

THE CANADA LUMBERMAN

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MANITOBA LUMBERMEN.

SKETCH OF THE WESTERN RETAIL LUMBERMEN'S ASSOCIATION AND ITS OFFICERS, WITH PORTRAITS.

"In union there is strength."—Old Proverb.

LUMBERMEN in Canada have been slow to realize the force of the old, but timely, saw which we have here quoted. Where lumbermen's associations are found in good numbers in other countries, especially in the United States, their growth in Canada has been slow and stunted. True, in Toronto there is a Lumbermen's Section of the Board of Trade, but it is restricted to lumbermen who are members of this institution, and whilst in particular cases it has put forth a good influence, yet, it can hardly be termed an association in the usual meaning of the term. Talk with lumbermen and they will admit the desirability of a union of the various members of the trade, but whatever the reason may be, it has been found next to impossible to get them together so that this end could be attained. In western Ontario, there did exist a few years ago an organization of hardwood men, which served an excellent purpose, and through methods of mutual protection, made money for by saving losses to its members. But if not actually dissolved, this association has been an inactive force for several years. About a year ago, lumbermen of the Maritime Provinces got together and formed an organization, which started out hopefully, though we are not hearing as much about it as ought to be the case with a living organization.

It is to the west that one must journey to find an illustration of a real live organization of lumbermen in Canada. In Sept. 1891, there assembled in the city of Brandon, Man., about 25 retail lumbermen, having in view the starting of a lumbermen's association. Compared with the membership to-day, and in fact with that which was reported at the second annual meeting, the members were few, but we are told that they were unanimous in purpose, and there and then the Western Retail Lumbermen's Association was formed: constitution and by-laws were adopted; and officers appointed.

Primarily, the organization is of retail men, and for their protection. To quote the Constitution: "The title of this Association shall be the Western Retail Lumbermen's Association, and it shall have for its object the protection of its members against sales of wholesale dealers and manufacturers to contractors and consumers, and the giving of such other protection as may be within the limits of the co-operative Association."

Every trade has experienced the injustice of wholesalers and manufacturers passing the retailer by and selling direct to the consumer. More than once, with the purpose of remedying this trouble, a Round Robin has been signed by retail men in different mercantile lines, resolving to boycott certain wholesalers who have been guilty of this sin. The stand taken by Manitoba lumbermen has been simply this, that they were in the field as customers for the wholesaler and mill man, and they could be depended upon to supply the needs of the consuming public. This position did not mean antagonism to the wholesaler or manufacturer. On the contrary, one of the first steps was to enlist the interest of this branch of lumbering, and a clause was adopted in the constitution admitting as an honorary member any wholesaler or manufacturer who should pay into the treasury the sum of \$10 annually. To the honorary members were given all the privileges of membership except that of voting upon any question at the meetings of the Association. At the end of seven months, when the first annual meeting was held, the membership consisted of 130 active members and 15 honorary members, which we are told included practically every

wholesale and retail dealer within the jurisdiction of the Association.

One excellent purpose has been served by this organization in keeping down unhealthy competition. No one is debarred from entering the lumber business in any town, but by fixing uniform prices, cutting of prices is suppressed, and when a town becomes over crowded with retail lumbermen conditions soon adjust themselves by one or more dropping out of the business. The scope of the Association has been further extended by admitting to honorary membership manufacturers in British Columbia, as it is from that section, a considerable quantity of lumber of Manitoba and the Northwest is drawn. Questions of freight rates and like matters have always received the attention of the Association, and when a grievance existed, active and business-like methods were promptly adopted to right matters.

The territory of the Association covers the Province of Manitoba and certain portions of the Northwest Territories. The first president was Mr. Alex. Black, of Winnipeg, and this position he held until the annual meeting in February of this year, when Mr. J. L. Campbell, who had been vice-president, was made chief executive officer. The first secretary-treasurer was Mr. G. B. Housser, of Portage la Prairie, to whose energetic efforts, at the inception of the organization, is very largely due its success. At the end of the first year he was succeeded by Mr. I. Cockburn, who has since filled the position with much satisfaction to all the members.

The whole management of the Association has been business-like and energetic. The treasury is never without a reasonable balance on hand. The secretary was made a paid officer, and devotes a large part of his time to the work. The Western Retail Lumbermen's Association is a living example of the advantages to be gained by lumbermen forming themselves into a business organization for self-protection, mutual advantage, and common interest.

The CANADA LUMBERMAN is pleased to publish in this number, on page 10, portraits of the officers of this successful association. These are: President, J. L. Campbell, Melita; Vice-President, Alex. Black, Winnipeg; Sec.-Treas., I. Cockburn, Winnipeg. Directors: D. N. McMillan, Morden; J. M. Neilson, Carberry; R. H. O'Hara, Brandon; J. B. Mather, Glenboro; T. A. Cuddy, Minnedosa; J. Dick, Winnipeg.

THE CURIOUS PAPAW TREE.

AMONG the curiosities of the tree world is the papaw tree, called by botanists *Carica papaya*. This tree is a native of South America, and has been widely scattered in the tropical countries. It is popularly called the "melon tree." It grows to a height of 20 feet. Its leaves are deeply 7-lobed, 2 feet in diameter and borne on footstalks 2 feet long. The fruit is somewhat like a melon in appearance, 10 inches long, oblong, ribbed and covered with a thick fleshy rind. The fruit is eaten raw or made into a sauce when ripe, and the green fruit is boiled as a vegetable or made into a pickle. The leaves, twigs, trunk and fruit contain an acrid milky juice, which has the singular quality of quickly softening the toughest meat boiled with a little of it. Even wrapping the meat in the leaves or merely hanging it among the leaves will cause it to become tender. The seeds are used as a vermifuge. The leaves are saponaceous. The proteolytic ferment obtained from the half ripe fruit is called papain, and it differs from pepsin in the respect that its proteolytic action goes on in either mental or alkaline solutions as well as in acid solutions.

The total revenue from timber in Manitoba and the Northwest to 1st January, 1895, was \$1,038,328, and the total revenue from timber within the railway belt, \$250,899.

BY THE WAY.

A THIRD attempt to float a large raft of logs on the Pacific is about to be attempted. We do not know how wise this movement is to be considered. It would be worth something to lumbermen to be able to transport logs in this manner, but the two previous attempts were so disastrously unsuccessful, involving a loss of about \$40,000, that it may well be questioned whether it is the part of business wisdom to make another attempt. It may be that there is luck in odd numbers and that the third trial will prove a success. Let us hope that it may be so. The new raft is about 525 feet long, 52 feet wide, 30 feet deep, and draws 21 feet of water. The route will be out of the Columbia and down the Pacific Coast to San Francisco.

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THE prodigal manner in which the most valuable of timbers are cut and wasted is always a question of serious concern with thoughtful lumbermen. There are few men in the present day, who do not realize the sacrifices that were made through the manner in which white pine in times past suffered by the woodman's axe. To-day white pine is prized and every tree counts. The Northwestern Lumberman reads a lesson to those who would slash and cut down oak, as though the country was full of this valuable product. It pertinently says: "Perhaps after northern and southern pine there was never a more lavish and inconsiderate cutting of any American wood than of oak. The impression seems to have prevailed that there was no end of oak." Oak occupies a very strong position on the market to-day, and it is simply suicidal to allow it to be sacrificed. It is a case of throwing gold dollars away.

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A TRADE journal, published in the Southern States, loses its head, when it says that it will take more than a reduction in freight rates to induce the people to go back to the use of common articles of twenty-five years ago, and classes as among these out-of-date materials white pine. In its ecstasy of delight at the success of yellow pine, it says: "It is a much more beautiful wood for finishing than white pine; it is more serviceable; has greater strength, and takes a superior finish as a building material. White pine is a back number, as far as beauty, taste and business uses are concerned." Let us give even the devil his due, and admit that yellow pine possesses many useful qualities. But when its fame is to be exalted by disparaging white pine, where the daily newspaper might be excused for this kind of nonsense, it is hardly pardonable in a class journal that ought to know better, and ought to speak on all subjects by the book. As has been remarked, more than once, yellow pine has owed its foothold in white pine districts largely to the price at which it has been sold during a period of depression when the mass of consumers had to satisfy themselves with a cheaper article. Yellow pine has come to stay and will not want a ready market, but for many of the best purposes to which lumber is put white pine will, as it always has, hold indisputable supremacy.

A skillful carpenter ought to be able to ex-plane all j-oaks knot to in-tree-cate, and fir-three-more he should be able to put up jams without jars.

A European firm has adopted the practice of packing pieces of leather one against the other in the grooves of wheels used for wire rope driving, securing the leather at intervals by wire cord passing through the leather and holes in the pulley rim. The resistance to slipping is immensely increased, and the rope in some cases wears fifty per cent. longer.—Power.

PLEA FOR THE FORESTS.

A SUGGESTION THAT CANADA ESTABLISH FORESTRY SCHOOLS.

MR. EDWARD JACK, a well-known New Brunswick, and an expert in forestry, when in Ottawa a few weeks ago, was interviewed on the subject of Canada's forest wealth. He said that Canadians did not know half nor quarter enough about their own timber interests.

"The first thing we want to do," he said, "is to get information as to our forests, their trees, character and extent. In order to do this we must have men suitably educated as foresters. This can be done only by the establishment of forestry schools. They should be located in some convenient forest; the buildings should be simple and the cost little. The parties to be taught forestry should be selected from among young men who have worked some winters in the woods and who have a fair education; that is, who can read, write and who understand the ordinary rules of arithmetic. Teaching should be confined to the summer months, thus the pupils would have the winter in which to work and thus gain a living.

"Young woodsmen would not have the wants of their city brethren. They could if needed cook their own simple meals and attend to their own wants. The school need be but a temporary structure, a log cabin, or it may be built of boards, as only a shelter from summer storms would be needed; indeed a large tent or two would be sufficient.

"The pupils should be selected with care, and only those taken who were anxious and willing to learn. The subjects to be taught should be land surveying and rough plan-drawing, and as much of botany, mineralogy and geology as was absolutely necessary to show the pupil the relation of soil and air to the growth of the tree. After being taught plain surveying, one hundred acre tracts might then be surveyed and the pupil taught to estimate the number of trees of various kinds or the number of thousand feet, b. m., of timber on such a lot to the acre, and the cost of hauling it to the nearest stream. This knowledge of cost of hauling most of them would already have."

"Do not lumbermen make pretty close estimates now?"

"In estimating the quantity of timber growing on any certain piece of land, lumbermen seldom have any fixed rules to go by," said Mr. Jack, "and here is where the pupils of a forestry school would derive the greatest benefit, for when they had been taught to estimate the quantity of timber by rule so far as this is possible on a lot of land, their services would be of the greatest value to him who has dealing in timber lands. The course of study might comprise a period of four summers and the brightest and best pupils might be selected as instructors of others or as employees under the government, which needs the services of a number of well-instructed woodsmen, men who would be capable of going on the Dominion lands and of reporting on the timber standing therein, its quantity and present and prospective value.

"Some years since I accompanied a party of members of the Royal Arboricultural Society of Edinburgh on a trip through some of the principal forests of Scotland. We remained over night among other places at a country hotel on the Tay. The party comprised many distinguished foresters. One, I remember, represented the Maharajah of Yohore. Each representative was called upon to describe the system of forestry adopted in the country which he represented, and I was asked in my turn to describe the forestry system of Canada. I was mortified enough when I had to reply that Canada had no forestry system.

"A Japanese gentleman who was at the Forestry Exhibition held some years ago at Edinburgh, heard with surprise the same thing, and told me that Japan then had a forestry school with some thirty professors.

"The possession of a trained staff of practical foresters would be the means of saving hundreds of thousands of dollars annually to Canada. We have many woods, especially on the lower St. Lawrence and on or near the shores of New Brunswick, which we now look upon as of little or no value, but which in the near future will

form the basis of great industries and will add much to our commerce.

"I am the correspondent of L'Echo Forestier, a special organ of the French timber trade, published in Paris, and I learn from the editor that France stands ready to use some of these woods, and I hear the same thing as regards Spain from a correspondent at Barcelona.

"The Intercolonial Railway crosses many rivers running through great forests, nearly all at right angles, and I am satisfied that with a proper investigation into the character of the woods on these streams, made by competent men and published to the world in English, French and German, many very extensive industries in now unused woods would spring up, especially along the shores of New Brunswick, where labor is abundant and good, and where one can live as cheaply as he can in any part of the world, as the sea will furnish him with a great part of his food, and where the soil is good enough to grow all the vegetables needed for a family."

THE WORKING SURFACE OF A PULLEY.

IT has taken considerable time to settle the question in regard to belts made of leather, as to which side should run next to the shaft wheels, if, indeed, it has been settled, for even now it is rehashed occasionally by saw mill men, says an exchange. It is always a pleasure to see the best side of a belt stand out whenever a new belt is to be set in motion, and good looks go a long way on all such occasions.

In spite of all tests that have been made on leather belting, nothing has ever been said of the extra cling that the flesh gets by being easily squeezed into every depression on the face of the pulley, which the grain side has a tendency to bridge over. This seems to follow the law of friction where the particles of one material interlock themselves with those of another. Pulleys covered with leather and wheels made of hardwood of all kinds have given much greater driving power from the same grasp of belt than the handsomely polished metal pulleys have done, though this latter class of wheels has all the advantages that are to be derived from atmospherical influences.

But the fine imperfections on the true surface, which are the real gear teeth of friction, are not there in the abundance found in the material that is more closely

allied with the belting itself. Everything would seem to indicate that a driving wheel is finished in the wrong direction when a covering of leather adds so much to its driving capacity.

The teeth of gear wheels are not cut lengthwise, and this gives all the hold that its strength will allow to the turn of a pulley, with the finishing cut taken crosswise and ground on a polishing wheel, herringbone fashion. This may not be appreciated in the machine shop, but the object to be obtained is the very one that a draw file is used for, namely to pitch the minute grooves found on every surface in the right direction.

CONCERNING FIRES.

IT is very generally argued, that when a boiler is being heavily worked, a thick fire is absolutely necessary, but from some experiments lately made, the opinion appears to be an erroneous one. As to the economy of the two, some maintain, that heavy fires give the most economical results; but this, also, is questionable. Valuable information on the subject has recently been brought out by the results of two evaporative tests, says the Mechanical World. They were made on a 72-inch return tubular boiler, having 1,000 3½-inch tubes, 17 feet in length. The heating surface amounted to 1,642 square feet, and the grate surface to 36 square feet, the ratio of the two being 45.6 to 1. On the thick fire test, the depth of the coal on the grate varied from eight to twenty inches, being heaviest at the rear end, and lightest at the front end. On the thin fire test, the depth was maintained uniformly at about six inches. The difference in the results, as appears from the figures given, indicates an increased evaporation, due to thin fires amounting to 15.6 per cent.

He who wood-pile up his fortune to the skies must not forget to advertise.

The "last" man among the wood-workers is awl-ways the first among the shoemakers.

When a man devises a little tool that helps the work along faster and better than before, show him you appreciate it, either by making his work easier, giving him better work, by a money consideration, or last but not least, letting him see that you consider him a valuable man with valuable ideas.—Machinery.

