Because of the large diameter of Pine's mahogany interpretation of a Philadelphia-style tripod, the author dished the top with a router instead of on the lathe. Hand tools then leveled the surface and carved the piecrust design. The ball on the shaft can be left plain or be carved. In either case, it should be turned to the diameter shown in the measured drawing on p. 82—the carving is so shallow that no allowance is necessary for it. The ball-and-claw foot and knee carving are hallmarks of high-style work, but less ambitious tables with pad feet and plain legs can succeed in capturing the uncluttered look of the best Queen Anne.

Tip-and-Turn Tables

Philadelphia detailing produced the masterpieces

by David Ray Pine

Of the many tripod tea tables made in America in the 18th century, those built in the Philadelphia area are considered by many experts to be the most desirable. The basic design and proportions are very successful when left unadorned ("in the Quaker taste"), but these tables lend themselves equally well to the highly embellished forms that are more often associated with Philadelphia Chippendale furniture.

The tripod table that I built and will describe here is often called a piecrust table, in reference to its scalloped molded top. Tables of this type—regardless their top's shape—are often called "tip-and-turn" tables, since the top of such tables can be swung to a vertical position and/or rotated on its "birdcage" support, much like a lazy Susan (see details in figure 2). The birdcage seems to have been popular only in the Pennsylvania region. New England and Southern tripod tables often tip, but seldom do they turn.

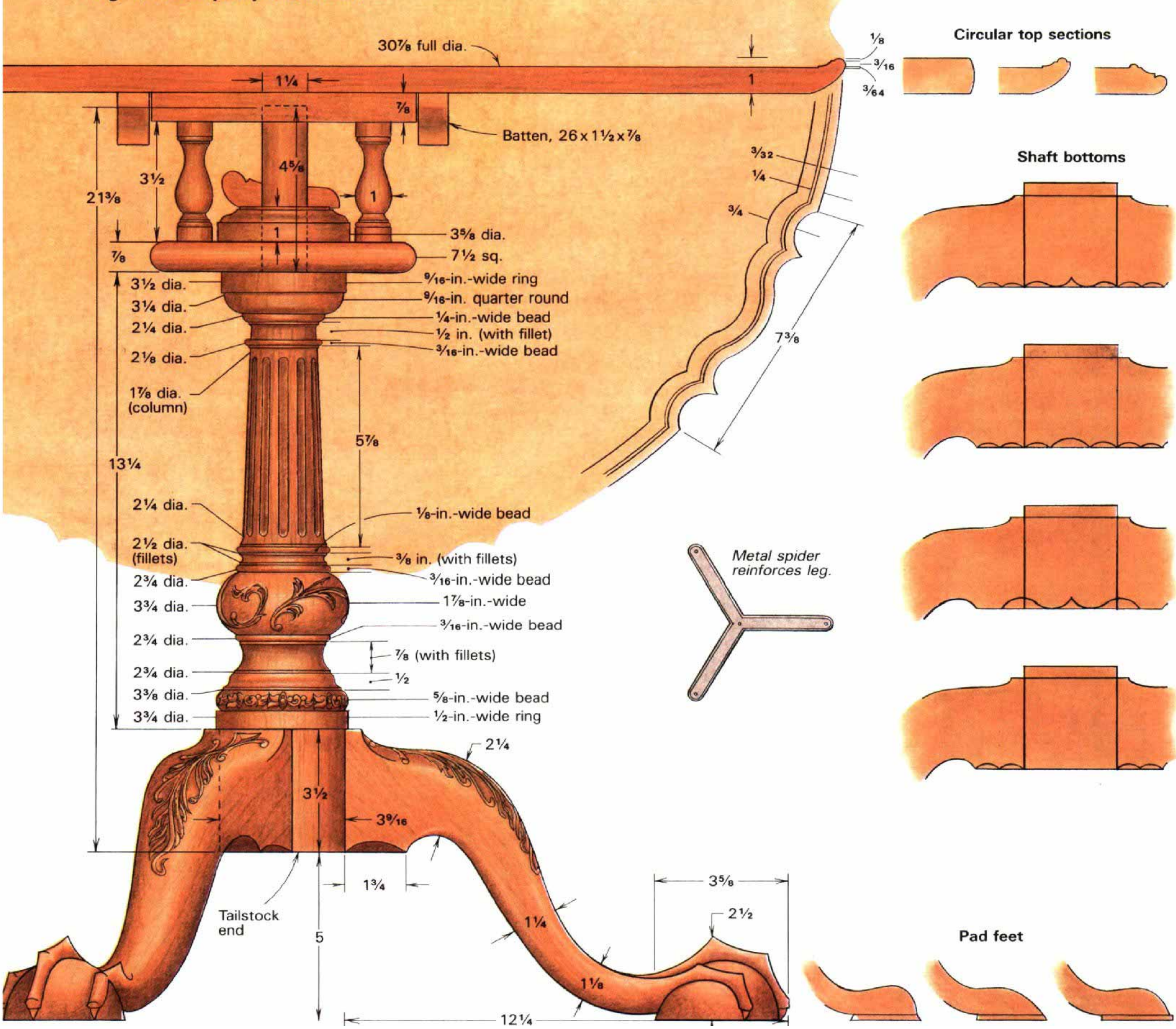
Figure 1 shows the dimensions of my table. If this project tempts you but seems too ambitious, there are many ways in which the design can be simplified. In *Fine Points of Furniture* ($12.95 from Crown Publishers, 34 Engelhard Ave., Avenel, NJ. 07001), Albert Sack shows some two dozen variations on the tripod table. Many have pad feet and plain turned tops with slightly raised rims, and there's at least one with a simple flat top with a half-round edge. Still others have fixed tops that neither tilt nor turn.

