

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

Covers damaged/  
Couverture endommagée

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

Cover title missing/  
Le titre de couverture manque

Coloured maps/  
Cartes géographiques en couleur

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

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

Bound with other material/  
Relié avec d'autres documents

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

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

Additional comments:  
Commentaires supplémentaires:

Coloured pages/  
Pages de couleur

Pages damaged/  
Pages endommagées

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

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

Pages detached/  
Pages détachées

Showthrough/  
Transparence

Quality of print varies/  
Qualité inégale de l'impression

Continuous pagination/  
Pagination continue

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

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

Title page of issue/  
Page de titre de la livraison

Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

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"/>

# THE CANADA LUMBERMAN

WOODWORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

VOLUME XVII. }  
NUMBER 12. }

TORONTO, ONT., DECEMBER, 1896

TERMS, \$1.00 PER YEAR  
Single Copies, 10 Cents.



## MAGNOLIA METAL

In Use by Eight Leading Governments.

BEST ANTI-FRICTION METAL

For All Machinery Bearings

## MAGNOLIA METAL CO.

OWNERS AND SOLE MANUFACTURERS

74 Gortland Street, NEW YORK

Chicago Office:

TRADERS BUILDING.

Montreal Office:

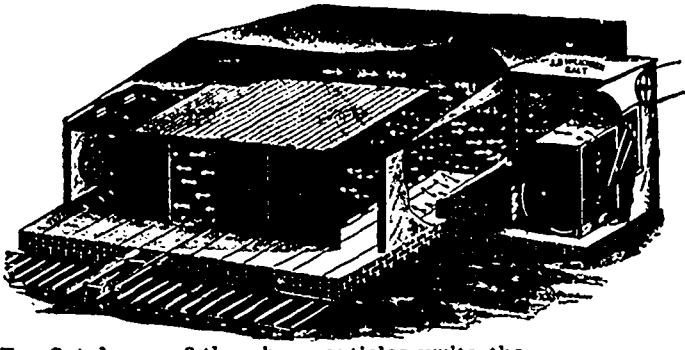
Messrs. Caverhill, Learmont & Co., Agents.

London Office: No. 49 QUEEN VICTORIA STREET, LONDON, E. C.

## DRY KILNS AND HEATERS

HOT BLAST SYSTEM for large buildings.

VENTILATING  
FANS,  
SHAVING  
FAN  
BLOWERS,  
ETC.



For Catalogue of the above articles write the

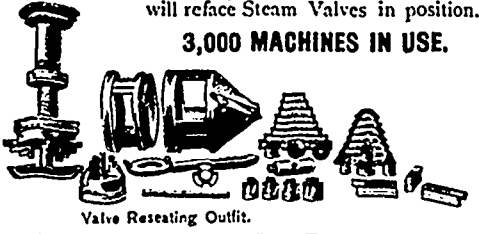
McEachren Heating & Ventilating Co. - Galt, Ont.

## "MORSE" VALVE MACHINE

"The Morse"

is the only machine in the market that will reface Steam Valves in position.

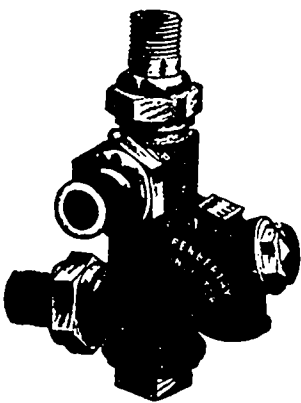
3,000 MACHINES IN USE.



Valve Reseating Outfit.

## DARLING BROTHERS

SOLE MANUFACTURERS  
"Reliance Works," - MONTREAL.



Why it is the  
World Renowned



Automatic  
INJECTOR

FIRST—STEADY IMPROVEMENT. Each year since 1887, when the "Penberthy" was first placed on the market, has seen some positive advance in its working qualities until now it stands unrivalled with an . . .

Efficiency of 99½ per cent. Shown by Actual Test.

YOU SHOULD HAVE ONE

## PENBERTHY INJECTOR CO.

Branch Factory:  
WINDSOR, ONT.

226 Abbott St., DETROIT, MICH.

## John Bertram & Sons

CANADA TOOL WORKS

DUNDAS - ONTARIO.

Any one desiring a good Second-Hand Tool, should write us for prices. Have several we will dispose of at a bargain.

CORRESPONDENCE SOLICITED.

C. C. CLEVELAND

G. F. CLEVELAND

## J. L. Goodhue & Co.

MANUFACTURERS OF

LEATHER BELTING :::  
AND LACE LEATHER

Danville, Que.



## All Grades of CROSS-CUT SAWS

at Lowest Prices

SOLE MANUFACTURERS OF . . .

## The "Burns" Patent Handle



PATENTED JUNE 26th, 1893

Positively the Strongest Handle Made.

Ask your Hardware Merchant for our Goods. -- Special Quotations on Large Quantities.

# No. 1 IRON FRAME OSCILLATING GANG SAW SASHES OF ALL WIDTHS

We manufacture a  
Complete Line of



## HIGH GRADE SAW-MILL MACHINERY

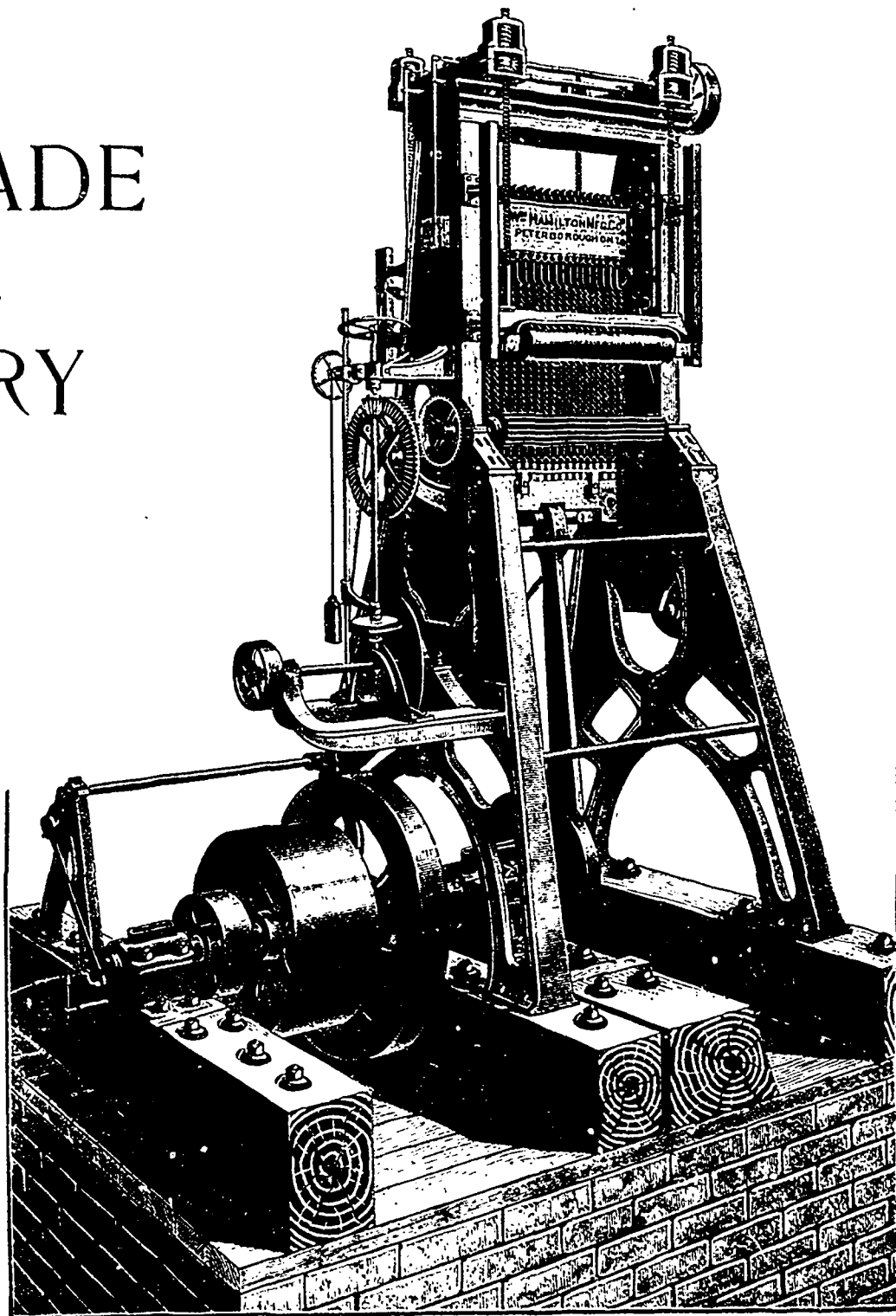
Prescott Band Mills  
Perkins Shingle Mill Machinery  
Covel's Tools for the care of  
Saws  
Engines, Boilers, Etc.

CATALOGUES ON APPLICATION



WE are prepared to furnish plans,  
specifications, and build mills  
complete of any capacity, or to  
remodel old mills.

Write for prices, informing us what  
your requirements are.



# The Wm. Hamilton Mfg. Co., Ltd.

Branch Office: VANCOUVER, B. C.

PETERBOROUGH, ONT.

# THE CANADA LUMBERMAN

VOLUME XVII. }  
NUMBER 12.

TORONTO, ONT., DECEMBER, 1896

TERMS, \$3.00 PER YEAR  
Single Copies, 10 CENTS.

## THE TAYLOR MILL COMPANY.

The mill of the above company, which is here-with illustrated, is situated on Government street, in the city of Victoria, B. C., its location being such that it commands a large share of the building trade of the city. The output is largely comprised of finishing stock for offices, stores, bank buildings, etc.

The saw mill consists of a two-story building, fully equipped with the most modern machinery. The planing mill turns out all descriptions of lumber and wood-work generally used. The logs are taken from the harbour on one side of the mill, and delivered to the purchasers from Government street on the other side.

The firm also manufacture sashes, doors and blinds, and carry continually a large stock of glass. The logs are generally obtained by purchase, thereby saving their timber limits for future requirements. From forty to sixty hands are generally employed in and about this establishment, and it can be safely called one of the leading industrial features of the city of Victoria.

## THE VALUE OF FORESTS.

An address was recently delivered at Baie des Peres, Temiscamingue, Quebec, by the Hon. G. A. Nantel, Commissioner of Crown Lands for that province, dealing with the relations between settlers and lumbermen. After referring to the natural resources of the country the speaker concluded as follows:—

The proprietor of forest concessions should not be surprised or interfered with in the enjoyment of his rights. He should be given full time to withdraw from the domain he leases from the State, and for which he gives it the greater portion of the revenue he takes from it. I should here say also what I hear everywhere, that the colonist should not pose as the enemy of the explorer of the forest. I wish to preach here, as I shall preach everywhere, the necessity of thorough harmony with a friendly understanding between the colonist and the forest explorers. I have not always been able to regard the conduct of these explorers as being faultless. I have had occasion to denounce their squandering and the extravagances committed by them, at the expense of the Department of Crown Lands, and if the colonists have caused great destruction of forest by fires for clearing purposes, it must be taken in good part and remembered that at one time the owners of limits pillaged and ruined the property of the department in a manner which

cannot be too severely condemned. But times are changed. The owners of limits have come to understand that our forest resources, which made their millions, are not inexhaustible, that they are growing deplorably less from year to year, and that they will disappear altogether unless they introduce into their operations a system characterized by method, reserve and moderation, one that will resemble the system of cutting which prevails in France, Austria, Germany, and in all other well regulated countries. If the lumbermen fail to plant young shoots, if they take no measure to renew the wood on the land, they at least take care of the young growth that is springing up, which they will be able to cut in twenty years, thus following a system of rotation which tends more and more to become, I hope, the base of all their operations. The



THE TAYLOR MILL, VICTORIA, B. C.

reports in my possession show that enormous progress has been made in this particular. I congratulate them upon the fact. The department over which I preside cannot too strongly urge them to continue on in this excellent way. Besides, I may say, en passant, that I intend to devote myself to the reorganization of our Department of Forests that this may be promoted, and to assist with all our power every effort that may be put forth by the owners of limits to keep the annual return of woods and forests at least up to the present standard. Is it not a distressing spectacle to see spaces, which I may call infinite, devastated by fire?—huge tracks of public property which were formerly covered by immense forests, composed of every species of timber, representing millions, lost to commerce and to private enterprise as well as to the treasury of the province? These burnt districts are covered with a second growth of inferior wood, amongst which, however, are met many young pines. Could not superb pine trees be thus restored without serious cost to either the public treasury or to the owners of limits? This

is another of those subjects which I can only touch upon to-day, but which I shall study thoroughly, consulting experts who will give care and attention to a subject so vitally important to our forest resources. I appear to have wandered from my subject; it is no harm, however, for it is important to convince you of the imperative necessity of preserving the forest and keeping the field clear for the lumber manufacturer. For it is with them the colonist disposes of his farm products and it will continue to be so for a long time yet, if not forever. You are here, 300 miles from the Ottawa market, and yet you get better prices for your produce than the farmers who live alongside of the Capital; better even than the farmers around Montreal. To what do you owe it? To the cultivator of the forest. You sell your hay at from \$20 to \$30 per ton, which is twice and three times as much as can be got for it in the older parishes; you are paid from sixty to seventy cents per bushel for your oats, a third more than we usually pay in Ottawa or Montreal, and all that is taken from you at your homes, at your barn doors. Is that not the principal source of your prosperity, and am I not justified in placing it before the fertility of your lands and the facility of clearing them? Do away with the great lumbering industry which is carried on here by the most successful men in

Canada, the great lumber merchants, and I ask you what would you do with your abundant crops? You would be exactly in the same position as the farmers of the west, who, with the finest lands in the world, cannot dispose of their products, and are obliged to let them go at wretched prices. You see, therefore, that the presence of the lumberman is of vital importance to the existence of your colony. You see, too, that your lot depends upon the cultivation of the forest, and that I am right in telling you that the lumber manufacturers, far from being your enemies, are good and indispensable friends. I wish it was understood thus in every corner of the province, but above all in those places where the lumber trade furnishes, in good years and bad years, its half million to the treasury of the province, and where colonization seems capable of unlimited development. The Laurentian chain, extending from Temiscamingue to Lake St. John, should constitute an immense forest reserve, capable of feeding on the one hand the sources of our admirable irrigation system on the North St. Lawrence, and on the other hand of giving, through the means of forest industry to the new colonies founded in this second province of which I spoke just now, as advantageous a market as can be desired, inasmuch as these forests will be carefully guarded and worked.

## LUMBERMEN EXPRESS THEIR VIEWS.

THE CONSENSUS OF OPINION DECIDEDLY HOPEFUL.—RECOVERY LIKELY TO BE GRADUAL.—SOME TIMELY SUGGESTIONS BY MR. J. T. SCHELL.

IN view of the fact that the commercial industries of the United States and Canada are not likely to again be disturbed by a national election for a few years to come, the CANADA LUMBERMAN solicited the opinion of several prominent lumber manufacturers and dealers regarding the prospects for the Canadian lumber trade. The views expressed indicate a decidedly hopeful feeling, and while the recovery is likely to be somewhat gradual, it is believed that the improvement will be maintained for some time to come. Below will be found some of the replies received:

J. W. MUNRO, Pembroke, Ont.:—"I think the outlook for local trade looks bright, as I have heard of several of our mills in this vicinity having sold all the stock in their yards, and in this town our largest mill is running until 9 o'clock every night to keep up with orders. The result of the Presidential election appears to have given confidence to dealers across the lines. But, however, if I had a million dollars to invest I would put it into white pine, provided I could buy at present rates, as it is bound to advance, and past experience shows that it is certain to rise to a fair price, as there is sure to be a demand for white pine at a paying figure, and if one can hold his pine he will ultimately reap the benefit."

J. E. MURPHY, Hepworth Station, Ont.:—"In my opinion the return of Mr. McKinley in the recent Presidential contest in the United States has already had its effect on lumber interests in this country. Lumber manufacturers are now holding for higher values, and none are disposed to accept the low prices that have been currently offered for several months back. It is early yet to say what will be the effect on the lumber trade in the United States. Inquiry from eastern points are on the increase, but mill men, as a rule, are pretty short of the good stock asked for at this time of the year. English buyers are gradually turning their attention more and more to Canadian points, in search of hardwoods, and this trade will undoubtedly increase in volume from year to year. Formerly this trade has been done through middlemen in New York, Boston, Albany and Buffalo. The local demand for hardwood has been no good to me for the past three years, but local trade in hemlock has been excellent, and my sales have been larger this year than for three years past."

MICKELE, DYMENT & SON, Barrie, Ont.:—"In reference to the outlook for the lumber business, we are looking for an improvement in the business, but do not expect much change before next spring, and then we think it almost impossible for cheap lumber to raise much in price, as there is such large quantities of low grade lumber at the mills in this country. If the present curtailment of cutting in the woods this winter is continued, there is no doubt that next year will see a decided change for the better. The trade at present requires careful handling, and the manufacturer must not manufacture large quantities, and if a reasonable curtailment is continued we may look for a more prosperous and paying business. We attribute the ruinous prices to the over-production."

