

CONSTITUTES A COMPLETE FILING ROOM OUTFIT.

Successful saw fitting requires two essentials—a well equipped filing room and a capable saw filer in charge of it. Saws do not run or fit themselves and require fine fitting to produce a maximum quantity of improved quality of output on a minimum saw filer. Hence it is usually an unwise economy that does not provide both essentials, and the most successful saw and factory operators consider it good practice to have every machine or tool calculated to improve the filer's work.

The operator of a sawmill or woodworking plant makes a substantial investment in mill and saws. His success depends largely upon having his lumber or finished product well manufactured on a maximum output on a minimum saw kerf. He spends money for saws that for some operators last for years until worn out; for others, last for weeks until worthless from cracks or defective conditions.

There are some operators whose saws run finely; others whose saws run indifferently well or poorly, on an irregular wave line, because of poor swaging, sharpening, sidedressing, irregular tensioning, etc. This is a condition of no swage, no sharpener, no shaper, no repair, or, if such tools are in use they are defective, in repair, and not uniform or efficient in operation. The buyer may take the stock for a dollar or less per thousand feet than market prices.

It suggests that the filing room is the initial point of attack in the use of saws. The purchase of filing equipment is variously approached by different operators. One can observe all manner of ideas on the subject ranging from those of the man in whose mind is dominant this proposition: "I want just a few cheap machines as my filer can possibly get along with to want him to work and earn his money by doing hand labor—what have you second-hand, or to those of the man who says: "I want the best filing outfit obtainable—a machine and tool service, everything must be up-to-date if not of date."

Oper conservatism in buying is always judicious, and it is manifestly true that not all mill men have the purchasing power, or can afford to be similarly equipped, or can carry on their business with equal success and profit, but it is a self-evident truth to the operator that the best results from saws are obtained upon fine swaging, sharpening, sidedressing, filing and brazing; results obtainable only from the use of high-grade, efficient saw fitting appliances in the hands of a capable operator. The life of saw fitting very much depends directly on the quality and strength of the machine, and on the care bestowed by the operator. Defective construction and lack of proper maintenance account for the number of sharpeners, stretchers, brazing clamps, etc., in the mills to-day in dissatisfactory use.

Ideas of millmen and filers differ as to what machines and tools comprise an efficient filing room outfit. As manufacturers of such equipment familiar with the possibilities in the way of a machine or tool for service, we enumerate below the several appliances that are found in practice to be necessary or desirable for the several processes of sharpening, filing, sidedressing, jointing, leveling, tensioning, shearing, lap making, brazing, patching. This list contemplates an outfit that will please the most critical and provides a machine or tool for service so far as conceived to date—our own estimate. It is an elastic list that will accommodate the requirements of the most or the least critical buyers. It may be observed that there are two "degrees" in filing room outfits, the "positive degree" to the outfit that includes only the absolutely necessary machines; the "comparative degree" to the outfit which includes in general a fair assortment, to the equipment of the average operator; the "relative degree" to that outfit which includes a machine or tool for every service, each the best obtainable, and the whole calculated to secure the greatest efficiency in mill operation as a result of the perfect fitting of the saws. The practical millman or filer can compare his own outfit in use with the list and note his comparative efficiency. A few dollars more or less is the measurement in

money between the positive and the comparative degree in filing room equipment, the saving in investment cost at 7 per cent. ranging from \$15 to \$50 per year. There are millmen who are saving this difference in first cost and fixed investment and who are losing thousands of dollars annually in poorly manufactured lumber, ruined saws and expense for labor idle while the mill waits on the saw fitting. There are millmen who spend from \$10,000 to \$50,000 on a plant, critical to a degree in everything that pertains to the heavy machinery, power plant, belting and saws, who fail to maintain the same high standard of excellence in the saw fitting department, regardless of the fact that a magnificent power plant, and the rapid handling of logs by steam, and their manufacture by the most modern of mills, cannot compensate for poor saw fitting.

A LOG BAND SAW FILING ROOM OUTFIT.

For Sharpening.—An automatic sharpener of suitable capacity, equipped with double feed finger device and post brackets for support of saw, and with idle pulley for use in fitting up work. This system does not contemplate the support of saw to sharpener on a set of adjustable pulleys, the use of which for this purpose has been largely discarded owing to the fact that they are not found to afford the most accurate feed.

For Swaging.—An automatic power or hand swage, either of which may on occasion be supplemented by the use of an upset swage or a swage bar. A grass-hopper type of swage is desirable in any filing room and a power swage also unless the teeth cannot be maintained of fairly even length.

For Sidedressing.—A swage shaper or pressure sidedressing tool is now generally regarded as indispensable, as its use secures the ideal tooth. A file sidedresser may also prove useful, but for regular use it is not highly recommended.

For Leveling and Tensioning.—A doghead and a crossface hammer weighing from 2 to 3 lbs. An iron leveling block, face 14x72 inches or smaller, surfaced both sides to permit of reversing. A steel faced anvil 12x16 or smaller. A concave back gauge from 6 to 10 feet long for testing the back of saw. A straight edge and tension gauge of proper lengths. A saw stretcher of abundant power, with rolls properly crowned that track and travel together. Perfect efficiency in this machine is of the utmost importance and a machine lacking in the particulars mentioned is inferior, as its work may have to be undone. If there is much shearing of saws, the stretcher should be equipped with a rotary shear, a feature of our geared machines.

