

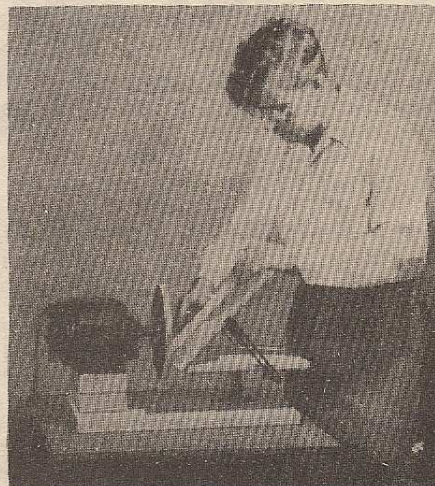
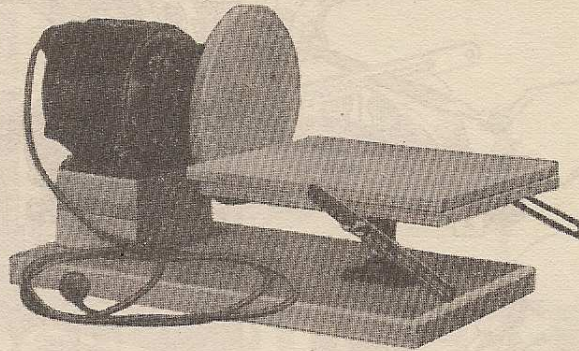
12-INCH DISK SANDER

has
tilting table

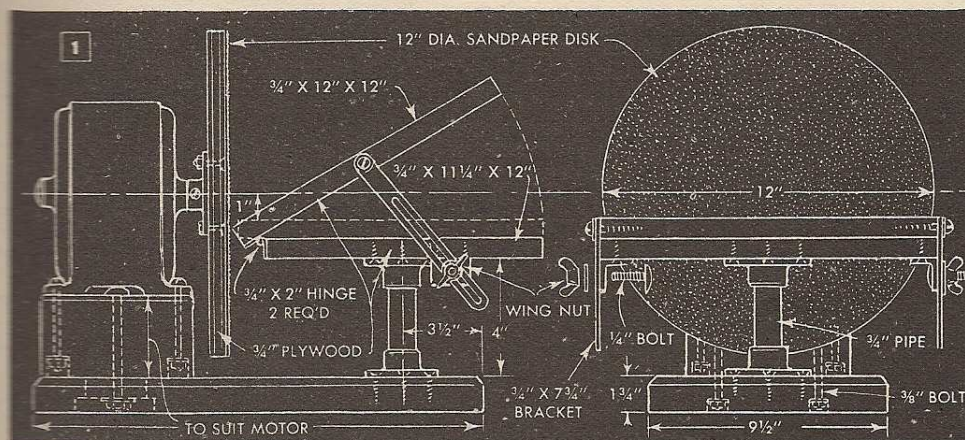
By Paul F. Sass, Jr.

