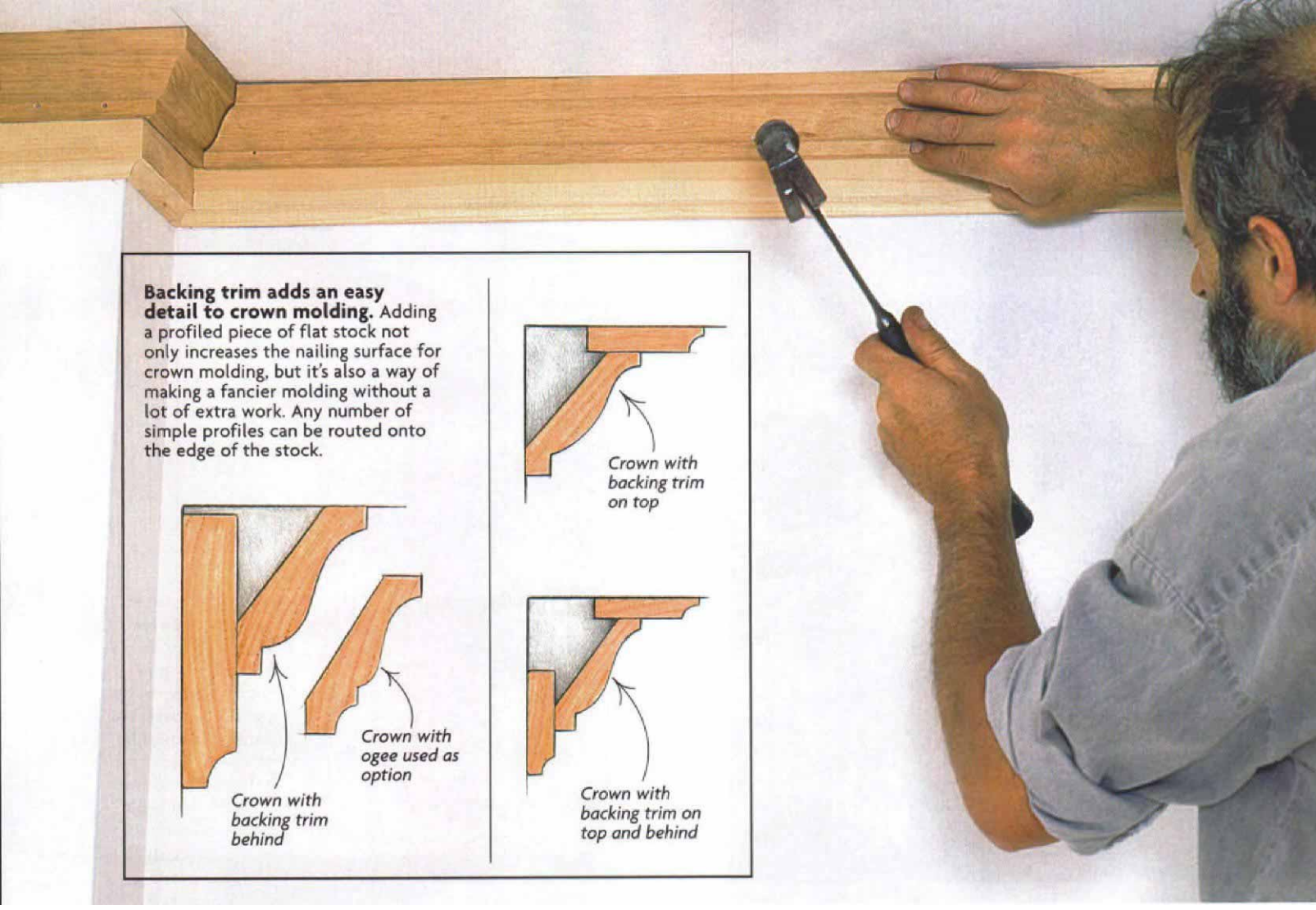


Installing Crown Moldings

Careful layout and accurate miters make installing a two-part trim an easier process

BY JOSEPH BEALS

Crown molding has a royally painful reputation. Installation can be difficult: Unlike baseboard or casing, crown molding must sit at a consistent angle to the wall, making cutting and nailing more demanding. When the joints don't fit properly, when the nails hit nothing but air and when the design that looked great on paper ends up looking trivial on the ceiling, the process of installing crown molding can become extremely disagreeable. However, crown molding will yield to patience and to a few simple techniques that anticipate its frustrating behavior.

