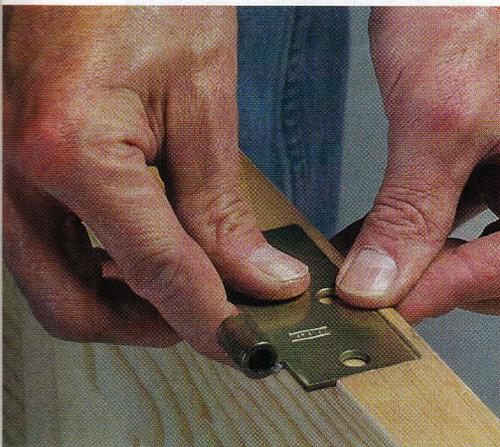
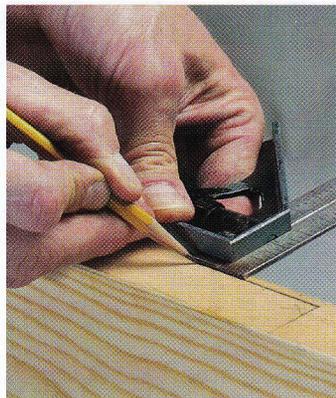


Mortising a hinge with a chisel

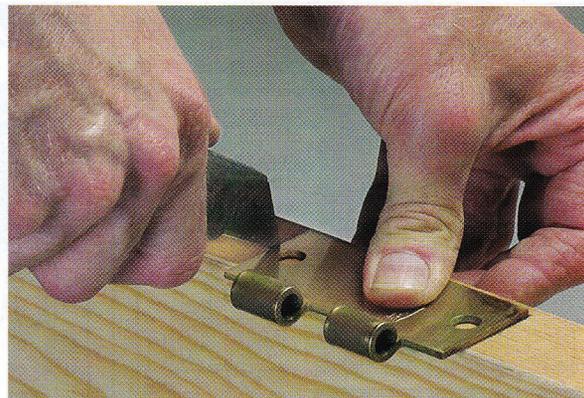


STEP-BY-STEP

Lay out the mortise



1 **Locate the back of the hinge on the door.** Using a combination square—with $\frac{1}{4}$ in. of blade exposed—as a gauge, lay out the back edge of the hinge with a pencil.



2 **Score along the ends of a hinge leaf.** It's easy to control a sharp knife cutting across the grain. Scoring offers a definite starting spot for the chisel.

If you've got a houseful of doors to outfit with hinges, a router and a hinge template are what you need to get the job done quickly. But these tools are expensive, and they require setup time. If you're installing only one or two doors, you can mortise the hinges just as fast using a sharp chisel.

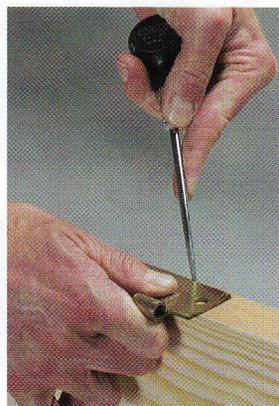
Unlike most cutting tools, a wood chisel is not fully sharpened at the factory. For fine carpentry work, the back of the chisel must be perfectly flat, and the beveled side must be razor sharp. Plenty of jigs are available to ease the sharpening process (for more on sharpening, see *FHB* #141, pp. 84-87), or you can send your chisels to a local sharpening service.

Becoming proficient with a chisel is useful for more than just hinges. Among other things, the mortising and carving techniques shown here can be used to install strike plates for doorknobs and dead bolts, remove broken floorboards, or make simple repairs in damaged trim.