A large manufacturer in the Ottawa Valley writes:—"In view of the depressed condition of business in the United States for the past three years, there is no doubt that the growing use of lumber was much curtailed, and the demand lessened; and as a consequence a very considerable surplus has accumulated at the various manufacturing centres. With the improvement that is almost certain to follow the results of the general elections in the United States trade will assume a healthier tone, and in due course of time the accumulated surplus of lumber will be worked off and trade will again assume its normal condition. Just how soon this condition will be reached no one can tell—there are so many conditions that may affect the question one way or the other. Our own feeling is simply this, that bottom has been reached, and a turn for the better will soon take place. We expect that

the improvement will be gradual; we neither expect nor hope for any boom and consider steady, healthy trade better for all concerned."

MR. J. T. SCHELL, Alexandria, Ont.:—"I have noticed in the press expressions of confidence for the future outlook for lumber on account of the election of McKinley. Instances of sales by Ottawa lumbermen are noted, also that the holding price for the Western States mills has been advanced; the hopeful views of numerous dealers have been published, that the lumber trade will wear a brighter smile from this time forward. I agree with the hopeful ones. The advance in asking prices of the western men indicates hope also, but even an advance of 50 cents and \$1.00 per thousand does not put them on the basis of two years ago, and for some time to come their profits will be reckoned on the pages of their ledgers marked "hopeful." The Ottawa sales are not out of the ordinary—the prices not above former years—and not in any way connected with the United States elections, as the buyers were British."

"The improvement hoped for in lumber matters will come in time, but I see no cause for large advances in price, or much increased demand from the United States at this season of the year. Owing to the fact that the depression has been severe and long continued, stocks have become depleted; dealers and manufacturers have only filled their immediate and necessary requirements, and to a certain extent some stocking up may be done; but when we consider that the buying of lumber has been going on all the time for the "necessities" of the country, we must look for the "great expansion"—as one writer has it—in the lumber demand to come from those who buy for the rise they expect, or wait until the "expansion" gets here in fact."

"There is a large amount of lumber on the piling grounds of the mills both in the States and Canada to-day—a larger amount than usual—and wisdom would be shown by our millers if the logs taken out in 1896-97 would be very much less than formerly. If to the surplus accumulations of stocks during the last two years we add a heavy stock in 1897, I do not see how the lumbermen can get much benefit from the good times coming, as there will still be too much stock for the demand and prices will remain low. By taking out about one-third or one-half of ordinary year's stocks of logs, and allowing the demand to overtake the production, we could expect to realize fair prices next year, and until the next depression shuts off demand. I shall not cut over one-third as much this winter as last season, and will expect to make the profit for the business on the increase in price of the 1896 stocks, which we have not tried to sell at less than cost, and which we have largely on hand at this writing. I would be pleased to know that the same action would be taken generally, as I think it would mean two to three dollars rise in value, while a large new stock on top of present supplies will mean no profits for another year or so."

MR. JAMES SHARPE, Burks Falls, Ont.:—"The result of the election in the United States is most satisfactory to Canadian lumbermen. The market is firmer, and that tendency set in as soon as the election was determined. There have been a large number of enquiries since then, especially about shingles, and a very good increase in the sales. The trade, I believe, will soon boom, whether a tariff is put on by the United States or not."

## A BANKER'S VIEW.

Mr. George Hague, general manager of the Merchants' Bank of Canada, visited several United States business centres shortly after the Presidential election, and has expressed himself on the situation as follows: "There can be no doubt that the result of the Presidential election will be to inspire confidence in all business circles, and there will be a renewal of confidence and activity in manufacturing enterprises, especially those which have been dull for some time past. In fact, I noticed before I returned home that a large number of establishments in several of the states which had been running half time were soon going full time, while others which had been closed down altogether have resumed operations. I think that one probable effect upon Canada will be the better demand for that which has been manufactured for the American market and which can only be sent there. The increased activity in manufacturing will give rise to a greater demand for lumber and will enable Canadian stocks to be got forward at a profit. The lumber market of Michigan

cannot fail to be benefitted, and as many of them seek their supply of logs in Canada a renewal may be looked for in that direction. It was understood some time ago that few logs would be manufactured in Canada for Michigan firms, but if such a demand springs up, as indicated, it is quite likely that operations in the woods may proceed almost on the usual scale. This, of course, will employ men in Canadian forests and the sending in of supplies will stimulate Canadian business. With regard to tariff legislation I did not hear much, but I fancy that owing to the large number of those who voted for Mr. McKinley being Democrats and free traders, it will be almost impossible to pass a tariff bill through Congress imposing higher duties than those at present prevailing."

## CORRESPONDENCE

Letters are invited from our readers on matters of practical and timely interest to the lumber trades. To secure insertion all communications must be accompanied with name and address of writer, not necessarily for publication. The publisher will not hold himself responsible for opinions of correspondents.

## A WORD FROM CHILI.

SANTIAGO DE CHILI, Oct. 12th, 1896.

DEAR SIR,—A copy of the CANADA LUMBERMAN is to hand, which I have found extremely interesting and desirable reading. I have been fortunate enough to promote considerable trade between Canada and Chili, and were it not for the fact that we are now passing through a severe financial crisis much more trade would result. Canadian goods in general compete advantageously here, in workmanship and price, with those of other countries, notwithstanding inconvenient and expensive shipping route. Nearly all Canadian goods are shipped from New York, and most always figure in Chilean commercial statistics as importations from United States. This fact in itself is detrimental to Canadian trade, and it should be the aim of Canadian ship owners and exporters to establish a line of vessels between Montreal and Pacific ports.

In normal times there is always a fairly good demand for fine lumber, such as walnut, oak, ash, hickory, clear white pine and rived oak staves. There is also a market for most all kinds of machinery for industrial and agricultural purposes. Steam engines, electrical apparatus generally, carriages and wind mills also sell fairly well. At present trade is altogether stagnated, owing to the recent Presidential election and also from uneasiness felt regarding stability of money laws which came into force last year.

Yours truly,

LEWIS E. THOMPSON,  
Canadian Commercial Agent.

## IT IS APPRECIATED.

Joseph S. Wallis, Port Carling, Ont., writes: "Your November issue is superb."

Mr. J. E. Murphy, Hepworth Station, Ont.: I like THE LUMBERMAN; it is pitily and pointed in all its original matters.

Messrs. Williamson & Crombie, Kingsbury, Que., write: "Your special number for November just here. It is just splendid."

Mr. T. A. Thompson, Iroquois, Ont., writes: "I must say that I am very much pleased with THE LUMBERMAN. I could not well do without it."

Messrs. J. T. Lillierap & Co., Lakefield, Ont., write: "We are much pleased with THE LUMBERMAN and notice a decided improvement during the year."

Mr. Geo. Cormack, Whitby, Ont., writes: "Your special number of the CANADA LUMBERMAN came duly to hand. I might say it does justice to the trade, and is worthy of the highest praise, and I trust that your circulation will ever be increasing."

Hickory promises to play an important part in the manufacture of bicycles in the way of handle-bars of 1897.

As indicating the wide range of the export lumber trade of New York, for the week ending October 27th shipments were made to the following points: Antwerp, Brazil, Argentine Republic, British West Indies, Bristol, British Guiana, Cuba, Danish West Indies, Dutch West Indies, Glasgow, Havre, Hull, Hayti, Liverpool, London, Port Rico, Santo Domingo, Southampton, Venezuela, Dunedin and Mexico.



**J. R. BOOTH'S LOGGING RAILWAY.**

To our readers the name of Mr. J. R. Booth, the great millionaire lumberman and railroad magnate, is quite familiar, but the system he uses in transporting logs from his timber limits to Ottawa will perhaps present some interesting and novel features.

There is no waterway between Lake Nipissing and the Ottawa river, or its tributaries, but back of Lake Nipissing is a small lake called Lake Nosbonsing, with an outlet by two small rivers and a lake into the Mattawa river, which empties into the Ottawa. The desired object, therefore, was to convey the logs from Lake Nipissing overland to Lake Nosbonsing, at the greatest speed and lowest possible cost, and twelve years ago Mr. Booth built a railroad connecting the two lakes for this purpose. The terminus at Lake Nipissing is Wisawasa, where the creek of the same name empties into the lake, but the bank is very steep, being 65 feet above the level of the lake. This creek was harnessed to draw the logs up to the top and load them onto the cars. A building was built into which the logs were carried to be loaded. The building is 220 feet long by 45 feet wide. The rear end is on a level with the ground, and the front end, supported by heavy framework, is 65 feet above the level of the lake. A jack ladder, 150 feet long, conveys the logs to the building by an endless chain, which is operated by a rope drive 500 feet long. A raised platform extends the full length of the building, and in the platform, or table, is an endless chain operated by another rope drive, 1,150 feet long. These rope drives derive their power from a water wheel 44 inches in diameter, under a heavy head of water passing down a flume 6 x 8 feet. The water wheel, by means of a friction clutch, drives a fire pump when required, by which the railroad engine is supplied with water. An annex, 30 x 50 feet, covers the wheel and pump. The shafting is 3 3/8 inches in diameter, and on this shaft are two grooved wheels around which the ropes rotate.

Alongside of the platform are shunted four flat cars, with two birch stakes in each, against which the logs run from the table. Each car is 18 feet long, and is built of red oak lumber on tamarack bunks. As the jack ladder chain dumps eight logs per minute on the platform, the chain carries them along and they are dumped or slid onto the skids and then onto the cars. Seventeen men are required to do the loading.

When a car is loaded a fork chain attached at one side binds the load on, being tightened by a ratchet wheel and dog. In the handling of the logs a great deal of bark is knocked off, which drops through the floor into a chute, and is carried down into the lake.

The road is five miles in length, with two miles of sidings and switches; one switch extending to the Grand Trunk railway. Twenty-two cars are taken each trip. Upon the return of the twenty-two empty cars, they are left on a siding. The engine then pulls out eleven cars already loaded to another siding, and eleven of the empty cars are run into the building, where they are quickly loaded. The engine then picks these up and with the other eleven the load is completed. At the terminus the track slightly declines towards the lake, the chains are let go and the logs glide off into the water. Two men are employed here to break up jams. Here the screw tug "Nosbonsing" tows the logs down to the Mattawa river, from whence they float down to Ottawa.

The rolling stock consists of 35 flat cars, which carry an average load of 19 logs. Thirty-three of these cars are in constant use, two being kept in reserve. They are 18 feet long by 10 feet wide, and are mounted on standard wheels and axles. The locomotive engine has been in use twelve years, and was built by the Rhode Island Locomotive Works. A competent engineer and fireman are in charge, and four brakemen are employed on the train. The road is level and everything runs smoothly. Four section men keep the road in good repair. The round trip has been made in one hour. It requires but two and a half minutes to dump the 22 car loads into Lake Nosbonsing. Ten trips a day are made, thus carrying over 4,000 logs.

The large steamer "Booth," of 100 tons, gathers up the logs around the shores, and a smaller tug does the booming, etc. There are two wharves at Wisawasa, and two men are constantly employed cutting up the flood wood which collects in the booms, for fuel for the boats. Six men feed the jack ladder chain.

Mr. Thomas Darling, the manager at Wisawasa, is a

trustworthy man, and has been in Mr. Booth's employ for many years.

**BRITISH COLUMBIA MILLS.**

BELOW will be found descriptions of several saw-mill and wood-working establishments in British Columbia which were unavoidably crowded out of our November issue:—

**BURRARD INLET RED CEDAR LUMBER COMPANY.**

The mills of the Burrard Inlet Red Cedar Lumber Company are situated at Port Moody, B. C., near the head of Burrard Inlet and on the main line of the Canadian Pacific railway. The trade of the company is principally confined to the manufacture of high grade red cedar and spruce lumber, and all grades of cedar shingles. The capacity of the mill is about 50 thousand feet of lumber and 150 thousand shingles per day of ten hours.

The plant is operated by a 300 h. p. double engine, and the machinery throughout is of the latest improved designs, eminently suitable for the economical manufacturing of bevel and drop siding, ceiling, mouldings and finishing lumber of every description. In the shingle department the latest improved machines are placed in position to use all interior timber from the saw mill. Rough cants after leaving the double circulars are cut into shingle blocks by an automatic cut-off machine, thus relieving the yard from an accumulation of inferior and unsaleable lumber.

The dry-kilns have a capacity of 150 thousand shingles and 15 thousand feet of lumber per day, and are operated by a 9 ft. fan driven by a 14 h. p. horizontal engine. The mill, kilns and sheds are protected from fire by a water system owned by the company, having a pressure of 40 lbs. per square inch, with hydrants conveniently placed in the yard and mill, and Ball nozzle sprinklers on exposed roofs.

The timber limits, within sight of the mill, on the opposite side of the inlet, are admitted to be the best in the province, and it is estimated by competent judges that the supply of timber is ample for thirty years. There is a large quantity of thoroughly air-dried lumber on hand at present, and with the stock now being cut the orders accepted will be filled promptly. The company is now being re-organized, and when this is accomplished it is proposed to add a first-class sash and door plant to the present equipment.

**VANCOUVER SASH & DOOR COMPANY, VANCOUVER.**

Though this business was only established two years ago, it has met with such success as to cause several additions to be made to the plant. As the buildings now stand, they cover a large area, the main factory being 120 x 60 feet and two stories high. The office and warehouse is 80 x 40 feet, and is also two stories high.

A perfectly appointed mill throughout is fitted with the latest improved wood-working machinery and tools, and the equipment of this establishment is not surpassed by any in the province. A force of thirty skilled hands and twenty laborers are constantly employed. From one-and-a-half to one-and-three-quarter million feet of lumber are used annually. The range of productions embraces the manufacture of sashes, doors, blinds, mouldings, newels, brackets, scroll and band-sawing, and interior finishings of all descriptions, as well as planing surfacing,

ripping, lathing, etc. The best seasoned lumber only is used.

The promptitude with which this company fills orders can be accounted for by the superiority of its plant. Though the business of the firm in this province is extensive, its manufactures of doors, etc., are largely shipped to Australia.

The president of the company is Mr. J. B. McLaren, of the McLaren-Ross Mills, New Westminster. Mr. H. DePencier, manager of the McLaren-Ross mills, is secretary and treasurer, while Mr. R. D. Featherstone is manager.

**VICTORIA PLANING MILLS, VICTORIA.**

Messrs. Muirhead & Mann are the proprietors of this, the largest and oldest industrial establishment in Victoria, located on Constance street. This enterprise was inaugurated in 1870, and has enjoyed a steady growth from the outset. The plant covers a large area, and is of the most modern and perfect description. The planing mill is a substantial three-story building of 125 x 125 feet in dimensions. The first floor contains all the necessary machinery for the finishing of lumber, such as sashes, doors, staves, mouldings, mantels and other products of lumber. The second floor is reserved for bench work. The plant is operated by two powerful engines, so arranged that, in case of accident to one, the other can be utilized, thus preventing the possibility of delay.

The firm own three large store-houses in which their output is stored, as well as their importations of glass, which commodity the firm imports direct in large quantities from England and Belgium.

On an average, 250,000 feet of lumber is consumed per month. At present forty workmen are employed, but in busy times one hundred and over have frequently been at work. A specialty is made of ship-joiners' work, the firm having supplied materials for many of the largest vessels frequenting these waters. Anyone visiting the Court House at Nanaimo, the new Parliament buildings at Victoria, and other public buildings and residences whose interiors have been finished by this firm, will easily see that their output is of a superior character.

**GEORGE CASSADY & CO., LIMITED, VANCOUVER.**

This company are proprietors of two establishments, which were amalgamated on the 1st of January, 1895, under the above name. They were originally known as George Cassady & Co., founded eight years ago, and Leamy & Kyle, founded nine years ago. George Cassady is secretary and manager. They are manufacturers of rough and dressed lumber, doors, sashes, mouldings, shingles, laths, turning work, etc.

The property is situated on False Creek. At the foot of Cambie street are the door and sash factory, finishing shops, sheds and offices; while on the south side of False Creek is where the saw mill is located. The machinery in all of the above is of the most modern description. While enjoying a large local trade, the firm also make considerable shipments into the interior and as far east as Ontario. The quality of their shingles is well known and in this department their export trade is very large. The machinery is mostly furnished by the Goldie & McCulloch Co., Ltd., of Galt, Ont. Mr. Cassady came from New Brunswick eight years ago.

### LUMBER AND LOG MEASUREMENT AT HOME AND ABROAD.

As is well known, Americans and Canadians sell lumber, logs and timber by the thousand feet superficial of one inch thickness. This is the universal rule in the United States and Canada, and is the simplest, easiest and best ever devised. By it anyone with the rudiments of a free school education can ascertain the number of feet in any piece of lumber or timber and compute its value in decimal money. In England the system is exceedingly complicated, and many lumber exporters, new to the business, get the idea that they are swindled in the return statements for their shipments, simply because they do not understand the methods of measurement and the nomenclature of the English trade.

