Smart Jig for Pattern Routing

Rout multiple shapes with just one jig

BY TIM CELESKI

PERFECT PARTS IN THREE STEPS

If you need two or more of a workpiece that has a curve, bend, or decorative shape like a cloud lift, the smartest way to make them is with a pattern and router.

Trace. *A full-size pattern not only guides the router, but it also guides a pencil as you trace the shape.*

Cut. *Bandsaw right up to the pencil line, leaving just a little waste for the router to remove.*

Rout. *With the pattern and workpiece overhanging ½ in., lock the clamp plate to the base, then clamp in the pattern and workpiece.*

Photos: Matt Kenney; drawings: John Hartman

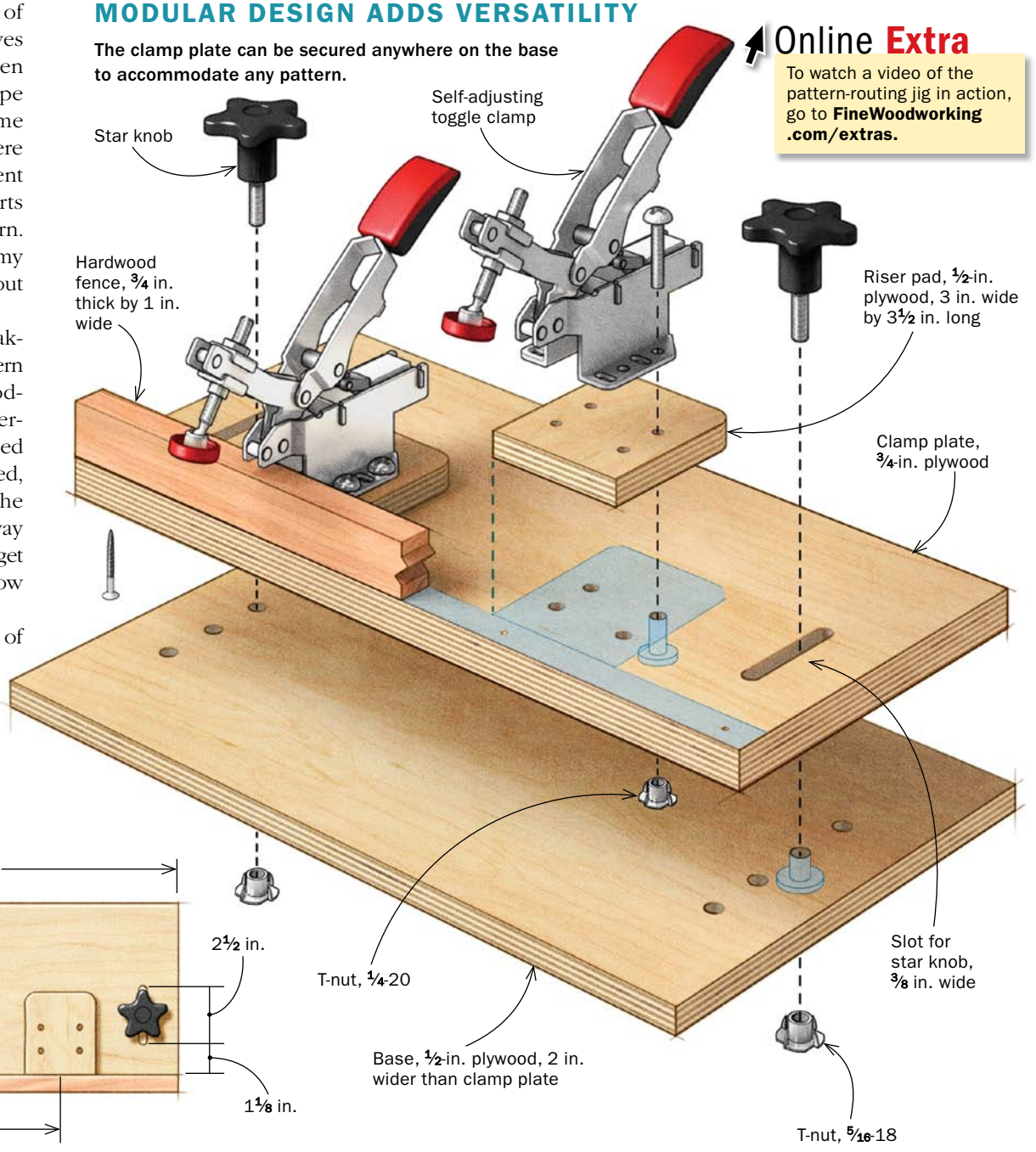
Just about every piece of furniture I make involves shaped parts, and I often need to reproduce a shape several times on the same piece. I quickly learned there is no better or more efficient way to make identical parts than to rout them to a pattern. Now nothing gets made in my shop more than once without using a pattern.

