

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.

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 covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

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

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

Cover title missing/
Le titre de couverture manque

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

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

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

Showthrough/
Transparence

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

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

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

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

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

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.

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

Additional comments: /
Commentaires supplémentaires:

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

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input checked="" type="checkbox"/>										

THE CANADA LUMBERMAN

VOLUME XV.
NUMBER 3.

TORONTO, ONT., MARCH, 1894

TERMS, 1.00 PER YEAR
SINGLE COPIES, 10 CENTS

WORKING UP WASTE.

UNDER the most favorable and economical conditions, says a lumber cotemporary, the waste in the manufacture of lumber is bound to be a big item. One looks at a tree in the forest, towering, it may be above its fellows and showing the straight, long body that delights a timber hunter's eye, and it seems to him that every inch of it ought to be available and of value. But looking at it with the eye of experience, he knows better. A rapid mental calculation tells him that a very large proportion of it will find its way, not into the timber pile, but into the refuse burner or the sawdust pit. The magnificent top he knows is worthless anyway, the heart must come out, the sap runs into the low grades, and the butt possibly is worthless. Lopping off here a little and there a good deal as waste, and then of the really sound, clear timber turning a considerable quantity into sawdust, there is left at last a surprising small part of the whole as a product available for market. Some timbers work up better than others, of course, but in the best of them a large part of the cost of the marketable material produced is represented in that which is thrown away.

The desirability of reducing this waste as much as possible was early recognized, and the history of lumber manufacture shows a steady, though slow progress in the direction of saving something out of the last material. Not so much goes into sawdust as formerly, and less into the slab pile or furnace; but there is still more room for economy and a further profit to be made in a closer utilization of the contents of a tree. Comparatively little has yet been done in the saw mill business in working wood into small shapes. Lath and pickets have been made for years where the timber was suitable, but beyond these there are few saw mills that undertake to do more than get as much boards, strips, plank and timber out of their logs as they will cut, letting everything that will not work up into this shape go into refuse. Unquestionably millions of feet of good lumber have been thrown away in this fashion, and the waste is still going on. When trees were plentiful and cheap it would have been useless and even unprofitable to attempt any sawing of this waste, but now it is important to work up as much as possible of it, the margin in lumber production having become so narrow that every means to produce it is necessary to success.

It is true that some experiments in this direction have been failures. Several large mills, the proprietors of which sought to carry to its extreme limit the idea of working up everything that came from the tree big enough to make a match splint, have gone into oblivion along with other schemes founded upon purely theoretical knowledge of the business. But the cause of failure was not the principle of avoiding waste, but its disproportionate development. With such people the idea is to use up everything that comes into the mill, almost regardless of the cost and relative profit. They do not sufficiently take into account the fact that there is no saving nor any money in working up a thing that is not worth in the end the cost of making it. They spend more in saving waste than what the save will bring, which is even more foolish than throwing away something that at small cost might be turned into a source of considerable revenue. Economy can be so elaborate and carried to such extremes that it becomes extravagance and waste itself, which is the case with practically every operation which, boasting of the results it proposed to accomplish by means of its close utilization of every particle of timber, has yet split and gone to pieces because it could not somehow make its income exceed its outgo.

The same principles should and must govern this part of wood conversion that controls the main work of saw-

ing trees into timber. Costs and results may be fully considered in every case, and methods selected that are not only applicable to the particular wood handled, but that are adapted to the conditions of the business in respect to the cost of labor and the market available for the products, whatever they may be determined to be.

Due regard being had to the peculiar circumstances of each case, there are few locations where it is not possible to work up to advantage a very considerable part of the stuff that is now wasted. Not all mills can do it, of course, for not all of them are able to invest capital in such an extension of their business, but it is plain that all who can do it should give the matter attention. Hardwood producers especially should make a careful study of the subject. The waste is proportionately greater in the manufacture of the hardwoods than of the coniferous varieties, and hence a greater necessity of more careful economy in getting out of the logs all the marketable stuff there is in them. But on the other hand many of the hardwoods have this advantage, that they are available for use in a large variety of small shapes, for which fair prices are obtainable and for which here is a steady demand. The time will no doubt come when most of the cut-up stock used in every factory where wood is worked up will be cut to the desired size and shape, or nearly so, at the saw mill, saving a good deal in material and the cost of handling to the user and producer. Even now orders are occasionally placed for small dimensions of hardwood, though, for the most part, these are still cut by the user as he wants them from lumber of the regular merchantable sizes. Saw mill men should encourage buyers to place their orders, not for so much lumber, to be cut up when it gets to the factory, but for so many pieces of a certain size, which the mill men can often furnish at considerably less than they would cost cut in the old way, while netting himself a good profit by saving the larger part of the stock out of refuse that would otherwise be of no value. There is room here for a development in the business that would be decidedly advantageous for mill men and it is to be hoped that it may go on steadily.

LUMBERING INTERESTS IN MAINE.

A DOCUMENT recently prepared by prominent Maine lumber manufacturers, intended to serve as a protest against the free lumber clause of the Wilson bill, contains some interesting statistics as to the size and character of the lumbering interests of this important lumber state. LUMBERMAN readers will be interested in the figures on the general principle of wanting to know all they can of the business in which they are engaged, and also because of the intimate relationship that exists between lumber methods in Maine, and our own Maritime provinces.

In the first place it is shown that the total cut of logs in the state during 1893 amounted to 849,581,398 feet. Of this amount 573,811,627 feet was spruce, 107,330,822 pine, 100,357,101 hemlock, 60,904,701 cedar and 7,177,147 hardwoods. The cost of getting logs from the stumps to the various saw mills, including cutting, hauling, driving, boomage, shorage, tolls and other expenses is estimated at from \$8 to \$8.50 a thousand. The average cost of stumpage is \$2, which makes the cost to the manufacturer of spruce logs delivered at the mill from \$10 to \$10.50 a thousand. In other words from 75 to 80 per cent. of the cost of a cargo of sawed lumber is expended for labor, which is a larger percentage than on almost any other manufactured article.

American citizens doing business at St. John, N. B., under the act of congress of March 16th, 1866, (which provided for the free importation of the product of logs

cut in the United States, but taken to a Canadian point for sawing) have from 15,000,000 to 20,000,000 feet of sawed lumber on hand, and from 90,000,000 to 100,000,000 feet of logs cut in 1892 and 1893, which have been carried over and will be marketed in 1894. Of this amount 90 per cent is spruce. About the usual amount of logs is being put in this winter under the provision of the above act, on the St. John river and its tributaries which will add largely to the stock to be marketed by the American citizens at St. John in 1894.

American spruce logs lying in booms at St. John, side by side with provincial logs of the same quality, sell in the open market for \$1.50 to \$2 a thousand more than provincial logs, which just about represents the increased cost of labor in getting them out.

There is now on hand 300,000,000 feet of logs and manufactured lumber cut in 1892-93 on the Penobscot, Kennebec, St. Croix, Union, Machias, Androscoggin and other rivers of Maine. The cut of logs in Maine during the present winter will be about two-thirds as large as last year. This will give 879,000,000 feet to be marketed in 1894.

An interesting point touching the question of forestry is brought out in this report, it being estimated by experts that the timber in a single Maine township renews its growth equal in amount to what six or eight horses, kept constantly at work, can haul to landings. In the great forest fire of 1825, extending from the Penobscot waters, in Maine, to the Miramichi, in New Brunswick, 600,000 acres of timber land were burned over, but so rapid was the new growth that large lumbering operations have been conducted on this same territory for years, and it is now equal in value to the same number of acres in any other section of the Maine forests. Townships which have been cut upon constantly are reckoned as the most valuable, for a judicious cutting of the large trees makes possibly the more rapid growth of the smaller trees. A few years ago it was supposed by many that the spruce forests of Maine would be destroyed by beetles, but it is now admitted by those familiar with the subject that the worms, or beetles, only attack the old trees, which have begun to decay.

The assessor's books show that in the state of Maine there are 13,214,027 acres of timber land, valued for the purpose of state and county taxes at \$34,204,634.

WOOD THAT WILL NOT BURN.

ACCORDING to Nicholas T. Wilson, an inventor of Chicago, Ill., there is no necessity in future for the destruction by fire of frame dwellings, or any other kind of buildings constructed of wood. He has invented a plan by which with certain solutions of chemicals wood is rendered non-inflammable. Saturated in the solution, it is impossible, he maintains, for a piece of lumber to burn, even if it should be soaked in coal oil. The wood or inflammable material of which houses are constructed is first immersed in the solution of chemicals for a period of twenty-four hours. Then the lumber is fire-proof and will burn no more than a piece of iron or stone. By means of the chemicals the wood becomes so dense that heat will decompose it by charring only, but will not cause any flame. The substance produces an inert gas, which prevents combustion. By this scientific process of making wood non-inflammable, Mr. Wilson believes that thousands of fires may be prevented. He also thinks that, after the invention is thoroughly known, many railroad catches will be built of wood so prepared. This would prevent railroad horrors resulting from fires after a wreck. Several car builders have seen the test and are satisfied that it is impossible to burn the wood after it is once immersed in the substance.

ELEPHANTS AS SAWMILL HANDS.

THE displays of trained animals, broken for show purposes, cannot offer the slightest comparison in interest to the trained elephant exhibition one sees in the city of Moulmein, British Burmah. The most absorbingly entertaining feature of the novel sight is the paradoxically industrious character which the work of those huge Indian pachyderms assumes. It hardly seems possible that the work of a sawmill, usually done by human hands, could be accomplished through the medium of the elephant's trunk and the elephant's sagacity; nevertheless it is a fact that the Irawadi steamship company uses some forty to fifty elephants in the operation of its sawmills at Moulmein, and the teakwood so largely entering into the construction of ships is here made ready for the artisan.

A gentleman lately returned from a tour of the east gives an interesting account of the manner in which the mills are operated. The logs are chopped in the interior and floated several hundred miles down the Salwin river to the mill, which is situated on the banks of the stream at Moulmein. Here the logs are formed into a boom, and henceforth the work of transporting is done by the elephants.

The boom is very similar to those we see in Canadian lumbering districts, but instead of the sight of men, brightly garbed in red and blue, running from log to log and moving them with long steel-pointed poles, we see great, ponderous elephants wading and swimming among the teak logs and pushing them toward the shore. The logs are not sawed directly from the water, but are first seasoned, and the elephants not only bring the logs from the water to the land, but also stack them in huge piles, convey them to the mill, saw them, and afterward pile the lumber. Of course, each elephant performs only such certain parts of the work for which he has been trained, and the entire herd is divided into companies of from two to eight. One division of the pachyderms does the work in the water, another company carries the logs to the drying or seasoning stacks, others pile them, another class convey the dry logs to the mill, where some of the elephants do the work of sawing, still others pile the saw lumber, and another herd carries hay and prepares the food for this great industrial combination of brute strength and intelligence.

But the most wonderful, interesting, novel and almost incredible feature of the entire combination is the sight of two monstrously large male elephants that actually act in the capacity of bosses or overseers of the work. These move from place to place among the working elephants, spurring them on, pushing, driving, and frequently chastising a lazy or recalcitrant member of force.

Very few men are needed to direct the elephants in their work. From six to eight of the animals usually work in the water. These wade or swim, according to the depth of the water, to the log boom, and loosening several logs at a time, tow them to the shore at a certain point. Each of the company of elephants that convey the logs from this point to the drying place has a chain attached to his neck and reaching to the ground. At the bottom of the chain is a loop through which the log is run. A man directs the movements of the elephants in placing the log within the coil of the chain. The elephant picks up another log by his trunk and in this manner drags two at a time to the seasoning stacks. About eight elephants are employed in this capacity. The work of piling the logs to dry is done by two female elephants. Each winds her trunk about the log near the end, and together they raise it in a horizontal position and place it on the stack.

After the logs have dried sufficiently they are ready for the mill. Two female elephants take the dry logs from the piles and deliver them to a herd similar in training to those that work between the water and the seasoning stacks. These convey the logs to a track over which a small car runs to the mill. Only one log at a time is placed on this car. As soon as a log is in position on the car an elephant trained for this particular part of the work pushes the car to the mill. Arrived at the mill the log is pushed from the car to a carrier that

passes beneath the buzz saw. As soon as the log is thus transferred to the carrier the elephant operating the car returns for another log, while another huge beast, trained to do the sawing, operates the carrier and pushes the log against the saw. But the interesting part of the work does not end here, for as the log is being sawed into the desired boards and timbers, another elephant receives the completed material, piling the slabs on one side and the more valuable product on the other. But two men are required to oversee and direct the elephants in sawing the logs.

Another detachment of the herd is used in carrying the lumber from the mill to the yards and sheds. For this purpose very long trucks with the low front and back wheels close to each other are used. There are elephants trained for loading trucks to the sheds. In the lumber yards are the "pilers" or elephants that take the lumber from the trucks and place it in piles for further seasoning.

As stated before, there is one detachment of this strange army of laborers which does the "kitchen work" for the hotel de elephant, or whatever the feeding place of these big fellows may be called. Some may be seen carrying for the stables, but by far the most interesting sight is the preparation of the food. This is composed of grass, bran and molasses, and is mixed in a large vat. While some are carrying these different components of this highly delectable elephantine boarding house hash, others are engaged in mixing it with pestles which they dexterously manipulate with their trunks. The narrator observed one of the elephants suddenly stop in his work with the pestle and refuse to wield his mixing stick any further. One of the two big boss elephants was called to the scene, and, picking up the recalcitrant's pestle beat him with it over the back and hips until he returned to his work.

Only about ten men are employed in directing the work of the entire herd of elephants. Those who have seen this novel mill at Moulmein in operation all agree in giving it the credit of being the greatest exhibition of trained animals in the world, and say that Hagenbeck's, and, in fact, all other trained animal shows, are simply nowhere near "in line" with it. The mill hands, or more properly speaking, the mill trunks of this institution, have never yet gone out on a strike.

CHEAP POWER FOR MANUFACTURERS.

IN a suggestive article on "The Economics of Electric Power," which appears in Cassier's Magazine for March, Mr. H. L. Lufkin, a prominent electrical engineer, draws a very striking picture of what has more recently been accomplished in the way of applying electric motors to the driving of machinery of all kinds. So much has been said and written in a general way of the convenience and economy of applying electricity to the driving of shop tools that specific facts and figures, derived from actual experience, are most welcome additions to the literature of the subject, and every power user must, therefore, needs appreciate the valuable reference data given in the article. One of the advantages of using electric motors is found in the fact that they may be connected to the machinery to be operated almost directly, without the intervention of long lines of shafting, whose friction losses alone often represent an appreciable item of expense. Referring to this feature, Mr. Lufkin says:

The apparent losses in shafting had always been vaguely estimated until the advent of the electric motor, by which, with the aid of an ampere indicator, these losses are readily and accurately determined. As a result of a test in some thirty shops of varied descriptions, made in 1890, it was discovered that 68 per cent. of the average power applied in these shops was consumed in the shafting. Some data recently very kindly furnished to the writer by one of the large electric companies, which, by the way, is furnishing current for operating about four or five thousand horse-power in electric motors, cover seventy-one shops. The totals of these shops showed that 121,524 watts represented the average total energy supplied, and that 84,700 watts were consumed in the shafting, etc., being 69.2-3 per cent. of the average power, thus approximately checking the tests of

1890. These friction losses in shafting in the mills and factories before referred to have been partially eliminated by means of grouping tools in sets and otherwise driven by electric motors, so that entire sets might be completely shut down when not actually in use without interfering with the remainder of the shops, and long lines of transmitting shafting and belting between floors or from building to building have thus been dispensed with.

An interesting example of the economy derived from this grouping of tools is found in a factory now being equipped with an electrical transmission system. A preliminary experiment in this factory showed that the saving in fuel alone will certainly exceed 50 per cent. and possibly 60 per cent. In one recent instance a card, indicating fifty-nine horse-power, was taken from an engine driving a large machine shop, a blacksmith shop with pneumatic hammer, blowers, etc., a pattern shop and numerous special tools on three floors of a building about seventy-five feet square. This card was taken with all tools idle, thus showing friction only. The same tools were rearranged and grouped into several sets driven by electric motors, and under the conditions the average indicator card from the engine driving the dynamos which furnish the power for these same tools is about twenty-five horse-power, covering friction, power for the tools and all.

The convenience and flexibility of an electrical power transmission system are frequently commented on by present users, from the fact that single tools or small groups of tools may be efficiently operated in isolated locations, or locations at considerable distances from the main power plant. The great saving derived in an electrical system owing to the intermittent use of tools, was long since taken advantage of by the builders of traveling cranes, and to-day probably ninety-nine out of every hundred traveling cranes installed are operated entirely by electric power, an independent motor being used for each of the several functions of the crane. Many foundries now work their jib cranes with directly geared motors, taking current, in many instances, from the same dynamo which lights the shops.