I've used some ceiling-trim designs repeatedly because they cover a range of stylistic options and because they're easy to build. These styles are not formal, but they go beyond the one-molding solution and add a surprising level of interest (drawing above). The common element here is a piece of flat stock that I call backing trim. I usually shape a simple profile on the exposed edge; a scotia is shown in the photos, but ogees and beads are other possibilities. The backing trim can be as wide or as narrow as preference dictates. A narrow exposure will look like an ad-

Drawings: Bob La Pointe

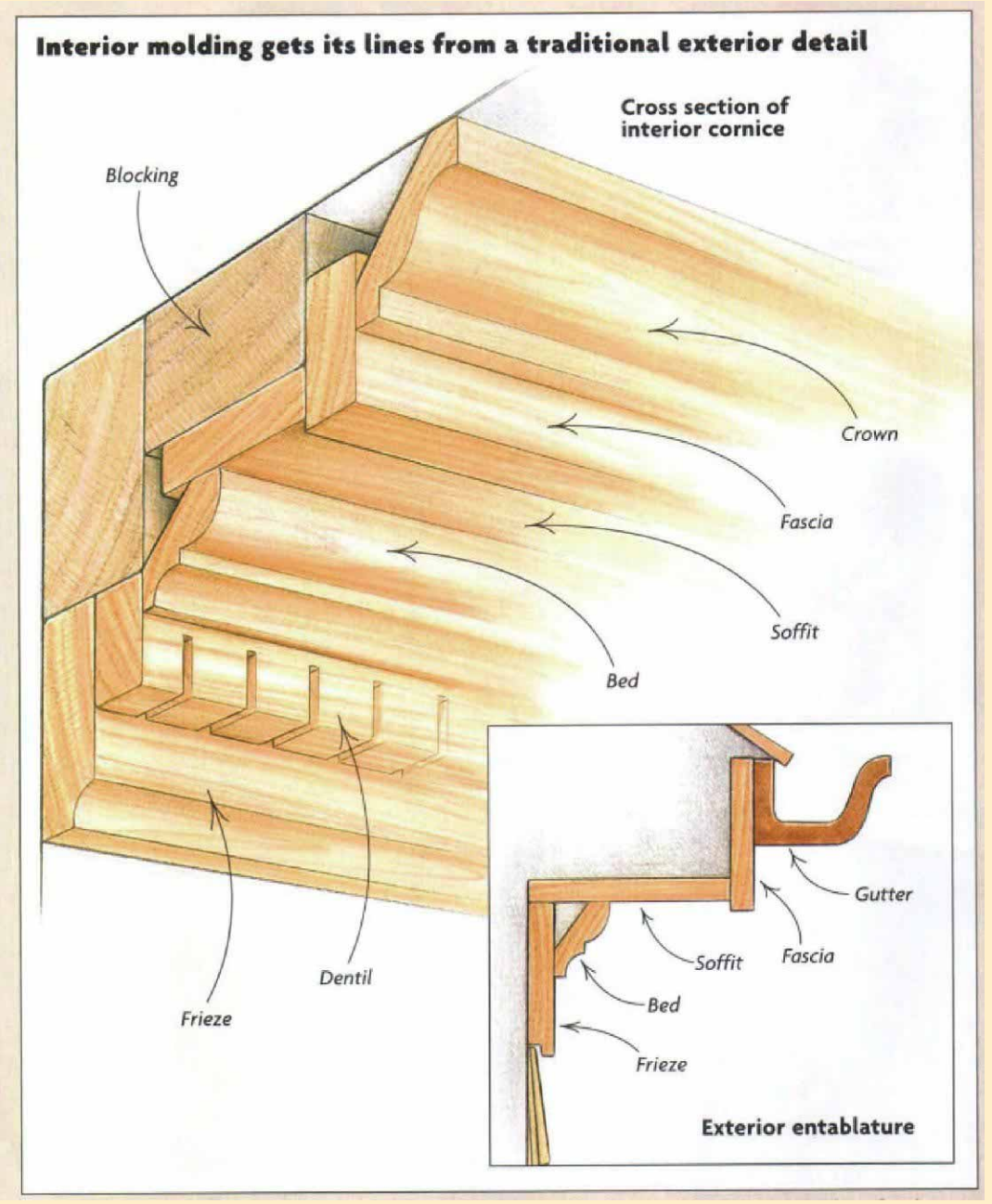
Designing crown molding

Known as the cornice, traditional ceiling-trim design echoes the entablature of a building, the place where the sidewall meets the roof overhang. In a classically influenced residential exterior, the entablature contains a frieze, a soffit, a fascia and a cornice (inset drawing right). At its most elaborate, the interior cornice's elements correspond to the exterior and include a crown, a fascia, a soffit, a bed and a frieze. Most interior designs, however, are much simpler.

