only to supply the demands for building material and fuel, but more especially to secure suitable meteorological conditions, to preserve the fertility of the soil, and out of sanitary considerations. The ratio of the minimum quantity and judicious local distribution of the indispensable forest to the aggregate area cannot be expressed by a universal rule, but the same can only be approximated by scientific investigation. Above all things, it is essential to prevent forest destruction where such would injuriously affect the fertility of the soil. It is important, then, to preserve and to cultivate judiciously those forests which stand at the head-waters and on the banks of the larger streams, because, through their indiscriminate destruction, fluctuations in the stage of water, sand-bars, and inundations of arable lands are

occasional. It appears also necessary to preserve and properly to cultivate woods in quicksands, or the summits and ridges, as well as on the steep sides of mountains, along the sea coasts, and other exposed localities.

"In Germany, and especially in my more narrow-bounded Fatherland, Prussia, it is regarded as of the greatest importance, not only to preserve the forests already there, but to extend them as much as possible.

"In the National Appropriation Bill large sums are set apart for the purchase of such lands as are unfit for cultivation, and for utilizing the same by planting trees.

"With reference to forests owned by private individuals, they are not restrained in the use of their forests, and may, according to their own judgment, clear the same and till the soil, in short, do what they like, and yet there may be certain restrictions placed upon the free use of the same as soon as danger to the common welfare is feared; these restrictions are prescribed by the law of July 5, 1876, relative to forest protection.

"This law is applicable in cases:—

"1. Where, by reason of the sandy nature of the soil, adjoining lands, or public grounds, natural or artificial courses, are in danger of being covered with sand.

"2. Where, through the washing away of the soil, or through the formation of cascades in open places on the ridges of hill and on hill-sides, the arable lands, streets, or buildings lying below are in danger of being covered with earth or stone, or of being flooded; or the lands or public grounds, or buildings lying above are in danger of sliding.

"3. Where, through the destruction of forests along the banks of canals or natural streams, riparian lands are in danger of caving, or buildings, hitherto protected by the woods are in danger of iceflows.

"4. Where, through the destruction of forests, rivers are in danger of a diminution of the stage of the water.

"5. Where, through the destruction of forests in open places and near the lakes, neighboring fields are seriously exposed to the detrimental influences of winds.

"In the cases above mentioned, which have been copied verbatim from the statute book, the manner of use as well as the culture of forests may be legally ordered, in order to prevent those dangers where the dangers to be averted are considerably in excess of the damages which would result to the owner by reason of the restrictions."

SAXONY.

The state forests are nearly 400,000 acres, worked at an expense of \$500,000, receiving \$1,750,000, leaving a clear rental of \$3 per acre. The expenditure is planting, draining, roads, improvement of inferior woods, felling, transport, killing insects, etc. About five thousand acres are planted yearly, at an average cost of \$7.50 per acre.

The fixed establishment is one inspector, fifteen over-forest-masters, one hundred and twenty district foresters, sixteen cash-keepers, thirteen engineers, twenty-seven foresters, and eighty-three sub-foresters.

There is a forest academy at Tharandt, with a separate staff of professors.

The system of planting now principally experimented on is much the same as that previously described; the young trees being several feet high before the old trees are all removed. One operation is noticeable. It was decided to convert a mixed hardwood forest, patchy and irregular, with impoverished soil, in 1820, into a coniferous forest, and maps were drawn showing what it would be in eighty years. Private intersecting lands have been bought up, and by 1,900 the ideal chart will be actual. Already, in place of a straggling wood, irregularly covered with timber trees of inferior growth, we have now a compact close forest, regularly wooded in sections of different ages, principally spruce and Scotch fir, but containing also fine oak, ash and beech, with straight and clean stems. In many cases the young oaks have been left where pines were planted, and the introduction of the latter has a wonderfully good effect on the oaks.

All private rights were abolished and com-

pensated in these forests by a Bill passed in 1832.

BAVARIA.

The state forests are 3,000,000 acres. They return, after paying all expenses, about \$1.50 per acre per annum. About 30,000 acres are planted or sown annually, taking 35,000,000 plants and 1,000,000 lbs. seed. Persons found guilty of breach of forest rules have been punished by enforced labor in the woods. Private forest rights are being bought up by the Government.

The system of management is much the same as that previously described. There is a forest academy at Aachaffenburg, with one hundred and sixty-five students.

It will be interesting to notice the injury and process of repair in the fine forests of the Spessart in Bavaria. The deterioration was caused by felling the forest trees as soon as, or before, they were mature, the impoverishment of the soil by the removal of leaves and litter, and the allowing dense underwood to grow unchecked. Inferior trees got the upper hand and prevented the growth of good, while they drained the already impoverished soil and gave nothing in return. Early in the present century the matter attracted attention, and every means have since been adopted to grow oaks, beech, and conifers. The result is, though not yet equal to the uniformity of other forests, nowhere can one find finer clumps and individual trees. Inferior trees will soon be rare in the whole forest. In remote portions where the humus had not been destroyed, the growth of beech and oak is truly magnificent, tracts of 120-year old beech and 300-year old oaks being common, the latter with clear trunks running up to 100 feet high. When we compare these with other portions where the crippled and stunted appearance of the trees shows the effect of unregulated grazing and loss of litter, burning of the decayed wood, and forest theft and mischief, or the soil and vegetation, the result is marked. The circumstances, says the Indian Commissioner, are analogous with what has gone on in India for centuries, and is still more or less permitted. The vast extent of forests, which once clothed the hill sides and extended far out on the plains, and the luxuriant growth of the tropics, have hitherto, or until the last two years, prevented the gradual deterioration of our forests being marked or felt, but the subject has now attracted attention, and none too soon. If any have doubts in the matter, let them visit the Spessart, study the history of its forests and judge for themselves.

The forests are sharply protected by law, the average number of prosecutions annually being thirty per thousand acres. The crimes are mischief to wood, pasture, grass, straw, and miscellaneous.

AUSTRIA.

Scientific forestry is not so far advanced as in Germany, but officials are busily introducing a reorganization, by means of which, there is no doubt, it will soon be on a par with other states.

The state forests have been largely sold to meet state necessities, but there still remains nearly 2,000,000 productive acres, which yield, however, after expenses are paid, little over 25 cents per acre.

The existing establishments of forestry are not uniform, but there are about twelve hundred employees, of whom twenty-two are forest-masters. Some of these have almost sinecures, while others have six times too much to do, and it is the same with those in the subordinate ranks. The forest academy is at Mariabrunn, near Vienna. There are about thirty-five students.

The collections are fine, possessing specimens of all instruments and appliances made use of in felling, squaring, sawing, carting, and preparing timber, models of saw mills and machinery of all descriptions, plans of river beds improved and embanked for floating, sluices of all sorts, dams and piers for directing rafts in their course and catching firewood, models of rafts, and specimens of home and foreign timber of all kinds. The damage done by animals and insects is also exhibited here comprehensively. There is also a forest garden attached to the academy for the instruction of the students.

The staff of the academy consists of the director, thirteen professors and assistant professors, with subordinates in the account office, laboratory, etc. There is also a forest school at Bruhl, for training young men (of whom eight were there) as practical foresters.

The greater number of those trained here are intended for private and not for Government service, their expenses for board and lodging being paid by noblemen and large proprietors, from whose estates they come, and to whom they return as forest officers and workmen. The state maintains the schools, and pays the professors salaries, and there are no extra fees. This cannot fail to assist the intelligent management of the private forests of the empire, which are very extensive. The absence of numerous candidates for the government forest service, and preference for private employment is noteworthy, when compared with the opposite state of things in Prussia. The irregular promotion, lack of system, and low salaries in the Austrian forest service are the explanation.

The Austrian crown forests have been neglected; they are patchy with a low and decreasing yield per acre. There has been till now no attempt at rotation of blocks or working in periods. As is found in India, a glance at the outskirts of the forests would lead one to suppose it fairly stocked with timber, but a more careful inspection proves that this is not the case, and that only in the valleys and more remote portions, where the soil is particularly good and the axe has not been so frequent in its inroads, is there a fair and regular crop.

Herr Schuppitch, the present director, is trying hard to change matters, and is changing the hardwood crop, which has exhausted the soil for that class, with pine growths, which besides grow quicker and pay better. He is also dividing into blocks and periods, and planting up many bare or ill-covered tracts, where natural reproduction is impossible owing to the absence of standard trees.

