Arts and Crafts Chest

Time-tested and versatile project, with beauty in the details

BY NANCY R. HILLER

I've long been a fan of English designer Ernest Gimson (1864–1919), who moved from London to the rural Cotswolds region with Sidney and Ernest Barnsley in 1893. Collectively their influential work, which is characterized by sturdy lines, exposed joinery, simple decorative carving, and motifs drawn from rural forms, is the heart of the Cotswold School of Arts and Crafts design.

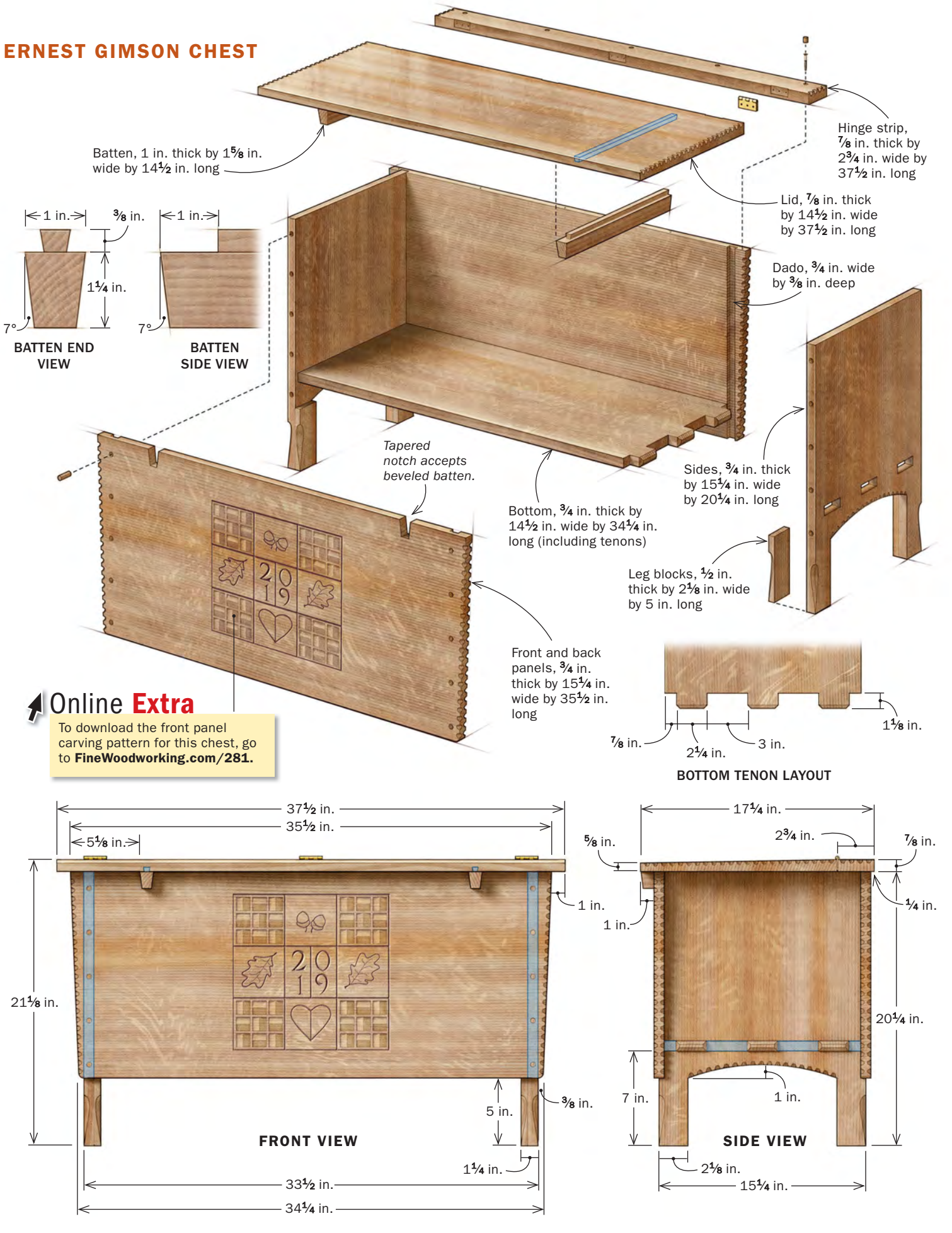
This chest, or coffer, is a good example of the style. Built of quartersawn oak, it has straightforward lines, through-tenons, and artful lettering, along with decorative chamfers and gouging. It's a versatile piece that would be equally at home storing towels in a bathroom or blankets at the foot of a bed.

