

A Better Tapering Jig

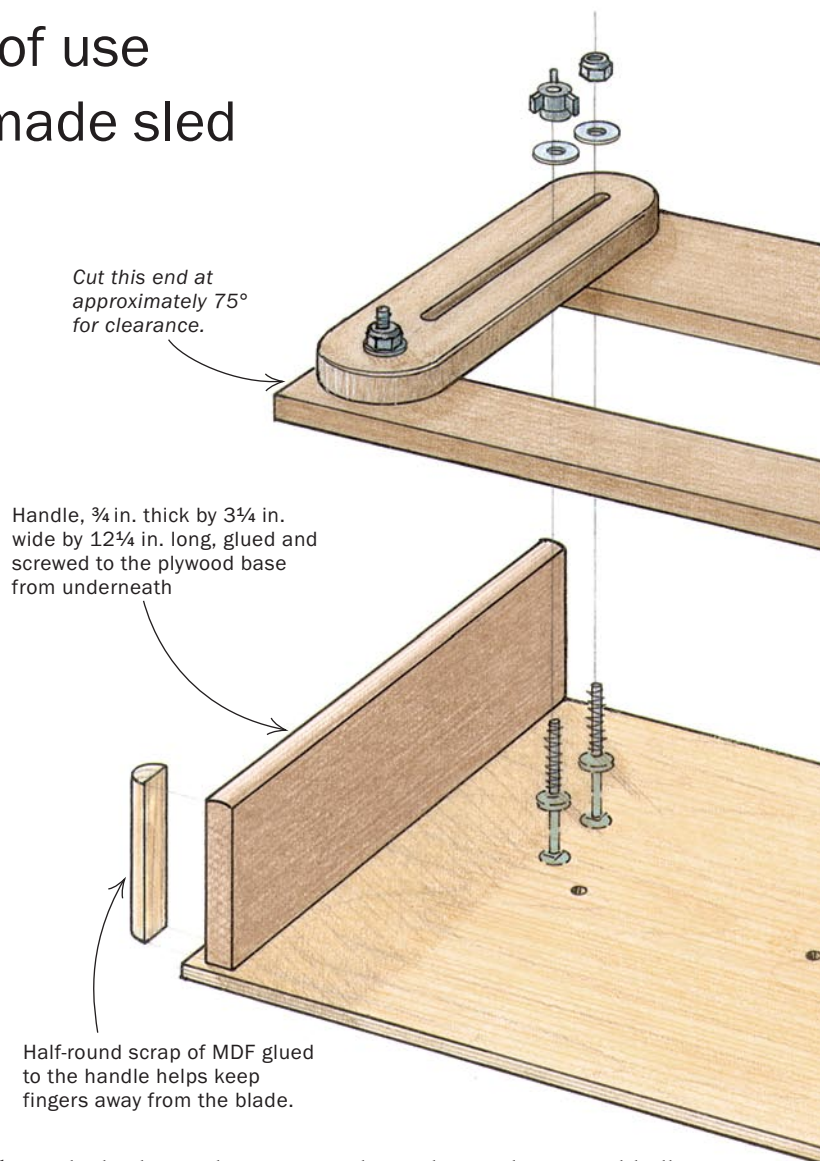
Adjustability, safety, and ease of use are key elements of this shopmade sled



BY RICHARD W. BEEBE II

I build a lot of Shaker-style furniture, and many of the pieces have tapered legs. There are numerous ways to taper a leg, and I tried them all before concluding that my preferred method is to use a tablesaw to cut off most of the waste, and a jointer to make a light pass to clean up the surface of the sawcut. I tried one commercially available jig made of aluminum, but it felt terribly unsafe because it did not hold the workpiece firmly in place while I made the cut. So I set about making my own tapering jig.

