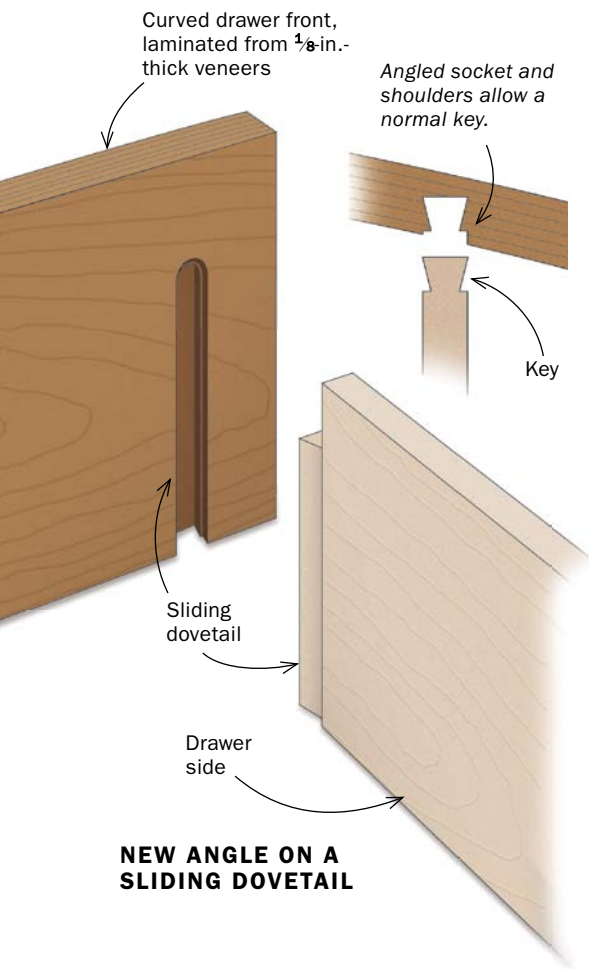


# Easier joinery for curved drawer fronts

CLEVER JIGS CONTROL THE CURVES

BY ALAN TURNER



**Puff out your chest.** Gently bowed overlay drawer fronts give the chest a clean, elegant appearance. The overlay also allows the sliding dovetails this article relies on.

**M**y colleague at the Philadelphia Furniture Workshop, Mario Rodriguez, recently designed this three-drawer bowfront dresser and handed it off to me, the resident jigmeister, to figure out an efficient way to build it. The key questions I faced were how to produce the curved drawer fronts and how to join them to the drawer sides.

I considered steam-bending the drawer fronts, but I thought I wouldn't get consistent enough curves. I could have bandsawn the fronts out of solid wood,

but that would have wasted material and created an unappealing grain pattern. I decided on bent lamination, which conserves wood, has minimal springback, and affords complete control of the grain. I decided to join the drawer sides to the fronts with sliding dovetails, the strongest method of attaching overlay drawer fronts.

To produce predictable curves and accurate joinery, I built a series of jigs to speed up and simplify the building process. I made a two-part bending form, a cradle for crosscutting the curved drawer fronts, a jig for routing the stopped dovetail sockets, and a

## Make the drawer fronts

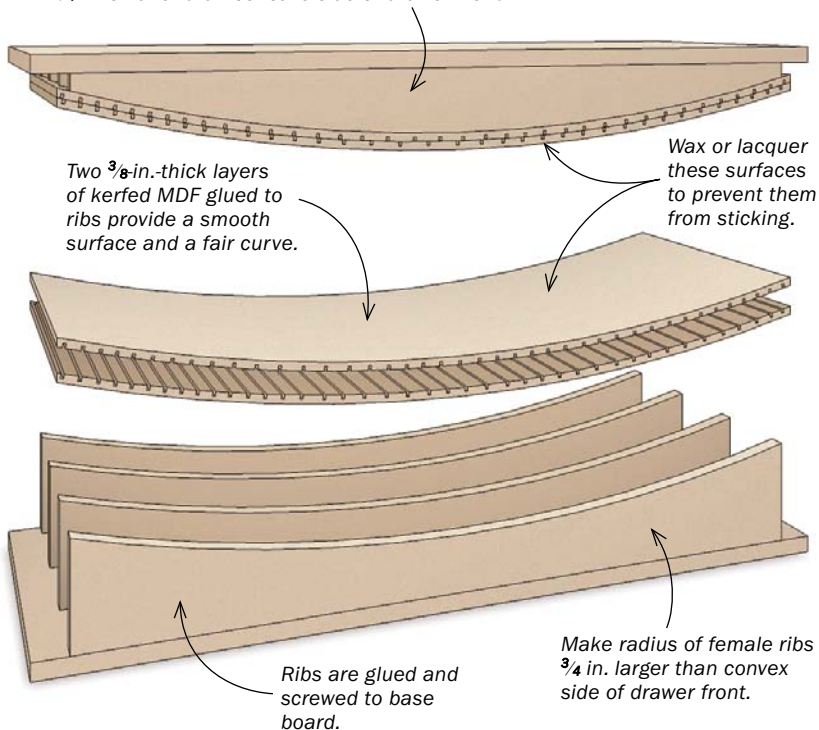


**Trammel cuts the master curve.** Turner uses a router on an adjustable trammel to produce male and female curved templates. He routs a curved groove  $\frac{1}{2}$  in. deep, then bandsaws through the waste and trims it flush with a router.