THE SHADDOCK TREE.

AMONG the interesting trees of the South is the "shaddock," or "grape fruit" tree. Its name "shaddock" is due to the fact that it was introduced from its native clime, the Malayan and Polynesian islands, to the western tropics by Captain Shaddock, many years ago. From this fact the larger, coarser varieties, which are never imported, take their name. They are also called by the native islanders "forbidden fruit" or pomelos. The trees grow a height of thirty or forty feet and are very beautiful. The leaves resemble the leaves of an orange tree, are glossy, dark green and very downy upon the undersides and upon the young shoots. The shaddock is considered the "black sheep of the melon family." It grows singly and often attains a weight of fifteen pounds, while the grape fruit known in this country grows in clusters. The outside of all varieties is pale yellow, according to the kind. The rind and the divisions are extremely bitter. Of late years it has been widely cultivated in Florida, for as its medicinal properties become known the demand for the fruit increases.

AMMONIA AN ENEMY TO WOOD.

THE injurious effect of ammonia upon paint and varnish have been so frequently referred to that few are unaware of the loss that is sure to occur if painted surfaces are exposed to its fumes, but it is not so well known that this enemy to paint is also an enemy to wood, particularly when in a green state. Its worse effects are shown upon oak and hickory, but it operates against other hard woods. If any of our hard timbers are piled up to season near a stable or other place where they are brought in contact with the fumes of ammonia, it will ruin the timber by rendering the fiber brittle and destroying its elasticity. The discoloring of oak is often due to the presence of ammonia. To protect the timber from this enemy it must be well covered, and so piled while seasoning that a good current of air can circulate freely among the piles and between the respective pieces.

LUMBER RANKS BROKEN.

DEATH OF FOUR PROMINENT LUMBERMEN.

ISAAC MOORE.

An early lumberman of the Ottawa district, Mr. Isaac Moore, died suddenly a week ago. Deceased was born in Hull, January 15th, 1823, and was brought up here, but the last 37 years of his life was spent in Ottawa. He was a first cousin of the late David Moore. He leaves six children, three sons and three daughters to mourn his loss.

EDWARD D. DAVISON.

One of the leading lumbermen of the Maritime provinces, in the person of Edward D. Davison, of the firm of E. D. Davison & Sons, died at his home, at Bridgewater, N.S., on the 21st February. Mr. Davison was born at Mill Village, Queen's County, N.S. His ancestors hailed from Connecticut. His first sawmill was started in his own village in 1840. In less than ten years he enlarged his milling capacity, and added steam to his water power. In 1865, in partnership with his sons, he commenced business on the Lahare river in Lunenburg County, and it was not many years before he was able to lead all competitors. In 1890 and 1891 the firm secured and remodelled the lumber business on the Midway and Nictaux rivers, comprising 100,000 acres of land and three lumber mills. Last year the firm cut 20,000,000 feet of logs, and 16,000,000 feet of lumber. In 1884 deceased was elected to the local legislature and served a term of four years. He was generous to a fault and had gathered around him during his life-time a large circle of friends. He leaves behind him a widow, three sons and four daughters.

GEO. CORMACK.

Few lumbermen were better known throughout the province of Ontario than Mr. Geo. Cormack, of Whitby, Ont., whose death occurred on Tuesday, 20th February, in his 64th year. Particularly throughout the lumber territories of the north, deceased was well known, he having been a frequent visitor to these points for many years, where he had a large business connection. Geo. Cormack was born at Aberdeen, Scotland, in 1829. He was selected by the Queen's architects to carve a model of Balmoral castle for her inspection before that fine Highland palace was built. He came direct to Whitby from Scotland about 40 years ago, and shortly afterwards started a retail lumber business. From these small beginnings he branched out into milling and lumbering, developing an extensive wholesale lumber trade. Personally he was a man who was greatly esteemed for his high character, integrity and kindly disposition. He occupied for a short time a position as councillor of his own town, but he had no particular relish for public life, preferring to live the life of the quiet and respected citizen. He was a member of the Presbyterian church and a Liberal in politics. A widow, one son, and three daughters survive him. The business will be carried on as usual by the son, George, who, for the past three years, since illness had confined the father at home, has been the active head of the concern.

JOHN B. SMITH.

On 7th inst., John B. Smith, founder and senior member of the firm of John B. Smith & Sons, lumber merchants of this city, passed away at the age of 75 years. Deceased was one of Toronto's best known and most highly respected citizens. While engaged in overseeing the erection of a mill at Angus two years ago he overtaxed his strength, and the result was the illness that finally caused his death. Mr. Smith was born in Greenock, Scotland, in 1819, and when a young man he followed his business as a ship carpenter at St. John, N. B., Charleston, S. C., and New Orleans. He subsequently went into business as a contractor, and as such he constructed a number of bridges on the Scottish Central, now the Caledonian Railway, one of them being the bridge at Stirling, over the Forth, and another over the Bannock at Bannockburn. He became a resident of Toronto on October 17th, 1850, having previously been a grocer and provision dealer, on a large scale, and

associated with him was Mr. Robert Jaffray. The business was continued until 1859, and in conjunction with it Mr. Smith carried on the business of a contractor and lumber dealer. Subsequent to 1859 he devoted himself exclusively to the lumber business, in which he succeeded, despite reverses which would have discouraged a less resolute man. Thrice were his factory and lumber yards destroyed by fire, and thrice his sawmills at Angus; but under his directing hand they rose up out of their ashes larger and better than ever. As a business man Mr. Smith was the personification of probity and uprightness. He would scorn to take an unfair advantage for gain, or to do any act that would involve a sacrifice of his honor. Though in later years a wealthy man, he led a life of unostentatious simplicity, and never lost sight of the smallest details of his business, every feature of which he knew thoroughly. If there was one thing that gratified him more than another it was to see work properly done, and the mechanic who acquitted himself well was always sure of his commendation. Mr. Smith was married three times. His first wife died in the old country, leaving one son. His second wife was a sister of Mr. Robert Jaffray, while the widow who survives him is a daughter of the late John Armour, of York Mills. The deceased leaves behind him twelve children—six sons and six daughters. Three of the sons have been partners in the business, and will continue to carry it on. Mr. Smith was a Presbyterian, and a member of St. James' Square Presbyterian Church. Politically he was a staunch and consistent Liberal.

ONTARIO'S TIMBER POLICY.

THE timber policy of the Province was defended in a vigorous, and in many respects, exhaustive speech, from the Commissioner of Crown Lands during the debate on the Budget a few days ago. Mr. Hardy replying to a criticism as to the lumber output of the province for some years back gave the following figures: The output in 1869 was 524 millions of feet board measure; 1872, 678 millions, and in 1893, 765 millions, or not quite one hundred millions more in 1893 than in 1872. In 1886 the output was 625 millions; in 1887, 628 millions; in 1888, 781 millions, and in 1889, 818 millions. Four years ago the output was more than it was last year. In 1892 it was 694 millions, and in 1893, 765 millions, or about fifty millions less than in 1889. These figures represent the quantity of timber actually cut and upon which dues were paid.

When we come to consider revenue from Crown lands the case, said the Commissioner, is somewhat different, for the reason that the bonusing system is comparatively modern. In 1873 we received as revenue \$832,119; in 1882, \$539,610; in 1886, \$731,845; in 1887, \$1,004,304; in 1888, \$1,652,659; in 1889, \$1,027,531; in 1892, \$2,135,849; in 1893, \$1,858,896. On this point the following question was interjected by Mr. Clancey: Will the hon. gentleman permit me to ask if the ground rent, bonus and timber dues are not essentially a part of the same thing, growing out of the timber sale? Mr. Hardy replied: "Ground rents are not bonuses in the slightest degree. When the land is a virgin forest the ground rent of \$3 per mile is still payable upon it. Until the limits are put under license no revenue whatever is derived from them. The dues are paid on the timber when cut. It does not follow that the licensees will cut the timber when they pay their ground rent. They may wait 5, 10 or 20 years, and, in the meantime, the Government is receiving ground rent. The timber taken out from 1873 to 1882, inclusive, was 4,433 million feet; from 1883 to 1892, 6,184 million feet, or an increase of 39 per cent., instead of 83 per cent. The bonuses were, from 1873 to 1882, \$422,890, and from 1883 to 1892 \$3,189,000, or an increase of 654 per cent."

The hon. Commissioner then turned to a record of the timber sales before and since Confederation. Before Confederation there was sold, he pointed out, at the rate of fifty cents per mile, no fewer than 9,904 miles of timber, while there was also sold before Confederation 2,561 miles upon which was paid a bonus of \$116,771, averaging \$45.50 per mile. Thus the total disposed of before Confederation was 12,465 miles. Since Confederation the record of timber sales was as follows:—

The Sandfield Macdonald Government, in four years,

635 miles for \$165,362, an average of \$260 per mile.

The Blake Government, in one year, 5,031 miles for \$592,601, an average of \$117.79 per mile.

Mowat Government, in 22 years, 4,284 miles, for \$5,101,627.75, an average of \$1,205.15 per mile. Thus the total sales since Confederation amounted to 9,900 miles, which, added to the 12,465 miles sold before Confederation, made a total of 22,365 miles sold down to the present time.

The Sandfield Macdonald and the Blake sales were made subject to a ground rent of \$2 per mile, and to dues of 75 cents per thousand feet. Of the 4,234 miles sold by the Mowat Government the terms were as follows:

2,766 miles were sold subject to \$2 per mile ground rent and 75 cents per thousand feet dues; 835 miles were subject to \$3 per mile ground rent and \$1 per thousand feet dues; and 633 miles were subject to \$3 per mile ground rent and \$1.25 per thousand feet dues.

The Sandfield Macdonald Government made four sales in four years, or an average of one every year and the present Government had made six sales in twenty-two years—one in about four years. Put another way, the Sandfield Macdonald Government sales had averaged 159 miles per year, and the sales under the Mowat Government had averaged 192 miles per year. Continuing, the Commissioner showed that as between the present Government and preceding Governments the figures quoted show that there were sold during a period of 31 years prior to the time of this Government—1873

18,227 square miles, and during the 22 years of this Government 4,324 miles. He took the period of 31 years before the present Government took office because that was the time, about 1841, when the Government of Canada first began to make sales of timber. Of the amount sold before Confederation 9,904 miles were so sold at 50 cents per mile and 2,561 miles at an average of \$45.50 per mile. During the five years from 1867 to 1873, 5,666 miles were sold for \$759,963, or an average of \$133.77 per mile. From 1873 to 1894 under the Mowat Government, 22 years, 4,234 miles were sold for \$5,101,627, or an average of \$1,205.15 per mile.

Referring to the charge of members of the opposition that large areas of timber limits have been sold, which had they been reserved to the present time, would have brought greatly increased prices and would now have been filling the Provincial coffers, the Commissioner said: "It is true that there have been recent sales of limits between private individuals at very large prices, limits that were sold by the Crown 30 or 40 years ago, before the time of Confederation, when the fixed charge was 50 cents per square mile, or a little later, when the average was \$45 a square mile. For example, the Lumsden, formerly McLaren, limits sold recently for \$400,000, which were originally bought for 50 cents per mile. The Perley & Pattee limits on the Bonnechere, bought for 50 cents per mile, sold for \$750,000. The Dickson estate limits, bought at the same price, sold for \$400,000. The Georgian Bay Lumber Company sold a portion of their limits, bought from the Government for \$50 per square mile, for \$1,000,000, including some lumber, deducting which, the price for the limits themselves has been estimated at \$750,000. These limits were disposed of by the Crown before Confederation, and, of course, prior to the existence of the present Government."

The objection has been urged that it is wrong to use receipts from timber taken from the forests and apply it from year to year as revenue. The Commissioner replied by saying that there is not a single representative country in existence on this continent or elsewhere where the receipts from timber taken from the forests is not applied from year to year as revenue.

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 CANADA LUMBERMAN, \$1.00 a year. Subscribe.



PUBLISHED ON THE FIRST OF EACH MONTH

—BY—

ARTHUR G. MORTIMER

OFFICE.

75 CANADA LIFE ASSURANCE BUILDING
TORONTO, ONTARIO

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

J. S. ROBERTSON, EDITOR.

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

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

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

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

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

LATE R. W. PHIPPS.

AN important side of the lumber interests loses a staunch friend in the death of Mr. R. W. Phipps, chief clerk of Forestry, for the Ontario government, who died at his late residence in this city on Sunday 18th inst. Deceased was well-known not alone for his interest in and close study of the subject of forestry, but for the wide and intelligent sympathy he showed for public affairs generally.

Mr. Phipps was a Canadian by birth, having been born in Toronto, December 7th, 1834, and was therefore in his 60th year at the time of his death. He spent twelve years of his life on the Globe, first as compositor, and afterwards as proof-reader. Sometime after this he removed to a farm in the township of St. Vincent, in the county of Grey, and remained there until 1872. It was while engaged in farming he obtained a practical knowledge of forestry, which he afterwards turned to good account on behalf of his native province.

Deceased was possessed of a strong literary instinct. He became quite a prolific writer on public and literary topics, through the newspaper press and by the medium of the pamphlet. He was one of the early and most enthusiastic advocates of the National Policy, and a pamphlet, he wrote at the time the struggle for the N. P. was at its height, is believed to have played a prominent part in influencing public opinion on these lines. In all his writing Mr. Phipps gave much attention to the garb, in which his thoughts were clothed. He was a man of culture and wide reading, and in everything that came from his pen this bent of mind was plainly to be seen.

In 1883 the Department of Forestry was created by the Provincial government, and Mr. Phipps became chief clerk. Since that time his best thoughts have been given to this subject. He studied the question closely and lost no opportunity by voice or pen to bring his views before the attention of lumbermen and others. In 1892 when the Algonquin Park commission was appointed he became a member of it. Mr. Phipps was never married,

EDITORIAL NOTES.

THE mills on the Ottawa are not expected to begin sawing before the first week in May, and there is not likely to be any night sawing.

BRITISH COLUMBIA lumbermen are pushing their lumber wherever opportunity presents itself. Its claims are now being pressed upon the Dominion Government, the statement being made that the pine of the coast is better than the oak and cheaper. Certain tests made at McGill University, prove, it is alleged, that British Columbia wood has greater strength either for pillars or beams.

ONE of the most hopeful signs of future trade, noted in our trade review this month, is the growing spirit of confidence in lumber circles in Great Britain. To quote an English authority on the question: "The belief in a gradual improvement in trade gains ground, and there is now no inclination to sacrifice stocks, which fact has helped to stiffen prices for most descriptions of timber."

THE Puget Sound Lumberman summarises the output of lumber and shingles in those territories for 1893, as follows, and contrasts the figures with those of 1892 thus:

	Lumber, Feet		Shingles	
	1893	1892	1893	1892
Washington	764,234,912	1,164,425,880	1,829,528,500	1,883,808,750
Oregon	449,036,250	608,600,200	86,486,000	162,340,000
B'h Columbia	96,954,000	164,877,000	84,975,000	126,273,000
Montana	65,063,953	no comp'n	10,500,000	no comp'n
North'n Idaho	22,120,000	no comp'n	13,950,000	no comp'n
Total	1,398,407,115	1,937,903,080	2,035,439,500	2,172,481,750

THERE is something daringly dazzling in the plans of the average Frenchman. At a time when the hardwood dealer treasures with care his stock of mahogany, knowing that every splinter counts, we read that the Paris Municipal Council is now making roadways of this precious wood. A portion of the Rue Lafayette has been pulled up and workmen are laying down blocks of real Brazilian mahogany of a fine texture and color. The cost of the business seems to be fully recognized by the Parisians, but it is thought that the extra outlay will be more than covered by the extra durability of the mahogany.

AT the Forestry Congress held in Albany, N. Y., on the 1st of the present month, among those who took part in the proceedings was Mr. Wm. Little, of Montreal. Discussing the outlook for forestry in New York State, Mr. Little expressed the view that it would pay the State to expend millions and millions for the protection of the Adirondacks, not at \$2 or \$3 per acre, but even at \$20 per acre. Colonel W. F. Fox, of the Forest Commission, of the State, communicated the information that there were forty-six varieties of trees in the Adirondacks, and that the main problem of the commission was how to make the State Department self-sustaining, and at the same time establish a system of preserving the forests. At a later session of the Congress Mr. Little read a paper on "Timber Tariff."

