

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cartes géographiques en couleur

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Bound with other material/
Relié avec d'autres documents

Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distortion le long de la marge intérieure

Blank leaves added during restoration may appear
within the text. Whenever possible, these have
been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées.

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé : « taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X	32X
12X	16X	20X	24X	28X		

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

THE CANADA LUMBERMAN

VOLUME XV.
NUMBER 4.

TORONTO, ONT., APRIL, 1894

{ TERMS, 1.00 PER YEAR
SINGLE COPIES, 10 CENTS

IN THE LUMBER WOODS.

THE current number of the Canadian Magazine, a journal that is making encouraging progress, and creditably represents the best thought of the Dominion, contains an interestingly written paper, with illustrations, on lumbering in Canada, written by Mr. E. C. Grant, the well-known manager of the Ottawa Lumber Company, of Ottawa, Ont. Mr. Grant writes, not alone with literary grace and skill, but is able from out of his long and practical experience to impart much valuable information concerning the actual work for cutting the standing timber, preparation of the drives, etc. We give here an abridgement of Mr. Grant's paper.

Prefacing the paper with a colloquid account of the engagement of a gang of logmakers for the winter's work, whose wages, it is said, will range from \$15.00 to \$60.00 per month, and the men having been started on their season's journey, Mr. Grant gives a facetious description of the journey. There is the running of various rapids, the handling of the load, often coupled with tests of strength by the heartiest of the men, showing who can carry the largest load on his back. The camping over at night with an account of the improvised spread for supper is pleasantly told.

Destination reached the men quickly settle down to business. The foreman is the earliest riser in the shanty; he getting up to waken the cook, who prepares the breakfast and gives the rest of the men a call about fifteen minutes before it is ready, which is more than ample time for the completion of a standard bush toilet. The cook really reigns supreme in his domain, and, as a rule, is quite a character, and should he be endowed with the proper qualifications, he will be a great favorite with the men and give them great amusement in their idle moments. If he is quick at repartee, he will be able to repel the jocular attacks on him which they all make from time to time. So much of his time is taken up attending to his cooking and baking that he is allowed an assistant, called a "chore boy," who cuts the wood, washes up the dishes, and makes himself generally useful.

The first men to start out are the logmakers, who generally go in gangs of about four each. Each four is in charge of a head log-maker, who, as a rule, is an old hand and able to judge the quality of a tree as it stands, and who notes a great many trees, which to an inexperienced person might appear sound, would upon being felled, be found to contain either bad shake, spunk, rot, or other defect, and not worth the labor spent in bringing them to earth. If square timber is to be made, as well as logs, then when the tree is felled the head logmaker will be able to tell at a glance how much of it will make a perfect square, and if satisfactory, a chalked line will be produced and fastened to each end of the tree, over the part to which the piece is to be squared. Then it is pulled up in the

centre and suddenly let go, causing it to strike the log sharply and leave the mark of the chalk the entire length. The same thing is done on the other side of the upper surface; and two men, called liners, take their positions on the top of the log, and with their axes chip out the sides to within about a quarter of an inch of the chalked line. Then the hewer comes along with his broad-

axe and finishes these sides, making an even surface plumb with the lines. The log-makers, who have been going through the same process on other trees, return in the afternoon to the ones that they were at in the morning, and, turning them over, treat the other two sides in a like manner; and the hewer who has been following them up, also comes around again and completes the stick. Any pieces that are left over, or will not make timber, are cut

of which a capstan is securely fastened, while at the stern they fasten the booms. Then one end of a rope is attached to the capstan, while the other end is taken off in a boat to a distance of about one hundred yards and "snubbed" to a large tree. After this has been done the men return to the crib and start working at the capstan until the logs have been drawn up to where the rope has been snubbed. The same process is repeated until a point is reached where the river is navigable.

Then the logs are taken to the point of consumption by a towing company. Before reaching this point, however, they may have come to a rapid where the booms have to be loosened and the contents allowed to run through them as best they may. If the water is fairly deep and the rapids not very rocky, there is not much difficulty to contend with, but should the logs begin to jam, there is no telling when the jam will break. I have seen two or three hundred thousand logs tangled up to such an extent that the men had to resort to explosives to move them.

A great deal of knack is brought into action during one of these jams. It is a great thing to be able to locate the key logs, which, when once displaced, start the logs moving. As the drivers run a great risk of being caught by the logs, when they start to move, they have to use every precaution. When the key log is found, they drive a long spike into it, with a ring attached to the other end; then a rope is tied to the ring and the log is pulled out of position by the men on the shore, after giving the others time to get out of the way.

As one can readily see, this mode of locomotion would be most injurious to the square timber: which, when it reaches a more navigable part of the stream, is treated in the following way: All the pieces, as near as possible, of a uniform size, are gathered together and made into cribs about twenty-three feet wide and anywhere from thirty to forty feet long. The length does not matter, but, as they have to pass through a number of slides, the width must not go over twenty-three feet or they would be unable to do so. After the cribs have all been made up they are fastened together with what is called cat-pieces. These cat-pieces are made of a piece of three inch deal with a hole in either end, through which the stakes that have been driven into the cribs are passed. Then a sufficient number of small cabins are made, each to accommodate four men, and placed on the loading sticks of the cribs, and, the raft-oars having been sawn, we are ready for another start. A steam tug takes us in tow and drops us at the head of the first rapid, where we snub the raft and prepare to make the descent.

As the cribs run through the rapid they are caught up at the bottom and again fastened together and prepared for the next tow, and so on until they reach the point at which they are taken apart and loaded on ship-board for some foreign market, for the square timber is very seldom used for home consumption. While the rafts are passing by Ottawa, en route, you may often see a party of visitors running some of the slides on the cribs, or else partaking of a meal on the raft cookery, a novel experience to many.



HAULING LOGS TO STREAM.

up into saw logs of lengths ranging from twelve feet six inches to sixteen feet six inches, these being the lengths commonly used for the manufacture of lumber.

The logs of timber being finished, along come the road-cutters, who clear a space wide enough to permit of the logs being hauled to some lake or tributary of the main stream.

The logs all having been drawn on to the ice, a good deal of delay is often caused, waiting until it breaks up and allows the driving to commence. When the ice starts to move it does not take long to clear the creeks, as, the water being high, it is an easy matter to roll the



A RAFT.

logs down the banks into the stream. As the logs pour out of these streams into the main river, they are caught in a pocket, or boom, which is made of long, flattened pieces of timber securely fastened together with chains which are passed through holes in either end of them. After collecting all the logs and timber which have been taken out, the drivers construct a capstan crib, to the bow

TALKS WITH WOOD-WORKERS.

It has been suggested that the LUMBERMAN could profitably use a portion of its space each month with practical talks to the many wood-workers who are readers of this journal. Wood-working is an important section of the lumber industry, and anything that can be said to strengthen the hands and help to improve and facilitate the work of those whose business it is to make into the perfect article the timber after it has passed through the hands of the saw mill man, will strengthen the lumber industry as a whole. It will be a pleasure to the writer to chat with readers along these lines once a month, and with the object of making these talks as useful as possible, I am in hopes that readers will do their part in contributing points, suggestions and information from out of their every-day experience.

* * *

I have been shown an article on "Mortising Machines," which will appear in this number of the LUMBERMAN. Workmen have different views as to mortising, and it may be that all readers will not agree with Mr. Harmon, the writer of the article in question. It seems to me, however, that he has brought out some strong practical points as to the best methods of utilizing a mortising machine. It is doubtful whether all workmen have recognized the force of what is said in regard to mortising soft wood. We are apt to do many things without thinking, and because hard wood has been always bored before mortising we may have come to the conclusion that this rule would apply to all woods. Mr. Harmon says that this does not necessarily follow. Many other suggestions out of actual experience are made by this writer.

* * *

Anyone who has had much to do with equipping a wood-working shop knows how quickly the machinery runs into money. Having locked up, as it is supposed to be, a considerable amount of capital in machinery the owner is naturally anxious that he should not be called upon too speedily again to replenish this department of his business. If good judgment and wise economy has been shown in buying the various machines the plant will last for a good while. It not unfrequently happens, however, and the remark can be made here, that the fullest economy is not always shown in the purchase of machinery. Because of the poor character of the machinery, it may not be long in use before something gets out of kilter. But no matter how good the machinery may be it will wear out after a time, and it is here that many men make a mistake. Machinery requires men to run it, and it has well been said that it costs as much to employ a man to run a worn-out machine as a good one. I would be disposed to put this even stronger; it costs more to employ a man to run a worn-out machine than a good one, for the reason, that no matter how capable the man may be he is not going to put in the same work each day tinkering away on an old machine. Let the "boss" take notice of this, and in a quiet hour figure out the cost for replenishing a worn-out machine, and against that what it is costing him per day to pay a first-class workman to get only partial work out of said old machine.

* * *

So many have been the improvements made in planing machines we are apt to suppose that a state of perfection in these machines has been reached. But what folly. The brain of man in these closing days of the 19th century is too active to permit of perfection even in planing machines. The records of the patent office show that constant improvements in planers and matchers are being made right along. Do you not think so, fellow-workers?

* * *

The question of transmission of power in every machine shop is a many-sided one. Perhaps there is no subject more discussed in different ways in mechanical journals of the day than that of transmission of belts, the adhesion of ropes and the driving power of bands or other tractive apparatus for transmission. It is to be expected that mechanics will hold widely different opinions on a question of this kind, and that views will be made public that others will look upon as nothing

but fallacy. A writer in Industry has been exposing what he considers a mechanical fallacy in an adhesion of ropes, bands, etc. He says: "Adhesion instead of being a virtue is commonly a vice, lessening first cost at a loss of double as much in maintenance. There is no lack of tractive force, in fact, there is too much of it in most driving gearing, and we recommend that when an agent comes around to explain what a high duty he can attain with a rope, or how much the driving power of a band can be increased, the safest way is to place no confidence in such schemes and have nothing to do with them. If ropes slip, more ropes are needed; if belts slip they are too narrow. If a shaft is required to perform a certain work, we provide one at least three times as large as the torsional strain demands; a wide factor of efficiency is provided in wheel teeth, beams, framing, indeed in nearly all the elements of machinery until we come to belts and ropes for transmission. These are commonly strained to their full capacity, hence the demand for increasing 'adhesion.'"

* * *

Just as there is no end of nostrums, alleged to cure every ill the flesh is heir to, so there is no end to the number of wrinkles that are constantly being shoved under the nose of the worker in mechanical lines to help in some department of his work. Some of these are, no doubt, good, and from the travelling man one will not unfrequently pick up a real good thing. But it is a case where there needs to be good care used, or one may easily get rid of his quarter. Men loose valuable time and sometimes spoil good material; this being the case I am disposed to say with a writer in the Lumber World, "Beware of the 'wrinkle' man." To illustrate the admonition this writer tells of a recent wrinkle that will interest wood workers. The wrinkle was clothed in these words: "A good furniture polish may be made by putting equal parts of spirit of wine, vinegar and olive oil in a large bottle, and shaking thoroughly every day for a week, when it will be ready for use. This polish should be applied to the furniture with a soft woollen cloth and thoroughly rubbed in. If the furniture is very dirty it may be rubbed clean with a woollen cloth dipped in kerosene." Answering the question, What do you think of that? the same writer points out what little practical use it can be. He says for one thing it is barely probable that a pint of olive oil and a pint of vinegar and a pint of spirit of wine mixed and treated as directed may form a three pint mixture that will clean polished wood. A break in either elements will make a new compound that may act very differently from the one struck by the man who made this wrinkle. Again, is the province of a polish cleaner to be "rubbed into" the polish? As the polish depends upon the surface, what will become of the polish when the perfect surface of the varnish is changed by the "rubbing in" of an emulsion of olive oil, spirit of wine and vinegar? Will not any "woollen cloth" scratch any fine polish on wood? And what effect will "kerosene" have on a polish? I have tried this "wrinkle," using the articles named as they are sold in general. The result? Well, a piano finish was utterly spoiled by it without "thoroughly rubbing it in." A carriage-body finish was deprived of its shine totally. On chairs and sofas it spoiled the finish. It dulled the faces of so-called "French walnut" veneers. Ordinary filled-oak, thickly covered with varnish, came out speckled and spoiled.

JAS.

A REMARKABLE DAM.

ONE of the most remarkable dams in the world for height and construction is that by which the Vyrnwy river, Northern Wales, is enabled to supply water to the city of Liverpool, some seventy miles distant. In building this dam a great trench was excavated across the valley for a length of 1,100 feet, a width of 120 and a maximum depth of sixty. The masonry was started in this trench; it consists of immense irregular blocks of slate, wedged together and thoroughly bedded in Portland cement mortar, the faces being formed of cut stone block, fitted together with great care, the greatest height of the dam being 161 feet. Its most remarkable feature is the lack of any channel to carry off floods, the surplus in the lake flowing down the front of the dam covers an area four and three-fourth miles long, from one quarter

to five-eighths of a mile wide and holds largely over 12,000,000 gallons. The aqueduct, leading from the intake tower to the distributing reservoir, about two miles from the city, is sixty-eight miles long, and consists principally of a large cast iron pipe line from thirty-nine to forty-two inches in diameter. There are a number of reservoirs and tanks along the line, and at one place is a great filtering plant.

CANADIAN LUMBERING IN OHIO.

THE Timberman, of Chicago, tells of a peculiar feature of the lumber business in Ohio in which Canadians have a somewhat strange interest. It appears that a few weeks ago a certain lumberman of Defiance, Ohio, was placed under arrest on a charge of violating the alien contract labor law. Those charged with the violation of the federal statutes deny that they are amenable thereto, as they engage their labor on the American side of the line, though they do employ a large number of Canadians. But however this may be, the fact has developed that a large business has been done for many years in that part of Ohio in the shipment of timber to Quebec for export. Large numbers of men were employed cutting timber and preparing it for export the work being done under contract with Quebec merchants. The story of the development of this business is told as follows: Back in the early fifties, when northwestern Ohio was still largely a forest country, the Canadian French crossed the lakes and established head-quarters at Defiance in the very heart of the magnificently timbered Maumee valley. From that place gangs of hewers and choppers were sent out into the forests, converting the oak, walnut and poplar into timber which was floated down the river and thence by lake to Quebec. It has been a large industry, which has afforded employment to thousands of men and benefited not only the laborers brought from Canada, but contractors, merchants, etc., in Ohio, particularly along the Maumee valley from Toledo up. It is estimated that during the five months of the present season there will be taken from the forests for this purpose 1,200,000 cubic feet of timber, which will average in Ohio 33 cents per cubic foot, or a total of about \$400,000; all foreign money brought to Ohio in one season by the timber industry. And this has led to the action referred to on the part of federal officials at Toledo.