I've also taught furniture making, and I've noticed that pattern routing makes many woodworkers nervous. It's understandable. There's an exposed cutter spinning at high speed, working hard to throw the workpiece being routed away from you. The only way to get over that anxiety is to learn how to rout to a pattern safely.

One of the key elements of safe pattern routing is a well-designed jig that holds the workpiece and pattern securely. Of course, patterns

MODULAR DESIGN ADDS VERSATILITY

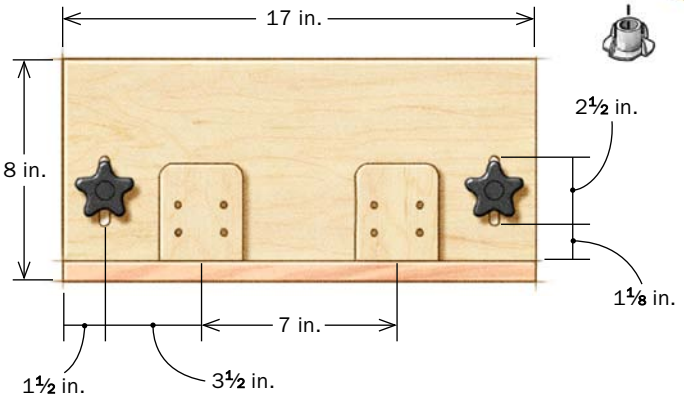
The clamp plate can be secured anywhere on the base to accommodate any pattern.



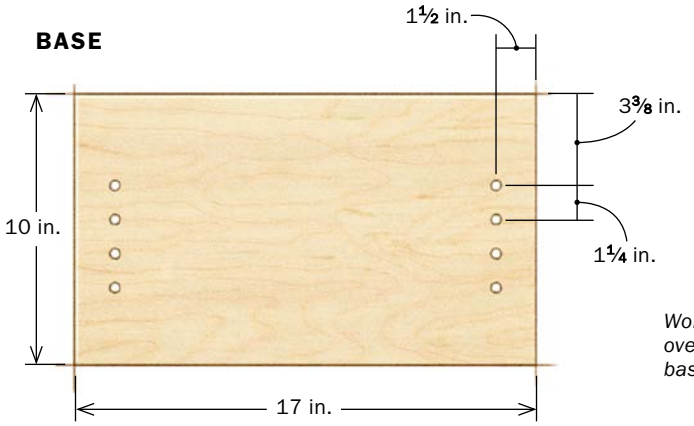
Online Extra

To watch a video of the pattern-routing jig in action, go to **FineWoodworking.com/extras.**

