

HOOKS IN BAND SAWS.

The more hook the greater the cutting ability of the band saw and the less motive power is required. Too much hook could not be given a saw if the question of cutting is alone considered. What makes the excessive hook detrimental or hazardous to the safety of the machine is the tendency for teeth with extreme hook to feed too rapidly. More hook can be given to the circular than to the band, as the circular, being round, has a tendency to throw or push the stock from it somewhat, irrespective of the hook. But the band saw, acting at right angles, has more of a tendency toward it. In the case of a band saw with no hook, the action of the teeth would not be so much one of cutting as of scraping or splitting.

Hardwoods require less hook than soft woods, and of the soft woods those that are stringy or fibrous require the most hook. Some of the most successful saw filers make no distinction in hook in cutting hard or soft woods, but run the same tooth with apparently equal success. In general practice, however, the hook used on saws for hardwood is from one-fourth to one-third and in rare cases one-half.

As regards the efficiency of the saw in different woods, a good deal depends upon having the saw fitted with proper swage and side-dress, kept properly sharp, properly slim and throated, and the feed not too fast. Very thin band saws are run successfully in re-sawing the hardest wood, such as kiln-dried oak, etc., but the teeth must be finely fitted, and the stock properly fed.

The action of saw teeth is identical with that of a chisel, and just as a woodworker learns to present his chisel at the right angle to the wood, to cut the best, so must the saw fitter learn at what angle his saw teeth are best calculated to cut, as regards hook. There should be no such thing as scraping or tearing, through imperfect hook or dullness. A dull saw takes much more power than a sharp saw, because its operation is not clean-cutting.

There is a general tendency on the part of

band saw filers to run more hook in their saws. This may be done without impairing the strength of the tooth to the extent that it will chatter or vibrate in the cut by allowing the hook to run down the face of the tooth about a quarter of an inch, and then drop away from the hook line on a gradual curve, forming a nice, round throat, which enables a saw to cut easily on big feed.

The back of tooth must be made sufficiently full or rounding to give plenty of strength to point of tooth and you must avoid long teeth on short spacings. For a tooth with extreme hook, and for a large round gullet, a spacing of $1\frac{3}{4}$ or 2 inches is right. This long space enables you to build up the back of tooth properly, because, with the greater space between the points, the backs can be kept higher without diminishing the throat room, and thus more hook is secured without weakening the teeth.

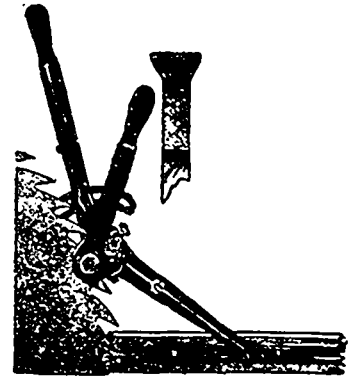
The amount of hook in wide band saws varies from 4 to $6\frac{1}{2}$ inches in a 10-inch saw as commonly run, and is governed somewhat by the timber being sawed and the feed carried. But there are those who want still more hook than that mentioned above, and their efforts in this direction have been thwarted in a measure because the construction of sharpeners has rendered it impossible to further tilt the head for extra hook, and still have the machine continue to operate successfully.

In deference to this circumstance, some machines now give a possible hook of 12 inches, in 12 inches of width or 45 degrees. Moreover, the construction of the machines renders their operation equally successful when head is thus set as when set at a less extreme tilt. Given a saw properly tensioned and running true on the wheels when out of the cut, or running idle, but tending to run back on the wheels, as soon as it enters the log, it indicates a need of more hook, and you can increase the hook up to the point where the saw runs uniform. In like manner, if saws run ahead of the wheels when in the cut, it is an indication of too much hook, and you may properly consider the reduction of same.—Packages.

A SUPERIOR FILING ROOM MACHINE.

Sawfiling might truly be called a science, and the filer an artist, so keen a similarity must there be between each tooth. And each tooth must be so accurately and scientifically drawn out that not one tooth will bind in the log. The teeth must be swaged so as to give a sharp cutting edge widest at extreme points. All this could be done to a certain extent by the old method with hammer and bar. But American ambition and push demanded quicker and more accurate filing-room practices, until now every first-class saw mill or factory has an up-to-date filing room fitted with the most expensive and best machines that are on the market.

One of the first machines the filers began to demand was a good practical saw swage; but only of late years has a thoroughly practical swage been put upon the market. Of these the Hanchett swage, manufactured by the Hanchett Swage Works, Big Rapids, Michigan,



THE HANCHETT SWAGE.

has perhaps the best claim to superiority. This is not only shown by a number of other swages having been modeled after it, but it has also several distinct features that are not duplicated by any other swage in existence.

1st. Take for example a saw that has struck a nail or other obstruction, and the corners are entirely gone on one side, or the teeth are broken off, say, 1-16 of an inch. By pulling the swaging lever over a second time a fine swage may be obtained and the teeth will be drawn out as long as the others, while other swages will bend a short tooth backward and not swage it at all.

2nd. Take a saw that has just been ground down and no swage is started. By pulling the swaging lever over a second time on say a 14 gauge, a seven or better can be obtained, and the saw will grind up even the first time grinding. With other swages an upset must be used first, which results in long and short teeth, besides more or less of them will be bent.

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