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CHARACTER SKETCH.

ALEXANDER McARTHUR.

"He put his conscience into every stone that he laid."—Hugh Miller.

WHAT the celebrated Scottish stone-mason and man of much learning—Hugh Miller—said of a certain individual in his own line of trade could well have been said of the late Alexander McArthur, president of the McArthur Bros. Co., Ltd. The deceased had reached a high degree of success in the business he followed, and he owed this largely to the fact that into everything he undertook he put conscience. Quiet and unassuming to all outward appearance, Mr. McArthur was at the same time a tireless worker, a man of indomitable will and wonderful energy. The great business he built up owes its pre-eminent position of to-day to the fact that these elements played a foremost part in his career.

Alexander McArthur was born at Williamstown, in the county of Glengarry, on 11th of April, 1839, and was, therefore, in his 54th year when death so suddenly overtook him a few weeks ago. He came of a typical Scotch-Canadian family. Glengarry, though separated far by distance from the native hills of Scotland, yet, so thoroughly reflects Scottish sentiment and character, that the man who is born there and lives there for any length of time is quickly impregnated with the characteristics common to the Scottish race. The Scottish quality of endurance, and working out a fixed plan determinedly, was a strong element in the character of Mr. McArthur.

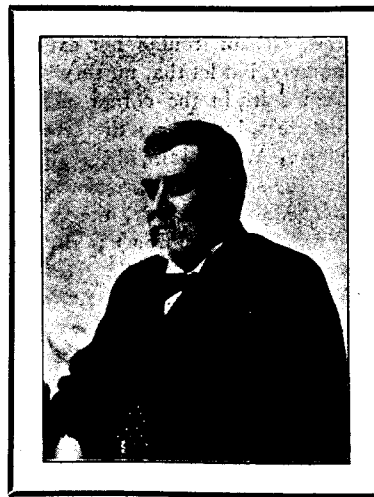
When about 24 years of age Mr. McArthur removed from his eastern home to Toronto, and continuously during these 30 years he remained one of the most respected residents of the city of his adoption. Lumbering was his business, and he gave to it his best thought and energy. He showed himself possessed of large business foresight, and he had not been engaged many years in the lumber trades before he realized that, if not then, at least, not far distant in the future, timber would be an asset that would bring a large return to any man who owned it. The McArthur Bros. Co. have always been owners of extensive timber limits and out of these they have made a great deal of money. For many years they have given particular attention to the British trade in lumber, and their principle operations to-day are in the United Kingdom. At Gracechurch st., London, Eng., they have had a permanent office for some years under capable management. They are also large operators in other parts of the United Kingdom. Among Michigan lumbermen the firm of McArthur Bros. has for years been well known, and Mr. Peter McArthur, a member of the company, has for 20 years been a resident of that State, at present making his home in Detroit.

In a business sense Mr. McArthur always recognized the value of a good name. He was careful to carry this himself in person. He was equally exacting in seeing that a good name should be attached to all his transactions, and the stamp of A in a circle when seen on a piece of Canadian timber was one of the best recommendations that could be given of the quality of that timber, for the McArthur Bros. Co. would place their name on nothing that was not reliable.

The Marquis de Spinola asking Sir Horace Vere what his brother died of, Sir Horace replied, "He died, sir, of having nothing to do." "Alas," said Spinola, "that is enough to kill any general of us all." The writer, speaking of Mr. McArthur to a lumber friend a short time after his death, remarked on the faculty deceased had for work. "Practically he was at his desk up to the last," was the response. Of course, he died away from home, whither he had gone to seek health, impaired somewhat, as a result of close application to business,

but when at home he was ever at it, and always at it. Naturally he was a man of strong and vigorous physique and of active habits, and could have had little thought that his end was so near.

Being a limited liability company the death of its late president will make no difference in the management and plans of the McArthur Bros. Co. Mr. Peter McArthur, of Detroit, succeeds his brother as president of the company, and Toronto continues the headquarters, with branches in Montreal, Quebec, Detroit, London, Eng., and elsewhere in the United Kingdom, all under capable management. Besides the brother Peter, the deceased leaves behind him an elder brother, Mr. Archibald McArthur, who still resides at the old homestead in Glengarry county, and there conducts a sawmill business. Another brother is Dr. R. D. McArthur, a successful physician of Chicago. Of his own family there remains a widow and five children, of whom, quoting the words of Timber, "In later years they will never want friends while Mr. McArthur is remembered, and will have the



THE LATE ALEXANDER McARTHUR.

inheritance of a name unblemished and unquestioned business integrity and fair dealing."

Mr. McArthur was interested, to no small extent, in mining operations in Canada, and here, as in everything that he touched, success met him.

GETTING OUT TEAKWOOD LOGS.

WE take the following information in regard to the teak industry in Siam from a paper read before the Indian Section of Arts by Mr. Charles Stuart Leckie, who for the last fifteen years has been a resident of Siam in the interest of the Borneo Company. Mr. Leckie says: When we come to the next important industry of Siam, the teak trade, we have a trade almost entirely British. In the northern towns of Chiangmai and Lakon one meets with British houses established in business, directing the working of the teak forests; one meets with British Burmans and Shans in numbers working the forest contracts, and when the teak has been passed down to Bangkok you find three steam mills belonging to British firms, and only one worked by a Chinese-Siamese firm. There are four smaller establishments with some machinery—one an Anglo-French firm, another Austrian-French, a Dutch and an Italian—but those four firms together do but a very small import business. In these mills you again find only British machinery. As the export of teak from Siam is almost entirely confined to Europe (the cargoes being sold through London), or Bombay or Hongkong, one may speak of the teak trade of Siam as a British trade,

carried on by British capital and British management. London merchants have put down large sums of money in the north of Siam in this teak industry, for the business entails the employment of a large capital. There are no German or French firms connected with the northern teak forest works.

Ten years ago the British trade in teak was confined to the Bangkok district, and the only means open to the Bangkok merchants of securing teak was by buying rafts of rough timber from the natives as they reached Bangkok, or by buying hand-sawn squared teak from the Chinese hand-sawyers in Bangkok. Nowadays the British firms work the wood themselves out of the forests, and pass it down the rivers to their Bangkok mills.

A teak forest is generally supposed to be something entirely different from what it actually is. One can go up the bed of a stream flowing into one of the northern rivers, and you may walk miles without seeing a single teak tree. You meet with paddy-fields, dense jungle, open jungle, mountain gorges, splendid scenery, but the thing you meet with seldom enough, when looking for it keenly, is a teak tree. The teak grows here and there on the sides of the hills which spread for miles from the stream, and although in places it grows in rich patches, it was never my fortune to get into a really rich patch.

The method of the work is tedious. A forester sends his elephants, in care of their mahouts, into the forest, for which his employers have a lease from the government or the working rights from the holder of the lease, and drags, during the rainy season, as many logs as his elephants can manage to the bank of the stream. It is quite a usual thing for the teak to be dragged four or five miles to the stream, and it is a good forest which can show a record of fifty logs being worked by one elephant in one season.

After passing through the rapids, which descend to the lowlands extending from the sea to the foot of the northern plateaus, the wood is caught by rafters and tied up into rafts of one hundred and fifty on the Me Ping, or one hundred logs in the Eastern River, and sent on down the four hundred miles or so to Bangkok in care of the rafters. The rafting waters are from June to November. The work is slow, for the average time used in delivering a teak tree into Bangkok from its stump where it was felled is about three years, although the distance actually covered is not over six hundred miles.

The Burmese and Shan foresters who work for the British firms are all British subjects, and, as the trade is carried on for the most part through them, the teak trade in the forests is really a British trade. The owners of the forest leases, with but few exceptions, are the Laos chiefs and princes, who receive a royalty on every log worked out of a forest, and the government collects a second duty before the wood enters Bangkok. The labor is mostly supplied by the native hill tribes, Kamouks and Kariengs. Kamouks come to teak workings from across the Mekong, and, as they are now being cared for by the paternal government of France, it is possible our labor problem in the teak forests may become difficult.

The annual export of teak from Siam to Europe, Bombay and Hongkong is likely to increase as the northern forest work gets better organized and the elephant force employed increases. The annual supply of rough logs into Bangkok is so entirely dependent on the rainfall for the year that there must always be the great variation in quantity shown by the export lists of the past six or eight years.

Timber, London, Eng. "Pitch pine timber has perhaps never been sold at such low figures. The prevailing spot prices have effectually stopped all c. i. f. transactions."

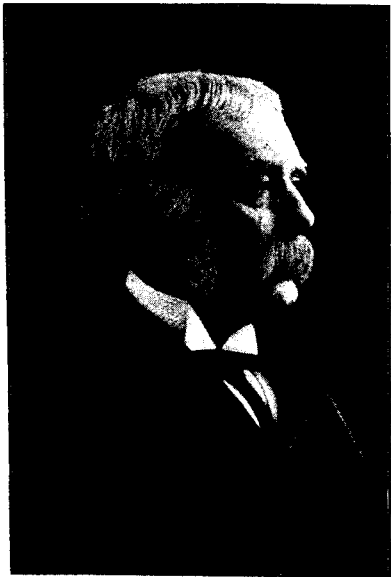
VALUE OF FOREST TREES.

BY THEIR REPRODUCTION AND CARE.

A LECTURE of much importance to the people of Canada was delivered by Mr. H. G. Joly de Lothbiniere in the Someville course, in the Natural History Society's building, Montreal, Que., a fortnight ago, the subject being: "The Value of Forest Trees, Individually and Collectively."

Hon. J. K. Ward, one of the best known lumbermen of Quebec, and himself a careful student of forestry, occupied the chair.

The Chairman in introducing Mr. Joly, said: "I deem it an honor to have this opportunity of introducing a gentleman whose name and character are as familiar as household words to all of Canada, and far beyond it, not only for his public services, but as a scientist in the



MR. H. G. JOLY DE LOTHBINIERE.

art of arboriculture and forestry. It would be folly on my part to attempt to eulogize one so able and willing to tell us how the woods indigenous to our country can be propagated, conserved and made to beautify the land. He can also tell us the commercial value of the product of the forest, how it supplies the material that furnishes employment to a great number of men, representing a large population, and making up the greatest industry in our country, except agriculture; how the lumberman with his axe carves his way into the woods, making his road as he goes along, building his shanty and stables, cutting down the giants of the forest to be converted into timber and sawlogs, hauling them to the lakes and streams, down which they are floated in the spring, followed by the hardy driver, cant-dog in hand, until they reach the mills, where they are made into boards, planks and deals; then the artisans, mechanics and laborers, who build and man the mills, steamboats, ships and barges, to freight all this material to its many points of distribution, to the hundreds of workshops where it is manipulated into every conceivable article from a piano frame to the tiny match. Then as to the utility of the forest, though it may not attract the rain or influence its downfall, there can be no doubt as to its regulating the flowing of the waters by holding them back in the glades and swamps, sheltering the land from the fierce rays of the sun, preventing evaporation to a great extent, and thus equalizing the flow of water, preventing oftentimes damaging floods and dried-up streams."

THE LECTURE.

As to the value of forest trees individually, Mr. Joly said, timber for use as fuel, and for the construction of houses, ships, etc., could easily be replaced by coal and iron, but nothing could displace the forests for the laying up and dispensing gradually the store of water necessary to the fertility of the land, upon which depended the life of nations. Many instances, he said, had been found on the old continent of the fatal results following the destruction of the forest, once fertile land, being transformed into wildernesses.

In Algeria, Southern France, Colorado, Idaho and the West, Mr. Joly continued, forests have been planted more for the sake of water and irrigation than for the timber they will yield. The forest acts as a screen

against the drying winds, which suck the moisture of the land. It is even claimed that they increase the rainfall. Their temperature being lower than that of the open country, it is said that they cause the vapor in suspension to condense and descend in the form of rain.

How are we provided with forest trees in our old settlements? Many lands have been denuded of their natural forests, and the scarcity is now seriously felt by the farmers.

There is a very simple remedy: plant trees. It is not easy to procure young forest trees, worth planting. The trees raised in the nurseries can generally be relied upon, and they are sold at moderate prices, but, owing to distance, want of easy communications, delays in forwarding and delivering (which are often cause that the trees, when received, are unfit for planting) and to the cost, however moderate, it is very seldom that the farmers have recourse to the nurseryman for the forest trees they intend planting (I do not allude, here, to fruit trees).

They generally go to the woods for them, often a distance of several miles. Those who have tried it know how hard it is to find such trees as they want, how much time and trouble it takes to dig them up, and how impossible it is, even with the greatest care, to avoid wounding and tearing off the roots. They know, too, how little satisfaction they have generally derived from all that work. Trees taken out of the forest and transplanted on the open are placed at a great disadvantage; they fail so often that people get discouraged, and many give up tree planting, as too difficult an undertaking.

Nothing is easier; in the proper season, with soil fit to grow the kind of tree you wish to plant, if the tree is in good order, with a little care you ought to succeed. But the trees you dig out of the woods are seldom in good order, and they cost you a high price in time, if not in money. If you wish for good trees, in great number, safe to grow, without trouble nor expense, procure them from a nursery, but let that nursery be your own.

Any farmer can start, in the corner of his garden, a nursery of forest trees, by sowing the seeds of the trees he wishes to plant. With a little observation, it is easy to find out when the seed is ripe; for instance, towards the end of June, beginning of July, the seed of the elm and of the soft maple (*acer rubrum*) is ripe; by sowing it at once it will sprout and the little trees grow nearly one foot in height this summer.

The maple, oak, ash, birch, butternut, &c., ripen their seed in autumn; better sow it at once than winter it in the house. Sow in straight rows, with a garden line, leaving a picket at each end to guide you when weeding. Sow, say half an inch deep, for the maple seed, and for other kinds, in proportion to the size of the seed, two or three inches deep, for butternut and walnut. Thin after the first year, if needed, and transplant further on the little trees removed in thinning. After three or four years, more or less, (the time will depend on the rate of growth of each kind of tree) plant your young trees where they are destined to stay. In our cold climate it has been established beyond a doubt that the spring is the proper season for planting. It is always a great trial for a tree to be transplanted, but much less so in the spring, when everything is in its favor, than in the fall, when everything is against it. Choose a cloudy or rainy day in the spring, and, without leaving home, with no trouble, without breaking any roots, you will take up and plant at once, without allowing the roots time to dry, one hundred young trees, certain to grow in less time than it would take you to go the woods and dig up ten trees, with a poor chance of their taking root and living.

These young trees will cost you nothing; your children will soon learn how to weed and take care of them, especially if you set them the example. Our own children when quite young, took pleasure in sowing acorns and watching the growth of the young oaks as they came up. By sowing, you can procure, with no expense, any number of young trees, and rewood, by degrees, all the land which is not fit for cultivation and ought to have been kept as wood land.

There is a general prejudice against growing forest trees from seed; people think it takes too long. It is a great mistake, as will be found on trial. Here Mr. Joly showed samples of black walnut, soft maple, oak and elm, grown by him from seed; these samples con-

sisting of trees one year, two years and three years old, showing the great progress of growth from one year to the next.