We will try to make some of the principal points plain. In England lumber is classed as boards, battens, deals and planks, and is sold by the wholesale by the "standard" known as the "St. Petersburg standard." It contains 165 cubic feet. A standard deal is a piece six feet long, eleven inches wide and three inches thick, and contains  $16\frac{1}{2}$  feet board measure; 160 standard deals make a standard. If the deals are 1x12 inches by six feet, 330 make a standard. If 1x11 inches, 410 are required. The latter size contains 2,160 feet board measure, while the first two require only 1,980 feet to the standard. In Ireland a different standard prevails. It calls for 120 deals 3x9 inches by 12 feet long, or 3,240 feet. The retail dealers generally sell boards, battens, deals and planks by the square or superficial foot, without regard to thickness. Here we sell by same measurement, except that every piece is counted by the inch in thickness. For instance, a panel  $\frac{3}{8}$ x10 inches by 12 feet counts with us just the same as though it was an inch thick, and the price is made as nearly as can be to cover the amount of timber in each thickness of board less than one inch. Thicknesses above one inch, whether in whole inches or fractions thereof, we add to the contents of the piece. Thus a board 3x10 inches by 12 feet contains just three times as much board measure as one of the same width and length one inch or less in thickness. It of course contains six times as much wood as the  $\frac{3}{8}$ x10 inches 12 feet piece given in the example above.

To reduce a mixed lot of lumber to the standard in use in the English market, which is the St. Petersburg standard, is a complicated process, and is figured thus: Suppose we have a lot of twenty pieces 3x7 inches 16 feet, eighty pieces  $\frac{3}{4}$ x5 $\frac{1}{2}$  inches 24 feet, and twenty pieces 1 $\frac{1}{4}$ x9 inches 14 feet to reduce to standards. We multiply the number of pieces in each lot by the width, by the thickness in inches and by the length in feet. The results are in inches, and the lots added together and then divided successively by 11, 18, 30 and 4. These are standard divisors and never change. The result will be in standards, quarters, deals and parts. In the above three lots, if we have made no mistake, there are 0 standards, 2 quarters, 29 deals and 56 parts. To get at the cost of the three lots, say at £7 9s. 6d. per standard, is another complicated mathematical process too lengthy to explain here, but suffice it to say that the cost of the standard being given, the cost of the quarters, deals and parts are ascertained by a peculiar system of aliquot parts similar to that sometimes

used in this country for computing interest for months and days, only the English dealers use a shorter method to get the value of the deals and parts. They double the price of the standard and call it pence, then multiply the pence by the number of deals and parts, and divide the product by 12, the number of pence in a shilling. If the remainder exceed 20 it is divided by the number of shillings in a pound, sterling money.

The foregoing is not intended as a guide to exporters of lumber to Great Britain, and is not in any way designed to discourage shipments. But the writer advises people not familiar with the wants, conditions and measurements of English markets not to ship anything on consignment. Not that the English wood merchants will take advantage of their ignorance of measurement and methods of computing prices, for they have never been accused of that sort of meanness (though it is not unknown in some of our home markets), but the English lumber dealer will insist upon getting just what he orders and will not accept anything else. The promiscuous shipments of timber and lumber on consignments by inexperienced American dealers demoralized prices and broke down a valuable trade of American woods in the English markets some years ago. A few years ago an association of American lumber exporters was formed which, during the past two years, has restored the tone of the English market, advanced prices on all standard forms of wood goods, and given an outlet for our congested markets. Great credit is due to a few of our hardwood and pine exporters, who make regular trips abroad and keep in close touch with the foreign demand, for the present satisfactory state of the export trade, and it is to be hoped that their labors will not again be nullified by those who are uninformed as to the conditions of foreign markets.

Lumber in the form of boards, strips, planks, squares, etc., in a more or less finished form do not constitute a very large proportion of our foreign wood exports. A much larger proportion goes to British markets in the form of timber, logs, sawed or hewn. The English people prefer to cut them into finished forms themselves. Until recent years hewed logs were preferred to those squared by the saw, but this preference is fast disappearing. Hardwood logs are usually hewn slightly on four sides, the bark removed from the corners. In this form they are known as waney timber. Yellow pine is shipped in the same form, and often of sixty feet and upwards in length. The English rule for measuring them differs greatly from ours. In the United States and Canada the almost universal rule of measurement used is that known as the Doyle log rule, as given in Scribner's Log Book, the owners of the copyright of that publication having substituted it for Mr. Scribner's rule many years ago.

The rule for obtaining the board measure contents of any size or length of log by Doyle's system is very simple, and, in the main, correct. It is briefly this: From the mean diameter of the log inside the bark subtract 4. Square one-fourth the remainder and multiply the product by the length of the log in feet. The result will be the number of feet, board measure, contained in the log. The exception to this rule is the measurement of mahogany and furniture woods of Constantine & Co., New York, and of cypress and large pine at Mobile and Pensacola. In

England logs are usually sold by the cubic foot, or by the load, which is fifty cubic feet. There are two methods of measurement, viz.: String and calliper. Round timber is always sold by string measure, hewed timber by both, but the string measure is best for the buyer, because it takes into account the loss on waney logs. By string measure the average girth of a log is taken at three places, if it be a tapering log, by a tape line, and the girth measure is divided by 4, which gives one side of a square log. The length of the log in feet is multiplied by one of its sides in inches and the product divided by 12. This quotient is multiplied by the same side of the log, in inches, and divided by 12. The result is the contents in cubic feet. In practice the odd inches are not counted in the first product.

In the calliper measure, two sides of the log are measured, just as though it is perfectly square, taking no account of the wane edges. In the calliper measure the larger size, or face of the log, in inches, is multiplied by the length in feet, and the product divided by 12, which gives the superficial feet of that side. Then multiply the product by the width in inches of the other, or smaller side, and divide by 12. This gives the cubic feet contents of the log, but makes no allowance for the many corners. It is the rule generally in vogue for hewn hardwood and pine logs.

In view of the importance of our wood trade with England, and the lessened cost of freights to some of the midland markets by the opening of the great Manchester canal, manufacturers of southern hardwoods will do well to inform themselves fully upon the conditions and customs of foreign markets generally.—D. W. Baird, in The Tradesman.

### POINTS ON BELTS.

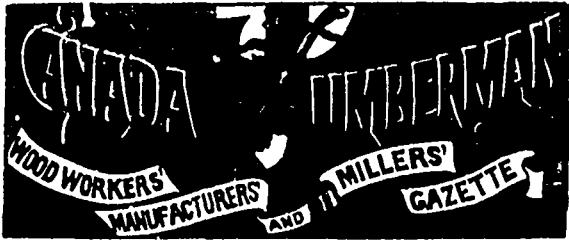
RECENTLY at a meeting of engineers in Chicago an essay on belts was read. From this essay the following abstract of points is made: A 3-inch wide single leather belt, travelling at 500 feet per minute, will produce a force equal to one horse power. One 5 inches wide, at 4000 feet per minute, will transmit a force equal to 10 horse power, and the same belt travelling at the rate of 50 feet per minute will only equal the power of one man. A 6-inch belt travelling through 4000 feet of space per minute will run machinery equal to a 24-inch belt only running at the rate of 1000 feet per minute. Belts should never be geared too tight, for the belt will be hard upon itself. Friction maintains the motion that is produced between the pulley and the belt.

The angle of the belt should not exceed 45 degrees, and the belt should be made to move from the top of the driving pulley to the top of the pulley being driven. A single belt should not be subjected to a strain of more than 3000 pounds to the square inch of cross section, about 50 pounds for every square inch in width. When it is necessary to use cross belts, see that the laps will not tear up or joints sever. This may be done by keeping them separated at the point where they pass. No matter under what conditions a belt is being used, it should not be allowed to dry out, but should always be kept soft and pliable. A thorough application of suitable belt dressing will keep them in proper condition.

Belts should be run with a slight waving motion, which should show on their slack side;







MONTHLY AND WEEKLY EDITIONS

C. H. MORTIMER

PUBLISHER

CONFEDERATION LIFE BUILDING, TORONTO

BRANCH OFFICE:

NEW YORK LIFE INSURANCE BUILDING, MONTREAL.

The LUMBERMAN Weekly Edition is published every Wednesday, and the Monthly Edition on the 1st day of every month.

TERMS OF SUBSCRIPTION:

One Copy, Weekly and Monthly, One Year, in advance..... \$1.00  
One Copy, Weekly and Monthly, Six Months, in advance..... .50  
Foreign Subscriptions, \$2.00 a Year.

ADVERTISING RATES FURNISHED ON APPLICATION

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

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

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

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

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

TO VISITING LUMBERMEN.

Lumbermen visiting Toronto are invited to use the office of the CANADA LUMBERMAN as their own. We shall take pleasure in supplying them with every convenience for receiving and answering their correspondence, and hold ourselves at their service in any other way they may desire.

"MADE IN CANADA."

GERMANY of late has taken the front rank as a manufacturing nation. By means of her great industrial schools she has produced a type of educated artisan who, in addition to the highest manual skill, possesses a knowledge of scientific principles which enables him to choose the best means to a desired end. Great Britain is feeling severely the competition of Germany both in her home and foreign markets. It is not on this feature of German industrial development, however, that we desire to dwell, but on the German practice of labelling every package and shipment of goods with the words, "Made in Germany." The Toronto Globe recently made the wise suggestion that Canadian manufacturers in all lines should follow the German example by stamping "Made in Canada" upon their goods. Our contemporary truthfully says that no more effective or less expensive method of advertising Canada could be adopted. The foreigner who sees in his own market the highest grades of wheat, lumber, apples, cheese, butter, canned goods, etc., labelled "Made in Canada," or "Grown in Canada," will naturally conclude

that Canada is a country of rich and diversified resources, desirable as a place of residence and as a source from which to purchase natural and manufactured products.

We learn from correspondence with British consular agents in South America, the West Indies, and other foreign countries, that large quantities of Canadian lumber and other manufactured products are imported into these countries via New York, and classed as United States imports. Thus the name of Canada is kept in the background, and our producers fail to get proper credit for the excellence of their goods. If the German system were adopted, this credit would come to us, and would be a most important factor in the promotion of our foreign trade. Let Canadian lumber manufacturers, to whom a foreign market is so important, be the first to adopt the nation and trade developing device, "Made in Canada."

FREIGHT RATES AND DISTRIBUTING POINTS.

EVERYONE closely in touch with lumber matters in Ontario must have observed that, in disposing of our product in the United States market, conditions of late have not been altogether favorable to the Canadian dealer. In the city of Toronto a few years ago were to be found a number of wholesale dealers, but to-day those conducting a purely wholesale business are very limited in number. Instead of the Canadian trade being distributed from a Canadian port, much of it has been diverted to Buffalo and Tonawanda and other American points, and as a natural result the middleman has discovered that his business can be conducted much more expeditiously from some location across the border. An instance of this was recently shown in the removal from Toronto of one of the oldest-established firms.

Having facilities for shipping by both rail and water, Toronto should be equally as important a shipping point as either Tonawanda, Buffalo, or Oswego, and, placed upon the same footing, we believe would attain to some proper position in this respect. In prospecting for the causes of this diversion of trade, we are led to believe that the Canadian dealer has been handicapped to some extent by discrimination in freight rates in favor of the dealer located on the American border.

To illustrate, the through freight rate from the Georgian Bay district, say Waubaushene or vicinity, to New York, is 19½ cents on either pine or hardwoods. The rate to Toronto on hardwoods is 7½ cents, and from Toronto to New York 16 cents, making a total of 23½ cents, or an advance over the through rate of 4 cents per 100 lbs. This amount the dealer who desires to ship to Toronto, and from thence to New York, is obliged to pay. In the case of United States points, take Tonawanda for example, the published rate from Waubaushene to that point is 8¾ cents, and from Tonawanda to New York about 13 cents, or a total of 21¾ cents, which is 1¾ cents less than the Toronto dealer is obliged to pay for reaching the same point in practically the same manner. This difference of 1¾ cents means a total on a car of 30,000 lbs. of \$5.25, which reduces the profits on a carload of lumber just so much. But it is said to be possible to obtain a special rate from Tonawanda to New York as low as 10 cents, which would make a difference of 4¾

cents per 100 lbs. Particularly in the case of hardwoods is this injustice felt, in view of the wide distribution of that class of timber and the difficulty often experienced in securing a carload of the stock desired at one point. The only recourse for the Canadian dealer, in order to save this amount and successfully compete with the American dealer, is to ship direct from the mill on the through rate, which, as past experience has taught, is not always practicable.

Some of the effects of this discrimination on the Canadian trade may be enumerated. A dealer gets an order from New York for a carload of a certain class of lumber, and after looking around locates what he considers the necessary stock, but when he comes to load the car discovers that there is only about half the quantity of the grade required. He is then obliged to inform his customer to that effect, and ask for instructions regarding the stock for the balance of the car. He is advised that the class enumerated in the first order was all that was really required, but is reluctantly instructed, in view of the circumstances, to fill out the car with something else. In all probability when the next order is to be given the Canadian dealer will not be considered in the matter, but the trade will be diverted to some dealer on the other side who, by means of a supply yard and more equitable freight rates, will be enabled to fill the contract in accordance with the specifications. The Canadian mill man will be almost certain to lose the trade and the railway company the freight. Again, a customer orders a carload of lumber and gives instructions to ship by a car of a certain line. The railway authorities are advised to that effect, and the wholesale dealer sends his shipper to the point of shipment, but the latter is sometimes obliged to wait several days before the car arrives, thus considerably reducing the profits on the carload of lumber.

To overcome these difficulties it is necessary that Toronto should be made a central distributing point and placed on an equal footing with American ports with respect to freight rates. The establishment of lumber supply yards in Toronto would, we believe, mean more to the trade than appears on the surface. American buyers would make personal visits to inspect stocks, and as a result their relations with the Canadian dealer would be closer. Their opinion of the Canadian trade would be heightened, and, feeling satisfied that their orders would be promptly filled, more business would be likely to accrue. The present tendency of American buyers to deal direct with manufacturers would be removed, as the judiciousness of purchasing at a point where a selection of stocks and prompt shipment could be made would be self-evident. It would further assist in solving the vexed question of inspection. All lumber would be unloaded at Toronto and graded, thereby maintaining a uniform grade, while the inspection would be controlled in this market also. Another advantage which might also result to the manufacturer would be in the direction of realizing a greater sum for his lumber. We believe that much money is lost by mill men through improper grading. Upon being sorted at the supply yard, every grade and size of lumber would be disposed of in the market which would bring the highest returns, and much refuse which is now wasted would be profitably utilized.

Going back to the question of freight rates,

upon the adjustment of which the expediency of opening a yard in Toronto would seem to depend, it is not contended that the railway companies should reduce the present through rate to New York. It is simply asked that this rate be allowed to be paid in two portions, say the present local rate to Toronto, and 12 cents from Toronto to New York. It is possible now to obtain, as a special favor, a stop-over privilege for a day or two at a cost of one cent per hundred pounds, but this is as a rule unsatisfactory and does not serve the desired purpose. There cannot be any just reason why a carload of lumber should not be shipped from Georgian Bay points to Toronto and thence to New York at as low a rate as via Tonawanda or Buffalo, and we doubt not that a change in the policy of the railway companies in this direction would result beneficially to the railways as well as the Ontario lumber trade.

The LUMBERMAN would be pleased to have an expression of opinion from wholesale dealers and manufacturers regarding the expediency of establishing a supply yard in Toronto, as well as the mode of conducting the same.

#### EDITORIAL NOTES.

THE Australian kari wood pavement which was constructed a year ago on West 20th street, New York, as an experiment, is said to have proven unsatisfactory. It was supposed to be a suitable pavement for streets on which the traffic is not heavy, but it is claimed that when the blocks are wet horses are unable to secure a footing. To prevent accidents a coating of sand has been spread over the street.

It is just possible that the development of the pulp industry in Canada may increase the profits of many saw mills, inasmuch as the waste product which formerly found its way to the burner may be utilized for the manufacture of pulp. In the state of Maine there are pulp mills which obtain a portion of their supply of raw material from the saw mills, but, of course, it is a small percentage of the total amount required. The spruce forests will continue to furnish the principal supply, and the competition for possession of timber limits will increase the revenue derived therefrom. An enthusiastic advocate has recently declared the superiority of wood pulp as a substitute for brick and stone as a building material.

SOME timely suggestions for manufacturers are contained in the letter which appears on another page from Mr. J. T. Schell, referring to the operations in the woods during the winter of 1896-97. Mr. Schell clearly points out the advantage to be gained by a curtailment in the log input, the effect of which would be to dispose of much of the lumber now at the mills at a more remunerative figure. To accomplish the desired end united effort is necessary. One manufacturer should not take the ground that as his neighbor is reducing his output he will be safe in operating his mill to its full capacity, as this action would be likely to become general, with the result that no reduction whatever in the output would be made. We believe we are safe in saying that there is little probability of any shortage in the log supply necessary to meet the demand for lumber during next season, and it is certainly more desirable to make a fair profit on

one million feet than to be obliged to handle five million to secure the same returns. The lumber trade will be none the worse for a quiet logging season.

