Dress Up Your Work With Creative Stringing

If you can imagine a shape, you can inlay it

BY STEVE LATTA

PLAY WITH GEOMETRY

Two simple shapes—a circle and a curve—cut into a single piece of MDF are all that's needed to cut the grooves for this lotus flower.

OR DRAW A PICTURE

Pattern routing makes it simple to cut grooves for pictorial inlays of all kinds, such as this stylized songbird.

There's no better way to personalize a piece of woodworking than with inlay. It's a decorative technique that's highly flexible and uses common woodworking tools.

One of the most basic challenges in inlay work involves cutting the narrow grooves in which the inlay is set. If the line is straight and near the edge of the panel, you can use a router with an edge guide, or other inlay tools. But things get more complicated when you're working away from a reference edge or cutting grooves with complex curves or irregular shapes.

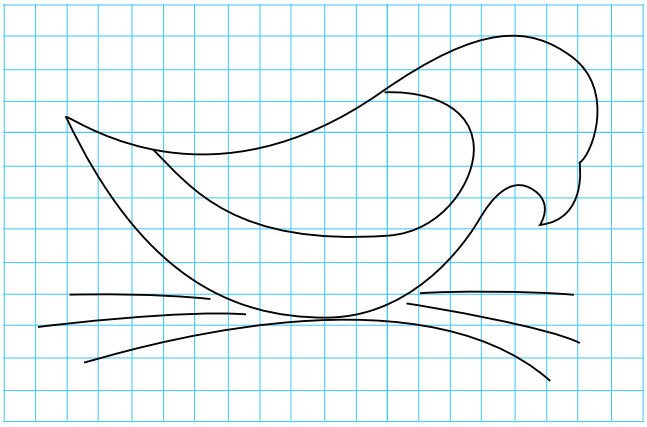
The solution is to use a pattern. This approach works very much like larger-scale pattern routing for shaping furniture parts. First, you create a pattern by cutting the design into a piece of MDF. Then you position the pattern on the workpiece and use it as a guide for the router. It's possible to use a trim router for this work, with a collet adapter for small-shank bits, but I strongly recommend a high-speed rotary tool (such as a Dremel), equipped with a router base from stewmac.com. The bits I use are two-flute, spiral upcutting end mills (1/32 in. from drilltechnology.com).

As for the stringing, you'll need to cut your own (see "Line and berry inlay," *FWW* #196) using 0.9-mm or 1/28-in. veneer in holly, sycamore, or dyed black anigre (try wood-veneers.com, rosebudveneer.com, or berkshireveneer.com). To show the possibilities, I'll demonstrate two of my favorite designs.

Steve Latta is a contributing editor.

Photos, this page, and drawings: John Tetreault

A pictorial design: The songbird



This design was adapted from a decoration on early Pennsylvania German furniture. It can be sized for a variety of uses including blanket chests, door panels, and box lids.

The pattern is made in two parts—the body and the wing. Start with a piece of ½-in. MDF that is large enough to allow plenty of room to accommodate clamps in areas that won't obstruct the router's path. The stringing is dyed black anigre.

If you want the inlaid design to exactly match the size of the drawing, be sure to enlarge the drawing slightly on a photocopier before using it to cut out the pattern. This step accounts for the offset between the bit's shank, which rides the pattern, and its cutting edge. For my 1/32-in. bit, that offset is about 3/64 in.

I make inlay patterns from ½-in. MDF because it wears well. The spinning shank can burn a recess into the pattern and put a ripple or wide spot in your groove. But as long as you keep the bit moving while you are routing the grooves, the pattern should last a long time. Keep the tool moving—even after you've cut power—until the bit stops.

The grooves for the bird design can essentially be cut all at once, without stopping to insert any inlay until the entire design is cut. The pattern has a couple of tight inside corners, which can be prone to burning. To avoid this, be sure to rout all the way in and then quickly come out. The outside corners need special care as well, as shown in the photos.

