

Make precise
tapers, circles,
wedges, and
curves safely
and easily

Five Essential Bandsaw Jigs

BY MICHAEL FORTUNE

The wall next to my bandsaw is festooned with jigs that expand the versatility of the basic machine. Though simple to build, each jig quickly and safely delivers the precise results I depend on. This article presents five of my favorites.

Build these jigs from Baltic-birch plywood or medium-density fiberboard (MDF), and adjust dimensions to fit your bandsaw. For the jigs to work correctly, the bandsaw's blade must cut parallel to the fence. To achieve this, I check that the bandsaw's tires are in good shape (no grooves or ridges), then set the fence parallel to the miter-gauge slots. Next, I adjust the angle of the upper wheel. If the blade's centerline aligns with the centerline of the upper wheel, it will cut parallel to the fence.

Check by ripping some scrap. You'll know it's right when the back of the blade is centered in its kerf. For more on bandsaw setup, see *FWW* #173, pp. 66-71.

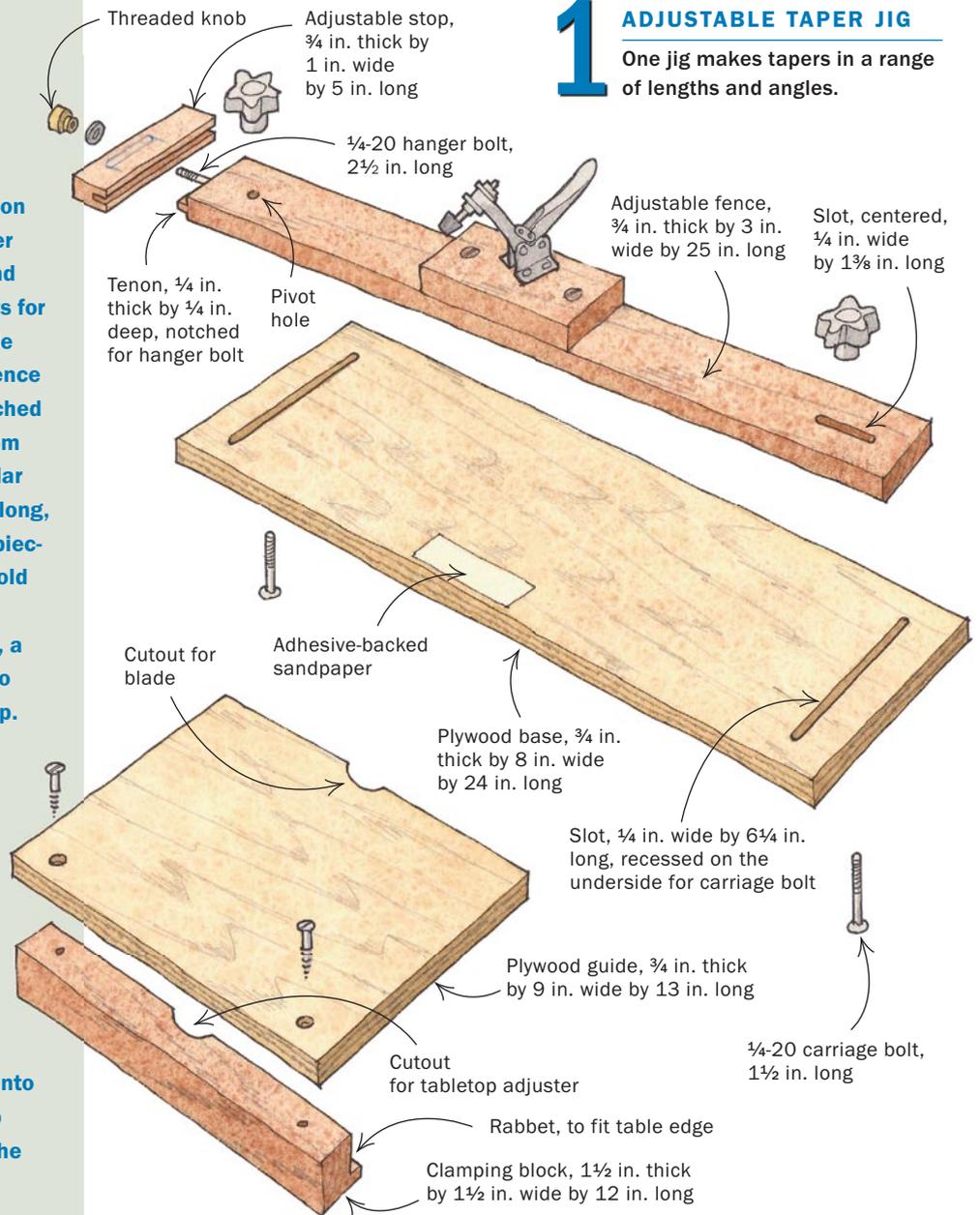
Michael Fortune designs and builds furniture in Lakefield, Ont., Canada.



