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# THE CANADIAN LUMBERMAN

WOODWORKERS' MANUFACTURERS' AND MILLERS' GAZETTE

Volume XIX. Number 12.

TORONTO, CANADA, DECEMBER, 1898

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

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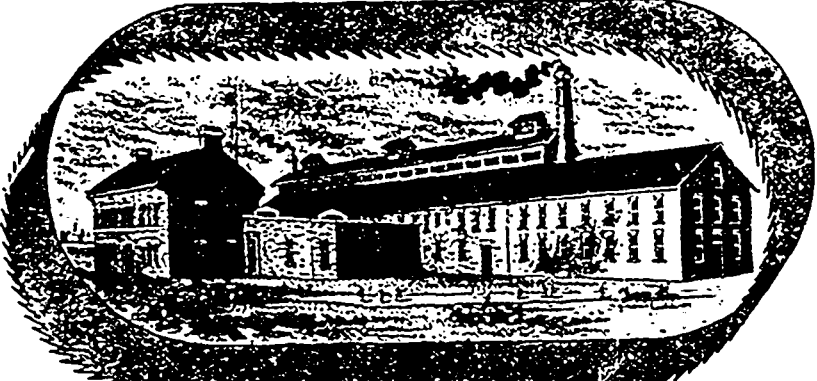
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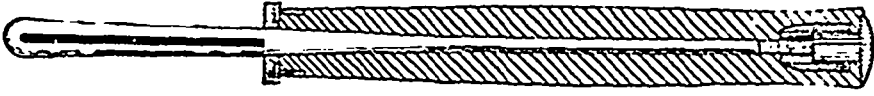
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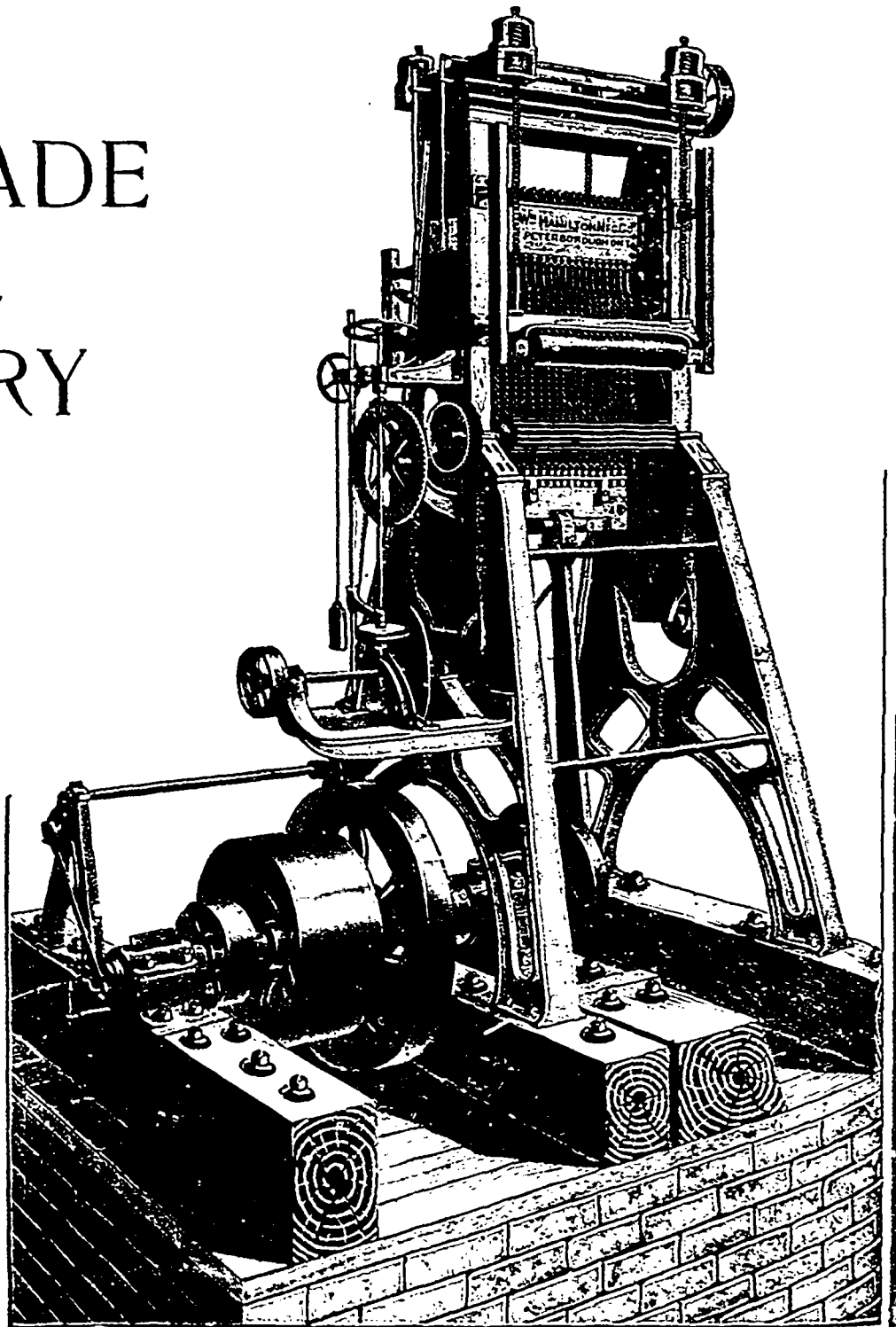
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## A YUKON SAW MILL.

In the early days of the Klondike rush, the crafts constructed for conveying gold seekers and their supplies down the lakes and the Yukon river to the heart of the gold fields at Dawson City were of the most primitive and crude design, and it is said that a number of the wrecks in the canyons and rapids are accounted for on these grounds. With the advent of saw mills the conditions were somewhat changed. The Mining Record furnishes the accompanying illustration of one of these mills, together with the following comment :

A local company, incorporated in Victoria in January, and known as the Victoria-Yukon Trading Company, sent 30 men, in charge of one of their directors, Mr. M. King, a well-known and experienced coast logger, to Lake Bennett, and in the face of most tremendous difficulties a complete saw mill equipment, weighing altogether in the neighborhood of 200 tons, and including a 40 horse power engine and boiler, was transported over the pass—a really remarkable feat, considering the then conditions of the trail, horses and men having to make their way through soft snow in many places many feet deep and up hill at that, dragging and carrying loads which would be trying enough on the level. At length, as is generally the case, pluck, perseverance and patience were rewarded, and by the middle of March the party arrived at Lake Bennett. The work of installing the machinery was commenced forthwith, and within two weeks from that time the steam whistle startled the silence of that grim north country, and a steam saw mill was in full operation on the shore of Lake Bennett. Needless to say, the mill could hardly keep pace with the enormous demand for lumber that immediately followed, for although prices would seem terribly "steep" to coast builders, to the prospectors, who with enormous labor had previously been obliged to whip-saw every foot of timber required for their boats, the saw mill charges appeared wonderfully moderate. Many, however, preferred to purchase boats or barges ready built at the mill, and so the company found it necessary to send from

Victoria a small army of competent ships' carpenters and boat builders, who received as much as fifteen and twenty dollars a day wages for their work; but then boats sold never far short of a hundred dollars. This year already hundreds of craft of all sizes and shapes have been turned out from the Lake Bennett mills, and the industry promises to become a very important one.

## ACCIDENTS FROM SMALL SAWS.

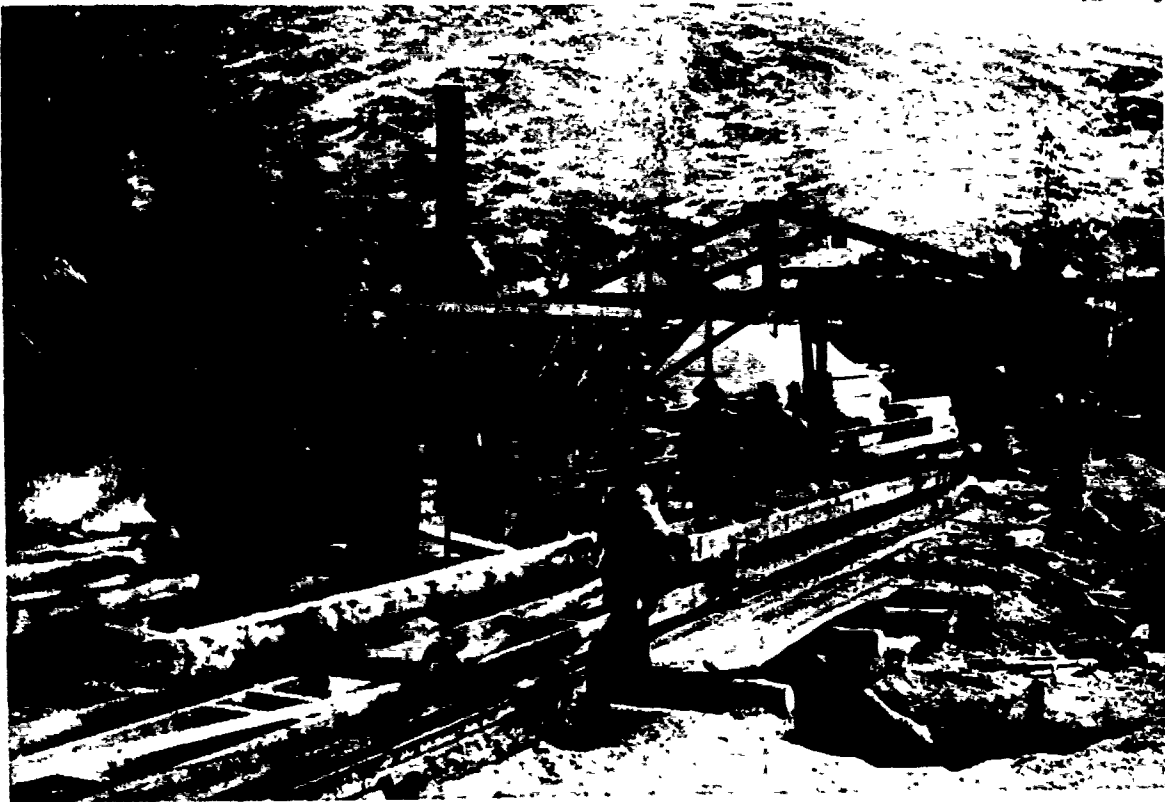
It is not a matter of surprise that so many accidents occur in saw mills, planing mills and other wood-working plants where rough lumber is cut up and finished. Indeed, it would

would never attempt such a trick. As long as he is afraid of moving machinery, he is pretty safe from accidents; but after a long experience he loses all fear, becomes careless and gets hurt.

It is true that many accidents are chargeable to the owners, operators or foremen. Often machines are not properly arranged on the floors, and placed in positions that greatly increase the liability to accidents. In such cases the owners or operators are liable for damages for accidents that may occur.

In this country the law gives a person who is hurt through the neglect or carelessness of his employer the right to bring suit for damages for any amount of money he may choose, and jurors generally sympathize with

the poor man who is hurt and also necessarily thrown out of employment, at least temporarily; but our laws make no provision to force employers to place their machines in such positions and to protect them in such a manner as to reduce the danger of accidents to a minimum. In England they have official factory inspectors who visit the plants using machinery, periodically in person; and if they find a machine is "dangerous," they serve a written notice to that effect on the foreman, proprietor or other proper person, and a heavy penalty attaches to



SAW MILL AT LAKE BENNETT, IN THE YUKON DISTRICT.

be a great surprise if none occurred, or if they were of rare occurrence only. Of the accidents recorded in the daily papers as occurring in wood-working plants, by far the greater number are caused by the small saws used for various purposes. Doubtless most of these accidents are due to the negligence or carelessness of the employees; at least that is the opinion of the writer, after considerable experience and observation. It is curious, but more accidents from this cause happen to hands with more or less experience than to new beginners. A long experience with rapid-moving belts and machinery induces a carelessness that amounts to a contempt for the known dangers. It was a favorite trick with the "Mohawk Dutchman," the champion scroll sawyer, to rub the ball of his thumb on an oil stone or greasy bearing, and remove the grease clean by passing his thumb repeatedly against the rapidly moving scroll saw. A new beginner

operating that particular machine until it is made to comply with the requirements of the Factory Act. Recently a law has been enacted requiring a hood, or a "fence," over all circular saws. The law has been much discussed of late in the British lumber trade papers. The trouble is to provide a hood, or fence, that will protect the operator and at the same time detract nothing from the efficiency and capacity of the saw. Several styles have been invented, and doubtless one will be devised that will be satisfactory to the employers.—Southern Lumberman.

A large saw mill is being constructed at Lake Temiscouata, Que., by James Miller, of St. John, N. B., and D. A. Huntley, of Parrsboro, N.S. The mill, which will begin operations next spring, will have a capacity of about 15,000,000 feet of lumber during the summer season. The firm have a gang of men in the woods now getting out logs.

## CANADIAN HOO-HOOS.

In the United States there is a society called the Hoo-Hoo, it being a social order composed almost exclusively of lumbermen. It was organized in 1861, and has since grown to considerable proportions, having a total membership of about 6,000. Some time ago the first branch of this society in Canada was formed in Vancouver, B.C., and on November 12th last another Canadian branch was organized in Winnipeg. A number of officers of the order from Minneapolis and vicinity, including Platt B. Walker, jr., the Snark, or great chief, visited that city, and initiated the following candidates into the mysteries of the society:

Richard Dignity Vigars, Vigars Bros., Port Arthur, Ont.

Arthur Frederick Ernest Phillips, Brunette Saw Mill Co., Winnipeg, Man.

Henry Scoots Burns, G. B. Housser & Co., Winnipeg, Man.

George Oliver Aulsebrooke, Brown & Rutherford, Winnipeg, Man.

John Malcolm Chisholm, Dick, Banning & Co., Winnipeg, Man.

George Welgord Campbell, B. C. Mills, Timber and Trading Co., Winnipeg, Man.

John Campbell Graham, Rat Portage Lumber Co., Winnipeg, Man.

Theodore Arthur Burrows, Winnipeg, Man.

Gideon Boyd Housser, G. B. Housser & Co., Portage la Prairie, Man.

Robert Hugh O'Hara, Barclay & O'Hara, Brandon, Man.

Daniel Boyce Sprague, D. E. Sprague, Winnipeg, Man.

John Dick, Dick, Banning & Co., Winnipeg, Man.

Douglass Cameron, Rat Portage Lumber Co., Rat Portage, Ont.

Magnus Stockholm Eshjornsson, Abbott Bros., St. Paul, Minn.

After the ceremony was completed an adjournment was taken to the Holmes restaurant, where an excellent banquet was participated in. Short addresses were made by all present, and the most cordial and friendly relations established between those who, while living in different countries, have many interests in common.

The appointment of a vicegerent for Manitoba was referred to the newly initiated members, and John C. Graham was univously selected for that honor. Mr. Graham is one of the representative lumbermen of the province, a genial gentleman and a general favorite.

## MAKING CLOTHESPINS.

THERE are probably very few people outside the trade who know anything concerning the vast number of clothespins that are annually required to supply the millions of housekeepers throughout the United States. It is estimated that as many as 50,000,000 dozen, or 600,000,000 single pins, are manufactured in eastern and western factories every year. Clothespins are made principally of beech and maple. Blocks of this wood are fed to a very ingenious and exceedingly rapid-running machine, which has three separate compartments. One of these cuts a block up into a dozen or more pieces, each of which is suitable for forming a pin. It next seizes and cuts the "crutel," or place that is to grip the wash on the clothesline, and the final operation turns the neck and head of the pins and smooths and finishes them off by the bushel, ready for use. The pins are then packed into boxes, each containing 720, and the boxes are then nailed up by another labor-saving machine, ready for the market.

## THE LATE MR. F. S. RATHBUN.

In lumber circles in Canada no name is more familiar than The Rathbun Company, of Deseronto, Ont. Widespread grief will therefore be felt at the death of Mr. F. S. Rathbun, one of the active partners and treasurer of the company, who was called away on the morning of November 26th, his death being due to heart failure. He appeared in the best of health and spirits the previous evening, arose in the morning at his usual time, and went to his dressing room, where he suddenly expired. His death is indeed a great loss to his relatives, the Rathbun Company, and the community at large.

Frederic Sherwood Rathbun was the son of the late Hugo Burghardt Rathbun, the founder of the Rathbun Company, and brother of Mr. E. W. Rathbun, the manager of the company. He was born in Deseronto on January 26th, 1856, and was one of a family of ten children, of whom four survive. He attended school in New York city, and at the early age of sixteen entered the office of H. B. Rathbun & Son, subsequently taking the duties of accountant in that firm.



THE LATE MR. F. S. RATHBUN.

When it became incorporated as the Rathbun Company, he was appointed secretary-treasurer of that great business organization. The position was one of great responsibility. His ready tact, prompt decision and wonderfully methodical arrangement of duties enabled him to perform the difficult task in a manner which won the admiration of all. He was always approachable by the members of the office staff, and secured their confidence, respect and loyal support. He was a thorough man of business, giving his close attention to the management of the department immediately under his supervision, and with every detail of which he was conversant. He was closely identified with the general management of the extensive business of the company, and in this respect his loss may be said to be irreparable, Mr. E. W. Rathbun losing in him a wise counsellor and strong right arm, as well as an affectionate brother.

In addition to his position in the Rathbun Company, deceased was also treasurer of the Bay of Quinte Railway Company, president and treasurer of the Oshawa Electric Railway Company, treasurer of the Thousand Islands Railway

Company, treasurer of the North American Telegraph Company, president of the Deseronto News Company, and treasurer of the Muskoka Slide and Boom Company. He avoided publicity, but nevertheless always took a deep interest in the affairs of the country, and more particularly in the town of Deseronto. He especially interested himself in educational affairs, being a member of the High School board.

Mr. Rathbun held the position of treasurer of Deseronto ever since it was incorporated as a town. He was postmaster of Millpoint and Deseronto for twenty years, and gave much attention to the proper management of the office. He was fond of yachting, boating, bicycling, and all kinds of manly sports, was for several years captain of the Deseronto Canoe and Boat Club, and, it will be remembered, held for one year the honorable position of Commodore of the American Canoe Association. He was very firm and constant in his friendships, and in his intercourse with men of business he was regarded as the soul of honor; hence the sorrow for his loss in such an extended circle of friends.

In religion Mr. Rathbun was a Presbyterian, being a trustee and a member of the board of managers of the Church of the Redeemer. On October 23rd, 1877, he married Miss Jean McMurrich, daughter of the late Hon. John McMurrich, of Toronto; three children survive him. His funeral was made the occasion of a spontaneous expression of respect for the dead and sympathy for the bereaved.

