

master class



Liven up legs with traditional stringing

BY STEVE LATTA

Setting stringing into the face of a table leg is a great way to give it visual vitality. The way I do it, all you need to get started is an image of a table leg with a design you like and a simple fixture to hold the workpiece. You'll enlarge the photo until the width of the leg in the photo matches the width of the actual leg—in this case, $1\frac{1}{8}$ in. In doing so, you get a full-scale representation of the stringing pattern. Using a compass, you'll locate the centerpoints of the arcs in the pattern, and then you'll transfer those centerpoints to the fixture and use them to guide the radius tool that cuts the arced grooves.

For years, I fabricated my own inlay tools, but a few years back I collaborated with Lie-Nielsen to make tools specifically for this task. You can still make your own, but stringing life is way easier with tools designed for the job.

Lay out the design

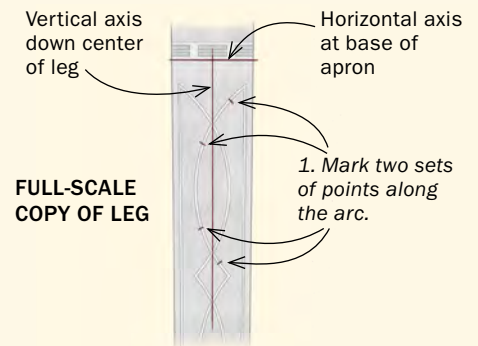
Once you have the leg image full size, begin laying out directly on it. First run a vertical axis down the center of the leg. Run a horizontal axis perpendicular to this line at the base of the apron, which is typically both the bottom



Work on paper first. Create a paper copy of the leg at full scale. Draw a vertical line down the center of the leg, and add a horizontal line at the apron. Then find the center of each arc by plotting two perpendicular bisectors along the arc, and extending them until they intersect.

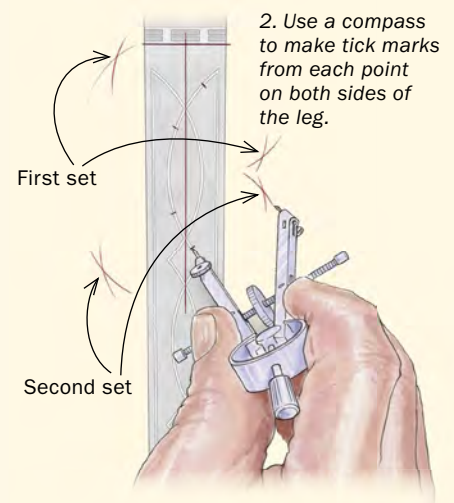
LAYING IT ALL OUT

Find the center points of the arcs and their distances from the horizontal and vertical axes. These points will guide the radius cutting tool.



FULL-SCALE COPY OF LEG

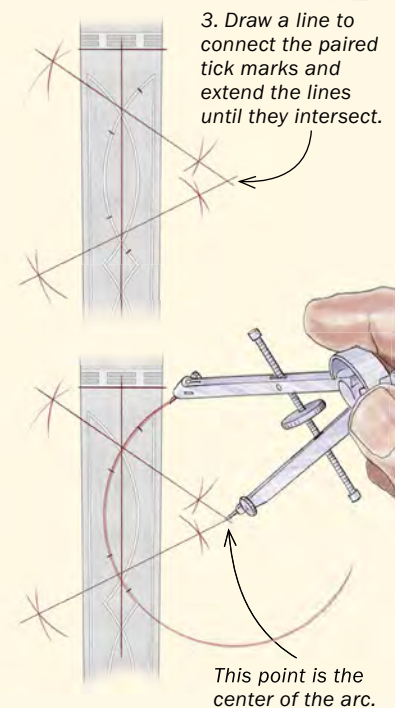
1. Mark two sets of points along the arc.



2. Use a compass to make tick marks from each point on both sides of the leg.

First set

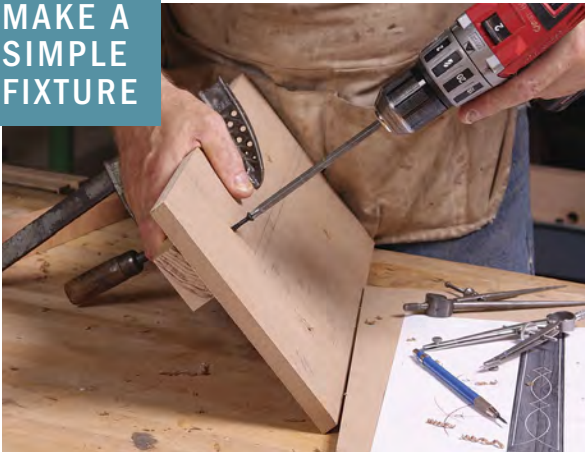
Second set



3. Draw a line to connect the paired tick marks and extend the lines until they intersect.

This point is the center of the arc.

