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DOCUMENT CHEST

Curly Maple, White Pine



MAKING THE DOCUMENT CHEST

After the stock has been thickened, ripped to width, and cut to length, plough a 1/4" X 3/8" groove on the inside faces of the front, back and two ends. This groove will receive the raised panel that will separate the upper storage chamber from the drawer compartment.

Then cut through dovetails for the four corners of the case (this process is detailed in the sidebar below). Glue the joints and assemble the case around the raised panel that separates its two sections.

Shape the moulded edge on the top and bottom of the lid and on the top side of the chest's bottom. Fasten the bottom to the case with ten 1 1/2" no. 10 wood screws. These pass through oversized holes drilled in the bottom to allow for seasonal expansion and contraction across its width.

Although the Shaker original didn't have them, I installed a pair of sturdy ash cleats on the underside of the lid to prevent it from cupping—a problem I encountered the first time I built one of these chests.

Build the drawer next (see the sidebar below) with through dovetails at the rear and half-blind dovetails at the



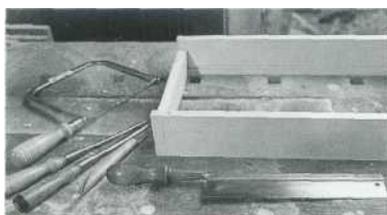
front. Slide the drawer bottom into its groove and tack it up into the drawer back. Then fit the length of the completed drawer by planing thickness from a pair of softwood strips tacked to the back side of the drawer.

Complete the chest by finishing the wood and installing the hardware.

CUTTING DOVETAILS BY HAND

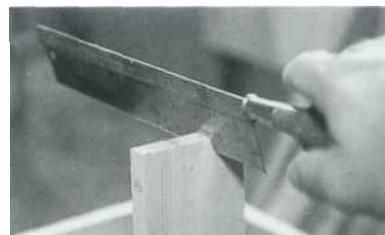
There's something soothing about the process of cutting dovetails by hand. The shop is quiet. The air is clean, carrying no load of machine-generated dust. There is the sense that this is what woodworking is supposed to be: calm, unhurried, not driven by the frantic scream and whine of power tools. This is woodworking stripped of the efficient unpleasantness of technology, reduced to the application of sharp tools to beautiful material. Even though the case must be made first, the following discussion of hand-cut dovetails will begin with drawer construction because, unlike the case, the drawer requires the creation of both through and half-blind dovetails.

1 The process begins with careful stock preparation. After the parts have been dimensioned, cut the grooves into which the drawer bottom will slide. Establish base-



lines for every pin and tail (the pins are those parts of the dovetail joint that fit between the tails). Score these lines across the grain with either a marking gauge or a sharp knife. In the case of the through dovetails (those on the back of the drawer), lines should be placed a distance from the end that is 1/16" more than the thickness of the stock to which the piece is being joined. Since, in this case, the drawer sides and back are 1/2" thick, the baselines will be set 9/16" from the ends of the drawer sides and back. Placement of the baselines on the front end of the drawer sides is handled a little differently because these joints will be half-blind dovetails. Because the drawer front is 11/16" thick, set the baselines on the front ends of the drawer sides 1/2" from the end. This leaves 3/16" of drawer-front material covering the ends of the dovetails on the front ends of the drawer sides.

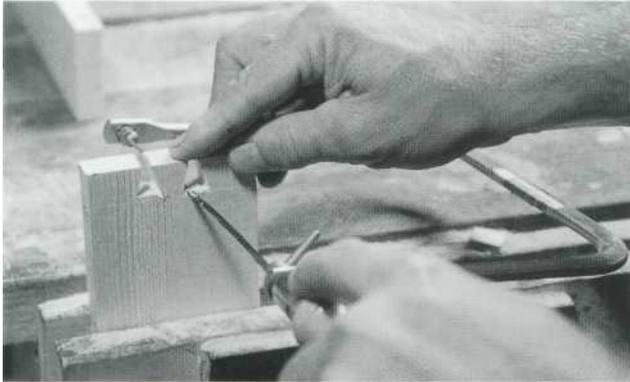
2 Cut the tails first. After deciding on their widths, use pencil lines (drawn with the aid of a try square) to mark the end grain of the drawer side. These lines indicate the widths of the gaps between the widest parts of the tails.