MEASUREMENT OF LUMBER.

The following table shows comprehensively the number of feet contained in scantling or timber of given sizes:

SIZE	LENGTH															
	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	
1 x 8	8	9	11	12	13	15	16	17	19	20						
1 x 10	10	12	13	15	17	18	20	22	23	25						
1 x 12	12	14	16	18	20	22	24	26	28	30						
2 x 3	6	7	8	9	10	11	12	13	14	15	16					
2 x 4	8	9	11	12	13	15	16	17	19	20	21	23	24	25	27	
2 x 6	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	
2 x 8	16	19	21	24	27	29	32	35	37	40	43	45	48	51	53	
2 x 10	20	23	27	30	33	37	40	43	47	50	53	57	60	63	67	
2 x 12	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	
3 x 4	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	
3 x 6	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
3 x 8	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	
3 x 10	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
3 x 12	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	
4 x 4	16	19	21	24	27	29	32	35	37	40	43	45	48	51	53	
4 x 6	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	
4 x 8	32	37	43	48	53	59	64	69	75	80	85	91	96	101	107	
4 x 10	40	47	53	60	67	73	80	87	93	100	107	113	120	127	133	
4 x 12	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	
6 x 6	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	
6 x 8	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	
6 x 10	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	
6 x 12	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
8 x 8	64	75	85	96	107	117	128	139	149	160	171	181	192	203	213	
8 x 10	80	93	107	120	133	147	160	173	187	200	213	227	240	253	267	
8 x 12	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	
10 x 10	100	117	133	150	167	183	200	217	233	250	267	283	300	317	333	
10 x 12	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	
12 x 12	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	

THE TIMBER TREES OF NORTH AMERICA.

AMERICAN WHITE OAK

THIS tree derives its name from the pale-ash colour of its bark, and very noble logs of timber are produced from it. The wood is of a pale, reddish-brown colour, straight-grained, moderately hard and compact, tough, strong, and of fair durability. Being remarkable for its elasticity, planks cut from it may, when steamed, be bent into almost any form or curve, no matter how difficult, without danger of breaking or splintering them. It is considered by far the best foreign oak timber, of straight growth and large dimensions, for constructive purposes that has ever been imported. The American white oak timber, introduced in 1861, was used in the royal dockyards as a substitute for British oak, chiefly for beams, keelsons, and other works requiring large scantlings. At the moment of its introduction, however, the great change took place by which iron was substituted for wood in shipbuilding; consequently the demand for it fell, and very little of this wood has been placed upon the London market for employment in the private trade.

THE AMERICAN LIVE OAK

is an evergreen, and is found principally in the Southern States, near to the sea-coast. The wood is dark brown in colour, hard, tough, strong, heavy, and very difficult to work, on account of the grain being wavy, or twisted. It makes good mallets for carpenters, and would be useful for cogs in machinery, and many other services where great weight is not an objection.

BALTIMORE OAK.

is so called from the shipments being made chiefly from Baltimore. The wood is of a reddish brown colour, somewhat darker than the white oak, and less hard and horny in texture. It is moderately strong, and the quality fair. It might be used with advantage for many minor fittings in ships, and for general purposes in carpentry, as it is easy to work and stands well after seasoning. It is not, however, recommended for use where great strength is required.

CANADIAN RED OAK.

This wood is brown in colour, has a fine, straight, clean grain, is somewhat porous, shrinks moderately without splitting, is easy to work, and stands well after seasoning. Large quantities are usually imported annually into London, and a far greater quantity into the Liverpool market for the use of cabinet makers and general dealers, who employ it for the manufacture of furniture and in the domestic arts, but as a building wood it is considered unfavorable, and unfit for works requiring strength and durability.

CANADIAN ASH.

The timber of this tree is often confounded with the American white ash also found in Canada. It attains good dimensions, and yields the timber of commerce in logs varying from 20 ft. to 40 ft. in length, by from 10 in. to 16 in. square. Our rafters are also produced from it. The wood is reddish-brown in colour, and considerably darker than the English ash. It is plain and straight in the grain, moderately hard and heavy, tough, elastic, and easy to work. It is very suitable for employment for oars to boats, and is consequently in great request for that service, while its economical uses are as wide and general as that of our native growth.

AMERICAN ASH, OR WHITE ASH.

The wood is light brown or whitish in colour, of very moderate hardness and weight, is tough, elastic, clean, and straight in the grain, and quite easy to work; it stands well after seasoning, and hence we get from this tree the best material for oars for boats that can be produced. The best quality wood has a clean, bright, uniform whitish colour.

CANADA ROCK ELM.

This wood is whitish-brown in colour, hard, tough and flexible, with a fine, smooth, close, silky grain; and, as it has only a small quantity of sapwood, it can be worked up closely and economically.

Rock elm is used for ladder steps, gratings, etc.; on account of its clean whitish appearance, and owing to its flexible character it is frequently used in boat building. It cannot, however, be used with advantage in bulk, or even in plank, if exposed to a dry current of air, as under such circumstances it is very liable to split with fine deep

shakes from the surface. Large quantities of this wood are imported annually into London and Liverpool for coachmaking, turnery, boat building, etc.

AMERICAN WALNUT.

The wood of the American black walnut is whitish brown in colour, moderately hard, straight and plain in the grain, splits freely, and is easy to work; the heart is much darker, however, whence the name, and is very durable and handsome. The uses of walnut wood are chiefly for furniture and pianoforte making; it is also much used for gun stocks.

CANADIAN AND AMERICAN BIRCH.

There are several species of birch tree in North America. The wood is of a yellowish colour, moderately hard, straight and even in the grain, close in texture, and easy to work. It is imported into this country in logs varying from 6 ft. to 20 ft. in length by 12 in. to 30 in. The heart-shake is small, and the wood near the pith is, for the most part, solid. Very little loss can therefore arise from its conversion. It is used extensively for furniture, turnery, and in a variety of ways in the domestic arts. The canoe birch obtains its name from the use of the bark by the Indians.

PRESERVATIVES OF WOOD.

CONSUMERS of wood have always been troubled by the proneness of the material to decay, says a writer in the Lumber World. In most quarters of the world, timber is certain to rot rapidly, because of the climatic conditions. In a few regions the climate favors wood, so that it will last centuries, but on the whole wood is perishable material, and in all ages builders have wished to find means to render it more lasting.

It is a little singular the ancient Egyptians, who appear to have mastered the art of preserving the bodies of men, cats and other animals, have left no record to show that they ever attempted the preservation of wood. History records no serious experiments in the line of wood preservation until modern chemistry was developed. In the latter part of the eighteenth and the early part of the nineteenth centuries the chemists experimented on perishable woods with preservatives, and up to 1816 the record shows that the following substance had been used to impart lasting qualities to wood and other substances: Selenite, alumine, copper sulphates, iron sulphates, resins, mineral coals, charcoal powders, vegetable oils, charring, essential oils, barytes, quicklime, common salt, corrosive sublimate, sulphate of zinc, coal-tar nitrate of silver, carbonate of silver, arsenic and caustic soda. Some of these substances gave good results, but the first great advances in preserving wood were made after the year 1830.

Among the first valuable process of preserving wood was "kyanizing," so named after the inventor, Kyan, who patented his process in 1832. This process employs corrosive sublimate. The next advance was made by Margray, who in 1837 patented a process employing sulphate of copper. In 1838 and again in 1848, Bethel patented the process known as "creosoting," in which creosote or coal-tar is used. Burnette in 1838 and 1840 patented the process called "burnettizing," using chloride of zinc.

Countless other processes have been brought out, using various other antiseptics, but the four named processes have led all others. At this time the chloride of zinc and the creosote process are extensively employed, while others have fallen into comparative disuse.

The timber is treated in several ways. The wood may be steeped for a given time in the antiseptic solution, or the solution may be fed to the tree while growing. Mechanical force, generally hydraulic pressure, may be employed to inject the solution into the fresh wood in the open air or in a closed vessel. Kyanizing is done by steeping the wood in the solution. The principal method now employed is the use of hydraulic pressure in a closed vessel.

Preservative treatment of wood has been reduced to something like an exact science. The process generally employed is as follows: The wood is placed in hermetically-sealed iron vessels, and for several hours subjected to steaming at a pressure of about twenty pounds to the square inch. The steaming liquefies the sap and raises

the temperature of the enclosed air. The steam is let out, and air-pumps exhaust the air from the vessels. The sap is driven out of the wood, and next the preservative solution is introduced into the vessel. Hydraulic pressure is applied by pumps, and the chemicals are driven in to the sap-cells in the wood under a pressure of 50 to 160 pounds to the square inch. This process requires from three to twelve hours.

Creosoted timber for weather exposure receives from eight to ten pounds of creosote to the cubic foot, and for use in water where worms attack wood the quantity injected ranges from ten to twenty pounds to the cubic foot. Wood to be creosoted is cut to size before being treated. Creosoted railway ties last from ten to twenty years, and creosoted piles in the sea last from ten to twenty years.

Burnettizing is accomplished similarly to creosoting. In this process the chloride of zinc is introduced at the temperature of the atmosphere instead of being heated. Different woods vary in their capacity for absorbing solutions. Open-grained and porous woods are better for treatment than hard, close woods.

In the chloride of zinc process a too weak solution will wash out, while a too strong solution will destroy the wood. German burnettizers use a 1.9 per cent. solution of zinc, while Americans have used 3.75 to 5 per cent. solutions, which made the woods brittle.

Another process uses two solutions, the first one chloride of zinc mixed with a small amount of gelatin, and the second solution of tannin. These are injected successfully in the usual way. The tannin and gelatin form an insoluble compound, which blocks the pores and prevents the zinc from being washed out. Railroad ties treated in this double way have given satisfactory results. Germans mix chloride of zinc with about eight per cent. of creosote, making an emulsion that is preservative.

French experiments with saline solutions and electric currents enable the experimenters to do in one hour what would require from ten to forty hours to do with the solution alone. The electric currents are sent through the wood while immersed in the solution. The principal uses of wood preservative treated are for piles in sea water where teredos abound, for railroad ties, and for conduits for electric wires underground.

AS EDITOR DEFEBAUGH SEES IT.

"ONE of the things that impressed me in my contact with Buffalo and Tonawanda lumbermen," says Editor Defebaugh, of the Timberman, "was the easily demonstrated demoralization of the trade in connection with lumber by reason of the recent change in the tariff laws as affecting the distribution of Canadian stock. It is well known that the high-class lumber product of Canada finds resting place on other shores, and the difficulty in the past has been to find a market for common grades. By a modification of the tariff laws, the Canadian manufacturers can come to Buffalo and the United States for their common stock in competition with similar lumber from this country, and have thereby greatly lessened the field of operations of wholesalers at the points mentioned. It does not take lumbermen whose business is located on the American side of the Falls long to allude to this subject in a discussion of lumber trade matters with newspaper men. Certainly the tariff question as a local issue is clearly defined, for in localities where Buffalo and Tonawanda have had little competition, and none from Canada, large inroads have been made by Canadian operators. And, mind you, our Canadian neighbors have other things to sell. They grow hay on the other side, and for purposes to which the dried grass is usually applied—that of furnishing lining for horses and cows—their hay is just as good and goes quite as far as the states-grown article, while the price is from \$3 to \$7 less per ton than the figures current before the freedom of the country was extended to our excellent neighbors."

NEW ENGLAND manufacturers lead the procession in the all-round, economical, general utilization of wood.

THE average logger may not dress like a dude, but he's always a "very chipper feller" for a' that and a' that.



PUBLISHED ON THE FIRST OF EACH MONTH

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

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

Special correspondents in localities of importance present an accurate report not only of prices and the condition of the market, but also of other matters specially interesting to our readers. But correspondence is not only welcome, but is invited from all who have any information to communicate or subjects to discuss relating to the trade or in any way affecting it.

Even when we may not be able to agree with the writers we will give them a fair opportunity for free discussion as the best means of eliciting the truth. Any items of interest are particularly requested, for even if not of great importance individually they contribute to a fund of information from which general results are obtained.

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

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

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Subscribers and advertisers are hereby warned not to pay money on account of this journal other than to our duly authorized agents, who are provided with our official form of receipt. This official receipt is the only one which will be recognized in the case of money paid to collectors.

A CANADIAN LUMBERMAN'S ESTIMATE CHALLENGED.

The statement made by Mr. W. C. Edwards, M. P., of Rockland, and quoted by the government statistician in his monograph on "The Forest Wealth of Canada," that ten times the amount of forest wealth has been destroyed in Canada through fire than has been cut by lumbermen, is vigorously disputed by the Timberman, of Chicago. It says, that this is one of a class of statements too common among lumbermen, both in the United States and Canada, and seriously damages the cause of forest preservation.

Our contemporary, taking its own country as an illustration, argues in this manner. It is supposed that there is cut annually in the United States about 25,000,000,000 feet of merchantable lumber and timber. Assuming that the high average of 10,000 feet is found to the acre, this means 2,500,000 acres, or 3,906 square miles must be on the average burned over annually, or a stretch of country 400 miles long and 100 miles wide, destroying each year 250,000,000,000 feet of timber. If we restrict it to white pine only and assume that the products in the three states of Minnesota, Wisconsin and Michigan is 7,000,000,000 feet per year, by the same process we find 10,940 square miles burned over annually in those states, which to say the least are as susceptible as any to forest fires. This is equivalent to a territory more than 100 miles square. The most extensive fire in the history of the country occurred last year, when at a rough estimate 1,500,000,000 feet of timber was damaged or destroyed. According to Mr. Edwards' statement 70,000,000,000 feet

were destroyed, not merely in such an extraordinary year as was 1894, but each year by fire in those three states.

It is to be remarked that Mr. Edwards in a letter written to the Commissioner of Crown Lands of Quebec some time since makes even a stronger statement than that quoted from his speech in the House of Commons. Referring especially to certain lumber districts in eastern Ontario and Quebec, he wrote: "I think I am safe within bounds when I say that in the region of country with which I am dealing 20 times as much merchantable timber has been destroyed by fire as has been cut and taken away by the lumbermen, to say nothing of the young and undersized pine destroyed at the same time, for fire destroys indiscriminately, while the judicious lumberman preserves the young and growing pine for future uses." Mr. Edwards' first statement was made on the floor of parliament in the hearing of a number of gentlemen engaged in lumbering operations, who also hold seats in the House, and he appealed to them for a verification of the statement he was making. No one contradicted it. The calculation of the Timberman places Mr. Edwards' figures in a peculiar light.

It is a hard matter to estimate how great has been the loss to Canada or the United States from the destruction of its forests by fire. But if we go back a little in history there will be found a time when this loss far outstripped the cut that was made by lumbermen from year to year. And in the aggregate this destruction of the past must have reached enormous figures. It would be lamentable, if in recent years, when lumbering operations have reached great activity, that the destruction of forest products by fire should exceed double, much less ten times that felled by the lumberman's axe. But viewed, as we can understand Mr. Edwards has viewed the question, it may be doubted whether, after all, his statement is an extravagant one. However, Mr. Edwards is quite able to make his own reply, and we shall be glad to hear from him in answer to this criticism from our Chicago contemporary.

WOOD AND METAL RAILROAD TIES.