Rip tapers at any angle

A lot of woodworkers cut tapers on a tablesaw, but I think it's safer and just as fast on the bandsaw. And unlike a tablesaw, a bandsaw allows for stopped tapered cuts. My adjustable jig slides between the bandsaw's fence and a plywood guide, which is attached to the table and prevents the jig from wandering into the blade. Two similar jigs, one 24 in. long and one 48 in. long, accommodate different-sized workpieces. Toggle clamps can be used to hold any length of workpiece securely.

When tapering four sides of, say, a table leg, always rotate the stock so that the newly tapered side faces up. This way, for the first two cuts, the workpiece's flat sides bear on the jig and its fence. Rotating the leg for the third cut places a taper against the fence, but an offcut between the two will keep the leg straight. For the fourth cut, an offcut at the fence and another placed between the leg and the bed of the jig will support the leg. The offcuts are taped into position slightly forward of the stop to accommodate the wood lost to the bandsaw kerf.



Jig setup. Adjust the rip fence so that the jig is almost touching the blade. Then clamp down the plywood guide, which should just allow the jig to slide.



Locate the taper's end. Marks on the stock align with the edge of the jig, which is the cut line. After fixing the outfeed knob, adjust the stop to clear the blade.



Locate the taper's start. Align the beginning of the taper with the edge of the jig and tighten the infeed knob.

Make circles of all sizes

This is a useful jig that's also fun. The workpiece turns on the jig's pivot point and cuts circles and arcs with a wide range of radii. I thread the jig with a 1/4-20 tap, so it will accommodate any size pivot point I care to grind from a bolt. They can range from the full 1/4-in. diameter for heavier pieces, to a needle point for delicate work. To avoid a center mark on the stock, attach a sacrificial surface to the underside of the workpiece with double-sided tape.

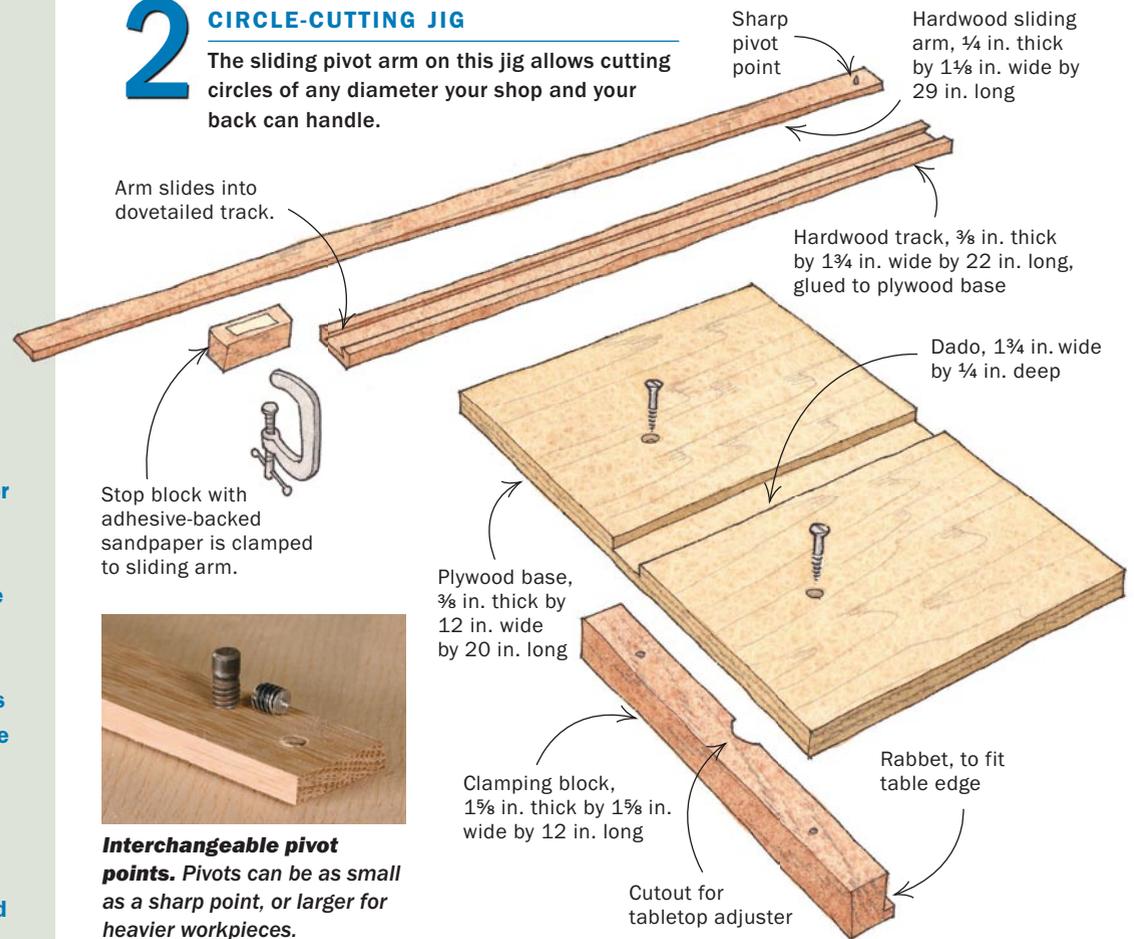
The pivot point is in a sliding arm dovetailed into the body of the jig. This arm can be moved gently forward while you rotate the stock into the blade, initially creating a spiral-shaped cut. A stop block clamped to the outboard end of the arm hits the body of the jig when you reach the correct radius, and only then does the blade begin to cut in a circle.