GRAND DUCHY OF BADEN.

We shall now notice a private forest, that of the Prince of Furstenburgh, in the Black Forest. The receipts and expenditure are not obtainable, as are the public ones, but we are informed that the forests are economically worked, and that the liberal sums expended in road-making, fitting rivers for floating, housing foresters, &c., were well repaid by the facilities secured, and contentment and zeal of the employees. In the case of this, as of other private forests, it is evident that a private individual is not burdened with considerations of policy and public good as in a State. The forests are, therefore, worked with the best profit compatible with their retention as capital.

There are about 72,000 acres, in charge of 18 foresters and over-foresters, who of course have many subordinates. The method employed in the slow felling and continual reproduction before mentioned, a block being about forty years in clearing before all the old are replaced by the new trees. Attention and intelligence are necessary, for seed will not grow nor the seedlings flourish without enough light, and the forest officer must watch that they get it; and again much greater care is needed in felling and hauling away when the trees are surrounded by lofty saplings and young trees than when the seedlings of the next crop are not more than a foot or two high. In this the axe-men of the Black Forest are adepts, and the damage very slight to what it would be in other hands.

It may be useful to describe their manner of bringing timber down the rivers. It cannot here be done when the stream is in flood; in fact, the less water in it the better so long as sufficient is stored up above to float the rafts. Reservoirs are made, and the water poured into the river bed when the raft is ready. The streams are often small, of only fifteen or twenty feet in width, and have to be prepared for floating, by being cleared of any large rocks or boulders, and "sloped," if we may use the expression, by pieces of wood firmly fixed in the bed of the stream every few yards. These prevent the formation of holes in the bed, and serve for the raft to slide on if it touches the bottom. The first impression of the Indian commissioner when he saw the float,

composed of stems from twenty to sixty feet in length tied together with withes at the ends, and lying zigzag in the bed of the mountain stream, up and down which they extended sixteen hundred feet, was that it was simply impossible they ever could be floated down the stream, with all its windings, and over the locks and rocks which occurred pretty frequently. It contained 880 stems, eight or ten of which abreast formed as it were a link in the raft. There were thirty links, not fastened laterally, but only at both ends to the next link. The breadth is greatest at about two-thirds from the prow, which is narrow, and consists of only three stems abreast, with in front of all a piece formed of old wood and raised out of water like the bow of a whale-boat, so as to lead the raft and the largest and heaviest stems placed in the broadest part and towards the stern or hinder part, which does not taper at all. There are two or three breaks, by which the speed is slackened or the raft stopped if needed. When all is ready, the water from above is let loose, and the raft, perhaps not now lying in a foot of water, begins to float a little, but is not let go till two-thirds of the water is passed, as it is a curious fact that when let go, if there is much descent, it travels faster than the water, and has to be stopped to let the water get ahead again. The raft has eight or ten men and boys, one or two of whom stand by the master at the chief break, on which the safety of all depends. When let go it is exceedingly curious to see the forward part dart off at the rate of five miles an hour, and the several links which have been lying zigzag and perhaps high and dry uncoil themselves and follow in its wake till the whole dashes along at great speed and apparently uncontrolled. Accidents are rare, as they are well trained (lads of six or eight can be seen going down in miniature floats); but for one not accustomed to it, it is nearly impossible to stay on the raft at all, as it literally springs out of the water on touching a rock, dashes around a rapid turn, or jumps a weir with a fall of several feet. Forty or fifty miles can be got over in a day if stoppages to let the water ahead are not too frequent or the stream is not swollen by rains.

REMARKS ON GERMANY.

The Indian commissioner proceeds to remark on the German history of forestry. Perhaps it will be here admissible that I make one myself. Let me say that, when we consider the immense extent and rapid growth of forests in India, the vast amount in Government hands, and yet find that they are so rapidly deteriorating as to necessitate the despatch of commissioners to Europe to learn the methods of preserving the forest, it is likely that Canada has just as much reason to bestir herself in the matter. Let us notice also, by some of the valuable tables Capt. Walker has furnished, that in Germany & Prussia alone that there are nearly two hundred and fifty millions of acres of forests. We will well have already understood, by the foregoing pages, how different the great mass of these forests, with their great reserves of growing and well cared for trees, planned and prepared for many years, so that the forests can be depended on to give its regular and annual yield of valuable timber in perpetuity, are from our Canadian reserves, which are cut without regard to the future, and are fast disappearing before the combined assault of the settler and the lumberman.

On asking, where are we to look for a model or precedent on which to work, he replies "To Germany, where the management of forests by the State has been carried on for hundreds of years. Not the mere planting of a few hundred acres here, or reserving a few thousand acres there, but a general system of forest management, commencing by a careful survey, stock-taking, definition and commutation of all rights and servitudes, careful experiments in the rate of growth, the best soil for each description of tree; in fact, in every branch of the subject, and resulting in what we find to-day, hundreds of thousands of acres mapped, divided into periods and blocks, and worked to the best advantage both with regard to present and future, and the annual yield of which now, and for many years to come, is known and fixed to within a few hundred cubic feet."

(Continued on page 252.)

Market Reports.

MONTREAL.

From Our Own Correspondent.

AVO. 9.—Business has been rather slow since the date of our last report, but at the same time a fair steady local demand has been experienced as the building trade has been very active. Shipping demand has been rather light. Prices in Ottawa a steady, but it is probable there will be a decline before the fall. Cherry lumber has advanced in price here, but a further decline is noted in laths which are in fair supply. We quote yard prices as under:

Table listing lumber prices for Montreal, including Pine, Spruce, Hemlock, and various grades of lumber with their respective prices per 1000 feet.

SHIPPING.

Comparatively little lumber has as yet been shipped to South America, but a good deal is expected to go forward from this till the end of the season. Shipments to Great Britain have been active since the date of our last report. The following clearances have been made at the custom house:—To South America, Bk. Peter Crearer, 540,175 ft; Bk. Wolfe, 807,945 ft; Bk. Pinaloqua 518,402 ft; Bk. Tuba, 741,887 ft; Bk. Wavalench, 445,510 ft; Bk. Raino, 431,003 feet. To Hartlepool, Bk. Jeffrey, 461,475 feet. To Glasgow, SS Concordia, 7162 pcs deals; SS Cynthia, 5,120 pcs deals; Ship Ardmore, 3,150 pcs deals; SS Titania, 7,155 pcs deals; SS Concordia, 3,307 pcs deals. To Liverpool, SS Lake Huron, 2,410 pcs deals; SS Nipigon, 4,221 pcs deals; SS Juliet, 15,466 pcs deals; SS Oregon, 5,472 pcs deals and 15,671 boards; SS Texas, 4,647 pcs deals; SS Toronto, 6,023 pcs deals; SS Milanese, 10,735 pcs deals and 1,956 boards; SS Manitoba, 4,917 pcs deals; SS Mississippi, 7,706 pcs deals; SS Sarnia, 2,224 pcs deals and 5,845 boards; SS Lake Champlain, 2,499 pcs deals; SS Montreal, 6,346 pcs deals and 1,818 boards. To Gloucester, Bk Lorna Doon, 200,612 ft white pine deals and onds. To London, Bk Tovit, 312,675 ft deals; Bk Murie 248 std deals; Bk Joy, 11,822 pcs deals; SS Avlona, 3,038 pcs deals; SS Erl King, 8,095 pcs deals; Bk Gulfo, 13,254 pcs deals and 35,077 boards; SS Carmona, 15,813 pcs deals; Bk Punjab, 15,078 pcs deals and 892 ends; Bk Columbus, 16,757 pcs deals; SS Viking, 10,847 pcs deals; SS Barcelona, 8,065 pcs deals, SS Ocean King, 2,903 pcs deals. To Bristol, SS Dorset, 17,998 pcs deals; Bk Eyra, 112 stad deals; SS Someraet, 3,237 pcs deals; Bk Ceres, 282,917 ft lumber; Bk Georgetown, 7,335 pcs deals. To Grimaby, Bk Gustaff Adolf, 187 std deals. To Barrows, SS Ross-shire, 38,255 pcs deals 2,077 ends, 13,389 pine boards and 4,886 staves.

CORDWOOD.