A TEMPLATE GUIDES THE WAY

Make a pattern to guide the router. *Glue the drawing to a piece of MDF and cut out the interior and wing with a scrollsaw (above). Smooth the curves with sandpaper or small files, keeping the edges square to the face. When routing the grooves (right), angle the router and pivot down to start the cut, keeping the bit shank against the template.*

TIP FOR OUTSIDE CORNERS

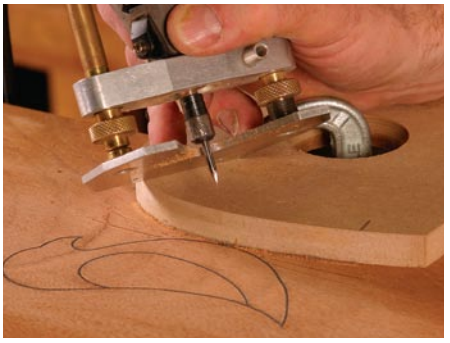
Stop short and finish by hand. *Routing all the way around an outside corner yields a rounded arc instead of a sharp apex. To avoid this, run the router close to the point, cut the power, and back up (top). Repeat from the other direction. To join the two grooves, Latta uses a narrow #2 or #3 gouge (bottom). An X-Acto knife with a blunted tip helps remove the chips.*

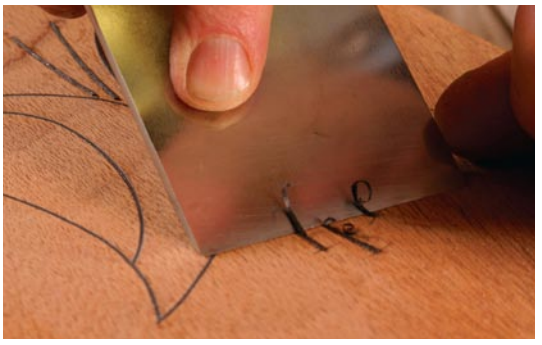
Rout the wing. *With the perimeter of the body cut, put the wing back in, hold it in place with tape, and rout around it. Avoid thick tape—you don't want the router base hanging up on it. Transparent household tape is fine.*

INSERT THE INLAY AND TRIM IT FLUSH

Shape the stringing. *Latta coaxes a curve into the stringing by bending the pieces over a heated burn-in knife. He uses an automotive feeler gauge as a bending strap to stop the stringing from catching.*

Apply glue like a surgeon. *Latta uses a syringe with a narrow, curved tip ($2.60 at leevalley.com) to lay a fine bead of yellow glue into the groove (top). Press the inlay into the groove with your fingers, leaving it just proud of the surface. Trim each end at an angle (above) so the pieces mate cleanly.*

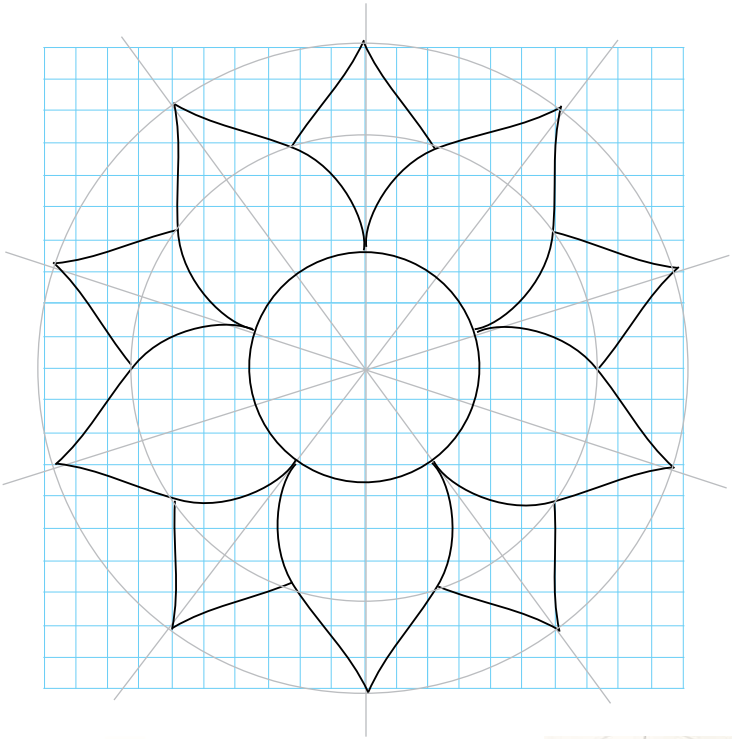




Give the bird a perch. *Latta uses a separate pattern (top) to rout the simple arcs that anchor the bird design. Leaving the stringing above the surface lets you level it with a smoothing plane iron, used bevel down (above).*

