

# Add Pop to Panels

One routing template is all you need to make this fielded panel with veneer and stringing

BY STEVE LATTA

A notable characteristic of Federal furniture is large flat or serpentine surfaces that, left unadorned, can look more than a little boring. Period makers often turned these barren surfaces into fielded panels made with veneer, evoking their frame-and-panel predecessors and bringing vitality and depth to a piece. But while this centuries-old technique is steeped in history, my approach has a modern twist: Instead of cutting the veneers with a fretsaw, I use micro end mills chucked in a Dremel tool to cleanly and precisely rout around an MDF template.

## Create the template

The design of this fielded panel combines cyma curves, straight shots, and circular corners. Whether you copy mine or make your own, start with a quarter version printed out and spray-mounted to a piece of ½-in. MDF. I cut the circular corners with a Forstner bit, cut close to my line with a scrollsaw, and then refine the curves.

If you want, you can make the quarter template and stop there, repositioning it as you rout around the perimeter. Instead, I used the quarter template to make a full template, simplifying routing. To make the full version, trace the quarter template around another piece of ½-in. MDF and cut out the interior at the scrollsaw. Then



## MAKE THE ROUTING TEMPLATE

Start with a quarter template and then use it to create the full template. This not only speeds the process, but it also ensures a symmetrical design. Take the time to get the quarter template right because it will save work when making the full template. Latta glues the printed-out pattern to a piece of MDF and cuts it out with a scrollsaw. He then refines the profile with a spindle sander, files, and a chisel.

Each leg of the template is overlong to make routing easier.



**Trace the template and remove most of the waste.** Move the quarter template from corner to corner to transfer the full pattern onto a sheet of MDF. Then scrollsaw near the lines. Latta first drills out the corners with a Forstner bit slightly smaller than the diameter of the corners, which can be easier than scrollsawing around a small radius.

**From quarter to full.** Latta nails the smaller template to the full version, and uses a pattern bit to transfer the profile. At the start and end of the cut, ride the flat on the quarter template for a clean transition.



**Clean up the corners.** The round bit won't leave angled inside corners, so clean up the full-size template with a chisel.

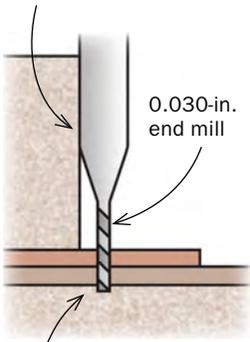
## TAPE AND ROUT THE VENEERS

**Assemble the veneers.** Use veneer tape to join the sections of the border. Then use low-tack purple tape to fix the border to the field so that nothing moves while you're routing.



**First rout.** Clamp the template to the veneers with a sacrificial board underneath. Ride the bit's shank along the template and cut just through the veneers.

Shank rides along template.



Set depth to rout through both layers of veneer.



**Finish the corners by hand.** To avoid rounded corners, don't rout around a point. Instead, stop, lift the bit out, and then plunge on the other side (right). Otherwise, you will get a radius and not a point. Remove the pattern and, with a narrow chisel or gouge, slice free these corners (far right). Make sure to keep them intact to help with alignment.



## SOURCES OF SUPPLY

Latta uses a Dremel tool outfitted with an after-market plunge base and a foot switch. He uses a pair of bits to rout the seam between the veneers and a channel for the inlay.

### DRILLTECHNOLOGY.COM

Dremel end mills for inlay, 0.030-in. and  $\frac{1}{16}$ -in. cutting diameter

### LIE-NIELSEN.COM

Latta Thickening Gauge

### STEWMAC.COM

Plunge Router Base #5806

## MOUNT, THEN ROUT FOR THE STRINGING



**Glue the veneer to a substrate.** Align the field inside the border and temporarily secure it with purple low-tack tape before covering the whole seam with veneer tape. To glue the assembled panel to its substrate, in this case  $\frac{3}{4}$ -in. MDF, Latta uses a cold-press veneer glue and a vacuum bag.

cut flush to the line using a router table and the quarter template. To toughen up the MDF, I follow the advice of longtime teacher Will Neptune and squirt cyanoacrylate glue along the edge. It soaks in and hardens, extending the life of the template.

### Make the panel

The veneer design consists of two components, the border and the field. Start with the border. For the border on this panel, I crosscut strips of mahogany veneer using a slicing gauge and created a frame that is mitered at the corners. Next, I taped the field and border together.

