

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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



PUBLISHED
SEMI-MONTHLY.

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

SUBSCRIPTION
\$2.00 PER ANNUM

VOL. 4.

PETERBOROUGH, ONT., APRIL 1, 1884.

NO. 7.

DESTROYING THE FORESTS.

The St. Paul Pioneer Press says:—In the issue of Saturday last there appeared an article from the pen of James S. Brisbrin, showing the effect of the destruction or cultivation of timber on the rainfall of the country. The article has elicited from Mr. Schatzka, a civil engineer and landscape gardener now employed at Lakewood cemetery, Minneapolis, some further interesting information. Mr. Schatzka is a graduate of the forest academy of Tharand, Saxony, and has written much and lectured on forestry. He says:—"I want to take this issue at the outset with Gen. Brisbrin, when he says: "Let every man remember when he falls a big tree that he is doing something which in his life time he cannot replace; and let him cut down just as few trees as possible." I say cut down every tree that comes to maturity, for after that the tree will deteriorate and become valueless altogether. But the man who has the benefit of a matured product, the cultivation of which has cost him nothing, is morally bound to replace the same, and thereby keep up the capital. He has had the compound interest; why not replace the capital? Trees come to maturity like other organized bodies, and it is poor economy to let your products go to waste. But to gain growth and time, a little nursery should be kept, out of which to replace such trees as become ripe for the woodman's axe. A small area of ground will suffice for this purpose. As there is coal enough in this country for fuel, it is important that trees be used for timber purposes. It is desirable, therefore, to have the trunks without branches as high up as possible. Trees for timber purposes should, therefore, be planted thickly together to make them grow straight and high without spreading. The lower branches will thus be too much shaded to live, and will die and fall off without leaving a mark on the trunk. After the necessary height is realized, or in the course of time, when they commence to show signs of crowded condition, a gradual thinning out should take place, but not too much at a time. We are aware that the national agricultural department in Washington has made several efforts to have the Government take the preservation and restoration of the forests in hand, and that the secretary of the interior, as authorized by Congress, has adopted some means to prevent the cutting down of forests in the territories. But all this is not sufficient for the preservation of that extent of forests which is needed for agricultural as well as manufacturing purposes. The forests should cover from one-quarter to one-third of the area of a country, if it is to be healthy and fitted to fulfill the conditions under which agriculture may be carried on with success. And not only is the extent of the forest to be considered. We must also take into account their proper distribution over the face of the country if we would secure the utmost possible benefit to its

inhabitants. The shelter and the healthful atmosphere of the forests in the far western territories have no effect upon the inhabitants of Wisconsin and New York. When we consider that some soils are in reality not fit for agriculture, and have to be termed on the assessor's list and on the maps as "uncultured land," would it not be a welcome sight to see young forests springing up in such places, and, though growing slowly benefitting the surrounding agricultural districts with a humid atmosphere, shelter against high winds, and against changes of temperature, frequently so sudden and disastrous?

In Europe the various governments have found it necessary to make the care of the forests a particular subject of consideration and legislation, and have created special official bureaus under the management of competent men who had to serve a long apprenticeship, graduate in the science and arts of forest culture, and who made the forests a source of revenue to the governments, amounting to millions of dollars from the poorest soil of that country. While the direct net income of the forests is counted by millions, their influence upon health and agriculture cannot be estimated. And when we consider the rapid increase of population in our own country, the demands already made upon the forests, and the present comparative scarcity of lumber, it is easy to see that here also similar methods will have to be adopted.

It will perhaps be objected, that in the vast areas of these states the millions of acres of woodland still remaining will be sufficient for all the wants of the country for years to come; but it must be remembered—

1st—That this abundance of wood is found just in those parts of the country where it is least needed, and that in consequence of the expense of bringing so bulky an article as lumber to the centres of demand, it is comparatively valueless where produced, and it is for the most part left to fall before the axe of the settler.

2nd—That two-thirds of the timber left to us is of such a quality as to be only fit for fuel.

3rd—That in the census and tax statements a large area is classed as woods, without deserving this classification.

4th—That Chicago alone employs a capital of \$60,000,000 in the lumber trade, and hundreds of thousands of acres of timber are annually sacrificed.

5th—That Michigan and Wisconsin, the main timber states, which had 10,000,000 acres of the finest timber before settlement began, have only about 2,000,000 acres left, and this, at the present rate, will be cut down in about five years.

6th—That according to the census of 1860, the value of the lumber improvements in the United States was \$3,322,522,000. All this had

been cut from the soil, and most of it within 30 years previous, and nothing has been done to replace it.

7th—That there are five hundred thousand artisans in wood in this country, and we estimate the value of their labor at \$1,000 each per annum, we have an aggregate of \$500,000,000 of wood per annum consumed as raw material for their use.

8th—That it takes one and one-third acres, on the average, to produce one cord of wood annually.

9th—That it takes three hundred acres for the production of wood sufficient to build and keep up one mile of railroad year by year.

10th—That the United States sends \$11,000,000 per annum to Canada for lumber, while millions of acres of land capable of producing the finest timber, are lying waste in our own country.

11th—That the farmer from year to year cuts down vast forests to enlarge his fields, and only saves what will suffice for his domestic uses, and seldom that.

12th—That the population of the country is daily increasing, the wood consuming industries are developing year by year to large dimensions, as hundreds of miles of new railroad are added annually to those already in operation, and in general, that while the wood-producing area has been greatly reduced, the demands upon the wood have been multiplied; and since the larger area has been so greatly reduced in supplying the smaller demands, how will the smaller area supply the larger consumption? From the above facts it is evident that unless measures are speedily taken to replace by planting the supplies consumed in the destruction of our old forests, there will be an actual famine for wood in this country within the next 30 years.

Can this matter of forest culture be safely left to private enterprise? A period of from 80 to 200 years is required for the growth and maturity of valuable forest trees. Now, if so many neglect to plant fruit trees and grape vines, the product of which they can enjoy in a few years, will they plant forest trees, whose completed growth they will never see? To carry on the culture of forest trees successfully, it is also necessary that extensive regions should be devoted to it, for the trees from year to year as are ready for the woodman's axe are necessarily a considerable distance apart. In small, isolated areas there could not be an economical adaptation of the means to the end. Forest culture can only be carried on upon a large scale. But there is still another reason why the supply of timber cannot be left to private parties. There is needed for the profitable growth of forest trees a scientific and technical knowledge which few farmers have it in their power to acquire. This knowledge, so far as it

is not purely scientific, must necessarily be, to a great degree, traditional. It cannot be acquired by personal experience. The mistakes of one year cannot be discovered, as in the case of ordinary farm crops, by the immediate results, for the forest tree's life outmeasures man's; the cultivator sees his error, if at all, when it is too late to remedy it. In Germany, therefore, where these facts are fully appreciated, the forester has to undergo a special scientific and technical education. He has to serve a long apprenticeship. The culture of trees and the management of the forests become the business and study of his life. From all this and numerous other reasons, it is evident that upon the government rests the necessity and duty of providing against the anticipated deficiency in the supply of timber, by initiating and controlling the planting of new forests, as well as the preservation of the old. It is not necessary to cite the disastrous consequences which have occurred in those parts of the globe, where the destruction of forests has taken, and which have been described by travellers in a most alarming manner. They are doubtless familiar to others as well as myself. In 1869 I sent a memorial to Congress in respect to the destruction of our old forests. I have not changed my opinion on this subject since, and believe that it cannot be refuted. I hope that all far sighted men will share the apprehension with me, and assist me in my patriotic recommendation.

American Forestry Congress.

The annual meeting of the American Forestry Congress will commence on the 9th of May next at Washington, the sessions being held in the rooms of the Department of Agriculture. The object of holding the meeting at this early date is with the view of influencing the members of Congress, which will be then in session. Amongst other subjects to be discussed is that of the laws and regulations regarding the tenure and management of the timber lands in Canada.

Wind Falls.

The late tornadoes, rather than gales, which have passed over these islands cannot fail to have some effect on the foreign timber trade, for when we read of trees being blown down by the two hundred thousand within a circumference of twenty miles diameter, and one hundred thousand on a single nobleman's estate in Scotland, &c., we can only conclude that all this timber being brought into the country markets—not a tithe of which would probably have been cut down for use this year—will bar so much of foreign wood, that under other circumstances might have found a remunerative market. Many of these fallen trees will fetch a small price, for which when standing an offer of fifty pounds would have been laughed at.—*Timber Trades Journal.*

EXPERIMENT ON AMERICAN WOODS.

We take from the *Pittsburgh Builder* the following paper by Prof. Sharples of Boston, Massachusetts:—

Under the act providing for the taking of the Tenth Census, the superintendent was authorized to appoint experts to inquire into special industries; accordingly Professor Charles S. Sargent was appointed to gather statistics in relation to the forest industries.

As Chief of the Department of Forestry of the Tenth Census he has been busily engaged in this work since the fall of 1879. Soon after his appointment he became convinced that it would be desirable to make an examination of the fuel value of the various woods of the United States, and this work was placed in my hands.

At the same time I made the suggestion that while we had the opportunity it would be well to test also the strength of these woods. The suggestion was adopted and Professor Sargent at once set his agents to work in various parts of the country to collect specimens of all the trees growing in their localities, employing as a rule, botanists who were familiar with the flora of the region in which they were at work. The result of this work was the collection of over 1,300 specimens of wood, comprising over 400 species and varieties, nearly 100 of which had not before been described as trees existing in the United States.

The ash and specific gravity of every specimen in this collection has been determined, in most cases in duplicate, about 2,600 ash and 2,800 specific gravities determinations having been made. About 325 species were further tested for transfer strength and resistance to crushing. In this series about 1,300 specimens were tested. As each of these was tested in three different ways, it made in all about 3,900 tests. The specific gravity of each specimen in this last series was also determined, thus making in all about 10,600 tests that were made on the specimens. Many of these tests, however, included not only a single test, but often a series of tests that required at least ten entries on the final report, as I shall explain further in this paper.

In addition to the tests already spoken, 79 tests were made of the carbon and hydrogen in a like number of specimens.

These tests have already, so far as the results of the ash and specific gravity of the dry wood is concerned, been published in *Forestry Bulletin* No. 22. The carbon and hydrogen determinations are to be found in *Bulletin* No. 18, while the tannin in the bark of a few of the most promising trees found in *Bulletin* No. 24.

A *Bulletin* shortly to be published is to give the deflections under various loads of woods tested in this manner, and the weight under which they failed, together with the force necessary to crush, in the direction of the fibre, pieces, whose length was equal to eight diameters. In addition to the tables published in the *Bulletins*, the final report will give the force necessary to indent the wood.

This series of tests is felt to be incomplete in many ways, and with the experience that has been gained in the work could doubtless be improved. A brief description of the methods used may be of interest.

Each specimen as soon as received was given a number, and this number has been constantly repeated in all the work done on that specimen; it is designated in the reports as the office number, and wherever met with always refers to the same tree.

After numbering, the sticks were at once sawed into bars five centimeters square. These pieces were then seasoned by air drying. During the first winter they were kept in a room warmed by a stove to about 70° F. After that they were removed to a timber loft at Watertown Arsenal, where they were kept until they were dressed for the final tests.

Two blocks of fifteen centimeters in length were taken from each specimen and dried rapidly with steam heat until they had lost most of their moisture. From these pieces, blocks of exactly ten centimeters in length and about thirty-five millimeters square were dressed out. These were then placed in an oven which was maintained at a constant temperature of 100° until the blocks were perfectly dry.

After they had ceased to lose weight, they were carefully measured with a micrometer caliper and weighed. From the measurement and weight it was easy to calculate the specific gravity.

The ends removed from these blocks were used for determining the ash. They weighed from ten to twenty grams and thus gave quite appreciable amounts of ash. The ash was determined by drying the wood in the same manner as the specific gravity blocks, then carefully burned in a platinum dish in a muffle-furnace heated by gas. The heat was so regulated as to burn the ash perfectly white without melting it. In most cases the ash was left in the exact shape that it occupied in the wood. It was judged best to report the ash exactly as found, and not attempt to make any correction, on account of the carbon dioxide that might have been lost from the calcic carbonate present.

From these results, the approximate fuel-value was calculated, assuming that equal weights of woods have the same fuel-value. This value is supposed to be given more correctly by taking as the weight of the wood, not the specific gravity, but the weight of a cubic decimeter, minus the ash contained in it. The ash evidently adds nothing to the fuel-value, while it does add to the weight. This assumption, which is the one generally made, is not strictly true, but it is near enough for all practical purposes. It is founded on experiments made by Count Ramford and Marcus Bull.

The carbon and hydrogen determinations were made by burning fine sawdust in a platinum boat in a current of oxygen and collecting the products in the usual way. These analyses were calculated on the dry wood. The determinations may be conveniently divided into two classes—those of the coniferous and non-coniferous.

The coniferous woods examined, with two exceptions, gave larger amounts of carbon than the hard woods. These two exceptions were the common white cedar or arbor vitae of the North, and the black spruce or *Picea nigra*, neither of which would be selected as valuable fuel. The average composition of twenty-nine specimens of coniferous woods examined was—carbon, 53.21; hydrogen, 6.45; ash, .32; specific gravity, .5624. Fuel-value by weight, 4488.3; by volume, 2324.2.

For the non-coniferous woods the average results of fifty-one determinations were—carbon, 49.33; hydrogen, 6.33; ash, .66; specific gravity, .6951. Fuel-value by weight, 3993.9; by volume, 2776.1. These latter values agree very closely with those given in the books, as the results of the analysis of European woods. It is rather singular that with the exception of fir, no coniferous woods have been reported on in Europe.

After the long sticks of wood had become thoroughly seasoned, they were dressed out to the exact size of four centimeters square, and were sawed as near as possible to the length of eleven decimeters. They were then tested on the Watertown machine. In testing, the stick was placed in a perpendicular position resting on supports that were exactly one meter apart. The force was then applied at the centre of the length by means of an iron bearing, which had a length a little greater than the width of the stick and a radius of 12.5 millimeters. The weights were slowly applied, fifty kilograms at a time, and after each weight was added a deflection was noted. After 200 kilograms had been added, the weights were removed and the set read; the weights were again applied, the reading again taken at 200 kilograms, and then at every fifty kilograms until the stick was broken, the breaking weight being noted. In making the report, the co-efficient of elasticity for the weights 50 and 100 have been calculated; also the modulus of rupture.

So far I can only give the most general results in regard to these tests. In the first place we have not been able to establish any general law in regard to the direction in which a stick is the strongest, that is, parallel or perpendicular to the annual rings.

The results have shown however, that it is by no means necessary to break two sticks to show which is the strongest, provided they are of the same kind of wood. The weak stick will show

the strongest deflections from the start. The strongest stick found was a specimen of locust, but following closely after it were specimens of hickory and Southern pine. Ash was found to stand well up to a certain point, and then it gave way suddenly and without warning, generally shattering badly. The California redwood was another that shattered very much. White oak was found to be inferior in strength to several other oaks, and to Southern pine; the average breaking weight of eight specimens of *Quercus prinoides* or the cow oak of the South was 523 kilograms.

The average of 11 specimens of *Pinus Australis* was 490 kilograms.

The average of 30 specimens of the Douglas fir from the Pacific coast was 374 kilograms, and of 6 specimens of the Western larch was 523 kilograms.

13 specimens of the white pine (*Pinus Strobus*) gave 274 kilograms.

11 specimens of beech gave an average of 454 kilograms.

16 specimens of *Carya sulcata* averaged 464 kilograms.

20 specimens of white hickory (*Carya alba*) averaged 512 kilograms.

24 specimens of white ash (*Fraxinus Americana*) averaged 378 kilograms.

8 specimens of locust averaged 378 kilograms.

The next series of tests which were made, consisting in taking specimens of the same size, square as before, and 32 centimeters long, and compressing them in the direction of their fibres. Here again both locust and Southern pine stood up well.

9 specimens of locust stood an average weight of 11,206 kilograms.

4 specimens of the Western larch stood an average of 10,660 kilograms.

35 specimens of white oak stood an average of 8,183 kilograms.

24 specimens of *Pinus Australis* stood an average of 10,493 kilograms.

The third series of tests was to find the force necessary to indent the wood at right angles to the grain. These tests are not finished yet, and I have made no examination of the results. They are made on blocks 4 centimeters square and 16 centimeters long, the bearing of such a size that it makes an impression on the block, which extends from side to side of the block and is of the same length.

