

WOODWORKER'S JOURNAL

"America's leading woodworking authority"™



Classic Project

In this plan you'll find:

- Step-by-step construction instruction.
- A complete bill of materials.
- Construction drawings and related photos.
- Tips to help you complete the project and become a better woodworker.

Sunburst Mirror

P R O J E C T S

Sunburst Mirror

Builder Richard Wonderlich, of Mt. Pleasant, Iowa, says the inspiration for this sunburst mirror came from the shutters on an historic home that he helped restore in his hometown. Coincidentally, Mr. Wonderlich adds that it was his great-grandfather who, back in 1854, did the original trim work on the house. Wonderlich says the position of the shutters above the window gave him the idea of substituting a mirror and frame for the window sash and frame.

Start by making the mirror frame. The stiles (A) and rails (B) employ a slip joint at the four corners (see Slip Joint

detail). The most accurate way to cut this joint is with the table saw using the dado head and a tenoning jig. Use two fence settings, one to establish the 1/2 in. wide slot in the stile ends, and the second setting for the cheek cuts on the rails. The dado head height for both cuts is 1 1/2 in. Note that if your stile and rail stock are both exactly the same thickness you can cut the opposite cheek on the tenon by just reversing the rail so the opposite face is out. Be sure to use a tenoning jig equipped with a backup block, or you'll likely have tear-out as the blade exits the cut.

The 3/8 in. wide by 1/2 in. deep rabbit

in the frame (see Back View detail) is cut with a bearing-guided rabbeting bit in the router. The bit won't get into the corners, so you'll need to square these by hand with a chisel.

The arched top is the challenging part of this piece. In practice, though, the work can be done almost exactly as it was over 100 years ago, except for the substitution of an electric drill for the brace. Start with two 7/8 in. thick boards, each one at least 4 in. wide and 16 in. long. Cut a 45-degree miter on one end of each piece, make a clamp notch adjacent to the miter, and establish a clamping flat on the opposite end as shown in Figure 1.

Cut a 1/4 in. wide by 3/16 in. deep spline groove in the two mitered ends, add a spline (note that the grain direction of the spline is perpendicular to the joint line) and then glue and clamp as shown. When dry, use the hand saw or a jigsaw to cut the arch (C). Files and sandpaper will final smooth the profile.

The ends of the 1/4 in. wide by 3/16 in. deep mortises for the shutter blades (D) are established with a drill and the waste between is cleaned out with a chisel. First, though, you'll need to lay out for these mortises. Start by dividing your arch along the inside radius into 13 equal 1 1/2 in. segments. The layout illustration (Fig. 2A) shows how the mortises are spaced and how the holes are positioned. Note the 10-degree angle of the mortises. To simplify the layout, you may want to make a cardboard template (see page 31 for full-size pattern). As shown in Fig. 2B, with the cardboard template all that's required for the layout is to position the template even with the 1 1/2 in. segment lines. Use the vise to hold the arch while you drill and then clean out the mortises. You'll find it helpful to reposition the arch in the vise for each mortise, so that you are always working vertically (Fig. 2C).

With the mortises cut, join the arch to the frame. If the bottom ends of the arch aren't fitting flush, use a sheet of sandpaper on a flat surface such as your saw table to true the ends. A 3/8 in. diameter dowel in each end (see Slip

29

Published in *Woodworker's Journal* July/August 1990

Get Adobe Reader To download these plans, you will need Adobe Reader installed on your computer. If you want to get a free copy, visit: <http://adobe.com/reader>.

Having trouble downloading the plans? Right click on the download link and select "Save Target As..." or "Save Link As..." (depending on the web browser you are using) to download to your local drive.

Copyright *Woodworker's Journal* © 2010
This pattern is copyrighted by *Woodworker's Journal*.
Purchasers of this plan may make three copies for personal use in the shop. The pattern itself, however, is the property of *Woodworker's Journal* and is not to be reproduced for distribution or resale. Doing so, including via any electronic methods, is a violation of copyright law.

www.woodworkersjournal.com

\$1.00
WJC037



Sunburst Mirror

Builder Richard Wonderlich, of Mt. Pleasant, Iowa, says the inspiration for this sunburst mirror came from the shutters on an historic home that he helped restore in his hometown. Coincidentally, Mr. Wonderlich adds that it was his great-grandfather who, back in 1854, did the original trim work on the house. Wonderlich says the position of the shutters above the window gave him the idea of substituting a mirror and frame for the window sash and frame.

Start by making the mirror frame. The stiles (A) and rails (B) employ a slip joint at the four corners (see Slip Joint

detail). The most accurate way to cut this joint is with the table saw using the dado head and a tenoning jig. Use two fence settings, one to establish the $\frac{1}{2}$ in. wide slot in the stile ends, and the second setting for the cheek cuts on the rails. The dado head height for both cuts is $1\frac{1}{2}$ in. Note that if your stile and rail stock are both exactly the same thickness you can cut the opposite cheek on the tenon by just reversing the rail so the opposite face is out. Be sure to use a tenoning jig equipped with a backup block, or you'll likely have tear-out as the blade exits the cut.

