When Good Wood Cracks

Technical Notes

Dennis Belcher February, 2019

Butterflies / Dutchman

1. Read the crack and make a decision about placement of butterflies and size of butterflies to use.
2. Mark center-line of each butterfly
3. Position template over marked center-line and hot glue in place.
4. Set depth router bit so that the cut does not penetrate the wall. Generally an appropriate depth is twice the thickness of the template.
5. Drill a starter hole for the router bit. This aids in controlling the bit when the router is first started. Drilled depth should equal the depth of the router bit.
6. Before routing, check to make sure that there is no spill over of the hot glue into the open space of the template. Clean out template when a pocketknife if there is any hot glue in the spot to be routed.
7. Position the router with the bit in the starter hole and slowly route the space. Follow the walls of the template and then clear the middle spaces. Be sure to wear earplugs and a mask to protected yourself.
8. Remove the template by striking the edge of the template with a wooden mallet. Do not strike the face of the template . It will break the template.
9. Hot glue can be remove from the turned form with a chisel or pocketknife.
10. The template can be cleaning with hot water and / or a blow dryer.
11. Use yellow carpenter's glue to affix the butterflies in the routed hole. Wipe off any excess
12. Allow the glue to dry overnight so that it is fully hardened.`

Splines

1. Place the form in a chuck mounted on the lathe or a carving stand. It needs to be secure and locked in place.
2. Read the wood and mark the position of the splines – Mark #1
3. Measure the distance from the bottom of your plate jointer to the beginning of the slot for the cutting blade. On mine the distance is 5/16 inch
4. Draw a line (Mark #2) on your form that 5/16” distance below your Mark #1
5. Hot glue a waste block on your form with the upper edge at Mark #2. Be careful that the waste block is parallel to the upper edge of the form.
6. Position the plate jointer on the waste block and make sure that all is secure and stable

7. Set the plate jointer to the size of your choice.
8. Cut the biscuit slot.
9. The biscuit slot can be lengthened by moving the plate jointer right or left to the length of your choice.
10. The biscuit slots can be “walked up the wall” by placing shims of appropriate thickness on top of the glued waste block.
11. Cut the biscuit from a wood of contrasting color.
12. Create biscuit stock from wood of a contrasting color. Stock should be the same thickness as the biscuit slot.
13. Using a normal biscuit as a template, trace the outline onto the biscuit stock.
14. Remember that only one edge of the biscuit needs to be cut. Leave sufficient stock so that you can safely hold the biscuit stock while it is cut.
15. Cut the new biscuit on a scroll saw or by hand. This is a dangerous operation on a band saw. Better to use a hand coping saw if a scroll saw is not available.
16. Use yellow carpenters glue to glue the spline into the wood.
17. Fill any gaps with a mixture of carpenter's glue and sawdust.
18. Allow to dry overnight
19. Use a small hand saw to cut away the excess biscuit stock
20. Sand the spline to the level of the form
21. Make your final cuts and sand as normal.

Lacing

1. An Internet search for lacing patterns will provide a immense universe of lacing ideas.
2. Lacing patterns for leather work is a second source of patterns
3. Select your pattern
4. Select your material
5. Determine how the lacing will end
6. Use masking tape to affix a transparent, grided overlay on your work.
7. Layout the pattern of holes on the overlay
8. Mark each hole with a marker
9. Use an awl to mark each hole
10. Using a small starter drill bit, drill the hole through the wall.
11. Switch to a larger bit and enlarge the hole to an appropriate size for the lacing material
12. Lace the pattern
13. Secure the ends

Staples

1. Determine the location of the staples
2. Select the staple material
3. Affix transparent, grided overlay to the form with masking tape
4. Check position of the overlay to be sure that it is square with your form
5. Mark position for each leg of each staple
6. Start each hole with an awl
7. Drill a hole “tight” to the staple material by using the staple material as the drill bit
8. Do not go through the wall
9. Form the staple making sure that it is sized to the hole depth and span
10. Form a barb on each end of the staple by squeezing the very end of the wire with pliers
11. Using a toothpick, put a bit of yellow carpenter's glue in each hole
12. Tap the staple firmly into the hole
13. Remove any glue squeeze out

Hand forged Copper Staples

1. Romex house wiring is an excellent source material. For thinner staples use 14 gauge wire, for wider staples use 12 or even 10 gauge wire
2. Strip a length of wire from its insulation – about a foot is good
3. Flatten the round wire with a hammer against a flat piece of steel
    1. Be aware that any imperfections in the anvil surface will be transferred to the wire.
4. Use the grided, transparent overlay material taped to the form as you layout for the staples holes
5. Mark the leg holes with a marker on the overlay
6. Start each hole with an awl
7. Drill a hole through the wall with a small diameter drill bit
8. Drill again with a drill bit sized to the width of your staple
    1. To guard against blowout on the back side, put masking tape where the drill bit comes through the wall
9. Insert the flattened copper wire through the hole with sufficient length to extend past the half way point of the span
10. Bend the staple on the inside making sure that it goes past the mid point of the span
11. Bend the staple on the outside of the form and through the second hole
12. On the inside of the form, bend the staple tight to the form.
13. Cut each leg so that the ends meet in the middle.

Cut It Out

1. Determine the pattern that will be used. Sanding disks are a good shape. Also look at line art on the Internet for other ideas.
    1. Print out line art and use the zoom feature on your printer to size it appropriately.
2. Mark the cut lines on the form
    1. By tracing
    2. By using rubber cement to affix the pattern to the form
    3. For the zipper insert, I layout the pattern on graph paper and cement it to the form before cutting the slot.
3. Use a hand saw for more control.

Riveted Plate

1. Material selection and thickness are key decisions
2. Best to use a thin gauge metal so that it is easier to mold the patch to the curved wall
3. Smaller patches are easier to mold to the wall than larger patches
4. Copper is easily worked. Brass is a second choice.
5. Put two pieces of metal together with rubber cement and allow to dry
6. Layout your patch shape
7. Cut both pieces at the same time keeping them together. Both patches should be the same shape when done.
8. Clean up edges with a file and/ or sand paper
9. Layout position of rivet holes
10. Drill holes through both pieces of plate making sure that plates stay aligned
11. Cut copper wire into short lengths to be used as rivets
12. Hold the wire with vise grips and from a rivet head on one end
13. Separate the two plates and position one plate on the outside of the form.
14. A little rubber cement may help hold the plate in place
15. Drill two holes through the plate and wall being careful that the drill is perpendicular to the wall
16. Insert a rivet through inside plate, wall, and outside plate
17. The formed head should be on the inside of the form
18. Insert the second rivet through both plates and wall.
19. Place backer plate on the inside of the from against the rivet and trim the rivet to length
20. Form the second rivet head by hammering against the backer plate
21. Repeat for each additional rivet