

6

SHAKER-STYLE MIRROR

Walnut, Curly Maple



MAKING THE SHAKER-STYLE MIRROR

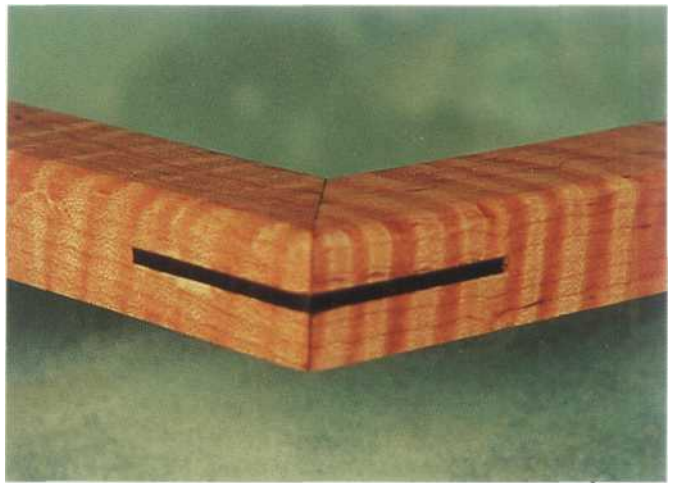
Begin construction with the mirror itself. After thickening the frame stock, cut the 1/2" X 3/8" rabbet on what will become the back, inside edge of the frame. (This rabbet will ultimately receive the glass and the glass backing.) Form a radius on the two front edges of the frame stock.

Then miter the frame parts. You can do this on a miter box or a table saw or radial arm saw using a very fine-toothed blade. At this point, cut the slots for the feathers that will later join the frame parts. You can cut these by hand with a tenon saw or on a table saw fit with a hollow-ground planer blade, using a Universal Jig to control the stock as it is passed over the blade. Precision is important in the cutting of both the miters and the feather slots as these joints comprise the entire inventory of joinery in the mirror frame. Any error in these processes is very difficult to hide.

The feather stock is then thickened and slid into the slots, marked, and cut. The frame is assembled with glue.

The hanger consists of only three parts: the blade, the shelf and the shelf front.

Fashion the blade first. After cutting its shape on the band saw, facet the top edges. Do this by hand, guided by a marking system similar to that used in the hand manufacture of the raised panel in chapter one. First, draw a line down the center of each edge to be faceted. Then draw lines on the front and back faces of the blade adjacent to these edges. These lines should be placed about 3/16" from the corners. Then, by using a wood file to create planes, join the lines down the center of the edges and the lines



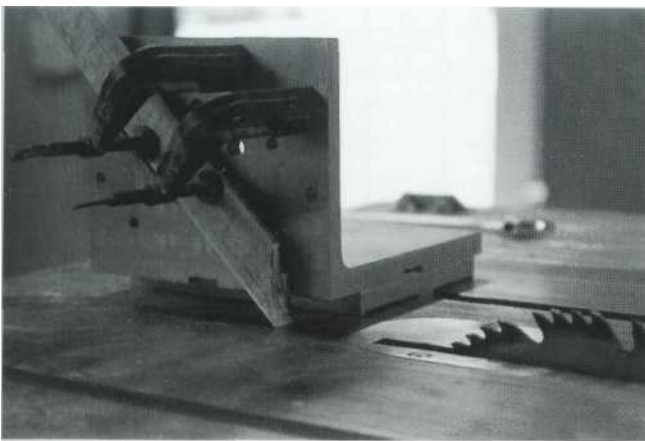
The walnut wedges in the mirror frame corners are not only beautiful, they also add structural support.

on the blade's faces. You could create these planes freehand, but the reference lines make it much easier to produce regular shapes.

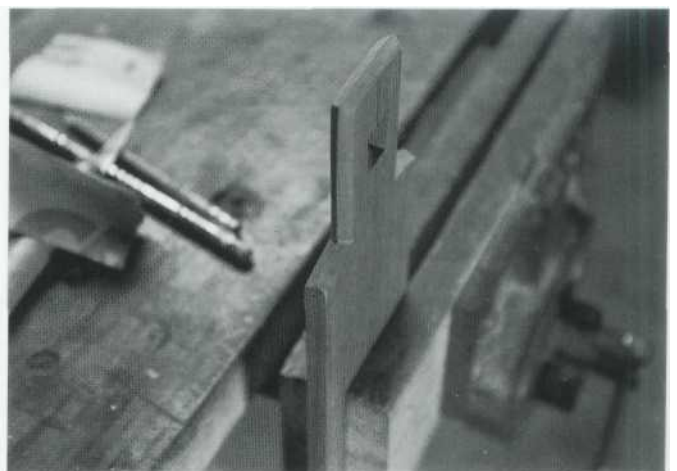
Cut a dado on the back edge of the shelf, and position the blade in that dado, holding it there with a bit of glue and two 1 1/2" no. 12 wood screws.