## HOW FLAG STICKS ARE MADE.

THE little sticks to which flags are attached are produced automatically by an ingenious machine recently invented for the purpose. By the old methods of manufacture it would hardly be possible to supply the demand, and certainly not at the remarkably low price at which this machine turns them out. Under the old method each stick was rounded separately, and the operation was very tedious and slow. By means of the new invention the whole board is fed into the machine. These boards are first sawed into the length of the finished stick. There are two sets of cutters, one cutting on the top and the other on the bottom of the board. These cutters are especially shaped, the upper cutter cutting one-half the circle of the finished stick, the lower cutter cutting the other half, and this is done so nicely that when the board has passed the cutters it is cut into finished round sticks, each separate from the other, and each so nicely rounded that the meeting point of the two sets of cutters cannot be observed. After leaving the machine, the finished sticks drop into a large box or hopper, and are then stacked up ready for the flags. The machine is made so that it will cut any size of stick, from the very smallest up to any diameter desired, by simply changing the cutters on the cutting mandrels. The machines are arranged so that these cutters can be removed from the mandrels very readily, and new cutters can be put in place in about a minute's time. The upper and lower cutters are placed in an almost vertical plane, so they will cut the stick at almost the same time, and after the sticks leave the cutters they are fed into circular grooves before they leave the machine, so that each separate stick is held firmly in place and a smooth cut ensured.—Invention.



CHAMBER OF SHIPPING BRITISH NORTH AMERICAN TIMBER AND DEAL CHARTER, 1898-99.

Following is a copy of the proposed steamship charter governing the shipment of timber, deals, etc., from Canada to Great Britain, as drawn up by the British Chamber of Shipping :

IT IS THIS DAY MUTUALLY AGREED between Owners of the good Steamship called the of Tons net register, or thereabouts, and of having a margin of 10 per cent. more or less, now and of Charterers. 189

1.—That the said Steamship, being tight, staunch and strong, and every way fitted for the Voyage, shall with convenient speed (having liberty to take Cargo for Owner's benefit, to any port or ports on the way, or to of same, sail and proceed to or so near thereunto as she may safely get, and there load, always afloat, from the Agents of the said Charterers, a full and complete Cargo of The Steamer to be provided with a Deck load, at full freight, at Charterers' risk, and with a sufficient quantity of ends, eight feet and under, for Broken Stowage only.

Memo.—Owners may agree to expunge the words "always afloat" at loading and/or discharging ports.

Memo.—Battens to be considered 2 1/2 in. x 6 in. and up.

Table with columns for cargo types (TIMBER, DEALS and BATTENS, BOARDS, DEAL ENDS, BOARD ENDS) and freight rates (per load of 50 cubic feet, St. Petersburg Standard Hundred). Includes a note 'Two-thirds freight.'

The Owner not to be responsible for any shortage or damage except as ascertained on delivery ex Ship. The Steamer to be free of Bateau hire on broken stowage at Quebec. The freight is in full of all Port Charges and Pilotages.

In the United Kingdom the Timber to be measured by the Customs Fund Officers; on the Continent or in the United Kingdom where there are no Customs Fund Officers, then to be measured by an official measurer. Measurements to be calculated upon the basis of full square dimensions (no allowance to be made for wane), and the expense of Measuring to be divided between the Charterers and the Owners of the Steamer.

2.—The Master or owners to telegraph the Shippers of the Cargo (telegraphic address as per margin), giving at least days' notice of the probable date of Steamer's arrival at the loading port. Default of this not to be considered a breach of Charter, but Charterers not to be responsible for delay in loading caused by such default of the Master or Owners.

3.—The cargo to be loaded and discharged with customary Steamship dispatch as fast as the Steamer can receive and deliver during the ordinary working hours of the respective ports, but the Charterers undertake that in no case shall the minimum quantity supplied in loading be less than standards per day, nor less than standards per day received at the Port of Discharge. Sundays and legal holidays in both loading and discharging excepted, unless used. Should the Steamer be detained beyond the time stipulated for loading and discharging demurrage shall be paid at the rate of pounds per running day, payable day by day. The cargo to be brought to and taken from alongside the Steamer at the Charterers' risk and expense, any custom of the respective ports to the contrary notwithstanding. The Steamer is not to be responsible for any cargo until same is taken hold of by her loading tackle. The Master has liberty to bring phosphate or other dead weight as ballast for Steamer's benefit.

4.—Sufficient Cash for Steamer's ordinary disbursements to be advanced the Master, if required by him, at Port of Loading, subject to 2 1/2 per cent. Commission and cost of Insurance.

5.—If the Cargo cannot be loaded and/or discharged by reason of a strike or lock-out of any class of workmen essential to the loading and/or discharge of the Cargo, or by reason of epidemics, the time for loading and/or discharging shall not count during the continuance of such strike or lock-out or epidemic; a strike or lock-out of the shippers' and/or receivers' men only shall not exonerate them from any demurrage for which they may be liable under this charter if by the use of reasonable diligence they could have obtained other suitable labor, and in case of any delay by reason of the before mentioned causes, no claim for damages shall be made by the shippers, the receivers of the Cargo, the owners of the ship, or by any other party under this charter.

6.—The Bills of Lading shall be prepared by the Shippers of the Cargo in accordance with the form endorsed on this Charter, and shall be signed by the Master, quality, condition and measure unknown, freight and all conditions, clauses and exceptions as per this Charter.

7.—The Act of God, the Queen's Enemies, Restraints of Princes and Rulers, and Perils of the Seas excepted. Also Jettison, Fire, Barratry of the Master and Crew, Pirates, Collisions, Strandings and Accidents of Navigation, or latent defects in, or accidents to, Hull and/or Machinery, and/or Boilers, always excepted, even when occasioned by the negligence, default, or error in judgment of the Pilot, Master, Mariners or other persons employed by the Shipowner, or for whose acts he is responsible, not resulting, however, in any case from want of diligence by the Owner of the Steamer, or by the Ship's Husband or Manager. The Steamer has liberty to call at any ports in any order, to sail without Pilots, to tow and assist vessels in distress, and to deviate for the purpose of saving life or property, and has liberty to coal at any port or ports, including Cape Breton, without prejudice to this Charter.

8.—Should ice (except in the Spring) effectually prevent the Steamer getting into the port of loading, this Charter to be null and void; and if during the loading (except in the Spring) ice should make it dangerous to complete the Cargo, the Master shall have liberty to sail with what Cargo he has on board, with the option of filling up at a port or ports on the way home for a port or ports on the way to, or for the port of discharge under this Charter party for Owners' benefit. If the nation under whose flag the Steamer sails shall be at war whereby the free navigation of the Steamer is endangered, this Charter shall be null and void at the last outward port of delivery or at any subsequent period when the difficulty may arise, previous to Cargo being shipped.

9.—The freight to be paid in cash without discount on unloading and right delivery of the Cargo, but the receivers of the cargo are to pay freight during delivery; if to the Continent in cash at the exchange current on the day of Steamer's arrival, for short sight Bankers' Bills on London.

10.—The Master not to be obliged to sign more than one set of Bills of Lading, unless due written notice be given him before commencing to load, and the cargo to be supplied, so as to enable him to keep separate the different consignments, and suitable lengths to be given with each parcel, so that while keeping the parcels separate the hold space be not wasted. In no case more than sets Bills of Lading shall be required.

11.—In case of average the same to be settled according to the York/Antwerp Rules, 1890, excepting that jettison of deck cargo (and the freight thereon) for the common safety shall be allowable as General Average.

12.—If discharged in a dock in London Consignees to pay two-thirds of the dock dues, and unless the Steamer is to be discharged in the Surrey Commercial Dock, the Charterers are to give the Owners seven days' notice before arrival where the Steamer is to discharge.

13.—The Master or Owners to have an absolute lien upon the Cargo for all freight, dead freight, demurrage and average, and should the receiver require the cargo to be delivered overside or at a place where the Owners cannot exercise their lien, then the approximate freight, etc., to be paid before delivery.

14.—The Charterers to have the option of cancelling this Charter if the Steamer has not arrived at her Loading Port on or before the day of next.

15.—Penalty for non-performance of this Agreement, proved damages, not exceeding estimated amount of freight. on the signing hereof, and the

16.—The Brokerage is at Five per cent. and is due to Steamer is to be reported by them at the Custom House at

SHIPPED in good order and condition by... in and upon the good Steamship called the of... whereof... is Master for this present Voyage, and now lying in... via other loading and bound for... 189... Ports, as per Charter, dated... (with liberty to call at any ports in any order, including Cape Breton, to coal, or for loading or discharging Cargo under Clause 8 on the undermentioned Charter Party, or otherwise, to sail without Pilots, and to tow and assist vessels in distress, and to deviate for the purpose of saving life or property)

of which... pieces on deck at Charterers' risk. And to be delivered in the like good order and condition at the aforesaid Port of... The Act of God, the Queen's enemies, Restraint of Princes and Rulers, Perils of the Seas excepted. Also Jettison, Fire, Barratry of the Master and Crew, Pirates, Collisions, Strandings and Accidents of Navigation, or latent defects in, or accidents to, Hull and/or Machinery, and/or Boilers, always excepted, even when occasioned by the negligence, default, or an error in judgment of the Pilot, Master, Mariners, or other persons employed by the Shipowner, or for whose Acts he is responsible, not resulting, however, in any case from want of due diligence by the Owner of the Ship, or by the Ship's Husband or Manager. The cargo shall be received at the port of discharge from the Steamer's tackle in the ordinary working hours with customary steamer despatch, Standards per day, Sundays and Holidays excepted (unless used)—any custom of the port to the contrary notwithstanding—and should the Steamer be detained beyond the time stipulated for discharging demurrage shall be paid at the rate of Pounds Sterling per running day, payable day by day.

unto... Assigns, he or they paying Freight for the same as per Charter-Party dated... all the terms and exceptions contained in which charter are herewith incorporated. General average payable according to York-Antwerp Rules, 1890, excepting that jettison of deck cargo (and the freight thereon) for the common safety shall be allowable as General Average.

IN WITNESS whereof the Master or Agent of the said Ship hath signed... Bills of Lading all of this tenor and date, any one of which being accomplished the others to be void.

Dated in... this... day of... 189... QUALITY, CONDITION AND MEASURE UNKNOWN.

The Master to apply for Cargo to The Telegraphic Address of the Shipper is

Received on account of Freight, Pounds, Shillings, and Pence on which Commission and Insurance have been paid.

**A MISLEADING ARTICLE ON BELTING.**

In our issue of November last, we printed an article entitled "Notes on Belting," by G. R. McLeod, McGill College, Montreal, which on account of the omission of very important data in the tables of comparison, and several errors embodied in the article itself, especially in regard to "Reddaway" or "Camel Brand" hair belting, is very misleading. This has been brought to our notice by Messrs. W. A. Fleming & Co., of Montreal, agents for the "Camel Brand" hair belting.

When the matter was brought to our attention, we communicated with Prof. Bovey, Dean of the Faculty of Applied Science, McGill University, Montreal, and received in reply the following letter, wherein he points out how the table of comparison is misleading:

DEAR SIR,—The account as given by you is substantially correct, but one very important omission has been made. In all the samples of the "Reddaway" belting, the total extension was given without any statement as to the load under which this extension was produced, and consequently in the table the results are very misleading, although they are correct. For example:

- In sample No. 1, the total extension in a length of 30 inches was 10.03" under a load of 7,500 lbs.
- In sample No. 2, the total extension in a length of 30 inches was 10.15" under a load of 6,050 lbs.
- In sample No. 3, in the same length, the total extension was 7.34" under a load of 10,000 lbs.
- In sample No. 4, in the same length, the total extension was 8.27" under a load of 7,200 lbs.
- In sample No. 5, the total extension in the same length was 7.18" under a load of 9,200 lbs.
- In sample No. 6, the total extension in the same length was 11.4" under a load of 19,400 lbs.

If a table is constructed, it should be made so as to give the extension per cent. per square inch of sectional area, and it should be clearly stated also over what length the extension is measured. All these items are of importance in making comparative estimates.

I think it is only fair to the Reddaway Company that you should make a statement to clear up these doubtful points, as I consider the "Camel Brand" belting an extremely valuable production. I am, Yours truly,

(Signed) HENRY T. BOVI

We have also been authorized by Prof. Bovey to state that the tests in question were made by Mr. George R. McLeod, under Professor Cecil B. Smith, when the former was an undergraduate in the Faculty of Applied Science. The actual results of these tests were communicated by Professor Smith in a letter which has been placed at our disposal, as follows:

McGILL COLLEGE, MONTREAL,  
March 30th, 1898.

W. A. FLEMING, ESQ.,  
Agent F. Reddaway Belting & Hose Co., Ltd.

DEAR SIR,—The following are results of tests on pieces of Reddaway's "Camel Brand" hair belting, kindly forwarded by you for our 4th year civil engineering students to test:

Dimensions.	Weight per foot.	Area of Section.	Time of Test.	Perman-ent Set in 30 in.	Breaking Load.		Stretch in 30 inches under loads of											
					Total.	per s. in.	1000	2000	3000	4000	5000	6000	7000	8000	9000	10,000		
No. 1 Single, 4.35"x.29"	.572	1.26		3.5	7520	5968	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
No. 2 Single, 5.07"x.24"	.599	1.22	22	4.45	6800	5574	.92	1.50	2.06	2.81	3.63	5.31	7.91					
R's'n No. 3 Double, 6.10"x.28"	.799	1.71	22	2.12	10100	5906	.77	1.18	1.55	1.96	2.28	2.72	3.29	4.11				
No. 4 Single, 5.05"x.22"	.599	1.31		3.87	7400	5649	.84	1.24	1.82	2.28	2.87	4.17	7.09					
No. 5 Double, 6.01"x.30"	.781	1.80			9800	5444	1.25	1.87	2.28	2.73	3.20	3.77	4.28	5.33	6.85			
No. 6 Double, 12.20"x.31"	1.795	3.78		5.80	19600	5185	.65	1.06	1.41	1.71	1.98	2.22	2.48	2.75	3.03	3.31		

I am, Yours truly,  
(Signed) CECIL B. SMITH (Professor).

We also give the following extracts from our correspondence with Messrs. W. A. Fleming & Co., and the comparative tables, furnished by them, which can be understood at a glance:

"It would be almost impossible to make a comprehensive table of comparison from the samples of different beltings, as none of the samples were of the same width and weight. The above table gives the ultimate strength (breaking load) and stretch of the "Camel Brand" samples, tested under different loads up to the ultimate strength. There is no kind of belting that will show so small a percentage of extension, under similar loads, and no belting will stand as great a strain per square inch as this table shows the "Camel Brand" capable of resisting.

"A sample of English oak-tanned leather belting, tested at the same time reached its breaking strain at 2200 lbs. per square inch while the limit of the "Camel Brand" was 5,968 lbs. per square inch. Before the breaking strain of the leather was reached it stretched 9 per cent. under a greater load, viz., 2460 lbs. per square inch. The single "Camel Brand" stretched only 7 per cent. Moreover, under a load of about double the breaking strain of leather the stretch of the "Camel Brand" was scarcely any greater than the ultimate strength of leather. By this it will be seen that the "Camel Brand" stretches

much less at the breaking strain of oak-tanned leather, and its breaking load is actually two and a half times greater.

"The following results of tests will be of interest, being made under the direction of Mr. Chas. Hopkinson, M. Inst. C.E., M. Inst. M.E., B.Sc., of Manchester, England, who designed a very elaborate and perfect machine, and erected a testing apparatus, enabling him to accurately ascertain the driving power of any belt up to 50 h.p.

**COMPARATIVE ULTIMATE STRENGTHS OF THE "CAMEL BRAND" OR "REDDAWAY" BELT AND BEST DOUBLE LEATHER BELTS.**

Width of Belt in Inches.	"Camel Brand" Belting.	Double Leather.
4	6,866 lbs.	4,908 lbs.
6	11,515 lbs.	5,641 lbs.

"In this connection it may also be of interest to give a few of the results of a series of tests to ascertain the ultimate strength of different widths of "Camel Brand" belting, which were carried out by Mr. Chas. Hopkinson:

**ULTIMATE STRENGTH OF "CAMEL BRAND" BELTING.**

Width of Belt in inches.	Breaking load in lbs. per inch of width.	Width of belt in inches.	Breaking load in lbs. per inch of width.
3	1,890	7	1,819
4	2,084	8	1,778
5	1,870	9	1,763
6	1,838	10	1,714

"These tests compare favorably with those made at McGill College.

"Extracts from further tests made by Mr. Hopkinson, comparing the driving power of link leather, ordinary leather (best quality) and "Camel Brand," will be of interest:

"The results are tabulated to enable the comparisons to be readily made. The belts tested were the "Reddaway" or "Camel Brand" belting, 6 and 3 inches wide, of the regular make; link leather belts, 6 and 3 inches wide; plain leather belts (best quality) 6 and 3 inches. The belts were all run for several hours under considerable tension before testing. They were, in fact, in as favorable a state as they could be. In the case of the 6 in. link leather belt, which was more difficult to get into good running order, the experiments were repeated; and the 3 in. link leather belt was run for some hours driving about 8 h.p., in addition to the same preliminary run as the "Camel Brand" and plain leather belts.

"The belts in all cases were jointed with metal fasteners, and no failure of a joint took place.

"The tests upon the 6 in. belts were repeated after altering the crowning of the pulley. At first the driving pulley was crowned 9/32 in. in 8 1/2 in. wide; after running some time, the crowning was reduced to 6/32 in.; the results of the second run were distinctly better, and the belts showed a better surface at the edges.

"In belts 3 inches wide, running 1353 feet per minute the safe load of link leather and cemented leather in both cases was 6 horse power, while that of the "Camel Brand" was 8.72 horse power. With belts 6 inches wide the results were precisely similar.

**HOPKINSON'S EXPERIMENTS—FIXED CENTRES.**

Belts 3 inches wide running 1353 feet per minute.

Total Initial Tension.	Link Leather.		Leather.		Camel Brand.	
	Indicated Horse Power.	Slip % Loss of Power & Speed.	Indicated Horse Power.	Slip % Loss of Power & Speed.	Indicated Horse Power.	Slip % Loss of Power & Speed.
457 lbs.—76 lbs. per inch width of belt of slack and tight parts.	8.4	1.65				
	10.43	1.95				
	12.54	2.65	12.83	2.1	12.75	1.0
	14.6	3.16			14.08	1.15
			15.09	3.0	15.8	1.26
			16.24	3.4	16.69	1.48
Initial area of contact, 150'.					18.65	1.9
					19.66	2.4
			12.66	1.3	12.59	0.8
	16.65	2.05	16.81	2.1	16.73	1.15
	20.82	2.56	20.82	3.6	20.75	1.4
793 lbs.—132 lbs. per inch of width.	22.94	3.16			22.67	1.48
					25.62	1.75
					28.5	2.35
					30.4	3.0

"Remarks: With less tension than 457 lb. the linked leather belt would not drive steadily.