Prices are decidedly in holders favor, and for some descriptions we advance prices. There is a scarcity of tamarac which is relatively dearer than other kinds of wood. The demand for wood has been slow, stocks in the city are fair, but on the wharf less than usual at this season of the year, although this is not of so much consequence now as in former years as it is quotable in the winter by the railways. We quote prices on the wharf as under:

Table listing cordwood prices for Montreal, including Long Maple, Short, Long Birch, Long Beech, Short, and Long Tamarac.

TORONTO.

From Our Own Correspondent.

AVO. 9.—Trade from the retail yards is now much better than when I last wrote you, although not at all pushing, and stocks are quite light in all the yards coming under my notice, and there appears a desire on the part of some dealers to purchase dry lots, more especially staves, both 1 in. and 1 1/2 in. flooring grade. The

demand for XXX shingles continues in excess of the supply and prices remain firm. Dimension lumber in 18x20 ft lengths is still hard to procure. This may in part be ascribed to the large demand for car bottom plank of the lengths above named. Shipments by car load to western points is now almost a thing of the past, consequent on the increased tariff of one cent per hundred weight over the Midland and Grand Trunk railroads, nearly all orders will now find their way by the water route to Saravia and other points, and receive their distribution from the docks there, by rail to the various places required, and will take less time to reach its destination by this route than that usually occupied by the railroads above named.

Business at the docks begins to wear a better aspect. Members of different lumber firms from the American side have put in their appearance during the past week, and lumber is now on the move, and not before it was needed, as it was quite impossible to pile any more on the docks until some stuff was moved to make room, but I think it is generally conceded by all the wholesale dealers that the outlook is much more hopeful than it was two weeks ago, and my own impression is that the remainder of the season will be a fairly active one. Lath by car lots is somewhat lower, prices ranging from \$2.20 to 2.25 per M, for A 1 lath. The demand for good basswood is quite active, purchasers for which can be easily found for an unlimited quantity. Black ash is also in good demand and not much coming forward.

Table listing various lumber products and their prices, including Mill cull boards, Shipping cull boards, cantling and joist, Cutting up planks to dry, Sound dressing stocks, and various grades of flooring and shingles.

ALBANY.

Quotations at the yards are as follows:—

Table listing lumber prices for Albany, including Pine, Spruce, Hemlock, and various grades of lumber with their respective prices.

BOSTON.

Cotton, Wool and Iron of August 4th, says: General trade is of very restricted proportions, rather more so than is customary at this mid-season period. Buyers are feeling their way along, and are waiting to see how fall business will develop and turn. In fact there is just

about the same spirit of conservatism that is prevailing in almost every class of trade. Prices show very little change to note.

CANADA PINE.

Table listing Canada Pine prices for Selects, Dressed, Shaving, Dressed, 1st, 2nd, Dressed Shippers, Dressed Box, and Sheathing, 1st quality, 2nd.

BUFFALO.

We quote cargo lots:—

Table listing Buffalo cargo lot prices for Uppers, Common, and Culls.

CHICAGO.

The Northwestern Lumberman of August 4th says:—The total number of lumber and shingle cargoes arrived at this port for the week ended on Wednesday, was 234, as against 217 the week before. The arrivals in port and the offerings on the market continue to show an excess for the last half of July over a corresponding time last year. The fleet was large from Monday to Wednesday, when there was a considerable thinning out, though on Thursday morning there were a number of cargoes offered, the proportion of shingles being excessive.

The market during the week, probably on account of the numerous offerings, was a little slower than that of the weeks preceding, though prices on good average stock did not suffer by the tardy movement. Trades were made slower than formerly, that was all. The wholesale merchants are now having a quiet trade at the yards, so that they feel no urgency to put in stocks beyond keeping their pilers employed, and they had plenty of time to whittle and "gas" on the market. They have hung off about closing bargains just because they could as well as not, and for the reason that a little delay might make the commission men a little nervous and anxious, and that might probably prompt them to offer slight concessions in price or time of payment.

Quotation are as follows:

Table listing Chicago quotation prices for Short dimension, Long dimension, Boards and strips, Boards and strips—Medium, Boards and strips—No. 1, Shingles, standard, Extra A, and Lath.

Receipts of lumber, shingles, etc., for the week ending Aug. 2, as reported by the Lumberman's Exchange:—

Table showing receipts of lumber and shingles for 1883 and 1882, including Lumber and Shingles quantities.

OSWEGO, N. Y.

From Our Own Correspondent.

We cannot change quotations, although we think prices are a shade lower. A strong desire to sell is manifested by most of the dealers. Stocks are large and assortment good; dealers generally are anticipating a brisk demand during the fall months, but at present business is very dull and arrivals small.

Table listing Oswego prices for Three uppers, Pickings, Fine, common, Common, Culls, Mill run lots, Shingles selected, 1 inch, 1 1/2 inch, Mill n. 1x10, 12 inch selected, Shippers, Strips, 1 and 1 1/2 inch mill run, 1x6 selected for clapboards, Shingles, XXX, 18 inch, pine, XXX, 18 inch, cedar, and Lath.

TONAWANDA.

CARGO LOTS—GAGINAW INSPECTION.

Table listing TONAWANDA cargo lot prices for Three uppers, Common, and Culls.

TYNE.

The Timber Trades Journal of July 28, says: The past seven days have brought forward a large number of timber-laden vessels, and as several of them are from Quebec, and also one steamer from Hudikwall with an entire cargo of deals, the total importation will be larger than usual. Large as it has been, it is yet a long way short, by about 12,000 loads of the importation to same date last year. So far the arrivals do not appear to have increased the stock on hand, a large proportion finding its way direct into consumption. The American vessels are now coming forward; some four or five cargoes have already arrived, and a large fleet is daily expected. An entire steamer cargo from Hudikwall, to order of Messrs. Borries, Craig & Co., has arrived. Though by no means so general here as at some other ports, yet it is evident steamers are being sought after for wood cargoes for the Tyne, and will ere long run off the wood ships; larger arrangements will, however, have to be made for the reception of wood goods by the dock authorities here before merchants will generally see their way to charter steamers as the usual method.

Trade remains fairly good, and although prices are not higher they are well maintained. Contracting too is going on in a fairly average way; the prospect of work is on the whole, not discouraging.

LONDON.

The Timber Trades Journal of July 28, says: The disposition at present noticeable amongst the trade to secure what is offering, if it can be got at a price, cannot be taken otherwise than as a favorable symptom of the market. There are plenty of buyers if the quotations are low enough; and it is rather regretful that so great a reduction was originally made on the commoner qualities of Swedish redwood, as that was accepted by the trade as indicative of a downward tendency, and has resulted in bringing down the prices of the scarcer and better-classed goods. This, we think, even with a somewhat sluggish sale, might have been partially avoided, or at any rate confined within more reasonable bounds.

We are glad to see the dock deliveries are keeping up, and though still behind last year, the difference is only slight. Including the over-aid deliveries, we consider the consumption is quite as active this year as it has been for many seasons.

CARDIFF.

The Timber Trades Journal of July 28, says: This last week has been a very dull one in the timber trade. Two vessels have arrived from Canada and one from the Baltic with deals, and another from the Baltic with sleepers. One steamer has also come forward with a cargo for three different receivers. This method of doing business is being very carefully watched to see how it works. The trade for the Midlands is very quiet; only small lots have been sent off, and fresh orders are difficult to obtain. There have been some small purchases from the Baltic, but we can hear of nothing being done from Canada, although importers are open to buy at low prices. Props and mining timber are coming in sparingly; still prices have not so far materially altered.

GLASGOW.

The Timber Trades Journal of July 28, says: The first public sale since the "fair holidays" was held here on the 25th of July. The attendance was pretty good, and transactions were to a fair extent, though of the goods catalogued a considerable proportion was withdrawn. The catalogue consisted largely of spruce deals, of which there is a comparatively heavy stock in this market at present. For spruce of 2nd quality average fair prices are obtainable, as will have been observed. A great part, however, of the stock now in yard is of inferior quality, and brings low prices.

GOOD LUMBER AT A PREMIUM.