In closing this paper I wish to express my thanks to Colonel Leadley for valuable suggestions made during the progress of the work, and to Mr. Howard for the able manner in which he has executed the tests. These tests have been made at the joint expense of the War Department and the Census Bureau, the machine having been put at our service by order of the Secretary of War.

The tests will probably be published in the annual report of the testing machine, calculated in feet and pounds.

THE HON. O. B. POTTER ON FREE LUMBER.

The following is a letter from the Hon. O. B. Potter in reply to a leading lumber firm in Albany, whose lumber interest lies in Michigan, and whose views have evidently been against the repeal of the lumber duties.

[In reference to it the *Sun* says:—"We are against the maintenance of the lumber duty; we are against the swift destruction of our forests which is now going on."] GRATWICK, SMITH & FRYAR LUMBER CO., Towanda, N. Y., and the HON. ERASTUS CORNING, Albany, N. Y.

GENTLEMEN,—I am unable to agree with the conclusions expressed in yours of March 12.

In reply to your first position, that lumber can be produced at least 25 per cent. cheaper in Canada than in the United States, I say, if this is limited to white pine, I wholly agree to your statement. This is the best and strongest reason why this lumber should be admitted free of duty. White pine, as you know, has already on account of its growing scarcity in the United States, reached a price which makes its use in dwellings of the middle and laboring classes very burdensome, if not beyond reach. Why should the use of this timber be made difficult or impossible in the dwellings of the great majority of the people of the country in order to

increase the profits of the capital engaged in the lumber business, and to hasten the destruction of the remnants of our pine forests in Michigan and elsewhere in the Northern States?

To your second point I reply: If the three hundred million dollars and one million men now engaged in hastening the premature destruction of our remaining pine forests cannot continue this destruction profitably without the stimulus of a tax to be paid by the thirty-five millions in the Northern States, to whom this white pine lumber is a necessity, I am glad. The removal of the duty will then preserve for some time longer our own pine forests. While they grow and greatly increase in value for our future use, the growth of our towns and cities and the building of houses for our people will not be retarded, but be held and hastened by cheaper white pine lumber.

Your third point that "nine-tenths of the people who use lumber are above the laboring classes, and the duty is not in any sense a burden upon the community," cannot be maintained. This duty is a most oppressive and unnecessary tax upon and against the homes of the middle and laboring classes. It is within my own experience that houses in New England have remained for years unfinished in order to meet the more necessary expenses of education, while sons slept under bare rafters in unfinished rooms. I am mistaken if this is not the case now with many homes throughout the country of large families and small means, who would appreciate and enjoy well finished rooms.

To your fourth point, that without this duty lumber for the Eastern States will come from Canada, and that railroads would lose the profits which would result from the early destruction of the forests still remaining at the West, and their transportation by rail to the East, I hope this is so, because then, with the removal of this duty, the East will be more cheaply supplied with lumber, while the forests of Michigan will remain for the use of the great and growing West, for which they will soon all be needed, and will be wholly inadequate. I cannot think 35,000,000 people should be oppressively taxed in order to enable railroads to make profits in the premature destruction and transportation of our remaining Western forests.

To your fifth point I answer that the price of pine lumber wholly negatives your position. This price has nearly or quite doubled within thirty years, and is constantly advancing. But if your statement be true, that the forests of Michigan and Wisconsin will last for fifty years, I ask what will be the condition of the vast and still growing West then with 100,000,000 people and no forests remaining? Fifty years is a short time in the life of a nation.

In reply to your sixth and seventh points, you cannot be unaware that the yellow pine of the Southern States is not, and never can be, advantageously used for the inside finish of houses, including doors, sashes, and casings; nor in the manufacture of furniture, where white pine is a necessity; nor for anything beyond beams, floors and wainscoting. Yellow pine and white pine are, as you know, best used together in the same finishing purposes, the greater will be the demand for Southern pine for beams, floors, and other purposes for which it can be used. All the white pine and yellow pine of the country will not be too much for its certain growth during the lives of those now born, if our Government shall be steadily administered to the great ends of liberty and self-government for which it was created.

Very truly yours,

O. B. POTTER.

House of Representatives, Washington, March 14.

HERR LASKER ON FOREST CONSERVATION.

Herr Lasker, the eminent German statesman, deprecated the prodigal waste of the forests with which this continent is so prodigally endowed. He pointed out the fact that, while naturally we are so far superior to Germany in this regard, the older country was far more enlightened in its policy as to forests. There the people and government were at the utmost pains to conserve and replace the occasionally denuded parks. While there the grand, primordial trees were not encountered in anything like

the prodigious stretches characteristic of the United States, there was the most preserving replacement of every tree which was compulsorily sacrificed for fuel or other purposes. He suggested that, while necessity would ultimately compel us to adopt the European plan in this matter, it would be well to anticipate the iron exigency of the future, thus saving us much positive damage and vexation on the principle that an ounce of prevention is worth a pound of cure.

LIST OF PATENTS.

The following list of patents upon improvements in wood-working machinery, granted by the United States Patent office, March 11, 1884, is specially reported to the CANADA LUMBERMAN by Franklyn H. Hough, solicitor of American and foreign patents, No. 617 Seventh St., N. W., Washington, D. C. —

- 294,762.—Bit brace Ratchet—W. R. Clarkson, Buffalo, N. W.
- 294,985.—Gage attachment for bits, &c.—J. Fuller, sr., Seneca, Kan.
- 294,919.—Plane bench—J. Siegley, Wilkes Barre, Pa.
- 298,625.—Plane bench—J. A. Traunt, New Britain, Conn.
- 294,914.—Planing machine—J. A. Roberts, assignor of one-half to D. M. Dwight, Detroit, Mich.
- 294,804.—Saw-elevator drag—W. J. Perkins, Grand Rapids, Mich.
- 295,115.—Saw filing and setting machine, J. S. Detrick and W. T. Smith, Baltimore, Md.
- 295,133.—Saw filing machine—W. Tucker, E. Brookfield, Mass.
- 294,989.—Machine shaft and bearings—G. S. Gates, Athol, Mass.
- 295,008.—Shingle machine—E. B. Hewett, and G. F. James, Tenino, Washington Territory.
- 294,036.—Timber and lumber stamp—L. Thruah & L. Wilson, Brookville, Pa.
- 294,777.—Wood-worker's dog—J. Forbes, San Francisco, Cal.

PATENTS ISSUED MARCH 18.

- 295,178.—Bench dog and clamp combined—C. C. Johnson, Springfield, Vt., assignor to Millers Falls, Co., Millers Falls, Mass.
- 295,407.—Chuck brace—G. W. Kerr, Bridgeport, Conn.
- 295,229 and 225,230.—(two patents)—Chuck lathe—G. A. Cotton, assignor of one-half to H. C. Hooker, Syracuse, N. Y.
- 295,466.—Cutting tool—J. B. Wallace, Chicago, Ill.
- 295,173.—Lath sawing machine—W. E. Hill, Kalamazoo, Mich.
- 295,234.—Lumber drier—L. Rollins, Mountain Creek, assignor to himself and O. Stolker, Montgomery, Ala.
- 295,418.—Lumber drying apparatus—A. S. Nichols, Pullman, Ill.
- 295,191.—Match splint machine—G. H. Millen, & E. Mousseau, Hull, Quebec, Canada.
- 295,162.—Mortising machine—W. W. Green, Chicago, Ill.
- 295,236.—Mortising machine, boring attachment—W. H. Doane, & G. W. Bugbee, Cincinnati, Ohio.
- 295,316.—Plane attachment rabbit—C. A. Warfield, Philadelphia, Pa.
- 295,414.—Plane bench—C. A. Moeckins, New Haven, Conn.
- 295,335.—Saw—W. H. Hankin, jr., Brooklyn, N. Y.
- 295,303.—Saw mill—J. M. Story, Spring City, Tenn.
- 295,170.—Tenon extractor—O. Hendrick, Macon, Miss.
- 295,354.—Vice—W. H. Cloud, Detroit, Mich.

Encouragement of Small Manufacturers.

The New London, Conn., *Day* says that there has been a decided recent growth of manufacturing in that place, and in discussing the subject has the following suggestion: "These interests can be further stimulated and developed by the erection of a building in which room with power can be furnished to manufacturers of limited capital who are unable to buy land and build for themselves. In every city where manufacturing interests are of importance such buildings are to be found. They are hives of industry and paying investments to the men

who own them. Many establishments throughout the country which have grown to importance have been started by men who in the beginning did not have the capital to furnish their own power, and many of the most prosperous manufacturing enterprises, on a small scale, to be sure, but yet substantial and yielding large returns on the money invested, are those which occupy leased premises and hire their power." It is added that the late Richard D. Chapel had proposed to erect such a building, and that, as a shrewd and experienced business man, his taking up the subject was a very valuable endorsement of the soundness of the views just expressed.

The Norway-British Lumber Trade.

The *Timber Trades Journal* says:—The table of Norway exports of timber for 1883, furnishes still further evidence of the importance of British trade in that industrious and thriving nation. In 1882 the trade of the United Kingdom with Norway in wood was, compared with that of all other countries together, as 546 is to 362; but in 1883 the disproportion was still greater, being as 603 to 337. Whether we needed all this immense quantity, while other timber chipping countries were also pressing their produce on our markets is another question; but any way we got it. Nor do the published figures tell the whole truth as to the quantity, as the statement only comprises the register tonnage of the ships employed to carry it away, and to that we may add at least one-third more, which would make instead of 608,000 tons for last year's supply from Norway, over 800,000 tons, and about 450,000 to the rest of the world.

The Rathbun Company.

In the New York Assembly a bill was passed authorizing the Rathbun Lumber Company, a Canadian corporation, to do business in the state. In the Senate a bill was reported from the Assembly allowing the Ogdensburg & Lake Champlain Railway to own propellers on the lakes, and was referred to the Canal Committee.

Lumberman's Convention.

On April 11th, a lumberman's convention will be held at Vicksburg, Miss. Excursion rates over the Illinois Central Railroad will be furnished to all who wish to attend. For full information as to time of starting, rates, sleeping cars, etc., address J. E. Kerr, passenger agent, Manchester, Iowa.

Advice to Mothers.

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

FOR ALL AGES.—The aged, debilitated and infirm will find renewed vigor and strength by taking Burdock Blood Bitters. The young hastening to early decay will also find in this revitalizing tonic a remedy worth trying.

FACT STRANGER THAN FICTION.—It is a fact that Alonzo Howe, of Tweed, had a fever sore than afflicted him for thirty-five years. Six bottles of Burdock Blood Bitters cured him, which he considers almost a miracle. It was but the natural result of the remedy restoring pure blood and perfect secretion.

A FAVORITE EVERYWHERE.—Wherever introduced Haysard's Yellow Ointment friends. It is the old reliable household remedy for external and internal use in all aches, pains, lameness and soreness of the flesh. A. L. Geen, a prominent druggist of Belleville, says: "It is a great favorite here, and has a good sale."

A PRIZE Send six cents for postage, and receive free, a costly box of goods which will help you to more money right away than anything else in this world. All of either sex, from first boy. The road not to fortune opens before the workers, *etc.* by sure. Address Tava & Co., Augusta, Maine.

LIVERPOOL STOCKS.

We take from the *Timber Trades Journal* the following Comparative Table showing Stock of Timber and Deals in Liverpool on Mar. 1st, 1883 and 1884, and also the Consumption for the month of Feb. 1883 and 1884:—

	Stock, Mar. 1st 1883.	Stock, Mar. 1st 1884.	Consumption for the month of Feb., 1883.	Consumption for the month of Feb., 1884.
Quebec Square Pine.....	101,000 ft	82,000 ft	155,000 ft.	15,000 ft.
" Waxy Board.....	177,000 "	82,000 "	" "	" "
St. John Pine.....	8,000 "	83,000 "	60,000 "	2,000 "
Other Ports Pine.....	40,800 "	77,000 "	1,000 "	6,000 "
Red Pine.....	60,000 "	60,000 "	2,000 "	2,000 "
Pitch Pine, hewn.....	541,000 "	230,000 "	53,000 "	98,000 "
" Sawn.....	440,000 "	540,000 "	121,000 "	130,000 "
Planks.....	62,000 "	64,000 "	23,000 "	20,000 "
Dantle, &c., Fir.....	34,000 "	117,000 "	16,000 "	10,000 "
Sweden and Norway Fir.....	21,000 "	120,000 "	60,000 "	6,000 "
Oak, Canadian and American.....	270,000 "	283,000 "	74,000 "	43,000 "
" Planks.....	131,000 "	183,000 "	24,000 "	82,000 "
" Battis.....	25,000 "	13,000 "	0,000 "	0,000 "
Elm.....	35,000 "	13,000 "	8,000 "	1,000 "
Ash.....	4,000 "	28,000 "	5,000 "	0,000 "
Birch.....	64,000 "	80,000 "	14,000 "	20,000 "
East India Teak.....	60,000 "	70,000 "	0,000 "	23,000 "
Greenheart.....	120,000 "	109,000 "	5,000 "	15,000 "
N. B. & N. S. Spruce Deals.....	10,103 stds.	17,611 stds.	5,830 stds.	2,193 stds.
" Pine.....	1,340 "	1,090 "	" "	" "
Quebec Pine & Spruce Deals.....	7,270 "	8,054 "	766 "	766 "
Battis Red Deals, &c.....	3,084 "	4,630 "	724 "	281 "
Battis Boards.....	301 "	60 "	" "	81 "
" prepared Flooring.....	2,807 "	3,483 "	628 "	576 "

H. WILLIAMS, SLATE & GRAVEL ROOFER

MANUFACTURER OF AND DEALER IN Tarred Felt, Roofing Pitch, Sheathing and Building Papers, Carpet and Rosined Waterproof Paper, Ready Roofing, &c. All orders promptly attended to at LOW PRICES.

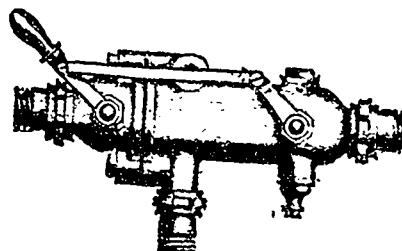
H. WILLIAMS, 4 Adelaide Street East, Toronto.

ROBERT MITCHELL & CO.

Montreal Brass Works, St. Peter and Craig Streets, Montreal.

THE KORTING INJECTOR

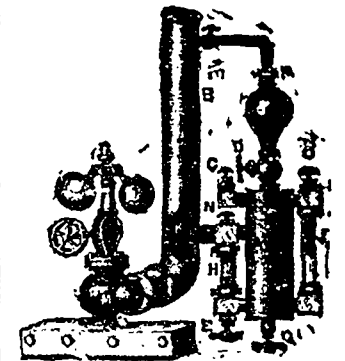
Acknowledged to be the Best Boiler Feeder in the World.



Will lift 20 feet, and take water at 150 degrees. Only one handle to start and stop. No valve to regulate. CHEAPER than any other injector in the market. Also, PATENT EJECTORS for conveying Water or Liquids. CIRCULARS ON APPLICATION.

The Continuous Feed Lubricator

Saves 50 per Cent in Oil.



MACHINERY.

STEAM ENGINES, STEAM PUMPS, STEAM BOILERS, SAW MILL MACHINERY, Of Every Description.

RUBBER BELTING, LEATHER BELTING, MILL SUPPLIES.

SHAFTING, HANGERS, PULLEYS, &c.

MACHINERY SUPPLY ASSOCIATION

Corner Bleury & Craig Streets, MONTREAL.

DECAYING OF HEAVY TIMBER.

It has been proven beyond all chance of contradiction that one of the principal reasons of machinery being lag hard to move so soon after being put in, is the decaying of heavy timber, both beneath the engines and the axles, causing the shafting, pulleys, drive-wheels, etc., getting out of true, giving rise to unnecessary friction. A journal, devoted exclusively to building and architecture, has offered some suggestions, that, being to the point, we insert them here. It says:—

"The best support for heavy machinery where a substantial foundation is essential, is made of timber six or eight inches square, laid on a solid foundation at distances from each other convenient to bolt the machinery directly into the timbers. The space between the timbers is to be filled with small stones, well rammed and covered with asphalt concrete, finished smooth to the level of the tops of these timbers. It must be painted to keep the asphalt from being softened by oil from the machinery. The asphalt preserves the wood from decay, is a poor conductor of heat, is agreeable to stand upon, and is water-proof. Cement should never be used in the place of asphaltum concrete, as the timber will decay very quickly. As in all damp places, it is desirable to use timber treated with some of the antiseptic processes."

