

Scrolled Coffee Table

A coffee table with a twist, a turn and a tail.

I WANTED to make a coffee table that was different, perhaps decorated with a cutout design. I finally stumbled on a design that I liked and later discovered that it has been around a long time. In the cabinetmaking field, this design is classified as English fretwork. It's also known as a Pisces design because it looks like a stylized fish. Whatever you call it, it simply consists of a row of intersecting semicircles.



Preparation

If you plan to use a clear finish or a stain and finish, choose a typical furniture wood, such as cherry, mahogany, oak or walnut. If you plan to enamel the base and finish the top to show the wood grain, consider poplar for the base. I used cherry for the entire project.

Start by planing the material to the finished thickness given in the Schedule of Materials. I planed the four side pieces to $\frac{1}{2}$ ", which saved time because I could then drill and saw two sides at once. As for the legs, I produced the desired thickness of exactly $2\frac{1}{2}$ " by gluing together two $1\frac{1}{4}$ " thicknesses.

Basic Construction

It doesn't really matter whether you begin with the sides or the legs. I made the sides first. Plane and sand them until you have two pieces exactly $\frac{1}{2}$ " x 5" x $35\frac{3}{4}$ " and $\frac{1}{2}$ " x 5" x $17\frac{3}{4}$ ". Pair these, best side up, and join each pair with a

1" x #7 roundhead screw through what will become the tenon at the end of each piece. Now you're ready to lay out the pattern as shown in the PullOut™ Plans on the top one of each pair. Transfer the pattern to the wood with carbon paper. Or, because the design is simple, you can draw the design directly on the wood, as I did. This requires only a compass and a ruler. It's advisable to begin at the center and work out.

STEP 1 Drill the Corners • Use an awl to mark the centers for drilling the cutouts. Drill holes tangent to the construction lines large enough to accommodate a scroll saw blade. There are different types of blades, so it's advisable to check, but a $\frac{7}{32}$ " bit is big enough for most blades.

STEP 2 Remove the Waste • Use a scroll saw to cut the pattern in the sides. After sawing is completed, sepa-

WOOD WORDS (wood'wurds) n.

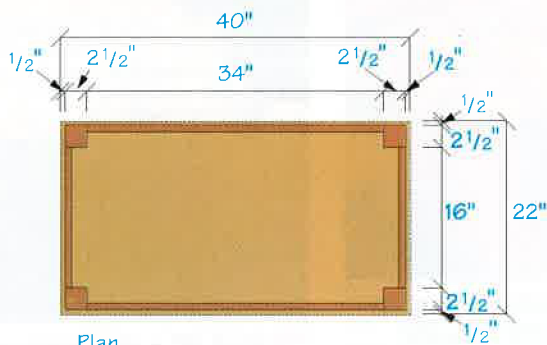
fretwork: Interlaced ornamental work, either perforated or cut in low relief on a solid ground, usually in geometric patterns.

glue size: The sealing of a surface using glue. In woodworking, glue left behind, even after cleaning a surface, that has penetrated the wood fibers. This prevents the coloring of the sealed area.

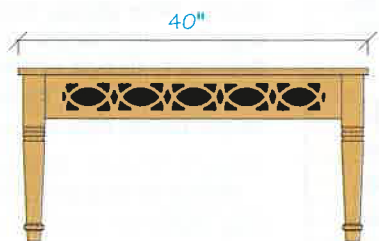
chain drilling: A line of drilled holes that overlap one another, giving the appearance of being "linked" to each another.



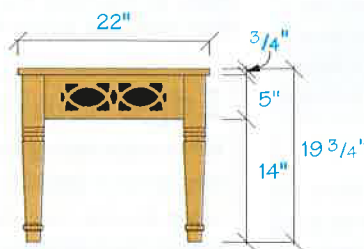
1 DRILL • As shown in the photo, drill two thicknesses at the same time. Place a piece of scrap wood beneath your work to prevent chipping as the drill breaks through the wood.



Plan



Elevation



Profile

Schedule of Materials: Coffee Table

No.	Item	Dimensions T W L	Material
1	Top	3/4" x 22" x 40"	Cherry
2	Sides	1/2" x 5" x 35 3/4"	Cherry
2	Ends	1/2" x 5" x 17 3/4"	Cherry
4	Legs	2 1/2" x 2 1/2" x 19"	Cherry
2	Cleats	3/4" x 3/4" x 32"	Cherry
2	Cleats	3/4" x 3/4" x 16"	Cherry

rate the pieces and smooth the rough edges with a fine-cut wood rasp and with sandpaper backed by a piece of flat wood about the shape of a ruler. Because it's easier to fit tenons to mortises than mortises to tenons, don't shape the tenons until you complete the legs.

Make the legs

If you need to glue together two or more pieces to make the legs, try to match grain types so the joints won't show. Make the legs at least an inch longer than the final measurement. Square the tailstock end with a lathe chisel and measure the pattern details (see PullOut™ Plans) from that end, leaving waste at the upper (headstock) end to be sawed off later.

STEP 3 Turn the First Leg • Start the turning by rounding the stock up to the point where the turning design is left square. The turning now looks like a rolling pin with a square end at the left. This way it's easy to mark turning details, measuring up from the tailstock end. I designed this table to be higher than most, so if you want to make it lower, adjust your plan accordingly.

