BAND SAWS FOR LOG SAWING.

IT is not alone in this country, but abroad, that the band saw is engaging the attention of practical machinists. We illustrate on this page a special band saw for log sawing, manufactured by A. Ransome & Co., of Stanley Works, Chelsea, London, S.W., Eng., a concern that has a world-wide reputation for high-class sawmill and wood-working machinery. The merits of the particular machine in question have been brought to public notice very recently through the inspection made of one of these machines, that was about to leave the workshops for Tasmania, by a company of scientific and practical men connected with the trade.

The claim is made by the Messrs. Ransome & Co. that while their machines possess the best features of the machines made on this side of the ocean, for ensuring rapid work and facility of manipulation, they have been still more designed to meet the requirements of a market like Canada, where economy of timber and the production of smooth and true boards, with a moderate expenditure of power, are likewise indispensable.

The log sawing machines now in use may be classified under the three following heads: (1) vertical timber or log frames; (2) rack circular saw benches; (3) horizontal single blade saw frames; and it may be useful to place on record in a summarized form the advantages which the makers of these special band saw machines claim for them as the results of practical working.

As compared with a vertical timber frame—(1) The band saw, taking only one cut at a time, enables the sawyer to see what internal defects there may be in the log, or how the figure of the wood is developing, and so to convert it to the best advantage. (2) The band saw cuts very much faster than the vertical frame, the effective speed on the cutting edge of the saw being 7,000 feet a minute, as against about 200 feet a minute, which is the effective speed of the cutting edge of each saw in the vertical frame. (3) The time lost in changing saws on the band saw is about half an hour a day as against two to five hours a day lost in changing and shifting saws in the vertical frame.

As compared with the rack circular saw bench—(1) The band saw will do as much work as the rack circular saw bench with much less power. (2) The band saw saves about 70 per cent. of the wood which is wasted by being cut into sawdust with the large circular saws used in the rack bench. The band saw when cutting oak or elm logs wastes a full sixteenth at each cut. The rack bench doing the same work with a 62 inch saw wastes fully five-sixteenths at each cut. Thus, when sawing a log 24 inches square into boards one inch thick, the band saw would produce four more one inch boards than could be obtained from the same log if converted at the rack bench. (3) The band saw makes much smoother work than is obtainable from a circular saw, and the surface of the wood is not marked by the back of the saw.

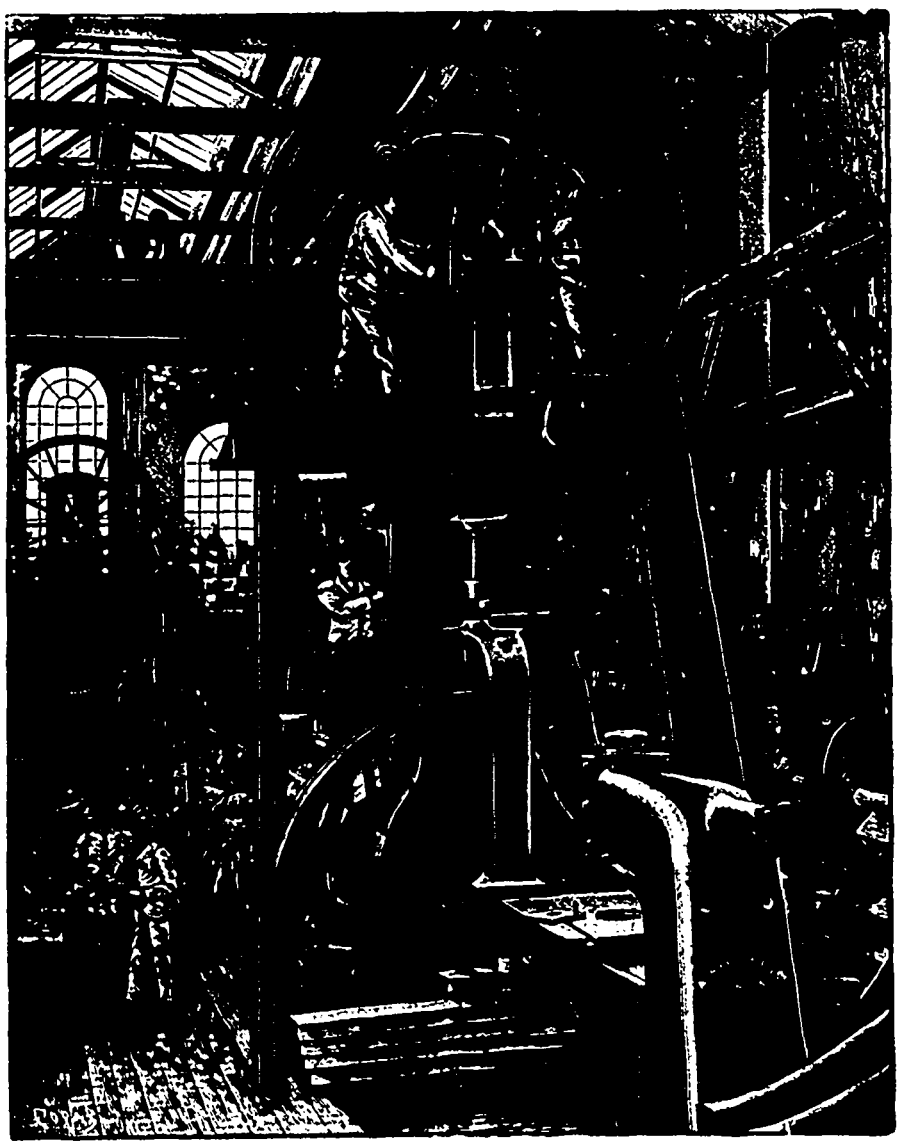
As compared with the horizontal single blade saw frame—(1) The band saw will cut vastly more than any horizontal single blade saw frame in the market. (2) The band saw takes up considerably less space in the mill than the horizontal frame. Assuming a log twenty-four inches square by twenty feet long required to be cut into boards one inch thick, the band saw would saw the log completely up into twenty-two boards in the same time as it would take the horizontal frame to cut off the first two boards, the waste of wood being the same in each case.