Of late years there has been a notable increase in the quantity of thin lumber shipped from Canada to Great Britain, a condition upon which Canadian lumber manufacturers have reason to congratulate themselves. It is possible that this trade is worthy of still greater expansion, but there are difficulties in the way which must first be overcome. The English saw miller is interested in having the timber shipped in the log or in deals, which of course brings to him trade in manufacturing for the many purposes for which the lumber is required. Opposition is therefore met in this direction. The conservatism of the English people is perhaps greater than is generally believed, and any new system of doing business meets with disapproval. The advantages of the new arrangement must be proven beyond a doubt before it receives the sanction of the Britisher. It is further necessary that the Canadian mill man should exercise greater care in the manufacture of his lumber. A visit to the English markets would enable the manufacturer to learn the requirements of the trade, and would prove of much assistance in preparing his stock. Unfortunately too many manufacturers do not realize the necessity of having their lumber cut to exact lengths and sizes. For twelve-foot stock, for instance, everything from twelve to thirteen feet is put in, although payment is only received for a 12-foot board. The freight rate in transportation to Europe on the surplus over the 12 feet reduces the profit by a considerable sum. Defects at the ends of boards should also be cut off, thereby raising the standard of the lumber. The variety of purposes for which lumber is required in Great Britain makes it imperative that the greatest precaution be taken in manufacture, and until this is done the development of the thin lumber trade is not likely to be rapid.

THE reference in these columns a few months ago to "excelsior," or wood wool, has brought to us numerous inquiries regarding the foreign demand for that article. There is no doubt that considerable quantities might be placed on the British market providing the rates of transportation were sufficiently low to permit of successful competition with the product of other countries, but the present carrying charges are somewhat excessive. As excelsior is put up in bales similar to hay, the freight rates thereon should be nearly the same, but we presume that owing to the small quantity shipped no equitable rates have been obtained. We were recently informed that a company in Scotland were prepared to take twenty tons a week if satisfactory prices could be arranged. The claim is made against the Canadian article that it is too coarse, but this defect should be easily overcome. In connection with this matter we observe that Messrs. Chapman & Co., of Deptford, S. E., who are large manufacturers and importers, are desirous of importing the raw material from which "excelsior" is made. They write as follows: "We want deal and batten ends (firewood, as it is termed in the trade) of about three inches thick and from one

to six feet long, and between six and ten inches wide, of white fir or pine or other soft wood that has little smell. We could also do with any white round wood of any length up to ten feet and about six feet in diameter, the same as used by the American manufacturers of excelsior. If it can be done we would like to get small sections as samples, with specifications of dimensions and quotations c. i. f. London. We would buy whole cargoes, and it would greatly help us to know the approximate weight of a fathom (216 cubic feet) of the different qualities submitted." Here is an opportunity for lumber manufacturers in the maritime provinces to utilize their waste product to advantage.

#### CUTTING TIMBER.

There is a great deal said by the advocates of forest preservation about the good policy of selecting out and cutting for lumber the old matured trees, leaving the younger and more vigorous for future growth and supply. In theory this looks feasible. But in practice it is different. This is a windy country, and it is a well-known fact that whenever a forest is thinned out by the removal of the larger trees the winds make a slaughter of the residue. This is the reason why lumbermen prefer to cut their timber clean when they enter upon a tract for operations. In the older sections of the country, where openings have been made for the clearing of farm land, it is the common experience that the standing timber left for fire wood, sugar orchards of maple, or growths to be converted into saw logs later on, greatly suffer from the winds, and in some instances isolated tracts have to be cut to save loss of timber. This is a pity, but it is the truth, nevertheless. There seems to be but one way to manage hardwood timber, and that is to cut everything that is merchantable, leaving only the second growth, which adheres firmly to the soil and is tough enough to withstand the more powerful winds.

Hence the only way to successfully perpetuate forests seems to be to cut all the old growth, that is, the original forest, while the second growth is conserved. It is idle to talk to lumbermen about sparing timber that possibly can be cut into lumber. A man who has put his money into timber tracts well knows that if he leaves the smaller, younger and more vigorous trees, taking only those which have ceased growing, he will lose much of what he leaves. Besides, in this cutting over pine lands, the debris left on the ground, especially where no attempt is made to gather and burn it, remains as a menace to the standing timber, because it is food for forest fires. Another consideration also affects the profits of the operator. When a camp is once started it is desirable to finish the timber on the tract operated, for repeated going over the land adds to the cost of getting the timber into marketable shape. The lumberman realizes the desirability of preserving the forests, but there are difficulties in the way of a practical application of the theories which appear well on paper. Each owner of timber will have to shape his own course under the dictates of experience, and much as his financial exigencies shall dictate.—Northwestern Lumberman.

"Just tell them that you saw me," said the log as it slid against the circular saw.



"THERE is one characteristic of birch timber which, I believe, few have observed," remarked the manager of a planing mill not far from Toronto. "If you notice," he continued, "you will observe that birch checks both ways, while all other woods check only in one direction. This is one of the simplest ways of distinguishing birch timber when piled with other woods and only the ends of the logs are visible. Just watch in future and see if I am not correct."

\* \* \*

A LUMBER paper tells a rather good story about the Hon. Philetus Sawyer, of Oshkosh, Wis., who has not only made a fortune out of white pine lumber, but is one of the best-known men in the northwestern lumber states. He recently attended the country fair at Omro, Wis., took in the fair and drank country fair lemonade. At one of the lemonade stands there was a boy about twelve years of age tending the lemonade barrel and he was not acquainted with the senator. The lemonade was good and Mr. Sawyer wanted a second glass, but the boy refused to give it to him until he had paid for the first glass. He paid for it and took the second. Some time afterwards the boy found out who it was to whom he had refused credit, and wrote Mr. Sawyer a letter of apology, in reply to which Mr. Sawyer said that he had done just right. The sequel of the affair is that Mr. Sawyer has sent for the boy and will educate him.

\* \* \*

THERE is located on one of the islands near Great Manitoulin a saw mill which has an interesting history. The Mississippi Valley Lumberman tells us that the plant was originally located in Detour, Mich., and was the property of a firm of Frenchmen whose capital was limited, but who had been offered inducements to locate there. Everything went well for a time, but the other parties of the contract at length failed to carry out their part of the bargain and the firm saw ruin staring them in the face. They employed a desperate and very novel expedient, but it proved entirely successful. They selected a new site across the border on a large island having a bay so completely landlocked as to be entirely hidden from ordinary observation. Then, selecting their time, they cut the telegraph lines out of the town and began loading the mill on a large scow. Before they got away telegraph communication was restored and a tug hastened to the rescue and gave chase to the runaway tug and scow. As the island chain was being approached the pursuer almost overhauled the heavily loaded scow, when it was found that the Canadian line had been passed and the chase had to be abandoned. When the parties who claimed the mill returned to the search they had great difficulty in locating it. The only thing which could be done then was to seize the plant as contraband, which was done by the Canadian government. It was sold for duty at Ottawa and the runaway owners bid it in at a

low figure and it has been busily at work in its new location for five or six years.

\* \* \*

Mr. W. B. Tindall, of the Parry Sound Lumber Company, is not altogether in favor of an export duty on logs; in fact, he conscientiously believes that the whole question of export duties is wrong. He says: "The Government sell their timber and get a good price for it, what more do they want? With regard to the claim that the manufacturing of our logs should be done in Canada, that is a matter which will eventually right itself, as shown by the fact that the Michigan people are now erecting mills on this side, where they can secure cheaper and better labor. Too many people apparently forget or are ignorant of the fact that as soon as an export duty is imposed upon saw-logs by the Canadian government, the same duty on lumber as existed under the McKinley bill comes in force. Apart from those who are directly interested in securing the imposition of an export duty on saw-logs, the persons who are advocating the measure are not conversant with the facts. We should remember that Canada is a long narrow country, and that the interests of other provinces besides Ontario must be considered. Then, again, the Americans are making unnecessary noise about the flooding of the United States market with Canadian lumber. Why, the importations from Canada are much less than the receipts at the city of Chicago alone." I observe that for the fiscal year ending June 30, 1896, according to the figures of the United States Treasury Department, 756,102,000 feet of lumber were exported from Canada to the United States, while the yearly receipts at Chicago are nearly double that amount.

\* \* \*

Mr. L. O. Armstrong, colonization agent of the Canadian Pacific Railway, returned early in November from a visit to the west. He was in the State of Michigan on election day. "Although the business men of Michigan rejoiced at Major McKinley's election," said Mr. Armstrong, "they appreciate the services rendered the Republican candidate by the sound money Democrats, and for this reason it is not thought probable that an extreme protective policy will be resorted to when the tariff comes to be framed."

"How is business in Michigan?" Mr. Armstrong was asked.

"Before the election," he replied, "business was in a terribly depressed state. In fact, it could hardly have been worse. The Chicago Lumber Company, one of the largest milling concerns in the State, had not paid a cent of money to their men for over a year, they being obliged to accept coupons, which were changed for goods at the company's stores. This was the deplorable state of affairs in Michigan, and, in fact, all over the country previous to the Presidential election."

"And are things any better now?"

"The feeling improved at once. The company I have just alluded to raised the price of lumber fifty cents per thousand feet all round, and merchants reported that orders began at once to come in."

Mr. Armstrong states that there is a strong feeling in Michigan in favor of putting a duty on Canadian lumber, but he thinks this influence will be counteracted by the New England States, where Canadian lumber is in such demand, and

also by the knowledge that an export duty would be imposed on Canadian logs. Be this as it may, Mr. Armstrong added that Canadians should begin to look to Europe for a lumber market.

\* \* \*

A LUMBER dealer who formerly resided in Toronto, but is now located in Georgia, recently paid a visit to his native city to renew acquaintances, and incidentally ran across a representative of one of the daily papers, when the following conversation ensued:

"Will you have something?" said he. The scribe never said a word, but over a pipe and a glass—or maybe two—a pleasant hour of the evening passed quickly away.

"How do you like Georgia?" asked the scribe.

"All right, except for the pigs," returned the lumberman.

"They have only one kind of pig down there, you know—the 'three-row' pig. They call him that because he can reach through a rail fence and dig up the third row of sweet potatoes." And the scribe laughed while the lumberman quietly pulled at his pipe.

"I went out one day to see about buying a timber limit," he continued. "Down there, you know, we cut logs all the year round, and the greatest bother we have is from water overflowing the ground so we can't cut during the rains. Well, I reached the place and went out to look over the ground."

"The owner of it solemnly assured me the water never came up near the timber at all. I could see water-marks about ten feet up from the ground on all the trees in one bottom, and I asked him what caused those funny marks up there."

"Oh, just the hogs scratching their backs, was the answer."

"I never said a word until we went to his house and had dinner. In the evening we were smoking on the big verandah."

"Waal, ah you goin' teh buy my timbah?"

"I thought a minute, and then I just said: 'No, but I'll take all the hogs you've got.'"

#### THE MOISTURE IN WOOD.

MICROSCOPICAL investigation is said to prove that the pores of wood invite the passage of moisture in the direction of the timber's growth, but repel it in the opposite direction, and this is supposed to account for the phenomenon which has been so often noticed and which is so commonly a mystery, namely, the fact of two pieces of timber sawn from the same section of a tree sometimes appearing to possess very variable degrees of durability. It is found that if the wood, say, of a gate post, is placed right end up the moisture in the soil will affect it, but the rain falling on the top will do little harm; if, on the other hand, the butt end of a tree is placed uppermost the top of the post will decay, because the moisture of the atmosphere will penetrate the pores of the wood more rapidly in such a position. The fact, so familiar, that the staves of a wooden tub appear to absorb moisture irregularly some getting quite sodden while others are comparatively dry and seemingly almost impervious to moisture is because the dry staves are in position as the tree grew, but the saturated ones are reversed.

## OTTAWA LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

RECENT transactions in the Ottawa Valley have somewhat encouraged lumbermen, and operations in the woods may be conducted on a much larger scale than was generally supposed before the presidential election across the border. On one particular limit up the Madawaska river five extra crews have been started. Estimates of the winter's probable cut of logs point to the fact that it will vary very little from last season. The square timber output will probably be more than double that of last year, unless some who now contemplate taking out square timber turn their attention to saw logs.

Lumbermen, it would seem, are gradually becoming convinced of the advantages to be obtained by having their saw mills adjacent to their limits. The Gilmour Company and the St. Anthony Lumber Co. have lately constructed mills in the vicinity of Algonquin Park, and now we hear that Mr. J. R. Booth has in view a scheme to erect a large mill at Barry's Bay, for the purpose of sawing the timber from his Upper Ottawa limits.

Nearly all the large mills have closed down for the season. The cut will compare favorably with the season of 1895.

The Hull Lumber Co. have received letters patent of incorporation. The capital stock is \$600,000.

Mr. R. M. Cox, the well-known Liverpool lumber merchant, who is well-known throughout the Ottawa Valley, is reported to have speculated very successfully in ocean freight chartering. Having secured a large amount of accommodation early in the season, he disposed of much of it to apple shippers at a substantial increase in rates.

OTTAWA, Ont., Nov. 23, 1896.

## NEW BRUNSWICK LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

THE lumbermen have suffered heavily from the recent rains. The Aroostook Lumber Co. lost upwards of 500,000 feet of logs by the breaking of a boom. About two million feet, believed to be the property of Kilburn & McIntosh and Stetson, Cutler & Co., hung up last year, are now floating in the St. John river. The crews in the woods have been working under difficulties, and in some cases the men have been obliged to cease work.

Bracketing at Maugerville was completed for the season early in November. Emery Sewell put up 53 rafts, containing 22,533 joints, for Tapley Bros.' tug boats; also about 1,500 joints of cedar, which was towed by his own tugs to Morrison's mill, making in all about 56,000,000 superficial feet. D. D. Glazier & Son very successfully handled and freighted 29,000 joints, containing \$1,042,622 feet, making a total of upwards of 137,000,000 feet. The season has been more than ordinarily favorable for the work.

Purves & Murchie, of St. John, will during the winter add an improved double rotary, with edger, trimmer, lath and box machine, to the plant in their mill on the west side. This will add about one-third to the capacity of their mill, which will then have an annual capacity of about fourteen million feet.

Mr. C. T. White, who purchased the Point Wolfe lumber property last spring, has put a new water wheel in his mill at that place, and has made extensive repairs. During the past season he has cut 13,000,000 feet of lumber at Point Wolfe and Apple River, and will probably make an increase on this amount next season. His mill has a capacity of 60,000 feet per day.

Harry McLellan recently cut on Jones' Brook 300,000 feet of logs. The high freshet has enabled him to get them down stream. It is said to be the first drive of logs ever brought to St. John the same season in which they were cut.

## BITS OF LUMBER.

Mr. Wm. Hanson, whose saw mill at Spruce Lake was destroyed by fire, will rebuild this winter.

Donald Fraser & Sons have closed down their rotary at Fredericton for the season. The mill will run all winter, cutting shingles and clapboards.

Mr. Redmond, of the firm of Stetson, Cutler & Redmond, lumber brokers of New York, was in the city recently interviewing the local shippers.

The exports of lumber from St. John for the month of October were as follows: Lumber of all kinds, \$207,276; shingles, \$18,763; piling, \$1,255; shooks, \$341; birch timber, \$1,000.

The new mill of D. & J. Ritchie at Newcastle will be 124 x 44 feet, with 25 feet posts. The engine room will be separate and of brick and iron, and there will be eight boilers, 40 feet long.

The mills of A. E. Alexander and W. S. Gray at Campbellton have closed down for the season. Mr. Alexander will put a new rotary in his mill on the Tobique, and will cut spruce this winter.

ST. JOHN, November 20, 1896.

## BRITISH COLUMBIA LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

MR. J. S. LARKE, Canadian Commissioner of Australia, has sent a letter to the News-Advertiser embodying some valuable information relative to the extension of trade with that country. He states that some timber sent from Puget Sound was refused by the buyer, owing to defects, and was valued by two surveyors of the Chambers of Commerce, who upheld the buyer in his contention. The letter says: "A new complaint has been made in regard to this timber, that of being scant sawn. Pieces from 1½ to 2½ inches thick lack by a quarter to a half an inch. The widths, too, are not up to requirements. Objections on this score have not been taken note of hitherto, but there is no doubt that henceforth it will be considered and deductions made for any considerable deficiency. The cargoes from British Columbia have so far been of excellent quality. The only grumble is that one order was not filled exactly as specified, a larger quantity of a certain length and a less of another having been shipped. Of course an allowance is demanded, but if it goes to a survey no great sum will be allowed. Your mills should do more of the dressed timber trade than they are doing. Here lack of shipping is the trouble. The mail steamers could not take it and a whole cargo order could not now be had. One broker who has been taking orders for shelving has become discouraged over failure to receive his orders, and says that unless something can be done to ensure regularity of delivery he will have to give it up. This brings up the freight question. The third steamer of the Canadian-Australian line will be on at the first of the year. This will give thirteen trips instead of eleven, which latter is about the average per annum now, and, too, will ensure regular sailings. These vessels are now carrying rough timber in competition with sailing craft in many ports, and if the B. C. mill men will push the dressed timber trade here they could furnish full and regular freights. They could touch at Queensland ports where the mail ships now do not go, and so build up a trade where we now get but little. There is the practical difficulty of getting a return cargo, but this would be no worse than the sailing ships have to face, and would be solved very much as they now solve it."

The annual report of the British Columbia Board of Trade for 1896 says of the lumber trade: "There was a steady improvement in the lumber industry during the year 1895, the quantity cut being 112,884,640 feet, or about 40 per cent. more than in the previous year. The foreign demand was more widely distributed than for some years past, but prices were low. The foreign demand has continued to improve during the past six months at advanced prices. Attention is again called to the importance of grading all lumber for export. Such specific grading would protect our millmen and simplify the work of purchasers when placing orders. The saw mill being erected at Takush Harbor will be one of the best equipped in the province, and will be occupied mainly in cutting cypress. The cypress is one of our most valuable woods, and commands a price almost equal to mahogany."