The design shown here is the third generation of my attempts to make a jig that's easy and safe to use. I made the base of



1/4-in.-thick plywood, reasoning that a thinner base would allow the sawblade to cut through thicker stock. For all but the thickest legs, however, a 1/2-in.-thick base would make a sturdier jig. I screwed a strip of UHMW (ultra-high molecular weight) plastic to the underside of the base so that the jig can ride in the miter-gauge slot with as little friction as possible.

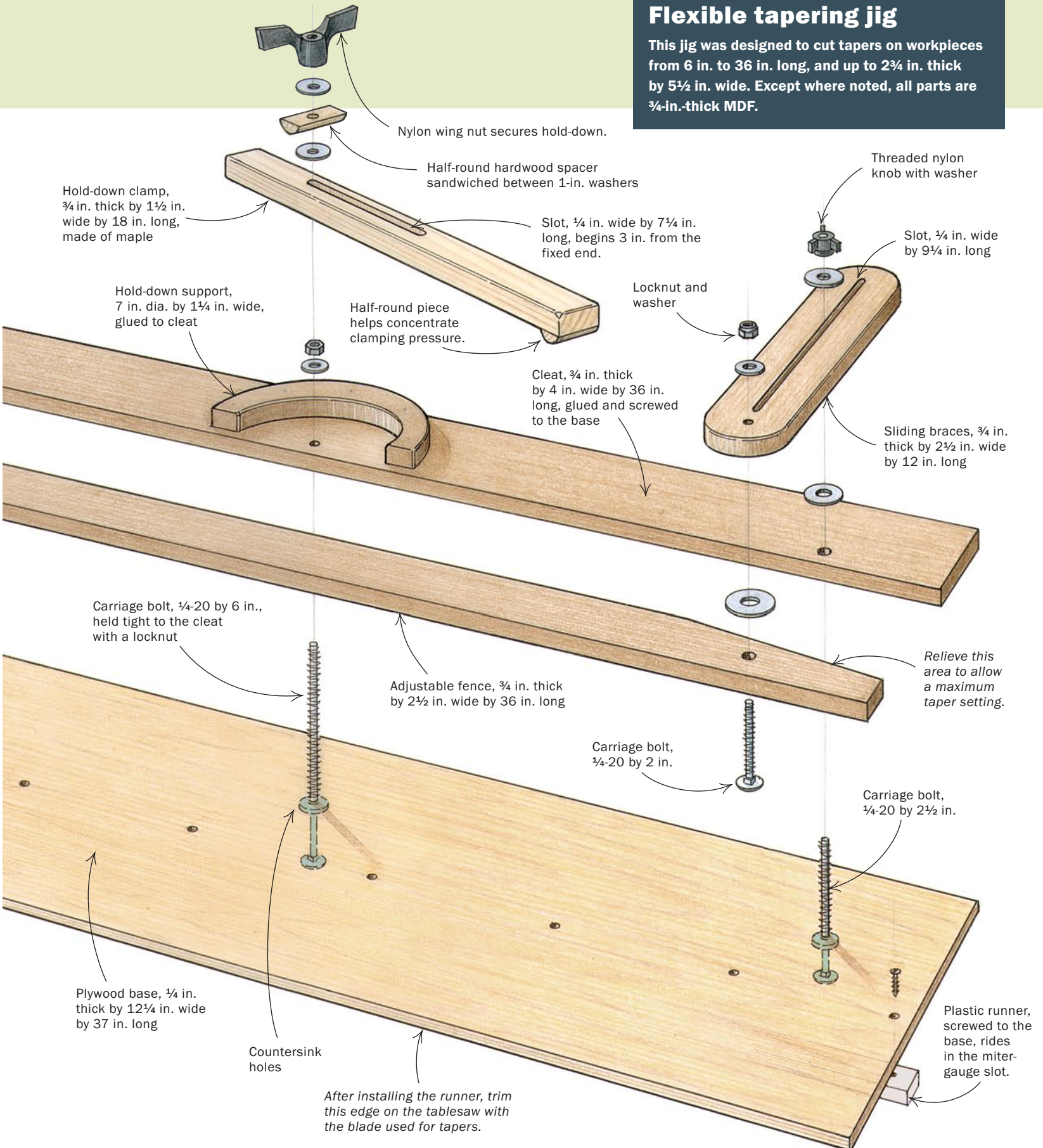
I used 3/4-in.-thick medium-density fiberboard (MDF) for the fence, the cleat, the handle, the hold-down support, and the sliding braces because it's flat and stable, and it machines well. I used a scrap of maple for the hold-down clamp because it's stiff and strong. The clamp applies pressure wherever