Admitting, as all will, these suggestions to be good ones, let us examine and see if some antiseptic property or process cannot be determined, that will not only be cheap, but pre-eminently practicable.

By referring to a previous article in this department, it will be seen in the discussion of "wastes," that mention is made of the volatile properties of wood when subjected to destructive distillation. Now these very products are what the writer of the article above quoted alluded to in speaking of treating with some of the antiseptic processes. These volatile properties of which we speak are essentially crude creosote. For any wood, we care little, if any, what kind of wood, if only dry, thoroughly impregnated with this, will last one thousand years,—ay, more than this, for we have seen samples of wood treated in this way by the prehistoric inhabitants of this country, and the evidences of decay were not yet visible, but for countless ages, almost, it has been buried beneath the rocks, water, sand, and other debris, subjected to all the decomposing influences common to the section where we obtained it (o a), and still it remains sound and perfect in nearly every respect.

Again, as a precautionary measure against fire, wood thus impregnated, is recognized by nearly all insurance companies as less liable to burn, and in some sections risks are taken at much lower rates, than when the wood is used in its natural state.

Near the line of the Empire State, in New Jersey, an establishment for impregnating piles and heavy timbers was recently burned, when it was demonstrated to the satisfaction of all beholders, that creosoting the wood afforded considerable protection against fire. The building proper was of pine and spruce in their natural state, and of course, having been subjected for years to the heat of the atmosphere without and the furnace within, this wood was dry as dry could be. The main axles, to preserve them from decay, were creosoted, and made of gummy pine, from Pennsylvania. These were set on posts and raised about a foot from the ground, so the flames and accumulated embers from the burning building had ample opportunity to do their work of burning under the most favorable circumstances. After the fire had exhausted itself for lack of material or food, everything was in ashes save these axles, which, though thoroughly charred, still retained their shape, and no little strength, while not a piece of timber untreated, could be found as large as the hand.

About the premises were numerous piles and other lumber, laying in piles which had been treated, were found unconsumed, while the cross-pieces placed between the layers to admit drying were entirely consumed, not a vestige remaining. In large timbers, where the creosote had not permeated through the centre, the flames burned through them lengthwise, leaving a shell; the creosoted wood went out of

itself, leaving things as we found them. It burned, as far as it went, with a dense black smoke which no doubt had a smothering effect.

Again, wood that has been thus treated can withstand the action of water equally as well; placed in positions exposed to the constant action of water it will neither swell or increase in weight. Neither will it furnish sustenance for any of the creeping vines, ivies, etc.; and it has been said—but we have no means of testing it—that the bottom planks of ships impregnated with this substance is proof against the barnacles.

That timber treated will not swell or increase in weight we know to be true, as we gave this a very severe test. For use in the laboratory we have a variety of scales, and one set, peculiarly sensitive, in fact the faintest lead-pencil mark will turn them, and on those we weighed a bit of thoroughly dried and seasoned bass-wood; a vessel containing the creosote at the proper temperature and in the right condition was now weighed, and the wood placed in it. After being thoroughly soaked the wood was removed and the dish and contents again weighed. Thus we have the actual weight of the wood and the creosote absorbed; these being determined, the wood was first placed in water, soaked and weighed; result, same weight as before; the water again received the wood, was boiled one hour; result, the same; again the water was acidulated, still it refused to increase in weight, and the more we treated it the harder it seemed to get water into it. The sample was now allowed to dry, and its size accurately determined by sinking it into a hydrometer jar, carefully and accurately graduated, and filled with distilled water. The cube was now taken out and treated to all the processes as before and then sunk in the water, when it was found to display precisely the same number of cubic centimetres as before; hence had not increased in size.—*Lumber Trade Journal*.

LONGEVITY OF TREES.

It is stated by competent men, that the great age of the mammoth trees of California is not so very phenomenal, as other trees on the Pacific coast also exhibit great ages. In order to ascertain whether the great trees formed more than one ring in a year, Mr. Meehan, of Philadelphia, has tested the matter in various ways. For instance, pine or spruce is found to make an average growth of one foot a year up to fifteen years old; from that to about 30 years, nine inches; from that on six inches; after that a stage is met where the erect growth ceases to any considerable extent and the growth force seems turned toward the lateral branches. In the pine forests of the Pacific coast, there is no possible danger of fixing the age of the average tree of sixty feet high, at about fifty years. Whenever such a tree is cut down, and the annual rings are counted, they are found to correspond so nearly with the calculated age, as to prove that it is quite safe to assume a single circle for a single year. There is a remarkable degree of uniformity in the diameter of these annual growths in most trees, so that when we once have the number of rings to an inch, and the diameter of the tree, we can tell the age near enough for general purposes. In some pines, growing on very rich soil, four circles only have been found to the inch. No matter how vigorous the growth of trees may be under fifty or one hundred years, decrease it with age, and we may safely allow six rings to an inch in the older sugar pines of California, which will make a tree of 33 feet girth about 400 years old. At Harrisburg, or Juneau, in 53 deg. north latitude, a sitka spruce, *Abies Sitkensis*, cut down, gave 149 rings from centre to circumference, 298 lines in a trunk three feet across. This is an average of about eight to an inch in this tree on the supposition that it was 149 years old. At Wrangel, lat. 56° 30', a tree of the western hemlock, *Abies Mertensiana*, which had been blown down, and afterwards divided by a crosscut saw at four feet from the base, gave 18 lines to the inch, and the annual growth seemed very regular almost to the centre of the tree. It was six feet in diameter, and must have been a grand old tree in its day. It had evidently been broken off before it was blown down, but

the length of the trunk up to where it had been broken was 131 feet, and four feet in diameter at that height. Allowing twelve lines average to an inch of diameter, it indicates an age of 432 years. There cannot be any doubt that these trees in the latitude of Alaska will attain a life of 500 years.

Turning now to the Atlantic States, we find 200 years is the full average term of life for its forest trees, with the exception perhaps of the plane tree, *Platanus Occidentalis*, which is the longest lived of all. Trees famous for longevity in Europe are comparatively short lived in the United States. In an old garden near Philadelphia, where the trees can be a little more than 150 years old, nearly all are past their best. The English oak, which in England is said to live for a thousand years, has grown to full size and wholly died away in this garden, and foreign spruces are on the down grade. The great cypress has also begun to show signs of deterioration. Silver firs, planted in the vicinity of Philadelphia in 1800, are decaying. This is the general experience.

In seeking for the causes of this difference, we are accustomed to look at the relative humidity of the atmospheres of Great Britain and the Atlantic States. Evergreens, which will endure a temperature of 25 deg. below the freezing point in Great Britain, are killed by 10 degs. in Philadelphia; and it is believed that it is done by the dryer atmosphere causing a heavier drain for moisture on the vital powers of the plant, than it is able to supply. A strain which wholly destroys plants in some instances, must have a deleterious influence where it does not act quite so forcibly, and this would naturally be exhibited in shortening the life of the tree.

The climate of Alaska has about the same favoring influences as Great Britain. The warm sea of Japan flows against its southeastern face, along which the trees first mentioned were found. The atmosphere is always moist, and severe weather is almost unknown. At Sitka, in lat. 57 deg., as much as 100 inches of rain has fallen in a single year. The harbor is rarely frozen, boats can go and come at all seasons of the year, and in some winters, no ice of any consequence is found. These are all conditions favorable to longevity in trees.—*Buffalo Lumber World*.

AN ENGLISH IDEA.

The *St. James Gazette* remarks:—The forests of the United States have been so mercilessly stripped of trees that a wood famine is almost inevitable in a few years. But an end is coming to that reckless method of procedure, and the lumbermen themselves are beginning to see that "something" must be done. That something can, of course, only be planting on a large scale. Happily, there is little fear of similar dearth in Great Britain; none, at any rate, until the great landlocks are reformed out of existence. For almost the sole reason that England and Scotland are so thickly wooded is the perseverance of the landed class in tree planting. One family alone, that of the Dukes of Athole, has in a hundred years planted scores of millions of trees. The "landed duke," who commenced operations in 1774, planted 27,000,000 trees, covering 15,000 acres, principally the Dunkeld hills and in their neighborhood. The present Duke of Athol plants from 600,000 to 2,000,000 trees every year. The terrible storm which destroyed the Tay bridge blew down 80,000 of the Duke's trees, but the loss was hardly noticeable.

A Variety of Woods.

The *Northwestern Lumberman* has repeatedly noticed the increase in the use of a variety of woods—especially hardwoods—in house finishing in the larger towns and cities. A Minneapolis venture calls the subject to mind again, and emphasizes what has been asserted. Mr. R. B. Squires, of Squires & Thompson, lumber dealers of Minneapolis, recently returned from a trip through Texas, Louisiana, Mississippi, Alabama, Tennessee and Arkansas, and after having made a thorough inspection of the woods of those states, contracted for shipments of walnut, cherry, sycamore, gum, red cedar, curly pine, yellow pine flooring, etc., which will be kept on sale for interior house finishing

or such other purposes as these woods may be required for. This incident is worthy of mention as showing that modern house building demands a variety of woods, and they will be had even from almost any distance. It is significant of the importance southern hardwoods are acquiring when they are carried all the way from the Gulf States to Minnesota for use. The incident is also significant of the growing wealth and elegance of Minneapolis, as well as of the enterprise and energy of the firm that has made this new departure in the lumber business.

The Weather and the Timber Trade in England.

The *Timber Trades Journal* of a late issue says:—Perhaps one of the most remarkable features which have characterized the present winter, and by which it will be long remembered, is the extraordinary succession of strong gales of wind. Hardly has one destructive storm swept across the country before another has been close behind to increase still further the devastation so painfully apparent in every direction. The effect of all these destructive winds upon the timber trade can hardly fail to make itself felt before long. We had occasion to refer to this matter in our last report, and its probable influence upon current prices of certain classes of wood. However, within the last three weeks the quantity of blown timber has been extensively augmented and consequently, under these circumstances, we certainly see but little prospect, if any, of improved quotations yet awhile; the tendency is rather in an opposite direction.

Larches in particular, but beeches as well, have suffered very much in these winds, and already there are signs of great quantities coming forward from various parts.

A Whistle Heard 13 Miles.

The Chesapeake and Ohio Railroad has decided to put upon their passenger engines steamboat whistles. At present six engines are thus supplied, and soon all of the passenger engines will have them. They will be very convenient, both to the public and employees of the road, as indicating on the approach of a train whether it is passenger or freight.

The *Staunton Vindicator*, in commenting on this innovation in railroading, says that the whistle can be heard at a great distance. A brakeman on one of the night trains coming to Staunton from the West the other night, says when he got home his wife told him she had heard the whistle at a distance in the still night air, had got up, made a fire, and cooked his supper by the time her husband reached home. It turned out that the whistle she had heard had been blown at North Mountain, about 13 miles distant.

Second Growth Timber.

A man who buys wood for one of the principal railroads in Maine asserts that wood is growing faster in that state than it is being cut. As logging is still active in Maine, this is a surprising statement, but it is not so incredible as it seems at first thought. Most of the best forests in Maine have been cut down, but only a comparatively small part of the land it covered has been cleared. It may easily be true that the territory devastated by the lumberman during twenty years is now being covered with second growth timber. In other words it may be that while a heavy growth is being cut on one acre a lighter forest is springing up on twenty.—*London Free Press*.

A Poetical View.

Writing to the Cincinnati tree planters Dr. Oliver Wendell Holmes has said:—"I have written many verses, but the best poems I have produced are the trees I have planted on the hillside which overlooked the broad meadows, scalloped and rounded at their edges by loops of the sinuous Housatonic. Nature finds rhythms for them in the recurring measures of the seasons. Winter strips them of their ornaments and gives them, as it were, in prose translation, and summer reclothes them in all the splendid phrases of their leafy language. What are these pines and firs and spruces but holy hymns, too solemn for the many-hued raiment of their gsy deciduous neighbors."

Russian Forests.

The constantly increasing destruction of Russian forests is naturally discussed with much interest by Russian papers. The *Pall Mall Gazette* says:—"In the last hundred years the forest area of Russia has diminished from 11 per cent. in Tver to 43 per cent. in Riazan. The beautiful oak forests are becoming extinct. Of the celebrated chestnut woods of Vassilsursk, which date from the time of Peter the Great, only the borders exist at present, while all the interior is ravaged. The extensive forests on banks of the Volga and the Don, which once reached far into the steppes towards the Ural Mountain, are now destroyed, and so many millions of trees have been felled in the interior of Russia that wood is becoming scarce in many of the provinces. The destruction is carried on very systematically; but before long it will of needs come to an end if the enormous consumption of firewood is not energetically stopped."

Pacific Coast Forests.

The forestry association of the Pacific coast, under the competent guidance of Prof. Sargent, is devoting its attention to the preservation of the beautiful forests of the Pacific coast range. Especially the redwood forests of California are said to undergo a fearful devastation by careless lumbermen, who utilize less than half of the trunks cut, besides the damage done by such indiscriminate cutting to the younger growth of trees. Very often districts are fired after the very best timber has been removed and thus additional damage is done to neighboring woods. Such wholesale destruction will eventually harm the lumbering interests far more than the small additional gain of the present can compensate for, and it seems that this fact is only too often ignored by those who are supposed to know better.—*Buffalo Lumber World.*

A Famous Parisian Tree.

The most famous tree in Paris is about to disappear, if it has not gone by this time; namely, the Fevrier or Gleditschia of the National Library. It is believed to have been planted as a tree of liberty in 1789, and was the gift of the English botanist, Catesby. In 1859, on the erection of the new reading-room, it had to be removed fifty yards, to the court of the library,—a difficult task for it was sixty feet high,—and the expense came to sixteen hundred dollars. The court, after the enlargement of the library, is about to be paved; and the tree is to be felled.

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

Burdock, BLOOD BITTERS.

WILL CURE OR RELIEVE.
 BILIOUSNESS, DIZZINESS,
 DYSPEPSIA, DROPSY,
 INDIGESTION, FLUTTERING
 JAUNDICE, OF THE HEART.
 ERYSIPELAS, ACIDITY OF
 SALT RHEUM, THE STOMACH,
 HEARTBURN, DRYNESS
 HEADACHE, OF THE SKIN,
 And every species of diseases arising from
 disordered LIVER, KIDNEY, STOMACH,
 BOWELS OR BLOOD.
W. MILBURN & CO., Proprietors, Toronto.

The American Hotel,

BARRIE, ONT.
 Collier Street, Adjoining the Market.
 RATES REASONABLE, CENTRAL LOCATION,
 FREE BUS TO AND FROM ALL TRAINS.
 Every accommodation for Commercial and
 LUMBERMEN.
 W. D. McDONALD, Proprietor.

VULCAN IRON WORKS

(ESTABLISHED 1842)

STEWART & FLECK, Jr.,

Manufacturers of every Description of

Saw and Grist Mill Machinery,

Water Wheels, Steam Engines, Derricks,
 Boilers, Steam Pumps, Mining Machinery

AND REPAIRS PROMPTLY EXECUTED. By

Wellington Street OTTAWA, Ont.

J. T. LAMBERT,

...ber and Commission Agent.

ORDERS FOR DIMENSIONS AND ALL OTHER
 KINDS AND GRADES OF

American Lumber

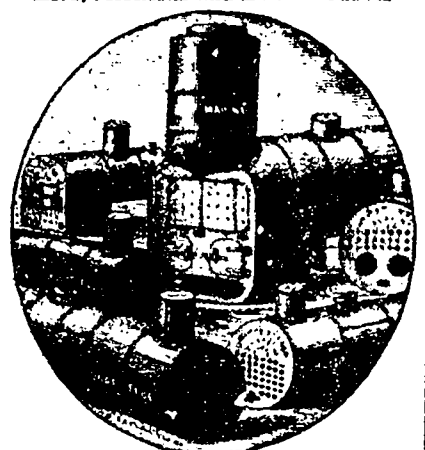
PROMPTLY ATTENDED TO.

Timber Limits and the Square
 Timber Trade a Specialty.

