



# Make Your First

Learn to create  
this classic  
furniture detail  
using a template,  
a band saw and  
a little lathe work.

Photo by Al Parrish

I like the look of the Queen Anne side table shown here mostly because of the elegant shape of the cabriole legs. This table was produced in Philadelphia between 1740 and 1760, but the design of the cabriole leg has been around a lot longer.

Its actual history is a little murky – similar shapes have been found in ancient Egyptian chairs. The shape also is very prominent in traditional Chinese furniture.

The shape has two curves – the upper one is convex and the lower one is concave. It's often given anthropomorphic qualities, evoking an elephant trunk, dragonfly legs or some four-legged animal, leading (not surprisingly) to the frequently seen ball-and-claw feet carved at the foot of cabriole legs.

From a cabinetmaker's point of view, this table is a good introduction to making cabriole legs and it's a piece that can be built in a relatively short amount of time. I chose the basic cabriole turned foot or "club" foot because it also is a good introduction to the leg design.

I'll focus on the legs in this article, and in the November issue we'll include an article on how to complete the rest of the table project.

by Glen Huey

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# Cabriole Legs

## Baby Steps to a Shapely Leg

When taken in small steps, forming a cabriole leg is straightforward work. First you choose the proper leg blanks (to show the best grain pattern), then transfer the pattern to the leg. Most of the material removal is done on the table saw and on the band saw.

The lathe is an important part of the process, but because much of the leg is shaped on the band saw, it's mostly clean-up work.

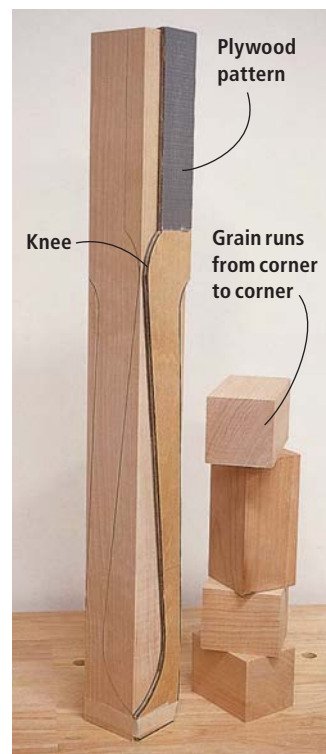
The last part is creating the details with a rasp, files, scrapers and sandpaper. Don't think of it as carving; it's simple stuff.

## Pattern First

I've included a scaled drawing for the leg on page 98, and that's where you begin. Scale that pattern 400 percent to full size and adhere it to a piece of 1/4"-thick plywood (A full-size pattern is available at [popwood.com](http://popwood.com); click on "Magazine Extras.") Then cut the pattern out on a band saw.

To ensure good-looking legs, it's necessary to select the best grain orientation on the 2 3/4"-square leg blanks. Align the blank so that the growth rings run from corner to corner in cross section with the grain terminating at the corner where the knee is located.

Use the pattern to lay out two silhouettes that touch at the knee. With the pattern transferred, cut the legs to length, saving the cut-offs for the knee blocks—the transition from the leg to the apron.



The pattern is the secret of cabriole legs. With the pattern transferred to the "best" faces the legs can be cut to length, but hang on to the scrap pieces for later.

## Defining the Leg Shape

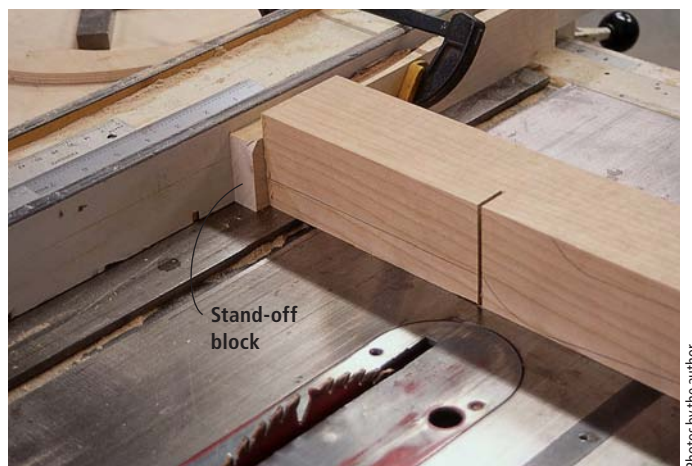
The next step is to remove most of the material from the leg blanks to make them look like the pattern. This is done in two stages, using the table saw to shape the leg post and the band saw to shape the curved part of the leg.