Unconventional construction has lasted over a century

I was skeptical about the joinery. So I consulted Christopher Vickers, an English furniture maker who specializes in Arts and Crafts designs and has inspected the original chest at auction. Vertical-grain sides fit into dadoes in the horizontal grain front and back and are reinforced with pegs—rule breaking at its most blatant. But as Vickers points out, despite the opposing grain orientation, the front and back panels of the original coffer have not split. The quartersawn lumber no doubt helps; and though there are examples of other furniture forms made in quartersawn oak that have split where the joinery has not allowed for movement,

Photos: Anissa Kapsales

ERNEST GIMSON CHEST



Online Extra

To download the front panel carving pattern for this chest, go to **FineWoodworking.com/281.**

Drawings: John Hartman

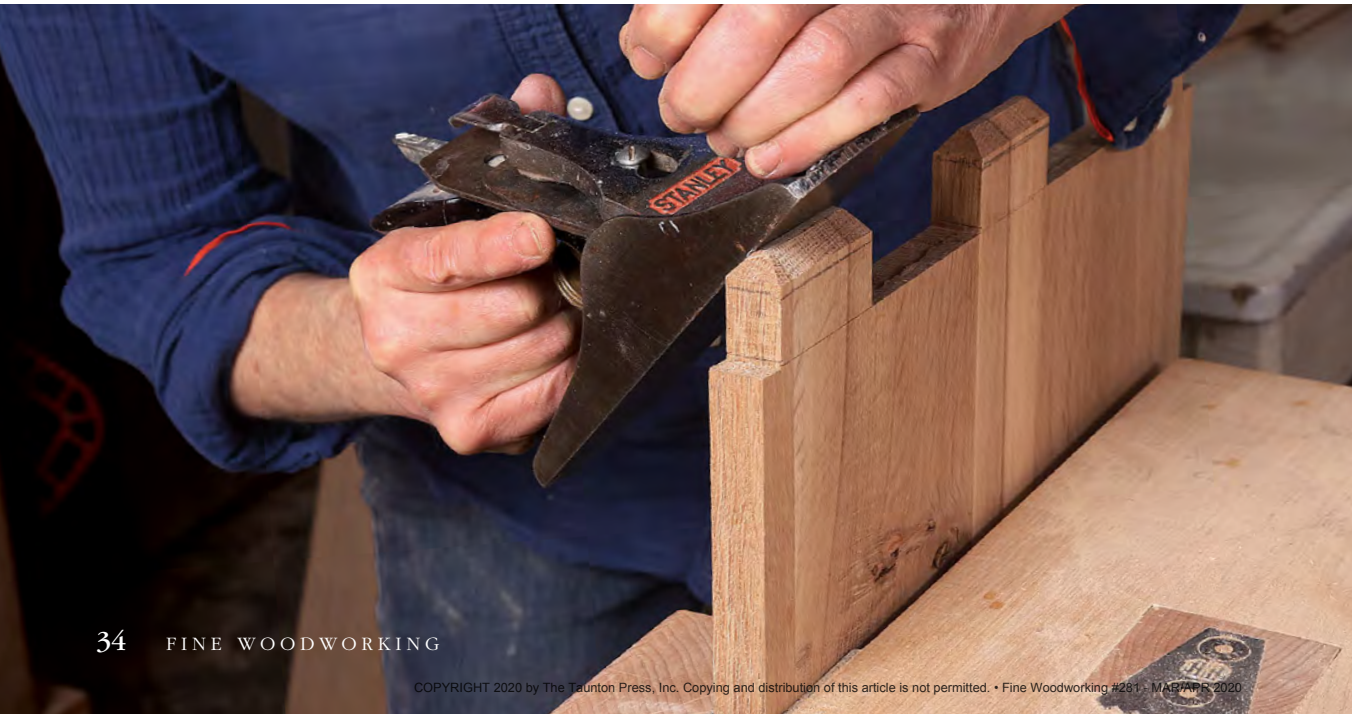
Join the sides to the bottom

It's unusual, but this project begins by joining the bottom to the sides with through-mortise-and-tenons.