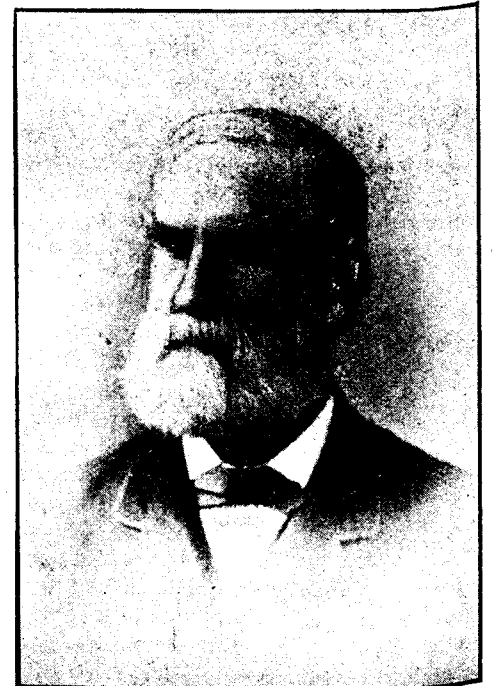
But, do not forget to fence carefully your nursery and your plantations, so as to keep out the cattle. No use planting trees without fences, the cattle will destroy everything.

In many cases nature will spare you the trouble of sowing where the ground is favorable, in July and August, along the ditches, the roads, the fences, on the moss on barren patches; wherever there is a little dampness in the neighborhood of the elms and soft maples, you will find hundreds of young elms and maples, just sprung from the seed fallen from those trees; plant them in your nursery; try it this summer; the seed of the elm is so minute and delicate that it is better to pick up those young seedlings than to attempt sowing the seed.

In the maple groves the ground is covered with a regular carpet of young maple seedlings. You can pull them up easily by hand in the fall or early spring, when the ground is still damp, without breaking any of the small roots. Plant them at once in your nursery.

It is very difficult to collect pine and spruce seed. Early in the spring, when the ground is still soft and spongy, in the pastures, near where those trees grow, you will see a number of young pines and spruces that you can pull up very easily; plant them at once, for that kind of tree you must shelter them from the sun until they are well rooted.

Whenever the ground of a garden has been dug up and worked in the fall, if there are any maple or ash growing in the neighborhood, it will be noticed that the ground, in the spring, is more or less covered with maple



HON. J. K. WARD.

and ash seedlings, grown from the seeds fallen from those trees. It takes a very little time to pull up and replant hundreds of them, and scarcely any of these will fail. Of course they must not be pulled up too roughly or it may damage the delicate roots; if the ground is too hard, use a trowel. As much as practicable, they ought to be pulled up when they have only got their two first leaves, which are easily known by their peculiar shape, long and narrow, from one inch and a half to two inches long and about a quarter of an inch wide.

For several years past I have been seeking the cheapest and, at the same time, most effective mode of restoring the woods, where they have been destroyed. Many of our old settlements are completely denuded of trees, and I can recommend this simple mode as the best, from my personal experience. Let those who suffer for the want of fuel, of timber for building, of trees for shelter and ornament; and those who would look to have a sugar maple grove at their door; let them start their own nurseries this very next summer. It will entail no expenditure of money, take but very little time and repay them bountifully.

Mr. Joly, continuing, alluded to the number of black

walnuts (over ten thousand) sown in the district of Montreal within the last two years. He based his calculation on the number of bushels imported by Mr. Wm. Evans, seedsman, of Montreal, who has taken much interest in the matter. Mr. Joly said he felt a sense of responsibility toward those who had made the experiment at his request, and would tell them all he had learned on the subject by eighteen years personal experience. He showed samples of black walnut fifteen years old, for which he had been awarded a medal at the Chicago Columbian Exposition. Though he had not yet received that medal, the mere fact that our black walnut was so much appreciated by competent foreign judges ought to be an encouragement for us. Those trees had begun to yield nuts when twelve years old, and he showed young trees grown from these nuts, one, two and three years old, of a fine vigorous growth.

Then he came to the difficulty experienced in transplanting the black walnut, owing principally to the great length and depth of the tap root; showed several samples illustrating the way in which the natural downward direction of the tap root could be altered, by placing a flat stone or other obstacle under the nut when sown, so as to send the tap root horizontally near the surface, instead of letting it run down perpendicularly to a great depth. He preferred, however, cutting the tap root about ten inches or a foot under ground, with a good neat cut, removing every wounded part of the smaller roots, and he exhibited several samples, showing how rapidly a number of new roots had formed all around the end of the old root when that end had been carefully trimmed. He then alluded to the fact that the head of the black walnut very often dried up after transplanting, but this was no loss, as, by allowing one of the buds lower down on the stem to develop itself, and removing the next year the dead wood above it, one secured a fine straight leader; in fact, he often removed the head when growing, if he was not satisfied with the shape, thereby improving the tree.

Of course, it was better to avoid transplanting the black walnut, by sowing the nut at once where the tree was destined to grow, but for a large plantation that was not always practicable, as it required the previous preparation of a large extent of ground, and much more trouble in weeding and looking after a number of little seedlings scattered over that extensive ground than if the same number of seedlings had been growing close to one another on the limited surface of the seed bed. Furthermore, as only a certain portion of the nuts sprouted, one could not rely on a regular plantation, when sowing them at once where they were meant to remain. It would be a good precaution in the latter case to sow three or four nuts in each hole. Beware of squirrels; they are very fond of the nuts and are guided by a wonderful instinct in looking for them in the ground. They never make a mistake, do not fumble to the right or left, but go straight to the spot where the nut is hidden in the ground.

As the burl, that part of the tree which is found underground, is of the greatest value, selling by the pound weight when cut up in thin strips for veneering, it is a question whether transplanting, though not affecting the ultimate success of the remainder of the tree, may not interfere with the full development of the burl. Time will show. He drew attention to the beautiful tracings and patterns on the burls of the black walnuts he had exhibited at Chicago.

As for the severe cold of our Canadian winter, Mr. Joly's experience tends to show that it affects those parts of the black walnut, the roots, which one would think safely sheltered under ground, much more seriously than the stem and branches, which stand out boldly and with no protection, exposed to the icy breath of the north winds. As the black walnut grows very rapidly, sometimes it does not mature the whole of the summer's growth, and a few inches at the end of the new branches may get burnt by the frost, but the damage is scarcely noticeable.

On the other side, one look at the tap root, which is much thicker than the stem, shows how soft and spongy its composition is when young, and how much water it can absorb and retain. In exposed places, where the wind sweeps away the snow as it falls, and leaves the ground completely bare, the first great frosts congeal suddenly the water in the roots, and cause

them to expand and burst the bark that covers them, separating it completely from the roots and leaving them bare. This kills the young tree as assuredly as if the whole bark was stripped off the stem. It took some time before he could account for the death of many promising young trees, as he was looking for the cause above ground; the moment he looked under ground, and saw the roots stripped of their bark, the remedy suggested itself at once—to retain the snow as it fell at the foot of the trees, by preventing the wind from sweeping it away. Either a fence or hedge or some stones, or any other obstacle answers the purpose equally as well. Since then he has not lost any walnut trees from that cause.

The last point was the care of trees after planting them. In the open, along the roads, avenues, and in isolated groups, all trees, except fir trees, grown solely for ornamental purposes, require pruning. Planted in close order and in large numbers, after a few years' growth they prune themselves. Mr. Joly alluded to the careless habit of pruning observable in so many places, the leaving of stumps too long to be covered by the growing bark before they began to rot. He illustrated his meaning with samples, showing the inevitable progress of decay from the time when a branch had been removed, leaving a stump, until that stump began to decay; then he showed that decay, penetrating gradually into the stem, reaching the heart and finally killing the tree.

Close pruning was the only safe pruning. He showed eight samples of good pruning: In the first the branch (a large one several inches in diameter) had been cut as close to the tree as it was possible to cut it; in the second, the bark was beginning to form like lips round the wound, and each successive sample showed the drawing closer and closer together of these lips, and the gradual healing of the wound until in the last it had completely disappeared. A ninth sample showed by a cross section of a wound so healed how thoroughly the tree had recovered from it.

In conclusion, Mr. Joly made a strong appeal to the present generation, asking them earnestly to repair the damage done to the forest by those who had preceded them, telling them that, if they did not all live long enough to enjoy the fruit of their labor, their reward would be in the feeling that if those who came after them would reap the benefit of their work, it would not be lost.

COMPRESSED WOOD.

THE enormous advance which has of late taken place in the price of some of the hardwoods required in various special branches of trade, says the English Mechanic, has directed attention to the possibility of producing some less expensive material as a substitute, and in one branch of trade this has been carried out with very successful results.

For the manufacture of loom shuttles boxwood has hitherto been very largely used, but the price of this description of wood has become almost prohibitive, and it has been found that by compression of cheaper classes of timber—teak being about the most suitable for this purpose—a substitute meeting all the requirements can be obtained.

For carrying out this purpose, Sir Joseph Whitworth & Co., of Manchester, have completed for Robert Pickles of Burnley, a powerful hydraulic press to be used in compressing timber for loom shuttles. This press consists of a strong cast-iron top and bottom, with four steel columns and steel cylinder, with a large ram. In the center of this ram is fitted a smaller ram, with a rectangular head, fitting into a die which is placed on the top of the large ram. The timber is put into this die, and a pressure of fourteen tons per square inch is applied. The pressure is then relieved, and the large ram descends. The top pressure block, which fits the die, is then removed, and the small ram rising pushes the timber out at the top of the die.

The timber so treated is made very dense and uniform, and so close-grained that it is capable of taking a very high finish. For the manufacture of shuttles it has been found as good as boxwood, and there is no doubt it might be applied to other branches of industry where expensive hardwoods have been used.

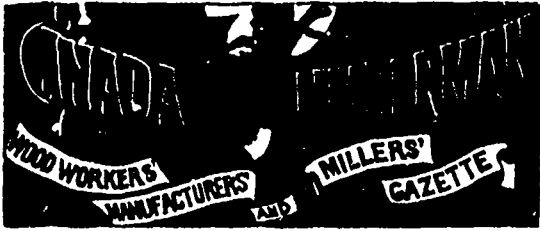
DRY ROT.

DRY rot is about the worst enemy timber has. In fact, if attacked by it, the fall of the wood is only a matter of time. The struggle may be long or short, but dry rot is always the victor. Every reader knows that, and if he be an owner—we do not say a builder—of property, he bears the acknowledged fact well in mind, and does everything he can to prevent it occurring. It does seem strange to say it, but dry rot is damp rot, and occurs only where there is damp. This may seem stranger still, since dry rot has been thought to occur in dry places. The places though were only apparently dry, or the wood was damp. What are the causes of this fell complaint? It may be due to the fact that a parasite has entered through a branch wound in the tree while standing in the forest, and continues to grow in the tree even after it is cut down, providing the wood contains a portion of its moisture; such wood will suffer from dry rot when used. Perfectly sound timber may be infected during the time it is lying in the forest, as, for instance, when peeled timber is in immediate contact with the ground. Every timber merchant knows that the bottom plank of a stack is often covered with the white fungus, a fact which illustrates the above point. Peeled timber piled upon supports and exposed to the air throughout, stands little chance of being affected. The germs of dry rot may be produced, though, in timber exposed to the heat of the sun. The wood cracks and the rain enters, carrying with it any spores (seeds) it may contain. The wood then swells and the cracks close, and decomposition enters upon its first stages. Thus timber merchants and others can not be too careful about piling logs, round or square, or timber and planks, and of protecting them from rain and heat, that is, provided they desire to have perfect timber. It is maintained by authorities who know much more upon the subject, that dry rot is also more likely to affect timber felled in summer, than timber cut in winter. Winter felling takes place in the lowlands (abroad) and in the less elevated mountains. In these districts the timber is chiefly removed from the forest by land, after it has lain with or without the bark. Such timber is either free from spores, or should it contain spores that have entered by cracks formed in the alburnum (sapwood) during drying, it is asserted that it afterwards remains dry, and therefore sound, because the spores are unable to germinate in dry wood. On all the higher mountains felling takes place in summer. The wood is peeled and piled on supports, and in winter is conveyed on the snow to the streams, and rafted in the spring. The timber cracks just after felling, and the spores enter. During floating, the logs are saturated and the cracks close. On reaching the saw mills, the logs are indifferently piled all together, and do not dry; while the summer weather is suitable for the germination of the spores; again the initial stages of dry rot commence. Red stripes in timber and brown-colored wood are sure signs that the stuff will suffer from dry rot when used.—Timber News, Liverpool, Eng.

SOME STRONG FOREIGN WOODS.

ONE of the strongest timbers in existence is said to be the Borneo ironwood, whose breaking strain is 1.52 that of English oak. It is of a dark brown color, turning to a deep red when seasoned, and becoming as black as ebony on long exposure. It neither swells nor shrinks under any degree of dryness or humidity. The white ant and teredo fail to perforate or destroy it. It weighs 80 pounds per square foot, that of lignum vitae 83 pounds, boxwood 88 pounds, ebony 74 pounds, and African oak 62 pounds. The Quebarcho wood in Argentina, is said to have extraordinary durability. Posts that have been in the ground one hundred and fifty years, in soil alternately sodden by tropical rains or parched by great heat, were found to be in sound condition. This wood is free from attacks by insects, does not decay and is not compressible, and weighs 78 pounds per cubic foot. These qualities make it a splendid material for railroad ties.

John Nicol, jr., Queensboro, Ont.: "I would not be without the CANADA LUMBERMAN for twice the price of it."



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—BY—

C. H. MORTIMER

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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 25 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.

THE SPRUCE SITUATION.

THE organization a month ago, at Boston, of the Northeastern Lumbermen's Association, has brought the matter of spruce prominently to the front. The purpose of the Association is to protect the spruce manufacturers of Maine and the Maritime Provinces by fixing prices that would leave to them a fairly profitable margin. The question that has been agitating the spruce market since that date is whether these prices can be maintained. It is a big jump from the figures that were obtained a year ago, and buyers do not take at all kindly to the increased rate, and are holding off making purchases, believing that the figures cannot stand.

Secretary James claims that a step of this kind has become necessary, because of the rapid depletion of the spruce forests. This has introduced a nice question of forestry, but those who do not hold with the Association view say that there is very little in this; it is simply allowed to serve as a very pretty background. As a matter of fact, it is claimed, there is no danger of the supply of spruce becoming exhausted for many years in the future. Whether this be so or not we shall not discuss at the present time. Suffice it to remark that the spruce forests are likely being denuded more rapidly than some people may anticipate, and the time will come when even Maine and the Maritime Provinces may find themselves in the same position in regard to spruce, as Michigan is to-day, so far as white pine is concerned. One thing is very sure, that the growth of the wood pulp industry will, in the future, make inroads into spruce, such as has not been experienced in the past, and if the Association will really make it an honest part of its work to help preserve the spruce forests, great good must be accomplished.

After all, this is a little aside from the question that is really agitating the spruce market. Will the Association accomplish its purpose, so far as an advance in prices is concerned? Rumors are flying thick and fast that even among its own members the price is being shaded, and it looks as though this shading is likely to continue, so that the actual market prices will rule lower

than those that have been given out by the Association. At the same time it is agreed by all sensible lumbermen that it cannot be a healthy thing for trade to let prices get down to \$10 and \$12 a frame, as was the case not long since. For manufacturers to sell at this figure is simply suicidal, and can have only one ending.

