

# A Blanket Chest with Legs



Simple frame-and-panel construction lets you  
break out of the boring box

BY JOHN MCALEVEY

I have always liked designing and making sideboards, chests of drawers and blanket chests. It is very satisfying to make a basic box that will contain and store the things that we use in our everyday lives. And when it works, the result can be as beautiful as it is useful. It's even more satisfying when you can transform a basic box into something with

depth, dimension and visual power.

The blanket chest I designed and made for a family in New Hampshire is a piece of furniture that could have been just another unremarkable dovetailed box, but it is redeemed by frame-and-panel construction that allows for greater play with forms and materials. It pleases me to think that many years from now, someone will open this

chest on a snowy December night, pull out a down comforter as proof against the cold, and think, "What a beautiful chest."

## Legs double as stiles

A chest made of four solid slabs dovetailed together looks too heavy and traditional for my taste, and I can assemble frames and panels much more quickly than I can cut

long rows of dovetails. Frame-and-panel construction has more going for it than lightness and economy of labor: It adds depth and shadow lines to the look of a piece, and it allows the use of contrasting wood—something you can't do with mitered or dovetailed chests made only from flat panels.

My client wanted a fresh design that incorporated elements of two of my previous frame-and-panel chests. In a departure from one of the older designs, I decided to eliminate the stiles of the frame-and-panel sides and join the top and bottom rails directly to the legs so that the legs themselves serve as stiles (see the drawing at right). This legs-as-stiles approach, which I had first tried nine years ago on a cabinet, allows for simplified construction and a lighter look than full frame-and-panel sides attached to separate legs. (Squinting at the blanket chest, you can almost imagine away the light-colored panels, leaving behind an open frame of thin, table-like legs and rails.) A gentle curve in the bottom rail helps the legs visually lift the chest off the floor.

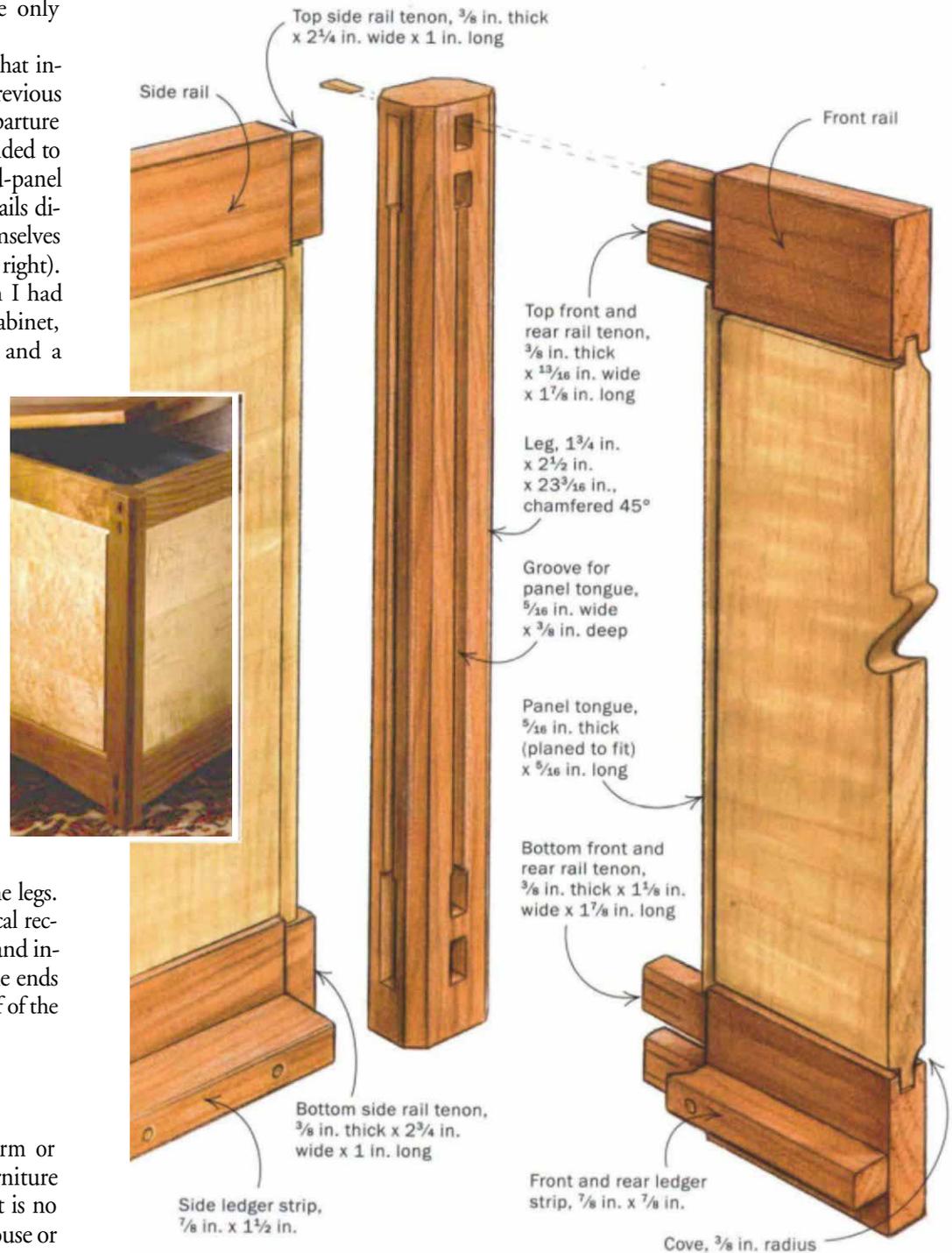
The frames are made of cherry and the panels are of curly maple. The legs are made from 8/4 lumber, lightened and made more interesting by chamfering on all four sides. To add even more visual character and a form of decorative detail, I brought the double tenons of the front and rear rails through and let them stand  $\frac{1}{8}$  in. proud of the legs. And to transform the top from a typical rectangular shape into a more pleasing and interesting form, I decided to curve the ends of the lid, carrying through the motif of the curved bottom rails.