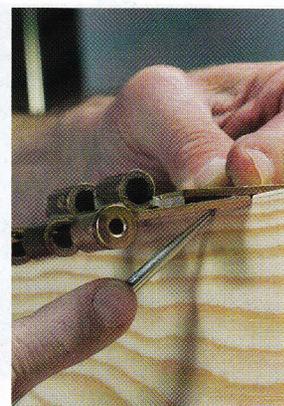
—Tom O'Brien, associate editor

\$10 CUTTING TOOL TAKES OUT THE GUESSWORK

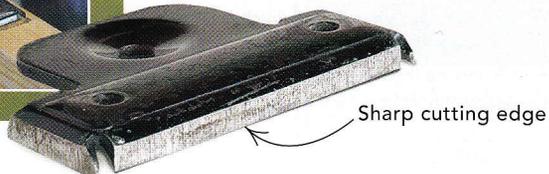
With three sharp edges that match the dimensions of a typical (3-in., 3½-in., or 4-in.) butt hinge, a Butt Marker (The Stanley Works; www.stanleyworks.com; 860-225-5111) establishes and cuts the outlines of the hinge mortise with a few good whacks from a hammer.



3 **Change tools to score along the back of the hinge.** Because it's less likely to follow the grain than is a knife, use an awl to score with the grain.

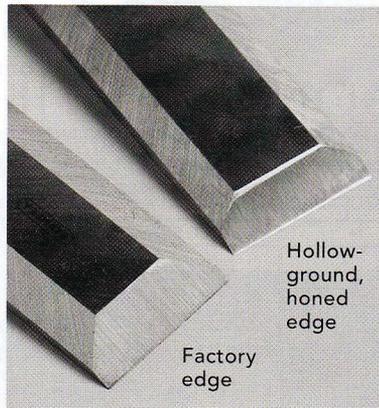


4 **Before putting away the awl, use it to score the mortise's depth.** A couple of scrap hinge leaves—stuck together by a dab of hot glue—serve as a depth gauge.



STEP-BY-STEP

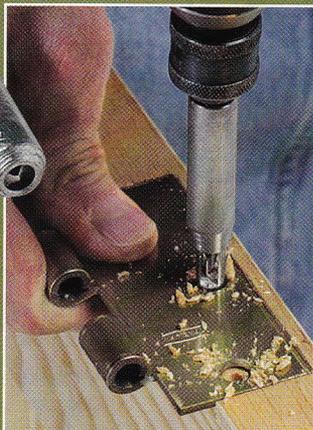
Working with a chisel



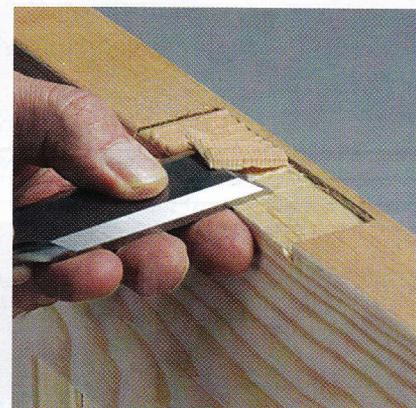
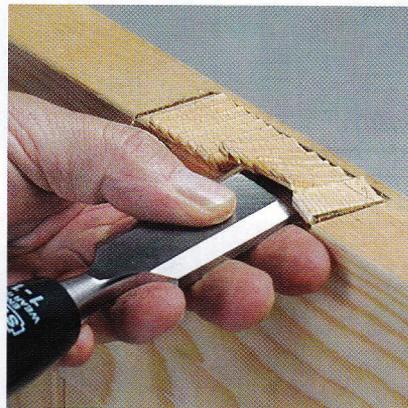
5 Start with a sharp chisel. An out-of-the-box chisel such as the one on the left is acceptable only for framing and other rough jobs. The chisel on the right had been hollow-ground on a bench grinder before it was honed on a series of oilstones; flat surfaces on the outermost edges only make resharpening quick.

SPECIAL BIT MAKES HINGE MOUNTING A SNAP

After creating a flawless mortise, you don't want a bunch of crooked screws sticking out at all angles. A #8 self-centering hinge bit, also called a Vix bit (Eagle America; 800-872-2511; www.eagle-america.com), ensures that all screws are centered and plumb. Using the hinge as a template, place the bit in the screw holes and drill.



6 A series of shallow cuts is the key to a precise mortise. Holding a 1¼-in. (or wider) chisel at about a 45° angle, cut across the grain in increments of about ¼ in. Gently tap the chisel until the point of the blade reaches the depth score. With practice, you'll develop a rhythm that enables you to reach the desired depth without needing to glance at the line.