I won't concern myself much with turning or carving in this article, but will describe the general order of how to make a tripod table, including important considerations that might not be too evident if you haven't made one before.

Construction begins with turning the shaft. Take special care

Photos: Gitchell's Studio

Fig. 1: Philadelphia piecrust table



in turning the area of the shaft where the legs will join. This section must be perfectly cylindrical -any taper will affect the stance of the legs. Turn both ends of the shaft and the ledge where the birdcage will rest flat and square to the axis of the shaft. Wait until the legs are fitted to the shaft before doing any carving or fluting. This will decrease the likelihood of damaging fine details while driving legs into and out of their sockets.

Choosing stock for the legs is next. Note that while each leg requires 3-in.-thick stock for the ball and claw foot, the leg is only 2 in. thick where it enters the shaft. With pad feet, you can get away with 2-in.-thick stock. After sawing the legs to shape, plane the end for the dovetail square to both the foot and the sides. I have a set of flat bits for my tablesaw's molding cutter-head that are ground to 14°, and I use them for cutting sliding dovetail pins. The pins can be cut with a crosscut blade on the tablesaw instead.

The shoulders of the dovetails can either be carved to fit around the shaft or left flat with the shaft faceted to match. Old tables were done both ways—then as now, it seems to have been a matter of preference for each maker. I've used both methods, and prefer to flatten the shaft for each leg, as shown in figure 3. It's easier for me to achieve a good fit at the shoulder, and I believe it makes the dovetails somewhat stronger, as there is more wood surrounding the pins because the angle is not so acute. The other approach—making legs to fit a round base—is described in the article on making music stands in *FWW* #63.

Drawings: Lee Hov

I like to align one leg with the grain rings exposed on the ball of the shaft and space the others equidistant from that one. This "master leg" will be at the front of the table (if a round table *has* a front!). Fit each leg to its socket by trial and error, paring waste away until the leg slides snugly up to the shoulder. It's a good idea to mark each dovetail pin and its socket to avoid mixups.

Now, finish shaping the legs and carve the feet. Carve the master leg last, so you can "put your best foot forward." Do any carving on the shaft now, then glue the pedestal up.

After the glue hardens, the bottoms of the legs should be pared even with the end of the shaft. Often, the bottom edge of the portion of shaft between the legs and the bottom edge of each leg itself are decorated with scallops. This scallop pattern is cut at an angle, so that it runs out a little way under the base of the table. The photo and drawings show the idea.

The best tables are reinforced at the bottom of the shaft with a three-legged iron "spider," which is screwed to the bottom of the shaft in the center, and to each leg somewhere beyond the dovetail joint. On some tables, the spider is bent to conform with the curve of the leg and can run several inches down each leg. The dovetail joints are the table's weakest point, and a sudden jolt, as from an armload of books, can cause the shaft to split out between two of the legs. The spider spreads the stress evenly around the base of the table. If you don't know a blacksmith who can forge a spider for you, you can cut one out of heavy $\frac{3}{32}$-in. sheet metal. Either way, the edges are best beveled back so they're less likely to show. Alternatively, the spider can be inlaid.