### Mortise-and-tenon joints hold the panels together

Mortise-and-tenon joints, in one form or another, are the basis for all good furniture construction, and this blanket chest is no exception. As in a post-and-beam house or a post-and-rail fence, mortise-and-tenon joints draw horizontal and vertical pieces

## THE ACTION IS IN THE CORNERS

Because the legs serve as the stiles of the frame-and-panel sides, they are mortised for the rail tenons as well as grooved for the panel tongues. Both the mortises and grooves are centered on the inside faces of the leg, so layout is straightforward.



of furniture together simply and rigidly. Used with frame-and-panel construction, these joints make furniture that accommodates seasonal changes in the wood better than any other method.

The architect Louis Kahn said that the joint was the beginning of all ornament, and this holds true for the wedged, double through-tenons on my blanket chest. I worried that through-tenons would detract from the lines of the legs, but now that I've done them, I'd do them again. Details like these through-tenons add mystery because people at first wonder why they're there, and yet they take away mystery because they ultimately reveal the nature of the construction. I've noticed at shows that people make a beeline to just such details.

### Careful preparation pays dividends during mortising

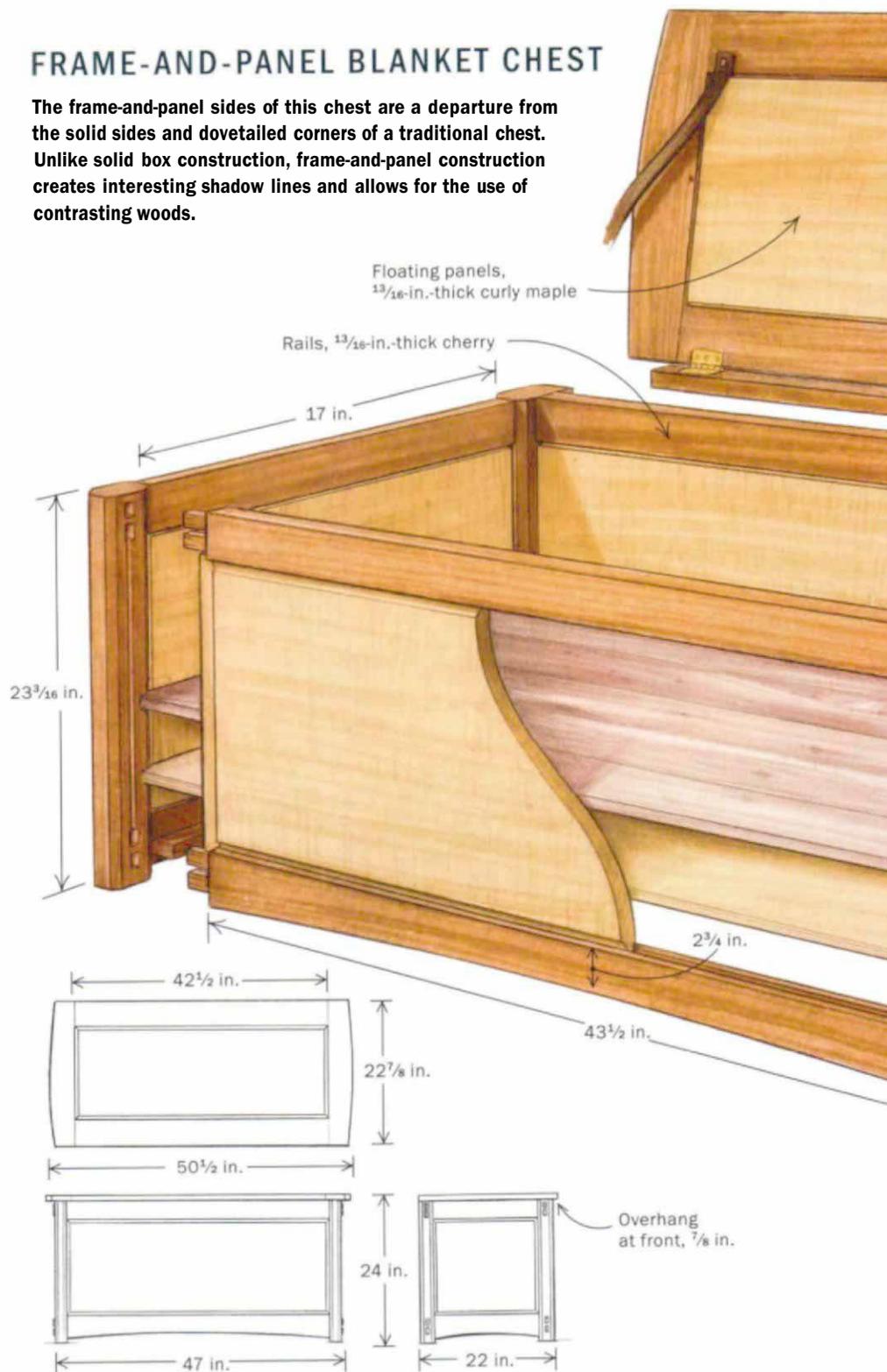
I always sticker more wood to acclimate in my shop than I think I'll need for a project, and I take a few shavings from each board with a block plane to give me a clearer view of its grain and color. For the legs, I wanted straight grain—nothing wild—so that no one leg would detract from the others. I also wanted consistency in the grain of the rails so that the figured curly maple would stand out. To match the grain on the top and bottom rails of a given side, I chose boards wider than 8 in., wide enough that I could rip them into a 3-in. top rail and a 3½-in. bottom rail. Because my design called for relatively narrow rails, I felt I could use flatsawn cherry instead of more expensive quartersawn cherry. Flatsawn lumber will expand and contract more than quartersawn lumber. But with a narrow rail, the difference will be negligible.

I began by roughing out the four legs. I always cut pieces to length oversized by a few inches. I keep an eye out for end-checking and surface defects and plan my cuts around them. If, when I am laying out the pieces, it looks as though one might have a streak of sapwood showing, then I'll rough out five legs. And I always mill a few test pieces. Using test pieces to set up joinery cuts helps ensure my good pieces will be right on. In making any piece of furniture, my time and labor far outweigh the cost of using a few extra inches of wood here and there. This is not a place to be stingy.