MORTISE-AND-TENONS MOSTLY BY HAND

Mortises first. *After scoring the outlines of the mortises, use a Forstner bit in a drill to waste out the insides of the mortise. To avoid tearout, drill halfway through on one side, flip the piece, and go the rest of the way through from the other side. Clean up the walls with a chisel.*

Tenons follow suit. *Using the mortises in the side pieces, transfer the tenon locations onto the bottom piece. Score them, hand saw the sides of the tenons, use a coping saw to remove most of the waste, and then clean it all to the line with a chisel.*



Refine the tenons. *Hiller uses a handplane to create a pyramid shape on the ends of the through-tenons.*

splitting seems to be more likely in thinner stock. Because this cross-grain joinery is authentic to the original coffer, I've thrown caution to the wind and am using it here. The prototype chest I made a few years ago has made it through Indiana's seasonal changes in temperature and humidity and is doing just fine.

Start with the sides and bottom

I begin the chest by cutting the sides to shape. Then I turn to the joinery that will attach the sides to the bottom. Through-tenons in the bottom fit into mortises in the sides. Lay out the mortises and score across the grain with a knife to avoid tearout. Remove the bulk of the waste with a drill, then chop out the rest and pare the edges with a chisel. Take care to avoid chopping or paring too vigorously and breaking out the grain on either face.

Transfer the mortise locations to the bottom for the tenons. Use a cutting gauge to mark the shoulders, and then cut the tenons with a backsaw, coping saw, and chisels.

The legs of the original chest appear to be thicker than ¾ in. To create this look without the significant added weight of using thicker stock for the whole side, I laminate a block to each leg. Rip the leg blocks to the same width as the legs, glue them on, then cut them to length. They will go from the bottom of the leg to the bottom edge of the front and back panels. After the glue has dried, chamfer the legs with a gouge and spokeshave.

Create the front and back panels

I begin the front and back panels with the dadoes. Keeping both panels square for now, cut the dadoes on the tablesaw. I use a Forrest finger-joint blade with a ⅛-in. kerf and start with the fence set at 1 in. After cutting the first grooves for the left and right sides of both the front and back panels, I move the fence out by ⅛-in. increments until the sides fit snugly.

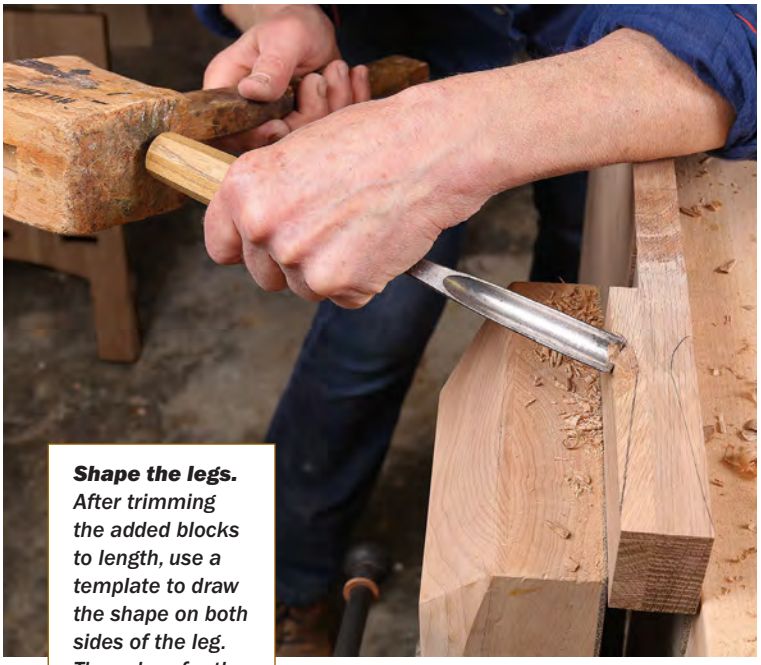
The front and back panels are wedge-shaped with decorative gouging on the front and back of both ends. The front panel also has a central field of carved numbers, Arts and Crafts motifs, and geometric shapes.

First, cut the ends of the front and back panels to a taper, removing ⅝ in. at the bottom of each end. Then clean up the

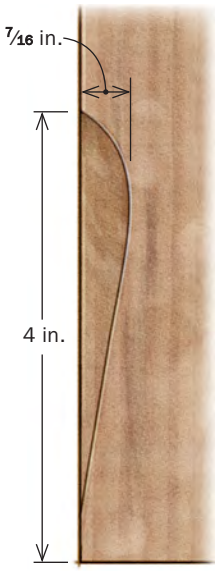
Thicken up the legs

The legs of the original chest appear to be thicker than ¾ in., but Hiller didn't want to make the whole side thicker. To emulate the beefier look, she added ½-in.-thick blocks to the legs.