The railroads of Canada and the United States are among the largest consumers of lumber. Without making any reference to the consumption of forest products in car building, if we take the one item of railroad ties the figures assume large proportions. Mr. Geo. Johnson, government statistician, calculates that for the 18,590 miles of railway in Canada, for railroad ties alone, 3,340,000 acres will be required to supply the consumption with 530,000 acres for each year's demand.

An investigation, that has been made by the forestry division of agriculture of the United States, and embodied in an exhaustive report of nearly 400 pages, by Mr. E. E. Russell Tratman, A. M. Soc., C. E., shows that metal ties are, in part, supplanting wooden ties in many European countries. In Asia, 14,586 miles are laid with metal ties, where the total railroad mileage is not more than 22,000 miles. Africa has 2,041 miles of metal ties, out of 5,675 miles of railroad. In South America, Central America, West Indies and Mexico, 21 per cent of the railroads are laid with metal ties, or 4,416 miles out of 21,500 miles. In Europe only about 10 per cent. of the 137,000 miles of railroad use metal ties. Germany stands at the head of European countries building its railroads in this manner, the total being 11,605 miles. In the United States and Canada, though there is an increase of metal ties, the percentage is barely 18 per cent. of the entire railway mileage of those countries.

Railroad corporations on the whole favor wooden ties, and the policy is rather to employ methods of preserving the wood than adopting metal ties. Of the woods used oak takes the first place, represented by 60 per cent. of the total number of ties in service; pine 20 per cent.; cedar 6 per cent.; chestnut, 5 per cent.; hemlock and tamarac, 3 per cent.; red wood, 3 per cent.; cypress, 2 per cent.; various other woods 1 per cent.

Mr. Tratman observes that white oak is the best wood both for wear and durability combined. Pine is largely used in its numerous varieties, of which white and yellow pine are the best, although the preference is given to the former, as it is slower to decay. It will last from 7 to 8 years under heavy traffic or 10 years under light traffic, where yellow pine will decay in about 6 years, though it

will resist wear for even 10 or 12 years. Hemlock is largely used, but its chief recommendation is cheapness. It gets soft under the rails and at the spike holes. Spruce is about the same, lasting from 3 to 7 years.

The suggestions made by Mr. Tratman as to the best time and methods for lumbering tie timber are valuable. Winter is the best time for felling tie timber, especially if it is to be used without seasoning, as it then contains less fermentable substance and seasons more slowly and evenly before the temperature is warm enough to cause fermentation to set in. Ties should always be left to season for at least six months, and a year is even better, as ties properly seasoned are far superior in efficiency to those used at once. The ties should be barked and piled rows of 8 to 12, the ties placed about 6-in apart and the inrows separated by two ties at right angles to them. Ties should be made from sound, thrifty, live or green timber, free from loose or rotten knots, worm holes, dry rot, wind shakes, splits or other imperfections, which effect their strength or durability.

It is only very recently that railroads have paid close attention to the importance of watching cost of renewal of ties. A few years ago the cost of renewals was but a fraction of the cost of rail renewals; now the figures are reversed, and tie renewals offer an opportunity for large reduction in expenses. Statistics are given, showing an increased ratio of tie renewals to rail renewals, ranging in 1890-91 to 100 for rails and 111 to 398 for ties. Caution is also exercised now in the removal of ties, it having been the case in the past that many ties in comparatively sound condition have been removed, through the indifference of those having the work in charge.

Valuable customers as are the railroads of the country for timber for ties, it would be unwise to suggest anything otherwise than the closest economy and the wisest care in the disposition of forest products for this purpose. Mr. B. E. Fernow, the United States forestry expert, in a word of introduction to Mr. Tratman's report, points out that it can be a question of only a short time when even wood for railroad ties will become scarce, and it behooves those interested in this branch of production to make themselves acquainted with the best process for preserving wood used for railroad ties. Fortunately this is a phase of the question that has been studied with a good deal of care, and there are to-day some excellent processes to be used for this purpose.

EDITORIAL NOTES.

THE Railway Review, published in the United States, raises an interesting discussion regarding lumber rates. It says: "While it is coming to be almost universally admitted, that the principle of charging what the traffic will bear is, when applied in its proper sense, the correct basis on which rate schedules should be formulated, it is also coming to be believed that without such a basis some method by which railroads can be protected from dishonest shippers on the one hand and equally dishonest associates on the other, must be provided. The theory that, aside from the question of risk, it costs no more for a railroad to haul a ton of gold than a ton of lead, or a bolt of silk than an equal weight of calico, therefore the transportation charges should be practically the same, now finds few advocates, but the railroad manager and the hardwood merchant who both admit that a case of high price shelf goods should pay a higher rate than an equal weight of iron bolts, find when they come to put the theory into practice there are dishonest shippers who will offer, and dishonest railroad men who will accept, a shipment of shelf hardware under the description of iron bolts and thereby defeat the object of discriminate theory. This subject is just now agitating lumber mill men who wish to obtain a market for their low grade lumber, which under the present basis of rates, is not only practically refuse stuff, but a nuisance as well as a constant source of danger. They understand full well that because of the possibilities inherent in the dishonest combination referred to that the railroads can safely issue a reduced tariff on such product, but they also know that properly handled that traffic would prove a source of revenue to both themselves and the railroads and at the same time put upon the market lumber that, for some purposes, could be employed where a more expensive grade was now being

used. Here is a problem in transportation that may profitably engage the attention of those interested. That it ought to be possible to market this product which is now going to waste is a self evident proposition, but how under present competitive conditions it can be accomplished is decidedly problematical." How Canadian lumbermen would relish a fixing of rates on the basis here suggested is an interesting question to propound. There is certainly an advantage in allowing poorer grades of lumber to be carried on a low rate, and this might have the effect of causing activity in lumbering in certain sections to day where the better lumber is cut away. But there is much to be said in another direction, and this would be, as Rudyard Kipling has said, another story. The matter in any case is suggestive, and we would be glad to have letters from our readers saying how the Railway Review's proposition strikes them.

An illustration of how thoroughly the growth of Canadian communities has centered around the lumber industry is found in a review of the lumber trade of Belleville, published in the fine special issue of the "Daily Sun" of that city. We are told that the history of the lumber industry in Belleville is almost a history of the city itself. The growth and development of the lumbering interests was, for many years, a barometer of that city. And then when the decline of the industry set in the city reverted for support to the agricultural and dairy interests. To-day the lumber industry is represented by but one concern that makes a sole business of lumbering in all its branches. This is the business of Mr. C. P. Holton, who first established in Belleville in 1872. At the time he commenced business there were no less than thirteen mills in and around the city all within a radius of three miles and all in active operation. A prominent lumberman of the early days was the Hon. Billa Flint. At that time there were also the following well-known lumbering firms established in Belleville: H. B. Rathbun & Co., Buck & Stewart, Job Lingham, Geo. Hanwell, Jones & Vandusen, Page & Co., Lewis & Kerr, Alexander Sutherland, D. D. Bogart, Wm. Bleecker, Foster & Sutherland, W. A. Ostrum, James Ross, John T. Lattimer, Baker, Jones & Co., Jacob Sills and Pope & Andrews. When these establishments were all running a large export business was done, but at the present time trade is almost entirely of a local character. What has been Belleville's history has been the history of many other towns and cities in the province, and will be the history of others, as the forests become depleted and the available timber removed from the saw.

FROM the north, the south, and away off on the Pacific Coast, comes the one call for an advance in lumber prices. Seldom have we seen so generally expressed a desire that lumbermen in all districts should resolve on falling into line with the hardening of values in iron, steel, leather, wheat and other commodities, and secure an advance in prices. Lumber for two years past, at least, has been sold at most profitless prices. In some sections of the country these conditions have been more aggravated than in others, the greater recklessness, to use a term none too strong, being manifested on the Pacific Coast. But white pine men have no occasion to feel elated at the margin of profit that has been left to them of recent years. Yellow pine men have this time led in the van and organized themselves and fixed on better prices. Perhaps they had as great occasion as anyone to take this step, for everyone knows how prices in the south have been slaughtered for years. Others can now well afford to follow their example. In the natural course of commerce, it is expected that with a revival in business in almost every line, lumber must follow a like course. But after all, what is done will depend upon lumbermen themselves. If they are satisfied to let things drift and not move in the direction of better prices, they will be just that much longer in placing their business on the improved basis that, seemingly, is going to be the record with other trades. Let lumbermen in the different sections shove up their prices a notch or two and it will not be long before the trade generally will fall into line. For it is something everyone is waiting for, though no one seems to have the courage to take the first step.

THE town of Medford on the Wisconsin Central Railway was struck recently by a cyclone, which overturned buildings and uprooted trees but left intact a new hotel which was in process of construction, and this hotel it seems was framed with hemlock timber, which has a reputation for toughness. The circumstance has caused Wisconsin papers to raise a boom for hemlock lumber, and it has brought this wood before the lumber trades in a manner which was quite out of the regular history of hemlock. This wood is found in large quantities in Wisconsin, the bark being used extensively for tanning purposes. For some little time, however, hemlock has been coming more to the front, and the suggestion has been made more than once that the future would find it largely put to uses that hitherto had not been the case. And as white pine becomes scarce it may be expected that hemlock will serve as one of the substitutes. One thing is sure, that in those districts where hemlock is stripped for the sake of the bark the wood itself cannot be allowed to go to waste. In different parts of Ontario hemlock is to be found in considerable quantities, and it has been noticeable that in the reports throughout different parts of the country published regularly in the Weekly Lumberman, hemlock has been spoken of by a number of correspondents as being in growing demand. In the issue of June 12th Mickle & Dymont, of Gravenhurst, reported that hemlock is among the woods in largest demand. Geo. Thompson, of Wingham, tells the same story. The growing scarcity of white pine will force many different classes of wood to the front, and in this particular interesting changes will be made in the lumber business, which intelligent men will study with profit.

LUMBERMEN owe much to Mr. W. C. Edwards, M. P., the well-known Ottawa lumberman, for the persistent and intelligent manner in which he has agitated for greater care in the preservation of Canadian forests from fire. He has recently written a letter of length to the Commissioner of Crown Lands, Quebec, making many valuable suggestions on this matter. He speaks with a minutely familiar knowledge of the lumber districts of eastern Ontario and Quebec. His suggestion is that fire rangers be appointed, to be named by the lumbermen, the crown and the lumbermen each to contribute one half the payment of their salaries. An important matter, he says, would be the appointment of wise and judicious men who would create a good feeling among the settlers and impress upon them the great and important truth that the preservation of the forests and the continuance of the lumber trade is their salvation from two sources, namely, in supplying them with both work and markets for their produce and also averts to as late a day as possible direct taxation, which must surely come when the revenue from the forests ceases altogether or is lessened very much. He points out also another serious source of loss to Quebec, and at the same time a great wrong to limit holders, namely, the practice of buying lots in certain townships ostensibly for settlement, but really for the purpose of securing at nominal cost the standing timber. He says: "For instance, in our case, all the limits we hold are old limits, which were very greatly cut over before coming into our possession. In buying we were influenced in the price paid in nearly every purchase, by the quantity of other timber, apart from pine on the limits, but we find we are pursued both on the north Nation river and the Gatineau by men who are robbing both the crown and ourselves by buying up lots at nominal prices on which we have paid ground rent for years, doing us out of our just rights and at the same time getting quantities of timber from the crown for comparatively nothing." In certain states of the American Union, Wisconsin in particular, and some parts of Michigan, this policy has been pursued with the result, as was outlined to the CANADA LUMBERMAN a short time since by Mr. McBurney, of Callender, Ont., who had lumbered in that section, that valuable timber lands drifted into the hands of speculators, many of them who had themselves gone in originally and ostensibly for the purpose of taking up land, but with the ulterior purpose of simply carrying out the necessary settlement conditions, and then disposing of their lots at a fancy price, because of the great value contained in them through the rich timber which they

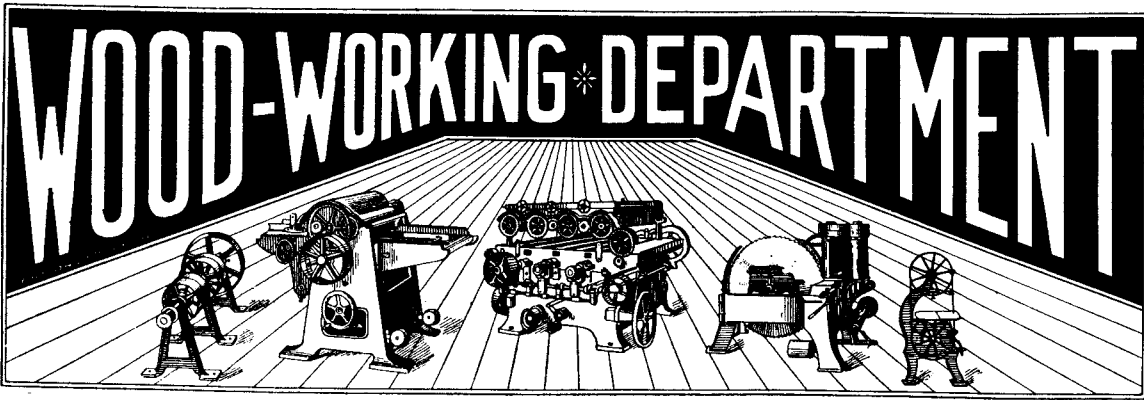
grew. Better things had been expected in this country, and it would hardly seem possible that after this evil has been pointed out so fully and clearly by Mr. Edwards, that the Quebec government can do less than take firm and vigorous measures to amend their land policy.

SPRUCE NOTES.

AS the business of pulp wood manufacture grows, it is to be expected that efforts will be made to utilize other classes of wood besides spruce. It has been a conviction with some that jack pine, despite the resinous matter it contains, can be utilized successfully in pulp manufacture. Recently a car load of jack pine was forwarded to the paper mills of William Barber & Bros., Georgetown, for the purpose of experimenting by Mr. A. F. Neuman, who holds the patents for this manufacture. In a letter to the CANADA LUMBERMAN, Mr. John R. Barber writes that the experiment has proven quite successful. He says, it is somewhat more difficult to work than spruce, but equally as good a paper making fibre. "We use the pulp in both news and book papers with equally good results." Word from Michigan contains information that Alpena business men are considering a project to erect a factory for the manufacture of jack pine pulp wood. A proposition has been made to the Alpena people, which, it is said, meets with the satisfaction of Mr. Neuman.

WE do not know that all the expectations of the recent organization, composed of leaders in the spruce trade in the Maritime Provinces and Maine, have been realized. There are reasons to believe that the standard of prices sought to be established by that organization are being shaded at times. These conditions, however, arise more through a lull that has taken place in trade and the necessity of small manufacturers, who are outside of the combine, realizing on their product. It is claimed by members of the Association that all circumstances combine to show that spruce will from year to year enhance in value, and that the lumberman who carries over a stock of logs into 1896 will find them worth from 20 to 25% more than the selling price in 1895. Such an advance would certainly represent a good interest on the capital invested in logs. It is sagely remarked by Secretary Geo. B. James that no more lumber is used when it is crowded into market at inopportune times than if sent along judiciously as required. The manufacturers have it in their own hands to control the situation by feeding the market as the appetite for lumber appears, not undertaking to force the dealers to eat six meals a day for one week and only one meal a day for another week. It is far better to supply them with three meals of good lumber per day. Then digestion will be ample.

