



Period-Perfect Bracket Feet

Best approach is a combination
of machines and hand tools

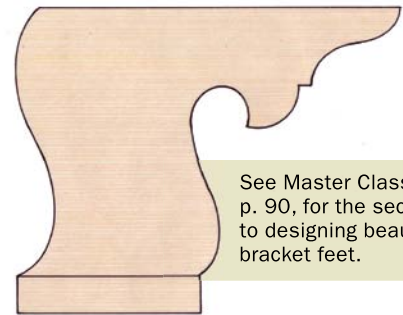
BY DAN FAIA

Ogee bracket feet, often linked to the Chippendale style, have been around since the late 17th century, and they remain one of the most recognized forms in furniture.

The distinctive S-curve on the faces (the ogee) and the ornate profiles on the ends of the feet traditionally were made with hand tools—a time-consuming, labor-intensive process. My method blends the best of the new and old. I've replaced the molding planes with the tablesaw to rough out the ogee profile, and the bandsaw has replaced the coping saw for cutting the end profile. However, machines can't replace the scrapers and other hand tools

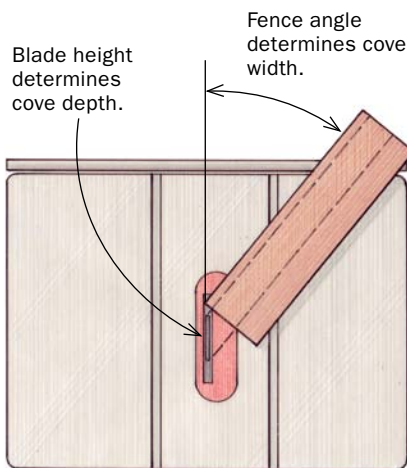
1

CARVE OUT THE COVE ON THE TABLESAW



See Master Class, p. 90, for the secret to designing beautiful bracket feet.

Reference lines. Use a full-size pattern to lay out the face profile on each end of the blank. You'll reference those lines as you rough out and refine the profile.



Eyeball it. Raise the blade to the apex of the cove. Then pivot the fence to set the cove's width, using the head of a combination square to keep the pattern 90° to the fence and table (above). Once you're there, clamp down the fence (right).



that are necessary to refine those machine-cut shapes.

Tablesaw takes the big bites

The front pairs of feet typically are mitered. To get the best possible grain match and flow, and for efficiency, start with a long blank, milled to the right size. You'll need a board long enough to make six pieces. You'll also need enough stock to make the unshaped portions of the rear pairs of feet, which are dovetailed together. Often these unshaped pieces were made of a secondary wood, because they were not seen.

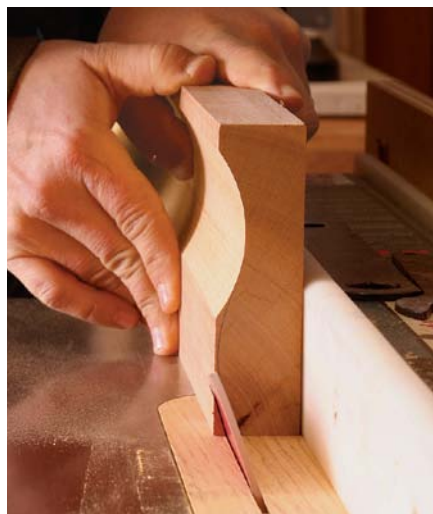
The key to success is making a couple of full-size patterns out of 1/8-in.-thick



Nibble away. Start with the blade about 1/16 in. above the table. Then make multiple passes over the blade, raising it in 1/16-in. increments, until you've removed as much waste as possible.

2 FINISH THE CURVES

Stay at the tablesaw. A few bevel cuts rough out the rest of the profile. Using the layout lines on the end of the blank as a reference, take multiple passes to remove the waste, adjusting the angle as you work. You'll end up with a faceted surface.



plywood, which will guide both machine and handwork (to learn more about designing ogee bracket feet, see Master Class, p. 90). I use one pattern to draw the ogee profile on each end of the blank. After the ogee shaping is complete, I use another pattern to lay out the miters and to draw the profile on the inside of the foot.

For speed and consistency, I shape the face of the long blank on the tablesaw, using a cove-cutting technique. This is done by passing the piece diagonally across the blade, guided by an auxiliary fence, and raising the blade a bit more for each pass. You can use any straight material for the fence, as long as it's thick enough to support the workpiece. The fence I made is simply two 3/4-in.-thick strips of MDF. After screwing the pieces together, I ripped both long edges straight. I don't use a special blade for the cove cut; it's just a combination blade.

Because this cove cut is symmetrical, the blade will be perpendicular to the table (an asymmetrical cove would require the blade to be tilted). Start by raising the blade to the apex of the cove, using the pattern as the guide.

