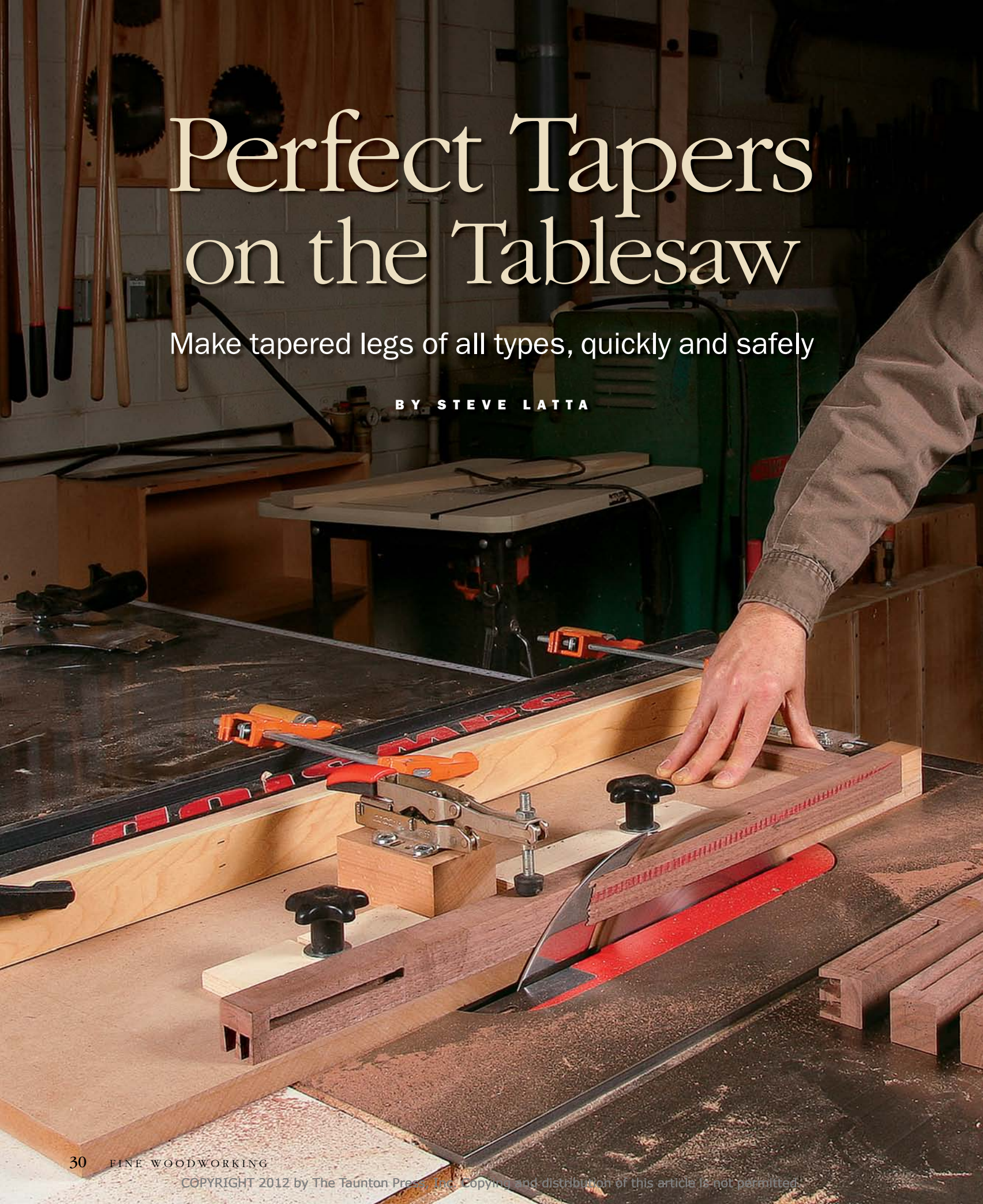


Perfect Tapers on the Tablesaw

Make tapered legs of all types, quickly and safely

BY STEVE LATTA





It's no secret why woodworkers taper the legs of tables and chairs: It improves the appearance of the entire piece. Tapering breaks up that boxy square look, lightens the visual weight, and helps direct the eye toward the center. Tapered legs are found across the range of furniture styles. The majority have tapers on two adjacent faces that begin just below the apron or rail, keeping the joinery square. But you can also find tapers that extend to the top of the leg, and tapers on all four sides. What they all demand is a way to cut them accurately and safely.