THE reference made by our New Brunswick correspondent to the building of a new pulp mill in Miramichi is only one of many instances of the activity that prevails in this branch of business, which is so intimately related to the lumber trades. The pulp business will be developed to a large extent at Sault Ste Marie, Ont., manufacturing facilities there being of a very complete character, and encouragement being given to capitalists by recent legislation of the Ontario Government. The Keewatin Power Co., who are in possession of splendid water facilities in the Lake of the Woods district, may also be expected, and we believe it is their intention, to develop the manufacture of wood pulp. The rich resources possessed by Canada in this direction gives subject for comment to capitalists in and outside of our own country. The immense wood pulp mills at Appleton, Wis., and other concerns in that section, have incorporated what is known as the Pulp Wood Supply Co., to furnish the pulp wood needs at the various manufacturing facilities. And the Northeastern Lumberman is authority for the statement that this concern is looking to Canada for its supplies of the raw material. How the situation strikes our contemporary is indicated in the following sentence: "Canada would wake up some day and double up the present price of spruce stumps, or put on an export duty that will make these pulp wood concerns squirm, who are dependent upon Canadian sources of supply for spruce wood."



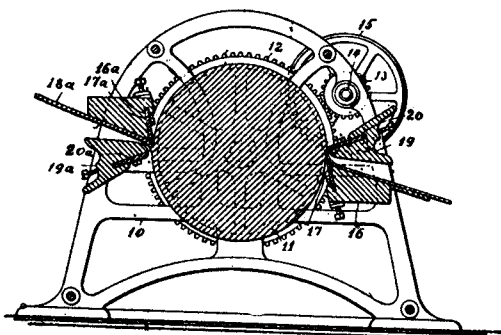
MARKET FOR WOOD-WORKING PRODUCTS.

THE boundary line of the Dominion, nor the 5,000,000 people who inhabit these provinces, do not necessarily mark a limit for the wood-working products of Canada. With the raw material in abundance, and means for providing the most complete equipment in machinery, there is no reason why those engaged in the wood-working business should not find a market for their products out of and beyond their own country. That this is being done, to some extent, is well known. The manufactures of the Rathbun Co., of Deseronto, find an extensive sale in Great Britain and other export fields. The same is the case with others. The field, however, is not nearly developed to the extent that it might be. New markets are to be secured by a careful study of commercial conditions, the world over, and it is safe to say that the wood-working manufacturer who makes a broad and intelligent study of the markets of the world will find various places where his product will be as acceptable as it is at home.

The field for manufacture is also to be extended by the ingenuity of the manufacturer. Because one has from generation to generation manufactured his wares in a certain way and of a particular kind, is no reason why he should continue to do so for all time. Nothing is more stimulating to business than to heroically get out of the ordinary rut into which the most energetic of men are apt to fall. The student of commercial history does not need to be told that the largest returns have come to those who, ascertaining the tastes and desires of particular people, have gone to work and produced those articles that have directly met their needs.

The same principle applied in catering to the market at one's own door will have the effect of increasing it. The complaint that the people of one's own country are too prone to seek other places to meet their wants, in place of patronizing home trade, is not always without justification. Not a little Canadian lumber is exported to the United States, and comes back again to our own country in the shape of furniture, because, so those in the furniture trade say, the home article is wanting in finish and perfectness of workmanship. These conditions can be changed if Canadian wood-workers only say so—and do.

NEW CANADIAN PATENTS.

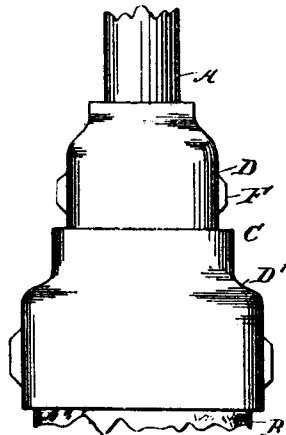


MACHINE FOR MAKING SHINGLES.

Patentee: The International Shingle Machine Co., assignee to Wm. F. Hutchison, all of New York, state of New York, U.S.A., 2nd of April, 1895; 6 years.

Claim.—1st. A method of making shingles, which consists in turning from a log a strip of veneer bevelled from edge to edge and then splitting the strip transversely to form the shingles. 2nd. Method herein described, which consists in feeding against a rotating log, knives have opposite pitch, whereby two bevelled veneer strips

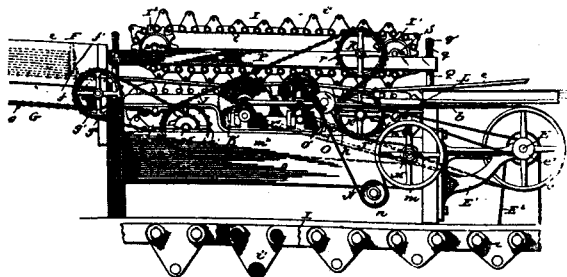
are turned with the thick edge of one strip opposite the thin edge of the other. 3rd. A rotary veneer-cutting machine, comprising the usual means of clamping, and also the customary means of feeding the knives, and a pair of knives arranged on opposite sides of the machine, the knives having opposite pitch and being adapted to feed simultaneously towards the log. 4th. One knife projecting upward and the other knife downward substantially as described.



METHOD OF PRESERVING TIMBER.

Patentee: John Simpson George, Newport, Oregon, U.S.A., 5th of April, 1895; 6 years.

Claim.—The herein described process of preserving timber which consists in enforcing a solution of iron sulphate and camphor sulphate into the pores of the timber and afterwards passing a current of electricity through said timbers, substantially as described and for the purpose set forth.

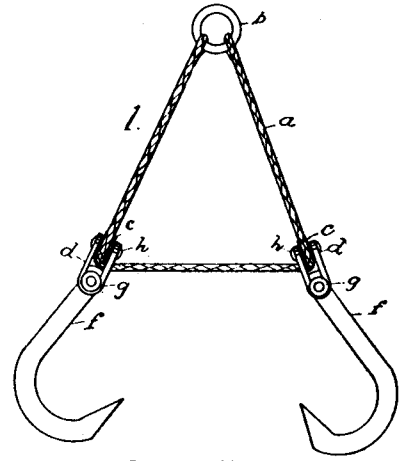


STAVE-JOINTING MACHINE.

Patentee: The Pleukharp Barrel Machine Co., assignee of James Pleukharp and William K. Liggett, all of Columbus, Ohio, U.S.A., 11th April, 1895; 6 years.

Claim.—1st. In a stave-jointing machine the combination of complementary endless chain formers, each former of the chain having a continuous convex outlined, and having a projection J, the links composing the upper chain formers being connected by pins, which have their ends projected beyond the sides of the links, rollers mounted on the projecting ends of said pins and beds to support the opposing portions of the chain formers against the tension of the blanks, the upper beds having portions to embrace the sides of the upper chain formers and receive the stress of the said rollers. 2nd. Jointing cutters of a bed J, located between the side bars of the links comprising the lower former, and a bed comprising side bars P to embrace the upper former. 3rd. Endless chain formers, to shape the other blanks and carry them between the jointing cutters, a frame carrying one of the formers, standards for supporting the said frames and provided with stops to limit the movement of the said frame in one direction, springs to hold the frames

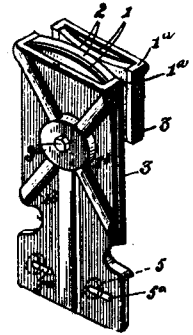
yieldingly against the said stops, and nuts for adjusting the tension of the said springs substantially as set forth.



LOGGING HOOKS.

Patentee: John M. Stewart, Vancouver, B. C., 5th April, 1895; 6 years.

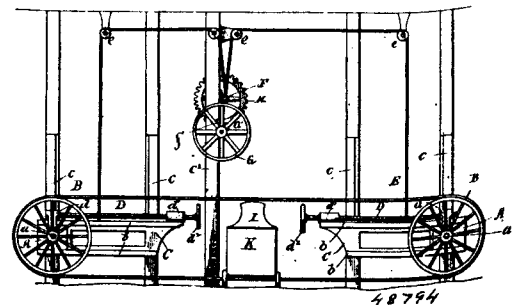
Claim.—1st. In logging-hooks the combination of the cable or chain A, with its two ends securely fastened to the ring B, and passing over pulleys C, mounted in block D, and made to operate substantially as specified. 2nd. The combination of the cable A, the ring B, connected by said cable A to blocks D and the hook F, pivoted thereon as and for the purpose set forth.



BAND SAWS.

Patentee: Joshua Oldham, Brooklyn, N. Y., U.S.A., 29th April, 1895; 6 years.

Claim.—1st. In a band-saw, the combination of a metallic semi-elliptic or convex backing having a correspondingly shaped pad, and a holder or bracket therefor provided with a central adjusting screw engaging the concaved side of said backing. 2nd. Said holder or bracket also having laterally adjusting screws substantially as set forth.



BAND-SAW APPLIANCE.

Patentee: Joshua Oldham, Brooklyn, N. Y., U.S.A., 29th April, 1895; 6 years.

Claim.—1st. In a saw-manipulating appliance the combination of the carriage guides, carriages fitted to move therein and having means to provide for the straining of a band-saw thereon, and mechanism for bodily and simultaneously adjusting said carriage guides, with the carriages and saw vertically. 2nd. The combination of the carriage guides having longitudinal guide-ways, the carriages fitted to move in said guide-ways and bearing axles provided with pulleys or wheels, around which a band-saw may be strained, hand-screws bearing upon said carriage-guides and connected to said carriages, mechanism for effecting the simultaneous vertical movement of said carriage-guides and vertical guide-ways for said carriage-guides. 3rd. The saw-manipulating appliance for hammering purposes comprising the carriages or plates having mandrels or axles

bearing pulleys around which is adapted to be stretched a band-saw, means for effecting the to and fro movement or adjustment of said carriages, the vertically adjustable guides or frames supporting said carriages and means for adjusting said frames, whereby the saw can be manipulated so as to present its relatively inner and outer surfaces or sides to a movably mounted anvil sufficiently elevated to permit the saw to freely pass thereunder, substantially as set forth.

SURFACE PLANING MACHINE.

THE engraving herewith presented represents a newly designed surfacer and planer, to plane 24½ inches wide and from one-sixteenth to eight inches thick on hard or soft wood. The frame is cast in one piece, wide at the base, very heavy. The table or bed is also cast in one piece, planed true, and is dovetailed into the frame, with extra long bearings, as wide apart as the width of the frame will allow, making the table as steady as if it and the frame were cast in one piece. Any wear can be taken up by means of gibs and set-crews. The table is raised and lowered by means of the large crank-handle shown, an indicator on side of frame showing the exact thickness the machine is set to plane.

The cylinder is double-belted, having a pulley at each end. It is made of the best forged steel, with extra large journals, which run in extra long, self-oiling boxes, lined with babbitt and provided with improved oil wells and oil cups. Both pressure-bars work very close to the knives, and are adjustable to the timber independently of each other and the feed rolls, thus insuring steadiness, even when planing very short and thin stuff. The pressure-bars are self-adjusting, always regulating themselves to the various sizes of thick and thin lumber being planed.

The feed is driven from the cylinder, and is quickly stopped or started by means of the belt tightener. The feed consists of four large steel rolls, powerfully geared. The feed rolls are set as close to the cylinder as possible and arranged to hold the board firmly to the bed. The upper in-feeding roll is fluted and held down by connected levers and weights; the out-feeding roll is held down by large coiled steel springs, making a strong and positive feed. There are two changes of feed—fast and slow.

SOME FACTS ABOUT PLANING MILLS.

IT is quite amusing, says a writer in the Wood Worker, to go around among the different planing mills in the country and see the different methods of getting out work and the different ways of putting up the tools. Some will insist that theirs is the only right way; others will be equally sure their way is correct. They may both be right, for in different localities the conditions vary and the different machines have individual peculiarities that should be humored in order to get the most out of them. Also the different kinds of timbers worked require a little different bevel to the knives at times, to do the best work without breaking out.

Speaking of knives, it is amusing to notice the different ways of grinding and "balancing" them. And let me say here that I think one of the worst failings in planing machines, and the one causing the most trouble in getting smooth work, is not having the knives properly balanced. There are a good many men who read this perhaps who were doing this class of work when I was a very small boy, and are still in the same business and balancing in the same old way their fathers did, who will say they guess they know how to balance a set of

knives, still they probably never balanced a set of knives in their lives that were any where near a running balance; they may have weighed the same, but where was the metal distributed? Was it evenly through the width of the knife? I trow not.

It was my good fortune, or ill fortune, whichever you like, to run across one of these knife-balancing cranks who thought he knew all there was about the business and could not be convinced to the contrary, even with the strongest evidence. He used to grind his knives, then take them to the balance scales and try them. If one was somewhat heavier than the others, he took the heavier one to the drill press, put in about a five-eighths drill and drilled or started a hole about the center of the width of the knife and at whatever position in the length of the knife he thought heaviest, drilling out enough metal to bring the weight to the same as the others; perhaps he drilled clear through the knife, perhaps only an eighth of an inch. He was very particular to get just enough to balance evenly, then paired them up and laid them away for use.

Are they balanced, or not balanced? that is the question.

Now why is it the heaviest? Because it has been worn off the back, or is it because it is worn or ground too much at the cutting edge? I claim it is worn at the cutting edge. Perhaps one knife wears faster than the other, or is filed a trifle more. My way to make the matter right is to grind enough off the cutting edge to make them balance; then your knife is kept the same thickness throughout and retains its full strength, while if you bore from one to ten holes in the width of the knife, it weakens it. I have actually seen knives drilled so they pricked through the knife, the holes running the length of the knife from one to two inches apart. It strikes me that would be a very weak knife for heavy work.

Another thing I see many grinders do, is to set the knife on the grinder by the cutting edge. Where you use a machine as you do a matcher, for instance, sometimes only from four to six inches in width, of course they wear faster on that end of the knife. I believe it is a mistake to set by the cutting edge of such a knife. I have seen knives that were a half-inch wider at one end than the other. This is wrong, as there is much

more weight at one end of the cylinder than the other, and when you revolve it about 5,000 times a minute it amounts to something.

