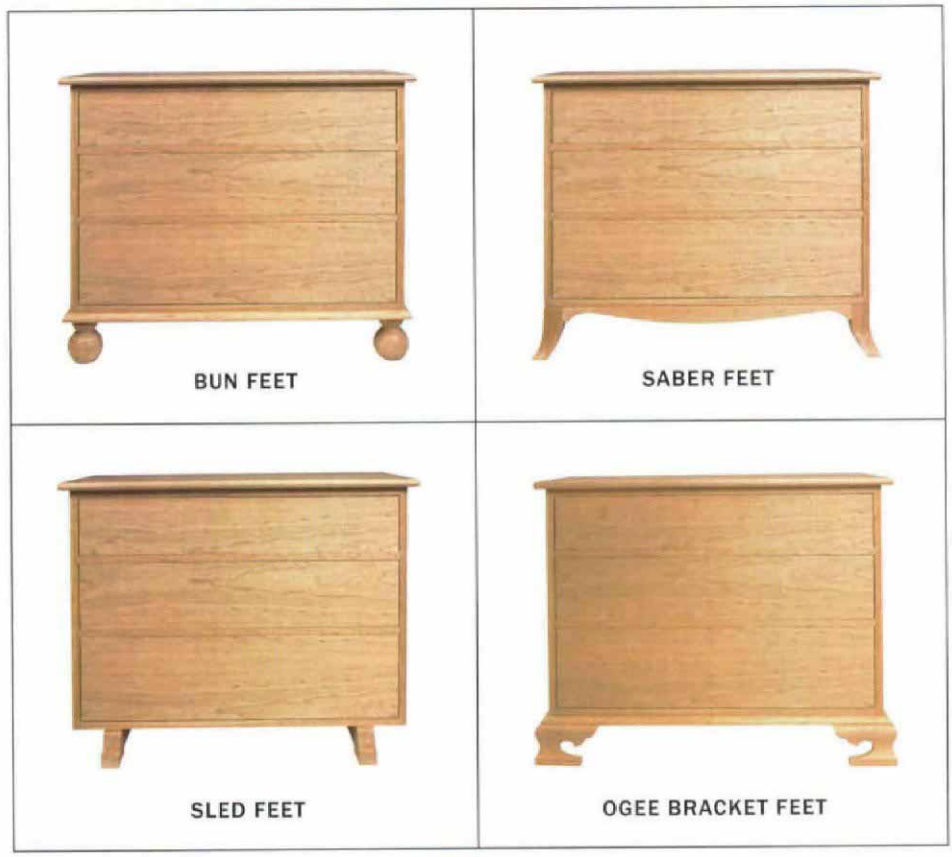
Where Furniture Meets the Floor



These four traditional bases change the look and style of the same chest

BY MARIO RODRIGUEZ

During the 1980s, when I operated a shop in Brooklyn, we received a steady stream of plain-Jane chests that had been picked up by interior decorators on their trips to the countryside or abroad. I was instructed to give these chests the "Cinderella treatment"—to revitalize them by changing the hardware, possibly adding stringing to the drawer fronts, or maybe making a new top.

By far the most dramatic change took place when I replaced a base. With a new base, a piece would assume a new personality. If I added just the right bracket feet, say, a mundane Victorian behemoth could be transformed into an elegant Chippendale-style treasure. The careful selection of the base proved, time and again, to be critical to the success of the completed piece. And I've found just the same thing to be true in designing my own pieces or adapting period designs.

To demonstrate the impact that different attached bases can have on a basic chest and to show how approachable most are to make, I've built a single, unadorned chest of drawers and fitted it with four different bases: with bun feet, with saber feet, with sled feet and with ogee bracket feet. All four of these bases are drawn from

historical examples, but as you'll see, they can easily be adapted to modern designs as well.

Why you need a base

A chest is essentially a box on a base. The box is where the action is—the drawers, the doors, the shelving. So the base, resting right on the floor, might seem likely to fall beneath our notice. But its impact is strong. First, it literally lifts the cabinet off the floor. The air it puts beneath the piece gives the cabinet definition and makes even an armoire appear lighter. Plunked right on the floor without a base, a large cabinet looks stunted and incomplete; it begins to seem immovable, like a part of the building. A Newport secretary minus its bracket feet would be about as impressive as the Statue of Liberty standing knee-deep in New York harbor.