"The loss of speed by slip and creep of the belts, is for any given load twice as much with the leather belt as with the "Camel Brand" belt.

"With the initial tension of 132 lb. per inch of width, which is very high for a leather belt, the leather belts showed less inferiority relatively to the "Camel Brand" belts.

"The results indicate that the usual allowance of 2 per cent. for slip and creep is sufficient for leather belts, and that 1 per cent. would be equally ample for the "Camel Brand" belts.

**COMPARISONS OF DRIVING POWERS OF BELTS 6 IN. WIDE RUNNING 1353 FEET PER MINUTE.**

Total Initial Tension.	Link Leather.		Leather.		Camel Brand.	
	Indicated Horse Power.	Slip % Loss of Power & Speed.	Indicated Horse Power.	Slip % Loss of Power & Speed.	Indicated Horse Power.	Slip % Loss of Power & Speed.
121 lbs.—10.08 lbs. per inch width of belt slack and tight parts.						
Lbs. Lbs.	Would not drive.		Would not drive.		10.73	1.46
233—19.4 do.	wd not driv		14.69	3.7		
345—28.75 do.	19.8	2.66			30.44	1.81
457—38.08 do.	23.73	4.18	32.68	2.94	30.82	1.84
793—64.41 do.	Arc 197					
1129—94.08 do.	36.24	3.5	40.43	2.77	47.07	2.27

"With regard to the construction of the "Camel Brand" belting in your article of November it is stated "the belting is made partly of cotton and partly of coarse camel hair. The cotton is the material which forms the chief strength and therefore the longitudinal fibres are cotton. The hair yarn forms a wool, although in some of the specimens tested there were strands of hair running longitudinally as well as transversely. This statement is entirely in error; on the slightest examination anyone will see that just the contrary is the case; the hair forming the chief strength of the fabric, the cotton is simply the wool, no longitudinal strain bearing on a whatever."

**DECREASED PRODUCTION OF LOGS.**

LITTLE CURRENT, Nov. 17th, 1898.

To the Editor of the CANADA LUMBERMAN:

DEAR SIR,—In your November monthly edition you state that it is reported that J. & T. Charlton intend to cut ten million feet of logs the coming winter for exportation to Michigan. The report is not correct, as their cut will be less than one-half of that amount, and in regard to towing the logs to Michigan, it is very likely they will do so providing the manufacturing embargo is removed; if not, of course they will have to manufacture in Canada. The reason I refer to this matter is, first, because the amount is far too large, and secondly, because Mr. John Charlton is a member of the Joint High Commission now sitting in Washington, and that the report might influence American operators to increase their output perhaps to their sorrow.

Yours truly,  
J. C. WELLS,  
Manager for J. & T. Charlton & Co.

**ONE DOLLAR.**

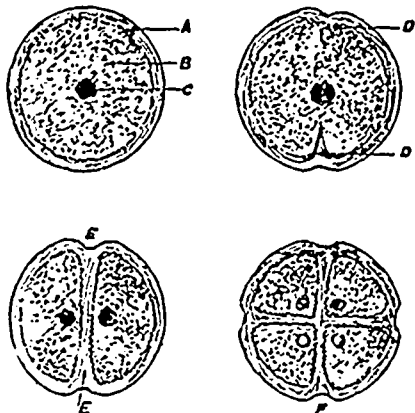
THE above sum represents the yearly subscription price of the CANADA LUMBERMAN, including both weekly and monthly editions, mailed to any address in Canada or the United States. Owing to postal charges, the subscription price to foreign subscribers is two dollars per year. Persons in foreign countries interested in Canadian timber products can invest that sum to no better advantage than by becoming a subscriber. Likewise every mill owner in Canada should read the columns of the CANADA LUMBERMAN. A sample copy will be furnished upon request.

The Lloyd Mfg. Co., of Kentville, N. S., advise us that their business was started in a small way fifteen years ago by Mr. J. L. Lloyd, the present proprietor, and gradually increased as capital and demand would warrant. Their plant was greatly increased last fall. The factory has a frontage of 90 feet by 120 feet, is two stories, and employment is given to about 25 skilled mechanics. Shipments of machinery are now made to Newfoundland, Quebec, New Brunswick, and Pacific coast.

HOW TREES GROW.

By JOHN BLACK.

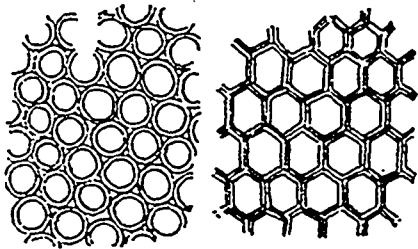
BEFORE attempting to offer an explanation of the curious processes whereby trees develop in stature, it will be necessary, in the first instance, to briefly describe the nature of the materials of which they consist, as well as to shortly notice the intimacy with which the latter are associated with and depend upon each other. In the first place, there is a structural peculiarity which is not only common to all trees but to all plants—from the tiniest mosses to the most gigantic trees of California, which often exceed 400 feet in height—and which comprises a complex system of cells or vesicles of which all vegetable growths are composed. These cells, as the name imports



SECTIONAL STRUCTURE OF CELLS.

are minute, bladder like cavities, bounded by fibrous walls and usually containing both fluid and solid matter of a heterogeneous composition. These and their numerous modifications may be very aptly compared to the bricks or stones of which a house is built, but with this remarkable difference, that they are continually dividing and subdividing and are constantly being supplied with fresh layers of what corresponds to cement as long as the life of the plant endures. The microscopic examination of a thin shaving of any vegetable product, whether it be the pulp of an orange or the pith of an oak, will give the best idea of the general appearance of these formations. Geometrically they are infinitely varied in form, owing to mutual pressure and other causes, but the designs that are of most frequent occurrence in the vegetable world are illustrated on this page. And just as they are of no uniform shape, neither are they of any regular compass. In fact, they alternate in magnitude in different plants from about the thirteenth of an inch to the forty-thousandth of that measurement. In order to understand the process of growth or, rather, of the multiplication and expansion of these animate organisms, it is desirable that an examination of the structure and functions of what are known as the "active cells" should first be made.

First, there is an outer covering, the cell wall, which is more or less elastic and which varies in thickness and density. In its earlier stages it is soft in texture and freely permeable to water. Inside there is a softer and more elastic layer, technically called "primordial utricle" or vesicle. The latter is scarcely membranous like the

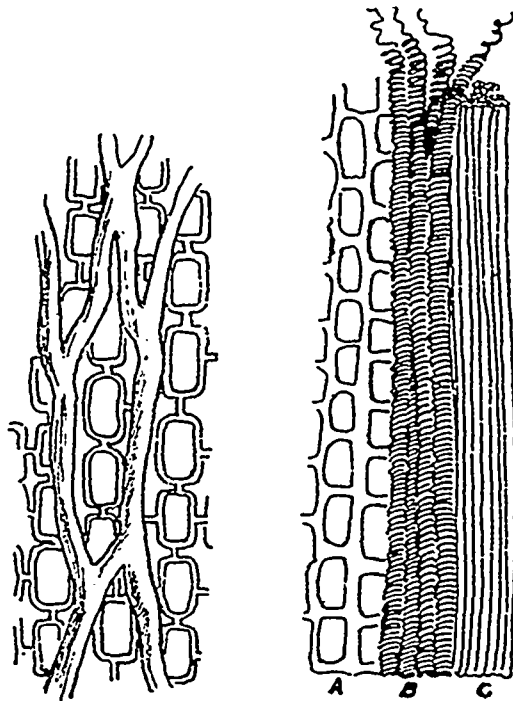


PITH CELLS.

cell-wall, and is merely the outer film of the softer matter called protoplasm. In the latter there is usually, but not invariably, present a small globular body called the nucleus, which, in turn, often contains smaller granules called nucleoli. The accompanying figure will enable the reader to understand these structures and their relative positions more clearly. The most important of these granules contain the green coloring matter which is so freely distributed throughout the composition of tree foliage, and when they disappear the activity within the cell walls diminishes and the tree becomes correspondingly lifeless. When the protoplasm is present in what may be called a healthy condition, these granules can often be

seen moving about from point to point in a manner which strongly suggests the circulation of the blood in animals. The regularity of this movement of the fluid contents of the cell-sap can be distinctly seen with a powerful microscope even in the case of so minute an object as the hair of a common nettle. The formation of new cells begins by a change in the protoplasm, the whole of which or a part only may be concerned in the production of such new cells. By the division of this substance, which has been called "the physical basis of matter," into new cells, and their subsequent alteration, the mass of the entire plant is built up. Some of the simpler forms of trees and plants readily illustrate the way in which the protoplasmic contents of a cell give rise to fresh cells. In certain of these, as shown in Fig. 3, there is a general infolding or splitting up of the cell at two or more opposite points, which finally results in the production of an equal number of new and distinct cells, each with its proper complement of walls, nucleoli, &c. As the new walls develop which separate the individual compartments, the lines dividing the latter become more clearly defined, and this intercellular substance, or vegetable cement, is the material by which the cells are bound together and which permits of their subsequent division and expansion.

The process of growth in nearly all the higher forms of trees necessitates changes at certain points in their structure into string-like fibres or sinews to lend strength and support to the softer parts. This is easily seen when a leaf is reduced to the form of a skeleton by maceration or any similar means that will reveal the beauty and variety



LATICIFEROUS TUBES.

FIBRO-VASCULAR BUNDLE.

of its framework. If the stems of some of our larger ferns are treated in the same way they will exhibit, under the microscope, an amazing labyrinth of network, called "fibro-vascular bundles," as shown, which are the same in principle as those met with in the case of their sturdier brethren, the trees of the forest. In such a bundle of fibres there are generally two modifications—one called bast, a, and the other what is virtually known as wood, b. In the earlier stages these vascular bundles are composed of ordinary cells, by the transformation of which they are produced, the bast layer being usually on the outside in the case of trees proper, and the cells which continue in an active state lying between it and the inner wood. Without entering into details, it may be sufficient to state that the parts of a vascular bundle are either true vessels or merely fibrous. The former consist of long cells in rows one over the other, the partitions between their ends partially or entirely disappear and so form continuous tubes, the most notable of which have a spiral band in the interior, either continuous or broken up in places, and closer or wider apart in different cases.

The other fibrous portions of a bundle are long, spindle shaped, and without spiral bands. They often contain grains of starch, sugar, gluten, etc., and are readily detected when the wood is cut into very thin slices. The laticiferous tubes are a very interesting modification of the true vessels of this vascular system, because they contain a limpid or milk-like juice, and are in other respects

a curious blending of the principles carried out in both the lacteal and blood vessels of animals.

Certain chemical changes always take place during growth. Water, so necessary for life in the plant, consisting as it does of the two gases, oxygen and hydrogen, yields supplies of these, and is also the medium by which other matters dissolved in it are conveyed to the tree or plant. The more important and life-sustaining of these are carbon, oxygen, nitrogen, hydrogen, and such other requisites as potash, lime, magnesia, phosphorus, and silica. The operation of such external influences as light and heat are just as important to the well-being of trees as the more material elements which are absorbed into their composition. The stimulus of light on the green contents of their leaves is necessary for the formation of new products and for the storing up of these in their internal recesses, for when a full supply of these is deposited in the cells there is less necessity for the action of light itself. The presence or absence of the latter has also a considerable influence upon the movements of the grains of chlorophyll. In darkness, more or less dense, these collect into bodies and display a degree of inertness which, if sufficiently prolonged, would lead to the eventual withering away and utter destruction of the tree; the phenomena presented being, in fact, almost precisely similar to what would inevitably occur in the case of an animal whose circulation, having become impaired, ultimately ceased altogether. There is still some difference of opinion as to whether those green granules are endowed with voluntary motion or whether they are carried about by some equally unknown property possessed by the fluid in which they float. The combination of light, heat and moisture enable a tree to produce new products from carbon, nitrogen, oxygen, etc., which are technically known as albuminoids, and which yield material in abundance for sustaining its life. When the juice of a plant is heated, part of it coagulates, just like the white of an egg, called albumen, when treated in the same way, and this has been extracted from the earth from many substances and converted by the instrumentality of the tree into its albuminous form.

Evaporation of water from the leaves of a tree determines the absorption of fluid by its roots, and its subsequent diffusion throughout the tissues of the plant by osmose—that is, the tendency of fluid matters to mix and combine in equal proportions when they come into contact. New cells are then formed by the division of the protoplasmic matter, as already described, and the succeeding alterations they undergo, as they are repeatedly subdivided, build up the separate organs which collectively constitute the entire tree. The rate of growth of certain trees is a subject of much interest and importance to both forester and carpenter. A cross section, cut at the base of the stem, shows a central spot—the pith—and, arranged concentrically, a number of layers, called the "annual zones," marking the growth of each year, surround this point. The exact age of a log of timber can thus be ascertained (when the date of its being felled is known), and its suitability for the purposes for which it may be required can therefore be all the more readily gauged. Whether or not it was grown in congenial soil may also be gathered from an inspection of the thickness or sparseness of these tell-tale rings, the appropriateness of the ground being estimated by the quality and depth from year to year. In all cases the external or youngest layers are the most juicy and least dense, and every carpenter knows the difference between sap-wood and heart-wood.

In this way trees grow, but how the flint of the soil is transferred into their substance, or in what manner that which of itself is incapable of giving nourishment is transformed into wholesome vegetable aliment, is so far, unfortunately, a puzzle alike to the chemist and the botanist.—Illustrated Carpenter.

"WANTED AND FOR SALE"

Persons having for sale or wishing to purchase a particular lot of lumber, a mill property, timber limits, second hand machinery, etc., in fact, anything pertaining to lumbering operations, will find a buyer or seller, as the case may be, by placing an advertisement in the "Wanted and For Sale Department" of the CANADA LUMBERMAN Weekly Edition. Testimonials to the value of this department by those who have given it a trial state that the results of advertisements were frequently better than anticipated. The cost is comparatively small. Mill owners might, with profit to themselves, make use of this method of advertising their stock to a still greater extent.





MONTHLY AND WEEKLY EDITIONS

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ADVERTISING RATES FURNISHED ON APPLICATION

THE CANADA LUMBERMAN is published in the interests of the lumber trade and 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 on 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.

FREIGHTS ON HARDWOODS.

THE injustice from which the hardwood industry of Canada has so long suffered as a result of discrimination in freight rates may yet be rectified. As forecasted in a previous issue, the question has been taken up by the Lumbermen's Association of Ontario, and recently a deputation from that body interviewed the traffic managers of the Grand Trunk and Canadian Pacific railways at Toronto, on the subject. It was pointed out that no discrimination should be made as between pine and hardwood lumber, that the higher freight rates on the latter could not justly be maintained, and that it would be in the interest of the lumbering industry, the railway companies, and the country generally, to encourage the manufacture of hardwoods. The representations of the deputation were promised the usual consideration.

With but few exceptions, from one to two and one-half cents per 100 pounds is charged against hardwoods as compared with pine and other soft woods shipped to points in Canada. This can be verified by reference to the freight rates published on the third page of the CANADA LUMBERMAN WEEKLY EDITION, and which are revised by the railways. Taking one or two points for illustration, the rate from the Owen Sound, Warton and Hepworth district to Toronto is 6½ cents per 100 pounds on pine and 7½ cents on hardwoods; to Montreal from same district the rate is 12½ and 15 cents respectively, a difference

of 2½ cents. The average discrimination, however, to Ontario points, is about one cent per 100 pounds. This, at a glance, seems a trifling discrimination, yet a little investigation shows how seriously it is affecting the hardwood trade. The minimum car-load of lumber, as fixed by the railway authorities, is 10,000 feet, and the minimum weight 30,000 pounds. Thus, on a car-load of hardwood lumber the overcharge of one cent per 100 pounds would be equal to three dollars, or 30 cents per thousand feet. This, in these days of keen competition, is quite an important item.

The business of exporting hardwoods to the European markets is handicapped to a still greater extent. From the hardwood district of Owen Sound to Montreal, the nearest point of vessel loading, the additional charge on a car-load of hardwoods over that of pine is \$7.50, equal to 75 cents per thousand feet. This cannot but have a tendency to discourage any efforts in the direction of establishing an export trade.

What method of figuring was adopted by the railway authorities in arriving at the decision to subject hardwoods to a higher rate of freight than pine it is difficult to conceive. It is generally understood—in fact, we are so advised by the railways—that the schedule of rates is based upon the valuation of the goods. This being so, the inference is that the members of the Classification Committee are of the opinion that hardwood lumber is more valuable than pine. Such is not the case. Were there to be found in this country even moderate quantities of mahogany, walnut, rosewood, cherry, etc., the contention that hardwoods are more expensive than pine might be justified. But we observe that such woods as these are placed in a higher category than the other hardwoods, and are not permitted to be shipped at the same rate of freight, the railway companies reserving the right to make special charges for more valuable woods. The evident intention is, therefore, to discriminate against the cheaper varieties of hardwoods.

The hardwood timbers found most plentifully in Ontario are birch, ash, elm, maple and beech. The average selling price of these is, we believe, below that of pine, while the cost of manufacturing is even greater, leaving a smaller profit for the manufacturer. The waste in pine during process of manufacture is comparatively small, while at least 25 per cent. of the hardwood timber finds its way to the wood pile, in the shape of hearts and other defects. The remaining 75 per cent. is worth about \$13 per thousand feet at the mill. Out of every thousand feet of logs only 750 feet of saleable lumber is obtained, netting \$9.75. The average price paid for logs is \$6 per thousand feet, and adding \$2 as the cost of manufacture, brings the cost to the mill man of producing one thousand feet of marketable lumber to \$8. It will thus be seen that the margin of profit is very small, and that but a limited revenue is derived from the small cut of the average hardwood mill. Another feature of the hardwood trade is that it is impossible to handle large stocks, as can be done with pine, owing to scattered growth, and the fact that only a small percentage of it is suitable for saw logs, small and rough logs going into firewood.

We believe it to be a short-sighted policy on the part of the railways to discriminate against the hardwood industry, which, more perhaps

than many other branches of commerce, requires fostering at least to a reasonable extent. If given equitable freight rates, and under present conditions, the export of hardwoods to foreign markets is certain to increase, as it has done, even under unfavorable circumstances, during the past few years. Ontario, the hardwood province of the Dominion, is so situated geographically as to be largely at the mercy of the railway companies with respect to export.