Make the track and sliding arm of a hard and stable wood. The sliding arm and track are dovetailed so that the arm does not tip out of the track, and the bearing surfaces are waxed. The track could be dovetailed directly into the body of the jig, but it is easier and will remain more accurate if a strip of hardwood is dovetailed, then set into a dado.

Keep in mind: The bandsaw blade must be narrow enough to cut the desired radius, and the cutting edge of the teeth must align with the centerline of the pivot point on the sliding arm. If the pivot is forward or back of the teeth, the blade will not cut freely and the circle will not be true.

2 CIRCLE-CUTTING JIG

The sliding pivot arm on this jig allows cutting circles of any diameter your shop and your back can handle.



Interchangeable pivot points. Pivots can be as small as a sharp point, or larger for heavier workpieces.



Attach the stop. After measuring the distance from the pivot point to the blade (circle radius), clamp the stop on the underside of the arm at the end of the guide track (above left).

Spiral into the circle. With the saw running, gently push the arm forward while rotating the stock into the blade (above right). Once the stop reaches the end of the guide track, the blade starts to cut the actual circle (right).



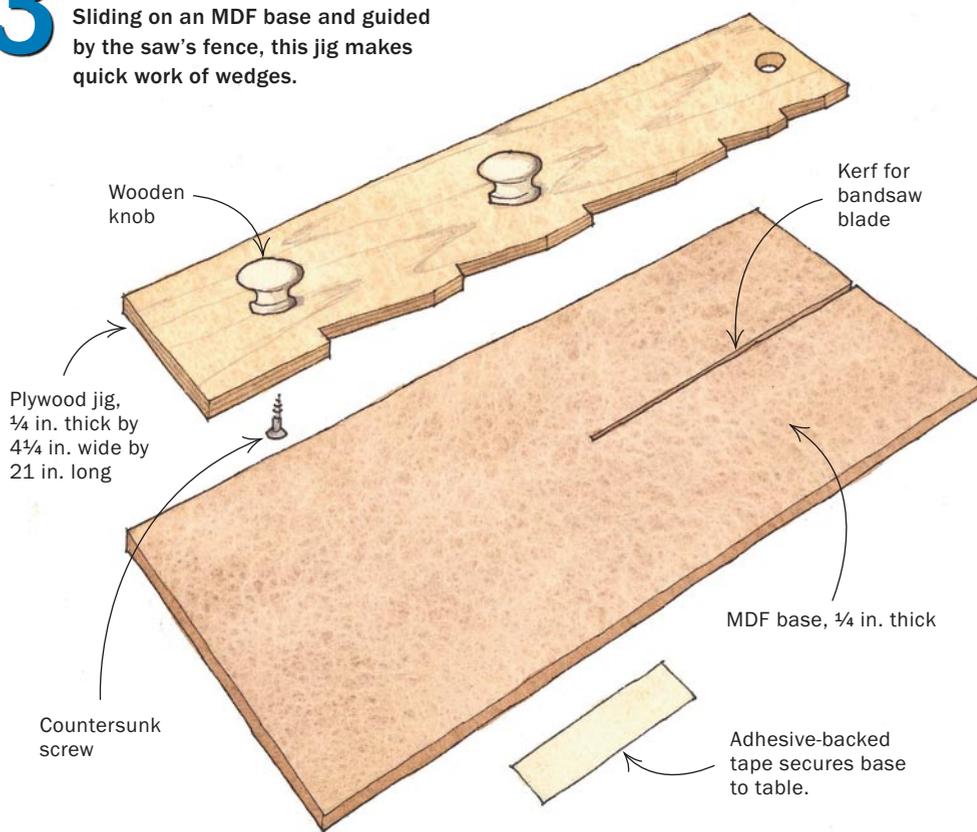
Cut small wedges safely

This simple and safe jig allows the cutting of identical wedges. The jig rides against the fence, which is set so that the blade just misses the jig. Notches the size and shape of the wedges are cut in the jig, and they hold the stock as it's cut. As a new size of wedge is needed, I add a new notch to the jig. For repeat projects, each notch is labeled with the project name and the dimensions of the wedge.

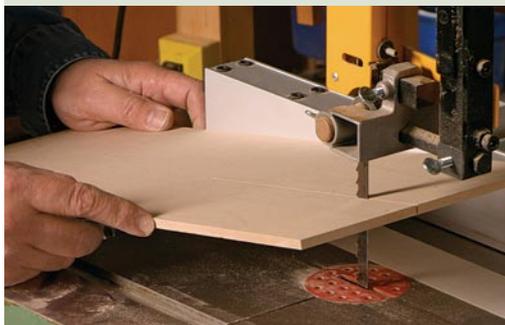
I start with a piece of stock that's crosscut to the length of the wedge, and flip the blank over with every cut. The MDF base serves as a zero-clearance throat plate that stops the wedges from binding in the bandsaw's more open throat plate. When the stock gets too small to handle safely, I switch to a new piece or use a push stick.

3 TENON WEDGE JIG

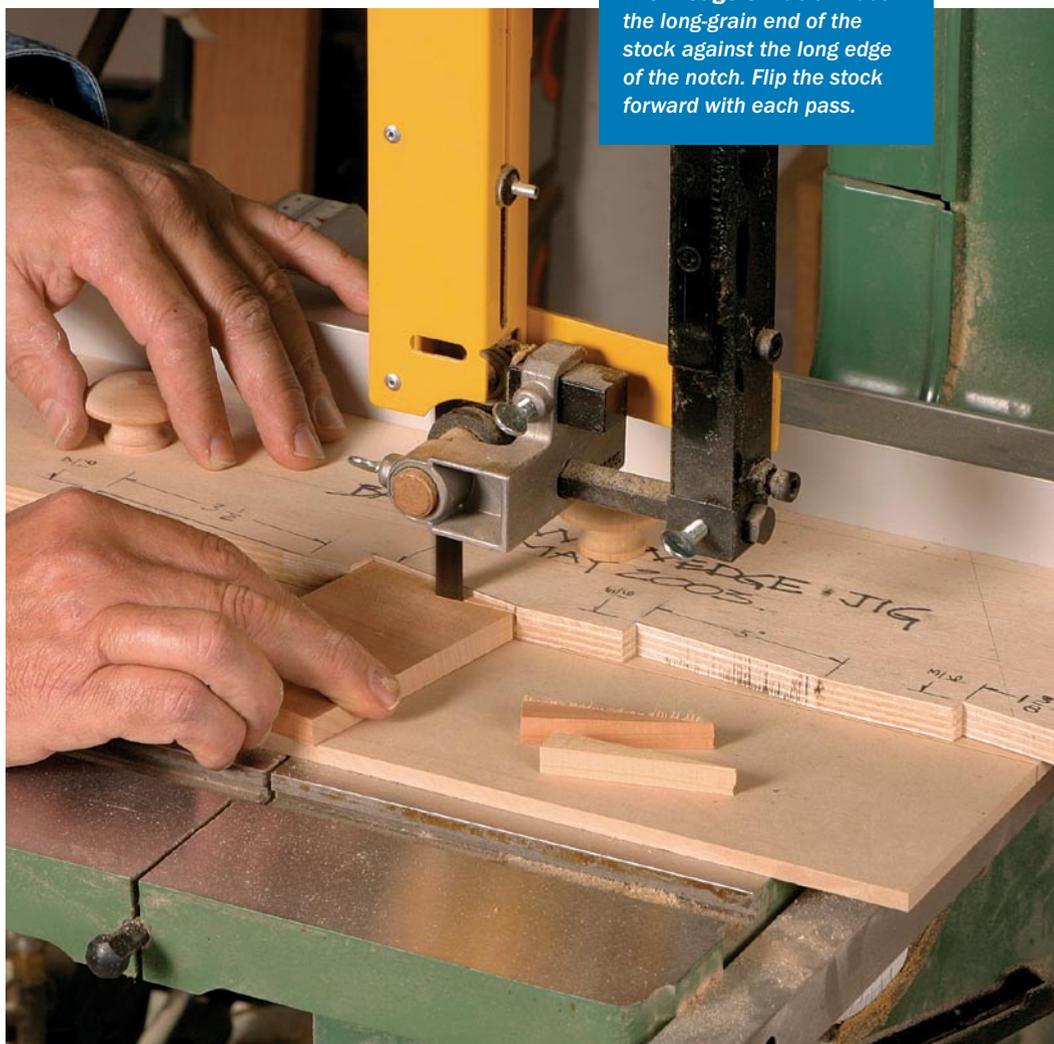
Sliding on an MDF base and guided by the saw's fence, this jig makes quick work of wedges.