The proper base should not only elevate the case but also enhance the other features of it. Instead of concentrating all of the detailing on the case and treating the base as an afterthought, I work out the details of the base along with the case.

My choice of a base is influenced by the size and weight of the piece. For instance, I wouldn't place a massive, multidrawer chest on dainty saber feet. Structurally, the feet might not support the great weight of the piece and its contents. And aesthetically, a large cabinet supported by diminutive feet might bring to mind a sumo wrestler wearing ballet slippers.

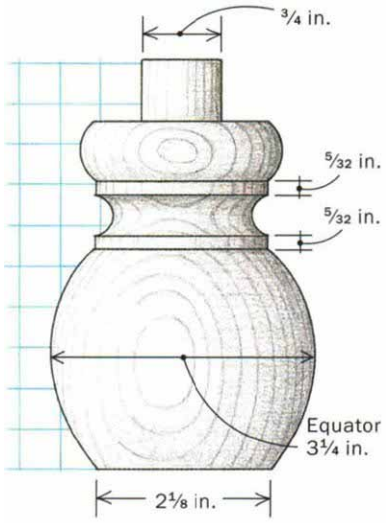
From a practical perspective, the lift a base provides also gives better access to the contents of a piece and protects them from moisture and dirt. In addition, an attached base can simplify construction of the carcase and can easily be replaced if it is damaged.

A base with bun feet

The bun-footed base is a lively design that can animate even a very large piece of furniture. Yet with their low center of gravity and rounded form, bun feet are the sturdiest possible. The base is willing to carry great weight and will even endure being shoved and dragged across the floor. The ball-shaped feet introduce a nice counterpoint to the rectilinear lines of a chest. The balls can be full and round, almost forming perfect spheres, flattened like doughnuts or elongated into cylindrical shapes.

Bun feet originated in Germany and Scandinavia and later were used on Kasten and blanket boxes in America. Bun feet were typically used on fairly massive pieces, but they found their way onto more refined case pieces such as desks and chests during the William and Mary period (1690-1730).

Bun feet are produced on the lathe. In the earliest examples, they were turned from a single block of wood; later, the block was laminated. Each foot has a stem or tenon at the top that is used for attachment to the case. Below that is a ringlike shoulder and then a narrow neck, called the reel, that swells into the ball. The most difficult aspect

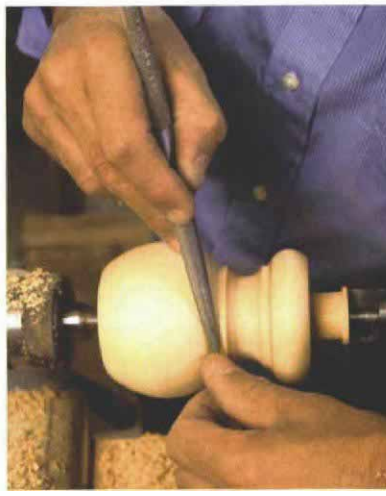


Scale: 1 square = ½ in.

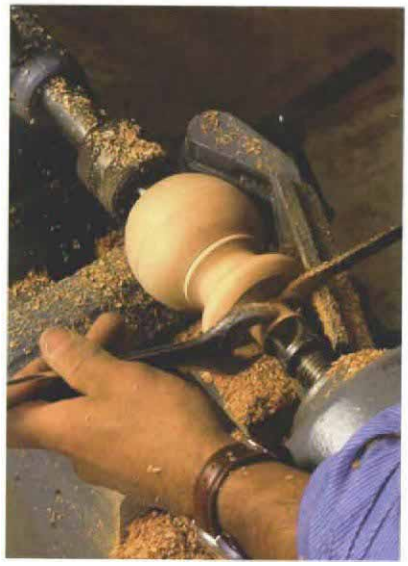
BUN FEET

A lathe-turned foot that has its origins in Europe, the bun foot is typically held to the bottom of a case by means of a wedged round tenon locked into a hole drilled into the case or into a molded frame below the case. A flattened section at the bottom of the spherical bun gives the foot a firm stance on the floor.