The most direct approach to trim design is to start at the top of the entablature and to pick as many elements as seem appropriate or desirable. The size of the room is not an important consideration: A large room with high ceilings requires elements of larger section, not more or fewer elements. Provided the parts are in appropriate scale, even a small room can support an elaborate cornice.

A model that's built from short sections of the proposed moldings is an ideal design tool that shows more detail than a flat drawing. It's easier to see the scale of moldings and embellishments in more complex designs; it's also a handy way to plan for blocking. Beware of designing too small, however. An old rule says that work to be placed overhead should be three times the size you think it should be. If a design looks good on a bench-top model, it will probably be undersize in place.

—J. B.

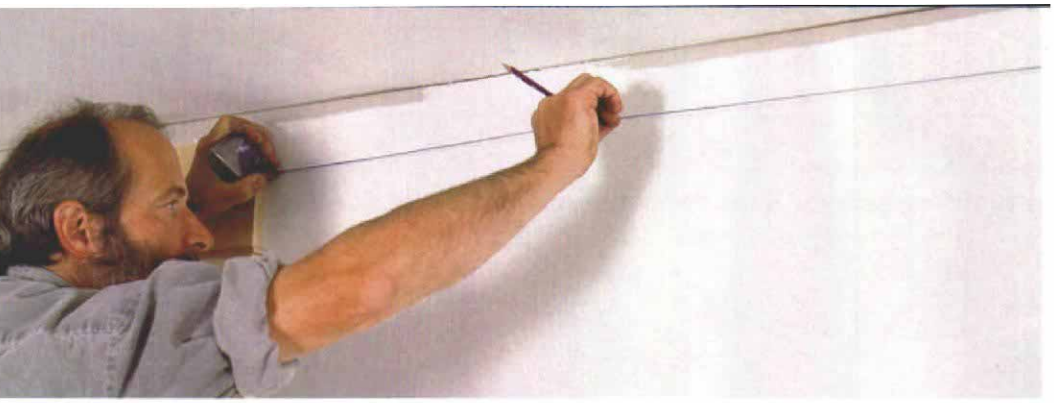


ditional crown-molding element; a wide exposure becomes a design element in its own space. In the following pages, I'll describe the techniques I use to lay out, cut and install this simple two-piece molding.