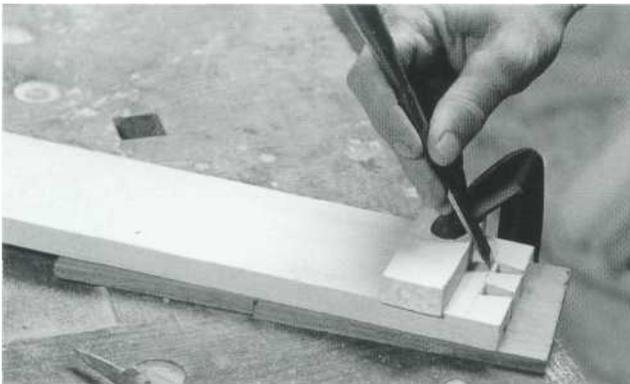
At this point, you can mark the actual angles of the tails

with the aid of a dovetail gauge. I chose to cut these freehand because the slight variances of angles and tail-widths provide incontrovertible proof of the piece's handmade origin.

With a fine-toothed backsaw, make cuts from the lines squared across the end grain down to the baseline established for the tails.

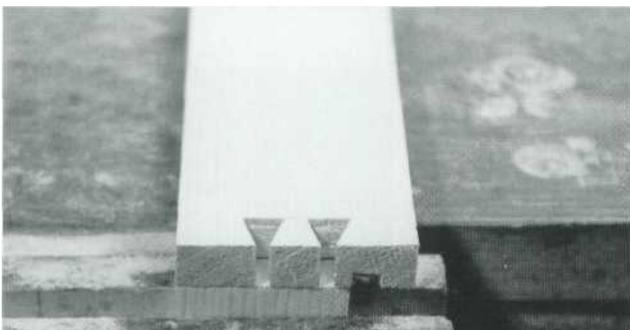


3 With a coping saw, remove the bulk of the waste. Don't approach the scored baseline too closely.



4 Then, use a paring chisel driven by a wooden mallet to cut away the remaining waste. The scored baseline serves to position the tip of the chisel.

In order to avoid breaking out chips on the back side of the piece, flip over the drawer side from time to time, working toward the middle from one side, then the other.



5 When the gaps between the tails have been cut and pared down to the baseline, mark the pins. Position the pin

MATERIALS LIST

Chest

A Side	2 pcs.	$1\frac{1}{16} \times 10\frac{1}{4} \times 18\frac{3}{8}$
B Full End	1 pc.	$1\frac{1}{16} \times 10\frac{1}{4} \times 10\frac{3}{8}$
C Partial End	1 pc.	$1\frac{1}{16} \times 7\frac{1}{8} \times 10\frac{3}{8}$
D Lid and bottom	2 pcs.	$1\frac{1}{16} \times 11\frac{3}{8} \times 18\frac{3}{8}$
E Bottom of storage chamber	1 pc.	$\frac{5}{8} \times 9\frac{7}{8} \times 17\frac{3}{8}$
F Cleats	2 pcs.	$1\frac{1}{8} \times 1\frac{7}{8} \times 8$
G Plug	4 pcs.	$\frac{1}{4} \times \frac{3}{8} \times \frac{1}{2}$

Drawer

H Front	1 pc.	$1\frac{1}{16} \times 3\frac{1}{16} \times 9\frac{3}{8}$
I Side	2 pcs.	$\frac{1}{2} \times 3\frac{1}{16} \times 17$
J Back	1 pc.	$\frac{1}{2} \times 2\frac{1}{8} \times 9\frac{7}{16}$
K Bottom	1 pc.	$\frac{5}{8} \times 8\frac{1}{2} \times 16\frac{3}{4}$
L Fitting strip	2 pcs.	$\frac{3}{8} \times \frac{5}{8} \times 2\frac{1}{8}$

Hardware

M Hinges	2 pcs.	$1\frac{1}{4} \times 2$
N Pull (brass)	1 pc.	$\frac{1}{2} \times \frac{1}{2}$
O Closer	1 pc.	
P Screws	10 pcs.	$1\frac{1}{2}$ " no. 10