The question of equitable freight rates also bears a close relation to the development of local industries. The scattered growth of hardwoods makes it necessary that they should be transported to some central point for manufacture at the lowest possible cost. Within the last few years several factories have been established in Ontario for the manufacture of wood specialties, such as chair stock, clothboards, etc., for export, hardwood timber being used as the raw material. These industries, employing hundreds of workmen, are of great advantage to the country, utilizing, as they do, much timber which could not be exported at a profit, and which would otherwise remain in the bush to be destroyed by fire. A liberal policy on the part of the railways will result in the establishment of a still greater number of such industries, as well as in greatly increasing the volume of freight traffic.

It is desirable that everyone interested in the hardwood trade should lend their aid to accomplish a reduction in the freight rate. It is believed that the Joint Traffic Association is responsible for the discrimination which now exists, and it should only be necessary to present the facts in their proper light in order to obtain redress.

THE PROPOSED TIMBER AND DEAL CHARTER.

ON another page will be found a copy of the new timber and deal charter as drawn up by the British Chamber of Shipping for the regulation of the Canadian export timber trade. This charter is so unsatisfactory and contains so many objectionable clauses that the timber interests on both sides of the Atlantic have strongly expressed their dissatisfaction therewith. On October 28th, at a meeting convened in London, Eng., by the Timber Trade Federation, the following resolution was passed:

"That this meeting, having considered the proposed new British North America charter, formulated by the Chamber of Shipping, and having regard to the unanimous objections of the trade in all parts of the kingdom to its provisions, cannot advise members of the federation to attend the conference called by the Chamber of Shipping for November 2nd, 1898. This meeting further considers that, in view of the abortive result of the prolonged negotiations with the Chamber of Shipping respecting the Baltic charter, such conference, on the basis of the form now submitted, could not lead to any satisfactory arrangement being arrived at, the trade being satisfied that the terms embodied in the London Chamber of Commerce and similar forms now generally in use, are fair and reasonable for both parties."

This resolution has been concurred in by the shippers from Montreal and Quebec, who regard the charter as inapplicable to these ports, and not nearly so satisfactory as the London Chamber of Commerce charter now in use.

This question is one which may seriously affect the Canadian export trade, causing, as it must, a temporary deadlock in chartering. Yet the form of charter seems so manifestly un-

reasonable that we cannot but commend the course taken by the shippers.

Some of the objectionable features might be noted. In clause 1 no provision is made for satisfactory loading berths. In Montreal, for instance, there are objectionable berths, and to protect shippers the words "as directed after arrival by the said merchants" should be inserted. In clause 3 there is an important omission, viz., "only rope slings or chains properly covered with canvas to be used for loading and discharging." On the whole, this clause is not nearly so desirable as the corresponding clause in the present charter, which reads as follows: "The cargo to be supplied to the ship and to be taken from alongside, as customary, at each port. Only rope slings, or chains properly canvassed, to be used for loading and discharging. Ship to work at night at port of loading if required by charterers or shippers. Ship's hold to be thoroughly swept and cleansed before taking in cargo; no stevedores objectionable to merchants to be employed."

Clause 8 is too ambiguous. If a steamer found it to her advantage to clear away in the fall before completion of loading, she might do so, in order to fill up at other ports lower down the river, while the shipper at the original port of loading might be left with cargo on his hands which he desired to send forward.

A portion of clause 9 is almost contradictory, inasmuch as it states "freight to be paid on right delivery of the cargo," but "receivers to pay freight during delivery."

Coming to clause 10, we read "suitable lengths to be given with each parcel, etc." This is, we believe, unworkable. The steamer is entitled to deal ends 9 feet and under for stowage purposes, and also to have them alongside the steamer so as to be available when required, but under the new clause the master could demand pieces two feet, or any other length, to fill up a hole, just as he pleases. No mention is made of two inch stock, large quantities of which thickness, in both spruce and pine, are shipped from the St. Lawrence.

The Bill of Lading is an extraordinary document. It will be observed that it commences with "Shipped in good order and condition," and concludes with the words "Quality, condition and measure unknown"—certainly a queer anomaly. The shipper would have no protection against the careless handling of the cargo by the ship's crew, and the value of the Bill of Lading as a negotiable document would probably be impaired.

There are other objectionable features of more or less importance. Those enumerated show that the charter affords no protection to the shipper, and is completely at variance with the custom of the trade on this side of the Atlantic. The existing form of charter is much preferable, and with a few alterations, would best serve the interests of both the ship-owner and shipper.

Industries in the United States that require large quantities of good hickory are said to find it necessary to place their orders with the mills prior to the cutting of the timber, and the mill men are obliged to scour a great deal of territory in order to find stuff suitable for manufacturing purposes.

#### DOYLE'S RULE ASSAILED.

THE Toronto Mail and Empire reconstructs into an editorial some statements made by Mr. Walter Beatty, M.P.P. for Leeds, touching the method employed for estimating the quantity of lumber in a saw log. The contention advanced is that the province is deprived of at least 20 per cent. of the revenue derivable from stumpage or timber dues, and that on the total log output of the decade from 1887 to 1896 the loss was \$2,482,779. For the enlightenment of our readers we quote from the Mail and Empire:

"The lumber content of each log is ascertained by a method of calculation known as Doyle's rule. This rule, Mr. Beatty says, belittles the size of a log surprisingly—particula a log whose diameter does not exceed 20 inches. For example, by the Doyle standard, a stick of timber 14½ inches in diameter is calculated as reducible to 83 feet of lumber. But, insists Mr. Beatty, let that same log be put through a saw mill and it will be found by the measurement of the actual lumber it is converted into to contain 120 feet, board measure. Therefore, 37 feet of it is exempt from timber dues."

The length of the log is apparently not taken into consideration in the above calculation; at least, as it is not given, that is the inference. Perhaps Mr. Beatty, in conjunction with the Mail and Empire, has some secret system of reckoning by which the length of the log becomes of no importance in arriving at results? And it may be that the time is drawing near when there will be no defects to be allowed for in the log, to reduce the quantity of merchantable timber. In any case, we welcome the advent of a new era in lumbering when it will be possible to obtain 120 feet of lumber while paying dues only on 83 feet of that amount. The Mail and Empire continues:

"Loss of revenue is not the only mischief that flows from the Doyle rule. It leads to the selection of the very hope of our forests as the victims of the woodman's axe. It falls short not on the large trees, but on the smaller ones—those described by Mr. Beatty as not exceeding 20 inches in diameter. On these sizes the lumbermen escape from 20 to 30 per cent. of the dues. They therefore have a motive for including as many lumber logs of small size as possible. \* \* \* So far from acting on the report of its own Forestry Commission, which recommended that all trees of a diameter not exceeding 12 inches be inviolable, the government has put a premium upon the cutting of small sizes above all others.

Would any lumberman be foolish enough to cut trees of small diameter which would make but one log? We think not, as it would be impossible, after taking off the slab and saw kerf, to get more than the amount of the saw bill out of the timber. The small logs now taken out by the lumbermen are chiefly the tops of large trees. On small logs Doyle's rule scales less than Scribner's, while on large logs the reverse is the case. If Scribner's rule were adopted, all small and crooked logs cut from trees would be left in the woods, and the timber dues lost to the government. Thus the advantage of Doyle's rule to the province and to the country generally. On the whole, the rule is not in favor of the lumberman. We would be glad to learn of one saw mill in Ontario where the actual production of lumber in a season has exceeded to any extent the scale made by the government. The remark of our contemporary that two and one-half million dollars has gone into the pockets of lumbermen

instead of into the provincial treasury is indeed amusing.

#### EDITORIAL NOTES.

THE lumbermen of Ontario have a greater interest in the proposed construction of the Rainy River Railway from Port Arthur to Winnipeg than that which pertains to them as citizens of Canada. The lumber requirement of Manitoba and the Northwest is now considerable, and will continue to grow in volume for years to come. The one essential to placing Georgian Bay lumber on that market is cheaper carrying charges. This is likely to be assured by the completion of the Rainy River Railway, as lumber can then be shipped by vessel to Port Arthur, and from thence carried by rail to Winnipeg. A competing route with the Canadian Pacific Railway will have been provided, and lower rates may be expected to come as a natural consequence. It is learned that surveys of the route are now being made, and that construction will be commenced forthwith.

It is rather surprising that more Canadian capital is not forthcoming for investment in pulp-making enterprises in this country. Virtually all the large pulp-producing plants in Canada to-day have been established by foreign capital. This should not be the case. Canadian money is being invested constantly in channels which, to say the least, do not offer as certain returns as a well managed pulp manufacturing establishment. Some pulp mill projects are on the tapis at the present time, the carrying out of which will depend, it seems, upon the financial assistance given by the Canadian people. Our capitalists should not be backward in advancing the necessary funds to develop an industry which promises to become one of the most important in the country. We must first display confidence ourselves before foreign assistance can consistently be asked for.

#### THE FACTS CHANGED.

IN the case of Creighton vs. Pacific Coast Lumber Co., noticed in our November issue, we incorrectly made the statement that "in March last defendants agreed to sell to plaintiff a carload of clear cedar strips, etc." It should have been stated that the plaintiff claimed the above to be the case; defendants on the other hand submitted evidence to the effect that plaintiff had examined the lumber in the yard before purchasing and that the lumber was rejects, out of which all clear was supposed to have been picked. Judgment with costs has since been given by the court in favor of the defendant company.

The Imperial Oil Co., of Petrolia, Ont., have closed down their barrel factory, after an exceptionally busy season. It is probable that in future the company will use only oak staves, as the elm barrels do not give satisfaction.

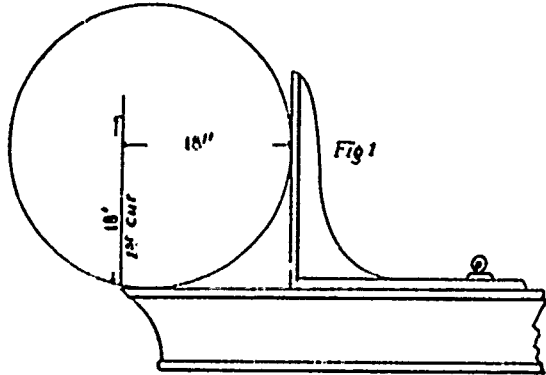
The firm of James Miller & Company, lumber merchants, Notre Dame du Lac, Temiscouata county, Que., having been dissolved by the death of the late James Miller, Messrs. James Hayes and D. A. Huntley have sold their interests to Charles Miller, A. P. Barnhill and Alice P. Miller.

The question as to whether slow or rapid combustion is the most economical may forever remain in dispute as it is at the present time, but one thing is certain, and that is, that where the furnaces are large enough to allow the coal to be burned at a slow rate, there is very little smoke made; or in other words, if there is a plenty of boiler power, there will be but little smoke. As smoke is said to contain matter that should be burned in a furnace, a smoke chimney denotes a waste of coal, and from these facts we argue that a slow rate of combustion is economical and logical.

**HANDLING LARGE LOGS ON A SMALL MILL.**  
By S. C. McLLAN, in Wood-Worker.

It is not my purpose to introduce any idea for the operation of the great saw mills of the land, and could every factory which saws its stock from the log be supplied with a band mill, there would be no occasion for this paper, with the accompanying diagrams. Wastefulness of any sort has always annoyed the writer, whether it appears in time or material, so that during several years' experience as a foreman it has been a question of continual study to prevent what possessed any evidence of loss in labor or stock.

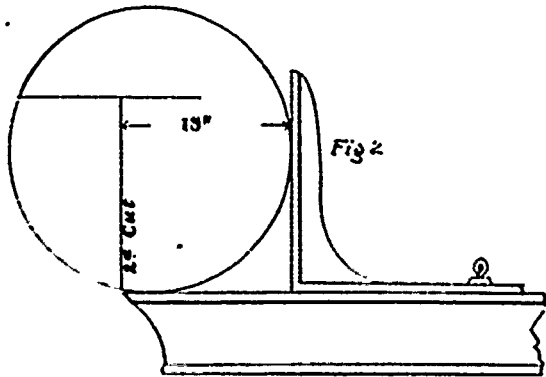
In some mills which cut out dimension stock in considerable quantities, the log, for a first cut, is located so that a heavy slab, ranging from four to eight inches in the heaviest part, may be dropped off, while the remainder of the log is cut up into heavy pieces of similar size, as may seem best suited for convenience and economy. Logs sawed in such form are afterwards cut into short



lengths and then can be handled by one man, being worked into light dimension stock on much thinner saws than those used in heavy mills, which, of course, saves an important quantity of the log.

In a factory where I was employed a few years since, a saw mill was added to the equipment, for the purpose of working up short logs, ranging in lengths of three to eight feet. It was thought that nothing larger than about 20 inch logs would be sawed on this mill, hence, reasoning on this basis, a saw 44 inches diameter was ordered with the mill. The mill behaved like a gentleman and the saw was just the thing for what had been expected, giving excellent service. Matters moved on so nicely that the buyer soon had logs in larger sizes coming into the yard, and instead of logs limited to 20 inches diameter, we had them ranging all the way to three feet in diameter.

As the historic street car can always find "room for one more," so this mill could handle something a little

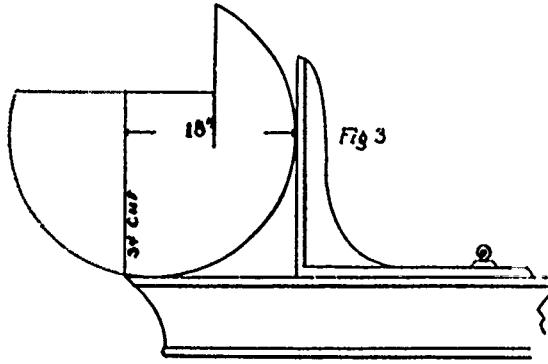


larger, and many a large log was cut into bolt stock, as we shall see. Notwithstanding this increased size in logs naturally demanded a larger saw, the 44 inch one did the work, and that with no waste of material. Many a time has the writer seen a saw go through the side of a log attempting to take off a heavy slice, but the saw could not reach to the top of the log, and then wedges were driven in to split off what was not sawed, after which a deal of time must be spent to hew the split portion to an even surface with what cutting had been made by the saw, so the log could be canted down for another run.

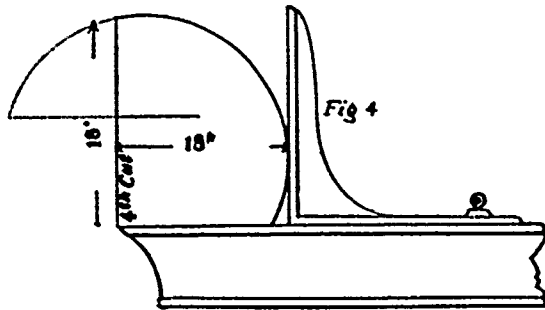
This always appeared too wasteful. Our 44 inch saw would reach only 18 inches above the collars, which, of course, was the depth of the kerf, and when you only reach that distance on, say a 30 inch log, there is quite a space that the saw cannot get up to. We reckoned there was a better plan than to use wedges and axes, so, with a little hard thinking, we worked out a plan which

saved the entire material and lessened the expense of working out our stock, without introducing a larger saw. The accompanying illustrations will correctly represent the method employed.

You will notice that the position of the head blocks remains the same, 18 inches from the saw, just the distance



which the saw enters in the log, so that the only change necessary is to give the log a quarter roll for a second cut, another quarter roll for the third cut, and then in the fourth position it is dropped back to the location of Fig. 1, where we began sawing. By these simple operations the log was materially reduced in size without any loss of timber, there being no changing of the head blocks for the four cuts made. The dotted lines of each figure show the piece dropped off at each run of the saw, and, I think, will be clear to all who may be interested in the idea. In this manner we solved the problem of handling very heavy logs on a comparatively small mill, without destroying valuable stock and consuming unnecessary time. Where a log tapers it should be blocked away from the



carriage head on the smallest end, so that the saw can at each change just reach to the line of the last cut made.

**WOOD CARBONIZATION.**

In the destructive distillation of wood, that is, ordinary charcoal burning, there are in the smoke or gas several valuable substances. These substances have been known for a long time and some have been partially recovered. The first process employed for the purpose was that for the production of tar from pine wood. Later, on the continent of Europe and in Scotland, wood was burned in retorts and the pyroligneous (that is, crude acetic acid), was made into acetate of lime. Of late years, however, this business has had a very great development in the United States, where the large amount of excellent hardwood forest in the natural gas regions, where no wood is used for fuel, has given a cheap raw material, making possible the export of acetate of lime and wood alcohol to Europe with profit.

At present there are two distinct processes used, called the kiln process and the retort process. In the kiln process the cordwood is put into a large brick or stone "bee-hive" kiln and burned in the ordinary manner for producing charcoal, but the smoke or gases do not escape into the air, but are drawn through a chimney into a series of condensers, where all the liquid products are condensed out, and the gas is burned under the boilers. The liquor condensed (amounting to 180 gallons for a cord of well seasoned dry wood), is led into tanks and the

tar is separated out. This tar is re-distilled, producing oils and pitch. If only wood alcohol is to be made, the settled liquor is distilled and crude alcohol produced, and the residual pyroligneous acid is run to waste. If brown acetate of lime is to be made, the crude liquor is neutralized with lime before the alcohol is distilled off. If gray acetate of lime is to be produced, the crude liquor is all distilled and purified before neutralizing with lime. This method gives the best product, the gray acetate of lime containing from 82 per cent. to 86 per cent. of acetic acid, while the brown acetate of lime sometimes contains less than 60 per cent. of acid. The retort process differs from the kiln process of carbonizing in having the cordwood put into horizontal wrought-iron cylinders, and these are heated by a fire-place beneath them. In the kiln process, enough air is let into the kiln to burn a portion of the wood, and this heat serves to carbonize the rest. The retort process is superior to the kiln process in giving larger yields of valuable products, but the cost of installation and of working is greater.

The by-products in the liquors from the condensers are recovered the same way, whether produced by the kiln or retort process. In all the processes the alcohol is re-distilled, purified and treated chemically, and brought up to a strength of 95 per cent., before being put on the market. The products of this industry are used in the arts for various purposes. Wood alcohol, or methyl alcohol, is like grain alcohol in many physical properties, but is poisonous. It is used for making spirit varnishes for burning and dissolving various gums, and by the government for making methylated spirit. Acetate of lime is used for the production of acetic acid, which is the acid of vinegar, and is diluted and flavored and sold for this purpose in Russia and other European countries.

