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THE CANADA LUMBERMAN

Wood-Workers', Manufacturers' and Millers' Gazette

VOLUME XXIII.
NUMBER 6.

TORONTO, CANADA, JUNE, 1903

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MOST DURABLE. THE BEST FOR MAIN DRIVES.
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LIMITED
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That will wear longer, need less repairs, is cut out of better stock, or better able to stand hard work on high speed machinery than the belts made by

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OF EVERY DESCRIPTION.

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WE ALSO BUILD

Pulp Mill Machinery,
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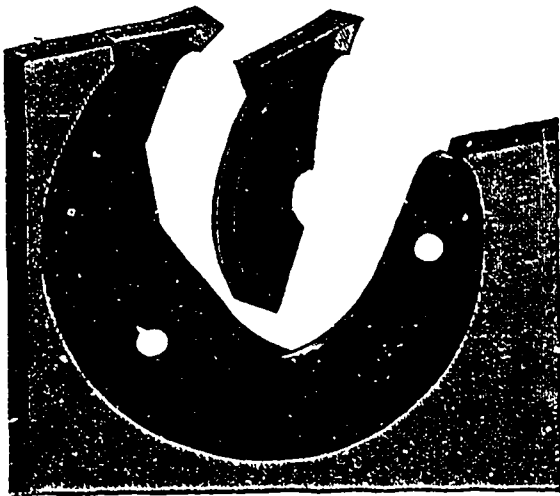
— St. Catharines, Ont. —

We are the Sole Manufacturers of Saws
under the

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in the Dominion of Canada.

There is no process its equal for tempering circular saws. Other makers recognize this fact, as some of them, in order to sell their goods, claim to have the same process. All such Claims are FALSE, as the patentee in the U. S. and ourselves are the only firms in the world who use it.



INSERTED TOOTH SAWS

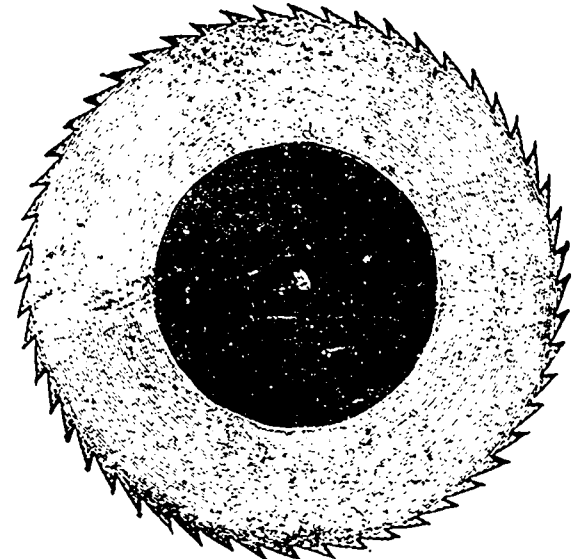
Notice the improved shank. We call particular attention to the swell which strengthens it at the weakest part and which gives it more wear than the old style.

Shanks made in usual gauges and to fit your saws perfectly.

SHINGLE SAWS

The quality of the "Simonds" Shingle Saws is proven by the fact that the largest shingle and machine manufacturers in Canada are using them.

Run a "Simonds" and you will increase your output.



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THE NARROW "LEADER"
REFINED SILVER STEEL.

The Simond's temper and style of tooth make the "Leader" the fastest and easiest cutting saw manufactured.

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Petrie's Machinery Bargains

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- 3 and 3 1/2 H.P. Fore & Aft, Compound, Doty, new.
- 4 1/2 H.P. " "
- 7 1/2 and 14 H.P. Steeple Compound, Doty
- 5 1/2 H.P. Marine Engine, with Shaft and Wheel.
- 9 1/2 Marine Engine, with Shaft and Wheel, new.
- 2 1/2 H.P. Marine Engine, Dutton, New.
- 3 H.P. " " " " " "
- 6 1/2 H.P. " " " " " "
- 7 1/2 H.P. " " " " " "
- 2 1/2 to 4 1/2 H.P. "Triton" Marine Gasoline Engines, Complete With Shaft and Wheel, new.
- 10 H.P. Engine and Boiler on Wheels, Cornell.
- 14 H.P. " " " " " " Waterous.
- 70 H.P. Tandem Compound Condensing Engine, Osborne Kelly Make.
- 7 3/4 and 9 5/8 H.P. Compound Slide Valve Engine, Waterous.
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- 4 1/2 H.P. No. 1 Jewel Automatic, Dutton, new
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- 10 H.P. No. 5 " " " " " "
- 12 H.P. No. 6 " " " " " "
- 12 H.P. No. 7 " " " " " "
- 6 1/2 H.P. Centre Crank, Dutton, new
- 7 1/2 H.P. " " " " " "
- 8 H.P. " " " " " "
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- 9 1/2 H.P. " " " " " " Northey.
- 9 H.P. " " " " " " Beckett, New.
- 9 H.P. " " " " " "
- 16 H.P. Hor. Rocking " " " " " "
- 12 1/2 H.P. " " " " " " Waterous.
- 10 1/2 H.P. Slide " " " " " " Goldie & McCulloch
- 8 1/2 H.P. " " " " " " Buffalo.
- 2 1/2 H.P. Gasoline Engines, Junction make, new.
- 1 1/2 H.P. Upright Gasoline Engine, Housay make, new.
- 10 and 15 H.P. Gasoline Engines, Haggas make, new.

BOILERS

- 6" x 120" - 28" Tubes, Hor. Tubular
- 3 1/2" x 120" - 33" " " " "
- 3 1/2" x 160" - 39" " " " "
- 4 1/2" x 130" - 39" " " " "
- 4 1/2" x 130" - 45" " " " "
- 4 1/2" x 150" - 43" " " " "
- 4 1/2" x 160" - 30" " " " "
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- 7 1/2" x 180" - 55" " " " "
- 6 1/2" x 210" - 54" " " " "
- 6 h. p. Portable Fire Box Boiler, new.
- 3 1/2 h. p. " " " " " "
- 4 1/2 h. p. " " " " " "
- 19" x 44" - 13" Tubes, Vertical, new.
- 19" x 44" - 17" " " " "
- 17" x 68" - 70" " " " "
- 24" x 40" - 19" " " " "
- 24" x 40" - 31" " " " "
- 30" x 60" - 43" " " " "
- 30" x 70" - 43" " " " "
- 24" x 60" - 31" Tubes, Submerged, new.
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WOODWORKING MACHINERY

- Left Hand Circular Mill, No. 1 Lane.
- 36 in. Circular Re-Saw, Galt Make.
- All Iron Swing Cut-off Saw Blades.
- Railway Swing Cut-Off Saw Table.
- Double Spindle Iron Top Wood Shaper, Galt make, new.
- Double Spindle Wood Top Wood Shaper.
- 12 inch A. Doig Pony Planer.
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- 13 inch Nicholls Planer, Matcher and Moulder.
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- 20 inch Combined Disk and Drum Sander
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- 12 in. Archimedian Brass, Waterous.
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- 36 in. Right-Hand Perfection
- 48 in. " " Vulcan.
- No. 12 Tuerk's Water Motor, 4 to 6 H. P.

STONE CRUSHERS.

- No. 2 Dodge Stone Crusher.
- Rotary Screen for above.

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- 12 to 15 Ton Refrigerating and 6 to 7 Ton Ice Machine.

Prices and Descriptions of the above machinery, also Catalog of Mill and Engineers' Supplies, sent on request. I carry a very large line of iron working tools and am prepared to make close prices on same.

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DRIED FRUITS LARD BEANS

General Groceries of all Kinds.

We make a specialty of everything in this line suitable for Camps and Lumbermen's use.

We have had a large trade in this field for years, and know exactly what is required. The right quality of goods at the right prices will always be found with us.

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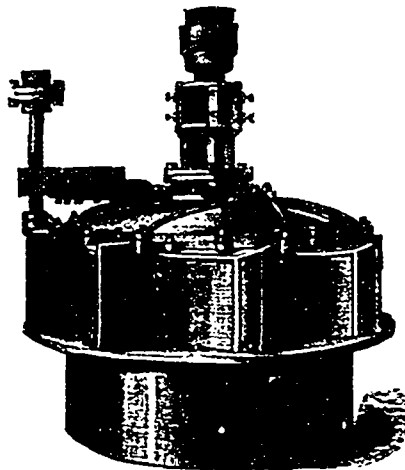
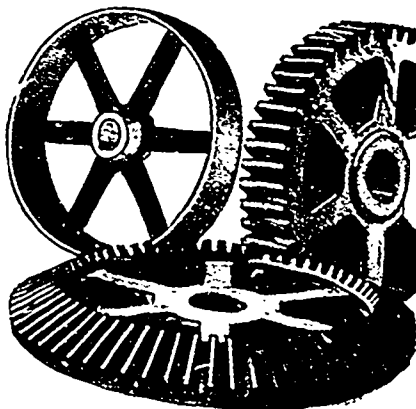
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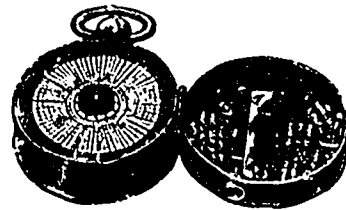
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Contain all the modern improvements. Warranted in every way. Cannot be tampered with without detection. Manufactured by

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According to the style of machine desired.

We can safely say that our rebuilt typewriters are the best on the market. We use genuine factory parts and employ the best workmen in the business. We also guarantee every typewriter we sell for one year

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Second-Hand Machinery

- 16x36 Brown Automatic Engine.
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- 13 1/4 x 30 Slide Valve Engine.
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- 10x15 Centre Crank Engine.
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- 12 h. p. Fire Box Boiler.
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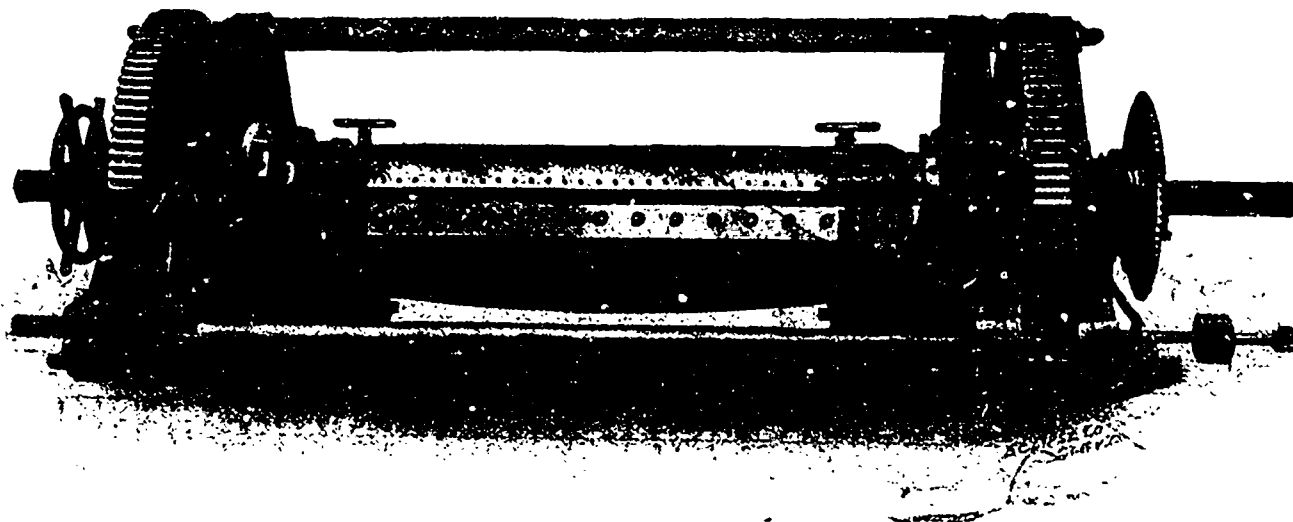
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Our Celebrated 

Rotary Cutting Veneer Machines

made in over sixty sizes, have stood the test and proved equal to any proposition to reduce logs into thin lumber and veneers.



The product is high grade.
The output is great.
The cost of operating and maintenance is reduced to a minimum.
Quite a combination, is it not?

Timber and mill owners should get in early.
Buy a Coe Veneer Cutting and Drying outfit and prepare to supply thin lumber and veneers which have a healthy growing demand. More money in it than sawing your logs into lumber.

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Established 1852.

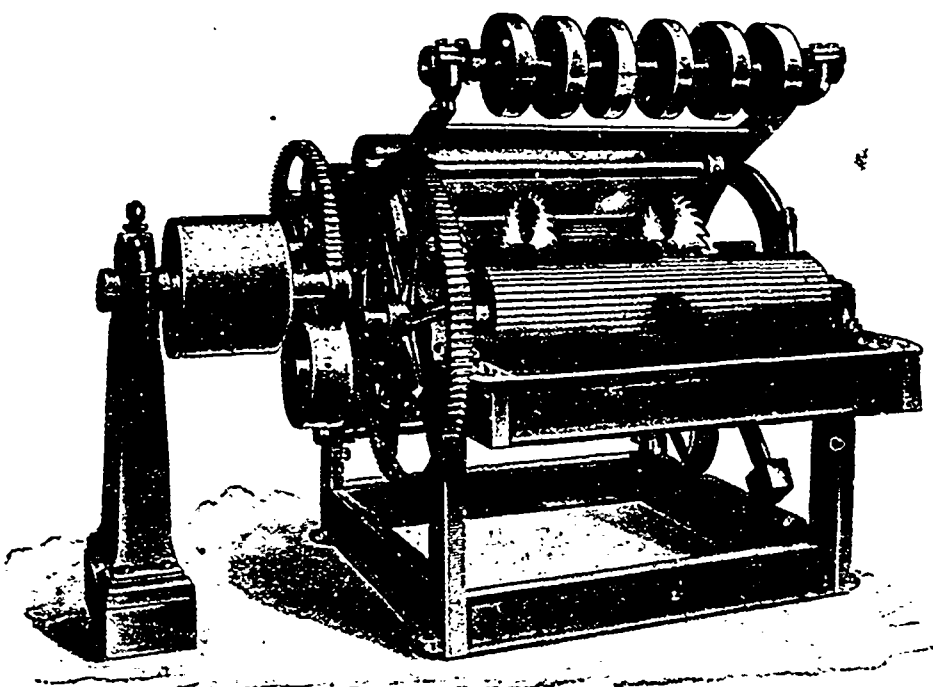
Largest Builders of Veneer Cutting Machinery in the world.

Improved Double Edger

BUILT in sizes from 3 saws up to 8 saws. The front top roller consists of six wheels, space 3 inches apart, thus enabling the operator to see exactly where the saws are. Fitted with one or two moveable saws. By means of removable bracket supporting the mandrel bearing, the entire set of saws can be removed and a new set placed on in a few minutes.

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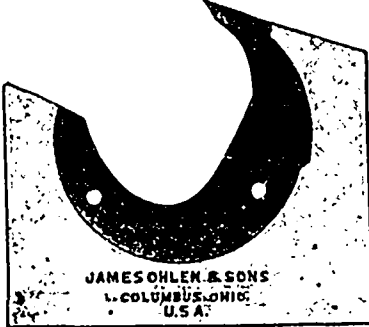


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 A trial order solicited. Write for price lists
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SOVEREIGN OIL Co.
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 Highest Grade in Cylinder
 Oils, Engine Oils, Machine
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 POWDERED BOILER
 (THE) COMPOUND (BEST)
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OHLEN SOLID AND INSERTED SAWS
 Made from Best of Steel, gives entire
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JAMES OHLEN & SONS
 COLUMBUS, OHIO,
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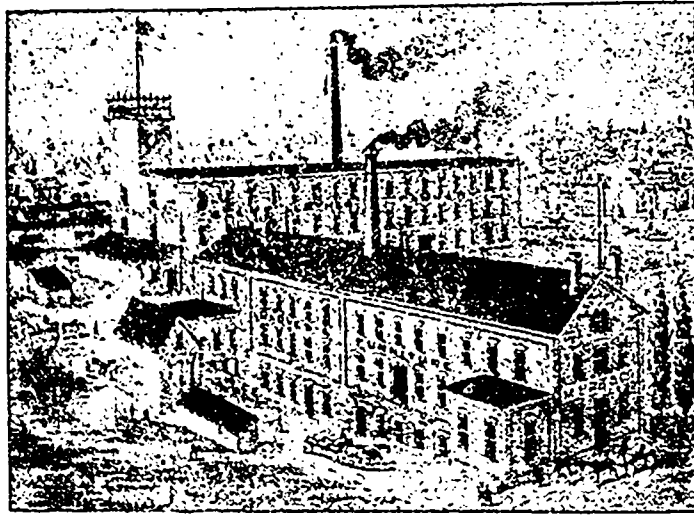
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The James Ohlen & Sons Saw Mfg. Co.
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Mince Meat,
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 Special Attention given to Mail Orders.

The Capstan Manufacturing Co.,
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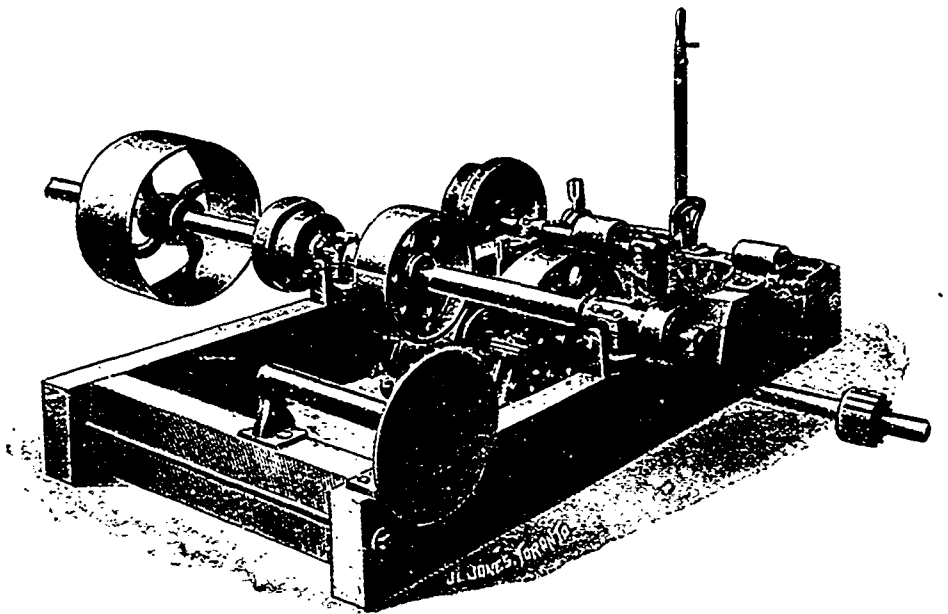
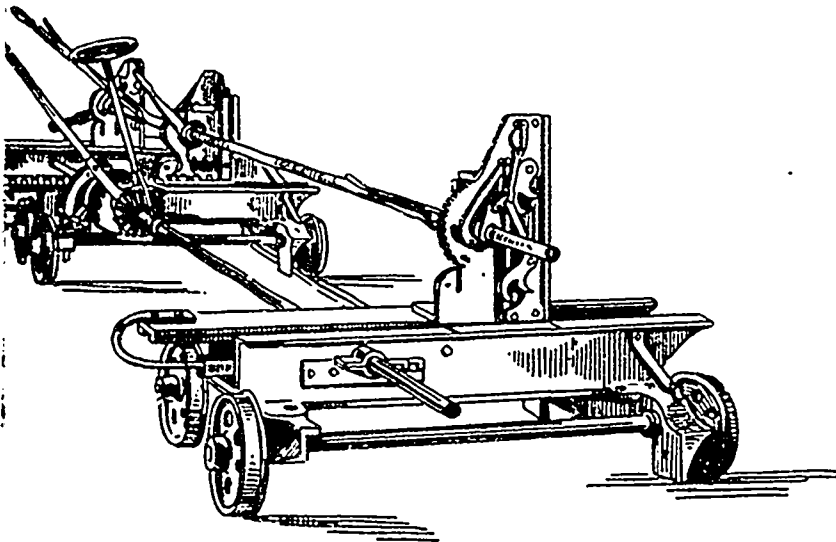
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GLOVES, MITTS, in all Grades of Stock as BUCK,
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Correspondence solicited. Samples submitted on application.

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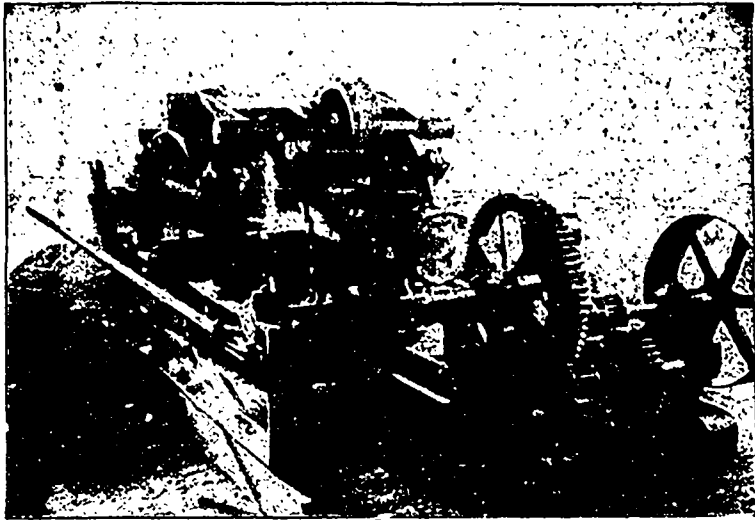
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WHEN IN THE MARKET WRITE US FOR PRICES.

THE BEST IN THE WORLD
 There is no doubt about the fact that the
RODGERS
Adjustable Log Siding Machine

is without a peer.
 This machine will slab opposite sides of a log in one operation at the rate of two thousand logs in 10 hours.



A MONEY MAKER **A MONEY SAVER**

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RODGERS IRON MANUFACTURING CO., Muskegon, Mich.
 Rock Island, Ill., Nov. 25, 1902.
 Gentlemen:—Replying to yours of recent date and referring to your adjustable log siding machine, must say it has given us general satisfaction, and we have done good work with it. Any one desiring a machine of this style for the purpose of slabbing small logs, we would recommend yours.
 Respectfully,
 WEYERHAEUSER & DENKMAN.

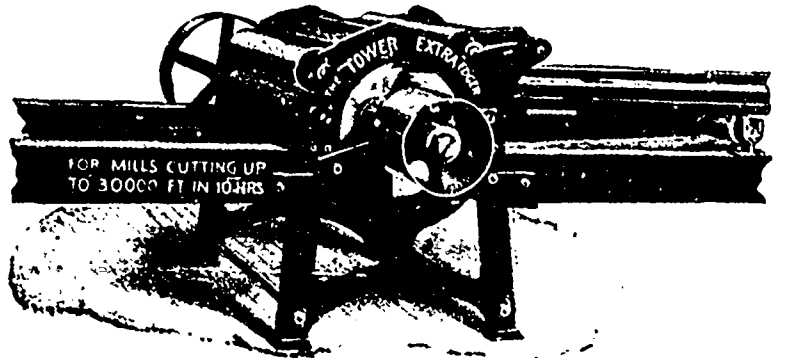
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RODGERS IRON MFG. CO.
MUSKEGON MICH.

The World-Famous **“TOWER”** Line of Edgers

1,000 IN DAILY USE.

MADE IN TWO SIZES, AS FOLLOWS
 The “TOWER” 2 and 3-saw Edgers, Improved.
 For Mills cutting not to exceed 20,000 feet in ten hours
 The “TOWER EXTRA” 3-saw Edger.
 A larger and heavier edition of the “TOWER,” for mills cutting up to 30,000 feet



1. They take up little room.
2. They require little power.
3. The feed rolls are adjustable in FOUR directions, which means absolute accuracy.
4. The saws may be removed easily and quickly, without disturbing the arbor.
5. The mechanism for shifting the saws is up-to-date, convenient and positive.
6. The vital parts are carried by a substantial iron husk resting solidly on the floor.
7. They are pre-eminently practical.
8. There is no edger made approaching them in cheapness.