Cut notches on the jig freehand. Draw the wedge on the jig, by tracing it or by determining its angle or its length and width. Clearly mark these measurements on the jig.



Small wedges require a zero-clearance throat plate. Attach a piece of 1/4-in. MDF on the table with double-sided tape to prevent pieces from getting trapped in the throat plate.



The Wedge-o-matic. Place the long-grain end of the stock against the long edge of the notch. Flip the stock forward with each pass.

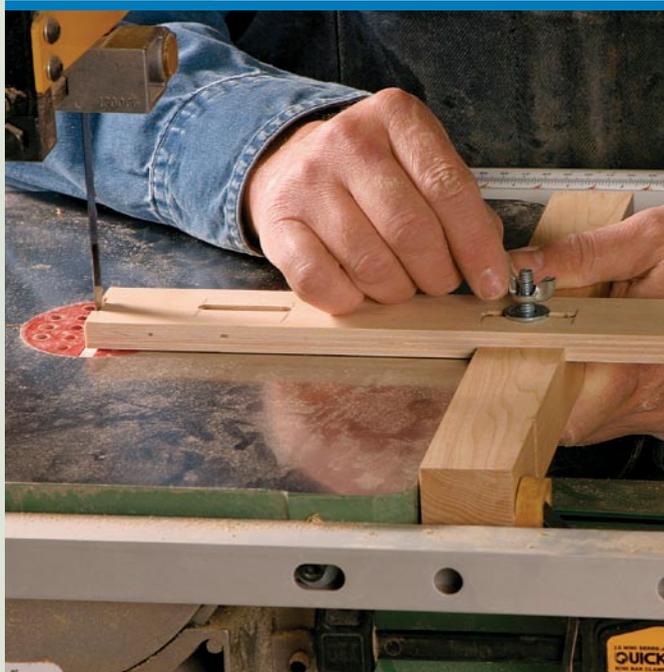
Safely reproduce curved shapes

Finger jigs are used to guide carefully made patterns on the bandsaw. The finger spaces the pattern just slightly away from the bandsaw blade, leaving a small amount of material to be worked by hand, or as I frequently do, shaped by a router outfitted with a flush-trimming bit. The pattern works with both the bandsaw and the router. This is a great technique for making multiples of curved chair parts such as rails or stretchers.

The blade is positioned within the notch at the end of the finger. The distance the finger protrudes past the blade determines the amount of wood overhanging the edge of the pattern when the cut is complete. The ends of the finger should be curved slightly tighter than any curve on the pattern.