Office, Wellington Street, OTTAWA. 1111

JOHN MCGREGOR & SONS

Manufacturers of all kinds of STATION-
 ARY, MARINE and LOCOMOTIVE



BOILERS

And SHEET IRON WORK.

SECOND-HAND MACHINERY Bought, Sold or
 taken in exchange for new work. REPAIRS
 PROMPTLY ATTENDED TO. All Boilers Tested by
 cold water pressure to 150 pounds to the square inch.

DOCK and WORKS:—

Sandwich Street, Windsor, Ont.

GRATEFUL-COMFORTING.

EPPS'S COCOA

BREAKFAST.

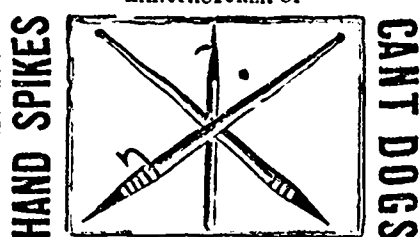
"By a thorough knowledge of the natural laws
 which govern the operations of digestion and nutrition,
 and by a careful application of the fine properties of
 well-selected Cocoa, Mr. Epps has provided our break-
 fast tables with a delicately flavored beverage which
 may save us many heavy doctor's bills. It is by the
 judicious use of such articles of diet that a constitution
 may be gradually built up until strong enough to
 resist every tendency to disease. Hundreds of subtle
 maladies are floating around us ready to attack where-
 ever there is a weak point. We may escape many a
 fatal snare by keeping ourselves well fortified with
 pure blood and a properly nourished frame."—*Civil
 Service Gazette.*
 Made simply with boiling water or milk. Sold in tins
 only (3-lb. and 1-lb.) by Grocers, labelled thus.
JAMES EPPS & Co., Homoeopathic Chemists,
 131/21 London, England.

J. K. POST & CO.

LUMBER MERCHANTS
 And Shipping Agents.
 OSWEGO, N.Y.

WM. A. HEARN

MANUFACTURER OF



Lumberman's Tools, etc.,

HIGHEST AWARDS IN CANADA and U.S.

120-17 CHAUDIERE, OTTAWA.



(ESTABLISHED 1862.)

CURRIE BOILER WORKS

MANUFACTURERS OF

Steam Boilers

NEW and SECOND HAND ENGINES

and other Machinery on hand and for Sale.

CURRIE, MARTIN & Co.

Esplanade, Foot of Frederick Street, TORONTO.

IA MAN

WHO IS UNACQUAINTED WITH THE GEOGRAPHY OF HIS COUNTRY
 TRY WILL SEE BY EXAMINING THIS MAP THAT THE



CHICAGO, ROCK ISLAND & PACIFIC RY

By the central position of its line, connects the
 East and the West by the shortest route, and car-
 ries passengers, without change of cars, between
 Chicago, Kansas City, Council Bluffs, Leaven-
 worth, Madison, Minneapolis and St. Paul. It
 connects in Union Depots with all the principal
 lines of road between the Atlantic and the Pacific
 Oceans. Its equipment is unrivaled and magnifi-
 cent, being composed of most comfortable and
 beautiful Day Coaches, Magnificent Hotel Re-
 ceiving Chair Cars, Pullman's Prettiest Palace
 Sleeping Cars, and the Best Line of Dining Cars
 in the World. Three Trains between Chicago and
 Missouri River Points. Two Trains between Chi-
 cago and Minneapolis and St. Paul, via the Famous

"ALBERT LEA ROUTE."

A New and Direct Line, via Seneca and Kanka-
 kee, has recently been opened between Richmond,
 Norfolk, Newport News, Chatham, Atlanta, Au-
 gusta, Nashville, Louisville, Lexington, Cincinnati,
 Indianapolis and Lafayette, and Omaha, Minn-
 apolis and St. Paul, and intermediate points.
 All through Passengers Travel on Fast Express
 Trains.
 Tickets for sale at all principal Ticket Offices in
 the United States and Canada.
 Baggage checked through and rates of fare al-
 ways as low as competitors that offer less advan-
 tages.
 For detailed information, get the Maps and Fold-
 ers.

GREAT ROCK ISLAND ROUTE,

At your nearest Ticket Office, or address
R. C. OGLE, E. ST. JOHN,
 Vice-Pres. & Gen'l Mgr. Gen'l Tit. & Pass. Agt.
 CHICAGO.

E. S. VINDIN,

Commission, Shipping, Forwarding and
 General Agent.

LUMBER MERCHANT

Office, Tempest's Block, Fort Hope. 111

HILLOCK & KENT,

Wholesale and Retail Dealer in
 Pine and Hardwood Lumber, Lath, Shingles,
 Veneers, Wave Mouldings & Fancy Woods.

103 Albert Street, TORONTO.

17123

100 COILS

Pure Manilla Rope

Assorted Sizes up to 2 in. diameter.

3 TONS EXTRA

Dry Tarred Lath Yarn

Single and Double Tie. Samples free by mail.

5 TONS

Best Proved Boom Chain

3/4, 1-10 and 1 1/2 inch. At the very lowest figures.

Gandy Cotton Belting

Under the fullest guarantee, all sizes. Delivered free
 of freight. Prices supplied on application.

Dynamite, Detonators, Platum Fuse and
 Safety Fuse, always on hand.

Large Orders Delivered Free.

Iron, Steel and Hardware, both Heavy
 and Shelf, for Lumbermen and
 Mill Owners.

GEORGE STETHEM

613 PETERBOROUGH.

THE GREAT CANADIAN PAPER

It has the Largest Circulation; the Latest News, both Local and Foreign. A Splendid Foreign Page. First-class Agricultural Page. Reliable Market Reports. Legal Column Household Department, Children's Department, etc.

THE MAIL is the great medium for advertisements of FARMS FOR SALE

Agents Wanted

ADDRESS THE MAIL Toronto, Canada.



HILL'S

English Extract of

BUCHU,

One of the Best

KIDNEY

INVESTIGATORS IN USE.

It is a specific in the cure of all diseases of the Kidneys,
 Bladder, Prostatic Portion of the Urinary Organs, Irrita-
 tion of the Neck of the Bladder, Urinary Calculus, Gonorrhoea
 in all its stages, Eucoccus Discharges, Conges-
 tion of the Kidneys, Brick-dust Deposit, Diabetes, Inflam-
 mation of the Kidneys and Bladder, Dropsy of the Kid-
 neys, Acid Urine, Bloody Urine, Pain in the region of the
 Back, PAIN IN THE BACK, Urinary Calculus, Renal
 Calculus, Renal Colic, Retention of Urine, Frequent
 Urination, Gravel in all its forms, Inability to retain the
 Water, particularly in persons advanced in life. IT IS A
 KIDNEY INVESTIGATOR that restores the Urine to its
 natural color, removes the acid and burning, and the
 effect of the excessive use of intoxicating drink.

PRICE, \$1; or, Six Bottles for \$5.

Send for Circular. Sold by all Druggists

W. JOHNSTON & CO.,

121 Jefferson Ave., DETROIT, MICH.

municated to the counter shaft, which, being in connection with the running engine shaft by means of the friction shaft above mentioned, is used to control the motion of the crank and thus prevent checking at each end of the piston travel. The result is a steady round motion, communicated to a slow moving engine, a desideratum never before achieved for this purpose. — *Lumberman's Gazette.*

LUMBERING IN THE FAR WEST

The *Winnipeg Free Press* has the following from Edmonton:—

The lumbering operations of this winter are decidedly in advance of any previous year. There are four firms engaged in the business of getting out saw logs. The Lamoureux Bros. are at work near the mouth of Dup Crook, below Fort Saskatchewan. The Roman Catholic Mission is operating on the Sturgeon River, and the Hudson Bay Co. and Hardisty & Fraser are working beside one another at the mouth of the White Mud river, about 45 miles up the Saskatchewan. The two first mentioned companies are getting out respectable quantities of logs, but the greatest amount of work is being done by the last two. They both laid their plans for beginning early in the fall, but they were delayed for some time by the difficulty of getting permits from Ottawa to cut timber. Both firms applied over two years ago for timber limits but they have failed to get them, and they are forced to be content with an annual license to cut. The Government maxim being apparently—"no mill owners need apply"—at least until friends of the Government have had all they want.

The two firms are working this winter in the same block of timber, and their camps are within a few yards of each other. The situation is a romantic and wild-looking one on the river flat at the foot of a steep spruce clad hill. A never-falling stream of spring water, which never freezes over, runs past the doors. There are some 50 men and 15 teams employed in cutting the logs and getting them to the river bank. The outputs thus far amount to 16,000 to 17,000 logs, which will yield about 100 feet of lumber each. In length the logs vary from 12 to 183 feet, with a few still longer, and very few of them are over two feet in diameter. The timber is of course spruce, but a few cotton wood or black poplar and birch logs are taken also. The quality of this year's cut is good, the logs being sound, of good size and comparatively free from knots.

PORT ARTHUR.

Mr. Squires, one of the leading merchants of Port Arthur, and who is in the city at present, says that the opening of the C. P. R. under the company's own management created much activity in the town last summer. The railway company are building their docks and have one elevator almost ready for grain. Several other docks are under course of construction by private individuals. Extensive preparations have been made for the manufacture of brick, which last season had to be brought by vessel at much greater expense than they can be manufactured for on the spot.

Recent explorations have revealed the fact that there is plenty of white pine to be had within easy access of Port Arthur, and the construction of Marks' sawmill and the extensive works of the Algoma Lumber Company, besides other planing mills and shops, have supplied a much needed demand. Mr. Squires further says that, notwithstanding this is the dull season, there is not now a vacant house to be leased in the town, and the demand for houses and stores is greater than can at present be supplied. The opening of navigation and the great increase in all branches of business which will follow that and the recent extraordinary developments in the mines are certain to create a regular rush and genuine boom next summer. — *Winnipeg Times.*

ON THE OLYDE.

Singleton, Dunn & Co.'s timber circular dated Glasgow, 6th March, says:—

The tone of our market is very dull, and the prospect not encouraging. The absence of fresh contracts for ships—making that branch of industry look very unpromising—and the uneasy

feeling caused by heavy failures in general business, have reflected on our trade, causing dealers to buy sparingly of spot goods, and to hesitate, and in most instances decline to enter engagements for l.o.b. business. We have, notwithstanding this state of matters, to report that from the ponds at Greenock and the deal yards here large deliveries have been made, in the latter case those deliveries exceeding those for the corresponding period of last year. These deliveries indicate a fair consumption, and it is known that some, indeed most, of the saw mills are fully employed. This consumption will soon tell on the stocks, and by and by, if moderation is exercised with consignments, some good should be done. In North of Europe wood goods business is in an identical position to what prevails in Canadian. So far few or no transactions in forward business is reported. Freight.—The ship owners are averse to accept merchants' terms, viz., from Quebec 21s. to 22s., and from Lower ports 6s. to 60s.; still there are indications that all the tonnage wanted may be acquired at the figures named. From St. John, N. B., it is reported steamers are loading at 60s. to a direct port in U. K.

A Big Cut.

We hear that a chopper of the name of Harry Lebbe, in the employ of Mr. Robert Dunlop, of North Monaghan, cut eight and a quarter measured cords of black ash between six o'clock in the morning and six o'clock in the evening last Tuesday, with a Wetmore axo. Who can beat this for a day's work?

The Lumber Trade.

Mr. I. M. Weston, of Grand Rapids, Mich., in commenting on Congressman Houseman's opinion in favor of rescinding the duty on lumber imported from Canada, lately, gave it as his opinion:

"The only result of putting lumber on the free list would be to increase the value of Canadian stumpage. They have only a small quantity of pine within reach anyway—principally around Georgian Bay—and have to buy largely of us. I have manufactured lumber in Whitehall year after year and shipped it to Canada. I now have orders from New York parties to go to Canada and buy up large tracts of pine if lumber is placed on the free list. If lumber goes on the free list, Canadian stumpage will increase in value about \$1 a thousand, and that is all there is of it.

Trade With Great Britain.

The *Monetary Times* says:—The quantity of timber and lumber imported into Great Britain and Ireland during the month of January last, was as under, compared with the same month of 1883:

	Jan., 1884.	Jan., 1883.
Hewn loads.....	81,788	63,940
Sawn ".....	56,153	61,355
Total.....	\$137,94	\$125,295

Showing a decrease in import of sawn goods, and an increase in the total. The London market for timber is described by the *Timber Trades Journal* of the 16th ult., as "uncertain," that of Liverpool as "comparatively stagnant;" at Hull and West Hartlepool matters are "extremely quiet" while in Glasgow the public sales are well attended, and Canadian deals are going off amid "spirited competition."

Lumbering at Roscommon.

The *Bay City Lumberman's Gazette* says:—The news comes from Roscommon county that operations in the lumber woods are about closed, and the contemplated cut of logs last fall has been very materially exceeded. Many jobbers had their contracts completed several weeks ago, but received orders from headquarters to push on the work as long as the weather was favorable, and have been doing so. This is but the reiteration of the news from many other points, and the pretended curtailment still being circulated by pretended lumber dealers, which should be better posted is nonsensical, as might be easily understood by the least consideration of the facts and circumstances. It is barely possible that there are individual cases in which the curtailment policy has been adhered to, but the percentage of such cases is unquestionably small.

A Sixteen Century Sawmill.

In the year 1550 the Bishop of Ely, being Ambassador from Princess Mary of England, to the Court of Rome, observed a saw mill in the neighborhood of Lyons. He describes it as being driven by an upright wheel, "and the water that makes it go is gathered whole in a narrow trough, which delivereth the same water to the wheel. This wheel hath a piece of timber put to the axle-tree end like the handle of a brooch and fastened to the end of the saw which, being turned with the force of water, hoisteth up and down the saw, that it continually eateth in, and the handle of the same is kept in a rigall of wood from swerving. Also the timber lieth as if it were upon a ladder, which is brought by little and little to the saw with another device." Such is the description given of a saw mill at that early date.

WM. LATCH

Wholesale Dealer in All Kinds of PINE and HARDWOOD LUMBER SHINGLES AND LATH. CONSIGNMENTS BOUGHT AND SOLD ON COMMISSION. 26 Adelaide St. East, TORONTO, ONT.

WANTED.

15 RED CEDAR POSTS, 10 feet Long, at least 5 inches thick.

Address, giving price, E., Review Office, Peterborough, Ontario. d30w0

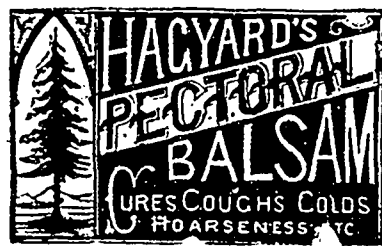
WATER POWER TO LEASE.

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

R. & G. STRICKLAND 1430 LAKEFIELD, NT. w15L9

WANTED AGENTS to sell TUNISON'S

NEW AND SUPERIOR CANADA MAPS & CHARTS As paying as any agency in the world. For particulars, full and free, address H. G. TUNISON, 388 Richmond St. LONDON, ONT.



AGENTS wanted for The Lives of all the Presidents of the U. S. The largest, handsomest, best book ever sold for less than twice our price. The latest selling book in America. Immense profits to agents. All intelligent people want it. Any one can become a successful agent. Terms free. — HALLERT Book Co., Portland Maine.



FREEMAN'S WORM POWDERS. Are pleasant to take. Contain their own purgative. Is a safe, sure, and effectual destroyer of worms in Children or Adults.



PRITCHARD & MINGARD GENERAL ENGRAVERS.

Stenoll Plates, Steel Stamps, Rubber Stamps, &c., OTTAWA, - ONTARIO.

WM. E. DODGE & SON, Pine & Hardwood Lumber

Office.—Cor. East Falls Avenue and Stiles Street, BALTIMORE MD., U.S.A. Correspondence Invited. 1y123

A. & T. J. DARLING & Co. TORONTO, ONT.

Specialties—"Darling" Axes, Saws, Outlery, "Black Diamond" Files. **HARDWARE.**

LUMBER

Shingles, Doors, Sash, Flooring, &c., WANTED, STATE QUANTITIES AND PRICE TO **SHORE & DAVIS,** Head Office, 514 Main Street, Winnipeg, Man.

HENDERSON BROS. LUMBER AND TIMBER.

Building & Bridge Timber Sawn to Order. Pine, Spruce and Hemlock Lumber by the Cargo. Steam Saw Mills, Box Factory and Yards—342 to 300 William St., and 150 St. Constant St., Montreal. Steam Saw Mills, L'Assomption, P.Q. P. O. Box 804. 1y121

FOR SALE.