The Standard Chemical Co., Limited, first introduced the retort system into Canada about a year and a half ago at Fenelon Falls, Ont. Previous to this, the only works in Canada turning out these wood products were located at Deseronto, and owned by the Rathbun Company, which owned the patents for the Burrel kiln process. H. O. Chute, superintendent of the company, was employed by the Standard Chemical Co. to erect a retort plant at Fenelon Falls, which has been in operation since last fall. When the Deseronto Iron Co. decided to locate at Deseronto, assuring a market for the charcoal, the Standard Chemical Co. acquired the rights of the Burrel patent, owned by the Rathbun Company, and decided to enlarge the plant by putting in retorts. This plant will have the largest single bench of retorts in the world, and many new features of construction are being introduced, which allow of a more economical working and handling of all products by machinery. We are indebted to H. O. Chute, superintendent of the Standard Chemical Co., for the information contained in this article.—Canadian Engineer.

The clothespin factories in Michigan and Pennsylvania turn out about 3,000,000 pins per day. Pennsylvania leads in their manufacture, nearly a million a day being made in the town of Kane, McKean county, and vicinity. Beech wood is used, and the factories employ hundreds of boys and girls.

## THE NEWS.

—John Schade has erected a shingle mill at Magneta-an, Ont.

—John Aush has started a saw and shingle mill at Anenburg, Ont.

—T. W. Grey, saw mill, Nelson, B.C., is offering his business for sale.

—Mr. Guthrie has purchased the steam saw mill at Lby's Pond, Que.

—W. W. Doherty's saw mill at Campbellton, N.B., has been rebuilt, and is now in operation.

—It is probable that Dobell, Beckett & Co., timber porters, will establish an office at St. John, N. B.

—The William Hamilton Mfg. Co., of Peterboro', Ont., is installing machinery in a saw mill at Fernie, B.C.

—George McPherson, of Keewatin, Ont., was awarded certificate as lumber culler at a recent examination.

—It is announced that a new saw mill, with a capacity of 25,000 feet per day, will be built at Revelstoke, B.C.

—Sergeant Bros., of Chatham Head, N. B., have sold their mill, together with tenement houses, to Timothy Lynch.

—The Oro Mining & Milling Company have built a saw mill at Oro, Ont., in connection with their mining operations.

—A. F. Bentley has removed from Five Islands, N. S., St. Martins, N.B., where he has engaged in lumbering operations.

—J. A. Calloun, of Savannah, Georgia, has supplied considerable lumber for a new elevator now being built at St. John, N.B.

—Mr. Madder is making preparations for building lumber sheds at Douglas, Man., where he will establish a tail lumber yard.

—A company has purchased the soft timber in the camps west of Exeter, Ont., and intend erecting a stave mill in the vicinity.

—Arnel & Company are erecting a sash and door factory and planing mill in connection with their lumber yard at Port Stanley, Ont.

—The Hepworth Manufacturing Company's building at Hepworth Station, Ont., is expected to be completed by the first of January next.

—The Rat Portage Lumber Co. have been supplying the Canadian Pacific Railway with grain car doors at the rate of one car load per week.

—Cressman & Stauffer, who recently sold their cigar box factory and saw mill at Baden, Ont., have purchased saw mill property in Muskoka.

—Chew Bros., of Midland, Ont., have purchased the old mill property at Dollartown, Ont., and are about to erect a large box factory thereon.

—The works of the Gardner Tool Co., at Sherbrooke, Que., in liquidation, have been sold to William Farwell, manager of the Eastern Townships Bank, for \$15,659.

—Robert Watt is building a new saw mill at Warton, Ont., which, when completed, will be one of the best in that district. The frame is now in course of construction.

—Maitland, Rixon & Co., of Owen Sound, Ont., have made arrangements for the building of a new tug, to replace the Adam Ainslie, which was recently destroyed by fire.

—Boyd & Company's saw mill at Bobcaygeon, Ont., closed down last month. The men employed, to the number of sixty, left for the firm's limits in Glamorgan township.

—McLaurin & McLaren, of East Templeton, Que., have just installed two 80 h.p. boilers in their mill. These were supplied by Bannerman & Findlater, boiler makers, of Ottawa, Ont.

—The shingle mill of S. Rainey, at Severn Bridge, Ont., has been purchased by Smith & Thompson, of Brillia, Ont., who have taken it to Barrie to manufacture railway ties and shingles.

—It is stated that two gentlemen are negotiating for the purchase of the saw mill and factory at Trout Creek, Ont., owned by William Burke, with a view to improving the plant and operating it.

—Austin Bowen, found guilty of conspiracy to rob Mr. McLaughlin, paymaster at Gillies Bros' saw mills, Lacade, Ont., was recently sentenced at Ottawa to seven years in the penitentiary.

—T. Sims & Co., of St. John, N.B., have purchased the old saw mill, spool and box factory at Hardington, N.B., together with 700 acres of timber lands, formerly owned and operated by L. P. Hayden.

—Samuel Freeze, of Doaktown, N. B., who returned last summer from the Klondike, has erected a mill to manufacture furniture stock for tables, chairs, organ cases, etc., for shipment to Great Britain.

—C. & I. and George D. Prescott, of Hopewell Hill, N. B., have made arrangements with an English company to establish a box factory to manufacture glove and other boxes for export. The new factory is now in course of construction.

—F. S. & W. E. Roop & Co. are rebuilding their wood-working factory at Middleton, N.S., assistance having

been granted by the municipality. The establishment will consist of a main building, three stories high, 41 x 91 feet, brick engine room 20 x 35 feet, and a dry kiln and storage room 34 x 35 feet, all to be equipped with latest machinery, and to be in operation by February 1st, 1899.

—Several artisans of Trenton, Ont., have organized the Trenton Lumber Cutting & Manufacturing Company, to manufacture lumber, boxes, furniture, etc. The undertaking is launched upon a co-operative principle, and is stated to be a labor-employing venture.

—It is reported that an English syndicate is negotiating for the purchase of the factory of the Perfection Hoop & Veneer Co., at Eugenia, Ont., with a view to manufacturing wood specialties for export to Great Britain. Further developments are looked for in the near future.

—A Winnipeg exchange states that it is now an assured fact that two of the large saw mills on the Lake of the Woods will be removed to that city upon the completion of the South-Eastern Railway to Rainy River. Negotiations for a site for one of these mills are now said to be in progress.

—The Hiltz Company, of New Ross, N.S., which commenced operations last February, have sawn between five and six hundred thousand feet of lumber, two and three hundred thousand of staves, and about two hundred thousand of shingles. They intend going in on a larger scale this winter.

—The King Lumber Company, Limited, are erecting a wood-working factory at Chipman, Queen's County, N.B. The machinery will consist of planer, matcher, moulder, trimmer and cutting-up saw, and in the near future it is contemplated to add machinery for the manufacture of doors and sashes.

—The Nova Scotia Lumber Co., of Sherbrooke, N. S., have completed one of the best gang and rotary saw mills in the Dominion. It is fitted with modern improvements, including saw dust, bark and refuse conveyor. The conveyor carries the waste wood 400 feet from the mill, where it is consumed by fire. The gang saw has a capacity of 100,000 feet per day, and the rotary between 25,000 and 30,000 feet per day. Upwards of 100 men are employed.

—Fred. W. Eddy, late of West Lucan, Mass., has taken up a large tract of land at the head of North-East Margaree River, N.S. On this property there is a large amount of valuable timber, which he proposes to take down the river to Margaree Harbor, where he is erecting a saw, shingle and stave mill. The machinery for the above is being supplied by the Robb Engineering Company, Limited, of Amherst, N.S., and will include a 50 h. p. boiler and engine as the power plant.

—At the recent convention of the Women's Christian Temperance Union, held in Ottawa, a report was submitted by Mr. Lecky, a lumberman's missionary, who has been kept travelling among the northern lumber camps. This report stated that the evil of intemperance was working great havoc among the men employed in the lumber woods. A further report stated that some of the supplies sent into the lumber camps by the Temperance Union had been sold to the men by the agents of the company.

—The Sarnia Salt Company, Limited, of Sarnia, Ont., has applied for permission to increase its capital stock from \$20,000 to \$100,000, the intention being to resume operations on a larger scale than formerly. This development of the Canadian salt wells no doubt bears some relation to the prohibition of the export of Canadian logs to Michigan. The Michigan salt wells, as is generally known, use the refuse from the lumber mills as fuel, and when this cheap fuel is cut off the cost of operating the wells will be greatly increased, thus affording a material advantage to the Canadian wells.

—Mr. James A. Smart, Deputy Minister of the Interior, in company with Mr. E. F. Stephenson, Dominion Crown Timber Agent at Winnipeg, made a trip last month to Moose Mountain, in the Northwest Territory. An inspection of the timber there showed that there was a large quantity of good serviceable wood in the district. Mr. Smart believes that the preservation of this belt is absolutely necessary, and next year steps will be taken to insure its protection. The above gentlemen also visited the Turtle Mountain timber reserve, and expressed themselves as well pleased with the fire guard which has been made from the north side of the timber belt to the lake at the summit.

—On October 27th last the lumber, shingle and lath mill of J. D. Shier, at Bracebridge, Ont., was completely destroyed by fire. In some quarters an impression seems to prevail that the fire was caused by a hot box. This is not in accordance with the facts. While the cause of the fire is unknown, it certainly did not originate from a hot box, as the mill had been running perfectly cool, and particularly this season; in fact, we learn that no trouble has been experienced with hot boxes for three years. The band mill was also giving the best of satisfaction right up to the time of the fire. It is possible that the fire was due to some disarrangement in the electric wires. Mr. Shier is now engaged on the erection of a new mill, which will be up-to-date and completed in time for an early start next spring. His planing and shingle mill is running full capacity.

—Much interest is taken in a lumbermen's lien case recently tried before Judge Wilson at Fredericton, N.B. A number of lumbermen had claims against certain logs taken out last winter by A. Cushing & Sons, of St. John.

These logs were hung up on the Oromocto river, and last summer lien claims were filed against them. These claims were allowed by the judge, who ordered that the logs be sold to satisfy the same. The case was appealed to the Supreme Court, which reversed the decision and held that the logs could not be claimed while in transit. The Oromocto river has now risen sufficiently to permit the logs to be floated, and recently Cushing & Sons sent a crew of men to raft the logs ready for towing. At this juncture Sheriff Holden, of Sunbury, served an attachment upon Cushing's workmen on behalf of the lien holders. This, however, was disregarded, and the logs are now on their way to St. John. What the next step will be is being awaited with keen interest.

## CASUALTIES.

—Robert Grant, employed in Mickle, Dymont & Co.'s camp, five miles from Dorset, Ont., had his leg broken last month.

—J. Ray was engaged piling logs on a rollway at Whitney, Ont., when one of the timbers rolled back on him, crushing his leg severely.

—While working in the lumber woods at Nashwaak, N. B., for Elias White, George Clark had his leg broken by a log rolling upon it.

—W. Sheridan, employed in the Gilmour camp at Canoe Lake, Ont., had his leg broken by a falling tree, and was taken to the Toronto General Hospital.

—David Tyand, head sawyer in T. L. Pardo's saw mill at Blenheim, Ont., was working in the vicinity of the boiler when a steam pipe burst, the flying iron breaking his leg in two places. It is not expected that his injuries will result fatally.

—James Hillier was killed while working in a saw mill in the township of Dawn, near Chatham, Ont. By some means a board fell across the rapid revolving circular saw, and was hurled with terrific force against the deceased, killing him instantly.

## PERSONAL.

The death occurred last month of Mr. L. W. Ross, book-keeper for M. M. Boyd & Co., Bobcaygeon, Ont.

Mr. G. Harley White, of the Alma Lumber & Shipbuilding Co., of Sussex, N.B., was recently married in Montreal.

Mr. George H. Perley, of the late firm of Perley & Pattee, lumbermen, Ottawa, sailed with his family on November 5th for a tour of the European continent.

At Galt, Ont., Mr. Raymond F. Shurly, eldest son of Mr. C. J. Shurly, of the firm of Shurly & Dietrich, saw manufacturers, was recently married to Miss Gilholm.

Mr. Henry Pedwell, of Thornbury, Ont., has been in England for the past couple of months, investigating the prospects of finding a profitable market for Canadian hardwood lumber.

The death of J. N. Draper occurred at New Westminster, B.C., on October 22nd last. Deceased was born at Woodstock, N.B., in the year 1834, and removed to British Columbia twenty-five years later. After remaining there a short time he went to Puget Sound, and engaged in the lumber business, returning to New Westminster in 1877. Since that time he has been associated with Messrs. Ewen & Co.

In our last issue reference to the death of Mr. Stephen Jarrett was inadvertently omitted. On October 7th he succumbed to typhoid fever at his home in Deseronto, Ont. Deceased was well known in lumber circles in Ontario. Coming to this country from England when fourteen years old, he spent some five years in a printing office, but fifteen years ago turned his attention to the lumber business. His first employment was as clerk with Christie, Kerr & Co., of Toronto, and subsequently he was associated with Messrs. Tennant & Co., the Ontario Lumber Co., J. A. McBean, Robert Thompson & Co., Donogh & Oliver, Davidson & Hay, and the late Toronto Wood & Shingle Co., being on the road for the last five named, as either salesman or buyer and shipper. For the last five years of his life he was employed by the Rathbun Company, of Deseronto, as inspector and foreman.

A prominent lumberman of the maritime provinces, in the person of Mr. James Miller, died on November 4th. The primary cause of his death was a severe cold which he contracted a short time ago while attending to his lumbering interests in the Temiscouata region. Deceased had lately completed arrangements with Mr. D. A. Huntley, of Parrsboro, N.S., to carry on extensive lumbering operations in Quebec, having secured valuable timber limits on the Temiscouata Lake. The erection of a mill was to have been commenced immediately. Mr. Miller was a son of the late senior member of the firm of Miller & Woodman, one of the largest saw mill owners and operators of St. John, N. B. He was born at Hollis, Maine, in the year 1855, was educated at St. John, Sackville and Sheffield, N.B., and then went into the lumbering business. His first venture was in 1881, at Economy, N. S., where he operated successfully for about ten years. He then removed to St. Mary's River and established a business there, which he continued until negotiations were opened for conducting operations at Temiscouata.

Mr. Madison Williams, Port Perry, Ont., reports the following recent sales: E. Beare, Greenbank, Ont., large globe case and flume; T. A. McLean, Charlottetown, P.E.I., 30 1/2" Lefel; N. McLean, Newville, Ont., Lane set works; Monastery du Bon Pastam, Pare Laval, Que., three 61" and one 35" Vulcans, with two 36" Vulcans to follow; J. H. Stanford, Chester, N.S., one 30 1/2" Vulcan, with gears, gauge roll and Green mountain dogs; The Succession du Masson Terrebonne, Que., one Lane double circular 30 ft. carriage and rope feed.



## OTTAWA LETTER.

(Correspondence of the CANADA LUMBERMAN.)

THE chief topic of conversation of late among the lumbermen of the Ottawa valley has been the financial embarrassment of Messrs. William Mason & Sons. This firm have been regarded as one of the most progressive in the district, and it is a matter of regret that arrangements could not be made to tide them over the present difficulty. The sale of their limits yesterday brought together a number of prominent lumbermen, including Messrs. Alexander Fraser, J. R. Booth, E. B. Eddy, R. H. Conroy, Alex. Lumsden, M.P.P., H. K. Egan, C. B. Powell, M.P.P., Hon. George Bryson, Alex. Barnett, J. B. Fraser, and others. The only purchaser was Mr. E. B. Eddy, who secured 100 square miles on Big Lake, River du Moine, and 245 miles on the River Coulonge, in the province of Quebec. Several other berths, as well as the sawmill at Bayswater, were withdrawn. The sale was held under the auspices of the Bank of Toronto.

The E. B. Eddy Company, of Hull, have adopted a unique system of continuous labor, the result being attained by a change concerning the dinner hour. The company give the employees a free dinner, served hot, and in the factory. Half the employees go to dinner say, at twelve o'clock, and the other half at half-past twelve, taking only half an hour for lunch. In consideration of this the employees are given a half holiday on Saturday. The company have recently added new machinery, which brings the output up to 30,000,000 matches per day. We understand that the machine recently completed by the Victoria Foundry Company for Merritt Brothers & Co., of St. John, N.B., had a capacity of 25,000,000 matches per day of ten hours.

The experiments with furnaces for the manufacture of calcium carbide, which are being carried on at the mills of W. C. Edwards & Company, continue to attract attention. Mr. J. G. Gardner, of Baltimore, Md., was in the city recently in connection with the scheme, and it is said that if the plant is not established here, he will offer Mr. V. L. Emerson special inducements for the establishment of such a manufactory on the American side.

The Ontario crown timber office, which for many years has been situated in the building at the corner of Kent and Queen streets, has been removed to the Sun Life building.

Mr. J. M. Portrais, representative of the Northern Pacific Lumber Company, Limited, is at present in British Columbia. His mission is understood to be in connection with the opening of the Ross-McLaren mills on the Fraser river, in that province. One drawback to the operation of these mills has been the report which gained currency that the Fraser river was not navigable for vessels of any size. This has now been contradicted by the investigation of the coast pilots, made during their recent visit to the Fraser river.

It has been the privilege of your correspondent to read the memorial which has been forwarded by the Ottawa valley lumbermen to the British commissioners at Washington. The document contains some strong arguments against the contentions of the United States lumbermen. At the outset, facts are given which show that the lumber shipped from Canada to the United States is of an average quality. Then follows some figures showing the imports from Canada by the United States, and vice versa. A denial is given to the statement that lumber is produced in Canada more cheaply than in the United States. The claim of the American lumbermen that dams, slides, booms, and river improvements generally for the purpose of lumbering operations, are constructed in Canada by the government, is met by the statement that in every case where improvements are made slidge dues are charged the lumbermen, sufficing to cover interest on cost of construction and maintenance, and in addition yielding a revenue, in some instances, as high as 15 per cent. Fully ninety per cent. of the improvements, however, are constructed by the lumbermen themselves, at their own cost. The amount of capital required for equivalent production in the two countries is next dealt with, the figures showing that the cost of producing white pine lumber in Canada is \$2 per M greater than in Michigan. The memorial concludes with some pointed arguments in favor of free lumber.

OTTAWA, December 1st, 1898.

## BRITISH COLUMBIA LETTER.

(Correspondence of the CANADA LUMBERMAN.)