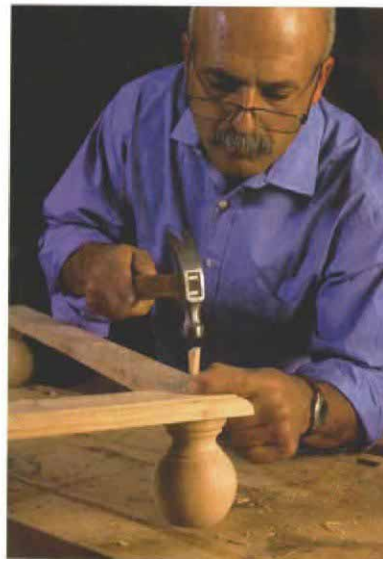
Bun foot starts with a gouge. *Turn a rough cylinder, then use a pencil to mark out the major segments of the foot, including an equator for the foot's sphere.*



Finish with a* rasp.** ***Use a *rasp with a light touch to smooth the bumpy surface left by the gouge and to finish shaping the bun foot.*



Wrenching accuracy. *To size the round tenon on top of the bun foot, hold an open-end wrench against the back of the foot while cutting the tenon to size with a parting tool. When the wrench slips over the tenon, it's the right size.*

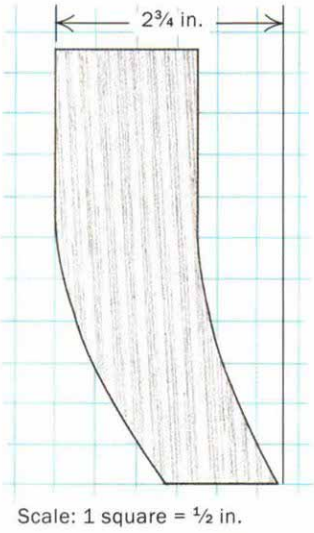


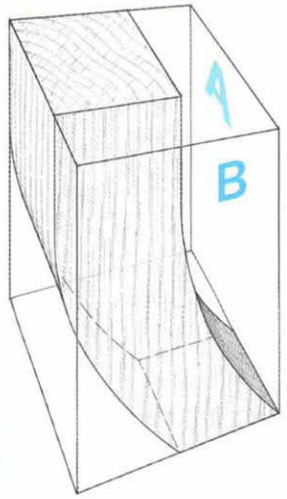
Footed frame. *The round tenons of the bun feet are wedged to holes drilled in a molded frame. The frame is screwed to the bottom of the* case.

Photos: Jonathan Binzen, except where noted; facing page and this page, top right: Michael Pekovich

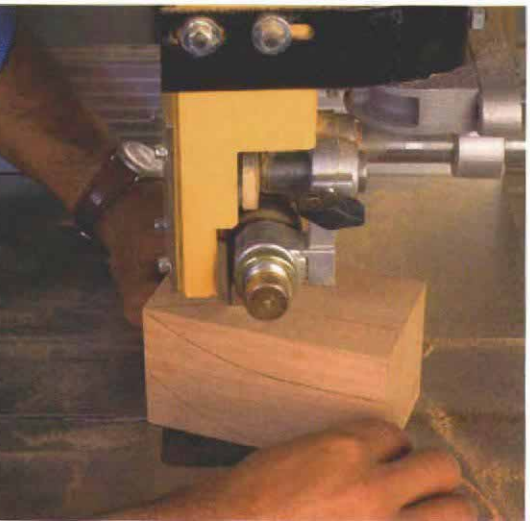
SABER FEET

The front feet on a Hepplewhite-style saber-footed base curve both to the front and the sides. The back feet curve only to the side, allowing the case to sit tight against a wall. Mortise-and-tenon joints hold together the rails and feet. Pine blocks strengthen corners. The base is screwed to the case through the blocks.





For the compound-curved front feet, trace the layout template on two adjacent faces (A and B) of a 2¾-in. square leg blank. The tracings should meet at the foot's bottom tip. For the single-curved back feet, you need to trace the template only on one side.