“The No 5” TOWER EXTRA Edger bought of you in January is immensely satisfactory.”
 KEO SHING-I CO., England, Ark.

The “TOWER” One-man 2-saw Trimmer.

With this trimmer one man can easily trim the output of a mill cutting up to 30,000 ft. in ten hours. The shifting crank being secured to one of the chain carriers, the operator shifts the saws as he walks toward the board to be trimmed, thus performing two operations simultaneously. This saves time.
 There are two feeds, easily and quickly started, stopped or changed, without stopping the saw. One lever controls both feeds.

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The Gordon Hollow Blast Grate Co.,
GRENVILLE, MICH.
 ESTABLISHED 1889. Send for Catalogue D.



WE MAKE A BIG LINE OF

River Shoes and Gruisers

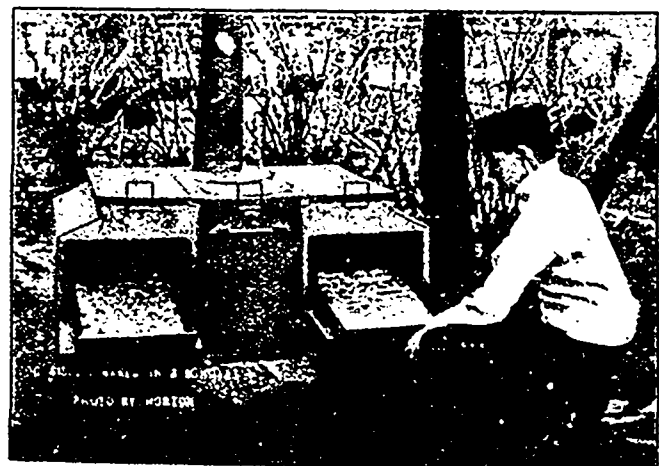
AND ALL KINDS OF HEAVY SHOES
 FOR RIVER AND CAMP

WE HAVE MADE THEM FOR YEARS. WE KNOW HOW
 TO DO IT. SEND FOR OUR CATALOGUE.

Herold-Bertsch Shoe Co.,
 Makers of Shoes GRAND RAPIDS, MICH.



Watson's Portable Air Tight Baker



The most convenient stove ever constructed for use in the Woods, on the Drive, in the Camps. Bakes as perfectly as the finest range.

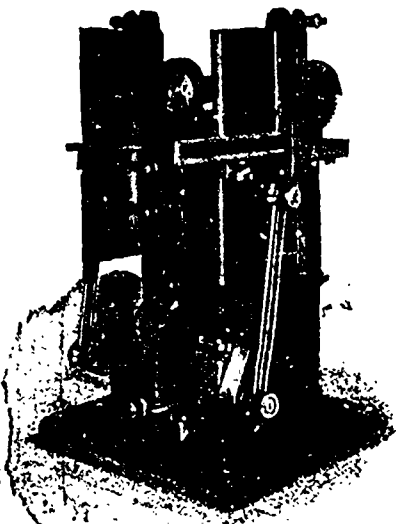
Read What Experienced Woodmen Say of it:
 “We used your Portable Woods Baker all last season with a crew of men in the woods, travelling from place to place. We found it convenient to handle and the best steel range cannot beat it in baking. It is a perfect baking oven and a success in every way.”
 The cooking is not affected by rain or weather and can be used outdoors or in a tent.
 Yours truly,
 MENOMINEE RIVER BOOM Co.
 Per Wm. H. Stephenson, Gen'l Supt.

We make these stoves in three sizes. Our No. 10 will cook for ten men; our No. 20 for twenty men, and No. 30 for fifty to one hundred persons.
 We want those interested in a stove of this kind to write us for full description and prices.

WATSON BROS.
 Manufacturers
MARINETE, WIS.



SHERMAN FLOORING MACHINES
Patented.



The above cut shows our End Matcher the best machine in the market for end matching flooring strips. They do the work quick and slick, that's why so many of them are in use.

WE MAKE THE
Sherman Side Boring Machines,
To bore flooring run face up or face down, and also
Sherman Face Boring Machines,
To bore jointed flooring.

Our Boring Machines are for attachment to any matcher. Send for circular with list of users; you can then inquire about our machines.

W. S. SHERMAN CO.
729 North Water St., MILWAUKEE, WIS.

Excellence is Paramount

THE
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-OF-

Shoepacks, Larrigans and Moccassins

are unexcelled.



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I confine myself exclusively to the manufacture of this line of goods, having an up-to-date tannery, also years of experience myself. I am prepared to fill all orders promptly and guarantee to give satisfaction at lowest possible prices.

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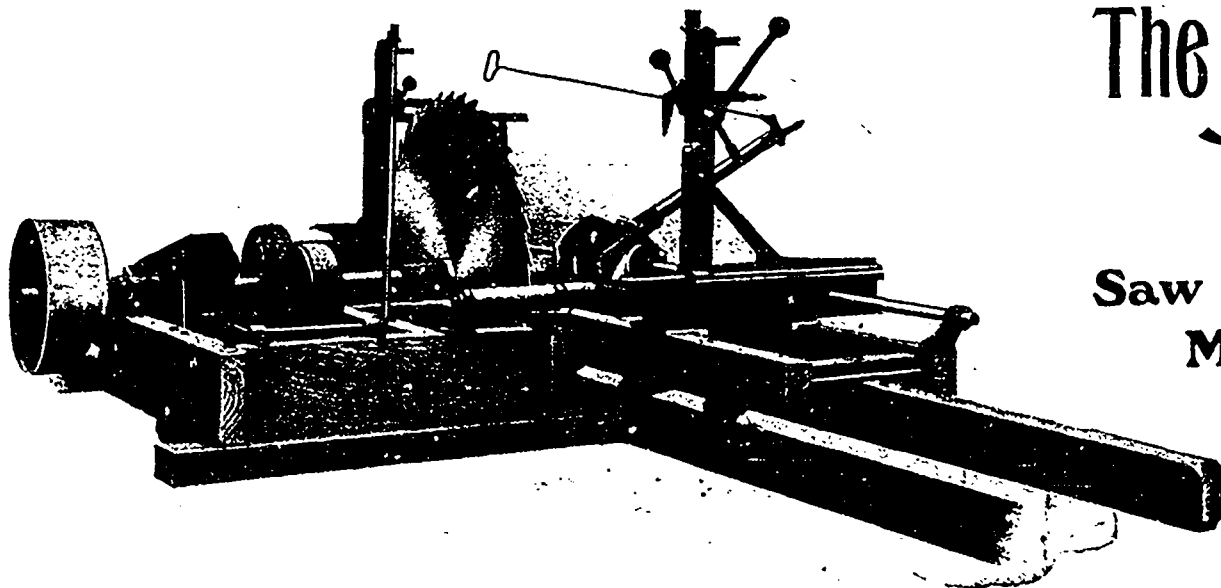
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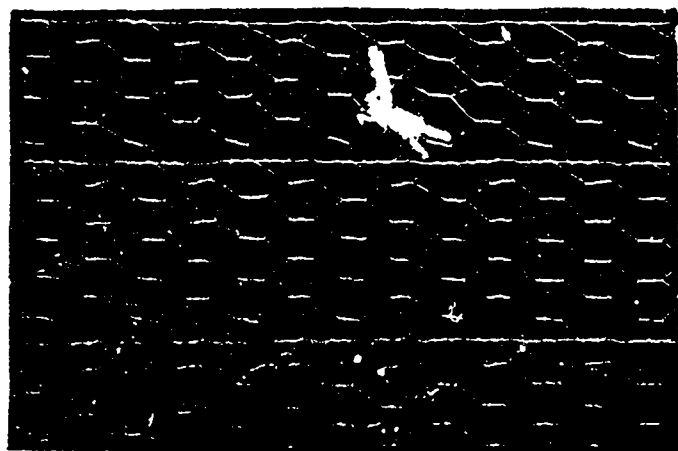
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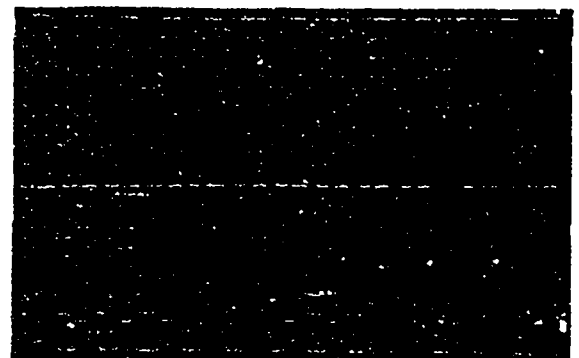
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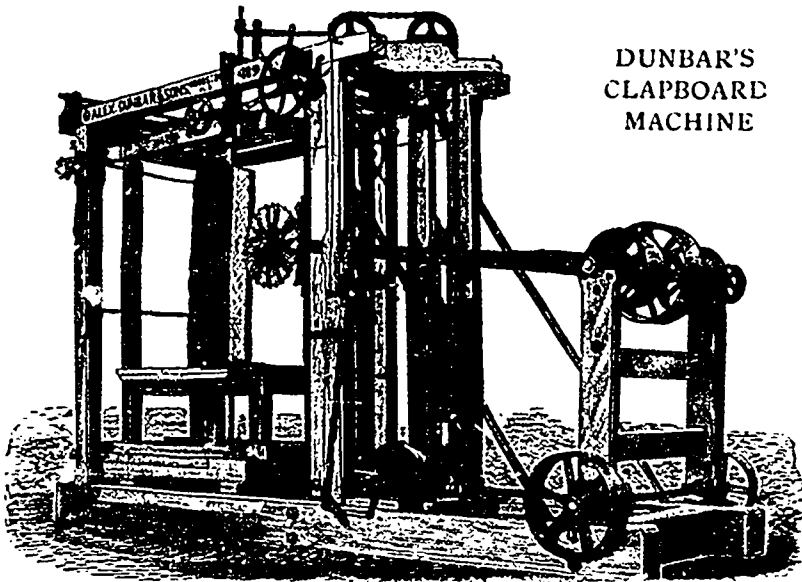


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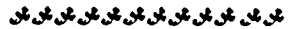


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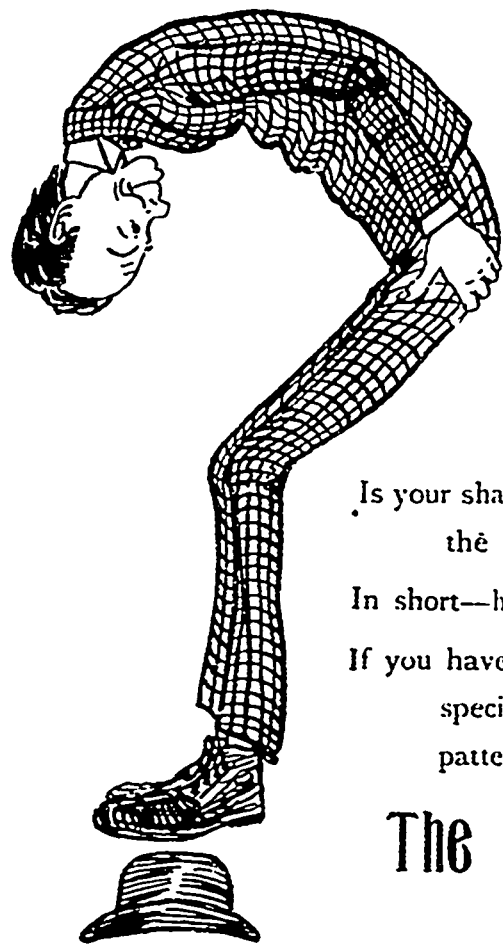
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Are you wasting power in quarter turn or right angle belt drives, when a rope drive would minimize the loss ?

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THE CANADA LUMBERMAN

VOLUME XXIII
NUMBER 6

TORONTO, CANADA, JUNE, 1903

TERMS, \$1.00 PER YEAR
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MAGNIFICENT NEW MILLS OF THE PACIFIC COAST LUMBER COMPANY.

The shareholders of the Pacific Coast Lumber Company include several well-known and successful Ontario lumbermen, Mr. W. J. Shepard, of Waubesa, being president, and Mr. J. G. Scott, of Vancouver, vice-president and general manager. Thus when it was announced, a little more than one year ago, that the company had decided to establish mills at Vancouver, it was taken for granted that an establishment of immense proportions and up-to-date in character would be built. That the anticipations of the public in this respect have been realized is proven beyond a doubt by the splendid illustrations of the completed mills which we are enabled to present in this number.

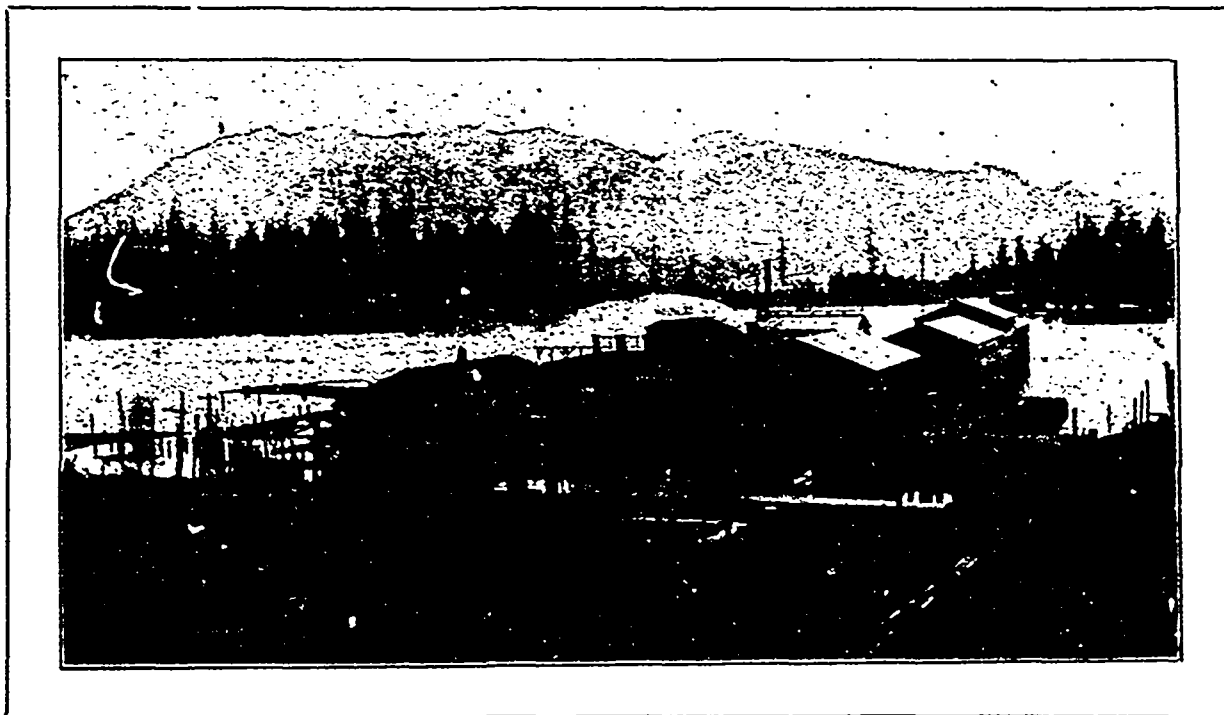
last. Work proceeded without any fuss or feathers, newspaper publicity was neither sought nor encouraged, the management preferring to let finished results speak for themselves. Practical men concede that the whole plant presents as strong a combination of good points, with special consideration to economical manufacture, as any saw mill in the west. There are many larger mills, but none more thoroughly up-to-date.

The saw mill occupies the east side of the company's property and is 60 x 300 feet, two stories in height. The big log haul-up is of the Wm. Hamilton Company pattern, is composed of 1 3/4-inch chain with cast steel brackets fastened at intervals thereon, and is capable of handling the largest logs with the greatest ease.

out to the timber delivery end of the mill.

No back-breaking, man-killing jobs are to be found in the whole mill, levers that a child can manipulate are operated and men's brains and steam power called into action. At the tail end of the edger the edgings and slabs are dropped on the floor of the mill and are carried by more transfer chains over to the slab smasher saws, where they are cut up into four-foot lengths and dropped into a conveyor which passes along on the outside of the mill.

From the edger the lumber is carried on live rollers to a camel back transfer and across the mill to the trimmer saws, where it is cut into the various lengths required. It then passes out on slow running transfer chains over the sorting platform and is sorted into the vari-



PACIFIC COAST LUMBER COMPANY, VANCOUVER, B. C. GENERAL VIEW OF NEW MILLS.

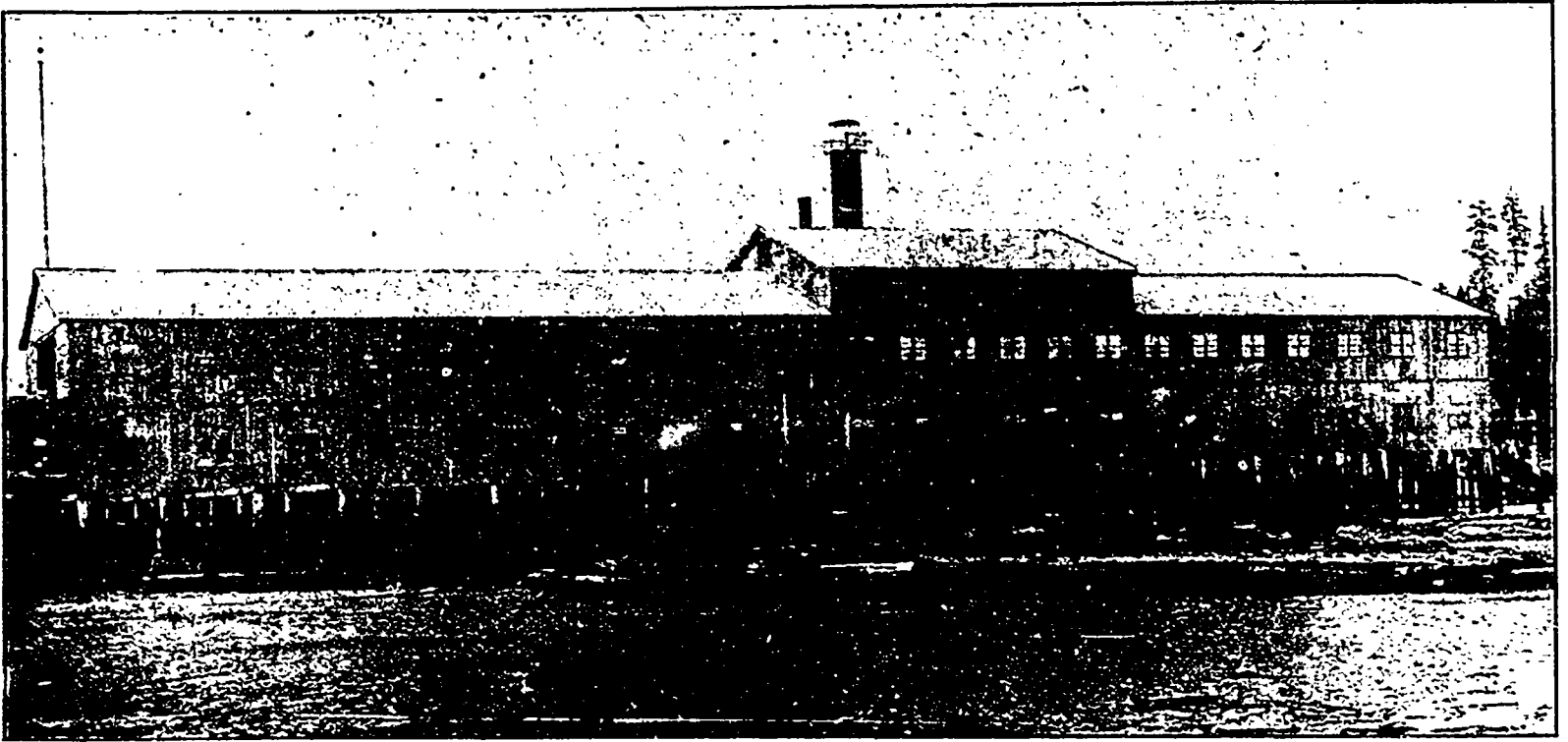
The site is on Coal Harbor, a sheltered little bay at the west end of Vancouver's Harbor, admirably adapted for the purposes of a saw-milling establishment. Excellent facilities are provided for shipment by rail or water. The location immediately adjoins the westerly end of the Canadian Pacific Railway terminus, and a short extension of the main line on to the property of the company affords rail shipment, while the Empress liners and all water traffic pass within a hundred yards of the mill.

Construction work was begun in January, 1902, and what had hitherto been a boggy, tidal flat has since then been converted into a most attractive hive of industry, giving employment to many scores of workmen. The shingle mill was finished first and began operations in June of last year, while the whole plant was completed and in operation the beginning of May

The mill is equipped with two ten-foot band saws, one on either side of the log deck, from which both of the carriages may take logs, although one side of the mill is more properly intended to act as the re-sawing side. Both of the bands and carriages were made by Clark Bros., of Belmont, N. Y. The heavy side is equipped with a Simonson log turner, by means of which the heaviest as well as the smallest logs are loaded on to the carriage or turned as easily and lightly as if they were hop poles. Both carriages are driven by Cunningham twin steam feeds. Transfer chains convey the "cants" from the heavy side of the mill over to the re-saw carriage, and further down the mill additional transfer chains convey the sawn lumber from either side of the mill to the centre, where the powerful Hamilton edger is placed, and live rollers carry the heavier timbers on

ous sizes and grades and passed on to the kiln cars which stand close alongside. When loaded these cars are moved by gravity to the dry kilns, and when the lumber is sufficiently dried, the loaded cars are again moved to in front of the planers in the planing mill. By this system some four or five handlings of lumber are saved as compared with the systems in force in most mills, and the saving in cost effected means almost a living profit.

From the timber delivery end of the mill, heavy timber or other lumber reaching there is placed on cars, and is passed along an elevated tramway running to the lumber yard, where it is either loaded on railway cars for final shipment, piled along the track for shipment later, alongside vessels for foreign shipment, or along wagon road for local trade. So well is this delivery of lumber



PACIFIC COAST LUMBER COMPANY, VANCOUVER—SAW MILL.

arranged that horses are not required about the mill.