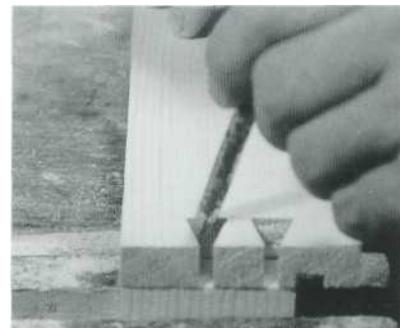
**These are net measurements. Surplus should be added to the length of dovetailed sides and ends to allow joints to be sanded flush.*

**Drawer height and width are $\frac{1}{16}$ " less than the opening size. This allows $\frac{1}{32}$ " clearance on all four sides.*

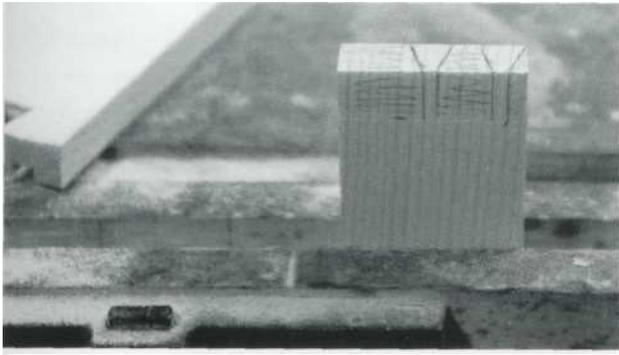
**Hardware was ordered from Constantine's Hardware.*

stock (in this case the back of the drawer) in a vise so that its end is just above the level of the bench top. Position the tails that were just cut above the end grain on the drawer back. Take care to align the baseline between the tails directly above the inside face of the drawer back.

(Because the drawer bottom must slide underneath the back of the drawer, the width of the back extends only from the top of the drawer side to the top of the groove.)

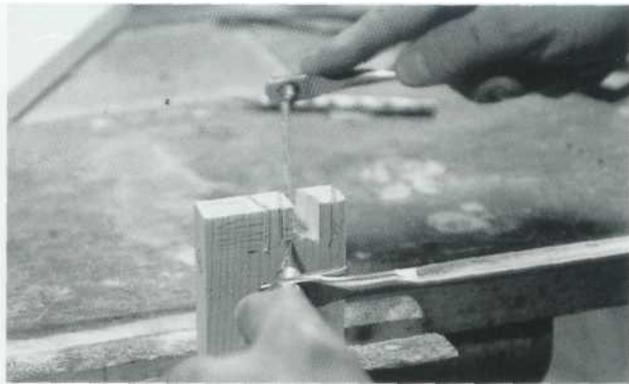


6 With a sharp pencil (you may need to whittle the tip of the pencil to a smaller diameter so that it can work its way into the gaps between tails), mark the limits of the pins on the end grain of the drawer back.

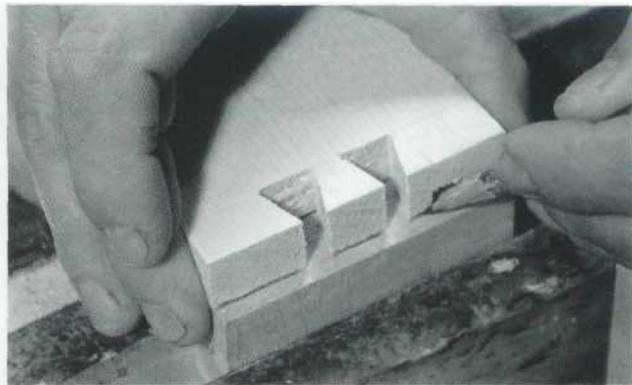


7 Using a try square, extend those lines from the end of the drawer back to the scored baseline for the pins. These lines identify the waste that is to be removed.

With a fine-toothed backsaw set just to the waste side of each line, cut the pin walls down as far as the baseline.



8 With a coping saw, remove the bulk of the waste between the pins. As with the gaps between the tails, cut away the remaining waste between the pins with a sharp chisel. Again, use the scored baseline to position the tip of the chisel.