While you can cut tapers on the bandsaw or the jointer, table-saw cuts are cleaner and more accurate. However, the standard commercial tapering jig (two aluminum sections hinged on the end) has always scared me—strike that—terrified me. Because the workpiece isn't clamped to the jig, your fingers have to come dangerously close to the blade.

Why I favor foolproof

At the college where I work, many of my students are new to woodworking, so any jig has to be simple and safe to use. The jig we use to taper legs ticks both these boxes. It falls under the broader category of what I call carriage jigs, in that the work is carried on some sort of sled. Because one edge of the sled lines up with the path of the blade, setting the location of the workpiece is very easy, and with a built-in clamp to secure the workpiece, your hands remain well clear of the blade.

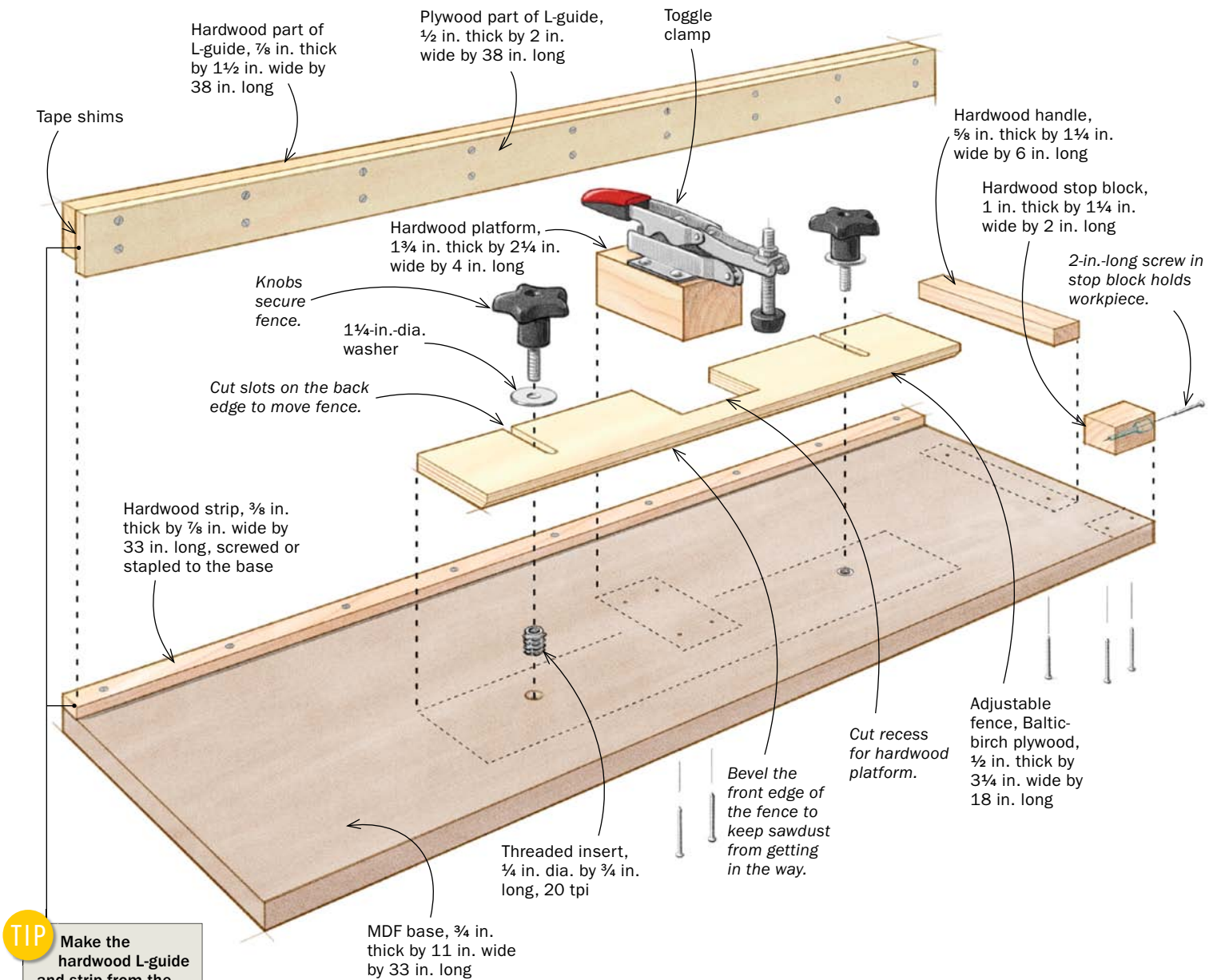
Instead of the sled being guided by the miter slot, as in most cases, I have it hooked to the fence. If the sled only rides in the