**MAKE A
SIMPLE
FIXTURE**



Start with one side of the fixture. Set the two hardwood blocks and the leg on the $\frac{1}{2}$ -in.-thick MDF base. Pencil around them to mark the position. Clamp one hardwood block in place, and predrill and screw it to the base from underneath.



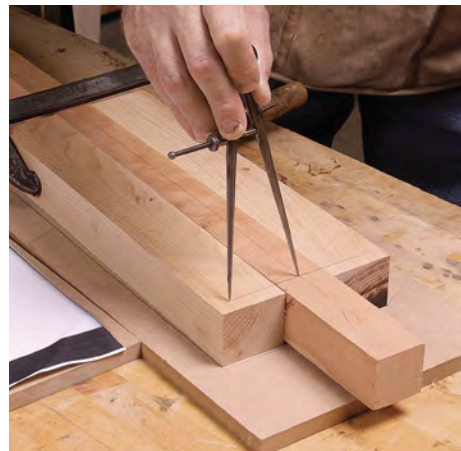
Add the second hardwood block. Reposition the leg and second block. Clamp them to the secured block, and predrill and screw the second block to the MDF.



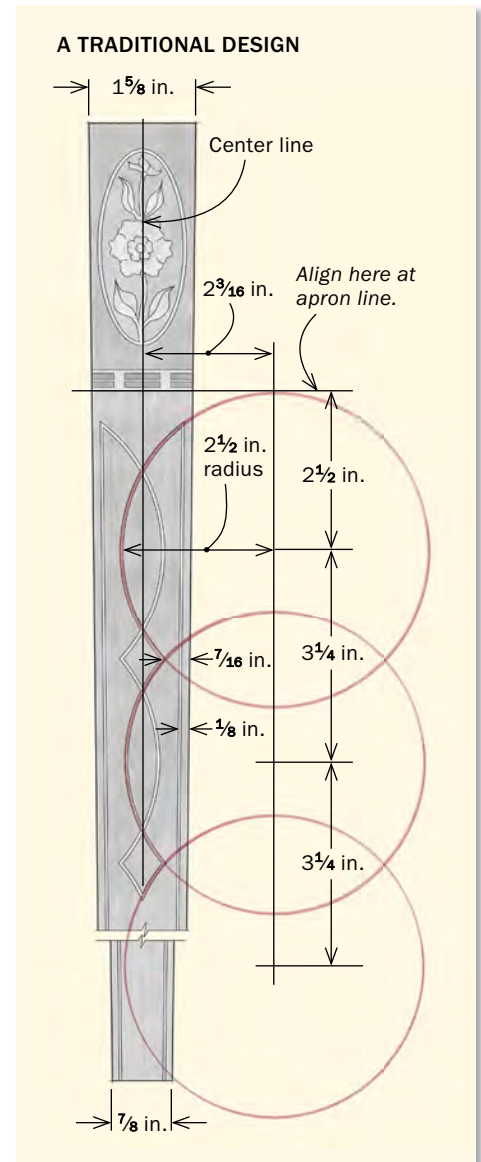
Transfer the layout to the leg. Start by drawing the vertical line down the center of the leg.



Add a horizontal line. With the leg in the fixture, draw the line marking the bottom of the apron perpendicular to the center line. Extend the line across the two blocks of the fixture.



Transfer the arcs. Using dividers, transfer all the center points from the paper layout to the leg, and then draw the arcs with a compass.





CUT THE GROOVES FOR THE STRINGING

Complete one side of the pattern by grooving and inlaying, and then move to the other side.

Start with the straight lines. Using a straight line tool, Latta grooves the outside border that runs from the cuff banding at the foot to about $\frac{1}{2}$ in. below the apron line.

edge of any banding and also the start of the taper. Now find the centerpoints of all the arcs in the design. To find the centerpoint of an arc, plot perpendicular bisectors at two different points along the path of the arc. Extend the bisectors until they intersect, and this is the center of the arc. Repeat

this process for all of the arcs on half of the inlay; because the pattern is symmetrical, you won't need to lay out both sides. Historically, a single radius was typically used, so if you are coming up with arcs that are really close to each other, pick an average.

Now that you have found the center points, measure their distance from the horizontal and vertical axes. You need to know how far they are from the center of the leg, how far apart they are from each other, and how far they are from the apron line.



Pivot pin



Move to the arcs. With the leg in the fixture, use a radius tool (left) to cut all three arcs. Stop where they meet other arcs or the border line.

Make the fixture and transfer the pattern to the leg

To make the fixture, screw two maple blocks, $1\frac{5}{8}$ in. thick by 2 in. wide by 10 in. long, to a piece of $\frac{1}{2}$ -in.-thick plywood or MDF. The two blocks should be spaced so that you'll need a little bit of pressure to slide the leg between them. Make sure the lower banding line fits just inside the top of the fixture so you can use it as a reference.