7 Horizontal slices remove the waste. Starting about ½ in. from one end of the mortise, place the blade (bevel side up) into the awl score and gently pare off the waste (photo left). You may need to start the cut with a soft hammer tap, but finish with hand pressure only. Make sure the first cut is flat and smooth, then use the finished surface as a guide for subsequent cuts (photo right).



8 Shim it if it's too low. Don't worry if the mortise ends up too deep. One or two cardboard shims (cut from the same box that the hinges came in) easily make up the difference.



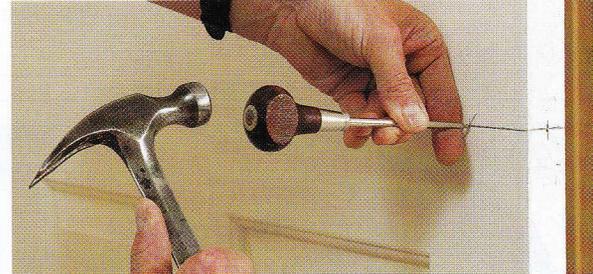
Installing a lockset



STEP BY STEP



1 Use a combination square for layout. Most lockset packages include a paper template for locating the face and the edge bore. It's easier and more accurate to use a combination square, especially if you've got more than one lockset to install. Begin the job by wedging the door halfway open with a couple of shims under the bottom edge. Mark the face on both sides, $2\frac{3}{8}$ in. from the leading edge of the door ($2\frac{3}{4}$ in. for exterior doors) and typically 36 in. from the floor. The edge bore is marked at the center of the door, in line with the face marks.



2 Pilot holes pave the way for the big bits. To make sure the holes for the cylinders start in the right place and don't wander, use a scratch awl to punch the precise starting points. Then drill pilot holes with a $\frac{1}{8}$ -in. bit in the edge and in both faces of the door.



3 Drill the face bore first. Holding the tool level and square to the door, drill halfway through one side with a $2\frac{1}{8}$ -in. hole saw. Then complete the bore from the other side of the door.

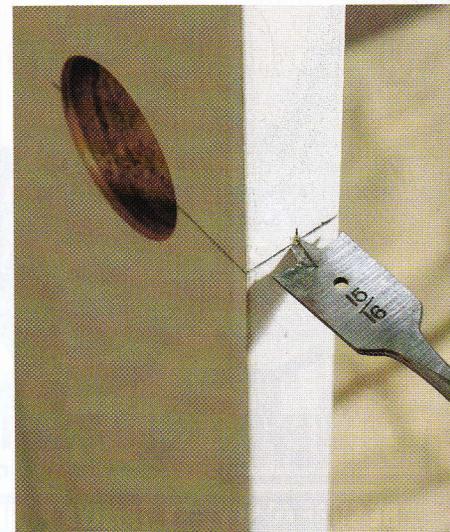
Unlike old-fashioned and complicated mortise locks, most of the locksets you see these days are of the cylindrical variety and are fairly easy to install. Basically, installation requires a large hole drilled through the face of the door and a smaller hole drilled through the edge. After the holes are drilled, the most difficult part of the job is cutting the mortises for the strike and latch plates.

There are two keys to a successful installation: careful layout and sharp tools. In addition to a tape measure, a combination square, and a hammer, you'll need a scratch awl, a $2\frac{1}{8}$ -in. hole saw, a $\frac{15}{16}$ -in. spade bit, and a 1-in. chisel. Assembling the lockset varies slightly from brand to brand, so it's important to read the manufacturer's instructions.

Tom O'Brien is a carpenter in New Milford, Conn. Photos by Charles Bickford.