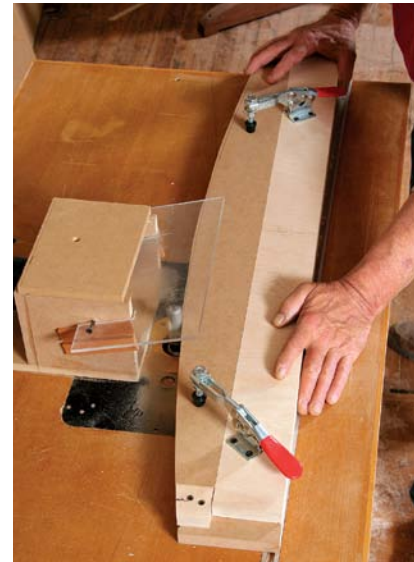
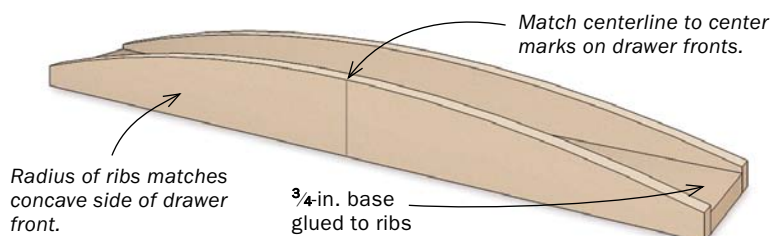
### TWO BENDING FORMS

Mating male and female forms create the bent-laminated drawer fronts. Make them several inches longer than the drawer fronts. If you have a vacuum press, you need only the male form. All parts are MDF.

To account for thickness of kerfed MDF, make radius of male ribs  $\frac{3}{4}$  in. smaller than concave side of drawer front.



### CROSSCUT CRADLE



**Make ribs at the router table.** After bandsawing the ribs to rough shape, use the trammel-cut master templates to pattern-route male and female ribs for the various cauls, jigs, and fences.



**Create the curve.** After rolling Unibond 800 urea resin glue onto the stack of  $\frac{1}{8}$ -in.-thick laminates, Turner binds the ends in stretch-wrap to keep them registered. Then he clamps the stack between forms and lets the glue cure overnight.

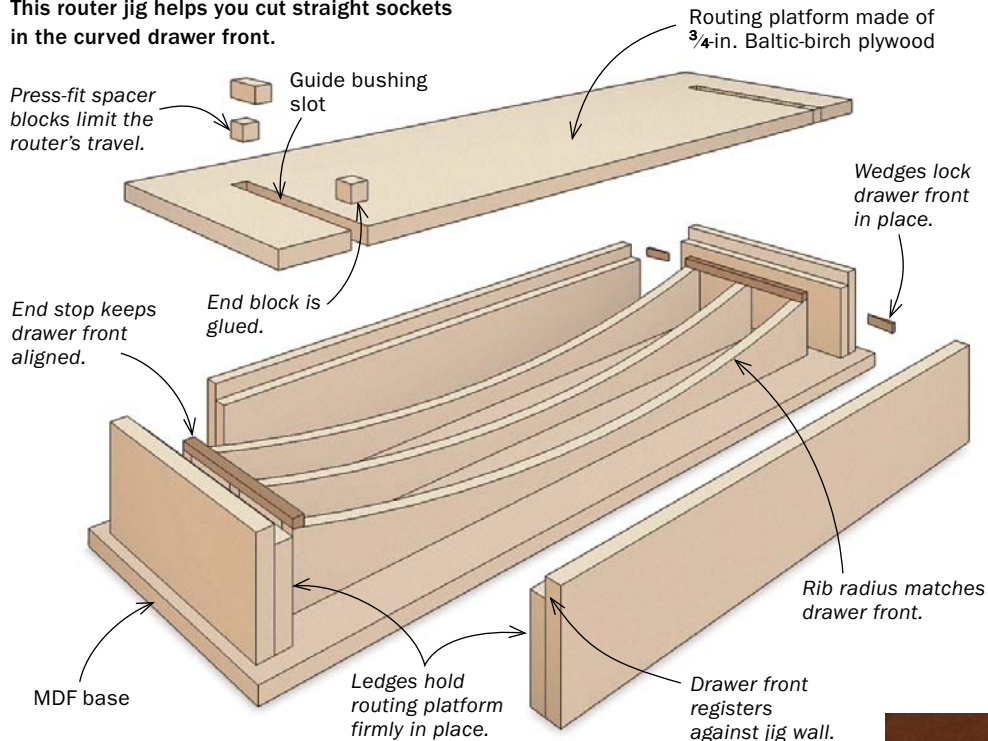


**Cut it to length.** Mark the centerline on the drawer front and align it with the center mark on the cradle.

## Rout the dovetail sockets

### JIG LEVELS THE CURVE

This router jig helps you cut straight sockets in the curved drawer front.



curved fence for the router table that enabled me to cut the slot for the drawer bottom on the concave inner face of the drawer fronts.