Front feet are cut four times. *The front feet on a saber-footed base curve to the front and to the outside, requiring four bandsaw cuts. The first two cuts are made with the blank resting on the same face.*

Tape the* waste *back on. *After making the first two cuts on the front feet, tape the waste pieces back on the feet. This will give you a flat surface on the bandsaw for the second two cuts.*

Back foot* meets the *frame. *Saber feet are often linked with rails to create a strong frame that's screwed to the bottom of the chest. The foot is trimmed flush to the frame with a block plane.*

of turning a bun foot is executing a nice, round ball. If it looks like a potato, it won't work as a bun foot.

For a typical bun foot, start by turning a cylindrical blank. Mark out the major segments of the foot on the cylinder, including a line for the equator of the ball and a circle on the end of the cylinder to establish the flat portion where the ball will rest on the floor. Turn the reel and the shoulder first and then begin work on the ball.

Seasoned turners often use a large skew chisel to cut a sphere. By pivoting and rotating the tool, they obtain a smooth, arcing surface that requires little or no sanding. If you have less experience on the lathe, you might have better luck with a stout gouge. The surface you achieve may be a little bumpier, but the gouge is less likely to dig in and ruin the job because only a small portion of the tool's cutting edge contacts the workpiece. Even so, cut carefully, stopping frequently to check for symmetry.

You can use a rasp to perform the final shaping and smoothing. A rasp can be easily controlled and lightly applied to the rotating shape to correct the bun's outline. By varying the pressure, you can control the amount of wood you remove. And unlike a turning tool, the rasp won't dig into the work. Use sandpaper on the spinning piece to attain the final smooth surface.

There is a foolproof technique for turning the tenon on a bun foot to a precise diameter. From behind the rotating workpiece, press an open-end wrench against the tenon while removing material with a ⅛-in. parting tool. The narrow parting tool is used with a scraping action, so it doesn't require careful guidance and can be held in one hand. When the tenon is reduced to the precise final dimension, the wrench slips over the tenon.

The simplest way to attach bun feet to a case is to drill holes into the bottom of the carcase to receive the feet's tenons. But if the interior of the cabinet or chest will be visible, so will the ends of the tenons. In that case, attach the feet to a frame and then screw

Drawings: Vince Babak; upper left photo: Michael Pekovich

the frame to the underside of the chest. Make the frame of solid wood and cut a profile on its edge, which adds a molding to the bottom of the chest.

A base with saber feet

The sleek, graceful saber foot was most popular during the Hepplewhite period (1790-1805), when Baltimore cabinetmakers used it extensively. But with its hard edges and simple sweep, the saber foot transcends period classification and looks perfectly comfortable on modern pieces. Visually, the saber foot works best with pieces that are moderate to small in size, fairly rectilinear in form and restrained in detailing. On the right case, a base with saber feet will confer a sense of poised nimbleness, like that of a dancer.

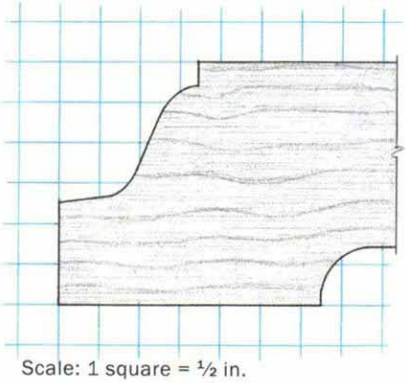
When designing saber feet, strive for a smooth, moderate curve. Start by making a cardboard template of the silhouette and use the template to trace the silhouette on a square blank. For the front feet of the base, which curve to the front and to the side, trace the template on adjacent sides of the blank; for the back feet, which curve only to the side, trace the template only on one side of the blank. As you design the curve of the feet, err on the side of moderation; a curve that looks good on the template will often appear exaggerated when cut out of the blank, because each foot is a compound curve. Too radical a curve can make a foot look like it is straining under the weight of the cabinet. And, in fact, it may well be. The grain is short at the toe, and the farther the toe extends, the more vulnerable it is to breaking off.