It was apparent to any one who carefully looked over the field last winter and spring that a decline in lumber was inevitable. This paper has been censured in some directions because it forecast the condition, but it did so after the

most thorough conviction that its utterances were those of true prophecy. It needs no argument now to prove that it was correct. It saw the decline so clearly that it felt willing to risk its reputation in asserting what the outcome would be. There is one feature of the lumber business, however, that deserves special consideration. The upper grades, particularly in Michigan and the east, have not sympathized with the lower ones, and the only reason is that good lumber, in proportion to the cut, is not so plentiful as it used to be. Logs from certain streams, which years ago produced twenty-five per cent, uppers, will now hardly produce five. There has been a steady deterioration. In many instances now it is the trees that have been left that are cut. The result is that while there is plenty of lumber, too much in fact, the finer grades are wanting. The same is true in walnut. So much poor stuff has been rushed on the markets that it has been impossible to sell it at anything like former prices, but good walnut has been in demand at good figures. Lumber dealers may as well make up their minds, for as last, that really good lumber, in either soft or hardwood, will be comparatively scarce, and the only conclusion that can be reached is that it will be held at a premium.—*Northwestern Lumberman.*

TREES, LOGS AND LUMBER.

A representative of the New York *Evening Post* furnishes his paper the following graphic description of his view of the Saginaw river. For 16 miles down to Bay City, near Lake Huron, the stream flows between wooden strands. The eye stretches itself in vain to see beyond the lumber horizon that stretches east and west. The yellow waters, perhaps 200 feet wide, pass first between continuous booms, each enclosing its army of giant logs. These booms reach far above Saginaw, and if we include the tributaries of the river and count both sides, make up a line of posts seventy-five miles long. Next to the logs and on the bank proper rise, most impressive of all, the trunks of sawn lumber. Pile on pile they rise on either side for sixteen miles up and down the stream, covering acre after acre, until the wooden monotony becomes thinner, only to rise again to more imposing height and width around a new cluster of mills. These mills, often of grand proportions, spring from their lumber heaps as a giant of fairy story looms amid the disintegrated bones of his victims. Their tall chimneys belch black smoke, the rattling saws cut the air with their distant rasp, and the sense of industrial activeness is filled out by the hives of workmen swarming over the lumber hills and loading them, by slow but steady toil, into barges whose hulls rival the capacity of a Cunarder.

RAFTS ARRIVED.

- The *Chronicle* gives the following list of rafts, etc., arrived at Quebec:
- Act. 2.—Sundry lots, staves, New London cova.
 - R. Campbell & Son, white pine, &c., Cap Rouge.
 - E. L. Kelsoy, staves, Dobell's (Sillery).
 - E. L. Kelsoy, staves, Bowen's (Sillery).
 - A. G. Fraser, white pine, &c., St. Lawrence Docks.
 - D. D. Calvin & Co., oak, &c., sundry covs.
 - Smith & McDougall, white pine, &c., Union cova.
 - J. R. Booth (2), white pine, &c., Cap Rouge.
 - J. R. Booth (2), white pine, &c., St. Lawrence Docks.
 - Barrett & Mackay, white pine, &c., Cap Rouge.
 - Win. McKay, white pine, &c., Hadlow cova.
 - B. Caldwell, white and red pine, &c., St. Lawrence Docks.
 - Barrett & Mackay, white and red pine, &c., Cap Rouge.

ON THE STILL HUNT.

CHIPPWA FALLS, Wis., July 30.—Some of our lumbermen who thought they were going to "catch on" to a big thing up in Duluth and St. Cloud districts, have returned to the Falls. They found that a few others in the country knew there was some pine in Minnesota, as well as themselves, and also that big things were not very plenty or very cheap. Some of

BOOK-BINDING.

Our facilities for BOOK-BINDING enables us to execute every description of work as well as it can be done in the cities, and at current CITY PRICES.

Blank Books and Account Books of any size Ruled to any pattern desired, and bound in the most appropriate and durable manner.

Books taken out in parts, Bibles, Works of Art, Illustrated Works, Music Books, Magazines, Periodicals and Newspapers bound in any style desired.

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Names Lettered in Gold Leaf on Presentation Books, Bibles, Purses, &c.

THREE FIRST PRIZES FOR BOOK-BINDING AT THE CENTRAL EXHIBITION.

TOKER & Co.

Printers, Bookbinders, &c., PETERBOROUGH, Ont.

them report that there are at least 2,000 men hunting over pine lands in Minnesota the present summer, and mention one Michigan firm that has 40 crews at work estimating and hunting up pine. I have met one man who has been up in the Duluth country for two months, he says that while there is some good pine on pre-emption land, on the whole the most of the government land of any value for lumbering is already picked up. This gentleman spoke of a suit going on in regard to improvements on the St. Louis, which had the effect of keeping down the price of logs for this year. I see by the *Lumberman* that the suit was decided in favor of the boom company, so that now the prices of logs will scarcely go up this season.—*Northwestern Lumberman.*

The *Timber Trades Journal* says:—The alarming destruction of American forests is the subject of an article that will appear in the August number of *Forestry*, from the pen of Mr. William Little, of Montreal, an authority who has made the subject of American forestry a life study. Mr. Little states that at the present reckless and wanton rate of cutting the United States will be entirely denuded of its merchantable yellow (American white) pine in seven years.

A Fool Murder.

A telegram from Guysboro, N. S., states that a deaf, dumb, and blind coloured girl, named Ada Byard, about twenty years of age, living with her father about a mile outside of Guysboro town, has come to her death under circumstances which leave the impression that she was foully murdered. It appears on Saturday the girl's father went to town, leaving his wife, who is stepmother of the diseased, with the latter and some younger members of the family. On his return home in the evening he found his wife had also gone to town. The girl Ada was in the house, suffering from terrible wounds, apparently inflicted with an axe, which resulted in her death the following day. The evidence adduced at the coroner's inquest was that a little girl, five years of age, locked herself in the house with deceased and committed the deed by striking her with an axe, but the opinion prevails that the child is not the guilty person.

Pirates Encarthed.

An extraordinary number of vessels have been wrecked in the Straits of Kertch, Black sea, the past few years, and in consequence of many suspicious circumstances, such as the wreck of vessels in calm weather and the fact that some pilots grew rapidly rich, an investigation was made by the English insurance companies, who had paid indemnities amounting to many million roubles. It was learned that a pilot named Francisco was head of a band of English, Italian, Greek and Russian pirates, who made a living by disasters on the coast. They were in collusion with the pilots and charged huge sums for assisting vessels pilots suffered to go ashore. In less than two years fifty stranded vessels had recourse to the assistance of the pirate salvors. It is said some Government officials are compromised.

Cows in the Pasture.

Murphy heard cows in his orchard the other night, and slipping out the back way appeared suddenly near the front steps, and yelled:—"He-ah Tigel He-ah Tigel He-ah!" Just then a figure rushed past, cleared two fences and

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Wholesale Lumber & Timber Dealers
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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.

vanished in the gloom. "Take 'im I take 'im!" screamed the old man, but his daughter Miranda, who had unaccountably appeared on the scene, secured the dog by the collar and refused to let go. "What ye doin'?" yelled the old man; "don't ye know them cows has been in here three or four times?" "Oh, pa!" was the answer, "but this was only a calf." The old man was pacified, but Adolphus, who was standing out in the road awaiting developments, wasn't, and Miranda will never understand the coldness that has sprung up between them.

Firemen's Demonstration.

ST. CATHARINES, Aug. 9.—The first day's programme of the Firemen's demonstration was carried out here to-day with great *colac*. All the hotels, and in fact every place where accommodation can be had, are crowded, all the available cots and shakedown are being utilized, and your correspondent is congratulating himself on having secured quarters at the Welland house. About fifteen hundred firemen from different parts of the province and New York State and about ten thousand visitors are here to-night, besides large numbers from the surrounding country, who have returned home for the night, but who will return to the city in the morning. The procession was a large and magnificent one. It took two hours to pass a given point.

Remarkable Case of Resuscitation.

PAISLEY, Aug. 9.—This morning while several children were playing near a cistern, one, a two and a half years old son of John Stark, fell in, and before he was taken out some fifteen minutes had elapsed. His mother, who was sick at the time, became nearly frantic over the affair. Several neighborly women pulled the body, which was quite black, out. They rubbed him well for ten minutes and wrapped him in warm blankets, when signs of life began to appear and vomiting was commenced, and when the doctor appeared he showed more symptoms of recovery. He is now weak, but will likely recover.