CLAMP PLATE

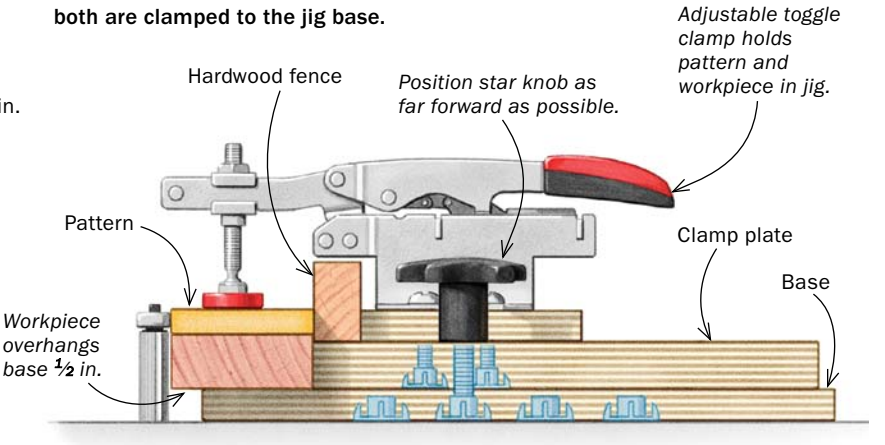


BASE

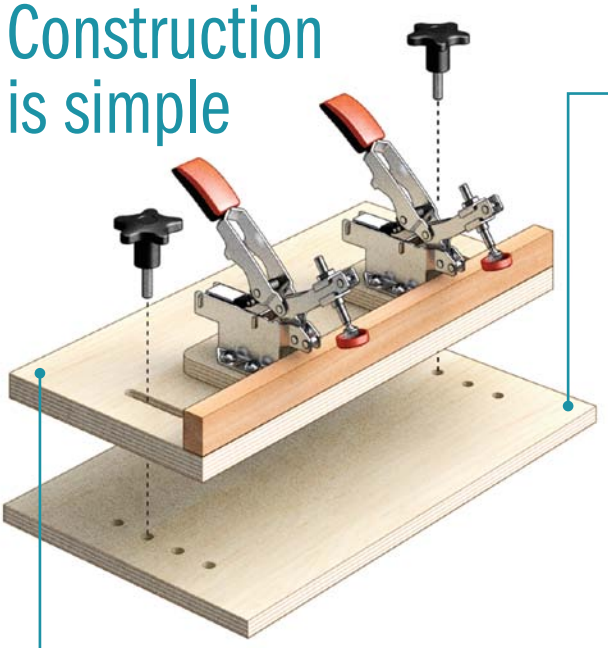


SIDE VIEW

The pattern goes on top of the workpiece, and both are clamped to the jig base.



Construction is simple



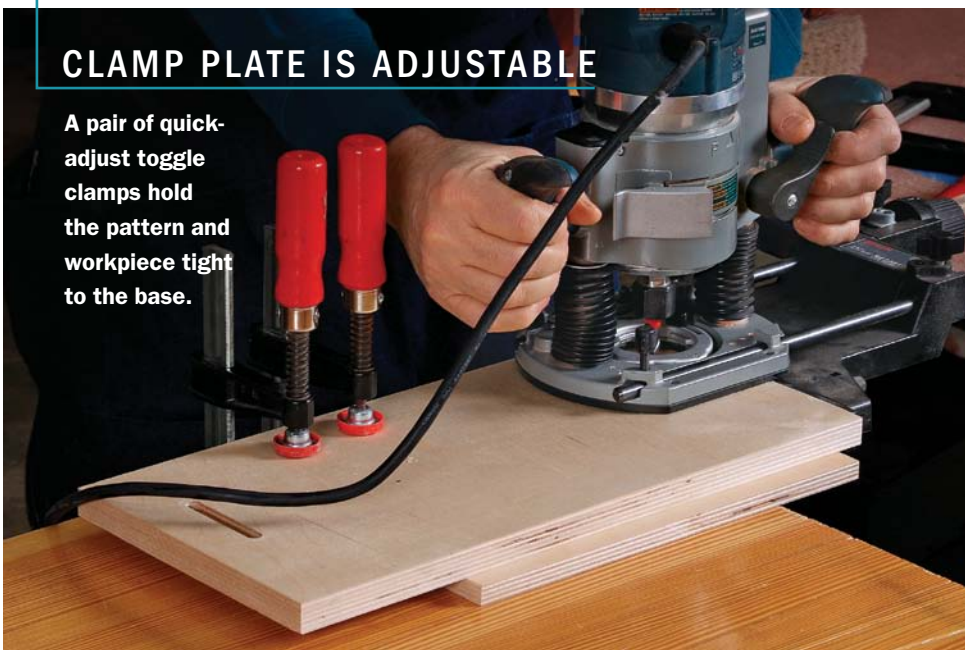
ONE BASE WORKS WITH MANY PATTERNS

With a series of T-nuts embedded in the base, the jig can be used with a greater variety of patterns.

Knock in the T-nuts. *Counterbore the underside to allow the T-nut's flange to sit just below the surface. Then drill all the way through for the T-nut's shaft. Celeski uses a dowel (foreground) to knock the T-nuts below the surface of the base.*

CLAMP PLATE IS ADJUSTABLE

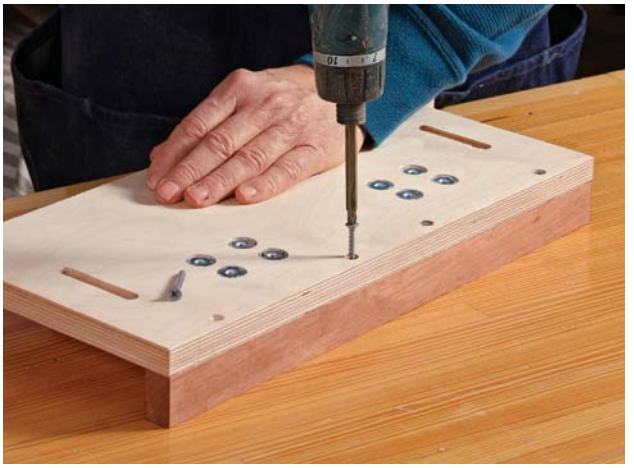
A pair of quick-adjust toggle clamps hold the pattern and workpiece tight to the base.



