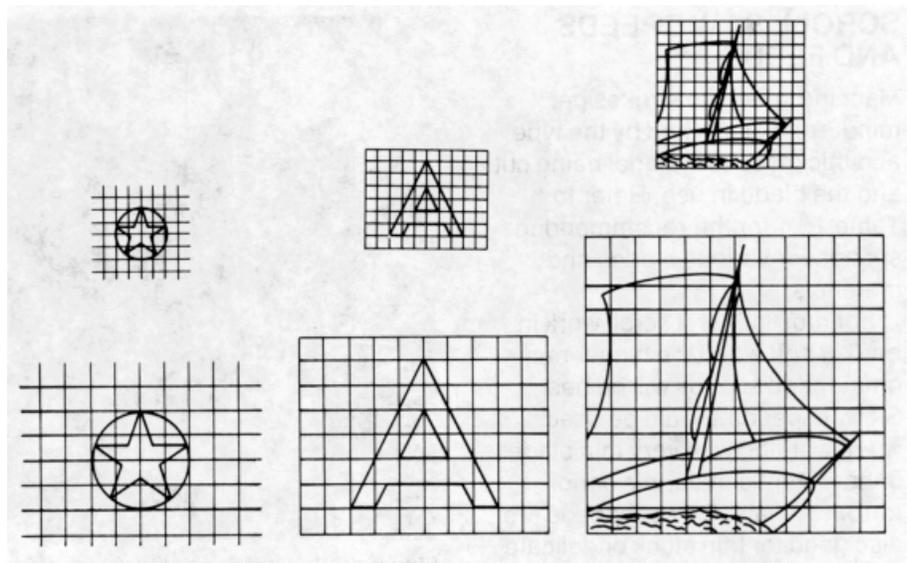


The full size pattern can then be transferred to the stock in several ways. For light colored wood you can use carbon paper or trace around a heavy paper cutout of the piece. On darker woods or for very accurate work it is usually easier to attach the pattern directly to the stock before cutting (Figure 15-5). This can be done with a thin coating of rubber cement or with a spray adhesive.



**Figure 15-3.** The grid system is commonly used to enlarge an illustration to create full size patterns.

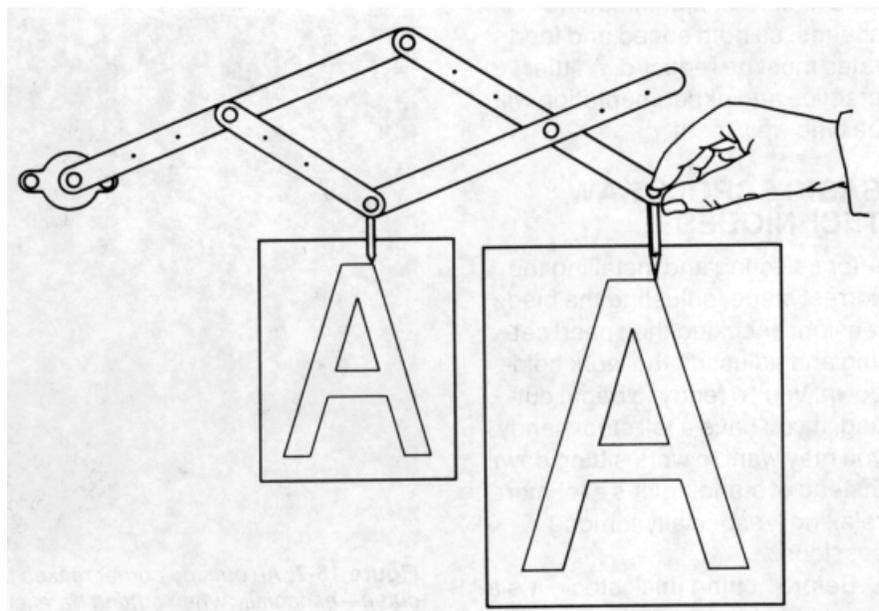
After the stock has been cut, you can easily remove the pattern by belt sanding. If the pattern is reversible, you can even leave it attached to the back side of the project. In either case, the pattern will be destroyed, so you will want to make copies for duplicates or in case of cutting mistakes.

### SCROLL SAW SPEEDS AND FEEDS

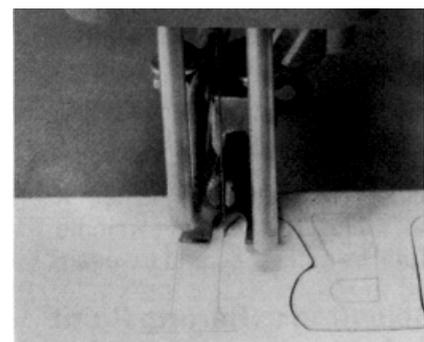
Machine speed (in strokes per minute) is determined by the type and thickness of material being cut and the blade in use. Refer to Table 15-1 for the recommended speeds for various blades and materials.