Now dial in the width of the cove by pivoting the auxiliary fence. Place the end of the pattern against the fence. To ensure accuracy, use the head of a combination square to keep the pattern 90° to the table and fence. With your eyes level with the table, pivot the fence until the blade aligns

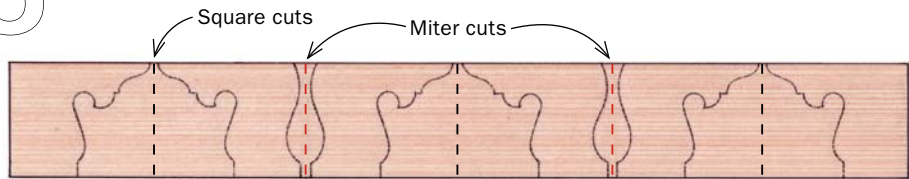


Hand tools take over. Use hand planes (above) to fair the faceted surfaces made by the tablesaw. A goose-neck scraper works quickly in the cove area (right). Finish with sandpaper.



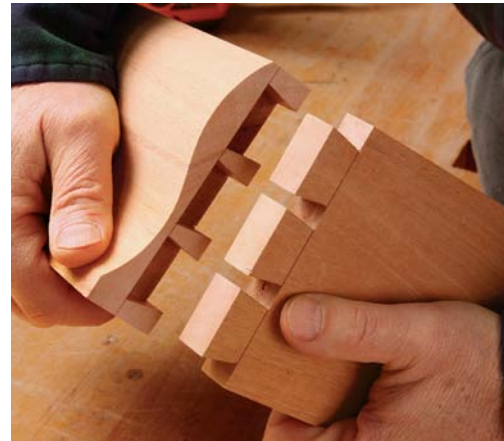


3 CUT THE JOINTS AND PROFILE THE ENDS



How to get a great grain match. You want the grain at the miters to flow seamlessly around the corner, so lay out the blank as shown. Note that the parts on the ends are the back feet, which are left square.

Perfect miters. Leave the mitered sections extra long, so you can creep up on a perfect fit. Then cut the feet to length.



Dovetails in back. Because the rear of the case was not seen, period makers didn't bother to shape the back pieces. Those flat parts join to the shaped side pieces with dovetails.

with the cutout on the pattern. Clamp the fence in place and make a test cut.

To do that, lower the blade so it projects about $\frac{1}{16}$ in. above the table. Make the first pass or two and then compare the cut to the pattern you traced on the end of the blank. Because you're taking such light cuts, any errors in the setup are easily corrected by adjusting the fence as you go. Continue making passes over the blade, raising it about $\frac{1}{16}$ in. at a time, until you're cutting the full depth of the cove.

Once the cove has been cut, it's time to create the convex (top) portion of the foot on the blank. This job is started at the tablesaw, with the blank on edge. Tilt the blade to remove the bulk of the waste in one pass. Then readjust the blade angle to creep up on the layout line with smaller passes. You'll end up with a faceted surface.

Hand tools heal the tablesaw scars

Following the layout lines on the end of the blank, I clean up the machine marks on the blank and refine the curves.

To shape the convex portion, I use No. 5 (jack) and No. 4 (smoother) planes, gradually removing the tablesawn facets to create a smooth curve. To smooth the concave area, I use a gooseneck scraper and

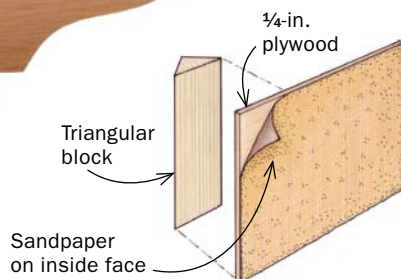


Cut the inside profile. First trim the feet to length. Then trace the pattern onto the back of each foot (above), aligning the inside edge of the pattern with the square-cut end. Cut the profile at the bandsaw (left). Work carefully—clean cuts here mean less work later.



4

GLUE AND FINE-TUNE THE FEET



Pinpoint clamping. Faia uses a pair of simple clamping cauls to apply pressure directly on the miter. Start by clamping the cauls to the mitered parts (right). Then clamp across the triangular blocks to bring the joint together firmly and evenly (below).