AT a meeting of the Paper Makers' Association of Canada held during the month at the Queen's Hotel, a discussion of the wood pulp industry was a leading feature of the conference. Before the passage of the McKinley act the wood pulp mills in Canada numbered 28 in operation, and a very considerable share of the product was exported to the States. The heavy duties imposed under that act has practically closed the market, and as a result 16 of the wood pulp mills have been shut down. The new Wilson bill makes no change in the wood pulp tariff, and the paper makers think it is time to play a return game. This can be done by putting an export duty on the Canadian spruce used in American pulp mills, and thus increasing the price of their raw material. A great many American paper makers have pulp mills entirely dependent, it was said, on Canadian spruce. Under normal conditions if the McKinley duty is taken off much of the pulp would be manufactured in Canada for export. The condition of the trade will be made known to the committee of the Cabinet engaged

on the tariff inquiry with a view to securing a modification of the law.

THE log problem gives rise to various suggestions. Mr. R. A. Johnson, of Bay City, Mich., says: "The great problem now is where to obtain the 250,000,000 feet of logs needed to keep the mills stocked. The Georgian Bay and East Algoma district of Canada is the region to which the mills must look for supply. The present arrangement is a very comfortable one for the American lumbermen and manufacturer, and if the Canadian government does not disturb it, there is no reason why the American lumbermen should want it changed." The Toronto Star, makes this contention, in urging the imposition of an export duty on logs: "The way in which Ontario's lumber business has been moved across the lakes is shown by the immense concern opening out at East Tawas, Mich., where a company has purchased 100 acres on the shore of a bay, giving it nearly a mile of water front. The plant is to be the most extensive in the state and comprises two large saw mills with a capacity of 300,000 feet a day, a mill that can turn out 150,000 shingles a day, two salt blocks and wells, a dry kiln, and a general store that will do a business of \$75,000 a year. There will be six enormous docks, three booms capable of holding 7,000,000 feet of logs and room for 100,000,000 in sight if needed. The company is logging 70,000,000 feet of logs in Georgian bay. Its payroll will be \$15,000 a month—on the Michigan side, of course—and 350 men will be employed."

WORD comes from Minneapolis of the consummation of the biggest deal in Minnesota pine lands of recent years. The negotiations, which have been pending for the transfer of vast stumpage in the northern part of the state held by C. A. Pillsbury & Co., and T. B. Walker, to a syndicate of Minneapolis lumbermen, and which include practically all the lumber manufacturing firms of the city, have been brought to a successful close. This is said to be the largest body of standing pine in the world. Most of it is near Leech lake. The practical effect of the deal is to unite the Minneapolis lumber interests in one organization, so far as the purchase of logs is concerned. The tract covers thirty townships and is estimated to contain 225,000 acres of pine. The amount of pine is estimated at 1,500,000 feet and a deal involves a matter of \$10,000,000. None of the parties will disclose the price per thousand, but it plain that it is a low figure and that the effect of the deal will be to unify Minneapolis prices. The firm composing the syndicate are Nelson, Tenny & Co., E. W. Backus & Co., Shevely, Carpenter & Co., Carpenter, Bros. & Co., Leavitt, Horr & Co., and J. W. Day & Co., of Minneapolis, and Wells Bros., of Clinton, Ia. The sale includes the Brainerd and Minnesota logging road and saw mills, and the planing mill and entire plant of the Northern Mill Co. at Drayton.

LUMBERMEN from the Ottawa say that the shortage of the annual cut of logs on the timber limits this winter will not affect the cut of lumber in the mills at the Chaudiere this year, but may possibly affect it more or less seriously in 1895. From twenty to twenty-five per cent. of the cut of logs of last winter in the woods will not come out this season, owing to the unusual depth of snow in the bush which practically paralysed the drawing. As the lumbermen at the Chaudiere get out between them some 950,000 standards of logs, and each standard furnishes some 235 feet of sawn lumber, it can be readily seen that the reduction of 25 per cent. of the forest winter cut will mean a curtailment in the output of sawn lumber in the mills in 1895, although not this year. Not only has the log cut suffered by the deep snow, but the square timber cut is claimed to be worse, as it is asserted it will be fully forty per cent. less than last year. This is greatly owing to the more unwieldy length of this class of lumber, which is much harder to be hauled in deep snow than the comparatively short log. The shortage of square timber is not looked upon as very serious, however, as the prices last year were small, and a shortage in the supply this year may help to lift up the price for the market of 1896. At the Chaudiere this coming summer, Mr. J. R. Booth will, it is expected, cut one hundred million feet of lumber; Benson & Weston, five million feet; and Buell & Hurdman, forty-five million feet.



A PROMINENT Ottawa lumberman was asked a few days ago when he thought the log drive would commence. "Ask me something easy," he replied. "I know a little something about lumbering operations, but when you come to ask me when the drive will commence, I must plead ignorance, for the commencement of the drive is one of the unknown things, for everything depends on the weather. If we had an extraordinary early break up it might begin the 1st of April, and if it was strangely late it might not begin before the 1st of May. Everything depends on the weather. Ordinary seasons, the drives in the up river sections are started about the 15th of April. "But come to think of it, it may be a little earlier this year than usual because the ice is very poor and I think will disappear rapidly once the spring thaws set in." "How about the price of lumber this summer?" "Oh, I don't think there will be any change from last season's figures as conditions are about the same. Things are brightening up in the United States, and I think we should have a fairly good season. As to whether the tariff comes off or keeps on it will make but a very fractional difference. From all I can see I think we should have a reasonably busy season."

* * * *

Government Statistician Johnson has prepared a comprehensive report to the minister of finance regarding the growth and extent of the lumber trade in Canada. Referring to the demand for an export duty on logs as necessary to the preservation of our lumber resources, Hon. Mr. Foster said: "During the coming session the government will not consider itself debarred from taking the course that is shown to be imperatively necessary because any persons have last year or this year, on the existing state of things, bought limits or invested in timber lands in our country."

* * * *

Mr. E. C. Grant, of Ottawa, manager of the Ottawa Lumber Company, says, "The prospects of the lumber trade were excellent. A marked improvement had taken place this year, the American market was flat, but the English market, which had been dead for the last few seasons, had shown great signs of revival, and, in his opinion, the trade with England will be excellent during this year. One marked incident this season is that the great American contracts for lumber to be cut during the summer, which are usually made in February, have not been entered into owing to the Wilson tariff bill. These contracts will be made later on. As regards the season's output Mr. Grant thinks the cut will be larger than ever, and his own company will make a heavy increase over last season."

* * * *

Frank McDonald, who recently returned from a business trip to the camps of the Ontario Lumber Co., says the snow was seven feet deep on the level. He says: "There was only the one track. When we met a loaded team we had to unhitch our horses and get them off the road and upset our sleigh off the track to let the loaded team past. When two teams with loads met they divided up the beaten track, the horses being hitched up in tandem fashion until the sleighs pass each other. No one unless by actual experience can understand the difficulty in getting off a beaten track where snow is seven feet deep. In our journey we saw great numbers of deer. In some places they were thick as cattle in a barnyard. I saw Indians shooting many of them but had no time for sport myself."

* * * *

W. J. McFaul, son of H. A. McFaul, Hillier, was cutting saw logs on his place in Ameliasburgh a few days ago when his axe struck a file about a foot long, which was embedded in the timber. How it got there in that

shape is a mystery. Not far from that place in the same woods Mr. McFaul found a sum of money. The money had been placed in quite a large tree. The top of the tree being dead it was decided best to cut it into fuel. When splitting the first length a package was exposed to view. A hole had been bored in the tree about six inches deep with an inch and a half auger, and the money placed therein. The hole had been completely covered by a growth of wood and bark. The contents of the package was as follows. One \$10 bill, one \$1 bill, one 50c. piece, two 25c. pieces, one 10c. piece and two 5c. pieces. The money had been well preserved and was all good.

* * * *

There is now in the river, says a Chaudiere lumberman, large quantities of logs which fill almost every boom for a long distance up the Ottawa. On the upper Ottawa there are five large rafts of square timber owned by Messrs. Barnett and Mackay, A. Fraser and Klock. These will, in all probability, be conveyed down to the Quebec market quite early in the season. There will not be many rafts of square timber on the Ottawa this year as the winter season was most detrimental to the taking out of large timber whether for dimension cutting or logs. It is safe to say that the amount of logs which will come down from the upper shanties this year will be less than that of 1893. Just what the difference may amount to is impossible to know just now. It is said on good authority that the cut of lumber in the saw mills of this city and Hull will not this year be so materially altered by the small cut of logs in the lumber camps along the Ottawa valley.

* * * *

A California reader of the LUMBERMAN sends a bit of history of Mr. Robert Dollar, who has recently purchased a large interest in the Usal Lumber Company, and becomes general manager at a salary that would knock the salary-economists of the city hall dizzy. I am inclined to think that even some of the fat-fee-fed-officers of the Ontario government, to quote from the speeches of her Majesty's loyal opposition, would simply be no where along side of Mr. Dollar. But "Dollars" count, and especially when they are Canadian "Dollars," and the circulating locality is the United States. The Republic to the south of us owes much of its prosperity to brain and energy that has come from this side of the line. The name Dollar was for years a familiar one in Canada in lumbering circles. Readers of these lines will remember the late Mr. John Dollar, who was for years identified with the lumber interests of Midland, where he built his first mill, and later united with Mr. H. H. Cook, and others, operating as the Ontario Lumber Company. In 1889, John Dollar removed to San Rafael, Cal., and engaged in the lumber business there, meeting his death in his Pacific Coast home in August, 1892. Jas. Dollar was a brother, who until about a year ago resided in Bracebridge, where he carried on a lumbering business. He was like the other members of the family highly respected, and at the time he left for San Rafael, Cal., to take up his residence there, he was serving his second term as Mayor of that flourishing town. We have now before us a third member of the Dollar family—Robert Dollar. His chief operations before going to the Pacific Coast were in Michigan, though he had been a large shipper of Canadian woods, as well as those of Michigan, to foreign ports. Mr. Dollar has been a large shipper of sugar pine from the Pacific Coast, and the story is told of him that knowing that should he ship sugar pine direct from the Pacific Coast the dealers abroad wouldn't know what the blowed stuff was, and maybe would not touch it with a pole. So he cut the sugar pine logs into deals, shipped them to Quebec, thence to a foreign market branded as Michigan deals, and asked for a special report on them. The reply was that they were a very fair sample of wide Michigan deals. that the quality was first-class, and that the softness and fine texture of the wood was a surprise. Thus it was that Mr. Dollar showed how far he had developed Yankee cuteness, and at the same time did a good stroke of business. Having made the right impression for his sugar pine, Mr. Dollar now sends his sugar pine to the foreign markets on its merits, his three-inch deals going direct to London and Liverpool.

AN OBJECT LESSON.

PEOPLE who do not believe that forest growths have any particular effect on streams are pointed to the present condition of the Muskegon river, in Michigan. Years ago, when lumbermen first began cutting the pine along its course, it was an ideal logging stream, deep and of even flow. To-day with the forests practically cut away from it, it is a comparatively shallow stream. When the primitive forests lined its banks it was little subjected to floods; now it rises and falls quickly, like any other stream that has no heavy forest growths to conserve the waterfall along its course.

CANADIAN LOGS FOR MICHIGAN.

F. W. FLETCHER, of Alpena, Mich., states that Alpena will receive about 40,000,000 feet of logs from Canada the ensuing summer. There is in Thunder Bay waters about 75,000,000 feet of old logs and nearly as many new ones have been put in this winter, which will give the Alpena mills a full stock. He says that Alpena manufacturers are carrying over about 50,000,000 feet of lumber and trade has been on its back with them during the winter, but there is some inquiry now, and they are disposed to the idea that the stuff will be wanted later on. He says the cedar business has been carried on more extensively this winter than ever before on the Huron Shore, and this has given employment to labor, so that there have been very few idle men. A large quantity of cedar railway ties has been gotten out, besides poles and posts.

TRADE NOTES.

The F. E. Dixon Belting Co., of this city, have issued a hand-book of useful information about leather belting, that ought to be, it seems to us, in possession of every man who finds a leather belt a necessary part of the equipment of his mill. And what mill can get along without leather belting? Their little book contains a variety of mechanical tables that are practically invaluable to all interested in mechanics.

The Canadian agency for the famous "Camel" brand belting manufacturers, is now in the hands of Mr. Fleming, of Montreal, who succeeds Mr. Fenwick, the former representative. A contract from the city of Montreal for a round lot of fire hose has just been awarded to Mr. Fleming.

NEWS AND NOTES.

Dickenson's mill at Staples, Ont., started running on 2nd inst.

Shaw, of Windfall, Ont., has sold his saw mill to C. Mills, of Wheatley, Ont.

Over 2,000 feet of shingle bolts were burned recently at Allen's saw mill, Crossland, Ont.

D. E. Sprague, Winnipeg, has returned from his lumber camp on the Rosseau river. He states that the winter has been a splendid one to get out logs, and his cut has been the largest he has ever made.

Mr. Geo. Webber, cooper, who recently bought a large quantity of oak timber from Mr. Lakins, Freelon, Ont., found among the lot one tree which measured 42 feet to the first limb, 5 feet in diameter at the butt, and only 11 inches less where it was cut at the top. The tree, according to the rings, was 349 years old.

The largest contract for cutting timber ever made in the Duluth district has just been entered into by the Siskiwit Lumber Co., and the Cranberry Lumber Co. The Siskiwit has given the Cranberry Co. the contract for cutting 100,000,000 feet of logs in the vicinity of Cranberry river, the money consideration being half a million dollars.

The saw mills at Young Point, Ont., are getting into active work. Mr. C. Young's mill is cutting plank for the Peterborough Waterwork's dam and also custom logs for farmers and others. Austin Dunn's shingle mill has commenced work for the season. W. J. Young has taken out a large quantity of saw logs this winter, and about three hundred cords of beech and maple on the lots he purchased last winter from the Lakesfield Lumber Co., in the township of Harvey. I. A. Gordon, and J. M. Godfrey are also taking out quite a quantity of stuff from same locality.

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE Hon. Mr. Flynn, Commissioner of Crown lands for Quebec, has returned from a trip through the lumbering region, and encountered some of the hardships in travelling owing to the thaw, that the lumbermen sometimes meet with. In many places he and his travelling companion, Mr. W. C. Edwards, M.P., had to make long circuits to avoid floods in creeks and coulees receiving several upsets and breakdowns by the way. On the commissioner's return here he called a meeting, which was held in the office of the Upper Ottawa Improvement Co., of the lumbermen to confer with as to the best mode of preventing forest fires and preserving the young and other growing timber. He gave a very interesting description of his trip and as to what he saw, being convinced that a terrible waste has taken place in the valuable forests by fire, of which no reports to the department or by the lumbermen even had fully expressed, and felt it was high time that the best means in the power of the government with the aid of the lumbermen and co-operation of settlers were employed to prevent the terrible loss sustained by the province each year by fire. He suggested that the lumbermen should nominate a certain number of reliable men—men of prudence and judgment, such men, if found qualified by the departments, and as it was as much in the interest of the lumbermen as of the governments that they should be good men, that they should be appointed by the government for the season, during which fires were prevalent. He said one half the wages would be borne by the government and the other half by the lumbermen, or in other words that the bush fire protection system of the Ontario government, which has proved so successful in combatting forest fires for four or five years past in Ontario, be adopted. Those present were Messrs. J. R. Booth, W. C. Edward, M. P., Hiram Robinson, of the Hawkesbury Lumber Co., Levi Crannell, of the Bronson, Weston & Co., Messrs. Reed & Avery, Mr. Gillies, Geo. H. Perley, Messrs. Gilmour & Hughson, Robert Hurdman, Allan Gilmour and Alex. Lumsden. The lumbermen expressed their great willingness to co-operate with the Hon. Mr. Flynn and to aid in the very laudable purpose taken by the commissioner; and now prompt action is to be taken to preserve the forests from the ravages made by fire. The Hon. Mr. Flynn received a very hearty vote of thanks for the deep interest taken in this matter. He being the first Commissioner of Crown lands who ever visited personally the lumbering regions. His trip will no doubt result in great good to the province.

LOGGING DIFFICULTIES.

The recent very severe thaws have brought work in the lumbering camps in the Ottawa district to almost a stand still. Horse teams in nearly all the shanties are more or less off work, and many are leaving or are being kept in stables pending colder weather, and ice. If very cold weather does not soon come to speedily dry up the streams and gullies filled with water by the thaw, a very considerable quantity of skidded logs must remain in the bush. Persons coming from the Coulonge, Black river, Dumoine, Kippewa and Temiscamingue, and other lumbering districts report that in addition to the check given to hauling logs, that supplies are scattered by the scores of loads along the lakes and along winter bush roads which are for the most part cut out of the forests along creeks and ravines now overflowing with water. This sudden break up added to the heavy work with deep snows is now certain to greatly curtail the crop of logs and enhance the cost of the logs which reach water. Cold weather and snow are very much needed, but at this advanced season are scarcely hoped for. The water in the Ottawa has risen nearly five feet and ice is fast giving way.