NEW WESTMINSTER, B. C., Nov. 20, 1896.

## MICHIGAN LETTER.

[Regular Correspondence of the CANADA LUMBERMAN.]

A LITTLE over two weeks has passed since the people of the United States pronounced themselves in favor of McKinley and the gold standard, yet the improvement which has come to the lumber business in Michigan in that short period is almost phenomenal. On every side the opinion is expressed that revival is assured. The past season has been one of the duller for the past twenty-five years. Taking the shipments from the Saginaw river up to 1st November as an indication, in 1870 they were 427,000,000 feet. Ten years later, in 1880, they reached 711,000,000 feet, but in 1890 had fallen to 382,000,000 feet. Last year they were reduced to 113,000,000 feet, and this

year they only reached 63,000,000 feet. From nearly every other point a like falling off is shown by a comparison of figures. Since the elections preparations have been made for conducting operations in the woods on a larger scale, and there is likely to be an average output of logs. Col. Bliss, of Saginaw, started camps last week in Midland county, where he will take out several million feet. He also started two camps in the Georgian Bay district.

Messrs. Alger, Smith & Co. are operating quite extensively. In the vicinity of Valentine Lake, Montmorency county, their main operations are being carried on, some 500 men being employed. The intention is to clear the land of both pine and hardwoods, which will require about three years.

## INDIFFERENT LENGTHS.

The season's cut of the Marquette mills is estimated at 171,000,000 feet.

The quantity of lumber shipped from Alpena up to October 31st was 76,608,075 feet.

Messrs. Smalleys & Woodworth, of Bay City, will rebuild their saw mill recently destroyed by fire.

Wm. Peter has started camps in the Georgian Bay district, and the logs will be rafted to his mill at Bay City.

SAGINAW, Mich., Nov. 21, 1896.

## RIGHTS OF IMPROVEMENT COMPANIES.

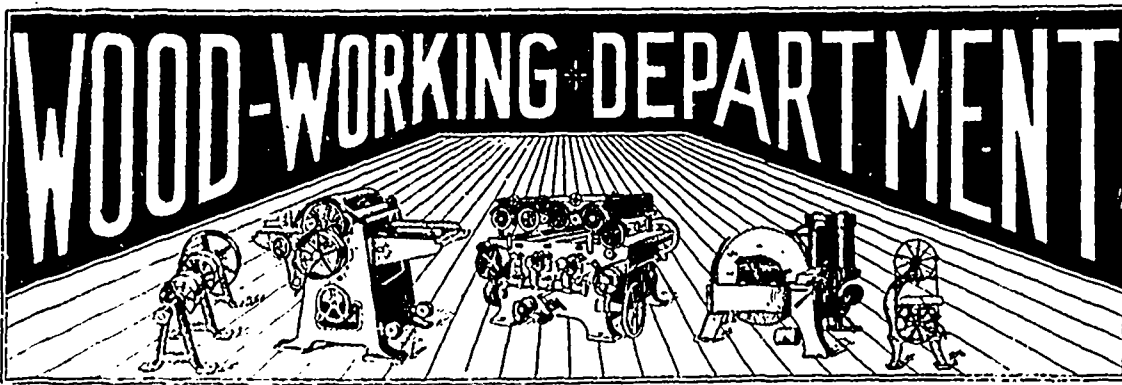
BEFORE Chief Justice Meredith at Toronto recently the Hardy Lumber Company, of Alpena, Mich., sought to have it declared that the Pickercel Lumber Co. had no right to collect tolls in the Parry Sound district. Judgment was reserved.

A deputation waited upon the Ontario Cabinet in connection with a waterway to connect Lake Wahnapiatae with Lake Matagamashing. A charter was granted for this work some years ago, the time for which is now nearly exhausted, and the deputation made application for another in conformity with the new Timber Slides Act. Among those interested are Mr. J. D. Moore, M. P. P., and Mr. Wm. Norton, of Wellesley. The Government promised consideration.

Hon. J. M. Gibson, Commissioner of Crown Lands, sat as judge a fortnight ago on an important arbitration case at Toronto. The Serpent River Slide and Boom Company made improvements on the Serpent River, in the Algoma district, for which tolls are charged under the provisions of the Timber Slide and Boom Act. These tolls were considered by some lumbermen to be excessive, and the Hale & Booth Lumber Company, of Ottawa, protested. Several witnesses were examined, among whom were such well-known lumbermen as J. Turner and S. O. Fisher, of Saginaw, J. L. Burton, of Barrie, and Mr. Horne, of Fort William. The Commissioner, after hearing the evidence, suggested a compromise between the parties interested, and this was finally agreed to. It is understood that the rates were fixed at about 40 per cent. less than the boom company at first wanted.

The Northwestern Lumberman says the crudest saw-mill in the Northwest is at Wagner on the Wisconsin & Michigan railway. It is owned by Frank Adams, a farmer. It consists of a circular saw, a carriage and a small engine to run the saw. The logs are hauled on to a carriage, and the horses pull the carriage backwards and forwards to make the feed. The mill has no roof, and the machinery is set on blocks of wood. The mill does custom work for the farmers in the vicinity.





### KNIGHT BROTHERS.

In 1877 the firm of Knight Bros., of Burk's Falls, Ont., launched in a moderate way into the manufacture of kiln-dried flooring and sheeting. Their premises and machinery at that time was modest, almost primitive, and their business necessarily limited. The year 1896 finds them occupying extensive and commodious premises, thoroughly equipped, and enjoying the patronage of a wide range of customers.

Their first motive power was a foot lathe, operated by a sewing machine treadle. A small boiler was added, which still does service in the blacksmith shop, and the fifth boiler is now in place, supplying steam to a 35 h. p. high speed engine, built by the A. R. Williams Machinery Co., who also supplied the other machinery. The boiler also heats the building and supplies steam to the Sturtevant dry kiln, which is in a building 18 x 85 feet, with a store-room above. The rear of the dry kiln opens out into the heavy machinery room, where the lumber is manufactured.

The ground floor of the building is divided into four rooms, two rooms being devoted to sawing, planing, etc., one to storage, and the other to a fireproof engine house. The engine room is virtually an annex, having a fireproof iron roof protected by mortar, with fireproof shutters on the doors and windows. The premises are lighted by electricity, and all modern appliances are used. Upstairs are the carpenter shop, two sash and door rooms, and two store rooms. There are two other store sheds separate from the building, one of which is devoted to mouldings. A blacksmith shop in the rear does all the repairing, and is well equipped. The office is a model room, with floor and ceiling in birch, the furniture being of the same material.

The yards are heavily stocked with manufactured lumber and the store rooms are kept filled with kiln-dried flooring, sheeting and mouldings. Their special lines of matched goods differ from the ordinary planing mill product. They are thoroughly kiln-dried, well made and tied in bundles, the ends butted off and all knots taken out, ready to lay.

From twenty to thirty men are employed the year round. Their trade extends as far west as British Columbia.

### IMPERFECT WORK IN PLANING MILLS.

WHILE it is the easiest thing in the world to discover when a planing machine or other piece of woodworking machinery is making wavy and imperfect work, it is not always so easy to discover the cause of the same. It is quite common for planing mill proprietors or their foremen when a machine is not doing good work to blame the operator. Now, the fact is, all machine operators have sins enough of their own to answer for, and it is not just to hold them responsible for the sins of others, which is too often done. We all know that imperfect journals and unbalanced cutters will produce that effect. If it is the unbalanced cutters, then it is the fault of the operator or the one who has charge of these matters, and there should be no time lost in applying the remedy, which is to balance them at once before using again. When the cause arises from imperfect journals (unless that condition is brought about by continuing to

use unbalanced cutters until one side of the journal becomes flat or egg-shaped) it is not always so easy to determine.

Upon general principles, we should naturally suppose that all well-constructed machines from reputable manufacturers should do the same perfect work. Still, we know that such is not always the case. Even the machines of the same manufacturer and of the same size and design do not always perform the same perfect work. When a machine, as before stated, fails to perform good work, it is generally considered the fault of the operator, notwithstanding that he may do all that he can to correct the fault. The machine will persist in turning out poor work, and while there is a remote cause, it is frequently a very difficult matter to find it.

One of the causes over which the operator has no control is in imperfect journals, caused by imperfections in the steel of which they are composed. If the bar of steel constituting the cylinder shaft has hard and soft places in it, as is frequently the case, then it is out of the power of the operator to prevent the journals wearing out of round, which not only causes a vibration in the cylinder that will manifest itself upon the surface of the board, but also causes it to heat whenever the operator attempts to screw down the caps tight enough to stop the vibration. He may make trips to the machine shop and have the journal turned off, which may remedy the difficulty for a short time; but those visits must be frequently repeated until the journal becomes so light as to be worthless, and then imperfect work will continue until a new cylinder is provided. All crucible steel is liable to this peculiarity, from the fact that the stock as it comes from the converting furnace is not always uniform. Some bars are carbonized more than others, and are, in consequence, harder than those which do not contain so much carbon. Now when this stock is broken up preparatory to being melted in the crucible, if it is not carefully sorted so as to be uniform in grade, an imperfect ingot will be the result—that is to say, if some portions of the stock in the same charge should be harder than others in melting, it will not mix thoroughly with that of a softer or lower grade so as to become perfectly homogeneous in the ingot, and when drawn out into bars the same hard and soft places will be found. In some of the first cast-steel cylinders that were forged, the journals, being a part of the same ingot from which the cylinders were forged, were so imperfect in this respect that in many cases it was necessary to cut them off, bore the cylinder, and insert a shaft of a better and more uniform grade of steel. But this, as well as many other imperfections, has been remedied by a more careful selection of the stock before it is

melted, so that the steel in the forged cylinders, as well as the journals that are manufactured at the present time, are by far superior to those sent out a few years ago. Competition also has had much to do with this business, as well as every other kind, and the firm that furnishes the best article for the same money is sure to secure the largest share of the trade.

The first cast-steel cylinders that were introduced were cast in sand after a pattern, and while they were considered much better than cast iron, the extra expense in boring and planing, besides the same liability for certain imperfections—such as blowholes—that are common with all castings made in this manner, was more than sufficient to balance any advantage that they possessed over cast iron, and their use was soon abandoned by all the principal manufacturers.

The demand for four-sided cylinders slotted for one head further increased the demand for cast-steel forgings, and, as before stated, the cast-steel forgings for that purpose that are now forged are as perfect and uniform as the average bar steel. Still there are a few cases to be met with where it is a difficult matter to run even the best that can be had for any great length of time, even with the best of care and attention, and keep the journals perfectly round, without an occasional visit to the machine shop. Sometimes imperfect gearing is the cause of imperfect work. Perhaps one of the cogs in a wheel may be swelled or otherwise imperfect in the casting, and if such a cog or tooth, as they are frequently called, isn't carefully filed to the proper shape, at every revolution when it comes in contact with the wheel working with it, a sudden shock is given which may not be noticed by the operator in the hum and noise of the planing mill, but its effects will be found upon the face of the board in the shape of a small corrugation. A smooth, steady and uniform feed is very essential to smooth work, and cannot be expected from imperfect and rattling gearing.

While it is necessary that all the gears pertaining to a planer should be sufficiently perfect to run smooth and without jarring, those which connect the rolls, and are termed extension gears, should be especially so, and if cast gearing is used for this purpose, it should in all cases be cast from iron patterns cut especially for that purpose. A pattern made of wood, no matter how perfect it may be in the first instance, after being used in the damp sand of the foundry, will absorb more or less dampness, causing it to swell and shrink, so that after a few times it will lose its shape and become imperfect, and perfect castings cannot be obtained. In my experience I have found that cut gears, especially the extension gears, are so much superior to cast ones that the machine runs lighter and the work is much smoother than with cast gears, no matter how perfect a pattern they may be cast from. It is true the first cost of a machine with all cut gearing may be a trifle more than cast, but the satisfaction of making more perfect work and less liability for breakdowns is more than sufficient to cover the difference in the first cost. Sometimes wavy work is caused by neglecting to properly adjust the pressure bars, but as this is a matter so easily detected and easily remedied, there is no excuse for the operator who makes rough and wavy work from this cause.



## THE NEWS.

—It is said that James Young will rebuild his saw mill at Auburn, Ont.

—An addition has been built to the planing mill of J. M. Taylor, Portage la Prairie, Man.

—The M. & N. S. Company intend building a pulp mill at Webbwood Falls, on the Spanish river.

—A. McPherson & Co., of Longford Mills, are building a large saw mill on their limits at Bethune.

—The Small & Fisher Co., of Woodstock, N. B., are building an addition to their machine shop.

—F. Dillon, of Parry Sound, Ont., will erect a shingle and saw mill at Shebeshakong in the spring.

—It is stated that Ross Bros. propose erecting new saw mills at Buckingham, Que., to cost \$50,000.

—The St. Anthony Lumber Co. lately purchased a steam fire engine to protect their mills at Whitney, Ont.

—I. Charbonneau & Co., sash and door factory, St. Louis du Mile End, Que., have dissolved partnership.

—Wm. Peter's mill at Parry Sound, Ont., closed down for the season last week. The cut has been an average one.

—A. D. Turcotte and Martin Bros., planing mill proprietors of Montreal, are each reported in financial difficulties.

—Two unsuccessful attempts have lately been made to burn A. S. Markle's saw mill on the fourth concession of Blenheim. The mill is a new one and cost \$3,000.

—Mickle, Dymont & Co., of Barrie, Ont., have secured the London Planing Mill Company's premises at London, and will go into the manufacture of builders' supplies.

—William McKinnon, of South Finch, Ont., is searching for his brother, John P. McKinnon, a prominent lumberman who makes Cheboygan his headquarters in the winter.

—C. F. & F. R. Eaton, of Parrsboro, N. S., have been given a contract by McKay & Dix, of New York, to construct another bark for the kryolite trade, and are now taking out timber for the frame.

—The Danish Government is asking for information in regard to Canadian pulp wood. Denmark's supply has been drawn from Norway, but of late years it has been playing out, and prices have advanced to a high figure.

—Extensive improvements have been made to his saw mill by W. R. Thompson, of Teeswater, Ont., including a planer and matcher and a dry kiln. Machinery has also been added for making table tops for the New York market.

—Mr. H. de Puyjalon, who was appointed by the Commissioner of Crown Lands for Quebec to explore the vast western territory of the province, has returned after an absence of four months, and reports vast resources of forest wealth.

—A boiler exploded in Robinson Bros.' saw mill at Parkhill, Ont., on the 16th inst., killing the daughter of Mrs. J. H. Cunnington and injuring one of the proprietors, Mr. E. Robinson, and his father, Mr. Thomas Robinson. The building was completely wrecked.

—Mr. J. B. Coats, of Los Angeles, Cal., has purchased the milling and cooperage business of Watson Bros., Ridgetown, Ont. Mr. Coats carried on this line of business at Blenheim previous to going to California, and is a man of large experience and great energy.

—The imports of forest products from Canada into New South Wales, Australia, during the year 1895 were valued as follows: Dressed timber, £765; rough timber, £19,112; laths, £1,240. The falling off in dressed timber is due to the failure of the spruce butter box trade.

—Messrs. Edmund A. King, Charles King and James King are applying for letters patent under the name of King Brothers, Ltd., to carry on a milling, lumbering and asbestos business. The capital stock will be \$300,000. Mr. W. S. Thomas, of Quebec, is manager.

—Action was recently brought by Mr. Arch. Lindsay, of Aylmer, against Klock Bros., to obtain damages for the burning of Mr. Lindsay's saw mill last summer while being operated by Klock Bros. The firm in leasing the property promised to return the mill in as good condition as when they took charge of it.

—The Sackville, N. B., Post says: Lumber shipments from Cape Tormentine, Baie Verte, Shediac and Sackville

are about over for this year. The season has been a busy one and a great deal of lumber has been handled. A larger amount was loaded at Cape Tormentine than ever before, while shipments at Point du Chene have been decidedly active. There was a slight falling off at Sackville. The shipments from Dorchester exceed those of last year very considerably. Reports indicate that this winter the cut will be fully as large as last year.

—A dispatch from St. Paul, Minn., says: The lumbermen from Duluth are complaining because Canadian lumber instead of the American product was used in the big bridge between Duluth and Superior. The Canadian lumber was used as a grillage between the head of the piling that was cut off under the water and the bottom of the masonry of the piers, and hemlock was specified by the bridge engineer. No hemlock grows in Northern Minnesota, although there is plenty in Northern Wisconsin and Michigan. The contractor, on discovering this, sent to Owen Sound, Canada, and purchased his lumber there, as he could buy it there cheaper than in the United States, and bring it in duty free. The timber was also shipped in cheap Canadian schooners to save freight, and they made the whole distance under sail, taking nearly a month for the trip.

### TRADE NOTES.

Messrs. Campbell Bros., St. John, N. B., report a steadily increasing demand throughout Ontario and Quebec, as well as the lower provinces, for their hand-made frost-proof axes.