The curves are cut on the bandsaw. After cutting one side of the front legs, temporarily reattach the cutoffs with masking tape. Then rotate the blank and cut the other curve. Clean up the convex curves using a block plane with a very small throat opening and a very sharp blade. I do any further cleaning up with a card scraper. On the concave sides, I begin with a curved soled spokeshave and follow that with rasps and sandpaper.

Saber feet are often linked with rails, creating a strong frame that can easily be screwed to the bottom of the case. Like table aprons, the rails are tenoned on the ends and fitted into mortises in the saber feet. It is simplest to cut the mortises in the feet while the blanks are still square.

A base with sled feet

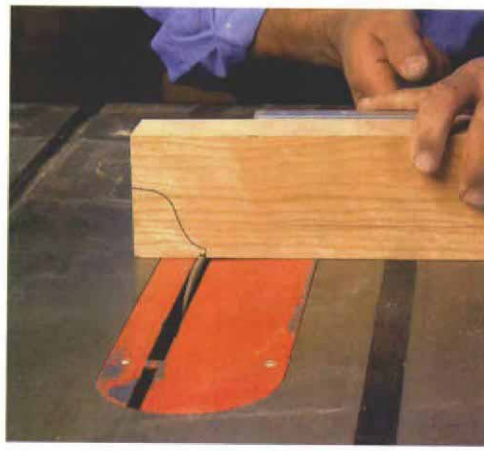
Solid and low slung, the sled-footed base suggests—and delivers—stability and strength. It can be used on both low storage chests and towering cupboards. I've seen sled feet on painted Scandinavian chests dating back to the 15th century as well as on early 20th-century English Arts-and-Crafts pieces. To me, sled feet conjure up sturdy medieval coffers and cupboards reinforced with iron straps and hinges, or simple rustic furniture built and shaped with little fuss.



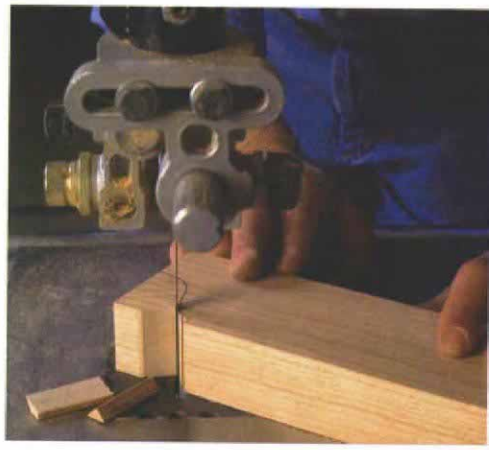
The sled-footed base is comprised of two parallel feet joined by a beam. The front ends of the feet typically extend beyond the front of the piece and are often chamfered, rounded over or embellished with an ornamental scroll. A varia-

SLED FEET

This base of European origin is made of three main components: two sled feet and a perpendicular beam. The front of the feet typically protrude beyond the front of the case. A 7/8-in. tenon is turned on each end of the beam, and it is secured through holes in the feet with a wedge (see the bottom photo).

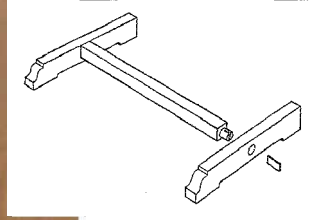


Crisp cuts start on a tablesaw. *Cutting the shoulder on the front of the sled-footed base is best done on a tablesaw.*



Relieving the waste. *Several bandsaw kerfs cut just to the layout lines of the front of the sled foot will make it easier to maneuver the wood around the blade for the tight corners of the finish cut.*

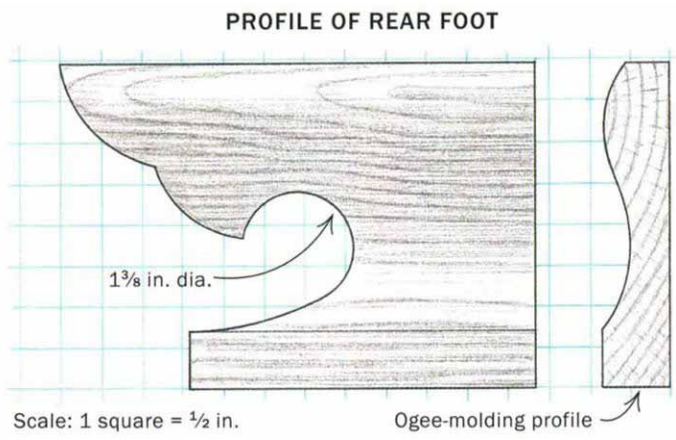
Wedge treatment. *The back of each sled foot is cut square and flush with the back of the chest. Both feet are screwed to the bottom of the chest.*