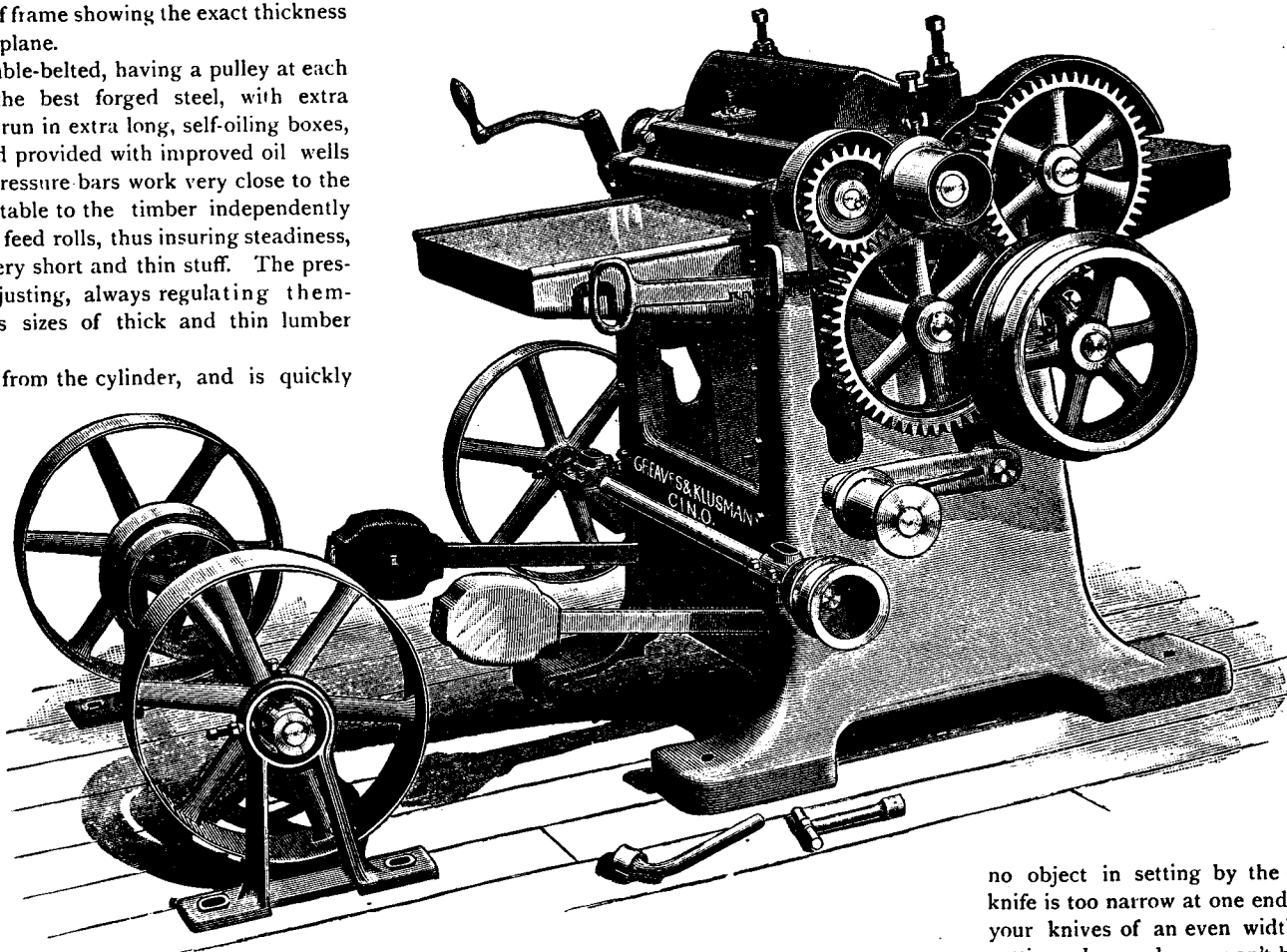
I think the proper way is to set your knife by the back. Have some pieces of wood or metal of different thicknesses, two of each thickness. Slip one under each knife, choosing one thick enough to raise the knife to the proper height for grinding; then you have a knife the same width all through and the same thickness. A very little practice will teach you just when to stop grinding and have your knives evenly balanced; if one is a trifle heavy, put it on again and grind lightly until they balance. I can see

no object in setting by the cutting edge, for when the knife is too narrow at one end it is thrown aside. Keep your knives of an even width, balance by grinding the cutting edge, and you won't be far from a good running balance. Your knives will look better, also, than if they looked like a wedge and were full of drill holes.

I don't pretend to be an expert in this line and have only given my way of reasoning in the matter. If I have reasoned wrong I shall be glad to be corrected and will take it kindly. It is perhaps in the same way that some men say a saw is no good unless it is hand-filed, but after seeing filers file saws until they were nearly a quarter of an inch out of round, I prefer a saw-grinder.

I call to mind a case where we had a saw that did fairly good work in soft wood, but one day some hard maple came in to be sawed and the saw did not seem to take hold right. I put it on a grinder as an experiment and ground one-half a day on it before I got every tooth pointed up. It worked all right then. Before there were not over five teeth that cut at all, so I am a convert to saw grinding. Of course there are filers who can keep their saws all right by hand-filing, but there are many more that can not.

There is a great difference in the bevel to give cutters. I find the best way to determine what bevel to use is to try them until you get the one that stands up best for your work and lumber, then keep it. One thing we should all avoid: don't get into a rut and think you have the whole thing down so fine you can not be taught any further.



SURFACE PLANING MACHINE.

I say most assuredly not, yet others will say that I am "way off," for don't the scales show that? I admit that, but let me ask, if you tie two pieces of iron, both of equal size and weight, to a cylinder, one with a string six inches long and the other with one four inches long, then revolve that cylinder at a pretty lively rate, would it run steadily and not tremble? Will not the one farthest from the center exert the most force upon the cylinder to draw it out of line? If both pieces of iron were an equal distance or in the same circle, they would run steadily. Now if this is the case, why should it not be so with planer knives? It looked wrong to me at the start to see them balance by drilling, for if you take out the metal in the body of a knife you get comparatively near the center of cylinder and the nearer you get to the center the less the centrifugal force. Does it have the same effect if you take the metal from the center of the knife that it does to take it off the cutting edge?

I will give my way of reasoning it out: Take a set of knives as they come from the maker. If he is a good reliable man the knives are even in thickness, thoroughly balanced, and you put them on the planer. They run well, but perhaps after a week or two or three days' use they need grinding and are taken off, ground and tried on the scales. One of them is a trifle the heaviest.



ALEX BROWN, Winnipeg.



J. M. NEILSON, Carberry.



T. A. CUDDY, Minnedosa.



J. L. CAMPBELL, Melita, PRESIDENT.



D. N. McMILLAN, Morden.



J. B. MATHERS, Glenboro.



ALEX. BLACK, Winnipeg, VICE-PRESIDENT.



JOHN DICK, Winnipeg.



R. H. O'HARA, Brandon.



I. COCKBURN, Winnipeg, SEC.-TREAS.

OFFICERS WESTERN RETAIL LUMBERMEN'S ASSOCIATION OF MANITOBA.—(See Page 3 for Sketch.)



It came in my way the other day to have a pleasant chat with Mr. W. H. Bromley, of the Pembroke Lumber Co., Pembroke, Ont., and a son of the well-known manager of that successful lumber concern. Mr. Bromley, jr., had been making a short trip in western Ontario looking after the business of his concern. He says that the season's trade with them has been of a most satisfactory character, business of the past month being much ahead of the corresponding period last year. The Pembroke Lumber Co. make a specialty of dimension timber, and it has been their pleasure this year to furnish a good deal of timber of this kind to be used in the erection of elevators and the building of large warehouses. Prices, Mr. Bromley says, have kept up very fairly; at least, they have not been disposed to cut prices. This, he tells me, has not been the case with everyone, as with some concerns in the east prices have been shaded to the extent of one or two dollars this season from the fact that large stocks are held by some lumbermen. He takes the wise view that it is foolishness for lumbermen to sacrifice prices, especially of white pine. The time is coming when white pine will be a scarce commodity in this country, and to quote Mr. Bromley's words, "white pine is for this reason to-day as good as gold." Mr. Bromley comes from a part of the country where many of the pioneers of lumbering in Canada have found their home. From around about Pembroke has come the Mackies, Mr. Peter White, Mr. Hale, and others whose names will easily occur to the student of lumber history, as the men who operated in the forest in the Ottawa district, when there was lots of forest to cut. Wonderful have been the changes in that section of the province since the days when Ottawa was best known as Bytown, and could not boast of the favored conditions that exist to-day. Mr. Bromley remarked that with lumbermen, as with men engaged in other lines of trade, it is not everyone who has been in the business for years and acquired a rich competence and therefore have no reason to trouble themselves about material affairs, who keep closely in touch with conditions as they change in every business, and have changed in the lumber business, from decade to decade. Having come from Hamilton, where he had met Mr. Robert Thomson, he did not hesitate to name him as one of the lumbermen of the country, who seemed to-day, though he had been lumbering for years, to be as keen and interested in every development of the business, as he undoubtedly was in his younger days.

* * * *

A MONTH ago I let Mr. McBurney, a well-known Canadian lumberman, tell something of the methods of drawing logs by rail in Michigan and Wisconsin, where he has been cutting timber lately. As one studies this question it is seen that important changes are taking place in logging methods. The railroad, in recent years, has cut seriously into the schooner and barge as a lumber carrier, shown by the Marine records in many places, and especially noticeable in the decline that has taken place in the vessel trade in Michigan. It looks as though the rafting of logs would in time become largely a method of the past, the railroad taking its place. Nearly half of the logs banked on the Upper Mississippi and its tributaries last winter were hauled by railroad. Logging roads are being extended into the interior in many different parts of the country where lumbering is carried on. A lumberman of Maine is quoted as saying: "It won't be many years, we hope, before this waiting for the spring drives of logs will be a thing of the past. How much better it would be to load them on to a car at the lake in the morning and have them at the mills within two days, if not within one. Now you put a log into the lake and wait two years for it, and you are lucky if you then get it intact, for frequently it is broken or left high upon the shore of the receding freshet." It

is calculated that you can get about 5,000 feet on a log track, or in other words, a train of ten cars would haul 50,000 feet. In lumbering, as with so many other vocations, the ingenuity of the times will soon take all romance and adventure away from many branches of business.

* * * *

IT is needless to say, that like everyone who aims to possess an intelligent knowledge of lumbering conditions, I read carefully the review of trade conditions, that is so important a feature of the Weekly Lumberman. Here, I have no doubt, is reflected very clearly the state of the markets from week to week. Making frequent calls myself upon lumbermen, I have been struck with this fact, so far as the commercial side of the business is concerned. The lumber trade is divided into at least two distinct branches, namely the mill man, who manufactures the lumber, and the wholesaler, who sells it. I will have a chat with my friend Col. Davidson, of Davidson & Hay, or Mr. Warren, of the Imperial Lumber Co. and naturally they talk from the side of the manufacturer. They are in the business to sell lumber. There is little use in their getting out large quantities of logs each winter, driving these to their mills and cutting them into lumber, if they cannot sell the product. It is to be expected that these men will take a little different view of the situation to Ald. Joseph Oliver, of Donogh & Oliver, and other wholesale lumbermen. Whilst they too have lumber to sell, and through these a very large part of the lumber of the country is distributed, yet they are always in the market to buy. And, I do not know, when playing this part, that they will want the price of lumber, and the conditions that would tend to increase prices, too favorable. At another time I will strike Mr. Thomas Meaney, of Robt. Thomson & Co. His concern occupies the position of wholesalers, as well as large manufacturers, and just how nicely a man is obliged to balance the situation, under these circumstances, I will leave readers to judge. There are Bulls and Bears, I suppose, in the lumber trade, not to so great an extent as in the grain business, but in a degree at least. One only gets at a real concensus of market conditions by carefully weighing all the pros and cons that enter into the situation, and I suppose this is the place of one, whose particular duty it is to write of trade conditions, and intelligently, fairly, and fully size up the situation.

* * * *

A Michigan correspondent of the Northwestern Lumberman is quoted as saying that Georgian Bay timber, not to exceed 15 per cent. of all the timber in that district, would run better than common. Though referred to as one who is himself largely concerned in the timber of the district, he is quoted as expressing wonder how the man who puts money into it can get out whole. The way he figures is this: "Georgian Bay logs have been held at from \$10 to \$11; it costs \$2 to bring them across the lake, and figuring interest on capital and saw bill at \$2, there is not much margin in selling the manufactured product at \$14. Of course, now and then a lot will bring \$16, and the man who owns the timber and puts it in has a little better show over his white alley. He paid \$2 to \$3 stumpage, \$1 crown dues, and it costs probably \$3.50 to \$4 a thousand to cut and put in the timber." This, it must be confessed, sounds somewhat illogical, coming from a gentleman who is credited with being well informed, and who has backed up his information by becoming a large holder of Georgian Bay timber. Every little while some statement of this kind is given currency to through the lumber journals across the border. And not only every little time, but quite frequently, the lumbermen of Michigan and other states keep increasing their investments in Georgian Bay pine. I don't believe that business men, as a rule, when there is no particular occasion for it, enter into business ventures that they are satisfied beforehand are going to give them some trouble to get their own out of. Messrs. Bliss, Hurst, Fisher, White, Loveland and scores of others have become investors, it seems to me, in Georgian Bay pine, because they know there is money in it. They have not done it from patriotic motives, I am sure, for their lot is cast under the Stars and Stripes, and not under the Union Jack, much as they may love the mother country, as everybody does.

They have not locked up their money in this way just for the fun of the thing, or because there is no place where they can place it in their own country. They are into the lumber business in Canada, rest assured, for the long green stuff there is in it, and nothing else. Our contemporary wants to call down those correspondents who talk rubbish like that which we have just quoted.

* * * *

IT is as true of business as it is of individuals, that the situation is largely effected by surrounding conditions. I hear complaints, when talking with lumbermen, of the disposition among buyers to break prevailing prices. A good deal of dickering is frequently indulged in. But the trouble is, the buyer cannot always control circumstances, and as the dictates of his good business sense suggest. I was in the office of a lumber concern a week ago, when the case was put to me something like this. Here is a letter from a manufacturer who wants certain classes of lumber, and the order is stated in the letter, but the qualification is, that there is no use in shipping this lumber unless the price can be made so and so. "We get a good many letters, and personal enquiries along this line," said this lumberman. "And when I have pressed for an explanation of this method of buying, the answer has been just this that manufactured stock to-day is brought down to so low a figure, a result largely of the keen competition, that unless the raw material is bought at a certain figure, the manufacturer cannot make up stock that will carry with it even a semblance of profit." Again, I have had the situation put to me from the standpoint of the builder. He has accepted a contract to erect one or more buildings in which will be used a certain amount of lumber. He has got his price down so fine, that he is forced to do a deal of bantering with the lumbermen, if in so doing he can get a shading of prices on his lumber. Now I know there is some truth in this, for it came in my way not long since to make enquiry among builders as to the condition of trade, and I learned that one of the worst aspects of the building trades to-day is the recklessness that characterizes the present system of contracting. In turn this influence quickly disorganizes prices among supply men. It occurs to me like this, that the lumber trade will be doing a good thing commercially for themselves, for the builders, and for the welfare of the country generally, if they could turn a deaf ear to all efforts on the part of buyers to secure a cut in standard prices. If the lumberman cuts his price, he is putting himself in the same position as the builder and the manufacturer, selling his product without a profit, for be it remembered, that in these days of high stumpage, and increased cost of lumbering, unless a certain price is secured for the forest product, it is simply a losing business. There is wanted at the present time an intelligent effort to effect a hardening of values in all lines of business. And good times are not going to return until business men in all classes determine that there is no business in doing business for nothing.

QUERY FOR QUEBEC LUMBERMEN.