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Visit our Web site to see the author demonstrate his tapering jig.

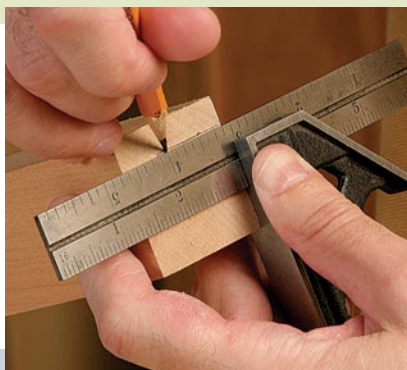
Flexible tapering jig

This jig was designed to cut tapers on workpieces from 6 in. to 36 in. long, and up to 2¾ in. thick by 5½ in. wide. Except where noted, all parts are ¾-in.-thick MDF.



Cutting two-sided tapers

Many furniture designs feature legs that are tapered on the two interior faces. When using the tapering jig, it's important to cut these tapers in the proper order (see drawing, below right).



1

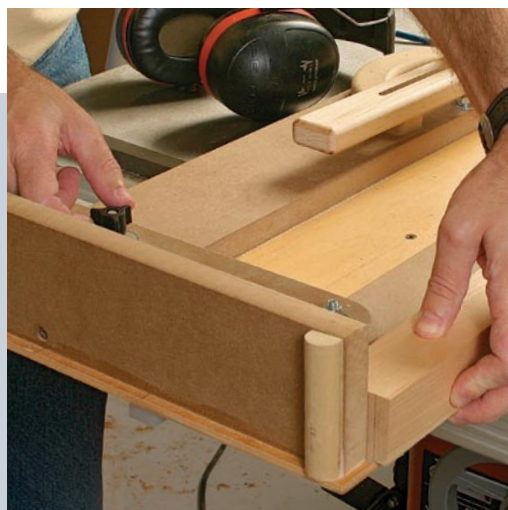
MARK THE TAPERS

Scribe where the tapers begin and end, first on the faces of the leg (left), then on the bottom of the leg (right).

2

POSITION THE WORKPIECE IN THE JIG

Line up the layout mark on the bottom of the leg with the edge of the jig's base (top), then lock down the sliding brace. Next, adjust the top end of the fence until the layout mark on the leg face aligns with the blade (bottom). Now lock down the top sliding brace.



needed, on any size workpiece that will fit on the jig. The sliding braces and the hold-down clamp are held in place with threaded knobs and carriage bolts. The adjustable fence is secured to the braces with carriage bolts and nylon locknuts.

Mark pencil lines to define the tapers

Before tapering the legs for a project, I always cut all of the mortises first because it's easier to do on square stock. For two-sided tapers, the mortises help me keep track of which sides of the legs will be tapered.

Using a pencil, mark the apron line, indicating where the taper starts on the leg, and then mark a line on the bottom of that same leg to define where the taper ends and how much material must be removed. Use those two lines to set up the jig, lining them up with the edge of the jig that will ride against the sawblade. Set the fence in place and clamp the leg firmly onto the jig.

