

Project 15805EZ: 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.

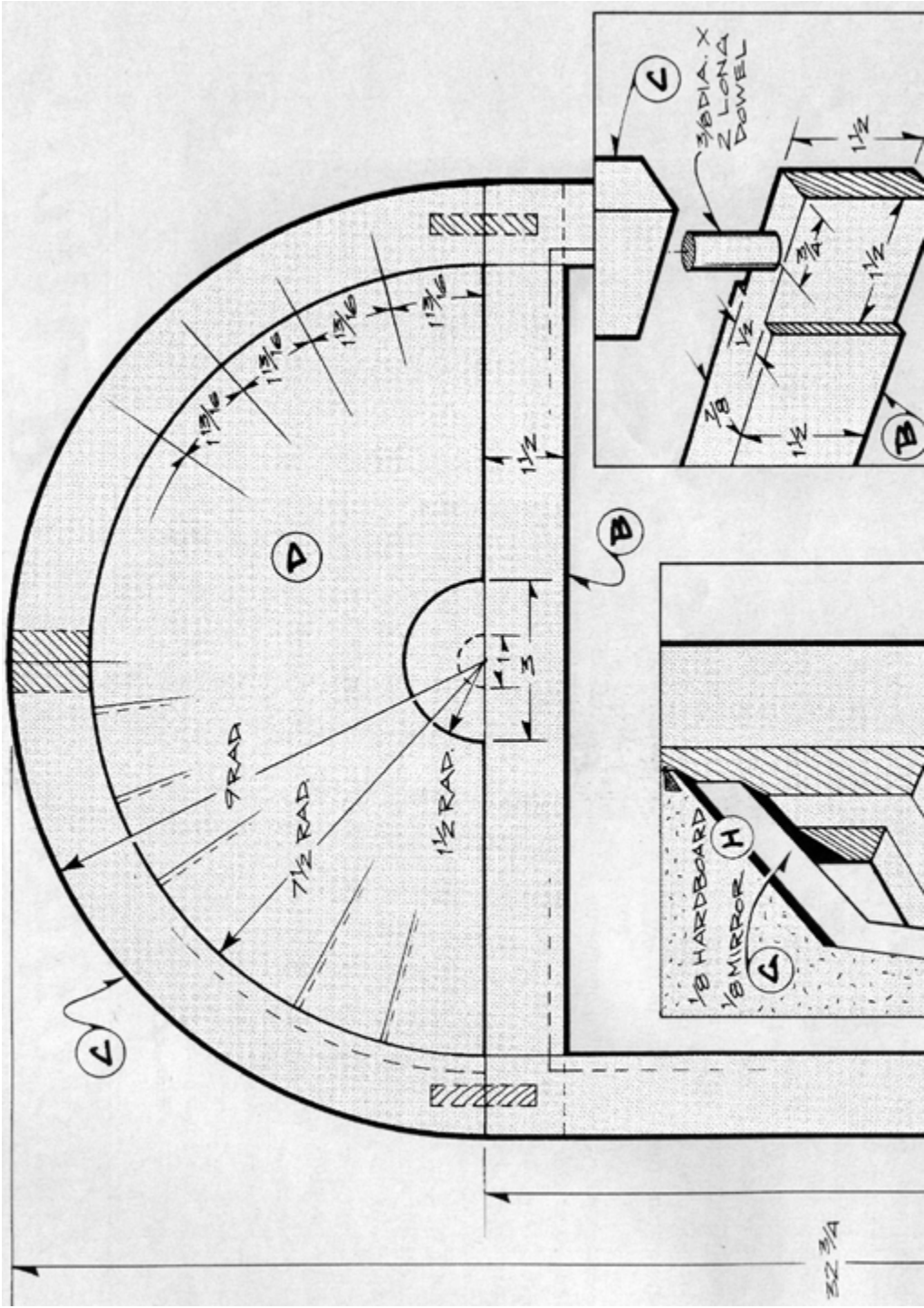


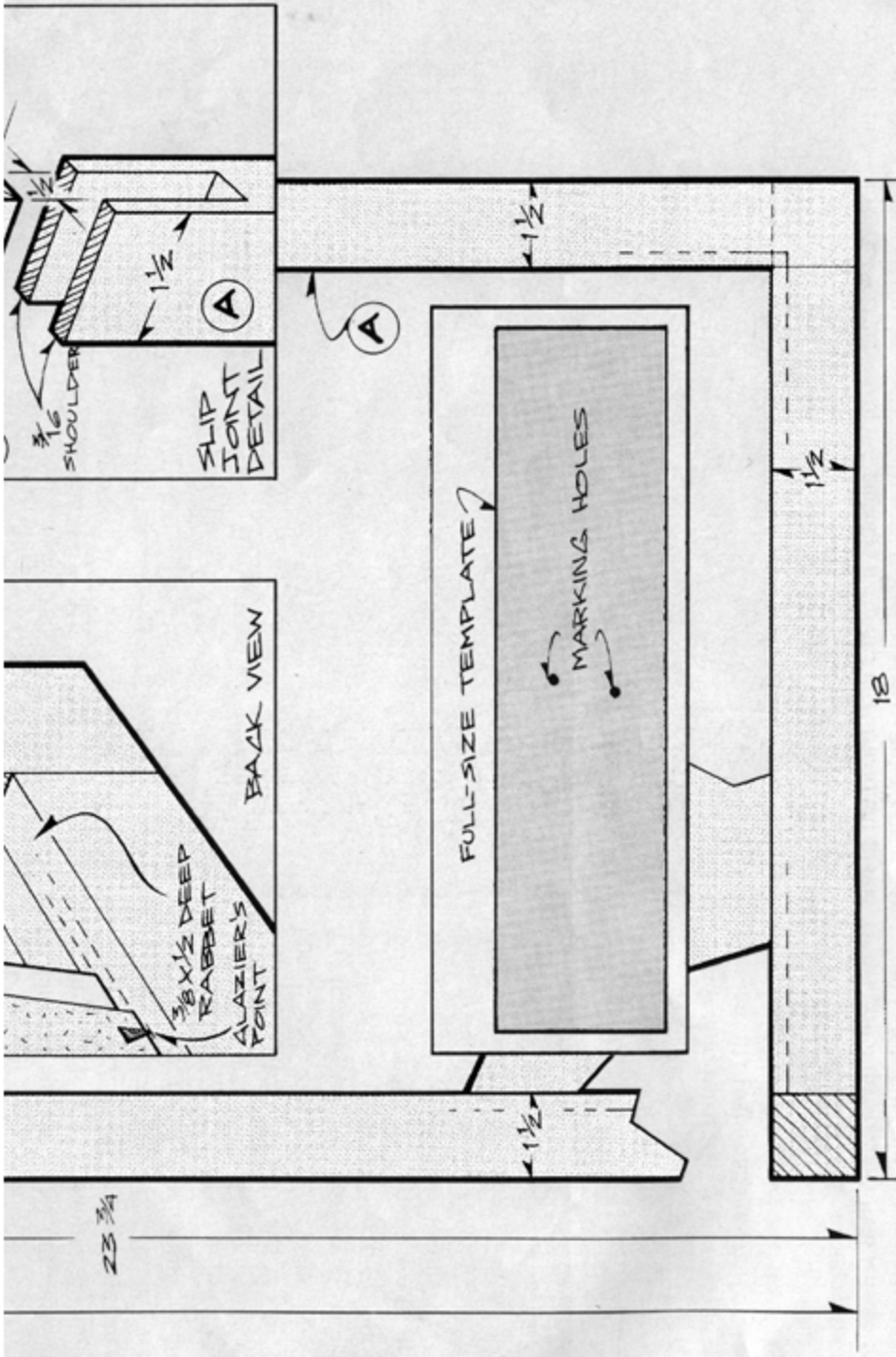
Sunburst Mirror Materials List

Part	Description	Size	No. Req'd
A	Stile	7/8" x 1-1/2" x 23-3/4"	2
B	Rail	7/8" x 1-1/2" x 18"	2
C	Arch	See detail.	1
D	Shutter Blade	See detail.	13
E	Hub End	3/8" x 1/2" x 1"	1
F	Hub	3/8" x 1/2" x 1"	1
G	Mirror Glass	1/8" x 15-3/4" x 21-1/2"	1
H	Backing	1/8" x 15-3/4" x 21-1/2"	1