Tapered legs on fine furniture. You need a jig that can make dead-accurate tapers on two, three, or four sides.

A SMARTER SLED

The sled is guided simply and safely by an L-shaped guide that clamps to the rip fence, and a little hardwood strip that is nailed to the sled.



TIP Make the hardwood L-guide and strip from the same piece.



miter slot, it wants to dip and come out of the slot before and after the cut. Some people try to use one knee to support the sled while doing an odd little one-legged dance in front of the spinning saw. Not with this sled. It is tied to the fence with an interlocking strip that keeps it flat on the table at all times.

What's more, one edge of the jig is near-zero-clearance, so it tells you where the blade will cut. That means you can simply align the layout marks on a leg with the edge of the jig, and cut with confidence.

Construction is straightforward

To make the jig, start with a piece of hardwood, roughly 7/8 in. thick by 2 in. wide by 38 in. long, rip off a

3/8-in.-wide strip, and cut it to 33 in. long. This strip will ride against the rip fence, so you want it just proud of the edge of the sled. To achieve this, place a piece of masking tape along the edge of the sled, place the strip and the sled base against the rip fence, and then glue and either screw or staple the strip to the sled. Peel off the tape, and you're all set.

The two long sides of the sled must be parallel, so with the sled riding against the rip fence, trim the opposite side. But before you do that, attach the stop block, so it gets trimmed flush, too. Afterward, attach the sled's adjustable fence, push handle, and toggle clamp.

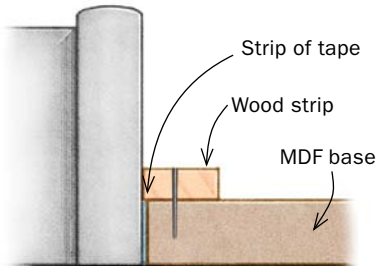
An L-guide locks the jig parallel to the fence yet allows it to glide smoothly with no slop. To make the

MAKE IT IN ONE HOUR

The guide strip and fence are easy to attach and fine-tune. The other parts go on quickly.

ATTACH THE GUIDE STRIP

To keep the wood strip just proud of the MDF, temporarily attach a strip of masking tape to a long edge of the base. Push both pieces against the fence as you screw or nail them together.



Trim the other edge. After attaching the stop block, trim the edge of the sled and the block at the same time. Those surfaces will tell you exactly where tapers will be cut.

guide, glue and nail or staple a 2-in.-wide by 38-in.-long strip of 1/2-in.-thick plywood to the remaining piece of hardwood that you ripped earlier. Place the side of the base with the maple strip adjacent to the saw's fence and clamp the guide to the fence. Check to see if the sled slides back and forth. If it is too tight, simply add a strip or two of blue painter's tape to the hardwood side of the guide before re-clamping it and testing the movement again.

