

saw blade and upper saw guard. On the Model 500 remove the lower saw guard also. On the Model 510, exchange the table saw insert for the disc sander insert. Mount a sanding disc; then readjust the table height and position the worktable for sanding. Clamp the workpiece in the miter gauge (Figure 17-13), and sand it at the same angle you cut it. The rip fence can also be used to back up the workpiece (Figure 17-14).

The procedure does not change if you are sanding a compound angle cut. Just keep the miter gauge and the worktable tilt at the same angles used to make the original saw cut (Figure 17-15).

Use the sanding-to-width technique when you need to sand a beveled edge (Figure 17-16). Remember that the fence is offset enough to provide clearance for the workpiece in the area indicated by the small arrow in the photograph.

When sanding bevels and miters, and especially if the angle is extreme, position the worktable and power plant at the right end of the machine. Length-of-work capacity will then be from the disc to the floor.

## **CHAMFERING**

By tilting the worktable, you can also sand a chamfer on the edge of a board.

Tilt the worktable to the right. Offset the rip fence as you would for edge sanding and position the rip fence so that the edge of the board to be sanded will contact the downward motion side of the disc. Make fine adjustments with the quill feed.

Make a five-point check—all locks should be secure—then proceed as you would when edge sanding (Figure 17-17). Be careful not to take off too much stock in one pass.

**End Chamfers**—By using the miter gauge and a miter gauge stop rod, or by setting up the miter gauge and the rip fence, you can end chamfer any number of pieces so they will be exactly alike. The workpieces shown (Figure 17-18) are small, but there is no reason why the techniques can't be used on larger projects such as fence pickets or corner posts for box constructions.

## **SANDING CURVES AND CIRCLES**

To sand curves, move the work-piece in to contact the disc and then use a sweeping motion to maintain the work-to-disc contact throughout the pass (Figure 17-19). Feed should be light and smooth even when a great deal of material must be removed. Several light passes are always better than a single heavy one. The disc has a fast cutting action, so excessive pressure can cause burn marks and will lead to premature clogging of the abrasive.

### **Sanding Curves to Width**

You can guarantee that curved workpieces will be of uniform width throughout their length if you follow the procedure demonstrated in Figure 17-20.

The guide is clamped in place so the distance from the dowel to the disc will equal the width of the workpiece. The stock is then slowly passed between the dowel and the disc. There are two important factors: (1) The curve of the workpiece where it bears against the dowel must always be tangent to the disc; and (2) the inside edge of the workpiece must be smooth and parallel to the outside edge, something you can accomplish with a drum sander.

If there are bumps or hollows in the bearing edge of the workpiece, you will not get good results. The construction details of a guide you can make are shown in Figure 17-21.

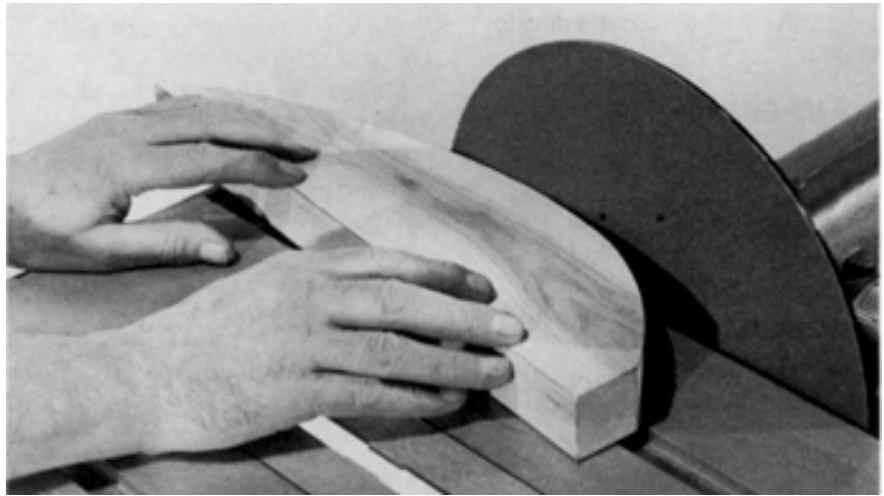
### Sanding Circles

Circular workpieces can be sanded freehand. But you will be more accurate, especially if you need duplicates, by using the pivot method of guiding the workpiece. The miter gauge, locked in place and with a pin threaded in the hole that is at the end of the bar, can be used as the pivot. You can also make a special fixture, like the one shown in Figure 17-22.

