

# Chisel Case

*Whether you hang this case on a wall or set it on a bench, a tilting rack keeps your chisels right at hand.*

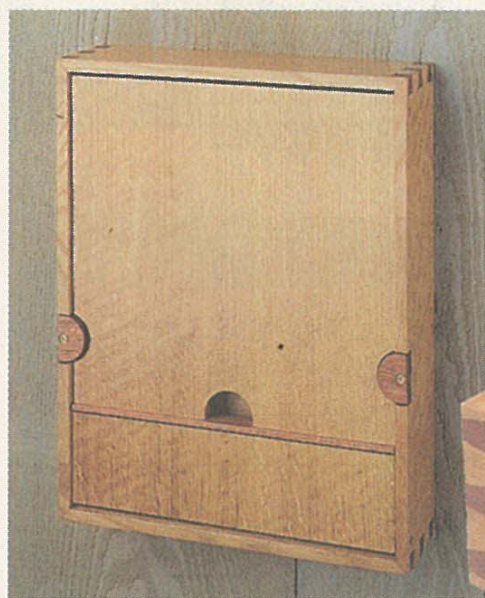
**T**here's no question that this chisel case is a great looking project. It's made of quartersawn white oak. And we used mahogany for the dovetail "keys" in the corners and the small accent pieces.

But what really intrigues me about this case isn't how it looks. It's how it *works*.

**TILTING RACK.** The chisels are held securely in place by a tilting rack. The unique thing is the rack locks in *two* different positions. This way, it provides easy access to your chisels whether the case is mounted on the wall (see photo above) or sitting on a bench, see center photo below.

**WALL-MOUNTED.** To "unlock" the case when it's hanging on a wall, you simply rotate a small wood turnbutton, see photo below right. Then flip up the cover, reach inside the case, and pull the rack forward. The cover drops neatly *behind* the rack, see Wall Mounted detail on page 7. And when you tip the rack back up, the turnbuttons lock it in place.

*When working at your bench, the cover of the case props the rack at a convenient angle which makes it easy to remove a chisel.*



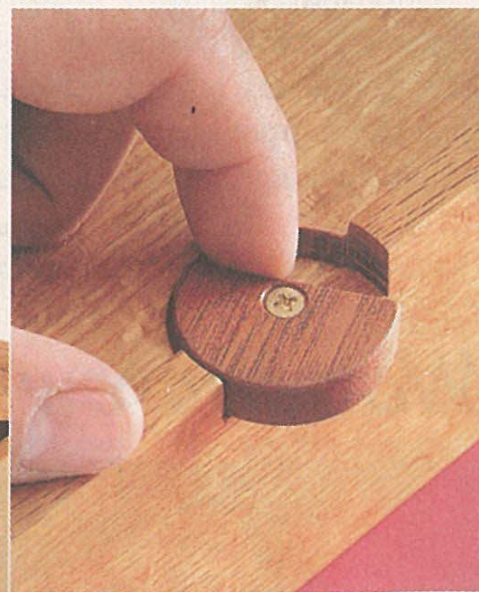
▲ Made of quartersawn white oak and mahogany, this chisel case is as attractive as it is functional.



**HANGING SYSTEM.** But just because the chisel case is mounted on the wall doesn't mean it's a permanent fixture. We've incorporated a hidden hanging system that lets you quickly remove the case and take it to your workbench.

**BENCHTOP.** With the chisel case lying flat on the benchtop, the rack needs to be propped up so you can slide the chisels in and out.

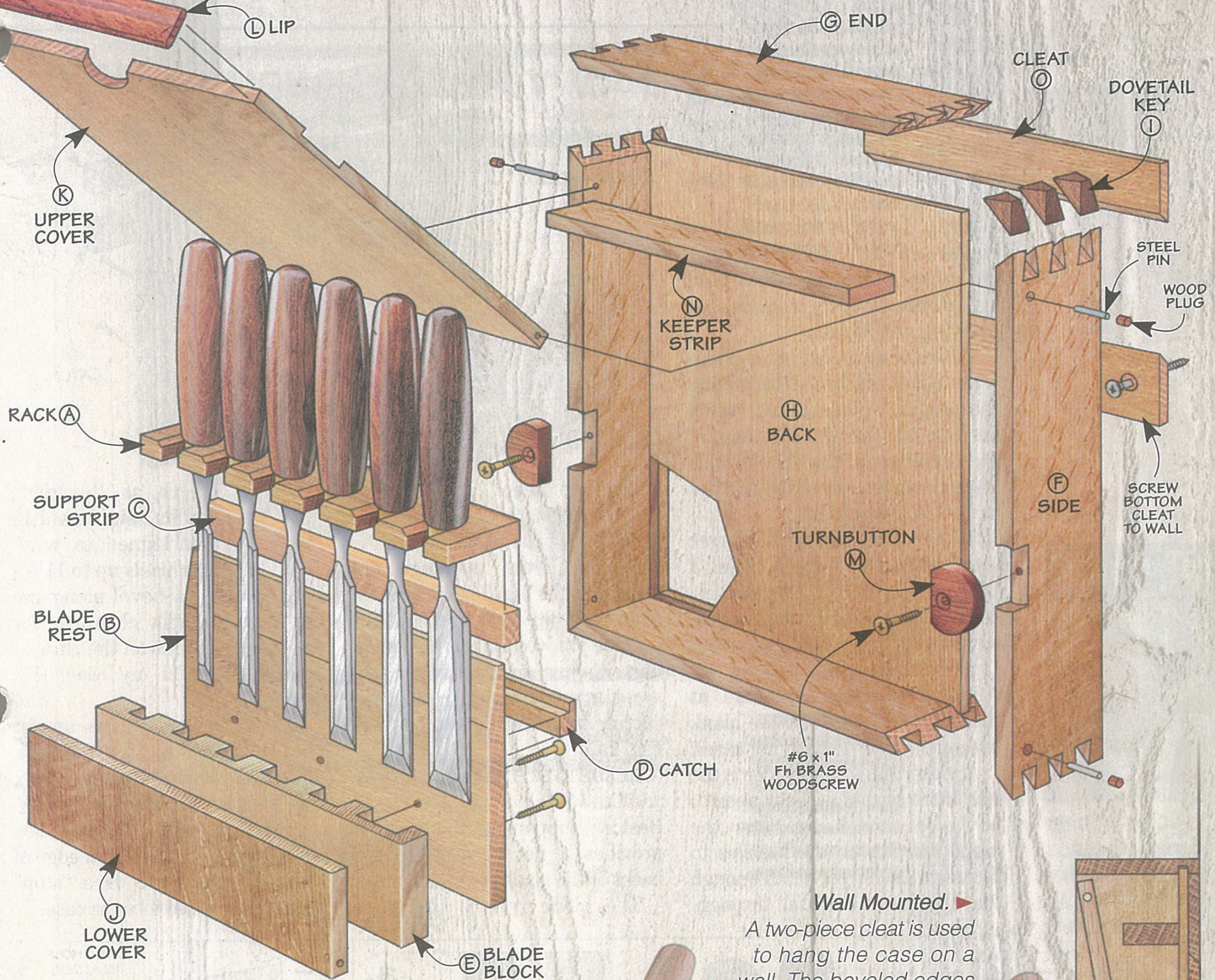
Here again, just tilt the rack up out of the case and lowering the cover behind it, see Benchtop detail. But here, the cover fits in a special wood catch that's attached to the back of the rack. This holds the rack at a convenient angle and locks it in place.