Photos, except where noted: Steve Scott

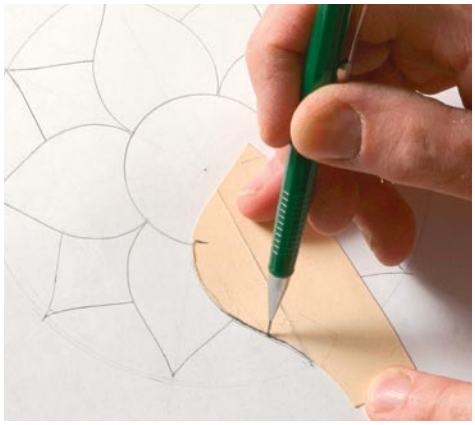
A geometric design: The lotus

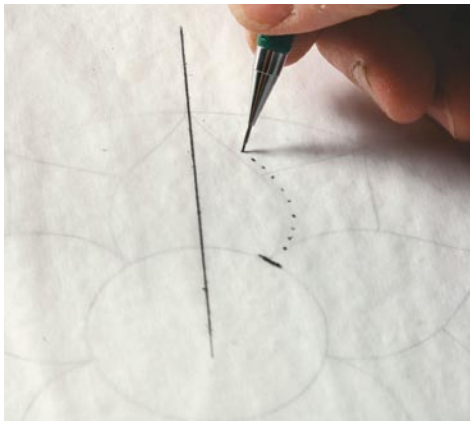


The lotus design, with its repeating complex curves, is tailor-made for pattern-routed grooves. The pattern that creates the flower's center is simply a hole drilled with a Forstner bit. The leaf pattern, which creates one half of a single leaf, is sawn into the edge of the same MDF template. To make the pattern, it helps to have a full-scale drawing of the design from which to trace. You can either copy the one shown here or draw your own.

To draw, start with two concentric circles for the flower's inner and outer diameters. Experiment with their relative sizes to find a proportion that pleases your eye, then divide the circles into 10 equal segments. Use the circles and rays to guide your drawing of the leaves—leaf tips at the outer circle, bases at the inner circle. I use a French curve to refine the leaf shape, then cut it out and use it to create a card-stock template for drawing the final design. Finally, a third concentric circle marks the intersection of background and foreground leaves.

Cut a practice flower or two in MDF or scrap before taking the router to your workpiece. Doing so lets you refine your layout while getting used to the tool.



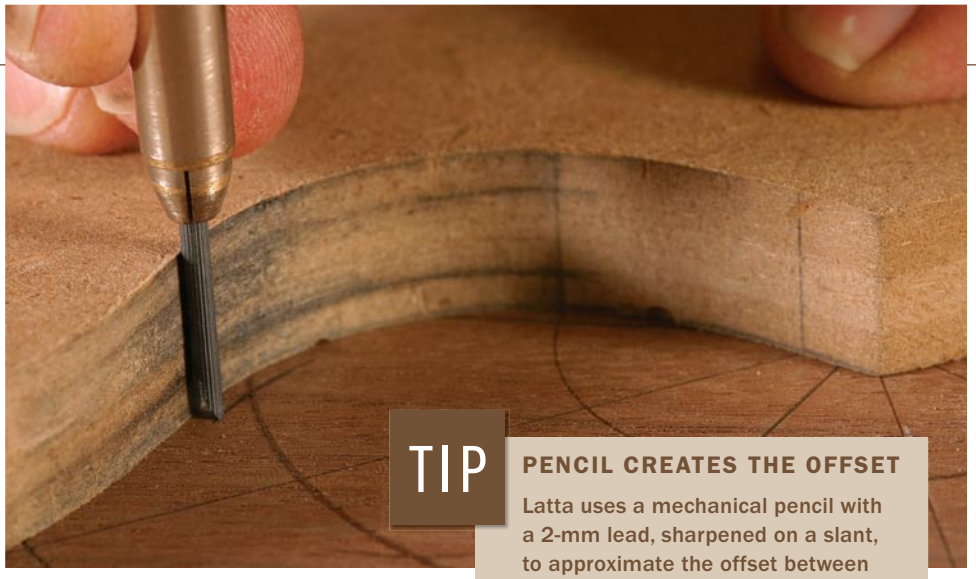


Draw the design. *Latta uses a card-stock template to create a finished drawing of the full design (left). He then creates a tracing from which the MDF pattern will be cut (right). To account for the offset between the bit's shank and cutter, the tracing must be 3⁄64 in. larger than the original drawing. Latta marks the offset with a series of dots, then connects them to create the traced line. He also draws the arcs beyond the centerline to allow minor adjustments when aligning the pattern on the work. Finally, he marks the tracing to indicate where the leaf's base meets the central circle.*