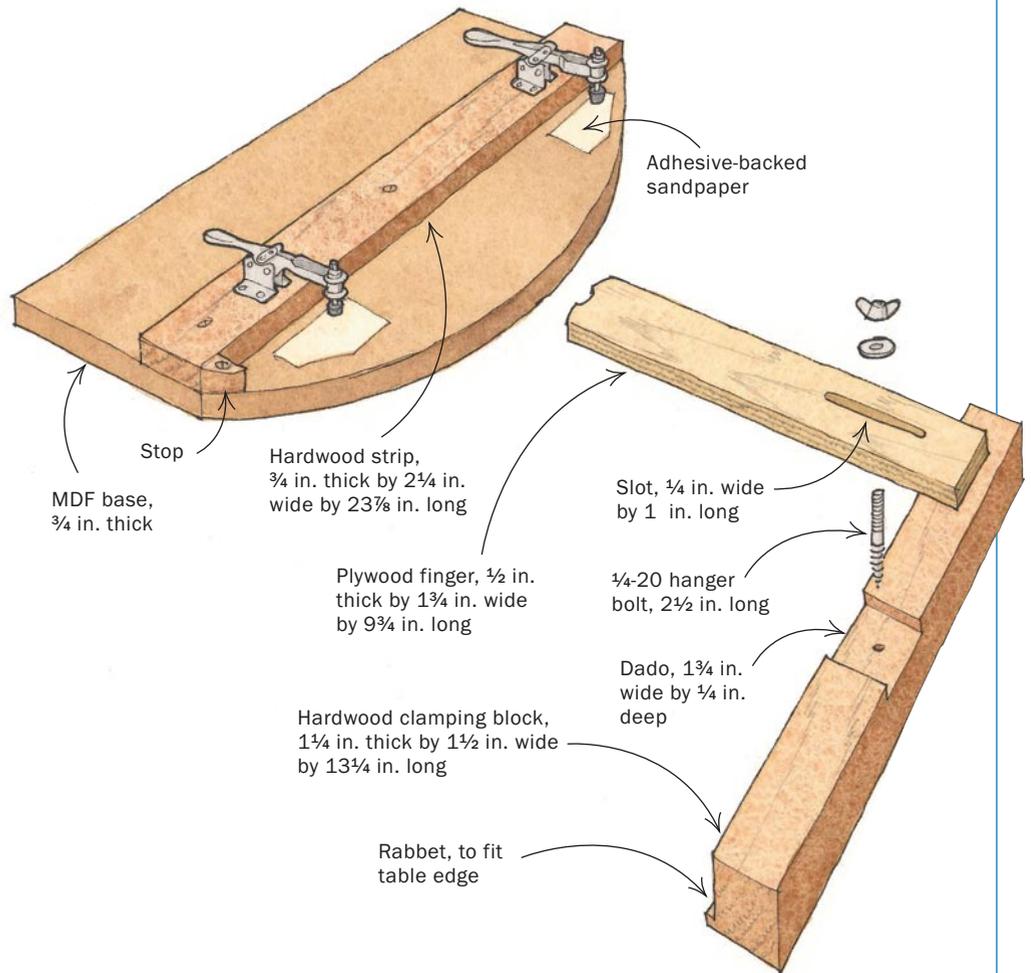
Simple, shallow curves can be bandsawn by clamping the finger jig directly to the table, and affixing the stock above the pattern (4). For complex curves, it is better to position the pattern and the finger jig above the stock so that the contact between the finger and pattern is visible (5). It's a little trickier to secure the stock to the pattern in this case. If you don't mind the holes, screws through the face of the stock can be used. If holes are a problem, hold the stock to the pattern with wedges or dowels, as shown on the facing page.

The notched finger jig surrounds the blade. For simple curves, the finger rests on the table, and a short bolt holds it in the dado of the clamping block.