▲ To "unlock" the chisel case, simply rotate a turnbutton on each side. The turnbuttons also keep the rack from tipping too far forward when the case is mounted on the wall, see photo above.



## SHOP PROJECT



### Wall Mounted. ▶

A two-piece cleat is used to hang the case on a wall. The beveled edges of the cleats hook together and allow you to lift the case off the wall.

◀ **Benchtop.** With the chisel case lying flat on a bench, the cover hooks into a wood catch in back of the rack to prop it at an angle.

## Materials

A Rack (1)	$\frac{1}{2} \times 17\frac{1}{8} - 10\frac{1}{8}$
B Blade Rest (1)	$\frac{1}{2} \times 5\frac{7}{8} - 10\frac{1}{8}$
C Support Strip (1)	$\frac{1}{2} \times \frac{3}{4} - 10\frac{1}{8}$
D Catch (1)	$\frac{1}{2} \times \frac{3}{4} - 10\frac{1}{8}$
E Blade Block (1)	$\frac{7}{8} \times 10\frac{1}{8} - 2\frac{3}{4}$
F Sides (2)	$\frac{3}{8} \times 27\frac{1}{8} - 14$
G Ends (2)	$\frac{3}{8} \times 27\frac{1}{8} - 11$
H Back (1)	$10\frac{5}{8} \times 13\frac{5}{8} - \frac{1}{4}$ Ply.
I Dovetail Keys (12)	$\frac{1}{2} \times \frac{1}{2} - 1\frac{1}{2}$
J Lower Cover (1)	$\frac{3}{8} \times 10\frac{1}{8} - 2\frac{3}{4}$
K Upper Cover (1)	$\frac{3}{8} \times 10\frac{1}{8} - 9\frac{15}{16}$
L Lip (1)	$\frac{3}{16} \times \frac{3}{4} - 10\frac{1}{8}$
M Turnbuttons (2)	$\frac{3}{8} \times \frac{7}{8} - 1\frac{3}{8}$
N Keeper Strip (1)	$\frac{1}{2} \times 1\frac{1}{4} - 10\frac{1}{4}$
O Cleats (2)	$\frac{1}{4} \times 2 - 10\frac{1}{4}$



# Tilting Rack

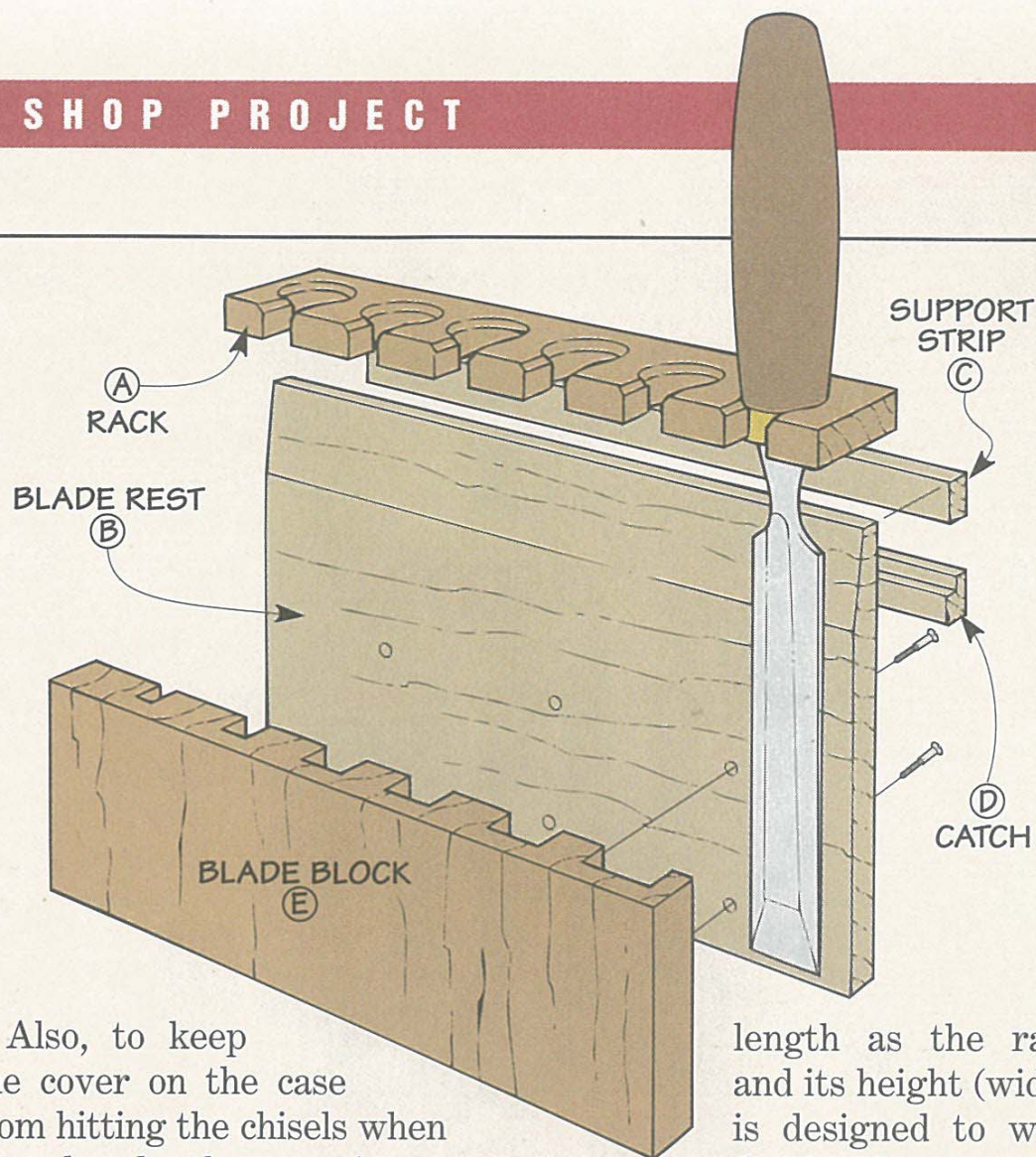
The best way I found to make this chisel case is to work from the inside out. This way, I could customize the tilting rack to fit my chisels, then build the case around it.