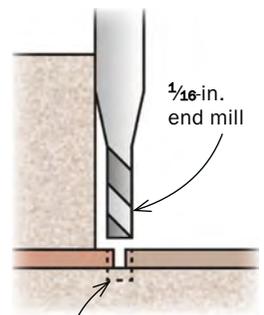
Now to the first round of routing. Clamp the template to the veneer with a backer board underneath, and make sure the clamps won't be in your way. Use a 0.030-in. end mill to cut through both layers of veneer. To make it easy to start these cuts, I use a Stewart-Mac plunge base for Dremels, but if your Dremel base is fixed, tipping into the cut also works well. When routing a corner, you must stop, lift, and re-enter on the other side.

For optimum control, a deadman-style foot switch is essential. When routing, always keep the tool moving to avoid burning divots into the template. Even when my foot leaves the switch, I keep the tool moving along the template's edge until the router bit comes to a stop.

With the routing concluded, remove the template and use a narrow chisel to slice free the corners left where you lifted the bit. Then untape the two layers of veneer, remove the waste, and reassemble them



**Second rout.** For the stringing groove you'll use a wider bit, which will trim both the border and the field at the same time. Once again, don't run the tool around sharp corners.



Set depth to just under  $\frac{1}{16}$  in.

**Corner cleanup.** A narrow chisel or gouge makes quick work of removing the material left behind in the corners.

## MAKE THE STRINGING



**Thickness to fit.** If the treble stringing doesn't fit in the grooves, pull it through a thicknessing gauge one piece at a time. Check and rethicken until the three strips slide in with some pressure.

into a single layer. I find the sliced points help position the veneers. Run a layer of veneer tape around the seam to tie the field to the border.

I glue the assembled panel to its substrate, in this case  $\frac{3}{4}$ -in. MDF, using a cold-press veneer glue in a vacuum bag. After about an hour in the press, I remove it and use a damp—not dripping—sponge to moisten the veneer tape. When the adhesive lets go, I just pull the tape by hand. A card scraper or chisel on edge works well for removing any residue.

To cut the grooves for the stringing, reposition the template on top of the glued-up assembly and use a  $\frac{1}{16}$ -in. end mill to rerout it, trimming the border and the field simultaneously. Your depth of cut should be a shy  $\frac{1}{16}$  in. Finish the corners with a chisel or gouges as needed. In this pattern, narrow #2 and #3 gouges are beneficial.

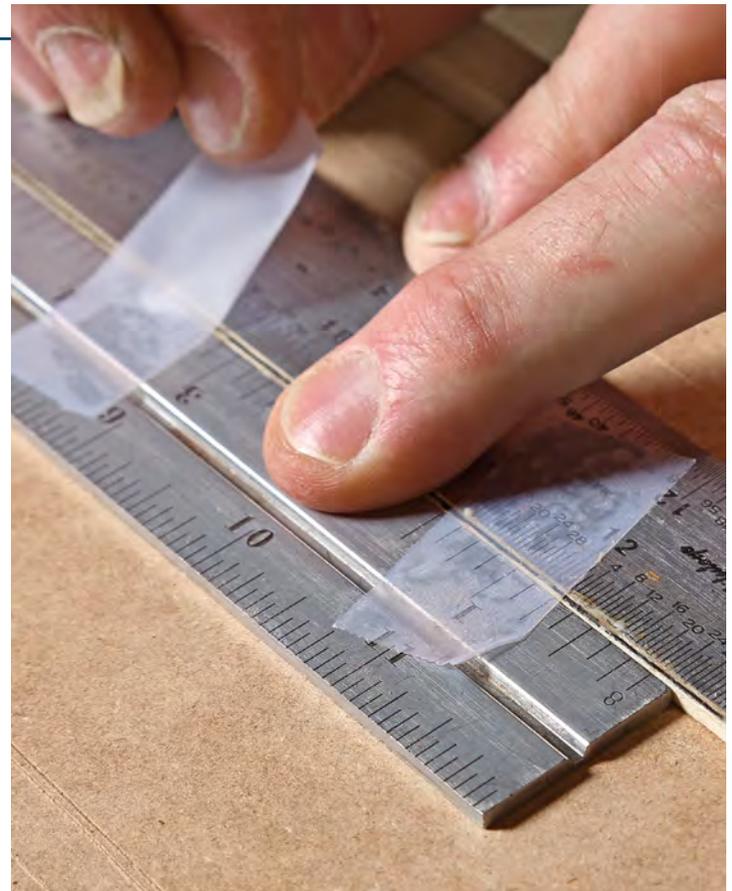
### Treble stringing

I chose a treble (three-piece) stringing for this panel because I knew it would look

## STRAIGHTS



**Glue the strips.** Latta uses a syringe for better precision and control when applying the glue (above). Sandwich the three strips between the edges of two combination square blades (right). Tape stretched between the blades makes a great clamp.