Canadian Victory

In a race on Tuesday for the "Fisher" cups at Chicago, the *Atalanta*, a yacht built at Belle-

ville, and sailed by Canadians, defeated her opponent, the *Cora*, by 8 m. 45 sec. The *Mail's* correspondent says:—"No sooner had the judges handed in their report than their services were enlisted for a third match to be sailed on Saturday next. So determined are the amateur seamen here that the "Fisher" cups shall not go to Toronto that you must not be surprised if you should hear, on the *Atalanta's* winning it again (as is generally expected), that she has been bought by Chicago yachtsmen."

\$500 Reward!

We will pay the above reward for any case of Liver Complaint, Dyspepsia, Sick Headache, Indigestion, Constipation or Costiveness we cannot cure with West's Vegetable Liver Pills, when the directions are strictly complied with. They are purely Vegetable, and never fail to give satisfaction. Sugar Coated, Large Boxes, containing 30 Pills, 25 cents. For sale by all Druggists. Beware of counterfeits and imitations. The genuine manufactured only by JOHN O. WEST & CO., "The Pill Makers," 81 & 83 King St. East, Toronto, Ont. Free trial package sent by mail prepaid on receipt of a 3 cent stamp. ORMOND & WALSH, sole authorized Agents for Peterborough, Ont. w4611222



"The great difference," says the commissioner, "in climate and local conditions between India and Germany would, doubtless, necessitate important modifications, but I can see no reason why the broad principles of organization and forest management should not be applied with success to our Indian forests, that is, gradually feeling our way as regards the best mode for the forest, and the wishes and interests of the people and the State."

I would here remark that this is still more applicable to Canada, as our climate presents no difference of moment.

"I do not think," he continues, "that we have much to learn from the Germans with regard to the planting and rearing of young trees; but it is with regard to the best method of managing groups or plantations that I consider we may, with advantage, take a leaf out of their book. For instance, I would certainly introduce, in an experimental manner, and on a very small scale, their system of rotation, clearing, and of periods, and endeavor to bring forward a second crop before the first is off the ground, encourage the growth of the better descriptions, and keep down the least valuable, so as gradually to arrive at groups of trees of the same age, description, and class, and eventually at blocks worked in rotation, and containing always a sufficient stock of crop coming on to meet the requirements of future years. To arrive at all this the most careful observations and experiments will have to be made as to the rate of growth and yield per acre of each description of forest, the conditions under which trees grow best and form the most timber, some requiring close and some open planting, some nurses and some not; some, like the oak, requiring a great deal of light, while some, like the beech, do best for many years in the shade. All these points, and many more, demand attention, and till they are settled we shall be merely groping in the dark. In fact, I think it may be taken for granted that all we will do in the way of forestry in the Madras Presidency, during the present century at least, will, after all, be but experimentalizing, which fact, however, need in no way delay the demarkation, survey, and settlement of the forests."

It may be said here that, if it be necessary to commence at once, in India, it is probably more necessary in Canada, where the process of growth is so much less rapid.

Concerning the capabilities of German foresters, the Captain says:—"An over-forester, and even many of the foresters and overseers, can tell the name, local and botanical, of any tree, shrub and plant, classify it, and state its uses; name and classify every beetle and insect in the forest, and know whether they are harmless or destructive to trees, in what shape they do damage, and what are the best known preventive measures; inform you of the nature of the soil, and to what period the formation belongs; what trees will grow best, and why. All this is known thoroughly, theoretically and practically."

"Then as to the district, the exact yield, rate of growth, and annual increase in value of each block is thoroughly known and can be put down in figures at each moment by the over-forester, who can tell at the commencement of each year how much timber he is going to cut and sell, and from what parts of the forest it is to come, how many acres have to be partially cleared for natural reproduction, how many to be planted, sown, thinned or planted up. The mere details of all this are left, as a rule, entirely to the subordinates, who thoroughly understand them."

"The forest-masters in charge of divisions possess not only the theoretical and scientific knowledge acquired in the forest academy, and the practical experience gained while they were over-foresters in charge of a district, but the more extended knowledge and wider views from their larger field for observation and comparison of causes and results. They are then qualified to decide most points, revise working plans, and supervise operations generally, whilst settling complaints and complications in connection with the forest administrations, advising the local head of the department, and compiling valuable reports and statistical information."

(To be Continued.)

EXPLORING NEWFOUNDLAND.

Mr. Hall, one of the largest lumber manufacturers in the world, and one of Canada's leading merchants, arrived here, says the St. John, Newfoundland, *Mercury*, on Thursday by the steamship *Polino*. He brought a party of explorers with him, who departed in the *Polino* for the purpose of being landed in the bay of Islands, where, should the explorers' reports prove favorable, he proposes to establish a large lumbering manufacturing business. The initiation of the scheme also depends upon the terms upon which the Government will be able to make grants of land; and it is to be hoped that nothing will be left undone to assist in the establishment of an enterprise so well calculated to develop a portion of this country. Mr. Hall has also an idea of exploring the Exploits river. He has been looking at our dry-dock, and says that in all his vast experience he has never seen finer timber used in such work—an opinion of great value because of his knowledge of the subject.

Maple Last Blocks.

The Bangor, Me., *Mining and Industrial Journal* has the following: Last blocks are an important article of manufacture in the towns of eastern and northern Maine. Blanchard, Lagrange, Alton and Katahdin Iron Works, will each ship about 25 carloads this season over the Bangor & Piscataquis railroad. Large numbers are also cut on the line of the Eastern & North American division of the Maine Central, and also in the towns to the eastward of Bangor. The blocks are cut from rock maple, and the work of getting them out gives quite remunerative employment to the farmers and their sons during the long winter months. A million and a half of these blocks, valued at about \$36,000, were shipped from Bangor last year, principally to Western Maine, New Hampshire and Massachusetts shoe towns. This, however, by no means includes all the last block business of this section, as large quantities are shipped each season by way of Calais.

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. I 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.

Convincing Proof.

Having suffered from rheumatism for a long time I was induced to try your Arnica and Oil Liniment. The first application gave instant relief, and now I am able to attend to business, thanks to your wonderful medicine.

I am yours truly,

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218 St. Constant St., Montreal.
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Arnica and Oil Liniment is sold by all Drug
giats.

A CURE FOR CHOLERA MORBUS.—A positive cure for this dangerous complaint, and for all acute or chronic forms of Bowel Complaint incident to Summer and Fall, is found in Dr. Fowler's Extract of Wild Strawberry; to be procured from any druggist.

"WHEN all other remedies fail," for Bowel Complaint, Colic, Cramps, Dysentery, etc., "then Dr. Fowler's Extract of Wild Strawberry comes to the rescue." Thus writes W. H. Crooker, druggist, Waterdown, and adds that "its sales are large and increasing."

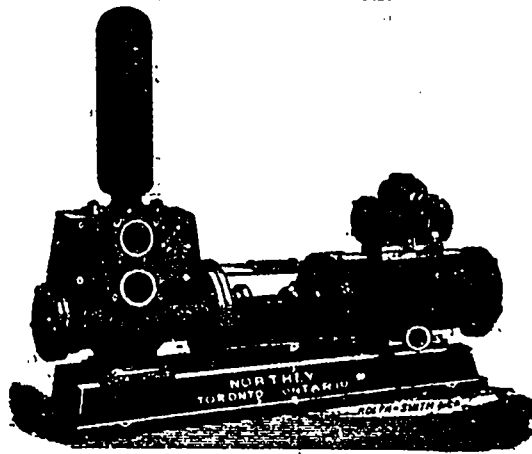
It is now in season to warn our readers against the sudden attacks of Cholera, Cramp Colic, and the various Bowel Complaints incident to the season of ripe fruit, vegetables, etc. Dr. Fowler's Extract of Wild Strawberry is the grand specific for those troubles.

A VALUABLE DISCOVERY.—One of the most valuable discoveries in the medical science, for the benefit of mankind, was made when Burdock Blood-Bitters were invented. This medicine positively cures all diseases of the Liver, Kidneys, Stomach, Skin and Blood. 25,000 bottles have been sold during the last three months.

NORTHEY & COMPANY, STEAM PUMPS

FOR ALL DUTIES.

ILLUSTRATED CATALOGUE AND
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ALL WORK ABSOLUTELY
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Combined Steam Fire Pumps and Boiler Feed Pumps for Saw Mills, Etc., a Specialty.