SAW MILL, STOCK and Limits, Situated at Tobermory, Co. Bruce

Stock on hand, Three Hundred and Fifty Thousand Feet Dry Lumber, Eight Hundred Thousand Pine and Cedar Shingles, Four Hundred Cords Wood, Ten Thousand Five Hundred Pieces Paving, Two Thousand Ties, Four Hundred and Forty-five Thousand Feet Pine in the Log, Cedar Timber for 750,000 Shingles. Saw Mill Capacity 20,000 feet per day. Docks, Buildings, Horses, Waggon, Sleighs, Supplies, &c., Eighteen Hundred Acres Land, timbered with Pine, Oak, Cedar, Black Birch, Basswood and Maple, enough to run the Mill ten years. Everything in first-class order and new. The whole amounts to \$16,500, figured at cost. The Property will be sold at a Bargain. For further particulars apply to

MAITLAND & BIXON, Owen Sound, Or S. C. KANADY & CO., Toronto.

PATENTS

MUNN & CO. of the SCIENTIFIC AMERICAN, continue to act as Solicitors for Patents, Caveats, Trade Marks, Copyrights, for the United States, Canada, England, France, Germany, &c. Hand Book about Patents sent free. Thirty-seven years' experience. Patents obtained through MUNN & CO. are noticed in the SCIENTIFIC AMERICAN, the largest, best, and most widely circulated scientific paper. \$3.00 a year. Weekly. Specimen copy of the Scientific American sent free. Address MUNN & CO., SCIENTIFIC AMERICAN Office, 31 Broadway, New York.

\$66 a week at home. \$5.00 outfit free. Pay absolutely sure. No risk. Capital not required. Reader, if you want business at which persons of either sex, young or old, can make great pay all the time they work, with absolute certainty, write for particulars to H. HALLERT & Co., Portland, Maine. Godd45-1y651

WOOD PRESERVATION.

How to protect wood from decay, or how to increase its durability is one of those important questions which Americans must try to solve in the near future. Many experiments in this line have been made in Europe at various times; of course no one has as yet arrived at a final solution, but like all important discoveries, the economical preservation of wood is a result to be attained only by prolonged and repeated experiments, and not something to be discovered by chance. Strange to say, our practical Americans have so far given but little, if any attention to the subject, although the centres for the wood supply become more and more inaccessible and farther removed from cheap transportation facilities.

We can not and dare not close our eyes to the fact that at the present rate of consumption our forests will, after a limited number of years, be exhausted; the supply will diminish while the demand, on account of extended applications, will increase year after year. Although under favorable conditions one single acre of pine lands can yield 8,000 feet of timber, the annual sales amount to billions of feet, and some people who always look at the darkest side of the question have already prophesied that the supply of white pine in the United States will be exhausted in about eight years. Let this be true or not, the question of the preservation of wood cannot be ignored, and the sooner we become accustomed to rigid economy in the consumption of lumber, the better it will be for the interests of the country at large and to the lumbermen especially.

England, France and Germany have already exhibited a large amount of activity in regard to this problem; in Great Britain alone more than fifty patents for the preservation of woods have been issued during the present century. The consequence is stated to be that railway sleepers, bridge timbers, telegraph posts, etc., last more than twice as long abroad as in America. If such facts can be demonstrated by statistics, our practical men must soon direct their attention to this important industrial problem.

Preservation of wood by chemical means has been tried with success. Wood so prepared exposed to the same conditions with unprepared wood, has proven the superiority of the former. But as the number of chemical preservatives is large, it is difficult to decide their relative merits, as the manufacturers or patentees do not always care to give full particulars about the processes. A preservative which works splendidly with one kind of wood, may fail entirely with another; and a method which protects seasoned timber may be found useless when applied to green wood. And thus it comes to pass that we find the most contradictory statements with regard to different processes. One found it efficient in every respect, another who failed to experiment upon the same conditions, failed entirely with the same material.

If we want to obtain a practical value of a test, there are a number of factors to be considered; the general efficacy of each process; the kind of wood to be used and its condition; the expenses and the use to which the prepared wood is to be applied. The first two can be decided by tests everywhere; the question of expense will vary with the locality, given a better or poorer market for the necessary chemicals.

The question of use, however, opens up different considerations. One process may preserve wood for say twenty years; another, very much cheaper method, for ten years. If now we are building something very large or heavy, where the removal of timber at a later period will involve a large expenditure of time and money, the process which preserves the wood the longest time, will be the cheapest although its first cost is higher. For other structures, however, which owing to the amount of wear and tear to which they are subjected, will wear out in a shorter time than perhaps ten years, the second process will claim higher advantages. And this must be carefully considered before accepting or rejecting one method in preference to the other.

Wood decays after it has been cut by slow oxidation, by the attacks of small creatures which burrow into the sound timbers and thereby open passages for air and moisture, and

by the growth of fungoid plants of the Bacillus family. Every one of these processes is largely influenced by the atmospheric conditions. When the place is perfectly dry, timber has been known to remain healthy for thousands of years, as testified in some of the Egyptian tombs; wood completely immersed in water acquires a similar longevity. The foundation piles of bridges built by the Romans across the Rhine in Germany, have recently been taken out and found sound and good. Decay sets in quickest where the wood is exposed to alternate wet and dry, added to changes in temperature. The moisture which has been absorbed between the fibres, freezes, and in its congealing, acts like a wedge which splits the wood, opening a new place for water and air to enter as soon as the wood has again dried under the rays of the sun.

In a general way all our preservation processes so far known can be divided into four great divisions. The first of these treats the surface only by an application of some kind of liquid which fills the pores of the wood and thereby renders them air-tight and the interior of the timber inaccessible to the atmosphere. The second class includes those where an application extends below the surface and effects the layers underneath, such as carbonizing by immersion in strong sulphuric acid or by charring in fire or by a lamp constructed for the purpose. This latter method is largely used in France for telegraph poles, where the outer layer of the wood is carbonized, while the layers underneath undergo a partial transformation and form preservative substances within the wood.

The third division includes all those methods by which the wood is impregnated with insoluble mineral matter and in this way protected. All these act upon the principle of double decomposition, two solutions, soluble as long as they remain separately, but insoluble in the moment they come in contact with each other. The wood is first charged with one, and then with the other, a process that fills the pores with an insoluble substance.

The earliest mention of this sort we find in 1823. In 1837 the use of water-glass and hydrochloric acid was recommended. Burkes, in 1844, proposed water-glass and sulphate of iron; Feuchtwanger, at about the same time soluble glass and lime water. In 1846 the use of sulphate of copper and caustic baryta was suggested by Vonatz. Among many others, Payne's process, announced in 1841, has perhaps been more thoroughly tested than any other; it consisted of sulphide of barium and sulphate of iron, but it, like the other processes of this class was found to be too costly and imperfect and the results obtained were not in proportion to the expenses involved. All these processes are now abandoned, but as they form a part of the history of wood preservation, their mention in this connection will be excused. The fourth and last class brings us finally to all the methods in vogue at the present day. They consist, in a general way, of the injection of an antiseptic into the wood; the various methods differ only in the choice of the antiseptic and its application.—*Buffalo Lumber World.*

CANADIAN LUMBER TRADE.

We take from the Toronto *Telegram* the following:

The American Congressional Tariff Committee's decision to place Canadian lumber on the free list, has caused a ripple of excitement in local lumbering circles. In conversation with several city lumbermen a *Telegram* reporter was informed that the result of the change in the improbable event of its being sanctioned by the Senate, would be to give a much needed impetus to the Canadian lumber industry. Mr. R. A. Lyon, M. P. P., for Algoma, and an extensive lumber manufacturer at Michéal's Bay, Manitoulin Island, in answer to a query said:—"It would be the best thing that could happen to us Canadian lumbermen at the present time. The trade is now extremely dull; large stocks of lumber are awaiting shipment at the principal centres in the Dominion. Although the accommodation of lumber at Chicago is one million feet less than at this time last year, it is an undoubted fact that the lumbering industry is depressed. The abolition of an American tariff which is virtually pro-

hibition on cheaper grades of lumber would give an outlet to the over-stocked Canadian market."

Mr. Riches, of S. O. Kanady & Co., remarked, "I believe that tariff will go. We will then be able to compete on the American market with the home producers. At present we are barred out by a duty of \$2 per thousand all around. This tariff isn't burdensome in expensive lumber, but when you come to ship lumber at \$8 per thousand it in effect closes us out from placing our lumber on the American market."

"The change will do more than anything I know of to relieve the present financial stringency in Canada," answered Mr. S. S. Mutton to the reporter's interrogation. "Why, you know," he continued, enthusiastically, "our lumber export trade almost equals our grain shipment. The lumber exports would be doubled by the change, and we would have a chance to deal with those men in Buffalo and elsewhere who give us big orders and always pay cash. Now, we are left tending on American orders on the cheaper grades by from 75 cents to \$1.25. With the \$2 duty off we could overcome this difficulty and still have a handsome profit. One result of the abolition would be to raise the price of lumber in Toronto by perhaps \$1 a thousand. I, however, don't believe the change will be made. If passed in Congress the influence of the Stalwarts from the Maine pineries will force the Senate to kill the project."

Mr. Kerr, of Christie, Kerr & Co., was not extremely sanguine as to the effect of placing Canadian lumber on the free list. If the American market was in a flourishing state it might enliven the trade considerably. In view of the prevailing depression he thought the good effects would be limited to opening a market for the cheaper grades of lumber.

Mr. McCracken, of McCracken, Galt & Co., did not believe that the change would result in increasing the price of lumber in the local market. It would largely increase the demand for cheap lumber, but in his opinion there was not the slightest probability of the Senate assenting to the abolition of the duty.

Mr. A. H. Campbell believed the change would benefit Canadian lumbermen in the unlikely event of it taking place.

CARE OF FORESTS.

The Agricultural Committee of the House of Commons of Canada met on Friday March 14th, and heard the evidence of Mr. Thayne of the parliamentary library, who said he had devoted a great many years to the study of forestry and had visited most of the finest forests of Europe. Forestry, he said, is intimately bound up with agriculture. The denudation of forest trees is a great injury to the agricultural interests of the country. In South France, for instance, whole districts have become depopulated, owing to the shepherds on the slopes of the Apennines having cut off the small growing trees for fuel and having left the surface soil exposed to rains, which washed it away. Other countries in Europe have suffered in the same way, and the damage done can only be repaired at immense cost. If we, in this country, said Mr. Thayne, destroy the vegetable barrier at the north, we expose ourselves to severe storms and cold. Forests have, it is well known, a moderating influence upon the climate. They equalize the weather and preserve our lakes and running streams. As to forest planting in this country he thought it was not yet necessary; but every farmer in the country who had bare fields should plant trees, to break the winds of and afford shelter to his stock in summer. In many European countries the government has taken away some of the private rights over forests, and insists that they shall not be destroyed; and if a man thinks it advisable to cut down his forest wood, the whole of the neighbouring landholders must be consulted. In Canada no care is taken of the forests, and the government makes no provision whatever for maintaining the supply of wood. But in Europe the tendency to control the forests is every year stronger, and it is considered necessary that at least 25 per cent, of the land shall be covered with wood. In the older provinces of Canada the government should, in Mr. Thayne's

opinion, set apart the timber lands to be leased out in blocks, from which all the trees of a certain diameter might be cut down, and after this is done they should be left alone for a while, till the remaining trees became sufficiently large to be cut. Such care of forests would be an advantage in supplying employment in winter to men who would without them have had nothing to do here, and would afford timber for a continuous supply to meet the requirements of trade. Mr. Thayne said he favoured the the importation of foreign trees, on the same principle of culture which renders expedient a change of seed. A new species can be introduced to general advantage only by a government agency in which the public would have confidence. It would be absurd to compel persons who go to live on the great plains of the Northwest to plant so many acres of trees; for there are no nurseries from which to obtain plants and no protection against the fraud and carelessness of dealers residing hundreds of miles away. If proper nurseries were established by the government, so that new settlers could obtain young trees, and the information necessary to their successful cultivation, they would prove a great benefit. He favoured the establishment of a central bureau of agriculture as a source of information and encouragement for farmers all over the country. The race of life is now so keen that unless special measures be taken we shall lose in the competition with our neighbours and the rest of the world. The Federal Government looks after the interests of trade and commerce, and therefore, should not neglect the chief sources of trade and commerce that the country possesses. Upon agriculture and the care of our forests depends in a great measure the prosperity of our country, and the best known methods should be adopted for their promotion and care. Under central bureau these methods could be taken, and, by means of experimentation, new methods could, from time to time, be introduced and applied. There is, in Mr. Thayne's opinion, no reason why a central bureau and experimental stations should not be as beneficial in Canada as in other countries.

NOTES ABOUT A SAW.

The Germans use at the present day among their furniture makers, carpenters and joiners, thirteen different varieties of saws, each one of which has its own peculiar size of the teeth, as well as a different relation of the teeth to each other. How important the thin saw blade is, not only as a means to save power, but also as a means to save wood, can be seen from the following:—A log of walnut, four meters long and one meter in diameter, cut into 20 pieces by the new horizontal saw frame saves thirty millimeters of wood when compared with the cutting of the old fashioned vertical saws. This is equal to a profit of from \$9 to \$12. For Germany, where annually 100,000 cubic meters of this wood is used in the various industries, this would represent a saving of \$37,500 to \$50,000.

The greatest enemies of saws are the particles and pieces of iron found in woods; these are often driven in some form into young trees and succeeding growth covers them up entirely. A curious collection of such ingrown iron particles was recently exhibited in Germany. It had been obtained from America, Prussia, Germany Spain and other countries, and exhibited the queerest forms of wood formation covering particles of iron of various shapes and sizes, whose presence was revealed only by a breaking of the teeth of the saw, and which without the cutting would have remained invisible to the human eye.—*Buffalo Lumber World.*

A VESSEL OF IRISH OAK.

The *Timber Trades Journal* says:—We make the following short extract from the Dundalk *Examiner* of Saturday last, giving an account of the launch of a new vessel by the Dundalk Patent Slip and Shipbuilding Company. This young but enterprising company owes its inception to Mr. John Connick, and seems to grow rapidly in prosperity and vigor, says our contemporary. On Thursday last they launched their first new vessel, the *Lake Pápa*.

A large company assembled, and no sooner had the custom of breaking the bottle of brandy

against her bow been complied with than the ship gracefully glided out. The *Lake Pator* is a three-masted schooner or barquentine, and is intended specially for the Brazilian trade, being of a peculiar although very symmetrical build. The vessel is made long and shallow, and takes a low draft of water in order to suit some of the shallow harbours of the South American empire. She is 102 ft. in length, 23 ft. in breadth, and 9 ft. in depth. She is registered at 107 tons, but will carry 220 tons. Built under special survey she is classed A 1 at Lloyd's for 12 years. The material used in her construction is all of the first quality, Irish oak and teakwood, her timbers being fastened with yellow metal bolts. The owner of the new schooner is Mr. William Larmour, of Liverpool, and her first voyage will be for Rio Grande at the mouth of Lake Pator, in South Brazil. She will sail from Dundalk to Cardiff when completed, and take on board a cargo.

NORTHWEST TIMBER.

We take the following from the annual official report of Department of the Interior:

"The satisfactory increase in the revenues of the Crown from the timber on Dominion lands, which was noted in last year's report, continues, being \$216,735.83 for the twelve months ending the 31st October, 1883, or \$108,004 in excess of the amount for the previous year. But what is even of greater consequence than revenue is the fact that, through the policy of offering timber berths at a comparatively limited original cost to those willing to comply with the regulations of the department in regard to the erection of mills, etc., in connection with each berth, and thus promoting a competition that could not have been produced had the system been followed of offering timber lands in unlimited areas to persons willing to pay the highest price for them, the pioneer settler is now enabled to procure the necessary lumber for his farm buildings, etc., at a cost of 40 per cent. on the average less than at any previous period since the acquisition by Canada of Manitoba and the Northwest Territories.