Canadian operators, it is alleged, are proving a thorn in the flesh to those who are within the ranks of the Association, it being freely stated that cargoes have been bought in Nova Scotia, to arrive in Boston as soon as the season opens, at \$11.50, and a further rumor says that Canadian stock has been even as low as \$11.

It is very certain that at present the trade is at sixes and sevens. The Association has an energetic and capable secretary in Mr. James, and is fighting vigorously for the policy that was outlined at the meeting in February. But lumber, unfortunately, for the best interests of the lumber business, is subject to the same conditions and contingencies as other lines of commerce. When men have notes to meet and are hard up, and stocks can be realized on at a certain figure, they are likely to let the stock go at a cut price, so that the money can be secured to meet their notes. Again an anxiety to do business is sufficiently great that, where dealers will give certain prices and nothing more, and trade continues, as it is just now, to move slowly, rather than do no business, sales will be made at a cut price. We do not say that this is a healthy condition of trade. Spruce manufacturers know just how strongly it worked against them a year ago. Other branches of lumbering are not without their experiences in this direction. But just at present we are simply stating history as it exists at the present time.

UNSATISFACTORY BUSINESS METHODS.

FRAUD is a strong word to use, though it is the best term to fitly express the actions of some men. There are frauds in the lumber business, and we have taken occasion several times to show how Canadian lumbermen are being defrauded by those engaged in the business, both in Canada and the United States. In making these exposures we have only been pursuing a plan that should be followed, it seems to us, by every class journal that desires to give honest protection to its readers.

It is the duty of a trade journal, however, to do something more than merely expose those who have proven themselves to be engaged deliberately in fraudulent practices. A method may be questionable and yet not be deserving of the term fraudulent, though plain people would be likely to speak of it in that way. We have before us at this time a letter from Mr. Fred Deutschmann, lumberman, Teeswater, Ont., making complaints against the methods adopted by Mr. Carl Gartner, of Hamburg, Germany, and London, Eng., in accounting for consignments of lumber that had been forwarded to him by lumbermen on this side of the Atlantic. If the statement, as given by our correspondent, is not open to any satisfactory explanation by Mr. Gartner, it is certainly one that reflects somewhat seriously on his business methods. These may be all right, but Mr. Fred. Deutschmann, who has had to pay the piper, naturally thinks them peculiarly wrong.

The charge made by Mr. Deutschmann is that in May, 1893, he sent a shipment of two car loads of maple plank to Mr. Carl Gartner. The shipment, he alleges, turned out to be No. 1 quality of lumber. This lumber he states was piled for nearly 18 months in sheds at London. Mr. Deutschmann says: "Mr. Gartner held out great inducements for my lumber before it was shipped, telling what he could realize for it in order to profit me, but to my sorrow I find now that no dependence could be placed on his flattering statements, as I realized 4 per cent. in all; 96 per cent. was lost." Mr. Gartner, seemingly, has the faculty of running up a bill of heavy charges. This Teeswater lumberman tells us that he had to pay a freight bill of \$274.04, and the piling of the lumber and insurance cost \$306.91, or a total of expenses of \$580.95. Aside from this he says, "It has been like pulling teeth to get even what little was supposed to be due me. By Mr. Gartner's own statement, in July, 1894, the last of my lumber was sold. In September I received a statement of it, pointing out several errors in his favor. On 25th of Nov. I received

payment for part of it from the manager of the storage sheds, Armstrong & Co. About a month later I received the balance from the same firm. Armstrong & Co. seem to own the Indian dock sheds, and Mr. Gartner is piling lumber for storage in those sheds. I think it is due to Canadian lumbermen that they should know what is likely to be the fate of their consignments when they are sent to Mr. Gartner."

This is a statement of facts told in Mr. Deutschmann's plain, blunt way. If the case has not been correctly stated, and it is but fair to say that we have as yet had presented to us only one side, we shall be glad to hear what Mr. Gartner has to say on the matter. It so happens that a case very similar to this one is recited in a late issue of the Timberman, of Chicago. A consignment of 15,000 sawed staves was made by Henry Dunkort, of Cincinnati, to Carl Gartner. Mr. Dunkort makes no complaint of the gross receipts for the consignment, but the items of expense, which absorb over four-fifths of the gross receipts, have given him serious concern. The details of the bill are given in full by the Timberman.

Mr. Dunkort's complaint is supplemented by some interesting comments from the editor of the Timberman, in his "Impressions formed in Foreign Lands," being notes of a trip that he made through Great Britain and the Continent a year ago. The Timberman says: "Mr. Gartner is a persistent worker and a very pleasant gentleman, as far as the social relations with himself go; but we are entirely justified in view of the unfortunate character of business transactions he has made in the past, and the relationship he is seeking to maintain with the lumbermen of America at present, in saying that this transaction (of Henry Dunkort) is only one of many that might be referred to at this time, as showing that the expenses of doing business with Mr. Gartner, and the delays incident to the sale of the property and the charges which necessarily follow the deposit of timber or lumber upon his so-called "American yard," are so high as to render it well-nigh impossible for the consigner to receive any adequate compensation for the timber, of whatever kind. Mr. Gartner has a wide acquaintanceship in Germany, and occasionally makes an excellent sale and a prompt one, and secures thereby for a shipper on this side adequate returns for his lumber for one or two shipments. Yet the very next shipment might meet adverse conditions, and as Mr. Gartner has little or no means with which to wield a business of the character he is assuming to handle, and is sure to make a full and complete list of charges for whatever he does, and has the stock in his possession up to the time he sells it and gets the money for it, the results of such a transaction leave him no chance for personal loss. The shipper himself stands all the brunt of depreciation in value of stock, and, when finally sold, accepts what is left after the long list of charges made up by Mr. Gartner has been satisfied."

BRITISH COLUMBIA RED CEDAR.

IN the presentation, before the Board of General Appraisers at New York, of the claims of the British Columbia red cedar lumbermen, asking for a reversal of the order exacting 25 per cent. duty on red cedar going into the United States, some interesting facts bearing on the character of this wood were produced. Because red cedar was ranked as a cabinet wood the 25 per cent. duty was enacted. The Board of Appraisers admitted, if it had been classified wrongly, and it was proven that red cedar belonged really to the softer woods, then their duty in the premises was clear. The question, in a word, was a botanical one, and the services of those who could speak with authority on these matters were brought in.

Paragraph 676, tariff act of 1894, of the United States Congress, provides for the free importation of "sawed boards, plank deals and other lumber, rough or dressed, except cedar, lignum vitae, lancewood, ebony box, granddilla, mahogany, rosewood and all other cabinet woods." The botanical testimony in the case is very clear. The British Columbia lumber on which this 25 per cent. duty has been exacted is manufactured from the "Arbor Vitae—Thuya Gigantæ—trees, and is the same species of trees as are described in the Condensed American

Cyclopaedia under the head of "Arbor Vitae"—*T. Gigantea*—"found west of the Rocky Mountains, and attains a height of 100 to 200 feet." The same authority says under the head of "Cedar": "No true cedars are native of North America. The tree called red cedar is a juniper, while the term white cedar is applied at the east to a cypress and at the west to an arbor vitae. The 10th census report of the United States, the volume of forest trees, was brought into service to bear testimony on the matter. There, it is stated: "The *Thuja Gigantea* is not a cedar, but an *Arbor Vitae*; no true cedar grows in North America."

Not the least interesting of the botanical information placed before the Board of Appraisers by Mr. J. G. Scott, of the Pacific Coast Lumber Co., New Westminster, B. C., who so ably represented the case for the Coast lumbermen, is the following list of the various cedars grown, with the local name, botanical name, and place of growth.

LOCAL NAME.	BOTANICAL NAME.	HABITAT.
White Cedar...	<i>Libocedrus decurrens</i>	Washington, D.C., Oregon, East Canada and N. E. States.
White Cedar....	<i>Chamaecyparis sphaerodia</i> .	Southern Maine and along coast of Florida.
Red Cedar....	<i>Thuja gigantea</i>	Washington, Oregon, and B. C.
Red Cedar....	<i>Juniperus Virginiana</i>	Widely distributed over the continent of North America.
Red Cedar....	<i>Juniperus occidentalis</i>	Washington, Oregon, B. C., and Alaska.
Yellow Cedar or Yellow Cypress.	<i>Chamaecyparis Nutkensis</i> .	Washington, Oregon, B. C., and Alaska.
Port Orford Cedar or Lawson's Cypress....	<i>Chamaecyparis Lawsoniana</i> ..	Oregon and California
Sinking Cedar or Savin.....	<i>Torreya taxifolia</i>	Western Florida.
Sinking Cedar or Cal. Nutmeg.	<i>Torreya Californica</i>	California.
Cedar Pine, Spruce Pine, or White Pine....	<i>Pinus Glabra</i>	South California to Florida.
Cedar Elm....	<i>Ulmus crassifolia</i>	Arkansas and Texas.

The strongest evidence submitted, at least it would seem so to the ordinary observer, was that which showed that out of the 314 woods tested as to their power to resist indentation, *Thuja Gigantea* takes the 297th place—proof enough, surely, that this is a soft wood and not a cabinet wood. And out of 429 woods tested as to their specific gravity *Thuja Gigantea* ranks 411th in its relative order of weight—another strong item of evidence.

At this writing we are still unable to say what decision has been reached by the Board of Appraisers, but whether from the business point of view, or the technical, the case would seem complete in every particular, so far as the claim of the British Columbia red cedar men is concerned.

EDITORIAL NOTES.

THE Western Retail Lumbermen's Association is meeting with some criticism, because of its determination, and success has met it in this particular in the past, to maintain a paying list of prices. The charge is being made that the Association is only another name for a combine to keep up prices. Its history during the several years of its existence shows very conclusively that it has done an excellent work for every one interested in lumber, not the least the consumers themselves. The president, in his address at the annual meeting, which was fully reported in the LUMBERMAN at the time, said distinctly, "that in no instance is the price of lumber being advanced by the Association." We had thought ourselves that the Association was very open and frank in its methods of doing business, as was shown by a reduction made in prices when freight rates were made sufficiently favorable to permit of this. So much injury has been brought upon the community by the greed of the monopolist and the arbitrary steps assumed by various combines, that public opinion swings sometimes to the other extreme, and reasonable men forget that a combine may be necessary for the protection of all concerned. A condition of trade that permits of a cutting of prices to such an extent that failure becomes a rule of the business, rather than success, and a mere fraction on the dollar is received by creditors, can never be healthy for any community. This is invariably the outcome of a cutting system, and when conditions reach this point, and it is too often the case, then the business

falls into the hands of a few who put up prices unreasonably. An organization of business men that will go on the principle of securing to each other a living profit, must always work for the benefit of the consumer. A community never thrives on the bankruptcy of its business men.

ON the evening of February 25th, and less than half an hour after the employees had left the building, a small upright boiler in a soda water factory on Sherbourne street, Toronto, exploded, completely wrecking the building and knocking but the windows and otherwise damaging surrounding residences. Luckily the absence of employees from the factory and of foot passengers from the sidewalks opposite the building, avoided more serious results. Portions of the outer shell of the boiler were found imbedded in the frozen ground in the yards of the locality, having cut their way through the felt and gravel roof of the factory. The force of the explosion is sufficient evidence that it was not caused by low water. Had five hundred pounds of gunpowder exploded inside the building, it could not have exerted a more destructive force. It is supposed that the fire in the boiler had not been securely banked for the night, and that it had burned up, causing a rise in steam pressure to at least 300 lbs., and that the safety valve was not in proper working-order. This occurrence should suffice to dispel the prevalent notion that while proper inspection and skilled supervision are required for steam plants of large capacity they can safely be dispensed with in connection with small plants. It should likewise direct the attention of the municipal authorities to the necessity for an ordinance to prohibit the locating of factories in the center of thickly populated residential districts, like the one in which this accident occurred.

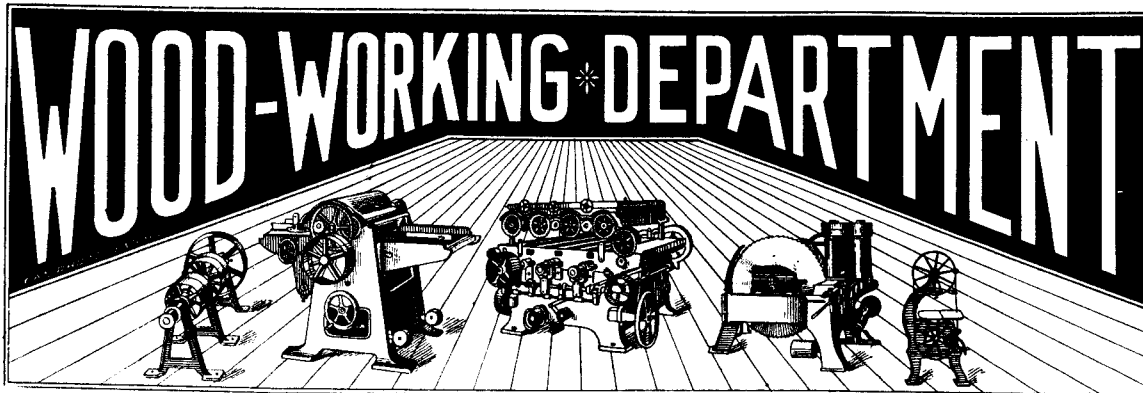
COMPLAINT is made by the Mississippi Valley Lumberman, of Minneapolis, that in the competition between yellow pine and white pine the success of the latter is handicapped by the discriminating freight rates given in favor of yellow pine. The Minneapolis journal recognizes that yellow pine is now an important factor in the market, but does not think that competition should be intensified, as against white pine, by unreasonable freight rates. It is claimed that the rate on yellow pine to Kansas, Nebraska, and other central western points is fixed at a very low figure, and that yellow pine is being brought into Chicago at a rate of 22c. The Mississippi Valley Lumberman goes so far as to say that the difficulty, if not remedied, will resolve itself into a decision by the northwestern mills to close down, until such time as the railroads see it is to their advantage to grant an equitable rate all round. The rate of white pine from Minneapolis to Omaha, Neb., is 17c, a distance of 325 miles, while the yellow pine is carried to Omaha, a distance of about 1000 miles for 22c. The rate from Minneapolis to Lincoln, Neb., is 20c for 100 lbs. as compared with a 22c rate on yellow pine, brought more than double the distance from the south. The white pine people claim they should get a rate of 12c to Nebraska. We mention these facts to indicate the unreasonable position constantly taken by railroads in the fixing of freight rates. We experience this unfairness in Canada in different ways. Just one condition seems to guide railroads in fixing rates and that is how far they can go in keeping rates up. And where pressure of the strongest kind, or competition from another road, cannot be brought to bear, railroads become quite unreasonable. The information imparted by our Minneapolis contemporary also shows that the lumbermen in that state, as well as in the eastern states and in Canada, are recognizing that yellow pine is every day becoming an increasing element in the lumber situation, especially in its relations to white pine.