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TUERK'S WATER MOTOR.

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View of Tuerk's Pressure Motor, with Tuerk's Improved Governor Attachment.

For running Sewing Machines for families or for manufactories; also, for running Dental Lathes and Engines, Telephone Generators, Coffee Mills and Roasters, House and Church Organs; also for running one Printing Press or six, at the same time. Paper Cutters, Sausage Machines of any make or size; GRAIN, FREIGHT OR PASSENGER ELEVATORS, Straw Cutters, and all kinds of Machinery by Water Power.

HYDRANT PRESSURE.

Cheaper, Quicker and Safer than Steam.

Over Fifty Motors of other makes have been taken out and replaced with the TUEK MOTOR; among the list are the Backus, the Sabin, the Little Giant, the Hayward, Clark's Piston Engine, and others.

Names of a few who have taken out Backus Motors and put in the Tuerk Motor in their place:

C. W. Meikel, Indianapolis, Ind.	Lemon & Co., Waverly, N. Y.
Columbus Telephone Co., Columbus, Ohio.	Braun & Jones, Cedar Rapids, Iowa.
James Egan, Chicago, Ill.	Gates, Douglas & Co., Cedar Rapids, Iowa.
H. C. Hawkins, Cleveland, Ohio.	Village of Rutland, Rutland, Vt.
Printing Office, Hannibal, Mo.	W. L. Randall, Chicago, Ill.
A. Solmens, Hat Manufactory, So. Norwalk, Ct.	A. J. Stoll, Sandusky, Ohio.
Lake Shore & Mica. So. R. R. Shops, Elyria, O.	Hillis & Wayland, Chillicothe, Ohio.
Index Printing Office, Evanston, Ill.	S. A. Morrow, Springfield, Ohio.
Republican, Johnstown, N. Y.	R. Putnam, Chillicothe, Ohio.
Tribune, Salt Lake, Utah.	N. Shelton, Omaha, Neb.
Alton Printing Co., Alton, Ill.	H. J. Lewelling, St. Helena, Cal., and others.
A. F. Worthington & Co., Cincinnati, Ohio.	

Do not fool your time away trying other Motors, but send for the Tuerk Motor, which is warranted to do better work with less water than any other Motor or Water Engine made.

Send for Catalogue, and state what you want to us,—give us particulars and Water Pressure per square inch.

TUERK BROS. & JOHNSTON,

86 and 88 Market Street, Chicago, Ill.

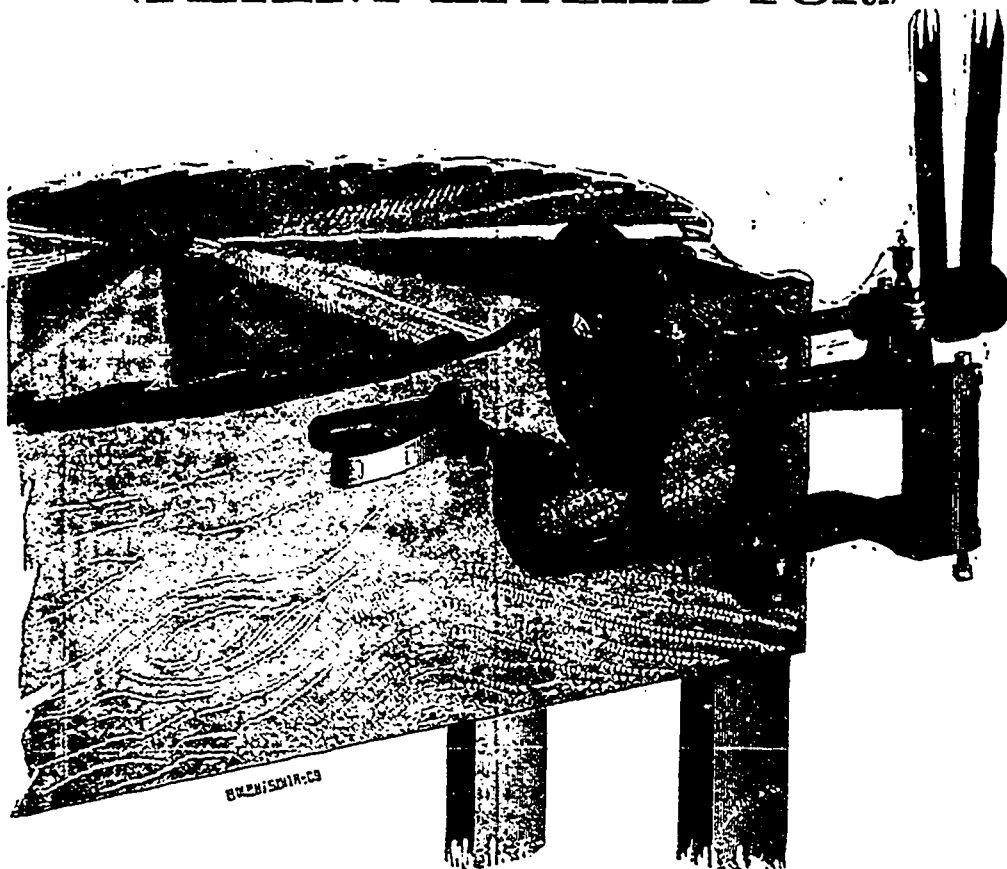
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(PATENT APPLIED FOR.)

No Heating!

Quick!

Simple!



Exact Work!

Cheap!

Complete!

POSITIVE STOPS! ADJUSTABLE GUIDE! Every Tooth made exactly alike!
JUST WHAT IS WANTED in every Saw-mill in Canada!

A REVOLUTION IN GUMMING SAWS WILL BE EFFECTED WHEREVER

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Is Introduced to replace Burr Gummers, or Grindstones, or where Emery Wheels have been run in the usual way. Every Machine Guaranteed to work as represented or No Sale. It works EASILY; is so SIMPLE and COMPLETE that Sawyers can keep their Saws CONSTANTLY in FIRST-CLASS ORDER and thus LARGELY INCREASE the DAILY OUT-PUT.

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Manufacturers of HART'S PATENT EMERY and CORUNDUM WHEELS.

BLYTE MILLS.

Instead of grumbling about the price of wheat being always too high, and milling being a ruined business, Mr. George Hilliard, M. P., set himself to work to find out how it was that he could not buy and grind wheat and make something out of the operation, as well as some others were evidently doing, inasmuch as no man can or will long continue at a business in which the balance is always on the wrong side.

The investigations thus brought about were not long in convincing Mr. Hilliard that the old system of grinding could not compete with the new roller process, which has recently been introduced into Canada, either in the quantity or quality of flour producible from a bushel of wheat. He accordingly determined to have his mill refitted with the latest and most improved machinery for making flour by the roller or gradual reduction process, and to this end entered into a contract with the Consolidated Parisier Company, of Toronto, who have secured control of all the most recent improvements in the flour line, for the refitting of his mill, and this contract has just been completed, and the new system put into operation by that company.

As a result of this change three of the four run of stones recently contained in the Blythe mill (the fourth being retained for chopping purposes only) have been discarded, and in their stead there has been introduced six sets of brakes, three purifiers, a bran roll, and a germ roll, which gives a capacity of one hundred barrels per twenty-four hours. As most of our readers, no doubt, are aware the great difference which exists between the old and new processes is that while by the former the grinding is all done at one, or at most at two operations, by the latter it is accomplished only after from four to five separate grindings. While any attempt at a detailed description of all the operations involved and machinery required in this process, from the time the wheat leaves the bin until it is ready for market, would be tedious to the general reader, yet we think a brief description of how the best, or patent flour is obtained will at once be interesting and give the ordinary reader some idea of the new process. The wheat, after being cleaned as formerly, is passed through three successive breakers, or sets of chilled iron rollers, each crushing the grain finer than its predecessor. As the crushed grain or meal leaves each of these breakers it passes over perforated zinc which allows all that has been reduced to a certain stage of fineness to pass through and be conveyed to a real covered with fine bolting cloth. In this way there is gradually separated from the whole product of the wheat the best part of it, with the least possible quantity of bran, before it enters the real we have just mentioned, and in passing through which there is separated that portion which has been over-ground or killed. From this real the meal is passed through a purifier, from whence it passes through a brake with stone rollers and in which it receives its final grinding, and passes to the bolts, where it is bolted as in the old process, and the "Patent" flour is ready for the market. From this brief statement of the *modus operandi* any one in any measure familiar with flouring operations will at once see that the patent article can hardly fail to be the very best that the wheat can produce, owing to the system of "creaming" which has been adopted in its production. But were we to stop here many might be disposed to think that the improved quality had been obtained at a too great sacrifice of quantity. In this, however, they would be mistaken. Of course the bran, or rather meal, which has not fallen through the perforated zinc over which it has passed after leaving the first three breakers still contains a good deal of flour. This, however, is conveyed from the last brake to the "bran roll," which separates the pure bran (and those who buy it for feed will think it pure enough) from the rest which is then passed through a purifier, and a stone roller brake, then through a set of bolts which extract therefrom a second quality of flour, while that which still remains has the same process of purifying, grinding and bolting again repeated to extract from it a third quality of flour. And when all this has been judiciously done it is

needless to say that the "remainder" does not contain much which, by itself, will make four footed animals grow fat.