A LUMBER SPEECH.

DISCUSSING the Government's Tariff Bill in the Commons a few days ago, Mr. Bennett, of East Simcoe, as representing a constituency in which is embraced the large lumber interests of the Georgian Bay territories, said: He blamed the Ontario Government for disposing of timber limits to American speculators without restricting them to the manufacture of the logs in Canada. The result had been that millions upon millions of feet of logs had been taken out of the country. The Dominion Government had imposed a \$2 and then a \$3 export duty on logs. The effect of this was to bring about the reopening of saw mills on the shore of Georgian Bay, but in 1888, largely due to the intercession of Mr. Charlton, the export duty was removed, in consideration of the fact of the American duty on lumber being reduced from \$2 to \$1 per thousand feet. The result had been to almost destroy the lumber industry, which was the mainstay of Georgian Bay towns, and the expatriation of 12,000 people, who were engaged in that industry. Why, he asked, should all these people be expatriated by the Government simply to please Mr. Charlton and Mr. Edwards. He asked the House to consider this question honestly, and interfere for the protection of the people whose rights had been denied by the Ontario Government. The lumbermen had made money even when the American duty on lumber was \$2 a thousand. He demanded that now the masses should be given a chance instead of the pampered class. The Americans must have our white pine, and if under the Wilson Bill the duty of \$2 a thousand were reimposed on lumber the American consumer would pay the duty and not the Canadian producer. Mr. Bennett expressed the hope that the demand of the thousands of people dependent upon this industry for their livelihood would be heeded by the Government. He proposed that an export duty of \$3 to \$5 a thousand feet should be imposed upon logs. Mr. Bennett strongly advocated the completion of the Trent Valley Canal, and expressed the hope that the Government would be awake to this matter. He considered this to be a more important national undertaking than the project of deepening the St. Lawrence canals.

VIEWS AND INTERVIEWS.

Felling Trees
By Electricity.

To what ends may electricity be not applied? A successful trial has been made in Sweden to fell trees by means of electricity. The method is very simple and consists in passing the platina wire around the stem of the tree heating it to a glow, cutting through the same much in the same way as one would divide a piece of soap with a piece of twine. One of the chief advantages is that the end of the log being burnt gives the log a better quality.

Heat of
Trees.

Investigations have been pursued in Belgium by M. W. Pitz for the purpose of ascertaining the internal temperature of trees. He finds, that as a rule, a large tree is warmer than the air in winter, and a little colder than the air in summer. The mean annual temperature of a tree is practically the same as that of the surrounding air, but the monthly mean differs by several degrees. Heat changes are transmitted slowly to the heart of a tree, the temperature of the interior differing sometimes as much as ten degrees C., from that of the air. When the air temperature is below the freezing point, the temperature of the tree appears to remain just above the freezing point of its sap, and in the hot days of summer the internal temperature was not known to vary more than two degrees from 15 degrees C., 59 degrees F.,

The Timber
Cruiser.

The aborigines have their own peculiar methods of acquiring knowledge and arriving at certain conclusions. Our boyhood days have been delighted with stories of the native red man and his ways of living. But the story comes to us, as told by Julius Chambers in a recent issue of the Century, that forms even a strange parallel to the life of the red man. The tale is of the timber cruiser who is more a child of the forest, says Mr. Chambers, than the native he succeeds. He is the precursor of the lumberman and the saw mill, two important factors in our progressive civilization. He is untutored. Generally he knows nothing of astronomy but the sun's course and the polar star, because the heavens are so often wholly out of sight in the tangled forest that he relies on their guides. The mysterious secrets of terrestrial nature, handed down to him by generations of pathfinders gone before, keep him informed. On the prairie he knows that the tips of the grass always incline toward the south, and that they are less green on the northward side. In the forest the slender twigs on the boughs bend southward so slightly, it may be, that only the trained eye can detect the deflection; yet it is there. The moss on the tree trunks is always on the north side; the bark is smoother and more supple on the east than toward the west, and southward the mildew never comes.

Some Big
Trees.

The trees of the forest have thoroughly established themselves in literature. The poet sings of them, the descriptive writer finds few themes on which he can dilate with greater ease and picturesqueness than the giants of the woods, or it may be tiny shrub of our gardens. The esthetician finds in the tree, its constitution, and foliage, a subject for endless study. The student of forestry knows full well the important part the trees of the forest play in the regulation of climatic conditions and the fixing and sometimes the unfixing of agricultural pursuits. But in general literature stories of the size of some of our great trees occupy, perhaps, the most popular place. It is a little hard to say just how correct these stories may sometimes be, for every writer is apt to think he can tell the best tree story. It has, however, been pretty fully established that the big tree is surpassed in size only by the eucalyptus of Australia, while the redwood may claim the honor of being the third largest tree in the world. The largest known redwood is 305 feet in height and twenty feet in diameter. The big tree attains a greater diameter, but does not reach a proportionately greater height. Thus there are big trees recorded having a diameter of forty-one feet, but we have seen none mentioned as being over 400 feet in height. The height of the largest known eucalyptus tree is stated to be 470

feet, but the diameter is only twenty-seven feet. So while taller than the largest big tree, if their proportions are the same, the California tree has about twice the bulk of the one which grows in Australia. With odd exceptions, however, we find perhaps the best average of big trees in the Dominion among the splendid trees of British Columbia on the Pacific Coast.

Foolish
Bravado.

Can the number of accidents in our mills and shops be lessened? As we have more than once pointed out in LUMBERMAN columns were there a little less foolish bravado and a more serious regard for the value of one's own life there would not be so many accidents. The subject is one where line upon line is an absolute necessity. It is, as another has remarked, familiarity with danger seems to breed often a contempt for it, and an utter carelessness. Our contemporary, The Tradesman, remarks, we have seen the "Mohawk Dutchman," the celebrated expert with a band scroll saw, rub the ball of his thumb in dirty grease and then cut the grease off with the rapidly running saw as clean as could be done with soap and water. We have seen a man put his finger under a powerful trip hammer in motion just to show how well he could manage the machine. Many other foolish things are done just to "show off." But most of the accidents happen through a carelessness resulting from familiarity. As long as an operator is afraid of his machine he is not apt to get hurt. Many human minds are so constituted that they cannot bear a sustained effort in one direction; that is, cannot be always equally on the alert in regard to a certain contingency. A train dispatcher or switch tender may hold a place for years without ever making a mistake, and at last make a terrible one from some cause he could not explain. The only way to lessen the number of casualties—they cannot be avoided entirely—is to take precautions.

FOREST PROTECTION.

PROF. B. E. FERNOW, the forestry chief of the United States government, has summed up the forestry legislation of Europe in the following manner in the April Century:—

In Germany the various governments own and manage, in a conservative spirit, about one third of the forest area, and they also control the management of another sixth, which belongs to villages, cities and public institutions, in so far as these communities are obliged to employ expert foresters, and must submit their working plans to the government for approval, thus preventing improvident and wasteful methods.

The other half of the forest property, in the hands of private owners, is managed mostly without interference, although upon methods similar to those employed by the government, and by trained foresters, who receive their education in one of the eight higher and several lower schools of forestry which the various governments have established.

The several states differ in their laws regarding forest property. Of the private forests, 70 per cent. are without any control whatever, while 30 per cent. are subject to supervision, so far as clearing and devastation are concerned.

The tendency on the part of the government has been rather toward persuasive measures. Thus, in addition to buying up, or acquiring by exchange, and reforesting waste lands—some 30,000 acres have been so reforested during the last 25 years—the government gives assistance to private owners in reforesting their waste lands. During the last 10 years \$300,000 was granted in this way.

In Austria, by a law adopted in 1852, not only are the state forests (comprising less than 30 per cent. of the total forest area) rationally managed, and the management of the communal forests (nearly 40 per cent.) officially supervised, but private owners (holding about 32 per cent.) are prevented from devastating their forest property to the detriment of neighbors. No clearing for agricultural use can be made without the consent of the district authorities, from which, however, an appeal to a civil judge is possible, who adjusts the conflict of interests.

Any cleared or cut forest must be replanted or reseeded within five years; on sandy soils and mountain-sides clearing is forbidden, and only culling of the ripe timber is allowed.

In Hungary also, where liberty of private property rights, and strong objection to government interference, had been jealously upheld, a complete reaction set in about 15 years ago, which led to the law of 1880, giving the state control of private forest property as in Austria.

Under a law adopted in Italy in 1888, the department of agriculture, in co-operation with the department of public works and in consultation with the forestal committee of the province and the respective owners, is to designate the territory which, for public reasons, must be reforested under government control.

The owners may associate themselves for the purpose of reforestation, and for the purpose may then borrow money at low interest from the State Soil-Credit Institution, the forest department contributing three-fifths of the cost of reforestation upon condition that the work is done according to its plans, and within the time specified by the government.

In Russia, until lately, liberty to cut, burn, destroy and devastate was unrestricted; but in 1888 a comprehensive and well considered law cut off, so far as this can be done on paper, this liberty of vandalism. For autocratic Russia this law is rather timid, and is in the nature of a compromise between communal and private interests, in which much, if not all, depends on the good will of the private owner.

A federal law was adopted in Switzerland in 1876 which gives the federation control over the forests of the mountain region embracing eight entire cantons and parts of seven others, or over 100,000 acres of forest. The federation itself does not own any forest land, and the cantons hardly 1000,000 acres, somewhat over 4 per cent. of the forest area, two-thirds of which is held in communal ownership, and the rest by private owners.

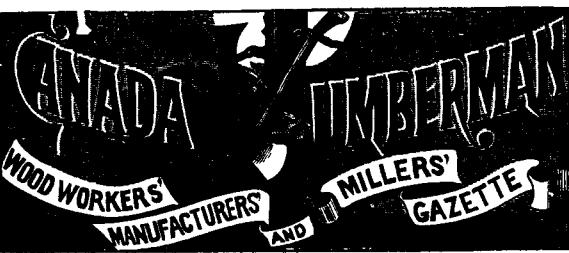
The federal authorities have supervision over all cantonal, communal and private forests, so far as they are "protective forests"; but the execution of the law rests with the cantonal authorities, under the inspection of federal officers.

In France, not only does the state manage its own forest property (one-ninth of the forest area) in approved manner, and supervise the management of forests belonging to communities and other public institutions (double the area of state forests), in a manner similar to the regulation of forests in Germany, but it extends its control over the large area of private forests by forbidding any clearing except with the consent of the forest administration.

NOTES ON STEAM.

The expense of restoring worn-out piston rods is much greater than the difference in cost between a good and a poor packing. If fibrous packings are used select those which have the greatest amount of elasticity. Those having a flat surface next the rod allow of a more perfect bearing and require less pressure to keep them tight. Packings should not remain too long in use, or long enough to become hard, otherwise the rod will be sure to be scored. A perfect piston rod is one of the surest indications of a careful engineer, as a scored rod indicates the careless and unthinking engineer.

We would like to inquire what a safety stop is on a governor for, if not to be used? It is by no means an uncommon thing to go into an engine room and find the blocking-up pin left in the governor of a Corliss engine or the lever hooked up, or the collar thrown around on a Greene, or the top motion on a Wheelock not in position. The excuse that the engineer has is usually no excuse at all; that he is always around, and if anything happens he is right at hand. These devices can be thrown in position for use in a second, and surely an engineer can spare that amount of time every day. When an accident happens it is almost invariably when some one is not at the throttle, and it only takes a few seconds to bring an engine to the dangerous point of speed. Do not be found with this protection against racing not in position, if there is one on your engine, is our advice to engineers.



PUBLISHED ON THE FIRST OF EACH MONTH

—BY—

C. H. MORTIMER

CONFEDERATION LIFE BUILDING, TORONTO

BRANCH OFFICE:

NEW YORK LIFE INSURANCE BUILDING, MONTREAL

TERMS OF SUBSCRIPTION:

One Copy One Year, in advance	\$1.00
One Copy Six Months, in advance	50
Foreign Subscriptions, \$1.50 a Year	

ADVERTISING RATES FURNISHED ON APPLICATION

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

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

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

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

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

NOTICE OF REMOVAL.

SUBSCRIBERS, advertisers, and others concerned are particularly requested to note that the offices of THE CANADA LUMBERMAN have been removed from the Canada Life Building to the CONFEDERATION LIFE BUILDING, Richmond and Yonge Streets. All communications should in future be addressed to C. H. MORTIMER, publisher CANADA LUMBERMAN, Confederation Life Building, Toronto.

CHANGE OF OWNERSHIP.

FOR some years I have been talking to readers of THE LUMBERMAN through these columns, but with this issue my connection with the journal ceases. Mr. C. H. Mortimer, the well-known publisher of the Canadian Architect and Builder and Canadian Electrical News has purchased the entire assets and good-will of the paper and with this issue assumes the duties of editor and publisher. That he is capable of maintaining THE LUMBERMAN in the front rank of Canadian trade journalism there is no room for doubt. I trust that not only will the patronage heretofore extended to me be continued to the present owner, but that the amount of advertisements and subscriptions will be supplemented. To the lumber and wood-working trades my thanks are extended for favors in the past. In conclusion I would say: "Stick to your own trade paper and it will stick to you."

A. G. MORTIMER.

IN assuming the management and ownership of THE CANADA LUMBERMAN, I deem it only necessary to state that no effort shall be wanting to maintain the Journal at the point of highest interest and value to persons identified with the lumbering and wood-working industries. Mr. J. S. Robertson, who has been connected with THE LUMBERMAN in an editorial capacity for three years past, in the same manner will continue to serve the interests of its readers. Subscribers and readers are cordially invited to make use of the columns of THE CANADA LUMBERMAN for the purpose of expressing their opinions on any subject affecting the lumbering and wood-working interests. If even a comparatively limited number would act upon this suggestion, the Journal would of necessity become increasingly interesting and instructive to every reader. I would appre-

ciate also suggestions and criticisms of a friendly character from subscribers tending toward the improvement of the paper. A straightforward business policy will be pursued toward advertisers and subscribers which I trust will prove satisfactory to all with whom I and my agents may have to deal. Finally I would express the hope that under my management THE CANADA LUMBERMAN will continue to improve and prosper.