**RACK.** I began by making a hardwood *rack* (A), with key-hole-shaped openings that hold the chisels securely in place, see drawing and Fig. 1.

The rack starts out as an extra-wide blank. Before determining the length of this blank, you'll need to lay out the locations of the openings for the chisels. This depends on the size of the handles at their *thickest* point.

To provide plenty of finger room when removing a chisel, I allowed  $\frac{3}{8}$ " between the handles, see Fig. 1. And I laid out the centerpoints of the openings starting 1" in from one end, see Fig. 1a. After allowing an additional 1" at the opposite end, I cut the blank to length ( $10\frac{1}{8}$ " long in my case).

Another thing to consider is the *size* of the openings. They need to be large enough to allow the metal ferrules on the handles to fit down inside, yet small enough that the chisels don't fall through.



Also, to keep the cover on the case from hitting the chisels when it's closed, the openings are located so the handles set back  $\frac{1}{8}$ " from the front edge, see Fig. 1b.

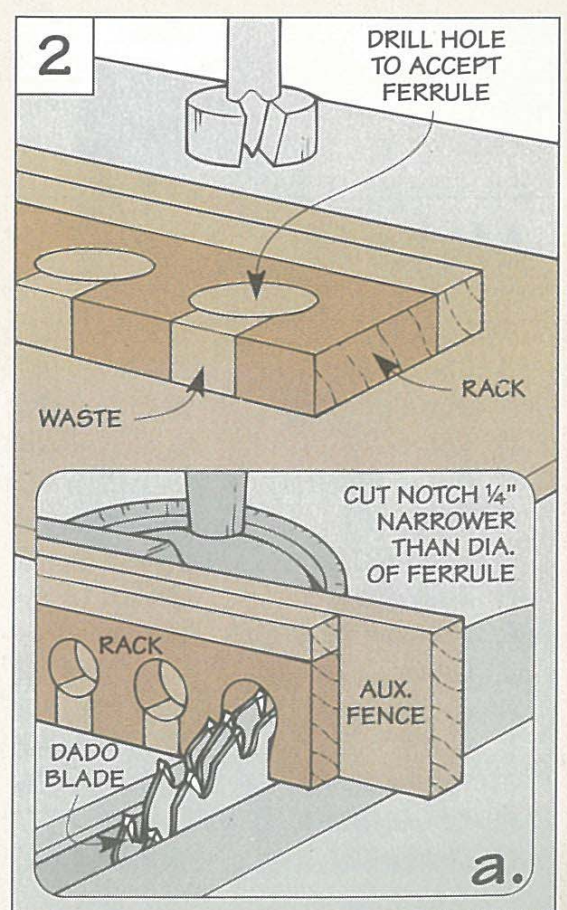
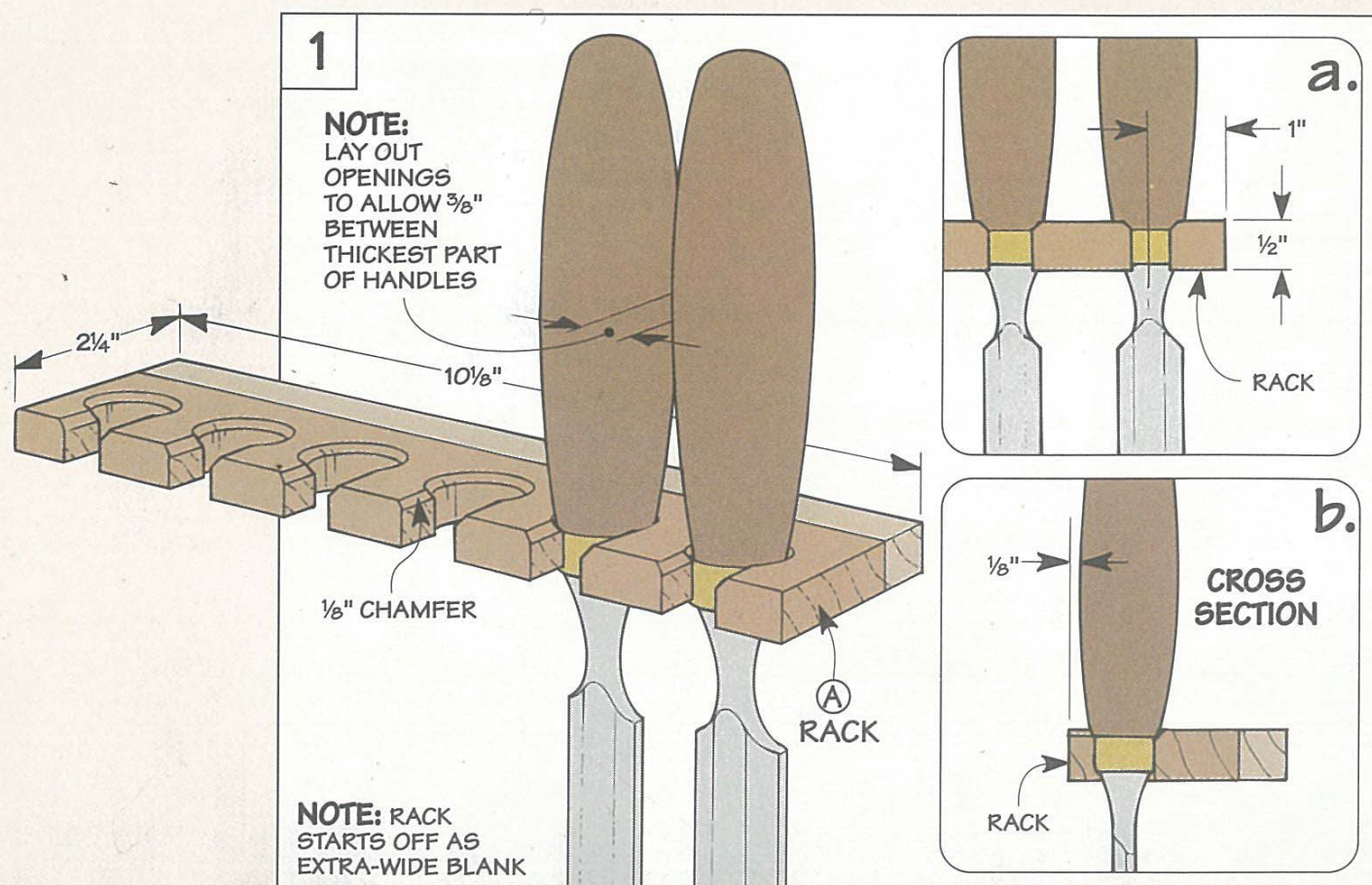
Once you've laid out the openings, it's just a matter of drilling a series of holes (Fig. 2), then cutting intersecting notches, see Fig. 2a.