Use chalklines as a reference

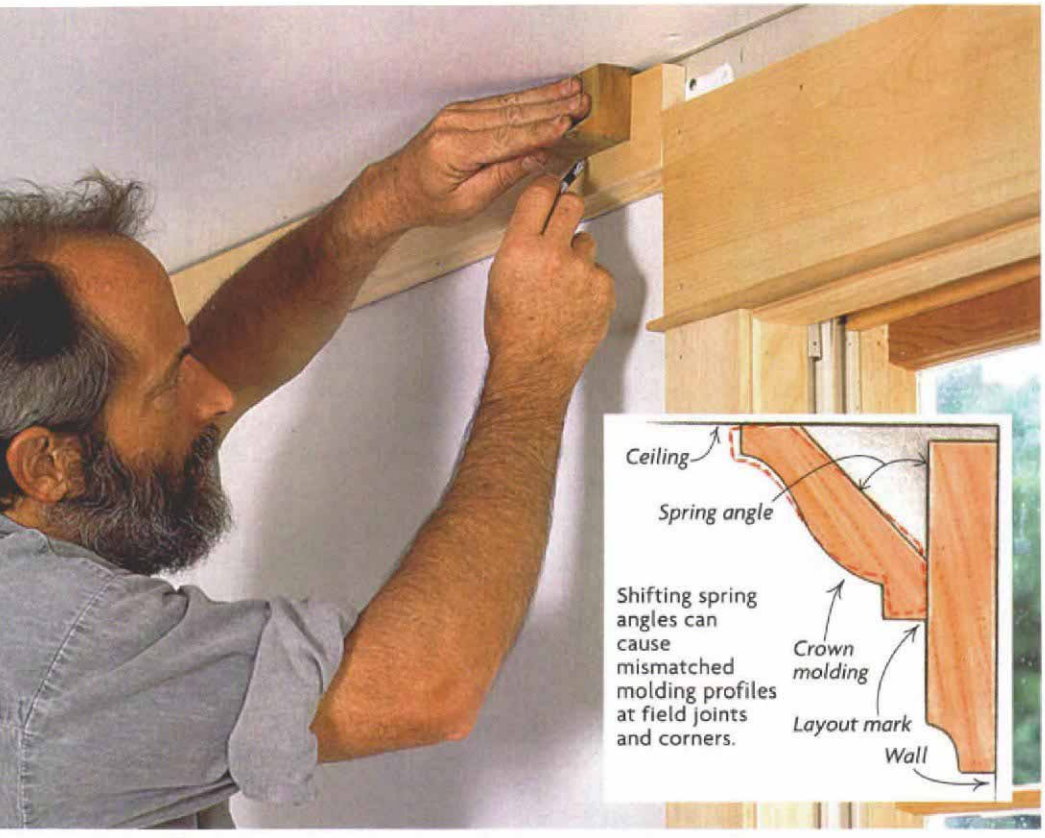
After I've decided on the design of the crown mold (sidebar above), my next job is layout. For practically any design, I snap chalklines on the wall as a guide (top photo, p. 80). The layout lines should be straight between any two points, typically corner to corner, corner to window, between two windows, and so on. Because an out-of-flat wall is curved with respect to a straight line on the ceiling and vice versa, the layout lines will make this flaw visible, and the inevitable adjustment won't be unexpected. Snapped lines are also important for more formal designs that require blocking.

If the room is really distorted, I like a big reveal in the design. The backing trim should follow the layout lines as much as possible, but the molding that comes after may be adjusted up or down a bit to conform to irregularities in the wall and on the ceil-



Chalklines provide a reliable layout reference. Because ceilings and walls are never flat and straight, the author prefers to snap lines that give him an accurate layout.

Backing trim makes a solid nailing surface for molding. Screwed into the framing, a flat piece of trim alleviates the problem of nailing crown into irregularly spaced studs and also adds an extra level of detail.