Besides the improvements directly required in connection with the manufacture of patent flour Mr. Hilliard has introduced two new packers which are easily adjusted to the packing of anything from a barrel down to a twenty-five pound paper sack.

As the more wheat ground at home the better for all of us, we trust Mr. Hilliard will not only have no reason to ever regret the large outlay which these improvements have necessarily involved, but that they will prove as profitable to himself as their success will undoubtedly prove beneficial to farmers marketing their wheat in Peterborough.—*Peterborough Review*.

THE MIDLAND R. R. WORKSHOPS.

From an article in the *Port Hope Guide* in reference to the Midland Workshops, we take some particulars. In the machine shops great alterations and additions have taken place. The moving of the Belleville and Lindsay shops to this place has also been accomplished, and though the appearance previously indicated that there was but little room for much more machinery, under the new arrangements there is ample room for all that has reached here from the two shops, and apparently room for more yet. In place of lathes, planers, drills, &c., being scattered about, they are now classified and placed in rotation according to size, quality and kind, thereby not only being more easily reached, but are so situated as to the very best advantage meet the demands of work. The shop has also been divided into departments, every one having a duty to perform; each of these having a leading man, and to him on the dissection of an engine is sent the work to be repaired to be done by his men. To illustrate:—When an engine comes into the repair shop the stripping gang immediately commences its duties. After uncoupling the engine, taking out wheels, &c., &c., the different parts are cleaned. They are then distributed to the respective departments where the requisite amount of repairs are made, which on completion, the pieces are returned to the erecting shops where fitters again take hold of it, and re-erect the engine. As a consequence of the bringing of the shops mentioned to Port Hope, there are now employed in the machine shops more men than heretofore. While the interests of the Company have been effectually looked after, the comfort and health of the employees has not been forgotten, and additional windows, a new floor, and a good drainage are things of recent date. The ventilation has also been made much better by the removal of the cumbersome partition which formerly existed. Its removal has increased the room likewise.

The blacksmith shop presents a much more cleanly appearance from a new coat of white-wash and a general renovation. The number of hands here are about the same as when Mr. Patterson came.

Business is again lively in the carpenter shop. The twelve flat cars, the order for which was countermanded some time ago, has been again given; in fact some of them are completed and others are approaching completion. Fifteen to twenty hands are now employed here.

The round house is a bee-hive of industry, as the employees are required on an engine coming in to thoroughly wipe it, take out the fires, and wash them out once a week. Twenty-five engines now come in and out for use on the Midland division alone. Each engine receives a fresh supply of coal and water before coming into the round house, and is at once ready to be "fired up" when required for a new journey.

Mr. Patterson has made another revolution in the system of government, time-keeping, &c., and while the plan is very simple, it is one whereby the most complete accuracy can be obtained.

As we were coming away, an engine, the repairs on which had just been finished, was leaving the shop on her trial trip. As to the engines sent to Montreal, the repairs required were of such a nature as to demand larger machinery than is here to economically perform the work.

Mr. J. Storer, of Uxbridge, we understand, is to succeed Mr. Patterson as general foreman in

the Midland shops, and as the last named gentleman leaves for Montreal on Saturday, no doubt the new officer will arrive by that date.

TAMARAC AND JUNIPER.

The *Northwestern Lumberman* says:—The terms tamarac, hackmatack and juniper appear to be more or less confounded, being regarded by some persons as identical. Juniper differs considerably from tamarac, but the botanical classification groups tamarac, hackmatack, American larch and black larch under the head of *Larix Americana*. Juniper is of different classification, and manifestly of different character. *Juniperus Californica* is called a small shrub, or tree, sometimes 20 to 30 feet in height. A sub species (*Utahensis*) growing in central Nevada, and south to southern Utah is only 10 to 20 feet in height and up to two feet in diameter, frequenting elevations from 5,000 to 8,000 feet. Another species grows to a large size in Oregon, and is smaller in California, or often reduced to shrub. A sub-species growing in western Texas forms forests, and is an important timber tree, though not as large or so easily worked as the *Juniperus Virginiana*, or red cedar of the plains of eastern Texas. Tamarac, instead of habiting plains and eminences, is common to low, swampy ground, and moist uplands. As is well known, it has a commercial value principally for ship's knees, posts, ties, etc., while juniper has little commercial value except for fuel. In Labrador and Newfoundland the tamarac is a tree from 80 to 100 feet high, and from two to three feet in diameter, but in the limits of the United States it is smaller and less valuable, and always grows in cold, damp swamps.

FORESTRY CONGRESS.

The following letter appears in the *Montreal Herald*:

POINTE PLATON, P. Q., July 30, 1883.
MY DEAR SIR,—The American Forestry Congress meets at St. Paul, Minnesota, on the 8th August. A number of Canadian gentlemen, from every part of the Dominion, are members of that Association.

All those among us who take an interest in forestry have felt grateful to the American Forestry Congress for having chosen Montreal as their place of meeting last summer, and the results of that meeting have been most encouraging, both in awakening public interest and in stimulating private enterprise.

We, Canadians, owe it to our American friends to return their courteous visit; and we owe it our own country to join heartily in their efforts for the preservation and renovation of the forests of this continent in which we are so deeply interested. I know that some of our Provincial Governments intend to be represented at the Congress and hope the Dominion Government will not be behind them. There is so much work for the forester on our western prairies, which are now bare of timber. It has been established beyond a doubt that timber can be successfully grown there, and we shall see on our way to St. Paul what has already been done under similar circumstances by railway and private enterprise in the creation of new forests.

May I hope that you will exert your powerful influence in order to encourage a good attendance of Canadian members to the Congress, and that the other leading organs of public opinion in the Dominion will join you in that useful work.

All the American railways have been most liberal in affording travelling facilities to the members of the Congress on their way to St. Paul and back, and I feel confident that the Grand Trunk and Canadian Pacific railways will be equally liberal.

Believe me,
Yours truly,
H. G. JOLY.

Vice-Pres. American Forestry Congress.

New Patent Wood Pavement.

Mr. Edward Hughes, of Liverpool, England, has patented a method of laying wood pavement on concrete, the chief feature of which is that a rebate is cut in the bottom edges of each block, so that when they are placed side by side

the two rebates form a single dovetail. The dovetail thus formed becomes entirely filled with the material in which the blocks are laid, forming with the bedding material one compact hard mass, from which it is impossible for any block to loosen itself. It is claimed that by this method the joints may be made perfectly close, there being no necessity for any grouting. —*Timber Trades Journal*.

Do not attempt to remain over night without a bottle of Dr. Fowler's Extract of Wild Strawberry near at hand. This is the season for Bowel Complaints, Colic, Cholera Morbus, etc., and the remedy above named is the unfailing specific.

There is no excuse for suffering from Head-ache, Constipation and all the wearying train of symptoms of a disordered liver, when Burdock Blood Bitters is an unfailing remedy, and only costs One Dollar a bottle. Why suffer on without a trial? 25,000 bottles sold during the last three months, with almost universal satisfaction.