**BLADE REST.** The next step is to add the *blade rest* (B), see Fig. 3. Besides supporting the rack, it provides a flat surface for the backs of the blades to rest against.

The blade rest is the same

length as the rack, and its height (width) is designed to work for chisels up to  $11\frac{1}{4}$ "-long. Cutting a bevel along the top edge provides clearance for the tapered necks on the chisels, see Fig. 3a. (In my case, this bevel was  $12^\circ$ .)

At this point, you're almost ready to attach the rack. But first, you'll need to trim it to final width. The idea is to end up with a  $\frac{1}{2}$ " overhang in back of the rest, see Fig. 3a. This way, the back edge of the rack will serve as a "stop" when it's lowered into the case.





An easy way to determine the final width of the rack is to set a chisel in the opening at each end and press the blades against the rest, see Fig. 3. This moves the rack into its correct position so you can mark and trim it to width.

**ATTACH RACK.** Now you're ready to attach the rack. It sits on the top edge of the blade rest. Since this edge is quite thin, I added another hardwood strip to provide extra support, see Fig. 4. This *support strip* (C) is simply glued to the rest and the rack.

**CATCH.** The next step is to add a *catch* (D) to the back of the blade rest. It's a thin strip of hardwood that keeps the cover from dropping into the case when the rack is propped up. To form a lip that holds the cover in place, the catch is rabbeted and then glued in place, see Fig. 4a.