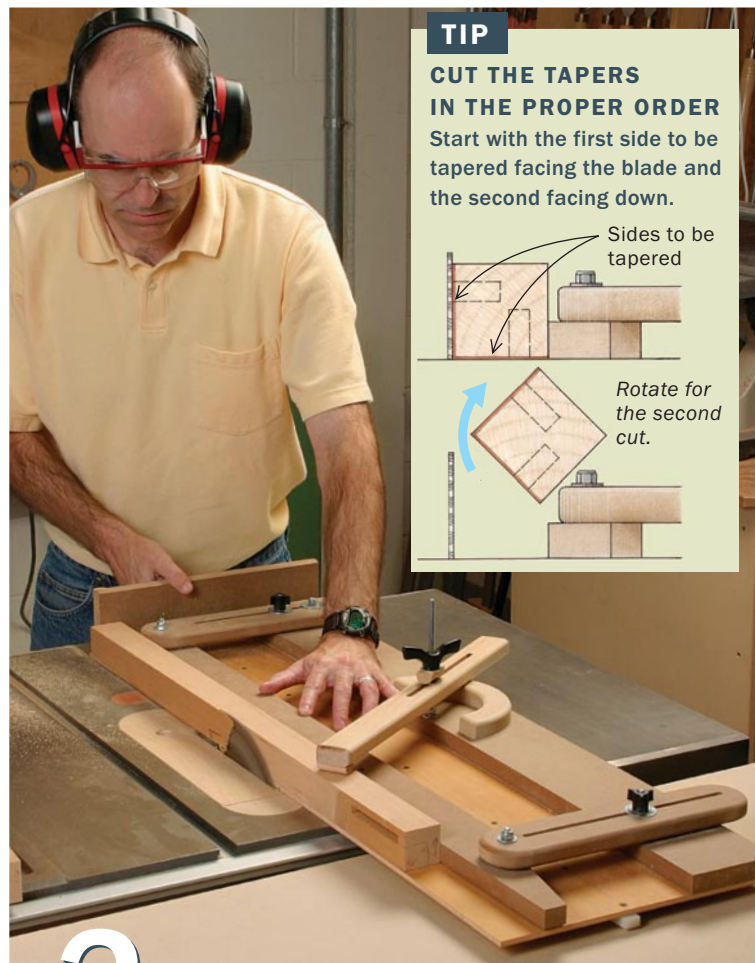
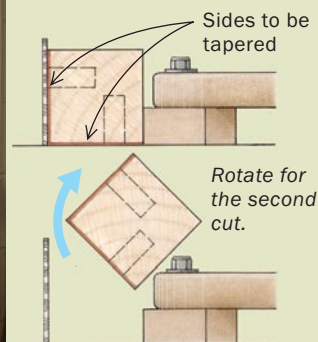
Two-sided tapers are cut on the inside faces of each leg, which already have been mortised for the aprons. To prepare for the first cut, set up the leg in the jig with one of the mortises facing down. Make the first cut, unclamp and rotate the leg, clamp it back in place for the second cut, and then taper the second side.

To cut tapers on all four sides of a leg, I use a center-point attach-

TIP

CUT THE TAPERS IN THE PROPER ORDER

Start with the first side to be tapered facing the blade and the second facing down.