WICKES Bros., of Michigan, say that they have furnished machinery this winter to American lumbermen operating mills in the Georgian Bay district, capable of adding about 1,000,000 feet a day to the cut of these mills. For the season, these figures, according to Mr. Wickes' calculation, will represent about 180,000,000 feet. The Northwestern Lumberman takes this fact as a text for reiterating its complaint that the recent change

in tariff legislation will be productive of good to Canadian lumbermen, largely at the expense of United States lumber interests. The argument is that wherever this lumber will go, and of course, it is taken for granted, which is the fact, that it will be shipped almost entirely to the United States, that it will displace just that much white pine of the northwest or yellow pine from the southern states. We do not know that this is exactly the position, for we are greatly mistaken, if our Chicago contemporary, when it has been in the mood to adopt another line of argument, has not pointed out that after all the shipments of lumber from Canada to the United States would represent so small a percentage of the entire output of that country that it would be a mere drop in the bucket. It has taken Chicago, as an illustration in this respect, pointing out that of the lumber consumed in that district alone the exports from Canada would represent a mere fraction. This also is the case: United States lumbermen have purchased heavily of limits in Canada, because in Michigan in particular, the forests have become so denuded of timber that it has been necessary that they should seek other fields of operation, and Canada, in no small measure, has been the choice. At the same time the tariff is working two ways, for, as we have pointed out before, lumber is coming into Ontario from Duluth, and also from the southern states. Even the Washington shingle men are making a bold effort to get their shingles as far in as Ontario. Minneapolis lumbermen have the opportunity, and are taking advantage of it, of increasing their exports from that state into Manitoba and the district thereabouts. Besides what about the 400,000,000 logs that are towed across to Michigan and there cut into lumber at the mills of that state?

THE very full report of the excellent lecture by Mr. H. G. Joly, on the value of our forests, that we give in another page, once more brings to the front the question of forestry in its many different phases. We shall not, at this time, enter into any general discussion of the question, though it is worth noting that more than ever the question of practical and intelligent forestry is being taken hold of by lumbermen themselves. We do not know a time when the lumber journals of the country have given so much attention to this question as during the past year, and, perhaps, more particularly, within the last six months. A reference here to a suggestion that has been made for the re-forestation of pine lands may fitly be noted. We are clearing away the white pine of this country rapidly enough to make it important that consideration should be given to this distinct phase of reforestation. Mr. Austen Cary, a special agent of the forestry division of the agricultural department of the United States government, who has been making investigations of pine growth in Lower Michigan, has expressed the opinion that the cut over pine lands in that district will rapidly produce a second growth of pine, were only forest fires and stock prevented from pasturing on such acres. Further attention to this particular phase of work is embodied in an article written by Mr. A. K. Ferguson, of Manistee, Mich. He claims that white pine (*pine strobus*) is the quickest growing tree that abounds in the pine belt. His suggestion, however, is that white pine, birch and poplar, also rapid growers, should be planted with pine trees in order to protect them and force their growth upward, and thereby secure long, clean trunks. The denser the growth of the young trees the fewer limbs will be thrown out and the taller, straighter, smoother will be the trunks, an important consideration when the commercial value of the tree is taken into account. The Northwestern Lumberman, commenting on Mr. Ferguson's letter, suggests that men of wealth might devote some of their means to the converting of the vast wastes of denuded pine lands into areas of health giving, climate equalizing, water preserving, profit bearing, beautiful forests. The question is also asked, why should not single individuals, who have large denuded lands on their hands, replant pine trees and eventually reap a rich and perpetual harvest of profit from the enterprise? What do Canadian white pine lumbermen say to these suggestions?

The Guelph Heading & Stave Co., of Guelph, Ont., has been granted incorporation.



A WORD WITH WOOD-WORKERS.

A GOODLY share of space has always been given in these columns to the wood-working departments of lumbering. Further prominence, however, is given the subject commencing with the present issue, because of the growing importance of this branch of the lumber trades. Besides, with the publication of the WEEKLY LUMBERMAN, discussing specially the commercial side of the business, we have more space to devote to mechanical matters.

The effort will be to present to readers regularly statements of progress being made in wood-working. Cuts of new machines will be published monthly, and wood-workers will be kept posted in regard to the new patents that are being issued in wood-working machinery.

We would like readers to feel that they can add to the interest of the department by frequent correspondence and suggestions. If the reader has in mind something of interest to his fellow workmen, let him send on the information to us. Let no one hesitate, because writing is not in his line. We will attend to the matter of form of expression. It may be that readers can forward us, in connection with correspondence, designs of wrinkles in wood-working that have grown out of their experience. We shall always be glad to reproduce such designs in these pages.

THE PHILOSOPHER.

PHILOSOPHY in anything as practical as wood-working? Some of the world's soundest philosophy has come from the men, whose daily avocations have been along mechanical and industrial lines. The Philosopher will talk occasionally in these columns on matters of every-day import to the wood-worker, indulging, he hopes, in some commonsense philosophy that will be productive of good results.

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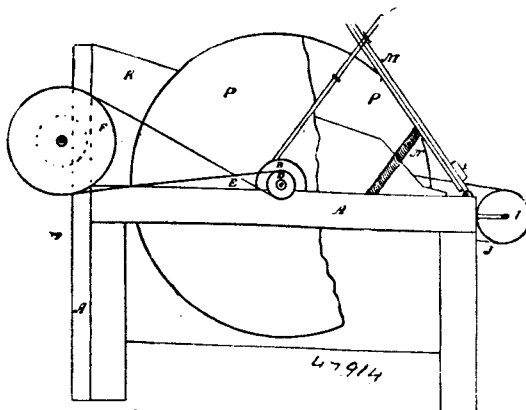
The Philosopher has sometimes queried to what extent workers at the bench and before the machine strengthen their position as mechanics by cultivating the mind in directions bearing distinctively on their trades. Perhaps there is a little bit of fad in the tendency of the present day to make mechanics through the schools and colleges, rather than by the old process of straight apprenticeship to the trade intended to be followed. Everyone knows, of course, that schools of journalism have a place in some of the universities of the present day. And yet there are those, high up in the profession, who doubt if there is any school that can equal that which starts as a primary department in the country printing office, and with the pupil as a small imp. Probably, it is the case, in this, as in many matters, that there is a happy medium. The editor, who has had a university training, if he can profit also by the practical education so necessary to his work, is going to be that much stronger in the position he holds. The technical schools, both on the continent and in this land, have done much for the mechanics of the country. The Philosopher has always felt that a great deal of the thoroughness that is a feature of all work in Germany is due, in no small degree, to the training that the mechanics of that country receive through its well equipped technical schools. It is the old story that the man, in whatever calling, who brings to his work, along with diligence, a well cultivated brain, is going to outstrip, in the race of life, the other fellow who thinks only of how easily he can slip through with his work before the bell rings for quitting.

The Philosopher deems it most essential to intelligent success, that wood-workers, without exception, should have a knowledge of mathematics, of drawing, and of the real bearing and possibilities of the machinery with which they are working. In Canada, fortunately, there has been an encouraging development in this direction and there is opportunity presented to every workman through the technical and manual training schools of the country, which are fast taking a position unequalled by few schools of a like kind of any country. The boy, who makes a start through these manual training schools, is likely to stand a much better chance of success than a youth who goes into a trade handicapped with little education. The superintendent of the mechanical training department of one of the large colleges of the continent tells of boys who have gone out to their trades equipped in this manner able to earn several dollars more per week than those who come into the work perfectly green and with little previous education to help them on. The advantage of school-taught mechanics gives the boy a standing upon entering the workshops much above the raw beginner, and if he has proven a worthy student his acquirements are soon discovered and his time under instruction in the shop is shortened, and he is generally paid much higher wages.

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It is one of the hard lessons of life, that real genius consists simply in the faculty of doing one's work well and thoroughly. The Philosopher thought of this as he talked with a friend the other day on the make shifts that are resorted to too often in workshops. The policy is to make the thing do, trusting that it will be all right. A machine gets out of repair, and the disposition is with a little tinkering to make it serve the purpose, where the right plan would be to put it at once into proper condition. Time may be lost in putting on useless fringe and furbelows in one's work. The pottering workman is one who indulges in this kind of nonsense. But time is never lost by the mechanic, who determines that the piece of work he is on will be made as complete as his ability and the equipment at his command will permit him to make it. That this is an old text to hammer on there is no doubt, and yet in a day where there is so much scamp work, and the temptation is to get through things with no regard as to who will suffer in the future, the subject will bear something of line upon line.

NEW PATENTS IN WOOD-WORKING MACHINERY.

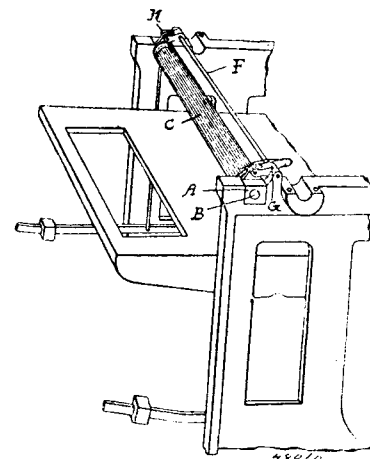


SHINGLE EDGING MACHINE.

Patentee: John Henry Askert, Lucknow, Ont., 15th January, 1895; 6 years.

CLAIM.—1st. The combination of two saws P and P, on one shaft or mandrel C, within from six to eighteen

inches of each other, or may be worked on two shafts or mandrel same as C. 2nd. The belt J and guide box K, in combination with said machine and said two saws P and P, substantially as and for the purpose as set forth.



PLANING MACHINE.

Patentee: William Clark, Galt, Ont., 29th January, 1895; 6 years.

CLAIM.—In a planing machine, the combination of the feed or delivery roll movably journaled in the frame work, and means for holding the roll in its proper relation to the table, of the machine when displaced by the passage of the material between the roll and table, substantially as specified. 2nd. A rock shaft journaled in the frame above the roll and a pivotal connection between the journals of the roll and the rock shaft. 3rd. Vertically movable bearing boxes for the journals of the roll, a rock shaft journaled in the frame above the roll, two links connected to the rock shaft and located one above each of the bearing boxes, and a pivotal connection between the links and the bearing boxes. 4th. A snug connected to each of the bearing boxes, and a pivot pin passing through each of the snugs and its respective link, substantially as specified.

SHAPERS AND SHAPER WORK.

I HAVE often observed, says a writer in the Wood Worker, that in woodworking plants of limited size any given number of machines is not quite sufficient to fill the requirements of the variety of work that will be ordered, with despatch and with profit to the owners. It is a well-known fact that no two mills have the same system, though they may be in the same locality. Their methods are entirely different in regard to the handling of work.

It came under my observation recently that a contract was given to a mill which was the lowest bidder for the entire factory work. The plans and specifications called for first-class finish in every particular. One of the features of the finish to the front porch (or gallery, as it is known in certain localities), was turned posts and turned balustrades. The posts were eleven inches in diameter, turned top and base, tapered in size from top to bottom, between the ornamental turnings. Between top and base a plain turned surface was left for raised beads, which presented a fine, rich appearance, and was different from the general run of turned columns. The same style of raised beads was carried out on the same balusters. The posts were of cypress, and the balusters of heart yellow pine.

Now the question was, how were these raised beads to be worked on the posts, as the diameter was large and the beads had to begin and stop at certain points where the ornamental turning came in. The balusters could be handled easy enough, as they were 3 x 3 inches and short enough for a fluting attachment which the mill was fortunate enough to have. Much hand work was out of the question, as it would take so much to complete the columns. The only reasonable way it could be done was with a long, verticle spindle, with the posts hung between centers secured to a guide form. The spindles on an ordinary shaper were not long enough to reach the center of the diameter of the posts, which were, as I have said, eleven inches, but it was the mill's fortune that in ordering a double-spindle shaper one of the spindles was ordered made longer than the other, for

special work, and was sufficiently long to do this raised beading.

A skilful machine man was selected to do the work, with the assistance of the regular shaper man. This man, after careful observation and reflection conceived a way by means of which he could accomplish this work entirely by machine, with no hand work outside of sand-papering the beads.

His first step was to make the cutters. The two centers were made of iron, projecting through wooden face-plates (circular in form) at each end, which held the post. One face-plate had saw kerfs spaced off at equal distances around its diameter. There was a saw kerf in the first piece, which was secured to the form or straight-edge. A piece of saw blade was used as a stop, and was inserted into these kerfs as the different beads were worked. The form or straight-edge ran against the lower collar on the spindle, and the posts were entered and fed along by hand.

The important features of the work were having one extra spindle long enough, the proper arrangement of the two centers to get the same taper as the posts, and dividing off the proper distances on the circular face-plates so that all the way around the beads would be the same and come out right at the last bead. After the posts were completed the balusters were beaded with the regular fluting attachment for a shaper. This attachment does an endless variety of such work, and can be had for a reasonable price from the manufacturers. This is, I think, a valuable shop kink or wrinkle, and may be of benefit to other woodworkers.

I believe a shaper is one of the most important machines in a mill, because of the endless variety of work it can do. I think it also necessary to have an extra

It may cost a little more, but it is a great deal cheaper in the end, as a great deal of time is saved in grinding the bevels, and it is far better. Shaper cutters as a rule are never made until they are really needed, and then in a hurry, and grinding the bevel on the two edges always takes time. It is often the case that small spindles are sprung and ruined by carelessness in not getting the two cutters exactly the same width in grinding them; if the cutters are not the same width exactly, in tightening down the nut with the wrench the collars draw the spindle over, and as a result the spindle is sprung. I have seen a spindle ruined from this cause.