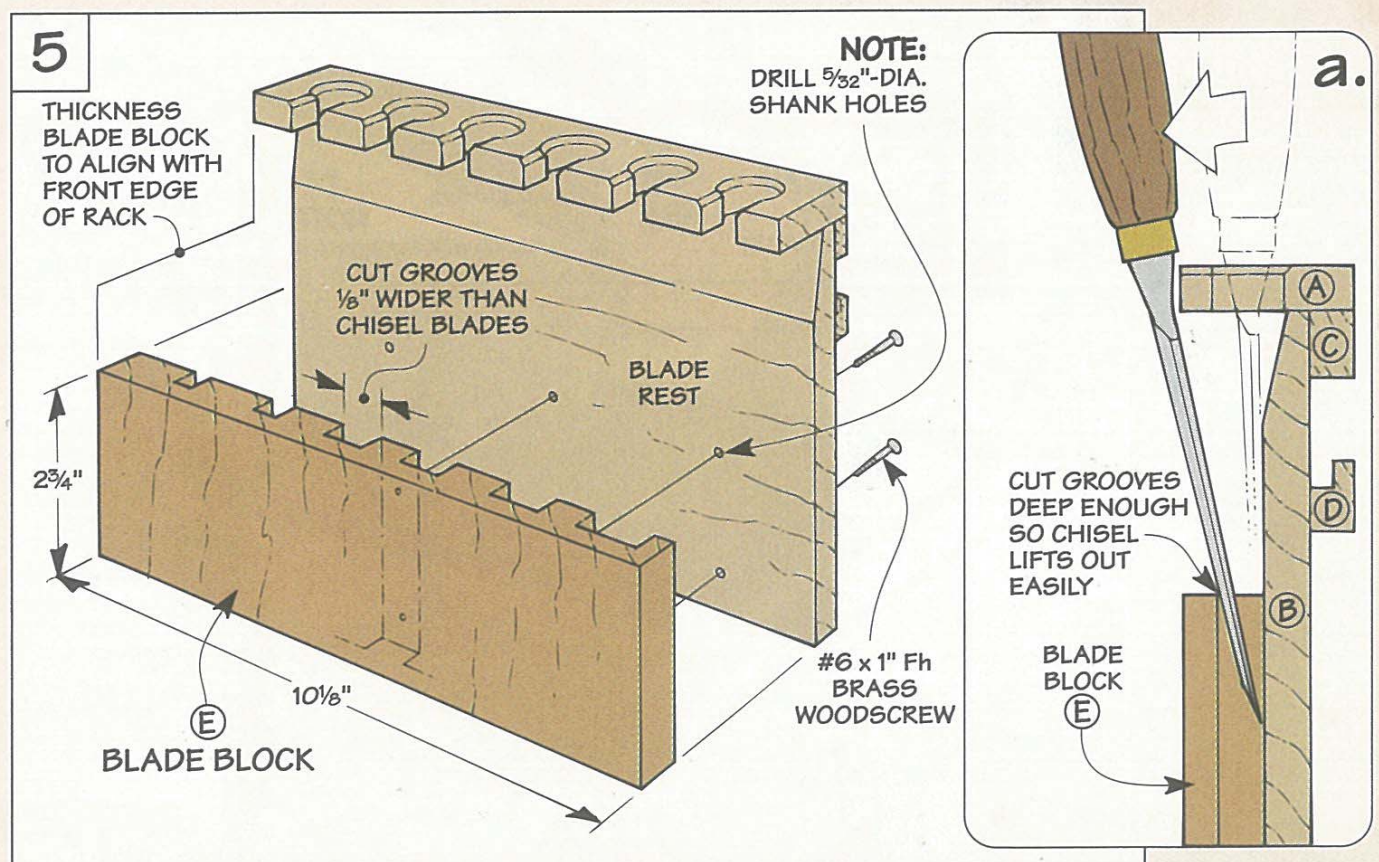
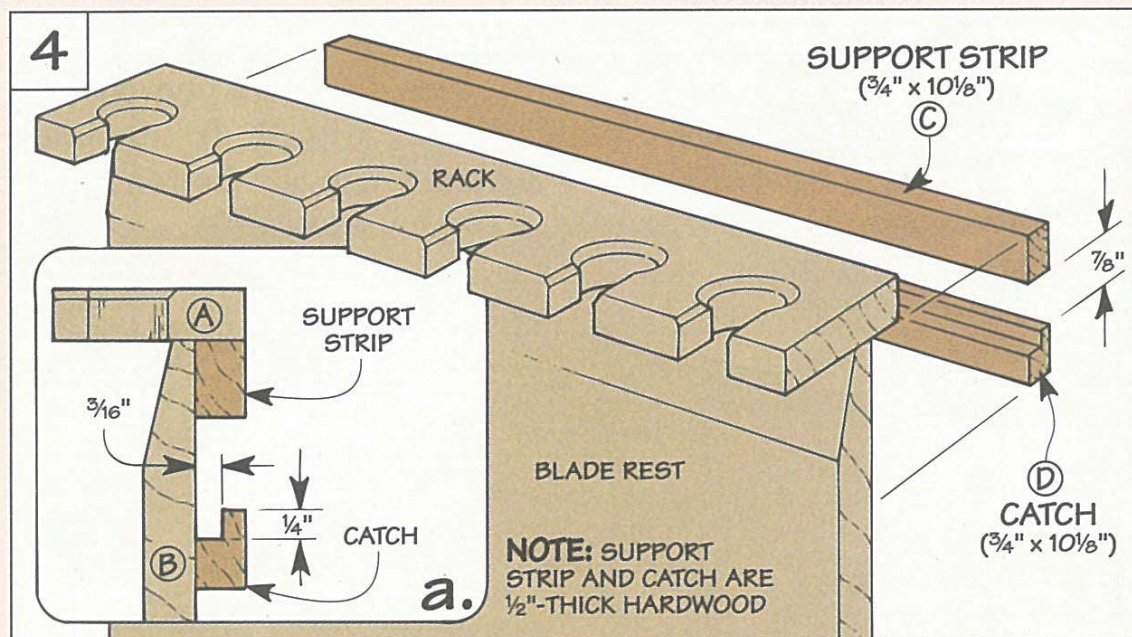
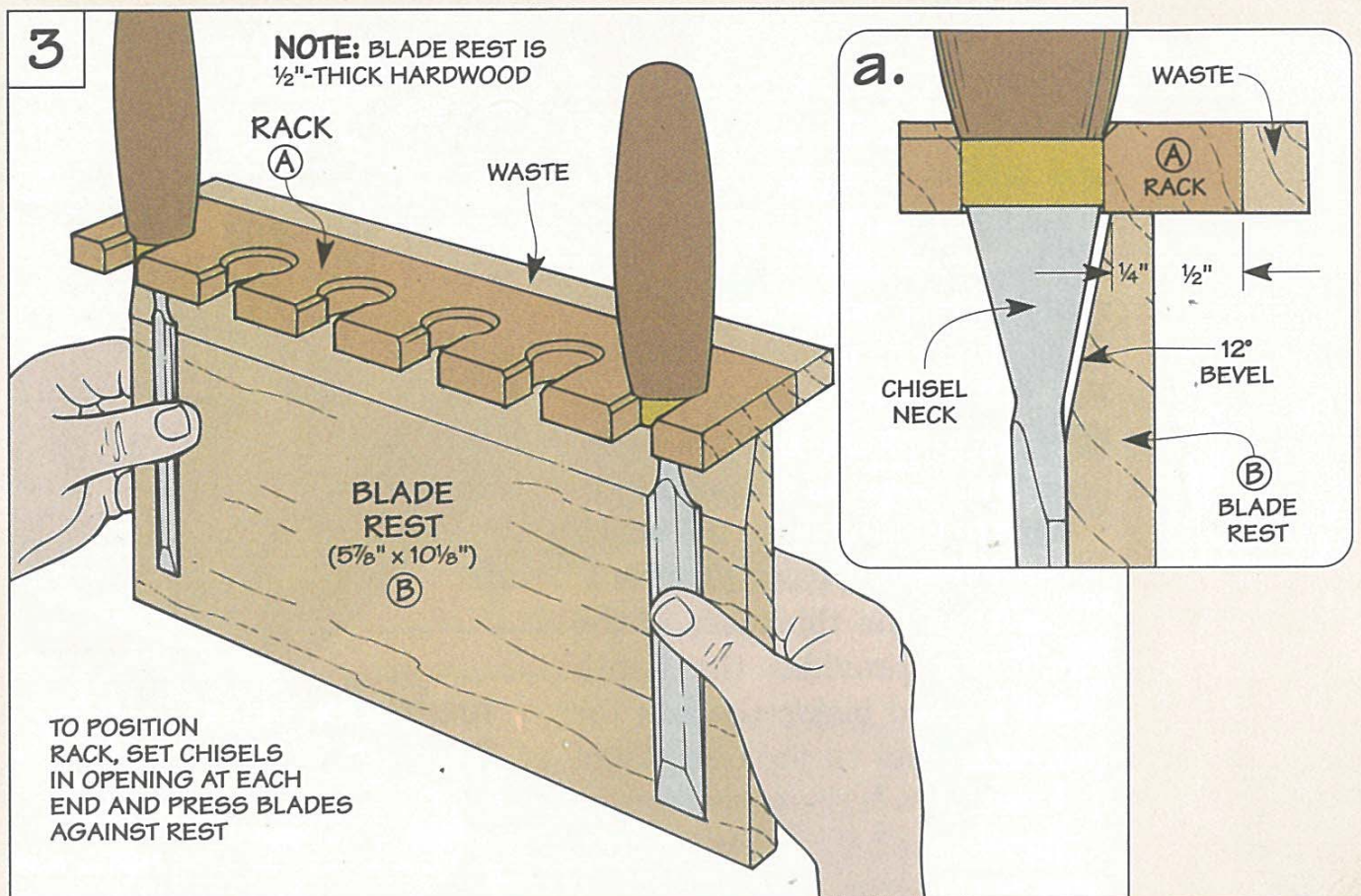
**BLADE BLOCK.** To complete the rack, I added a *blade block* (E), see Fig. 5. It's a thick block with grooves that form pockets for the blades on the chisels.