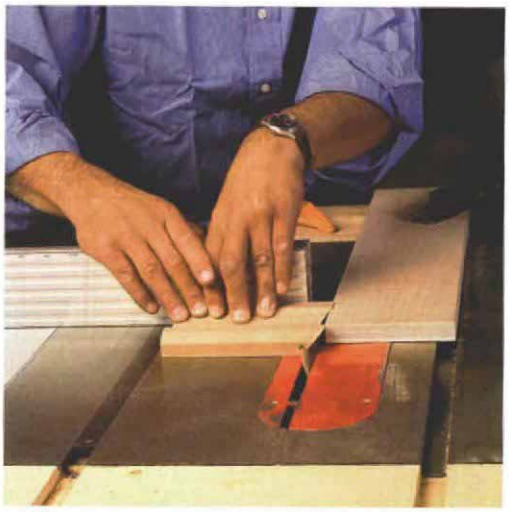


Top right photo: Boyd Hagen; bottom: Michael Pekovich

OGEE BRACKET FEET

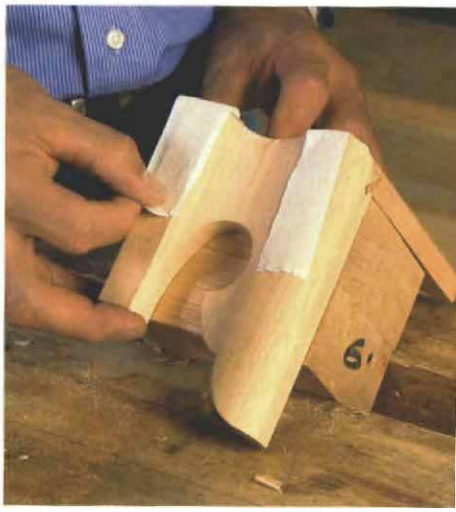
Popular in the Chippendale period, ogee bracket feet are made from sections of tablesaw-made ogee molding. The tight inside curve of each foot is cut on a drill press before the rest of the bracket is cut on a bandsaw. The rear feet are molded on the sides only. Flat pine blocks butt to the end of the rear feet and allow the case to sit tight to a wall (see the drawings on the facing page).





Spline time. *An ogee bracket foot is made of mitered sections of moldings and held together with splines. After cutting the corner miter on a tablesaw, the author sets up the saw to cut a groove for the spline, taking care that the height of the spline cut is lower than the height of the thinnest part of the ogee profile.*

***Low,* inside curve.** Most *of the cutout work on the ogee bracket foot is done on a bandsaw. An exception is any tight, constant-radius curve, such* as the one *near the bottom of the foot, which is more easily cut with an appropriately sized Forstner bit.*



Taped around a square block. *To ensure a tight, 90° miter, set the splined-and-glued bracket foot around a squared block of wood. The miter is held tight with tape until the glue dries.*

tion on this design that you sometimes see is one that raises the carcase off the feet with legs.

Because the shaped end of a sled foot is in front of the cabinet, its shape and finish must be crisp and attractive. Cut the shoulder of the scroll on the tablesaw and the curved outline on the bandsaw. Fair the curves and smooth them with fine rasps, files, card scrapers and sandpaper. Start with a fine, 6-in. tapered rasp to create a flowing curve without any abrupt dips or blips. Work down from the bottom of the shoulder cut to the tip of the foot. Next, take care of the rough surface left by the rasp with a smooth round file and a card scraper. Finally, sand a bit for a silky surface. Make sure the curving edge is square to the sides, not lopsided. Refrain from breaking the edges, keeping everything crisp and clean.