Speaking of the rapid manner in which work can be done on a double-spindle shaper, I say double-spindle shaper, because I believe a single-spindle shaper is only a makeshift outside of a very limited line of business. At present there is a large sale for 1 1/2 x 1 1/2 square-pointed

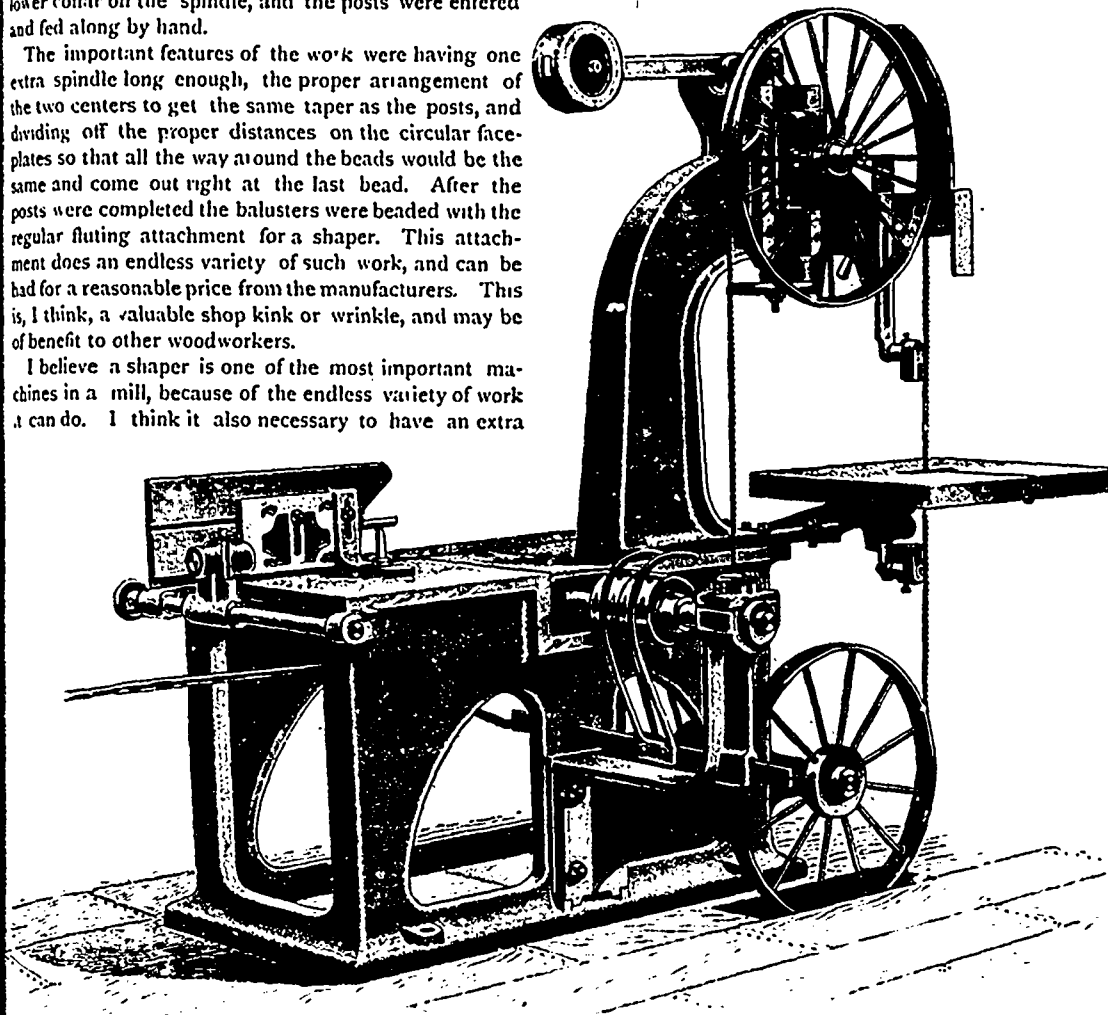
In belting a shaper there should be binder pulleys attached to the countershaft frame or stand. Several makers build shapers on this plan. The advantage of this is the belts run steadier at a high speed and it prevents that disagreeable flapping motion, which gives a slight jar to the shaper top or table, when it becomes worn by use. With the binder pulleys attached to countershaft, the belts run at the right place on the spindle pulleys and do not drop down when they become slack, and belts last longer where this arrangement is carried out. These binder pulleys should have an adjustment back and forward, on slides properly and simply arranged, to take up the slack of the belts when they become stretched.

COMBINED SAW BENCH AND BAND SAWING MACHINE.

THE novel saw bench herewith illustrated, and described in the Timber News and Saw Mill Engineer, of Liverpool, Eng., will be interesting to all woodworkers. It is planed perfectly true on the surface, and is fitted with strong parallel fence, regulated by hand wheel and screw. The framing for the circular saw is massive, cast all in one piece, and has planed facings to receive all the parts fitting to it. The saw spindle is of steel, and works in long gun metal bearings; the fence is made to cant, for cutting work on the bevel. It is also arranged so that it will turn over the end of the bench, for cross-cutting when cutting deep stuff. Fences of this class are apt to give way a little at the end nearest the saw; to prevent this occurring in the above machine the makers fix a stay behind the fence, to be used when required. The band saw apparatus is made very strong, and has wrought iron pulleys 30 in. diameter, covered with india-rubber tyres. The table is made to cant, for cutting work on the bevel. The top pulley is also fitted with canting motion. The tension of the saw under heat is taken up by weight, or, if desired, by a spring. These combined arrangements make a very complete and substantial machine.

STEAM MORTISER.

THIS figure represents a machine for cutting mortises in timber. The operation is simple, and is performed by means of a reciprocating chisel. By means of an ingenious link motion the stroke of the chisel can be regulated by the foot-lever, which brings it down into



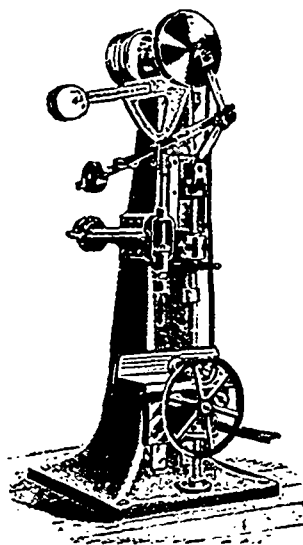
COMBINED SAW BENCH AND BAND SAWING MACHINE.

long spindle for a shaper, for special work that often comes in. In a small or medium sized mill it is invaluable, for the reason that the other machines are apt to be crowded and the work delayed, whereas on the shaper it could be gotten out quickly. Take, for example, a small mill where one hand-jointer has to do all the jointing of door and window frames, cabinet work, mantles, brackets and a variety of other work. With a double spindle shaper, with one long spindle a great deal of this work can be done, such as working face molds on mantel breasts, reeding such work, and chamfering large and small posts and columns. A spindle 13 inches above the table is long enough, but this spindle should not be less than 1 1/2 inches in diameter at the smallest part above the table between the collars, not less than 1 1/4 inches below the table between the bearings, nor less than 1 1/2 inches in the bearings, as it would not do good work.

All shapers should have three different changes of collars: One set of collars as small as the spindles will allow, for small curves or the small places; one set medium size, for ordinary work, and one large set, say about five inches diameter, for shaping pickets and such work, which cut faster and do better work.

In regard to cutters for shapers, a good plan is to have steel of different widths and in lengths already beveled.

pickets. Most of these pickets are done on a picket-header, and there is a close margin of profit. After some delay in pointing these pickets, we by accident found a better, simpler and much quicker method. A "jack" or form was made V-shaped to receive the pickets to be pointed, which were held securely in place in the "jack" by small pointed iron pins. The cutters were beveled to an angle of 45 degrees in pairs on each spindle, one bevel up and one bevel down between each set of collars. It will be readily seen that the right-hand spindle cutters cut two corners, and the left-hand cutters cut the other two corners, the pickets being diamond-pointed to a finish without changing or turning them over, which would have to be done if an ordinary flat form or pattern were used, and pieces would have to be nailed on each edge to keep the pickets in proper place on the pattern. In this case, if the pickets were not dressed exactly alike all around, they would not fit in between the pieces the same, and the point would not come out perfect, causing some delay; whereas with the V-form all this is obviated and made much simpler, whether there is a slight variation or not, and the operation is so easy that an intelligent boy pointed the pickets with perfect ease in half the time it would take any other way.



STEAM MORTISER.

the timber from a state of rest to its full throw, so that when entering the timber the stress on the chisel may be brought on gradually, and so obviate any excessive jar to the foot of the workman and undue strain on the chisel. These machines are usually provided with a boring apparatus, by means of which a hole may be first bored into the timber before mortising, to relieve the chisel. This is found of advantage when working hard wood.

PUBLICATIONS.

Elizabeth Stuart Phelps, Mrs. A. D. T. Whitney. Rev. Robert Collyer, and Walter Besant are all going to tell in The Ladies' Home Journal of either the man or women who most influenced their lives.



SOME days ago Mr. C. H. Clark, of Barrie, Ont., drew my attention to a comment in the WEEKLY LUMBERMAN, where it was intimated that one reason why prices for white pine were cut in Duluth, was because there were not a few men engaged in the trade there lacking the capital which would enable them to hold out for better prices. Our friend Clark has about made up his mind to become a resident of Duluth, and has already spent considerable time there, and done some business. He tells me there is no lumber section in the States where men stronger financially are engaged in the lumber trade, and that if a long pull is necessary they are quite equal for it. I have no doubt but that this is the case, and, for my part, I did not read the paragraph named as meaning that, financially, Duluth lumbermen were weak. I am quite sure, however, that Duluth is no different to other lumber sections, and that among those engaged in the trade are quite a few who find it necessary to make a quick turn-over of their product, and cannot always hold lumber for a better price. We have had such experiences in Canada. During the past winter, when lumber was so terribly dull, from time to time a break in prices would occur in Michigan from just the same conditions. The large majority of the Michigan men held on bravely to their stocks, and to this cause is due the fact that there was no general break up in white pine. Nevertheless white pine could at times be bought at a good shading under market prices. In new districts these conditions are almost sure to prevail in a larger degree than in the older territories. What is the trouble with lumber in the southern states? A lot of jobbers have located themselves there, who are simply into the business for speculation. They are not particular whether they pay their workmen even. All they want is to get a certain quantity of lumber cut, shove it on the market, make their sales, pocket the money, and in many cases get out. This, of course, is demoralizing to the general trade. It is almost certain to be the case in Duluth, where the lumber business is developing rapidly, that to a modified degree, at least, these same methods will prevail. Or else Duluth is different to any other lumbering district that has yet come to light.

* * * *

Nearly every day additional illustration reaches us of the importance that is attached to the timber products of Canada by United States lumbermen. Michigan lumbermen are such heavy investors in Canadian timber limits at the present time that a busy newspaper man has started the rumor that Michigan lumbermen intend to form a syndicate and completely control Ontario lumber affairs. Of course, an item of this kind serves very well for a daily newspaper, but anyone who is disposed to reflect a few minutes on the question would see the absurdity of any such suggestion, and for the good sense of the Michigan men themselves, let it be said, that they only laugh at the proposition. United States money is being liberally spent in some of the lumber districts of Ontario, and this year, more than in previous years, our country will benefit by the energy being put forth, from the fact that a number of the larger concerns have, within the year, erected their own mills and will cut on this side of the line, where, without free lumber, they would either have not made the investment at all, or sent the logs over to Michigan to be cut there. A fortnight ago I met Mr. W. S. Taylor, of Taylor & Felin, lumbermen, Philadelphia, Pa. Mr. Taylor was prospecting a little and has some notion of securing a timber berth or two, and perhaps locating a mill here. His firm have to get lumber from some point, and like others, he looks with favor upon Canada. Mr. Taylor tells me that the outlook for lumber this spring is encouraging. In Philadelphia building operations will be engaged in on a liberal scale, and generally throughout that section of country trade looks hopeful.

A correspondent, representing one of the largest lumber firms in the province, has written, saying: "Write up Canadian joists instead of Georgia." Now, this is a sensible suggestion, and I have been thinking a good deal along that line. Recent unfortunate events in Toronto have provided strong arguments for the use of white pine in our larger buildings, rather than the yellow pine of the southern states. I do not need to reiterate the position taken by the lumber section of the Board of Trade, after the large Globe fire in Toronto the early part of the year—a position that has found further confirmation in recent fires since that date. The case rests a good deal with the architects. They have been in the habit, in a measurable degree, of recommending yellow pine for joist, contending that it is possessed of a degree of hardness and endurance that is not general to white pine in similar places. This statement is questioned by white pine men, who believe they know what they are talking about. Furthermore, white pine is not possessed of those obnoxious elements that add flame to the fire when a big conflagration takes place in any city. Saying this much, and there is no doubt that white pine men have reason, as well as patriotism on their side, I am never one to scare over anything of this kind. It is a harsh doctrine, perhaps, the survival of the fittest, but it is one that serves with unswerving exactness throughout all nature, and it is not likely that any exception will be provided amid the trees of the forest. If it can be established that yellow pine, for certain particular purposes, is the best wood that can be used, it is going to be used. Crying it down will not close it out. So with white pine. It has held a premier position among the woods of the continent for years, and the introduction of a new rival by no means indicates its annihilation. I always think that white pine holds a position so substantially strong that every man who owns a stick of it may feel that he has got a gold mine. There is not such a quantity of white pine anywhere that its displacement by any other wood need be feared.

* * * *

The clever fellow who holds the quill of the Bobcaygeon Independent has written up a sketchy account of lumbering operations in the far north. He tells how 30 years ago Bobcaygeon was the centre of lumbering operations; 10 years later the centre had moved back about 30 miles; and to-day the great lumbering field of the Gilmour Company is 100 miles to the north. Then follows a brightly written account of the changes in methods of lumbering, how the cross-cut saw has superseded the axe, and the many changes that have taken place in the way of hauling logs, how the railway has become a part of the equipment of lumbering in the woods, just as it has cut its way in as a helper in every other branch of commerce. For anyone who wants the details of these changes I refer them to the Bobcaygeon Independent. What struck me in connection with the sketch was the lesson reflected in the first few sentences, telling how from decade to decade Bobcaygeon was moving back from the centre of lumbering operations. What is the matter? Geographically, I fancy, Bobcaygeon stands to-day where it stood 30 years ago. The surveyor's lines would mark the same place to-day as then. But the timber has been gradually cut away, there, as everywhere else throughout the province, and the man who would engage in timber operations to-day needs to get a long way into the interior to find his product. This fact explains the downfall of not a few villages in Ontario. It has been the custom to talk of certain places as ruined because of the rafting of logs to the American side. To some extent this has been the case, but what is true of Bobcaygeon is true of Midland and other places, once thriving saw mill towns—the logs have got far away from the saw. Another lesson: and it is a serious one; no matter how much timber may still be remaining in the interior, we are rapidly clearing our timber out. Thirty years ago Bobcaygeon was in the woods. The woods are a long way from it to-day, and in place of these woods is a barren waste, which as a country we are doing really nothing to replace.

* * * *

"I just wish the LUMBERMAN would give it strong to the sharks and "skins" who manage to get into the lumber trade," was the way I was greeted, as I stepped

into the office of a local lumber concern the other day. What is the matter? I remarked. "Well if you had to get out on the road and buy lumber as I have to do," said this person, "you would take in the full import of what I have said. Take last week, I was out north at one of the mills buying lumber to meet some calls we have from the States. It was the hardest thing in the world to get this mill man to come to any other conclusion than that the great majority of wholesale lumbermen of Ontario were a lot of rogues. He, unfortunately, had been soft in his day and got badly fooled by some of the real sharks himself. He was one of the mill men who made a donation of several cars of lumber to a certain firm of lumbermen in Toronto, who to-day are *non est*, whose creditors bemoan their sudden collapse, and one of the principals of which has had a chequered career running the gauntlet of detectives and police courts. And because these fellows had bitten him badly the mill man was going to be particularly sharp after this and watch everybody who wanted to buy lumber." I remarked that this kind of thing was too bad, and yet in a sense one could not blame the mill man for being careful where he placed his lumber. He was only going to the opposite extreme, which, is too much the rule with everyone. This led to a discussion of another phase of the lumber business, where sharp practices prevail. I remarked to this friend that the LUMBERMAN was likely to have something to say about the operations of a certain German lumber commission house, and I told him how some Ontario mill men had fared with this concern. My friend took another line this time and in his usual plain-spoken manner said he knew something of the situation and was not sorry that mill men sometimes got sold by these outsiders. "They have only themselves to blame," said he. They get a nicely worded letter, with a letter-heading that is unusually prepossessing, from some presumably big concern on the continent, who holds out all sorts of inducements to them. I remember talking to a mill man on this point one time, and he was very "cockey," as the saying sometimes runs. He was not going to bother selling goods to Canadian wholesalers any longer. They could not be counted on. He was going to be his own exporter, and was going to send his goods to Germany, United Kingdom, the United States, and it was hard to say where else throughout the civilized and uncivilized world. All he had to do was to ship his goods, and promptly on their arrival a sight draft, covering the full amount would be paid. This man has had his experience, just as I judge some of the others whom the LUMBERMAN, I understand, will talk about have had their experience. The mill men ought to learn the lesson by this time that their best customers after all are the wholesalers within their own country. They know the state of the market, know what the lumber is worth and are ready to pay the best price that is going at any time. The outsider, who tempts with a little bit of sugar on the stick, offering a higher price than lumber is really worth, needs watching. He is after more than the lumber, unless it is the whole lumber and nothing but the lumber."