A SUBSCRIBER to the CANADA LUMBERMAN asks, why the tamarac, or red spruce, is all dying in Quebec limits, particularly on the Gatineau. It seems, he says, to "dry up." Who will answer?

THE TRADE IN SAWDUST.

IN New York City there are about five hundred vendors of sawdust, having a capital of \$200,000 invested and doing a business of \$2,000,000 annually. Forty years ago the mills were glad to have sawdust carted away; twenty-five years ago it could be bought for fifty cents a load; now it brings \$3.50 a load at the mills. It is used at hotels, eating-houses, groceries and other business places. It is wet and spread over floors in order to make the sweeping cleaner work. Plumbers use it a great deal about pipes and buildings to deaden the walls and floors. Soda-water men and packers of glass and small articles of every kind use it, and dolls are stuffed with it. Yellow pine makes the best sawdust, as it is the least dusty and has a pungent, healthy smell. But any light wood will do. Black-walnut sawdust will not sell, and is burned.

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE sawdust trouble has been remedied by the introduction and second reading by Mr. Costigan of a bill to amend the Fisheries Act. He said that previous to last session the dumping of sawdust and mill refuse into any navigable stream was forbidden. The power to grant exemption was reserved to the Governor-General-in-Council. By the act of last session that power was withdrawn and the present bill proposed to restore it for two years longer. In the meantime the whole question might be dealt with in a more practical way than was possible at present. A commissioner had visited most of the mills east of Ottawa, but his enquiry was not yet completed, for it was necessary to visit not only the mills but the streams on which mills are now situated or may hereafter be constructed. In reply to criticism of the bill by some members, Sir Chas. H. Tupper replied that it was not a question of granting political power to the Minister of Marine. The lumbermen, regardless of politics, had united in a presentation on the subject, and made out a case to the entire satisfaction of the Minister. This was simply a proposal to adopt the best means by which a sudden loss and sudden interruption of business to parties who may be considered to some extent to have acquired vested rights in this regard, may be averted. The discussion was taken part in by Messrs. Edwards, Sir James Grant, Bryson, and a number of others who have a practical knowledge of the needs of the lumber industry.

J. R. Booth is adding two band-saws to his mills, and is now making improvements upon the site of the burned mill, which will enable him to place them in running order.

William Mason & Sons' saw mill, since the new machinery has been put in, has been running steadily, principally cutting deal lumber and dimension timber. It will increase the sawing capacity of their mill about 50 per cent. They estimate their cut this season to be in the neighborhood of 15,000,000 to 20,000,000 feet.

The Bronson & Weston Lumber Co. are making extensive improvements in their match factory over in Ogdensburg, N. Y. They expect to manufacture about 250 gross per day, and will all be made from board ends from their Ottawa mill, which will be a new departure. Until recently they had to use these ends for firewood; owing to improved machinery they can now use them for this purpose.

A lively discussion took place in the House of Commons a fortnight ago, when Mr. Bennett, member for East Simcoe, and who is a strong advocate of protection to the Canadian lumber industry, scored Mr. Charlton for the part he took in securing a certain amendment to the Wilson bill in the United States Congress. Mr. Charlton defended himself with his usual energy, and contended that what he had done had been for the best interests of the lumber trade of Canada. This did not allay the opposition, which came hot and fast from members of the government party.

OTTAWA, Can., June 22, 1895.

NEW BRUNSWICK LETTER.

[Regular correspondence CANADA LUMBERMAN.]

BUSINESS has continued active throughout the month, and lumbermen are commencing to feel the benefit of the change in the lumber tariff. Large quantities of lumber are going to the United States.

K. Shives has put into his mill a slab-slasher to convert the slabs and edgings into wood.

Flett's mill at Nelson on the Miramichi is running night and day. The same is the case with the mill of Senator Snowball.

A fire in the saw mill owned by D. & S. Goggins, Penobscot, was fortunately discovered before any great damage was done.

Alex Gibson has decided to make some improvements in the furnaces at the mills at Marysville, so that he will be able to use for fuel a large quantity of sawdust that now goes to waste.

It is expected that Messrs. Andre Cushing and Co. will erect a new saw mill at Fredericton. A representative has been there examining the site, and is believed to have reported favorably.

The sch. Thurston, loaded with deals for Parrsboro, has gone ashore on the rocks at Diligent River and is badly damaged. She is a new vessel, only launched about two months ago, and insured.

A. H. McLane's gang mill, on the Saw Mill Creek, has been shut down for the summer after a good season's sawing. The crew will go on the stream shortly to repair dams and fit things up in good shape. A new driving dam will be put in.

The death is announced of Mr. B. Haliburton Teakles, for the past twenty-five years a member of the civil service in Ot-

tawa. The deceased was a son of the late William Teakles, and at one time an extensive lumber merchant at the Portage, in the parish of Cardwell.

The mill of G. G. & W. C. King, at Chipman, is running day and night. The Messrs. King intend to furnish light to the mill by electricity. Work on the mill of Stetson, Cutler & Co., at Indian town, has been pushed ahead with energy, and it is hoped will be in running order before a great while.

It is believed that the project to establish a large pulp mill at Miramichi is very certain to go on. The business will be conducted under the name of the Masterman Sulphite Fibre Co., with Mr. W. H. Masterman, of Montreal, president. The general manager will be Mr. Thos. Allison. The site is at Mill Cove, about a mile and a half above Chatham, on the opposite side of the river. Splendid water facilities are found there, especially adapted for pulp mill purposes, and altogether the site is the most favorable one for the business proposed. The expectation is that the mill will be ready to operate by the end of the year.

ST. JOHN, N. B., June 21, 1895.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

WHATEVER others may think, it is plain to the very ordinary observer that Duluth lumber is going to become a very familiar figure, if I may so put it, on the markets of Michigan. W. B. Mershon & Co. are among large purchasers of Lake Superior stocks, and other Michigan men are following in their walk. Pine is a rich resource in the Duluth district, and lumbermen there have evidently laid themselves out to push their product near and far, and Michigan, as also Buffalo, Tonawanda, Albany and all through the eastern states, will soon make its acquaintance.

A large purchase of pine, amounting to 400,000,000 feet, near Duluth, has been made by Messrs. Tirney & Davidson, of Bay City.

The Canadian drives of Colonel A. T. Bliss are at the lower end of Big Island, French River, and will be nearly a month behind last year's record, because of low waters.

The factories are doing a fair business, though lumber trade generally has lagged this season. Shipments by rail are increasing, whilst, on the other hand, the lake movement is light.

Comstock Bros., of Alpena, own 200,000,000 feet of pine in the Georgian Bay region, which they will have rafted across the lake, and manufactured into lumber, per contract made with Churchill Bros.

The Ontario Government, it is said, has six men on the French River boom, to count the logs being rafted there. They are camped on the trip and work a force day and night, counting the logs as they pass over the Tramway rapids. They use two locomotive head-lights for night work. The step is taken to overcome complaints that were made to the government last year as to certain sharp practices that were practised.

Mills here that rest upon Canadian logs for their supplies, are now receiving these in good quantities. The low water in Georgian Bay streams had hindered the movement earlier in the season, but recent rains have removed this trouble. The Central Lumber Co., the Saginaw Lumber and Salt Co., Eddy Bros., and a number of others at Saginaw, and also Albert Pack and others of Bay City, have commenced to receive some good-sized rafts.

The demand for bill stuff at Bay City is reported to be very large; car sills are in big demand.

Mr. John Charlton, M. P., was among recent visitors at Bay City. He feels somewhat sore over the treatment he received in the House of Commons a week or two since, believing that anything he did was for the best interests of his own country. With others Mr. Charlton is having logs rafted to Bay City to be manufactured there for his American trade.

The Nester Estate has purchased about 75,000,000 feet of standing pine in Ontonagon and Houghton counties, from S. O. Fisher, of Bay City.

An effort is to be made in Bay City to raise \$6,000 to pay off the incumbrances on the McLean property to induce Esty & Calkins to locate their hardwood planing mill there.

Recent rains in Northern Michigan have been of value to the Diamond Match Co. As a result of the forest fires the Match Company was forced to cut in the last year's logs, a cut which would not have been made at the present time in the ordinary course of business. Low waters in the mills gave rise to the possibility that these logs could not be floated to the mills, but rains within the last few days have enabled the lumbermen to get all these logs in the water and save them from the danger of being injured by worms. The last of the logs were gotten into the water a few days ago. This timber will

now be cut into lumber at the Company's mill, and will make upwards of \$3,000,000 worth. The better demand for lumber will make it possible for the company to market a considerable portion of the cut this year. There will be, on the whole, a profit of something like \$1,000,000 above the cost of the stumpage.

SAGINAW, Mich., June 22, 1895.

PINE TREES NEED LIGHT.

ACCORDING to the novelists and other superficial observers, the pine tree is always gloomy, and the forest is always dark. They make a midnight tree of the pine, but it is really a midday tree and requires a good deal of light to bring it to full development. The most luxuriant part of the pine is always its top, for that part of it is in the open light. Wherever the pine is shaded, its foliage is thin, scraggy and scrimpy. The pine growing in the open field is full and luxuriant in foliage to the base, while those in the crowded forests are full foliaged only at the tops. One Maine essayist says that trees which grow up in the natural forest and must in the earlier years have been densely shaded show far less growth, both in height and diameter, than those which grow up after fire or on clear land. The great majority of the trees cut in the largest pine operations on Penobscot waters this year were from 200 to 225 years old, while trees of similar dimensions cut in the city of Deering ran from 130 to 140 years. Starting all alike, and with no obstruction between them and the sun, the growth of the latter was very rapid. Many of them yearly grew more than a foot in length and a half-inch in diameter during their early life, while in later years a thinner deposit of wood on a larger area produced a far greater accumulation of material. In recent years these trees, now about two feet at the butt, had been growing an inch in diameter in from eight to twelve years.

FRENCH FORESTRY LAWS.

FRENCH forestry has been reduced to what may be called an exact science. Formerly France was swept by forest fires like those that now sweep the United States and Canada. So destructive were these conflagrations in France that the government in 1870 enacted a 20-year law designed to prevent forest fires. It succeeded, and in August, 1893, the present law was enacted. Americans are directly interested in the provisions of this new French law, which briefly summarized are as follows: The first provision prohibits during June, July, August and September all fires in forests or shrubby waste lands, or within a distance of 600 feet from their boundaries. Among the fires prohibited during the close season is the so-called "petit feu," by which strips of undergrowth were carefully burned every six or seven years in the cork forests. Another clause directs landed proprietors who have adjoining lands with woody growths on them, to keep a strip of land, from 60 to 300 feet, between the two estates entirely free from shrubs or conifers. Another clause enacts that similar bare strips 60 feet broad shall be kept up along all lines of railway through a wooded area, and that these strips in adjoining property shall be kept clear at the expense of the railway companies. All proprietors whose woods are cut down in clearing these strips are to obtain indemnities. This is a new provision and is aimed in favor of the extension of railways. In the handling of fire, if a counter fire is started to head it off, no indemnity arises for woods burned under such circumstances. The fires heretofore in France have been frequently caused by sportsmen or poachers during the dry season, and this has led to the delay of the shooting season until the September rain sets in. The construction of a network of roads greatly facilitates fire protection by making the forests accessible and by increasing their value, and the government offers a bonus of \$1,000 a mile for roads constructed in the forest districts. Severe penalties are exacted where the forest law is transgressed, and if the railway companies do not clear the fire lines on their roads, the French forest department clears them at their expense. The law of 1870 cut down the forest fires in France over a half, and it is expected that the law of 1893 will practically put an end to these destructive conflagrations in that country.

AUSTRALIAN HARDWOODS.

IN a lecture on Australian hardwoods and their uses, delivered before the London (Eng.) Imperial Institute recently, Mr. C. R. Fenwick, A. M. I. C. E., said: "In those colonies there was a very large extent of land growing timber that came under the general denomination of hardwood. Of the eucalyptus alone, for example, there were some 120 varieties, and of the acacia over 300. South Australia was the only Australian colony that had reason to complain of not being well off in timber. The colony was dependent on its neighbors for supplies of the article, but was taking steps to correct the deficiency by extensive planting. In Tasmania the forest trees were mostly fruit trees. In Western Australia there were two varieties of eucalyptus not known elsewhere. Some of this wood was used by native tribes as incense for propitiating the gods, and much of it was used for engineering purposes, while iron-bark was found good for paving. String-bark, which was found plentifully in Queensland, New South Wales, Victoria and Tasmania, was useful for jointing, planking, and other purposes. The blue gum grew extensively in Victoria, towards Cape Otway, and there were two varieties of it—the true and the bastard. The difficulty and cost of transport by rail was a great hindrance to the exportation of much of these woods. These hardwoods were very valuable as piles and sleepers. Great discrimination had to be observed in making selections of the timber, as the quality of the wood varied very much in different districts, and the same name was often given in different districts to different kinds of wood. Blue gum resembled string-bark when it came to be dealt with. The paper went on to give instructions which should be observed in selecting timbers for commercial purposes, and one of these enjoined the necessity of inquiring as to the quantities in which they should be obtained and the facilities of obtaining them. This point was all the more important as in some of the Australian colonies the question had been raised whether the exportation of some of those woods should be encouraged. There was, in fact, a probability of the supply of them becoming scarce, but there was still no question of there being an immense superabundance of timber in these colonies, which left a large margin for exportation. Western Australia enjoyed a great advantage in its more favorable geographical position for exporting purposes over the eastern colonies." The subject is one that is engaging considerable attention in Great Britain, and Timber, of London (Eng.), says: "Among the more valuable varieties of eucalyptus are the ironbarks. These yield very good timbers, some of them being unrivalled for strength, elasticity and durability combined. Sleepers made from the narrow-leaved ironbark have been taken up perfectly sound after twenty-four years' continual use. The tallow-wood, so called from the greasy nature of the timber when freshly cut, is one of the best for use in bridge construction, also for decks of ships, and is readily worked with saw or plain. The black-butt, when properly selected and seasoned, is invaluable for piles, sleepers, decks of ships, bridges, carriage work, etc. The spotted gum, when the sapwood is removed, is often equal in industrial importance to the ironbarks. The red or flooded gum is largely used for street paving, also, when free from gum veins, for railway sleepers, retaining its soundness for many years. The grey or white box, a common variety of eucalyptus, possessing considerable strength and elasticity, is largely used for telegraph poles, wheel-spokes, shafts and railway sleepers. The forest mahogany, not being readily attacked by the toredo, and lasting well when underground, is much preferred for piles, also for rafters in buildings, being found in excellent condition after fifty years' use. The swamp mahogany, which derives its name from thriving most readily in swampy ground, is useful for shipbuilding purposes, also for railway sleepers. The blood-wood, which resists both white ant and damp, is used principally for piles and sleepers. There are other kinds of eucalyptus of a similar serviceable character. Most of the timbers above mentioned possess all the requisites for the construction of sound and durable roads and pavements.