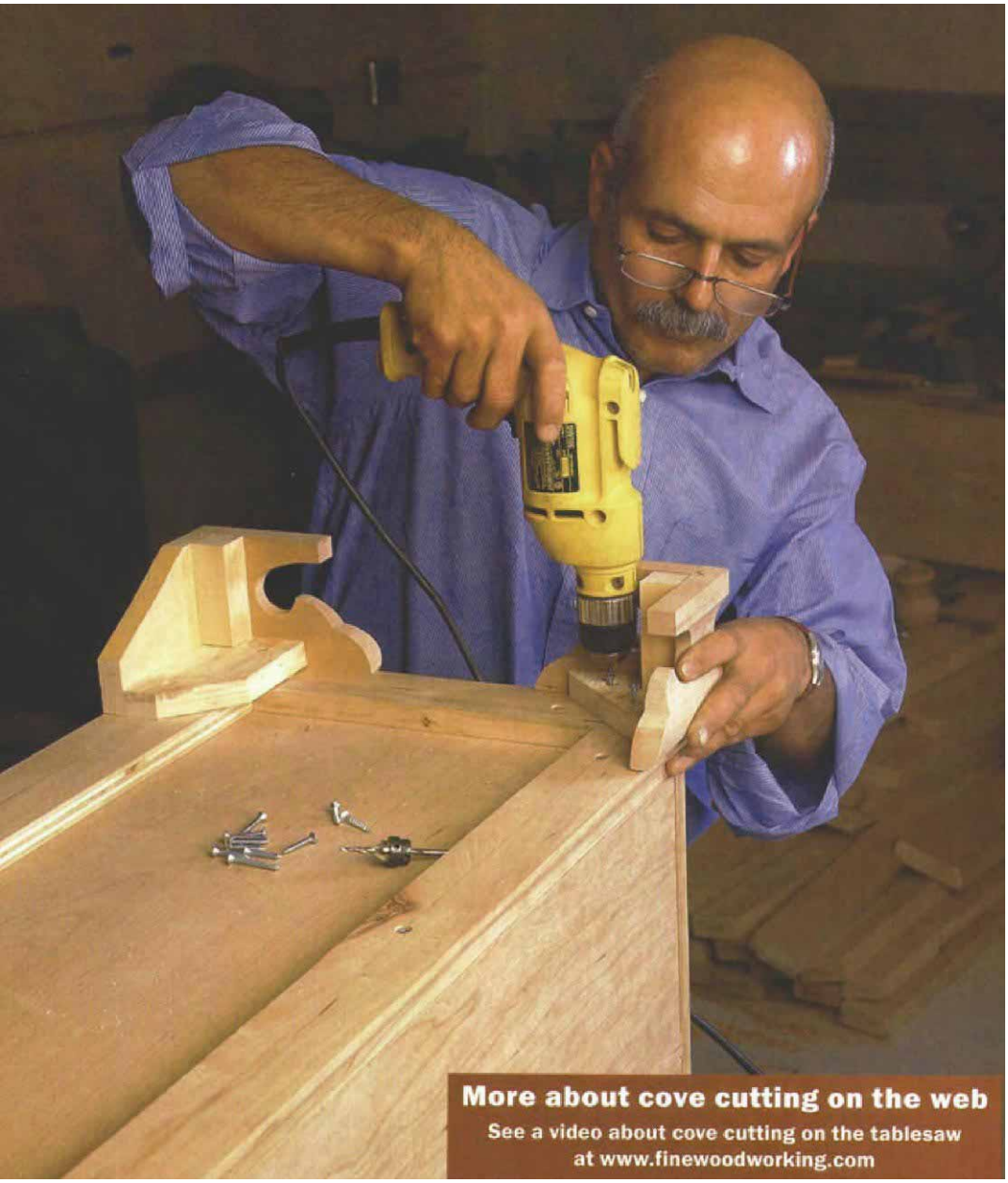
Because the feet support the weight of the cabinet, the beam's purpose is mainly decorative. Not needing maximum strength, I joined the beam to the feet with round mortise-and-tenon joints. Turn the tenons on the lathe and size them with an open-end wrench to an exact ⅞-in. diameter. Then drill a corresponding hole in the feet to accept the through-tenon. For a decorative touch that also ensures a tight, clean joint, cut a thin kerf into the end of the tenon with a dovetail saw and later, when assembling the joint, tap a wedge into the kerf.