READY FOR THE LOGS.

The Upper Ottawa Improvement Company, who tow the logs in the upper reaches of the Ottawa, have been very busy during the winter in making repairs at their several works. At Des Joachim, Fort William, Allumette, Quyon, Deschene, and Thompson's bay, piers and booms have been put in a thorough state of repair in preparation for handling the season's cut of logs. It is estimated that these repairs cost the company fully \$12,000. The company's steamers too are being looked carefully after and are getting a general overhauling. The steamers number 11 and are in use during the summer in towing logs and rafts from Des Joachim's to Ottawa.

INDIFFERENT LENGTHS.

At the annual meeting of the Bronson & Weston Lumber Co., Ottawa, Hon. E. H. Bronson was elected president, A. Weston vice-president, and Levi Crannell secretary-treasurer.

By the death of "Jock" Arkinson, Ottawa and the Valley of the Ottawa lose an old man who grew up with the his-

tory of this section of the province, and who for years was an authority on timber, lumber, hunting, shooting and fishing as well as being a taxidermist in his way. He had been foreman of gangs on the Madawaska, Du Lievre, Ottawa, Gatineau and other rivers where he is pleasantly remembered.

OTTAWA, Can., March 5, 1894.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

A TERRIBLE calamity overtook the fine tug-boat Estelle in the vicinity of Cape Mudge. The only thing that appears certain is that the boat is a total wreck and that the whole crew of eight persons lost their lives with her. It is said that the vessel was blown to pieces by the explosion of her boilers, but this has yet to be confirmed. The Estelle was one of the best boats of her class in the Canadian Pacific waters, and her machinery was of the best. She was built about three years ago at a cost of \$20,000.

COAST CHIPS.

Mr. H. H. Spicer has returned from Ontario.

Bolton has started a sash factory at Salmon Arm.

The B. C. M. T. & T. Co. started their Surrey logging camp this month.

The Pacific Coast Lumber Co. are putting in a larger fan in their new dry kiln.

It is expected that the B. C. M. T. & T. Co. will begin running again almost immediately.

The Brunette S. M. Co. are expecting a ship to load lumber. This will be the first of the lumber fleet for 1894.

The B. S. M. Co. are doing a number of improvements to their mill, the most important the putting in of an Allis band mill.

It is reported that the Brunette Saw Mill Co. have bought out the Shoal Bay Lumber Syndicate and will shortly begin operations.

It is rumored that the Moodyville mill, which has been idle for so long, will resume operations shortly, though nothing definite to that effect has yet been announced.

Messrs. E. C. Cargill & Co., have bought Chas. Brewer's sawmill property at Armstrong for \$5,000, including logs and lumber on hand. The mill will be put in order and begin the season's work shortly.

The American vessel Pioneer is loading for Santa Rosalia. The barkentine Wrestler, 447 tons, Capt. Bergman, which came from Honolulu via San Francisco, and will load at the Sayword mill, Victoria, for Australia on private terms, being under charter to Messrs. Robert Ward & Co., Ltd.

The smaller loggers of this province welcome the news that the Local Government intends to appoint an official log scaler. They are urging the nomination of such an official, in order, as they assert, to secure for them the due returns for their labor, by accurate measurement of the results of their work, ere it passes into the lumberman's hands.

NEW WESTMINSTER, B.C., March 2, 1894.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

WE are hardly more than on the threshold of spring, but already there are evidences of an improvement in trade. Nothing very bright, I must confess, and not a few dealers say so far as they are concerned, they fail to sight the coming boom, but there is a measure of inspiration in the air, and the belief is times will be better.

BITS OF LUMBER.

6,000 cord of pulp wood a year is consumed at Fletcher & Sons' factory at Alpena.

The Cadillac Stave & Heading Company has been incorporated with a capital of \$20,000.

A sale of 1,000,000 feet of lumber was recently made by Bay City concerns, to L. C. Slade, of Saginaw.

Albert Peck, of Alpena, is harvesting 4,000,000 feet of logs in Presque, Isle County, which will be cut by his Alpena mill.

Pitts & Co., of Bay City, are harvesting a large lot of logs in Ogeman County, which are being railed to their Bay City mill.

The Muskegon Booming Company has been re-organized under the name of the Muskegon River Boom Company with a capital stock of \$100,000, where the present capital is \$50,000.

The rumor is generally current that the Arthur Hill Company has purchased \$300,000 worth of Canadian pine timber.

Sibley & Bearinger have purchased 60,000,000 feet of standing timber in Duluth district adjacent to a body of timber owned by them.

A. T. Linton, of Saginaw, has closed a contract with New York firms for boxes that will require about 5,000,000 feet of lumber to make them.

The entire plant and stock of the Lansing Lumber Company at Dodge was burned on 11 inst. Loss, \$175,000, believed to be covered by insurance.

Reports of logging in the vicinity of Menominee tell of successful work being done, it being estimated that over one-half the present winter's intended log cut is now at the landing.

S. O. Fisher, of Bay City, is showing his faith in the future of the lumber business by engaging extensively in logging and in purchasing large quantities of lumber as opportunities offer.

It is reported that an agent of D. Whitney, jr., of Detroit, recently purchased 8,000,000 feet of lumber, to be cut at a Lake Superior mill, at \$18 a thousand, that would readily have brought \$21 last season.

W. C. McClure states that his concern in Duluth has suspended logging operations. They had intended to put in 50,000,000 ft. and run the mill day and night, but they have only cut 25,000,000 and will run the mill but 10 hours a day.

Whitney & Batchelor are putting an Allis band mill outfit into their saw mill at Melbourne, taking out one circular. This will give them a band, gang, and one circular. They are cutting and bringing down from Clare County 8,000,000 feet of logs and have purchased 20,000,000 feet of Canada logs, which will give them a full stock for the coming summer's work. The firm has 10,000,000 feet of unsold lumber on the mill dock.

The Emery-Holland concern, at East Tawas, of which Temple Emery, of Bay City, is the moving spirit, will, when in full motion, be the largest lumbering establishment in Michigan. There will be two sawmills with a daily capacity of about 300,000 feet. The territory occupied will be nearly one hundred acres with a mile of water frontage; six docks, with tramways and booms for 7,000,000 feet of logs; a big shingle mill of 150,000 daily capacity, two salt blocks, a dry kiln and all the other requisite machinery in a first-class mill. The company in all its ramifications of business will employ over three hundred men.

SAGINAW, Mich., March 8, 1894.

TIMBER IN FRENCH TONQUIN.

THE forests of Tonquin are numerous and their utilization is only waiting for capital and skilled labor. This is generally the fault in all French colonies. At present these forests are worked by the most primitive methods. The saw mills are for the most part in the hands of the Chinese, who will be found everywhere devoting themselves to all kinds of trade, giving the preference to those that yield the largest profit.

These forests are found in all the provinces, even in the neighborhood of the sea, but especially in the interior, where many are still in a virgin state. The species of wood are greatly diversified, timber for building and hardwood for finishing, both abounding. To find the extensively wooded tracts, one has to go towards the mountain in the direction of Lass and towards the Yunnan. To reach this remote region will, perhaps, not be without its inconveniences nor without danger, the neighbors being no more accommodating than they can help. But this is a question of time, and probably in a few years, when the peace making will be more complete, these regions will offer more chances of success and the work will be able to commence.

To produce a quantity and on conditions cheap enough to contend with the Chinese competition and make the latter impossible, it is necessary that the French who apply themselves to the working of the forests and the preparation of the woods, do it by the most perfect means. The hand or water saw mill does not produce enough results; and as the Chinese are a very clever and practical people in all manual work, they would not be slow in imitating the improvements which they would see in regard to tools. One must absolutely use steam. This information is furnished us by a gentleman lately returned from Tonquin, and who has visited the colony and inspected everything carefully.

THE NEWS.

CANADA.

—Burton's mill at Rugby, Ont., is doing a good business this season.

—The sawmill of D. P. McDougall & Co., Maxville, Ont., has been started up.

—W. H. Atkinson, lumber, Deloraine, Man., admitted Alfred Atkinson; style, W. H. Atkinson & Co.

—Wm. Harris & Sons, Day Mills, Ont., are getting out a large quantity of square timber for the "Soo" canal.

—Campbell's new saw mill at Inverhuron, Ont., is now running and turning out about 8,000 feet of lumber a day.

—Frank Atkinson, sawmill, Ailsa Craig, Ont., who compromised at 50c. on the dollar in December last, has now assigned.

—Mr. Mitchell, of Millwood, it is said, has decided to build a saw mill at Selkirk, Man. He will tow his logs from Lake Winnipeg.

—Chas. Ashley, Havelock, Ont., whose new mill has a capacity of 15,000 feet per day, informs the LUMBERMAN that business is lively.

—E. C. Cargill & Co. have purchased from Charles Brewer his sawmill property at Armstrong, B.C., the sum paid being \$5,000, including logs and lumber on hand.

—George Trask, whose sawmill at Orillia, Ont., was burned a few years ago, and on whom the work of rebuilding it has proven too heavy a strain, has assigned.

—Lumbering operations are still impeded in New Brunswick, owing to the heavy snows. There has been 12 weeks of uninterrupted sleighing in the province this winter.

—The Rathbun Company is carrying on extensive lumbering operations near its own section. Timothy Murphy's shanty of 60 men will get out in Hungerford 2,500 cords of hardwood, which will be shipped to Deseronto by train.

—Stewart Bros., of Rapid City, Man., have finished their season's log cut. About 12,000 pieces have been secured. Axemen and skidders have returned from the bush, but it will take the teams about six weeks to finish hauling.

—The shipments of W. M. McKay, of Ottawa, to British ports last year numbered 171 cargoes. Mr. McKay has shipped during the month 690,000 feet of deals to Liverpool, and Scammell Bros. 402,406 feet of scantling and 304,971 feet of boards to Buenos Ayres.

—E. Todd, Brantford, Ont., writes: "I have moved my sawmill from Clavering to Brantford. Have got out a fine stock of pine, oak and basswood; have 700,000 feet on skids and in yards. Though it has been a bad winter for logging in this section, yet I have logs within seven miles of the city."

—A dispatch from Collingwood says: "The sawmill and the large water front belonging to the Georgian Bay Lumber Company have been sold to Toner & Gregory, of this town, who intend to put the works in operation at once. The mill usually employs from 75 to 100 men during the cutting season. The capacity of the mill is from 80,000 to 100,000 feet per day."

Mitchell Bros.' sawmills at Berkeley, Holland Centre and Lucknow, are running in fine shape. \$12,000 has been paid out for logs so far this season at the Berkeley mill. The mill is running day and night, the large part of the work during the winter season being in the manufacture of window rollers for the English market, and shipped direct by the Mitchells. The volume of business at the other two mills is about the same as at Berkeley, the whole aggregating a large business.

—At Dorchester, N.B., says the Sackville Post, besides the large quantity of logs that is got out and sawed by Messrs. James Anderson & Son, there are as follows: By Messrs. James & Robert Buck, 1,500 logs; Samuel & John McAllister, 1,200; Gideon Buck, 1,000; Robert Cook, 1,000; Leonard Buck, 800; Rennis Hicks, 200, and a brow at Dorchester Cape of 4,000 logs. F. C. Palmer & Co. will have about 800 cords of pulp wood and 500 cords of kiln wood to ship as soon as navigation opens; also a quantity of piling.

—D. E. Sprague, the Winnipeg lumberman, who is in the woods on Rosseau river, with a gang of 100 men and 40 teams, says that the winter's work is progressing favorably. He adds that there is plenty of snow for the long hauls. The white and red pine in that section of the province is of a superior quality. Mr. Sprague's cut this winter will exceed two million feet. The logs will be floated down the Rosseau river to the Red river, and thence to the mill at Winnipeg. Mr. Sprague expects also to get a quantity of logs from Minnesota, to be brought down the Red river for his mill.

—The vast amount of logs that passed over the Horseshoe falls, and which are now on the Canadian side of the river on the ice bridge, are only a portion of the number which came down from Tonawanda, and their loss will be a most serious blow to Mr. W. L. Land, who owns the property. Mr. Land is from Au Sable, Mich., and an extensive lumber dealer. The extent of his loss is estimated at 1,500,000 feet of Norway pine lumber, valued at \$21,000. Some of this lumber has undoubtedly passed through under the ice bridge, and will hardly be recovered again. The lumber was in rafts when swept away by the ice.

GENERAL.

—Sales of lumber at Duluth, already contracted for, aggregate 20,000,000 feet, or forty cargoes.

—Puget Sound lumbermen are discussing the advisability of introducing the Australian idea of cutting timber by exploding a ring of compressed gun cotton. It is claimed that the explosion will cut the tree perfectly clear of the stump.

—Messrs. Merrill, Ring & Co., of Toledo, Ohio, recently sold 800,000 feet of white pine lumber to the Jeannette Planing Mill Company, of Jeannette, Pa. This firm claims that they manufacture from 500,000 to 600,000 feet of glass boxes into lumber every month.

FIRES AND CASUALTIES.

FIRES.

—Pilkey's sawmill at Edenvale, Ont., has been destroyed by fire.

—Frank Benninger, while running an edge-saw in Thompson's mill, Hepworth, Ont., had his hand cut clean off.

—Wallace Beeler, an employee of Rope Bros., Bridgetown, N.S., met an almost instantaneous death by a log rolling over him.

—James Shannon, employed in McCorgowdale's sawmill at Boissevain, Man., had his right arm badly injured by an accident in the mill.

—John Richardson, of Windermere, Ont., was instantly killed a few days ago, by a log which rolled off a high pile, striking him on the head.

—Samuel Thompson while employed in a camp of Messrs. Dymont & Mickle's, near Bracebridge, Ont., was struck by a falling tree and instantly killed.

—A man named Kelly, while drawing logs for Rathbun & Co., at McLean, Ont., had his sleigh upset, receiving a broken leg as a result, and one of his ears was completely severed.

—A terrible accident happened at Vale's sawmill in Sombra township, Ont. The operators were just preparing to shut down when the boiler exploded, killing Mr. Cornell, the engineer, and three of his children, who were in the engine room at the time. The boiler was thrown over the house adjoining the mill. Mrs. Cornell has one child left.

PERSONAL.

Capt. Graham, formerly of Winnipeg, and well known in the lumber trade, is dead. He has lately been residing at Townsend, Wash.

W. D. Mearns has resigned his position as foreman of the Hastings mill, New Westminster, B. C., after a service of a number of years.

Mr. Duncan McLaren, a well-known lumber merchant of Lanark county, died recently in Florida, whither he had gone for his health. His remains were brought to Carleton Place for burial.

At St. Martin's church, Montreal, Que., on Feb. 27th, Albert McLaren, of Buckingham, Que., lumberman, was married to Lillian Edith, daughter of William Henry Moody, of Terrebone, Que. The officiating clergyman was Rev. G. Osborne Troop.

LUMBERMEN OF MANITOBA.

The third annual meeting of the Western Retail Lumbermen's Association was held at Winnipeg on the 12th February. The meeting was well attended and much interest evinced in the association work.

The president in his opening remarks made pleasing allusion to the honorary members in acknowledging the good support received from them in faithfully observing the by-laws and firmly declining to sell to suspended members and generally co-operating with the association throughout. He reported the association to be in a prosperous state and that the board of directors had only a few congested cases to deal with in the early part of the season for infraction of the by-laws, and was glad to state that the board had successfully disciplined the offenders and all of whom in the end are working harmoniously with each other.

The secretary-treasurer followed with the financial statement showing a balance on hand of \$1,140.80. He also reported the association in a prosperous condition; that it is generally recognised in the lumber trade of this country and that its members comprises all the retail yards in this province, and the eastern part of Assiniboine, with its usefulness for good being more and more demonstrated. The secretary desired to strongly emphasize the remarks of the president as to the honorary members in the very reliable support received from them in dealing with suspended members, in refusing to sell to such; and that the retail members should in their dealings keep in mind the old adage "that one good turn deserves another," in making their purchases, to patronise honorary members always.

The by-laws having been read and with a slight amendment adopted, the election of officers was proceeded with and on motion the president and directors were re-elected by acclamation. The question of freight rates was discussed and a committee appointed, with power to co-operate with other corporate bodies in urging the railway companies, to make a reduction in the freight tariff. An amendment to the lien law was submitted and upon full discussion was given into the charge of a committee to obtain legislation upon it.

An important question was brought up at the close of the meeting as to the advisability of establishing a mutual fire insurance company in connection with the association. After much live discussion the matter was given into the hands of the board of directors to deal further with it.