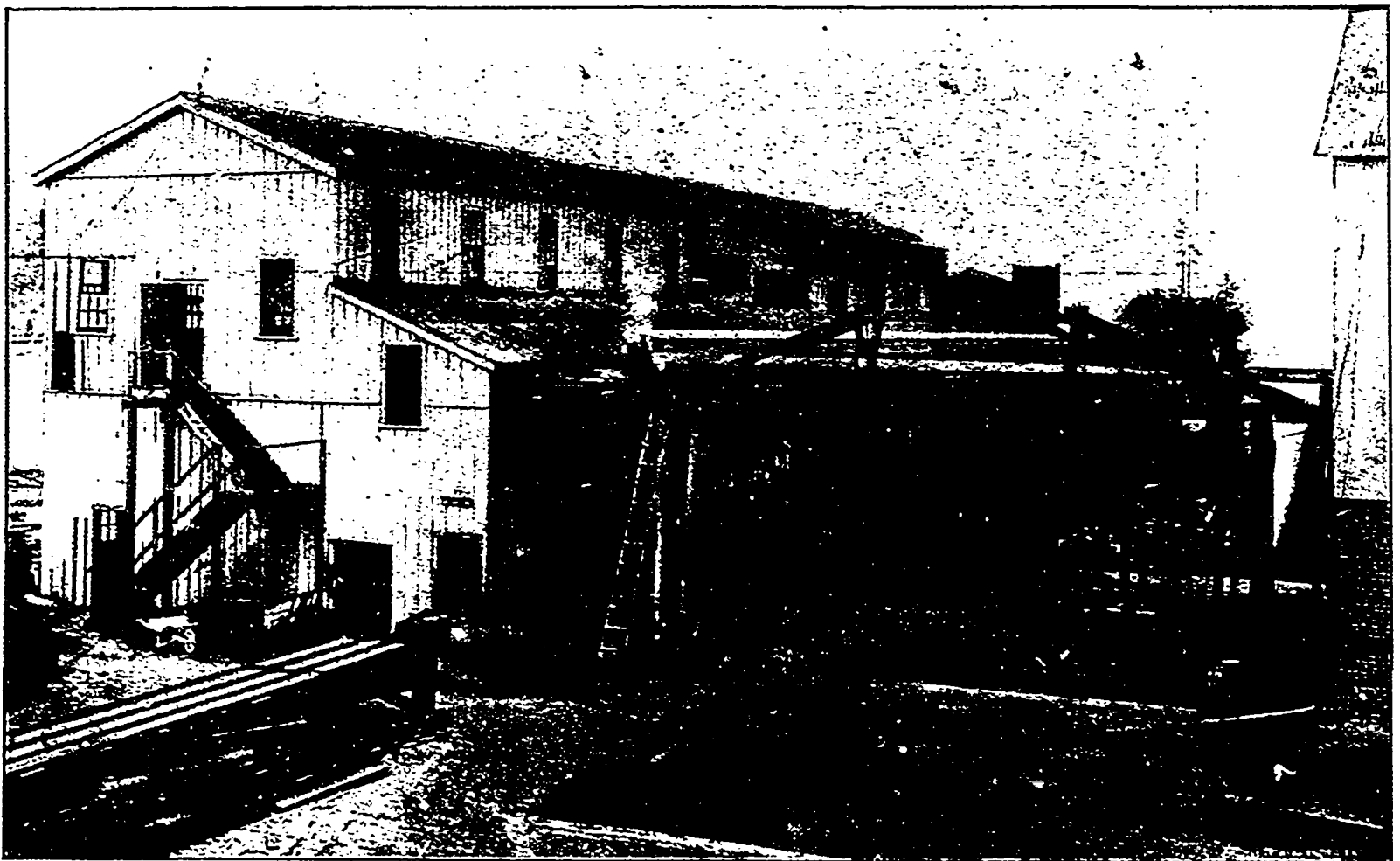
The planing mill is about 100 feet from the saw mill and is 72 x 120 feet, two stories high. It is equipped throughout with wood-working tools made by the Berlin Machine Works, Beloit, Wis., and is a model in every respect. The ground floor is given to flooring machines, moulders, lumber trimming devices, a six inch re-saw and a sixty inch double drum sander, the latter machine being the first of its kind in the province, and with it the company will

sand-finish their flooring, ceiling and such inside finish as can be sanded. This will be a boon to builders and contractors, as it will do away with the necessity for the expensive and laborious work of hand dressing and sand papering of interior finish.

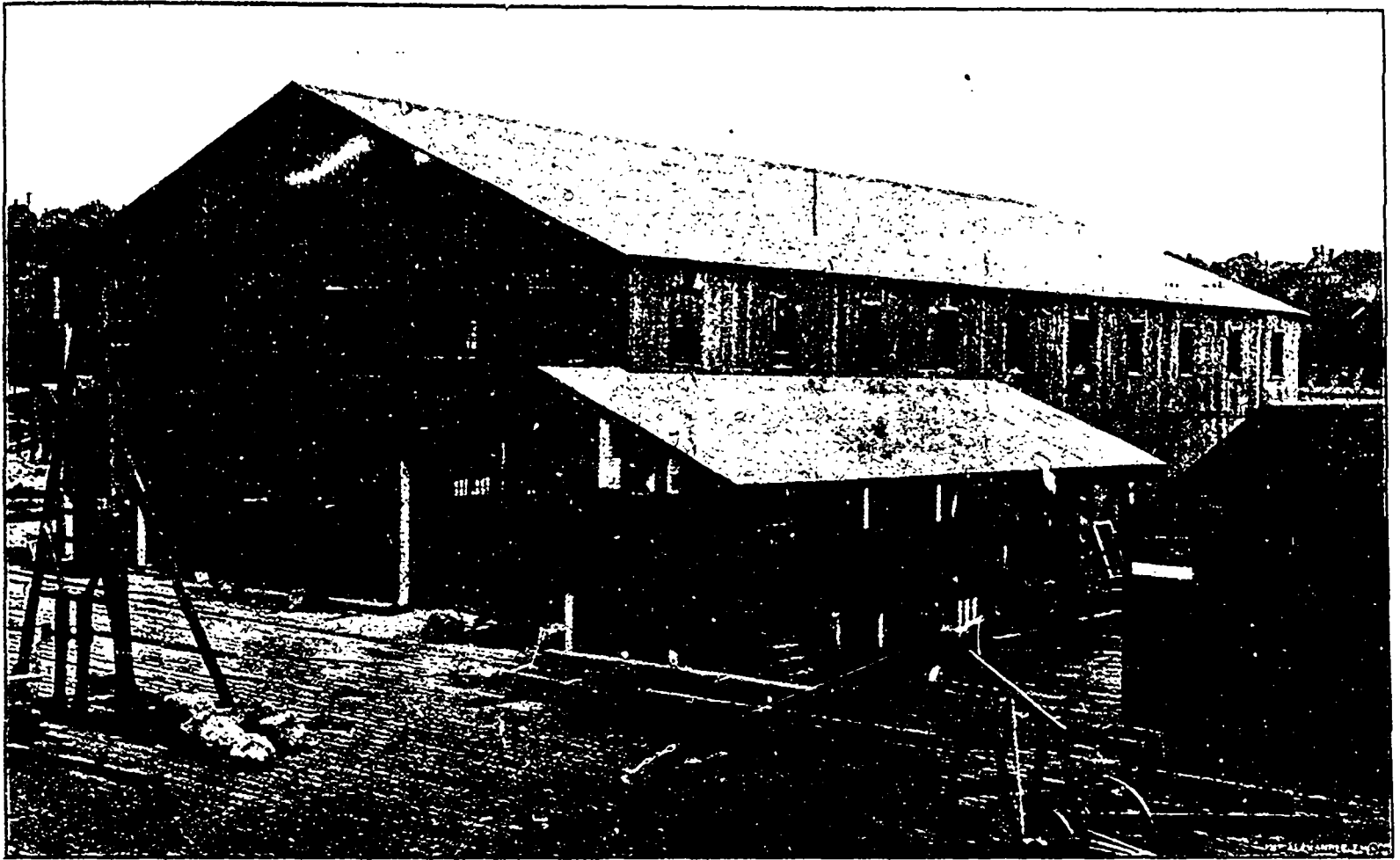
On the upper floor of the planing mill, which is on a level with the sawing floor of the saw mill, the green lumber planers are placed, including the heavy, four-sided timber planer, and with a minimum of handling, heavy timbers or other lumber that is dressed without being

kiln dried are planed and passed out on the elevated tramway to the railway car or pile. Close by the planing mill, the lumber storage sheds are situated. These are 40 x 350 feet, and on either side of this building are railway sidings, so that lumber can be passed on from the planing mill just as readily to either the railway car or storage shed as may be required.

The shingle mill is an entirely separate plant and occupies a building about 200 feet west of the saw mill, and is a good sized industry in it-



PACIFIC COAST LUMBER COMPANY, VANCOUVER—SHINGLE MILL.



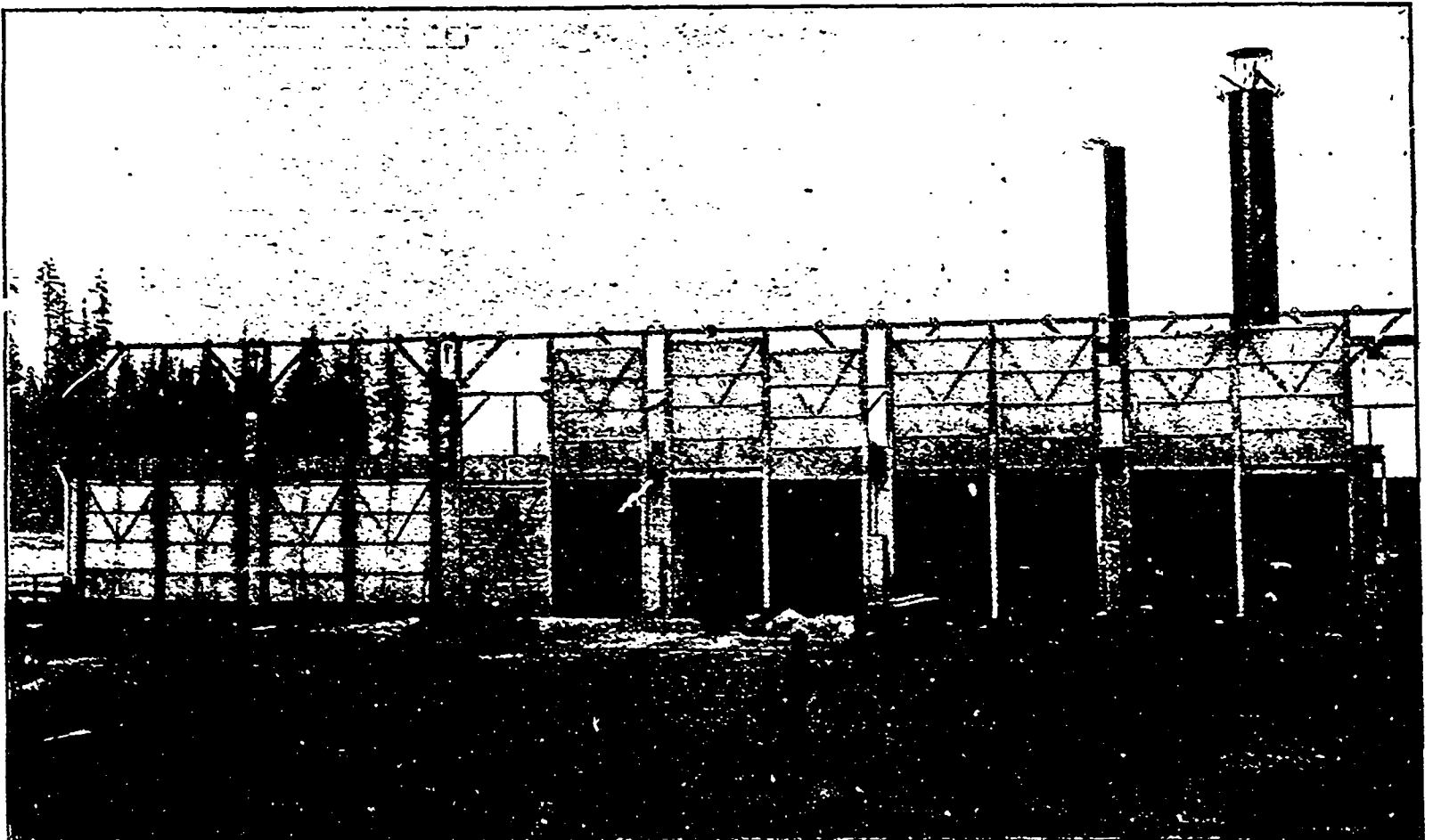
PACIFIC COAST LUMBER COMPANY, VANCOUVER—PLANING MILL.

sell. In the log end of the mill are a heavy log haul-up rig, a powerful drag saw, built to special order by the Albion Iron Works, Vancouver, a power bolter, two knee bolters, a shingle bolt conveyor and cut-off rig. Either logs or shingle bolts are used. From this end the blocks are conveyed upstairs to the shingle machines, which were made by the Schaake

Machine Works, of New Westminster. From these machines the finished shingles drop into bins, where they are sorted as to grades and bunched by a carefully trained corps of packers. The bunches are then placed on the kiln cars, which pass close alongside the packing room the full length of the mill, and with loads of 100,000 shingles on each, these cars are passed

down a slightly inclined track and into the dry kiln; when sufficiently dry, again passed along by gravity to the railway car for shipment, or unloaded in a large storehouse capable of holding about fifteen million shingles.

More than ordinary care has been given to the boiler house, which is 52 x 80 feet, situated midway between the saw and shingle mills,



PACIFIC COAST LUMBER COMPANY, VANCOUVER—DRY KILN.

with a clear space of 60 feet on each side. This building is composed of as non combustible material as possible, the sides and roof being covered with heavy corrugated iron and the floor being a heavy bed of concrete, while underneath the whole of the boilers a complete circulation of air is provided by means of rows of six-inch drain tile, set in concrete. A battery of eight boilers has been installed, each being 16 feet long and 66 inches in diameter.

The saw mill is driven by a pair of 24 x 30 vertical engines, the planing mill by a pair of 14 x 20 horizontal engines, and the shingle mill by a 20 x 24 vertical engine, all being set up on concrete pier foundations. For the purpose of lighting the whole plant, a 750-light direct current dynamo, made by the Canadian General Electric Company, has been installed. This machine is driven by a 12 x 12 Robb engine, and both arc and incandescent lights are used.

The Standard Dry Kiln Company furnished the equipments for the dry kilns. There are six rooms in all, with space provided for addition of more should requirements demand enlarging. In the construction of the dry kiln buildings the greatest care has been exercised to make them as nearly non-combustible as possible. The walls and ceiling are lined with a plaster composed of cement, asbestos, lime and sand, the roof being covered with felt and gravel. Live steam pipes are carried into each room for fire extinguishing purposes, and all steam pipes have been well protected from wood contact.

In the way of fire-fighting appliances the company has installed a six-inch water main, running through the centre of the property, from which a number of four-inch branches are taken, these entering into each of the buildings. Hydrants and hose houses are placed at convenient locations, with an abundant supply of hose and hose reels. A fire brigade will be formed among the employees and regular fire drills held in order to enable each man to understand what duty will be required of him in case of emergency.

The offices of the company are situated on the north-east corner of the property and face on Georgia street. The exterior presents a neat and tasty appearance, while the interior is conveniently arranged and is panelled with cedar and fir, natural finish. The building certainly is a credit to the locality.

Taken as a whole, the plant gives evidence of most careful planning and foresight, and it is bound to be an important factor in both rail and cargo trade. Labor-saving appliances are employed wherever possible; no unnecessary work is needed in the manufacture of the various products; from start to finish it is a straight progressive system. To the uninitiated everything looks natural and just as it should be, and the general completeness suggests that when this plant cannot make money for its owners, it will be a blue time for the lumber trade of that province.

While Canadian machinery and supplies have naturally been given the preference in the equipment of the plant, every part of the machinery has been carefully selected and the best and most modern that the world produces has been chosen. To keep the plant steadily em-

ployed ten hours per day, about fifty million feet of fir and cedar logs will be required annually.

The company is represented in Manitoba and the Territories by Mr. H. T. Burntrager, of Winnipeg, Man., and in Ontario by Mr. W. J. Lovering, of Coldwater, Ont.

THE COST OF RETAILING LUMBER.

For the purpose of getting an expression of opinion on a subject of interest to the retail trade, I recently propounded this question to a number of retail yard men: "What is the average cost of handling lumber in a retail yard?" The auditor of one of the line yard companies was the first to respond. "With the exception of the line yard companies I find

him anything. Our experience in various yards demonstrates very thoroughly that there is no way of determining the actual cost per thousand feet of handling lumber. It depends entirely upon circumstances and the location of the yard. Unless the utmost care is taken and a perfect system inaugurated, many items of expenses are incurred throughout the year which do not appear on any of the books kept by a retail lumberman. This keeps the dealer ignorant as to what his total expenses are until he takes his inventory at the end of the year, and then he finds to his sorrow that his profits have been materially cut down by these miscellaneous expenses. I have known cases where the total expense of handling and selling lumber in a yard footed up to \$3 a thousand,

TOTAL TRADE OF THE DOMINION OF CANADA

FOR THE FISCAL YEARS ENDED JUNE 30TH, 1865 TO 1902.

Millions of Dollars

YEAR	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1902
\$131,027,532	1865																												1869
134,829,946	69																												70
148,247,879	70																												71
170,266,589	71																												72
194,070,190	72																												73
217,801,203	73																												74
217,665,510	74																												75
200,967,282	75																												76
174,116,781	76																												77
178,203,355	77																												78
172,408,454	78																												79
153,455,682	79																												80
174,401,205	80																												81
203,621,643	81																												82
221,656,703	82																												83
230,239,516	83																												84
207,803,539	84																												85
198,129,841	85																												86
189,675,815	86																												87
207,408,017	87																												88
201,097,630	88																												89
204,414,098	89																												90
218,607,390	90																												91
218,344,334	91																												92
241,269,443	92																												93
247,638,820	93																												94
240,999,889	94																												95
224,420,443	95																												96
239,025,360	96																												97
257,168,862	97																												98
304,475,736	98																												99
327,661,713	99																												00
381,517,236	00																												01
336,903,157	01																												02
422,910,444	02																												
442,409,121																													

very few retailers who have any knowledge of the actual expense of handling a car load of lumber, nor are they in a position to tell what is the actual expense per thousand feet on the lumber they handle during the year. Where they have no teams of their own many dealers make contracts with some concern to unload, haul and deliver the lumber into their yard and accordingly they can tell what this item amounts to. Others who attempt to do the work themselves often arrive at a wrong conclusion. One dealer actually told me that he could handle his lumber for twenty-five cents a thousand. After pinning him down, however, I made up my mind that he referred merely to the cost of loading the lumber from the car onto the wagon and delivering it to his shed. He remarked that the piling was done by his yard man at odd times and really did not cost

This, however, included a reasonable compensation for the owner, insurance, taxes and interest on investment. At one or two points where we operate I do not believe that the total expense is over \$1.50 a thousand, while at other points it exceeds \$2.25. Taking the retail yards as a whole, I do not believe that they can possibly carry on business for less than \$25 a car or about \$1.75 a thousand. — Mississippi Valley Lumberman.

Thomas A. Malcolm, of the firm of Malcolm & Ross, contractors for the construction of the Restigouche and Western Railway from Campbellton to St. Leonard's, N.B., says the railway will open up a rich timber region. It is estimated that on Crown lands within twenty miles on either side there are 2,000,000 feet, and on New Brunswick railway lands nearly 3,000,000 feet, of which 60 per cent. is spruce and the balance cedar.

MR. WILLIAM POWER, M. P.

(By Byron Nicholson.)

A feature of Canadian life, of which we may all well be proud, is that the highest positions in the land are open to all, without exception, who have the ambition to aim at them, the ability to fill them, and the perseverance in seeking after them which ensures success. Indeed, the second of these qualifications is sometimes all that is necessary—for now and then the office seeks the man rather than the man the office. At any rate, whilst Canada gave to royalty the honor which is its due, and unfeignedly respects true aristocracy, she allows no adventitious circumstance of birth or fortune to be a bar to the progress of her deserving sons. Of this the career of the present representative at Ottawa of the Western Division of "the Ancient Capital" is a notable example.

Mr. Powers was born in 1849 at Columbia de Sillery, a suburb of Quebec. He received his primary education at the parochial school of his native parish, and afterwards took a course at the Quebec Commercial School. When but a lad he left this institution to enter



MR. WILLIAM POWER, M. P., Quebec.

the employment of Messrs. W. & J. Sharples, the well-known lumber merchants, and was given a situation in their office at Sillery. Here he displayed such business ability that at the early age of seventeen he was given a much more important position in the company's offices in the city, and, as he afterwards became a partner in the business, he has been identified with the timber trade of the port of Quebec for nearly forty years. Besides, he has a practical knowledge of the actual work of lumbering, having spent several winters in the pine forests of Michigan and of Western Canada, supervising the work there carried on by the company's employees.

Quiet and unassuming though he has been, yet it would hardly be expected that a man who had shown so many excellent business qualities, and who, besides, had given many proofs of his generous and charitable disposition, would be allowed to remain altogether in the comparatively quiet sphere of a business life, and so, not only has he been for many years a member of the parish Municipal Council of Sillery, but on the death of Hon. R. R. Dobell, M. P. for the district of Quebec West, Mr.

Power was elected as his successor—and that, too, by acclamation. Moreover, the esteem and popularity thus implied becomes still greater when it is remembered that the election took place during the candidate's absence in England.

He has already adapted himself to parliamentary life very happily, for he is not one of those who occupy the time of the House by making long or academical speeches, but (in accordance with the spirit of the age) deals with questions of public interest in a thoroughly practical manner. In this way, rather than a debate, is his presence felt at Ottawa—though, when he does speak, he speaks with such clearness, deliberation, and force that no one who hears him can possibly misunderstand his meaning, or fail to be influenced by his arguments.

SETTLEMENT OF CROWN LANDS.

HOUSE OF COMMONS, OTTAWA, May 2, 1903.

Editor CANADA LUMBERMAN

DEAR SIR,—I take the liberty of bringing before your readers a few ideas I have held for some time. I shall be pleased to find that some improvements may be made to the present laws now in force regarding the settlement of the Crown lands of the Province of Ontario. I believe the rule of the provinces of Canada is to lay great stress upon the matter of free homesteads or cheap homesteads, and Ontario has not been behind in its offerings of large privileges in this way.

For the especial benefit of the settler, all of the timber, other than pine and spruce, has been reserved for the settler subject to limitations regarding settlement duties.

The principal enactments of importance to the settler are: That he must live upon his land a certain number of years, do certain improvements under a number of conditions, and when, on the part of the settler, these conditions have been fulfilled he becomes owner of the grant. This all sounds very fair and generous and I may even go so far as to term it paternal. Right here is where I have considered the fabric weak and inefficient for the purpose which the liberality of the grant is intended to serve. Presuming that settlement and development of the vacant lands of Ontario is the desired object of the province, the matter may reasonably be considered from the standpoint of the success of the present laws in achieving that object.

So far, after very many years of experience with the present laws, settlement has been extremely slow in the Ontario wild lands where the timber is heavy. For the purpose of my statements I will assume that a colony of, say, ten settlers, take up hardwood timbered lands, and ten settlers at any one point is fully above the average settlements in embryo. In moving upon their lots the question of existence is a matter of importance if they have little money or means of subsistence, and people of means as a rule do not go into bush lots these days. They are confronted with the regulations of the Crown Lands Department at once, when a clearing is begun, because there is no market for their timber near by, and as they are on hardwood lots their timber will not float. For the purposes of the first clearing, the timber, after cutting, is burnt, and without a market to buy their timber the process is repeated year after year. Just at this stage in the history of many such new settlements is where a difficulty comes in. Without capital to live upon and with very limited means to start upon, with but a very limited clearing the first or second year to produce means of subsistence, very many of the settlers first going into a new district are obliged to abandon their lots and go out to work in employments which will enable them to live, losing their time and what little savings they may have started with, and leaving their holdings to be taken up by others who may start upon their wrecked hopes and abandoned clearings.

I will not pursue this thought further, as it is so well known, but will suggest, roughly, a remedy: As the greatest obstacle the settler has to contend against is the timber upon his lot, which he cannot sell nor give

away, but which must be removed before he can live upon his land, a market for this timber should be sought for first, and then to value what is now condemned to be burnt after time and labor has been wasted upon doing so, to the injury of both the would-be settler and the country at large as well as in particular.

In the case of a township surveyed into concessions running say east and west, reserve say the south half of one concession and the north half of the adjoining one, and open to hardwood mill men these half concessions for the sale of the timber upon them, say at stumpage values, and if advisable, divide each township into two, three or four such berths, so as to not allow too large a territory to be tied up or held inactive by mill owners. Hardwood mills are necessarily small and 9, 12, or 18 square miles of hardwoods in a well wooded section will supply all the timber such mills can cut for years. The mills will go in concurrently with, or in advance of the settlers, will be an immediate market for the timber upon the other half of the lots reserved for the settlers, will take off the timber, allowing settlers easier clearing upon the sections the timber has been sold from, and then the paternal disposition of the government may show itself in two ways—either hand to the settler the money received by the government as dues for the timber so sold or use these moneys to build roads, bridges, etc., through the section or township. A mill must have employees (who will largely become settlers), a community will bring a store and post office and artisans, and the growth of the district will soon develop a village.

I feel that by this method what is now bound to be destroyed will be utilized, the mill owner will be an active fire ranger, the co-operative method will assure better and quicker results in settling the country, no loss can come to any of the interested parties, and the government will save the country generally and the district particularly what would and is to-day and has been in the past destroyed by fire.