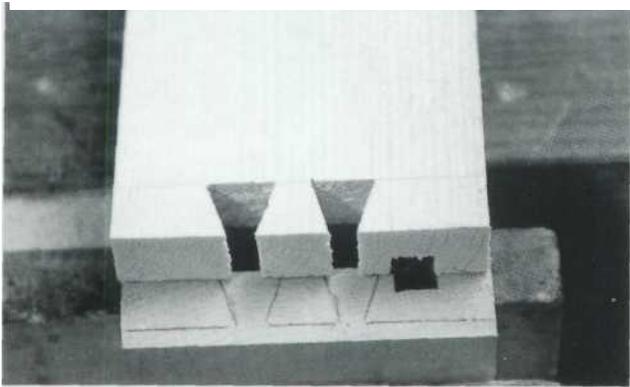


9 Shaving some of the pin walls may be necessary, but once fitting is accomplished, the joint can be dry-assembled (without glue).

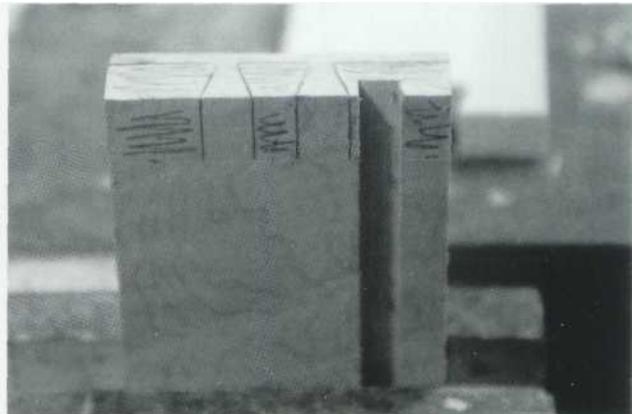
White pine is a very soft wood, so a joint that might not fit perfectly can still be brought together. Hardwood, however, requires more fine-tuning of the pins with a paring chisel. Too much force applied to the fitting of a dovetailed joint can result in a split drawer side.

10 The half-blind dovetails (so named because the joint doesn't show from the front) used at the front of the drawer are a bit more complicated to cut.

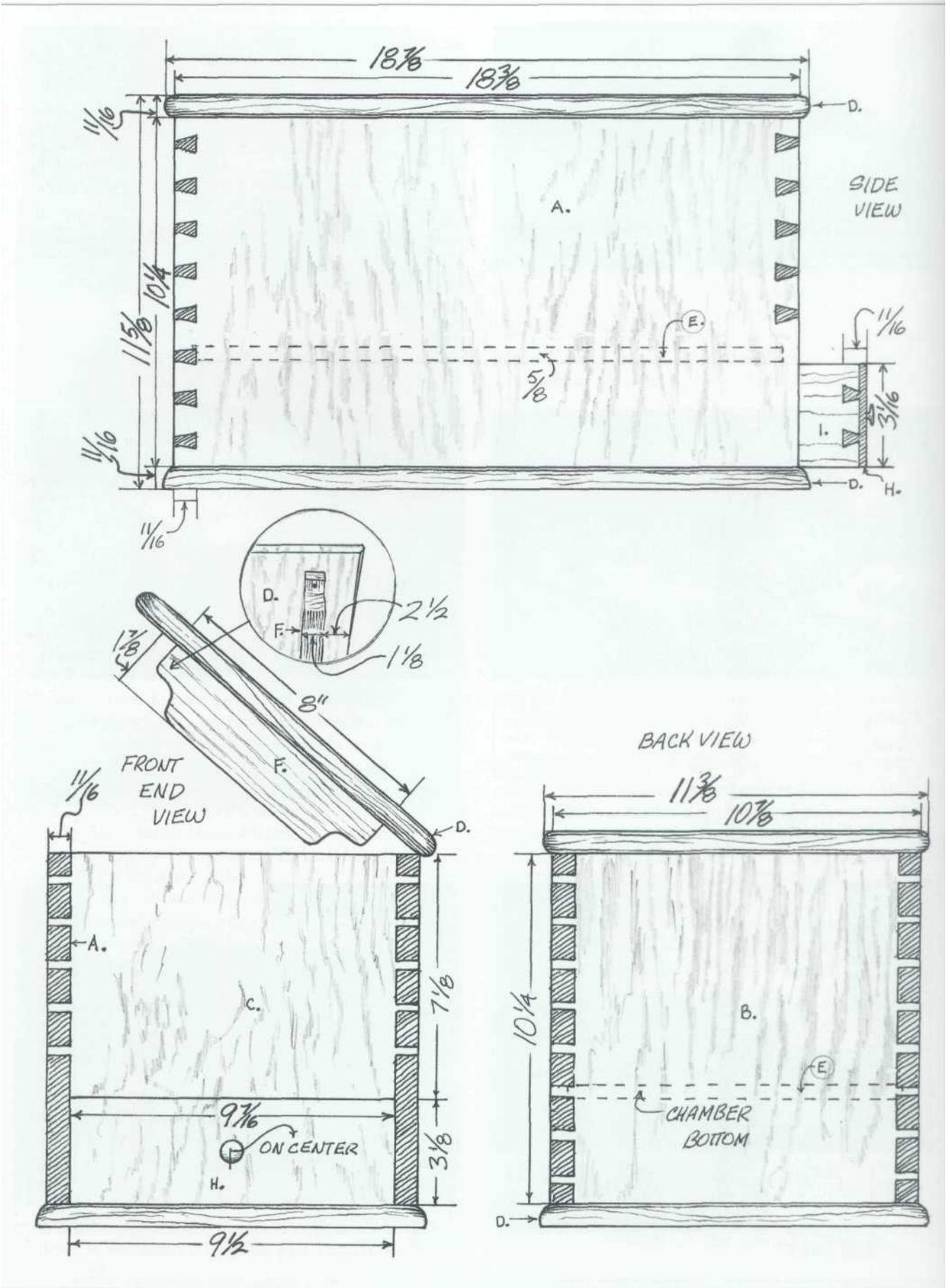
Again, the process begins by cutting the tails. Then lay these across the end grain of the drawer front, and mark the perimeter of each tail on the drawer front.