Cut the pattern on the scrollsaw. *Glue the tracing to the MDF and score the centerline with a knife. After cutting the pattern and smoothing it with files and sandpaper, carry the layout lines down the edges to the bottom of the pattern.*

LAY OUT THE WORKPIECE

Key landmarks. *To guide placement of the MDF pattern, draw the circles and rays on the workpiece (above). To complete the layout for each background leaf, position the pattern for the adjacent full leaf and draw an arc where the pattern crosses the middle circle. The resulting X (right) indicates where the two leaves meet.*



TIP

PENCIL CREATES THE OFFSET

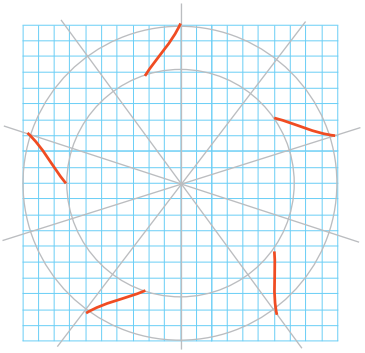
Latta uses a mechanical pencil with a 2-mm lead, sharpened on a slant, to approximate the offset between the bit's shank and cutter.

A SEAMLESS INLAY, STEP BY STEP

To join the many lines of stringing cleanly, it's important to cut and fill each set of corresponding grooves in a specific order, filling and leveling them before cutting the next ones. Start in the background and work forward. This way, you can trim the ends of the first pieces as you cut subsequent grooves. This leaves nearly invisible joints.

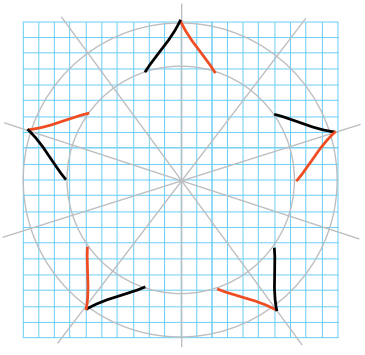
1 BACKGROUND FIRST

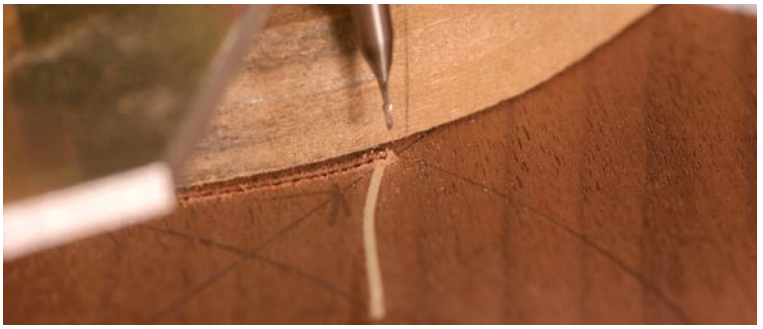
Start with the background leaves, cutting the left-hand edge of each leaf. Lay the leaf pattern down on the workpiece and align its centerline with one of the rays. Place the point of the leaf at the outermost reference circle and clamp the pattern in place.



2 FILL AS YOU GO

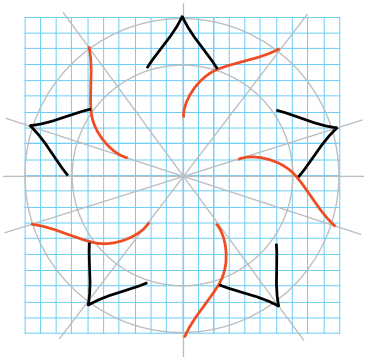
Once the left-hand edges are done, fill the grooves with stringing and then cut the right-hand edges, filling them as well. Keep an eye on the bit. You don't want to run too far into the adjoining line; you don't want to stop short of it, either.