In the description of Messrs. Mickle, Dymont & Son's mills at Gravenhurst, Ont., which appeared in our November number, it should have been stated that each of the two shingle mills were equipped with four "Boss" shingle machines, manufactured by Messrs. B. R. Mowry & Sons, of that town. These machines are said to give perfect satisfaction to the proprietors.

Sectional catalogue No. 4 to hand from the McEachren Heating and Ventilating Co., of Galt, Ont., consists of upwards of 100 pages, enclosed in an attractive cover. The heating, drying and ventilating apparatus manufactured by the company are fully described and illustrated, and numerous testimonials from customers express the utmost satisfaction with the "Progressive" dry kiln for drying lumber.

### LEGAL DECISIONS.

The Kentucky Court of Appeals held, in the recent case of The Asher Lumber Company vs. French, that under a contract between appellant and appellee by which appellant agreed to pay appellee certain prices for timber, to be paid "when titles are examined and found good and the timber branded," if appellee tendered to appellant trees of the kind mentioned in the contract within a reasonable time after its execution, and if he had good title to the same, it was appellant's duty to receive and pay for them, and if appellant refused to comply with the contract appellee was not required after that time to make an actual tender of timber, but he might cease to buy or procure any more under the contract, and sue and recover damages on account of appellant's failure to comply with the contract. The court further held that an oral contract for the purchase of standing trees to be speedily removed from the land is valid provided the trees are so marked or described as to be easily identified.

SHEPHERD VS. JOHNSON.—In this case, which was tried in the Non-Jury Court at Toronto, William J. Sheppard, manager of the Georgian Bay Lumber Company, and William Irwin, of Peterboro', sought to recover the sum of \$60,000 from Edward E. Harvey, of Detroit, the price agreed to be paid for certain timber limits in the Rainy River district. In the alternative they asked for a return of the limits. A counter claim was presented by Harvey for \$36,000 for damages for alleged misrepresentation of the quantity and quality of the timber, but this was withdrawn. A house and lot in Detroit figured in the suit, the defendant having conveyed it to the plaintiffs in part payment, which was all the plaintiffs had received. The defendant afterwards conveyed his interest in the limits to the Peninsular Savings Bank and the Detroit River Savings Bank, both of which were made defendants in the action. Judgment was given for plaintiffs for specific performance of agreement and for payment of purchase money now due by defendants, and in default for foreclosure, with full costs of action.

### PERSONAL.

Mr. J. W. Todd, the well-known lumberman of Liverpool, Eng., is at present on a visit to Canada.

Mr. Wm. H. Murray, lumberman, of St. John, N. B., recently celebrated his 65th birthday. He has been connected with the lumber business nearly all his life time, and is one of the most successful and energetic lumbermen in the province.

Mr. Archibald Campbell, of Lakeport, Ont., an extensive grain and lumber merchant, was drowned by falling off a pier in his native town. Deceased was in his 55th year, was widely known, and was one of the most popular members of the Toronto Board of Trade.

Mr. W. C. B. Rathbun, brother of Mr. E. W. Rathbun, manager of the Rathbun Company, of Deseronto, was found dead in his bed on the 20th ultimo, death being due to heart failure. He was 30 years of age, and the youngest son of the late H. B. Rathbun. He married Miss Blaikie, daughter of Mr. J. L. Blaikie, of Toronto.

Mr. R. W. Southern, of the firm of Southern & Nephew, lumber merchants, Manchester, Eng., has spent the past month in Canada, acquainting himself with the leading lumber manufacturers with a view to opening up trade. His firm were the purchasers of the first cargo of lumber that went through the Manchester ship canal, and which was shipped from Parrsboro', N. S.

### PUBLICATIONS.

Bulletin No. 13 of the United States Department of Agriculture, entitled "The Timber Pines of the Southern United States," is to hand. It is published by Mr. Filbert Roth, under the direction of Mr. B. E. Fernow, Chief of the Division of Forestry, and contains upwards of 150 pages illustrating and describing the characteristics of the various woods, making one of the most complete works of its kind yet issued.

The October number of "Business," published by the J. S. Robertson Co., of Toronto, is very bright and attractive. It is an anniversary number, containing 32 pages, enclosed within an appropriate cover. Its contents consist of interviews with leading advertisers on the art and practice of advertising, portraits of prominent business men, a department on practical accounting, and other equally interesting articles.

### BIRCH SQUARES.

THE Timber Trades Journal, of London, Eng., in reviewing the market, says of birch squares:

"Some of the large Midland contracts are early in the market this year, and we hear that the various East Coast firms who deal therein have been busy looking up their customers during the last fortnight. Baltic birch would be preferred to any other, if a high class of manufacture and assortment could be depended upon, but lately there has been a downward tendency in the quality, which is to be regretted, especially as it is coupled with a rise in value. It appears that the American squares are in reality superior in make, but their price has been considerably higher than Baltic produce. We learn that a new company has been started to acquire and work a large and favorable tract of birch-grown forest-land in America, with a view of placing on the European market a reliable and good assortment of birch stuff. Samples have been received on this side and have been favorably criticized, but it remains to be seen if the quality, apart from samples, is maintained, and also if the price obtained compares favorably with European-grown birch."

Machines used in a saw-mill, made after a fixed pattern, and which are fastened to the floor only by bolts and screws and run by belts connected with the shafting and can be removed without injury to the building and used as well in another building, are not fixtures.

**CLEANING DIRTY BELTS.**

A CORRESPONDENT of the Centralblatt fur die Textil Industrie, who complains that several belts are dirty from drop oil and dust and desires to know how to clean them, is told by that journal to first wash the belts with warm water and soap, using a sharp, stiff brush, and while still moist, to rub them with a solution of sal-ammoniac, which saponifies the oil in them. Immediately thereafter the belts must be rinsed well with luke-warm water and then dried with sufficient tension. While they are still moist the belts are to be rubbed well on the inside and less on the outside, with the following: Two pounds three-quarter ounce of India rubber, heated to 122° F. and mixed with two pounds three-quarter ounce of rectified turpentine oil. After this solution is complete twenty-seven ounces of bright resin are added, and when it is dissolved twenty-six and one-half ounces of yellow wax are added. This mixture, by diligent stirring, is mixed with six pounds ten ounces of fish oil and two pounds twelve ounces of tallow, previously dissolved in the former. In the further treatment of the belt rub the inside only and the outside only at the first time, as stated. The unguent also replaces the tannin extract from the leather, prevents the dragging of the belt and imparts elasticity to it.

**CLEANING FILES.**

A. GAWALOWSKI recommends the following treatment of files that have been in use for some time: Lead and tin are best removed by nitric acid; the files are then dried in coal dust or sawdust, after which they receive a good brushing. Iron grit is removed by dipping into copper

sulphate; the precipitated copper does not adhere. Treatment with nitric acid follows, which is, as in the former case, continued until the brown vapors become unpleasant. Zinc is dissolved out by sulphuric acid. For copper, nitric acid is repeatedly applied. Rasps are cleaned in warm sulphuric acid, brushed, dipped into caustic soda, and dried and brushed.

**THOMAS PINK**  
MANUFACTURER  
OF  
LUMBERING  
TOOLS

**PEMBROKE, ONT.**  
OTTAWA ENG CO

**LUMBERMAN'S**  
VEST-POCKET  
**INSPECTION**  
**BOOK**

Containing Rules for the Inspection and Measuring of Pine and Hardwood Lumber in the leading markets of Canada and the United States. Embracing also many useful tables and calculations of everyday service to lumbermen.

Prepared by the Editor of the  
*'Canada Lumberman.'*

Toronto, Canada  
C. H. MORTIMER, Publisher  
1895

THE above is a fac simile of the title page of the latest and most complete Lumber and Inspection Book published. We shall be pleased to send you a copy on receipt of four 3 cent Canadian postage stamps . . . . THE CANADA LUMBERMAN, Toronto, Canada

**CAMP SUPPLIES**

We are making a specialty of this class of business and quote a few lines:

Japan tea, good style and cup quality @..... 11c. lb.	Prunes, large bright fruit in cases 4½c. lb.
Y Hyson tea, good style and cup quality @..... 10c. "	Valencia raisins..... 4c. "
Congou tea, good style and cup quality @..... 11c. "	Evaporated apples (choice brights) 5½c. "
Choice medium beans..... Soc. bus.	Dried apples..... 3¾c. "
	Dried peaches..... 5½c. "
	Dried plums..... 6½c. "
	½ brls fine quality rich syrup..... 2c. "

WRITE US FOR PRICES

**H. P. ECKARDT & CO.**

WHOLESALE GROCERS - TORONTO.

It Pays to Advertise in the Canada Lumberman

**IT COSTS YOU NOTHING**

FOR OUR

Automatic "Compression"



UNLESS OUR GUARANTEE IS FULFILLED

To convince you of the Superiority of our Process, write us for Catalogue "C" and Testimonials.

Have you ever seen our Channel Steel . . . ?  
Roller Bearing Trucks and Lumber Buggies ?

THE EMERSON COMPANY FIDELITY BUILDING BALTIMORE, MD., U.S.A.

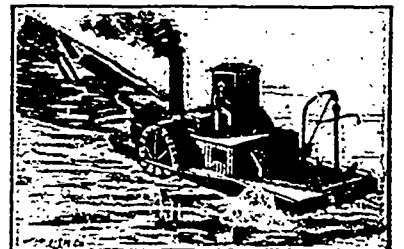
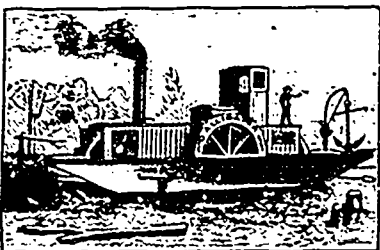
**WEST & PEACHEY**

SIMCOE, ONT.

MANUFACTURERS OF

**ALLIGATOR STEAM WARPING TUGS**

STEAM ROAD MAKER



ENGINES AND BOILERS FOR STEAM YACHTS



•• Saw Mill Machinery ••

**SHAVINGS.**

The value of forest products exported from the United States during the fiscal year ending June 30, 1896, according to figures furnished by the Agricultural Department, was \$33,718,204, or 3.91 per cent. of the total exports, as against \$28,576,235, or 3.61 per cent., for the fiscal year ending June 30, 1895.

Statistics show that the United States is consuming annually about 40,000,000,000 feet of lumber, valued at \$450,000,000. At this rate of consumption the estimated standing supply of 2,300,000,000,000 feet, board measure, would not last many years, but there are revolutions taking place which point to the conclusion that timber will be moderately plentiful for some time to come. The growth of the lumber industry has been rapid. In 1870 the number of men engaged in lumbering was 149,997, and that their wages account footed

up \$32,007,322, while the product of the year was valued at \$168,127,462. Twenty years later 286,197 men were employed, and they earned \$87,784,433, their output being \$403,667,675. The exports in 1892 amounted in value to \$27,975,423.



OUR EXTRA  
HAND-MADE  
**AXE**

This Axe stands better in frosty weather than any axe made. Send for sample. Can supply any pattern.

CAMPBELL BROS.  
Mfrs.  
St. John, N. B.



The LUMBERMAN is issued fifty-two times a year for \$1.00. Can you afford to do without it?

**LUMBERMEN'S  
CLOTHING**

MANUFACTURERS  
OF THE

**FAMOUS CARSS MACKINAW**

In Jackets, Pants and Shirts

WOOL SOCKS and MITTS

**VAN GOODS** Specially for the Lumber Trade.

Write for Prices and Samples.

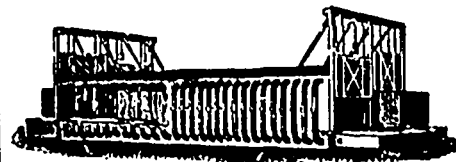
**W. Carss & Co.**  
ORILLIA, ONT.

**RAILS FOR TRAMWAYS**

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

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

**THE PARMENTER  
PATENT DRY KILN**



For Drying **LUMBER**  
Staves, Heading, Shingles, &c.

**The Latest  
The Cheapest  
And Best**

CHATHAM, ONT., June 19th, 1896.

JAS. S. PARMENTER, Flushing, N. Y.

DEAR SIR: We take very great pleasure in being able to say from nearly one year's use of your Patent Dry Kiln, we find it away ahead of anything we ever yet tried for thoroughly drying lumber without injuring it in the least. So far we have found exhaust steam alone sufficient for our purpose, so that it absolutely costs us nothing to run it. We thoroughly dry white oak, rock elm, balm and other hardwood lumber in less time than we ever did with a blast kiln, and especially find it a splendid kiln for drying white oak hubs. It does its work so naturally that neither hubs nor lumber are injured by it.

CHATHAM MFG CO., LTD.

D. R. VAN ALLEN, President.

**J. S. PARMENTER**  
PATENTEE

Canadian Office— Head Office—  
WOODSTOCK, ONT. FLUSHING, N. Y.

**Electrical  
Supplies ...**

TELEPHONE  
TELEGRAPH  
ELECTRIC LIGHT

Write for Illustrated Catalogue.

**John Starr, Son & Co., Ltd.**

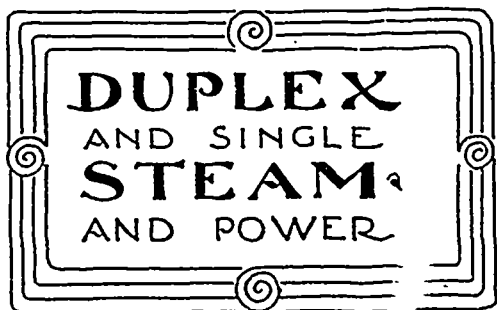
Mfrs. and Dealers in  
**ELECTRICAL SUPPLIES**

Box 448 \* Halifax, N. S.

**OAK TANNED BELTING**

TORONTO  
20 FRONT ST EAST  
TELEPHONE 475

**THE J.C. Mc LAREN BELTING CO** MONTREAL



The Northey Mfg. Co. Ltd.  
TORONTO

THE LAURIE ENGINE CO. - MONTREAL  
SOLE AGENTS FOR PROVINCE OF QUEBEC.

**JOHN SCULLY & CO.**

ESTABLISHED 1878. TORONTO

TIMBER LIMITS BOUGHT AND SOLD

Contractors', Lumbermen's and Mining Co's Plant and Supplies.

Light Locomotives; Rails of all kinds. Air Compressors, Pumps, Steam Drills, Blasting Batteries, Wire and Hemp Rope.

MINING MACHINERY—New and Second-Hand.



SCRIBNER'S  
LUMBER  
AND  
LOG BOOK

Over One Million Sold. A complete book of five kinds ever published. Gives measurements of all kinds of Lumber, Logs, Planks, Timber; Hints to Lumber Dealers; Wood Measure; Speed of Circular Saws; Care of Saws; Cordwood Tables; Felling Trees; Growth of Trees; Land Measure; Wages, Rent, Board, Interest, Stave and Heading Bolts, etc.

Standard book throughout the United States and Canada. Illustrated edition of 1895. Ask your bookseller for it.

27 Sent postpaid for 35 cents. S. B. FISHER, Box 238, Rochester, N. Y.

**J. D. SHIER**

MANUFACTURER OF

**Lumber, Lath & Shingles**

BRACEBRIDGE, ONT.

**MICHIGAN**

Are you thinking of moving to better your condition?

If so, come to Michigan, where you can get comfortable living, good markets, good neighborhood, reasonable transportation for your products. A PROSPEROUS STATE!

The Flint & Pere Marquette R. R. Co.

have good lands for sale, prices ranging from SEVEN TO FIFTEEN DOLLARS per acre, according to location and timber; easy terms.

You make no mistake locating in this territory.

ADDRESS:

A. Patriarche, Traffic Manager  
Saginaw, Mich.

**Your Stomach Distresses You**

after eating a hearty meal, and the result is a chronic case of Indigestion, Sour Stomach, Heartburn, Dyspepsia, or a bilious attack.

**RIPANS TABULES**

Promote Digestion, Regulate the Stomach, Liver and Bowels, Purify the Blood, and are a Positive Cure for Constipation, Sick Headache, Biliousness, and all other Diseases arising from a disordered condition of the Liver and Stomach. They act gently yet promptly, and perfect digestion follows their use. Ripans Tabules take the place of an Entire Medicine Chest, and should be kept for use in every family.

Price, 50 Cents a box. At Druggists, or by mail. RIPANS CHEMICAL CO. 10 Spruce St., New York.

**ARE YOU LOOKING**

FOR A CHANGE IN LOCATION?

If you are not satisfied with your present site, or if you are not doing quite as well as you would like to, why not consider the advantages of a location on the Illinois Central R. R. or the Yazoo & Mississippi Valley R. R.? These roads run through South Dakota, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Kentucky, Tennessee, Mississippi and Louisiana, and possess

FINE SITES FOR NEW MILLS  
BEST OF FREIGHT FACILITIES

CLOSE PROXIMITY TO

COAL FIELDS AND DISTRIBUTING CENTERS

AND

INTELLIGENT HELP OF ALL KINDS  
MANY KINDS OF RAW MATERIAL

For full information write to the undersigned for a copy of the pamphlet entitled

100 Cities WANTING INDUSTRIES  
AND TOWNS

This will give you the population, city and county debt, death rate, assessed valuation of property, tax rate, annual shipments raw materials, industries desired, etc.