C. H. MORTIMER.

too quiet, and have been letting the red men do all the talking and aggressive work. A result of the present condition of the shingle trade is that white pine men are likely now to make known the reasons why white pine shingles should continue to be in popular favor.

It has not been alleged of the red cedar shingles of British Columbia, so far as we have been able to learn, as a result of the boom, that manufacturers have become careless, and are making up a product that will not give lasting satisfaction. This charge is being made against some of the cedar shingles of Washington Territory.

Without detracting in any way from the good things to be said of the red cedar shingle, the white pine man has a strong case. He may claim with some fairness the advantage of his shingle in a climate like Ontario, where we get extremes of heat and cold, and where freezing weather will at certain times of the year quickly succeed wet weather. Besides there is a difference in prices in white pine and cedar shingles that gives advantage to the former.

By no means an unimportant element in the consideration of this question is the claim of even white pine shingle manufacturers themselves, that the time has come in our province when white pine can be more profitably cut into lumber than into shingles.

EDITORIAL NOTES.

THE association idea does not take hold of Canadian lumbermen as it does of their congeners across the border. We have had occasion to remark this before and the reports of the various State lumber conventions that are coming before us at this time brings the matter anew to our notice. We know that not a few leading lumbermen of the province would like to see an association of Canadian lumbermen, and perhaps the mention given of the matter here may start the ball rolling.

IT may be claimed that the argument is only local; it is nevertheless true that the people residing in the towns and villages along the North Shore feel keenly the loss that comes to them because of the exporting of large quantities of logs from those territories, in place of having them manufactured in the mills, that dot that portion of the country, and which are now closed. This feature of the lumber question was forcibly brought before the public a week ago in a speech of Mr. Bennett, member in the Commons for East Simcoe, extract from which we publish in another column.

WORD reaches us through the report of the Dominion Geological Survey, that will cause surprise, we believe, to many lumbermen. Under authority of the Dominion government the Survey has recently accomplished an exploration of interior Labrador. The statement is made, as a result of these explorations, that the climate in the interior of Labrador, where there are many large and sheltered valleys, is far milder than has been supposed. This vast district is thickly wooded with spruce, interspersed with poplar. There are many square miles of spruce timber, the growth being largely of trees which will square 18 inches. This will be of great interest to Canadian lumbermen. Railroads will need to penetrate the regions, either in the points from the province of Quebec or from Hudson Bay.

AN encouraging element in connection with Canadian wood pulp is contained in the information that it is obtaining a hold in England, in competition with Scandinavian pulp. English paper manufacturers, it is said, are becoming interested, and realize that there is a vast field for their own capital in the extensive forests of spruce in Canada. The Paper Mill says: "It is among the possibilities that a great deal of English money will be put to use in developing the pulp industry in this country, in the near future. Englishmen are restive under the comparative monopoly which the Scandinavians and Germans have had in pulp, and the business of selling American pulp in England which has grown up during the past few months has suggested a way of breaking up. While they would not care to become customers for America, they will probably take kindly to the idea of making their own pulp in a British Province."



THE difficulty of clearly estimating the possible cut that may come from a forest of standing timber has been a subject of frequent comment among lumbermen. It is true that woodmen have developed the faculty of calculation in this respect in a very high degree, but their work can hardly yet take a position among the exact sciences. In illustration of this fact cases are constantly coming before us showing how wide of the mark the cleverest experts will sometimes be. In connection with the several lumber sales that have taken place in our own province within the past year or two, we have known timber-lookers to have gone forth to spy out the land, and reported certain spots to be worth certain figures. Others, believed to be equally shrewd and knowing, have gone over the same ground and fixed up a widely different estimate of the supposed quantity of standing timber. Added to these instances, I learned a little time ago of a Michigan case that goes to confirm all that has been said of the uncertainty of these estimates. Louis Sands, of that state, bought last summer a piece of pine land, supposed to contain on an estimate 13,000,000 feet, for which he paid \$74,000. It is now conceded that this tract will cut 16,000,000 feet, and yet others who looked over the ground with a view to purchasing could not find over 6,000,000, much less 13,000,000 feet. Those who are disposed to laugh at the frequent estimates that we get of the quantity of standing timber in the leading pine provinces and states can point with a good deal of force to such instances as I have here cited, and query, What do you know about it?

* * * *

When in the north country a few days ago I learned that at Howry & Sons, the large Michigan lumbermen, who are carrying on extensive operations in the Georgian Bay territory, had purchased the old S. G. Smith mill, at Fenelon Falls, and will cut their logs, at least a part of them, on the Canadian side this summer. This mill has been idle for six or seven years. It will be good news to the people of the north to learn that the Howrys are to become Canadian operators. Talking of Howry & Sons operations in the woods this winter my informant remarked that these had been conducted on a wide scale. There is lots of "go" in this concern, said he, and whilst the figure they paid for their limits was a large one, they are evidently intent in getting all they can out of them.

* * * *

A few days ago I dropped into the office of Mr. F. Tennant, and in answer to the enquiry, how were cedar shingles moving? was told that, though early in the season, he had placed a large quantity of them in the province, especially in Western Ontario. It is Mr. Tennant's opinion that the red cedar shingles are affecting the sale of the better quality of white pine shingles. For the lower grades of white pine shingles there is a good demand. Whilst there is no remarkable rush of business in lumber generally throughout the province, Mr. Tennant's experience is that there is a very satisfactory revival of trade. Last month proved with him one of the largest months of business for a considerable period, and the first week of April has opened up very auspiciously. It is remarkable, said Mr. Tennant, how well prices for lumber are keeping up. They do not stand just as high as this time last year, but there was then a special boom on; the disposition now is to hold quite firm to good figures. Trade in the city is altogether slow. In fact, there is no building going on this winter worth speaking of.

* * * *

Few names are better known in lumber circles in the Dominion, and especially in the east, than that of Stanley F. Burns, of the maritime provinces. Readers of the LUMBERMAN will remember that nearly three years ago a portrait with character sketch of Mr.

Burns, was published in these columns. He was then representative in the House of Commons for a leading constituency down by the sea. Within the past year his name has been quite prominently mentioned in connection with the Lieutenant Governorship of New Brunswick. He is a big enough man for any of these places, and does justice to any work that he undertakes. Lately Mr. Burns spent some time in England in the interest of his large lumber operations, and has been successful in selling the whole of his winter's cut at 75 cents a thousand over last year's rate. The future of lumber in the maritime provinces is, in his judgment, better than it has been for years. Deals will be worth \$9 a thousand in St. John in the coming summer, and may even go higher than this. Mr. Burns says the lumber cut of Restigouche, Gloucester and Northumberland counties, as well as other counties in the province, has not been nearly so large as last year, and this reduction in stocks will effect prices favorably.

* * * *

Particularly with Michigan lumbermen the business relationship between them and many operators in our own country is so close, that I am constantly on the look-out for any item of news that can be picked up regarding the plans and intentions of our lumber friends in Michigan. Remarking on this point, I am reminded of a comment made by Mr. Bray, of the Parkin Lumber Co., of whom I have something to say elsewhere. We were talking about the changes in methods of logging in the present day contrasted with those of ten and fifteen years ago, when Mr. Bray was active in the woods. He spoke of the magnificent scale on which some of the Michigan lumbermen conducted operations. "Take Howry & Sons," said he, "they are thorough going Americans, and they do things up fine in the woods. Lots of money is spent in the making of fine roads, the elaborating of shanty methods, etc." But to matters concerning lumber in Michigan, Mr. A. Comstock, an extensive and wealthy lumberman of Alpena, has been predicting a large shortage in the annual lumber crop this year that will be occasioned by the sudden thaw which set in in the open woods early in March. "It came to us all in a minute," said he, "and we were perfectly helpless. There had been snow enough for our operations previously, but within a few hours after the thaw set in everything was slush and we were tied up so that we could not move a log. It will cause a shortage of at least 100,000,000 feet in the lower and about 150,000,000 feet in the upper peninsula. In the districts which are immediately tributary to Michigan, including Wisconsin and the Canadian border, the shortage in the lumber crop will foot up at least 500,000,000." All this means a largely reduced output of lumber in Michigan this year. Canada will be drawn on for a good supply of logs. Mr. Otis Shepard, president of the Shepard & Morse Lumber Co., of Ottawa and Boston, and vice-president of the Saginaw Lumber and Salt Co., has said of trade in Canada that he found prices in both grades and mill run firm and that the prospects for a good trade in the East looked bright.

* * * *

Mr. Thomas Meaney, manager for Robt. Thompson & Co., who have also an office at Hamilton, does not anticipate any large amount of building in either cities this summer. "In fact," he says, "there is hardly anything projected as yet. Throughout the province, however, there is a fair measure of activity and a good deal of lumber going out." He tells me what others in the trade remark, that prices are holding up well. This applies more particularly to dressing grades and below. The United States market is equally dull for the higher class of lumber. The drawback there is the uncertainty regarding the fate of the Wilson bill. It certainly drags its way slowly along and Mr. Meaney tells me that not a few United States lumbermen are under the impression that at the last it will be defeated. This, he, of course, would consider an injury to the Canadian lumber trade. Talking particularly of building operations in Toronto, said Mr. Meaney, "this city will never again see another building boom." I remarked that this was a strong statement, the word never was a very long one. "It is so, however," he repeated, "the supply men and the labor men have been successful in securing legisla-

tion from the Ontario government that will prevent men from entering into that reckless class of speculative building that gave, at the time, so much life to the building boom here, and that proved, as well, perhaps, the strongest feature in bursting that boom. Any man who could handle a saw and hammer and who might be worth his \$1.50 or \$2.00 a day, went extensively into building. These men possessed no capital, but the boom was on and the loan societies were prepared to advance them large sums of money. Only one result could follow from the extravagance of these business methods and the lumbermen and other supply men came in for the heaviest losses. The working men by virtue of their lien law had some protection. The loan society gave these light-weight contractors the money and they seldom paid the supply men, if they could manage otherwise. Under the new act of Mr. Mowat the workmen and the supply men will have a primary claim on the building and the loan societies are expected to satisfy themselves when they advance money that these claims have been met, if not, they will have the pleasure of doubling up on their payments by paying over again."

* * * *

Spending a few hours in the progressive town of Lindsay, a few days ago, I took the opportunity to visit the mills of the Parkin Lumber Co. who are extensive manufacturers of shingles. They give their entire effort, in fact, to the manufacture of shingles. The business was originally conducted by S. G. Parkin & Sons, and within the past year has taken the shape of a limited liability company. The Parkins, outside of being shareholders, are not actively engaged in lumbering, being contractors for the supplying of electric power to the town of Lindsay. Mr. A. C. Dutton, of Springfield, Mass., is president of the company, and Mr. James Bray, sec-treasurer, an active business manager. The mill is a new one and very perfectly equipped, a description of it appearing in these columns some months ago. I had the pleasure of chatting with Mr. Bray about lumber affairs. He is a man who knows lumbering from A to Z, there not being a department of the business, perhaps, he has not at one time or another engaged in. "For a long time," he said, "I spent every winter in the woods, and know, I guess, as much about logging as the next man, and of its pleasures, as well as vicissitudes. For some time I was shanty clerk and obtained experience in a business way in that position. Speaking of the drives, as the time comes near for that work, I have done my share of that thing. To-day my friends have installed me as manager of this business, which is one of no small size. We started the mill running on the 2nd of April and will continue it to its fullest capacity until the end of the season. I anticipate a good summer's trade." Responding to my enquiry whether the introduction of the red cedar shingles of British Columbia would interfere with the trade of white pine shingles in Ontario, Mr. Bray said: "I do not fear competition from this source. We manufacture less or more cedar shingles here, and at present the mill is working on this class of goods from cedar obtained from the swamps in this locality. I do not disparage the red cedar shingle. It's a splendid shingle and I only wish we had their wood here, but I anticipate, in any case, they must always be handicapped by the high rates of freights." I asked Mr. Bray, if he thought there was anything in the contention of white pine men, that it would pay better to work up the best logs into lumber rather than shingles. He said: "We do not consider any white pine too good for shingles, and manufacture ours out of the very best pine we can procure. The old way was to use only the culls for shingles, but this was a great mistake." Coming back again to the question of drives, Mr. Bray, looking out of his office window, giving ear to the whistling and howling of the wind, for I tell you when the wind does blow, there is lots of scope for it in that north country, he said, "I do not like the looks of the weather. A fortnight ago I despatched a company of men to get started with the drives and things looked favorable, but just now the weather is against us. However, I do not anticipate any serious delay. So far as this section of the country is concerned, I think the drives are going to come along all right. So soon as the ice breaks up we will have abundance of water."

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE event of the month has, of course, been the opening of Parliament and the introduction of the Government's revision of the tariff, the discussion of which now waxes warm. So far as lumber is concerned the particular interest most agitated is the wood pulp industry. It has been felt ever since the introduction of the McKinley Bill that this branch of the lumber trade was unfairly dealt with. From the Canadian point of view there has not been any intelligent explanation of why spruce should have not held just as favorable a position in the regulations as white pine. The opinion of Mr. Eddy has already been given in the LUMBERMAN columns, that pulp wood will yet prove itself to be a greater industry for Canada than white pine. Protests from the manufacturers of wood pulp at the Merriton mills, at the Cornwall mills and at the New Brunswick mills have been entered against wood pulp being placed on the free list. Hon. W. B. Ives, on the other hand, who is himself in the business in the Eastern townships, seems to think that the duty will not interfere with the Canadian mills. White pine men are interested in waiting to ascertain what may be the outcome of the Wilson tariff.

INDIFFERENT LENGTHS.

A deputation composed of Mayor Thompson and Councillor McCort, of Thessalon, Messrs. Burton Bros. and Major Elliot, have been here asking to have the navigation of that part of Algoma improved.

Probably not less than 400 shantymen have already arrived in the city to locate here for the summer months. The present season is spoken of as one of the worst on record in the Ottawa Valley for taking out logs. All through the winter the roads have been far from good, there is fully two feet of water across some of the larger lakes where the traffic is cut off. Shantymen are praying for a cold snap to help them in winding up their season's business. The season has been an unfavorable one for the taking out of large timber. There seems to be little doubt that the amount of logs that will come down from the shanties this year will be less than that of 1893.