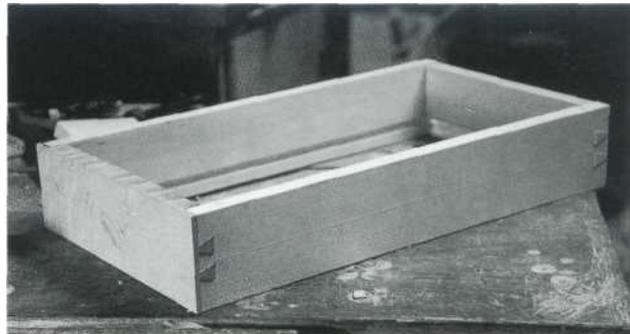
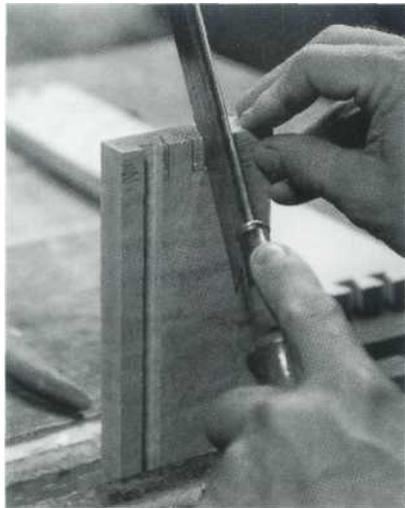
11 The marking can be seen more clearly here.



12 With a try square, extend the lines from the end of the drawer front to the scored baseline. Scribbling indicates waste.



13 With a backsaw positioned just to the waste side of each line and held at about a 45° angle, define the sides of each pin by a saw kerf that connects the baseline on the back of the drawer front with the line drawn on the end grain indicating the forward limit of the tails.



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The dry-assembled drawer shows through dovetails at the back and half-blind dovetails at the front.



14 Then clamp the drawer front to the bench with its inside face up. Cut away the waste with a mallet and chisel.



17 The procedure for dovetailing the sides of the case is the same as that used for the back of the drawer with two important differences: First, because of the board widths, there will be many more pins and tails, making joint fitting more time-consuming. Second, because the joint components are hardwood, they must be fit more carefully. Forcing a hardwood joint nearly always results in split stock.



18 Assemble the case around the bottom of the storage chamber. The edges of this bottom are housed in the groove on the inside faces of the four sides of the chest.

Clamping blocks permit the pressure to be exerted behind the pins. This allows the pins to protrude 1/16". After the glue has cured and the clamps have been removed, sand this excess away, making the ends of the pins flush with the sides of the case.