I chose to make all the mortises and tenons ¾ in. thick, with the tenons on the bottom rail a little wider than those on the

## FRAME-AND-PANEL BLANKET CHEST

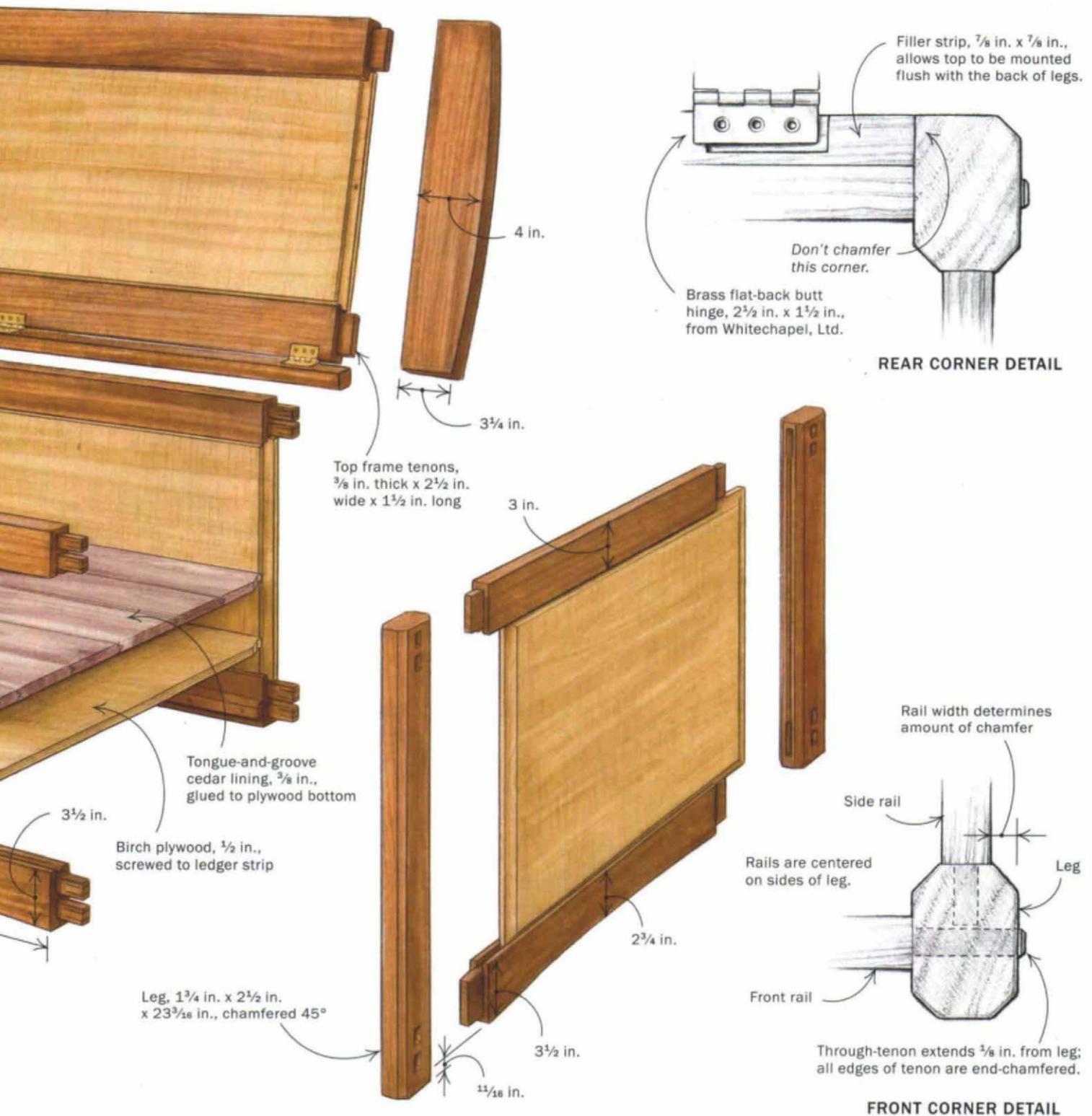
The frame-and-panel sides of this chest are a departure from the solid sides and dovetailed corners of a traditional chest. Unlike solid box construction, frame-and-panel construction creates interesting shadow lines and allows for the use of contrasting woods.



top rail. The side rails and the frame for the top are put together with blind, not through-tenons. After I determined their locations, I laid out the mortises and tenons on the legs and rails with a marking gauge and a very sharp pencil.