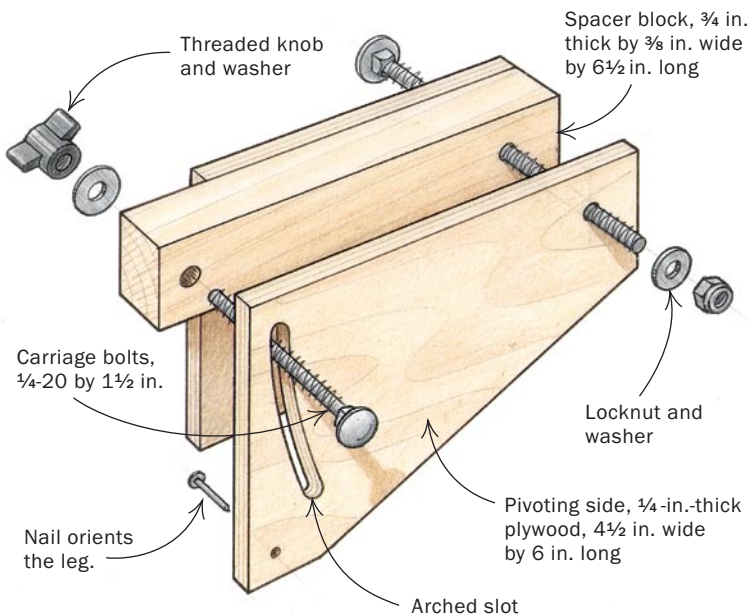
3

CUT THE TAPERS

Secure the leg in the jig with the hold-down clamp. Make the first cut, turn off the saw, then rotate the leg (see drawing) to make the second cut.

Cutting four-sided tapers

A center-point attachment allows you to cut a four-sided taper without readjusting the jig. The attachment has one pivoting side with a nail that engages the center of the leg. After cutting each taper, the leg is rotated and reengaged on the nail.



ment that slips over the jig's handle. The pivoting side of the attachment has a nail that engages and supports the leg as it's being tapered. Mark a center point on the bottom of the leg. Use an awl to punch the center point. When rotating the leg for all four tapers, it will revolve around this point.

When you're setting up a four-sided taper, you still have to follow the routine used on the two-sided tapers, marking pencil lines where the taper begins at the top apron line and where it ends on the bottom of the leg.

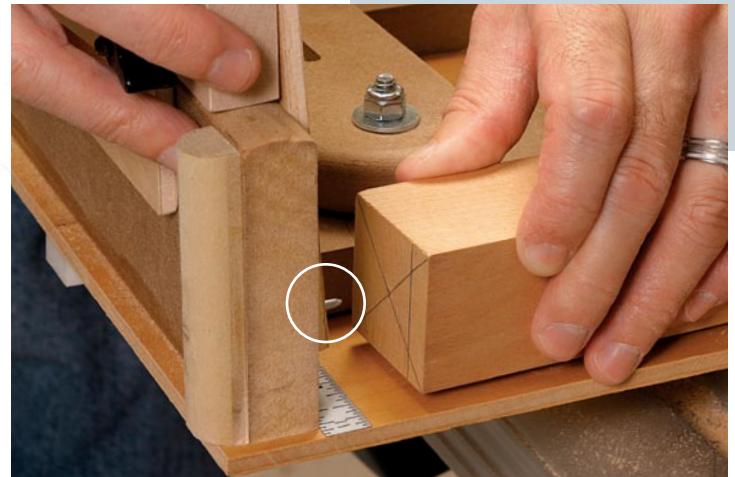
Now set up the center-point attachment so that the nail engages the center of the leg. From there, it's a matter of repetitious cutting: Clamp the leg in place, make the cut, unclamp, rotate and clamp it back in place, and so forth, until you've finished cutting tapers on all four sides. It's best to rotate the leg (see drawing, facing page) so that there's an untapered side against the base of the jig for all but the final cut.

Keep in mind that you don't need the center-point attachment to cut four-sided tapers. Instead, follow the steps for cutting two-sided tapers, then readjust the fence to cut the last two. When cutting the last two tapers, the flat of the apron surface is all that is riding against the fence, so be sure to place the hold-down clamp over that part of the leg (see photo, right). □

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1 INSTALL AND ALIGN THE CENTER-POINT ATTACHMENT

Slide the attachment over the handle (left). Adjust the pivoting side until the nail engages the center point marked on the bottom of the leg (below). Lock that setting in place with a clamp.



2 CUT EACH TAPER, THEN ROTATE

Clamp the center-point attachment to the handle and secure the leg with the hold-down clamp. Make the cut, then rotate the leg (see facing page) until all four sides have been tapered.