THE destruction by fire of the Hastings saw mill, owned by the British Columbia Mills, Timber and Trading Company, is regarded as a serious loss to this city, more especially as there is so a probability that the mill will not be rebuilt. The Hastings mill was the pioneer saw mill on the mainland, having been erected in the year 1862. Shortly after being built it passed into the possession of a firm named Dickson, DeWolf & Heatley, which firm for many years managed the establishment, San Francisco at that time being the principal market for its output. Mr. Heatley afterwards became almost sole owner, and some years ago sold the mill to the Hastings Saw Mill Co., Limited, which was afterwards merged with the British Columbia Mills, Timber and Trading Company, Limited, who are still the owners thereof. Nearly three hundred men were employed around the establishment, and the company's pay roll amounted to \$12,000 per month.

Mr. John Hendry, manager of the Hastings saw mill, returned last month from Australia, Mr. Sisson, who accompanied him, remaining there. While Mr. Hendry naturally feels indisposed to make public all the information gathered regarding trade prospects in Australia, we learn that he feels somewhat encouraged by his trip, and that an effort will be made to increase the business of his company in that colony.

A change has been made by the government in connection with its policy of disposing of public lands. A notice is gazetted to the effect that hereafter no lands, or timber will be sold or disposed by the government except under special circumstances. Persons desirous of purchasing lands must apply to the department, showing any special reason why they should be allowed to purchase, before any expense is incurred.

The Victoria-Yukon Company, whose mills at Lake Bennett, in the Yukon district, did a large trade last season, intend making extensive improvements in order to be better equipped for next season's business. The management believe that in future there will be a still greater demand for freight barges. There are also a number of steamers to be built, and no doubt quite a town will grow up around Bennett.

When the Beaver saw mills are completed they will be one of the finest in the province. W. G. Neilson, M.P.P., is manager of this establishment.

Mr. F. B. Waterous, of the Waterous Engine Works, Brantford, Ont., has recently been on the coast. He appointed Mr. H. B. Gilmour, formerly with the C.P.R., as agent for this province, and we have no doubt that Mr. Gilmour's extensive acquaintance, coupled with his sterling qualities, will secure a large business for the company.

The British Columbia Mills, Timber and Trading Company will probably open up one of the largest timber limits on the north coast. It is situated 135 miles up the coast, near Bear Island creek, and was recently prospected by Mr. J. St. Clair. Mr. St. Clair estimates that it will yield 80,000 feet of lumber to the acre. In connection with the logging operations, it will be necessary to construct a short line of railway from the coast in seven miles to the first of the chain of lakes that run from end to end of the limit. The logs will be floated down these lakes and loaded on trains, which will haul them to the shore line.

VANCOUVER, B.C., November 22, 1898.

## THE OTTAWA SAW WORKS.

A SMALL fire occurred in the band-saw department on the second story of the Ottawa Saw Works, Ottawa, on the morning of Thanksgiving Day, causing damage to stock and building to extent of about \$2,000; fully insured. Fortunately the fire was not extensive enough to interfere with the running of the works or any of the departments, and the company inform us that they are in a position to fill orders as promptly as ever. They also purpose making some additions in their facilities for making saws before the end of the year, so as to be prepared for the usual rush of trade during winter and spring months.

The Knight Bros Co., of Burks Falls, Ont., who make a specialty of kiln-dried birch flooring and sheeting, are having their factory fitted throughout with steam heaters. They also contemplate putting in a large engine during the coming winter.

## GOOD ADVICE TO BOILER ATTENDANTS.

THE Manchester, Eng., Steam Users' Association has issued the following hints to boiler attendants:

**WATER LEVEL.**—Before lighting fires see that there is sufficient water in the boiler. Test the water gauges frequently and keep the water level steady.

**BLOW-OFF COCKS.**—Before lighting fires be sure that the blow-off cocks are closed and not leaking. Occasionally feel if the blow-off water pipes are hot. Blow off from bottom before starting the engine. Sediment has then settled in the elbow pipe. Blow off the scum before stopping the engines, but only when the water level is at the correct height. At such times most of the scum has collected in the troughs.

**LIGHTING FIRES.**—Sudden changes of temperature may produce fractures or start leakages. Therefore never raise steam hurriedly. The top and bottom of a boiler should grow warm together. If convenient, fill the boiler with warm water through the economizer. If the boiler water is cold, allow fully six hours for raising steam. If pressed for time, fill the boiler to the top of the water gauge, fire slowly, and keep the safety valve open until steam blows off freely. After closing the safety valve, blow out the bottom cold water till the working level is reached. The pressure may now be raised more quickly.

**SMOKE PREVENTION.**—Smoke and imperfect combustion are caused by an insufficient air supply or by premature cooling of the flames. Therefore after coaling, when the fires are black, admit air either at the door or through the spirt bridge. It is less wasteful to admit too much air than too little. With smoky boilers or when hard pressed, keep the fires thin and even. Fire steadily. Don't coal all furnaces at once. Coal each furnace on one side at a time.

**EMPTYING BOILERS.**—Do not empty boiler while steam is up.

**OVERHAULING, CLEANING AND INSPECTION.**—Clean the boiler monthly or oftener; remove the scale while soft, if possible while emptying the boiler. Sweep the soot off the boiler plates and clean the flues every three months, as well as on the occasion of the annual inspection. All leakages should be stopped, any cause of dampness in the setting should be removed, corrosion should be arrested. The fusible plugs should be cleaned on the fire side and water side once a month, and the fusible metal should be renewed once a year at the time of the annual inspection. All cocks should be kept oiled, and, unless asbestos-packed, they should be overhauled once every month. These cocks, the feed valves, steam stop valves, and all safety valves, should be overhauled annually on the occasion of the inspector's visit.

**MANHOLES.**—Before opening the man-holes, ease the safety valve so as to be quite sure that there is no pressure in the boiler. Before entering a boiler secure the steam valves and blow off cocks.

**SAFETY VALVES AND LOW WATER ALARMS.**—Never overload or tamper with safety valves or with low water alarms. Ease or test them regularly every day. Be sure that they are in working order. If they will not work properly, reduce the steam pressure and then report to the manager.



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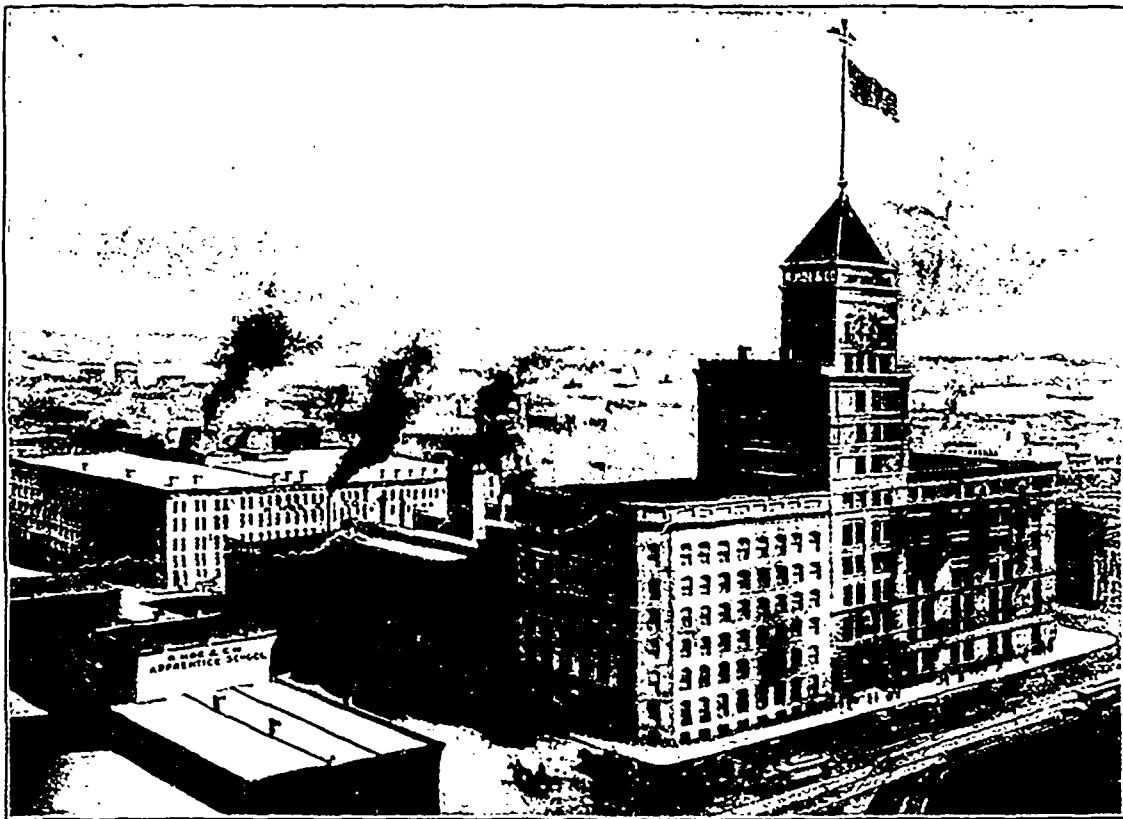
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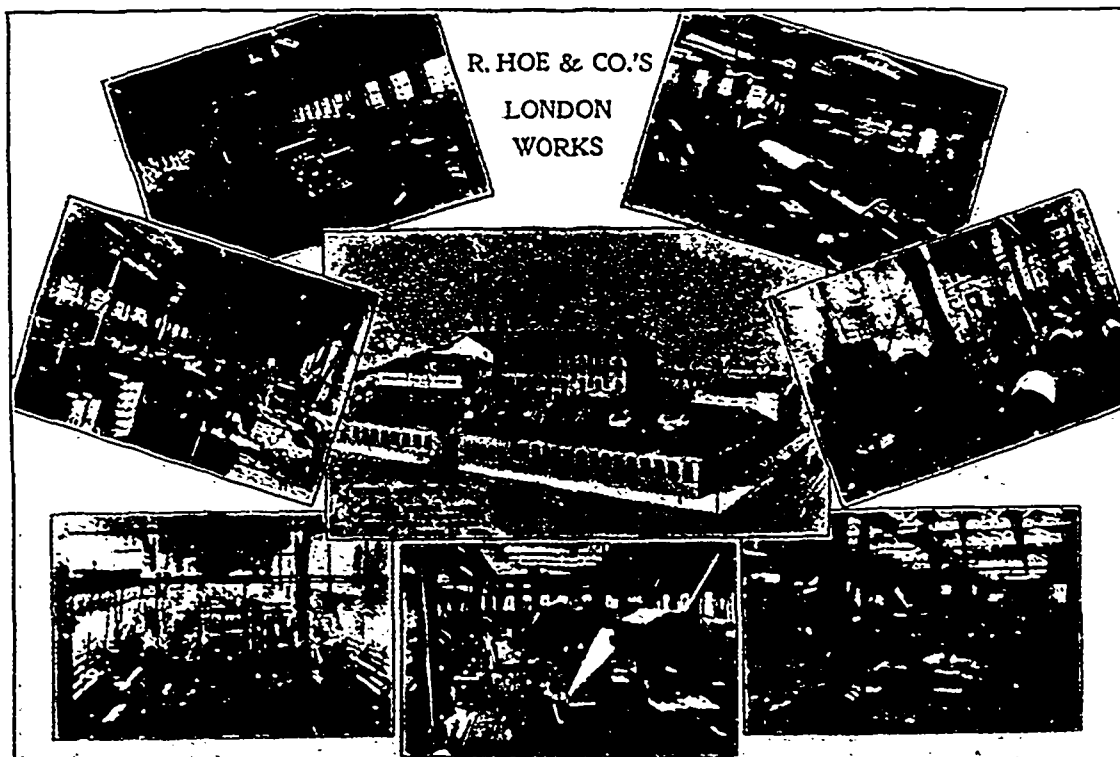


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## WOOD PULP DEPARTMENT

### THE EXPORT OF PULP WOOD.

The probability is that the Quebec Legislature will open another session early in January. This fact accounts for the interest which is now being shown in the question of the export of pulp wood. It is understood that influential interests have requested the Cabinet to take some steps to protect the spruce forests of the province, and to assist the development of the pulp industry in Canada. The provincial government has no power to impose an export duty on pulp wood, and the federal government has taken no action. Therefore, it has been suggested that this difficulty can be overcome by imposing a stumpage tax of say \$4 per cord upon all wood cut in the province for pulp, and to give a rebate of \$3 or \$3.50 per cord upon all manufactured into pulp in the province. This would virtually prohibit the export of pulp wood from the province into the United States, and would no doubt be ruinous to those American pulp factories that are dependent upon Quebec for their raw product.

Whether or not any action will be taken by the government is a question in doubt. Those opposed to the imposition of heavy stumpage upon pulp wood intended for export, argue that it would interfere with the large trade done by individual farmers in cutting this wood upon their own lands for export. Against this it is claimed that the stumpage would only apply to lumber cut on Crown timber limits, and that a little courage in the matter on the part of the local government would lead to an industrial revolution in the province of Quebec, forcing the location there of many pulp mills, and probably paper mills as well, that are now situated on the other side of the line and furnishing employment to American labor.

Quebec's strong point is this, that the amount of spruce available in the United States is decidedly limited and will soon be practically exhausted, while in Quebec, the greatest spruce province of the Dominion, the supply is virtually unlimited.

A significant feature of the situation is the rapid absorption of the spruce lands on the St. Lawrence river. The International Paper Company of the United States, which began pur-

chasing only a few years ago, now owns 2,500 square miles. The Laurentide Pulp Company, of Grand Mere, and two other companies own between them 3,500 square miles. The Shawenegan Water & Power Company bought 700 square miles at the sale of limits in Quebec recently, paying over \$50,000. These and other facts, such as the acquisition of large tracts in Ontario by the Petawawa Lumber, Pulp & Paper Company and by the Sturgeon Falls Pulp Company, show that paper manufacturers are convinced that the supply of available spruce in the United States is almost exhausted, and that the paper mills of that country must soon be dependent upon us for their raw material. The International Paper Company alone has a capital of \$36,000,000, and the effect of such a transfer of industrial activity is almost incalculable.

### PULP NOTES.

Grenville, Que., is said to offer a good location for a pulp mill.

The pulp mill at Sturgeon Falls, Ont., resumed operations early in November.

Hamelin & Ayers, of Lachute, Que., are experiencing a large demand for their felts for pulp and paper mills.

The Sault Ste. Marie Pulp & Paper Co., according to reports, exported over 10,000 tons of pulp to the United States since October 1st.

A rumor is current that a number of Truro capitalists have in view the establishment of a pulp mill at Farm Lake, Colchester county.

The first shipment of pulp from the pulp mills at Sturgeon Falls, Ont., under the new management, was made on Wednesday, Nov. 30th last.

The Dominion Pulp Company, of Chatham, N.B., has closed a contract with E. Leonard & Sons, of London, Ont., through their St. John branch, for one of the largest digestors ever made in Canada, this being the fourth digester to be supplied by this firm.

The project for a pulp mill at Baie St. Paul, Que., on the St. Lawrence river, is reported to be making good headway. Cross & Ewing are said to be making arrangements to secure a water power at Lime Ridge, near Marbleton, Que., for the purpose of manufacturing pulp.

At the next session of the Newfoundland legislature, application will be made to incorporate the Newfoundland Bleached Pulp Co., with a capital of \$2,000,000. It is proposed to exploit wood pulp, and probably coal, lime, stone and pyrites. The Messrs. Reid are prime movers in this important concern.

The manager of the Dominion Pulp Mills Company, Chatham, N.B., announces himself as strongly in favor of a regular line of steamers between St. John, N.B., and London, England, the year round. He states that his company are in a position to supply four car loads of pulp every week for shipment to London.

It is rumored that an English syndicate have in view the erection of a large pulp mill at Alma Island, near

Tadousac, Que. The company purpose expending about \$2,000,000, and is said to have made an offer to the local government to manufacture 450 tons of pulp per day, provided the free use of certain water powers is accorded.

According to figures just compiled, the export of pulp wood to the United States increased from \$677,221 in the fiscal year ending June 30th, 1897, to \$876,690 in 1898. As showing the marked increase in the export of pulp wood in recent years, it is stated that in 1890 pulp wood was shipped from Canada only to the value of \$50,197, and up to 1896 the exports had not reached the half-million mark.

In connection with the proposal of Mr. George Taylor, of Toronto, to build a pulp mill at Seven Islands, on the north coast of the St. Lawrence, it is learned that the river in some parts is 400 feet wide and 10 feet deep, and that there is a waterfall of 112 feet, giving an immense power. Mr. Taylor has purchased 76 square miles of spruce timber limits in the vicinity, and intends to proceed immediately with the erection of the mill.

An important decision has just been rendered by Judge Routhier in the matter of the Cascapedia Pulp & Lumber Co., of Cascapedia, Que., in liquidation. Mr. Alfred Lemieux, of Quebec, had been appointed liquidator to the company, and as such obtained in May last leave from the Court to sell the property. The sale was advertised to take place on the 14th of July last, but on that date, the bidding not being considered satisfactory, the sale was postponed, and on the following day the Court again granted Mr. Lemieux's petition to sell the property on the 17th of August last. On the latter date the sale took place, and Mr. McLellan purchased the property for \$20,700. Mr. J. M. Fortier was a shareholder and creditor of the company when the latter assigned, and took action in September last against Messrs. Lemieux and McLellan to have the sale to the latter annulled, on the ground that the notices required by law were not given previous to the sale, and that the property was worth much more than the price obtained. Notwithstanding this action, the liquidator notified the shareholders and creditors that the property had been sold, and published notices to that effect in the Quebec Official Gazette. Mr. Fortier then presented a petition to the Court, praying that all proceedings upon the ratification of the deed of sale be suspended until a decision was obtained in his case against Messrs. Lemieux and McLellan, and Judge Routhier granted the petition and ordered that all proceedings respecting the ratification of the sale to Mr. McLellan be suspended, as requested.

### APPRECIATES THE PULP DEPARTMENT.

In renewing his subscription to the CANADA LUMBERMAN, Mr. B. L. O'Hara, of Quebec, writes: "The Pulp Department, which seems to have become a regular feature of the LUMBERMAN, is most interesting, and I hope in the course of the next few months to see many good articles on the different stages of the manufacture of pulp, material used, power required, etc. Considerable fir (peeled) is shipped from this province each year."

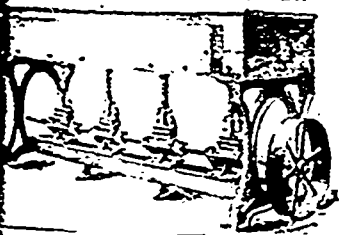
Readers of THE LUMBERMAN who contemplate enlarging their mill, or purchasing new machinery of any kind, are asked to advise us of their requirements. Such information is greatly appreciated.