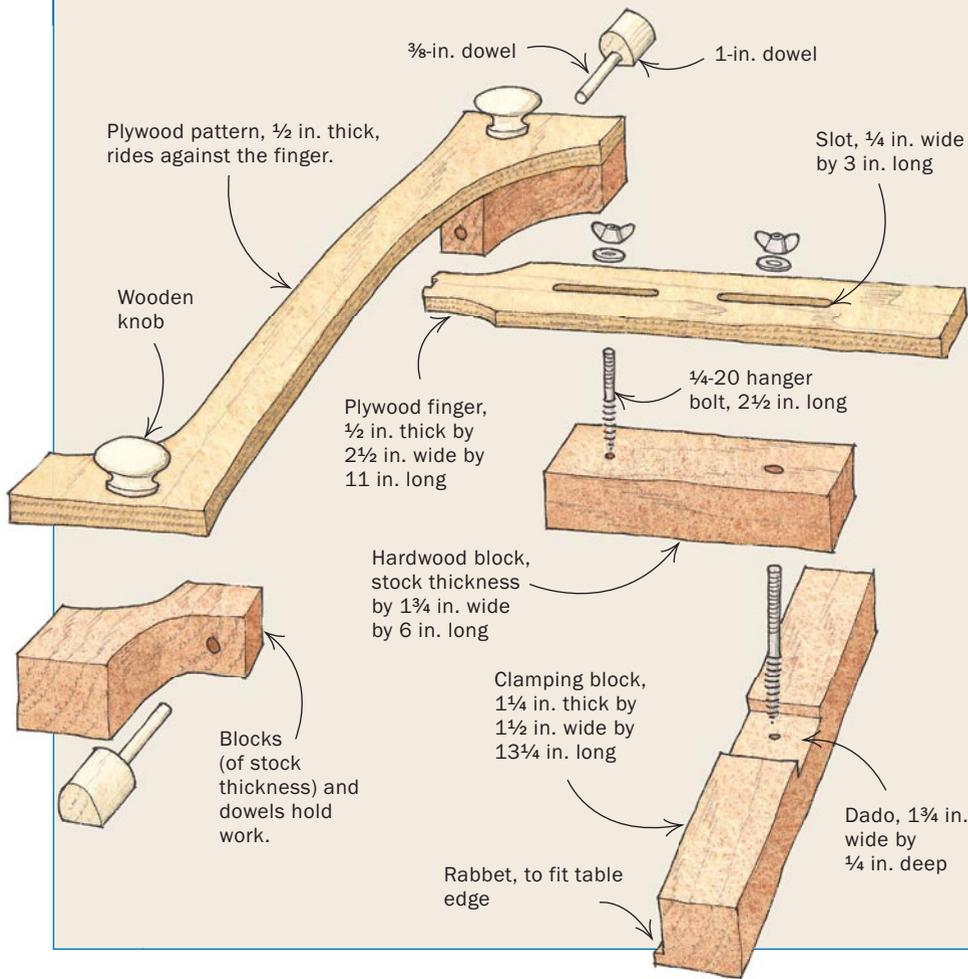
4 JIG FOR SIMPLE CURVES

A notched plywood finger clamps to the table to guide a pattern, which has the workpiece clamped onto it.



5 JIG FOR COMPLEX CURVES

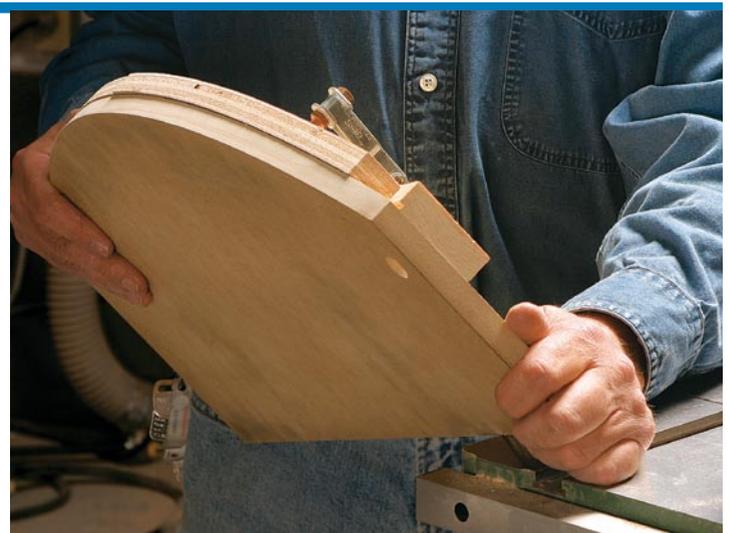
Raising the guide finger and the pattern makes complex curves easier to cut.



Raise the finger to cut complex curves. Adding a block to raise the finger jig, and placing the pattern atop the workpiece, makes it easier to keep the pattern on track.



Quickly clean up the bandsawn edges. A pattern-routing bit rides along the pattern, trimming the workpiece to its final shape.



Toggle clamps secure the work. The pattern rides along the finger jig to guide the cut. The notch in the finger jig accommodates the blade and protects the pattern from damage. The finished cut overhangs the pattern (above). The distance from the end of the finger to the teeth determines the width of the overhang.