In the case of Boyd & Co. vs. Smith, judgment has been given in the Exchequer Court. Boyd & Co. are well-known lumbermen, of Bobcaygeon, and Smith, who has charge of booms on the Fenelon river, seized their logs for toll. Boyd & Co. took an action against Smith, meantime depositing \$2,245 in the court for dues. The court has now given judgment in favor of Boyd for \$300, and if action is not taken within thirty days by the Government, then the \$2,245 will be returned to the firm.

OTTAWA, Can., March 29, 1894.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

A STATEMENT that has recently been published showing the wide export field covered by Washington lumber is being quoted by the local journals here as an object lesson to B. C. lumbermen to throw fresh life into their business methods. It is quite true that the depression in the markets of South America and Australia have cut off supplies for export in Washington, as well as here, yet the figures show that our neighbors shipped during 1893 80,621,926 feet lumber and 6,926,325 lath. The destination of these shipments took in Chilli, Germany, China, Belgium, Japan, Mexico, England, France and other points. But our people will get there, no doubt, for the lumbermen of this province are keen and energetic business men.

COAST CHIPS.

At the annual meeting of the New Westminster Board of Trade, two lumbermen were elected to official positions, namely, John Wilson, of Brunette Saw Mill Co., president, and J. G. Scott, of the Pacific Coast Lumber Co., to the council of the board.

The Moodyville Saw Mill Co. have lately cut one cargo for export and are expecting two or three more vessels.

Mr. D. S. Savage, secretary and treasurer of the Ontario and Western Lumber Co., Rat Portage, paid this province a visit lately.

The Moodyville Saw Mill Co. purposes building a light line of rail three miles in length, in order to extend their logging at Grief Point, Malaspina Strait.

A final judgment has been given in the case of Scott vs. B. C. M. T. and T. Co. Scott lost a leg by an accident in the Hastings Mill, Vancouver, and the jury awarded him \$2,500 damages; the judgment now given reverses this.

Elisha Robinson for several years mill foreman of the Brunette Saw Mill Co. died a few days ago after undergoing an operation for a dangerous abscess in his neck. Deceased was 33 years of age and came from Stormont, Ont., to the province twelve years ago.

The position of the Shawinigan Lake Lumber Co. has been altered by the retirement of Ewen Morrison; the partners now are William Munsie and T. Elford.

The Chilean bark India is expected at Vancouver from Valparaiso before long to load a return cargo.

Though our shingle men are showing a good deal of energy in pushing business, it is not supposed that the cut this year will be very large. There is considerable of last year's cut still on hand.

NEW WESTMINSTER, B. C., March 28, 1894.

NEW BRUNSWICK LETTER.

[Regular correspondence CANADA LUMBERMAN.]

EVIDENCES of spring work among the mills of the province are commencing to show themselves. The rivers are fast being cleared of ice and it is thought that the season altogether, will be a favorable one for the drives.

Lumbermen are encouraged by a tendency to firmer prices in the British market, especially for spruce and white pine.

The fate of the Wilson tariff bill continues to effect trade in different lines. Were the duty on lime lowered it would help the sale of cordwood and tend to increase prices some at the main ports.

The provincial government are pleased with the result so far of their new 21-year lease system. The returns are beyond their expectation. It is a case, however, as was feared at the time where the larger operators are controlling the business chiefly.

The first cargo of deals for the season arrived a few days ago from Advocate Harbor, N. S.

A new mill will be built this spring at Campbelltown by the Muskoka Mill and Lumber Co., of Toronto. It will be remembered that they acquired considerable limits at the government sale a year ago.

Receipts from stumping on crown lands in the province last year were \$105,740, the cut being smaller, the receipts for current year will be lighter.

W. H. & J. Rourke, of St. Martin's, will have their new mill running early this spring. The cut in the vicinity of St. Martin's this year has run about 6,000,000, half of it being cut by the Messrs. Rourke.

The Jewett mill site above Fredericton, on the St. John river has been purchased by Donald Fraser, of River de Chute. He will erect a lath, shingle and board mill and at the same time continue to operate his mill at River de Chute.

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

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE statistics of the lumber trade of this state for 1893, which show quite a decrease in business compared with previous years, are enforcing the repeated contention of lumbermen that this once banner state for white pine is fast losing its strength. It is granted that in the southern portion of the lower peninsula the pine is well consumed, and what woods are left consist chiefly of hemlocks and hardwoods. In the Saginaw district our mills for some time have been looking to Canada and other points for their supplies. On the Lake Huron shore stocks are exceedingly light, and large supplies are brought to this point from Canada. The lumber cut of 1893 was in round numbers 647,000,000 feet less than the output for 1892. The following table makes comparison of the lumber and shingle stocks on hand in this state at the close of the years named.

LUMBER AND SHINGLES MANUFACTURED.

	Lumber (feet).	Shingles.
1885.....	3,578,138,732	2,574,675,900
1886.....	3,984,127,175	2,088,124,232
1887.....	4,162,317,778	2,677,858,750
1888.....	4,292,189,014	2,846,201,000
1889.....	4,207,741,224	2,602,930,250
1890.....	4,085,767,849	2,469,878,750
1891.....	3,599,531,668	1,826,174,250
1892.....	3,794,250,754	2,140,647,875
1893.....	3,147,999,147	1,832,027,550

COMPARISON OF STOCKS ON HAND.

	Lumber (feet).	Shingles.
1885.....	1,252,942,251	211,229,500
1886.....	1,354,101,834	283,838,000
1887.....	1,428,224,132	195,218,000
1888.....	1,424,266,000	335,952,256
1889.....	1,447,503,997	372,807,250
1890.....	1,436,878,279	376,875,750
1891.....	1,218,683,167	199,211,250
1892.....	857,057,493	186,220,000
1893.....	1,246,369,160	351,749,100

PRESENT PROSPECTS OF TRADE.

There is a good deal of difference of opinion as to the prospects of the opening season's trade. One prominent local lumberman has said that we are not going to be relieved from the present depression for some time to come, and he looks for nothing but hand-to-mouth trade for the spring and summer,

and further states that his correspondence with various sections of the country, leads him to believe that the retail yards are running with very light stocks, and that the wholesale yards are not largely stocked up. In their anxiety to make sales, many dealers are reported to be cutting lumber lower than it can be purchased for. Opposing this view, there are others who look quite hopefully to a good trade during the present season.

BITS OF LUMBER.

Isaac Bearinger, Saginaw's millionaire lumberman, a large holder of Canada timber limits, has recently built a magnificent \$200,000 fire-proof building, which will be one of the commercial attractions of the place.

The saw mill industry of Alpena, has started the season's work in the running of the lumber mill of Mr. Albert Pack, a well-known name in Canadian lumber circles. The mill will be operated until the logs now in the mill boom are manufactured, besides ten and twenty train loads of logs that are to be brought by the Alpena and Northern railway road from pineries of Mr. Pack in Presque Isle county. This will take about three weeks, then the mill will stop until the regular sawing season commences.

An instance of how the depletion of the pines is shown in the case of Muskegon, once familiarly called "The Lumber Queen of the Earth," which will have nine saw mills in operation this summer, which are expected to cut 200,000,000 feet. When in the height of its glory this lumber town had 41 mills.

The Lansing Lumber Co. will rebuild its mills recently destroyed by fire. The insurance amounted to \$89,000.

Prof. W. J. Beal, professor of Botany in the Michigan State Agricultural College, in a lengthy article to the press on the forest trees of Michigan, says there are 80 species of forest trees native to the state, which attain a foot or more in diameter.

The box factory that is being erected by Ross, Bradley & Co. will be ready for running early in April. This firm began business in 1881 unloading that year 4,000,000 feet of lumber, a figure that has now grown to over 40,000,000 feet annually.

An impression prevails here that Tawas will be one of the points in the state where lumbering operations this year will be carried on on a light scale. The Holland and Emery Lumber Co., really the life of the place, will, it is said, sell all the logs they can. This firm expected to take out about 70,000,000 feet in Canada, of which, already, they have sold 40,000,000 feet. If a satisfactory figure can be had for the remaining 30,000,000 feet they will be sold and the mills likely remain idle.

John B. Brown, of this place, has obtained a verdict in the United States Courts against Thos. H. McGraw and R. K. Hawley, of New York, for \$43,922. The case arose out of a pine log deal.

SAGINAW, Mich., March 27, 1894.

WHEN ACCIDENTS OCCUR.

FLESH wounds.—Wash with clean cold water. Apply lint soaked in water, and bind with a clean cotton bandage.

Bruised eye.—Bind on a linen pad soaked in brandy. To remove dirt, use point of led pencil.

Sunstroke.—Apply ice or ice-water to the head, and keep in a cool place.

Apoplexy.—Raise the head and body. Bare the head and neck, and promote circulation of fresh air.

Bruises.—Apply ice, or bathe part with ice-water.

Fainting.—Keep head low. Bare the neck; dash cold water on the face, head and neck. Promote circulation of fresh air.

Burns.—For severe burns, apply cotton wool soaked in linseed oil.

Bleeding.—If the blood spurts, an artery is severed. Bind the limb tightly above the wound with a handkerchief or scarf, twisting it with a stick. If the blood does not spurt, a vein is divided. Bind the limb tightly below wound; raise the wounded limb above level of body, and press near the wound with thumb. Apply clean bandage to stop flow of blood, and take patient to the surgeon.

A THREE CENT STAMP DOES IT.

ON receipt of a three cent stamp we will mail free to any address a copy of our little hand-book entitled "Rules and Regulations for the inspection of pine and hardwood lumber," as adopted by the lumber section and sanctioned by the Council of the Board of Trade, of Toronto, June 16, 1890. Address, CANADA LUMBERMAN, Toronto, Ont.

THE NEWS.

CANADA.

—Gillies Bros. have commenced driving on Lone Creek, Ont.

—Neibergall's and Buchanan's mills at Staples, Ont., have started work for the season.

—C. A. McCool & Co.'s. saw mill at Mattawa, Ont., is expected to be running shortly.

—The Pembroke Lumber Co., has a large drive of logs on the South branch of the Petawawa.

—Chas. Battrick, of Midland, Ont., will build and operate a shingle mill at Byng Inlet this season.

—A Waterous portable saw mill has been set to work on the claim of John C. Fraser, near Edmonton, Alta.

—Many million feet of logs, it is thought, will be "hung up" this year owing to the early break up of winter.

—The Brunette Saw Mill Co., of Vancouver, B. C., have sold four cargoes of lumber and are endeavoring to charter ships to load.

—G. Kastner, of Wiarton, Ont., is pushing work on his new saw mill. He has a large supply of logs at Oxenden and Colpoys.

—The firm of Lamoureux Bros., sawmill, Edmonton, Alberta, has been changed to Chave & Co. The new company have begun sawing.

—The Campbellford Herald says there may not be a drive of logs floated in the river Trent this year, except what may be necessary for the mills in Campbellford.

—Atkinson, Rufus & Co., lumber, etc., Estevan and Alameda, have moved to Hartney, and a new partnership is being formed ; A. J. and J. H. Hughes being admitted partners.

—A local correspondent writes of the saw mill of Chas. Birge, and the planing mill and sash and door factory of Leitch & McKinney, at Hornings' Falls, Ont., as doing a good business.

—Gilmour & Co., of Trenton, Ont., have already expended over \$200,000 in preparing water courses, and other needed operations, along the route from their new limits to the southern lakes.

—The Shawnigan Lake Lumber Co., (Limited), succeeds the unincorporated company of that name. Their yards are at Victoria and at Wellington, B. C. Wm. Munsie, T. Elford, John W. Coburn, Andrew Hasleman Lewis Mounts are the directors, and the saw mills of the company, whose capital stock is \$160,000, are at Shawnigan lakes.

—A demand of assignment has been made upon William W. Gibsone, trading under the style of W. Gibsone & Co., lumber merchants, Quebec. Gibsone started business in November, 1891, having obtained a contract from Dobell & Co., to cut lumber on their limits. His capital was small, and he has had hard work to get along. Liabilities not stated.

—The shingle mill industry of British Columbia is represented by the following range of mills :

	Daily Capacity
H. H. Spicer & Co., Vancouver.....	300,000
W. L. Tait & Co., Vancouver.....	70,000
B. C. Mills, Timber & Trading Co., Vancouver.....	70,000
Hastings Shingle Mill Co., Vancouver.....	70,000
A. McNair, Vancouver.....	70,000
Thos. Kirkpatrick, Vancouver.....	50,000
Geo. Cassidy, Vancouver.....	50,000
B. C. Kendall, Vancouver.....	50,000
W. L. Cedar Lumber Co.....	50,000
W. L. Johnston & Co., Vancouver.....	70,000
Brunette Mills, New Westminster.....	85,000
Galbraith & Son, Vancouver.....	50,000
Pacific Coast Lumber Co., New Westminster.....	150,000
B. C. Mills, Timber and Trading Co., New Westminster.....	105,000
Revelstoke Lumber Co., Revelstoke.....	35,000
N. Hanson, Wasa.....	35,000
G. O. Buchanan, Kaslo.....	35,000
Knight Bros., Chilliwack.....	35,000
Total.....	1,380,000

The total dry kiln capacity is 895,000 per day. H. H. Spicer & Co., of Vancouver, operate the only ten block machine in the province, the other mills using double block, hand machines or upright "Boss" machines.

—The story comes from Carleton Place, Ont., of a curious phenomenon observed on the Chalk River limit of the Gillies Bros. Co. A gang of men, who were engaged cutting logs, noticed smoke as from a small fire rising up over the opposite side of a ridge from where they were at work, and it being near noon they thought it must be from a fire started by some of their companions, as it is customary for the men to take their lunch to the woods with them in the morning and sometimes to start a fire to warm it. So they concluded to go over the ridge at noon time and thus save themselves the trouble of making a fire. Imagine their surprise, on reaching the top of the crest, and looking down on the opposite side to see that the fire was in the tops of two green pine trees, and not on the ground or started as they had supposed. On investigation it was found that the trees were leaning one towards the other, so that near

the tops they crossed, and bore heavily against each other. The swaying motion caused by the wind had chafed them so that there was a dry, hard spot on each, where the gum had been oozing out. This day, through the extra length of time the gale had continued, the heavy pressure caused by the friction of the trees rubbing together had evidently caused them to ignite. The trees were cut down and made into logs.

GENERAL.