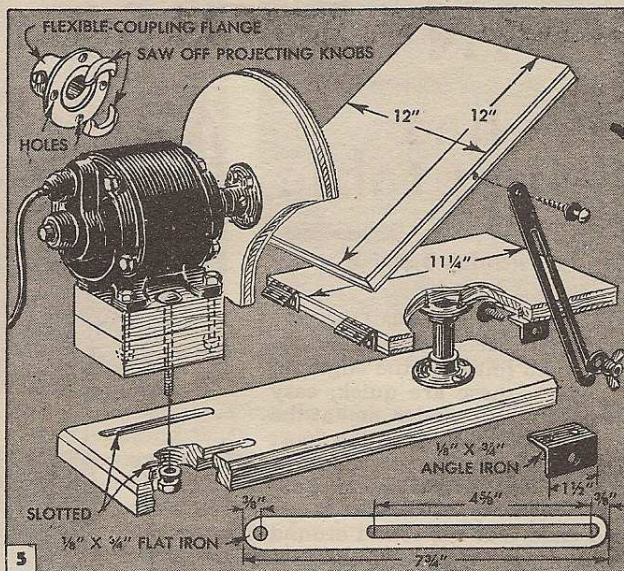
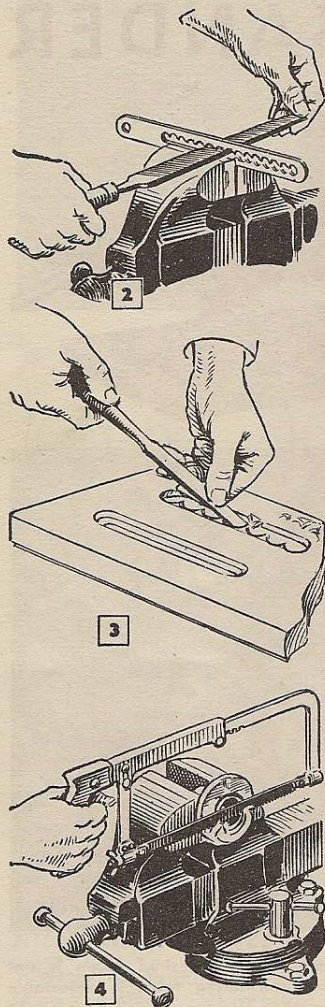
SQUARING UP small, rough-sawed parts, smoothing end grain and finishing the edges on plywood—these are quick, easy jobs for a disk sander, and at the same time are among the most difficult and tedious to do by hand. Exclusive of the motor, which can be $\frac{1}{4}$ to $\frac{1}{2}$ -hp., 1725-r.p.m. capacity, the sander is made from odds and ends that are found around most workshops, and only hand tools are needed for its construction.

Dimensions for the motor-mounting block are omitted because they will vary with the motor that is used. As far as height is concerned, the center line of the motor should be 1 in. above the tilt-table top, or $6\frac{1}{2}$ in. above the base and, lengthwise of course, it centers on the base. Bolt the motor to the block and countersink holes for the nuts and washers, Fig. 1. The base is slotted for adjustment of the motor, and these slots are countersunk also, Fig. 3, so the block mounting nuts and washers can be recessed. Make the slots a little wider than the diameter of the bolts to provide adjustment sideways. The table and tilt top are screwed to a pipe-and-flange pedestal that is $3\frac{1}{2}$ in. from the end of the base opposite the motor. Dimensions for



Sanding surfaces at any desired angle is not difficult because the tilting table is adjustable





the table and tilt top, which are $\frac{3}{4}$ -in. plywood, are given in Fig. 5, as are the details of the adjusting brackets. The slots for the brackets are drilled and filed as indicated in Fig. 2. Two butt hinges are used to secure the tilt top to the table, allowing the former to overlap the latter as shown in the left-hand detail of Fig. 1. A flexible-coupling flange is used as a mounting for the sanding disk. The face is cut off flush with a hacksaw, Fig. 4; or, to insure a disk that will run true, it can be faced in a lathe if the latter is available. To complete the sander, cut a $\frac{3}{4}$ -in.-plywood disk 12 in. in diameter and bolt it to the flange with flat-head screws, countersinking the holes so the heads will be a little below the surface of the disk. Glue on the sandpaper and finish the unit with gray or black paint. For convenience in operation, a toggle switch can be mounted on the base or block to control the operation of the motor instead of using a switch in the line or on the wall.

Heats to Temper Homemade Tools Checked With Solder

The home mechanic who makes up small tools from drill rod or similar steel, will find that the following methods of gauging tempering heats and hardening the metals produce very accurate results. Instead of quenching the metal in water, heavy machine oil or boiled linseed oil is used, the tool being heated to a very bright cherry red, but below a white, sparkling heat. This is necessary as the oil quenches slower than water, giving the required hardness and increasing the strength and toughness. After this preliminary hardening, the tool is polished for some distance back of the working edge. Then it is heated slowly by applying a blowtorch flame about 1 in. back of the working edge until the metal just

begins to change color, after which it is tested by touching a piece of half-and-half solid wire solder to the heated portion. If the solder melts instantly, remove the tool, and as the heat works toward the edge, keep testing with the solder. When this barely melts when pressed firmly on the edge, quench the tool in water instantly and it will be of the right hardness for working in wood, leather and soft metals. For punches, cold chisels, etc., the metal should be just hot enough to melt the solder after a couple of light rubbing strokes.

☛ To free metal articles of rust, dip them in pure cider vinegar, leave it on for a few days, then rinse and dry thoroughly.