At the table saw make two cuts per leg to define the top edge of the knee. Make the cuts at the bottom edge of the leg post just above the knee. Cut only on the two sides that are patterned and cut just deep enough (about 7/8")

to reach the edge of the pattern, leaving 1 7/8" width of the leg post intact until later.

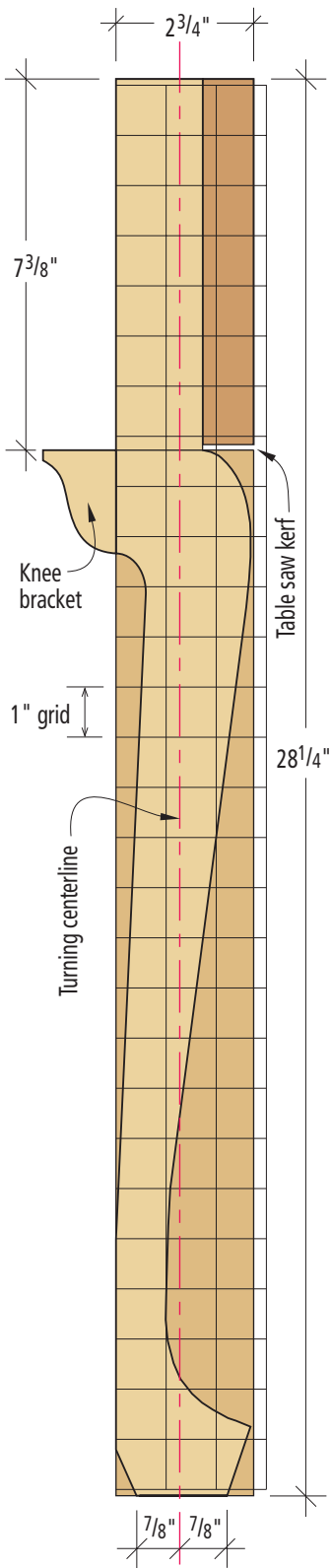
That's all for the table saw for the moment. Next head to the band saw and cut the outside-facing pattern on one side. Do this in two cuts, starting from the top end of the leg and stopping in the middle. Then cut up from the foot. Leave a small bridge section in the middle uncut to keep the waste piece in place for now.

Leaving the waste pieces in place gives you a stable surface for

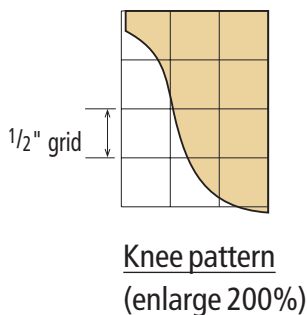


The point where the leg post meets the shaped part of the leg is defined by two crosscuts on adjoining faces. I used a miter gauge on my table saw to make these cuts. Notice that I've used a stand-off block clamped to the lead part of my rip fence to gauge the proper height and to avoid any binding problems during the cut.