With these simple outlines I will reserve further words for more definite details if necessary.

Yours truly,

J. T. SCHELL.

CARBOLINEUM TREATMENT OF TIMBER.

The Dominion Paving and Contracting Company, of Toronto, is erecting a large building and plant in Vancouver, B. C., for the treatment of piles, railway ties, paving blocks, etc., with carbolineum. The works, which are now in course of erection, are situated on Coal Harbor, at the junction of Georgia and Denman streets. The property has a water frontage of 330 feet, and occupies a piece of ground several acres in extent. The work the company purposes carrying on is not the manufacture of carbolineum, but the treatment of woods with this composition, wharf piles, railway ties, street paving blocks, etc., and it is hoped that the already large domestic and foreign trade in some of the manufactured products of the British Columbia forests may be increased as a result of the establishment of this industry. Carbolineum is already extensively used on the coast for the preservation of timber. The process considerably lengthens the life of a pile, railway tie or other timber. Unlike creosoting and some other methods of treatment, it does not destroy the firmness or exhaust the wood by extracting or dissolving the soluble albuminous gums, resin, etc. The carbolineum treatment, it is claimed, coagulates all these gums into insolubility and thus prevents the tendency to rot. The treatment also prevents expansion and contraction under varying temperature and moisture. It so impregnates the wood that it becomes entirely uninhabitable to worms or the lower orders of animal life which are so destructive to woods, animalculae, fungi and other forms of lower life being destroyed or kept at a distance by it. Mice and rats and even horses refuse to gnaw wood so treated.

W. L. Martin, lumber merchant, Watella, N.W.T., has sold out to K. Nixon.

A. Haslam, of Nanaimo, B. C., recently put in a log hauling chain containing 774 links, each 6 inches long, made of 1½ inch iron. It was supplied by the Nanaimo Steam Carriage Works and will be used for hauling logs from the pond into the mill.

THE Canada Lumberman

MONTHLY AND WEEKLY EDITIONS

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ADVERTISING RATES ON APPLICATION.

THE CANADA LUMBERMAN is published in the interests of the lumber, wood-working and allied industries, being the only representative in Canada of these important interests. It aims at giving full and timely information on all subjects touching these interests, and invites free discussion by its readers.

Special pains are taken to secure for publication in the WEEKLY LUMBERMAN the latest and most trustworthy market quotations throughout the world, so as to afford to the trade at home and abroad information on which it can rely in its operations. 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.

Advertisers will receive careful attention and liberal treatment. For manufacturing and supply firms wishing to bring their goods to the attention of owners and operators of saw and planing mills, wood-working factories, pulp mills, etc., the CANADA LUMBERMAN is undoubtedly the cheapest and most profitable advertising medium. Special attention is directed to "WANTED" and "FOR SALE" advertisements, which are inserted in a conspicuous position on front page of the Weekly Edition.

FACTS ABOUT SHINGLES.

When about ten years ago the first vigorous steps were taken to introduce the red cedar shingle of the Pacific Coast into the eastern markets, there was much speculation as to the effect which the success of such a movement might have upon the white pine variety. At that time the advantage in the matter of price was with the red cedar shingle. It is only fair to the coast manufacturers to state that the reception which their product received was favorable, while with equal truth it may be said that the white pine shingle has lost little, if any, of its popularity. Natural conditions have brought about a very different situation than that which prevailed ten years ago.

The time chosen by the red cedar manufacturers to exploit the eastern markets was most opportune. Many white pine lumbermen had been nursing a conviction that timber was becoming too valuable to be worked into shingles, even at the higher prices then prevailing. As years went by, one manufacturer after another either ceased to produce shingles entirely or reduced his output, using as shingle timber only that portion of the tree which could not be used commercially in any other way. Thus as the production of white pine shingles was reduced, the importation from the west was increased, an opportunity which the red cedar manufacturers were not slow to recognize.

Within ten years the price of red cedars has advanced, while that of white pine has declined. The rising market for white pine lumber has not been reflected in the price of shingles, and little encouragement is offered for their production. On account of the lessened supply many eastern wholesale houses are abandoning entirely the handling of white pine shingles and are

devoting their attention largely to the Pacific Coast product, which is fast monopolizing not only the Ontario trade, but that of the Eastern States also. In the latter territory the white cedar shingle of eastern Quebec and New Brunswick is an element of competition to which consideration must be given. Being slightly cheaper than the western product, it finds many customers, particularly as the standard shingle now manufactured is vastly superior to that of a few years ago. Having a great advantage in freight rates, the manufacturers of the white cedar should be able to pretty well hold the market in near-by territory.

It will be seen that the producers of white pine shingles have gradually abandoned the market, not as the result of competition from other varieties, but because better returns could be obtained by converting their timber into lumber.

THE SELLING OF TIMBER.

It would be unwise to claim that the persons who are in charge of the administration of the Crown lands of the different provinces of the Dominion have not a fair knowledge of the value of timber. They are, as a rule, shrewd men, capable of framing such laws and regulations as will best meet the present, as well as the prospective needs of the country, as far as it is possible to do so. It is not easy to account, therefore, for certain agreements which have been made by more than one Government, and which would seem to have given away valuable timber lands for a "mess of pottage." Only last month the announcement was made by the British Columbia Government that nearly all the timber lands on Vancouver Island and the coast of that province not previously taken up had been reserved for really unknown parties, under the name of the Island Power Company. At first it was difficult to grasp the significance of the announcement, which seems a serious blow to the lumber industry. The situation was not improved by the later report that the company securing the concession had sold out to an English syndicate.

Notwithstanding claims to the contrary, it is quite certain that our timber lands are not always disposed of to the best advantage. More than one pulp company have secured a greater area than they were entitled to, and a few lumbermen have profited by the generosity of governments. The favored few will have no words of condemnation, but to the majority an injustice is done. As a public asset the timber should be sold to the highest bidder, and an equal opportunity given to all. It is a question whether the disposal of pulp wood lands by auction, although presenting some disadvantages, would not after all be found to be the most equitable plan.

A policy which seems to have been adopted by the Quebec Government is to give but scant publicity to proposed public sales of timber limits. Although one of such sales is to take place about the middle of this month, there was not, so far as can be learned, until a few days ago, any public announcement of the fact outside of the city of Quebec. It is difficult to imagine how the Government hopes to thus secure that degree of competition which would

result in obtaining the best possible prices for the timber. If that result is not desired, the course followed can be understood.

Since the above was written, a modest looking notice has been published in the British Columbia Gazette cancelling the reservation of timber on behalf of the Island Power Company, on the ground that the reserve was six hundred square miles more than it was intended to have been.

EDITORIAL NOTES.

At time of writing forest fires are raging on all sides. Already the damage to standing timber and to a number of settlements has been heavy, but it is feared that the worst is not yet past. Undoubtedly the extreme drouth which has prevailed throughout almost the entire Dominion is the chief cause for the large number of fires. As the property of many individuals, particularly in Quebec and New Brunswick, has suffered, it is probable that it may lead to a public awakening to the necessity of more adequately protecting the forests from fire. The public has in the past been too careless about the setting of fires, and while commendable measures have been taken by the different governments to prevent their origin and spread, these measures have in a large degree been frustrated by the indifference and apathy of the public towards forest protection. When their personal effects become endangered, however, a change of disposition may be looked for.

The manufacturer is being severely condemned for the prevailing high prices of lumber, which, in the opinion of the layman, are largely the result of a desire to increase profits at the expense of the consumer. If due consideration were given to the conditions affecting the price of lumber, however, it would be found that the manufacturer is deserving of no such censure. Apart from the added expense of timber, camp supplies, machinery, etc., the expenditure in wages alone to produce one thousand feet of lumber has almost doubled within six years. This is shown by the following table, compiled by the secretary of the Mississippi Valley Lumbermen's Association. The figures given are the monthly wages paid the employees of the camps in Minnesota and Wisconsin:

	1896	1897	1898	1899	1900	1901
Teamsters	\$16.00	\$16.00	\$20.00	\$24.00	\$26.00	\$30.00
Swampers	15.00	16.00	20.00	24.00	25.00	30.00
Choppers	14.00	15.00	20.00	24.00	26.00	30.00
Loaders	20.00	24.00	26.00	30.00	32.00	35.00
Sawyers	14.00	18.00	20.00	24.00	26.00	30.00
Graders	13.00	16.00	18.00	20.00	24.00	30.00
Chain tenders	16.00	16.00	19.00	20.00	24.00	30.00
Blacksmiths	35.00	40.00	45.00	50.00	55.00	60.00
Cooks	40.00	40.00	45.00	50.00	55.00	60.00

The conditions in Minnesota and Wisconsin are much the same as those which exist in the white pine districts of Ontario.

The Canadian buyer of lumber is more generously dealt with in respect to terms of sale than is his confrere in the United States. As recently pointed out in these columns the terms allowed are two per cent. off for payment within fifteen days, or the face value of the invoice within three months. In the Eastern States $1\frac{1}{2}$ per cent. discount is allowed for settlement within fifteen days, one per cent. within one month, and the invoice must be met in full within sixty days. These terms seem to

have given general satisfaction, as the Mississippi Valley Lumbermen's Association and the Wisconsin Valley Association have recently adopted them, and the Southern Lumber Manufacturers' Association and the Northwestern Hemlock Manufacturers' Association are considering their adoption. This will make their adoption practically unanimous for the territory east of the Mississippi Valley.

CUTTING AND FLOATING OAK.

Our contemporary, the Southern Lumberman, publishes the views of several persons on the subject of whether or not it will damage oak timber to cut it in the spring or early summer, peel the bark off and let the logs lie out until the fall or winter, before sawing them up. While there is some difference of opinion expressed, the replies are in the main unfavorable to the assumption that the logs can be carried over summer profitably. Discoloration and worms are given as possible sources of damage. One correspondent states that the removal of the bark frequently prevents worms getting into the logs, although it would scarcely pay to remove the bark. The policy of another firm is to cut the timber in the fall and scalp it, refraining from putting it in the water until it has been cut and on the bank sixty days. It is claimed that 99 per cent. of oak will float after being prepared in this way. If it is cut in the winter and hauled in green with the bark on, about one-half or two-thirds of it will sink. Timber cut in June or July and peeled will float, but is likely to check.

THE AUSTRALIAN LUMBER TRADE.

In his last report to the Department of Trade and Commerce, Mr. J. S. Larke, Canadian Commissioner at Sydney, New South Wales, says of timber :

"Notwithstanding the drouth building operations have been brisk and the demand for timber good. British Columbia fir, known here as 'Oregon,' is now \$14 at the mill, instead of \$7.50 at which it was once sold. California redwood, sold largely for doors, sashes and inside work, has advanced nearly 33½ per cent. in a year and is quoted at \$24 at the mill. Every now and then it has been proposed to introduce cedar and some of the cheaper timbers of British Columbia into this market, but no determined effort has been made. The market in timbers, as well as in other lines, is conservative and no demand for a new timber can be created in a day. The high prices now ruling afford an opportunity to introduce the Canadian that may not occur again for a decade.

"One of the timbers practically unknown here is the hemlock, and in connection with the cutting of that timber, there would be a market for the extract of the bark. There is a prejudice against hemlock-tanned leather mainly on account of its colour and some poor samples of that tannage that have been offered on this market. Wattle, which is the Australian bark used for tannage, has gone up in price and as a result there is a demand for a cheaper tanning material. This demand is likely to continue for some time, as the drouth has killed a good many wattle trees and stopped the growth of more."

VIEWS AND INTERVIEWS

Few persons know more of the early history of lumbering in Ontario than Mr. Thomas Shortiss, an old Torontonian. He relates that fifty years ago the township of King was considered the lumber centre of the Province. In 1853 Mr. Shortiss built a saw mill just above Barrie, on the Northern Railway. It had a capacity of 75,000 feet per 24 hours and in those days was considered a very large mill. He was the first person to ship lumber from Ontario to Chicago. He is now not actively engaged in the lumber business, although interested in timber limits. It is the opinion of Mr. Shortiss that very few people have become rich by saw-milling operations, but that most of the wealth now represented by lumbermen is the result of investment in timber limits.

* *

Would it not be possible to increase our exports of turned hardwood stock to Great Britain if we more nearly met the requirements of that market? This is a matter that is worthy of consideration. One who is largely interested in this trade states, for instance, that the English buyer is very particular about the design of broom handles, for which there is a large market there. They require a handle grooved about two inches from the top and with a bead running around. The ordinary Canadian broom handle would be called a mop handle in England. Great care should also be taken in the shipment of such stock. We know of an entire consignment of broom handles which was rejected on account of the bundles having been tied with a tar band, causing a mark which could not be removed.

* *

It is impossible to manufacture basswood in certain seasons without its being seriously discolored with sap stain. For this reason much of this wood is manufactured in the winter and even then a large per cent. of it blues. Soft elm occasionally has this defect, but it is very seldom found in oak or maple. Some of the sap in birch decays, but it leaves white spots and very soon rots. Hemlock has very little sap and so escapes the defect. Doubtless climatic conditions have much to do in bringing out this discoloration in wood. The other day a manufacturer in speaking of the subject said: "Whenever a rain storm occurs followed by hot, sultry weather, lumber that is freshly piled is almost certain to become badly stained. I have known cases where lumber has been taken from the saw, loaded in the hold of a vessel and 24 hours afterwards had quite a mold and mildew covering the surface. This was doubtless caused by the stifling, hot atmosphere down in the bottom of the vessel. We find that one board seems to discolor another, but generally it is not seriously injured except where it comes in contact in cross piling. Many of the manufactures have adopted the practice of using hemlock on this account."

* *

The Toronto Globe, in noting the appointment as Senator of W. C. Edwards, the Ottawa lumberman, says that while operating far up the

Gatineau river, he tells this story of a shantyman who had spent a couple of seasons working for him in the bush, and was coming out again shortly after the death of Queen Victoria.

At Maniwaki the shantyman made his first stop on the way down, and in a chat with the hotelkeeper asked what was the news since he had gone in the woods.

"Oh, there's nothing much new. I s'pose you heard up there that the Queen was dead?"

"No, you don't tole me de Queen was dead! I'm sorry to hear dat: I'm sorry. She was a good woman, de Queen, an' a good Queen, too. Well, we'll all die some tam, even de Queen."

After a hort respectful paus, he asked: "An' who's got de job now? Who's de head now?"

"Oh Edward's the King now. It's King Edward for the last three months."

"Edwards de King! Well, well; you don't tole me Edwards de King! He's a beeg man in de lumber business, but I never expec' to hear of him be de King. What a pull dat man Edwards mus' have wit' Laurier!"

* *

Hemlock is now having its innings. The price of white pine has reached the point where substitutes are sought after, and for many purposes hemlock fills the bill. The mills in the Parry Sound district are this season sawing a very large quantity of hemlock logs, largely into dimension timber. Hemlock lath is also growing in favor, although the price seems to be too close to that of pine to warrant its use to any large extent. Concerning the relative merits of white pine and hemlock lath the Mississippi Valley Lumberman says: "White pine is particularly well adapted for lath for the reason that it is not inclined to warp and does not shrink and swell abnormally. In addition to these well known merits there is a well grounded preference in the minds of practically all builders and consumers favorable to white pine lath. The numerous substitutes which have been put on the market from time to time have accordingly had to be sold at a substantial reduction from the white pine prices." The question has been asked whether there is any money in manufacturing hemlock lath from standing timber. It is extremely doubtful that this could be done to advantage, as it is now a recognized policy to manufacture lath only from that portion of the tree which would otherwise be wasted.

DOMINION TIMBER LICENSES.

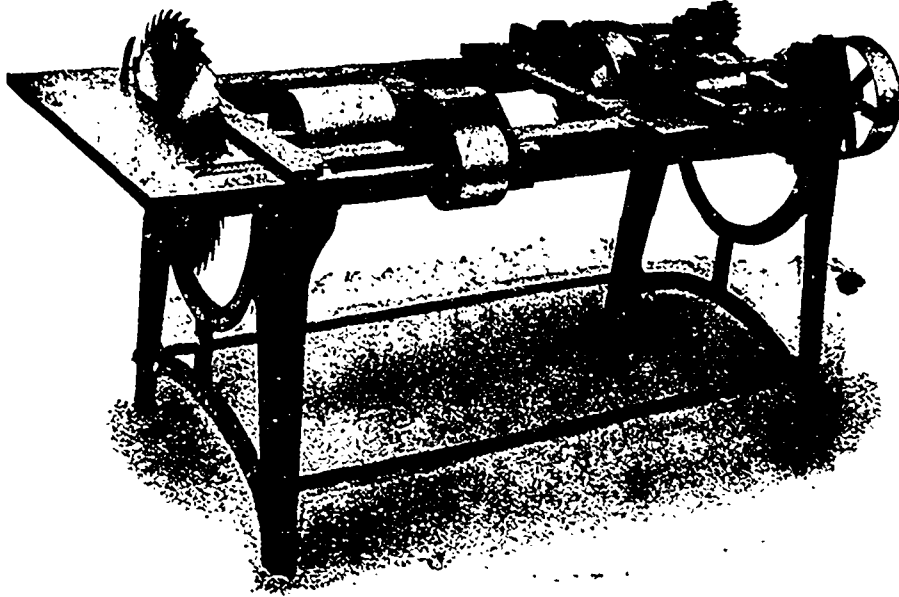
The regulations regarding timber licenses in Manitoba, the Northwest and the railway belt of British Columbia have been amended so as to make it clear that the licensee complying with the conditions is entitled to a yearly renewal while merchantable timber remains upon the area.

The Virden Lumber & Hardware Company, with offices at Brandon and Virden, Man., have changed their name to the Manitoba Hardware & Lumber Company.

During the eight months ending with February the United States imported nearly fifty per cent. more unmanufactured wood than during the corresponding eight months of the previous year. As represented in dollars the figures were \$10,232,745 and \$15,206,827.

NEW COMBINATION LATH MILL AND BOLTER

Although there have been many combination lath mills and bolters put on the market the last few years, the exacting conditions of the lath industry soon relegated many of them to a place in the background. It is claimed that not until the advent of the machine which is the subject of this sketch, has any manufacturer been successful in designing a machine which was strong and cheap enough to fill the conditions. This machine, however, meets all the requirements and has proven to be a favorite with the lath manufacturer from the start. The machine consists of a one-saw bolter and a three-saw lath mill mounted on one table with strong iron legs.



NEW COMBINATION LATH MILL AND BOLTER.

The bolter saw, which is 22 inches in diameter, has a power feed roll, adjustable guide, and a splitter behind the saw.

The lath mill has 12 inch saws, with feed and adjustable pressure rollers both in front and behind. There is a shield over the saws to prevent accidents. The arbor, roll shafts and rolls are all made of the best machinery steel, while the rest of the machine is built of the same quality of iron that has helped to make the "Hill" machinery famous.

The table is a large well proportioned casting so designed that nothing short of dynamite will break it, while the legs and other parts are strong and well proportioned. A countershaft, not shown in the illustration, completes the machine.

The machine is built on generously strong lines, and like all other "Hill" machines is built to wear. It is 6

feet 10 inches long over all, 3 feet wide, 3 feet 6 inches high, and when boxed occupies about 72 cubic feet; weight complete with countershaft, 1,050 lbs.

Those interested in the cheap manufacture of lath will do well to write for the pamphlet "How to Make Good Lath," in which this and other interesting machines are fully illustrated, addressing Wm. E. Hill & Co., 415 N. Rose street, Kalamazoo, Mich., and mentioning this paper.

TRADE INQUIRIES.

The following inquiries concerning trade prospects have been received at the office of the Canadian

desires names of Canadian manufacturers who can supply doors, shelving, carpenters' clear pine, poplar, etc.

DOORS AND SASH—A correspondent at King's Lynn, England, desires to purchase the above for cash against shipping documents. He asks for quotations delivered at London or Liverpool.

DOORS, WINDOWS AND SASH—A merchant in Antigua, B. W. I., desires to purchase the above. He asks for quotations f. o. b. St. John and Halifax. Canadian references are sent and payment will be made by sight draft on New York.

HANDLES—BROOM—(1) A Bristol house is prepared to contract for supplies of broom handles and invites correspondence from Canadian producers.

(2) A correspondent at King's Lynn, England, desires to purchase the above for cash against shipping documents. He asks for quotations delivered at London or Liverpool.

HANDLES, SPADE AND SHOVEL—An enquiry has been received from Berwick-on-Tweed for names of Canadian lumber houses in a position to export 32-inch spade or shovel box or D handles (English pattern); also shovel stems 32, 29 and 34 x 1 1/2 inch diameter.

LUMBER—A London merchant desires to purchase carpenter's clear pine, poplar and hickory.

PIANO KEY BOARDS—A London manufacturers' agent asks to be placed in touch with Canadian manufacturers of basswood piano key boards.

SKEWERS—A well known firm in Christiana, Norway, desires to purchase the above and asks for samples and quotations l. o. b. New York.

TIMBER—A Wolverhampton commission agent desires to procure cheap timber for machine chopping and bundling firewood.

WOODEN WARE—A Glasgow firm of manufacturing agents who already represent Canadian manufacturers desires to correspond with shippers of the above with a view to representing them in Great Britain.

C. W. Milestone has established a lumber yard at Moose Jaw, N. W. T.

The St. Anthony Lumber Company, of Whitney, Ont., are building a new steam hoist at Sproule Lake for the loading of logs.

One of the boilers in Petit Bros. saw mill near Comber, Ont., exploded recently, seriously injuring one of the employees.

Hunting & Lee are building a shingle mill on the south side of False Creek at Vancouver, B. C. The mill will be equipped with five shingle machines, which will be supplied by N. Thompson & Company, of Vancouver.

The Surveyor General of New Brunswick proposes to make some alterations in the fees of log scalers. Heretofore the scalers have been paid five cents a thousand on all the logs scaled. It is proposed to pay the scalers a stated salary and to make them game, fish and fire wardens all the year round.

Manufacturers' Association, Toronto. The names of inquirers may be learned by communicating with the publishers of this journal.

BOX SHOOKS—A firm of fruit shippers in Ealing, Eng., require a large quantity of box shooks cut to dimensions and wish to hear from Canadian manufacturers who can fill orders.

A wholesale seed firm in Surrey, Eng., requiring large supplies of wooden boxes, cut to specified sizes, have asked to be placed in touch with Canadian shippers of box shooks.

CASEIN—The addresses of casein manufacturers in Canada are asked for by a firm in Scotland.

CHAIR MATERIAL—A London firm of manufacturers' agents possessing a long experience and large connection would like to represent a first-class Canadian producer of chair materials.

DOORS AND LUMBER—A London timber merchant

Advertisement for Pennsylvania Lumbermen's Mutual Fire Insurance Co. featuring a check for \$97.75 payable to Gillies Bros Ltd for dividend on policies No. 7225, 1576, 19. The check is signed by Richard T. V. C. E. President and includes a stamp from the Bank of Ottawa.

THIS IS THE WAY WE SAVE MONEY FOR LUMBERMEN. THERE ARE OTHERS—WRITE US.

DO YOU EVER SWEAR

Because goods are not delivered to you promptly?
We make a specialty of quick shipping. Try us.
We have some special values in

Evap. Apples, H. P. Beans, Mat Figs, Syrup and Tea

WRITE FOR QUOTATIONS and SAMPLES.

LUGAS, STEELE & BRISTOL, HAMILTON, ONT.

AN INSPECTION BUREAU.

The cargo branch of the Pacific Coast Lumber Manufacturers' Association have organized the Pacific Coast Lumber Inspection Bureau, with one chief and three deputy chief inspectors. The manufacturers interested in the movement include the Victoria Lumber & Manufacturing Company, of Chemainus, B. C., and the British Columbia Mills, Timber & Trading Company, of Vancouver. The result of the first month's work of the Bureau was very satisfactory. It is estimated that fully 95 per cent. of the coast-wise and foreign shipments from the Pacific North-West will pass under the supervision of the Bureau. It is claimed that for the past ten years the lumber manufacturers have been compelled to stand for reclamations in the markets of the world, and had absolutely no recourse. The Bureau's inspectors now reject defective lumber at the mill, thus saving the cargo trade thousands of dollars annually. It is understood that shippers by rail are considering the adoption of a similar plan.

