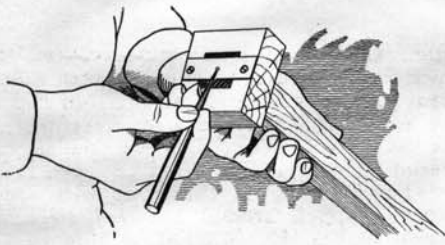
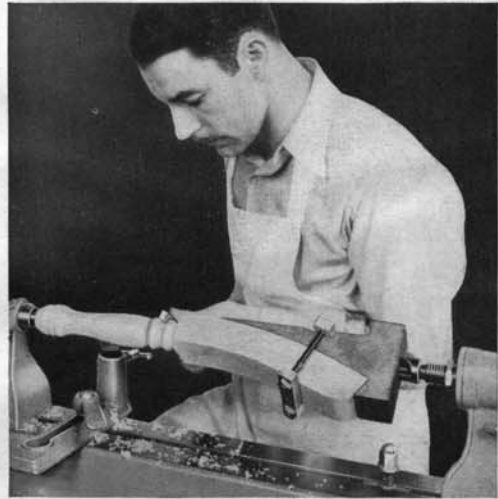
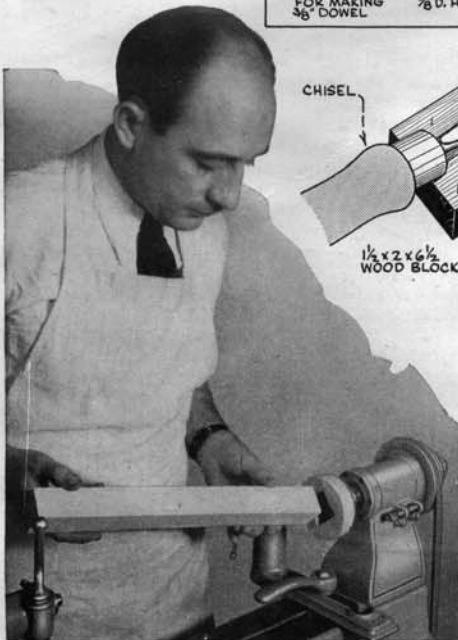
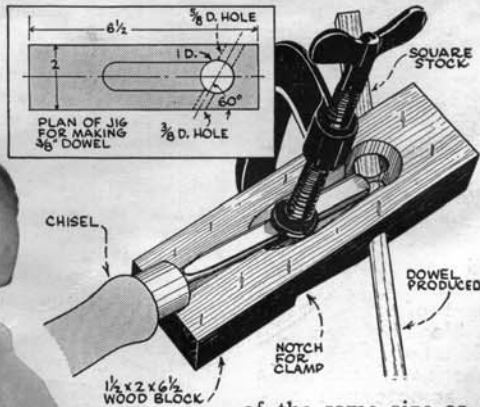


# JIGS and FIXTURES



**Off-Center Work.**—Legs for stools, chairs and other pieces of furniture often have one end turned while the opposite end is band sawed to shape. Turnings of this kind can be readily worked in the lathe by making up a suitable jig to center the curved portion, as shown in the photo at the right. The jig makes up without waste since it can usually be made from the scrap leg cuttings. The centerline of the portion to be turned is projected to the end of the jig; then, the centers are marked in the usual manner. Work of this kind should be run at low speed. However, higher speeds can be used if the jig is properly balanced to prevent vibrations. With the type of clamp shown, balancing is easily effected by turning the bolts one way or the other and adding nuts or washers.

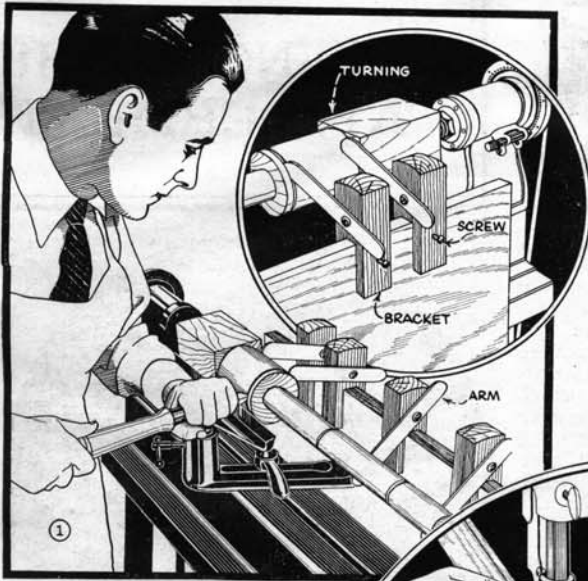
**Turning Dowels.**—The drawing in the center of the page shows a useful jig for making dowels on the lathe. In use, the square stock to be turned is centered in a suitable chuck. The size of the jig will depend upon the size of the dowel required, the plan view showing



dimensions for making  $\frac{3}{8}$  in. dowel. With the work revolving in the lathe, the jig is simply slipped over the end of the stock and advanced towards the headstock, the chisel paring the wood down to the required diameter.