The $\frac{3}{8}$ in. wide by $\frac{1}{2}$ in. deep rabbet

in the frame (see Back View detail) is cut with a bearing-guided rabbeting bit in the router. The bit won't get into the corners, so you'll need to square these by hand with a chisel.

The arched top is the challenging part of this piece. In practice, though, the work can be done almost exactly as it was over 100 years ago, except for the substitution of an electric drill for the brace. Start with two $\frac{7}{8}$ in. thick boards, each one at least 4 in. wide and 16 in. long. Cut a 45-degree miter on one end of each piece, make a clamp notch adjacent to the miter, and establish a clamping flat on the opposite end as shown in Figure 1.

Cut a $\frac{1}{4}$ in. wide by $\frac{9}{16}$ in. deep spline groove in the two mitered ends, add a spline (note that the grain direction of the spline is perpendicular to the joint line) and then glue and clamp as shown. When dry, use the band saw or a jigsaw to cut the arch (C). Files and sandpaper will final smooth the profile.

The ends of the $\frac{1}{4}$ in. wide by $\frac{5}{16}$ in. deep mortises for the shutter blades (D) are established with a drill and the waste between is cleaned out with a chisel. First, though, you'll need to lay out for these mortises. Start by dividing your arch along the inside radius into 13 equal $1\frac{13}{16}$ in. segments. The layout illustration (Fig. 2A) shows how the mortises are spaced and how the holes are positioned. Note the 10-degree angle of the mortises. To simplify the layout, you may want to make a cardboard template (see page 31 for full-size pattern). As shown in Fig. 2B, with the cardboard template all that's required for the layout is to position the template even with the $1\frac{13}{16}$ in. segment lines. Use the vise to hold the arch while you drill and then clean out the mortises. You'll find it helpful to reposition the arch in the vise for each mortise, so that you are always working vertically (Fig. 2C).

With the mortises cut, join the arch to the frame. If the bottom ends of the arch aren't fitting flush, use a sheet of sandpaper on a flat surface such as your saw table to true the ends. A $\frac{3}{8}$ in. diameter dowel in each end (see Slip

Joint Detail) anchors the arch to the frame. Use dowel centers to get the alignment right and be careful to drill the holes perpendicular to the joint line.


Next, cut the shutter blades (Fig. 3), hub ends (E) and hub (F). The shutter blades are cut to shape with the band saw and then smoothed, or you can just use a hand plane for the tapers. If you have one, a disk sander comes in handy for thinning the blades at the narrow end and rounding the edges. The hubs are just half-circle disks. Mount the front hub end and the hub with a dab of glue (Fig. 4), then insert the shutter blades. The mirror frame should be face down and lying flat during this operation. The