TRADE NOTES.

The Stillwell & Company, of Detroit, Mich., announce the removal of their office from 684 West Fort street to 301 Stevens Building, 31 to 39 Grand River avenue, near the Griswold House.

McQuat & McRae have recently shipped one of Duncan's patent resawing machines to Gillies Bros., Brae-

side, Ont., and another to the Great Northern Lumber Company, of Mount Tremblant.

The Hanchett Swage Works, Big Rapids, Mich., manufacturers of the celebrated "Hanchett adjustable saw swage" and other filing room tools, report a marked increase in their Canadian trade.

Owing to the large orders that the Syracuse Smelting Works have been receiving for babbitt metal, solder, Columbia phosphor tin, etc., they have been obliged to add more furnaces and to work day and night.

Messrs. Mixer & Company, wholesale lumber dealers, of Buffalo, N. Y., are sending out a leather pocket book with their name and address stamped on the inside—a useful article, and withal a good advertisement.

Mr. Alfred Rubbra has resigned his position as manager of the Machinery and Supply Department of the Laurie Engine Company, Montreal, and has opened a new machinery supply warehouse at 22 and 24 Victoria square, under the title of The Machinery Exchange. It is the intention to carry full lines of new and second-hand machinery. Mr. Rubbra has been appointed eastern agent for H. W. Petrie, of Toronto.

The Mengel Box Company, of Louisville, Ky., will equip their new veneer plant with "A B C" dry kilns. The American Blower Company have also an order for apparatus for a three-compartment kiln for the Laquon (Pa.) plant of the Brooklyn Cooperage Company. The same company is furnishing kilns for the Chicot Lumber Company, Blssville, Ark., Huntly Manufactur-

ing Company, Silver Creek, N.Y., The Menasha (Wis.) Woode Ware Company, Buckstege Furniture Company, Evansville, Ind., Hastings (Mich.) Wood Working Company, The East Jordan (Mich.) Flooring Company, Evansville (Ind.) Desk Company, and J. C. Widman & Company, of Detroit.

McDougal & Cameron, of Vancouver, B. C., 125 month purchased two logging engines for their camp on Jervis Channel.

The Trites-Wood Company, Limited, has been incorporated by the British Columbia government, to carry on a general lumber and mercantile business.

The sash and door factory of the Fernie Manufacturing Company, at Fernie, B. C., is one of the best equipped establishments of the kind in the west. The machinery was furnished by J. L. Neilson & Company, of Winnipeg.

P. PAYETTE & CO.

Manufacturers of Saw Mill and Engine Machinery, and all kinds of Marine Machinery.
VENEZANQUISHENE, ONT

CLARK'S PORK & BEANS

are the best made in Canada and equal to the finest imported. Clark's Canned Corned Beef knows no superior. Get quotations from your jobber.
W. CLARK, MANUFACTURER, MONTREAL,

TOLEDO FIRE & MARINE INSURANCE CO.

CAPITAL PAID IN, \$100,000.

Fire Insurance on Lumber Only.
Substantial Lines. Fair rates.

No Assessment Liability.

NO LOCAL AGENTS.

ADDRESS COMPANY DIRECT.

TOLEDO FIRE & MARINE INSURANCE CO., Sandusky, Ohio.



Sole Canadian Agents :-: Prices Reduced
WATEROUS BRANTFORD, CANADA.

SMALL STEAM POWERS

For every kind of service MILL, AGRICULTURAL and MARINE.

These engines are reliable and easily managed. Remarkably small and compact for the power developed. Light and portable. They will reverse instantly at any point. High-speed, noiseless, and non-vibrative. And they are above all economical engines.

We also devote ourselves to Small Steam Yacht Installations, using Fuel-Oil and Quick-Steaming Boilers, as well as to Direct Connected Lighting Units.

The SLEEPER ENGINE COMPANY, Limited, Montreal.
Office and Works, Cor. Darling and Notre Dame Street
Phone, East 2403.

OBITUARY.

H. W. TODD.

The death occurred last month, in Liverpool, England, of H. W. Todd, of the firm of Watson & Todd, timber merchants, Liverpool, England, with branches at Ottawa and Montreal. He was 64 years of age. Mr. Todd gained his early experience in the lumber business with Mr. R. A. Watson, of Liverpool, whom he subsequently joined in business. About twenty years ago they turned their attention to the pine deal trade, and since that time have been large buyers of Canadian lumber. Last year their shipments from Montreal were upwards of 50,000,000 feet.

WILLIAM RICHARDS.

William Richards, one of the most extensive lumber operators on the Miramichi river, died at his home in Boiestown, N. B., on June 1st, after more than a year's illness.

Mr. Richards was born in Cardigan, York county, sixty-eight years ago. He was a son of the late Daniel Richards, who was a native of Wales. Mr. Richards had been a large lumber operator for more than thirty years, a little time on the Nashuaak for Alex. Gibson, but for many years on the Miramichi. He also operated a large saw mill at Boiestown.

Six years ago his business was transferred to a stock company, The Richards Company, Limited, of which he was president. He was widely known and much respected and a staunch Liberal.

EDMUND HALL.

Edmund Hall, a veteran lawyer and lumberman of Michigan, died at his home in Detroit on May 17th, after a very brief illness. Mr. Hall was born at Cayuga, N. Y., in 1819. He was admitted to the bar in 1847, practising for a number of years in Detroit, where he soon took rank as one of the cleverest lawyers in that section. About thirty years ago his other interests became so large that he gave up the practise of law entirely. He was contractor for the building of several state roads, receiving land scrip in part payment. He located valuable tracts of white pine in this way and soon became known as a lumberman.

Mr. Hall's early lumbering operations were largely confined to Michigan, his mills being located at Bay City. When the pine timber in that city gave out he invested in extensive timber tracts in the Georgian Bay district of Ontario, rafting the logs to Bay City. About three years ago he built a large saw mill at Sarnia, which is now in operation.

JOHN MACLAREN.

John MacLaren, a prominent citizen of Brockville, Ont., died at Kamloops, B. C., on May 29th from injuries sustained by being thrown from his horse while on a hunting trip up the Thompson river, fifty miles from Kamloops. Mr. MacLaren was spending a short time in British Columbia in connection with his lumbering operations at Barnet.

Deceased occupied a prominent place in business, social and religious circles in Brockville, where he resided. He was born at Buckingham, Que., about fifty years ago, being the son of the late James MacLaren, a prominent lumber merchant and former president of the Bank of Ottawa. As a young man he was associated with his father in the lumber trade. He spent several years at New Westminster, B. C., in connection with his father's interests and for a time lived at Windsor, Ont. In 1892 he removed to Brockville and purchased the James Hall Glove Works, which he considerably enlarged and operated up to the time of his death. He was also president of the Canadian Oak Belting Company, Brockville, and owned a large saw mill at East Templeton, Que.

Deceased was one of the stalwart members of the First Presbyterian church in Brockville, and took an active part in all branches of church work. He was a warm supporter of healthy athletics and an enthusiastic curler. In every sense of the word he was a public spirited citizen, always ready to give a helping hand to a just cause.

The surviving members of his family are Alexander and Albert MacLaren, of Buckingham, David MacLaren, vice-president of the Bank of Ottawa, and Mrs. William Alloway, of Winnipeg.

ALEXANDER FRASER.

The result of an attack of pneumonia extending over four weeks, Alexander Fraser, the pioneer lumberman of Ottawa, passed away at his home in that city on June 1st, at the age of 73 years.

From the first of his illness it was feared that he might not recover, owing to the fact that he had not been in good health for several years, though for a year previous to his death he had been very well.

The late Alexander Fraser was one of the last of the square timber pioneer lumbermen of the Ottawa Valley and was widely and favorably known from the headwaters of the Ottawa to Quebec.

He was a son of Hugh Fraser, a Highland Scotchman, a soldier who served in the 1812 war and later settled in Goulbourn, near Ottawa, where Alexander Fraser was born. Along about 1835, the late Hugh Fraser removed to the township of Pembroke and his son Alexander entered the employ of the late Hiram Chamberlain, of Westmeath, as clerk in his lumber supply store. It was here that he came into contact with the lumber men and Hudson Bay traders and acquired a taste for the life of the woods and river. And when quite a young man he had already acquired such an expert knowledge of woods and river craft that he soon became a leader among men on the Ottawa river, and in 1853, at the age of 23, he took out his first raft of square



THE LATE ALEXANDER FRASER.

timber on Black river. As time went on he kept increasing his operations and during the seventies it was not unusual to see 10 or 12 of his rafts passing down the river to Quebec. His energy was tremendous, and being a man of great physical strength and also a splendid constitution, no amount of application to business appeared to have any effect on his general health.

Mr. Fraser was possessed of a keen foresight and sound business judgement and was often by consent accorded a leading part in the management of large enterprises in which he was interested. He was one of the founders of the Bank of Ottawa, The Lachine Rapids Hydraulic Company, The Ottawa Trust and Deposit Company, and was also largely interested in The Upper Ottawa Improvement Company, The Keewatin Lumber Company, and many smaller enterprises.

He was of a very quiet and retiring disposition and extremely simple and unostentatious in his habits of life, but possessed of a strong will and great determination.

His business career was not one of uninterrupted success. He had at various times serious losses, sometimes running into several hundred thousands of dollars, but his greatest reverses occurred after he had attained a strong financial standing and was able to bear them easily.

Since the formation of the Fraser Lumber Company by his sons in 1855, the late Mr. Fraser had not been actively engaged in lumbering—his time was almost exclusively devoted to the enterprises in which he was interested outside of the lumber business.

His business relations, extending over nearly half a century, with such firms as Sharples, Dobell Beckett, Burstall, and McArthur's, were always of the pleasantest

nature, and it was with these people that the great bulk of his business was done. His estate is estimated at between three and four millions.

He leaves surviving, his widow, three daughters, Mrs. Daw, Mrs. Fee, and Miss Madge Fraser, and two sons, J. B. and W. H. A.

The funeral of the deceased was very largely attended. Among the prominent lumbermen present were the following: Hon. E. H. Bronson, Messrs. R. Beckett, F. P. Branson, Peter Whelan, Edward Skead, Levi Crannell, J. G. Bryson, Charles McLaren, J. R. Booth, C. J. Booth, G. B. Greene, W. C. Hughson, James G. MacLaren, John Mather, George Klock, J. C. Browne, Ottawa; T. H. Lemay, W. J. Poupore, Montreal; William Power, M.P., E. Harper Wade, Quebec; Claude McLaughlin, Arnprior; Hon. Peter White, Pembroke; David Gillies, George Gillies, Braeside; Robert McLaren, Buckingham; Norman McCuaig, J. E. McCuaig, Bryson.

WILLIAM MOHR.

William Mohr, a prominent figure in the early lumber trade of the Ottawa valley, died at his home in the township of Fitzroy, near Renfrew, Ont., last month, in the ninetieth year of his age. His operations were confined to the square timber trade. He took many rafts to Quebec, his operations sometimes reaching 750,000 cubic feet in a season. He operated on the Quyon, Bonnechere, Petawawa, Dumoine and Madawaska rivers. He was particularly well known along the valley of the Bonnechere, where he year after year regularly made his trips to the snanties. It is said that he could fall a lofty pine with great despatch.

ALLAN GILMOUR.

Allan Gilmour, a well known lumberman of Ottawa, was on May 19th accidentally shot by a magazine rifle, death resulting almost instantaneously. It seems that Mr. Gilmour had arranged to go on a fishing trip and proceeded to get his tackle together. The store room was darkened and it is presumed that in reaching for his fishing rod the gun was in some way discharged.

Deceased was the eldest son of the late John Gilmour, a prominent lumberman, and was in his fifty-seventh year. He was a man of independent means, and a few years ago retired from active business life, although retaining an interest in the lumber firm of Gilmour & Company, Limited, of Trenton, Ont., of which company he was formerly president. Messrs. John Gilmour, of Ottawa, and David Gilmour, of Trenton, are brothers of the deceased.

PERSONAL.

Mr. E. H. Lemay, the well known lumber merchant, of Montreal, accompanied by Mrs. Lemay, recently returned from a three months tour through Europe. They visited Spain, Italy and Algiers.

Mr. E. A. O'Connor, formerly of St. John, N. B., and well known as a shingle expert, has removed to Salmon Lake, Que., to accept a position as foreman for the lumber and shingle mills of J. Fenderson & Company.

Mr. George W. Campbell, for several years manager of the Winnipeg branch of the British Columbia Mills, Timber & Trading Company, has accepted the management of the Tait saw mill at Vancouver, B. C., recently purchased by the Rat Portage Lumber Company.

PUBLICATIONS.

Mr. Robert Bell, of the Seaforth Engine and Machine Works, Seaforth, Ont., is sending out a new catalogue of his various lines of saw mill machinery, engines, etc.

Illustrated sectional catalogue No. 149, issued by the American Blower Company, of Detroit, and referring to exhaust fans, is a very complete work, neatly printed and containing a number of useful tables.

Eastern capitalists have formed a joint stock company to take over the extensive timber limits and logging business in British Columbia controlled by W. H. Higgins, of Vancouver. The principal limits concerned are located on the Toba river, near Malaspina Inlet. Mr. Higgins will continue as manager of the business.

THE GROWTH OF FOREST TREES AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA.*

By W. T. MACOON, Horticulturist.

Experiments in the growing of forest trees at the Central Experimental Farm were begun mainly for the purpose of gaining information which would be useful to the farmers of Canada, and the fifteen years' work accomplished has, we believe, been of some service to the farming community and also to others who are interested in the growth and development of trees from a more economic and scientific standpoint.

About twenty-one acres of the Experimental Farm have been devoted to the planting of forest trees in belts and clumps, and sixty-five additional acres have been used for an Arboretum and Botanic garden in which forest trees are planted as individual specimens.

The forest belts extend along the whole northern and western boundaries of the farm; the belt along the western side being 165 feet wide and that on the northern boundary 65 feet, their total length being nearly 1 1/4 miles. There is an evergreen plantation also occupying about 2 acres. These belts and plantation were planned by Dr. Wm. Saunders, the director, and the first planting was done in the year 1887.

The main points on which information was desired were: First, as to the rate of growth of the best timber trees when grown on different kinds of soil and at different distances apart; the distances chosen at first being 5 by 5 feet, 5 by 10 feet, and 10 by 10 feet. Second, it was desirable to know how the growth of trees planted in blocks of one species compared with those grown in mixed plantations. Third, it was important to learn what influence the forest belts would have on the crops in the adjoining fields, in regard to the shelter afforded them, and also how far from the belt the crop would be affected adversely. Fourth, the planting was also planned as far as possible with the object of improving the landscape, and the several species were arranged so that a good effect would be produced.

These were the principal objects in view in establishing the forest plantations. We propose to endeavour to show how far these objects have been accomplished.

First, with regard to the comparative growth of trees when planted on different kinds of soil and at different distances apart. The soil in which the trees were planted was in some instances poor, in some cases wet and cold, in others heavy clay loam, black muck, sandy loam, and also in gravelly soil—a great variety of soil being represented in the 1 1/4 miles of forest belts.

The black walnut thrives well and grows rapidly on warm sandy loam but is almost at a standstill in wet, cold, sandy soil and the trees are stunted and practically useless. This is very interesting, for in Western Ontario this tree thrives best in river bottoms, but it is a good example of how trees taken from a comparatively warm and dry part of the country must be given a warm soil in a colder climate, even though there is less moisture in the ground. A number of species of Canadian trees as they reach their northern limits are found growing on much higher altitudes than where they grow to perfection. The hard maple is an example. This tree as it goes north seeks the hillsides. In the Maritime Provinces also it is found on the high elevations. The white, red, and green ash grow almost equally well on wet, cold soil, heavy, clay loam, black muck and gravelly soil. The black ash only succeeds where there is an abundant supply of water.

White, canoe, and yellow birches all thrive on the light soils, but they also do well on heavier and wetter ground.

The hard maple succeeds best and grows quickest in warm sandy loam. In clay loam it makes a healthy but slow growth, the growth lessening as the loam gets stiffer. Good drainage is very essential for the vigorous growth of this tree. The red maple does best in moist ground and the rate of growth is largely governed by the amount of moisture in the soil. It is unfortunate that so many of these trees have been planted along the streets of Ottawa, as the permanent roadways and walks which are being made in the city prevent these trees getting the moisture which they require and they are gradually sickening and dying. The

red maple has a wide range from north to south in America, and it has been found at the Experimental Farm that trees of this species imported from the South are in some cases not hardy. The silver maple thrives in a greater variety of soils than the red and is a more rapid grower. It, however, also requires a plentiful supply of moisture to make its best growth.

The white or American elm has been tested at the Experimental Farm in a great many kinds of soil. There is an elm avenue about 3/4 of a mile long, and by driving along this the rate of growth of the trees on different kinds of soil can easily be noticed. This tree is making the strongest growth in the warmer but fairly moist soils. Where the subsoil is a cold, compact sand it does not thrive nearly as well. The elm makes remarkably rapid growth where the conditions are favourable. Avenue trees planted in 1888 when about 11 feet high and 1 1/2 inches in diameter 4 feet 6 inches from the ground are now 37 feet in height and 12 1/2 inches in diameter at the same height from the ground. The red and rock elm have also been tested in the forest belts, but these are not important timber trees.

The beech does best in warm, sandy loam here like the hard maple, but does very poorly where the soil is wet.

The basswood is one of the noblest trees and thrives well in the Ottawa district. It succeeds best in rich, warm soil and seems to require a fair amount of moisture. It has not done so well on light, sandy land. The butternut also grows well here, but does best in warm rich ground.

Poplars and the large growing willows have made very rapid growth on most soils, but on stiff clay loam the willows have made least growth, though the poplars do well in it. The Russian poplar made strong growth at first, but of late years have been affected with a dry rot which is gradually destroying them. The white poplar is very subject to borers, and the aspen is too small a tree to be of much value. The two species which are making the best growth and the finest trees are the cottonwood and the balsam poplar. These are fine specimens and reach noble proportions here.

The white spruce makes the moist rapid growth on warm, sandy loam soil at Ottawa. It does well on gravelly soil and fairly well on clay loam. The Norway spruce, which is the fastest growing spruce we have, makes its greatest growth in good sandy loam. It also succeeds well on gravelly soil and clay loam; in fact, it has made good growth in all kinds of soil in which it has been tested, but makes the poorest growth in the lightest sandy loam.

The American arbor vitae thrives in almost all kinds of soil. It is most at home, however, on the black and moist ones. It makes the least growth in heavy clay.

There is no forest tree which appears to succeed as well in such a diversity of soils as the Scotch pine. This tree makes strong growth in cold, poor soil, in clay loam, and in warm sandy loam; in fact, we have not discovered a soil at the Experimental Farm in which it does not thrive. The white pine succeeds best in sandy loam, and although it makes a healthy growth on heavier and moister soils, the growth is much less.

One of the most striking trees at the Experimental Farm is the European Larch. Like the other European trees, the Scotch pine and the Norway spruce, the Larch succeeds almost equally well on all kinds of soil. A block of these trees in the forest belt, in cold, sandy loam soil, have made very satisfactory growth, while equal if not better growth has been made on the highest sandy loam on the farm. The trees have also made strong growth on heavy clay loam. The Larch saw-fly is, however, very troublesome, and if the trees were not sprayed they would be defoliated every year. It is a remarkable fact that in the Arboretum where specimens of the European Larch and our native Tamarac are growing within a few feet of one another, the saw-fly has not attacked the native species. Tamarac transplanted from a swamp adjoining the Experimental Farm have surprised us by succeeding admirably on the higher ground in sandy loam soil. Whether the tree will reach a large size in this soil has not yet, of course, been determined.

As already stated, the trees in the forest belt were planted 5 x 5 feet, 5 x 10 feet, and 10 x 10 feet apart in order to learn which was the most satisfactory method.

These distances have all been found too wide. Where the trees were 10 x 10 feet apart, cultivation was still necessary, in some cases eight years after planting, in order to prevent sod from forming, and to get the trees to make satisfactory growth. The lower limbs of trees planted 10 x 10 feet apart have in many cases not yet died, the result being that the trees have knotty trunks. The tops of the trees planted 10 x 10 feet apart have also been more broken by storms than those planted closer. The main objection, however, to such wide planting is in having to keep the ground cultivated for so many years.

Even 5 by 5 feet has not been found an economical distance, as cultivation had to be kept up for from five to seven years, depending on the species and the arrangement of the trees. The most satisfactory growth from a forestry standpoint has been obtained in a solid plantation of evergreens, which was in 1877 a nursery, but which was allowed to remain and was extended. The trees in this plantation were in rows 3 feet apart and the trees from 1 to 2 feet apart in the rows. These have done remarkably well, growing tall and straight, and having their lower branches killed early owing to the dense growth. This plantation has been gradually thinned until the trees are now about 3 by 4 feet apart but the distance will be widened somewhat this year, as more will be taken out for poles.

During the past three years some new plantations have been made in the forest belts where certain kinds of trees have failed, and the trees in these blocks were planted only 2 1/2 by 2 1/2 feet apart. These were not really all timber trees, as a large proportion of shrubs and small trees were used for the purpose of shading the ground and saving cultivation. Several kinds of trees and shrubs were used for this temporary purpose, with the object of finding out which were the best. It may be found that 2 1/2 by 2 1/2 feet apart is an extreme in close planting, and that a slightly wider distance would be more satisfactory.

It has already been said that the trees in the forest belts were planted in blocks of a single species and mixed plantations in order to demonstrate which was the better plan. The rapid growing evergreens have succeeded about as well in unmixed blocks as where mixed with deciduous trees and other species of evergreens, but the deciduous trees have required much less labour to keep them growing vigorously where the species have been mixed. For instance, the ash, walnut, butternut and elm, though rapid growing trees, have thin foliage, and in the case of the ash, walnut and butternut are late to leaf out in the spring. The result is that there is greater opportunity for grass to grow; there is also greater evaporation from the soil, as the leaves are not thick enough to shade the ground thoroughly. The result is that the trees do not grow as rapidly as if there were no sod and the ground well shaded.

The hard maple, oak and beech are rather slow growing trees, and although they have heavy foliage do not grow rapidly enough when planted in rows and cultivated to shade the ground in a reasonable time.

The quick growing but thin foliaged trees require the thick foliaged deciduous kinds and the evergreens planted among them to make good soil conditions and give best results, and the thick foliaged but lower growing kinds require the others for the same purpose. The box elder is both a thick foliaged and rapid growing species, and hence a very useful kind as a temporary tree.

There is another advantage in having a mixed plantation on a farm, and that is that injurious insects spread less rapidly and are easier controlled than where the trees are in blocks of a single species.

A number of average trees were selected in 1893 in the principal parts of the forest belts and for the past ten years annual measurements have been made of these trees. The average is taken of these average trees and the results published from time to time in the annual reports of the Experimental Farm.

Some of these measurements may be of interest to this Association:

Name.	Distance Apart.	When Planted	Height When Planted.	Soil.	Height, 1902.	Diameter, 4 ft. 6 in. from ground, 1902.
	Feet.		Inches			
White Pine	5x5	1889	8-10	Light sandy loam with gravel.	25 3	3 1/2
"	10x10	"	"	"	24 5	5 1/2
Scotch Pine.	5x5	1887 fall	16	Low sandy loam with gravel	27 7	3 1/2
"	10x10	"	"	"	22 9	"
"	1 1/2 x 3	1887	"	Light sandy loam and gravel	6 4	1 1/2
Black Walnut	5x10	1887	12	Clay loam	17 8	1 1/2
White Ash.	5x5	1889	1 year	Black muck	25 7	2
"	10x10	"	"	Light sandy loam, moist bottom	26 9	1 1/2

*Abstract of a paper read before the Canadian Forestry Association.

ONTARIO CROWN LANDS.