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For detailed information, get the Maps and Fold-cards of the **GREAT ROCK ISLAND ROUTE,** at your nearest Ticket Office, or address **R. R. O'BLE,** E. ST. JOHN, Vice-Pres. & Gen'l Mgr. Gen'l Trk. & Pass. Agt. **CHICAGO.**

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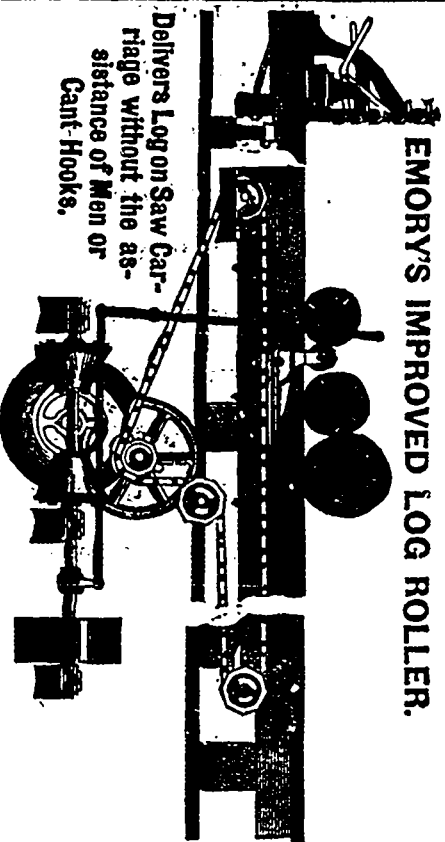
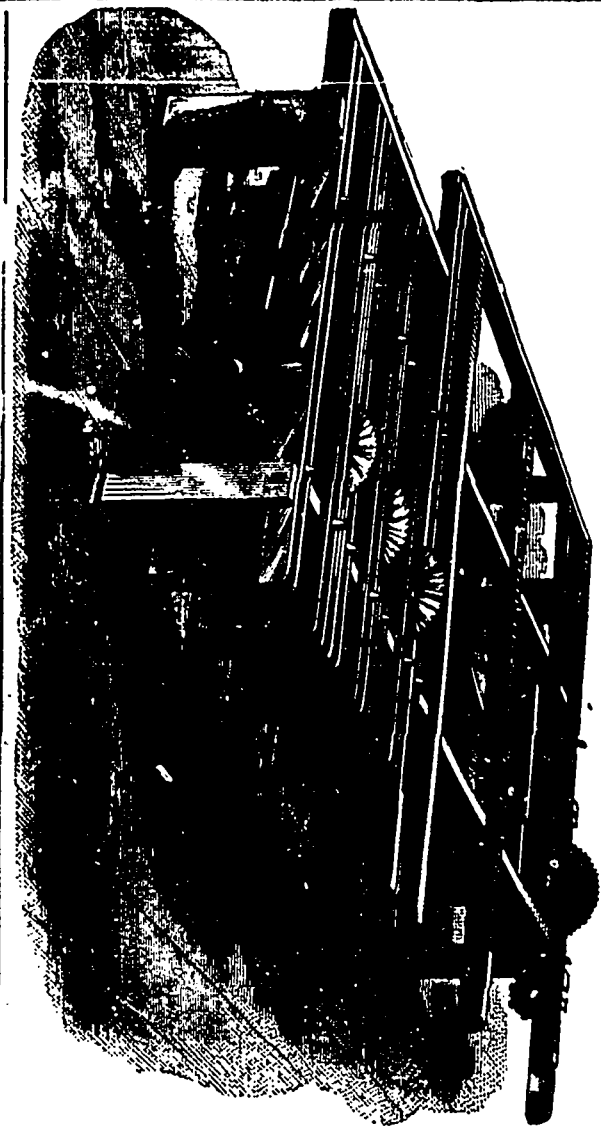
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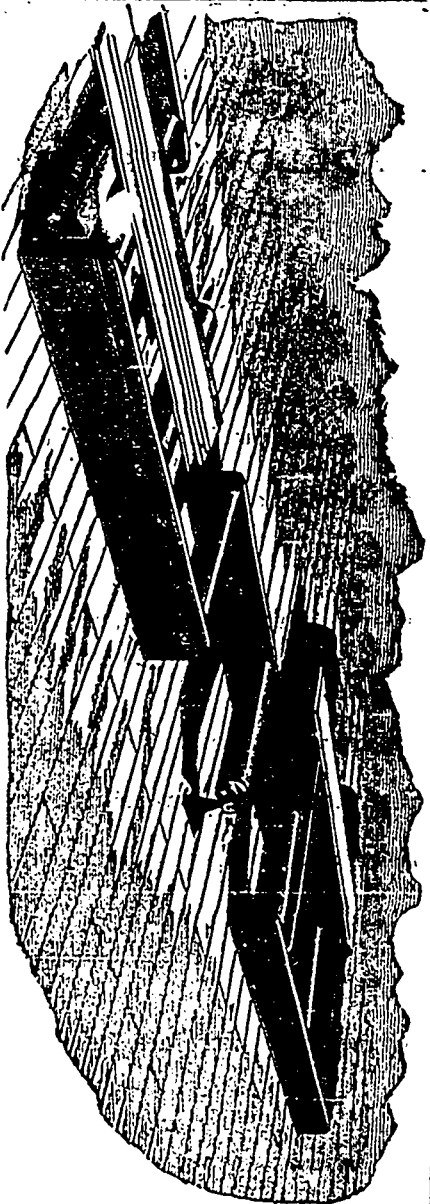
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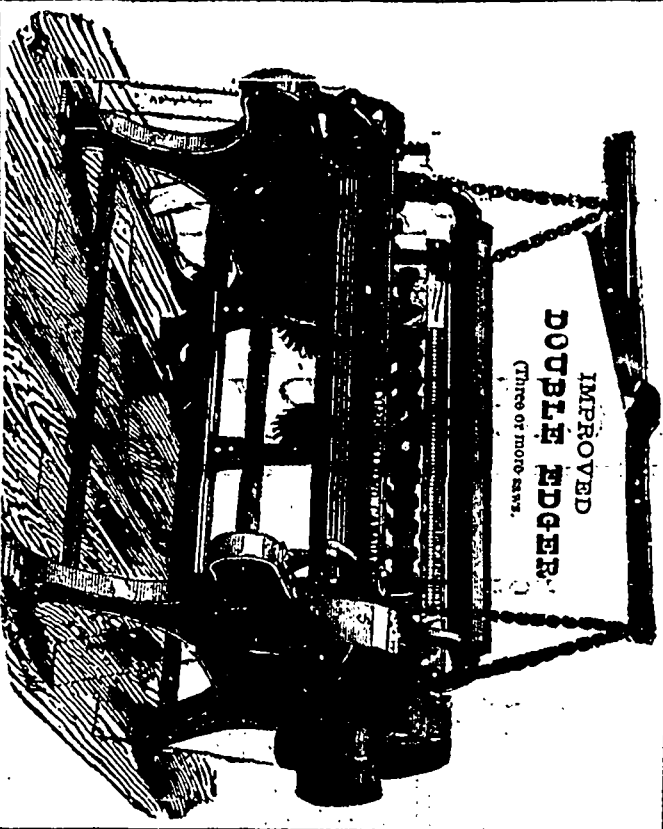
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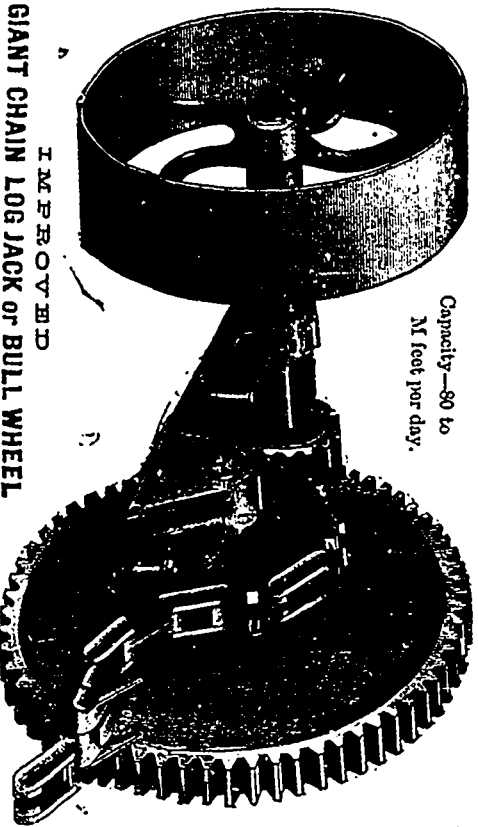


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