A very successful meeting was brought to a close after two sessions and extending to two days.

LUMBERING IN GREY COUNTY.

THE lumbermen of Grey look for a profitable season's work, and already many of the mills are quite busy. In this county is located a considerable lumber interest. The following particulars touching some of the leading operators will prove interesting.

John Harrison is getting the most of his stock from the Manitoulin Island and will raft it to his mill at Owen Sound. He has large orders for lumber to fill for the C. P. R. and for the G. T. R. extension. C. H. Whittune & Co. have their new mill near Shallow Lake running. J. E. Murphy, the Hepworth lumber king, has erected another mill on con. 10, Keppel, on the G. T. R. extension, which will be running almost right away. H. Pedwell has removed his mill from the Glen to the Centre road, Keppel, and has made large improvements in the size and increased the speed of his manufactory. He has out a large stock of logs and is running a full gang of men on full time. Mr. Pedwell has also a second mill at Brookeholm, for which he is getting out large stocks of logs on the shores of Georgian bay, and which he will raft to this place as soon as navigation opens and start cutting. He has also a good stock of logs at his mill at Thornbury. James Nelson at Bayview, Sarawak, is getting out a nice little stock for his water mill. Kilbourn & Dunbar, near Presque Isle, are getting out a good stock of hardwood logs and will start to cut in March. Pickett & Ryan, who have purchased the mill near the Polsons, are purchasing logs on the Georgian bay to be rafted to their mill at Owen Sound, to be sawed during the coming season. Maitland & Rixon have a large gang of men and 30 teams getting out logs on their limits on the Peninsula, to be rafted to their big mill at Owen Sound and converted into lumber during the summer. Brunell Bros. mill on the Derry line is running day and night manufacturing mangles for the English market. They are getting out a large stock, and so are Barber & Gowan at their mill, also laying in a fair stock of logs. Champion's mill at Rocklyn is busy, with a small stock in the yard. Wardell's mill at Kilsyth is busy on custom work, and has a stock of logs in yard. R. A. Stark has already a large stock of logs on hand and will double his last year's supply if the sleighing holds out. Jones Bros. are not stocking very heavy this season. They are waiting, it is said, for free trade in lumber and will then take advantage of the market. Young, Leslie & Bro. have in a large stock and are paying good prices for logs to fill their orders for lumber in the American market. Charles Engle at Balaclava is running full time, and has his yards full of logs. N. D. Seaman, whose steam mill is near Woodford, is well supplied with hardwood and hemlock logs, and is running full time to fill orders in hand for lumber. J. S. Findley's mill at St. Vincent Crossing has in a large stock of logs, mostly maple, that he is manufacturing into mangles for the London market.

The details here given are confined principally to those whose operations are within easy distance of Owen Sound, and does not take in Hepworth, Chatsworth, Holland Centre, Allanford, Tara, Meaford, Wiarton, or the many other mills in this county, or the neighboring county of Bruce. The saw mills mentioned will have a combined stock of at least 17,000,000 feet.

TRADE REVIEW.

Office of CANADA LUMBERMAN, }
March, 10, 1894. }

THE GENERAL SURVEY.

THE considerable measure of brightness and sunshine that has prevailed for the past few weeks has inspired lumbermen with thoughts of a possible improvement in trade. An increase in trade at this time of the year we have all a right to expect, but it is rather difficult to say how far lumber business will be affected by the opening season. It does not appear that the general lumber trade of the province will be on any unusual scale this spring or summer. Building operations both in the city and out of it will be carried on with care and conservatism, and we do not learn of prospective contracts of any magnitude being under way.

Export trade with the United States will depend largely on the result of tariff legislation. It is generally anticipated that the Wilson bill will secure free trade in lumber. At the same time there are not a few contingencies likely to arise to modify the character of the bill. For one thing it is among the possibilities that the bill may be so slaughtered before it is actually formulated into legislation, that when it comes out its best friends will not know it. In any case it is yet a question among lumbermen how broadly the term free lumber can be interpreted to cover the various classes of manufactured lumber that may be exported from this country. This uncertainty is likely to have an effect in retarding trade in the meantime between Canada and the United States. Much different was the condition on the opening of trade last year. It seemed hardly possible then for a while to nearly meet the large call from the United States for our lumber, while prices no matter how stiff they were held, were made an objection by no one. But the trade depression that struck our neighbors, like one of their western cyclones, a little later in the year, changed all this, and business has remained depressed ever since. Lumbermen, however, do not themselves believe that these conditions can continue much longer, and if lumber duties are removed there will be a speedy revival in trade.

The outlook in South America and in the United Kingdom is better than for some time, and Ottawa lumbermen are anticipating a large export to South America this year, the Export Lumber Co., of that city, having chartered seven cargoes for the river Platii out of Montreal. It is also known that Ottawa lumbermen have already sold a large part of their cut in England this season.

In the Maritime Provinces trade is not any too active. British Columbia is maintaining a good share of activity, and would seem to be steadily developing new fields for its products. This is especially the case in shingles, our own Province now being large purchasers of red cedar shingles.

UNITED STATES.

It cannot be said, taking the lumber interests generally of the United States, that indications are abroad of a heavy season's business. Tariff affairs still drag slowly along, and it may be some months before a complete copy of the Wilson bill is presented to the public. This uncertainty is having an injurious effect on general trade and activity in lumber interests is being also impeded from the same cause. Then there is a difference of opinion among lumbermen, especially handlers of white pine, as to what shape prices may take. Large stocks have been carried over the winter by lumbermen, and they have now a strong desire to unload, and obtain some relief from a winter's inertness. With some the temptation is strong enough in this direction to lead them to give way in prices. We are told that this is especially the case with common grades. Another element, however, comes into calculation here. It looks as though the log crop might be short. The weather has on the whole been unfavorable. Spring has come upon us with a rush and large numbers of logs are in the woods still on skids, and no immediate appearance of getting them forward. Thus it is that a period of hesitancy in operations prevail, producing at least a present dull market.

FOREIGN.

A decidedly better feeling prevails in British lumber markets. It is felt that the depression of the past year

has well nigh exhausted itself, and that with the opening of spring a fair trade may be looked for. Nor are stocks excessive at any point, so that if building operations are carried on to any extent new purchases must be made. Favorable reports also come from South America, and there is good reason to suppose that a season of revival has already commenced in this port. Farnworth & Jardine, of Liverpool, Eng., have this to say of Canadian woods in the United Kingdom: Both waney and square have moved off slowly, as usual at this time of the year; there is no change in value to report, and the stock, although moderate, is sufficient. Red pine is in dull demand, and values rule low. Oak has been dull of sale throughout the month, although there has been more enquiry for first-class wood for next season's delivery; the present stock is much too heavy. Ash: The import has consisted of one small parcel from the United States; the deliveries during the month have been fair, but the stock is still too heavy, and there is no change in value. Elm has been in fair request and prices steady, and the stock moderate. Pine deals have moved off more freely than during the two years at corresponding time. Prices are firmer in sympathy with the higher values being asked by shippers for the coming season's delivery; the stock is sufficient."

TORONTO, ONT.

TORONTO, March 10, 1894.

CAR OR CARGO LOTS.

1 1-4 in. cut up and better.....	33 00	36 00
1x10 and 12 dressing and better.....	20 00	22 00
1x10 and 12 mill run.....	16 00	17 00
1x10 and 12 common.....	13 00	14 00
1x10 and 12 spruce culls.....	10 00	11 00
1x10 and 12 mill culls.....	10 00	11 00
1 inch clear and picks.....	28 00	32 00
1 inch dressing and better.....	20 00	22 00
1 inch siding mill run.....	14 00	15 00
1 inch siding common.....	12 00	13 00
1 inch siding ship culls.....	11 00	12 00
1 inch siding mill culls.....	9 00	10 00
Cull scantling.....	8 00	9 00
1 1-2 and thicker cutting up plank.....	24 00	26 00
1 inch strips 4 in. to 8 in. mill run.....	14 00	15 00
1 inch strips, common.....	12 00	13 00
1 1-4 inch flooring.....	16 00	17 00
1 1-2 inch flooring.....	16 00	17 00
XXX shingles, 16 inch.....	2 50	2 60
XX shingles 16 inch.....	1 50	1 60
Lath, No. 1.....	2 15	2 25
Lath, No. 2.....	1 80	1 85

YARD QUOTATIONS.

Mill cull boards and scantling \$10 00	F. M.
Shipping cull boards, promiscuous widths.....	13 00
Stocks.....	16 00
Scantling and joist, up to 16 ft 14 00	18 ft 15 00
" " " " 20 ft 16 00	22 ft 17 00
" " " " 24 ft 19 00	26 ft 20 00
" " " " 28 ft 22 00	30 ft 24 00
" " " " 32 ft 27 00	34 ft 29 50
" " " " 36 ft 31 00	38 ft 33 00
" " " " 40 to 44 ft 37 00	
Cutting up planks, 1 and thicker, dry.....	25 00
" " " " board.....	18 00
Dressing blocks.....	16 00
Picks Am. inspection.....	30 00
1 1-2 in. flooring, dressed.....	26 00
" " " " rough.....	18 00
" " " " dressed.....	25 00
1 1-4 in. flooring, undressed, B.M.....	16 00
1 1-4 in. flooring, dressed, B.M.....	18 00
" " " " undressed.....	12 00
Beaded sheeting, dressed.....	20 00
Clapboarding, dressed, XXX sawn shingles per M.....	2 60
Sawn lath.....	2 60
Red Oak.....	30 00
White.....	37 00
Basswood, No. 1 and 2.....	30 00
Cherry, No. 1 and 2.....	70 00
White ash, 1 and 2.....	24 00
Black ash, 1 and 2.....	20 00

HARDWOODS—PER M. FEET CAR LOTS.

Ash, white, 1 to 2 in. \$18 00	\$20 00
" " " 2 1/2 to 4.....	20 00
" " " 1 1/2.....	16 00
Birch, sq., 1.....	4..... 17 00
" " " 8x8.....	20 00
" " " 1/2.....	20 00
" " " 2.....	22 00
" " " 4.....	22 00
" " " 4.....	22 00
" " " 4.....	22 00
" " " 4.....	22 00
Basswood 1 1/2.....	15 00
Butternut 1.....	15 00
Chestnut 1.....	25 00
Cherry 1.....	50 00
Elm, soft 1.....	1 1/2 \$11 00
" " " 2.....	12 00
" " " 3.....	12 00
" " " 4.....	12 00
" " " 5.....	12 00
" " " 6.....	12 00
" " " 7.....	12 00
" " " 8.....	12 00
" " " 9.....	12 00
" " " 10.....	12 00
" " " 11.....	12 00
" " " 12.....	12 00
" " " 13.....	12 00
" " " 14.....	12 00
" " " 15.....	12 00
" " " 16.....	12 00
" " " 17.....	12 00
" " " 18.....	12 00
" " " 19.....	12 00
" " " 20.....	12 00
" " " 21.....	12 00
" " " 22.....	12 00
" " " 23.....	12 00
" " " 24.....	12 00
" " " 25.....	12 00
" " " 26.....	12 00
" " " 27.....	12 00
" " " 28.....	12 00
" " " 29.....	12 00
" " " 30.....	12 00
" " " 31.....	12 00
" " " 32.....	12 00
" " " 33.....	12 00
" " " 34.....	12 00
" " " 35.....	12 00
" " " 36.....	12 00
" " " 37.....	12 00
" " " 38.....	12 00
" " " 39.....	12 00
" " " 40.....	12 00

OTTAWA, ONT.

OTTAWA, March 10, 1894.

Pine, good sidings, per M feet, b.m.....	\$32 00	40 00
Pine, good strips, " " ".....	27 00	35 00
Pine, good shorts, " " ".....	20 00	27 00
Pine, 2nd quality sidings, per M feet, b.m.....	20 00	25 00
Pine, 2nd quality strips, " " ".....	18 00	22 00
Pine, 2nd quality shorts, " " ".....	15 00	18 00
Pine, shipping cull stock, " " ".....	14 00	16 00
Pine, box cull stock, " " ".....	11 00	13 00
Pine, s.c. strips and sidings " " ".....	11 00	14 00
Pine, mill cull.....	8 00	10 00
Lath, per M.....	1 60	1 90

QUEBEC, QUE.

QUEBEC, March 10, 1894.

WHITE PINE—IN THE RAFT.

For inferior and ordinary according to average, quality etc., measured off.....	14	@ 18
For fair average quality, according to average, etc., measured off.....	16	@ 20
For good and good fair average, " " ".....	23	@ 27
For superior " " ".....	28	@ 30
In shipping order " " ".....	29	@ 35
Waney board, 18 to 19 inch " " ".....	30	@ 36
Waney board, 19 to 21 inch " " ".....	37	@ 40

Measured off, according to average and quality.....	14	@ 22
In shipping order, 35 to 45 feet " " ".....	22	@ 30
By the dram, according to average and quality.....	45	@ 51
By the dram, according to average and quality, 45 to 50 feet.....	30	@ 32
" " " " " 30 to 35 feet.....	25	@ 28
14 inches and up, according to average and quality.....	30	@ 34
16 inch average, according to average and quality.....	20	@ 23
Square, according to size and quality.....	17	@ 19
Flatted, " " ".....	15	@ 18

Merchantable Pipe, according to qual. and spec'n—nominal. \$330 \$350
W. O. Punccheon, Merchantable, according to quality..... 90 100

BOSTON MASS.

BOSTON, Mass, Mar. 10.—One cannot report much of lumber trade at the Hub. It is quiet, with no very bright omens as yet of future trade.

EASTERN PINE—CARGO OR CAR LOAD.

Ordinary planed boards.....	\$11 00	12 00	1/4 inch.....	\$ 9 50	10 00
Coarse No. 5.....	16 00	16 50	1 1/2 inch.....	9 00	9 00
Refuse.....	11 00	12 00	3/4 inch.....	8 50	9 00
Outs.....	9 00	9 00	Clapboards, sap ext.....	52 50	55 00
Boxboards, 1 inch.....	11 00	11 75	Sap clear.....	47 00	50 00
3/4 inch.....	10 00	11 00	Sap, 2nd clear.....	38 00	42 00
			No. 1.....	20 00	25 00

WESTERN PINE—BY CAR LOAD.

Uppers, 1 in.....	\$52 00@54 00	Fine com., 3 and 4 in.....	42 00	46 00
1 1/4, 1 1/2 and 2 in.....	52 00	No. 2, 1 in. Fine com.....	28 00	30 00
3 and 4 in.....	60 00	1 1/4, 1 1/2 and 2 in.....	29 00	31 00
Selects, 1 in.....	45 00	No. 1 strips, 4 to 6 in.....	43 00	44 00
1 1/4, 1 1/2 and 2 in.....	48 00	No. 2.....	36 00	37 00
3 and 4 in.....	51 00	No. 3.....	28 00	30 00
Moulding boards, 7 to 11 in. clear.....	36 00	Cut ups, 1 to 2 in.....	24 00	26 00
60 per cent. clear.....	34 00	Coffin boards.....	21 00	23 00
Fine common, 1 in.....	40 00	Common all widths.....	22 00	26 00
1 1/4, 1 1/2 and 2 in.....	41 00	Shipping culls, 1 in.....	15 00	15 50
		do 1 1/2 in.....	15 00	16 50

SPRUCE—BY CARGO.

Scantling and plank, random cargoes.....	14 00@15 00	Coarse, rough.....	12 00@14 00
Yard orders, ordinary sizes.....	15 00	Hemlock bds., " dressed.....	12 00
Yard orders, extra sizes.....	16 00	Clapbds., extra, 4 ft.....	29 00
Clear floor boards.....	16 00	Clean, 4 ft.....	30 00
No. 2.....	17 00	Second clear.....	23 00
		No. 1.....	12 00

LATH.

Spruce by cargo..... 2 50@2 75

SHINGLES.

Eastern sawed cedar, extra.....	\$3 00	\$3 25	Eastern shaved sawed cedar, 1st quality.....	5 00
clear.....	2 30	2 75	2nd quality.....	4 75
2nd's.....	2 00	2 35	3rd.....	3 85
extra No. 1.....	1 50	1 75	4th.....	3 00
			Spruce No. 1.....	1 50

OSWEGO, N. Y.

OSWEGO, N. Y., Mar. 10.—Business has not yet taken on its spring activity. So soon as navigation opens there will doubtless be a change.

WHITE PINE.

Three uppers, 1 1/4, 1 1/2 and 2 inch.....	\$47 00@49 00
Picks, " " ".....	39 00
No. 1, cutting up, " " ".....	34 00
No. 2, cutting up, " " ".....	24 00
In strips, 4 to 8 wide, selected for moulding strips, 14 to 16 ft.....	32 00

SIDING.