The two battens that help hold the tabletop flat will eventually be screwed to the underside of the top. The top tips up by rotating on dowels worked on the top edge of the birdcage (see figure 2). These dowels are captured in holes bored tangentially to the top edge of the battens. On old tables, battens often taper from the center to the ends; sometimes, they have an ogee or a lamb's tongue sawn on the ends. Make the battens before the birdcage. If you plan to make a small table that neither tips nor turns, make a single wide batten to fit a wedged through tenon at the top of the shaft. This tenon can be round or square—either is correct. On old tables, battens always run cross-grain (to prevent warping), and there is no provision for wood movement. On a new table, it makes sense to slot the screw holes in the battens.

The birdcage consists of a top and a bottom plate, held together by four turned balusters. The plates are generally square in shape (very rarely is one circular) and about twice the size of the shaft's largest diameter. Most often, the top plate is square-edged, but, on better tables, the bottom plate has a half-round worked on all four of its edges. Work the dowels on the top plate by bandsawing waste away, then rounding them over by hand until they slip-fit in their batten holes. Bore both plates for the balusters' tenons simultaneously if you're planning on through tenons, which can be wedged. Blind tenons are, perhaps, neater in appearance, but they require a lot of measuring for location and depth. The central hole for the shaft should pierce the bottom plate, but stop about ¼ in. deep in the underside of the top plate.

The length of the balusters (between tenon shoulders) should be about the same as the diameter of the table's shaft. It's a curious fact that the birdcage balusters keep their characteristic vase shape (except English birdcage balusters, which are columnar in shape), regardless of whether the shape of the shaft is vasiform or has the flattened ball and column. Thus, the balusters aren't necessarily miniature copies of the shaft. The balusters' through tenons should be cut off about $\frac{1}{32}$ in. too long—this leaves enough surplus to trim after glue-up. Split the tenon ends with a chisel and drive the wedges immediately after glue-up, aligning them cross-grain so they don't split the plates.

The bottom plate of the birdcage is sandwiched between a ledge on the shaft and a loose, lathe-turned ring that's held in place by a wedge through the shaft. There's often a notch cut into the flat on opposite sides of the top of the ring. The wedge engages these twin notches and keeps the ring from rotating when the top is turned, which would wear away the finish and eventually the bearing surface. With the ring and birdcage in place, mark the location of the wedge on the shaft. This should be at right angles to the master leg. Cut the tapered slot for the wedge and make the wedge several inches longer than necessary. For the

Fig. 2: Birdcage and battens

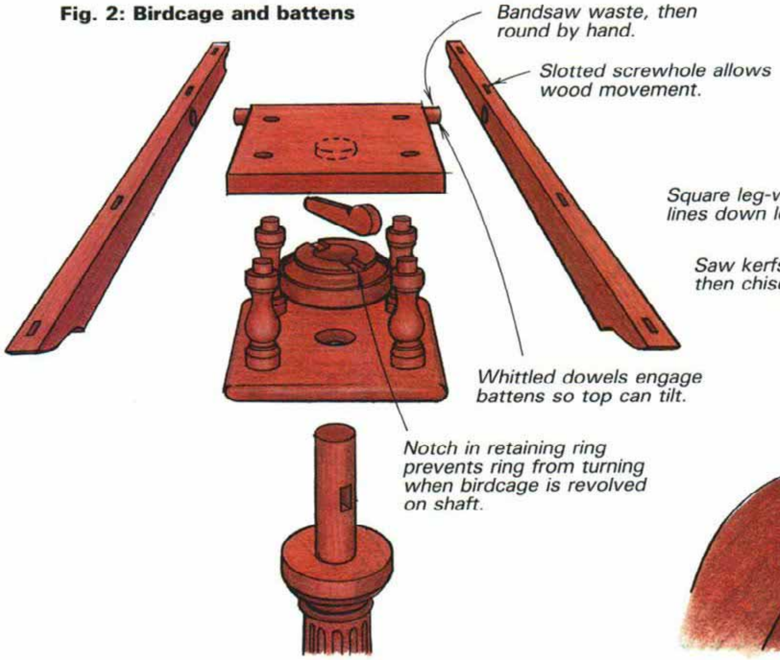
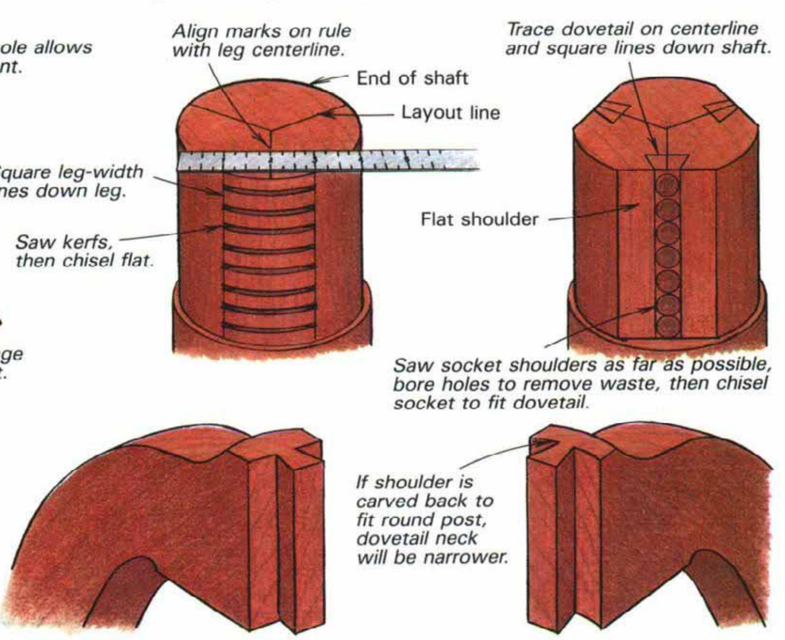