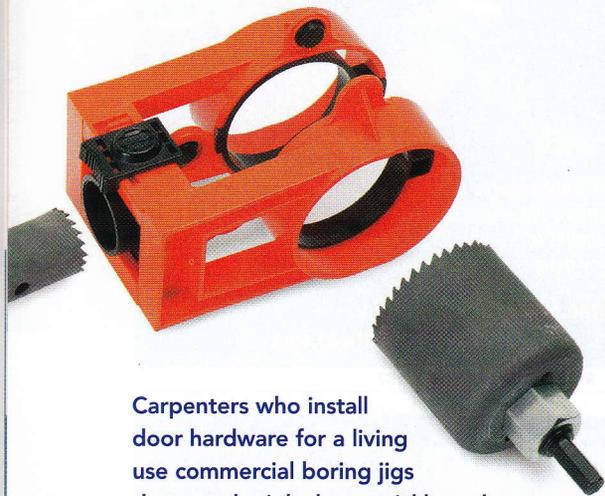


4 Use a nail to mark the center of the strike-plate hole. Close the door and hold it tight to the stop, then push a 6d nail through the $\frac{1}{8}$ -in. pilot hole in the door edge until it pierces the door jamb; a pry bar provides leverage if necessary. Now drill holes for the latch and the strike using a $\frac{15}{16}$ -in. spade bit. (A $\frac{7}{8}$ -in. bit is too small for most latch mechanisms, and the hole left by a 1-in. bit won't be covered completely by the latch plate.)



STEP BY STEP

A jig for foolproof hole alignment



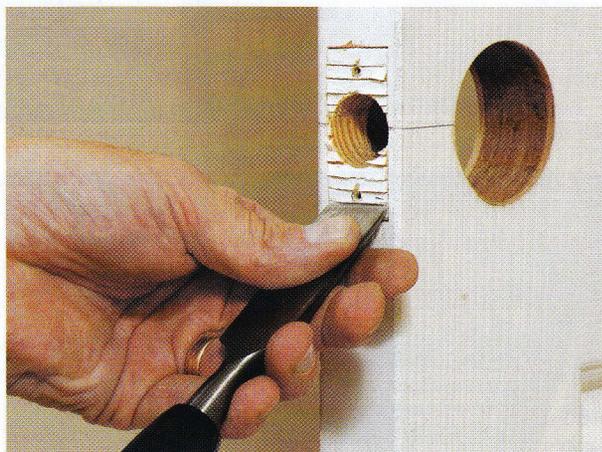
Carpenters who install door hardware for a living use commercial boring jigs that get the job done quickly and accurately. You can buy a light-duty version of the \$250 jig for about

\$15. Made by Black & Decker (www.blackanddecker.com), this plastic jig clamps onto a door edge

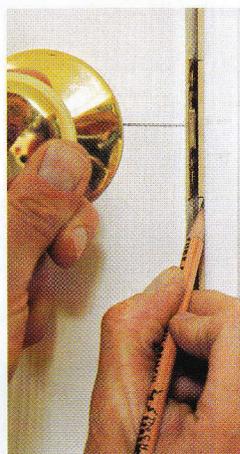
and aligns the face and edge holes automatically. Two hole saws (2½ in. and 1 in. dia.) and a common mandrel are included in the kit. The jig will handle both 2⅜-in. and 2¾-in. backsets.



5 Use the latch as a template. After drilling the edge bore, insert the latch mechanism and secure it with the screws provided; then trace around the edges with a sharp utility knife. Be especially careful when cutting vertically along the grain because the knife may wander. Some carpenters prefer to use a scratch awl to cut along the grain.



6 Take your time with the chisel. Hold a sharp chisel at about a 45° angle to the work, and score the face of the mortise by gently tapping the chisel with a hammer; cut across the grain in increments of ⅛ in. or so. Now carve away the waste, working the chisel toward the center. Check the fit of the latch plate; it should lie flush with the door surface. If you end up carving too deep, cut a piece of cardboard to shim the latch plate flush with the edge of the door.



7 Align the strike with the latch. Close the door, and transfer the top and bottom edges of the latch plate to the door jamb. Now measure the space between the edge of the latch plate and the inside face of the door, and allow the same amount of space between the back of the strike plate and the door-stop. For a 1⅜-in. door (if the latch is centered properly), that space should be a heavy ⅛ in. The final task is to cut the strike mortise, following the same procedure used for the latch plate.