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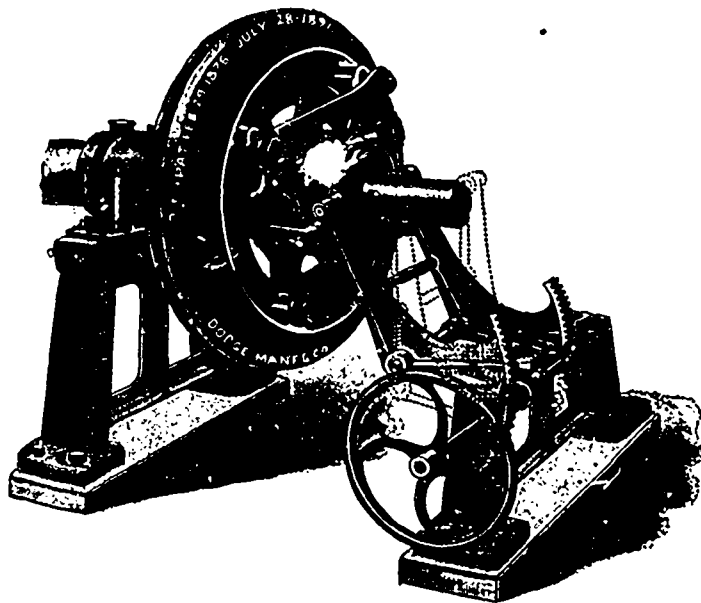
ON the size of the white pine log crop of the new season will rest, to a good extent, the future of the market. One is able to form a better idea now than earlier of what this crop will amount to, and it seems safe to say, so far as Canada is concerned, that the crop will not be in excess of that of a year ago, and the probability is that it will run rather lighter. This is likewise the report that reaches us from the white pine districts of the United States. The crop there will certainly not be larger than a year ago, and to such an extent has the spirit of caution marked the work of the lumbermen during the past winter, one feels sure in saying that the crop will be a comparatively light one. In those sections that suffered by fire the crop will necessarily be heavier than would otherwise have been the case. Self protection has demanded this. But this excess in spots will not make any serious effect on the average of the crop, taking the white pine territories in their entirety.

The factory and saw mill of the Port Elgin Brush Co., Port Elgin, Ont., is advertised for sale.

THE DODGE PATENT SPLIT FRICTION CLUTCH AND CUT-OFF COUPLING.

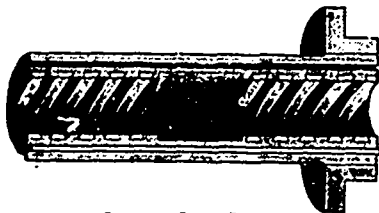
THE utility of friction clutch pulleys for power transmission has been fully demonstrated by long and continuous service, and their advantages over the belt driving shifter are so numerous and obvious that one wonders why their already extensive use is not universal. Even in the matter of first cost the clutch equipment is not greatly in excess of that of tight and loose pulleys, when the extra pulleys and double widths necessary for the drivers are considered. By placing the clutch pulley upon the driving shaft, the belts and all the auxiliary shafting connected or controlled by the clutch are thrown out of action, saving belting, power, oil and danger from hot bearings and pulleys. Amongst the comparatively new clutches on the market is the Dodge Split Clutch, manufactured by the Dodge Wood Split Pulley Company. This clutch is made for service as a cut-off coupling, or may be used in connection with pulleys, gears, sprockets, rope sheaves, friction or hoisting drums, and various other power connections. Its simplicity is readily appreciated by mechanics who have ever had any experience with clutches of more or less complicated mechanism and those having a large number and variety of parts.

The friction disc is made of iron with perforations therein, through which hardwood friction blocks are



DODGE CLUTCH WITH SHIFTER.

fastened, presenting two surfaces of end grain for frictional contact. This disc is a part of the extended sleeve or portion of the clutch connected to the pulley, or whatever driving appliances may be used, and runs loose on the shaft where the clutch is located at the driven end of the transmission. The friction connection is made through two finished cast iron plates, one of which is keyed to the shaft, and which are thrown in contact with the wood filled disc by throwing in a sliding collar which works loose on the shaft, through the thrust of the collar actuating the toggle levers which operate four draw-bolts, forcing the friction plates to

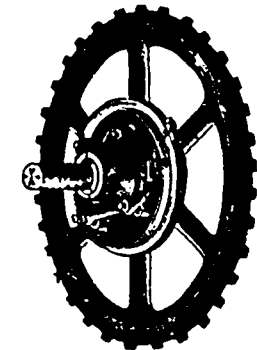


SHOWING SPLIT SLEEVE.

contact with the friction disc this connection operating the pulley or transmission wheel in conformity with the moving shaft. One of the main difficulties existing in the various styles of clutches is the lack of clearance between the friction disc and plates; this trouble is entirely obviated in the Dodge clutch, the clearance being large and instantaneous, actuated by powerful coil springs which separate the plates quickly upon a withdrawal movement on the sliding collar. Two levers are used with four points of contact on the plates, there

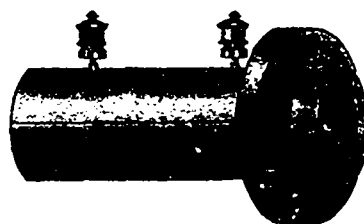
being no loose or rattling joints; the levers are made solid in one piece and have carefully finished fulcrum points on the outer or loose friction plate.

The Dodge Wood Split Pulley Co., appreciating the trade demand for a simple, quick acting clutch, with all possible points of advantage considered, have incorporated the split or separable feature as being one of the most important and quickest of appreciation by consumers. The advantages in a split clutch are manifold, they are easier and quicker to adjust to shaft or repair, and effect quite a saving in time and labor. None of the shafting or other equipment need be disturbed in placing the clutch in position. When this point is fully understood and appreciated we bespeak a more rapid change from the old tight and loose pulley ideas to the modern plan of machine driving. It is the expense of the split clutch as formerly made, as well as the trouble and expense involved in putting on solid clutches that has kept many manufacturers from making the changes long ago. This clutch is put on the market at about the same price as any other first-class clutch, but having the split feature to its credit. The Dodge split clutch is particularly adapted to service with gears, sprockets and other connections, and the only necessary features of these appliances over the regular goods is the large bore necessary to fit the extended sleeve. This sleeve is separate from the friction disc and may be easily detached for repairs without handling any portion of the clutch mechanism. For ordinary service the sleeve is lined with genuine babbit and fitted with compression grease cups to insure continuous efficient lubrication. The pulley is clamped over the sleeve and keyed securely. An improvement of very great practical importance is the patented separable or detachable hub, which bears to the clutch the same relation that the Dodge and Philon bush bears to the pulley. It enables the manufacturers to carry finished clutches in stock to be furnished with hubs as ordered also from stock—or at most with delay of only a few hours. It also enables the owner to keep a clutch on hand, and at the expense of a new hub use it in a shaft of different size or as a cut off coupling, as he may desire.



CLUTCH ON SPROCKET WHEEL.

Many patents have been taken out on the special features, and if the numerous favorable expressions of mechanics and engineers go for anything we feel safe in predicting a large demand for the Dodge patent split clutch. Many shifting devices are shown; one is adjusted to the floor stands used for shaft supports, and another a plain geared apparatus mounted independently and operating through a rock and pinion.



PATENT INTERCHANGEABLE SLEEVE.

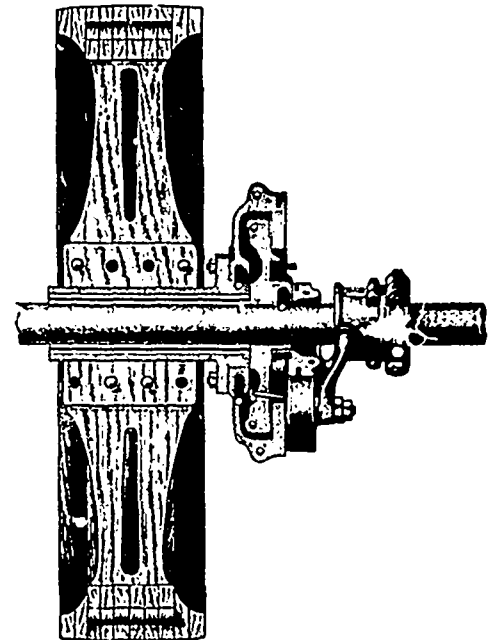
The company issue a handsome catalogue covering their various specialties, and are pleased to mail same free to any one interested. Address, Dodge Wood Split Pulley Company, 68 King Street West, Toronto.

LOOK TO THE BOILER ROOM.

THE enormous coal consumption per unit of output in many electric lighting and power plants is cause for general comment, especially since a recent committee report brought the wide variations of efficiency prominently into notice.

Theories innumerable are advanced to account for the difference between the fuel burned per horse-power in driving the dynamos, as compared with other service; a favorite conclusion seeming to be that compound engines are not satisfactory when working through other than narrow ranges of power variation.

While this is probably true of a great many of the engines used for such work where the cylinder proportions and general make-up are no credit to those responsible for the designs, yet there is little doubt but that one main cause of the trouble must be looked for in another direction. A glance through the power houses



SECTION OF CLUTCH AND PULLEY SHOWING EXTENDED SLEEVE.

discloses the fact that many of them are run on an easy-going basis, no attempt seemingly being made to maintain proper discipline among the attendants, each of whom shifts for himself without let or hindrance from the directing authority.

A genuine fireman, thoroughly trained in the principles of his profession, would blush with shame at the sight of these boiler departments.

In place of clean grates, giving a bright glow beneath, the bars are masked by clinkers, and the ash pits yawn without a ray of light to show what is going on within.

The air wheezes as it forces a passage through the refuse, instead of passing in with that rustling sound that tells of free combustion.

At frequent intervals, between the discussion of politics, or other matter foreign to the work in hand, an individual, whose only claim to being a fireman lies in his ability to heave carbon against the back of the furnace, rises from an ottoman of coal and canvas, and throwing open a furnace door, leisurely proceeds to shovel in a half ton or so of fuel, after which work of art, with no attempt to level the fire, or clear the grate, he throws himself upon his couch for another restful season.

Under the too common management of such places, there seems to be not the slightest incentive offered a man to properly attend his boilers.

An enormous grate and heating surface, and immense chimney, are relied upon to maintain steam, when a few first-class men at the fires would make fewer boilers do better work.—American Machinist.

The number of boiler explosions in saw mills and other wood-working establishments during 1894 was fully up to the average. Some of them were unusually destructive. Country saw mills, whose boilers are in charge of cheap and ignorant men, furnish most of the casualties.

OTTAWA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

LUMBERMEN of the Ottawa seem to have pretty well made up their minds to resist the new law in regard to dumping sawdust. At least, they will allow the matter to come before the courts, and have it thrashed out there before they will go to the expense of putting in equipments for the consumption of the sawdust. It is stated that a legal gentleman has determined to test the question, and after the 1st of May will lay information against all and sundry mill men, who shall violate the law. But an exception, perhaps, to the general rule is that of W. C. Edwards & Co., whom, it is stated, will build an incinerator to burn all sawdust and refuse from their lumber mill at New Edinburgh. The incinerator will be 20 feet in diameter and 80 feet in height. It will be located on the site of the old office of the firm and the end of the mill nearest Sussex St. The incinerator will be constructed entirely of stone and brick and of such thickness as to endure for 20 years. Carriers of the most improved kind will be laid all through the mills to carry all edgings and sawdust to the incinerator. What the final outcome of the legislation on the sawdust question will amount to, it is difficult to say. If the mill men show fight, it will be a serious thing for Ottawa to have the mills closed down at the season when they are expected to be at the busiest. Leaving out the question of possible trouble from the sawdust act the lumber mills of the Chaudiere are expected to begin operations about the middle of April, if the ice does not interfere. A busy season's sawing is anticipated, and it is not thought that there will be any delays for logs.

Reports of five colporteurs of the Ottawa Auxiliary Bible Society for the month of February, show that they visited 165 shanties and depots on the Ottawa river and its tributaries, travelled 2,484 miles, and sold in the lumbering camps 626 Bibles and Testaments, valued at \$350.60.

Some time ago the government issued a fiat to enable Dennis Ryan and Company to take action to set aside the letters patent of incorporation granted to the Ontario Western Lumber Co., of Rat Portage, on the ground that the statements made in the application were untrue. Evidence was taken in the case at Rat Portage last December, but argument was not concluded. The Imperial Bank of Toronto, creditors of the company, asks now that the government allow the fiat to be withdrawn and Sir Charles Hibbert Tupper heard the application a few days ago. He reserved his decision.

OTTAWA, CAN., March, 22, 1895.

NEW BRUNSWICK LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE saw mill of S. T. King & Sons at Kingsville, that was closed down last summer because of the depression in trade, has started going again this season and nearly all the old staff have returned to their first love.

Isaac Porter is this week shipping ton timber by rail to St. John.

Evidence of the starting of the mills generally for the season is seen on many hands.

The return is noticed of Mr. Allen Ritchie, of Newcastle, from the United Kingdom.

Charles Miller's shingle mill, Pokiok, and Barnhill's mill at Pleasant Point have commenced operations.

There is some talk of Montreal capitalists establishing a large pulp mill on the Quebec shore of Bay Chaleur.

A large quantity of logs are now being hauled by Chas. Stillwell, C. J. & Moses O. Colwell, John Mullin and others to be sawed by C. & J. Robinson's mill at the Narrows, Queen's County.

It is not supposed that the lumber cut at Salmon River this season will exceed 9,000,000 feet, about as follows: Hugh McLean, four million; G. G. King, three million; R. D. Richardson, three quarters of a million.

It is noteworthy the number of portable mills that are in operation in different parts of the province. In the vicinity of Weymouth Creek near St. Martin's there are five mills of this class, giving employment to 200 men and 150 horses.

The death of Robert Connors, a veteran lumberman of the Upper St. John, N. B., took place at Hot Springs, Ark., on the 11th inst. He was a native of Nova Scotia, but resided and carried on extensive lumber operations on the St. Francis for many years.

Six teams are hauling deals from Beaver Brook, Albert County, for J. S. Atkinson & Co. In addition to the large amount of spruce timber got out this winter a great deal of hardwood in the shape of ton timber will be shipped from Albert and Riverside this spring. In the vicinity of Albert Station, J. S. Atkinson & Co., and C. and I. Prescott have a

large amount of very fine ton timber, which was cut at New Ireland and will be shipped direct to Great Britain from Grindstone Island.