The report of the Commissioner of Crown Lands of Ontario for the year 1902 states that the total revenue collected on account of the Woods and Forest branch was \$1,331,352.10. Of this sum \$1,078,273.35 came from timber dues; \$227,667.84 from bonuses; \$61,039.41 from ground rent, and from transfer fees \$4,371.50. The revenue collected on account of timber dues is the largest in the history of the Province. The collection on account of bonuses is derived from timber sales of previous years.

The report refers to the prosperous condition of the lumber trade. Wages in the woods not many years ago ran from \$14 to \$18 a month. Last year the range was from \$25 to \$32, and even then men were hard to obtain. All kinds of supplies increased in price, and the cost of getting out logs, delivery at the mills, and sawing and shipping the lumber was much enhanced, leaving the lumbermen no more than a fair profit.

The statement of timber cut on Crown lands for the year is as follows:

Area under license	17,408 sq. miles
Pine saw logs	615,831,433 ft. B.M.
Other saw logs	38,654,341 "
Pine boom and dimension timber	38,539,856 "
Other dimension timber	4,994,334 "
White pine square timber	1,468,756 cub ft.
Ash timber	169 "
Pile timber	1,022,483 ft. B.M.
Cedar	362,491 lin. ft.
Cord wood	31,562 cords
Tan bark	10,723 "
Posts	5,394 "
Railway ties	2,575,255 pcs.
Telegraph poles	10,824 "
Head blocks	343 "
Shingle bolts	521 cords
Pulp wood	29,703 "
Heading bolts	24 "

SAWDUST AND FISH LIFE.

A paper bearing the above title was read before the Canadian Institute by A. P. Knight, M. A., M. D., Professor of Animal Biology at Queen's University, Kingston, and has been reprinted for distribution. It is a very valuable work, reviewing as it does the experiments which have been made by leading scientists to determine the effect of sawdust upon fish life.

Professor Prince, Dominion Fish Commissioner, says: "So far as our present knowledge goes, sawdust pollution, if it does not affect the upper waters, the shallow spawning and hatching ground, appears to do little harm to the adult fish in their passage up from the sea. There is no case on record of salmon, or shad, or any other healthy adult fish being found choked with sawdust or in any way fatally injured by the floating particles."

Mr. Bastedo, Deputy Commissioner for the Province of Ontario, expresses the opposite view in the following words:

"There can be nothing more destructive of fish life than the depositing of sawdust in the rivers and lakes. It is said to absolutely kill all vegetation, and it is well known that in waters where there is no vegetation fish life is noticeably absent. Minute crustacea of various kinds feed upon the juices of the plants which are to be found at the bottom. These afford food for the smaller fish, and again these furnish food for others of larger size."

In the year 1900 Professor Knight, with the above facts before him, undertook some experiments at St. Andrews, N. B., for the pur-

pose of ascertaining whether or not sawdust was injurious to fish life. The results went to show that brook trout were not injured by living for two weeks in a water tank largely filled with sawdust so long as a copious supply of water was allowed to run into and out of the tank. These results were corroborated by subsequent experiments carried on in the biological department of Queen's University. When, however, sawdust was allowed to lie in still water, or in very slowly running water, entirely different results were obtained.

Prof Knight made a series of experiments which show comparative results at a glance. Two grams each of different kinds of sawdust were placed in shallow circular dishes containing respectively 300, 400, 500, 600, 700, 800, 900, 1,000, 1,200, 1,500, and 1,700 c.c. of fresh water. After soaking for about five hours in each case, a minnow was placed in each of the dishes. The length of time each animal lived was carefully noted, except in those cases where death occurred during the night. The results for white pine, Ontario cedar and British Columbia cedar are given below:

Weight of Sawdust	Volume Water c.c.	Time Soaking	Time at which minnow was immersed.	Results.
2 grams.	300	10 a. m.	2.43 p. m.	Lived about 9 minutes.
"	400	"	"	"
"	500	"	"	"
"	600	"	"	"
"	700	"	"	"
"	800	"	"	" 10 minutes.
"	900	"	"	" 13 "
"	1000	"	"	" 15 "
"	1200	"	"	" 20 "
"	1500	"	"	" 29 "
"	1700	"	"	" 29 "

Weight of Sawdust	Volume Water c.c.	Time Soaking	Time at which minnow was immersed.	Results
2 grams.	300	10 a. m.	2.33 p. m.	Lived 8 minutes.
"	400	"	"	" 9 "
"	500	"	"	" 19 "
"	600	"	"	" 20 "
"	700	"	"	" 21 "
"	800	"	"	" 22 "
"	900	"	"	" 27 "
"	1000	"	"	" 27 "
"	1200	"	"	" 1 hour
"	1500	"	"	" 1 " and 48 minutes.
"	1700	"	"	" 1 " " 55 "

Weight of Sawdust	Volume Water c.c.	Time Soaking	Time at which minnow was immersed.	Results
2 grams.	300	10 15 a.m.	2.51 p.m.	Lived 6 minutes.
"	400	"	"	" 6 "
"	500	"	"	" 15 "
"	600	"	"	" 53 "
"	700	"	"	" 43 "
"	800	"	"	" 1 hour and 9 minutes.
"	900	"	"	Jumped out of dish unnoticed.
"	1000	"	"	Lived 1 hour and 32 minutes.
"	1200	"	"	" 1 " 36 "
"	1500	"	"	" 3 " 50 "
"	1700	"	"	" 3 " 29 "

Concerning experiments made on the Bonnetiere River Prof. Knight says the results point unmistakably to the conclusion that the sawdust poured into the river is not destroying its fish life. Moreover, in Golden Lake, an expansion of the same river, and ten miles above any saw mill, lake trout used to be very abundant. Every October large numbers were caught in nets along their spawning beds. Now these spawning grounds are reported to be deserted by fish, and certainly sawdust cannot be blamed for their disappearance. Higher up the river, in Round Lake, the October fishing is still good, solely because there are fewer settlers and less fishing.

The conclusions of Prof. Knight are summarized as follows:

1. Strong sawdust solutions, such as occur at the bottom of an aquarium, poison adult fish and fish fry, through the agency of compounds dissolved out of the wood cells.

2. The overlying water in such an aquarium does not at first kill fish. After about a week it does kill, but solely through suffocation, the dissolved oxygen having all been used up.

3. Bacteria multiply enormously throughout all parts of such an aquarium, and through oxidation change the poisonous extracts to harmless compounds. Mosquito larvae live on the bacteria. No doubt, in natural pools, other aquatic insect larvae live on bacteria also.

4. Subsequent aeration and sedimentation of sawdust water purify it, so that fish can live in it without injury.

5. Since adult fish and black bass fry both refused to be driven into pine extracts in the bottom of an aquarium after they had experienced its poisonous effects, we may infer that fish would desert a river much polluted with sawdust, going down stream and into tribu-

aries to escape from the disagreeable influence of sawdust extracts.

6. No stream can be pronounced off hand as poisoned by sawdust. Each stream must be studied by itself and the varying conditions must be thoroughly understood before a judgment can be pronounced. The chief things to be considered are (1) the quantity of sawdust, and (2) the volume of water into which the sawdust is discharged. Subordinate conditions are the rapidity or sluggishness of the stream, the amount of sunlight or shade, and the character of the water, whether from agricultural lands or from primitive forests.

7. Further observations and studies along sawdust polluted streams and rivers of Canada are urgently needed before more definite conclusions can be reached.

THE NEWS

—Mr. Shea has remodelled his saw mill at Doe Lake, Ont.

C. T. White is building a new saw mill at Apple River, N. S.

Moir, Son & Company have completed a new box factory at Halifax, N. S.

—F. E. Sayre & Company have completed their new saw mill at St. John, N.B.

—Dumont, Fontaine & Cie, sash and door factory, Genilly, Que., have registered partnership.

The Victoria Lumber & Manufacturing Company are building a shingle mill at Chemainus, B.C.

—Forest fires in the vicinity of Amherst, N. S., early in May destroyed considerable standing timber.

The Cushing Bros. Company have installed new machinery in their planing mill at Edmonton, N. W. T.

—B. Quinn, of Windsor Mills, Que., has purchased from Joseph Bedard his saw mill and limits at that place.

—Incorporation has been granted to the W. A. Dunn Lumber Company, of Toronto, with a capital of \$40,000.

—The lumber yard of Klassen & Wieve, Altona, N.W.T., has been sold to the Prairie Lumber Company.

—The Deseronto Milling Company have purchased the Easterbrook mill at Tweed, Ont., for the sum of \$16,000.

—R. Walker, of London, Ont., has purchased the lumber business of E. H. Mathias at Morningside, N. W. T.

—The Arrowhead Lumber Company, Limited, of Arrowhead, B.C., has been incorporated. The capital is \$250,000.

—James W. Day has purchased the woodworking factory at Parrisboro, N. S., formerly operated by E. Spencer & Son.

—A. M. Stewart, of Morden, Man., has disposed of his lumber business at that place to the Canadian Elevator Company.

—It is stated that the saw and shingle mill at Fenelon Falls, Ont., owned by the Rathbun Company, of Deseronto, will be enlarged.

—The Rat Portage Lumber Company have given the contract for the erection of a large saw mill at Winnipeg to Stephen & McKinnon.

—The Brodhagan Lumber Company, of which Mr. Benniweiss is president, are building a saw mill on Cecebe Lake, Muskoka district.

—The Hastings Shingle Manufacturing Company, of Vancouver, B. C., are building a large flume for floating shingle timber from their limits to the mill.

—Irons & Winnacott, of Huntsville, Ont., have the new addition to their planing mill well under way. It will contain the machinery for the manufacture of sash and doors.

—The St. Anthony Lumber Company, of Whitney,

Ont., have built a logging railway which will enable them to get logs to the mill without waiting for the slower method of river driving.

—The Victoria Lumber & Manufacturing Company have installed four new boilers in their saw mill at Chemainus, B.C. They were supplied by the Victoria Machinery Depot, of Victoria.

—The Gull River Lumber Company, of Cobocook, Ont., has been incorporated, with a capital of \$40,000. The directors are G. W. Stevens, J. A. Peel, Edward Noice and R. J. McLaughlin.

—The saw mill and timber limits of A. E. Alexander at Campbellton, N.B., has been transferred to the Wm. Richards Company, Limited. It is understood that the purchase price exceeded \$10,000.

—T. A. Burrows, G. A. Mantle and H. E. Crawford, of Winnipeg, and William Cowan and E. H. Moore, of Prince Albert, N.W.T., have formed a partnership to carry on a lumber and pulp wood business.

The saw mill at Sidney, B.C., has been remodelled and again put into operation. George Cudhee is manager, and J. W. Wey, of Tacoma, head sawyer. United States capitalists are largely interested.

—John Hanbury, of Brandon, Man., has sent out cruisers to survey the timber limits in British Columbia which he recently purchased. It is understood that mills will be erected in the vicinity of Vancouver.

—The new mill of G. L. Burtis at Thessalon, Ont., is nearing completion. It will be operated day and night, as it is expected to cut 30,000,000 feet of lumber this season. The local manager is Mr. J. H. Vice.

—C. Ward and H. S. Barton, of London, England, have decided to build a saw mill of 50,000 feet capacity per day at Trout Lake City, B.C. A contract has been given for the cutting of 1,000,000 feet of logs to be delivered at the mill this summer.

—An exhibit of the timber, mineral and salmon industries of British Columbia will be made at the Louisiana Purchase Exposition next year. William Hutchison and W. H. Hay are making arrangements for the display.

—The largest private electric plant in New Westminster is now in operation at the Brunette Saw Mills. It was recently installed by the Hinton Electric Company, of Vancouver, and is capable of supplying 3,000 candle power.

—The Grand Valley Company, Limited, has been incorporated to conduct a lumber business, with headquarters in the city of Quebec. The incorporators include T. G. Meredith, Narcisse Bechar, Reginald Meredith, A. E. Scott, and Ferdinand Audet, all of Quebec.

—The Burrard Inlet Flume & Boom Company will soon have completed their large flume for conveying shingles bolts from the west bank of the Capilano river to salt water, a distance of eight miles. J. G. Woods is managing director of this company, and H. H. Spicer secretary.

—John Angus McBean, foreman of Alex. Gibson's log driving operations, was killed on the Nashwaak river

near St. John, N.B., on April 21, being crushed under a brow of logs. He was 46 years old, and had been associated with Mr. Gibson's lumbering operations for many years.

—The Ontario-Slocan Lumber Company's new four machine shingle mill at Slocan City, B.C., made a very satisfactory start a few days ago. The company will at once proceed with the erection of their large saw, planing and other mills, and hope to have all completed during the year.

—A party of twenty-three students at the School of Forestry of Cornell University recently visited Ottawa. They inspected the Experimental Farm and were shown the experiments in forestry undertaken by the officials of that institution. They also visited the large saw mills in the Ottawa district.

Andre Cushing & Company, of St. John, N.B., have for some time been conducting experiments with a view to utilizing the refuse of their saw mill for the manufacture of wood board. It is said that they have been successful and will erect a large plant at St. John. The firm holds both the Canadian and American patents on the process.

—R. M. Jack, of North Sydney, N. S., recently returned from Newfoundland, where he surveyed timber limits on which the Dominion Iron & Steel Company have an option. It is understood that his report is favorable. The company desires the limits for the purpose of obtaining a supply of pit props and other timber for their mines.

—The Northwest Lumber Company has been incorporated, to establish lumber yards in Raymond, Magrath and Stirling, Man. The supply of lumber will for the present be obtained from the Northern States, although eventually a mill will be built in the vicinity of Stirling. The manager of the company is L.H. Baker, with headquarters at Raymond.

—Much sympathy is expressed for Messrs. Davidson & Thackray, of Ottawa, in the total destruction of their planing mill by a fire which occurred on June 4th. Their loss is estimated to be above \$200,000. This is the third total loss the firm has encountered within ten years, while Mr. Davidson was a heavy loser by the destruction of the Hotel Cecil last fall.

—Messrs. Ross & Taylor, of the Exeter, Ont., Planing Mills, have added to their already large enterprise by the purchase of the business which has been successfully carried on for the past thirty years by the late James Willis. They have purchased the entire stock of lumber, shingles, etc., and have leased the yards for a term of years. With this addition to their stock they have now a very extensive and well equipped lumber yard.

The Vancouver Engineering Works, Vancouver, B. C., recently turned out what is claimed to be the largest logging engine ever manufactured in British Columbia. It has cylinders 10-inches in diameter by 15-inch stroke, and the bedplate is made of 15-inch steel I beams. The main drum will accommodate 1 1/2 miles of 3/4-inch cable. The boiler is 60 inches in diameter and 131 inches high and will carry a working pressure of 150 pounds of steam. The engine was built for the British Columbia Mills, Timber & Trading Company, of Vancouver, B.C.

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All our wheels are first-class in every respect. All special shapes supplied without extra charge.

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WOOD PULP ~

DEPARTMENT

MECHANICAL WOOD PULP.

Lord Strathcona, the Canadian High Commissioner in Great Britain, in his last report to the Department of Trade and Commerce, thus refers to the pulp industry :

Some surprise is expressed that the development in Canada so far should have been in the direction of mechanical wood pulp rather than in sulphite. The trade in the latter in the United Kingdom is much larger than in the former, the quantities consumed being about the same, viz., 250,000 tons, but while mechanical pulp is shipped containing 50 per cent. of water, chemical pulp is shipped air dry, consequently the actual amount of fibre in sulphite is almost double that of mechanical. The following is an extract from a letter received on the subject:—"We must strongly urge for future developments in Canada properly organized sulphite mills, and there can be no doubt that the future of sulphite making lies in Canada. Our reasons for this statement are the following: We have seen that Canadian mechanical pulp mills can compete successfully with Scandinavia. The only advantage they have over the Scandinavians is a modern plant and cheap wood, and the disadvantages under which they labour are the extra freight rates. Now, the wood necessary to make a wet ton of mechanical wood pulp in Scandinavia costs on the average 11s per ton; and in the best situated mechanical mills in Canada is said to cost 6s a ton. A Canadian mechanical wood pulp maker therefore starts out with an advantage of 5s per ton wet; against this he has an extra freight to pay of 5s to 6s a ton at an optimistic estimate, and therefore has no present great advantage, except that of modern plants, over his Scandinavian competitors. But reversing the position to chemical pulp making, the wood necessary to make a ton of chemical pulp costs in Scandinavia 6s, because the bulk of the wood boiled is boiled away; reckoning the wood costs 3 dols. a cord at the mill, it would cost the Canadian only 30s for his wood to make a ton of pulp, and leaves him an advantage of 30s per ton. Against this he would have an extra freight to pay on dry pulp of 7s 6d, and he starts out making pulp with a certainty that he can get his raw material so cheaply that he can manufacture 20s to 22s per ton less than the Scandinavians. The answer to this argument is, of course, why don't the existing mills do it, and the reply to that again must be that whereas any intelligent man can become a fairly expert pulp grinder in six months, in sulphite making great experience is required, and many a man who has been a sulphite maker all his life cannot make sulphite when he dies. The sulphite maker, like the paper-maker, is born, and the workmen who can be obtained in Canada are not sufficiently experienced, and do not take the

care requisite in the manufacture of a good sulphite pulp. All these are difficulties which can be overcome, and Canada is to-day making no fair share of the sulphite of the world, and it is in this direction that it will be a pleasure for the writer to convince your lordship that the future development of Canada in the pulp trade is possible."

HARMSWORTHS SECURE PULP LANDS.

The announcement was made about one week ago that the Newfoundland Timber Estates, Limited, in which H. M. Whitney, of Boston, and B. F. Pearson, of Halifax, are interested, had taken over the timber possessions in Newfoundland owned by Lewis Miller, of Scotland. It transpires, however, that most of this property has been taken over temporarily by the Whitney Company, and that they will operate it only for the remainder of this season. It will then be taken over by Harmsworth Bros., publishers, of London, England, who, it is said, will make an investment of about \$10,000,000 in the purchase and equipment of their Newfoundland property.

Mr. Beeton, hydraulic engineer for the Harmsworths, has visited Russia, Finland, Norway and Sweden in search of suitable pulp lands, and believes that the property which they are about to acquire is admirably adapted to meet their requirements. The property consists of over one million acres, located on the Exploits River, Indian Lake, Lloyd River, King Georges Lake, Victoria River and Victoria Lake. The watershed is over 2,000 square miles, so that a famine in the water supply may be said to be out of the question.

At Grand Falls, on the Exploits River, the Harmsworths will build a mechanical pulp mill, a sulphite pulp mill, and a paper mill capable of producing 1,000 tons of paper per week. This amount of paper will be required for their various publications. It is estimated that the time necessary to erect the mills will be between two and three years.

One of the advantages of Newfoundland for pulp is that in the case of forest fires, or of spruce being cut down, the second growth is invariably spruce.

PULP AND PAPER MAGAZINE.

Messrs. Biggar-Samuel, Limited, Toronto and Montreal, have issued the first number of a publication entitled "The Pulp and Paper Magazine of Canada." It contains 52 pages, of regular magazine size. Articles in the first number include the following: "Fibres for Paper Making," by Earnshaw Bradley, C. E., Toronto; "Canada and her Forests," by George Johnson, Dominion Statistician, Ottawa; "The Pulp Mill at the Soo," (with folding plate), by E. G. N. Cape, C. E., Montreal; "The British Paper Industry and its Relation to Canadian Trade," "Anglo-Canadian Pulp Trade," and other interesting contributions.

SWEDISH WOOD-PULP MARKET.

Consul R. S. S. Bergh writes from Gothenburg to the United States government, April 22, 1903, as follows: "Swedish newspapers state that by reason of the unsatisfactory condition of the wood-pulp market, Swedish and Norwegian manufacturers have agreed to diminish their production. According to reports, 39,834 tons of paper were exported from Gothenburg during the year 1902, or nearly 64 per cent. of the total export from Sweden, and 7,197 tons of pasteboard or building paper (nearly 92 per cent. of the whole). The quantities of wood pulp exported from Gothenburg were: Chemical, dry, 40,004 tons, or nearly 25 per cent.; chemical, moist, 4,753 tons, or more than 47 per cent. mechanical; dry, 22,339 tons, or more than 60 per cent., and moist, 7,604 tons, or more than 14 per cent. of the total export from Sweden.

PULP NOTES.

It is expected that the pulp mill of the Metabetchouan Pulp Company, at Metabetchouan, Que., will be in operation by the end of May.

W. & J. Shaples, of Quebec, who are largely interested in the River Ouelle Pulp & Lumber Company, are reported to have decided to increase the manufacturing capacity.

Mr. Grosset, managing director of the St. John Sulphite Pulp Company, arrived at St. John last month from Scotland to make an inspection of the pulp mill at Mispic.

The William Hamilton Manufacturing Company, of Peterborough, Ont., have supplied ten large turbines for the new pulp mills of the Canada Paper Company at Windsor Mills, Que.

The Quatsino Power & Pulp Company, of Vancouver, B. C., are preparing for active operations on Quatsino Sound. The intention is to erect a saw mill at once, and a pulp mill at a later date.

The experiment of running a pulp wood camp in the woods all summer will be tried near Gilchrist, Mich., this year. If the experiment is a success it will revolutionize the pulp wood cutting industry and avoid the present danger of shortage of pulp wood.

A Mr. Campbell estimates that the cost of pulp wood in Ontario is \$4 per cord, which will make 1,850 pounds of air-dry pulp. In Norway and Sweden it is estimated that the cost of pulp wood is higher, the difference amounting to about \$3 per dry ton of pulp in favor of Canada.

A paper on "The Chemical Industries of Canada" was read by W. R. Lang, B. Sc., at an open meeting of the Canadian section of the Society of Chemical Industry in the chemical lecture room of Toronto University on May 6th. The author gave some attention to the pulp and paper industry.

From Great Britain comes the information that the Canadian Finance Syndicate, Limited, has been organized, with a capital of \$75,000, to acquire timber limits and water powers and engage in the manufacture of pulp and paper in the province of British Columbia. The water powers are located on the Finlay river and lakes.

The North Shore Power & Railway Company, in which Thomas Meaney, of Toronto, is interested, are actively pushing operations on their works at Seven Islands, Que. During the past month a contract was given to Michael Connolly, the well-known contractor, Montreal, to construct a railway, wharves, pulp mills, and other buildings.

The Island Power Company, which secured a large timber concession from the British Columbia Government, for pulp purposes, is reported to have sold out to English capitalists. The Oriental Power Company, has in reserve all the timber limits on Princess Royal Island in British Columbia, is also reported to have disposed of its holdings to an English company. These English

capitalists are said to be pledged to spend between one and two million dollars in the establishment of pulp mills.

It is reported that American capitalists are considering the construction of a pulp mill at Lac du Bonnet, Man., situated on the Winnipeg river. About Lac du Bonnet there are stretches of country that is well timbered with spruce and other pulp wood, and a sharp variation in the level of the water there furnishes the natural requirements for a good water power.

The case of the Bank of Montreal and other bondholders of the Maritime Sulphite Fibre Company against the company and the Royal Trust Company has been settled. The difficulty arose over the winding up of the pulp mill at Chatham, N. B. The claim of Lieutenant-Governor Snowball against the company has been referred to arbitration, Judge Barker having been selected as arbitrator.

Proceedings have been taken to wind up the Blanche River Pulp & Paper Company. The assets of the company are said to be \$3,000 and the liabilities \$6,000. The reason given for the unsatisfactory state of the company's affairs is that the land grants to veterans have been taken largely out of the territory covered by the company's concessions. These grants carry with them rights to timber included in the concession to the

company. Hence the company's material was being limited to narrower bounds by the progress of settlement.

The question of the determination of moisture in wet wood pulp is a matter which has occupied the attention of everyone connected with the industry. It has been the cause of innumerable disputes, as well as the subject of careful investigation on the part of many experts. It is learned that the Chicoutimi Pulp Company, of Chicoutimi, Que., have engaged Mr. G. Davis, of the firm of Davis Bros., of Manchester, England, to thoroughly investigate the arrangements for the determination of moisture, with a view to putting them on a reliable working basis.