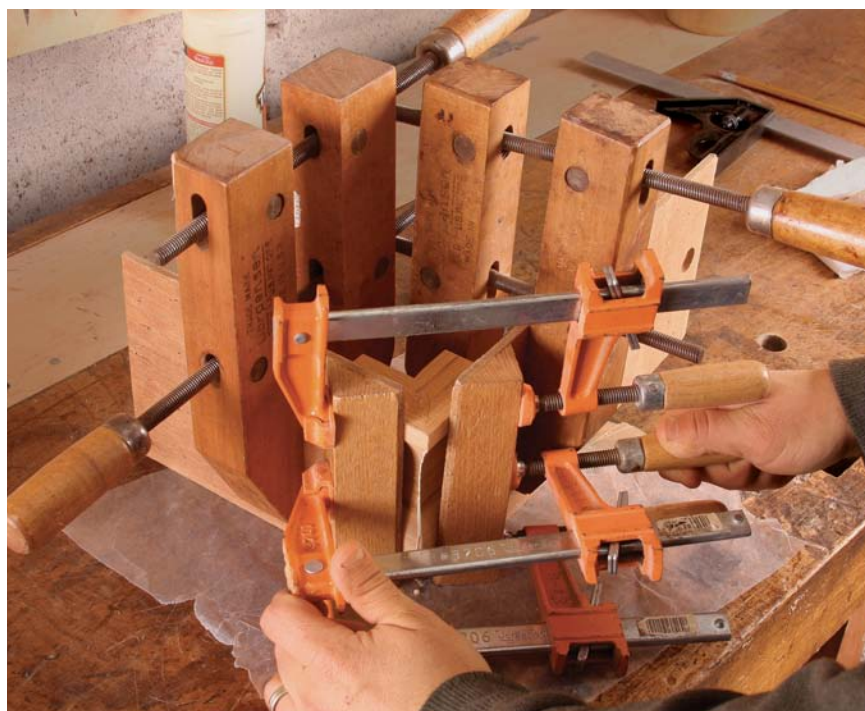


TIP

QUENCH THIRSTY MITERS



End grain soaks up glue quickly, drawing it from the surfaces and weakening the joint. The solution is to seal the end grain with an initial coat of glue, a process called "sizing." Let the glue absorb for a minute or two, then wipe it off with a rag moistened with water. Let the pieces dry completely before applying more glue and clamping them.



sandpaper. Finally, I sand all the curves smooth. Once the face is complete, you can start cutting the individual feet from the blank and mitering them.

Accurate miters are a must

True to the period forms, I typically miter the front pairs of feet, but I use half-blind dovetails in the rear pairs. The dovetail is a strong way to join the thin, flat back piece to the shaped piece (see photo, p. 79).

To ensure a continuous grain match around the feet on the front, it's important to lay out the parts in pairs. When laying

out the parts, leave extra material on the straight-cut ends. This will give you room to make test cuts until you have perfect-fitting miters.

Once the miters are cut, trim all the feet to their final length using the inside profile pattern as a guide. Now cut the dovetails in the rear pairs of feet: tails in the flat feet and sockets in the molded feet. Don't glue any of the feet together yet.

Profile the feet before assembly

Once the joinery is done, lay out and cut the inside profiles on the feet. Use the

full-size pattern to draw the design, and bandsaw close to the lines. Now glue the feet together—both the miters and the dovetails. For the miters, I use clamping cauls that direct the clamping pressure to the corners. I also seal, or size, the porous end grain with glue before assembly. Don't rush here. The glue must dry completely to adequately seal the end grain; otherwise, the joint will be compromised.

It may seem counterintuitive to glue the feet before fairing the end profiles, but doing so makes it easier to clamp the feet in a vise for the final shaping.



Cleanup work. First remove sawmarks using rasps and files (left). Use gouges to back-cut the edges slightly (center), then go back and refine only the outside profile using rasps and files. Finally, chamfer the inside edges with a chisel (right). It's OK to leave unseen, inside surfaces rough.

After the glue dries, fair the inside profile. First, I remove most of the bandsaw marks with rasps and files. Then I use gouges and chisels to back-cut the shapes at a slight angle. The back-cut makes it easier to finesse only the visible portion of the profile in front with rasps and files. I also break the inside edges by chamfering them with a chisel.

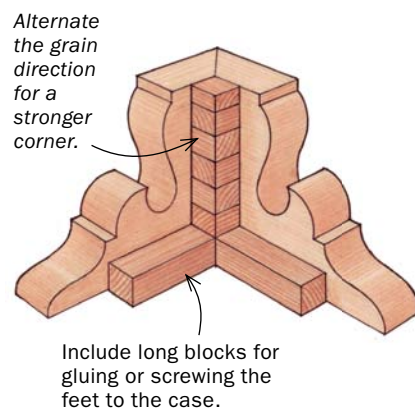
The final step is to add reinforcing corner blocks to the inside of the feet. The blocks strengthen the miter and add to the overall glue surface for attaching the feet to a base frame. Here's a trick to avoid a potential problem with cross-grain glue surfaces on the vertical section. I cut a series of small glue blocks and stack them, alternating the grain direction of the blocks. This creates a super-strong block assembly that will remain stable over time. No need to clamp any of the glue blocks in place; a simple rub joint will do the trick.

After the glue dries on the blocks, I trim the vertical pieces flush, then chisel a slight chamfer on the outside corner to make sure the pieces can't be seen by any probing eyes. Now the feet are ready to mount to the case. □

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Reinforce the corners. To strengthen the miters, add glue blocks to the back of the feet. No need for clamps here; a rub joint works fine. Rub each block until the glue grabs and holds it.



Chamfer when dry. A wide chamfer helps hide the glue blocks.