—The plant of the Memphis Lumber Co., Memphis, Tenn., was burned a fortnight ago. Loss \$100,000; partly insured.

—The Canadian Pacific, Great Northern, Northern Pacific and Union Pacific are all prepared to haul shingles and lumber from Washington territory on same basis.

—Both of the big saw mills in Tacoma, Wash., are shut down, and the general outlook is blue. The dullness is attributed to the bad conditions that prevail outside the coast.

—London, Eng., imported 12,840,682 feet of mahogany lumber last year, chiefly from the Central American states. The supply of this valuable wood, which once grew in great abundance in Cuba, and the finest color of any in the world, is said to be nearly exhausted.

FIRES AND CASUALTIES.

FIRES.

—Jesse Cook's saw mill and planing mill at Zephyr, Ont., was destroyed by fire on 30th ult. Loss \$10,000; no insurance.

—Two men, Larry Murphy, and Eli Kimberby, engaged at lumbering at Straight Lake, Ont., were killed a week ago in a C. P. R. accident.

PERSONAL.

The president of a lumber company in the Southern States is a woman.

Mr. John Charlton, M. P., was a recent visitor to the Saginaw River cities in the interests of his lumber business.

Lord Rosebery, Great Britain's new Premier, adds lumbering to his many other avocations. He is a large stockholder in the Southern States Land and Timber Company, an English corporation that has several large mills in Florida and its general offices in Pensacola.

THROTTLING vs. AUTOMATIC CUT-OFF ENGINES.

UPON this question the American Machinist in a recent issue says: There can be but little doubt, we think, that in some instances the throttling engine, with fixed cut-off, will equal in all respects, the automatic cut-off, and we believe it is possible to conceive of an engine being operated under such conditions that the former would show slight superiority. But in the great majority of purposes for which steam engines are employed it seems that the reverse must be true.

The great point of superiority of the automatic cut-off principle comes from the fact that most steam engines are subjected to variable loads, and quite generally some fluctuation in steam pressure. If this was not so then a properly designed throttling engine would be unobjectionable. For, of course, there is a point of cut-off for any engine that is the most economical, and a cut-off can be fixed for that point that shall, at least, be as good in all respects as that under the control of the governor. But because there is such a point of cut-off it does not follow that it is best to fix it, and reduce the pressure as by throttling for lesser loads. This economical point of cut-off varies with the steam pressure, and the automatic cut-off governor so varies it, which is right in principle. That is, if a cut-off at one-quarter stroke is the best for a given pressure, if the pressure is somewhat higher than that, it is better to take advantage of that high pressure by cutting off earlier than to reduce the pressure by throttling or otherwise. This is very near, but probably a universal fact. For example, with the point of cut-off correct for a given pressure it is possible—we think probable—that a little, not much, throttling may be better than a change to earlier cut-off. And in case of very materially higher pressure considerable throttling may be advisable. This would depend upon the quality of steam, and upon other circumstances, perhaps; at any rate it is to be shown that there is enough in it to afford a margin for the economical use of the throttling governor, except in selected instances.

The reaction in favor of throttling is not likely to be violent, but it is interesting. Engineers who set out to-day to improve the throttling engine have to aid them

a good deal of general information that was not on hand at the time the automatic cut off engine made its appearance. Should serious effort be made to bring the throttling engine into competition with the automatic cut-off the attempt will be on quite different grounds from what it would have been made on twenty years ago, and it would not be safe to predict the outcome. It is possible only to fall back on the argument—which does not amount to much—that it cannot be seen how the effort can be successful, and await results.

CANADIAN SPRUCE FOR MAINE.

M. R. EDWARD JACK, of Fredericton, N. B., sees an easy way for the manufacturers of Maine to secure easy access to the vast forests on the upper St. John, in Quebec, transporting the output to Boston with little or no trouble. His outline of the plan is like this :

"From a point about three miles above the Grand Falls of the Saint John to the mouth of the Saint Francis river, the former river is the boundary between the United States and the Dominion of Canada. Where it reaches the Saint Francis it follows that river for a number of miles, then striking off in a northwesterly direction, and crossing many tributaries of the Saint John which have their sources in the Province of Quebec. The Saint John river is thus, for eighty miles, the boundary between the two countries. Two railways skirt the river—the Canadian Pacific from Grand Falls to Edmundston and the Temiscouata railway from Edmundston to Connor's Station—the latter distance being 32 miles; at Connor's Station and from that place to the Saint Francis the strong, deep current of the Saint John has become still, and the river widens out, so that between the Saint Francis river, which empties into the Saint John about four miles above Connor's Station and that station, hundreds of millions of feet, board measure, of saw logs can be held at all seasons in the most perfect safety. From Connor's Station across the Saint John to the State of Maine the distance will be but about fifty or sixty rods; consequently, the Canadian spruce logs can be held in the river here to be made into pulp or even sawn into deals, whence they can be transported to River du Loup, on the St. Lawrence river, a distance of 113 miles. The cost of the transfer of pulp from Connor's Station to Boston is 17 cents per hundred. 118 miles from Connor's Station will place the Spruce product of the Upper Saint John on the wharf at River du Loup, the whole distance being by rail, and at this wharf vessels from Europe can load and discharge. Thus the vast forests on the Upper St. John, in Quebec, can be utilized in such a manner as to give manufacturers of pulp in Maine, within fifty or sixty rods of Connor's station, the output can go in bond to Boston via the Temiscouata or Intercolonial or other roads, or it can be carried by barge up the St. Lawrence either to New York or to the cities on the lakes. Thus the duty will be saved. There are many millions of acres of spruce land on the Saint John above Connor's Station, and at and above that station is the only place above the Grand Falls where logs can be held to any extent in the upper Saint John."

ALL ABOUT SAW MILLS.

A young miss in the schools of a saw mill town in Michigan has evidently investigated the saw mill business thoroughly and read the following essay on the subject recently, which we republish for the benefit of our readers who may not have had practical experience : "Saw mills is very useful. If it was not for saw mills we wouldn't have no sawdust for to stuff our dolls. If I was a doll I would rather Die than to be stuffed with straw. Straw is very ticklesome when you haint got anything Else on your Inside. I know a good deal more about saw mills but my paper is all gone."

Letters from our readers are always welcome.

"That's a venerable joke," sighed the sawyer as he listened to the "chestnut" of the road man.

WOODMAN, chop that tree! Chop root, trunk, branch and bough! In youth its twigs switched me, and I'll get even now!

MORTISING MACHINES.

By F. J. HARMON, IN "WOOD WORKER."

EVERY shop should be equipped with a good power mortising machine. One fitted with the improvement of a self-turning chisel is desirable, but it does not pay, especially for heavy work, to use a machine that reverses the chisel by dropping the table. It may be well enough to use such a machine for very light work, but even then I do not like to be forced to lift the foot 12 or 18 inches, letting the work and table fall to the bottom limit of its travel, and then be obliged to raise things up again before the work can be carried along. I have done this even on big car mortising machines, but I will never buy a machine of that kind for my own use. The best reverse is a small lever arrangement located close to where the left hand would naturally be located when holding the work to be mortised.

The machine should have the boring attachment belted separate. A pretty good way is to have it fitted with the hollow shaft arrangement, or one shaft inside the other, one to drive the chisel, the other the auger. Then two tight and two loose pulleys can be put along side each other and the two belts controlled by a single shipper built with two guides. When the shipper occupies a central position, both belts are on the two loose pulleys, or, upon a single wide loose pulley, but as two belts seldom ever drive at the same exact rate of speed, and also because it may be desirable to run the auger faster than the chisel, it is better to have a separate loose pulley for each belt. Now, when both belts are shipped to the right, one goes on the chisel-driving pulley, the other to the loose pulley vacated by the first belt. But when the bit, or auger, is driven, its belt goes off to the left and the other belt comes to its place.

The shipper handle should be rigged so close to the mortiser that it can be actuated without the operator having to move from his tracks. Indeed, I like even better than the regulation shipper handle, to rig a rope attachment for operating the belt shifter. Let the rope run vertically past the post or frame of the machine, and if necessary let it pass down through the floor, there to be attached to the belt shifter, and by means of pulley sheaves carried to the desired position beside the machine. Another rope is attached to the other end of the shipper and run over a pulley to a vertical position and a weight attached which is heavy enough to move the shipper and start the machine. Then, to operate the belt shifter it is only necessary to pull down or lift up on the rope. For this reason the counter weight attached to shipper must be heavy enough to operate it any time when the other weight is removed, by lifting on the main rope.

All soft woods should be mortised without boring, but in case of very deep, narrow mortises it is well to bore a single hole before commencing with the chisel. Hard wood should be bored before mortising. In some kinds of very heavy work it is well to put in a narrow chisel and make two or more cuts. This puts much less strain on the machine and is nearly as rapid, owing to the possibility of taking a thicker chip with the narrower tool.

When a good deal of deep mortising has to be done, say for door stiles, I make a square end tool 1½ inch narrower than the mortise and about ½ inch thick. Put this tool into the machine in place of the chisel, after that tool has been used all that is necessary, then with the blunt tool all the chips can be driven out cleanly and quickly. A tool of this kind saves a good deal of time in cleaning up a mortise, against what would be required in "beating out" by hand. But with this tool, as with the hand concern described later, it must be used carefully or the work may be split open. It is possible to drive mortise chips in with very great power, so great, in fact, that the surrounding wood will not stand it, and the result is a crack that will damage, if it does not spoil the work in hand beyond even the possibility of glue-pot repairs.

The hand tool above alluded to is made of good, hard hickory, maple or oak, hickory preferred, and sap-wood at that. A piece about 1¼ inches square is planed up, the length being eight inches more than the thickness of the stuff make the stick 12 inches long. Put one end of the stick in the vise and with a draw-knife shave down the free end until it is thin enough to go into the mortise,

taking care to keep the thin part right in line with the middle of the handle or thick part, otherwise the tool will spring. Another very good way is to mark off the exact shape of the tool, then saw it out on the band saw.

In mortising by hand, I like to bore a single hole to start with in all except the very softest woods, say white pine. After the hole is bored, commence to cut down with the chisel, working towards one end of the mortise. Keep on until within ¼ inch of the mark, then put the chisel squarely on the mark and drive it neatly down, taking great care not to cut under or to slant the other way. The nicety of the mortising depends largely upon the manner in which this last and light cut is made. Next commence again at the hole and work in the opposite direction until the end of the mortise is reached, then finish that in the same manner as the first end. The piece should then be turned over and the other side chiselled. The driving out stick should then be used. Place the mortise over some object with a hole in it, or project it over the bench a little, then drive the stick down through the mortise at the point where there are the fewest chips. Be careful and not drive too hard. Work the stick through gradually, perhaps turning the work if necessary. After once through the rest is easy. Advance the stick ¼ or ½ inch at a time, faster if the chips go out easily, and soon the entire mortise will be cleared. If the chiseling has been well done but little trimming will be needed. The tool must be held very true and driven squarely, to avoid leaving a bunch on one side of the mortise and a hollow on the other side. If trimming must be done, take a firmer chisel as wide as will easily go into the mortise, and skive high parts boldly down, taking on every part of the wood which shows itself when sighting through the mortise from one line to the other.

In grinding mortising chisels do not let the face get rounding. Keep the chisel flat on the stone when grinding the face, which should be ground as little as possible. Power chisels with corner lips must be handled with great care, and used with very light chips in knots or hard wood.

SETTING PLANER KNIVES.

WORKERS in wood are not all of one opinion as to the best way of setting planer knives. The following suggestions, however, from a correspondent of the Wood Worker, as referring to a heavy 30-inch double surface, has much in it that is practicable and sensible. The correspondent who signs himself Nemo, says :

"To start with, after taking off the dull knives, we have a sharp steel scraper, generally made from a half-round or flat file, with which we scrape off the pitch and gum from the edge of each face of the cylinder. After that is thoroughly cleaned we turn the cylinder so that one side is level (on a four-sided cylinder there would be two sides straight). We then drop a knife down on the bolts on the back of cylinder, then turn the cylinder forward until the knife is nearly level. We have a straight-edge ¾ inches thick by 1½ inches wide and 30 inches long, in which there is a rebate cut ½ inch wide; the ½-inch is the amount of set we give the knives.

"Two men take the straight-edge and hold it up against the face of the cylinder, then push out the knife until the edge strikes the edge of the rebate. They hold it there tight with one hand, while with the other they tighten all of the bolts. Then they take the wrenches, and go over them again, putting them all down tight. After the knife is tight, they turn the cylinder forward one-half over and put the mate to the first knife on (the knives are balanced up in pairs).

"In putting the knives on the lower cylinder they shove the back bed around out of the way and take one of the bars out so they can get at the cylinder, then set the knives the same as they did on the upper cylinder. There are two bars to the lower cylinder, one on each side, which are adjustable. After they have put on sharp knives they raise these bars up so the knives will not cut too much, and as the knives are worn down by filing they lower these bars to correspond.

"In front of the upper cylinder is an adjustable pressure-bar. When we want to run the planer, after putting on sharp knives, we start the machine and put in two

boards that will nearly fill the width of the planer, and feed them in a little ways beyond the upper cylinder, then stop the feed and adjust the pressure-bar so it will hold the boards down on the bed steadily and not allow them to chatter. If the lumber is coarse and knotty, we watch the work for a while, as it is liable to chip or tear. In that case, we stop the machine, and while it is running slowly, before it stops, feed the boards ahead a little by hand, when the knives that are doing the cutting will show a light streak of dust on the edge. On those knives we run a file over the edge lightly, giving the cutting edge a very short bevel. Once or twice doing that will nearly always stop all chipping or tearing.

"I will also give the way we have of setting siding or beading knives on a matcher-cylinder. It is not a patented way, but we find it a very quick and handy one. We use a small pattern that the shape of the work to be done is drawn upon, in this way : We take a piece of lattice stuff, about ¼ inch thick, 1½ inch wide, and a little shorter than the length of the cylinder. In that we drive a small nail in the edge close to one end; from that nail we mark off the distance the inside head cuts from the cylinder. That is the point we have to work from. On the face of the pattern we make a line parallel with the edge, the same distance the knives are set out from the cylinder, then taking the beading or siding knife and mark on the pattern, with a sharp pencil, its proper place. After a pattern is once made any one that can set knives on a cylinder can set the knives for either ceiling or patent siding. The shape of pattern looks like that used for cove siding.