### Master patterns are the starting point

I built all these jigs using convex and concave ribs. The MDF ribs are easy to produce on the router table using male and female pattern-routing jigs.

These master routing patterns are the key to the whole chest. I generated the curves with an adjustable trammel arm and a router. I drilled right into our wooden floor to set the trammel pin, and then I screwed a fence into the floor perpendicular to the trammel arm. To ensure that it was exactly 90° to the arm, I measured carefully to make the two ends of the fence equidistant from the trammel pin. After routing a 1/2-in.-deep groove with a 3/8-in.-dia. bit, I bandsawed through the waste and then cleaned up with a router and a flush-trimming bit.



**Precise height is key.** Due to springback, no two bent-laminated drawer fronts are exactly the same. Use paper or card-stock shims to level the drawer fronts.

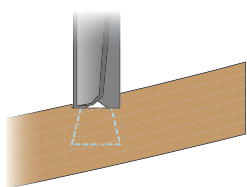


**Spacers control the length.** Graduated drawers require different-length sockets. Use press-fit spacers to control the router's travel.

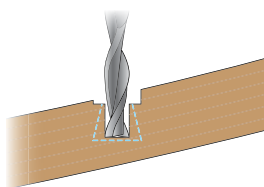


**Multiple passes.** To cut the joints from start to finish without disturbing the drawer front, Turner sets up three routers with different bits. If you don't have extra routers, change bits between cuts and use test cuts in a sample board to reliably reset the depth of cut.

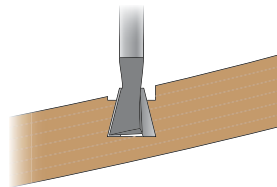
### ROUT IN THREE STEPS



**1** 12mm straight bit establishes the shoulder.



**2** 1/4-in. upcutting spiral bit roughs out dovetail in a single pass.



**3** 10°, 1/2-in.-dia. Whiteside dovetail bit finishes the joint.

I used one pair of patterns to generate all the ribs for the various jigs and I had no problems as a result. If I were making the chest again, however, I think I would take the mathematically precise route and make a separate set of patterns to produce the ribs for the bending jig, so that I could account for the thickness of the layers of kerfed MDF in that jig.

### Bent-lam basics

To make the bent-laminated drawer fronts, resaw a plank into slices slightly more than  $\frac{1}{8}$  in. thick and then use a planer or thickness sander to bring them down to  $\frac{1}{8}$  in. Each drawer front is a sandwich of six slices. When you glue up the bent lamination, you can add a sheet of commercial veneer as the show surface. Slip-match the show veneers so that the grain pattern is consistent from drawer to drawer. After gluing them up and letting them cure overnight, joint one edge, rip the pieces to width, and then crosscut them to length.

### Perfect joint for curved drawer

Perhaps the trickiest part of this project was cutting the sliding-dovetail sockets in the drawer fronts. The router jig I built, however, let me cut the dovetail sockets and shoulders as if the drawer front were flat. And that allowed me to cut the dovetail keys on the drawer sides just as you would if they were joining flat stock. The router jig takes most of the guesswork out of the process, but because there is some minor springback even with bent-lamination, the drawer fronts may not be perfectly consistent curves. Once the drawer front is in the routing jig, it's important to ensure that the four corners of the drawer front are equidistant from the routing surface. I used a Starrett depth gauge to check this and paper or card stock shims to adjust for any disparities. □

*Alan Turner teaches at the Philadelphia Furniture Workshop, which he founded in 2006.*



## Fit the sides to the front

**Scribe the angled shoulder.** After cutting normal dovetail keys on the drawer sides using a router table, insert the key into the socket and transfer the drawer-front angle onto the drawer side. Turner uses a flat-sided marking knife for an accurate transfer.



**Notch the top end.** Use a backsaw and then a chisel (above) to cut away  $\frac{3}{4}$  in. or so at the top end of the dovetail, creating an angled surface that mates with the slightly curved inside face of the drawer front (right).



**Curved fence for a curved groove.** To rout the stopped groove in the drawer front that will accept the drawer bottom, use a slot-cutter in the router table. To support the piece, make a fence from male ribs cut to the same radius as the concave side of the drawer front.