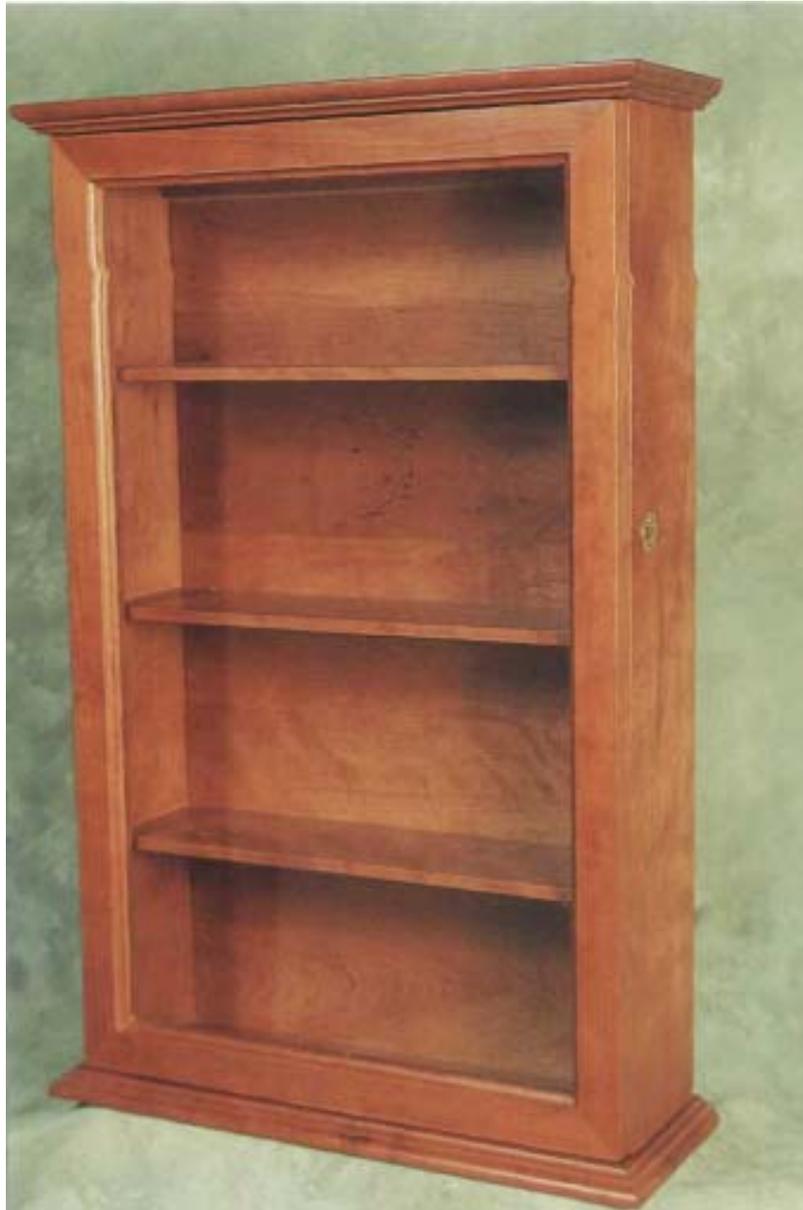


15 Carefully (to avoid splitting the drawer front), shape the sides of the pins with the chisel.

