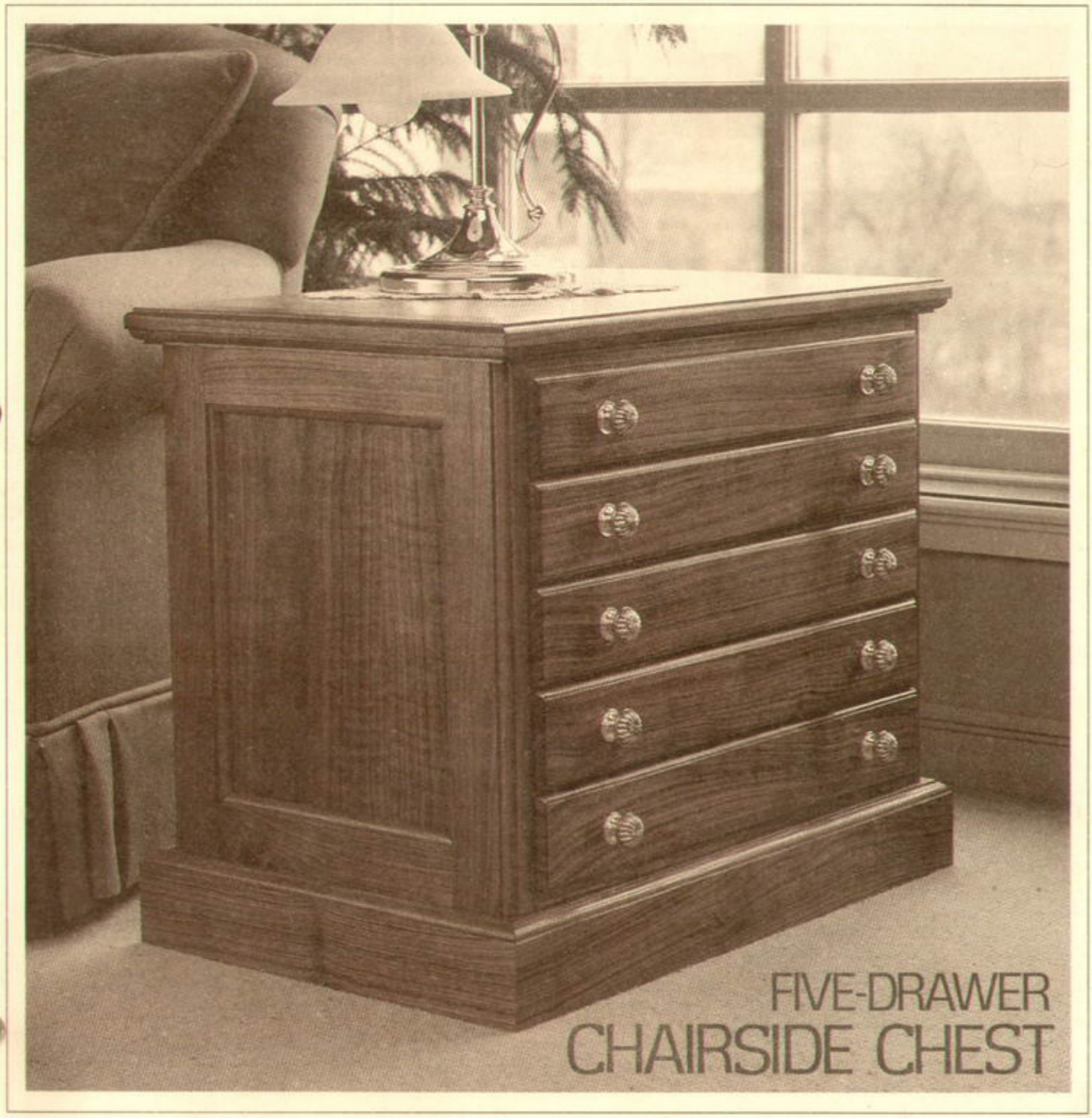
NO. 68 NOTES FROM THE SHOP $3.95

Woodsmith®



FIVE-DRAWER CHAIRSIDE CHEST

No. 68 April, 1990

Woodsmith

Woodsmith (ISSN 0164-4114) is published bimonthly (February, April, June, August, October, December) by Woodsmith Publishing Co., 2200 Grand Ave., Des Moines, IA 50312.
Woodsmith is a registered trademark of Woodsmith Publishing Co.