When setting up, place the workpiece on the fixture and position the worktable so the edge of the workpiece will be about 1/4" away from the disc. Advance the disc so it will start sanding the workpiece; then secure the disc's position by using the quill lock. The workpiece is then slowly rotated a full 360° (Figure 17-23).

Use the same procedure, but with the worktable tilted to the right, when you need to bevel the edge of a circular workpiece.

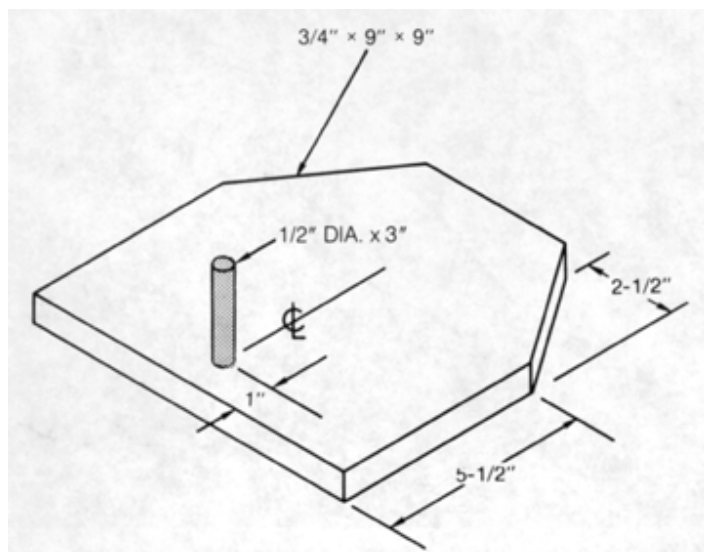
The same arrangement is useful when you need to round off the ends of straight pieces (Figure 17-24). Drill a pivot hole at the center of the workpiece; then proceed to sand as if the workpiece were fully circular.



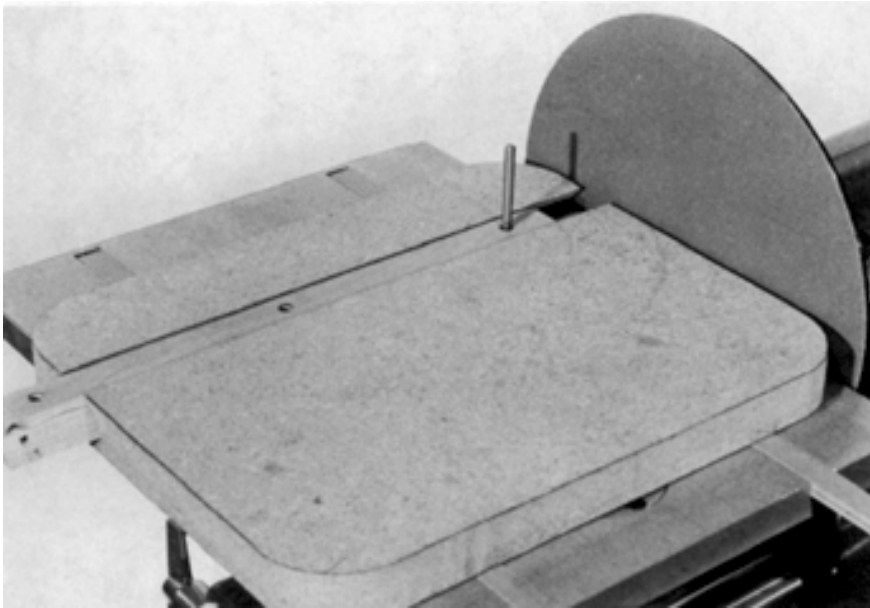
**Figure 17-19.** Use a light, sweeping motion when smoothing outside curves. Don't hesitate at any point or the disc will sand a "flat".



