

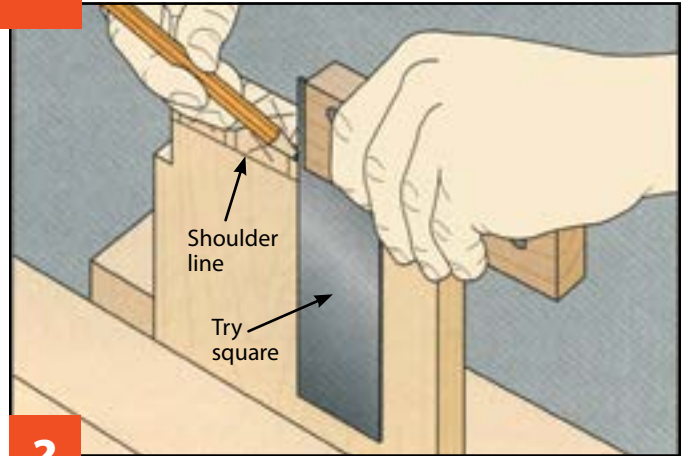
Cutting the Dovetails

MAKING THE STEP STOOL TREADS & SIDES



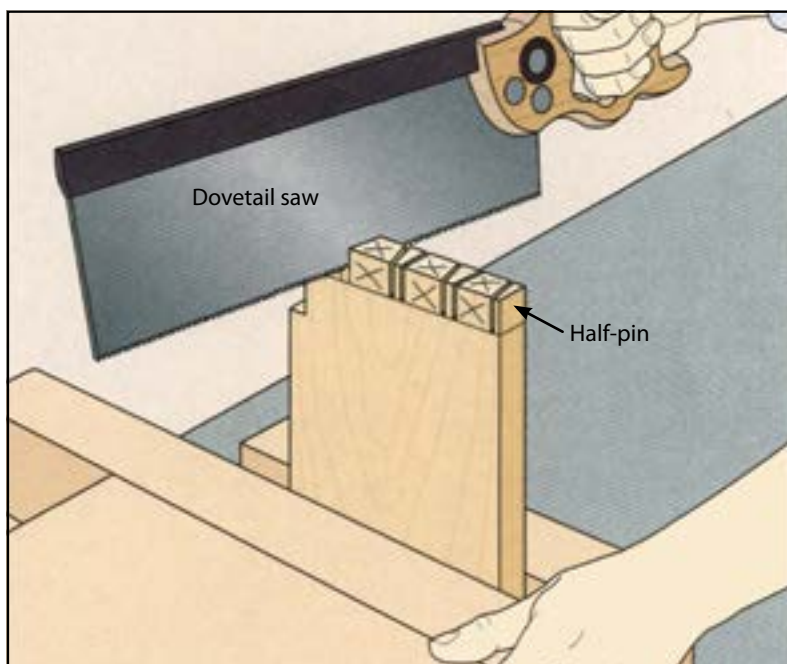
1

Notch the sides for the crosspieces. The sides are made from two boards glued together after the notches and the pins of the dovetail joint are cut in them. Outline the notches on the edges of each side piece, then cut them on your table saw. Install a dado head on the saw and set the cutting height to the notch width. Screw a board to the miter gauge as an extension. Make several passes to cut each notch, feeding the stock up on edge with the miter gauge. Use the rip fence as a guide for cutting up to the notch end line.