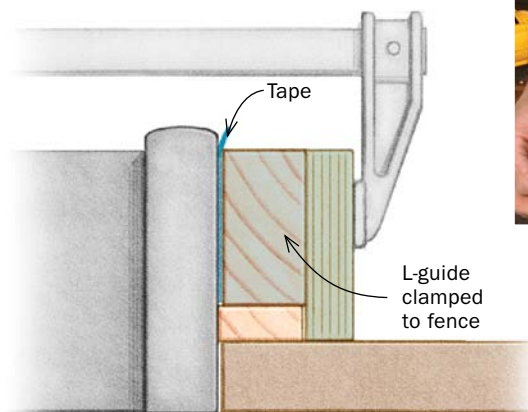
Two-sided tapers are the most common

On traditional furniture across a range of styles, there is a basic rule for which faces of a leg to taper: If it falls under the aprons, it gets tapered. A tapered leg lends a piece the lightness and grace mentioned earlier, plus gives it a stable-looking stance without making it look splay-legged. On a typical four-legged table with a rectangular top, or



Add the adjustable fence. Screw threaded inserts into the base of the sled. These will receive the knobs that secure the sled's adjustable fence. File the inserts flush with the underside of the sled to avoid scratching your saw.

MAKE AND FIT THE L-SHAPED GUIDE

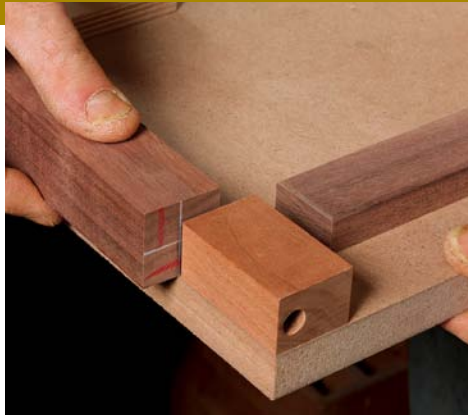


Smooth sledding. Attach the sled to the fence via the L-guide and see how easy it is to push (right). You may need to add a strip or two of masking tape to the L-guide to allow the sled to slide smoothly but without slop.



TWO-SIDED TAPERS IN MINUTES

You need to set up the sled only once to cut tapers on two adjacent sides, but lay out each leg to keep track of your cuts.



Align the foot. Line up the layout mark with the edge of the sled and stop block, and push the leg gently against the screw in the block.



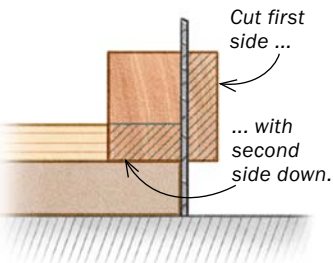
Align the top. You need only a small tick mark at the start of the taper. Line it up with the edge of the sled, then slide the adjustable fence against the back of the leg blank.



Adjust the rip fence. You want the edge of the sled to be about $\frac{1}{32}$ in. away from the blade. In this way the taper is cut slightly proud to leave room for handplaning and sanding.

MAKE THE FIRST CUT

Adjust the jig and cut the first taper.



SEE IT IN MOTION

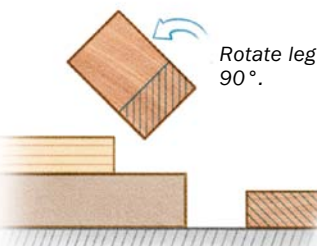


even variations such as a bow or serpentine front, the two inside faces of the legs are tapered. To show how the jig works, I'll cut one of these legs.

First, cut any joinery on the leg. It is much easier while the blank has straight sides. Layout, or more accurately the lack of it, is another advantage to this jig. A

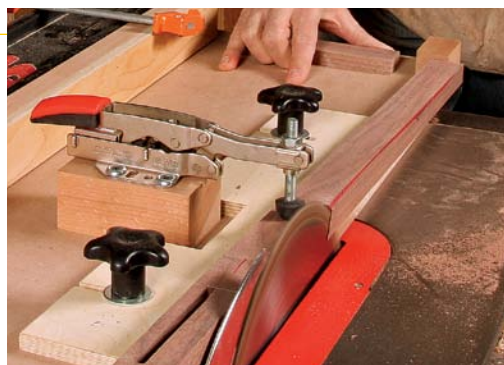
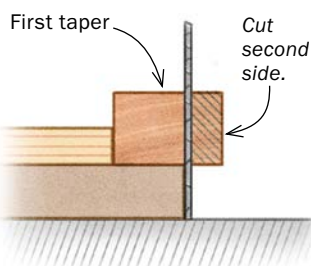
ROTATE FOR NEXT CUT

There is no need to adjust any setting; just reposition the leg while the blade is spinning and clamp it down.