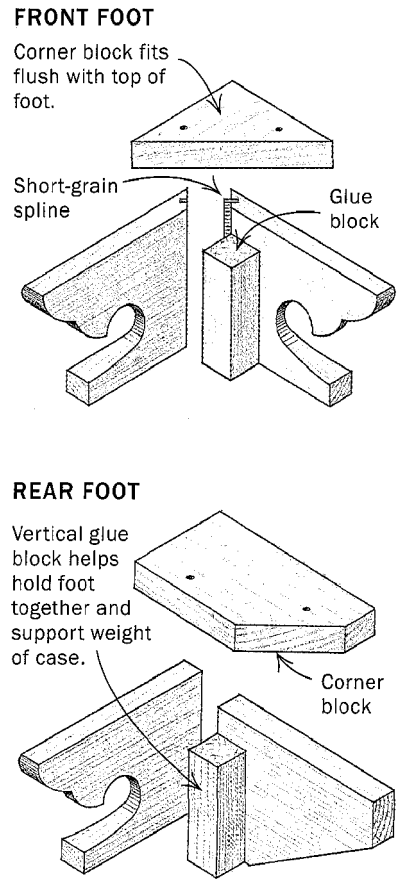
A base with ogee bracket feet

I always have fun with making ogee bracket feet and put great effort into their design. Ogee bracket feet give a rectilinear cabinet a fluid, sculptural touch, catching light and shadow in a pleasing way. This sculptural design was popular in the 18th century and typifies the Chippendale style (1760-1790). While displaying the sensuous nature of the wood, ogee bracket feet give a piece a sturdy, rocklike stance.

By definition, an ogee is a pair of complementary curves that form an S shape. The relationship of these curves can vary to suit your taste. The curves might be the same radius, or you might have a tight convex curve over a wide, shallow concave curve. The only requirement is that the convex curve be at the top and the con-

Upper left photo: Michael Pekovich





Screw through triangular corner block. *The back feet on an ogee bracket base are not mitered like the front ones. Rather, the ogee bracket butts a flat pine block that will be invisible when the case is placed against a wall.*

cave curve below. A bracket foot with a convex curve at the bottom is called a reverse ogee.

A successful ogee profile will have a lively, curling contour, suggesting fabric unfurling. In addition to the undulating ogee, a bracket foot is defined by the profile at the end of each wing of the bracket. Some end quite simply; others end with a flourish of scrollwork. When designing a bracket foot, this end profile is read two ways—as a positive form (the foot) and as a negative form (the space beside the foot). You can explore this positive/negative relationship by cutting possible profiles in a light material and viewing them against a dark background.

There are a few ways to make ogee molding (see *FWW*#102, pp. 82-85). I cut the cove with an angled fence on the tablesaw and the convex shape with tablesaw cuts and hand tools. After milling long sections of ogee profile, cut them into 8-in. lengths. Next, designate adjacent pieces to be paired up as feet so that the grain will be continuous around the mitered outside corner of the bracket. The pieces must be marked left and right to produce a pair.

I often use splines to register and align the joint. To cut a groove into the face of the miter, set the tablesaw blade to 45°. Clamp a scrap to the saw table to use as a stop to register the cut, and use the miter gauge to push the stock. Be careful to raise the angled blade no higher than the thinnest dimension of the ogee profile.

The grain orientation of the spline is critical to the strength of the joint: The grain should run across the width of the spline, not along the length. To produce a spline with the correct grain orientation, make a tablesaw kerf into the end grain of a scrap piece of molding. Then cut the spline free on the bandsaw. Most of the cutout work for the end profile of ogee bracket feet is done on the bandsaw. But to achieve a crisp result for designs that include tight inside curves, I begin at the drill press. I use whatever bit matches the radius I need—Forstner bits or circle cutters—to cut out the inside curves, then I cut the rest of the shape on the bandsaw. □

Maria Rodriguez teaches period furniture making in Manhattan, and he is the author of Traditional Woodwork *(The Taunton Press, 1998).*