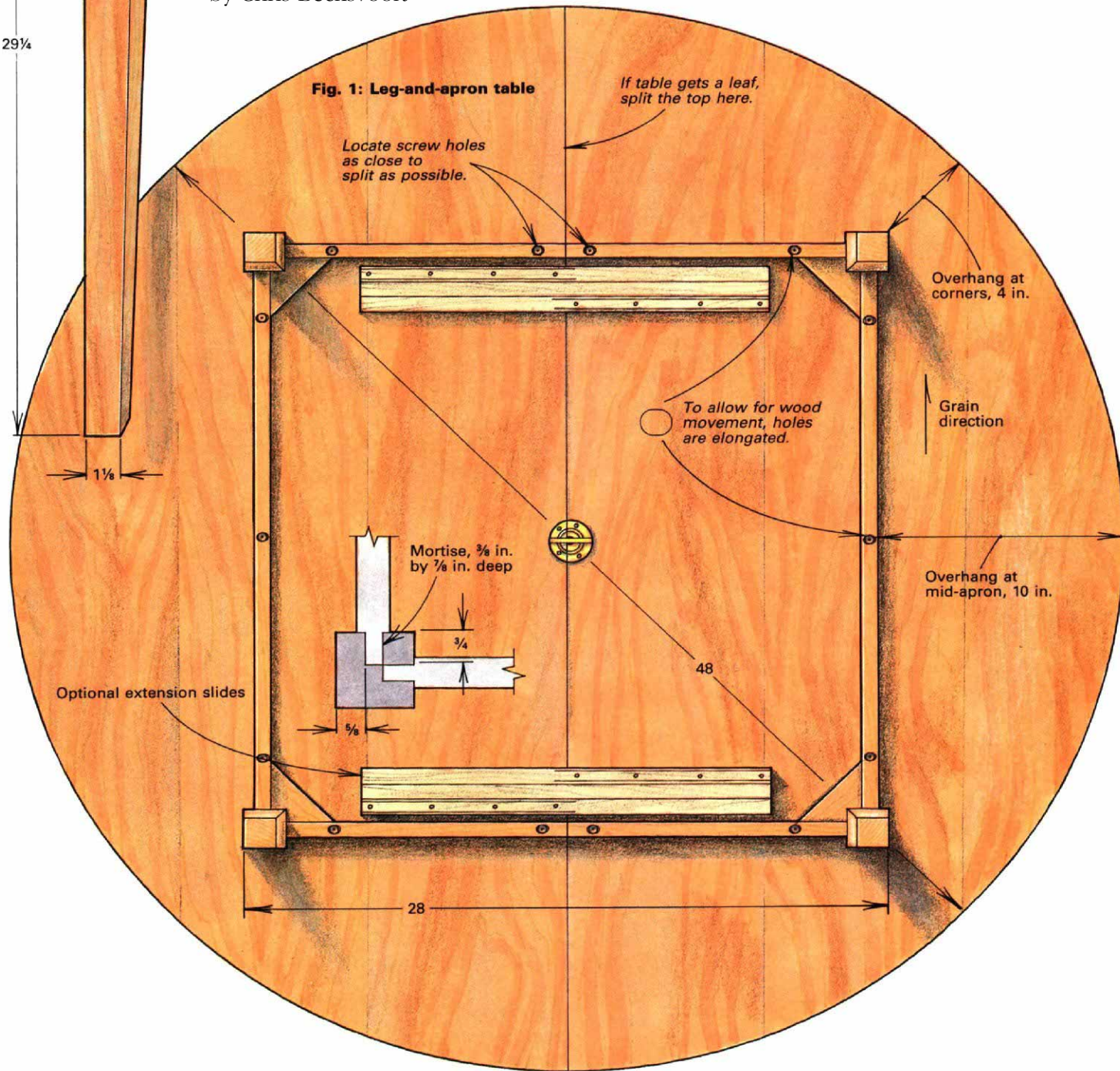


# Leg-and-Apron Table

*Add a removable leaf when company comes*

by Chris Becksvoort



I designed this round table to solve a space problem in a tiny apartment my wife and I once shared. Our dining room was a niche surrounded by three walls, leaving far too little space for a rectangular table. A round tabletop on a square leg-and-apron base promised the most usable surface area in the least floor space. I've since built about 30 of these tables, some with up to three removable leaves that expand the top to accommodate more people. Over the years, I've refined the details a little, but the table remains a straightforward piece you can build with minimal tools in a couple days.