The particular machine shown in our illustration stands twenty feet high from its base plate to the summit of the upper saw pulley. Its saw pulleys are eight feet in diameter. The blades used on it are eight inches in width, and their lengths are nearly sixty feet. When cutting they travel at the rate of 7,250 feet per minute. The weight of the machine complete with its traveling carriage is twenty tons.

This machine will saw right through a maximum depth of seventy-five inches, and will square and convert logs up to seven feet in diameter. The wooden section (dogged on the traveling carriage) showed a log of the maximum diameter which the machine can convert. It girths about twenty-two feet. A lot of blue gum wood of this average section, and fifty feet long, would weigh nearly fifty tons.

The rate of travel of the log, while the saw is cutting it, is variable up to fifty feet per minute. Where smaller logs are to be cut a still higher rate of speed is obtainable.

Messrs. Ransome & Co. will cheerfully furnish to readers of the CANADA LUMBERMAN any particulars of the band saw not included in the description here given. Woodworkers are likely to be interested in a number of machines constructed by this concern, and which are fully described and illustrated in catalogues and circulars. They also manufacture several machines and appliances for keeping large band saws in order, a patent automatic saw-sharpening machine being one of the most useful. This machine will sharpen in about 20 minutes what would take 4 hours to sharpen by hand.



RANSOME'S SPECIAL BAND SAW FOR LOG SAWING.

SHAFTING.

BE sure that the shafting has a firm foundation, that the hangers are strong enough and not spaced too far apart, that they are lined up in good shape and well provided with means of lubrication. It may pay to reduce the size of shafting as you go further from the engine, for everything that helps to take friction from the engine load is beneficial; this requires careful calculating, however, and should not be done by guess work; it does not pay.

LINING UP AN ENGINE.

THE easiest way to determine whether an engine shaft is out of line depends considerably on the style of the engine, as with some engines it can be done quite easily and by simple means, while in others more inconvenience and greater difficulties are experienced in lining, says the Stationary Engineer. As a stationary engine is attached solidly to the foundation, it may be leveled and squared. With the frame of the engine level, a level placed across the guides should show these to be level also, then a plumb line dropped in the path of the crank, so that the line will come at the centre of the length of crank pin when the pin is above the shaft, and again when it is moved to the lower part of its travel, will show that the shaft is level. This point might also be determined by the use of a level, if enough of the shaft is exposed to accommodate the length of the level. To determine whether the shaft is in line on a horizontal plane, run a line parallel with the guides and determine whether the crank pin strikes the line at the same point when near both the outward and the inner points. If the leveling and establishing of the line are carefully done, the engine can be placed exactly in line, or a trial in this way will show how much it is out of line.

To thoroughly line up an engine and get all parts in their proper position, the piston, crosshead and connecting rod must be removed and a line drawn through the cylinder and projected beyond the outer point reached by the crank pin in its travel. This line must be centered accurately in the cylinder, measurements being made at both ends and the work carefully done, so that the line is at equal distance from the sides. A very trifling variation in the distance of the line from the sides at either end of the cylinder will be multiplied at the crank end. The line can be fastened in any convenient manner at the crank end, but at sufficient distance beyond, so as not to interfere with the movement of the crank. With the line in position, the guides should be carefully adjusted and the adjustment made accurate, as must all other adjustments and measurements when lining up the engine, or best results cannot be obtained.

A good and careful workman can show his qualities to good advantage in this kind of work, for here a variation of half a hundredth of an inch may be "good enough" to suit some, but the line should be drawn closer than this. With the cylinder and crosshead in line, the next thing is to line the shaft. This can be done by removing the shaft from the bearings, replacing the caps of the journal boxes and running a line through them, and then testing with a square and plumb line or level, adjust the bearings, so that the shaft will come in line. If the shaft bearings are badly worn we should prefer to line the shaft while in position. This can be done by blocking the shaft so it is level with the center line of the engine, and placing it also at an angle of 90°, as shown by the square, to the center line of the engine. The height of the shaft can be obtained by leveling from the center line to center of the shaft. If it is necessary to re-babbitt the bearings, the old babbitt should be removed from the boxes before the shaft is placed in position; then, when accurately in line, re-babbitt the boxes in the usual way.

THE MYSTERY.

A WRITER in an engineer's paper properly says that when old grate bars, scrap iron and similar weights are hung on the safety-valve lever (to prevent the valve working at the proper time), there is always a deep mystery connected with it—and that mystery is, what prevents an explosion?