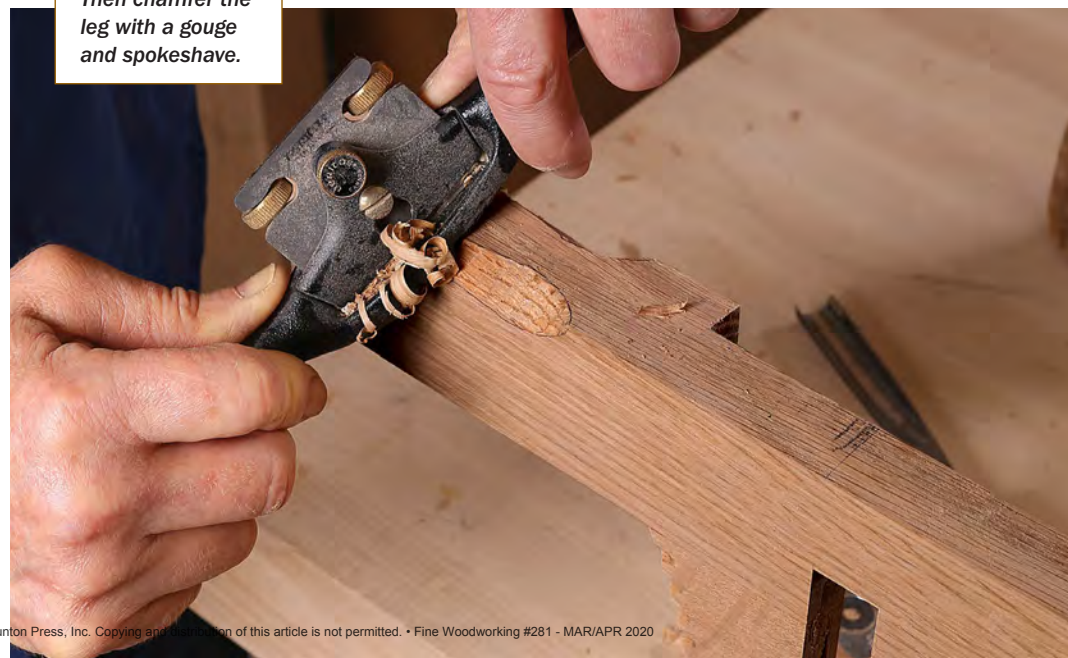
Add blocks to the legs. *Cut these out of the same stock as the sides so that the grain will match, and then glue and clamp them to the legs.*



Shape the legs. *After trimming the added blocks to length, use a template to draw the shape on both sides of the leg. Then chamfer the leg with a gouge and spokeshave.*



CARVING PROFILE



Flare the front and back pieces

Angled front and back panels overhang the sides and get thumbnail carving on both faces at the ends. In keeping with the joinery on the original chest, the side pieces fit into dadoes in the front and back, and are reinforced with pegs.

Start with the dadoes. *Before tapering the ends of the front and back pieces, cut the dadoes. Hiller uses a Forrest finger-joint blade, adjusting the fence and creeping up on the fit in multiple passes. She keeps the board firmly against the fence while using a nonslip push pad.*

end grain with a block plane or a router and pattern-cutting bit with a straightedge.

Mark a line parallel to the taper to guide the thumbnail carving at each side. Use dividers to lay out the center point of each thumbnail. Clamp the workpiece to the bench and cut the pattern with a #9-15mm gouge and a mallet.

While you're at it with the gouging, lay out the smaller thumbnail pattern along the arch on each of the sides and cut them the same way using a #9-7mm or #9-8mm gouge and mallet.

Lay out your pattern for the carved field on the front panel with care and carve the letters, numerals, and other motifs with gouges and chisels. (For more on this technique, see "The ABCs of Letter Carving" by Clark Kellogg, *FWW* #275.)

