

moisture is of more importance in the preparation of bending than heat. But it takes hot water and heat both to make the best combination.

Just what proportions of water and heat are best for preparing wood to be bent is a matter in which people differ somewhat, some going to one extreme and some to another. It doesn't hurt stock, and it is really good for it to be immersed in water and the water heated to a boiling point by steam. Another method, and a good one, too, is to put the stock in a box or vat and let it get both the moisture and heat by turning exhaust or wet steam into it. Some people equip a steam box of this kind and use live dry steam. This, while it helps some, is not the best method. If live steam is to be used for the heat, it is best to have the stock immersed in water and heat the water with the steam.

The bending part of the work involves more complications than the boiling, and it is rather difficult to give in detail advice as to how best to do the work, without knowing beforehand the exact amount of work to be done in each case, the kind of wood to be used, the form it is to be bent into, and the size of the piece.

One of the many points to watch out for is to protect the back or outside of the bend, to reinforce it, so to speak, while it is being bent, so that it may not give way through a sudden falling of too much strain on one point. The more thoroughly one can protect the back, not only through merely the preliminaries of bending, but the entire process, the less loss there is from breakage and the better conformity there will be to the exact shape desired. If one should take a stick of wood, and, after it has been boiled properly for bending, cut it up into short lengths, it will be found that some sections of it will be compressed more readily than others. It is this difference in compressibility that causes the tendency to irregularity in bending. This tendency leads to kinks and ruptures if the back is not properly reinforced by what are termed straps in the process of bending.

SAWS FOR VENEER.

Saws for veneer work are very thin, and require extra good care. The observance of the following method will enable any intelligent, progressive man to handle such saws successfully, however:—

First, keep saw round. This can easily be accomplished by fastening an old file onto a board, presenting it squarely to the saw and touching lightly; then move the file or jointer. If it strikes the file too much in one place, the points of the teeth will be hard, at least those most prominent. A piece of hard brick or emery wheel will not do, as it will make the teeth rounding, and not square.

Second, file square in front and bevel the back slightly. Some bevel front and back, but this is not best. Stroke the file squarely across the saw, making almost a clean cut on the tooth that sets from you, while those set toward you must "squeak" a little. This must be noticed, particularly in filing the back. Some hold the file at an angle so as to not "squeak," and get the desired level. It is understood that this bevel is but slight.

Third, be careful and file only to an edge. Use a smooth 6 or 8-inch file. Many filers soon file a saw out of round by excessive filing. The best filer I ever knew did not joint his saws at all. He noticed the front of each tooth as he filed it; if one tooth showed a little duller or bright spot, he filed the back of this tooth off.

Fourth, the amount of set is determined by the kind of timber. If green, then more set; if dry, less set and a

sharper corner; that is, a clear-cut corner. For hardwoods saw should be slightly spring-set. Some run only a double swage, which is best, but more difficult to keep up, unless an automatic sharpener is used.

Buy only from the best makers. There are few who can make a perfect veneer saw, which is more difficult to make than any other saw, but when right will usually wear out without needing hammering; that is, will wear to where it needs grinding thinner. Don't let any one but a reputable sawmaker hammer or repair your saw, or it may be ruined.

Segment saws are principally used for thin, wide veneers, such as mahogany and walnut. They can be run more successfully than a solid saw and can be made much thinner; they require no hammering, if not abused. When such a saw gets sprung or out of true, send it to the maker. In gumming such saws use a soft, free-cutting wheel. Do not heat the saw. Don't use any wheel that comes to hand. A 38 x 10-inch wheel will not cost very much.

The proper hook is about half way. Run a short tooth with a rounding throat and good clearance on the back. Thick veneers require a little more set on collar side of saw. Expert filers swage their saws a little occasionally. This is a good plan where the corners wear badly, and is the only remedy, unless frequently jointed. Sharp, clear-cutting, regularly-set teeth are very essential.

—Electricity has undoubtedly an immense field before it. In its application to the needs of the wood-working plant, where there are, under usual conditions, a number of machines at times more or less casually employed, without going into technical details, it is generally admitted that by the employment of separate motors, and in other cases by grouping together two or three machines requiring small power to drive, some remarkably successful installations have been effected in various parts of the country.—Timber Trades Journal.

—To most of us, whose time is taken up with shop duties, the training secured by writing our experiences is evident in many directions. First, we train our hands to write what our minds tell us to; second, our minds receive special training in preparing thoughts in such a manner that they can be conveyed to others; third, our eyes are trained to see things that they would otherwise pass by. A man who writes has many things upon which his thoughts are fixed at once. This broadens his mind. He sees more things, and each is seen in more ways than would be the case did he not write. He can talk better because of this training. He reads better. What he reads is read, first, from the side of one who is looking for information, then in a critical manner, turning over the subject and comparing the way in which he would have handled the matter, with the method used by the writer. Does it pay? Yes! A man immediately broadens when he begins to write.—American Machinist.

—Many of the old-time buyers of hardwoods and veneers in the piano, organ, and furniture industries in Canada will remember E. D. Albro, who was until 1895 head of the E. D. Albro Company, of Cincinnati. Mr. Albro sold his interest in this company in January 1895, and until a short time ago devoted his attention to other lines of business. Early this year, however, he organized the Albro Veneer Company, with offices at 1932 to 1936 West 8th Street, Cincinnati, where he is again in full charge and will be glad to hear from his old friends in Canada requiring veneers, hardwood lumber, mahogany, and foreign cabinet woods.