W. McCredie, coming from the Temiscaming district, says: "An intending settler makes application for his lot of 160 acres, pays the Government five dollars, he has at the end of four years to pay a total of fifty cents an acre, clear sixteen acres, and have built on his lot a house at least 16 by 20; then he will get his title. But supposing him to be so poor he can only raise five dollars and get there, when he has located his lot he can go to any one of the three companies buying timber in that country and say, 'I am poor; I want an axe, saw and a load of provisions to live on, and a horse,

harness, hay, oats, etc.' He will get those articles cheaper than he can at the retail stores. He then goes to work cutting pulp wood, for which he gets \$2.50 per cord, on the banks of any of the streams that will float it down. When his provisions are gone he can go back and get more till the spring, when the company will send their agent up to his place, measure his winter's cut, and pay him the balance due in cash. He can then go and chop and clear the land he has taken his timber off during the winter; and each succeeding winter repeat the operation. I learned that settlers last winter cut from one hundred to eight hundred cords each."

It is announced that the Remy River Pulp & Paper Company, of which Hon. George E. Foster, of Toronto, is a director, have secured a timber concession of 270 square miles from the Ontario Government. The company are making preliminary surveys for flumes, dams, mills, etc., and intend erecting a 30-ton mechanical pulp mill and a 15-ton chemical mill. They will also erect a saw mill and do a general lumbering business. They expect to have the saw mill in operation next spring, and the pulp mill by the spring of 1905. The area of the concession is covered with banksian pine, poplar, spruce, tamarac and cedar.

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PULP MILLS AND WATER POWER
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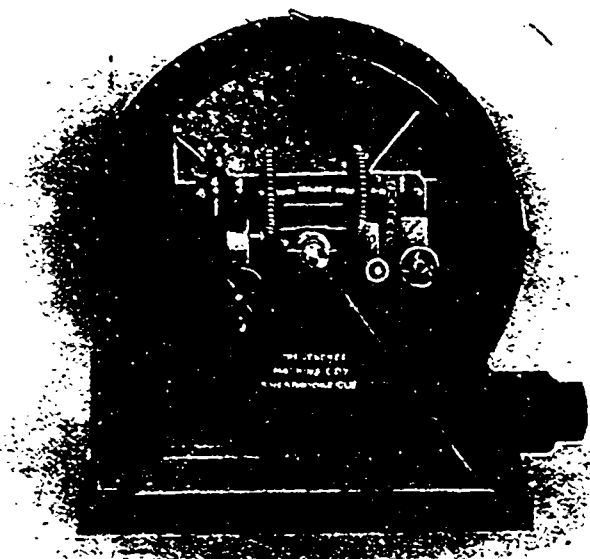
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Showing Campbell Automatic Log-Turning Attachment.

We have no hesitation in guaranteeing our Challenge Barker, here shown, to be the equal of any barker on the market of the same size, and we sell this barker under a positive guarantee to refund purchase price if barker proves unsatisfactory within thirty days.

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The illustration shows a right hand model with 60 inch disc.

We make them both right and left hand, and with 60 inch and 48 inch discs.

Several attachments for turning the wood may be obtained from us, one of which is shown herewith.

Prices, etc., on application.

THE MOREHEAD RETURN TRAP.

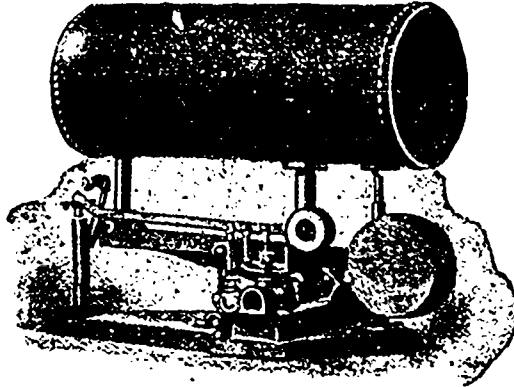
The condensation from any steam heating or cooking apparatus must be removed. The more quickly the condensation is removed the drier and more effective will be the heating surfaces. It is the greatest extravagance to waste it, as it is pure water, and hot. The most effective way to utilize the heat it contains is to deliver it into the boiler before it loses its latent heat, and in no other manner can the condensation be handled as quickly and with the same economy as with a return trap.

The Morehead return trap is constructed of steel, the heads and longitudinal seams being closely riveted and caulked, to withstand any pressure carried on the boiler without breaking, which is impossible with cast iron traps. It is the embodiment of simplicity, there being no rubber joints to blow out or leak, and only one valve, which is on the outside. All working parts are on the outside, in plain sight, and easily accessible. There is no ball or globe float inside the receiver to collapse, rust, leak or stick.

This trap is located six feet or more above the water-line of the boiler. The water from the condensing surfaces is forced by the pressure of steam from behind, through a pipe leading to the trap with a swing check valve close to the latter. As soon as sufficient water has entered the receiver to overcome the counterbalance weight, the receiver tilts down, allowing the water to pass through the discharge pipe, at the same time opening the steam valve, which has a pipe connected with the dome of the boiler.

By equalizing the pressure on the surface of the water in the receiver with that in the boiler, the water, in simple obedience to the laws of gravity, flows into the boiler. As soon as the receiver is empty it tilts back as before, and again refills. The trap is prompt in opening and closing, its action being entirely due to gravity. When once set up it requires no further attention. It takes the water from the condensing surfaces whether they are above or below the water level in the

boiler, and automatically returns it to its boiler at the temperature due to the pressure at which the steam is condensed. There is no outlet by which the steam can be wasted. The trap is quick and positive in delivering the water into the boiler against any pressure, and regardless of fluctuations of pressure. It supplies all the water needed in the boiler from the main water pipe, providing there is enough pressure on the main to lift the water to the trap, thus performing the duties of a pump injector. It operates equally well with high or



THE MOREHEAD RETURN TRAP.

low pressure coils, or coils using exhaust steam, allowing no condensation to collect in them.

For a boiler plant of 200 horse power having an efficiency of 65 per cent. and an evaporation of 6,900 pounds of water per hour, from and at 212 degrees, under average conditions, the saving effected by a Morehead return trap for a year is more than twice the cost of installing one large enough to handle such a plant.

Where a Morehead return trap is not employed, the usual way of handling compensation is by means of a pump. A comparison of the two methods shows many

points of advantage in favor of the former. A pump will not lift water at a temperature exceeding 212 degrees; a Morehead return trap will. A pump consumes an extravagant amount of steam to do a very little work. For example, an ordinary duplex boiler-feed pump requires from 90 to 120 pounds of steam per horse power hour. A common slide valve engine seldom consumes less than 40 pounds per horse power. The pressure is admitted to the surface of the water, and is automatically shut off before the tank is empty. The steam used is only such as is condensed by the latent heat passing from it into the water in the tank, which is all put back into the boiler.

A Morehead return trap, it is claimed, requires practically no attention; needs no lubrication; will not race or run away; is noiseless; requires little room and no foundation.

Full information, prices, etc., of the Morehead return trap may be obtained by addressing the American Blower Company, of Detroit, Mich., or any of their branch offices.

NEW CATALOGUE OF MARINE MACHINERY.

The Marine Iron Works, Station A, Chicago, Ill., have just issued a new illustrated catalogue of their product, which will be sent free on request. This company makes an exclusive specialty of designing and building modern marine machinery (steam only) suitable for vessels ranging from 30 to 160 feet in length, and within their range of sizes the line is very complete, covering paddle-wheel as well as screw propeller machinery, condensing or non-condensing, for either salt or fresh water, as may be required. The large line of marine boilers which they build includes the Roberts safety water tube, also the better class of shell marine boilers, and for either hard coal, soft coal or wood fuel as desired.

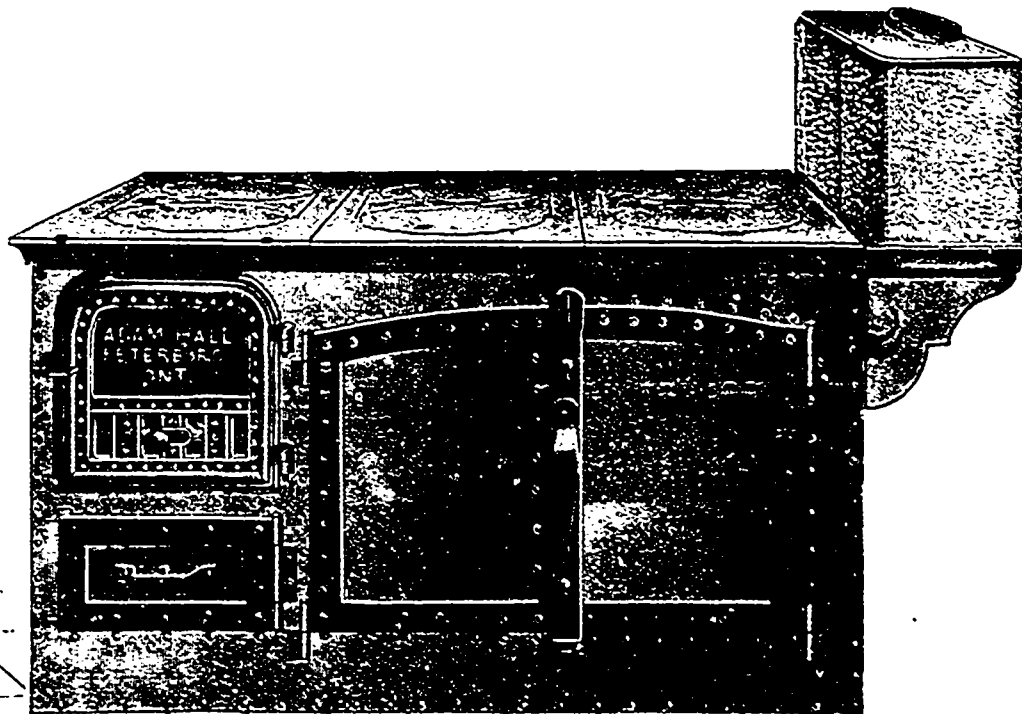
Their new catalogue illustrates and mentions thirty-five different sizes and types of screw propeller engines and thirty-six different paddle-wheel engines, all of modern type. Fifty different sizes and types of marine boilers are listed.

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- 36 Inch Lumberman Heater
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This Heater is used in heating Lumbermen's Camps, Boarding Houses, School Houses and large buildings.

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It is a perfect Heater, and very durable.

We have been manufacturing Steel Ranges and Heaters for Lumber Camps for the past Twenty-four Years, and have supplied the wants of nearly all the Lumbermen in Quebec, Ontario and Manitoba—they are unexcelled for Baking and Cooking, and are strong and durable.

This No. 10-25 Range with 25 Gallon Copper Reservoir is the one we sell the most of, owing to the convenience of having a supply of hot water at all times. Will cook for 50 to 60 men. Weighs 450 pounds.

Write for Catalogue and Price List.

LUMBER PILING BY-LAW.

As a result of recent fires in the city of Ottawa, claimed to have started in the lumber yards, the city council have passed a by-law to prevent the piling of lumber within the city limits and stipulating that the owner or occupant of any premises where lumber is piled or stored shall remove the same outside the limits of the city within six months of the passing of the by-law. The by-law grants permission, however, to any manufacturer or retail dealer in lumber to maintain a lumber yard within the limits of the city and to pile or store therein not more than 500,000 feet of lumber, provided that such yard shall be surrounded by a close fence not less than six feet high and that the entrance or entrances to such yard shall be provided with gates which shall be securely locked and fastened at night and at any other time when the yard is not being used, and that the lumber within such yard shall be piled or

stored not less than 33 feet distant from any other property.

Referring to the by-law Senator W. C. Edwards stated that of all the fires that have taken place in Ottawa only the one which occurred on May 10th was directly attributable to lumber. Had the city waterworks been in good shape on that day, he contended that the fire would have been extinguished before serious damage had been done. There seemed to be an impression that Ottawa would be immune from fire if the lumber were removed.

Mr. J. R. Booth is said to be considering the removal of his saw mill from the city as a result of the new by-law. This is considered a serious matter, as his employees now number nearly 2,000. It is possible that Mr. Booth will secure outside piling grounds at such a point that the lumber may be carried to the yard by rail.

TO ARREST THE MILL MEN.

We are credibly informed that the city attorney of Everett will arrest all mill men of that city who continue to dump sawdust into the waters of Puget Sound, as the United States government has recently demanded through Major Millis, of Seattle, that they stop it. There has been a great deal of trouble lately with the mill men from Maine to Washington, about what they shall do with their mill refuse. Already several are defendants in suits at Everett and Seattle, and the Maine lumbermen, along the Kennebec river and its tributaries, are having equally as hard a time with the authorities.

In addition to committing a nuisance these manufacturers are absolutely wasting their sawdust, when they might be running their mills with it by putting in the Gordon Hollow Blast Grate. As this grate is sold on approval after thirty days exhaustive trial, and as, moreover, its value is demonstrated by the fact that there are over 2,000 sets in daily use, it would be well for those interested to obtain full particulars from its manufacturers, the Gordon Hollow Blast Grate Company, Greenville, Michigan.

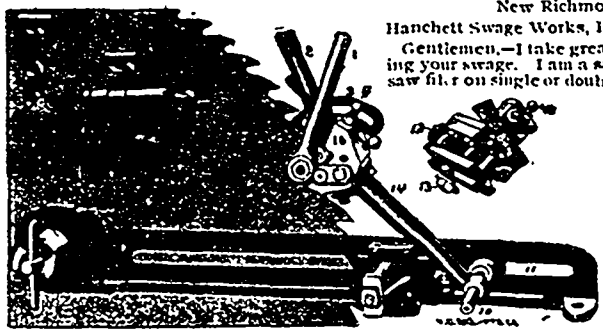
H. P. Lawson is building a new saw mill at Georgetown, Ont.

“ THE REEVES ”

For Saw or Planing Mill work—
“ The Reeves ” Wood Split Pulley is the favorite. A good, strong, durable pulley made honestly and made right.

Reeves Pulley Manufacturing Company, Limited
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GET OUR PRICE LIST AND DISCOUNTS

Hanchett's Adjustable Saw Swages



New Richmond, Wis., March 17, 1903.
Hanchett Swage Works, Big Rapids, Mich.
Gentlemen,—I take great pleasure in recommending your swage. I am a saw maker and expert band saw fitter on single or double cutting bands, and have used the different makes of swages now on the market and consider the Hanchett superior to all others for circular or band.

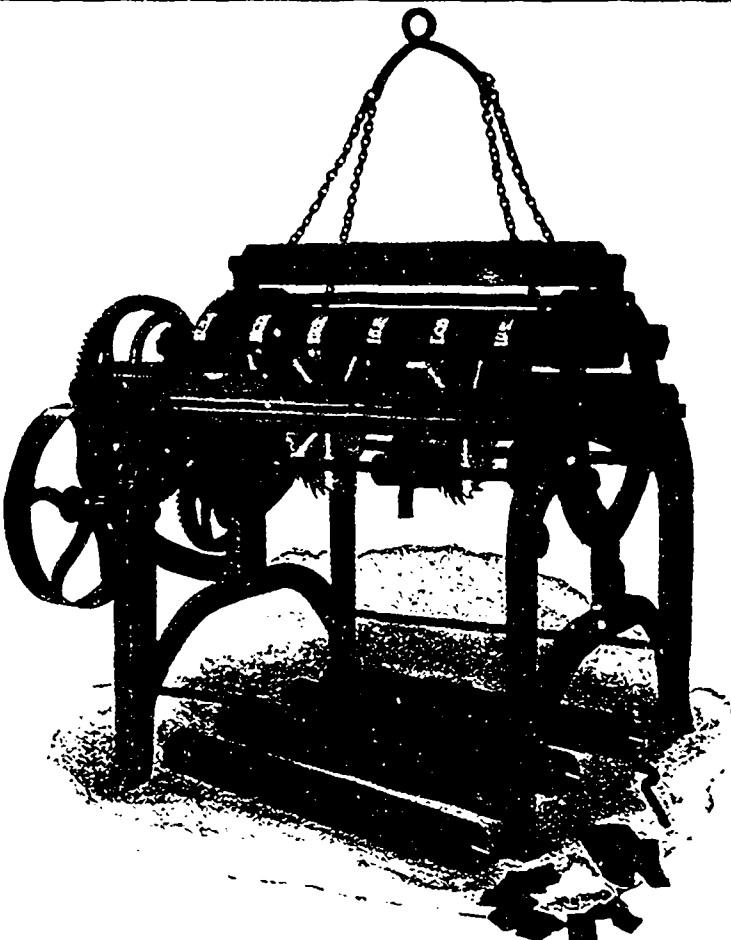
Yours truly,
M. E. ALLEN.
Mr. Allen is with Willow River Lumber Co. at a salary of \$10 a day.
The accompanying cut represents our swage and jointer for circular saws. Without question the best Swaging Machine in existence.

We also make Swages for Band Saws, Gang Saws and Band Resaws.
We invite correspondence from Canadian mill operators and supply houses, mentioning this paper.

HANCHETT SWAGE WORKS, Big Rapids, Mich.

OUR 2, 3 and 4 SAW EDGERS

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Direct Action Steam Feed, with D Valve, acknowledged the best.
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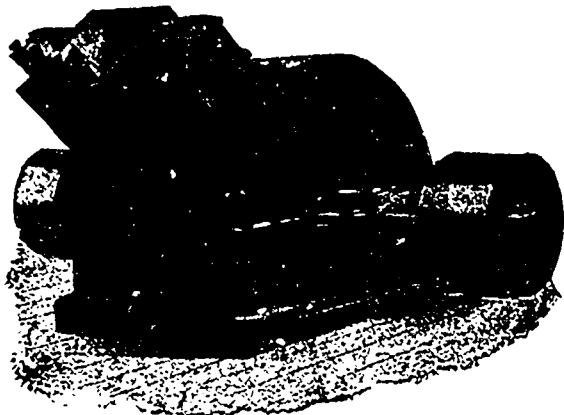
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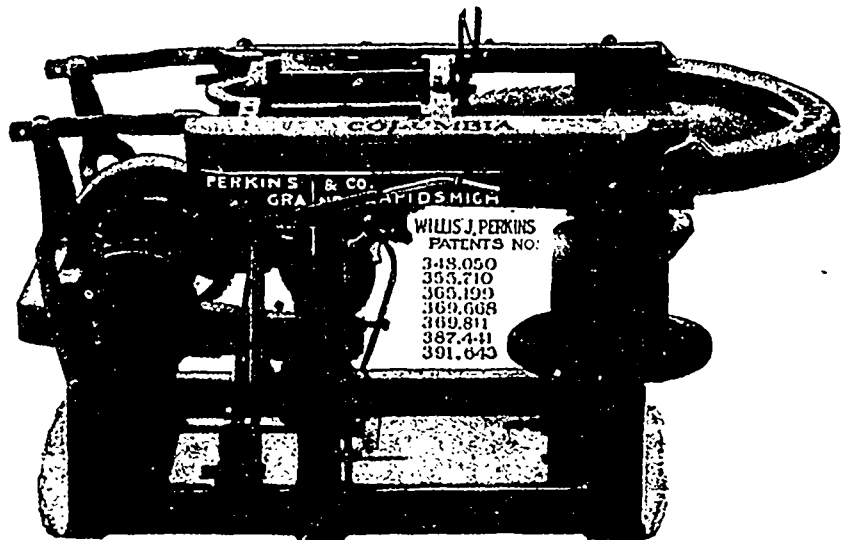
If you have no time write us for circulars and let us tell you all about ours. They save their cost in a short time. Write for our Stock List of New and Second Hand Machinery.

A. F. BARTLETT & CO. - Saginaw, Mich.

Hand Feed Machine \$150.00 and over.
Double Blockers - - \$550.00 and over.
Ten Blockers - - \$1200.00 and over.

—ALSO—

COLUMBIA HEADING AND SHINGLE MACHINES



THEY WERE WELL PLEASED.

PERKINS & CO. HAMPTON, N. B.
DEAR SIR:—Replying to your favor of 18th inst., Mr. Shives has not called to see the Columbia as yet. Our man is feeding her on the fly now; he don't lose a clip. We are very much pleased with the machine.