I cut these grooves  $\frac{1}{2}$ " deep. You'll want to check that they're deep enough that they don't restrict the blades when you lift out the chisels.

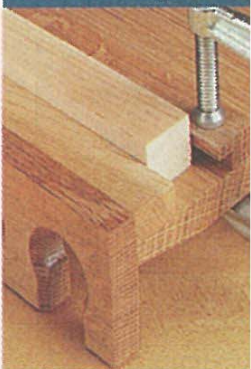
In addition to protecting the chisels, the blade block works together with the rack to support the two-part cover. So to ensure that both covers are flush when the case is closed, the blade block is thickened so it's in line with the front edge of the rack, see Fig. 5.

**GRAIN.** One last thing to note is the grain direction of the blade block. It runs up and down (the same direction as the lower cover that's glued on later). This means that it's *opposite* the grain direction of the blade rest.

So to allow for expansion and contraction with changes in humidity, the block is attached to the rest by drilling oversize shank holes and screwing it in place.



Shop T



Using a piece of scrap as a spacer makes it easy to properly position the catch.



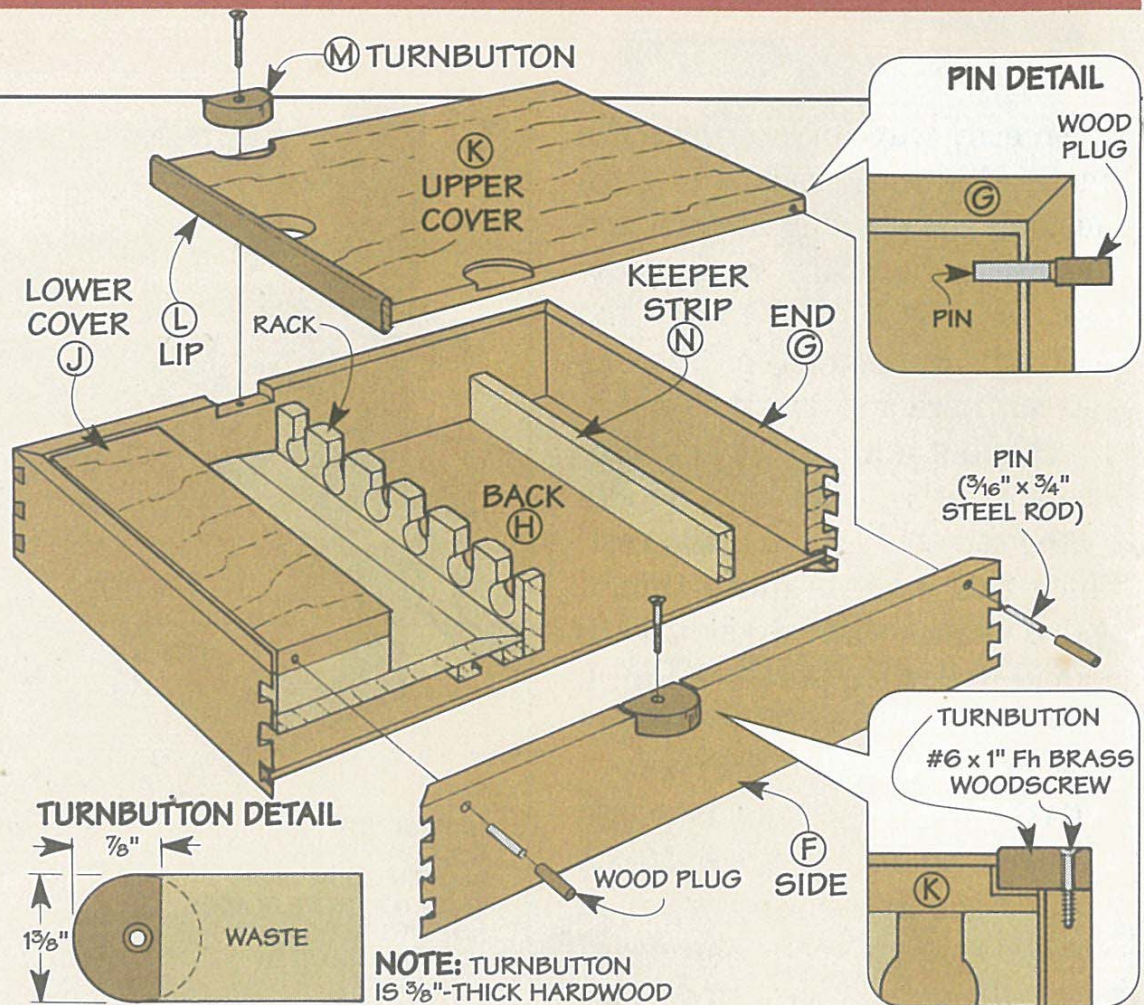
# Case

With the rack complete, all that's left is to build the case around it and add a two-part cover, see drawing at right.

The case starts out as a shallow box consisting of  $\frac{3}{8}$ "-thick *sides* (F) and *ends* (G), see Fig. 6. They're joined at the corners with miters and strengthened with dovetail shaped keys.

**WIDTH.** Establishing the width of these pieces is easy. They're 1" wider than the thickness of the rack. This provides the depth that's needed inside the box for the rack. And to provide visual interest, it will allow the covers to be recessed  $\frac{1}{8}$ " below the top edge of the case.

**LENGTH.** You'll also need to determine the length of the pieces. The ends are  $\frac{7}{8}$ " longer than the width of the rack. And the sides are 14" long to accommodate chisels up to  $11\frac{1}{8}$ " in length.