To sound industries, which will bear investigation, substantial inducements will be given by many of the places on the lines of the Illinois Central R. R., which is the only road under one management running through from the North-Western States to the Gulf of Mexico. G. O. C. POWER, Industrial Commissioner I. C. R. R. Co., 506 Central Station, Chicago.



Sole Canadian Agents --- Prices Reduced,  
WATERLOO, BRANTFORD, CANADA.

**LUMBERMEN'S VETERINARY MEDICINES**

J. G. & W. R. McMURTRY

**Veterinary - Surgeons**

ARNPRIOR

Manufacture the Cheapest and Most Reliable lines of Veterinary Medicines. OUR COLIC DRENCH is a valuable acquisition to any lumberman's camp. A safe, sure and speedy remedy, giving permanent relief to COLIC and all other inflammatory diseases in horses, almost instantly. Send for Descriptive Circular and Testimonials from many of the leading lumber firms of Canada.

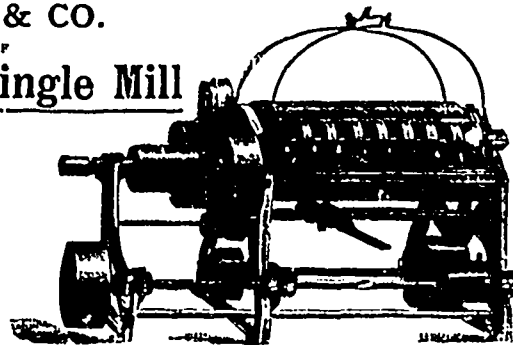
**P. PAYETTE & CO.**

MANUFACTURERS OF

**Saw Mill and Shingle Mill**

**Machinery . . .**

Boilers and Boiler Fittings  
Shafting, Pulleys, Hangers  
Brass and Iron Castings  
Cant-Hook Handles, etc.



Write for Terms and Prices.

PENETANGUISHENE, ONT.

**Galt Machine Knife Works**



**MACHINE KNIVES**

OF EVERY DESCRIPTION

FOR

**Woodworking Machines**

... Send for Price List ...

PETER HAY - - - - Galt, Ont.

**WHY BAND SAWS BREAK**

SIXTEEN

REASONS,

AND HOW TO

AVOID THEM



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

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

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

Address— CANADA LUMBERMAN, Toronto Ont.

**PULLEYS**

FOR SAW AND SHINGLE MILLS

We make a Special Strong and Heavy ::::::::::::::

**WOOD SPLIT PULLEY**

for Saw and Shingle Mills.

Millmen, when Overhauling or Extending, write us for Prices. We can save you money and give you good satisfaction.

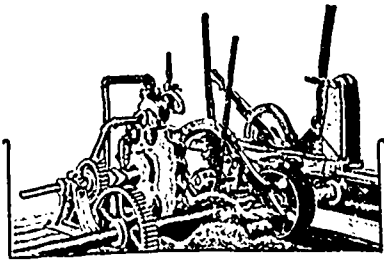
**DODGE  
WOOD-SPLIT  
PULLEY CO.**



Office:  
74 York St.  
TORONTO

# THE DAKE ENGINE

The accompanying cut shows the Dake Engine as attached to saw mill carriage set work. The engine, as shown, is reversible, advancing and receding head blocks at the will of the operator. Does away with coil springs used for receding head blocks, and is a practical assistant to a saw mill carriage, enabling the setter to handle the heaviest logs with ease. Steam is carried to engine by means of steam hose, or by swinging steam pipe with knuckle joints, taken from near the centre of carriage travel. As applied to carriage work, it has been in actual operation for over a year.



CORRESPONDENCE INVITED.

**PHELPS MACHINE CO.**  
EASTMAN, QUE.

# THE ROYAL ELECTRIC COMPANY

MONTREAL, QUE.

Western Office: TORONTO, ONT.

Cable and Telegraph Address, "Roylelectric."

MANUFACTURERS OF

## Electrical Machinery and Apparatus

... FOR ...

**LIGHT and POWER**

SPECIAL ATTENTION GIVEN TO

**LONG DISTANCE TRANSMISSION OF ELECTRICITY**

FOR LIGHT AND POWER

ALSO FOR

**ELECTRIC PLANTS FOR MILLS**

Distant water powers utilized and Mills lighted and operated safely.

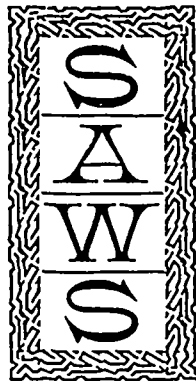
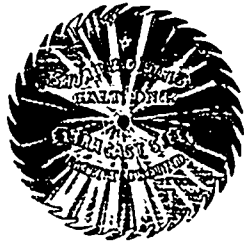
CORRESPONDENCE SOLICITED.



# SHURLY & DIETRICH

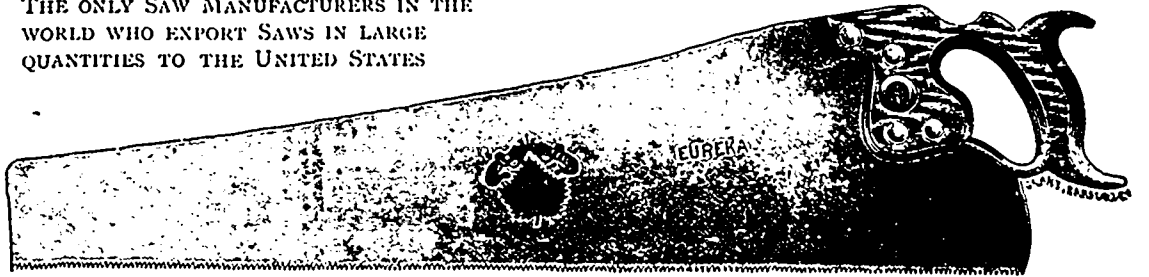


MANUFACTURERS OF



THE ONLY SAW MANUFACTURERS IN THE WORLD WHO EXPORT SAWS IN LARGE QUANTITIES TO THE UNITED STATES

GALT, ONT.



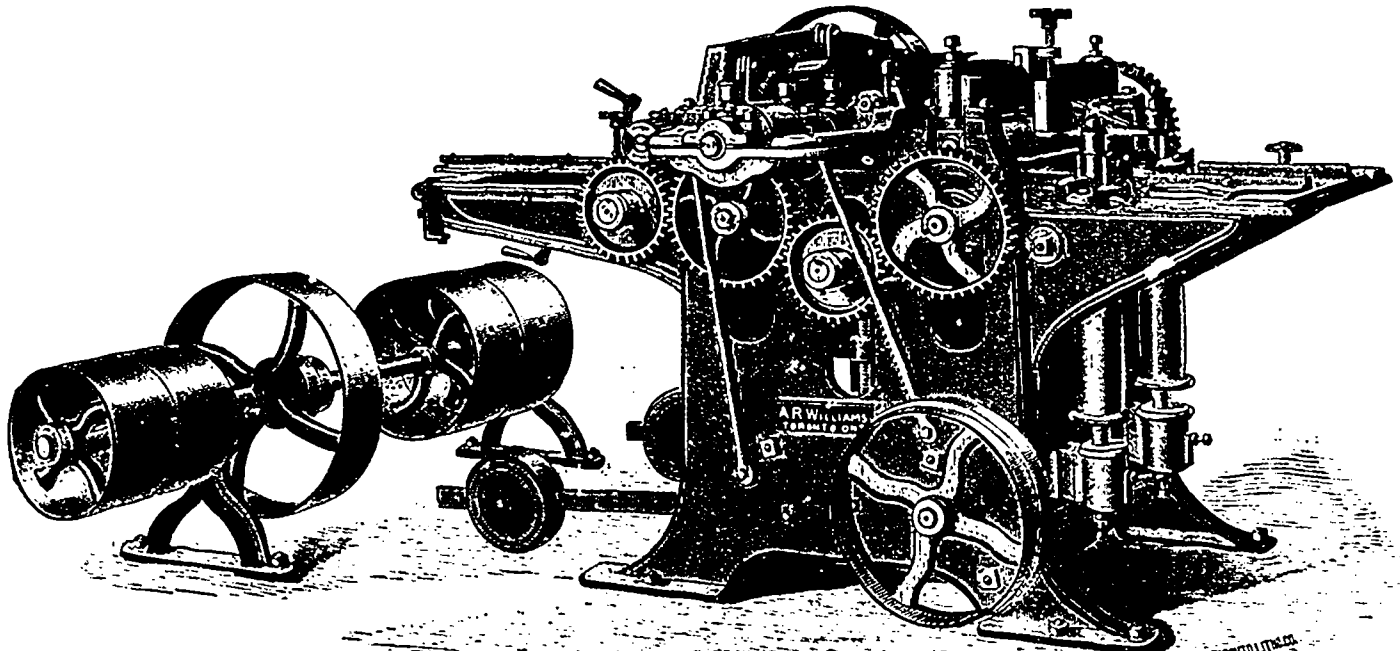
SOLE PROPRIETORS OF THE SECRET CHEMICAL PROCESS OF TEMPERING : : Our Silver Steel Saws are Unequaled

# The A. R. WILLIAMS MACHINERY CO., Ltd.

HAVE FOR SALE THE FOLLOWING :

COMPLETE OUTFIT of Saw Mill, Shingle Mill, consisting of one Three Head Block Saw Mill, two Large Engines, one 65 h. p. Boiler, Shingle Machine, Jointer and Packer; and Chopping Mill with Three Acres of Land, Wet and Dry Yard, with lots of Timber near.

PLANING MILL OUTFIT, consisting of Engine and Boiler, Planer, Matcher and Moulder Combined, with a Full Set of Sash and Door Machinery, Shafting, Pulleys, Belting, Etc., in good town.



"ECLIPSE" PLANER, MATCHER AND MOULDER.—DOES GREAT VARIETY AND FINEST WORK.

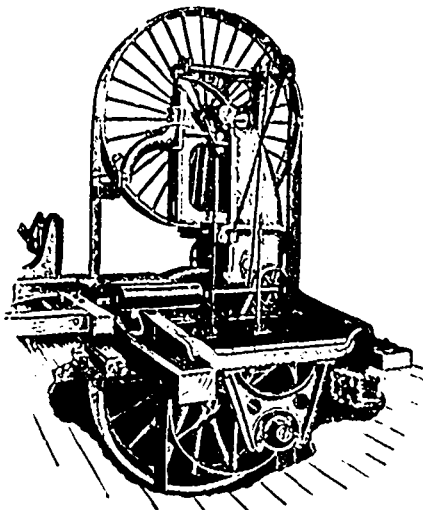
Sole Canadian Agents for the Genuine Sturtevant Fans and Heaters for Dry Kilns, Shaving Fans, Blowers; S. J. Shimer, Sons & Co.'s Celebrated Shimer Matcher Heads, Door and Sash Heads; E. Harrington, Sons & Co.'s well-known Chain Hoists and Overhead Tramway.

We have a Large Assortment of Planer and Sticker Knives for Immediate Shipment.

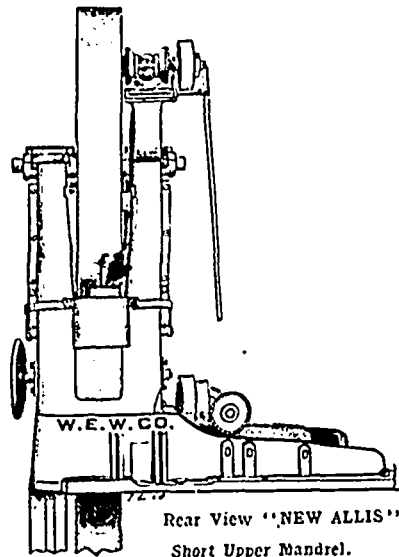
**The A. R. Williams Machinery Co. Ltd.,** Front St. West (OPPOSITE QUEEN'S HOTEL) **Toronto**



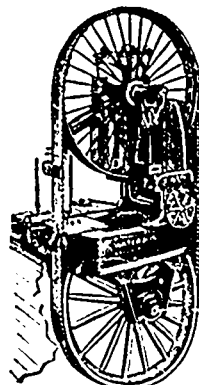
# Lumber Machinery The Most Modern



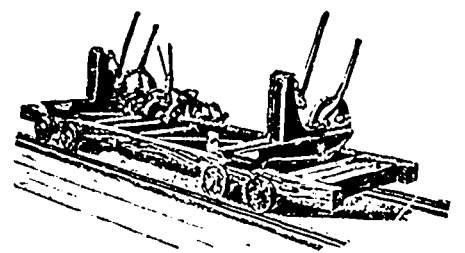
Right Hand Front View.  
"NEW ALLIS"  
It surpasses all others in many points.



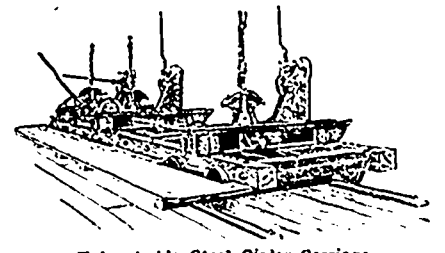
Rear View "NEW ALLIS"  
NOTE . . . . .  
Short Upper Mandrel.  
Wheel Centrally Hung.  
Lower Wheel Inside Frame.



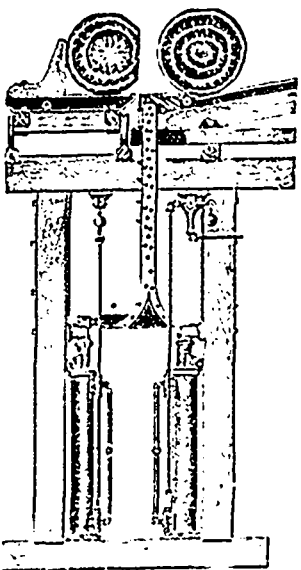
38 NEW ALLIS  
BANDS  
Sold in Canada since  
Jan., 1894.



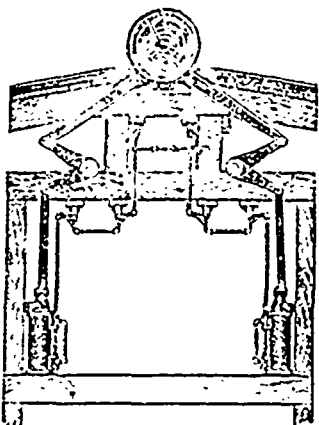
Reliance 2-Block Carriage.



Unbreakable Steel Girder Carriage.

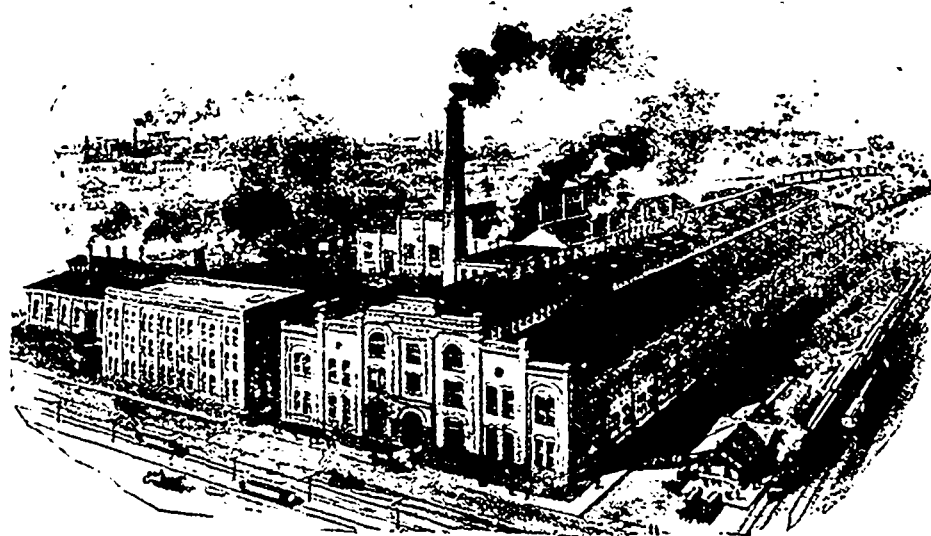


Our Steam Nigger.



Kelly Log Kicker.

## Where It Is Manufactured



Best Quality of Work  
Low Prices . . . . .