Subscriptions: One year (6 issues) $15.95. Two years (12 issues) $27.95. Canada and Foreign: add $2.00 per year, U.S. funds only. Single copy price, $3.95.
Second Class Postage Paid at Des Moines, IA and at additional offices.
Postmaster: Send change of address to *Woodsmith*, Box 491, Mt. Morris, IL 61054.
Subscription Questions? Call 800–435–0715 (IL residents: 800–892–0753), 7:30 am to 8:30 pm, Central Time, weekdays only.

EDITOR'S COLUMN

Sawdust

Like most woodworkers, I really enjoy getting into the details and techniques of working with tools. So, in this issue we're introducing a new feature article: Tool Techniques.

We plan to have an article like this in every issue — a page or two devoted to a particular shop tool that will show tips on how to get the most out of that tool. This time we're showing a collection of tips for the drill press (see pages 14 and 15).

We've also expanded our question-and-answer feature "Talking Shop" to two pages so we can provide more information in this format too.

This is all part of the 32-page expanded version of *Woodsmith* that started with the last issue. With the extra pages, we'll be able to show larger projects, and have more articles on tools and woodworking techniques.

Along with the issue, we're sending out the new *Woodsmith Store* catalog. The idea behind this catalog is to replace the old "protective cover." If you've been subscribing for awhile, you know that we used the protective cover to show the covers of the back issues and list their contents.

Now, with the new catalog we are able to show a lot more projects from past issues and give a description of them. We will also use it to provide more information on Project Supplies. This will usually include items related to the current issue. But we hope to be able to present a list of all the supplies available for past projects as the catalog grows.

To round out the catalog, on the last page we've included a brief index to projects, plus a few extra tips. I hope you enjoy it.

NEW FACES. I usually spend most of this column talking about woodworking. But I would like to talk about some of the new people who are working here.

Last fall we began looking for an assistant editor. Jim Dolan, who's been a long-time subscriber, responded. Jim was working in the Phoenix area doing marketing research and consulting for corporate newsletters.

After talking to Jim about all the typical job interview stuff, I asked him why he wanted to work at *Woodsmith*. He said that every time he builds a project he learns something new. He wanted to help other woodworkers learn what he had learned and have as much fun doing it. Needless to say, Jim is learning a lot and having a lot of fun in the *Woodsmith* shop.

Jon Snyder has also signed on to help with the graphics of the new catalog and with our direct mail packages. As the catalog appearance improves, it will be the result of Jon's efforts. He's already planned several changes, including ways to produce the whole catalog on a computer. (The new computer technology in this area is astounding.) We're also looking into a way to produce photos of projects in full color.

The area that's growing the fastest here is customer service. When the first *Woodsmith* Catalog came out, we were deluged with orders. Linda Morrow, the manager of this group, was almost overwhelmed, and has spent most of her time hiring new people.

Fortunately we were able to hire some great people. Genelle, Vicki, Mic, Linda Jones, and Kristine are all anxious to help you with orders for back issues or project supplies. Then it's up to Kelly and Scott to find everything in our bulging warehouse and get it shipped to you. It's an operation that seems like it sprang up overnight.

With all this activity, Leslie has been on a non-stop purchasing cycle for the past two months. This created enough paperwork that Paul (our controller) hired Linda O'Rourke to help write checks and spend money. And so it goes.

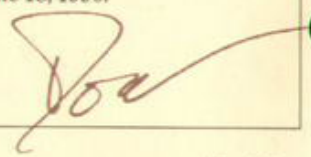
ST. LOUIS STORE. While things were growing here, we were also in the process of closing *The Woodsmith Store* in St. Louis.