"Among other hardwoods is the blackwood, which has been found suitable for the construction of railway carriages, also for a variety of purposes, such as the interior

fittings of buildings, furniture, and engineering and architectural construction. The turpentine tree resembles the tallow-wood in some of its properties, and furnishes an excellent timber for wharf construction and fencing. It is difficult to burn. The rosewood is much used for cabinet work, turnery and shipbuilding. The white beech, which resists the white ant, is one of the best outdoor flooring woods known, and is largely employed for verandahs and ships' decks. The negro-head beech is utilized for furniture making, window sashes, doors and joinery work. It takes a beautiful polish. The red cedar is one of the most valuable of the New South Wales timbers; its combination of lightness and durability causing it to be largely in request for fittings in buildings, furniture, etc. It is identical with the Moulmein cedar of India. In some of the oldest buildings in Sydney, dating from the earlier days of the colony, the cedar woodwork is often found in almost perfect condition."

AN EVIL WITHOUT A REMEDY.

THE part played by the scalper in the lumber industry is discussed as follows by the St. Louis Lumberman: Everybody but the scalpers themselves concede that their presence in the lumber trade—probably in other trades as well—is a thing to be deplored. They are in the business, but not of it, in the sense that they fail to conserve the real interests of any department outside their own operations. They are a tax upon both buyer and seller, without performing for either a service of real value. The risk of their dealings falls upon the producer or wholesaler from whom their stock is received, but in return he receives no compensating benefit since the profit on any transactions they make is absorbed in the "scalp," little or none of it comes to those whose capital and credit furnish the real basis for them.

At various times legitimate operators have undertaken to restrict the work of scalpers, and diminish to some extent their power to injure the business, but the efforts in this direction have not, it must be admitted, been attended with any success. If any scalper has been driven out of business because of speeches and resolutions against him, the fact is not known.

On the contrary, in spite of anything done or attempted, operators of this class have rather increased, some of them even thriving to such a degree that they have been able with accumulating means to abandon the methods of the scalper and to adopt those of the legitimate dealer, with capital invested and a basis of credit. The scalper is evidently so far rather master of the situation.

It is likely that he will continue to occupy this position in a greater or less degree. Much as his methods may be disliked, so long as he lives up to his contracts and pays for what he buys, there will be no lack of stock which he can obtain on about his own terms.

With many mill men the problem of selling is the most difficult their business presents, and through lack of skill, experience, or the means to employ better methods, they are practically forced to put themselves into the hands of scalpers as the only way of getting their stock quickly into market. To sell promptly is a necessity the scalper takes advantage of to make a bargain of which the best end always comes to himself. He is, in fact, the product of conditions which have brought into the saw mill trade many operators whose capital is so small in proportion to the amount of business they aim to do, that a steady sale of their product is necessary to keep them going.

If this proposition is true, there is no remedy for scalpers while the small mill men remain an important element in the trade. So long as there is money to be made in handling the product of these small mills at the expense and risk of the maker, there will be no lack of men to take up that line of business, no matter how much they may be discredited by operators on a higher commercial plane.

Upon the principle that it is wise to modify, and as far as may be control, an evil that cannot be remedied, should it not be the policy of the lumber trade to frankly acknowledge that scalping cannot be eradicated, and to use such measures as may be available to diminish its depressing and disturbing influence upon the business?

Individually the scalper is often—perhaps in a majority of cases—a capable business man who is simply trying to get a start by the shrewd use of other people's capital. If he can avoid the numerous dangers that beset his pathway, he will eventually work out of scalping methods into a more legitimate manner of doing business.

Is there not some way by which the scalpers who mean to be honest may be distinguished from the sharks, so that manufacturers may know whom they deal with in this fraternity with this risk?

If the efforts of the trade could be turned in this direction instead of being wasted in mere denunciatory resolutions which effect nothing, the chances of accomplishing some improvement would be vastly increased.

Scalpers are evidently a permanent feature of the lumber business, and as they cannot be removed, the only thing to do is to get along with them as well as possible.

ROCK MAPLE.

IT has become a habit among the lumber papers to devote a large amount of space to a few of the showy woods, such as oak, cherry and birch, with poplar as a subject on which something can always be said. This is hardly fair to other woods and their manufacturers. It may possibly be true that oak demands all that is said of it, for the wood is hardly out ranked in real importance by any other on the continent, hard or soft, although there are others which run up into higher figures in total value of annual product. But the manufacture of poplar is practically restricted to three or four States, and in amount of feet of annual product it ranks far below several others. Its value, however, gives it a certain position warranted by nothing else.

White ash, or the four species commercially known as such, has occupied a most prominent place, both as regards amount produced and value. But is now waning in favor, and its use is becoming greatly restricted, because of its growing scarcity. Hickory occupies about the same position, while rock elm is, to a certain extent and for many purposes, usurping the place of both.

There are several woods which are generally spoken of in a sort of casual way, which really deserve much more extended mention. The most noteworthy of these is, perhaps, rock or hard maple, which is one of the most widely diffused woods on the continent, and in humble ways has at all times been of great value to the country. The casual reader would probably get the impression that the principle, if not the only, use of this wood is for flooring. But great as its use for this purpose, and valuable as it thus is to the building world, there are other uses where its value is many fold greater.

Go into any great carriage, wagon or agricultural-implement factory and something can be learned of these uses. Many times more millions of feet of hard maple are used thus than for flooring, great and important as is that trade. The ordinary heavy wagon and agricultural-implement builder would hardly know what to do without this valuable but unpretending wood. But the greatest consumers of hard maple are the chair and furniture makers. In these lines of manufacture it may truly be said to be the poor man's friend.

For actually low-priced, substantial, honestly made, fairly good-looking goods, there is no wood that grows that can take its place. Again it is worth repeating, in the furnishing of the poor man's home, there has nothing yet been found to take its place; it is the poor man's household friend. Flooring takes millions of feet of the honest old tree, but the workman's furniture and household utensils, his tool handles and the like, take billions. Of this amount it must not be forgotten that household utensils consume a large quantity, and what a long list of them, all most useful articles, the housewife can make.

In addition to these, it would probably surprise the public to know how many pairs of wooden shoes are annually made from hard maple, even in the United States. Then there are shoe lasts and boot trees, and a lot of other things for similar use.

Maple has been called an honest wood, and so it is for a fact, for there is no other wood which takes so unkindly to all attempts to stain it or disguise it as some other more showy species. Do what you will it shows up last for just what it is, honest old rock maple.—Hardwood.

THE NEWS.

—Cameron's mill at Hawkesbury, Ont., was recently gutted by fire.

—The Booth lumber mills, recently destroyed, at Burlington, Ont., are to be rebuilt.

—A saw mill is being erected by Mr. E. G. Lavalle at Notre Dame des Anges, Que.

—The Burrard Inlet Red Cedar Lumber Co. have opened a lumber yard at Oak Bay, B. C.

—An electric light plant has been installed in Graham, Horne & Co.'s mill at Fort William, Ont.

—Considerable damage was done recently by the breaking of a band saw in Howry & Son's mill at Fenelon Falls, Ont.

—Joseph Shurr's planing mill and shop at the village of Kohler, were destroyed by fire recently. Loss, \$5,000; no insurance.

—The destruction of Barnes' mill at Cockport, N. B., together with 150,000 feet of deals and boards, is reported. No insurance.

—Considerable damage resulted in Train's mill at Burke's Falls recently, due to the sawyer reversing the carriage before the saw had passed through the log.

—The Rapid City Spectator states that Mr. E. F. Stevenson, Crown Timber Inspector, recently visited that place to seize all spruce timber in sight for non-payment of dues.

—J. G. McIntosh, and G. A. Edwards, of Carleton Place, and Henry Gillies, of Braeside, passed the recent cullers' examination at Ottawa, for the Province of Quebec.

—The Gillies mill at Braeside, the largest in the Ottawa Valley, has started up with a new engine of 1,600 h. p. capacity, and two new band saws in addition to its former equipment.

—The Dominion Export Co., comprising American and Canadian capitalists, with headquarters at Montreal, has been organized to work three million acres of timber land in Nova Scotia. The capital of the company is \$5,250,000.

—Mr. Geo. Cushing is reported to have sold his interest in the firm of A. Cushing & Co., St. John, N. B., to his partners, Allston and Richmond Cushing, who will proceed at once to re-erect a new mill on the site of the one recently burned.

—On 25th of May last Mr. Malcolm McKinnon, of South Falls, Muskoka, cut in the shingle mill of Mr. Geo. Kielty, with a Gravenhurst Boss machine, 76,000 shingles in 10½ hours run (this time includes all stoppages during the day). He would like to hear from other shingle sawyers as to their ability and if they can beat this cut.

—Before the Grand Trunk acquired the Northern Railway, all the forest produce from Huntsville and Gravenhurst was sent over that line to Toronto and there distributed to eastern and western points. Now all the square timber is shipped to Belleville; one crew brings the train to Lindsay, a run of 98 miles, where another crew is in waiting to take it on to its destination.

—The forest trees that grow in Manitoba are the maple, elm, oak, basswood, ash, birch, black and white poplar, spruce and tamarack; sometimes the willow becomes a tree but is more generally found a bush.

GATINEAU NEWS.

[Occasional Correspondence CANADA LUMBERMAN.]

A FEW small creeks are stuck; but the logs will not suffer any damage, as they will be in the water.

Mr. Charles Logue's fine raft of waney pine, made in 1893 and 1894, in the Kakabongo District, will be in Quebec in a few days. It will be put in shipping order at Cap Rouge, Quebec. The Quebec merchants who are in the market purchasing waney logs, will do well to inspect this raft. We have no doubt Mr. Logue will get a good figure for his timber. Mr. Logue has another raft of waney pine on its way down the Jean de Terre river made in 1894 and 1895, which he expects to get out this season, although the drive from Kakabongo is a very long one. There are years when no trouble exists to bring the timber down to the Gatineau boom in one season. This is the only timber for Quebec market from the Gatineau river.

Mr. Edwards' Upper Gatineau drive is finished.

Messrs. Gilmour & Hughson Co., Ltd., are very well pleased with their new investment, the steamer Baskatong (alligator boat), for towing logs on the Baskatong lake.

Although a great scarcity of water the drives have been fairly well handled this year.

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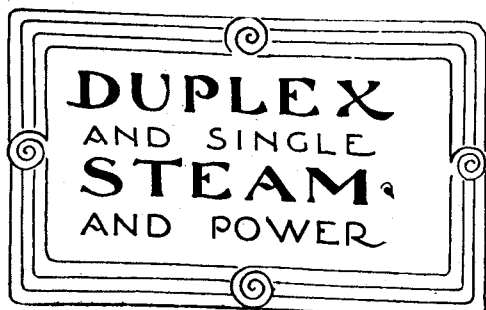
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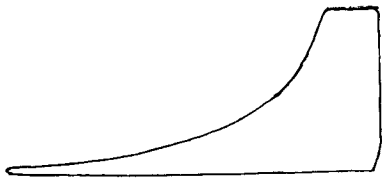
SOLE AGENTS FOR PROVINCE OF QUEBEC.

QUESTIONS AND ANSWERS.

"Constant Reader" writes: 1. What is the loss of pressure in a 3-inch pipe, 100 feet long, at 100 lbs. pressure per square inch, supplying steam to an engine doing 50 horse power? 2. What would be the loss in the same pipe supposing there were four elbows and two globe valves in it.

ANSWER: 1. Loss of pressure in steam pipes is due to three causes: (a) The pressure required merely to overcome friction in the pipe. (b) The pressure required to produce the required discharge of steam through a pipe of given diameter. (c) That loss of pressure which is due to the difference in temperature of the steam at opposite ends of a long pipe, caused by radiation of the heated pipe surface into the surrounding atmosphere. With the data given, the combined losses of pressure due to the two first causes will be, with a straight pipe, about one-third of a pound per square inch; the globe valves will make no difference practically; the entire drop due to friction of pipes and bends and velocity through same would be one-half a pound per square inch. The drop due to difference in temperature is likely to be more appreciable, but with the data given it is not possible to more than approximate to it. Assuming 100 lbs. pressure at boiler; 100 feet of 3-inch pipe, bare pipes, and an atmospheric temperature of 60°—there would be a difference of temperature of about 10° Fahr., corresponding to a loss of pressure of about 15 lbs. per square inch. What the actual drop is, depends on the material with which the pipe is covered, and upon the actual temperature of the outside air.

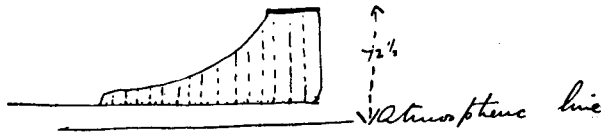
"Fireman" writes: Please explain to me how to find the mean pressure on this card, also what horse power is the engine if the card on the other end is the same.



Steam, 72 1/2; revolutions, 94; spring, 40; cylinders, 13" x 30".

ANSWER.—The mean steam pressure of an indicator card can best be found by running a planimeter round the card. If you have not such an instrument, then

divide up the horizontal line representing the length of the stroke, into a considerable number of equal parts; draw from each point of division a vertical line cutting the steam line. Then add the lengths of the verticals between the stroke line and the steam line together, and divide by the number of division. To this result



add the vertical distance between the stroke line and the atmospheric line (which you have not shown), and the figure you get will represent mean pressure in lbs.

A MODERN SAW MILL.

IN the old-fashioned saw mill each man worked for all he was worth, wrestled with logs and packed lumber out of the mill. Things are somewhat different to-day; in setting up a mill the machinery should be so arranged that the log is not touched by the man's hand after it enters the mill. It is rolled, carried and handled entirely by machinery; and after being cut into boards, dimension stuff or timber, it is automatically carried out of the mill and separated into lengths, widths, and thicknesses each side being put by itself outside the mill. Success or failure in the lumber milling business depends largely upon this point; it is then in order to arrange the mill so that it will be as nearly automatic as possible.

THE Argentine capay tree furnishes a richly veined and very fragrant wood, fitted for cabinet purposes.

IN the forests of Paraguay and Misiones is found the famous evergreen tree, *Ilex paraguayensis*, which produces the yerba-mate, the general beverage of the natives, the duty on which affords the national revenue of Paraguay, the government having the exclusive monopoly of the trade.