ST. JOHN, N. B., March 22., 95.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THE effort to extend ship building in the province is creating a good deal of interest among lumbermen and business men generally. The manner in which the proposal has been met by the different boards of trade shows how the position occurs to the commercial community. It is recognized, had British Columbia her own vessels, that business now carried in foreign bottoms, would come to this province. The lumber trade, of course, welcome any movement in this direction, and would be good customers for such vessels. Besides it would mean a consumption of lumber that would be worth something to the local lumbermen. The hope is that the provincial government will view the matter in a liberal light, and take steps in the direction indicated.

Some large shipments of lumber have gone east within the past week or two from the Brunette and Royal City Saw Mills.

The lumber trade of the province is looking up and there is a good deal of activity among the mills. Shipments of good size are going out for export and local trade, and also business with Manitoba is improving.

Estimates are being prepared for the installation of an electric logging railway on one of our large northern timber limits. Electricity will be generated by water power and transmitted some distance to the limits.

How quickly the standing tree can be turned into lumber is illustrated in the case of a car load of lumber that went east from the Royal City Mills on Thursday of last week, the raw material of which was growing in the woods on Monday.

An Ottawa despatch received here says that judgment has been handed down in the Supreme Court in Canada in the case of B. C. Mills & T Co., vs. Scott, involving an accident at the saw mill of the company. A new trial is given, the appeal being allowed.

NEW WESTMINSTER, B. C., March 18, 1895.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

THOUGH another month has gone by, it must be confessed that there is not any great stir in lumber business in this state. Of course mills are getting in readiness for the season's operations, but even these are tardy in their movements. A year ago some of the mills were in good swing early in March. This year it will be the 1st of April and the 15th in many cases before there will be a large amount of stir. All these are evidences of caution on the part of the trade, and is in keeping with the spirit of buyers, who confine their purchases to small lots, where in other seasons they would buy much more generously.

Charles Merrill & Co., are likely to run their mill light this season, having a stock of 16,000,000 feet of lumber on hand, which is not moving very rapidly.

The final decision of the Dominion cabinet in officially announcing the removal of the duty on boom sticks and chains is a satisfactory ending of a difficulty that at one time looked rather threatening for Michigan and Canadian lumber interests.

There is some talk of a Michigan syndicate being formed to control Canadian timber, but it is hard to trace it back to sound foundations. Lumbermen, who ought to know, because of their interest in Canadian timbers, laugh at the suggestion.

The liquidation of the affairs of R. G. Peters, of Grand Rapids, who failed four years ago with over \$1,000,000 liabilities, is progressing, under the management of the Michigan Trust Co., in a very satisfactory manner. The trustees announce that within another year the business will be closed up, with a surplus of decent size for Mr. Peters.

In 1851 the mills on the Saginaw river cut 92,000,000 feet. Inside of ten years these figures had only reached 125,000,000 feet. Another decade showed an immense increase, when the cut figured out within a fraction of 600,000,000 feet only to be increased in 1880 to practically 900,000,000 feet, and high water mark was touched in 1882 with an output of more than 1,100,000,000 feet. Then came the toboggan slide act, until last year the record of cut shows only 481,244,039 feet. Stronger evidence of the denudation of this once great white pine state needs not to be offered.

SAGINAW, MICH., March 20, 1895.

Subscribe for the CANADA LUMBERMAN. \$1.00 per year.

THE NEWS.

—W. H. Freeman, lumber, Milton, Ont., is dead.
—S. E. Holmes, Harwich, Ont., is rebuilding his saw mill.
—W. Hamilton will erect a saw and shingle mill at Sand Point, Ont.

—Over three million feet of logs are on hand at the Cashmere, Ont., saw mill.

—Mr. Kushick has just completed the erection of a saw mill at Buckingham, Que.

—Haun Bros., Edgington, Ont., are removing their saw mill to Dufferin Bridge, Ont.

—Wm. Arselstine, of Violet, has purchased the grist and saw mill of G. Deline, at Croydon.

—Scott Bros. have lately thoroughly overhauled the machinery in their saw mills near Galt, Ont.

—C. H. Merryfield has started his saw mill at Monkton, Ont. He has 600,000 feet of logs to saw.

—Messrs. Martin & Jones, of Kemptville, Ont., are erecting a sash and door factory on the south bank of the river.

—Ament Bros., of Brussels, Ont., have their mill yard stocked with 800,000 to 1,000,000 feet of logs this spring.

—Ferguson Bros. have started their saw mill at Eversley, Ont., for another season. They have their yard well stocked with logs.

—The shingle mill of S. A. McAuley at Lower Millstream, N. B., has been recently undergoing repairs, executed by the Robb Engineering Co.

—James Crawford offered to build and equip a large sawmill on Baker's Brook, N. B., provided the council will grant exemption from taxation for ten years.

—D. E. Sprague, of Winnipeg, has a number of men employed placing his log booms in the river near his mill preparatory to the spring break-up of the ice.

—Graham, Horne & Co., of Fort William, Ont., expect to operate their saw mill night and day during the coming summer, employing two gangs of workmen.

—Munroe & McEwen's saw mill at Moose Creek, Ont., has opened for the season. The cut this season will be large, as the number of logs taken out during the winter has been larger than usual.

—A steam barge is being built at Garden Island by the Calvin Company, expressly for carrying timber. The dimensions are 180 feet long, 87 feet beam, and 13 feet hold. She will carry 40,000 feet of oak timber.

—The Wm. Cane & Sons Mfg. Co., of Newmarket, Ont., are consumers of a large amount of timber. In one week recently 60 cars of pail timber were received by the firm. They intend putting in another machine for pail work.

—W. Kerr has been taking the machinery out of his old tannery at Mitchell, and shipping it off to exchange for saw-mill machinery. Mr. Kerr has a splendid water power and mill privilege in Algoma, and is putting up a saw and carding mill.

—A movement is on foot to establish a saw mill at Slate River, Ont. A large amount of timber in the Slate River valley is inaccessible to the mills at Port Arthur and Fort William, and there is a demand for lumber in the vicinity also, which cannot well be supplied by these mills on account of distance, except at too great a cost.

—George Gurd, timber dealer, of Tilbury, Ont., has over 2,000,000 feet of logs on the Lake Shore railway, awaiting shipment to Walkerville, from whence they will be rafted to Detroit. He has another 1,500,000 banked on the Krule and other drains for rafting, in addition to a large quantity on Detroit river.

—A deputation recently waited on the Ontario Government urging that further steps be taken for the protection of the timber limits in the northern parts of the province by the appointment of additional fire rangers. Among the deputation were Mr. Thos. Long, of Toronto, Mr. John Long, of Collingwood, and Dr. Spohn, of Simcoe. Consideration was promised by the Premier.

—D. L. Shannon, who recently sold the machinery of his sawmill at Prince Albert, Sask., to Smyth Bros., of Steep Creek, has purchased a 50-horse power engine and boiler, and a more extensive outfit of machinery, and is fitting up his mill to manufacture lumber, shingles and lath. The capacity of the new mill will be 20,000 feet of lumber, 20,000 shingles and 30,000 lath per day. About twenty men will be employed during the summer. The mill is expected to be in operation early in April.

—Wm. Irwin & Co., of Orillia, Ont., have entered suit against Turner & Fisher, a lumbering firm of Bay City, Mich.,

to recover the sum of \$22,000, claimed to be due on a \$95,000 timber cutting contract in Algoma. The defendants state that 7,000,000 feet of the amount contracted for was not cut, and that the plaintiff's scalers fraudulently figured it against them. The plaintiffs deny that this was done, and claim that some \$6,000 of dues in respect of the 7,000,000 feet were paid to the Ontario Government.

CASUALTIES.

—A lumberman named John Norton, while cutting timber near the camp at Mattawa, Ont., was crushed by a falling tree. He was taken to his home in Dalhousie, N. B.

—W. A. Johnston, foreman in Robertson & Hackett's factory at Vancouver, B. C., had the misfortune to lose four fingers of his left hand, while working on a buzz planer.

—A man named Harry Smith, of Salmon Beach, N. B., while working in W. M. Roger's lumber camp, at Russell's siding, had his left leg broken below the knee by a falling tree.

—A painful accident occurred at Hardy's saw mill at Limebank, Ont., recently, by which a German employee who was engaged working at a circular saw, had his hand split between the fingers up to the wrist.

—A Chinese mill hand named Ah Sing, met a horrible death at the Taylor mills at Victoria, B. C. He became entangled with the fastenings of the carrying frame and was thus projected on the saw, which almost bisected his body.

—While sawing lumber with a portable saw mill at Stirling, Ont., Anson Dafeo was fatally injured. In putting on the belt his hand was caught, tearing one arm nearly off, breaking the other in two places, and fracturing five of his ribs.

—Simeon Grenier, of Pain Court, was killed a fortnight ago by the bursting of a saw in Scheff's mill, at that place. A piece of the saw struck him in the forehead, killing him instantly. He had been an employee of the mill for many years.

Sylvester Z. Earle and Robert Palmer were recently cutting lumber at Douglass Harbor, N. B., for a new wharf. Earle was hewing and palmer was "scoring." Palmer's axe accidentally struck Earle on the back, inflicting an ugly wound, from which it is feared he will die.

—An accident occurred at Point Fortune, Ont., on the 13th March, which caused instant death to Edmund S. Bradford. He was cutting timber with a portable saw and while stepping over the shaft his clothing caught in the coupling, revolving him around at a speed of about 600 revolutions per minute.

—The saw mill of Martin Bros., at Lake Clear, Ont., was the scene of an accident on the 7th ultimo by which Frank Martin lost his life. A loosened board came in contact with the saw, and in recoiling struck Martin in the stomach, throwing him about twelve feet. The internal injuries caused death in a few hours.

—M. Silter, engineer in Thomson & Avery's saw mill at Sharbot Lake, Ont., was accidentally caught in the belting recently, and had both legs broken, from the effects of which he died in a few hours. He was watching another employee adjust a belt, by the breaking of which he was thrown against the machinery.

—A boiler explosion occurred in S. T. King's steam saw mill at Kingsville, N. B., last week, killing a fireman named Wellington Smith, and injuring eight others. The mill was damaged to the extent of several thousand dollars. The action is supposed to have been caused by the boiler being coated with salt, fully an inch thick on the bottom, which had accumulated from the water taken from the St. John river. The mill employed eighty hands, and was insured for \$15,000.

ENTERPRISING LUMBERMEN.

AMONG Canadian lumbermen, who, by their operations show perfect confidence in the future of lumber is to be named Messrs. Hale & Booth, of Pembroke. A fortnight ago we noted a heavy purchase of limits at that time concluded by this firm with the Muskoka Mill and Lumber Company, Toronto. A survey of their operations within the past year shows that altogether their purchases within this time represent not less than \$500,000. They may be particularized as follows: January, 1894, they purchased from Wily Bros., of Saginaw, Mich., limits to the value of \$80,000; August, from R. Burt, of Saginaw, timber lands to the value of

\$65,000; November, from the John Spry Lumber Co., of Chicago, timber to the value of \$20,000, and to these is to be added those purchased from the Muskoka Mill and Lumber Co., berths 136 and 137 on the north shore of the Georgian Bay, the price said to be \$350,000.

They are also heavy operators on the Vermillion River; their output this season will be about 20,000,000 feet of white pine logs, which will be driven to the mouth of the Spanish River. They have extended their business to Michigan, among the lumber kings of that state. Their output there will be about 200,000 cubic feet of board or Waney white pine.

Recently they have purchased from the Perry Lumber Co., of Sault Ste Marie, Mich., 300,000 cubic feet of board or Waney timber, making a total of 500,000 cubic feet of timber, which will string 22 inches and 26 feet lineal. This will be the finest lot of timber that ever left the shores of Lake Superior. We understand that the timber will be brought to Quebec and there prepared for English markets.

The firm are now with a large force of teams and men moving supplies to berths 136 and 137 before the spring opens, and expect to be in readiness for an early start next summer. Evidently Hale & Booth can take a prominent place among the lumber kings of the continent.

TRADE NOTES.

P. W. Ellis & Co. are finding ready sale among the mills for their special silver solder for repairing band saws. A great deal of it has been used, and is said to have given satisfaction in every way. It flows easily and is very strong. They roll it very thin and cut it to any size.

The Wm. Hamilton Manufacturing Co., of Peterboro', Ont., have recently received an order from Audre, Cushing & Co., St John, N. B. for one of their well known Prescott band mills.

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A call from buyers when in the city solicited. Letter orders have careful and prompt attention.

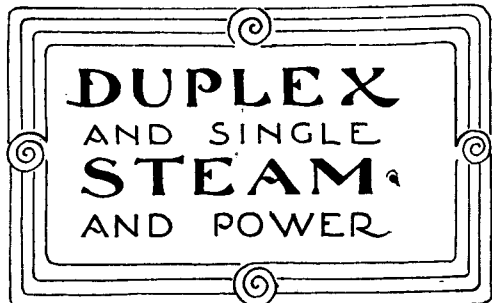
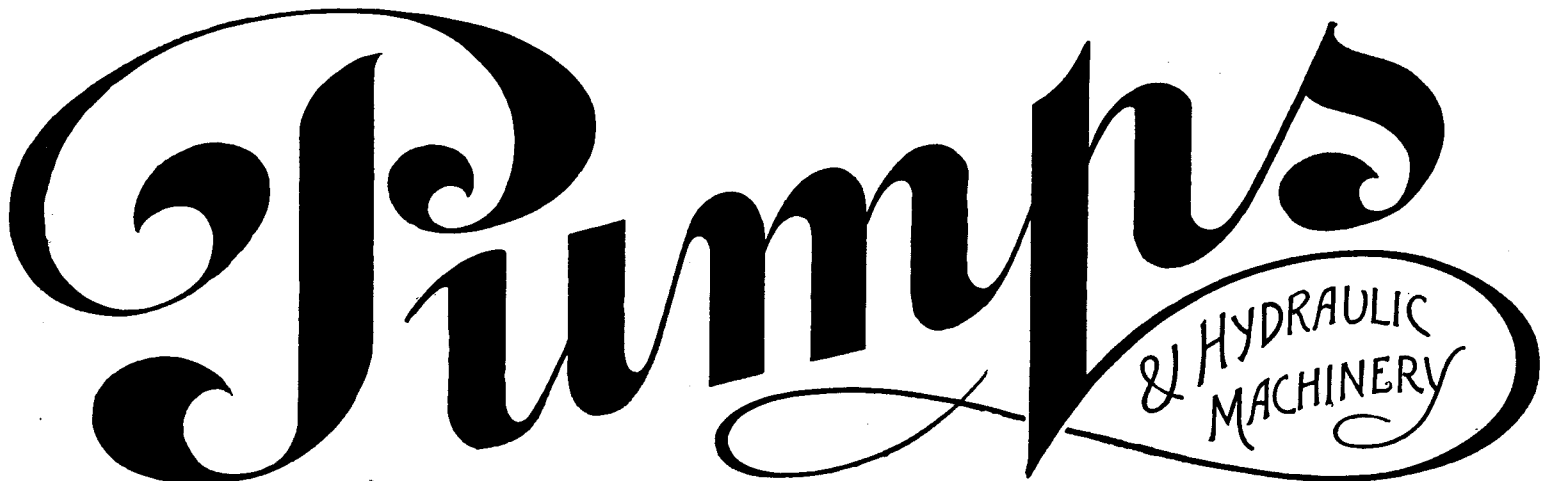
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Being extensive operators in the lumber business, as well as Wholesale Grocers, we are exceptionally well qualified to fill orders for Lumbermen's Supplies.