**BACK.** To enclose the rear of the case, I added a plywood *back* (H), see Fig. 6. It fits into a groove near the bottom of the ends and sides.

**KEYS.** After gluing the box together, I routed slots across the corners and glued in *dovetail keys* (I), see Fig. 6. (For more on this, refer to page 12.)

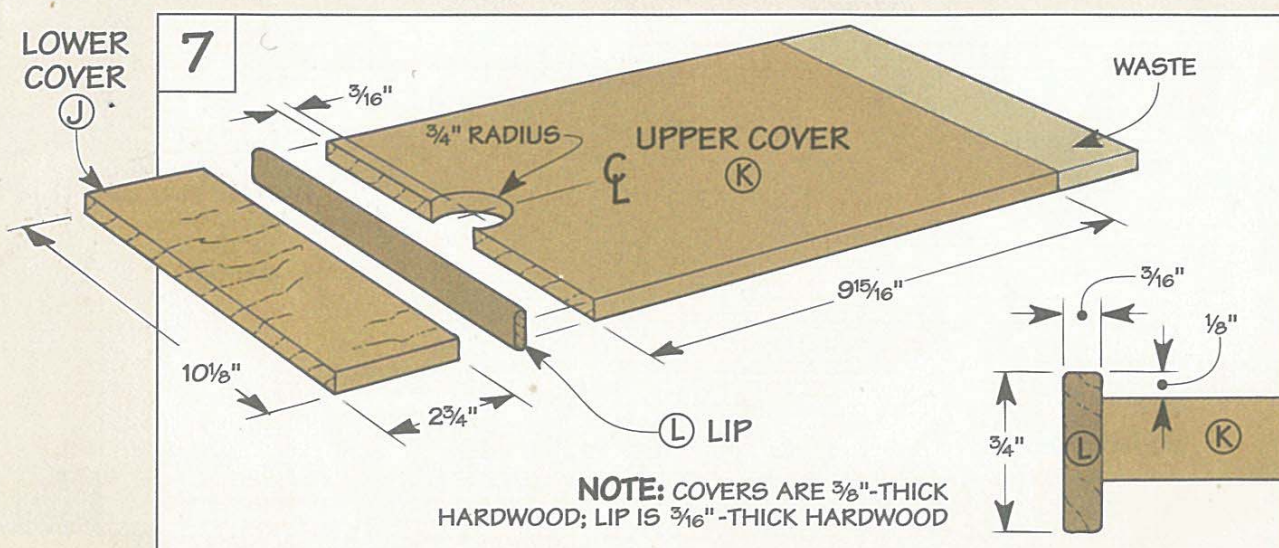
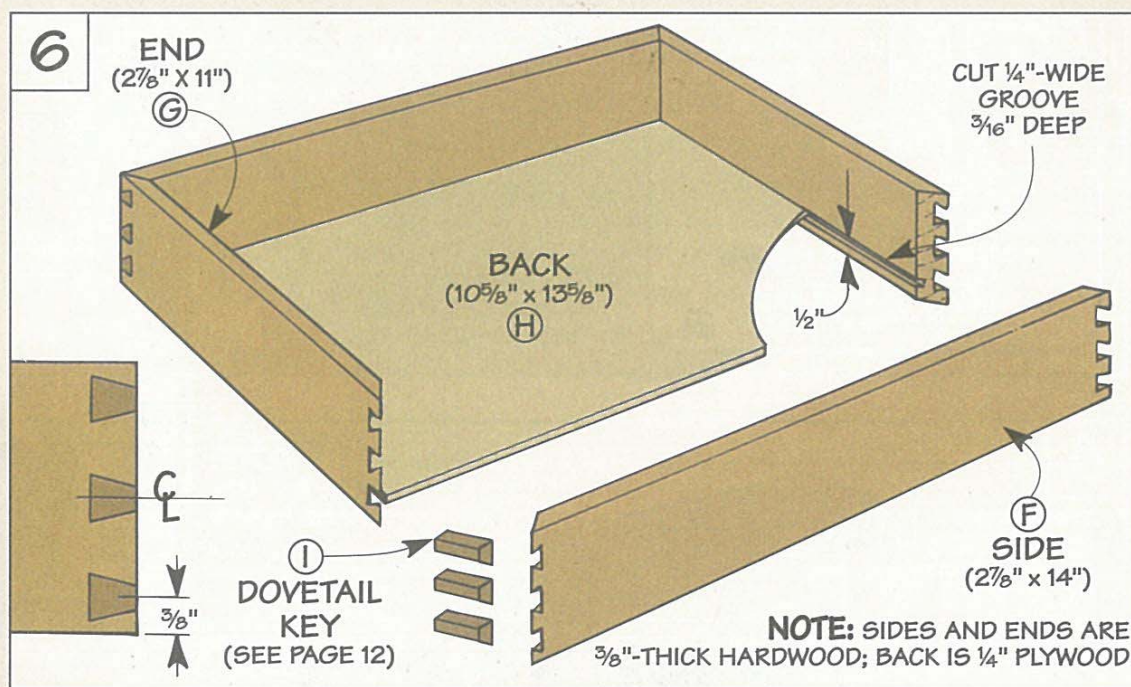
**COVER.** Once the case is complete, you can concentrate on the cover. It's made up of two parts: an *upper cover* that swings behind the rack to prop it up, and a *lower cover* that's attached to the front of the tilting rack.

To produce a consistent grain pattern, I made both covers from a single glued-up blank, see Fig. 7. It's  $\frac{1}{8}$ " narrower than the case opening and about 2" longer.

The next step is to cut the *lower cover* (J) to match the length of the blade block and glue it in place. But before you cut the upper cover to length, there are two things to take into consideration.

First, there's an  $\frac{1}{8}$ " gap between each cover and the ends of the box. And second, after a lip is attached later to the upper cover, there's an  $\frac{1}{8}$ " gap between the covers.

Once the *upper cover* (K) is cut to length, I drilled a finger hole to make it easy to lift the cover, see Fig. 7. Also, a thin *lip* (L)





that's glued to the upper cover will hook into the catch on the back of the rack. (I used mahogany.)

**ASSEMBLY.** At this point you're ready to attach the covers (with rack attached). To allow the covers to swing in and out of the case, they're held in place with metal pins.