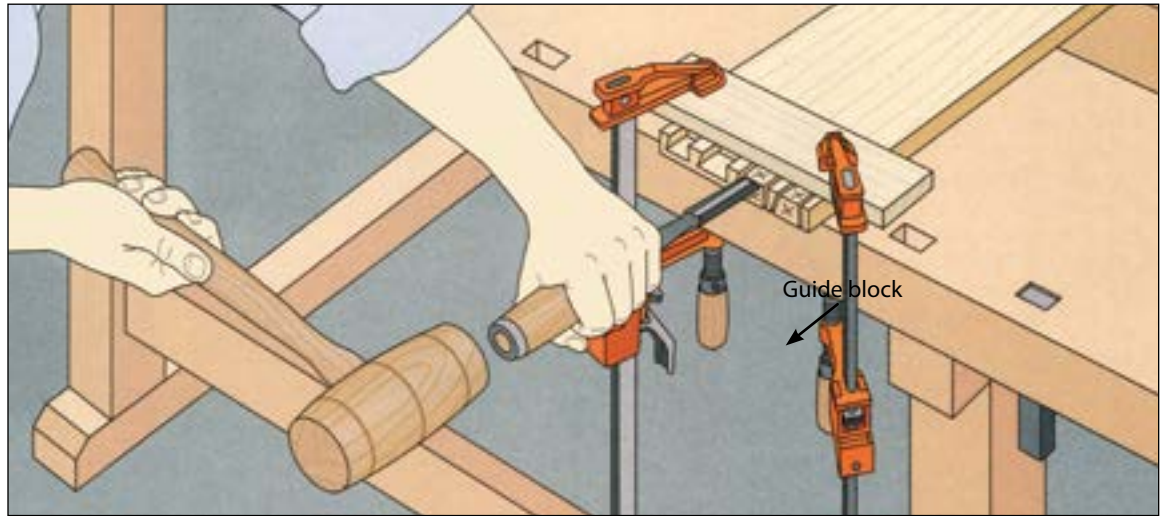
2

Laying out the pins. Set a cutting gauge to the stock thickness and scribe a line around the top end of each side piece to mark the shoulder line of the tails. Next, use a dovetail square to outline the pins on the same end; the wide part of the pins should be on the inside face of the stock. Start with a half-pin at each edge and add evenly spaced pins in between. To complete the marking, secure the piece in a vise and use a try square and pencil to extend the lines on the board end to the shoulder lines. Mark the waste sections with Xs as you go.

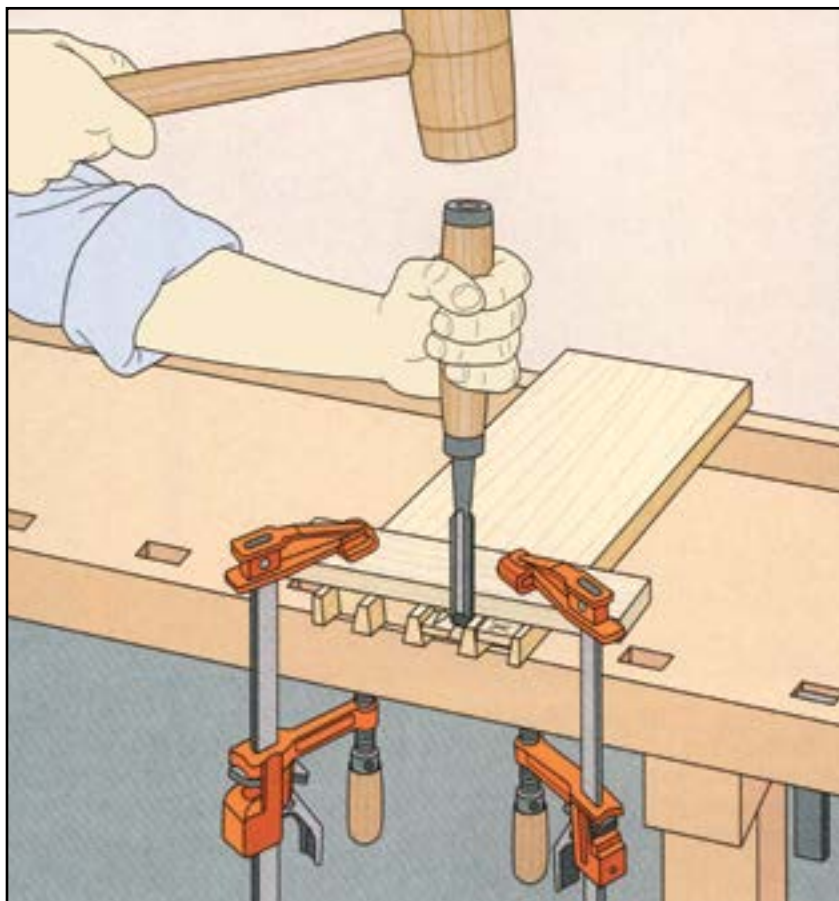


3

Cutting pins. Leave the piece in the vise and use a dovetail saw to cut along the edges of the pins, working from one side of the board to the other. For each cut, align the saw blade just to the waste side of the cutting line. Use smooth, even strokes, allowing the saw to cut on the push stroke. Continue sawing right to the shoulder line, making sure that the blade is perpendicular to the line.