* Length includes tenons

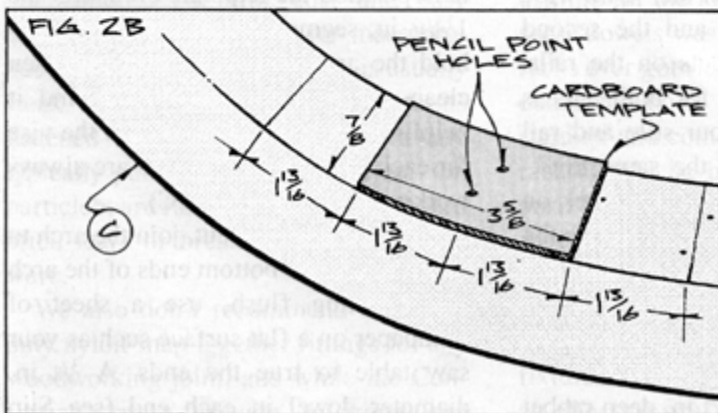
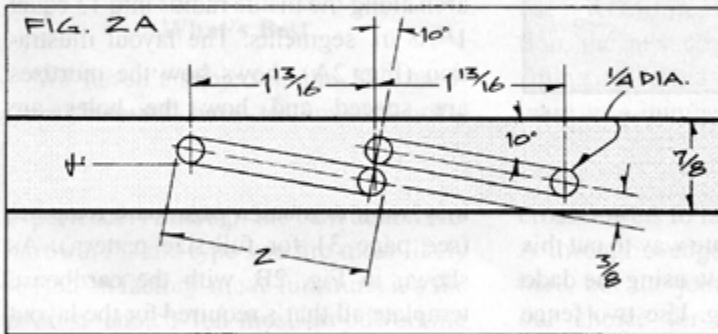
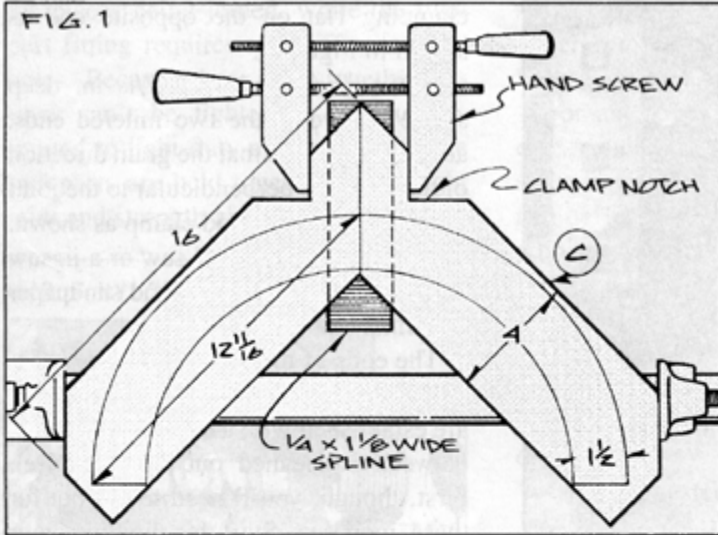
Sunburst Mirror Complete Schematic





Sunburst Mirror Step-by-Step Instructions

1. Cut parts A and B for the mirror frame.
2. Equip the table saw with the dado head and a tenoning jig to begin making the slip joint at the four corners where the stiles (A) and rails (B) meet (see Slip Joint detail).
3. Set the dado head height to 1-1/2".
4. Set the fence to establish the 1/2" wide slot in the stile ends.
5. Equip the tenoning jig with a backup block and cut the slot.
6. Reset the fence and make the cheek cuts.
7. Equip the router with a bearing-guided rabbeting bit to make the 3/8" x 1/2" deep rabbet in the frame (see Back View detail).
8. Use a chisel to square up the corners.
9. Select two 7/8" thick boards, each one at least 4" wide and 16" long, to begin making the arched top.
10. Cut a 45-degree miter on one end of each piece.
11. Make a clamp notch adjacent to the miter.
12. Establish a clamping flat on the opposite end as shown in **Figure 1**.
13. Cut a 1/4" wide by 9/16" deep spline groove in the two mitered ends.
14. Add a spline. **NOTE: The grain direction of the spline is perpendicular to the joint line).**
15. Glue and clamp as shown.
16. Allow the glue to dry.
17. Use the band saw or a jigsaw to cut the arch (C).
18. Use files and sandpaper to final smooth the profile.
19. Start laying out the mortises for the shutter blades by dividing the arch along the inside radius into 13 equal 1-13/16" segments (see **Figure 2A**).
NOTE: The mortises are at 10-degree angle.
20. Simplify the layout by making a cardboard template (see the full-size pattern).
21. Position the template even with the 1-13/16" segment lines (see **Figure 2B**).
22. Place the arch in a vise.
23. Use a drill to establish the ends of the 1/4" wide by 5/16" deep mortises for the shutter blades (D).
24. Use a chisel to clean up the mortise waste.



25. Join the arch to the frame. **NOTE: 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.**
 26. Anchor the arch to the frame by placing 3/8" diameter dowels in each end (see Slip Joint Detail). **NOTE: Use dowel centers to get the alignment right and be careful to drill the holes perpendicular to the joint line.**
 27. Use the band saw to cut the shutter blades to shape with the band saw (**Figure 3**).
 28. Use a disk sander to thin the blades at the narrow ends and to round the edges.
 29. Cut the hubs (F), which are just half circle disks.
 30. Cut the hub ends (E).
 31. Mount the front hub end and the hub with a dab of glue (**Figure 4**).
 32. Make sure the mirror frame is face down and lying flat.
 33. Insert the shutter blades. **NOTE: The two end blades may need fitting where they butt to the top of the mirror frame.**
 34. Lay in a generous bead of epoxy, which has good gap-filling properties, to anchor the blades where they butt to the hub.
 35. Add the remaining hub end to conceal the bead of epoxy.
 36. Bring the mirror frame to your local glass shop and have the mirror glass (G) cut to fit.
 37. Finish as desired.
 38. Mount the mirror glass.
 39. Add a hardboard backing (H) to protect the silvered surface.
 40. Use glazier's points to hold the backing and mirror glass in place.
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