"There is one fault with this way of setting, and that is if the knives on the cylinder are filed away some, the pattern knives will cut too deep. Then you will have to set them back to correspond, and sometimes it is quite a nice little trick to get them right, especially if the siding has a long bevel."

LUMBER PRICES IN MANITOBA.

THE report of the Minister of the Interior, recently issued, gives a list of lumber prices at different points in Manitoba. The average cost of lumber to the consumer, at Winnipeg, is placed at \$18, while at Brandon, 150 miles further west, it is placed at \$11 to \$15 per thousand. It seems strange, says The Commercial, of Winnipeg, that, according to these figures, lumber is cheaper farther from the source of supply than at Winnipeg. The figures are no doubt misleading, prices probably being based on a different class of lumber. Brandon is a manufacturing point for spruce lumber, the logs being brought down the Assiniboine river from the Riding mountain country. This class of lumber is sold much cheaper than pine, and the price of lumber at Brandon is no doubt based on spruce, while at Winnipeg it is based on pine. Pine lumber could not be sold as cheap at Brandon as at Winnipeg (much less \$3 to \$7 cheaper) without loss, as it costs considerable more to lay it down at the western town. Brandon, however, has always been a very cheap lumber market for the consumer, but a very dear market for the wholesale dealers, who have made heavy losses through the frequent failures of the Brandon retail dealers. The one fact accounts for the other. People up around Brandon have got cheap lumber at the expense of the wholesale dealers who supplied it. Cutting in prices has been the rule in that market, followed by frequent failures, and the trade has been in a continual state of demoralization.

A USEFUL RECIPE.

A FIREPROOF and waterproof substitute for paint, for use in boiler and engine rooms, consists of six quarts of freshly slackened lime, well sifted, to which is added one quart of rock salt and a gallon of water, the mixture being then well boiled and skimmed clean. To five gallons of this mixture are added a pound of alum, half a pound of copperas (stirred in slowly), three-quarters of a pound of potash, and four quarts of fine sand or hardwood ashes, well sifted. To this may be added any coloring material desired. It is said to be as durable as slate, and to be especially applicable to brickwork and similar surfaces.

NOTES ON BELTING.

A LARGE proportion of the so-called accidents to belts, in which they jump from one cone to another, or run into neighboring gears, are due to excessive pliability. Owing to their greater lateral stiffness, slack belts are much to be preferred to thin ones. So much do I believe that the property of stiffness increases the life of belts that I make it a rule to use as thick a belt in all cases as the diameter of the pulleys will permit. A manifest advantage of belts made of two or more thicknesses of leather lies in the fact that imperfection of the leather will produce but little effect in a double or triple belt, while in a single it is fatal. Messrs. Lewis Bauroff have, in their experiments, demonstrated the fact that "no marked difference could be detected in the power required to run a wide double belt or a narrow light one for the same tension as modern speeds." And again, we see ropes up to two inches in diameter transmitting power with great efficiency, and with apparently but little loss of power owing to their thickness. Therefore a thick belt will be practically no less efficient than a thin one on account of its stiffness.

Many experiments have shown that the pulling power of belting for a given arc of contact is almost independent of the area of the belt in contact with the belt, and that it depends chiefly upon the sectional area of the belt, and its total tension; so that a triple belt will transmit about as much power as a single belt three times its width.

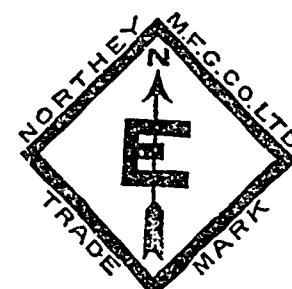
With wide belts, and belts running at high speed, it is especially desirable that the thickness should be increased. If thin belts are used at high speed, they almost invariably run in waves on the slack side, particularly if the load which they are transmitting changes suddenly. These waves frequently continue in the belt while it is rounding the driven pulley, so that one can sometimes even see light in places between the belt and pulley rim when standing in the proper position. This wrinkling of belt, and the snapping that occurs as the waves straighten out, wears it very fast, and causes the splices to part, frequently in a few months. The remedy for this trouble I have invariably found to be an increase in the thickness of the belt. When a sufficient thickness is used, the belt settles down on the same pulleys and under the same conditions to a long, steady curve on the slack side, and the wrinkling and snapping cease.

It would seem also as though a certain ratio of thickness to the width of belt should be maintained, particularly in high-speed belts, otherwise the belt is apt to chase from side to side on the pulleys. This chasing would seem to be due chiefly to the oscillation of the

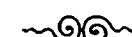
belt around its longitudinal axis on the slack side, the belt being thereby tightened, first at one edge and then at the other, each side as it is tightened tending to run toward the center of the pulley. This oscillation, and the resultant chasing, are almost sure to cease when the thickness of the belt is increased in proper proportion to its width. As an illustration of this principle, the writer has in mind the case of a belt 78 inches wide and 9 1/16 inches thick, running about 5,500 feet per minute, which could never be prevented from chasing from side to side on its pulleys for any length of time without the use of an idler pulley. This chasing was due to the oscillation about its longitudinal axis, which was caused by the small thickness of the belt in relation to its width. A belt 3/8 inches thick and 72 inches wide, used on the same pulleys, was almost entirely free from the chasing, and I am convinced that an increase to 1 1/4 inches in thickness would have rendered it sufficiently stiff to permanently remove the trouble. It should be noted that the thicker belt proved to be far more economical, durable, and satisfactory in every way than the thin belt. If the principle is correct, of using thick belts on account of their lateral stiffness and consequent durability, it becomes of the utmost importance to determine the minimum diameter of pulley which can be used with a given thickness of belt, and still have the belt last well. The writer is quite sure that the double leather belts 3/8 inch thick will last well and give excellent satisfaction on pulleys as small as 12 inches in diameter, as he has had many belts in use for years under these conditions. For some time past he has had a triple leather belt 12 inches wide, 0.56 inch thick, running about 4,500 feet per minute, with an idler pulley pressing lightly upon it, and transmitting about 100-horse power to a pulley 12 inches in diameter. This belt has up to date given excellent satisfaction, and has already lasted much longer than the two double leather belts which preceded it.

Regarding the question of fastening the two ends of the belt together, I think it is safe to say that the life of belting will be doubled by splicing and cementing the belt, instead of lacing, wiring, or using hooks of any kind. When belts are subjected to the most severe usage, the spliced portion should be riveted, iron burrs being preferable to copper. For double belting, the rule works well of making the splice for all belts up to 10 inches wide, 10 inches long; from 10 inches to 18 inches wide the splice should be the same width as the belt, 18 inches being the greatest length of splice required for double belting.

STEAM PUMPS



Duplex AND SINGLE Steam AND POWER Pumps



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

WRITE US



NORTHNEY

M'FG CO.

LIMITED

TORONTO - ONT.

J. F. EBY

HUGH BLAIN

SNOW GONE

Of course you will want **CAMP SUPPLIES**. Your Fall orders must be nearly exhausted. BEFORE ordering your Spring Supplies write us for samples and quotations. We quote **Currants** and **Raisins** WAY DOWN, and our **JAPAN TEAS** are special value. Just drop us a line.

EBY, BLAIN & CO.
WHOLESALE GROCERS - TORONTO, ONT.

OUR NORTHWEST LUMBER SUPPLY.

EMBODIED in the report of the Minister of the Interior laid before parliament at the present session are the particulars of the several crown timber agents under the control of the Dominion Government. Briefly summarized these reports say: "The price of lumber within the Winnipeg agency varies from \$9 to \$18 a thousand feet, according to the quality and kind of lumber. There are 29 mills in operation within the agency cutting under government license. The revenue received from the British Columbia crown timber agency during the last year was \$32,780, being an increase of \$1,864. Of the amount collected, the sum of \$4,693 has been received for bonuses of berths put up to public competition. The total area acquired was about 34.56 square miles, averaging a bonus of \$136.07 a square mile. The total quantity of lumber manufactured for the year amounted to 16,089,067 feet, as compared with 20,062,680 feet for last year, and sold at the rate of \$9 to \$10 a thousand. There were 13 mills within this agency operating under license from the Dominion government. The total amount of dues collected within the Calgary agency during the year amounted to \$17,983, an increase of \$3,168. The price of lumber at Calgary was from \$10 to \$18; at Fort McLeod, from \$10 to \$39; Cypress Hills, \$10. Seven saw mills were operating within this agency last year under the government license. The total amount of dues collected within the Edmonton agency was \$3,795 being a decrease of \$1,495, as compared with previous year. The price of lumber at Ed-

monton during the year was \$16 to \$23 a thousand feet. The agent reports four saw mills in operation within this agency. The total amount of dues collected within the Prince Albert agency was \$5,671, being a decrease of \$4,347, as compared with the previous year. Lumber sold at Prince Albert from \$17 to \$40 a thousand. There are three saw mills in this agency cutting timber under license.

Saw mill returns received at the head office gave the following quantities of building material as having been manufactured and sold during the year within the five agencies: Sawed lumber, manufactured, 38,104,797 feet; sold, 37,660,002 feet. Shingles, manufactured, 2,687,499; sold, 3,383,407. Lath, manufactured, 455,750; sold, 480,500. One hundred and twenty-seven licenses to cut timber over a total area of 2,669.45 square miles were issued during the year. The area licenses in the province of Manitoba, the provisional territorial districts, and on Dominion lands in the province of British Columbia are as follows: Manitoba, 621.08 miles; Alberta, 1,389.05 miles; Assinboia, 66.75 miles; Saskatchewan, 203.83 miles; British Columbia, 388.74 miles. The number of applications received during the year to cut timber was 111, of which 94 were for licenses and permits to cut timber on Dominion lands in British Columbia. The number of applicants during the previous year was 94.

Ocean freights at St. John, N. B., continue firm, ranging from 38s. 9d. to 42s. 6d.

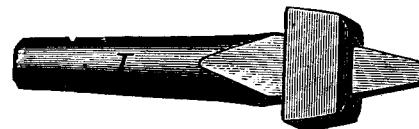
Mr. C. A. Godfrey, representing Walter H. Kendall of Vancouver, B. C., was a recent visitor to the office of THE LUMBERMAN. Mr. Godfrey reports the lumber business to be looking up in British Columbia.

A union of boiler owners has been formed in south Sweden for the purpose of bringing about a more economical and rational working of boilers, etc., similarly to what has been done with such good results in Germany. The time for the formation of such a union is considered particularly appropriate, inasmuch as some much-needed legislation in connection with boilers may soon be looked for.

Buy the Best

The "WHITING" Saw-Set

FOR CROSS-CUTS ONLY WARRANTED



The only SWAGE SET made

SAMPLE BY MAIL, PREPAID, 85c.

R. DILLON OSHAWA, ONT.

A. ALLAN, President

J. O. GRAVEL, Secretary-Treasurer

J. J. MCGILL, Manager

F. SCHOLE, Managing-Director

Canadian Rubber Company

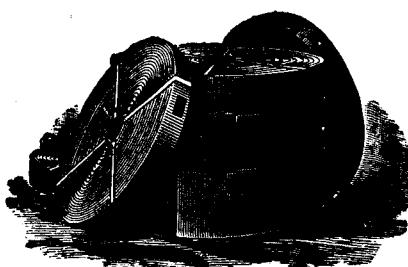
of MONTREAL, TORONTO and WINNIPEG

... MANUFACTURE ...



**SUPERIOR QUALITY
RUBBER GOODS**
for Mechanical Purposes

RUBBER BELTING, PACKING, HOSE



HEAD OFFICES AND FACTORY: MONTREAL.

Western Branch: CORNER YONGE AND FRONT STREETS

TORONTO

J. H. WALKER - Manager.

FORSYTH

**Seamless Rubber Belting
Seamless Tube Hose**

These Patents we control for Canada



.. CANADIAN HOLLOW BLAST GRATES ..

Do you —

LACK STEAM?

TESTIMONIALS:

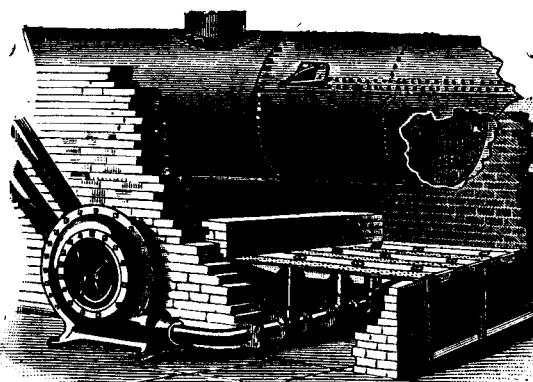
JAMES NAYLOR & SON, Hoops, Staves, Heading, etc., Essex, Ont.: "The Blast Grates please us beyond expectation. We had spent hundreds of dollars in contrivances to burn our elm sawdust, but without success. We now burn it all, and keep better steam than before with dry wood."

E. H. DOYLE, PROPRIETOR, Detroit Hoop and Stave Co.: Wyandotte, Mich.: "Their work is simply marvellous. They have paid for themselves every fifteen days this season. We steam with refuse 20,000 feet of logs, 30 cords of bolts, a mammoth dry-kiln, and run five engines and all our machinery with two 66-inch by 16-foot boilers, and steam blowing off all the time. One fireman, sixty years old, does the firing, and he has a chair that he uses a third of the time. We use carriers and a bulldog furnace. Your grate is a boon to mankind."

AARON GORDON, Staves and Hoops, Dresden, Ont.: "I do not consider a saw mill complete without Blast Grates."

FOR FULL INFORMATION
ADDRESS

The Canadian Hollow Blast Grate Co.



We can —

HELP YOU.

TESTIMONIALS:

NELSON, TENNY & CO., Saw and Planing Mills, Minneapolis, Minn.: "We have given your Hollow Blast Grates a full test during the present summer at our saw mills in this city and are very much pleased with them. They have greatly increased the draught of our furnaces, so that we have had no trouble in burning the wet sawdust and making all the steam needed."

STEINHOFF & GORDON, Dealers in all Kinds of Cooperage Stock, Wallaceburg, Ont.: "We are greatly pleased with your grates. We can make all the steam we require no matter how wet our fuel is. For burning sawdust they are unequalled."

D. P. McDougall & CO., Manufacturers of Lumber, Maxville, Ont.: "In reply to your letter inquiring about Blower and Grates, may say that so far we are satisfied that we have 'struck it' for burning sawdust."