**Centering.**—The lower photograph shows a centering jig which is often useful in production work. A square hole of the same size as the stock to be turned is sawed in a suitable piece of wood. The block is then centered and fastened to the lathe faceplate. In use, the work is automatically centered on entering the hole, thereby eliminating the job of centering and seating the spur center generally used. The work, of course, is driven as well as centered by the jig.

**Other Ideas.**—Other useful ideas in connection with wood turning are shown on the following page. Fig. 1 shows a simple semaphore jig which speeds up any kind of production work. The jig consists of a board fastened to the back of the lathe, the top of the board supporting the wooden brackets which are adjustable along the



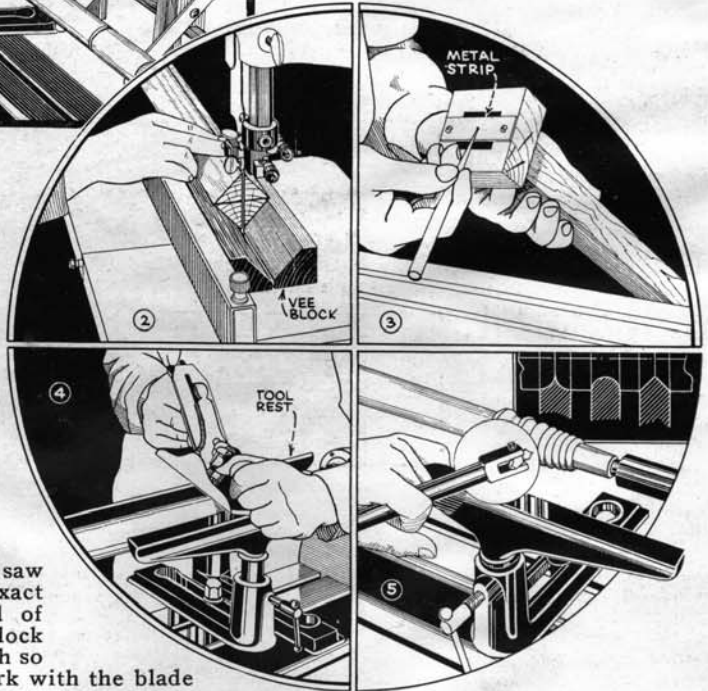
length of the board. Each bracket carries a wood or metal arm of such a length as to suit the work. In use, the arms ride the top of the turning and thereby mark distances along its length. When the parting tool cut reaches the proper depth, the arm signals the completion of that particular operation by dropping below the turning.

Fig. 2 and 3 picture two centering devices. In the first, a suitable vee-block is used in connection with the band saw fence to aid in sawing exact diagonals across the end of the work. The vee block should be some exact width so that it will center the work with the blade when the fence is set at some even measurement—say, 2 inches. Fig. 3 shows the use of centering blocks. These are made up to fit the size of the work, and, in use, check the squareness and size of the stock as well as locating the center mark.

Frequent use can be made of a small plane on lathe work, especially in smoothing cylinders and straight tapers. Special jigs can be made up for production work. Good results can be obtained by using two tool rests to support the plane, the rests being set at a height to suit the intended diameter of the work. The wooden jigs for tapers or long curves are made up on the same order. The plane can be used alone in smoothing up straight work by simply holding it in contact with the revolving

turning to take a fine shaving.

Precision turning can be done by using shaper cutter bits in a special tool holder, as shown in Fig. 5. The inset shows a few of the typical shapes which can be turned perfectly uniform in this manner. This manner of working is particularly useful where a long series of coves or beads must be cut—a difficult job with skew or gouge. The special tool holder required is made up to the approximate shape shown, the width between the shoulders being slightly greater than the width of the cutter. One shoulder is threaded to take a bolt which compresses the two jaws



the slight distance necessary to hold the cutter securely. In using shaper cutters for this purpose, bear in mind that the original bevel of the cutter is not particularly ideal for wood turning when handled in the conventional manner. Best results can be obtained by handling the tool somewhat as for metal spinning, hinging the cutter into the work well below center. For production work, depth collars can be used on either side of the shaper cutter.

Precision work of another nature can be done by using special cutters in the slide rest tool holder, this method of working applying more to production or very exacting work.