The tabletop is 48 in. in diameter, which will seat four comfortably or six in a pinch if you don't wish to add a leaf. You can scale the top and base up or down slightly, but wholesale departure from the dimensions given isn't advisable. The plans call for a 24-in. space between the legs—plenty of room for knees and legs. For a smaller top, you could move the legs a little closer together, but if you scale the top up and widen the leg stance accordingly, spacing greater than about 26 in. will look awkward. Leg spacing is complicated by the fact that a round top overhangs a square base unevenly. As a result, when the apron is viewed from straight on, the table appears to be all overhang; when viewed diagonally, it appears to have too little overhang. By experimenting with a mock-up, I arrived at a visual compromise represented by the dimensions in figure 1. If you need a larger table, I suggest you add one or two leaves instead of gluing up a bigger single-piece top.

**Getting started**—There are any number of ways to build a leg-and-apron table, but for expediency, I follow a definite order of events, regardless of the method. First of all, I glue up one or more tabletops several days before beginning construction. When I do my weekly errands in Portland, I drop off the tops at a local millwork house where they're sanded to 150 grit on an abrasive planer. This machine sanding is well worth the \$20 or so it costs: The tops emerge perfectly flat and ready to finish after a final sanding to 220 grit.

Some woodworkers argue that it's best to glue up a tabletop so the boards' growth rings are either all up or all down, reasoning that any cupping will be easier to restrain if it occurs in the same direction. Others alternate the growth rings, claiming it's better to have several small warps than one big one. Frankly, I don't accept either point of view. I'm most interested in a nice-looking top, so I orient the boards for best color and grain match and let the growth rings fall where they may. So far, I've had no problems with warping. Whether the table will have a leaf or not, I glue up the top in two sections that can fit through the mill's 36-in. capacity sander. For a top without a leaf, I glue the two sections together before marking the circle with a trammel and bandsawing it. Leafed tabletops are clamped for marking, then bandsawn as two halves.

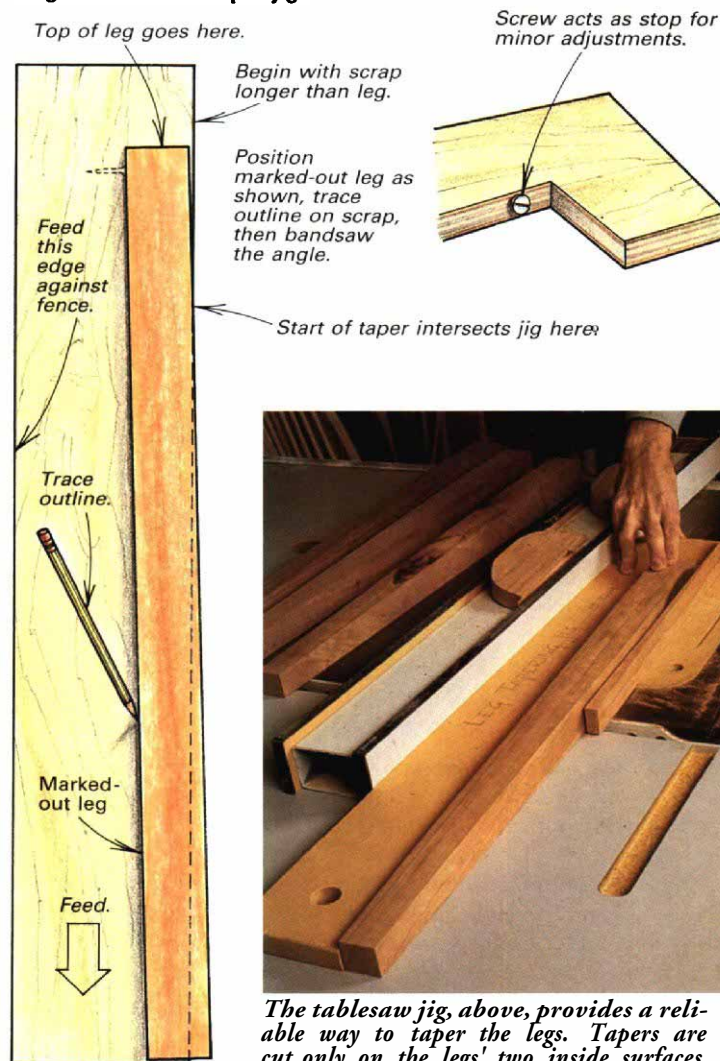
I begin construction of the base by making the legs. Over the years, I've experimented with various sizes and tapers and have finally decided there's no good argument for making the legs thicker than the minimum dimensions needed to support the table. Even the thinnest legs will support vertical loads imposed on a table, so the chief design concern is balancing the legs' visual weight with their ability to resist wobble. On the table illustrated here, the legs taper from 1 3/4 in. to 1 1/8 in. This proportion looks just right with a 48-in.-dia. top, 3/4 in. thick, and it results in a rigid base. For visual balance, a thicker or larger top might look nice with a heavier leg, but I think the table would look awkward with a 2-in.-thick leg.