Gauge block shows exactly where the bottom of the molding must lie. Layout marks keep molding at a consistent angle to the wall, which in turn makes miters and field joints line up.

ing. Remember that the trim serves the room, not a spirit level, so plan to make some compromises. A big reveal allows this to happen without appearing conspicuous.

Screws hold the backing

I like backing trim for its looks, but it also can solve serious nailing problems. Studding in old houses is often widely spaced, loose or missing, usually where nailing is crucial. On the ceiling, strapping, lath or joists can be hard to find, or spongy. (During layout, I use a stud finder or drive a 6d finish nail into plaster to find solid nailing, and then mark the location with a pencil.)

I screw flat sections of backing trim in place (center photo) because the holding power of a screw is huge, and there's no impact to distress old plaster. Also, a screw can get a solid bite in old wooden lath or a loose stud where nailing is useless. I like to hide the screws behind the molding, but if I can't do that, I counterbore first and glue in wooden plugs afterward. Even for painted work, the plugs will hide holes better than any other method of filling holes.

Reference marks keep the molding straight

Before I install the crown molding, I need reference marks on the backing trim. Snapped lines won't do the job here: I want the molding tight and accurately sprung, which means, as much as possible, maintaining the proper angle of the molding to the wall and ceiling throughout the length of any run. Sprung moldings touch the wall and the ceiling along two narrow surfaces. These surfaces are inadequate for ensuring a stable reference, and any molding, particularly large moldings, can shift (drawing left). This shift creates frustrating problems where joints don't cope or miter properly. The displacement can happen when the molding wanders as it joins the wall to the ceiling, when it is pressed into a slow curve or rides past a hump, or when a twisted molding is pressed into a straight line. It can also happen with straight stock on a perfect surface because the last hammer blow shifted the molding. I guard against this condition by using a gauge block to mark the location of the moldings bottom edge (bottom photo). To make the gauge block, I take several samples of the crown molding, hold each at the proper angle against a corner (such as the chopsaw table and fence) and mark the position of the bottom edge of the molding. The distance from the mark to the corner defines the height of the gauge block. A pencil mark ensures that I keep the molding to a constant

Miter-saw jig keeps correct spring angle. With the gauge block used to mark the crown height on the backing trim, the author transfers a mark to a piece of masking tape applied to the fence (photo top left). This mark corresponds to the mark on the wall measured by the gauge block. Holding a piece of molding upside down against the mark on the fence, the author transfers the molding's angle to the table (photo above). A length of scrap wood keeps the molding's angle proper (photo bottom left).

spring angle and resolves many baffling fitting problems. I also use the same gauge-block method if I'm installing a sprung bed molding on a more complex cornice.

A site-built jig makes cutting crown easier

Once I've laid out the job, it's time to start cutting. The most confusing aspect of crown molding is that miters must be cut upside down. I also want to reproduce the angle of the molding between the wall and ceiling that I've just marked on the wall.