From data obtained by the Crown Timber Agent of the department at Winnipeg from the accounts of the sales of the principal lumbermen of that city, it is ascertained that the prices of the various classes of lumber at that point during each year from 1872 to 1884 were as follows:—

Year.	Pine per M.	Spruce per M.	Poplar per M.
1870	\$23 06	\$22 00	\$3 00
1880	27 33	23 00	23 00
1881	28 06	24 60	23 00
1882	23 33	26 60	23 00
1883	25 00	20 00	13 00
1884	21 00	15 25

The foregoing statements show that at this date the price of lumber in the Winnipeg market is 40 per cent. less than in 1883; spruce lumber, over 30 per cent. less than in 1879; tamarac lumber, nearly 7 per cent. less than in 1879; oak lumber 12 1/2 per cent. less than in 1872; and poplar, 55 per cent. cheaper than in 1872."

On Thirty Days Trial.

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

A DOUBLE BENEFIT.—James Moore, a prominent resident of Leamington, writes that he cured himself of Dyspepsia of a year's duration by one bottle of Burdock Blood Bitters, and two bottles cured his wife who had been for years a sufferer from the disease. He conscientiously recommends it to all suffering from similar troubles.

CRUSHED BY THE CAR.—A little son of John Spinka, Toronto, had his foot crushed by a G. T. E. Express train some time ago. Two doctors attended him without benefit, and amputation was proposed, but Hagar's Yellow Oil was tried, which gave prompt relief and effected a speedy cure, even removing all stiffness of the joint.

DANGER TRAPS.—Neglecting colds are the fatal traps that ensnare many a victim beyond possibility of rescue. Take a cold or cough in time and it is easily conquered by that safe and pleasant vegetable remedy, Hagar's Pectoral Balsam. Asthma, Bronchitis and pulmonary complaints generally soon yield to its healing influence.

Chips.

LARGE quantities of ship knees are being hauled to the South Seboc, Me., station, to be shipped to various points on the coast.

The Wilson Hoop Company, of Bay City, Mich., will use 2,000,000 feet of elm timber this year, from which they expect to manufacture 8,000,000 hoops.

New York exporters say that good walnut logs are in little demand in the European markets. Small ones are not wanted. They say, however, that the European markets in hard woods are generally bad.

ABOUT 1,700,000 rock maple last blocks were shipped from the vicinity of Bangor, Me., mostly to Massachusetts. The value of this output was more than \$40,000. The shipments this year promise to be more than ever before.

One of the saddest phases of lumber business is the accidents, so often recorded, to children. Loggers permit their little ones to play around where trees are being felled, or to ride on loads of logs, and the result, too often, is what any one acquainted with the danger attending life in the woods might expect.

A MICHIGAN man contracting for a walnut counter, and the builder of it, following the usual custom, put in panels of whitewood stained in imitation of walnut. The work was not accepted; suit was brought, and the court decided that when a man buys a walnut article it must not in part be made of whitewood.

The *Timber Trades Journal* says:—White Sea goods are moving off slowly, but at firm prices, and we consider there will not be much difficulty in maintaining values for stocks of this kind, as they are known to be short. The large fires we had to chronicle last year, and the consequent destruction of the mills at Archangel will help greatly to reduce the present season's shipments.

M. QUINN, of Saginaw Mich. who has been most of the winter in the vicinity of Duluth, is now at home, and reports that not more than two-thirds as much lumber will be cut in Duluth this present year as was cut in 1883. The reason he gives for this prospective falling off of the cut is a falling off in the demand, a large share of Duluth lumber heretofore having gone to north-western markets.

GERMAN technical papers recommend the following mixture for the staining of wood in imitation of cedar; 200 parts catechu, 100 parts of caustic potash and 10,000 parts of water, all by weight. The longer the wood remains in this solution, the better the stain penetrates its fibres and thick veneers can in this way be stained right through the whole thickness, which permits a refinishing without injury to the color.

The Willimantic Company is employing 125 men in its Maine spool mills and in the woods getting out spool timber. About 2,000 cords of birch were in the yards at a late date. The mills are turning out 4,500 gross of spools, and 9,500 gross of spool blocks per week. About 200 thread boxes are made a week. The number of spools required can be realized from the fact that 6,000 boxes and 80,000 gross of spools were ordered in February.

THE largest sale of lumber that has come to our knowledge this spring was recently made by the O. N. Nelson Lumber Company, St. Paul, Minn., to the Chicago Lumber Company, of this city. The amount purchased was 18,000,000 feet, and although the purchase price has not transpired, we understand it was in the neighborhood of \$200,000, on car. The lumber is piled in the yard at St. Paul, and will be shipped to the various yards of the purchasers.

THE project to build a railroad from Saginaw to Adrian, Mich., so as to form a connection with the Wabash system, and an outlet southward from Saginaw, is again being aired in that part of the state. Saginaw, frightened at the prospect that lumber will be placed on the free list, disgusted at the spathy of eastern buyers this season, and tired of seeing those great piles of coarse lumber looming in the yards, naturally wants a range in western fields. The proposed railroad scheme is a means to the desired end.

National Manufacturing Co.

160 Sparks Street, Ottawa,

MANUFACTURERS OF



TENTS!

Camp Furniture and Hosiery.

OUR GOODS ARE THE BEST IN THE WORLD!

Four Gold and Silver Medals and Thirty-two First Prizes at the Toronto and Guelph Exhibitions, 1883.

Highest Awards at Sydney, New South Wales: Exhibition June, 1883.



Lumbermen's Tents

A SPECIALTY!

At Prices Lower than ever before.

HEAVY SOCKS

Our own make, and at Prices Very Low!

SHANTY BLANKETS

IN GREAT VARIETY.

Liberal Discount to Large Buyers. Send for Catalogue.

National Manufacturing Co.

160 Sparks Street, Ottawa.

P. O. BOX 345

Market Reports.

TORONTO.

From Our Own Correspondent

MARCH 24.—The weather, and, as a natural consequence, the condition of lumber, has materially changed for the better since my last letter, and all the dealers with whom I have come in contact are of one opinion, viz., that although they are doing business on a small margin there is a brisk trade from the yards to partially compensate for the small profits obtained, and should the duties on lumber for the American market be thrown off, which many dealers firmly believe will yet come to pass, the coarser grades of lumber will hold its own or slightly advance on this market; but should the duties remain as at present, the inferior grades of lumber will undoubtedly go below present figures during the season now entered upon. This I think is conceded by all who have taken the trouble to form any opinion on the subject.

The arrivals by the N. & N. W. R. R. at present are from 20 to 25 car loads per day, which, for the month of March, is considerably above the average of other years. Orders for Western Ontario also come in freely, the fine mild days during the past week have stimulated builders into more than their usual activity, which is not surprising considering the long period of forced suspension from business, and if the various branches of mechanics whose labour is utilized in the building trade will only be content with a moderate days pay for a fair days work, and no strike take place, a fair season's trade may be anticipated with a fair certainty of fulfillment.

Since writing my last letter the Grand Trunk Railway Company have so far acceded to their customers' wishes that all cars can now be shunted west to any part of the Esplanade free of charge, but owners of private switches, or sidings, have still to pay for such service. I doubt not but that the company will shortly see the injustice of charging owners of private sidings for shunting. In the first place parties have to pay for the making and keeping in repair, besides a nominal rent for all such sidings, so it is hard to see why they should have to pay for shunting service any more than the general public.

The N. & N. W. R. Co. still pursue their obstinate course and charge from \$1 to \$2 per car for all westward shunts. There is only one excuse that may be made, perhaps, with some show of reason, they doubtless require every dollar that can be made in order to make both ends meet, but in the long run it is doubtful if they will gain anything by their obstinate course as the position taken by them in this matter is not honestly tenable.

Mill cull boards and scantling.....\$10 00
Shipping cull boards, promiscuous widths..... 12 00
stocks..... 14 00
Scantling and joist, up to 10 ft..... 13 00
" " " 12 ft..... 14 00
" " " 14 ft..... 15 00
" " " 16 ft..... 16 00
" " " 18 ft..... 17 00
" " " 20 ft..... 17 50
" " " 22 ft..... 18 00
" " " 24 ft..... 20 00
" " " 26 ft..... 21 00
" " " 28 ft..... 22 50
" " " 30 ft..... 24 00
" " " 32 ft..... 25 00
" " " 34 ft..... 26 00
" " " 36 ft..... 27 00
" " " 38 ft..... 28 00
" " " 40 to 44 ft..... 30 00

Cutting up planks to dry..... 24 00
boards..... 18 00
Sound dressing stocks..... 18 00
Picks Am. Inspection..... 23 00
Three uppers, Am. Inspection..... 35 00
R. M.
1 1/2 inch flooring, dressed..... 32 00
" " " rough..... 16 00
" " " dressed..... 26 00
" " " undressed..... 15 00
" " " dressed..... 22 00
" " " undressed..... 16 00
Boards Shading, dressed..... 22 50
Clapboarding, dressed..... 14 00
XXX sawn shingles, # M..... 3 00
Sawn lath..... 2 75

MONTREAL.

From Our Own Correspondent.

MARCH 25.—Business has been fairly active at Ottawa and quite a number of sales have been made there lately on American account at firmer prices, and the demand in New York and through the Eastern states is likely to be very fair. It looks as if the Americans would not take the duty on lumber as was expected, the leaders on both sides of the question are appar-

ently afraid to touch the question just now. Some of the large concerns at Three Rivers have not made any logs this winter, but they have enough on hand to keep the mills going for this year. It is reported that G. B. Ball & Co.'s extensive mills at Montmorenci are going to saw for Gilmour & Co., of Ottawa, this year. Contracts for freight from Ottawa have been made about 10 cents less per 1,000 feet than last year's rates, which looks bad for the boatmen. Business here is quiet, but prospects are good as a considerable amount of building is going on, but the supply is more than equal to any demand which is likely to arise. Some kinds of hardwood from the Southern States and California, such as gum wood and California redwood are coming into this market to be used for house finishing and fancy furniture, but the stocks of them are still low. Our prices are unchanged, but laths will decline in price as soon as the mills begin to run. We continue to quote:

Table listing lumber prices for Montreal, including Pine, Spruce, Hemlock, Ash, Oak, Walnut, Cherry, Butternut, Birch, Hard Maple, Lath, and Shingles.

CONDWOOD.

The demand for wood is fair, but hardly so brisk as at the date of the last report. Stocks in the city are ample and dealers along the line of the G. T. R. and C. P. R. say that large quantities are got out and ready for shipment, but in the mean time no change has been made in quotations, which are ex cartage at the railway station:

Table listing prices for Condwood: Long Maple, Long Birch, Long Beach, and Tanarack.

LIVERPOOL MARKETS.

The state of the lumber market presents no new feature, the consumption for February coming up to what was generally anticipated, and there is no material change to report in prices.

OTTAWA.

From Our Own Correspondent.

MARCH 22.—The approaching season's trade has opened very auspiciously, and prospects are consequently encouraging, and merchants entertain hopes of a thriving condition of things. Already a large sale has been made. Within the past week one of our local firms made a \$100,000 sale to an American Company. A representative here of a foreign firm has told your correspondent that he expects to make unusually large purchases this season. This is only another indication that trade promises to be booming in the near future.

Within the past year a great change in shipping facilities has occurred in this district. The railroads have interfered greatly with navigation companies, but the latter seemingly intend to keep the competition lively as a number of them have increased their fleet. Messrs. D. Murphy & Co. recently purchased the fleets belonging to J. R. Booth and Perley & Pattee. These two firms having a large interest in the Canada Atlantic Railway ship nearly altogether by rail. This railway has built up an enormously large trade in lumber transshipment. To-day, as daily for the last two or three weeks, no less than 50 cars laden with lumber for the American market left the Chaudiere yard of that railway. The yard capacity of the road has been somewhat inadequate to the increasing extent of the business, and a number of new sidings are about to be put in at the Chaudiere yard.

THE UPPER OTTAWA.

The Rev. Father Paradis scheme for regulating the water of the Ottawa river by the construction of a dam at the foot of Lake Temiscamingue, has seemingly met with the universal approval of the lumbermen of the Valley. Yesterday morning a deputation composed of Messrs. Bryson and Mackintosh, M. P., Mayor Bate, ex-Aldermen McDougall, F. Clew, P. A. Egleson, and Aldermen Germap,

Desjardins, and others, waited upon Sir Hector Langovin, Minister of Public Works, and presented the honorable gentleman with a memorial and the petition which is given below, both of which set forth the importance of the scheme, the particulars of which have already appeared in the columns of the LUMBERMAN. It might here be stated, however, that by this scheme it is claimed that over twenty thousand acres of land, which area is now submerged, in the vicinity of the lake, would be recovered. Besides this important consideration there would be afforded what is supposed to be the only means of regulating the water of the river.

The following was the petition:—
To the Hon. Sir Hector Langevin, C.B., K.C.M.G., Minister of Public Works:

The petition of the undersigned humbly sheweth:

1. That they have considered a certain memorandum discussing a new scheme for establishing easy communication between Mattawa and Lake Temiscamingue on the river Ottawa, submitted to your consideration by the Rev. Father Paradis, one of the Indian missionaries of the Upper Ottawa.

2. Most of your petitioners being lumber merchants interested in timber limits on Lake Temiscamingue have had the opportunity of inspecting the country around Mattawa and said lakes, and have given particular consideration to different schemes devised for opening up the communication above referred to.

3. Your petitioners unhesitatingly say that the scheme proposed by the Rev. Mr. Paradis, and so fully discussed in the said memorandum, is by far the easiest to carry out and at the same time most advantageous to the progress of the country it is intended to benefit, and the one best calculated to promote the agriculture, lumber, mineral and other interests of the country above Mattawa.

4. Your petitioners beg leave to submit that notwithstanding the immense sums of money derived yearly as a revenue to the country from lumbering sources, yet, comparatively nothing has ever been done by the Government towards aiding or facilitating that particular branch of our Canadian commerce.

Your petitioners therefore pray:

1. That you may be pleased to submit the said scheme to the earliest possible consideration of the Government, and to recommend the adoption thereof.

2. That steps may be taken towards the prompt execution of said scheme.

3. That such further or other relief may be granted as to you may seem meet.

And your petitioners as in duty bound will ever pray.

- Perley & Pattee, Sherman, Lord & Hurdman, Bronson & Weston, Gilmour & Co, (Estate) Levi Young, E. B. Eddy, W. R. Thistle & Co., E. T. Wright, O. Latour, J. O. B. Latour, M. L. Stewart, Francis Clew, C. H. Mackintosh, W. H. Lewis, W. E. Brown, F. McDougall, P. H. Chabot, J. P. O'Conner, Jas Warwock, Liblane & Lemay, Thompson Bros., C. O. Dacier, E. & H. Borlidge, R. S. Montgomery, P. Baskerville & Bros., T. Borkett, W. O. May, Jacob Erratt, E. McGillivray, Bryson, Graham & Co., J. M. Garland, P. C. Anclair, Keams & Ryan, R. W. Scott, M. Ogara, Dupus & Nolan, J. Sweetland, R. J. Devlin, J. Boydon, W. H. Rowley.

Sir Hector Langevin received the deputation with his characteristic cordiality, and, after hearing their representations, promised that an investigation as to the feasibility of the scheme would be made at once.

WINNIPEG.

The Commercial of March 18th says—Although the demand in the lumber line has not increased very much during the past week, signs are not wanting of returning activity, and inquiries about early wants have been quite numerous. Business is not yet in a state in which any but nominal quotations can be given, but within a week or two it is expected that

matters will be into an even flow, and quotations based upon actual transactions will be obtainable.

Table listing lumber prices for Winnipeg, including Pine lumber, Shoafting, Timber, Dimension and joists, Fencing, 2 and 3 in. battens, A. stock boards, B. stock boards, C. do, D. do, 1st clear, 2nd do, Window and door casing, Base boards, 1st pine flooring, 2nd do, 3rd do, 1/2 inch split siding, Spruce lumber, Dimension and joists, Boards, 1st flooring, XX shingles, Star A shingles, X shingles, A. do, Lath.

ALBANY.

Quotations at the yards are as follows:—

Table listing lumber prices for Albany, including Pine, Spruce, Hemlock, Ash, Oak, Cherry, Butternut, Birch, Hard Maple, Lath, and Shingles.

BUFFALO.

We quote cargo lots:—
Uppers.....\$40 00
Common..... 15 00
Culls..... 13 00

BOSTON.