To save the trouble of crosscutting them individually, I rip all the legs from a single 1 3/4-in.-thick board cut to the exact



*With a 48-in. round top on a square, leg-and-apron base, the author's table will accommodate four people. Built with three removable leaves, there's room for eight to 10 people.*

**Fig. 2: Tablesaw taper jig**



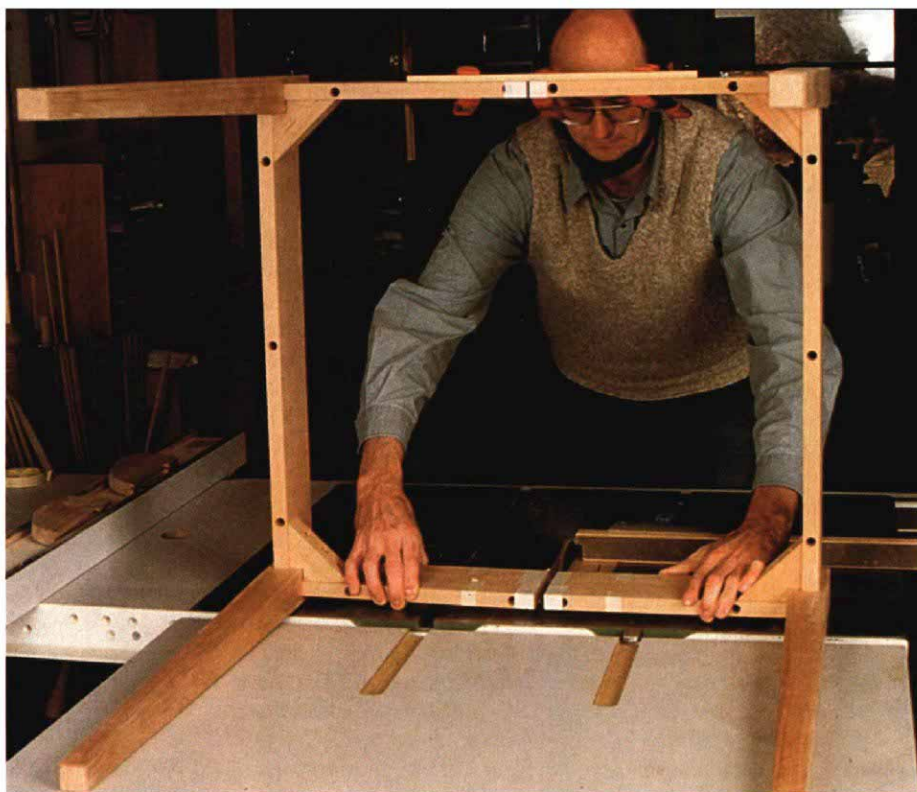
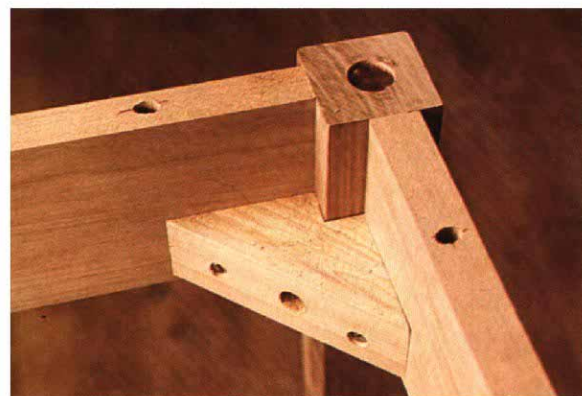
*The tablesaw jig, above, provides a reliable way to taper the legs. Tapers are cut only on the legs' two inside surfaces.*



