

Economical Lumber Making.

THE great advance in value of timber lands and the supply receding from the mills and markets tend yearly to increase the cost of logs delivered at the mills and thus to reduce profits unless the price of lumber is increased or cost of production diminished.

To lessen the cost of production the circular mill has been driven to its utmost capacity to produce large quantities in the least time and consequently least cost of wages per thousand.

To stand the strain of extra feed the thickness of saw and kerf has been increased, sending millions of feet into the burners or under the boilers, the loss being unnoticed as long as logs held out to scale.

Thin circulars did not remedy this, as they won't stand up under a sufficiently heavy feed to pay and the result is more spoilt lumber than is saved by thin gang.

Heretofore the gang was the only recourse, but even it has been put in the race for speed with heavy saws, cutting nearly a quarter inch kerf, and while the cutting of stock lumber on a gang is a good practice in itself, it fails to save the best lumber—the "uppers" cut off the best part of the log by the circular with its extra waste in saw kerf.

To remedy this waste the "Band Mill" is the coming machine.

This is no new fact, as this mill has been before the public for many years—patents in regard to it dating back to 1836.

The expense of the machine and the supposed great trouble and expense in operating it from the mystery thrown around the treatment of the Band Saw by so-called experts has been the great cause of its limited use.

The diffusion of the knowledge among a wider circle of users and the increased attention given by practical saw makers to the making of Band Saws in a practically perfect manner has gradually eliminated the latter trouble.

OUR NEW PATENT ECONOMICAL BAND SAW.

This is a strong, rigid but light machine which brings the Band Saw as much within the reach of all parties cutting lumber as the old-time circular.

THE FRAME consists of two triangular castings connected by four steel columns.

THE WHEELS are solid cast iron, perfectly balanced and made with bearings inside the wheel-face, bringing the strain on them in place of on the shaft.

THE UPPER WHEEL SHAFT is carried in a triangular frame throwing the main strain on centre column in a straight line with foundation plate and top and bottom bearings.

CROSS-LINE MOVEMENT is provided to both wheels. After the saw is on and strained the lower shaft may be strained by saw out of line. We have arranged a vertical and horizontal movement to this shaft, independent of the frame, to enable it to be brought back to a perfect line after the saw is strained. The upper wheel can also be tipped with a hand wheel within reach of sawyer either forward or back so as to keep the saw strained tight on its cutting edge, or keep it in any desired position on the wheels. This cross-line movement enables sawyer to adjust the mill to the saw, rather than the saw to the mill.

THE STRAINING BAR has a new arrangement of screw and gear and tension; is held on saw by spring and also by very sensitively fulcrumed combined levers and weight, the whole strain coming in a direct line with centre of foundation plates.

THE GUIDE consists of wooded blocks, adjustable and readily removable. The upper guide is raised and lowered by power actuated by lever in reach of sawyer. The outer arm of guide throws up in changing saws.

THE FEED is worked by face plate and friction disc operated by rack and pinion; the feed can thus be instantly varied at the will of the sawyer. The *gigging* back motion is operated by bevel friction and is strong and quick.

OFFSET TO CARRIAGE. We offset the carriage as it gigs back by a simple automatic device which acts instantly the carriage is reversed. If desired, however, to back out of a cut straight the offset can be stopped or controlled by a lever. This device works to perfection and does away with the vibration caused by deflecting the saw which does not readily subside, and is the means of frequent injury to saws.

THE CARRIAGE can be of any size to suit the diameter and length of logs to be cut. The one shown in operation consists of the three head blocks of Girder steel with adjustable rack, throwing out at pleasure and permitting the adjustment of each knee independently of the other to a crooked lock or to cut taper stuff.

ROPE FEED. The rope feed is exceedingly effective and simple, the rope being in all positions in a straight line and the old-fashioned winding barrel is done away with.

THE SAW we use is 8" wide and 38 feet long, 15 gauge.

The following table will show mill men, at a glance by comparison, how the Band Mill touches their pocket. It shows the saving on logs sawed to inch boards with the $\frac{1}{8}$ " saw kerf of the band saw to exact sizes with 12 feet logs.

Diameter of Log in Inches..	10", 11", 12", 13", 14", 16", 18", 20", 22", 24"	Diameter of Logs in Inches...	26", 28", 30", 32", 34", 36", 38", 40", 42"
Waterous Band Saw Scale..	58, 68, 88, 100, 120, 162, 200, 252, 312, 376	Waterous Band Saw Scale ...	440, 514, 594, 682, 770, 866, 958, 1,068, 1,186
Scribner's Scale.....	59, 73, 86, 119, 160, 210, 251, 303	Scribner's Scale.....	375, 436, 493, 552, 600, 692, 801, 903, 1,007
Doyle's Scale.....	27, 37, 48, 61, 75, 108, 147, 192, 243, 300	Doyle's Scale.....	303, 432, 507, 588, 675, 768, 867, 972, 1,083

DIAMETER OF LOG IN INCHES..	44", 46", 48"
Waterous Band Saw Scale.....	1,306, 1,426, 1,554
Scribner's Scale.....	1,110
Doyle's Scale.....	1,200, 1,323, 1,452

NUMBER OF MEN required to run the band mill is the same as a circular mill, but it will be found economical to have a man in the filing room to take care of the saws and have them always sharp and ready to go on, and as on the excellence of the work put upon the care of the saw depends very much the quality and quantity of the output. This mill can be placed in any mill same as a circular saw, or circular can be taken out and band mill put in its place. For further particulars address,

THE * WATEROUS * ENGINE * WORKS * CO., * LTD.
BRANTFORD, ONTARIO.

Mention "The Canada Lumberman" when writing us.