The St. Louis store was the first *Woodsmith Store* and it was a great one. By most accounts it was the largest, most complete store for woodworkers in the country. It was fun just to walk in that store and wander around looking at things.

But it was a matter of being in the wrong place at the wrong time. The store was located next to a large shopping mall called the St. Louis Galleria. The owner of the Galleria wanted to expand. Unfortunately, the *Woodsmith Store* and about 100 homes and 30 other businesses were in the way.

To make a long story short, they tore down the *Woodsmith Store* and put in a parking lot. It was a great store. I'll miss it.

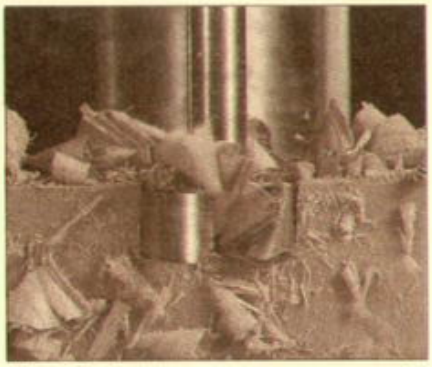
NEXT ISSUE. The next issue of *Woodsmith* (No. 69) will be mailed during the week of June 18, 1990.



A LOOK INSIDE

Contents

Chairside Chest *page 6*



Tool Techniques *page 14*

Plant Stand *page 18*

Sandpaper Dispenser *page 26*

Tips & Techniques

NARROW STOCK PUSH BLOCK

■ When ripping *narrow* stock, I've never really felt comfortable using a push stick. I worry about catching the push stick between the blade and the fence. Instead of a push stick, I built a push block that straddles my rip fence, refer to Fig. 2.

My push block version is made out of two face pieces of Masonite held together by a spacer. And, to push different thicknesses of stock, I cut stair-step notches on the front end of the Masonite face nearest the blade.

To make this push block, start by cutting a ¾"-thick spacer to width to match the thickness of your rip fence. The width is fairly critical because you want the push block to fit snugly over the rip fence, but not so tight that it binds.

After cutting the spacer, I used ¼"-thick Masonite to make the two face pieces. Cut the two pieces 7" long and high enough to clear any adjustment bolts on the top of the rip fence plus ¾" (the thickness of the spacer), see Fig. 1.

Now, to cut the stepped cuts on the piece that faces the saw blade, lay out a stair-stepped design. Each step is ¼" high and ½" wide to suit different stock thicknesses. Then, cut out the faces. (I cut mine using the band saw, but you could also use a coping saw or back saw.)

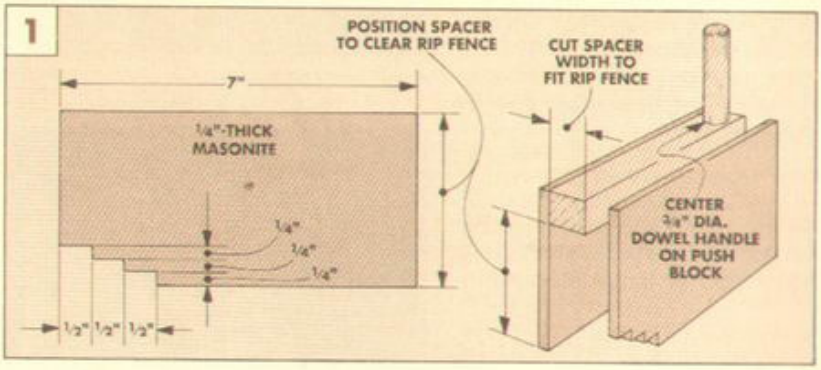
Next, glue the face pieces to the spacer so the bottom edge of both face pieces ride on the top of the saw table and the spacer clears the top of your table saw rip fence.