*For tenoning with a single setup, above, the tablesaw's cutting depth is set to the shoulder depth, the fence (or a stop block) to the shoulder length. With the stock held firmly against the miter gauge, multiple passes form the cheek.*



*Glue blocks, above, glued and screwed at the bottom edge of the apron bolster the joint against damage from an accidental kick. The author's trademark, a penny let into the leg, dates the piece for posterity. Pulled home with clamps, the tenons, below, are pinned with 1/4-in. dowels.*



*Wooden extension slides convert an ordinary table into one that expands. To install the slides, the top is attached to the base and the slides are screwed to the underside of the top. Then the base is removed so the apron rails can be tablesawn, above, using a miter gauge. A scrap taped to the apron acts as a shim, preventing binding during the cut. A brass latch, below, locks the leaves together.*



length of the legs. Each leg is then tapered on the tablesaw with the jig shown in figure 2. If you prefer, you can mark the taper on the leg and bandsaw to the line or use the jointer tapering setup described in *FWW* #54, p. 54. Keep in mind, though, the tapers are cut only on the legs' two inside surfaces. Position the legs to expose the nicest figure and color on the two outside surfaces. Also, note that the taper starts about 5 in. below the top of the leg, leaving a flat for the apron to bear against.

**The apron**—As with the legs, the table apron's width is a trade-off between ergonomics and aesthetics. A 4-in. apron is wide

enough to provide substantial tenon shoulders, but not so wide that you bang your knees on it. The few tables I've made with 3-in. aprons look fine, but aprons 5 in. or larger give the table a low-slung, bottom-heavy look. In leg-and-apron tables, the aprons are usually joined to the legs by a mortise and tenon. On older tables, you'll often see a haunched tenon. Even though a haunch will help keep the apron from twisting, I don't think it's worth the extra time required to cut it. Also, the apron is screwed to the tabletop near the corners, which are further braced against twisting with stout glue blocks. Besides, the apron twisting doesn't threaten the joint as much as a swift kick to the end of

the leg does. The glue blocks, positioned at the bottom edge of the apron and screwed into the leg, are good insurance against such a broken joint.

The detail in figure 1 shows the joint dimensions. I cut the mortises on a slot mortiser equipped with a fence and a series of stops. This means I have to mark out only one of the legs, then use it to set the fence and stops for cutting the rest of the pieces. If you plan to chop the mortises by hand (see *FWW* #66) or by some other method that's not jigable, you'll need to mark each joint individually. In either case, take care to cut the mortise in the right place, that is, on the sides with the tapers. And, don't forget to offset the mortises toward the outside of the leg, as shown in figure 1. Mortises  $\frac{7}{8}$  in. deep will just meet inside a  $1\frac{3}{4}$ -in.-thick leg, and there's really no need to make them any deeper. If you've cut mortises with a router or slot mortiser, you'll need to either square the mortise with a chisel or round the tenon. I've found that rounding the tenon with a knife is a quick, rather pleasant job.

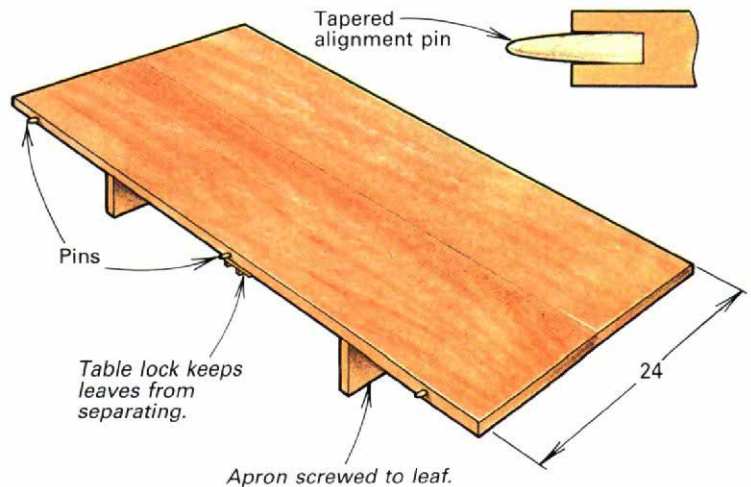
**Cutting short tenons**—Tenons are easy and quick to cut on the tablesaw. To set up for tenoning, I take a long scrap cut from the stock used for aprons and center it over one of the leg mortises. With a knife, I mark the mortise width on my scrap, then set the tablesaw's depth of cut just shy of the knife marks. Next, I position the fence (or a stop block clamped to it) so it's as far from the *inside* edge of the blade as the shoulder is long, in this case,  $\frac{3}{4}$  in. Allowing for a  $\frac{1}{8}$ -in. kerf, this produces a  $\frac{7}{8}$ -in.-long tenon. The shoulders are cut first by firmly holding the scrap in the miter gauge and feeding its squared end against the fence or stop block. To form the cheeks of the tenons, I nibble away the waste in multiple passes, starting at the squared end and working toward the shoulder cut. With both cheeks wasted, I try the fit. If the tenon's too loose, I reduce the depth of cut and try again with another scrap. If it's too tight, I increase the depth until the fit is just right. Because increasing the depth removes material from both sides, make minute adjustments and try the fit as you go.