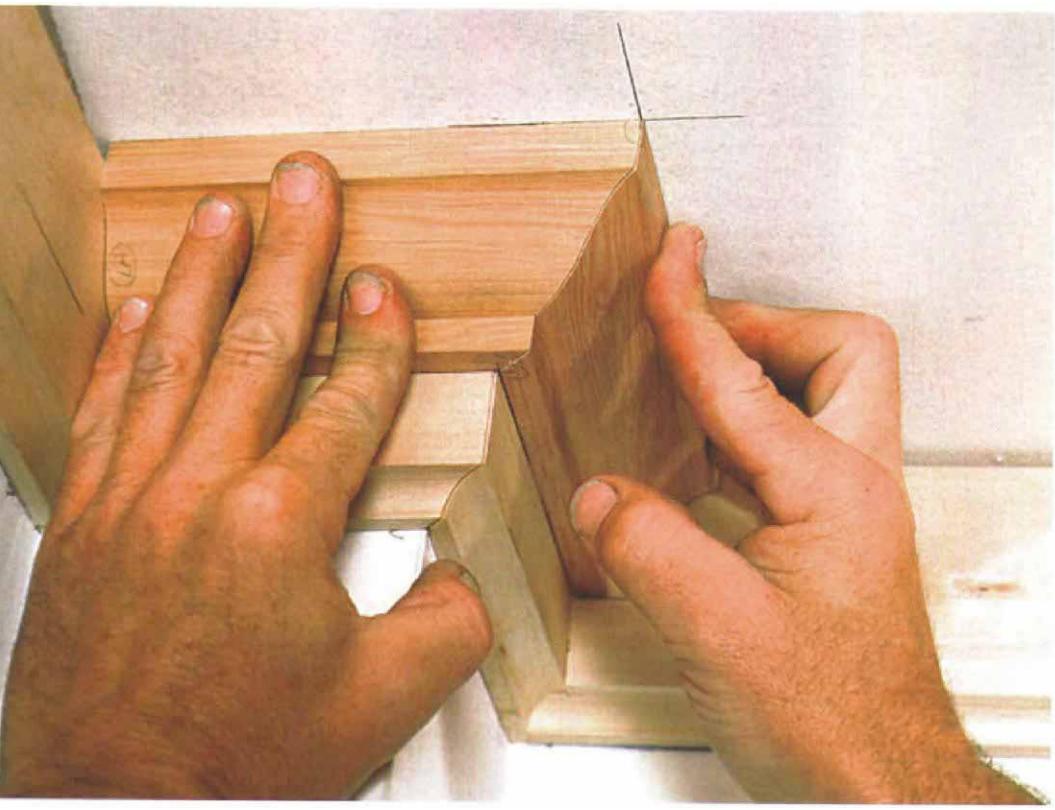
I make a jig for my miter saw's table that takes all the guesswork out of cutting. The jig consists of a fence that's screwed to a wooden auxiliary table (photos above) that's bolted to the saw table. Registered against both fences, the molding is held securely and accurately during the cut. (For many people, it may be easier to build an auxiliary fence that's fastened to the saw's fence. Either way, the important thing is that you immobilize the molding's spring angle as you make the cut.) Even if you have a compound-miter saw that can cut crown miters on the flat, it may take less guesswork to set up this way.

In any house, it's extremely rare to find a square outer corner. Rather than a fussy trial-and-error session with the miter saw, I've found that it's easier to mark the upper and lower points where the two pieces of molding meet and cut accurately to the lines.

To find the intersecting points, I hold the first piece of molding in place, trace a line along its upper edge on the ceiling and mark the point where the bottom meets the corner (top photo, p. 82). I then repeat the process with the other side; now I've drawn the upper part of the molding miter on the ceiling. After transferring the marks to the molding, I can cut an accurate miter (center, bottom photos, p. 82).

On most jobs, I install the first run of the molding square cut at both of the ends, cor-

Reference marks help to make tight outside miters. On out-of-square corners, the author extends the upper line of the molding and transfers the intersecting points onto the stock (top photo). Aligning the sawblade to the marks (center photo), he can cut a reasonably accurate miter (bottom photo) with little guesswork.



ner to corner. I then work counterclockwise around the room. I nail large moldings along both the top edges and the bottom edges, which is why backing trim can be so useful. I place the bottom edge on the reference marks, nail the bottom edge first and then nail the top.

