

THE RETAILER AND Wood-Worker

SAW-GRINDING.

The following suggestions contributed by Mr. Powis Bale, M.E., to the Timber Trades Journal, are presumed to represent the latest English practice:

For many years after the introduction of emery wheels or disks a prejudice existed against their use for sharpening saws; and, to some extent, this prejudice still survives. It arose chiefly from the fact that many of the wheels made were unsuited to their work, and the user had little knowledge as to the proper management. In the following paper some hints will be given as to their management, which may be found serviceable to users; and although these remarks relate chiefly to emery wheels for sharpening saws, they can, in most cases, be equally well applied to emery wheels used for other purposes. In the first place, it is important to secure an emery wheel of good quality and of a texture and hardness well suited to the work. This is not so simple a matter as it may at first appear, owing to the quantity of cheap, inferior wheels with which the market is flooded.

For saw-sharpening purposes a moderately soft wheel should be preferred, since it will cut quicker and heat and glaze less than a hard one; it will, however, wear out a little sooner. Some wheels are harder on their surface than further in, and they do not cut their best until they are worn a little; but the best class of wheels may be obtained of any required degree of hardness, as it is only necessary to vary the proportions of the compound used in their manufacture. Sometimes a good wheel will be condemned as bad when the fault may arise from its being unsuited to the work it is used for, or it may have been run at an improper speed. In establishments where a variety of work is done it will pay well to have a fair assortment of wheels, and not make one do duty for all kinds of operations. When the wheel is secured, before mounted it should be examined to see that it is perfectly sound. This may be ascertained by tapping it lightly with a hammer; if sound it will ring. If it does not ring it should be closely examined, and if any cracks or flaws are detected, however slight, the wheel should be discarded, as it would be dangerous to work.

To lessen the chance of accidents from cracks, the manufacturers of some wheels insert in them a web or webs of brass wire, proportioned in strength to the size and weight of the wheel. They claim that the insertion of the wire does not in any way affect the cutting power of the wheel, as it wears away in advance of the emery. The wheel should be mounted so that it fits easily on the spindle, and thus have room to expand should it become warm. Large washers or flanges, say about one-third the diameter of

the wheel, should be fitted on either side. These are preferably made slightly concave on their inner side, and a small piece of packing—rubber or leather will do very well—should be placed between them and the wheel. Care must be taken that they are not screwed too tightly, as thin wheels are liable to crack, especially if a little warped, and they are then, of course, exceedingly dangerous. The saw-sharpening machine in which the wheels are run should be well made and substantially built, the main frame being cast in one piece. In the best machines the emery wheel is mounted on a small steel spindle running in bearings or centres fitted in a counterbalanced swinging carriage. This carriage is brought down to the saw by hand, and, by means of a quadrant, can be set at an angle to give any desired lead to tooth; stops are also fitted to regulate the depth of the gullet and the pitch of the tooth. The counter-shaft is usually placed at the back of the machine, and the band (belt) giving motion to the emery disk passes over an idle pulley and then directly on to small pulley on the emery disk spindle. In the place of single pulleys the writer strongly recommends the use of adjustable pulleys of different sizes, or small cone pulleys, so that as the wheel wears less in diameter its speed can be increased in proportion.

The question of speed is a factor of immense importance in the successful working of emery wheels. The best cutting speed will vary somewhat in wheels of different character; but a speed of from 4,500 feet to 5,500 feet per minute at the periphery of the disk will usually be found suitable. A speed midway between the figures, say 5,000 feet per minute for the 12-inch wheel, which is generally used in sharpening saws, may be accepted as the standard.

THE SAGINAW BAND RE-SAW.

The growing scarcity of timber and consequent higher value of stumpage has caused lumber manufacturers to give greater attention to the adoption of such methods and appliances as will reduce the waste in the saw-mill to a minimum and produce the largest quantity of marketable lumber from a log. This condition no doubt accounts in a large measure for the success of the Saginaw band re-saw, illustration of which appears on this page. The manufacturers thereof operate a large plant

at Saginaw, Mich., for the manufacture of lumber and boxes in shooks, sash, doors, blinds, etc. Some time ago the president of the company, Mr. E. C. Mershon, decided to build a machine for their own plant, and subsequently secured a patent therefor and arranged to place it on the market. The large sale which the machine has had has demonstrated the wisdom of this decision.

The Saginaw re-saw has proved very successful when used in connection with band and circular log mills in the United States, where the practice is to saw plank double the thickness required, and then re-saw them on the band re-saw, thus making the re-saw perform half of the work. In Canada the mill is also very popular, the manufacturers having placed resaws in the mills of the following well-known firms: W. C. Edwards & Co., Rockland, Ont.; Estate of Ross Bros., Buckingham, Que.; Estate of James McLaren, Buckingham, Que.; Hawkesbury Lumber Co., Hawkesbury, Ont.; Gilmour & Co., Trenton, Ont.; Georgian Bay Lumber Co., Waubesa, Ont.

The manufacturers state that they believe the Saginaw resaw to be the first machine designed from a thorough knowledge of the requirements of saw-milling. The feed works, they say, are designed so as to meet every imaginable requirement, whether self-centering or slabbing from one side, whether stock to be re-sawed is perfectly manufactured plank or deal, or thick on one edge and thin on the other, or even a slab or a wane deal. Under any of the above circumstances the feed works will insure the stock being perfectly sawn. The set works is another valuable feature. Referring to the machine, Messrs. W. B. Mershon & Co. say: "We manufacture, including seven or eight styles of the Saginaw re-saw, no less than 14 practically different machines,



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adapted to as many different classes and conditions of work. We also remind you that we are wood-workers and operate eight of our own re-saws and rip saws about our own plant; hence, we claim that our machines are more practical than those manufactured in the ordinary machine shop. We claim that it will convert over 100,000 feet of 2 inch plank into one inch boards in a day of ten hours. The saw-kerf is but five sixty-fourths of an inch.

Persons desiring further information should communicate with the manufacturers, Messrs. W. B. Mershon & Co., of Saginaw, Mich.

Wm. Williamson, contractor, of Toronto, proposes erecting a wood-working factory.

The Arrowhead Saw and Planing Mills Company, of Arrowhead, B.C., has been incorporated, with a capital of \$150,000.