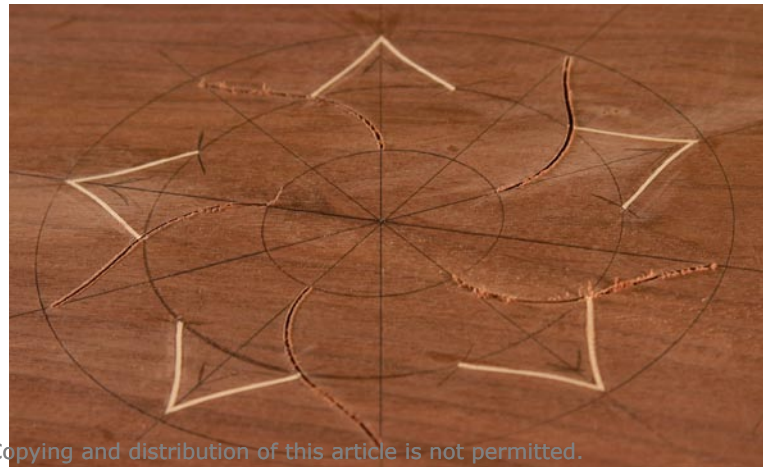




3 START THE LONG LEAVES

Position the pattern to rout the first half of the long leaves, being sure to just clip the end of the background leaves as shown.

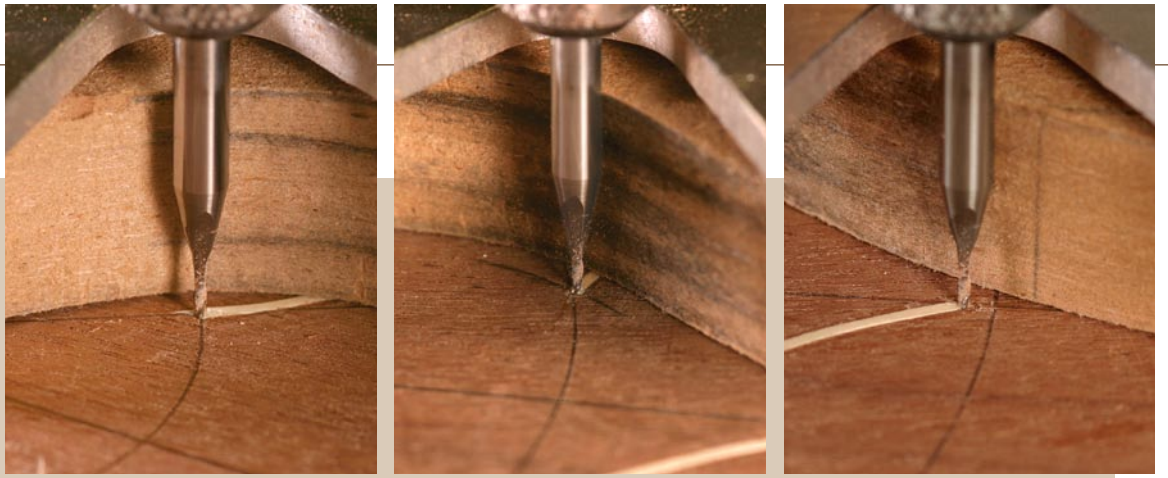




TIP

MAKE A TEST RUN

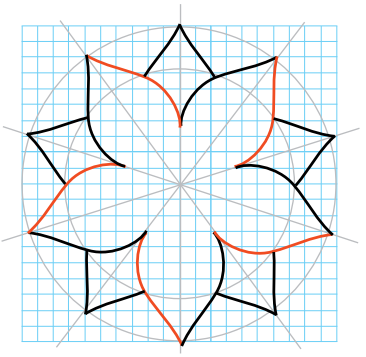
To rout the grooves in Step 4, the pattern must be positioned to cut three intersections cleanly.



At the leaf's base (left), check to see that the bit starts on the central circle and completely overlaps the existing line of stringing. Where it meets the background leaf (center), the bit should rest on the reference arc and clip the end of the existing stringing. At the petal's tip (right), it should clip the existing line but not go beyond it.

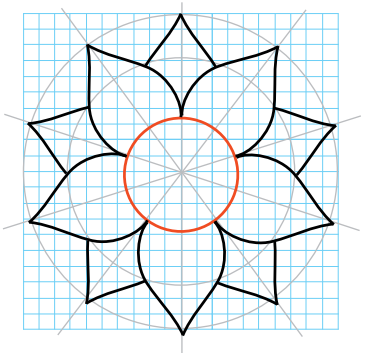
4 COMPLETE THE LEAVES

After cutting the last leaf grooves, use an X-Acto knife to clean them up and to refine the point on the leaf tips if necessary. Then set the stringing, trimming the ends with a chisel.



5 FULL CIRCLE

The groove for the central circle should evenly clip the stringing at the base of each petal. Close the circle with a scarf joint, marking the angle on the workpiece for reference when cutting the mating ends.



One pattern, many designs

Other lotus variations (below) can be cut with the same template. Creative placement (left) is part of the fun.