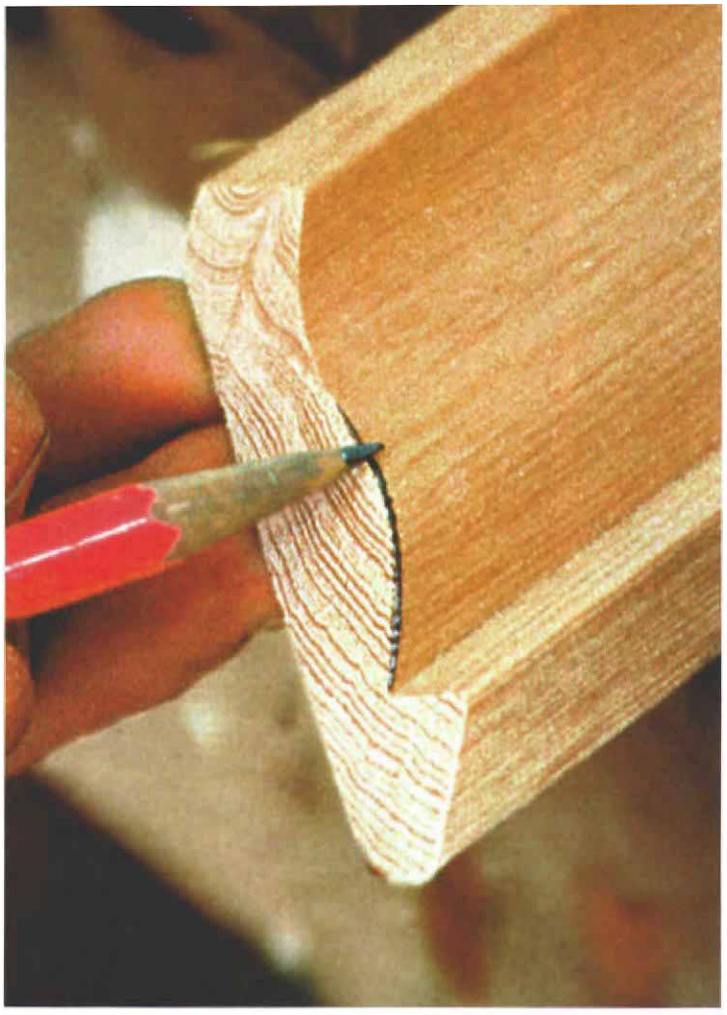
Coping inside miters makes a tighter fit

Instead of mitering inside corners, I cope the right end of each successive piece of molding. A coped joint is essentially a butt joint made by scribing the end of one molding to fit the profile of the opposite half of the joint. Coping may take more time than mitering, but in the end, it makes a better joint. Often, inside miters will open as the joint is nailed because the molding is drawn tighter than it could be held by hand or because the drywall yields slightly under the influence of the hammer. The coped joint avoids these problems and can also be easily modified to accommodate small variations in the molding profile.

To make a coped joint, I run the first half of the coped joint tight to the corner. The adjoining piece is first mitered exactly as if it were half a conventional inside miter. If you hold a mitered molding in a corner close to an adjoining molding, you'll see how the miter cut reveals an edge profile of the adjoining piece. After darkening the profile edge with a pencil (photo top left, facing page), I use a coping saw to cut as close to the line as I can with a slight back cut (photo top right, facing page). If you look at the cut from straight on, you should not see any material protruding beyond the cutline. After sawing, I use a bastard file or a chisel to dress the cope until the profile fits (bottom photo, facing page).

Often, the last length of molding in a room must be coped at both ends. I first rough-cut the molding full length, cope the right side as usual, then measure the top and bottom lengths. I cut the miter in the chopsaw, sighting along the blade to make sure the angle and length are correct; cut the cope; and test the fit. A long molding is more easily fitted than a short one because it can be cut a fraction oversize and sprung into place. A short molding must be perfect, and it can be tuned with a sharp chisel and rasp if it is almost right. Be prepared for mistakes, and dump a short molding if it just won't fit. A second attempt is a better investment of time than patching a bad joint. □

Joseph Beals is a designer and builder in Marshfield, Massachusetts. Photos by Charles Bickford.



Coped miters are labor intensive but make tight joints. After cutting an inside miter, the author highlights the molding's profile with a pencil (photo top left) and cuts to the line with a sharp coping saw (photo top right). Rather than make a square cut, he relieves the cut by a few degrees (called back-cutting). The cut can be fine-tuned with a file to match the profile (bottom photo).