MAIL ORDERS GIVEN PROMPT ATTENTION.

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THE NORTHEY MFG. CO., Ltd.
TORONTO

PERSONAL.

Alderman James Scott, manager of the Georgian Bay Lumber Co., is on a holiday trip south.

Mr. John Waldie, manager of the Victoria Harbor Lumber Co., has been nominated by the Liberals of Halton, for the Commons in the coming Dominion elections. Mr. Waldie, some years ago, was the Liberal member for Halton.

John Armstrong, of the firm of S. & J. Armstrong, McKellar, Ont., died of pneumonia at Parry Sound on the 16th of March. Mr. Armstrong has been contracting in logs in this district for over 28 years, and has lumbered in nearly every township on the west side of the district.

ROPE DRIVES.

FOR rope drives, the common rule is not to make the diameter of the smallest pulley less than thirty times the diameter of the rope, and even larger than this is to be preferred. For wire rope it should be still more, and from 50 to 100 times the rope diameter is the common practice when these are used. Excepting for very long transmissions, the wire is seldom used in regular driving, as its weight is objectionable, and its advantages are not enough to make it popular over manilla or cotton ropes.

"MYSTERY" OF BOILER EXPLOSIONS.

WHILE the "mystery" that has so long surrounded boiler explosions seems to be gradually lifting, a great many of the things occurring around an active steam plant have a tinge of the marvelous about them that has a decided tendency to quicken the perceptive faculties of the man who is called on to wrestle with them. A short time ago a neighbor asked my opinion as to the singular action of his boiler, which he had left with nearly three gages of water the night before and had found it in the morning without any water visible in the glass. He was confident that none of the valves were leaking, and when that explanation was suggested, and could not imagine any probable way to account for this loss. A few days afterwards I met him again, and the matter had been cleared up to his satisfaction. It seems that the day before he had left the boiler in the same shape as he commonly did, which sometimes included a partially opened injector valve. As he drew his feed water from a barrel, when the injector ceased working it became virtually a siphon, which drew the water out of the boiler. As on the latter occasion he had merely shut down for dinner, he had returned before much of the water had got out, but it is safe to say

that he will be careful to shut all valves hereafter.—F. Riddel in Power.

ADVANTAGES OF WOOD PULLEYS.

THE practical advantages of wooden over iron pulleys are briefly summarized by Power and Transmission as follows:—

- Saving in power by better traction surface for belt, 33 per cent.
- Saving in weight, 70 per cent.
- Reduced size and weight of shafting, hanging, etc.
- Corresponding saving in power required to overcome friction in bearings, etc.
- Gain in safety speed limit, 400 per cent.
- Saving in time in putting on or off the shafts.
- Saving in time in procuring pulley when wanted.
- Saving in avoiding mutilation or distortion of shafting.
- All these considerations become augmented in importance as speeds are increased, and are, therefore, of especial interest to all who are operating electrical machinery.

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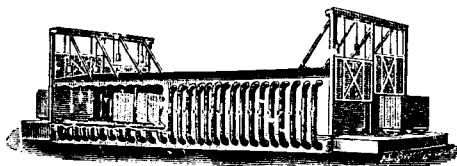
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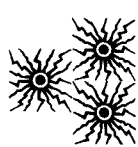


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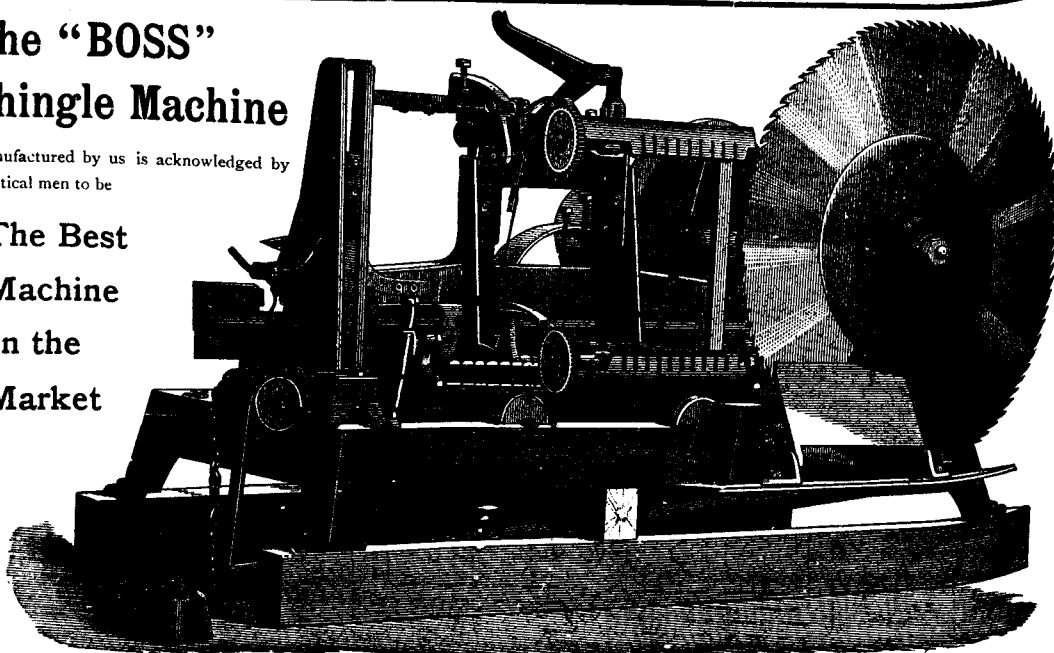
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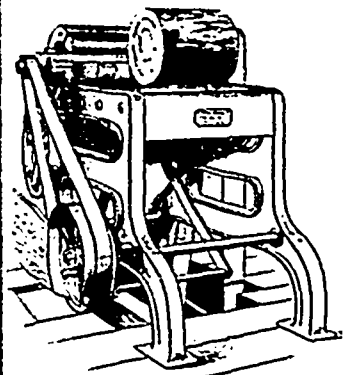
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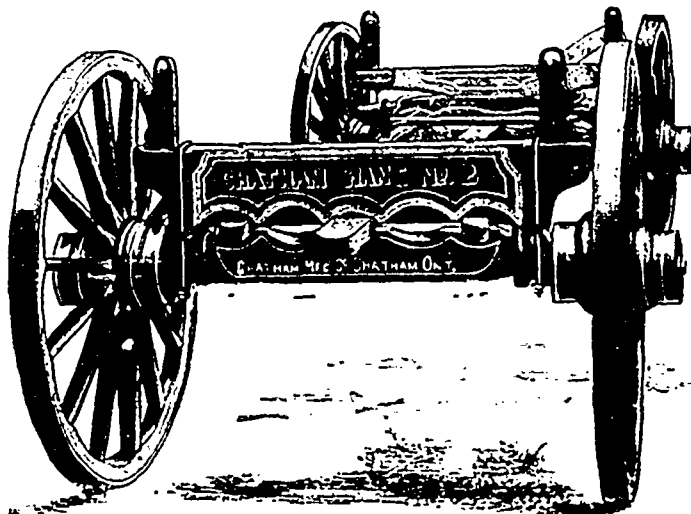


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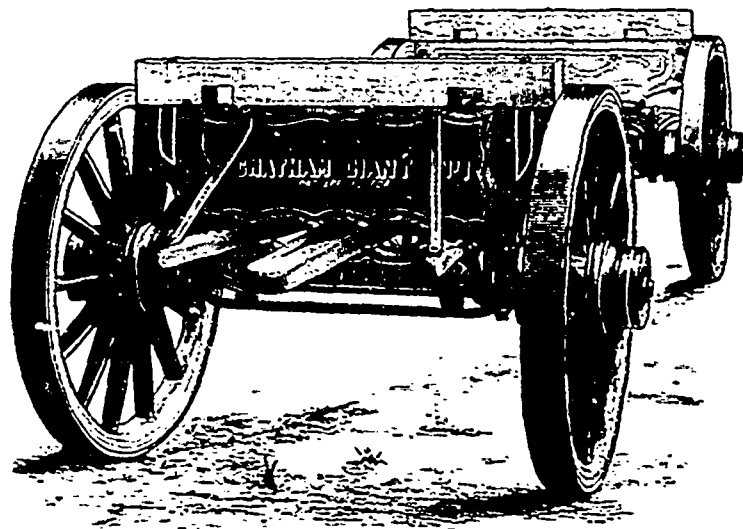
It will do double the work of any other.
It is the only machine made that will peel Cedar Shingle Blocks.
It will peel dirty blocks without taking the edge off the knives as they cut from the clean bark or block out.
It is a self-feeder, and very easy to operate.
It requires less power than a face wheel.
All iron and steel, very simple and durable.
It will ross knotty and uneven timber without waste.
It occupies about the same space as an ordinary planer.
You can have a chance to try a machine before buying it.

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THE CHATHAM GIANT LOG TRUCK.



IT must be self-evident that our GIANT ARM LOG TRUCKS, of which the above is a faithful illustration, is the best log truck made; but if conclusive evidence of this is wanted we refer to every mill man and lumberman in the county of Essex, Ont., where millions upon millions of Elm logs are gotten out every year on them, and where these trucks sell readily, while those of other makes remain unsold at \$5 to \$10 less.



THE CHATHAM GIANT LOG AND LUMBER TRUCK.

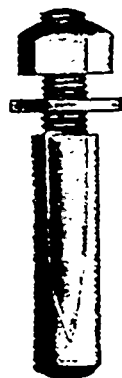
As seen above it is a Lumber Truck, but it is quickly converted into a Log Truck by bunks which are grooved at the ends to receive the stakes and slip down between them, and are perforated for side or lug poles. We build these trucks in all sizes from 2½ to 4 inch Malleable Giant Arms. Farmers all over are extensively adopting the lighter sizes as general purpose wagons.

In reference to above trucks we would call the attention of the reader to the following illustration of VANALLEN'S PATENT GIANT ARM with which they are equipped.

It will be seen that the hind bolster and sand-board are formed to rest upon the flat top of this arm, and being securely clipped to the axles forms a complete and solid truss and render the axles unbreakable and inflexible.

Our Malleable Giant Arm farm and teaming Wagons have no equals on this continent, of which the judges on vehicles at the World's Fair, Chicago, gave us an unqualified certificate in the shape of a GOLD MEDAL AND DIPLOMA.

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TRANSMISSION.

The transmission of power by ropes has been largely resorted to in England, the preference being given to what is known as the Lambeth cotton rope, which is made of four strands, the center or core of each strand being bunched and slightly twisted, the outside of the strand having a covering of yarns that are firmly twisted. The four strands are further laid with a core in the center to form a rope and twisted in the same way as any four-stranded rope. In this way a rope is formed possessing extreme flexibility, and the fibers will not break by bending on each other when run on pulleys, the rope also standing elongation or stretching some twelve inches in a length of fifty inches before breaking.

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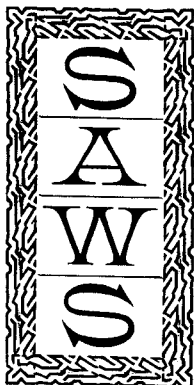
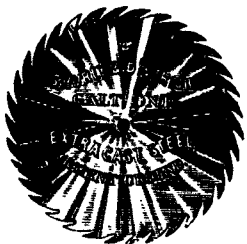
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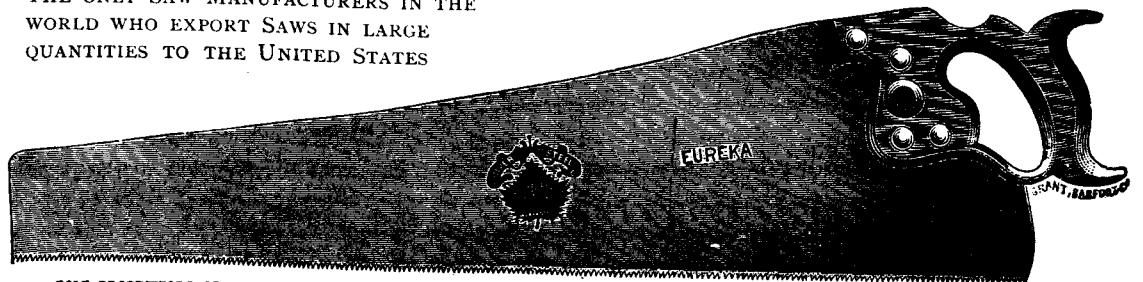
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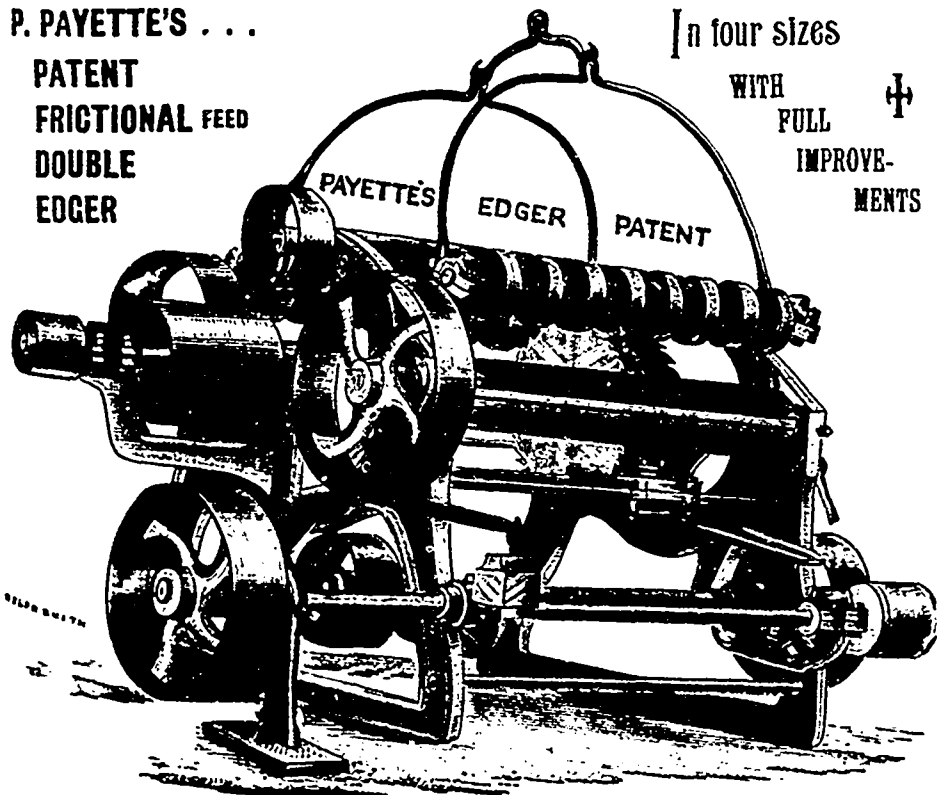
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