THOS. C. DAWSON, Saw Mill, Renfrew, Ont.: "The Grates are giving good satisfaction. I am well pleased with them and everyone who sees them working thinks they are just the thing."

Essex, Ontario

JOHN MILNE, PRESIDENT AND
GENERAL MANAGER.

**STEAM BOILER INSPECTION AND INSURANCE DEPARTMENT
OF THE
STEAM BOILER AND PLATE GLASS INSURANCE COMPANY**

JAMES LAUT, MANAGER, OF CANADA

DIRECTORS

PRESIDENT.

F. A. FITZGERALD, ESQ., President Imperial Oil Co., VICE-PRESIDENT.

HON. DAVID MILLS, Q.C., M.P., Ex-Minister of the Interior.

JOHN MORISON, ESQ., Ex-Gov. British America Assurance Co., Toronto.

T. H. PURDOM, ESQ., Barrister, London.

J. H. KILLEY, Consulting Engineer. JOHN FAIRGRIEVE, Chief Inspector.

HEAD OFFICE: MASONIC TEMPLE - LONDON, ONT.

AUTHORIZED CAPITAL, \$500,000 SUBSCRIBED CAPITAL, \$200,000

FULL GOVERNMENT DEPOSIT.

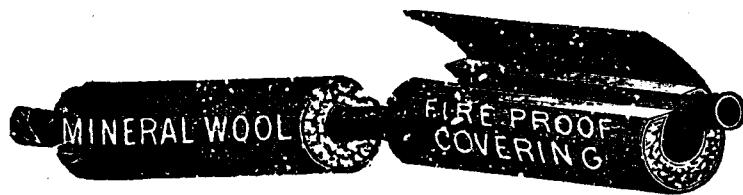
When were your Boilers last inspected by a competent engineer?
Do you know what pressure your Boilers can safely stand?
Is your Steam Gauge registering the correct pressure?
Are your Water Gauges free and in good working order?
Is your Safety Valve working properly?

DO not trust to luck; the unexpected generally happens. Avoid the calamity of an explosion. Protect life and property by taking out one of our Inspection and Insurance Policies.

Representative Lumber Manufacturers and Dealers

TOWN	Railway, Express, or nearest Shipping Point	NAME	BUSINESS	Power, Style and Daily Capacity
Ottawa, Ont.	Ottawa	Booth, J. R.	Lumber, Wholesale and Retail.	Steam, Circular and Band Mill
Ottawa, Ont.	Ottawa	Bronson & Weston Lumber Co.	2 Sawmills, White and Red Pine, Wholesale.	Water, Gang and Band, 450m
Ottawa, Ont.	Ottawa	OTTAWA LUMBER CO.	Lumber, Pine, Spruce, Hemlock, Wholesale.	
Parry Sound, Ont.	Utterson	Conger Lumber Co.	Lumber, Wholesale and Retail.	
Parry Sound, Ont.	Parry Sound	Parry Sound Lumber Co.	Saw, Shingle and Lath Mills, Pine, Wholesale.	
Muskoka Mills, Ont.	Midland	Muskoka Mill and Lumber Co., Head Office, Arcade, 24 King st. w., Toronto	W. Pine Lumber, Lath and Bill Stuff, all lengths.	
Alexandria, Ont.	Alexandria	McPherson, Schell & Co.	Cheese Box Factory, Pine, Spruce, Cedar.	
Almonte, Ont.	Almonte	Caldwell, A. & Son	Sawmill, Pine, Lumber, Hemlock, Hardwoods.	Circular, 3m.
Barrie, Ont.	Barrie	Dymont & Mickle	Sawmill, Pine, Spruce, Cedar, Hardwoods.	Steam, Circular, 40m
Barrow Bay, Ont.	Wiarton	Barrow Bay Lumber Co., Limited	Saw, Shingle and Heading Mill, Pine, Cedar Oak, Oak Railway Ties, Paving Blocks.	Steam, Circular, 16m
Blind River, Ont.	Blind River	Blind River Lumber Co.	2 Saw, Sh. and Lath Mls., Pine, Hem., Bl. Birch	Stm., Band, Cir., S. 75m, Sh. 60m
Bobcaygeon, Ont.	Fenelon Falls	Boyd, Mossom & Co.	Lumber, Wholesale and Retail.	Lumber, Wholesale and Retail.
Barrie, Ont.	Barrie	Burton Bros.	Pine only.	Waubaushene mill, stm., 200m; Pt. Severn mill, water, 120m
Waubaushene, Ont.	Waubaushene	Georgian Bay Consolid. Lumber Co.	Lumber, Wholesale, and Retail.	
Calabogie, Ont.	Calabogie	Calabogie	White and Red Pine Lumber, Bill Stuff, Lath and Shingles.	Steam, 2 Circular, 80m
Callander, Ont.	Callander, G.T.R.	John B. Smith & Sons	Head Office, Strachan Ave., Toronto	Steam, Cir., Saw 14m, Sh. 20m
Collins Inlet, Ont.	Collins Inlet	Collins Inlet Lumber Co.	Lumber, Pine, Oak, Ash, Birch, Whol. and Ret.	
Glanmire, Ont.	Pinkerton	McIntyre, N. & A.	Saw, Shingle and Lath Mill, Timber Lands, Hemlock, Pine, Lumber, Hardwoods.	
Hamilton, Ont.	Hamilton	BRADLEY, MORRIS & REID CO.	Lum., Tim., Pine, Hem., Hdws., Whol. and Ret.	
Huntsville, Ont.	Huntsville	Heath, Tait and Turnbull	Sawmill, Pine, Spruce, Hemlock, Hardwoods.	Steam, Circular, 25m
Hamilton, Ont.	Huntsville and Katrine	Thomson, Robert & Co.	Sawmill, Pine, Spruce, Hardwoods.	Steam, Circular, 4m
Keweenaw, Ont.	Keweenaw	Dick, Banning & Co.	Sawmill, Pine, Hardwoods, Wholesale.	Steam, Circular
Keweenaw, Ont.	Keweenaw	Keewatin Lumber & Mfg. Co.	Saw, Lath, Sh. and Pl. Mill, Moving Posts, Pine	Water, Band and Circular, 100m
Lakefield, Ont.	Lakefield	Lakefield Lumber Mfg. Co.	Lumber, Wholesale and Retail.	
Little Current, Ont.	Sudbury	Howry, J. W. & Sons	Lumber, Wholesale and Retail.	
London, Ont.	London	Gordon, James	Exp. and dlr. in Am. Hdws, made to specification	
Longford Mills, Ont.	Longford	Longford Lumber Co.	Saw and Plan. Mill, Tim., Lands and Logs, Pine	Steam, Band and Circular, 100m
Norman, Ont.	Norman	Minnesota & Ontario Lumber Co.	Lumber, Wholesale and Retail.	
Louise, Ont.	Elmwood, G.T.R.	S. B. Wilson & Son	Hardwoods, Shingles, Lath, Handles.	Steam, Circular, 20m.
Toronto, Ont.	Toronto	The Imperial Lumber Co., Limited	Pine.	80 m. per day, Stm., 2 Cir. Saws
Toronto, Ont.	Toronto	Cache Bay, Ont.	W. Pine, Lath, Shingles, Dim. Timber, Car Sills	Stm., 2 Band, Cir. & Gang, 140m
Toronto, Ont., Mill.	Toronto	S. J. Wilson & Co.	Pine and Hardwood, Wholesale.	Steam, Circular, 15m.
Toronto, Ont.	Toronto	F. N. Tennant	Lumber, Wholesale.	
Toronto, Ont.	Toronto	Donogh & Oliver	Lumber, Wholesale.	Com.
Toronto, Ont.	Toronto	Victoria Harbor Lumber Co.	3 Saw, Shingle and Lath Mills, White Pine, Whol.	Stm., Cir., Gang and Band, 140m
Toronto, Ont.	Toronto	W. N. McEachren & Co.	Lumber, Wholesale.	Com.
Toronto, Ont.	Toronto	James Tennant & Co.	Lumber, Lath, Shingles, etc., Wholesale.	Com.
Toronto, Ont.	Toronto	DeLaPlante & Bowden	Pine and Hardwood Lumber, Whol. and Retail.	
Toronto, Ont.	Toronto	James McBain Reid	Ry. and Ship Timber, any required dimensions.	
Toronto, Ont.	Toronto	Miller, B. B.	3 Sawmills, Lumber, Barrel Heads.	Stm., Wr., Cir., Port. & Sta., 10m
Montreal, Que.	Montreal	Dufresne, O. Jr. & Frere	Sawmill, Pine, Spruce, Hemlock, Hdws., Whol.	Steam, Circular and Band, 50m
Montreal, Que.	Montreal	SHEARER & BROWN	4 Sawmills, Oak, Ash, Elm, Pine, Hem., Dim.	2 Stm., 2 Wat., Band, Cir., 40m
Moodyville, B.C.	New Westminster	MOODYVILLE SAWMILL CO.	Sawmills, P. Fin, Spruce, Cedar, Hardwoods.	Steam, Circular, 20m
New Westminster, B.C.	New Westminster	Brunette Sawmill Co.	Saw and Planing Mills, Sash, Doors and Blinds, Fir, Cedar, Spruce, Hardwoods.	Steam, Gang and Circular
Canterbury, N.B.	Canterbury Stn.	James Morrison & Son	Sawmill, Pine, Hardwoods.	Steam, Circular, 38m
Bridgewater, N.S.	Bridgewater	DAVIDSON, E. D. & SONS.	5 Saw, Shgle. and Lath Mills, Pine, Spr., Hdws.	Water, Circular and Gang, 200m
South River, Ont.	South River, G.T.R.	South River Lumber Co., Ltd.	Pine, Spruce, Birch, Hemlock, Shingles.	Stm., Cir., 40m, Shingles, 35m, Lath, 15m

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

**Mineral Wool Pipe and Boiler Covering**

If you want to save fuel

" " dry steam at long distance

" " to prevent condensation

" " cold water pipes from dripping

USE
MINERAL WOOL
SECTIONAL
COVERING

THE best non-conductor is the cheapest covering. Mineral Wool heads the list as a fire-proof non-conductor. Hard pressed coverings are poor non-conductors, and are therefore the most expensive in the end.

A good pipe covering is one of your best investments. It is false economy to have uncovered pipes, as you are just paying the coal man what the covering man should have, and only ashes to shew for it. Give the matter your consideration, it means money to you.

We also carry full lines of Asbestos Goods, and Mineral Wool for fire-proofing, deadening of sound, insulation, etc., etc. Send for Pamphlet.

CANADIAN MINERAL WOOL CO. LTD., 126 BAY ST., TORONTO

REAMER LUMBER CO. LTD.

WHOLESALE DEALERS IN

WHITE PINE

AND

HARDWOODS

41 Park Row New York

LUMBER TRUCK WHEELS**The Montreal
Car Wheel Co.**

.... MANUFACTURERS OF

**Charcoal Iron Chilled
RAILROAD
WHEELS**

OFFICES:

NEW YORK LIFE INSURANCE BUILDING, MONTREAL

WORKS: LACHINE, QUEBEC

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

CORRESPONDENCE
SOLICITED

Four Grades

do all your work
with economy**COPPERINE**

Best Box Metal

..... Extant

Stands any Gait,

Weight or Motion

~~~

Holds the best  
TESTIMONIALS  
from the largest ma-  
chinery manufac-  
turers, owners and  
users in the country

ALONZO W. SPOONER  
SOLE MANUFACTURER  
PORT HOPE, ONT.