Photos by the author



**Leg pattern**  
(enlarge 400%)

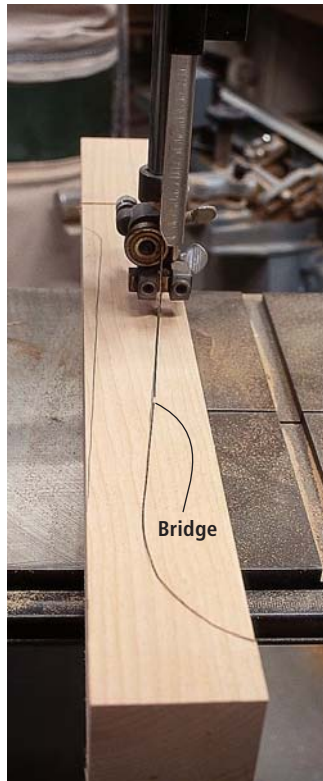


**Knee pattern**  
(enlarge 200%)

cutting the second side and leaves the entire pattern visible.

On the outside of the leg (above the knee) there isn't an easy way to leave a bridge, so I complete the cut and use a hot-melt glue gun to reattach the waste.

When the first side is cut, turn the blank 90° and remove the waste on the second side. The second side of the leg can be finished



Cut the outside shape of the leg on the band saw, but leave a bit of material (the bridge), which keeps the waste intact until after the second face is cut.

without bridging the cuts.

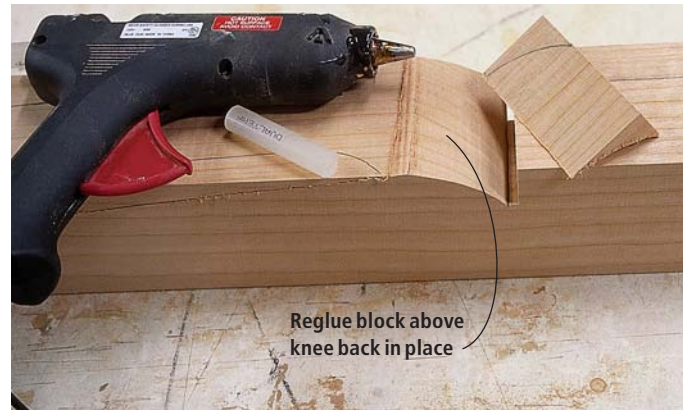
Once the second side is removed, return to the first side and finish the cuts by removing any connections. Repeat the process on the other three legs.

### Turning the Leg

With the leg post and leg rough-shaped, mount the leg onto the lathe. Use the illustration to mark

the center of the top and bottom of each leg blank, and mount the first leg on center.

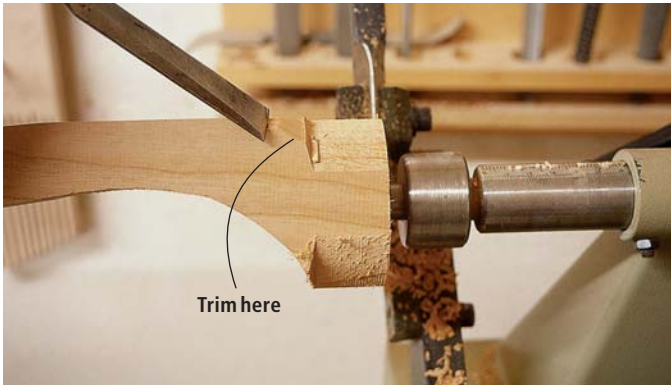
The turning starts at the foot of the leg. Begin by ensuring that the blank turns free and is not making contact with any part of the lathe. At your slowest speed, turn the foot with a gouge to a 2 3/4"-diameter just to the top edge of the foot (1 1/8").



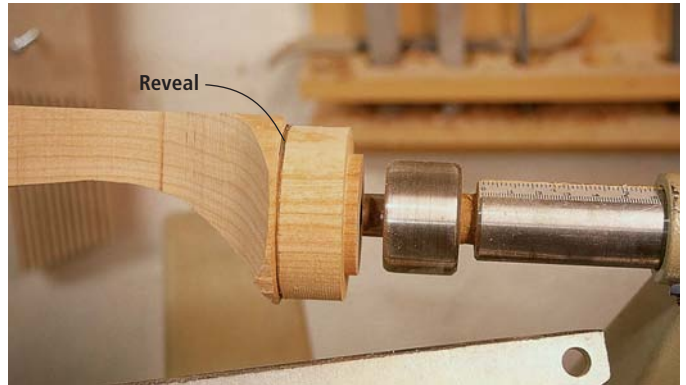
On the inner part of the leg a bridge isn't possible, so I use a spot of hot-melt glue to hold the waste piece temporarily in place.