## CIRCLES



**Wrap and tape.** After adding glue to the strips, Latta wraps them around a cylinder. He again turns to clear tape to keep the thin stringing secure while the glue sets.

## CYMAS



**Prebend and glue just the end.** Latta rolls the ends of the strips around a burn-in knife to start the radius for the cyma curve. Apply glue to one end of the pieces and clamp them using a paper clip. This will make the end stout enough to miter but leave the rest of the stringing, which is unglued, free to bend into the curves.



great. There are some rules to follow, however, regarding whether a single, double, or treble stringing is appropriate. In this case, because both the border and field are dark, the holly stands out nicely. A single piece of holly would simplify the technique and work aesthetically as well. If I had a dark border and a light field, say satinwood, curly or bird's-eye maple, or birch crotch, I would shift to a double string of white and black, with the black next to the lighter veneer.

For this piece, the treble stringing consists of white/black/white using holly and dyed pearwood. I slice these from veneers of standard thickness, and three layers combined fit nicely in the groove. If they need to be thinned, I pull them through a thickening gauge.

For the straight runs, I glued three strips together, sandwiching them between the edges of two combination square blades. For a clamp, I used household tape. To laminate the circular corner bandings, I

wrapped them around a cylinder the same diameter as the corner groove. (You may have to turn your own cylinder.) I covered mine with clear tape to prevent glue from sticking. I applied adhesive between the strips before wrapping them on top of each other around the cylinder. Again, I held them in place with Scotch tape.

For the gentler curves, the cyma curves and the turns on either side of the straight runs, I bent the stringing's ends using a thin metal strap and the shaft of

## INLAY THE STRINGING

While you can start the inlay process anywhere, don't jump around. Instead, glue in the stringing in adjacent sections. Start with a short straight section, add a cyma curve, and then a corner. Level the pieces as you go.

2. Glue in the cyma curve next.

1. Start with a short, straight section.

3. Tackle the circular corner before moving on to the next straight piece.

an electric burn-in knife. After bending, I stacked the pieces and glued about  $\frac{3}{8}$  in. at one end. I used a small paper clip as a clamp. The rigid end makes mitering easier. I did not glue the entire length because that would make it difficult if not impossible to bend it to the undulating curves. You can run glue between the strips when they're ready to be inlaid.

### Set the stringing

Begin by laying out the intersections. Where runs of stringing will meet and be mitered, lay a ruler along the angle of the miter and, with a sharp pencil, mark a light line. This line will help you cut the strips. Cutting any of the joints typically involves a rough cut followed by a nice clean slice. Both are done with a chisel. It is important to use a slicing action rather than a straight chop (imagine that it's bread).

Regardless of where you start, work in sections. I began by dry-fitting a circular corner to help guide my first miter and set

a straight piece. From there, I mitered and glued in the cyma curves before returning to the circular corner. Throughout, I used yellow glue applied with a syringe. After inserting each section of stringing, give it a few minutes to set before leveling it to the panel's surface using a small block plane, card scraper, or sanding block.

In this article I've made a flat panel, but if your case has curved panels, the procedure isn't much different. Rather than glue the assembled veneers to a piece of  $\frac{3}{4}$ -in. MDF, I would glue them to a piece of specialty two-ply veneer called NBL, which is about 0.040 in. thick. I would then continue the process as mentioned above, making certain I never routed all the way through the NBL. This results in a flexible panel that could be glued to a curved surface. □

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

## 1. STRAIGHTS



**Slice the miters.** The curved corner is dry-fitted, allowing Latta to reference off it without locking it in place. Pencil lines guide the cuts.

## 2. CYMAS



**Glue in the groove.** After mitering the cyma's glued end, which meets with the straight piece, Latta carefully adds glue to the channel.

## 3. CIRCLES



**Back to the corner.** Double-check your first miter before trimming the other end.



**Ready for glue.** Latta leaves the circle dry-fitted, again for reference. With grooves this narrow, a syringe helps minimize the mess. Once the straight piece is in, he removes the corner so it doesn't get glued in place.



**Flush it down.** Latta most often uses a small low-angle block plane to level the stringing, but he also uses a card scraper or sanding block as necessary.



**Wind in the stringing.** Glue only an end beforehand. Add glue between the strips right before inlaying them.



**Trim the end.** After cutting off the bulk with his first cut, Latta uses a second slice as a finishing cut.



**Push into place.** After adding glue, a straightedge helps fit the thin strips securely into the channel.



**Keep flushing.** Level the pieces to the panel as you go as opposed to trying to do them all at once.