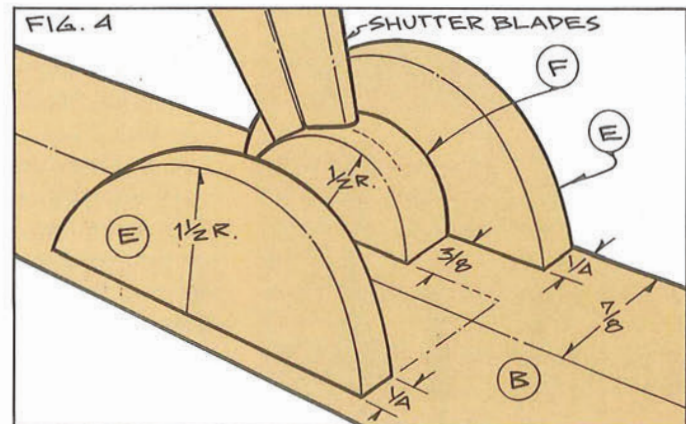
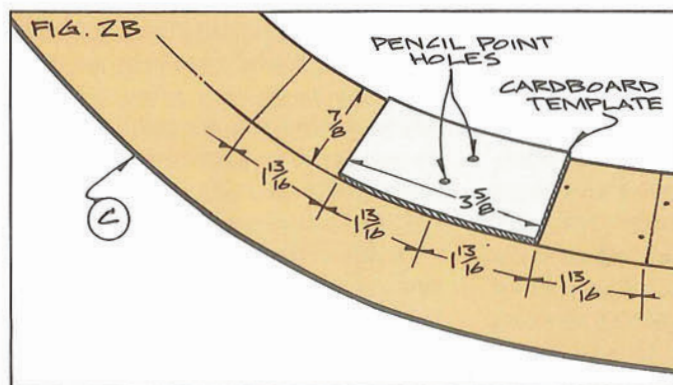
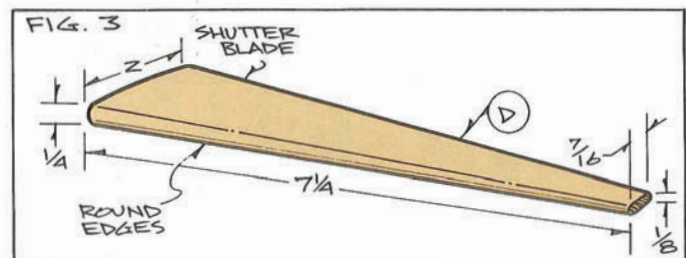
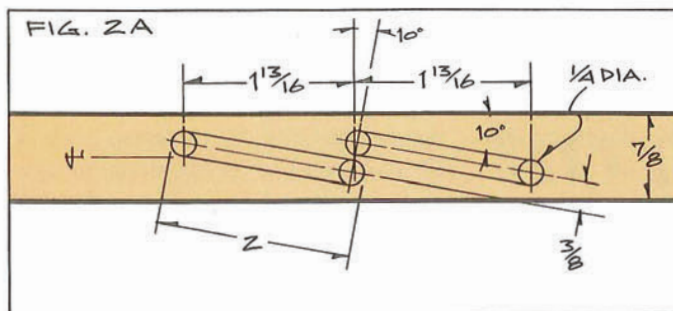
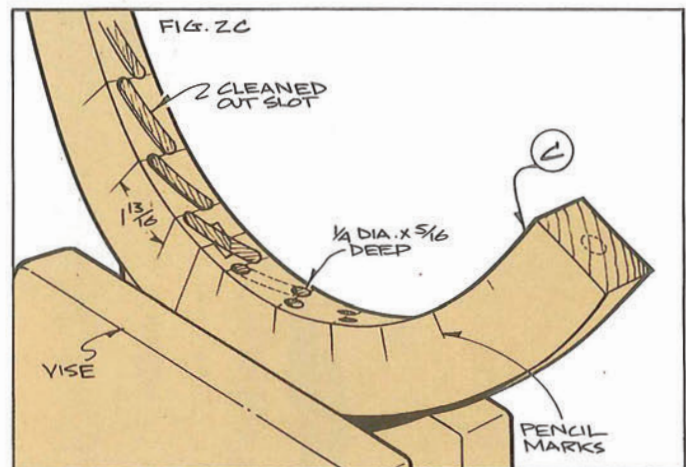
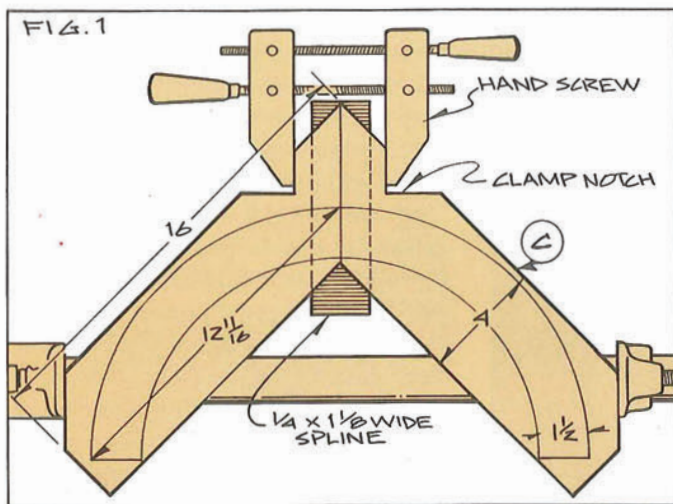
Bill of Materials (all dimensions actual)

Part	Description	Size	No. Req'd.
A	Stile	$7/8 \times 1\frac{1}{2} \times 23\frac{3}{4}$	2
B	Rail	$7/8 \times 1\frac{1}{2} \times 18^*$	2
C	Arch	see Detail	1
D	Shutter Blade	see Detail	13
E	Hub End	$1/4 \times 1\frac{1}{2} \times 3$	2
F	Hub	$3/8 \times 1/2 \times 1$	1
G	Mirror Glass	$1/8 \times 15\frac{3}{4} \times 21\frac{1}{2}$	1
H	Backing	$1/8 \times 15\frac{3}{4} \times 21\frac{1}{2}$	1

* Length includes tenons.

two end blades may need fitting where they butt to the top of the mirror frame. After the blades are properly fanned out, lay in a generous bead of epoxy—which has good gap-filling properties—to anchor them where they butt to the hub. Add the remaining hub end to conceal the bead of epoxy. Then bring the mirror to your local glass shop and have the mirror glass (G) cut to fit.

Our mirror, which is made of oak, has an oak stain and a lacquer finish. Apply the finish before mounting the mirror glass. We added a hardboard backing (H) to protect the silvered surface. Glazier's points hold the backing and mirror glass in place. 



WOODWORKER'S WJOURNAL

Thank you for purchasing this *Woodworker's Journal* Classic Project plan.

Woodworker's Journal Classic Projects are scans of much-loved woodworking plans from our library of back issues. Please note that specific products and sources cited in a plan when it originally appeared may no longer be available.

If you experience any problems with this plan, please contact: info@woodworkersjournal.com

or

Attn: Classic Projects
Woodworker's Journal
4365 Willow Drive
Medina, MN 55340

Thank you again for your purchase, and happy woodworking!

Matt Becker
Internet Production Coordinator