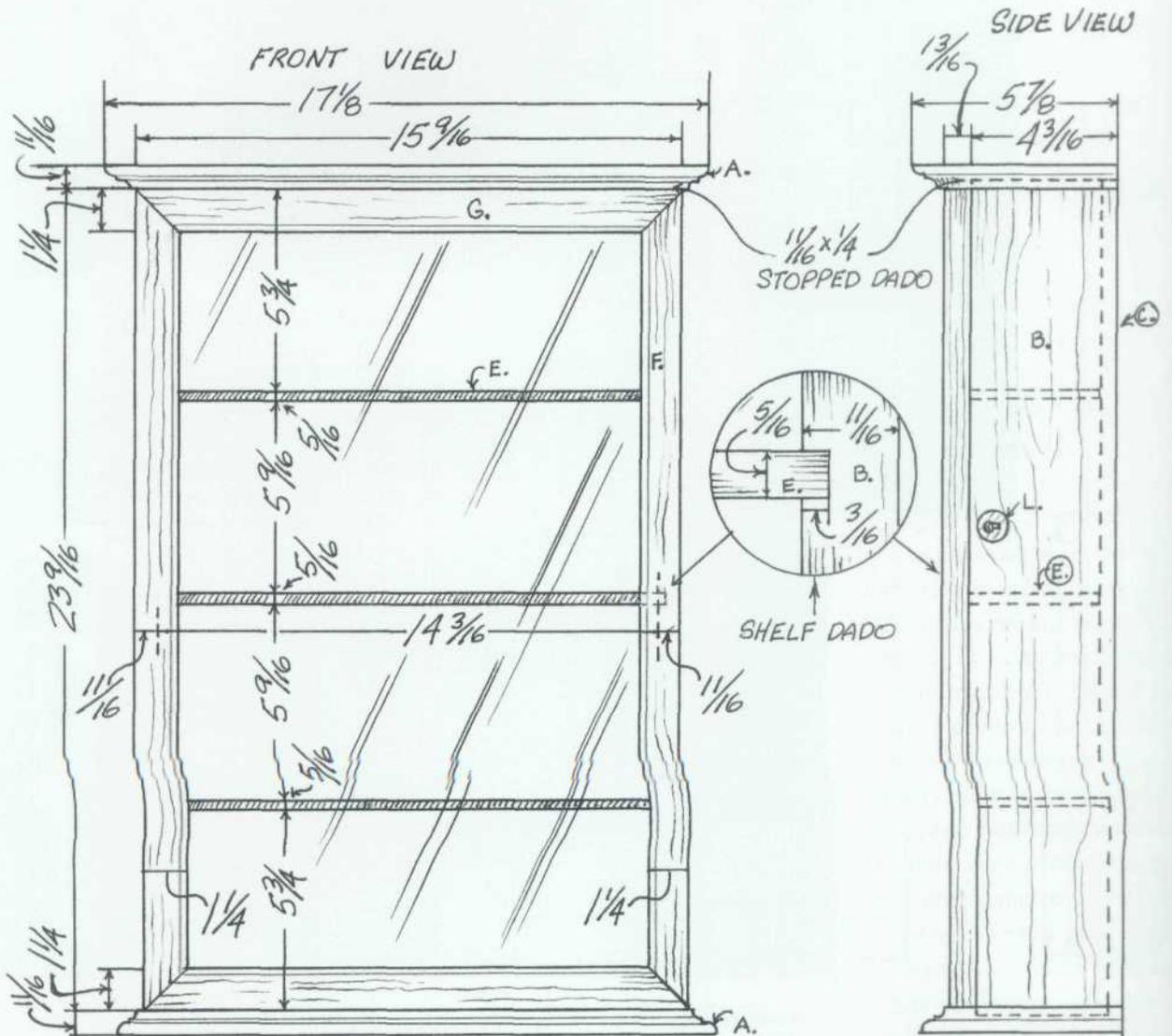
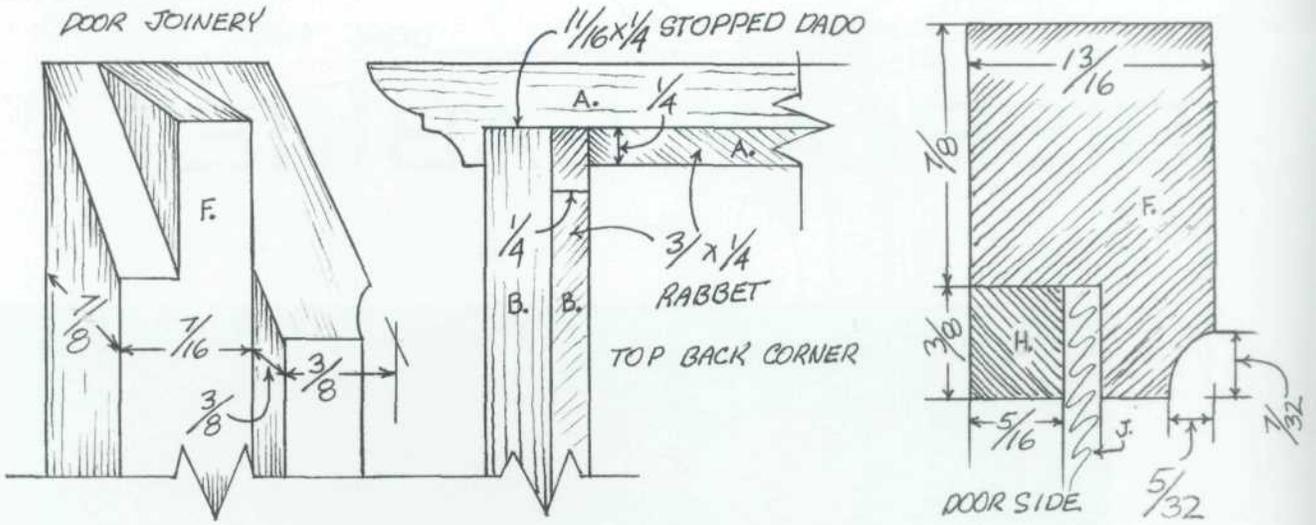
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DISPLAY CABINET