CUT THE SECOND TAPER

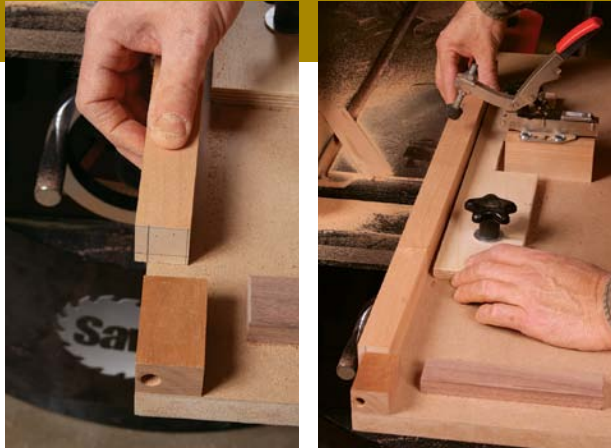
With the first taper facing up, make the second tapering cut.



line marking the start of the taper and another on the bottom of the foot are all you need. The taper usually starts where the bottom of the apron or rail intersects the leg. I use a combination square to set the lines on the top, being careful to mark only the sides to be cut. Too many lines leads to mistakes! If the taper has a finished dimension of, say $\frac{5}{8}$ in. at the bottom, I cut a piece of stock that thick, line up the blanks, and mark the bottoms with one swipe of the pencil. I rotate each leg 90° and make a second mark. Finally, I use a wax crayon to highlight the faces to be tapered. When using the sled, the thin end of the tapered leg should always be closest to the operator. This way not only are you cutting “downhill” with the grain, but the action of the blade helps push the blank onto the sled. You also want to rotate the leg clockwise after the first cut, so the leg is resting flat on a non-tapered face during the second cut (see photos, left).

To position the leg in the sled, align the mark on the bottom of the foot with the edge of the sled and push the foot into the tip of the screw protruding from the stop block. Now align the start of the taper with the edge of the sled and set the adjustable fence against the leg. Finally, deploy the toggle clamp. Leave a little extra material to handplane and sand by setting the saw fence so that the side of the sled is about $\frac{1}{32}$ in. from the blade. Make the cut, using the handle to push

FOUR-SIDED TAPERS? JUST ONE EXTRA STEP



Set up for tapers three and four. After cutting the second taper, rotate the piece clockwise and align the marks with the sled as before (left). This time, because the opposite side of the leg has already been tapered, you'll need to move the adjustable fence (right).



Cut tapers three and four. There is no need to adjust the fence after the third cut, but you might need to adjust the toggle clamp or place a shim under it to maintain pressure on the thinner leg.

the sled so that your fingers come nowhere near the blade. Pull the jig back to the front of the saw, loosen the clamp, rotate the leg 90° clockwise, and secure it again. Cut the second taper. When cleaning up the saw marks, don't remove any wood above the taper because this will leave a gap between the leg and the apron. To sneak up on the line, I mark the area below the line with a crayon, and then plane up the marked area, stopping just before the line. A final light sanding completes the job.

Three or four-sided tapers are no problem

On a round or oval period table with corresponding shaped aprons, the legs can be tapered on three or four faces. Further,

on contemporary furniture, it is common to find legs tapered on four sides, often extending all the way to the top, or even inverted with the wider part at the base of the leg. Never fear, this jig can handle all of these tapers and then some.

For example, with four-sided tapers, cut the first two adjacent sides as above. To cut the last two sides, first adjust the sled's fence to take into account the tapered side of the leg that will now be against it. After cutting the third taper, you may need to place an offcut under the blank to support it during the fourth cut. □

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CLEAN UP THE CUTS CAREFULLY

Precise planing. To avoid extending the taper too far, mark the surface of the leg a few inches below the layout mark with a wax crayon (right). This makes it easier to measure your progress and to stop before you reach the line (far right).