Slots allow for movement. *Make them 1/16 in. wider than the diameter of the knob's threaded shank so that you can angle the clamp plate differently to use the jig for a wider range of patterns.*

Add riser pads for the clamps. *With the fence resting in place, glue and nail the pads to the clamp plate.*

Screw on the fence. *The workpiece and pattern register against it, which helps to keep them aligned. The T-nuts are for bolting on the toggle clamps (right).*



Bolt on the clamps. *The upward force of the clamps could be too great for screws.*

and workpieces come in a variety of shapes and sizes. You could make a jig tailored to the shape and size of each of your patterns, but that's a waste of time and materials. Instead, I designed and made a jig that can be adapted and used to shape a number of different patterns. It's safe to use and easy to make.

The jig has two parts: a base and a clamp plate, which is outfitted with two self-adjusting toggle clamps that hold the workpiece and pattern to the base. This plate can be adjusted on the base to accommodate narrow or wide workpieces, and angled for tapered workpieces—threaded star knobs lock it to the base. I've also spaced the jig's key elements (the clamps and star knobs) so that you can easily use more than one clamp plate on a base (I've found that 3½ in. apart is ideal).

The secret to the jig's versatility is its modular design. The jig can be altered quickly to better match the pattern at hand. For example, to rout a curved chair leg, you can make a base with the correct shape and use two clamp plates, one on each side of the bend. You can also make variations on the clamp plate (very narrow with one clamp, longer with three clamps, etc.) to increase the possibilities even more.

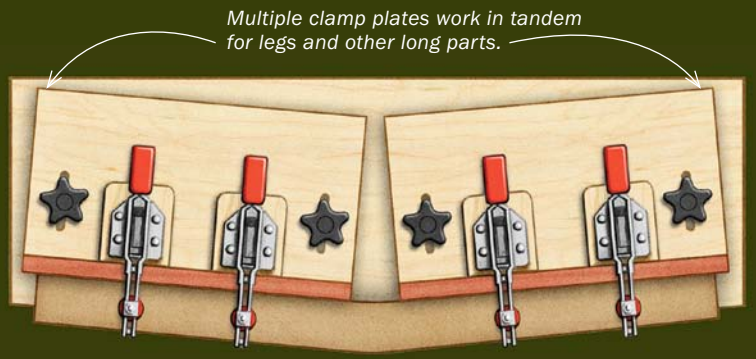
As for safety, the jig has good heft when holding a pattern and workpiece for routing, so the bit is less likely to pull it away from your hands. The star knobs make great handles, giving you good control, and they are positioned to keep your hands well away from the spinning bit.

This jig works so well that I use some version of it for 95% of my pattern routing. I'll show you the most basic version, for workpieces that are mostly straight. I'll also show you how you can expand the jig with additional clamping tops to rout long parts and odd shapes, like a curved chair leg. □

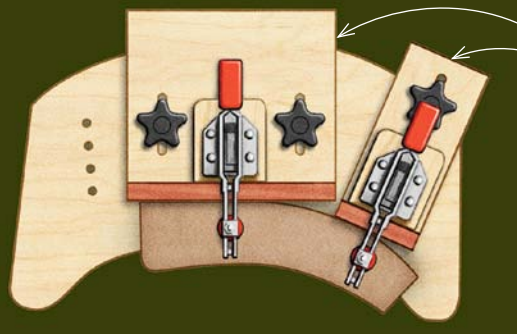
Tim Celeski lives near Seattle, where he makes furniture and runs the website workbenchdesign.net.

Jig is easy to adapt

As versatile as the basic jig is, it does have limitations. The good news is you can adapt the design easily to handle any size or shape workpiece, such as long parts, bent parts, and convex and concave curves.



Add a second clamp plate for long workpieces. *If the workpiece has a bend in it, like this chair leg, put a matching bend in the base.*



Use different size clamp plates to get around curves. *The second edge of this base is convex. The plates can be turned around so that you can rout outside curves.*