# Waterous, Brantford, Canada

ESTABLISHED

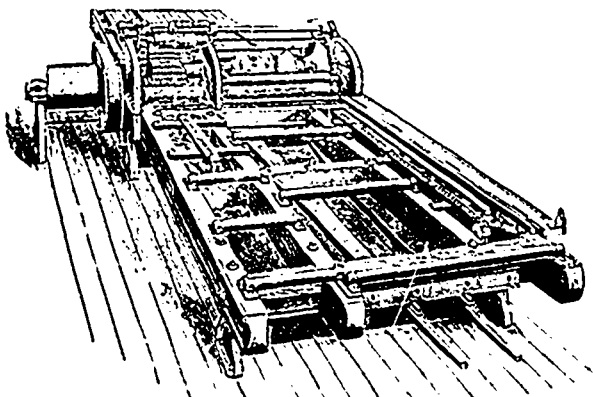
# 1844

INCORPORATED

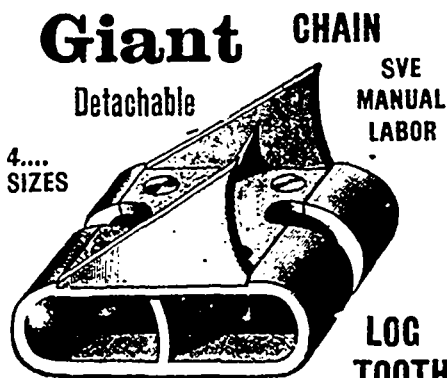
# 1874

NEW WORKS OCCUPIED

# 1896

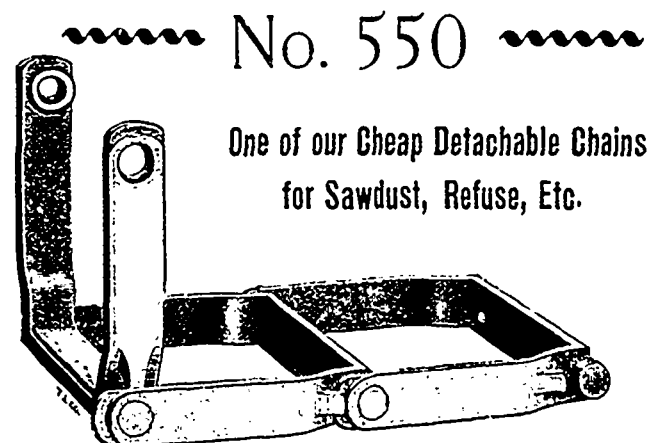


Combined Gang Edger and Flooring Machine.

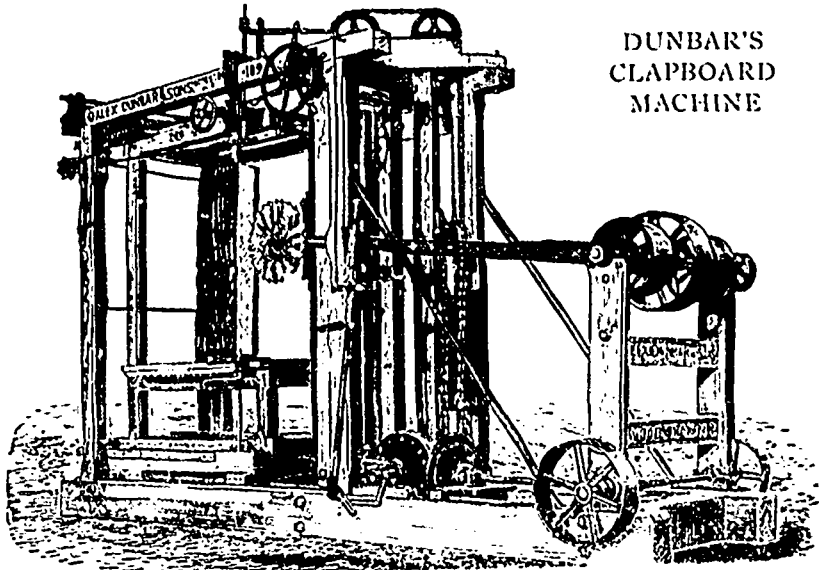


**Giant CHAIN**  
Detachable  
4... SIZES  
SVE MANUAL LABOR  
LOG TOOTH  
On 600-1050-1075.

A Most Satisfactory and Durable Chain for Log Haul-Up, Heavy Refuse Conveyors, etc.



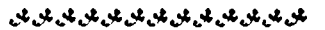
No. 550  
One of our Cheap Detachable Chains for Sawdust, Refuse, Etc.  
Over 50 Sizes and Styles of Chains, varying from 75 to 20,000 lbs. Breaking Strain. Special Attachment Links for all purposes.



DUNBAR'S  
CLAPBOARD  
MACHINE

ALEX. DUNBAR & SONS  
Woodstock, N. B.

Manufacturers of . . . . .



Saw-Mill Machinery

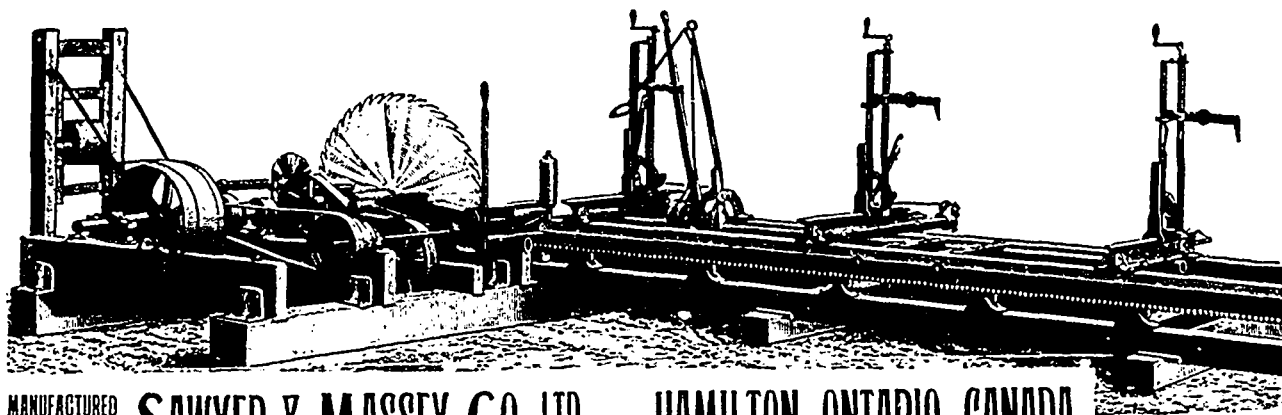
OF ALL KINDS

Including ROTARY SAW MILLS (3 sizes), CLAPBOARD SAWING MACHINES, CLAPBOARD PLANING AND FINISHING MACHINERY, SHINGLE MACHINES, STEAM ENGINES, Etc.

WRITE FOR FURTHER PARTICULARS

ALEX. DUNBAR & SONS - Woodstock, N. B.

NEW PORTABLE SAW MILLS



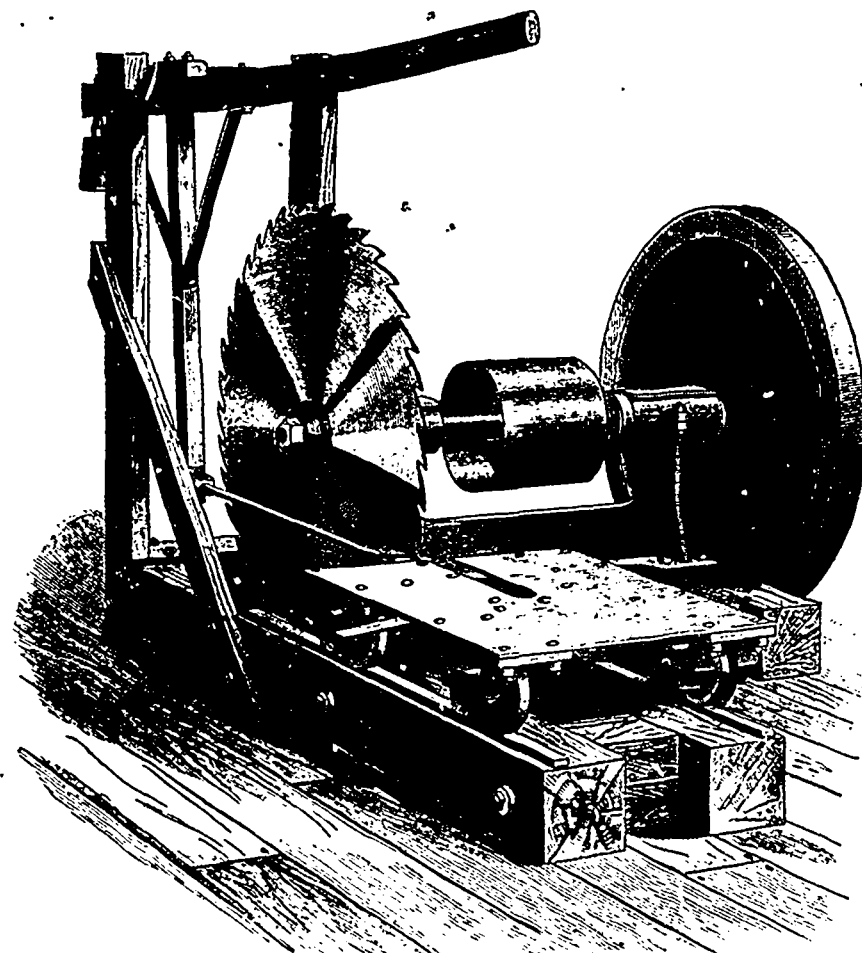
*Traction and Plain Engines  
of different sizes*

*Threshers, Clover Hullers,  
Horse Powers and Road-  
Making Machinery.*

MANUFACTURED  
... BY ... SAWYER & MASSEY CO., LTD. - HAMILTON, ONTARIO, CANADA

SEND FOR CATALOGUE

XXX SHINGLE BOLTER OR SPLITTER



**H**AVING had numerous enquiries for a First-Class, Self-Contained Bolter or Splitter, I have designed the accompanying illustrated machine expressly to fill that want, and guarantee it to be the best machine for the purpose in the market.

The frame is made of heavy timber, and bolted through and through; it occupies a floor space of 8 ft. long by 5 ft. wide.

Saw arbor is of 3 inch steel with solid forged collars 7 inches diameter. The driving pulley (unless otherwise ordered) is 14 inches diameter, 13 inches face.

The solid webbed balance wheel, shown in cut, is 48 inches diameter, weighs 1050 lbs., and with the pulley is turned true and accurately balanced.

As the boxes are in a solid cast iron yoke they can never get out of line. The bearings are full size of diameter of saw arbor, 12 inches long, and lined with finest quality of anti-friction metal.

The carriage is very strong and easily handled; the top is of steel boiler plate and is strengthened at the end of slot or centre of carriage by a heavy casting which carries a pivot and foot lever, used for the purpose of raising a heavy block and thus making it easier to turn. The carriage wheels are 8 inches diameter, with steel shafts running in self-oiling babbitted boxes. The carriage is operated by a hand lever, the front end of which is counter-balanced by an iron weight attached to back end of lever.

In operating this machine it is not necessary to "dog" the block on the carriage; that would be a waste of time. If the saw is in proper shape a piece of two inch plank can be stood on end on the carriage and split with the saw without "dogging" or holding it in any way.

Timber when split with an axe will invariably follow the grain of the wood, but when split with a saw it is of course perfectly straight, no matter how winding the timber may be, and the first cut then is a perfect shingle. On this account alone a splitter will not only save from 10 to 25 per cent. of the timber, but will add about 5,000 shingles to each day's cut.

Make more shingles in a day and more from the same quantity of timber, and you will save more money.

These machines made either Right or Left Hand; in ordering state which is required. The accompanying cut represents a Right Hand Machine. Speed of saw 700 revolutions per minute. Price, complete with 50 inch saw and heavy balance wheel as shown in cut, \$225.00, F. O. B. here. Or to parties who prefer to build their own wooden frame, I would furnish the iron work complete with any desired size of pulley and balance wheel at corresponding prices.

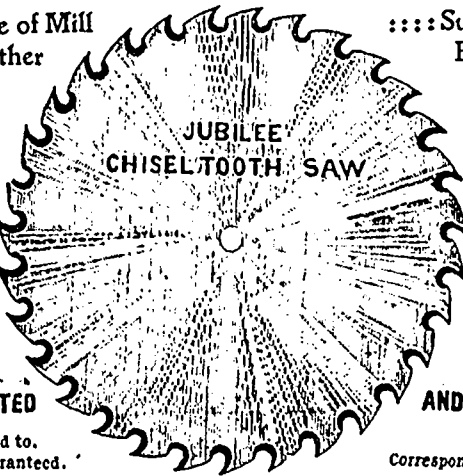
MANUFACTURED UNDER F. J. DRAKE'S PATENT BY

CANADIAN LOCOMOTIVE & ENGINE CO.  
LIMITED  
KINGSTON - ONTARIO

**THE JAMES ROBERTSON CO. LTD.** Manufacturers of.....  
Saws of all Description

.....: A full line of Mill Rubber and Leather Metal, &c., always

.....: Supplies, including Belting, Babbit carried in stock.



Head Office: 144 William St. MONTREAL

Factories at Montreal, Toronto and St. John, N.B.

ALL OUR SAWS FULLY WARRANTED

Orders promptly attended to. Satisfaction guaranteed.

CIRCULAR, GANG AND MILL SAWS A SPECIALTY

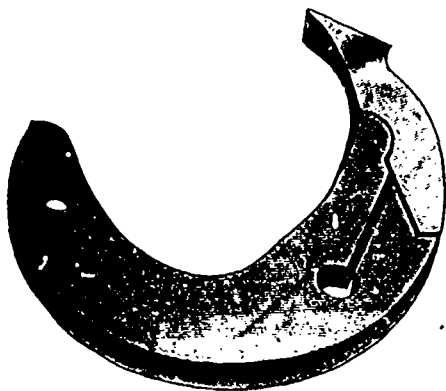
Correspondence Solicited.

**SUPPLIES**  
OF ALL KINDS

Chains, Ropes, Axes, Files, Bar Iron, Horse Shoes, Peavy Cant Dogs.

**RICE LEWIS & SON**  
(LIMITED)

Cor. King and Victoria Sts. - TORONTO



**A. McPHERSON**

Manufacturer of

**SHANKS AND CHISEL BITS**

For Inserted Tooth Saws.

Warranted equal to any on the market.

Also Manufacturer of

Locomotives and Trucks for the Pole System: of Tramways for handling logs and lumber in the woods.

Correspondence Solicited.

A. McPHERSON - OXFORD, NOVA SCOTIA

Every Lumberman wants it

35 cents buys it

**Scribner's Lumber and Log Book**

SAVES TIME SAVES MISTAKES SAVES MONEY

BRIMFUL OF EVERY-DAY, PRACTICAL INFORMATION

Address: THE CANADA LUMBERMAN, Toronto

**The McMillan & Haynes Co., Ltd.**

ST. CATHARINES, ONT.

**CELEBRATED NICKEL-STEEL CROSSCUT SAWS**

We lead all others in High-Grade Crosscuts and Saw Tools. A cheap, thick, clumsy saw is dear at any price.

The price of a good saw is soon saved in the extra work it will do.

Be sure you use Mc-MILLAN & HAYNES SAWS; they are all warranted to give entire satisfaction.



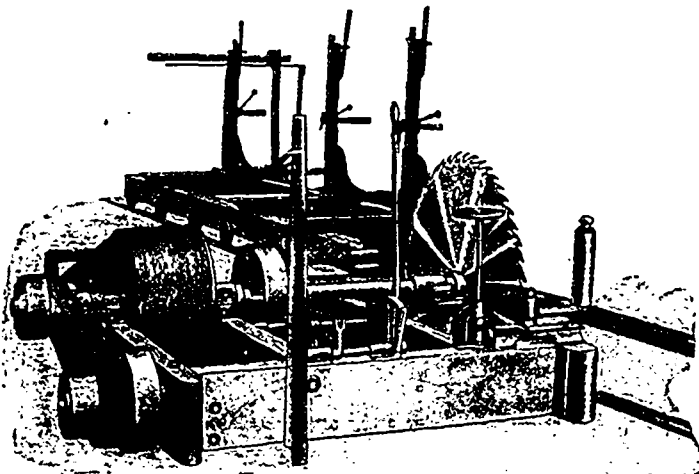
This SAW SET is the BEST EVER MADE. It is Simple and Strong, and is guaranteed to do its work perfectly.

We also manufacture Axes, Files, Saw Jointers, Cant Hooks, Steel and Brass Bedsteads. We have a cheap bed with wire

mattress attached suitable for shanties.

We handle the Famous KELLY AMERICAN AXES. Their Flint Edge is guaranteed to stand in cold, frosty weather, better than any other axe made.

**BELL'S No. 2 SAW MILL**



The accompanying cut shows our No. 2 mill with wood frame and feed works in the frame. We build this mill with either wood or iron frames as desired. The carriage has any desired number of head blocks, either ratchet or friction set works. We also put on an elevated scale, which is a great convenience to the sawyer, and a newly designed roller guage to set up to. Lumber cut on these carriages is uniform in thickness and can be made any desired thickness by adjusting roller, which is at the sawyer's hand.

We also build a No. 0 mill for light portable work, and a No. 1 mill, which is a good general mill for either portable or stationary use. Also Edgers, Slab Slashers, Cut-off Saws, Log Haul-ups, Friction Niggers, Lath Trimmers, Lumber Trimmers, Bolting Saws, Saw Benches. Send for Prices and Description.

ADDRESS

**ROBT. BELL, JR.,** Hensall Engine & Machine Works, HENSALL, ONTARIO, CAN.

**USE THE FAMOUS . . . PINK LUMBERING TOOLS**

Duck Bill Peavies, Round Bill Peavies, Finest Duck Bill Winter Cant Hooks

Lowest Prices



**THOMAS PINK**

Cant Hook Handles | By Car Load or Dozen  
Peavy Handles |  
Pike Poles, Skidding Tongs, Boom Chains

PEMBROKE, ONT.