For Shearing.—A combined shearing and crosscutting machine that may be used either to shear the back or toothed edge of saw or to cut saw in two preparatory to lap making.

For Retooling.—A retooter with dies made specially to suit the special requirements. This machine may also have combined with it dies for shearing. Additional sets of dies for special requirements are often to advantage.

For Lap Making.—A lap grinder or a lap cutter. As between an efficient machine of either type there is little to choose.

For Brazing.—A powerful brazing clamp that will insure uniform pressure across the entire surface of the lap. A machine for this service cannot be too heavy and powerful. A forge for heating the irons. The ordinary open hearth portable forge may be used for the purpose, but a special force with tuyeres arranged to secure a uniform heating of the irons their entire length, is more efficient. Good silver solder, brazing, etc.

For Fitting Up.—An iron filing clamp with planed jaws of proper length. A set of adjustable pulleys for support of saw is convenient but not necessary if saw is fitted in connection with sharpener, and an idle pulley is in place for use in pulling saw around. A file jointer. An emery wheel dresser. Instruction book on hammering.

For Checking Cracks.—A crack drill or prick punch may be used for checking small cracks. But the use of our patch machine for preparing the surface of a cracked saw ready for repairing by means of the application of a patch is highly desirable.

For Power.—An engine for driving the filing room machinery independent of the mill machinery, to afford

a steady, independent power at any time, is highly desirable.

Add to the above good saws and emery wheels and a capable saw filer and the successful fitting of the saws will be assured.

A BAND RESAW FILING ROOM OUTFIT.

Band resaws in general use vary from 2 to 8 inches wide and from 16 to 24 gauge, and differ from the log band saw only in size. Compared with log bands, resaws require as great or even greater care and skill in fitting, because of the thinner gauges employed and the desirability of perfectly converting valuable lumber into proper thicknesses without waste.

The attempt to fit resaws without a suitable equipment of machines and tools is not economical, because of the waste in stock, poor manufacture involving extra care and labor on the part of those that work up the stuff into manufactured form, and the loss arising from breakage and destruction of saws. The greater need of suitable appliances is also evident from the fact that many of the filers called upon to take care of band resaws are men of little or no previous experience on such saws, and hence whatever is calculated to facilitate and improve their work is not only desirable but also essential.

Our outfits as regularly furnished comprise the following: (1) Automatic sharpener equipped with double feed finger device and post brackets for support of saw, with an idle pulley for use in fitting up work. (2) A stretcher for tensioning. (3) A grass-hopper swage, with a small upset for occasional use. (4) A swage shaper for sidedressing, which is indispensable to the best results, although some make use of a file sidedresser. (5) A brazing clamp. (6) A filing clamp. (7) A jointer. (8) A steel faced anvil 6x10 or larger. (9) A leveling block 8x48, surfaced both sides. (10) A pair of 2 to 2½ lb. resaw hammers. (11) A set of resaw straight edges and tension gauges. (12) For those that make their own saws or have much shearing or retooling to do, a retooter and shear. (13) A lap cutter or lap grinder, if many brazes are necessary. (14) A forge of suitable character for heating the brazing irons, silver solder, acid. (15) An emery wheel dresser. (16) A book of instruction on band saw fitting and tensioning will be found of use to beginners or those who have had little experience in saw work, and are not familiar with the best practice.

A SMALL BAND SAW FILING ROOM OUTFIT

The appliances necessary to the proper care of small band saws ranging from 1-8 to 1, 2 or 3 inches, include an automatic filing machine, automatic setting machine, set of adjustable stretching wheels for support of saw, a filing vise, a brazing lamp, solder or spelter, etc.

A FILING ROOM OUTFIT FOR RECIPROCATING SAWS.

For gang, frame, web, and jib saws, the outfit of machines and tools must depend upon the size and kind of the saws and the methods employed in the fitting, which vary in different localities, but in general for saws that exceed 3 inches wide and 18 inches long, the following appliances, in size suited to requirements, are found desirable:

Automatic sharpener, swage, upset swage, or bar and swaging hammer, filing clamp, stretcher, jointer, swage shaper or file sidedresser, anvil, hammers, straight edges, emery wheel dresser.

For very small gang saws a swage, shaper and filing clamp.

A CIRCULAR SAW FILING ROOM OUTFIT.

The selection of circular saw fitting equipment must depend entirely upon the size and character of the saws, which differ materially in the various sawmills and woodworking plants.

No sawmill of 10,000 or more feet per day capacity can afford to do without an automatic sharpener, and in mills or factories where there are a considerable number of rip and cut-off saws in use, an automatic rip and cut-off sharpener should be employed.

The use of a machine swage on all large rip saws is indispensable, and a more general introduction of such a tool for swaging small factory saws would afford results far superior to hand swaging or the mixed use of swage and spring set, or the use of spring set only.

A suitable outfit of hammering tools is always essential. A good equipment will include the following: Automatic rip saw sharpener for large saws. Automatic or hand rip and cut-off sharpener for medium or small saws. Swage shaper or file sidedresser. Jointer. Hammering bench. Anvil and hammers of proper size. Emery wheel dresser. Instruction book on saw hammering and fitting.—From catalogue of Baldwin, Tuthill & Bolton, Grand Rapids, Mich.