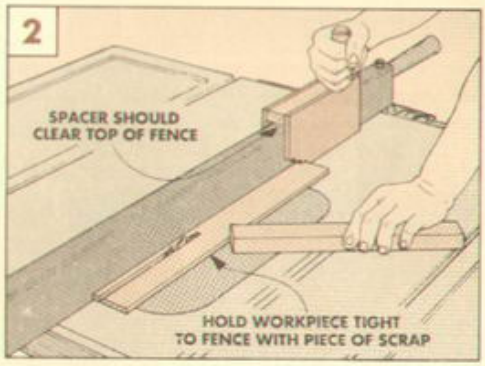
Then, to get a secure grip on the push block, I drilled a ¾"-dia. hole and glued a ¾" dowel near the back end of the spacer.

To use this push block, set it over the fence, with the notch on the push block over the workpiece. To help hold the stock tight against the fence, I also hold a piece of scrap against the piece while cutting, see Fig. 2.

Robert Spalter
Lake Worth, Florida

Editor's Note: This push block is only intended for ripping narrow pieces and not wide pieces. When pushing a wide piece through a table saw, the push stick should be centered on the width of the workpiece.





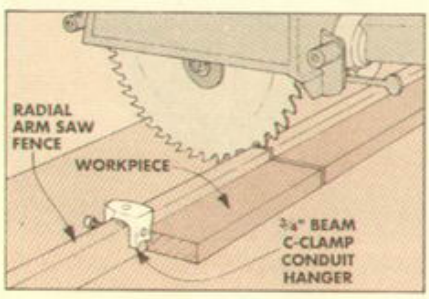
FENCE STOP

■ The other day at the hardware store, I found a pre-made stop that works great on my radial arm saw fence. It's called a beam C-clamp conduit hanger (see drawing) and can be found for a little over $1 at most local hardware or electrical supply stores.

There are different sizes of conduit hangers available. The one I bought has an opening of ¾" — perfect for most fences.

To use this hanger as a stop, simply attach it over the top of the fence (with the screw facing away from the fence, see art). Now set the stop the right distance from the blade and tighten the screw down. Then go ahead and make your cuts.

Ted Johnson
McDonough, Georgia



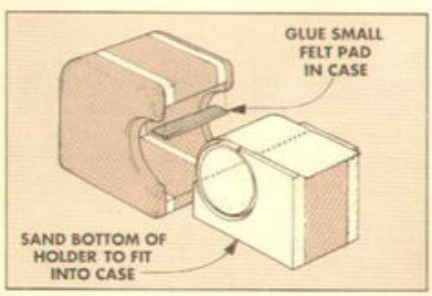
STAMP DISPENSER

■ I recently made a few stamp dispensers from *Woodsmith* No. 65. As with most stamp dispensers, sometimes the stamps will want to draw back inside the holder and they don't pull out evenly.

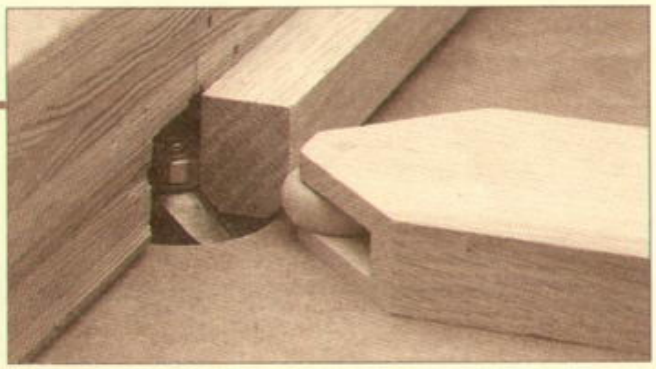
To keep this from happening, I simply glued a small piece of felt to the case above the stamp's path, see drawing. If, after gluing the felt in place, the stamps are too hard to pull out, just lightly sand the bottom of the stamp holder.

The felt gently holds the stamps in place for storage and when the stamps are needed, they pull out smoothly and evenly.

Jim Treadway
Great Falls, Montana



ROUTER TABLE HOLD-IN JIG



I've designed this wooden wheel jig to hold a workpiece tight against the fence on my router table. But it can also be used on a table saw, band saw, or drill press as well.