1 in siding, cutting up picks and uppers.....	32 00@39 00	1 1/4 in selected.....	38 00@43 00
1 in dressing.....	19 00	1 1/2 in dressing.....	20 00
1 in No. 1 culls.....	14 00	1 1/4 in No. 1 culls.....	15 00
1 in No. 2 culls.....	14 00	1 1/2 in No. 2 culls.....	14 00
1 in No. 3 culls.....	14 00	1 in No. 3 culls.....	11 00

1X12 INCH.

12 and 16 feet, mill run.....	21 00	24 00
12 and 16 feet, No. 1 and 2, barn boards.....	19 00	20 00
12 and 16 feet, dressing and better.....	27 00	31 00
12 and 16 feet, No. 2 culls.....	15 00	16 00

1X10 INCH.

12 and 13 feet, mill run, mill culls out.....	21 00	23 00
12 and 13 feet, dressing and better.....	26 00	28 00
1x10, 14 to 16 barn boards.....	18 00	19 00
12 and 13 feet, No. 1 culls.....	16 00	17 00
12 and 13 feet, No. 2 culls.....	15 00	16 00
14 to 16 feet, mill run mill culls out.....	21 00	23 00
14 to 16 feet, dressing and better.....	26 00	28 00
14 to 16 feet, No. 1 culls.....	17 00	18 00
14 to 16 feet, No. 2 culls.....	15 00	16 00
10 to 13 feet, No. 3 culls.....	11 00	12 00

1 1/4 X10 INCHES.

Mill run, mill culls out.....	\$22 00@25 00	No. 1 culls.....	17 00
Dressing and better.....	27 00	No. 2 culls.....	15 00

1X4 INCHES.

Mill run, mill culls out.....	17 00	21 00	No. 1 culls.....	14 00
Dressing and better.....	24 00	30 00	No. 2 culls.....	13 00

1X5 INCHES.

6, 7 or 8, mill run, mill culls out.....	20 00	25 00	6, 7 or 8, No. 1 culls.....	16 00
better.....	25 00	30 00	6, 7 or 8, No. 2 culls.....	14 00

SHINGLES.

XXX, 18 in. pine.....	3 70	3 90	XXX, 18 in. cedar.....	3 50
Clear butts, pine, 18 in.....	2 70	2 90	Clear butt, 18 in. cedar.....	2 50
XXX, 16 in. pine.....	3 00	3 20	XX, 18 in. cedar.....	1 90
Stock cedars, 5 or 6 in.....	4 50	5 00		

LATH.

No. 1, 1 1/4.....	2 30	No. 2, 1 1/4.....	2 25
No. 1, 1 in.....	1 80		

BUFFALO AND TONAWANDA, N. Y.

TONAWANDA, N. Y., Mar. 10.—Signs are not wanting that we are soon to enter upon spring trade. Mills are stocking up, taking it for granted that there will be business to do. We are hearing favorable reports of

export trade in South America and the West Indies. Possible tariff changes are still influencing buyers. It is generally anticipated that free lumber is coming, but until the Wilson bill has passed through all its vicissitudes, no one is perfectly sure what the outcome may be.

WHITE PINE.

Up's, 1, 1 1/2, 1 3/4 and 2	\$47 00	50 00
2 1/2 and 3 in.	55 00	57 00
4 in.	58 00	60 00
Selects, 1 in.	38 00	40 00
1 1/2 to 2 in.	40 00	42 00
2 1/2 and 3 in.	50 00	52 00
Fine common, 1 in.	35 00	38 00
1 1/2 and 1 3/4 in.	37 00	38 00
2 in.	39 00	40 00
3 in.	45 00	45 00
4 in.	45 00	45 00
Cut'g up, No. 1, 1 in.	28 00	30 00
1 1/2 to 2 in.	35 00	36 00
No. 2, 1 in.	18 00	20 00
No. 2, 1 1/2 to 2 in.	24 00	26 00
No. 3, 1 1/2 to 2 in.	18 00	19 00

WHITE PINE.

Shelving, No. 1, 13 in and up, 1 in.	31 00	@33 00
Dressing, 1 1/2 in.	26 00	28 00
1 1/2 x 10 and 12.	24 00	25 00
1 1/2 in.	24 00	25 00
2 in.	26 50	28 00
Mold st'ps, 1 to 2 in.	33 00	35 00
Barn, No. 1, 10 and 12 in.	23 00	24 00
6 and 8 in.	22 00	23 00
No. 2, 10 and 12 in.	18 00	19 00
6 and 8 in.	18 00	19 00
No. 3, 10 and 12 in.	14 50	15 50
6 and 8 in.	14 50	15 50
Common, 1 in.	16 00	18 00
1 1/2 and 1 3/4 in.	18 00	20 00
2 in.	20 00	22 00

BOX.

Narrow	13 00	@14 00
1 1/2 in.	15 00	18 00
1 3/4 in.	15 00	18 00
2 in.	15 00	18 00

SHINGLES.

16 in., *A extra.	2 60	2 70
16 in. clear butts.	2 60	2 10

LATH.

No. 1, 3 ft.	1 10
No. 2, 4 ft.	1 95

ALBANY, N.Y.

ALBANY, N.Y., Mar. 10.—Just at present it is a case of anticipating a fairly good lumber season, but real work has not yet actually begun.

PINE.

2 1/2 in. and up, good	\$56 60	10-in. common	\$15 16
Fourths	58	12-in. dressing and better	28 34
Selects	50	Common	15 17
Pickings	45	1 1/2-in. siding, selected, 13 ft.	40 45
1 1/2 to 2-in. good	52 55	Common	15 17
Fourths	47 50	1-in. siding, selected	38 42
Selects	42 45	Common	15 17
Pickings	37 40	Norway, clear	22 25
1-in. good	52 55	Dressing	16 18
Fourths	47 50	Common	11 15
Selects	42 45	10-in. plank, 13 ft., dressing c. c.	42 55
Pickings	37 40	and better, each	23 25
Cutting-up	22 27	10-in. plank, 13-ft. culls, each	23 25
Bracket plank	30 35	10-in. boards, 13 ft., dressing	28 32
Shelving boards, 12-in. up	30 32	and better, each	17 21
Dressing boards, narrow	19 21	10-in. boards, 13-ft. culls	17 21

LATH.

Pine	\$2 40	Spruce	\$2 30	\$2 40
------	--------	--------	--------	--------

SHINGLES.

Sawed Pine, ex. XXXX.	\$4 40	\$4 50	Bound butts, 6 x 18	\$5 90	\$6 00
Clear butts	3 15	3 25	Hemlock	2 15	2 30
Smooth, 6 x 18	5 50	5 60	Spruce	2 20	2 30

SAGINAW, MICH.

SAGINAW, Mich., March 10.—When dealers contrast conditions at this port with those of a year ago, they are inclined to become blue. Then it was easy to sell lumber, and get one's own price for it. Buyers to-day are going it slow, and they are not so sure that lumber may be worth all that is being asked. Business in a word is slow, and it is hard to say just how trade will develop this spring.

FINISHING LUMBER—ROUGH.

Uppers, 1, 1 1/2 and 1 3/4	45 00	Fine common, 1 in.	35 00
2 in.	46 00	1 1/2 and 1 3/4 in.	36 00
Selects, 1 in.	40 00	2 in.	36 00
1 1/2 and 1 3/4	41 00	C, 7, 8 and 9 in.	30 00
2 in.	41 00		

SIDING.

Clear, 1/2 in.	24 00	C, 1/2 in.	10 00
3/4 in.	24 00	3/4 in.	34 00
1 in.	21 00	No. 1, 1/2 in.	13 00
Select, 1/2 in.	40 00	3/4 in.	23 00

TIMBER, JOIST AND SCANTLING.

2x4 to 10x10, 12, 14 and 16 ft.	\$11 00	20 ft.	13 00
18 ft.	13 00	22 and 24 ft.	15 00
For each additional 2 ft. add \$1;		12 in. plank and timber \$1 extra;	
extra for sizes above 12 in.			

SHINGLES.

XXX 18 in. Climax	3 65	18 in. X (cull)	1 00
XXX Saginaw	3 40	XXX shorts	2 25
XXX Climax	2 25	XX	1 50
18 in. 4 in. c. b.	1 25		

LATH.

Lath, No 1, white pine	2 25	Lath, No. 2, W. pine, Norway	1 65
------------------------	------	------------------------------	------

NEW YORK CITY.

NEW YORK, March 10.—Business is not looking up to any encouraging extent in the Metropolitan market. A considerable amount of building is anticipated in the early spring, but the effects of present plans is not being felt in lumber quarters. Prices, however, keep quite firm; certainly a hopeful sign of the confidence in the ultimate condition of lumber.

WHITE PINE—WESTERN GRADES.

Uppers, 1 in.	\$44 00	@45 00	Coffin boards	20 00	22 00
1 1/2, 1 3/4 and 2 in.	46 00	47 00	Box, in.	\$17 00	@17 50
3 and 4 in.	55 00	58 00	Thicker	17 50	18 50
Selects, 1 in.	40 00	41 00	Ceil'g, base, fig. No. 1	40 00	42 00
1 in., all wide	41 00	43 00	No. 2	35 00	37 00
1 1/2, 1 3/4 and 2 in.	43 00	44 00	No. 3	24 00	26 00
3 and 4 in.	52 00	53 00	Shelving, No. 1	30 00	32 00
Fine common, 1 in.	36 00	37 00	No. 2	25 00	27 00
1 1/2, 1 3/4 and 2 in.	38 00	40 00	Molding, No. 1	36 00	37 00
3 and 4 in.	46 00	48 00	No. 2	34 00	36 00
Cutting up, 1 in. No. 1	28 00	30 00	Bevel sid'g, clear	22 50	23 00
No. 2	21 00	23 00	No. 1	22 00	22 50
Thick, No. 1	29 00	32 00	No. 2	20 00	20 50
No. 2	24 00	26 00	No. 3	16 00	17 00
Common, No. 1, 10 and 12 in.	22 00	23 00	Norway, c'l, and No. 1	23 00	25 00
No. 2	20 00	21 00	No. 2	20 00	22 00
No. 3	17 00	18 00	Common	18 00	19 00

BELTS IN SAW MILLS.

IT is frequently stated, says the Tradesman, that there is no place where a leather belt is subjected to harder use than the saw mill, and that the belts that drive the saw under the most favorable conditions are short lived. While this is true to a certain extent, still there is no good reason why this should be the case. It is also true that the belt which drives a circular saw is subjected to more variations in tension, from the fact that the resistance offered to it is more variable than in any other class of machinery; still, that is no good reason why a good leather belt should not last a reasonable time under favorable conditions. But here is the trouble: The manner in which many mills are constructed is such that favorable conditions for the belt are out of the question. In the first place, the pulleys upon the mandrel are too small in diameter and too narrow upon the face to admit of sufficient belt power at a reasonable tension, and to remedy this defect the belt is not only subjected to a ruinous tension, but heavy binders are applied to complete the job and render matters worse so far as the belt is concerned. It is often the case where a sixty-inch saw is used with the usual feed, that the belt is required to transmit 60 horse-power, when at its proper speed and tension it should not be required to transmit over from 30 to 40, but by the means of a heavy binder it is compelled to perform its work regardless of consequences; then, if it gives out in a short time somebody except the right one must take the blame. Experience has fully demonstrated that a leather belt in order to be durable and lasting should never be subjected to a tension to exceed 100 pounds to the inch in width, consequently the pulley should be of sufficient diameter and wide enough upon the face to admit of a belt of sufficient width to transmit the maximum power at that tension, without the use of a binder. It is estimated that a sixty-inch saw, making 600 revolutions per minute, with the average feed in pine lumber, requires not less than a maximum of 60 horse-power, which would require a pulley upon the mandrel thirty inches in diameter and eighteen inch face to give that power with a reasonable surplus for contingencies. A saw of that size running 600 revolutions per minute and furnished with a pulley thirty inches in diameter would give you a belt speed 4,712.40 feet per minute, and if the belt were eighteen inches wide and subjected to a stress of 100 pounds to the inch in width, the whole stress would be equal to 1,800 pounds. As the fractional power of all leather belts is equal to 40 per cent. of the stress it follows that the effective force of the belt will be equal to 720 pounds. To find the power of a belt we multiply the speed in feet per minute by 40 per cent. of the stress and divide by 33,000. Hence, 4,712.40 times 720 divided by 33,000 equals 93.42 horse-power and this should be sufficient to drive the saw up to its speed without the use of a binder or straining it otherwise beyond its powers of endurance. Under such conditions there is no reason why a belt should not stand as long as in any other part of the mill. Still we find many mills of this kind with a pulley of from eighteen to twenty inches in diameter and frequently not over from twelve to fourteen inch face and a belt of that width is compelled to drive it. By the same rule it will be found that a fourteen inch belt upon a twenty-inch pulley at 600 revolutions per minute will not give more than about fifty-five horse-power, while the same belt upon one of eighteen inches in diameter will only transmit thirty-six, and all the power required beyond that amount is only obtained by overstraining the belt, which soon destroys it and the only remedy for the difficulty complained of is to use larger pulleys and wider belts and leave the binders out of the question.

STRENGTHENING OLD BELTING.

BY means of an ingeniously arranged apparatus the strength of old belting is now renewed or augmented to such a degree as greatly to lengthen its service. To accomplish this, two large, hollow copper cylinders are provided, and into these steam is admitted, so that they are always heated. In a tank is a solution composed of beeswax, borax, glue, starch and molasses, prepared in equal quantities, the solution being in liquid form; and there are guide rollers, through which runs the leather belting, which is in process of treatment. The belt to be operated upon is started into the machine at a point where it can enter the tank, and while passing through the latter the leather receives an application of the solution; the press rollers immediately squeeze the compound into the fibre of the leather, and then the heat from the cylinders, over which the belt is being drawn, dries the compound. All the rollers and cylinders rest in the bearings. As represented, the application of this compound to the belt, and immediately drying, is to add strength to the fibre of the leather in a remarkable degree.

MECHANICAL ARTICULATION.

TO make a sound by steam power loud enough to be heard ten or fifteen miles for signal purposes, as in the case of the steam siren, a 10-horse power boiler is used that must be red for all it is worth, for it takes steam to furnish lung power for a device of this kind, says the Boston Journal of Commerce. The steam is allowed to rush direct into the open air from a valve in the horn that opens and shuts 250 times in a second to give a pitch that will correspond with the human voice. The trouble with sound like this is that it is too regular, with all the pulsations just alike and calls for interruptions similar to those found in telegraphy to give signals. What is wanted is to rig up some way to have perfect control of every pulsation on the opening and closing of the valve for every discharge of steam, that the horn may work more like the telephone; in fact, make the steam siren speak for itself by working on the phonographic principle. A single word is composed of no more vibrations than there are pulsations made by the steam horn during the time it takes to pronounce it. This number could be spaced off on the rim of a large wheel as though intended for teeth to a gear, and a tooth cut for every space that will open and close the valve on its own hook independently of all the others; then when the wheel is given a single revolution each tooth will act on the lever of the steam valve in their regular order and produce the word they have been shaped out for. With a set of no more than twelve wheels quite a conversation could be kept up by simply changing the lever opening from one to another, as the case may require, but who will attempt to shape the first valve wheel? Already a sectional view of a phonographic cylinder has been made that will show the styles perfectly, and has been magnified and photographed till the vibrations for a single word can all be traced on a 12-foot circle. This ought to be large enough for any mechanic to be able to reproduce on a wheel 2 feet in diameter with a one-eighth milling cutter quite closely on the pantographic principle, and given the siren a distinct articulation. The first time it may sound a little hoarse, but might improve in this respect as the surface of the valve wheel wore smooth.

DESIGNING vs. MAKING.

IT is very easy to tell by a quick, searching glance whether a piece of machinery has been "designed" or only "made," in other words, whether the plans have been carefully studied and weighed for convenience and cheapness of manufacture, or whether they have been neglected and the machine built piecemeal, making the latter parts fit the first ones. This is too often the case with some machinery, and we find to our sorrow when we come to repair or replace some part, that what should be a minor repair necessitates taking down the whole machine to get at the piece to be replaced. This counts against a machine when the repair bills are charged to it as should be the case in a well organized shop, and probably prevents another order for this machine being placed when another is wanted. It will pay to look your machine over and see if there is not some part which comes under this head and that can be improved, and these little improvements in get-at-able-ness all count in a machine's favor with the men who have them in charge.

PUBLICATIONS.

The "Progress of the World" of the Review of Reviews is not confined merely to a review and discussion of current events. In this department of the March number, for instance, appears a report upon the geographical and scientific explorations that have recently been completed, or are now being carried on, accompanied by maps and portraits of the explorers.

