



# Four-Sided Quartersawn Table Legs

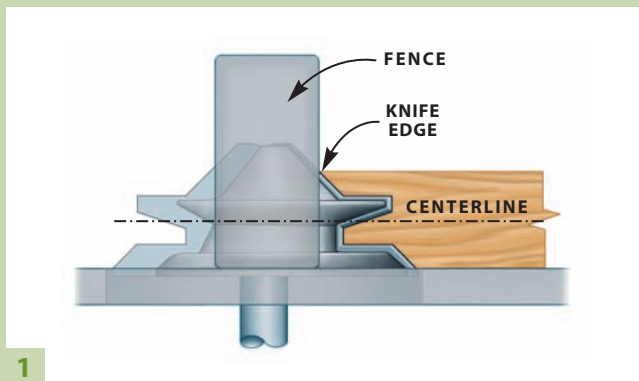
## How to rout lock miters on narrow pieces

By Tom Caspar and Stewart Crick

**IF YOU SPOTTED** an oak leg with quartersawn figure on all four sides, your first reaction might be: That's neat! But if you know wood, your second reaction ought to be: Now, how did they do that?

Well, there's more than one way. You could make a solid, plainsawn leg and glue quartersawn veneer on all four sides. Or you could make a leg from quartersawn wood and veneer just two sides. Or you can do what L. & J. G. Stickley did over one hundred years ago, in the heyday of the Arts and Crafts era, and make the leg from four interlocking pieces of solid wood (see Arts and Crafts Bedside Table, page 39). This method is the most durable type of construction because there's no chance of veneer flaking off. Using a modern lock miter router bit, it works well for any size leg, big or small.





1

**Set up a lock miter bit** in your router table by aligning the center of the bit with the center of your material. Set the fence to produce a knife edge.



2

**Test the setup** by routing similar lock miters on two scrap pieces. Pre-cutting some of the bevel on the tablesaw produces a smoother profile.



3

**Fit the pieces** together. If the top surfaces are flush, the setup is OK. If not, adjust the fence's position or the bit's height.



4

**Route the first bevel** by standing each leg piece on edge, in a vertical position. Make a large push block, with a stop on the end, to hold the workpiece tight against the fence.

Figuring out how to make these lock miters safely and accurately on a narrow leg can be quite a challenge. On each piece, one lock miter is routed with the piece held vertically; the other is routed with the piece held horizontally. The problem, as you can readily see, is that the pieces have very small bearing surfaces. The solution: make a push block and a jig to hold the pieces rock steady for each pass.

## Test The Set Up

You'll need a lock miter bit that can handle 3/4" thick stock (See Source, page 49) and a router with variable speed mounted in a router table. Dial the router down to one of its lowest settings, then adjust the bit's height

and the fence as shown (Photo 1).

Chances are that the setting will be close, but not perfect, so prepare two blanks for test cuts. First, cut a bevel on the edges of each piece using your tablesaw—but not a complete bevel. Leave a 1/4" wide flat area. Route one edge of both pieces (Photo 2) and fit them together (Photo 3). Be picky here. The top surfaces must be absolutely flush. If they aren't flush, adjust your bit's height, the fence's position, or both. Once you've got the setup right, you won't have to change it because it will work for cutting both sides of each leg piece.

## Route The First Bevel

Before you cut into your good wood,

you'll probably want to go through the whole procedure with scrap stock. Prepare your blanks by selecting wood with strong quartersawn figure. Rip them to the final width of the leg and crosscut them a few inches extra long. When you're done, the blanks must be absolutely flat and straight—this is essential for making precise lock miter joints.

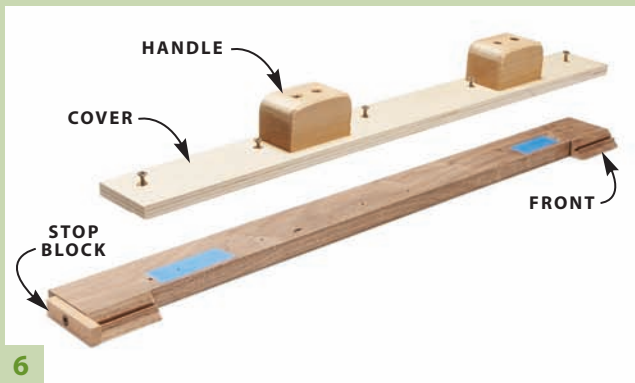
Next, make a push block that's as long as the blanks. It should be as thick as the blanks are wide. Fasten two push pads to the top of the block and add a stop to the block's end to help push the blanks through the cut.

Attach a featherboard to your router table's fence. This is a must—the pressure it applies is essential to making a smooth cut.



5

**Build a jig** for routing the second bevel. Rout a lock miter on this piece by standing it on edge, as in the last step. Remove the center portion of the lock miter profile using a bandsaw.



6

**Fasten a cover piece** to the jig and attach a stop block. Slide the workpiece into the jig from the front, with its lock miter engaged with the jig's profile.



7

**Rout the second bevel** with the workpiece held horizontally. The jig provides a wide bearing surface in order to cut a perfect joint on this narrow piece.



8

**Glue four identical pieces** to make the leg. The interlocking miters prevent the pieces from slipping side to side.

Stand the workpieces on edge and rout the first bevel on each one (**Photo 4**).

### Rout the Second Bevel

Make a jig for cutting the second bevel. Start with a piece that's about the same length as the workpieces. Stand the piece on edge and cut a lock miter along its length. Next, remove most of the profile using a bandsaw (**Photo 5**). Leave about 3" of the lock miter at each end. This huge notch ensures that the workpiece will nest securely in the jig.

Next, fasten a stop block to the end of this piece, plus a cover piece that hangs over the lock miter by about 1" (**Photo 6**). Fasten some

blocks to the cover piece to make the jig easier to push.

Slide a workpiece into the jig from the front end, so the lock miters on both pieces are engaged front and back. It should be a pretty tight fit. If it's too tight, place masking-tape shims under the cover. Rout the second bevel (**Photo 7**). Slide the piece out of the jig and rout the remaining pieces. When you're done, glue-up is fairly simple, but use lots of clamps all around to make sure the joints are tight (**Photo 8**). Let the glue dry overnight and cut the legs to final length.

#### SOURCE

◆ Freud, [www.freudtools.com](http://www.freudtools.com), (800) 472-7307, Lock Miter Bit, #99-035, \$79.99.