Then profile the shelf front on the band saw and facet all except the top edges in the same manner as that used for the top edges of the blade. Glue this to the front edge of the shelf.

After sanding and finishing the wood parts, place the mirror glass and a matt board backing inside the rabbet cut in the back side of the mirror frame. Hold both in place with the protruding heads of a half-dozen wood screws turned into the sides of the frame rabbet.



1 Clamp a piece of mitered frame stock in the Universal Jig prior to passing it over the hollow-ground planer blade. Notice that the frame stock rests on its mitered tip and is clamped in the jig at a 45° angle.



2 The faceting at the top of the blade can be seen in this shot. The same faceting is used on all but the top edges of the shelf front.

ADHESIVES

A recent *Woodworker's Supply* catalog lists eleven different types of adhesives. Several of those—for example, hot melt glues—are available in different formulas for different applications. These different formulas increase the actual number of choices to sixteen.

Sixteen kinds of glue?

Without devoting significant time to study and experimentation, no woodworker is likely to make the perfect adhesive choice for any particular application. And who wants to spend hours studying adhesives?

In my shop, except for specialized applications (for example bonding Formica-like products to wood), I've reduced the adhesive inventory to three choices: white glue (plain old Elmer's), yellow glue, and hide glue, all of which are more or less appropriate for any wood-to-wood joint.

Each of these three types forms a bond that is stronger than necessary for wood furniture. The primary differences are the amount of working time they allow, the ease with which joints they've bonded can be disassembled, and the convenience of their application.

Hide glue allows for relatively easy disassembly when making repairs and also offers the woodworker the longest working time. It's available in two forms, each of which, unfortunately, has its own set of drawbacks. Traditional hide glue, which comes in flakes or pearls, must be mixed with water and kept heated to a temperature of 140-150° F. Then, after a few days, it must be thrown out and a new batch mixed because, once mixed and heated, it quickly loses its strength. All of this is a significant inconvenience for the owner of a small shop.

The other form comes premixed in squeeze bottles just like white and yellow glues. Unfortunately, however, its shelf life is shorter than white or yellow glue and much shorter than the dry form of hide glue.

In terms of convenience, both white and yellow glue are clearly superior to hide glue. They come premixed in easy-to-use squeeze bottles. They have long shelf life if kept from freezing, and they form an all-but-unbreakable bond between two pieces of joined wood.

There are, however, drawbacks to their use. First, because the bond they form is all-but-unbreakable, a piece assembled with these glues is very difficult to repair. If a yellow- or white-glue-assembled chair comes into my shop needing a new rung, I have to explain to the customer that I can't predict the cost of the repair.

MATERIALS LIST

Mirror

A Sides	2 pcs.	$\frac{3}{4} \times 1\frac{1}{4} \times 19\frac{7}{8}$
B Top and bottom	2 pcs.	$\frac{3}{4} \times 1\frac{1}{4} \times 13\frac{5}{16}$
C Feather	4 pcs.	$\frac{3}{32} \times 1\frac{1}{8} \times 2\frac{1}{8}$
D Mirror glass	1 pc.	$\frac{1}{8} \times 11\frac{1}{16} \times 18\frac{1}{4}$
E Mirror backing	1 pc.	$\frac{1}{8} \times 11\frac{1}{16} \times 18\frac{1}{4}$

Rack

F Blade	1 pc.	$\frac{5}{16} \times 3 \times 24\frac{7}{16}$
G Shelf	1 pc.	$\frac{7}{8} \times 1\frac{3}{8} \times 13\frac{3}{4}$
H Front	1 pc.	$\frac{5}{16} \times 3\frac{3}{8} \times 14$

Hardware

I Brass eye hook	2 pcs.	$\frac{7}{8}$
J Brass chain		
K Screws	various	

Whereas a chair assembled with hide glue can be disassembled by applying warm water to a tight joint, thus allowing a fairly predictable repair time, the same chair assembled with white or yellow glue may resist my best efforts at disassembly. On more than one occasion, I've broken the slab seat on an old Windsor trying to break loose parts that have been joined with white or yellow glue.

The second problem associated with the use of white and yellow glues is short assembly time. When using these products, a woodworker may have only ten or fifteen minutes to get parts aligned and clamped before the glue grabs and adjustments become all but impossible to make. The time constraints applied to the assembly process by white and yellow glues add stress to an already stressful procedure.

In my shop, I follow these guidelines when choosing an adhesive:

1. For large, complex pieces with a high dollar value (pieces for which one could justify the cost of making repairs), I use hide glue.

2. For pieces requiring lengthy assembly time, I use hide glue.

3. For all other applications, I turn to the ease and convenience of white and yellow glues. For example, all the pieces in this book were assembled with one of those two varieties, the choice being determined by the proximity of the glue bottle to my hand when it was time to glue something up.