There are many ways to cut mortises, ranging from using hollow-chisel machines and plunge routers with spiral end mills to

chopping them out by hand the old-fashioned way. I use an Italian-made slot-mortising machine to cut mortises in my shop. The machine can use either a Clico slot-mortise miller bit (available from Garrett Wade; 800-221-2942) or a spiral end mill (available from Woodcraft Supply; 800-225-1153). A slot-mortising machine is expensive, but it's extremely accurate once



you've set it up, and it's a pleasure to use. I've never understood why the Taiwanese haven't made a less expensive one.

A slot mortiser leaves a mortise with rounded ends. I prefer the look of a squared tenon in an exposed through-mortise joint, so on the blanket chest legs, I squared up the mortises by hand with a bench chisel. Working on the outside face

of the leg, I made starter cuts on the sides of the rounded mortise and then cut out the waste at the end. The English would have cut a tapered mortise to accept the flared shape of a wedged tenon. I didn't make a big deal of it, but I did cut a little heavy on the end line and chiseled a slight taper.

When I cut the mortises, I also used my slot mortiser to cut the grooves that receive

the maple panels. Because both the mortises and grooves are centered on the legs, I had only to change the bit. You could also use a router or a dado blade on the table-saw to cut the grooves.

For cutting tenons, I prefer a tablesaw. I made the shoulder cuts first, using a tenon jig that safely secured the rails perpendicular to the table. As always when cutting



## ONE SIDE AT A TIME

To avoid gluing up too much at once, assemble the front and rear panels first. **1.** Glue the double through-tenons of the top and bottom rails into a mortised leg. **2.** Fit the panel into the grooves in the rails and leg without glue. **3.** Glue up the other leg, and wedge the through-tenons. **4.** Join the completed front and rear with the side rails and panels to form a carcass.



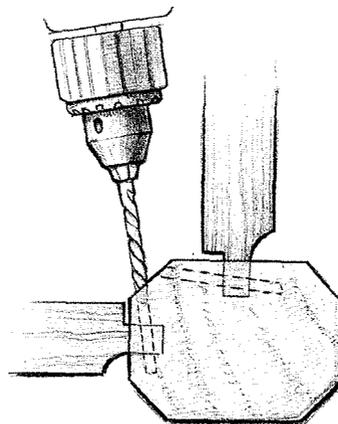
tenons, I used a test piece to check the settings of the tablesaw. I removed the waste between the double tenons with a bandsaw, and cut slots for the wedges two-thirds through the tenons with a backsaw.

Once all the mortise-and-tenon joinery was cut, I dry-fit each tenon to its own designated mortise. I strive for an exact fit right off the machine. If I'm going to use machines, I insist on obtaining a high degree of accuracy. I've put a lot of time into adjusting and keeping my saws, jointer and planer tuned up. Those machines and my trifocals ensure the precision I've grown to expect.

### A cove bit shapes the panels

I feel as though we've become anesthetized to frame-and-panel construction because of kitchen cabinetry, much of

### PIN THE PANELS FROM THE INSIDE

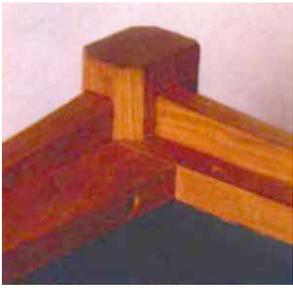


Pin the center of each vertical tongue to the legs with a  $\frac{1}{8}$ -in. dowel, so the panels will expand and contract evenly at the top and bottom rails. Angle the hole for the pin to prevent the drill from damaging the sides of the panels.

which has been derivative of traditional furniture. I try not to make furniture that looks like a kitchen cabinet. So I milled the five curly maple panels that make up the sides and the top of the blanket chest from solid stock glued together with butt joints at the seams. I raised the panels by cutting a cove around the perimeter on the outside surface, allowing for a very narrow reveal between the frame pieces and the cove.