**Assembly**—With all the parts cut out, the base goes together in about 10 minutes. I first bore holes in the aprons for the top mounting screws and sand everything to 220 grit. I don't usually dry-assemble a simple piece like this table, but I do check that all the tenons fit snugly into their mortises and that the shoulders seat correctly. At final assembly, I pull the tenons home with clamps and bore  $\frac{1}{4}$ -in.-dia. holes through the joint into which  $1\frac{1}{2}$ -in. hardwood dowels are driven, pinning the tenon. The dowels are later pared flush with the leg surface. You can turn your own dowels or buy them in hardwood species from Midwest Dowel Works, 4631 Hutchinson Road, Cincinnati, Ohio, 45248. At assembly, check two critical things: Make sure the aprons go into the correct mortises, or the holes you bored for the top will be upside down; check the base for square by measuring diagonally across the inside edges of the legs. If everything looks right, I make up glue blocks, then screw and glue them at the corners.

All that remains is to screw the top to the base. Before I do this, however, I elongate the screw holes with a rasp to give the screws room to move as the tabletop shrinks and swells with the seasons. When drilling the mounting holes, it's a good idea to use a depth stop on the bit. Nothing is more embarrassing—or harder to repair—than an accidental hole through a tabletop.

**Adding a leaf**—If the table is to get a leaf, I screw the two separate tabletop sections to the base, just as I would a single-piece top. Then, after the table extension mechanism is installed on the

**Fig. 3: Typical leaf detail**



underside of the top, I remove the base and simply crosscut the aprons on the tablesaw, using a scrapwood shim under the apron so it won't pinch the sawblade. Once the base is reinstalled, the kerf space remaining between the two halves of the apron allows for wood movement. You can make your own table-extension slides (see *FWW* #65) or buy one of the many commercial models available. I prefer a commercially made wooden slide made by Walter of Wabash and available from the Woodworkers' Store (see sources of supply). For a single leaf, 24 in. wide, use a slide with a 26-in. opening. Two leaves will require a 50-in. opening slide, but the table will then expand to a racetrack shape 8 ft. long, with room for eight or 10 people. The table could accommodate up to three leaves, providing seating for 10 to 12 people, but I wouldn't recommend making it any bigger without a center leg to support the additional leaves.

The leaves should be about 24 in. wide and their length should equal the diameter of the top. To keep the apron from warping and to hide the extension mechanism, fasten short sections of apron rail to the underside of the leaves. To align the leaves, table pins made from tapered dowels should be let into the edges of each leaf. Pin spacing isn't critical, but a 4-ft. leaf should have at least three table pins. To keep the leaves from separating, install table latches under the top and position them so each leaf can be latched to its neighbor.

A final sanding followed by the finish of your choice completes the table. I normally use Watco oil, but if the top will see hard, daily use, lacquer or varnish would be more appropriate because of its durability. □

*Chris Becksvort makes furniture in New Gloucester, Me. He wrote about fastening tabletops in FWW #62.*

## Sources of supply

*Table slides, tapered alignment pins and table locks are available from The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374, (612) 428-4101.*

*Table locks and slides are available from Garrett Wade, 161 Ave. of the Americas, New York, NY 10013, (800) 221-2942 or (212) 807-1757 (in NY), and in Canada from Lee Valley Tools Ltd., P.O. Box 6295, Station J, Ottawa, Ont. K2A 1T4, (613) 596-0350.*