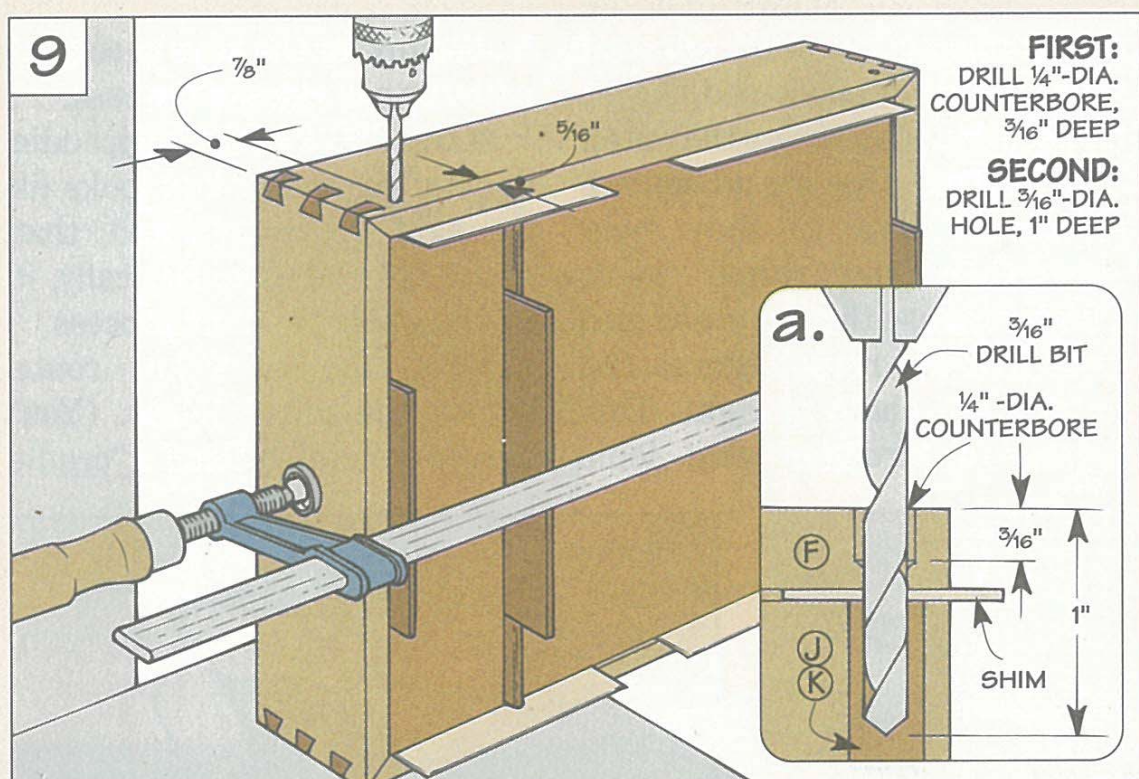
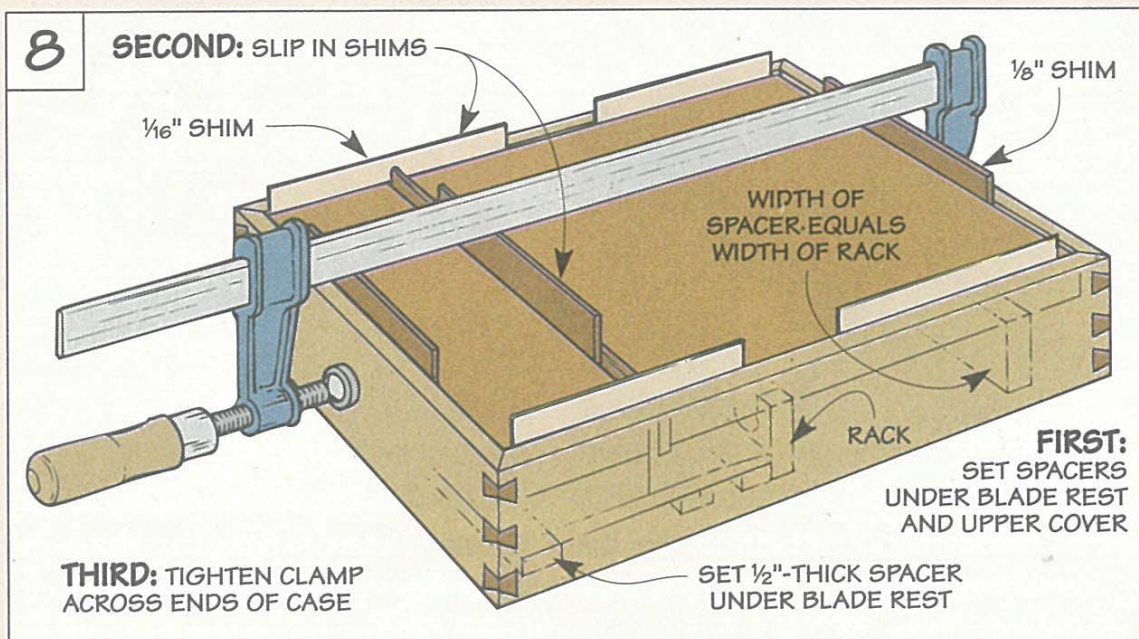
These pins pass through counterbores in the sides and into holes in the upper and lower covers. Locating these holes is easy. The trick is keeping the parts from shifting as you drill the holes.

The best way I found to do this is to place a spacer under the blade rest and upper cover, see Fig. 8. The idea is to size the spacers so the covers are flush with each other. After fitting shims into all the gaps, tighten a clamp across the ends and drill the holes, see Figs. 9 and 9a.

Now just push each pin into place and glue in a plug to hide the pin. (For more on cutting wood plugs, see page 30.)

**TURNBUTTONS.** Next, I added two mahogany *turnbuttons* (M), refer to drawing on page 10.

They rest in curved recesses drilled in the sides and cover, see Fig. 10. To minimize chipout, I clamped a scrap to each side of the case and carpet-taped two more scraps to the cover.



**KEEPER STRIP.** All that's left to do is glue in a hardwood *keeper strip* (N), see Fig. 11. It keeps the chisels from slipping out of the rack when you carry the case.

**CLEATS.** Finally, to hang the case on a wall, I used two beveled *cleats* (O), see Fig. 12. Mounting the case is just a matter of "hooking" the cleats together.