For the cove cut, I used a router table with a standard high-speed-steel,  $\frac{3}{8}$ -in. cove bit. To increase the height of the cove, I stood the panels on end, against the fence, and ran them vertically through the router. This way, I could make use of the  $\frac{3}{4}$ -in. height of the cove bit rather than its smaller radius.

I took slight incremental cuts, about  $\frac{1}{16}$  in. at a pass, to avoid burning the maple. This



**Ledger strips support a plywood bottom panel** painted with odorless milk paint (above). A liner of tongue-and-groove aromatic cedar (right) is glued on top of the plywood and is notched to fit around the legs.



improves consistency and saves time and frustration. And I ran each panel through consecutively before raising the bit. Experience has taught me to be careful not to bull through this process. Only a newly sharpened bit will do; if the bit is borderline dull, it will burn. And I find that high speed steel is less likely than carbide to burn a workpiece. For most woodworking projects, I think carbide has been over-hyped.

After I finished cutting the coves on all five panels, I used a dado blade in my tablesaw to remove enough material to make a tongue that fits into the grooves previously cut in the legs and rails. The grooves were  $\frac{3}{8}$  in. deep, so I made the tongues  $\frac{5}{16}$  in. long, allowing  $\frac{1}{16}$  in. for expansion. In sizing panels, it's important to allow enough room for seasonal expansion and contraction. Often I have to fine-tune the width of a panel tongue by using a rabbet plane to shave the shoulder.

I pre-finished all the curly maple panels before assembly, because it's easier to get a finish on the cove edges this way. On the inside surfaces, I brushed on three coats of shellac. Shellac will not impart any unpleasant odor to blankets or sweaters stored inside the chest. On the outside of the panels, I used a linseed oil and turpentine mixture, wiping off any excess oil (as it began to tack up) with cotton rags. I took great care to dispose of the rags by putting them in a bucket of water.

### Assembly is easy

With all the parts prepared, I assembled the chest in sections (see the photos on the

facing page). The front and rear sections each consist of two legs, top and bottom rails and a floating panel. I glued and clamped the front and rear sections separately. (I prefer Titebond Extend glue, which I buy from Woodcraft Supply, because it provides a little more working time for putting together many parts at once.) At this time, I wedged the exposed through-tenons with pre-cut maple wedges, wetted with a dab of glue. I also pinned the vertical centers of the panel tongues to the legs so that the panels will expand and contract evenly in the top and bottom rails (see the drawing on the facing page). When the glue on the front and rear frames had set, I then glued and clamped the whole chest

together, joining the front and rear sections with the top and bottom rails of the sides. I was careful not to forget to put in the maple side panels.

After the four sides were together, I attached bottom ledger strips with screws and glue, and screwed a  $\frac{1}{2}$ -in. birch plywood bottom panel to the ledger. I painted the plywood panel with milk paint (which, like the shellac, won't impart an odor). With a few lengthwise beads, I glued a tongue-and-groove aromatic cedar lining on top of the plywood to make the floor of the chest smell good (see the photos at left). A little play in the tongue-and-groove joints and glue on only a few boards allow the cedar lining to expand and contract without busting up the chest. I also glued up the frame-and-panel top, which is essentially a door mounted on brass butt hinges.

Once the top was glued up, I laid out the curves on the ends, using spline weights and a plastic spline (see *FWW*#71, p. 45). I cut the curves with a sabersaw and then cleaned up the edges with a block plane and sandpaper. Before setting the hinges, I glued a filler strip to the rear top rail, between the two rear legs (see the photos below). To keep the lid from swinging too far back, I installed a leather strap. The leather adds a warm touch to the chest without sacrificing strength. □

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**A filler strip holds the hinges.** The strip is glued to the rear top rail and butts against the rear legs, whose inside back corners remain unchamfered.