MARCH 18.—The most noticeable feature of the lumber market consists of the large export movement of lumber from this port. What is being shipped is coarse stock, Canadian and Michigan pine, which is brought here on through bills of lading from Canada and the West. Vessels are now loading here for Port-au-Prince, Buenos Ayres, Gat Maloupe, Vera Cruz, Australia and the Cape of Good Hope, which will take out lumber. Some Southern pine is being shipped from here, after being worked over by the Laconia Car Company. The demand for building purposes is moderate as yet, but the tone is fair. In Southern pine the mills at the South are firmer, and freights are higher than the Atlantic ports at \$3, and the Gulf at \$7.00 to \$7.25. The spruce manufacturers have elected F. A. Pitcher, president; A. L. Brown vice-president; David Birnie, secretary and treasurer. They have decided to make no schedule of prices this season. The spruce mills are fairly busy on orders taken at the recent decline, and are hoping to get better prices. There is a large supply of logs secured and it is conceded that with water to market the logs prices will be lower in about two months. Trade is slow, but with good weather operations will be more active. Shingles are quiet, but there is more demand for clapboards, in hardwoods the trade is very good. A

feature is the increased demand for walnut, which promises to be more used for finishing purposes, as it wears better than cherry, ash or butternut.

Table with 2 columns: Item (Selects, Dressed, Shipping, etc.) and Price. Includes CANADA PINE and CHICAGO.

The Northwestern Lumberman of March 22, says:—Indications at the East are a little more encouraging. It has become more evident, than appeared earlier, that the season is to be an active one in building enterprises.

It is claimed in eastern Michigan that inquirers find but little fault with prices when they can find the lumber that suits them. For this reason good stocks are considered reasonably firm in value, and the holders at Saginaw points assert they do not fear a decline.

A noteworthy feature of the Michigan eastward trade is the increasing reach after good lumber northwest of the old fields of supply. Uppers are now being shipped from Menominee to the East, large amounts from eastern Wisconsin and from the Lake Superior region, and whole mill cuts go from Cheboygan, Michigan, Grand Marais, and other points in the upper country.

The March demand throughout the northwest is evincing considerable strength. At some points on the Mississippi trade has been better this month than it was in February.

There is some solicitude felt in the Northwest as to the effect of the unexpectedly heavy log crop will have on the value of the coming season's lumber output. The conviction has become general among the handlers of stocks in the trade that common lumber will sag a little in value.

Receipts of lumber, shingles, etc., for the week ending March 20, as reported by the Lumberman's Exchange:—

Table showing receipts and stock on hand for March 1, 1884. Columns include Year, Lumber, Shingles, and Cedar posts.

OSWEGO, N. Y. From Our Own Correspondent. We change quotations as below. Trade has improved some since our last. The stormy weather interferes with delivery as well as sales, a succession of snow and rain storms has prevailed since March set in.

Table listing lumber items like Three uppers, Pickings, Pine, Common, Culls, etc. with prices.

TONAWANDA. CARGO LOTS—SAGINAW INSPECTION. Three uppers, Common, Culls.

LONDON. The Timber Trades Journal of March 8, says: With respect to colonial goods, though most of the various items are slightly heavier than they were last year at this time, they cannot be considered overpriced, and if we look back four or five years we shall realize to the full extent the lightness of the stocks of 1883 and 1884.

That these will be supplemented with any very large shipments when the navigation opens is unlikely, if all we hear of the moderate proportions of the stocks at the shipping ports can be depended on, as shippers will be in humour to consign on the off chance of sale prices advancing.

Though somewhat heavier, yellow pine and spruce stocks are not so materially different from what they were last year. Prices supposing trade to be in anything like an average state of activity, need not be affected; but the general indifference displayed by merchants on all sides is becoming characteristic of each succeeding spring.

GLASGOW. The Timber Trades Journal of March 8th, says:—Arrivals of wood goods during the week have been a large cargo of teak at Greenock and one of sawn pitch pine. At Glasgow there have been no cargo imports.

The Clyde shipbuilding for the past month has been sixteen vessels, measuring 23,750 tons. The return for February 1883, was 33,560 tons, and February, 1882, 23,300 tons.

The vessels of all classes now on the stocks all over are stated to be about 90, but shipbuilders complain of an absence of inquiries, and some of the yards are already presenting an empty appearance, prices, although understood to be greatly reduced, not inducing owners to build. Of last month's work one-half is foreign owners,

J. S. MAYO IMPORTER AND MANUFACTURER OF MACHINE OILS OF EVERY DESCRIPTION.

9 Common Street, Montreal.

AMERICAN LUBRICATING OILS A SPECIALTY.

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

and one-half, it may be noted, is constructed of steel.

AUCTION SALES. On 28th ult., at Greenock, Messrs. Allison, Couland & Hamilton, brokers. Quebec yellow pine timber, Quebec wany beardwood, Quebec oak, Hewn pitch pine, Quebec 3rd pine deals.

On 5th inst., at Glasgow, Messrs. Singleton, Dunn, & Co., brokers. Quebec 1st yellow pine deals, Quebec 3rd yellow pine deals, Quebec 4th yellow pine deals, Quebec red pine deals, Quebec 1st spruce deals, Quebec 2nd spruce deals, Quebec 3rd spruce deals.

LIVERPOOL. The Timber Trades Journal of March 8th says:—We have again had a very quiet week of business; Few orders of any importance have been in the market. Prices remain low, and with the inanimate condition of trade generally, our principal dealers are not disposed to enter into large transactions for future delivery.

issued a list of timber they want, and for which tenders are invited, consisting principally of pitch pine, which will in some degree help to wake the trade from its present lifeless condition, as amongst other items they want 55,000 cubic feet hewn and 32,000 cubic feet sawn timber.

The failure of a firm of Manchester timber merchants is reported, in which several Liverpool houses are interested, but it is said that there is every probability of a good dividend being obtained.

LIVERPOOL TIMBER SALES. On Friday last Messrs. A. F. & D. Mackay sold by auction a cargo of St. John, N. B., spruce deals and birch and a cargo of sawn pitch pine. There was a fair attendance of buyers, and both cargoes were sold; prices, as will be seen, show no alteration from previous rates.

RESULT OF AUCTION SALE AT LIVERPOOL, 23RD FEBRUARY, 1884. 577 logs birch timber, ex Thomas Perry, from St John N. B., containing 24,748 cub. ft.

Average price 17½d. per cubic ft. 216,302 spruce deals, 1st, 2nd and 3rd qualities. Table with columns for size and price.

TYNE. The Timber Trades Journal of March 8, says: In American goods the demand is of the smallest possible, as shipbuilders have got fairly well filled up for present requirements and but little in prospect. The dispute about wages having been settled this week by a substantial reduction will help a little, but with the number of steamers laid up for want of employment it is not likely that many will be built during the present season.



Lumber Drivers' Calks

TEMPERED IN OIL.

25 BALL and 5 HEEL to Set

The Calks are now used by all the principal Drivers in Maine and New Brunswick.

Kept by Dealers in Lumbermen's Supplies

FOR SALE BY

T. McAVITY & SONS

Dealers in Lumber and Mill Supplies,

ST. JOHN, N. B.

Samples sent by mail on application.

ROBIN & SADLER

Have been awarded Three Years in succession at the Provincial and Dominion Exhibitions in Montreal, First Prizes

for

LEATHER BELTING

LEATHER BELTING

Fire-Engine Hose, &c.

Send for Price Lists and Discounts to the Factory

594, 596, 598, St. Joseph Street,

MONTREAL.

NATIONAL PUMP WORKS.

J. A. McMARTIN & CO.,

SOLE MANUFACTURERS OF THE

McMartin Patent Double and Single Acting Lift and Force Pumps

For Ships, Barges, Railroads, Factories, Mills, Cisterns, Deep Wells (non-freezing), and Hand Fire Engines, and Wind-Mills for pumping water. Also geared windmills for cutting straw, roots and grinding grain for feed.

Factory and Office, 637 Craig Street, MONTREAL.



The above cut shows our Double Acting Brass-Lined Horizontal Suction and Force Pump, mounted on a Cast Iron Bed Plate with tight and loose pulley, 4 inch face, 18 inches diameter. This is one of the most compact and powerful Pumps of the kind yet out, with Bed 4 feet long and 3 feet 2 inches, where the pulleys are placed, all being in good proportion. The pump has a guide to the piston rod, and is driven by the connection rod attached to the disc with Steel pin and wrought iron connections. The valve seats and valve are made of gun metal, and easily got at by bolts on either side of the pump, so that access to the bottom or top valve can be had without any difficulty. We make two sizes of these pumps, which are adapted for mills, factories or tanneries. We make these pumps with a clutch to drive them direct, when so ordered, and dispose of the pulleys and belt.

All inquiries will be promptly answered, by addressing the above, and catalogues of our pumps sent out. 220

THE INTERNATIONAL TENT & AWNING CO.

184 Sparks Street, Ottawa.

MANUFACTURERS OF

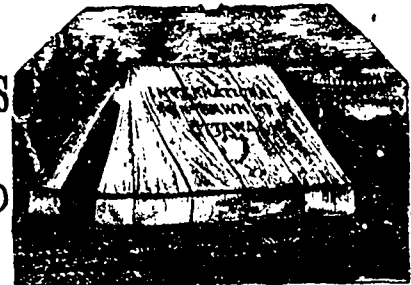
32

First Prizes

AT

TORONTO

1883.



6

MEDALS

AT

HALIFAX

1883.

LUMBERMEN'S TENTS

The Cheapest and Best in the Market!

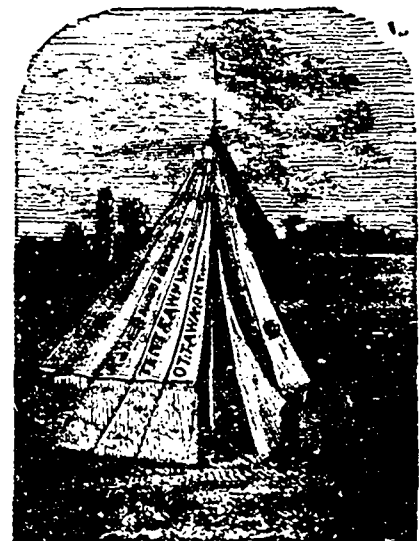
Tents, Flags, Tarpaulins, Waterproof Goods, Camp Furniture, etc., etc.

Estimates for Circus Tents, Range Marquees, Hand-made Sails, etc., furnished on application. Liberal Discount to Large Buyers.

PORTABLE CANVAS BOATS MADE TO ORDER

SEE OUR NOVELTIES

Camp Furniture!



PRICE LIST!

Send for CATALOGUE

At Toronto, Ont., and St. John, N.B., we made the best Display of Tents ever shown in Canada—and we never substitute an article inferior to sample in filling orders.

We control "THE LATOUR PAT." for Camp Furniture, the best on earth. The only Gold Medal ever given for this class of goods was awarded to the Latour Camp Furniture at Toronto in 1882.

SAIL-MAKING.

We have secured the services of the best practical sail-maker in Canada. Orders in this line will receive prompt and satisfactory attention, as is usual with all orders entrusted to us.

Agency for the WILDERMUTH BED SPRING, the best in the Market.

A. G. FORGIE, MANAGER,

International Tent & Awning Co.,

184 SPARKS STREET, OTTAWA.

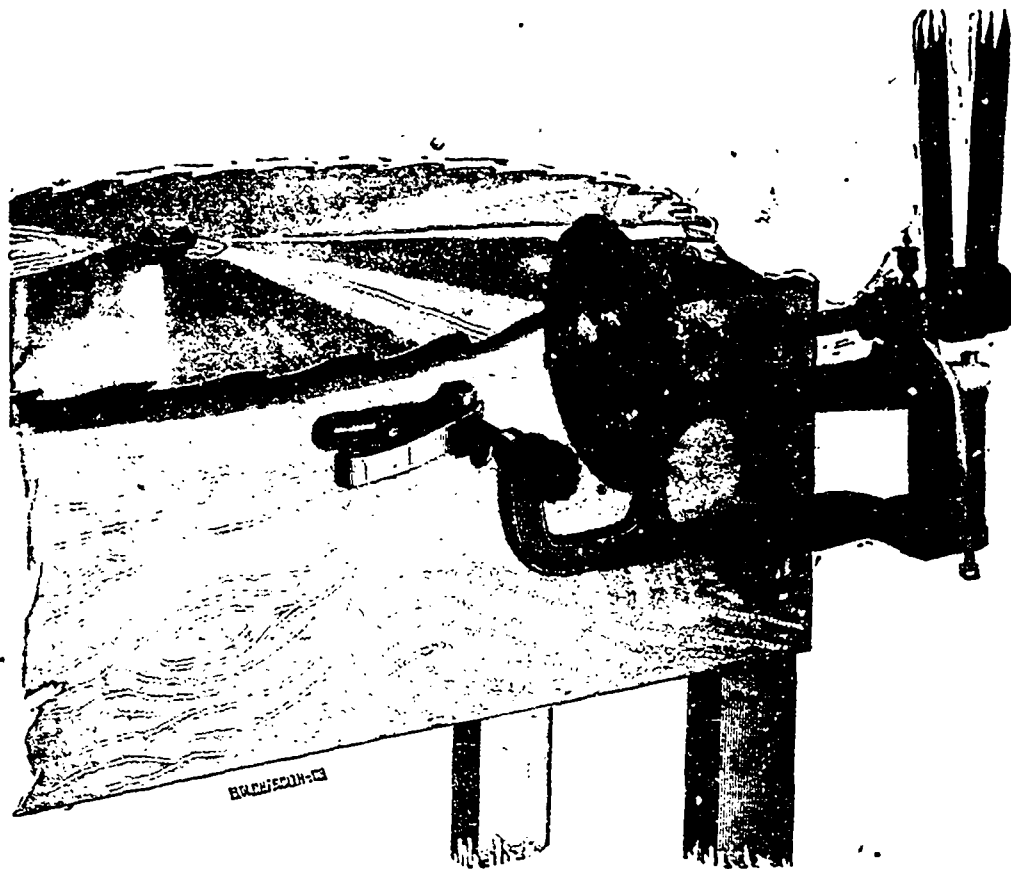
ROGERS' PATENT SAW GUMMER and SHARPENER

The Handiest Machine for these purposes ever Invented.

Don't Heat!

Cheap!

Very Simple!



Accurate!

Works Fast!

Complete!

Lumbering Season, 1884

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

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

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

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

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

ROBT. R. WEIR, Orillia, writes:—
"It works like a charm, and is very accurate in its work."
CRONE & PATTON, Hoc Roc Mills, Gravenhurst, says:—
"The Rogers' Saw Gummer purchased from you gives good satisfaction, * * it cannot be beat."

D. DAVIDSON, Pentanguishono, writes:—
"We are well pleased with the Gummer."
W. W. BELDING, Wyovale, writes:—
"I have the Gummer running and it is giving good satisfaction."

ADDRESS ALL ORDERS TO THE

Hart Emery Wheel Company, Limited - Hamilton, Ont.

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

The Improved CLIMAX Sash Lock

MANUFACTURED BY MILLER BROS., GUELPH.

Holds the Sash in any position so that it cannot be moved either up or down, can be put on by anyone, only requiring two screws.

AGENTS FOR CANADA:—
 RAE & WATSON, 22 Church Street, TORONTO, Ont.

F. E. DIXON & CO.

MANUFACTURERS OF

STAR RIVET



LEATHER BELTING
 70 King Street East, Toronto.

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

MONTREAL AXE WORKS

T. J. MOCOCK & Co.

St. Gabriel Locks, - Montreal,

—MANUFACTURERS OF—

AXES and EDGE TOOLS

OF EVERY DESCRIPTION.

Old and Reliable, the Best Axes made in Canada.

HUGH GIBSON,

MANUFACTURER OF

KNIGHT'S PATENT "EXCELSIOR"

SAW MILL DOGS

The Sawyer's Favorite

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

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

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

Manufactured by HUGH GIBSON, CHATHAM. EXCELSIOR DOG.



EAGLE FOUNDRY!

GEORGE BRUSH

14 to 34 King and Queen Sts, MONTREAL,

MAKER OF

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

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

AND AGENT FOR

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

EXTRA HEAVY AMERICAN

Oak Tanned Leather Belting.

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

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

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

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

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO.