WINNIPEG AS A LUMBER CITY.

THE following story of a lumber boom for Winnipeg comes to us by way of our esteemed cotemporary, the Mississippi Valley Lumberman. A correspondent writing to that journal from Winnipeg says:

The most important enterprise affecting the lumber trade of this portion of Canada for many a long day—in fact since the trade came into existence—is now under consideration. The plan, if carried out, will completely revolutionize the entire lumber trade of this section. The scheme involves the construction of 100 miles of railway and the changing of the base of the lumber industry from the Lake of the Woods to the Red river. This is not a visionary enterprise, planned by speculators, boomsters or schemers. It is a well-considered plan, presented in a practical and feasible form and engineered by business men of the first magnitude in the industry.

Some two or three years ago a railway charter was secured for a road which was to be known as the Manitoba Southeastern, to run from Winnipeg in a southeasterly direction. A few miles of the road were graded, but nothing has since been done and the thing was regarded as simply one of those numerous railway schemes which were brought into existence for charter managing purposes. The existence of the charter had almost been forgotten until recently, when the Manitoba Southeastern has come to the front in a new role. The leading lumbermen of the Lake of the Woods district have become alarmed at the prospect of free trade in lumber, and they have been considering means of cheapening the cost of manufacture and reducing the cost of placing their product throughout the country. Practically the entire lumbering interest is centered at and about the town of Rat Portage, on the Lake of the Woods. The reason why it is so centered is that this is the only point on the lake reached by railway—the Canadian Pacific—and the pine timber country is tributary to the lake. The distance from the mills to Winnipeg is 150 miles and the trade of the mills begins at Winnipeg and extends westward. The mills, it will be seen, are thus located a long distance from their market, and with no railway competition very high railway rates and other disadvantages. They feel that they would not be able to compete with Minnesota manufacturers in case of free trade being established. The lumbermen have been pondering over this situation and they have evolved a plan which they believe opens a way out of all their disadvantages. They propose to build a railroad of their own from Winnipeg to the Lake of the Woods, establish their mills on the Red river, right in the centre of their trade, and bring the logs here to saw.

To carry out this programme they have secured control of the Manitoba Southeastern Railway, and propose working under this charter. This charter carries with it a bonus of 6,400 acres of land per mile of road, so that it is worth something more than the paper it is printed on. They can reach the lake in a southeasterly direction from Winnipeg within about 100 miles, thus shortening the distance over one-third as compared with the present Canadian Pacific line. By that road the logs would be hauled across and dumped into the Red river and sawed by mills to be erected or moved here from their present location at the lake.

The plan appears to be all perfected but the financing, and it is in the financing that it has been made public. The promotion of the enterprise is in the hands of Messrs. Cameron, Graham and Ross, all representative lumbermen. These gentlemen are negotiating with the Provincial Government for financial aid, in the form of a guarantee of interest, at 5 per cent. upon the lands of the company for 12 years to the amount of \$11,000 per mile. They do not ask this as a direct bonus from the province, but simply as a guarantee to assist them in floating the bonds. The province would of course be responsible for the payment of the interest in case the company defaulted, but the promoters offer to put up their land grant as security, so that they give ample security for the full amount of risk taken by the government. The company also offer to guarantee a maximum freight rate, amounting to 8 cents per 100 pounds on lumber, cordwood 3 cents, and

poles, posts, piles, etc., 4½ cents, and \$3 per thousand feet on logs. These are about half the present rates from the mills to Winnipeg. They propose getting to work at once, so that the mills would be established in Winnipeg by the early summer of 1895. The promoters claim that they will be able to manufacture the lumber in Winnipeg at about the same cost as they are now under at Rat Portage, and that the present freight rate would be entirely saved. The retail price of lumber, they claim, would be reduced in Winnipeg from \$4 to \$7 per thousand. The mills have no local demand for refuse where they are now situated, and this has to be burned to get it out of the way, while in Winnipeg the sale of the refuse would almost pay the cost of yarding. In Winnipeg, where fuel is dear, good prices could be obtained for slabs, etc. If they can carry out their scheme the promoters say that they will be able to sell lumber in Dakota and northeastern Minnesota, instead of fearing competition from that quarter.

The proposed road would open up a fine agricultural prairie country, now without railway communication, for some distance east of Winnipeg, after which it would enter the pine country and continue on to the lake. It is also believed that the road would become a link in another through road to Lake Superior, which is so badly needed to give competition in export grain rates. There is a road now building eastward from Port Arthur, on Lake Superior, to the Rainy river district, and a little extension would join the two lines. It would be a great thing for Winnipeg, making it a lumbering city of considerable magnitude. The scheme has been received with great favor by the people here, as it is now felt that the cost of lumber is too great, and in fact an agitation is at present on foot to secure lower freight rates. The government is therefore being strongly pressed to grant the financial aid asked.

BLACK WALNUT FARMING.

BLACK walnut, like many other particular classes of wood, is fast becoming scarce. Mr. James Nichols, a large shipper of Virginia, who was interviewed the other day by a newspaper reporter has furnished some interesting information concerning this wood.

"Black walnut is worth twice as much nowadays," said Mr. Nichols, "as it was ten years ago. The supply is practically exhausted. Ten years ago there was a big quantity in sight in Southern Indiana—great trees eighty feet high to the first limb, and from three to five feet in diameter. But all that is gone, and Missouri has the only supply of any considerable amount, and that is melting away fast. These logs of mine (referring to a shipment of twelve carloads) come from the woodlands on top of the Katoc range. They are none of them what would be called first-class. A few years ago nobody would think of buying them. That, indeed, is why they are in my hands to-day. Thousands of just such logs have been cut and used for firewood by Virginia farmers, and every little while I hear nowadays of some old backwoods mossback who has burned up a \$50 log in his \$2 cook stove. That is a thing to make you swear, but those old fellows can't read or write, and see few outsiders, so they do just as they did fifty years ago.

"I found the other day a black walnut plank four feet wide nailed up in a Virginia barn, where it had been for twenty years waiting until its owner could get the three or four dollars necessary to pay for getting it made up into a good kitchen table. That plank, just as it stood, was worth money enough to buy the old man four good cherry tables. I tell you, it is hard to find four-foot black walnut logs in my neighborhood now. Six years ago I was travelling in the south-western part of West Virginia, where I saw some very fine timber land. I asked the people I met what land was worth around there.

"'Oh,' they said, 'if you go back away it can be had for 50 cents an acre.'

"I was through that way last summer, and that same land, which I unluckily did not buy, was stripped of its heavy timber, and they were grubbing out numerous black walnut stumps, which they told me were worth anywhere from \$50 to \$100 for the splendid sound burl veneering to be cut from them.

"These little logs that we ship from the Katoc range will seldom square over fourteen inches, but they are sound and make a good quality of lumber. I pay about 12 cents a square foot in the log, owner grubbing the tree out by the roots according to my directions. If a tree will cut into a log fourteen feet long it does well. The farmers are glad to get rid of them, for the black walnut is not much of a shade tree. Nothing will grow under it on account of the peculiar acid-like quality of the tree, and there is hardly a tree that grows that sends its limbs and roots further laterally, so that it despoils a good deal of land. If a farmer can by expending \$5 worth take out a tree that will bring him \$12 to \$15, and leave him soil enough to bring in \$6 or \$8 hereafter in crops, why, he is making a good thing of it. I get on an average \$160 per 1,000 feet for the black walnut I take to market. There is a good margin between buying and selling, but the quantity to be had is so limited that it is not a safe or very profitable business to be engaged in. It would not pay me, or any one, to put my whole time into it.

"And let me tell you this: If you want to leave your children and grand-children a fortune, buy some worthless mountain land and plant black walnuts. You can get thousands of acres in some parts of Virginia and West Virginia, and the walnuts are to be had in almost endless quantity every fall anywhere within forty or fifty miles of Washington. The tree really grows rapidly, notwithstanding its strong acid character and peculiarly dark, firm grain. If you chose to cut a tree fifteen years old you could make money planting them for that length of time. It is a good crop to try."

TRICK OF A SAFETY VALVE.

AN engineer recently observed his steam gauge indicating a higher pressure than his safety valve spring was set for. He slackened the spring, but the gauge kept rising and the steam did not blow off. He slackened the spring further, still the steam did not blow. When the pressure rose to 200 pounds he became alarmed; and as he could not start the engine he started the injector and opened the water blow-off cock. The damper being closed, this had the effect to prevent further increase of pressure. On examining the safety valve it appeared that the brass seat of the valve was a bushing put into an iron casting, that it had become loose and that the steam had pressed it up against the valve. As the valve rose the seat followed it, and there could not have been a release of steam until the bushing was pushed out of its hole. Some serious accidents have occurred from this cause. It is not good engineering to so construct safety valves that it is possible for the valve seat to become detached.

NOT ALWAYS THE CASE.

PERIODICALLY there floats through the technical press, says Power, an item to the effect that one-sixteenth of an inch of scale has been determined by accurate experiment to require 15 per cent. more fuel; three-sixteenths, 23 per cent. While this may be strictly true for the boiler experimented upon, it can not, in the nature of things, be of universal application nor an index of the loss which may be expected upon another boiler from a given thickness of scale. A boiler with a meager amount of heating surface would suffer seriously from an impairment of the efficiency of that surface by scale, while a boiler with ample surface would suffer comparatively little. The item evidently started from a formula based by Nystrom upon the alleged fact that saturated scale has about one-thirtieth the conductivity of iron plate, and giving the diminishing values quoted as the amounts of heat transmitted through a given amount of heating surface.

HOW TO DO IT.

TO maintain perfect regulation, place the engine in the hands of a competent engineer, who is capable of adjusting and keeping the engine in good running order. A good engine, or piece of machinery, placed in the hands of an incompetent person, will never give good service or economical results.

A MADAGASCAR FOREST.

HOW powerless one feels when one attempts to describe the wonderfully varied and almost endless forms of vegetable life that pass their days in the great eastern front of Madagascar! I have heard the forests spoken of as monotonous. Nothing could be further from the truth. An English wood, consisting entirely of oak or fir trees, might be called monotonous, but the term can surely not be applied to a forest in which you rarely meet with two adjoining trees or shrubs of the same species. If one thinks merely of tree trunks and green leaves in the abstract, then perhaps it may be called monotonous, but even in this monotony there is infinite variety. Why, no two leaves are alike, they are of all possible shapes, sizes, and tints; and as for the tree trunks, they all differ from one another in girth, and in the guests which partake of their hospitality. Of ferns that live on the trunks of trees I know at least fifty different species, and even this, of course, does not exhaust the list. Of orchids there are probably a greater number even than ferns. Very frequently there may be seen a shrub growing out of a tree trunk, which seems to form part and parcel of the tree itself; but when its leaves are examined they are found to be quite different from those of its host. It is a Loranthus of which there are about a dozen species, or a Viscum, of which there are probably more. It is a veritable parasite, having pushed its roots right into the tree for the purpose of sucking its juices, and thus flourishes at the expense of its neighbor. A species of lichen, the "Old Man Beard," hangs very abundantly from many of the trees. Other lichens, too, of various hues; fungi, and delicate little mosses, the life of each one of which would be an interesting study in itself, also play a prominent part in this heterogeneous community.

NATURAL WOODS IN CARRIAGE BUILDING.

THE popularity of the natural wood finish, says The Hub, suggests the propriety of a departure from oak and ash in bodies, as has been the rule for several years past. There are many other rich woods which could be used to an advantage, and thus relieve the monotony, now so marked, due to the general use of light woods. Among the woods that might be used to advantage are beech and maple, for light colors. The beech has a particularly rich grain when quarter sawed: it is dense and durable, and not necessarily expensive. Maple, both hard and soft, has a rich grain; it surfaces well, is free from the absorbent

qualities of ash, and can be procured in abundance.

There are dark woods which possess richly mottled grainings, and which are all that can be desired for carriage panels. These are butternut, black walnut, redwood and mahogany. Butternut has a rich light brown color, mottled by light and dark stripes, is easily worked, has good surfacing qualities, fills readily and brightens richly when varnished. Black walnut is too well known to require special mention, and now that it has ceased to be popular among cabinetmakers, the price puts it within the reach of manufacturers. Redwood is a wonderfully rich wood, and shows a delightful variety of surfaces and shades. It is one of the most durable woods that grow, and as it darkens by age, it grows richer as it grows older. Mahogany is the great leader among red woods. It can be used to an advantage, although no richer nor better than redwood.

The use of brown and red woods would greatly relieve the monotony, and tend to further popularize natural wood finish.

KEEP YOUR MILL CLEAN.

THERE is no good reason why a saw mill should not be kept in a reasonably tidy condition as well as other manufacturing establishments, says the Lumberman's Review. What is known as mill refuse is no longer a source of serious trouble to the practical mill man. If you have not already done so, provide a large grate surface under your boiler, feed it with refuse direct from the saws or planers, by modern and expensive appliances, and thus remove an eye sore from your mill yard, increase your heat and power, reduce operating expenses, keep your mill approaches neat and clean, in fact, kill a half dozen birds with one stone. If you can't use up all your mill refuse, buy a refuse burner and make a clean job of it.

THE MAGNOLIA METAL COMPANY'S ENORMOUS SALES.

The business of the Magnolia Metal Co., in its sales of magnolia metal has increased 12 from January, 1893, to January, 1894, over the sales of the previous year, notwithstanding one of the greatest panics that the world has ever seen, passed over the country during that time. The factory of this company has never closed down for one day on account of the panic, and a part of the time it had to run all night in order to keep up to the company's orders for magnolia metal. The outlook for the coming year of 1894 is very bright, and the Magnolia Metal Company anticipates an increase of at least 50% over the year 1893.

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



NORTHEY

MFG CO.

LIMITED

TORONTO - ONT.

I. F. EBY

HUGH BLAIN

Lumbermen

Having made a specialty for years of supplying Lumber and Mining Camps with Groceries, Flour, Feed and Smoked, Dried and Green Meats, etc., we solicit inquiries from you for your various camps.

SPECIAL: -

Write us for Catalogue and quotations.

Send us your address and we will quote the market from time to time.

EBY, BLAIN & CO.

WHOLESALE GROCERS - TORONTO, ONT.

STEAM BOILER INSPECTION AND INSURANCE DEPARTMENT

OF THE

STEAM BOILER AND PLATE GLASS INSURANCE COMPANY

JAMES LAUT, MANAGER, OF CANADA

DIRECTORS

- E. JONES PARKE, Q.C. 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.

REAMER LUMBER CO. LTD.

WHOLESALE DEALERS IN

WHITE PINE

AND

HARDWOODS

41 Park Row New York

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	Water, Gang, Circular, Saw 90m, Shingles 70m, Lath 30m
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.	2 Mills, Water, 1 Band, 2 Gangs and 3 Circulars.
Alexandria, Ont.	Alexandria	McPherson, Schell & Co.	Cheese Box Factory, Pine, Spruce, Cedar	Circular, 3m
Almonte, Ont.	Almonte	Caldwell, A. & Son	Sawmill, Pine, Lumber, Hemlock, Hardwoods.	Steam, Circular, 40m
Barrie, Ont.	Barrie	Dymont & Mickle	Saw, Shingle and Heading Mill, Pine, Cedar	
Barrow Bay, Ont.	Warton	Barrow Bay Lumber Co., Limited	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.	Feneelon Falls	Boyd, Mossom & Co.	Lumber, Wholesale and Retail.	
Bonaville, Ont.	Barrie	Burton Bros.	Lumber, Wholesale and Retail.	
Waubushene, Ont.	Waubushene	Georgian Bay Consolida. Lumber Co. Hd. office arcade 24 King st. w., Toronto	Pine only.	Waubushene mill, stm., 200m; Pt. Severn mill, water, 120m
Calabogie, Ont.	Calabogie	Carwell, Thistle & McKay	Lumber, Wholesale and Retail.	
Callander, Ont.	Callander, G.T.R.	John B. Smith & Sons	White and Red Pine Lumber, Bill Stuff, Lath and Shingles	Steam, 2 Circular, 80m
Collins Inlet, Ont.	Collins Inlet	Head Office, Strachan Ave., Toronto	Lumber, Pine, Oak, Ash, Birch, Whol. and Ret.	Steam, Cir., Saw 14m, Sh. 20m
Glamis, Ont.	Pinkerton	Collins Inlet Lumber Co. 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., Hwds., Whol. and Ret.	Steam, Circular, 25m
Huntsville, Ont.	Huntsville	Heath, Tait and Turnbull	Sawmill, Pine, Spruce, Hemlock, Hardwoods.	Steam, Circular, 4m
Hamilton, Ont.	Huntsville and Katrine	Thomson, Robert & Co.	Sawmill, Pine, Spruce, Hardwoods.	Steam, Circular
Keewatin, Ont.	Keewatin	Dick, Banning & Co.	Sawmill, Pine, Hardwoods, Wholesale	Water, Band and Circular, 100m
Keewatin, Ont.	Keewatin	Keewatin Lumber & Mfg. Co.	Saw, Lath, Sh. and Pl. Mill, Moving Posts, Pine	
Lakefield, Ont.	Lakefield	Lakefield Lumber Mfg. Co.	Lumber, Wholesale and Retail.	
Little Current, Ont.	Sudbury	Howry, J. W. & Sons	Lumber, Wholesale and Retail.	
London, Ont.	London	Gordon, James	Exp. and dir. in Am. Hwds. 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.	Warren, C.P.R.	The Imperial Lumber Co., Limited	Pine	80 M. per day, Stm., 2 Cir. Saws
Toronto, Ont.	Cache Bay, Ont.	Davidson, Hay & Co.	W. Pine, Lath, Shingles, Dim. Timber, Car Sills	Stm., 2 Band, Cir. & Gang, 140m
Toronto, Ont., Mill: Stony Lake	Lakefield	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.	
Warton, Ont.	Warton	Miller, B. B.	3 Sawmills, Lumber, Barrel Heads	Stm., Wr., Cir., Port. & Sta., 10m
Montreal, Que.	Montreal	Dufresse, O. Jr. & Frere	Sawmill, Pine, Spruce, Hemlock, Hdwds., Whol.	Steam, Circular and Band, 50m
Montreal, Que.	Montreal	SEBARE & 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., Hwds.	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.