Cherry



DOOR JOINERY



miter. This spline not only increases the glue surface; it also allows face grain to be glued to face grain. The feathered miter, used in the construction of the Shaker-style mirror, is another variation of the basic miter joint, one offering the same advantages as the splined miter. The mitered bridle joint used in the construction of the door on this cherry display cabinet is still another variation, one including tenons on the door's sides which fit into mortises cut into the miters on the door's top and bottom. This joint offers the strength of tenons which are an actual part of the door's sides. It does, however, provide less glue surface than either the splined or feathered miter joints.

MAKING THE DISPLAY CABINET

After milling the stock to the required thicknesses, lengths, and widths, form the moulded edge on the front and ends of the cabinet top and bottom. Then, cut 11/16" X 1/4" stopped dadoes on the top surface of the bottom and the bottom surface of the top (see chapter five). These dadoes will house the ends of the cabinet sides. Cut a 3/8" X 1/4" rabbet across the back of the cabinet top and bottom connecting the dadoes. Cut the same rabbet on the back, inside edges of the cabinet sides. These four rabbets will house the perimeter of the cabinet back. Finally, cut three 3/16" X 5/16" dadoes across the inside surface of the cabinet sides to house the ends of the shelves.

Then assemble the case with glue and screws passing down through the top into the sides, and up through the bottom into the sides. Screw the back to the cabinet sides, top, bottom and the backs of the shelves. These screws

pass through oversized holes to allow the back to expand and contract in response to seasonal changes in humidity.

Begin door construction by running the moulded edge on the front inside corner of the frame stock. Cut a 3/8" X 7/16" rabbet on the back inside edge. Then cut the mitered bridle joint. You can do this with a backsaw and a chisel or with a stack of dado cutters on the table saw, holding the work in a Universal Jig.

The glass is held in its rabbet with the four tack strips.

MATERIALS LIST

A	Top and bottom	2 pcs.	1 ¹ / ₁₆ × 5 ⁷ / ₈ × 17 ¹ / ₈
B	Side	2 pcs.	1 ¹ / ₁₆ × 4 ³ / ₁₆ × 24 ¹ / ₁₆
C	Back	1 pc.	3 ⁷ / ₈ × 14 ¹³ / ₁₆ × 24 ¹ / ₁₆
D	Cleat	1 pc.	1 ³ / ₁₆ × 1 ¹ / ₄ × 14 ³ / ₁₆
E	Shelf	3 pcs.	3 ⁷ / ₁₆ × 3 ³ / ₁₆ × 14 ³ / ₁₆

Door

F	Door side	2 pcs.	1 ³ / ₁₆ × 1 ¹ / ₄ × 23 ³ / ₁₆
G	Door top and bottom	2 pcs.	1 ³ / ₁₆ × 1 ¹ / ₄ × 15 ⁵ / ₁₆
H	Vertical tack strip	2 pcs.	1/4 × 3/8 × 21 ³ / ₄
I	Horizontal tack strip	2 pcs.	1/4 × 3/8 × 12 ¹⁵ / ₁₆
J	Glass	1 pc.	3/8 × 13 ³ / ₄ × 21 ³ / ₄

Hardware

K	Hinge	2 pcs.	1 × 1 ³ / ₄
L	Lock	1 pc.	1 ³ / ₈ × 1 ⁷ / ₈
M	Screws	various	

**These are net measurements. Surplus should be added to door sides to permit joints to be sanded flush.*