Start by marking vertical and horizontal axes on the actual leg just as you did on the drawing. Then run lines down the leg $\frac{1}{8}$ in. from the sides to indicate where the straight border stringing will go. Slide the leg securely into the fixture and add a clamp to keep the face of the leg flush with the top of the maple blocks. Continue the horizontal axis out across the maple blocks, making certain this line is perpendicular to the vertical line down the face of the leg. The horizontal apron line on the blocks will become a reference mark for all the legs when inserted into the fixture.

With the leg firmly mounted, use dividers to transfer all the pivot points from your drawing to the fixture. Sometimes a little fudging needs to happen to get the pattern to work out just right. In this case, because the leg tapers, I wanted the lower enclosure



Clean up the intersections. Depending on the situation, Latta uses a #3-10mm gouge, a piece of a card scraper, or a modified X-Acto blade to fine-tune the grooves.

a little smaller than the top, so I bumped the center points out about $\frac{1}{32}$ in. It is only a small adjustment but it does have a significant impact on the final design.

Plow the grooves and cut the stringing

Before cutting the border stringing, determine its range by drawing the upper arc with a compass and then locating the top of the cuff banding on the bottom of the leg. The stringing will extend a little past this line and will be trimmed when the cuff is mounted. The straight-line tool makes quick work of the border groove. To cut it I remove the leg from the fixture and clamp it in a vise. Cut the grooves and glue the stringing in place for one half of the pattern at a time. This ensures that the places where the arcs cross are cut cleanly.

With one border groove cut I put the leg back into the fixture. Then, to cut the arced grooves, I set my radius cutting tool to $2\frac{1}{2}$ in., fit its pivot pin into the centerpoint of an arc, and begin. Before I start grooving the whole arc, though, the points where the arcs intersect need to be firmly established. To do this I use the tip of the radius tool's tooth—the tooth closest to the pivot—to make a series of very light scribes indicating the points of intersection. These marks show exactly where my grooves need to stop to avoid cutting too far. Then I can cut all three arcs with the radius tool. I stop the lower arc where it intersects the center axis. There will be a little handwork cleaning up the intersections of the grooves.

I slice my stringing from holly veneer sawn at about 0.035 in. thick on the tablesaw or bandsaw. Using a slicing gauge and slicing fixture, cut off a strip about $\frac{1}{8}$ in. wide. To standardize the stringing, pull it through a thickening tool.

Glue the stringing into the grooves

The intersections can be managed in one of two ways: with a miter or with what I call a run-by, which is basically a butt joint. Choose the joint you prefer. When properly executed, a run-by and a miter are indistinguishable from each other.

I start at the bottom arc and shape its bottom terminal point so that intersecting it from the other side will be easy. Using a sharp chisel, I cut all the miter joints in the arcs, working my way up the



CUTTING STRINGING IS AN EASY THREE-STEP PROCESS

Slice, cut, and thickness. Once you saw the veneers on the tablesaw or bandsaw, use a slicing gauge to cut them into strips, and then pull them through a thickening tool to make all the stringing uniform.



Online Extra

To watch a video showing how Steve Latta sizes his stringing to perfection, go to FineWoodworking.com/273.

SOURCES OF SUPPLY

LATTA INLAY TOOLS

Set includes: Radius Cutter, Straight-Line Cutter, Slicing Gauge, Thickening Gauge (\$345)

www.lie-nielsen.com

side of the leg. Properly cutting a joint requires two cuts. The first cut comes close; the second cut firmly establishes the joint.

Glue and insert the three arcs, making sure the joints are tight. End the top arc in the middle of the vertical border groove. At this top joint, I always do a run-by joint. It is far easier to execute and looks every bit as good as a miter. A properly fit run-by displays no intersections and just looks like a solid white line. To cut the run-by, I take my 1-in. chisel, align it with the side of the border groove, and snip the end of the top arc. The most important aspect of making this top joint work is the end shape of the border stringing. It must be cut as a natural extension of the arc, and I use my #3 gouge for this purpose. Often, the top of the groove itself needs work to allow the stringing to slide in to just the right location.

Once the stringing is mounted and the glue has dried, I level it to the background using a small block plane and a card scraper.

With the right side completed, repeat the process on the left. As always, if you are new to this type of work, invest the time to make two or three practice legs and you will be repaid many times over in terms of efficiency and appearance. □

Steve Latta teaches woodworking at Thaddeus Stevens College in Lancaster, Pa.



INLAY THE STRINGING MATERIAL



Start at the bottom and work your way up. Latta cuts and inlays one piece at a time. He fits the miters and butt joints just so. Each joint requires two cuts; the first comes close and the second nails it. Use a glue syringe to deposit yellow glue and press the stringing in place with a metal ruler.



Moving upward. Repeat the process for each joint, stopping the top arc in the middle of the vertical border groove. At this top joint, rather than mitering, Latta does a run-by, or butt, joint. Flush each arc to the leg before moving on to the next arc.



Add the vertical border and switch sides. Once the first set of arcs is inlaid, glue in the border stringing (left). Then move on to cutting the grooves for the other half of the pattern.