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Messrs. Adams, Burns & Company, of Bathurst, N.B., are investigating the prospects for a pulp mill at that place.

Messrs. Abbott & Company, London, Eng., and Olive & Company, Manchester, Eng., are looking into the question of importing spruce pulp wood from Canada.

It is understood that the Commissioner of Lands and Forests for Quebec has ordered the collection of information bearing upon the existence of water supply and spruce forests, with a view to aiding the establishment of pulp

manufacturing industries. This will no doubt prove of great value to capitalists seeking fields for investment.

Mr. Charles R. Loring, of Livermore Falls, Me., the expert engaged to report on the outlook for a pulp mill at Woodstock, N.B., has given his conclusions to the Board of Trade of that town. He expresses regret that more water power is not available. The wood supply, he states, is plentiful, but for the mechanical process of pulp manufacture an enormous water supply is required. The mechanical process is simply a grinding up of all parts of the wood into pulp, giving a ton of pulp for a ton of wood,

while the sulphite process only yielded 1,100 pounds per ton. He recommends the establishment of a mill, particularly on account of the cheapness of the product. He estimates that a sulphite mill of a capacity would cost, including building and machinery, about \$75,000, while a mechanical pulp mill of a capacity would cost \$100,000, and each would require about the same number of hands to operate it. Messrs. Hugh Hay and H. Paxton Baird, members of the Board of Trade, have expressed themselves as well satisfied with the report.

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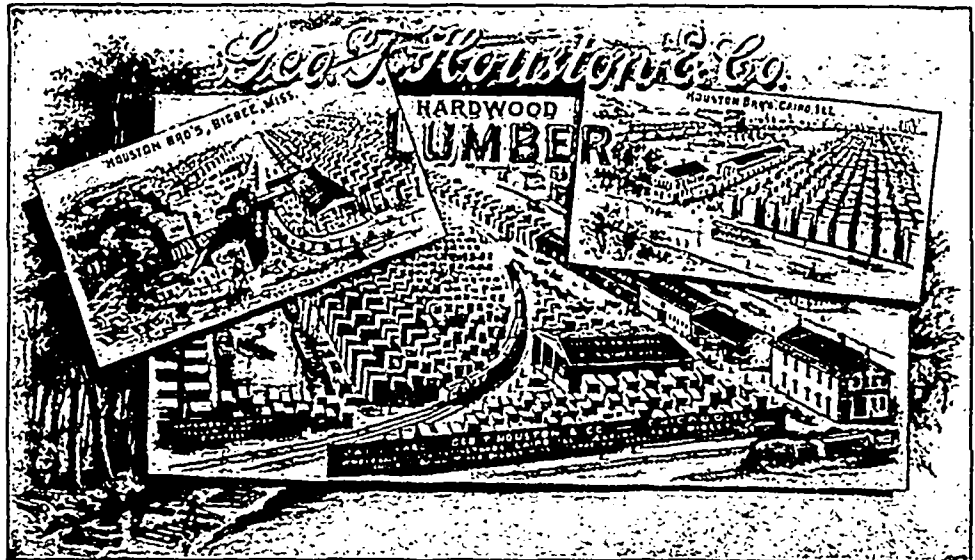
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We invite Travelling Buyers to visit our Double Band Saw Mills and examine our large dry stocks. Location: Bigbee, Miss., south-east of Memphis, Tenn., on K. C. M. & B. Railway.

**SPECIAL NOTICE**

We can furnish large lots, straight or mixed carloads, dry stock, at Saw-Mill Prices, and make quick shipment. Inquiries and orders by mail or wire solicited.

**SPECIALTIES—SPECIALTIES**

Large Figured Band-Sawed Oak—White Oak is our main Specialty. Also kinds Hardwood Lumber, Yellow and Cypress, Wood Stock. Disc sawed to order.

**Main Office: GEO. T. HOUSTON & CO., Chicago, Ill., U.S.A.**

**T**HERE'S been a good deal of talk in this space on... **"VULCAN," "LEFFEL" AND "PERFECTION" TURBINES**

Not more, however, than the excellent quality of the goods warrants. In fact, the manufacturer has plenty good talk regarding them that has never been used—very gratifying talk indeed when people who READ, INQUIRE and PURCHASE say, as they invariably do, they get all that was promised—in many cases much more than was expected.... These remarks apply with equal force and truth to

**The Lane Improved Circular Saw Mill**

BUILT WITH

SINGLE OR DOUBLE SAW FRAME  
ALL KINDS OF DOGGING DEVICES  
VERY LATEST ROLLER GAUGE

DIRECT OR INDEPENDENT FRICTION FEED UNDER  
SAWYER'S CONTROL BY PATENT FOOT RIG  
PERFECTED SET WORKS FOR FINEST ADJUSTMENT

**Nothing Superfluous—Nothing Wanting** for a Compact, Rapid, Accurate, Easy-Running and Lightly-Manned Mill. AND THE BEST VALUE IN THE MARKET—BAR NONE.

**THE "CANADA FAVORITE"**

is a Hand-Feed Horizontal SHINGLE MACHINE, having a capacity of 25,000 to 50,000 Shingles per day, according to power applied and character of timber.

**A GOOD MACHINE TO MAKE MONEY—AND NOT COSTLY**

**Gearing, Pulleys, Shafting, Hangers, &c., in a great variety of patterns**

**Madison Williams**

Successor to PAXTON, TATE & Co.

PORT PERRY, ONT.

Laurie Engine Co., Agents, 321 St. James St., Montreal.

**CANADA'S COMMERCIAL AGENTS.**

Following is the correct official list of Canada's Commercial Agents in Great Britain, British possessions and foreign countries:

S. Lark, Sydney, N.S.W., agent for Australasia.

Eustace Burke, Kingston, Jamaica, agent for Jamaica.

Robert Bryson, St. John, Antigua, agent for Antigua, Grenada and Dominica.

L. Horsford, St. Kitts, agent for St. Kitts, Nevis and Anguilla Islands.

Edgar Tripp, Port of Spain, Trinidad, agent for Trinidad and Tobago.

C. E. Sontum, Christiania, Norway, agent for Sweden and Denmark.

D. M. Rennie, Buenos Ayres, Argentine Republic, agent for Argentine Republic and Uruguay.

In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders:

J. G. Colmer, 17 Victoria street, London, S.W., England.

Thomas Moffat, 16 Church street, Cape Town, South Africa.

G. H. Mitchell, 15 Water street, Liverpool, England.

H. M. Murray, 40 St. Enoch Square, Glasgow, Scotland.

Harrison Watson, Curator, Imperial Institute, London, England.

A booklet has been issued treating of Richibucto, N.B., as a favorable centre for the establishment of a pulp mill. This book has been prepared by John C. Brown, C.E., of that place.

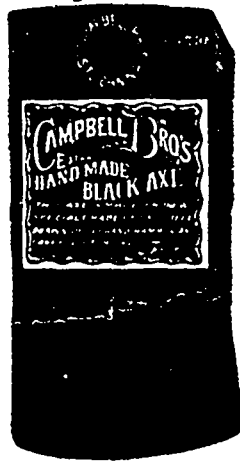
# Your Best Interest

Will be served by getting our prices on the following

- |                      |                                |
|----------------------|--------------------------------|
| White Beans          | Prunes in 25 and 50 cent boxes |
| Comadia Figs         | Sugars, dark yellow            |
| Raisins and Currants | Syrup and Molasses             |

**H. P. ECKARDT & CO.,**  
Wholesale Grocers TORONTO

It Pays to advertise in the CANADA LUMBERMAN. Try it.



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.

CHARLES F. CLARK, President. JARED CHITTENDEN, Treasurer. ESTABLISHED 1849.

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THE BRADSTREET COMPANY, Proprietors

346 & 348 Broadway, NEW YORK.  
Offices in the principal cities of the United States, Canada, the European Continent, Australia, and in London, England

The Bradstreet Company is the oldest, and financially, the strongest organization of its kind—working in one interest and under one management—with wider ramifications, with more capital invested in the business, and it expends more money every year for the collection and dissemination of information than any similar institution in the world.

TORONTO OFFICES.

McKinnon Bldg., Cor. Jordan & Melinda Sts.  
THOS. C. IRVING, Superintendent.

# DICK'S PATENT BALATA AND CANVAS BELTING

Still keeps an increasing lead all over the world—ever since its original invention about 1870 for following reasons:

**ITS GREAT DURABILITY  
IMMENSE GRIPPING POWER**

**NO SLIPPING  
SMOOTH RUNNING**

Unequaled for Wet Work

Does not Stretch; Has no Seams or Joints; Uniform Throughout

**IT IS THE BEST FOR ALL HEAVY WORK**

**TRY IT**—Write to the Sole Agent for Canada—**J. S. YOUNG,** 15 Hospital Street, MONTREAL

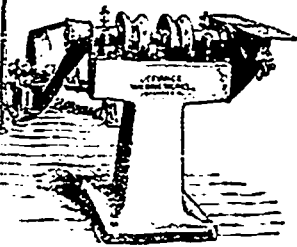
ESTABLISHED 1850

## THE DEFIANCE MACHINE WORKS

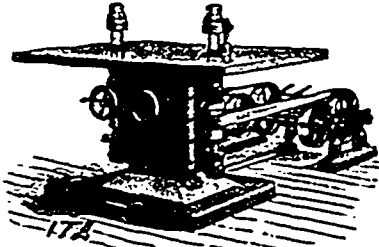
Designers and Builders of

DEFIANCE, OHIO, U.S.A.

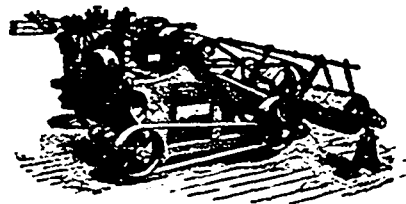
**PATENT HUB, SPOKE, WHEEL, WAGON, CARRIAGE,  
BENDING, HANDLE AND BARREL HOOP MACHINERY**



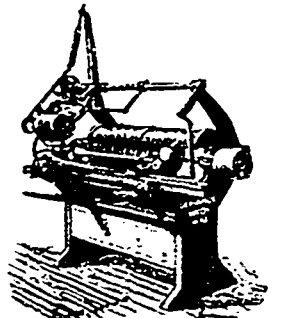
PATENT NO. 0 ROUNDING AND CORN ERING MACHINE, WITH 6 INCH BUZZ PLANER ATTACHMENT.



DOUBLE SPINDLE SHAPING MACHINE



AUTOMATIC SAWED HOOP PLANER.



COMBINED SPOKE TURNING AND SQUARING MACHINE. Capacity, 2,500 Spokes per day

# OAK TANNED BELTING

TORONTO  
20 FRONT ST EAST  
TELEPHONE 475

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



# FRICITION PULLEY BOARD

The BEST Article Known for the Purpose

MANUFACTURED BY THE DOMINION LEATHER BOARD CO'Y. - MONTREAL, QUE.

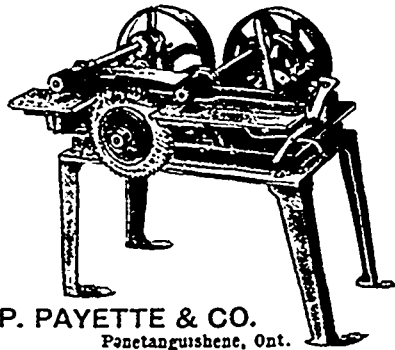
**CANADIAN OFFICE & SCHOOL FURNITURE CO. LIMITED**  
 PRESTON ONT.  
 FINE BANK OFFICE COURT HOUSE & OBSERVATORY FITTINGS.  
 OFFICE SCHOOL CHURCH & COLLEGE FURNITURE  
 SEND FOR CATALOGUE

**THE CANADIAN PHOTO ENGRAVING BUREAU**  
 TELEPHONE 215  
 110 ADELAIDE ST. WEST  
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**GANDY'S PATENT REGISTERED TRADE MARK**  
**AMERICAN COTTON BELTING**  
 BEST MAIN DRIVE. GUARANTEED.

Sole Canadian Agents: WATERLOUS, BRANTFORD, CANADA. Prices Reduced.

## PAYETTE'S PATENT LATH MILL



P. PAYETTE & CO. Panetanguishene, Ont. SAW MILL MACHINERY

## BARBER'S CANADIAN TURBINE

As a Saw-Mill Wheel, is by far the Steadiest Driver, varies less from light to full load and pulls steadily through the heaviest cut.



"It is by far the Best Wheel; pulls through the Heaviest Cut where the Lefell could not live." - W. L. H. BROS. Lowest Price and Highest Satisfaction. C. BARBER - MEAFORD, ONT.

# WEST AND SOUTH

run the lines of the Illinois Central Railroad and the Yazoo & Mississippi Valley Railroad reaching into the eleven States of

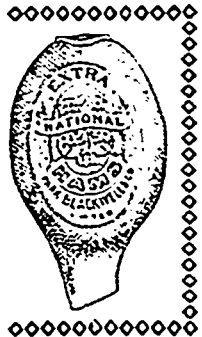
- South Dakota
- Minnesota
- Iowa
- Wisconsin
- Illinois
- Kentucky
- Tennessee
- Arkansas
- Mississippi
- Indiana
- Louisiana

Presenting an unequalled territory for diversified industries, and possessing

- Fine Sites for New Mills
- Best of Freight Facilities--Coal Fields
- Close Proximity to Distributing Centers
- Intelligent Help of all Kinds
- Many Kinds of Raw Material

To sound industries, substantial inducements will be given by many of the places concisely described in the pamphlet "100 Cities and Towns Wanting Industries" Write for a copy. Nearly all kinds of Industries are wanted. Very liberal inducements are offered TEXTILE INDUSTRIES in the South by a number of good places. GEORGE C. POWER, Industrial Commissioner I. C. R. Co., Chicago

## THE PARK, BLACKWELL CO. LIMITED



# Pork and Beef Packers's Wholesale Provisions

TORONTO

Orders solicited for Pork and Beef Products, Butter, Cheese, Lard, Dried and Evaporated Apples, White Beans, etc., at close quotations.

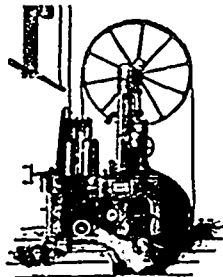
# WRITE TO US

For a List of the Canadian Saw-Mills using our Band Re-Saws. A number of them are also in use in Canadian Planing Mills and Box Factories.



## THIRTY-TWO MERSHON BAND RE-SAWS

are Running in the Mills in the Saginaw Valley.



# W. B. MERSHON & CO.

SAGINAW - MICH.

## 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.

# Second Hand Machinery

SNAPS TO CASH BUYERS

Langaster Machine Works - BOX 113, LANGASTER, ONT.

*The Leading European Timber Paper*

**The Timber Trades Journal**

Published Weekly by WILLIAM RIDER & SON, Ltd. 14 Bartholomew Close, LONDON, E.C.

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The "TIMBER TRADES JOURNAL" circulates in all European countries, the British Colonies, United States, E. & C., and is a very reliable medium of publicity for buyers and sellers of hardwoods.

Try the "Wanted and For Sale" Department of the Weekly Edition.

# TO BELT USERS:

Try Our GENUINE

# ENGLISH OAK-TANNED BELTING

and Our Lancashire Hair Belting

D. K. McLAREN

Victoria Square, MONTREAL

# The IMPROVED DIXIE Hand-Feed Shingle Machine

(Patented in United States and Canada.)

WITH....

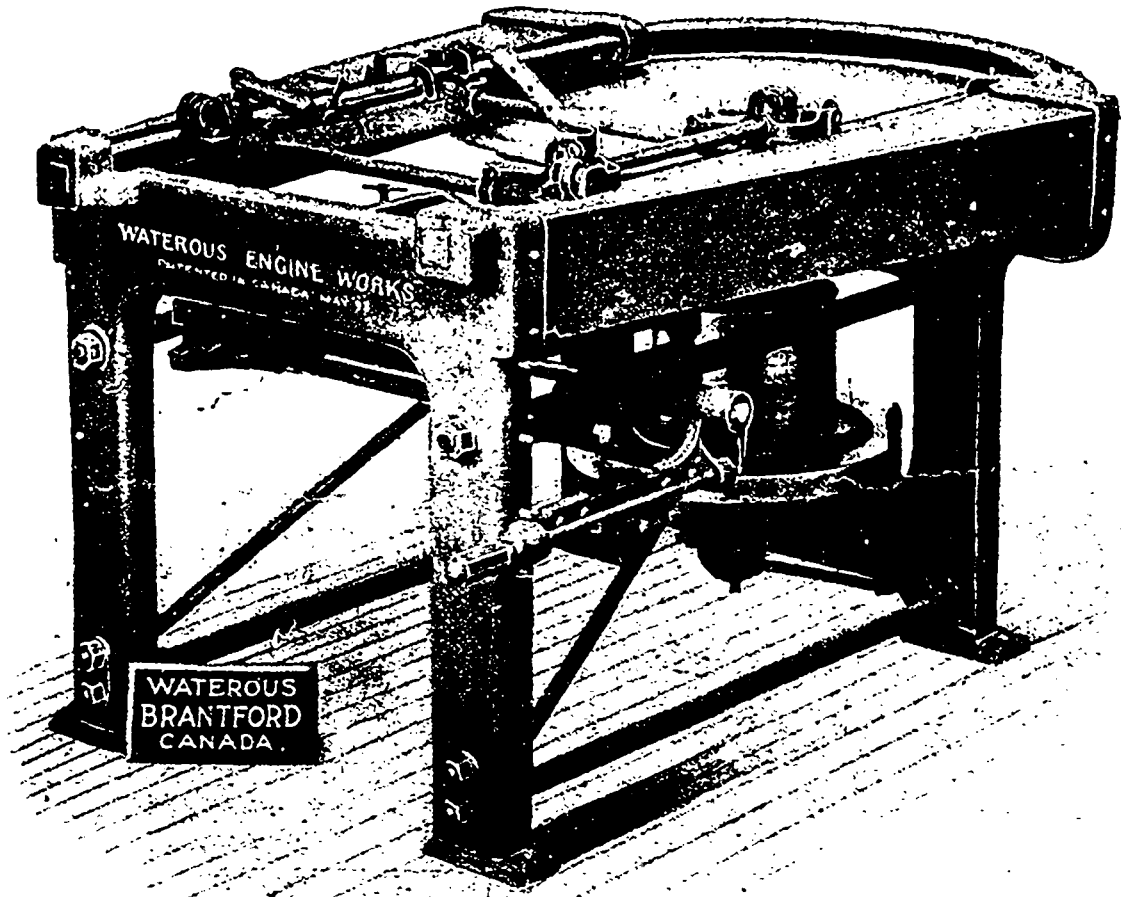
**ROLLER-BEARING  
CARRIAGE**

**AUTOMATIC TILT**

AND....