Fig. 3: Cutting dovetails and sockets



tabletop to revolve properly, the wedge should bottom out in its slot while just removing all slop from the ring and birdcage. The bottom of the slot must line up exactly with the top surface of the ring. If the slot is too high, the tabletop will rattle around; if the ring is too thick, the wedge will bind things up and the top won't turn at all. When you have things just right, trim the wedge to length and shape its ends.

Tops are generally done as faceplate turnings, as described by Gene Landon in the article beginning below. Dished tops have a tendency to cup after the center is wasted away, either because of unbalanced tension or due to moisture within the wood. It's a good idea to temporarily attach the battens as soon as the top is dished, to keep the top from moving. Stock for any dished top should be at least $^{15}/_{16}$ in. thick, but stock more than $1\frac{1}{8}$ in. thick will look too heavy, even on a large table. The total height of the raised rim is usually $^{5}/_{16}$ in. to $^{3}/_{8}$ in., which looks taller than you'd think after it's shaped up.

The molding on old tables doesn't usually have much of a perk or fillet at the surface of the top—just enough to define the edge of the cove. In contrast to Landon's method (see below), I dish the top first, truing out any cupping as it occurs. Next, I true and turn the top surface of the rim, with the back of the rim last. It's a good idea to do all the lathework in one session, as the top will probably move overnight, causing the edge to wobble. This can make sanding difficult, and makes further turning a real problem.

The scallop on a piecrust top consists of a serpentine curve flanked by a small semicircle on both sides. These scallops repeat from 8 to 12 times (always an even number) around the top, and are separated by small segments of the circular edge. As a rule of thumb, the scallops are about twice the length of the segments, though this does vary on old work. When laying out a top, draw the whole width of the molding out, as what looks good on the outside edge may appear too cramped on the inside perimeter. The width of the molding is usually between $^{5}/_{8}$ in. and 1 in., and radii of arcs and curves increase and decrease accordingly. Usually, tops are laid out with a serpentine curve topmost when the top is tipped, rather than a plain segment.

I'm uncomfortable turning a top bigger than about 24 in. on my homemade lathe. An alternative method, which I used to make this table, is to use a router and flat bit to waste the center away. First, bandsaw the piecrust perimeter. Then begin routing in the middle of the top, and make a spiral cut toward the outside edge. As you approach the rim, use a block (thicknessed equal to the depth of cut) to help support the router base. Rout as near the inside line of the piecrust mold as possible, then remove the marks left by the router bit using a plane and a scraper. Pare to the inside line of the molding using appropriate gouges, then lay out the line of the bead. I use a compass set to the bead's diameter and slide it around the top with the point hanging over the scalloped edge.

Set the bit depth to cut the stepdown from the topmost bead, then rout it using the same support block as before. Conceivably, you could rout a portion of the cove using templates, but I doubt that it would be worth it. It's easy enough from this point to finish the job using carving tools.

The birdcage can now be installed between the battens. Attach the catch (part H-43 or H-48 from Morton Brasses, P.O. Box 120, Cromwell, Conn. 06416) to the top and inlet its keeper into the birdcage top if you haven't done so already. A little final sanding should be all it takes to get the table ready for finish. □

Ray Pine makes furniture in Mt. Crawford, Va.