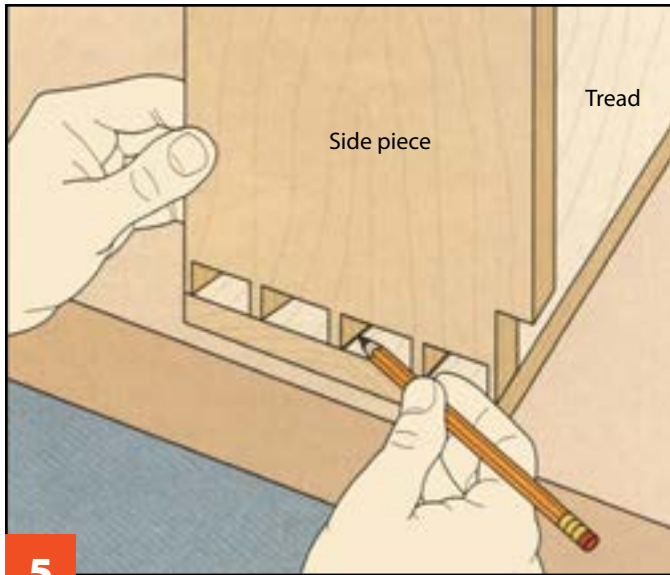


Guide block



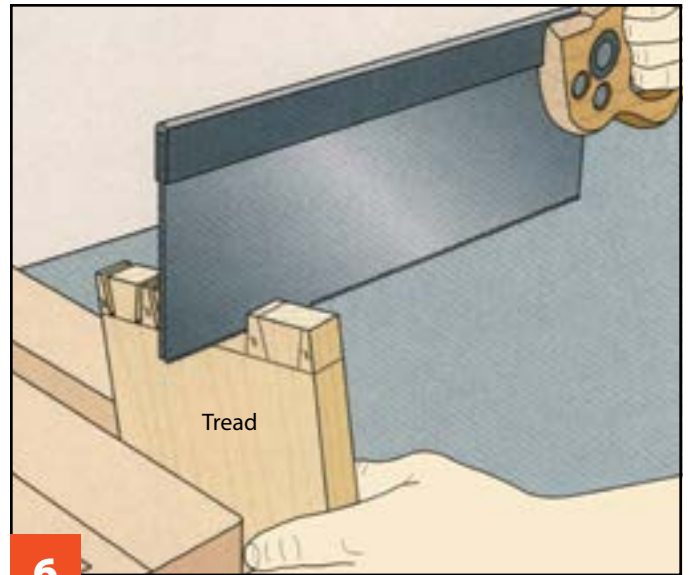
4

Chiseling out the Waste. Set the side piece inside-face up on a work surface and clamp on a guide block, aligning its edge with the shoulder line. Using a chisel no wider than the narrow side of the waste section, butt the flat side of the blade against the guide block. Hold the end of the chisel square to the face of the piece and strike it with a wooden mallet, scoring a line about $\frac{1}{8}$ inch deep. Then turn the chisel toward the end of the panel about $\frac{1}{8}$ inch below the surface of the wood and shave off a thin layer of waste (*above*). Continue shaving away the waste in this fashion until you are about halfway through the thickness of the piece, then move on to the next section. When you have removed all the waste from this side, turn the piece over, and work from the other side (*left*) until the pins are completely exposed.



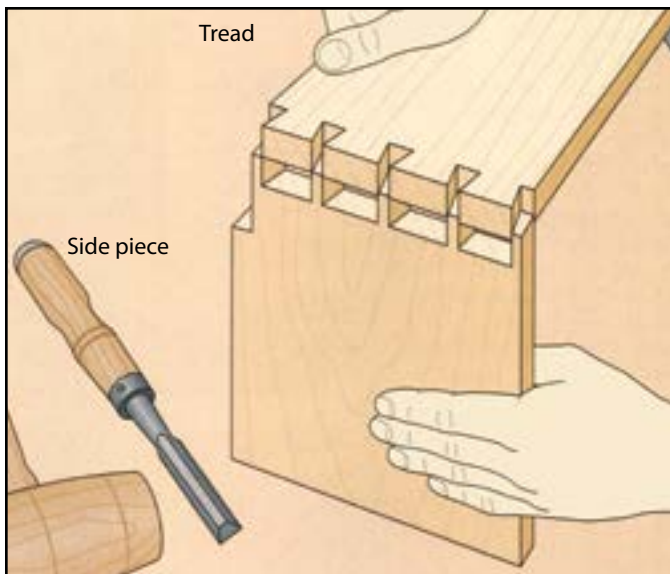
5

Laying out the tails. Set a tread bottom-face up on a work surface. Hold one of the side pieces pins down with its inside-face aligned with the shoulder line of the tread. Use a pencil to outline the tails at each end of the tread, and then extend the lines on the board using a try square. Mark the waste with Xs and repeat the process with the remaining tread.



6

Cutting the tails and removing waste. Use a dovetail saw to cut the tails the same way you cut the pins (*step 2*). Angling the board, rather than the saw, makes for easier cutting. Saw smoothly and evenly, stopping just short of the shoulder line. You can also cut the tails on your band saw. Remove the waste with a chisel as in *step 4*.



7

Testing the fit of the joints. Before gluing up the stool, assemble it to check the fit of all the joints. Stand one of the side pieces on end, then align a tread with it. Press the joint together by hand as far as it will go (*right*), then use a mallet to tap the tread the rest of the way into place. The boards should fit snugly, requiring only a light tapping; avoid using excessive force. If any joint is clearly too tight, mark the spot where it binds, then disassemble the boards and use a chisel to pare away a little more wood. Test-fit the joint again and adjust it further, as necessary.