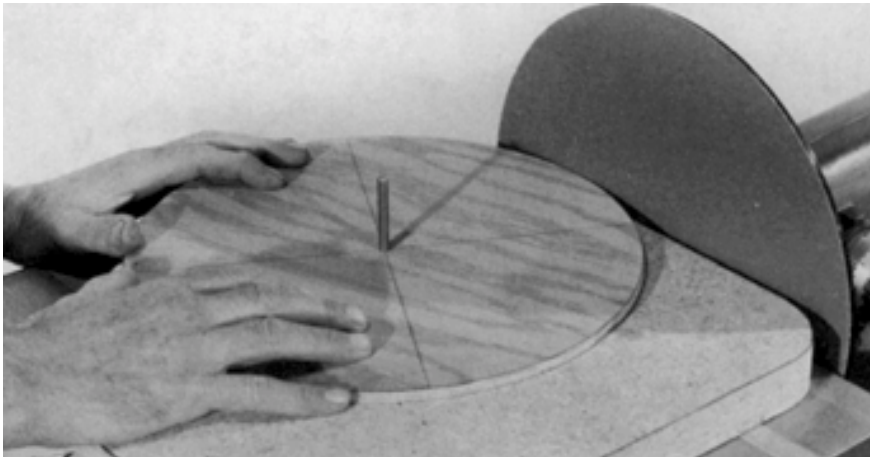
**Figure 17-20.** Use a guide to sand curved workpieces to a uniform width. The edge that bears against the dowel must be smooth and true.



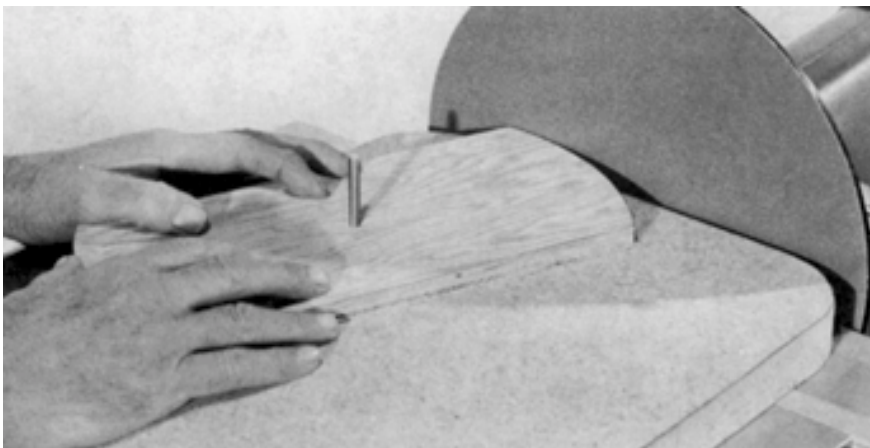
**Figure 17-21.** Construction details of a guide for sanding curved workpieces to a uniform width.



**Figure 17-22.** A special pivot fixture that you can make to sand perfect circles.



**Figure 17-23.** The workpiece is mounted on the pivot post and slowly rotated against the disc.



**Figure 17-24.** The pivot guide method can also be used to round off the ends of straight pieces.

Construction details of the pivot fixture are shown in Figure 17-25. Notice that you can make pivots that are straight posts or are pointed. The short, pointed one can be used when the workpiece does not have a center hole. The L-shaped lock can be used to secure the sliding bar if you remove the table insert before putting the fixture in place. The pivots, if threaded deeply enough, will also serve to secure the bar in a particular position.

You can pivot sand exceptionally large circles using the following setup. For Model 500, place the rip fence on the extension table and mount the lathe cup center in the hole used for the mortising holddown. For the Model 510, drill a 5/8" dia. hole in the top of a rip fence extension. Mount the extension to the rip fence and mount the lathe cup center in the hole. Set the height of the extension table so the point of the cup center will be slightly above the surface of the worktable (Figure 17-26). Extend the quill so the distance from the disc to the point will equal the radius of the workpiece. Set and lock the depth control dial at "0."

After the workpiece is in position, advance and lock the quill (the amount of extension will be controlled by the depth control); then slowly rotate the workpiece until its entire circumference is sanded. Remember that the cup center point is just a pivot guide; the workpiece must rest solidly on the worktable.