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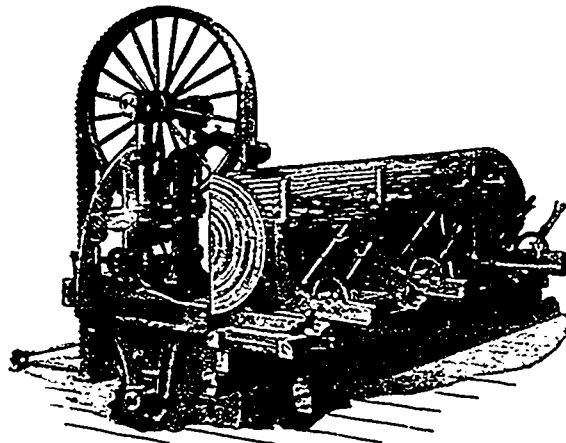
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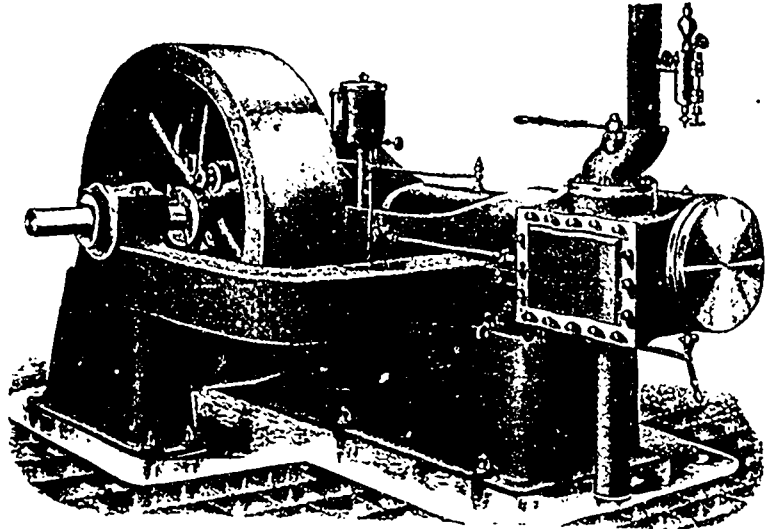
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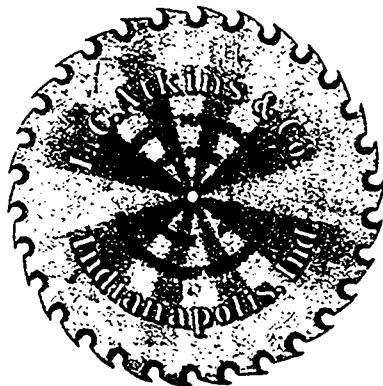
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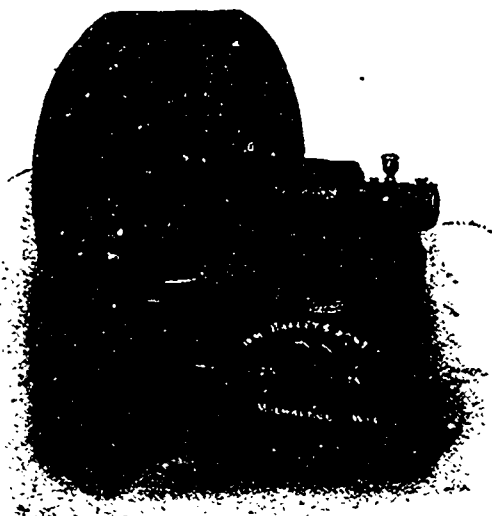
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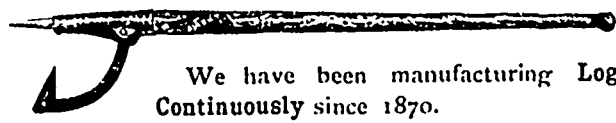
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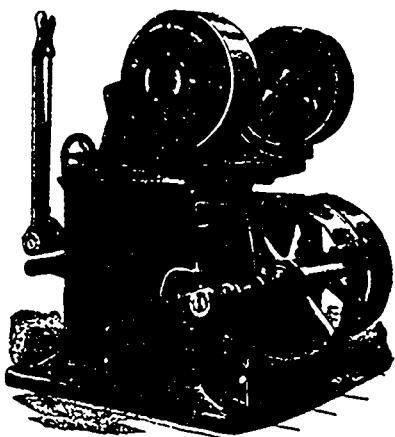
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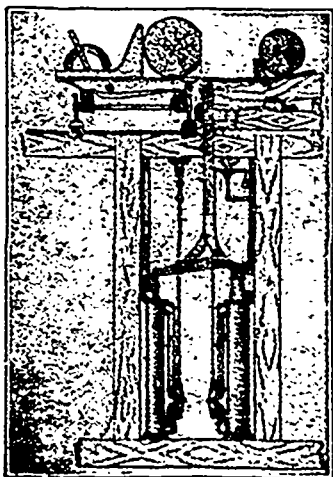
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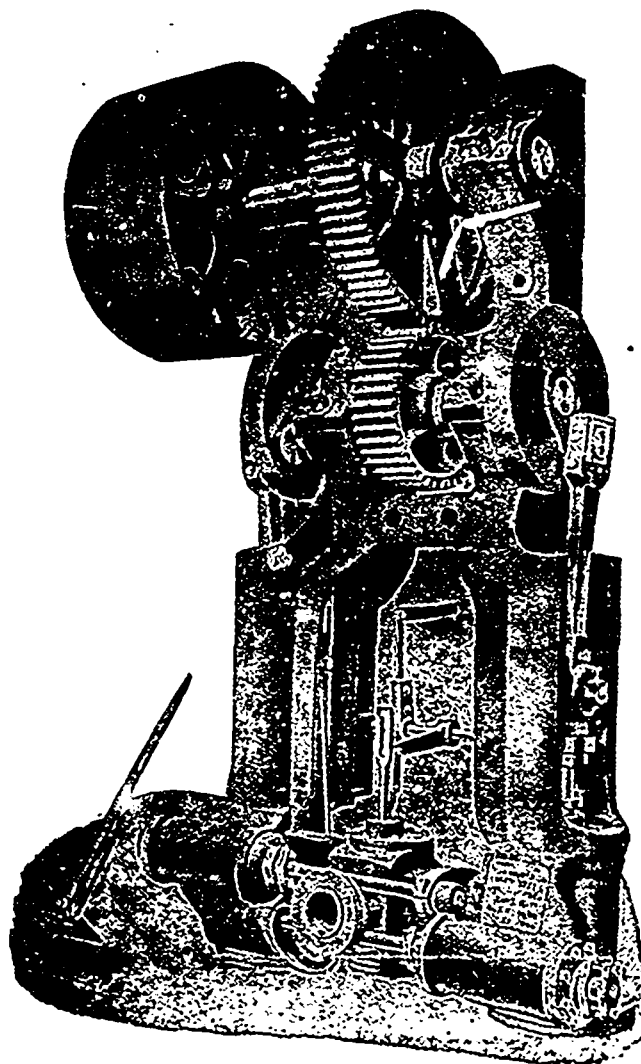
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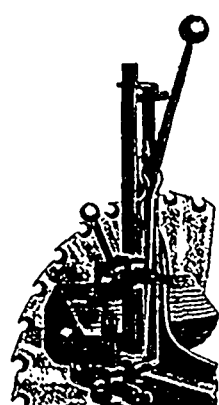
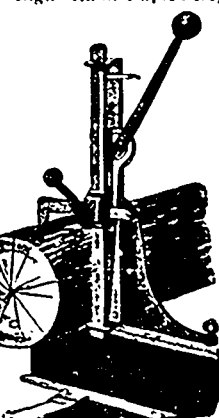
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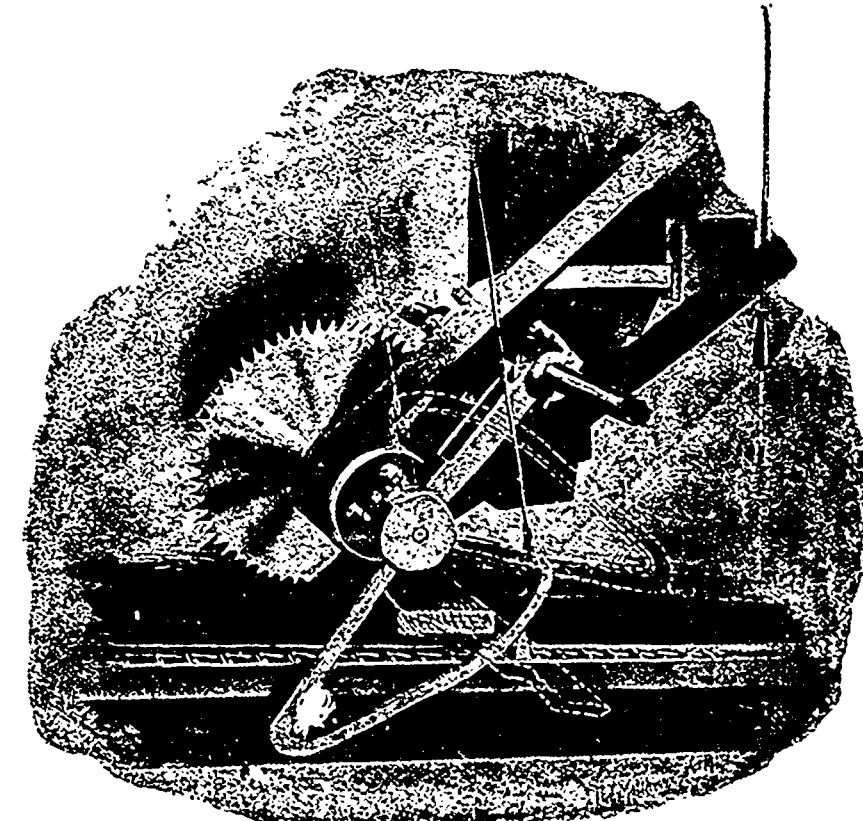
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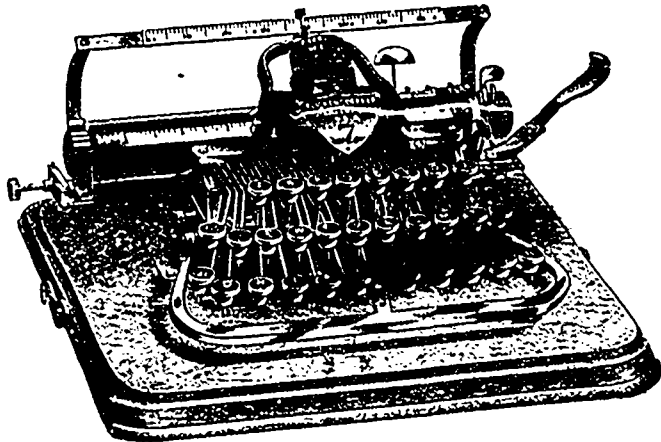
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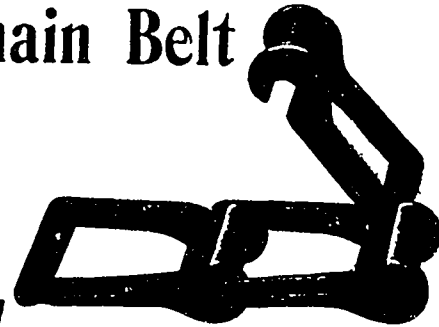
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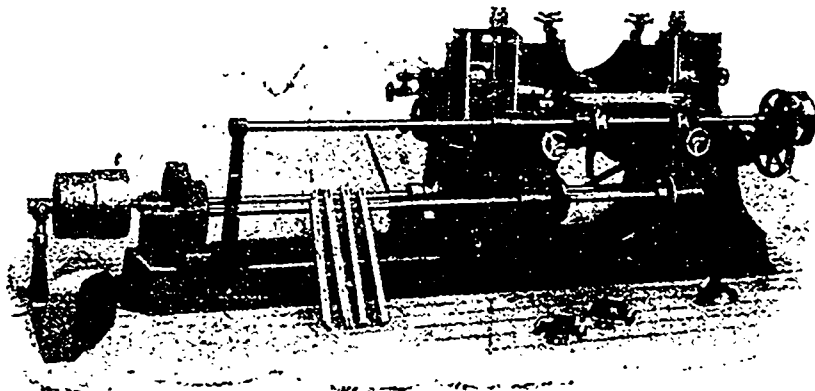
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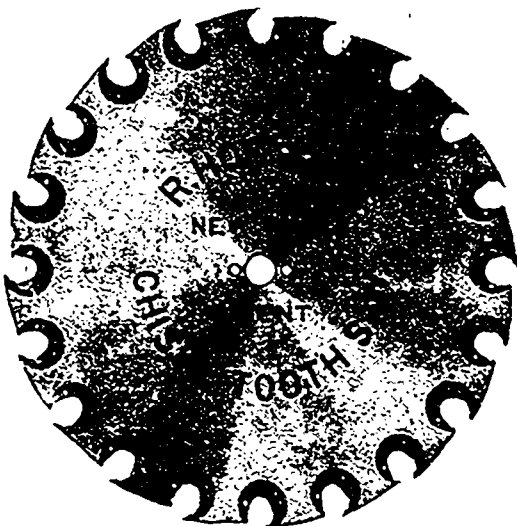
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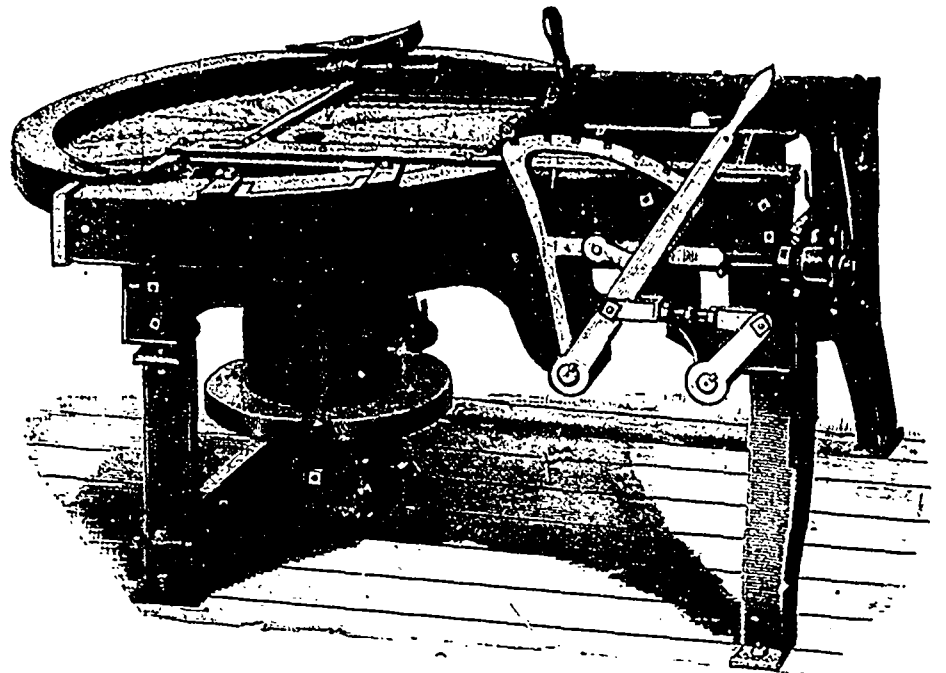
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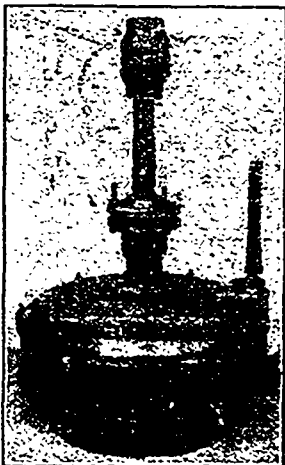
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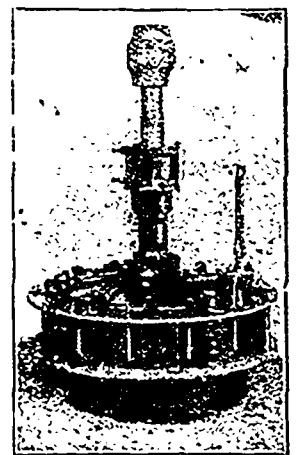
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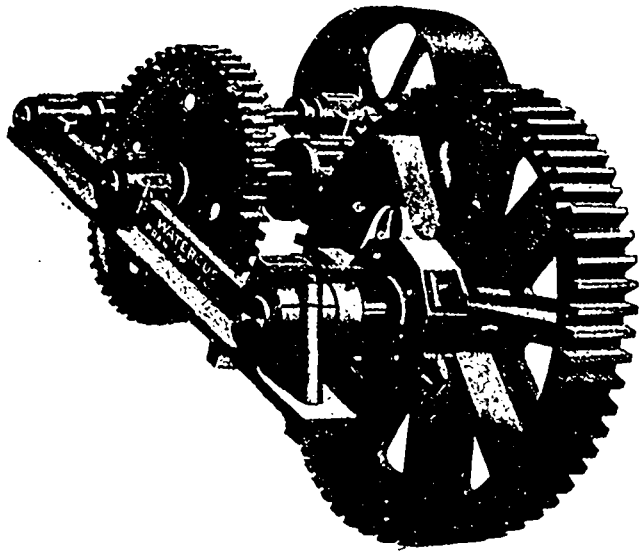
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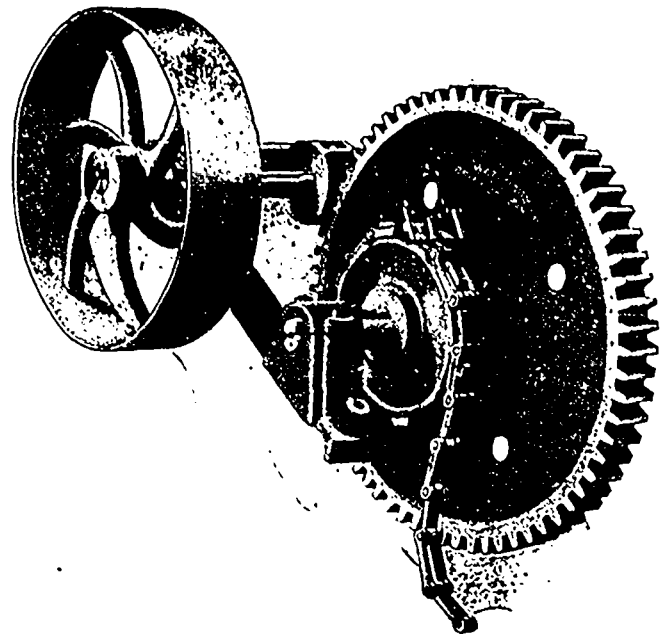
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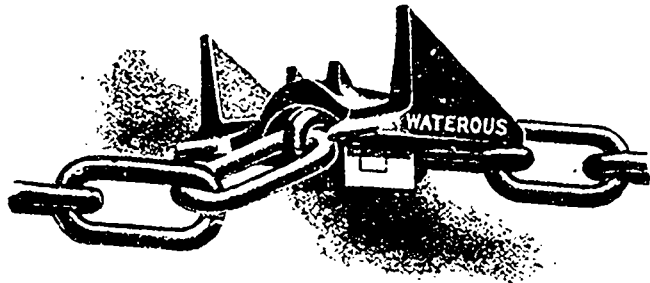
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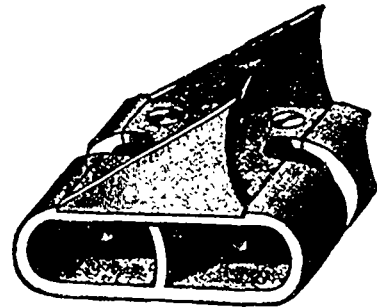
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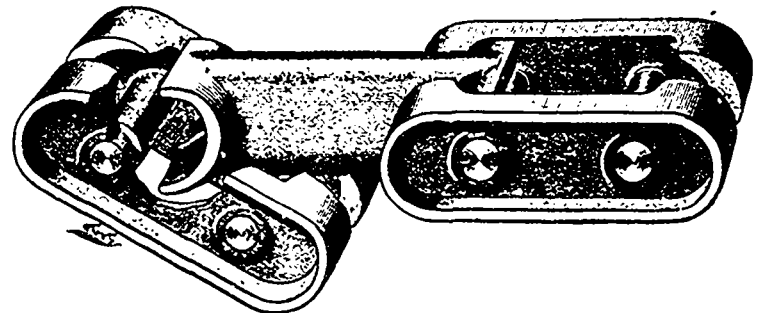


Cable Chain with Cast Iron Log Spurs

Chilled wearing shoes 3x12" on each side round link. Made 10", 12", 14" wide for 1", 1 1/4" and 1 1/2" chain. Can't turn on chain.



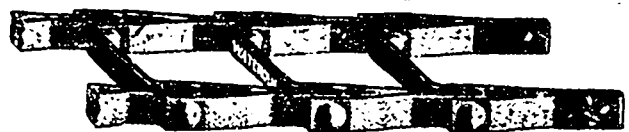
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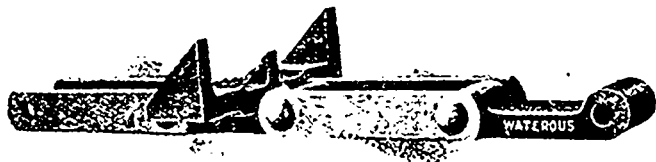
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Outside width 12 1/2 in.—Made of 1 1/2 x 3/8 in.



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Rivets 3/4", side bars 1 1/4 x 3/4", 8" pitch, center (cast steel) 2 1/4 x 6" pitch. Spurs 9" point to point.

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Is 8" pitch similar to above, except that solid link is a drop steel forging, the pin is 1 1/2" in diameter (like illustration) and is fixed in position connecting side bars, presenting a large wearing surface for solid link. Side bars 2x1 1/2"



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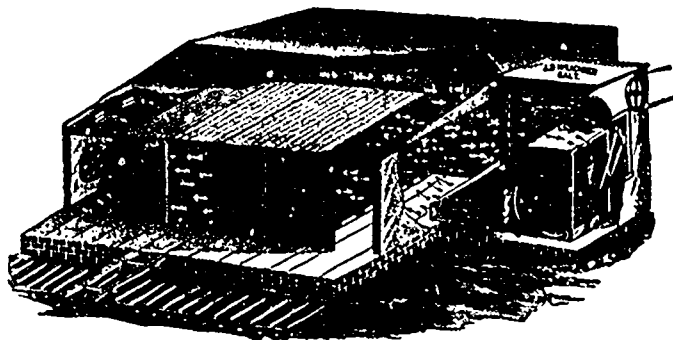
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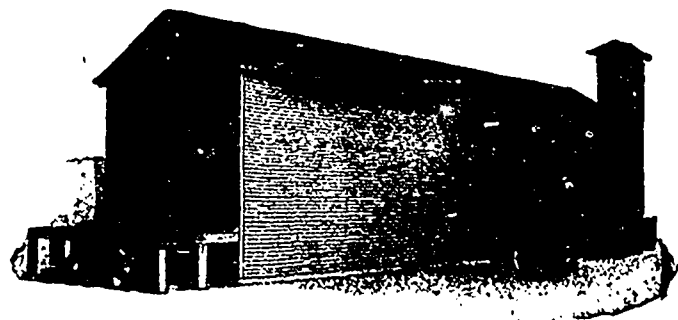
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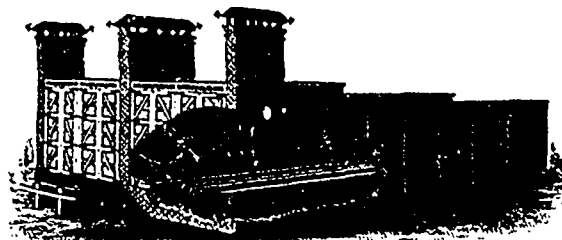
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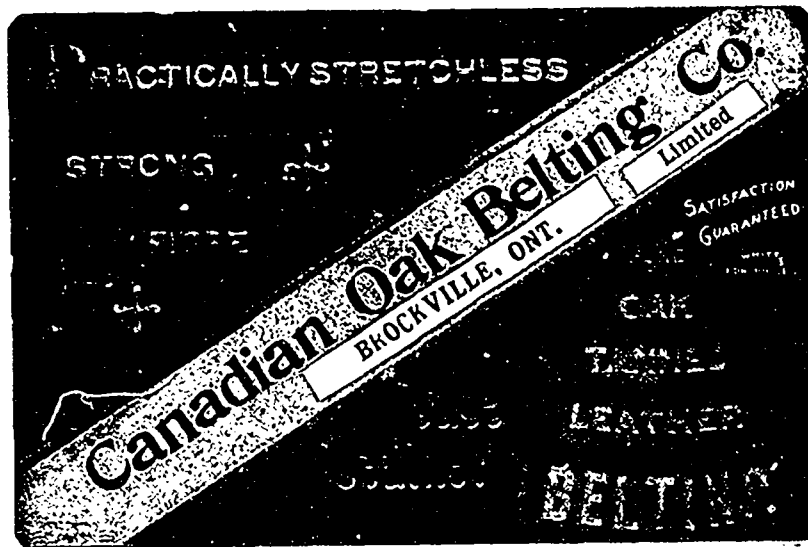
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 (Signed) J. H. GIGNAC.

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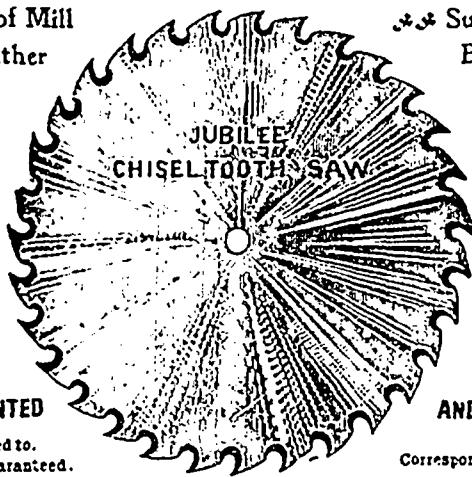
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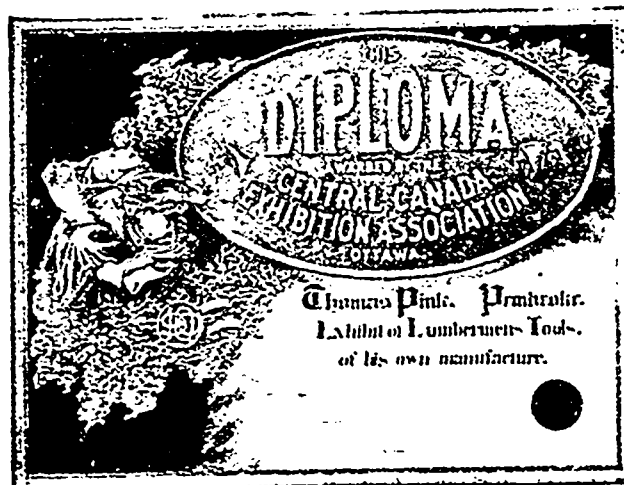
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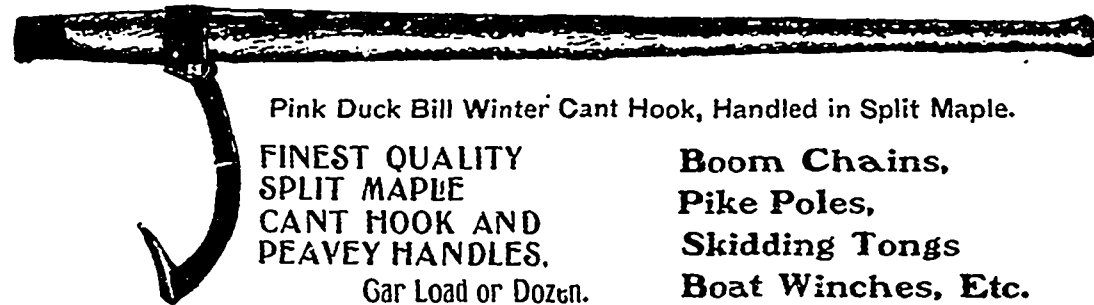
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