The lid and the batten

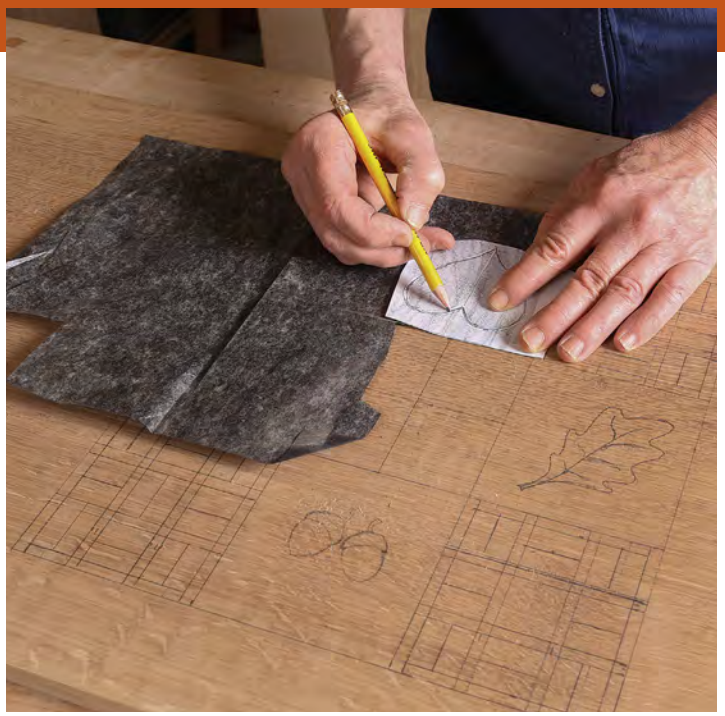
The two-part lid is hinged together, with one smaller section that is secured to the case and a larger section that lifts to open the chest. Cut the lid parts to size and place them on the chest. Lay out the

Angle both ends of the front and back pieces. *Bandsaw close to your taper line, and then clean up the cut with a handplane or a straightedge and a handheld router with a bearing-guided bit.*

Add a simple yet elegant carving. *Using dividers, mark the center point of each thumbnail. Clamp the workpiece to the bench and then cut the pattern with a #9-15mm gouge and mallet.*

Add the carved field

Gimson used simple, decorative carving and motifs drawn from rural forms in much of his work. Just a handful of layout and carving tools will get you a beautiful result.



Lay out the design. *Carefully draw the design directly on the front panel. Hiller uses dividers and a square to mark out and then draw the straight lines. She uses carbon paper to trace her drawings onto the wood.*

Cut the repeating peak shapes. *First use a knife and straightedge to mark the sides parallel to the peaks. Then use a chisel to slowly approach the depth you want, leaving the apex of the peak sharp and crisp.*

Carve the letters, numbers, and designs. *Take special care with the outlines that are parallel to the grain; these are especially challenging because your V-chisel will want to follow the grain instead of your line.*

mortises for butt hinges and cut them. I cut them by hand, making a series of chops with a chisel and then paring out the waste with a chisel held flat.

The larger portion of the lid is thinner at the front than at the back. Taper its top face from ⅞ in. to ⅝ in. thick. I do this by securing a ¼-in.-thick shim to the underside at the front with double-sided tape, then taking a few light cuts with my planer.

The lid is held flat with wedge-shaped battens fastened by sliding dovetails that allow the wood to move. Start by routing the slots at your bench, using a guide. The slots will come through the hinged back edge of the lid but will be stopped about 1 in. short of the front. Next cut the dovetails on the battens at the router table, then trim the dovetails back to the stopped slot with a tenon saw. Cut a 7° angle on the front end of each batten, then rip a 7° bevel along the length of each side.

Sand the battens and the underside of the lid, avoiding the shoulder areas to preserve a clean fit. Then affix the battens, gluing just the section at the front.

Assemble the chest

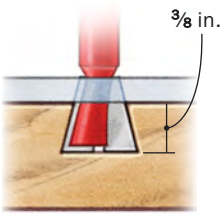
To prepare for assembly, clean up the parts with a scraper or sandpaper. Avoid

Focus on the top

A subtly tapered lid has sliding dovetailed battens that keep it flat.

THE LID

Cut the dovetail slots. *After cutting the hinge mortises in the lid, use a straightedge and a dovetail bit in a handheld router to cut the dovetail slots. Hiller registers the router on the straightedge, careful not to cut all the way through the front edge, and then backs the router out while maintaining the same registration.*



Create the taper. *Tape a shim to the underside of the front edge of the lid. Feed the lid into the planer, top side up. The taper goes from 5⁄8 in. thick at the front of the lid to the full 7⁄8-in. thickness at the back where it is hinged. You also could use a drum sander to do the tapering, or bust out your jack plane, roll up your sleeves, and get to work.*

removing material around the joints where doing so could affect their fit. Tap the sides onto the bottom. I don't use glue here. It isn't necessary. The bottom is trapped between the sides, and I cut tight-fitting joints.