With the waste pieces removed, the four legs quickly assume their classic cabriole shape.



After mounting the leg on the lathe, turn the foot to its finished diameter. It will be necessary to stop the lathe and trim the back of the leg where it meets the foot with a chisel, as shown.



With the foot at its final diameter, cut a slight reveal to separate the foot visually from the leg, as shown above.

You will need to stop the lathe and remove the waste material at the rear of the foot with a chisel. This will allow you to get your lathe tools in close enough to finish shaping the foot.

Use the point of your skew to mark and define the top of the foot. Then cut the  $\frac{1}{8}$ " pad to a  $1\frac{3}{4}$ " diameter using a parting tool. Finally, roll the foot edge to the pad using a skew to complete the shape of the foot. Then go ahead and turn the other three legs to match the first one.

### Sanding and Hand Work

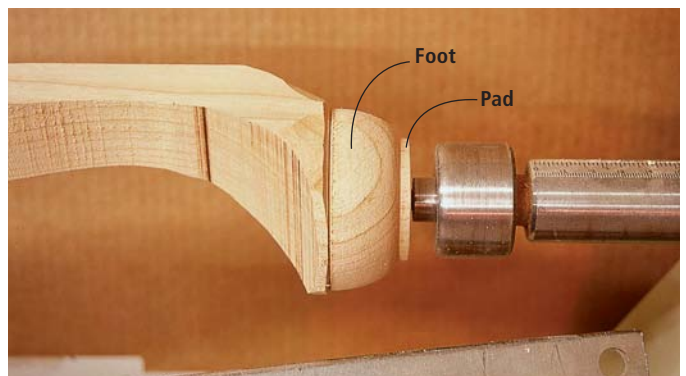
The next step is to flatten the top of the foot so that the foot transitions smoothly into the ankle of the leg. While this can be com-

pleted with chisels and rasps, I find that a spindle sander speeds the process along.

It's time to shape the legs themselves. I use this Shinto Saw Rasp (tools-for-woodworking.com, \$27) for the majority of my shaping, along with a few other finer rasps, files and scrapers.

These particular legs have a rather pointed knee so the shaping is basic. I begin by rounding the ankle to a complete diameter and then gradually I move up the leg by transitioning the shape to a square at the knee. By sight and feel you want to move from the roundness of the ankle to the square of the knee area.

This last step will give you the shape you want, but it's still pretty



Finally, the pad is turned to a  $\frac{1}{8}$ " tall by  $1\frac{3}{4}$ " diameter at the base of the leg and the foot is radiused to meet the pad.



A spindle sander takes a lot of the effort out of the process of smoothing the transition from the leg to the foot.



There's no getting around some muscle power to shape the legs themselves. Proper tools speed things up, such as this aggressive open-form rasp.

rough. I follow the rasp with files and scrapers and finally sand the leg to a final grit of #150.

### Mortising and Post Time

With the legs shaped and the leg posts still at full width, now is the time to choose your best legs for the front of the table.

Determine the most attractive leg orientation, then mark the  $\frac{1}{4}$ " x  $2\frac{1}{4}$ " x  $1\frac{1}{4}$ "-deep mortise locations. They are set  $1\frac{3}{8}$ " in from the inside of the legs and  $\frac{1}{2}$ " in from the top or bottom edge.

I used a mortising machine to cut the mortises for the aprons. The front lower apron is a single mortise while the side and back mortises are double mortises (with a  $1\frac{7}{8}$ " gap) to avoid weakening the leg posts.