For most general scroll work in hard or soft wood the higher recommended speeds will be best. Slower speeds should be used when working with very thin blades or hard, brittle materials or non-ferrous metals. Slower speeds are also good for thin stock or delicate materials such as veneer.

Some woods, such as walnut, tend to burn at higher cutting speeds, so both speed and feed rates must be reduced. A little practice and experimentation will be time well spent.



**Figure 15-4.** A pantograph makes enlarging or reducing plans quick and easy.



**Figure 15-5.** With dark woods or for more accurate results, patterns can be mounted directly to the stock.

## BASIC SCROLL SAW TECHNIQUES

After selecting and installing the correct blade, adjusting the blade tension, checking the speed setting and adjusting the work hold-down, you're ready to begin cutting. If you have a tall stool handy, you may want to work sitting down instead of standing. It's a lot more relaxing-especially for long sessions.

Before cutting thick stock, it's a good idea to be sure the table is square to the blade. This can be checked with a square or a thick piece of scrap wood. Just feed the scrap stock into the blade enough to score the wood slightly-then swing the piece around behind the blade (Figure 15-6). If the table and blade are square, the blade will be aligned perfectly with the kerf. If not, adjust the table to eliminate half the difference and try again.

### Selecting a Starting Point

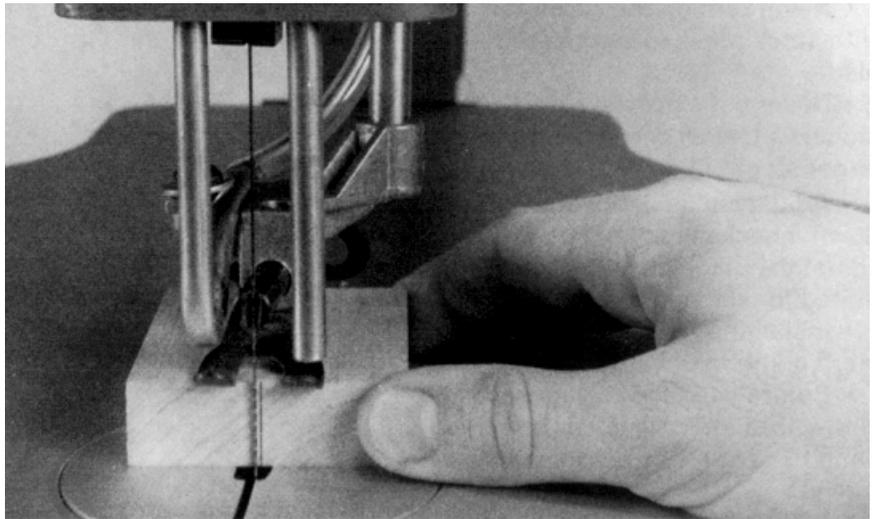
The best place to begin cutting is almost always at an outside corner (Figure 15-7). Then when you come around the workpiece you can finish off with a sharp, clean corner with little or no sanding.

If you must begin cutting along a curve-such as when sawing a round circle-begin cutting across the grain, not parallel to it. This reduces the tendency for the blade to follow the grain and make a bump or dip where the cut begins and ends. You may even want to begin and end the cut slightly out-side the pattern line and then sand away the excess to produce a perfectly smooth curve.

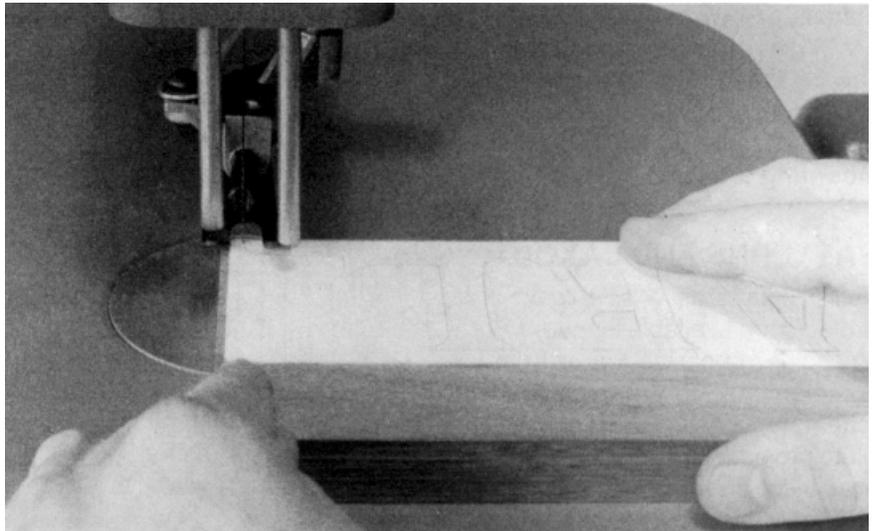
### Simple Cuts

For general cutting, press the stock lightly against the table and feed it smoothly into the blade. When properly adjusted, the hold-down will minimize vibration and yet be loose enough to allow the stock to move freely.