For the rest of the assembly, I use a slow-setting adhesive such as Titebond Extend or a slow-curing epoxy. Set the back panel on your workbench, brush glue into the dadoes, and set each side into its dado. Next, apply glue to the dadoes in the front panel, then lay the front on top of the sides and tap it in place with a rubber mallet. Lift the assembly carefully into upright position, then clamp. Check for square and twist, and make adjustments as needed. Clean up the joints and the top edge of the case.

Hinge and install the lid

With the two lid parts hinged together, glue and clamp the small part in place. Counterbore with a 3⁄8-in. Forstner bit, then drill for screws and screw it in place. Plug the holes with oak pegs.

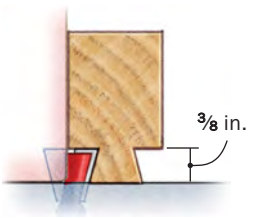
Clean up the lid by scraping or sanding, then lay out the decorative gouging pattern for the smaller thumbnails along each end, and cut those.

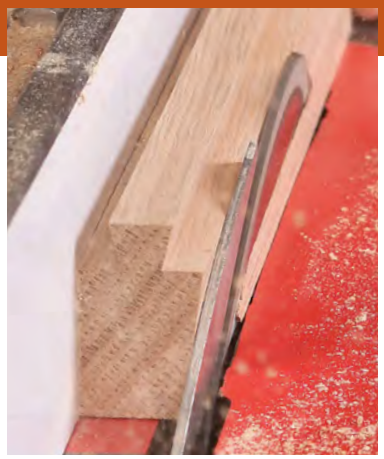
Cutouts for beveled battens

The front panel is notched at the top to accept the lid battens. Lay out the notches

THE BATTEN

Cut the dovetails. *On a router table with a dovetail bit, cut both sides of the batten, creeping up on and testing the fit of the dovetail in its slot.*





Bevel it. *Rip a 7° angle along each side of the batten. When cutting the first side (left) you have a flat surface to ride the fence. For the second side (right), with the first bevel against the fence, maintain good downward pressure and make sure the pressure against the fence is at the top of the stock. Be sure to finish both cuts using a push stick.*

Trim the dovetails back. *Because the dovetail slot stops 1 in. before the front, notch out the dovetail with two cuts with a handsaw.*

Affix the battens. *Gluing just the front section, where you trimmed back the dovetail, slide the battens across the underside of the lid.*

Assemble the case

Putting the chest together is as stress-free as a glue-up can get. Assemble the bottom to the two sides, add the front and back, and then install the two-part lid.

Attach the bottom to the sides. *Hiller doesn't always use glue on the mortise-and-tenons that attach the sides to the bottom. The bottom is trapped and not going anywhere. She makes sure the joinery fits tightly, and she doesn't have to worry about squeeze-out.*

Add the front and back panels. *Spread glue in the dadoes, set the sides-to-bottom assembly on top of the back, add the front, turn the assembly upright, and clamp it all in place to dry.*

Add the lid

Install the hinges. *To cut the hinge mortises, Hiller makes a series of chop cuts with a chisel and then cleans them up with paring cuts. Then she hinges the two lid pieces together.*

Attach the lid. *Set the lid in place with equal overhang on each side. Then counterbore with a 3/8-in. Forstner bit and drill for screws. Screw the lid to the back panel and plug the holes with oak pegs.*

Tapered notch for the beveled battens. *Transfer the beveled battens' wide and narrow points onto the top front edge of the chest using a square. Extend these lines down the front and back. Cut the tapered notches with a backsaw and chisel, and then pare to fit.*

carefully; the battens are beveled, so the notches must be tapered to match. Cut the tapered notches with a backsaw and chisel, then pare to fit.

I finished the piece with TransTint dye in Honey Amber followed by Minwax oil stain in Golden Oak, a thinly brushed coat of Zinsser amber shellac applied at full strength, and black wax. □

Nancy Hiller, the owner of NR Hiller Design Inc., is a custom furniture and cabinet maker in Bloomington, Ind.