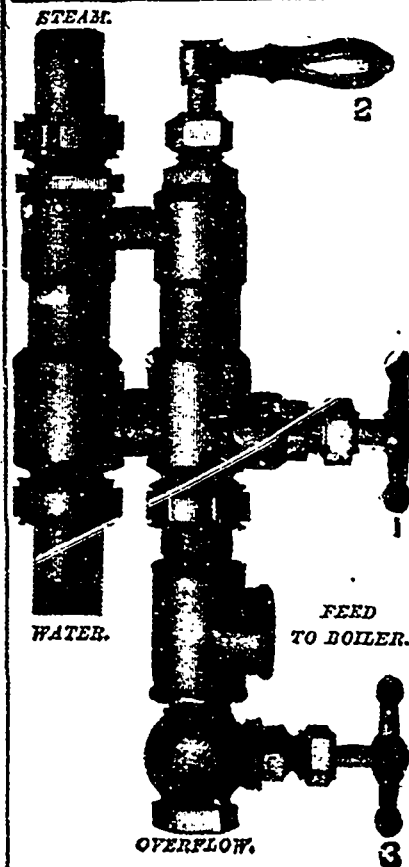
T. McILROY JR.

WAREHOUSE:—10 and 12 King Street East,

P.O. BOX 556.

L6m

TORONTO.



THE

Hancock Inspirator

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

THE INJECTOR PERFECTED!

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

Over 50,000 Now in Use.

MANUFACTURED BY THE

Hancock Inspirator Co'y

5 CUSTOM HOUSE SQUARE,

MONTREAL, P.Q., CANADA.

Manufacturers of Inspirators, Ejectors, and General Jet Apparatus.

12L20

The William Hamilton Manufacturing Co'y

MANUFACTURERS OF (LIMITED)

SAW MILL & GENERAL MACHINERY

We make a Specialty of Heavy Saw Mill Machinery.

OUR SAW MILL ENGINES are made Strong, Neat, and Durable, knowing well the ever varying strain they are subjected to in driving a Saw Mill.

We wish to call the attention of our Canadian Lumbermen to our First Class HEAVY SAW MILL MACHINERY for CIRCULAR MILLS and CIRCULAR and GANG MILLS of the most improved designs. We are prepared to submit Plans and Specifications, together with any information that our many years of close application to the Saw Mill Business may have suggested to us, also when required to enter into contract for building and supplying the machinery complete, superintending the starting of the same, and handing over the mill to its owner in first-class running order.

OUR HEAVY SINGLE CIRCULAR SAW RIG, Complete, with or without Top Saw, Rack, Rope or our Improved Steam Feed (Patent applied for), is acknowledged by our leading lumbermen to be a first-class article, got up in the best manner possible, and furnished with Headblocks and Dogs to suit our Customers. We also manufacture a lighter Circular Rig for the smaller class of mills (or where there are two circulars required in the same mill), which is exceedingly smart in its movements, and supplies a long felt want in this direction.

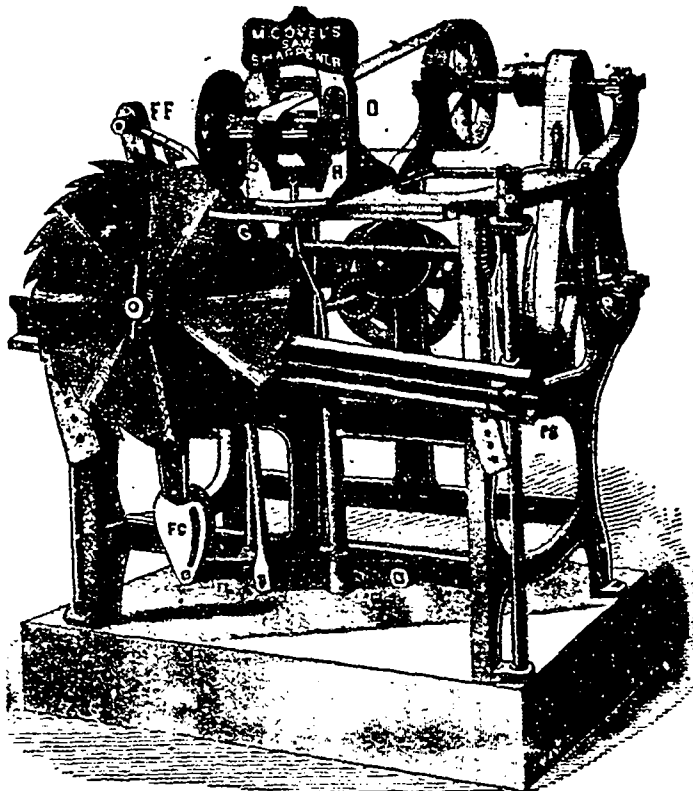
OUR PATENT TWIN CIRCULAR RIG with Rack, Rope, or our Improved Steam Feed (Patent applied for), is now the favourite Machine for Slabbing Logs, and is acknowledged by all to be the smartest and the best Machine for this purpose in the market.

OUR IRON FRAME OSCILLATING, SLABBING and STOCK GANGS are fitted up with the most improved Machinery, which for Strength, Class of Workmanship and Design cannot be excelled.

OUR DOUBLE EDGER is the best, most useful and most substantial article of the kind in the Market, which is proven by the number we are called upon to supply; we put on any desirable number of saws on the Spindle; they can be arranged to suit the work especially required to be done. We also furnish them with one or two Guages for sawing Scantling or re-sawing Lumber.

Our PATTERN WROUGHT IRON ENDLESS LOG CHAIN for drawing up logs, keeping a constant supply of logs in the mill, and requires, from its construction, very little power to drive it. We have furnished the majority of the best Mills in Canada with this Chain, and many Mills in the United States are using it. We also supply when required Trout's Log Counter (Patent applied for), to count the logs as they are drawn into the Mill. By this simple device the proprietor is able at a glance to know at any time during the day how many pieces have been cut, thus enabling him to judge if the Mill is up to her work.

Our most improved LOG CANTERS for Turning Logs on Carriage. We also furnish them with Weirs' Patent Incline Attachment for rolling logs from Skids on to Carriage.



We still continue to manufacture
THE

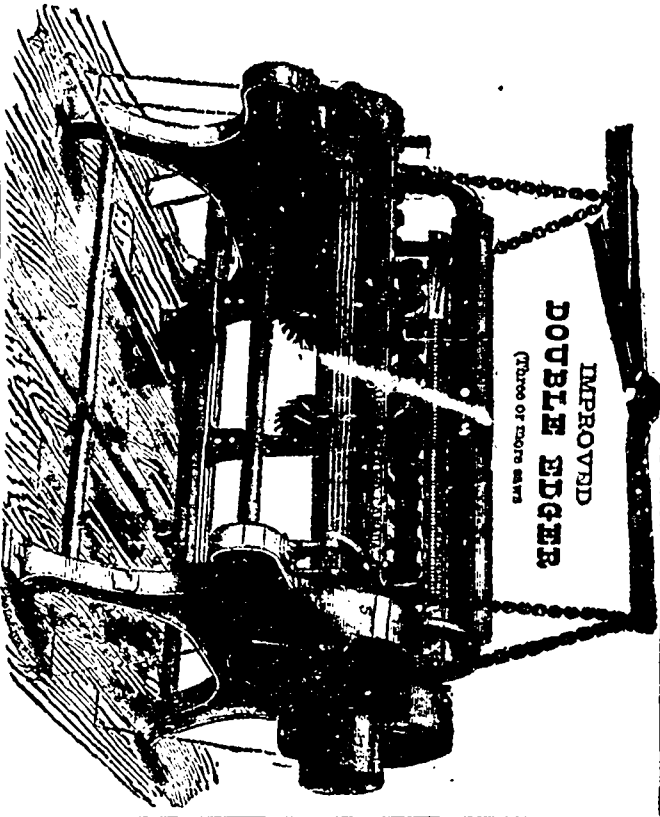
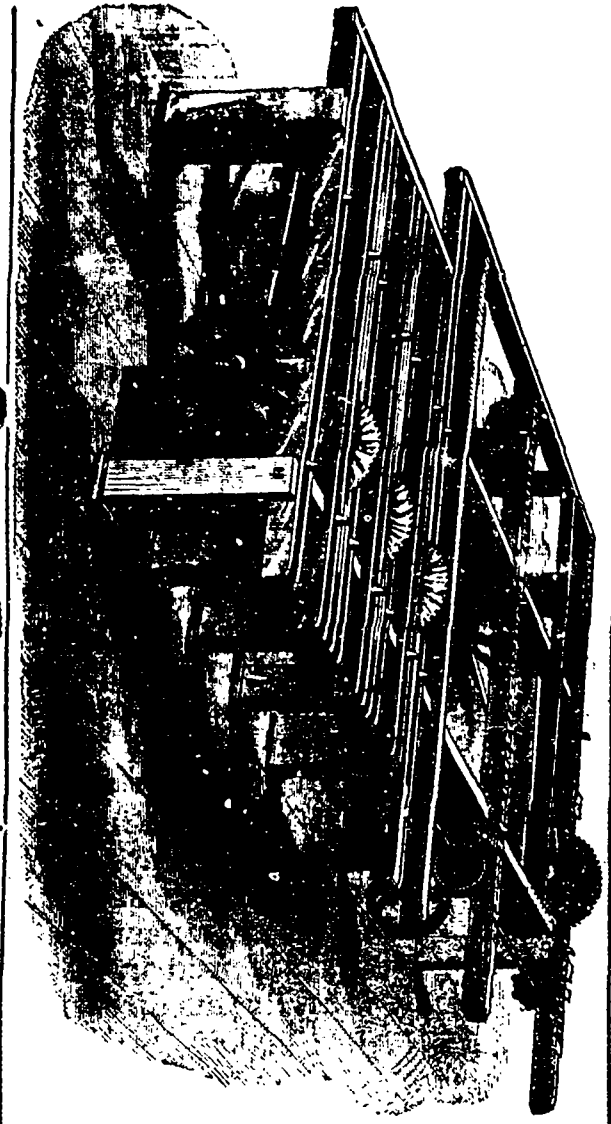
Scovell Saw Sharpener

with all the latest improvements, which Machine has only to be known to be appreciated.

We also manufacture LATH MACHINES, LATH BOLT-ERS, LUMBER TRIMMERS, LUMBER MARKERS, SLASH TABLES, TIMBER CANTERS, LOG DECK CANTERS, SHINGLE MACHINES, KNOT SAWS, DRAG SAWS, SHINGLE JOINTERS, BOLT-ERS, WATER WHEELS, and a variety of the best kinds of Wrought Iron Refuse and Sawdust Carrier Chain (that can be relied on to do their work). Everything required in a first-class Saw Mill.

PETERBOROUGH, ONTARIO.

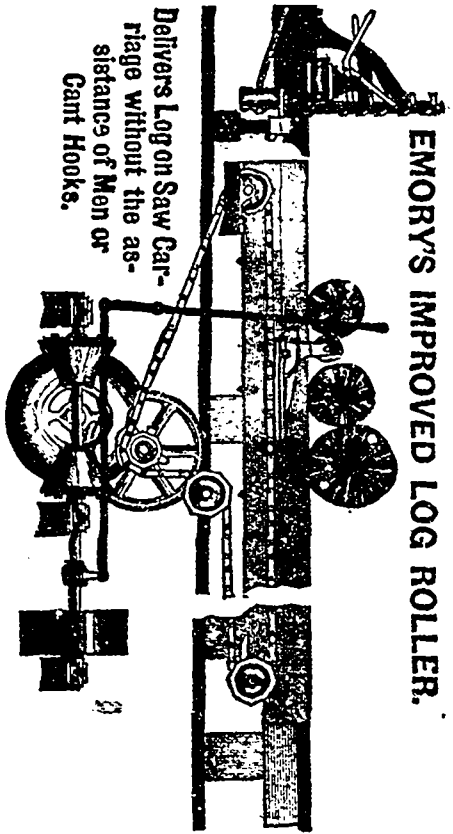
Ewart's Detachable Link Belting and Special Labor Saving Machines for Saw Mills.



LIGHT and HEAVY SAWDUST CARRIERS.

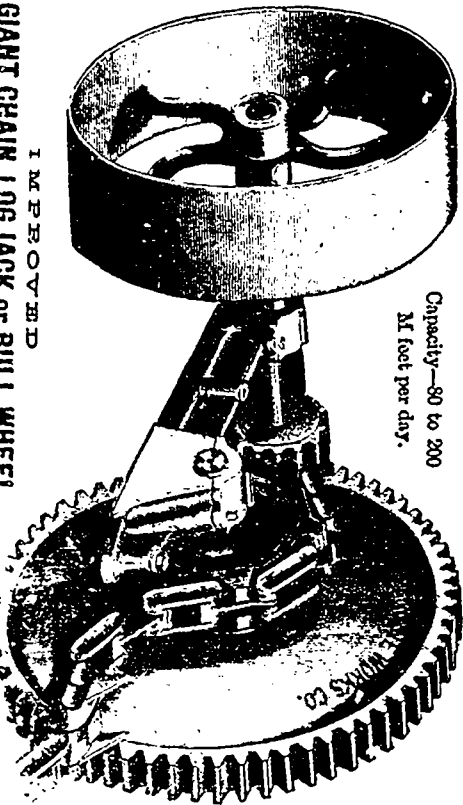
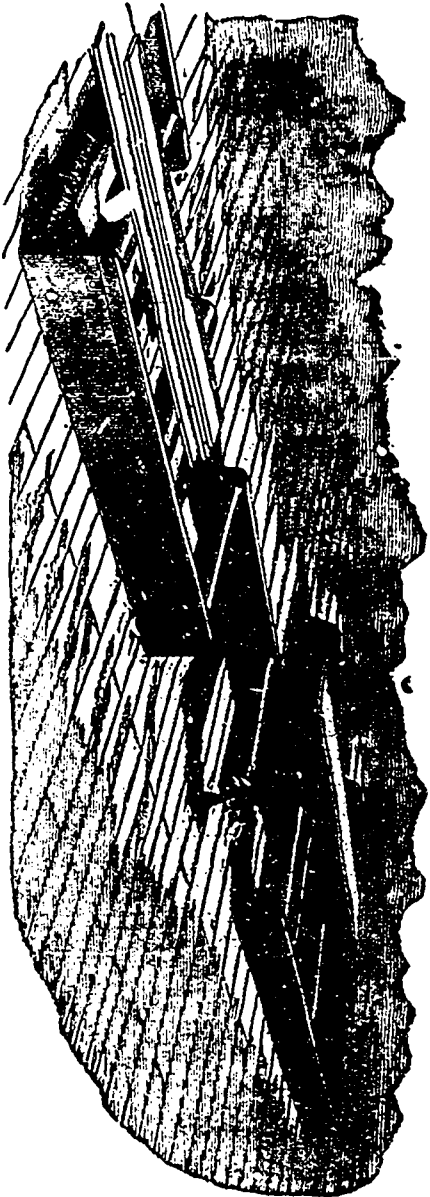


High Glass Heavy and Portable Saw Mill Machinery our Specialty.



Delivers Log on Saw Carriage without the assistance of Men or Cant Hooks.

LUMBER TRANSFERS & LIVE ROLLS
Using Ewart's Link Belting.



Capacity—80 to 200 M feet per day.

IMPROVED GIANT CHAIN LOG JACK OR BULL WHEEL

WATEROUS ENGINE WORKS Co., Brantford, Canada.

Replace Manual Labor by Automatic Handlers, made possible by Ewart's Patent Detachable Link Belting.

Full Illustrated Catalogue sent on Application.

TRY THEM. G.A.N.D.Y. BELTING FOR MAIN DRIVERS.

8-ply Stronger than Double Leather.

8-ply 80 per cent. stronger.	Per Ft.
14in. 8-ply Gandy.....	\$1.44
14in. 8-ply ".....	1.75
Double Leather.....	2.25
18in. 8-ply Gandy.....	1.50
18in. 8-ply ".....	2.25
Double Leather.....	4.12
22in. 8-ply Gandy.....	2.50
22in. 8-ply ".....	2.75
22in. 10-ply ".....	3.00
22in. Double leather.....	5.50

Runs perfectly true without stretching, not affected by steam or dampness.

Get Send for Circulars.

GIANT LOG CHAIN
\$1.40 to \$1.50 per Foot.

Sawdust & Refuse Carrier Chain
16c. to 90c. per foot.

CHAINS of all SIZES
STRENGTH & PRICES.

FURNACE FEEDERS
Tie and Telegraph Pole Loaders
Etc., Etc.

Send for Circulars. Mention this paper.