~~~

ALONZO W. SPOONER

SOLE MANUFACTURER

PORT HOPE, ONT.

~~~

**WANTED AND FOR SALE.**

Advertisements will be inserted in this department at the rate of 15 cents per line each insertion. When four or more consecutive insertions are ordered a discount of 25 per cent. will be allowed. This notice shows the width of the line and is set in Nonpareil type. Advertisements must be received not later than the 24th of each month to insure insertion in the following issue.

**PARTIES HAVING BLACK ASH LUMBER**  
and Cedar Fence Posts for sale send us particulars. ROBERT THOMSON & CO., 103 Bay St., Toronto.

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

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

**WANTED**

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

**LUMBER AND SHINGLE MILL FOR**  
sale in the Village of Dundalk; this is good new 50-horse power mill; will run lumber and shingles at same time; plenty of stock can be bought in the locality for four or five years at a reasonable rate. Apply to JOHN IRWIN, Brampton, Ont.

**WANTED SITUATION**

**A S BAND SAW FILER, NINE YEARS' EXPERIENCE;** also thoroughly practical on Rotaries. Steady and temperate; good references. Best offer in December for next season and earliest to work, gets me.—H. HOWE, South Boardman, Mich.

**SAW MILL CAPACITY 15,000 FEET**

**BEST WATER AND RAILWAY FACILITIES**  
for shipping. Hard and soft wood limits in connection. Will be sold cheap. Address "W," CANADA LUMBERMAN.

**COMMISSIONS**

**THE ADVERTISER CAN SECURE BIG PRICES** for black ash, basswood, elm and maple in New York and surrounding markets, best of references given. Send lists of stock on hand. No shipment on consignment. Bona fide orders sent you before shipment.

Address "Commissions," care of CANADA LUMBERMAN.

**FOR SALE**

**POR T ROWAN SASH AND DOOR FACTORY** and Sawmill and Shingle Mills. The Factory is fitted with new 60-h.p. steel boiler, also with following new machinery by Macgregor and Gourlay, of Galt.

Large Matcher and Planer combined, Band Saw, Power Mortiser, Shatter, Jointer and Sandpaperer.

Apply, Box 16, Port Rowan, Ont.

**LOGGING TRAMWAY FOR SALE**

About three miles of 25 lb. T-Rail; 12 Logging Cars complete, and a Shay Locomotive  
IN GOOD CONDITION, FOR SALE ON ADVANTAGEOUS TERMS.

For further particulars apply to

JOHN J. GARTSHORE,  
49 Front Street West,  
Toronto.

**RAILS FOR TRAMWAYS**

**NEW AND SECOND-HAND STEEL AND IRON RAILS** for tramways and logging lines, from 12 lbs. per yard and upwards; estimates given for complete outfit.

JOHN J. GARTSHORE,  
49 Front St. West, Toronto.

**FOR SALE**

**From 5 to 6 Million Feet of First-class**

**VIRGIN WHITE PINE SAW LOGS**

**THESE LOGS ARE THE FIRST CUT FROM** new timber limits; choice quality; are cut principally 16 feet long, and average from 5 to 6 logs per 1,000 feet, and can be delivered in the Georgian Bay by the 1st of June, 1894.

For particulars apply to

J. D. SHIER,  
Bracebridge.

**MACHINERY FOR SALE.**

**ONE 18 x 20 ENGINE IN GOOD ORDER,** with 7-inch shaft 8½ feet long, on which are two large pulleys and fly wheel, 10 feet diameter. Will be sold cheap. Also a THREE BLOCK CARRIAGE, Sewrey's make, with three Boss Dogs—V track—in first-class order; two Heavy Slush Chains, with gear; one Circular Saw Mandrill, 30-inch Pulley, guides, tightener, etc.

Apply to MICKLE, DYMENT & SON,  
GRAVENHURST.

**Rochester Bros.  
: : COMMISSION AGENTS**

Limits bought and sold on commission. Limits travelled and carefully prepared. Estimates given.

Some first-class berths on the North Shore of Lake Huron and on the Upper Ottawa now in our hands for sale.

Communications confidential. References given.

36 Rochester St. Ottawa

**SAW MILLS**

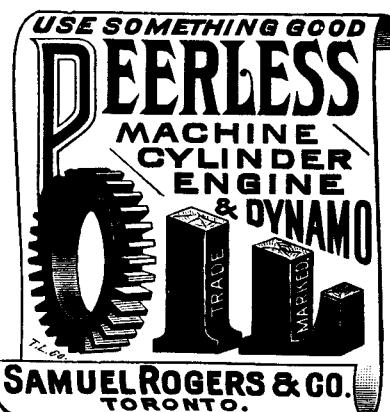
SUPPLIED

SPECIALLY

WITH

High Grade...

... Heavy Quality

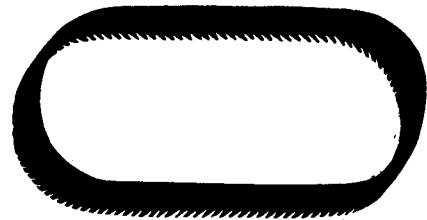
**WHY****BAND SAWS BREAK**

SIXTEEN

REASONS,

AND HOW TO

AVOID THEM



Being instructions to filers on the care of large band saw blades used in the manufacture of lumber.

A book filled with valuable information on the care of band saws. Giving the reasons for breaking; analyzing each reason; giving instructions to dispense with the causes as laid down in each reason; and full details on filing and brazing. The proper styles of hammers to use are illustrated and described, and views of blades showing the blows of the different styles of hammers form an important part of the illustrations. Improper and unequal tension are then treated, and the manner of properly setting irregular teeth is described. In connection with the treatise is a history of the invention, manufacture and use of the saw from its origin to the present time. The work in whole makes an accumulation of information such as has never before been published.

The book is printed on fine paper, good clear type, and is handsomely and substantially bound in cloth. It will be sent to any address on receipt of the price, ONE DOLLAR.

Address—

CANADA LUMBERMAN, Toronto, Ont.

FOR PRICES AND SAMPLES OF

**REDDAWAY'S CAMEL HAIR BELTING**

(CAMEL BRAND)

WRITE TO

W. A. FLEMING

SOLE AGENT FOR REDDAWAY & CO., MANCHESTER, ENG.

The "Camel" Brand Belting stands almost twice the strain of best English oak double Leather Belting.

AGENT ALSO FOR THE FABRIC FIRE HOSE COMPANY, OF NEW YORK, U.S.

**HARD-MOUTHED HORSES AND PULLERS CONTROLLED WITH ABSOLUTE EASE. RUNAWAYS IMPOSSIBLE.**

This statement is now repeated by thousands who have purchased

**BRITT'S AUTOMATIC SAFETY BIT.**

This Bit, by an automatic device, closes the horse's nostrils.

HE CANNOT BREATHE, AND MUST STOP.

SAFETY FROM RUNAWAYS ABSOLUTELY GUARANTEED WITH THIS BIT.

Any horse is liable to run, and should be driven with it. By its use ladies and children drive horses men could not hold with the old style bits.

Send for illustrated pamphlet containing testimonials from all parts of the world, and earnest and candid expressions about the BRITT AUTOMATIC SAFETY BIT and its resistless but harmless and humane power in subduing the most vicious horses and controlling the most stubborn pullers chronic runaways.

The only bit in the world that is endorsed, advocated, used and sold by the Society for the Prevention of Cruelty to Animals, The Highest Authority.

DR. L. P. BRITT, 37 COLLEGE PLACE, NEW YORK.



# OAK TANNED BELTING

TORONTO  
20 FRONT ST EAST  
TELEPHONE 475

THE J.C.McLAREN BELTING CO MONTREAL

# H. P. ECKARDT & CO.

## WHOLESALE GROCERS

Lumbermen's Supplies a specialty.....

..... Correspondence solicited

**H. P. ECKARDT & CO.** - 3 FRONT ST. EAST, TORONTO

## GALT MACHINE KNIFE WORKS



PETER HAY, GALT, ONT.

J. J. TURNER & SON

.. Sail, Tent and Awning Maker ..

251 George St. and 154 King St.

PETERBOROUGH

Canoe, Yacht and Boat Sails made to order. Perfect  
Fits Guaranteed.

Every description of Lumbermen's Supplies and  
Waterproof Clothing.

WILLIAM FOSTER

Lumber and Commission Merchant

RECEIVER AND FORWARDER OF

LUMBER, LATH AND SHINGLES

... CORRESPONDENCE SOLICITED ...

OWEN SOUND, ONT.

CODE: "HEATHER," TORONTO

TELEPHONE 1853

**WM. C. WILSON**

(Late with the BUSHNELL Co., LTD.)

Manufacturers' Agent - 24 Front St. E., Toronto

REPRESENTING

The Franklin Oil Works, Franklin, Pa.

(Locomotive, Valve Engine, Railway Coach and Car Oils)

The Hamilton Engine Packing Co., Hamilton, Ont.

(Sectional Ring, Rainbow Sheet and Coil Packings, Asbestos Cement)

The Magnolia Metal Co., New York

(Endorsed by the United States and German Governments best  
Anti-friction Metal in Market)

The Merchants' Refining Co., Buffalo, N.Y.  
(Refined Oils in Tank Cars and Barrels, American Paraffine, Wax and Soap Stock)

The Peterboro Carbon Co., Peterboro  
(Electric Carbons)

Radaway & Co., Manchester, Eng.

(Camels' Hair and Cotton Belting, Linen Fire Hose)

Detterick & Co., Tanners, St. Catharines, Ont.  
(Lace Leather, Rawhide, Russet and Calf)

The Pennsylvania & Delaware Oil Co., New  
York

(American Lubricating Oils and Grease)

Oils shipped from any port on American  
side to suit customers.....

Before placing your Spring Order write  
for my prices.....

# BRITISH COLUMBIA RED CEDAR SHINGLES

HAVING made arrangements with H. H. SPICER & Co.,  
of Vancouver, B.C., for the exclusive sale in Ontario  
of their CELEBRATED RED CEDAR SHINGLES, I am in  
a position to supply the trade PROMPTLY and in LARGE  
QUANTITIES. To the many patrons who purchased from  
us last year we extend our hearty thanks, and beg a con-  
tinuance of your patronage this year. To Dealers who  
have not yet handled these Shingles, we ask you to give  
them a trial, as we know that this is all that is necessary  
to insure a continuous trade. Write for further particulars.

F. N. TENNANT  
No. 1, Toronto St., Toronto

LUMBER MERCHANT

**F. E. DIXON & CO.**  
MANUFACTURERS OF  
**Star Rivet Leather Belting**  
WRITE FOR DISCOUNTS  
70 King St. East, Toronto

Every Lumberman wants it      **35 cents buys it**

## Scribner's Lumber and Log Book

**SAVES TIME   SAVES MISTAKES   SAVES MONEY**

BRIMFUL OF EVERY-DAY,  
PRACTICAL INFORMATION

Address :  
THE CANADA LUMBERMAN, Toronto

J. W. MAITLAND — H. RIXON



J. G. AINSILE — W. STODART

**MAITLAND, RIXON & CO.**  
OWEN SOUND, ONT.

## Saw Millers and Lumber Dealers

All kinds of Building Material kept in stock

WE MAKE A ...  
... SPECIALTY OF LONG BILL STUFF IN ROCK ELM, PINE, CEDAR AND HEMLOCK  
Quotations furnished on application

... THE ...  
**FLINT & PERE MARQUETTE**  
**RAILROAD**  
FROM  
**Port Huron and Detroit**  
Is the Short Line to  
**SAGINAW AND BAY CITY**  
(Centres of the vast lumber interests of Michigan)  
**MT. PLEASANT, CLARE, REED CITY**  
**BALDWIN, LUDINGTON, MANISTEE**  
AND  
**MILWAUKEE, WIS.**

The last-named place reached by the Company's line of steamships across Lake Michigan.

The line thus formed is a short and direct route from

**MONTREAL   TORONTO**

and all Canadian Territory

To **ST. PAUL, DULUTH** and Pacific Coast Points.

This road traverses a section of Michigan with unvalled advantages to settlers. Cheap lands, thriving villages and towns, well watered with streams in all directions; a market for every product of Forest and Field. The policy of the "F. & P. M." is known to all travellers and settlers.

**A. PATRIARCHE**, Traffic Manager.  
GENERAL OFFICES: **SAGINAW, MICH.**

NEW & 2ND  
**MACHINERY**  
ILLUSTRATED CATALOGUE FREE  
H.W. PETRIE  
TORONTO, CANADA.

**FIRE PROOF**  
**ROOFING**  
ILLUSTRATED CATALOGUE FREE  
**METALLIC ROOFING CO.**  
MANUFACTURERS. TORONTO

**DO YOU WANT**

A Life Policy  
An Endowment Policy  
An Investment Policy  
Or an Annuity Policy?

**THE ONTARIO MUTUAL LIFE**  
ISSUES THEM ALL

One 20-year Survivorship Distribution Policy embraces all the newest features, and is the best form of Protection and Investment money can buy. It has no equal. Guaranteed values, attractive options and liberal conditions.

**A WISE AND GENEROUS PLAN.**

Our Annuity Endowment Policy ensures a certain annual income to yourself during 20 years after maturity of the Policy or to your family at earlier death; and the Annuity Life Policy guaranteed a sure income to your family during 20 years after your death; first payment immediate. The rates are lower than on ordinary plans.

**HEADQUARTERS FOR TRUSSES FOR RUPTURE INSTRUMENTS FOR CLUB FEET, WHITE SWELLING, SPINAL CURVATURE & ALL DEFORMITIES**  
ILLUSTRATED BOOK FREE  
**CHAS CLUTHE**  
OPPOSITE ROSSIN HOUSE  
TORONTO, CAN.  
ESTABLISHED 1871  
134 KING ST. W.

# Dauntless Shingle and Heading Machine

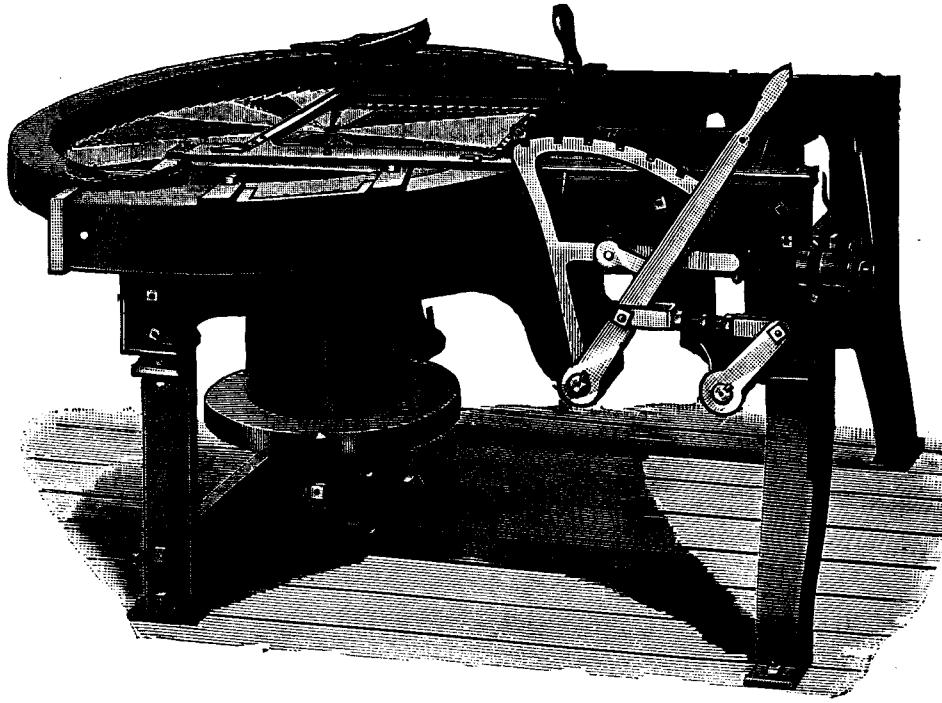
... WILL make more Shingles per day than any self-acting machine with vertical saw in existence, and more Shingles from the same quantity of timber.

### THE FRAME

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

### THE CARRIAGE

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



[COPY.]

LINDSAY, May 18th, 1893.

MR. F. J. DRAKE, Belleville.  
Dear Sir,—The shingle machine we bought of you over a year ago is doing well. Last year we averaged over 32,000 shingles per day all through the season. We did not lose 15 minutes' time from all stoppages, and all repairs so far have not cost 50c. We expect to make a still higher average cut this year.

All our other machinery purchased from you is as good as the shingle machine. Your drag saw, with friction drive, cannot be beaten. We run ours 180 strokes per minute; with 6½ ft. saw it would easily make blocks for two shingle machines. The splitter, with balance wheel 4 feet diameter, weighing 1,000 lbs., is perfect and runs without the least jar. The iron frame shingle jointer with 40-inch saw is the only good jointer we ever saw. In fact, all your machinery, line shaft, pulleys, etc., give us the best satisfaction.

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

Truly yours,

M. DOVEY.

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

PATENTEE AND ...  
MANUFACTURER OF

**I F. J. DRAKE I**

**SAW, SHINGLE AND LATH MACHINERY**  
BELLEVILLE, ONT.