STEP 4 Turn the Other Legs • After completing the first leg, mount it behind the lathe for comparison while making the others. Use a two-by-four as a base and two wires from a coat hanger to make a suitable holder. Wait until all four legs are turned before sanding.



2 CUT THE DESIGN • As you cut the design to shape with a scroll saw, the drill holes simplify turning of the work while sawing.



3 TURNING • Begin the turning by making the rounded part nearest the square section of the leg. Then work down the leg to the ball near the foot.



4 MORE TURNING • To ensure the legs are identical, mount the first leg behind your lathe. While turning the other legs, stop periodically to compare measurements using calipers.



5 MORTISES • The mortises can be made by drilling several holes and then cleaning out the waste with a chisel. Or you can use a $\frac{3}{8}$ " straight router bit, as shown here. Mark the beginning and ending points on your router table's fence and on the legs. Make three or four passes at increasing depth, up to 1".

STEP 5 Mortise the Legs • Mark the legs for sawing and cut them on a table saw. Place the most attractive sides outward. Mark the mortises' locations for the side tenons. These are set back $\frac{3}{8}$ " from the outside edge of the legs and are centered top to bottom on the squared part of the legs. These may be formed by "chain" drilling a row of overlapping $\frac{3}{8}$ " holes 1" deep, then cleaning up the walls with a wood chisel until smooth slots are formed.

Now go back to the scroll sawed sides and cut the offside tenons to fit the mortises. The tenons are $\frac{7}{8}$ " long x 4" wide x $\frac{3}{8}$ " thick, so remove $\frac{1}{2}$ " of width from the top and bottom ends and $\frac{1}{8}$ " from the front surface. Textbook mortises and tenons are usually shown with square corners. The joints will be just as strong if you round the tenon corners with a wood rasp to fit the rounded ends of the mortises.

STEP 6 Build the Base • Assemble the legs and the short end sections first, gluing and clamping. Remove any glue that squeezes out of the joint with a wet cloth. This is important to prevent a light-colored spot in the finish, a result of glue size.

After the glue has set, remove the clamps and join the end sections to the sides in the same way. Check the assembly with a framing square, both horizontally and vertically.

Make the Top

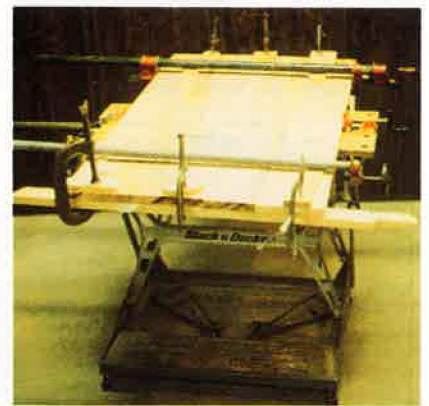
Rip $\frac{3}{4}$ " x $\frac{3}{4}$ " cleats that go around the inside upper edge and attach the top. Drill these with slotted holes, and secure them to the sides with glue and 1" x #7 flathead wood screws set in countersunk holes. You won't need all of the holes you have drilled, as four screws will probably be plenty for attaching the top. However, if you discover a slight warp or twist in the top, you might want to use more.



6 ASSEMBLY • Before gluing, dry fit all the joints for complete assembly. There may be a slight variation, so try them for the best fit, then mark the joints AA, BB, etc.

Edge Gluing Tip

When edge-joining wood where long grain is glued to long grain, using dowels, biscuits or splines doesn't add strength to the joint. In fact, they weaken the joint somewhat. The use of joinery in edge-gluing is an assembly aid only, helping align the surfaces of adjacent boards. It is helpful with wood that might be slightly warped, or if you have a large glue-up where the time to level each board to mating boards is limited before the glue begins to set.



7 GLUE UP • Use dowels or biscuit joints for edge-joining the top boards. After gluing, draw the boards together with clamps. To hold the top flat, use C-clamps to attach straight pieces at the ends. Finish all the pieces before final assembly.

Select the boards for the top, examining them for warp or twist. Cut the boards about an inch longer than final dimensions and allow a little extra for width. Run all edges on a jointer, or plane them until you get a perfect fit the entire length of each joint. Use at least three dowels or biscuits in each joint.

STEP 7 Glue the Top • Apply glue and draw the pieces together using bar or pipe clamps, two on one side, one on the other. Remove any glue that squeezes out on the upper surface.

Finishing

The top will need considerable sanding. If you start with a belt sander, use fine paper. This tool is easy to overuse, causing low spots or gouges. I recommend a straight line or orbital sander of the pad or palm type for most of the sanding. Sand under the best lighting conditions and view your work from all angles.

Break the sharpness of the corners with 120 grit sandpaper using a block for backing. For a fine finish, use paper as fine as 220 grit for all final work.

For finishing, work in a dust-free room and go over all parts with a tack cloth. I applied two coats of Minwax cherry stain. This was followed by three coats of polyurethane finish, the last being a satin finish. This removes the shine left by a glossy polyurethane finish. Coat all surfaces (including the underside of the top) with at least one coat of polyurethane to seal out moisture.

Finally, attach the top with washers and roundhead screws. After all this work, you've earned a rest. Sit on your sofa, have a cup of coffee and admire your new table. **PW**

Ralph Wilkes is a retired business manager/treasurer of Keuka College in New York. Woodworking is his hobby.