LUMBER TRUCK WHEELS

The Montreal Car Wheel Co.

... MANUFACTURERS OF ...

Charcoal Iron Gilled

RAILROAD WHEELS

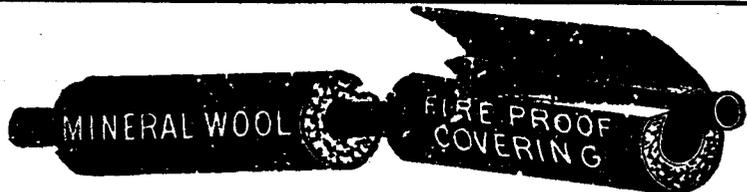
OFFICES:

NEW YORK LIFE INSURANCE BUILDING, MONTREAL

WORKS: LACHINE, QUEBEC

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

CORRESPONDENCE SOLICITED



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
- “ “ “ “ “ freezing

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

Best Box Metal
.....Extant
Stands any Gait,
Weight or Motion

COPPERINE

Holds the best
TESTIMONIALS
from the largest machinery manufacturers, owners and users in the country

Four Grades
do all your work
with economy
NO HOT BOXES

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 27th of each month to insure insertion in the following issue.

PARTS HAVING BLACK ASH LUMBER and Cedar Fence Posts for sale send us particulars. **ROBERT THOMSON & CO.,** 101 Bay St., Toronto.

WE WANT ALL KINDS OF HARDWOODS. Will pay cash. **ROBERT THOMSON & CO.,** 101 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 "Basswood," care of **CANADA LUMBERMAN.**

LUMBER AND SHINGLE MILL, FOR sale in the Village of Dundalk, this is good 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 BAND SAW FILER, NINE YEARS' EX-perience, also thoroughly practical on Rotarys. 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 commission. Bonus file orders sent you before shipment. Address: **Commissions,** care of **CANADA LUMBERMAN.**

FOR SALE

PORTRAWAN SASH AND DOOR FACTORY and Sawmill and Shingle Mills. The Factory is fitted with new 10-hp steel boiler, also with following machinery by Macgregor and Gourlay, of Glasgow: Lathe, Mather and Planer combined, Hand Saw, Plane, Mower, Shafter, Jointer and Sandpaperer. Apply. Box 16, Port Rowan, Ont.

LOGGING TRAMWAY FOR SALE

About three miles of 25lb. 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 on principle 16 feet long and average from 4 to 6 1/2 in. per 1200 feet, and can be delivered in the Georgian Bay by the 1st of June, 1934. For particulars apply to **J. D. SHIER,** Bracebridge.

Buy the Best.

The "WHITING" Saw-Set FOR CROSS-CUTS ONLY WARRANTED



The only SWAGE SET made SAMPLE BY MAIL, PREPAID, 35c. **R. DILLON** OSHAWA, ONT.

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**

WHY BAND SAWS BREAK

SIXTEEN REASONS, AND HOW TO AVOID THEM



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

A book filled with valuable information on the care of hand 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.** SAFETY GUARANTEED. 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 and 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.**

USE SOMETHING GOOD **PEERLESS MACHINE CYLINDER ENGINE & DYNAMO** **SAMUEL ROGERS & CO. TORONTO.**

SAW MILLS SUPPLIED SPECIALLY WITH High Grade ... Heavy Quality

OAK TANNED BELTING TORONTO 20 FRONT ST EAST TELEPHONE 475 **THE J.C.McLAREN BELTING CO** MONTREAL

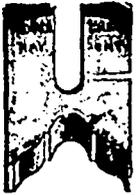
H. P. ECKARDT & CO. WHOLESALE GROCERS

Lumbermen's Supplies a specialty . . .

. . . Correspondence solicited

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

GALT MACHINE KNIFE WORKS



MACHINE KNIVES
OF EVERY DESCRIPTION FOR
Planing, Moulding and Stave Cutting
Send for Price List

PETER HAY, GALT, ONT.

J. J. TURNER & SON

.. Sail, Tent and Awning Maker ..

251 George St. and 154 King St.
PETERBOROUGH

Cane, 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," GORONTO

TELEPHONE 181

WM. C. WILSON

(Late with the BUSHNET 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., Ham-
ton, 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, Lamen Fire Hose)

Detterick & Co., Tanners, St. Catharines, Ont.

(Lace Leather, Rawhide, Russet and Calf)

The Pennsylvania & Delaware Oil Co., Ne
York

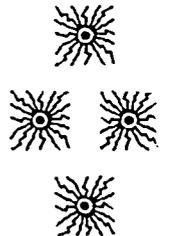
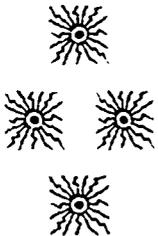
(American Lubricating Oils and Grease)

Oils shipped from any port on American
side to suit customers

Before placing your Spring Order we
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 - LUMBER MERCHANT

No. 1, Toronto St., Toronto

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. AINSIE — W. STODARI

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.

Write the undersigned for Folders, which contain Maps, Train Schedules and much information of value to those contemplating a trip to any of the above-mentioned points.

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 guarantee 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 134 KING ST W TORONTO, CAN. ESTABLISHED 1871

Dauntless Shingle and Heading Machine

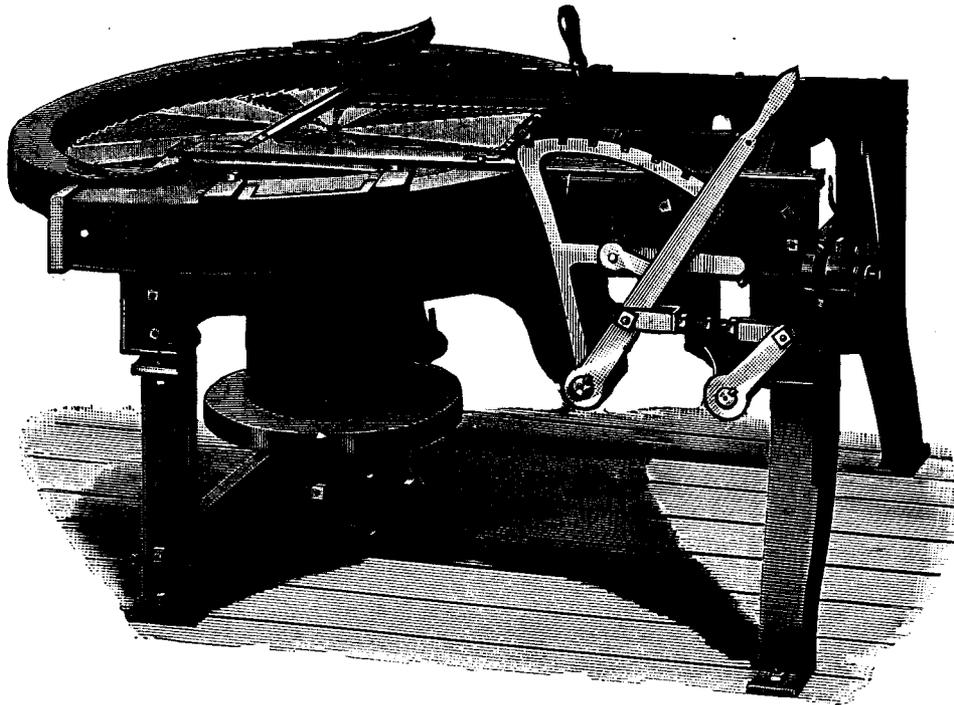
WILL make more Shingles per day than any self-acting machine with vertical saw in existence, and more Shingles from the same quantity of timber.

THE FRAME

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

THE CARRIAGE

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



CAPACITY FROM 25,000 TO 50,000 PER DAY

[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.

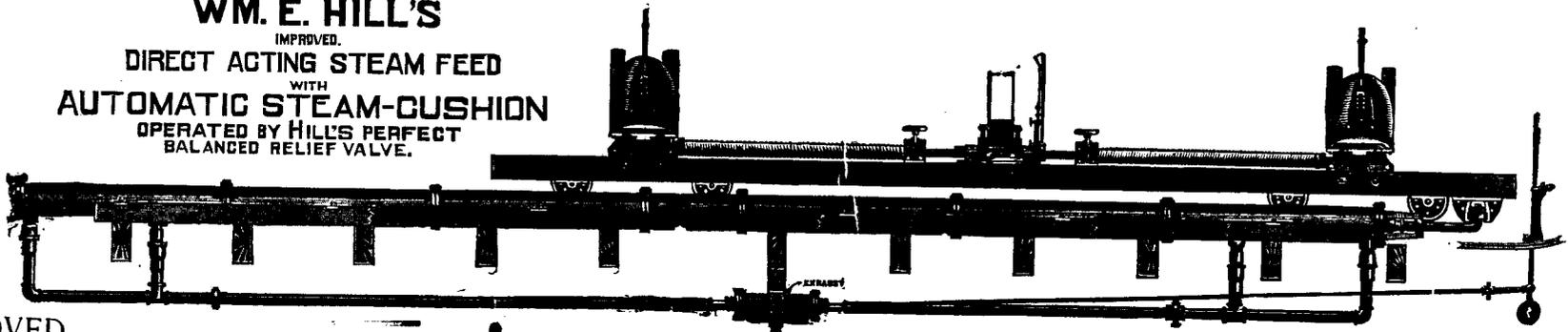
Truly yours, M. DOVEY.

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

F. J. DRAKE

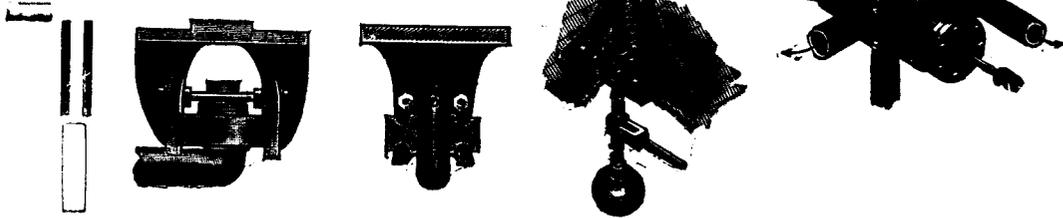
PATENTEE AND ... MANUFACTURER OF SAW, SHINGLE AND LATH MACHINERY BELLEVILLE, ONT.

WM. E. HILL'S
IMPROVED.
DIRECT ACTING STEAM FEED
WITH
AUTOMATIC STEAM-CUSHION
OPERATED BY HILL'S PERFECT
 BALANCED RELIEF VALVE.



IMPROVED
PISTON, BRACKET,
 Lever, lever stand connection.

STEAM SAFETY CUSHION prevents damage if operator loses control.



Output of your mill will be increased 10 to 25% by putting in this steam feed.

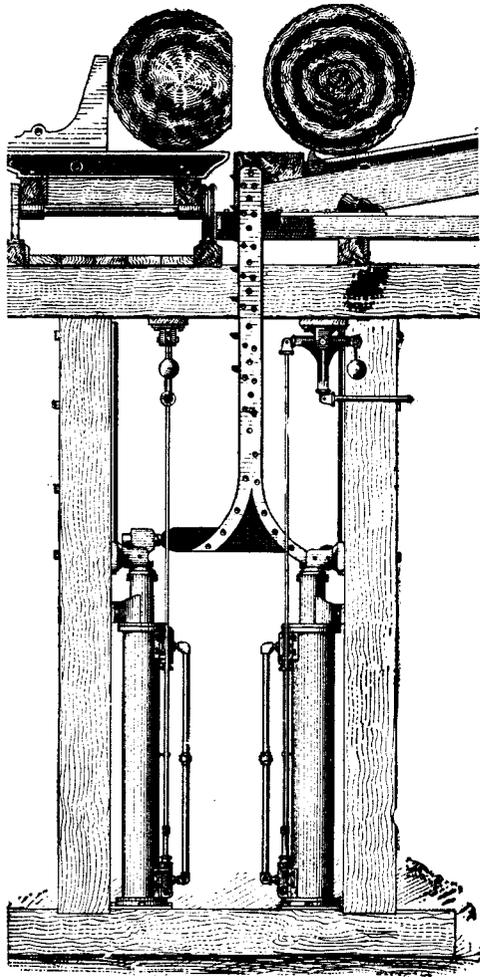
If your boiler capacity is sufficient now, it will not be necessary to increase it.

We also build the ordinary Prescott Steam Feed and Allis patent double valve economical Steam Feed

BAND SAWS and Band Saw Tools

These are of equal importance to the Band Mill. Without the best saws and the best means of keeping them in order it is impossible to get the best results from the Band Mill.

IN BAND SAW TOOLS we build the largest and most improved line, having combined the best features of the leading American tools with many valuable improvements.

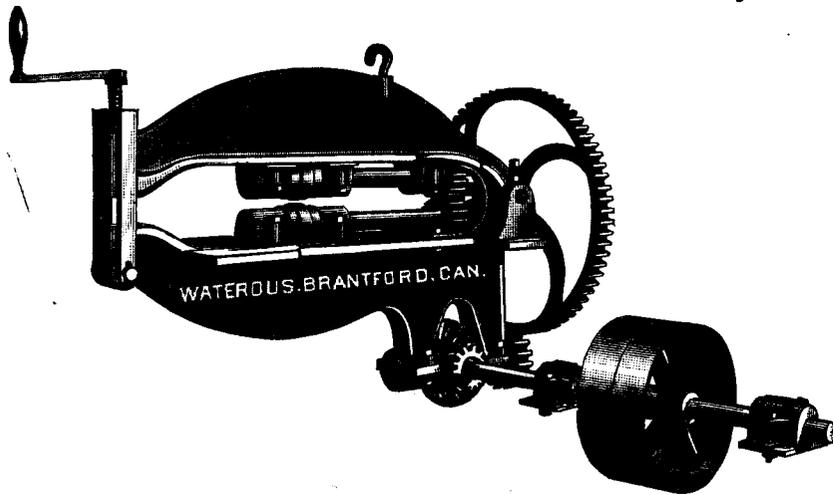


Hills Niggers

MAMMOTH AND MEDIUM SIZES

The Stationary latest improved Niggers are the simplest and best. They do away with the leaky universal steam joints, and are more easily set up and connected. Made under Hills patents, with all his latest improvements. Unless properly made, a steam Nigger is a positive disadvantage in loss of time and erratic action.

Always buy the best, it's the cheapest in the end.



FOR INSTANCE

These horizontal stretching rolls open the saw, putting in the proper tension and doing away with a great deal of hammering that would be otherwise necessary. The work is done more evenly and quickly, requiring less skill from the operator.

The rolls are hardened steel, ground to proper surface, and adjustable for saws of different thickness.

The countershafts are interchangeable to drive either way.

No filing room is complete without this tool.

IN BAND SAWS

We can supply you Saws made from the celebrated "Sandvik" steel, guaranteed in every particular and in perfect order to put on your wheels, at lowest possible prices. It will pay you to give us a trial order.

If you are thinking of putting in a Band Mill, write us. Our circular contains considerable information on the subject. Remember the "Allis Improved Band" is the best.

WATEROUS, BRANTFORD, CANADA