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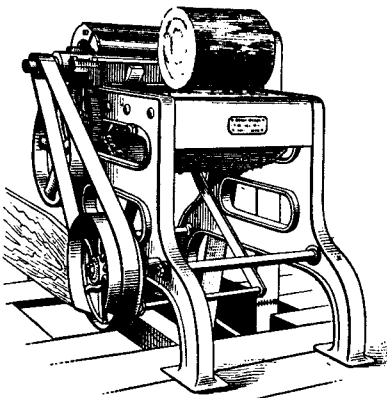
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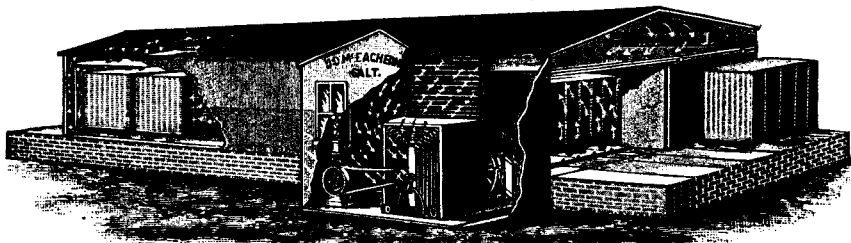
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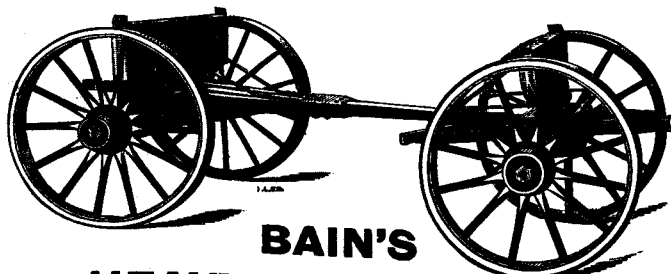
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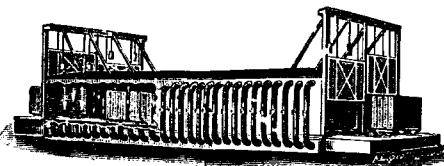
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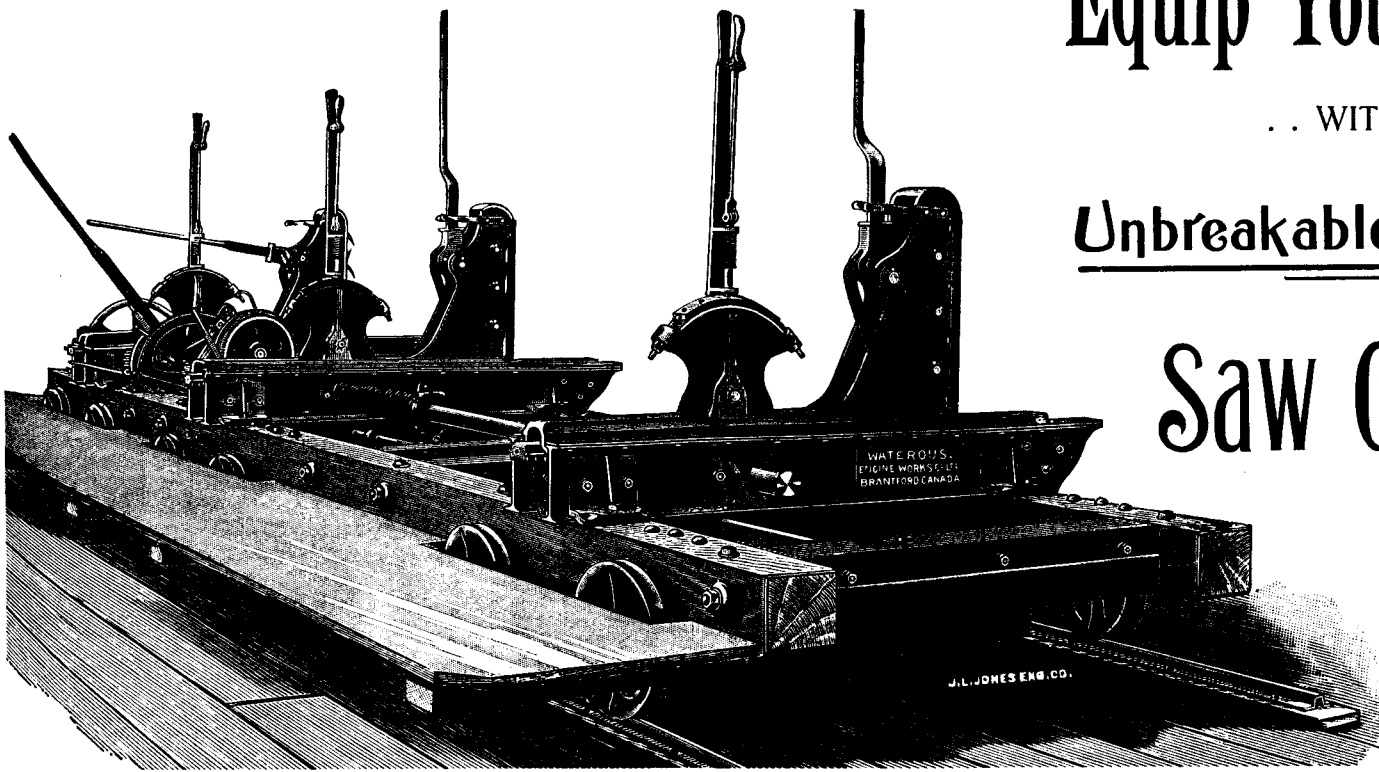
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Burk's Falls, Ont., April 19th, 1895.

THE WATEROUS ENGINE CO., (Ltd.), Brantford, Ont.

Gentlemen,—We have now tried the No. 3 Allis Band purchased from you. It has been running for the last eight days, and is giving us good satisfaction. It don't seem to take any more power than the circular saw did. We are sawing Birch, and there is quite a lot of frost in it, but it is making splendid work. We have not broken a saw so far.

The trial that we have given the mill is sufficient, and we accept the mill as per our agreement with you. We will have much pleasure in recommending the mill to anyone who may contemplate putting in a band.

Yours very truly, T. G. S. TRAIN.

MR. TRAIN USES WATER POWER

Two More No. 3 Bands Just Started

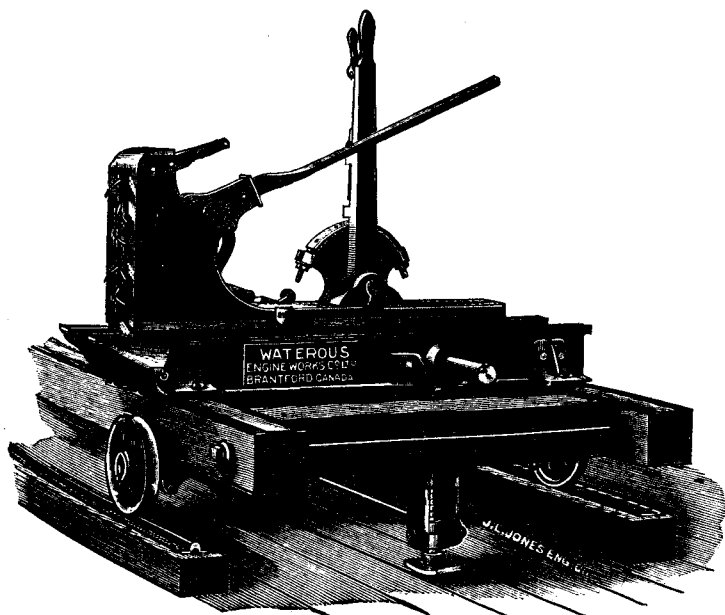
Ottawa, May 10th, 1895.

The Waterous Engine Co.,
Brantford, Ont.

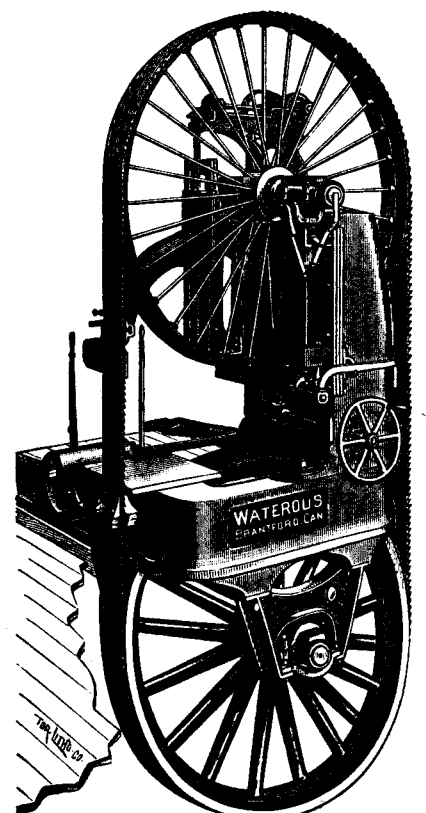
Gentlemen,—This is to let you know that your Mr. Grant has been here since Thursday last, and has hammered and put in order all the saws, except one, that we have here.

We have much pleasure in stating that so far both the mills and the saws on them have given us the best of satisfaction, and if they continue to do as well as they have done, the few days we have been running them, we will be very well satisfied indeed.

Yours truly,
WM. MASON & SONS.



No. 4 A—Front View—Opens 36 in. from Saw; 6 in. Steel Girders; 10 in. Steel Wheels; Cut Steel Rack and Pinions.



LEFT HAND FRONT VIEW, ALLIS BAND.

If You Change to a Band, Make no Mistake

●—PUT IN AN ALLIS—●

The Most Popular Mill Built.

WE BUILD

Steam Feeds, Steam Niggers, Steam Log Unloaders, Steam Log Rollers, Steam Cut-Off Saws, Heavy Edgers, Trimmers, Stave Sawing Machinery, Conveyor and Haul-Up Chains.

CORRESPONDENCE SOLICITED

Waterous, Brantford, Canada

J. W. MAITLAND—H. RIXON

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MAITLAND, RIXON & CO.

OWEN SOUND, ONT.

Saw Millers and Lumber Dealers

All kinds of Building Material kept in stock

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

Quotations furnished on application

GALT MACHINE KNIFE WORKS



MACHINE KNIVES

OF EVERY DESCRIPTION FOR

Planing, Moulding and Stave Cutting

Send for Price List

PETER HAY, GALT, ONT.

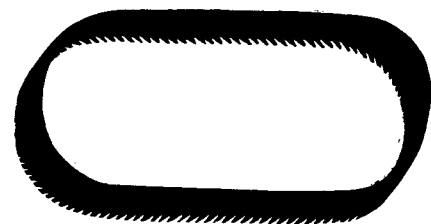
WHY BAND SAWS BREAK

SIXTEEN

REASONS,

AND HOW TO

AVOID THEM

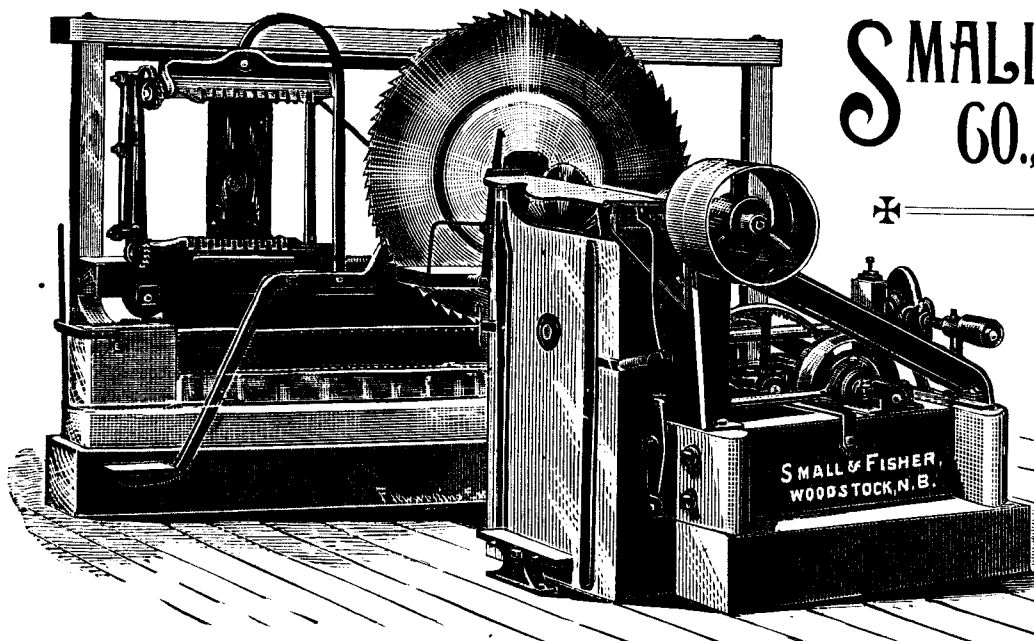


Being instructions to filers on the care of large band saw blades used in the manufacture of lumber.

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

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

Address— CANADA LUMBERMAN, Toronto, Ont.



SMALL & FISHER GO., Ltd.

Woodstock, N. B.

Patent Shingle Machine

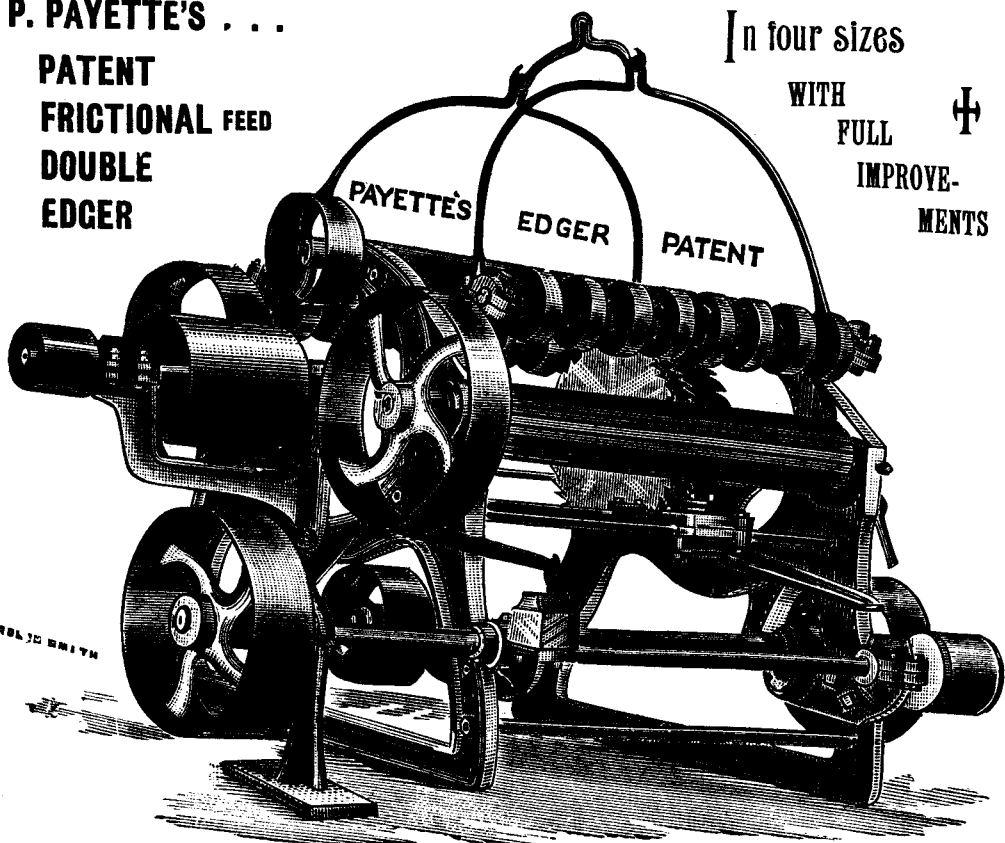


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PATENT FRICTIONAL FEED DOUBLE EDGER

In four sizes

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MANUFACTURERS OF

Saw Mill Machinery

- Circular Saw Rigs, Light and Heavy Wood or Iron Frames.
- Rope and Chain Feed for Saw Carriages.
- Live Rollers, Wood or Iron.
- Log Canters, Light and Heavy.
- Double Edgers, Friction and Direct Feed.
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- Butting Tables.
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- " " Jack-Ladder.
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- " " Pumps.
- " " Making Matches.
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