With the mortises complete, you can now remove the rest of the material from the leg posts to give them their final shape. Head back to the band saw and cut away the waste at the leg posts. A wide  $\frac{1}{2}$ " blade works best here. Make sure to cut the sides in the correct order to ensure a flat surface to support your cuts. Make the cut slowly to eliminate any wandering of the blade. These cuts establish the face sides of the leg posts and should be as neat as possible.

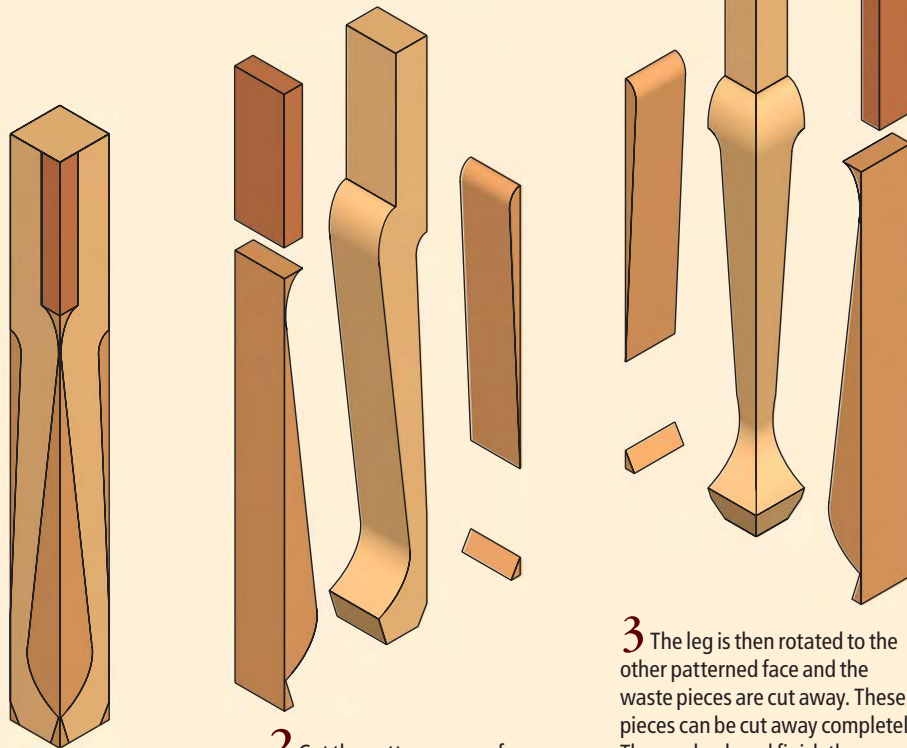
Spin the leg  $90^\circ$  and make the second cut. The legs are now complete. In the November issue I'll show you how to add the legs and knee blocks to the delicately sculpted table aprons and show you how to add a simple top to complete this heirloom-quality project. **PW**

### TO LEARN MORE

For more information about cabriole legs, visit:

<http://www.pbs.org/wgbh/pages/roadshow/speak/cabriole.html>

## THREE SIMPLE STEPS ON THE BAND SAW



**1** The first step is to trace the pattern onto perpendicular faces of the leg blank with the "knees" touching. These are outside faces, so choose the best grain pattern.

**2** Cut the pattern on one face, working in from either end of each section. The pieces are separated from the leg above, but you should leave a small center section uncut to hold the waste in place for now.

**3** The leg is then rotated to the other patterned face and the waste pieces are cut away. These pieces can be cut away completely. Then go back and finish the stopped cuts on the first face to complete the leg. Most of the work is done, and you can see the leg emerging from what had been a simple stick of wood.



While it might seem logical to finish sizing the leg posts before drilling the mortises, the full width helps support the leg during the mortising process.



After the mortises are complete, head back to the band saw and carefully trim away the waste from the leg posts on the two outside faces of the legs.