**QUICK-DROP TILT**

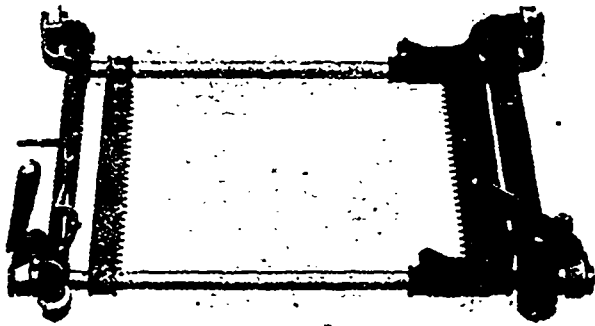
Saw Mandrel is 2 7/16 and runs in two Self-Oiling, Self-Adjusting Boxes which line themselves in every direction and insure Cool Journals. The step runs in a bath of oil.



## The Improved Dixie Carriage

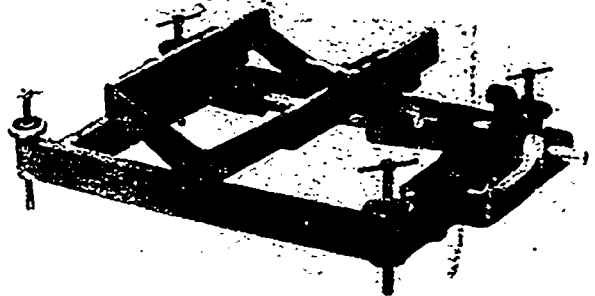
is made of Steel Castings and Bicycle Tubing, with Tool Steel Dogs. It is mounted on 8 large Case-Hardened Rollers running on 1 1/2-inch square finished Tracks.

These Rollers take care of all downward pressure and side thrust due to cut of Saw, making a perfect Carriage that runs without any friction. Carriage adjusts for different lengths by removal of Two Screws only.



## The Tilt Works

are contained in one Iron Frame levelled by 4 Screws. The Table is tilted automatically by a Pawl on Carriage. A Roller Bearing between Carriage and Table is provided. Without lifting hand from Carriage, Pawl is lifted or dropped, cutting Butts or Tips continuously at each end of Block. A Single Screw changes thickness of Shingle.



## The Quick Drop Tilt--

To quickly remove imperfections in block, the entire Tilt can be dropped one or two inches by Lever, and bad portion removed at a single cut.

Every adjustment is made by a single Screw or a single Lever within easy reach of operation.

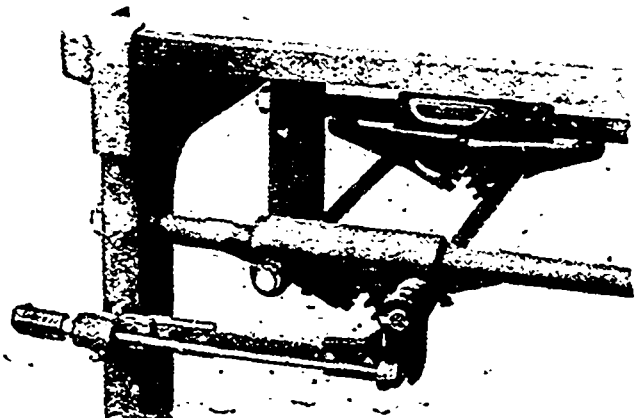
No. 1 3/8" Saw cuts 16"; No. 2 3/8" Saw cuts 18"; No. 3 40" Saw cuts 20"; No. 4 42" Saw, and No. 5 44" Saw each cut 24" Shingles. Every detail on these machines is perfect, and

**WE GUARANTEE THAT THEY WILL PRODUCE MORE MERCHANTABLE SHINGLES THAN ANY OTHER HAND-FEED MACHINE**

**Send for Circulars and Prices**

# WATEROUS

**Brantford - - - Canada**



THE QUICK DROP TILT.

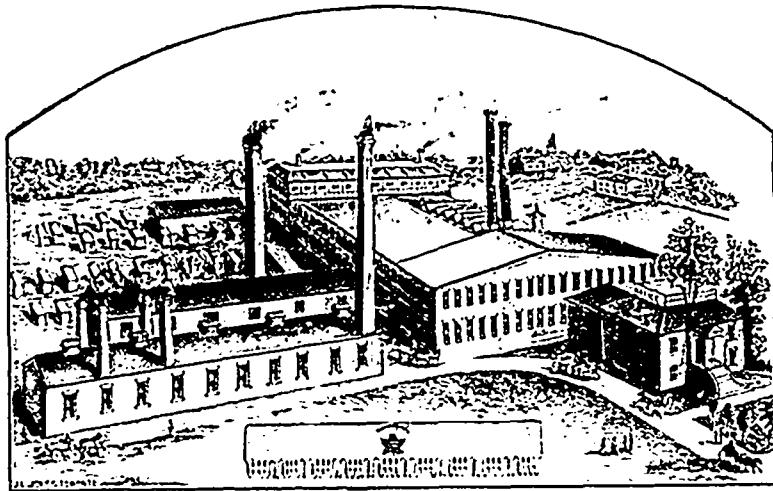
THE  
**MAPLE LEAF  
 SAW WORKS**



**Shurly &  
 Dietrich**  
 GALT, ONT.

Manufacturers of

**CIRCULAR SAWS  
 GANG SAWS  
 MILL SAWS  
 BAND SAWS  
 CROSS-CUT SAWS**



Manufacturers of

**HAND SAWS  
 BUCK SAWS  
 PLASTERING TROWELS  
 BUTCHER SAWS  
 STRAW KNIVES, &c.**



**GROUND THIN ON BACK**  
 Save Labor                      Save Gumming  
 Save Time                        Save Files

**This Saw Stands Without a Rival**

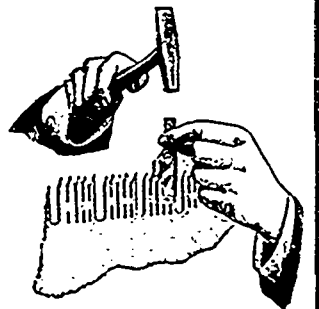
AND IS THE  
**FASTEST CUTTING SAW IN THE WORLD!**

Its Superiority consists in its Excellent Temper. It is made of "Razor Steel," which is the finest ever used in the manufacture of Saws. We have the sole control of this steel. It is tempered by our secret process, which process gives a keener cutting edge and a toughness to the steel which no other process can approach.

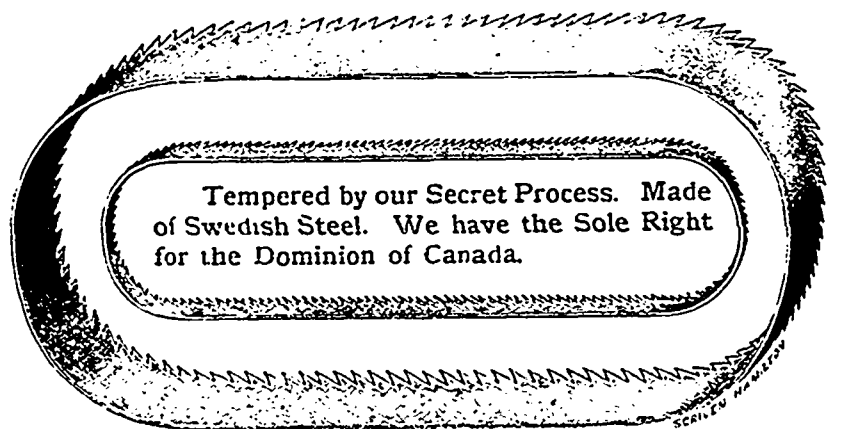
**Maple Leaf Saw Set**

MANUFACTURED BY  
 SHURLY & DIETRICH, Galt, Ont.

Directions - Place the set on the point of tooth, as shown in the accompanying cut, and strike a very light blow with a tack hammer. If you require more set, file the tooth with more bevel.  
 If you follow directions you cannot make a mistake. Be sure and not strike too hard a blow, and it will set the hardest saw. On receipt of 40 cents we will send one by mail.



We are the only manufacturers in the world who export Saws in large quantities to the United States.



Tempered by our Secret Process. Made of Swedish Steel. We have the Sole Right for the Dominion of Canada.

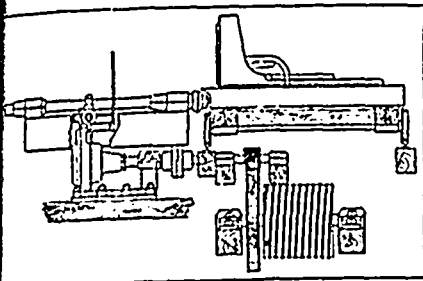
We Manufacture

**HIGH GRADE BAND SAWS**

of All Widths and Lengths.

These Saws are made of Refined Swedish Steel imported direct, and tempered by our Secret Process; for Fine Finish and Temper are not excelled.

# The DAKE STEAM FEED

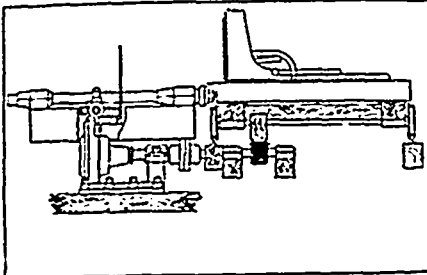


WITH ROPE FEED.

The movement of the engine in either direction is under the absolute control of the sawyer, thus accommodating the speed of the feed to the size of the logs.

Mill men who have used other makes of Steam Feeds comment favorably on the economical use of steam of our feed over others.

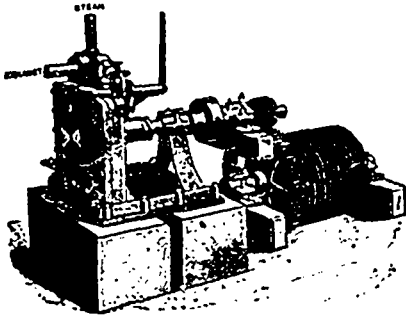
Write for Catalogue and full particulars.



WITH RACK FEED.

Embodies the following Advantages:

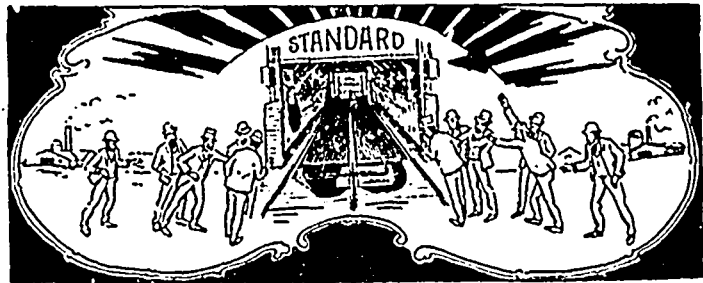
- Simplicity of Construction,
- Positive and Easy Management,
- Economical Use of Steam,
- Small Space Occupied,
- Cheapness,
- Easy Adaptation to either New Mills or those now in use.



## The Jenckes Machine Co.

36-40 Lansdowne  
Street,

SHERBROOKE, QUE.



## TAKE A PEEP INSIDE

of the Standard Kiln, and it will be easy for you to understand why it is the Most Perfect Lumber Drier in the World. There are other "good looking" kilns. Yes, and other "good" kilns, too; but no other kiln ever made will dry so much lumber, do it so quickly and so thoroughly, and use so little steam as

## The Standard Improved Compression Dry Kiln

We can prove that—by demonstration or by evidence. We will mail you the evidence of many users, if you want it. It will give you a good idea of the range and the quality of its work. Here is one firm's opinion:

OTTAWA, ONT., June 25, 1898.

THE STANDARD DRY KILN CO., Indianapolis, Ind.

GENTLEMEN,—In reply to yours of the 21st of June, I have to say that the "Compression" Kiln put in for us is "all right." It worked very nicely during the winter months, and seems to suit our Canadian climate.

Yours truly,

R. THACKRAY,

Per James Davidson.

Our illustrated catalog sets forth in a very clear manner the detail of construction, and shows plainly the application of the Standard "Moist Air" theory of drying. You can have one for the asking.

## THE STANDARD DRY KILN CO.

195 South  
Meridian Street,

INDIANAPOLIS, IND.



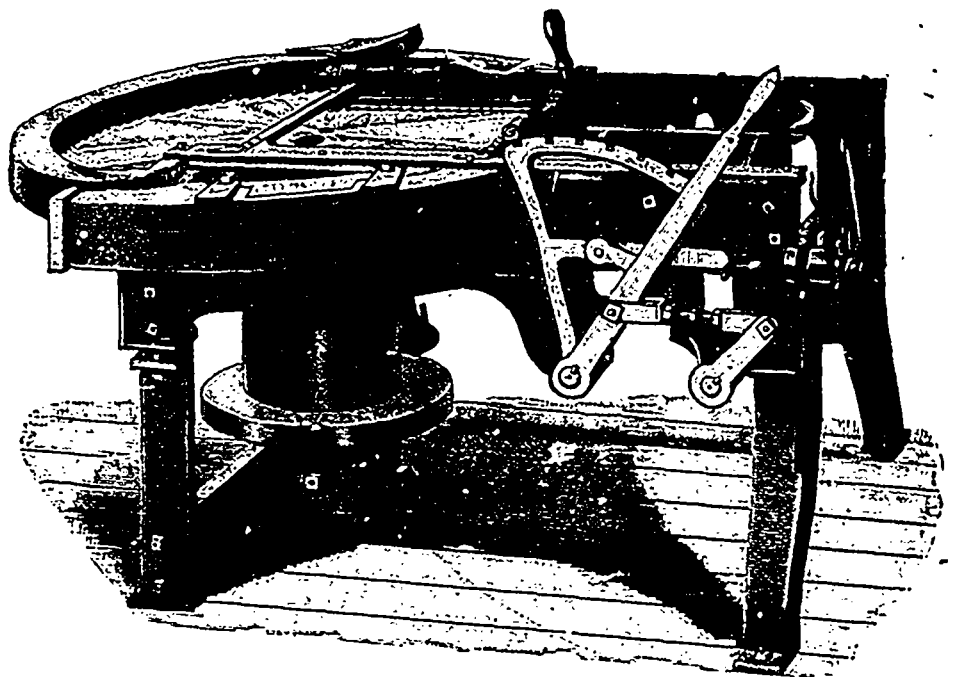
# THE CANADIAN LOCOMOTIVE & ENGINE CO.

KINGSTON

ONTARIO

## Manufacture

- Band Saw Mills
- Gang Saw Mills
- Circular Saw Mills
- Portable Saw Mills
- Shingle Mills
- Lath Mills
- Saw Filers, and all of  
F. J. Drake's Patents



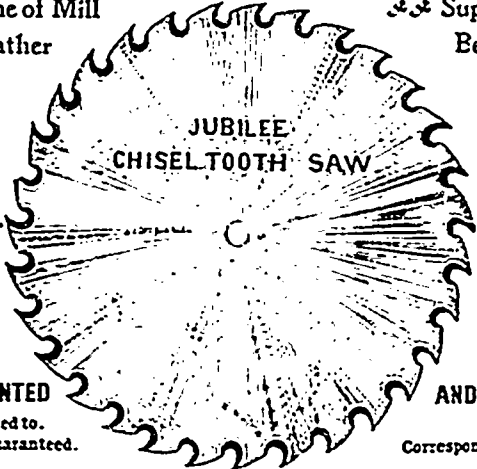
DAUNTLESS SHINGLE AND HEADING MACHINE.

Size No. 1 takes Saws up to 42" diameter. Size No. 2 takes Saws up to 48" diameter. Capacity 25,000 to 50,000 per day.

Our Patterns are New and of Modern Design. We can give you a Complete Outfit and guarantee results. No trouble to quote prices.

CORRESPONDENCE SOLICITED

**THE JAMES ROBERTSON CO., Limited.**  
 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

## Galt Machine Knife Works



**MACHINE KNIVES** OF EVERY DESCRIPTION  
 FOR **Woodworking Machines**  
 ... Send for Price List ...  
**PETER HAY** - - - - - Galt, Ont.

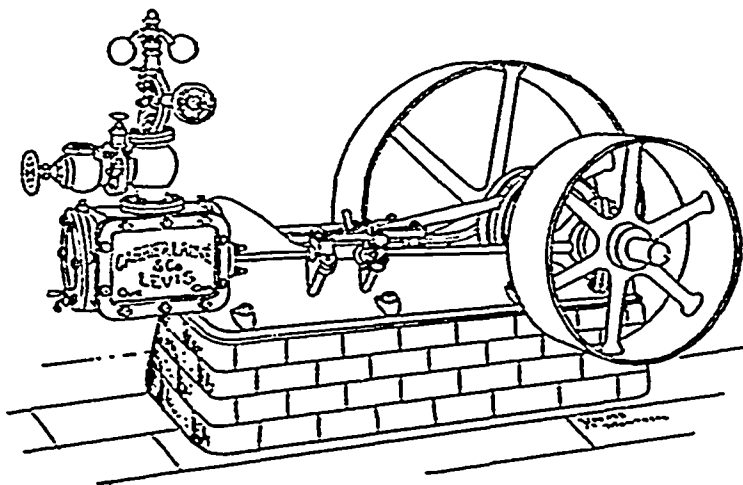
## Notice to Millmen

THE OXFORD FOUNDRY MACHINE CO., Oxford, N. S., have rebuilt, and are better prepared to give satisfaction, and would solicit a share of the public's patronage.  
 We manufacture all kinds MILL MACHINERY also TRAMWAY OUTFITS.

**7** "DEAD  
**3** EASY"  
**10**

But if that "3" represents Middlemen's commission on the Machinery you buy, you had better make a change and deal at headquarters.

No better Mill Machinery is made in Canada or elsewhere than that supplied "DIRECT" from our Machine Shops.



## Portable and Stationary Engines and Boilers

CIRCULAR SAW MILL PLANTS  
 GANG AND BAND SAW MILLS  
 SHINGLE MILLS, LATH MILLS

EDGERS, PLANERS and BUTTERS

Modern Patterns in Every Line.

Tools, Belting and Supplies.

We are equipped to build any special machine you may require.

IF YOU HAVE PLANT TO EXCHANGE GET OUR ESTIMATES

**CARRIER, LAINE & CO.,**  
 LEVIS. QUE.

## 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.