The scroll saw cuts fairly quickly, but don't try to force the stock or you'll bend the blade and reduce the accuracy of your cut. In most cases, slower feed rates will result in a smoother finished cut. This is



**Figure 15-6.** A scoring cut in the thick piece of scrap is a way to check that the blade and table are square.



**Figure 15-7.** An outside corner makes the best starting point. Avoid starting at a curve--especially when cutting parallel to the grain.

especially true when cutting very soft or stringy woods and less critical on harder woods such as maple or oak.

If you're new to the scroll saw, you may be tempted to cut slightly outside your pattern line and then sand away the excess. Although this can be done, the scroll saw cuts so smoothly that sanding is seldom required. Therefore, practice cutting right on the pattern line and eliminate the extra work, except for special situations as mentioned above.

On straight cuts-especially with heavier blades-you may find that the blade tends to "lead" or cut slightly to one side of your intended line. This is caused by the set of the blade or minor imperfections in the teeth which cannot be eliminated during manufacturing. It's easy to compensate for this problem by feeding the stock at a slight angle-usually two to four degrees.

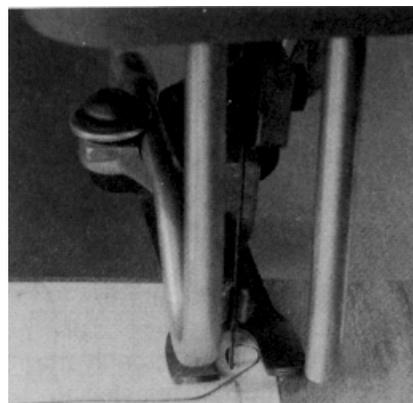
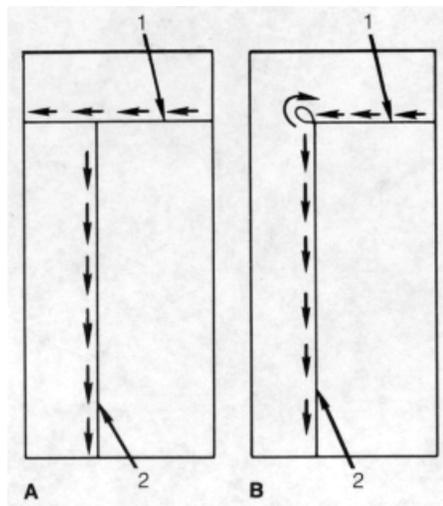
You may also notice a tendency for the blade to follow the grain of the wood when you are ripping or cutting parallel to the grain. This problem can be eliminated by slowing your feed rate to give the blade plenty of time to cut.

### Corners and Tight Turns

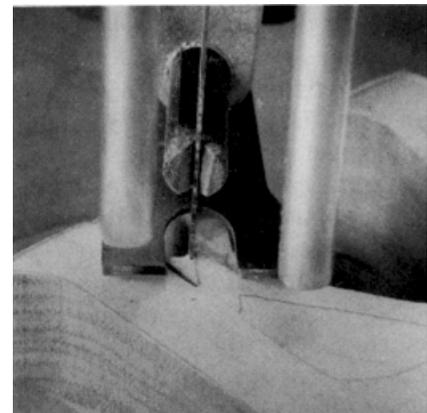
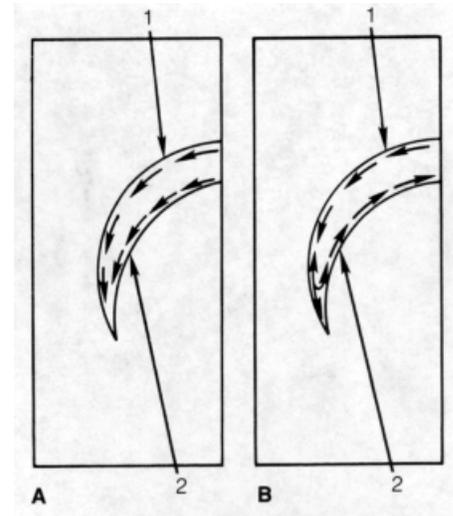
Although a constant tension scroll saw will permit you to make turns in an area only slightly larger than the width of the blade, no machine can cut a sharp, square inside or outside corner in a single pass. Therefore, some compromise or combination of techniques must be used.

Outside corners are usually cut in one of two ways. One method is to cut completely across the stock and out, then turn the workpiece and begin cutting in the new direction (Figure 15-8A). The other method is similar, but you simply loop around in a scrap area and come into the corner from the new direction (Figure 15-8B).

Sharp, clean inside corners must also be cut in two passes which intersect at the corner. This can be done by cutting into the corner from one direction, then backing the



**Figure 15-8.** Sharp outside corners can be cut: (A) in two passes or (B) by looping around in the scrap area.



**Figure 15-9.** Sharp inside corners may be cut: (A) in two passes or (B) by cutting across the corner, then coming back to remove the remaining scrap.