Typically, this would be a job for a featherboard, but I've found that featherboards can be difficult to clamp down parallel to a fence, and a featherboard with a straight end won't work with a curved workpiece. Also, since this jig only touches the wood at one point (the edge of the wheel), it applies more direct pressure than a featherboard.

There's another advantage. Since the wheel is free-rolling, it's easier to push the board through this jig than past all the fingers of a featherboard.

Editor's Note: While this jig works great, it doesn't prevent kickback — you should still use a push stick. And your workpiece has to be a fairly consistent width or thickness.

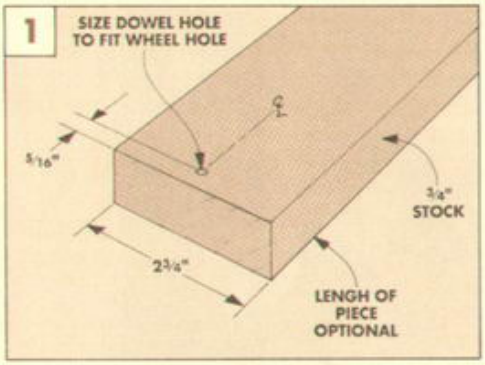
To make the jig, cut a piece of ¾"-thick stock 2¾" wide. Then drill a hole for the dowel "axle" centered on the width and 5/16" from one end, see Fig. 1. (Note: I used a 1"-dia. toy wheel.)

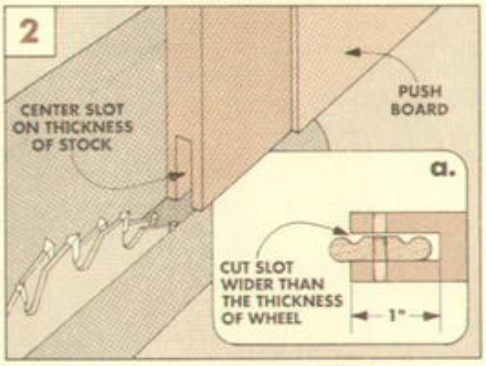
Next, stand the piece on end and cut a 1"-deep slot for a wheel well, see Fig. 2.

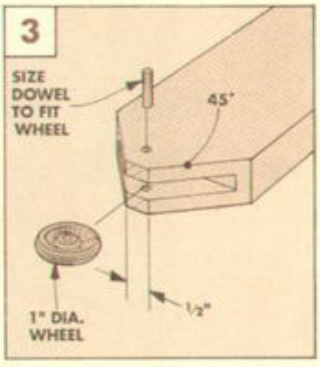
To provide clearance for curved workpieces, I trimmed 45° angles off the end with the slot, see Fig. 3. Finally, insert the wheel and dowel into the jig.

By making two jigs, you can keep pressure right before and after the workpiece passes the bit. Or they can be stacked on top of one another for tall or irregular-shaped pieces. The jig also can be clamped to the fence to hold a piece tight to the table.

Phip Stoddard
Jesup, Iowa





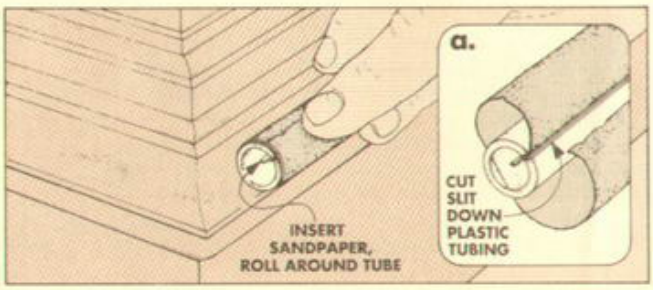


SANDING TUBE

■ To sand coves, I wrap sandpaper around small lengths of clear flexible plastic tubing. Most hardware stores carry this type of tubing. Choose a tube diameter smaller than the radius of the cove.

Slice the tube down its length and slip the edge of the sandpaper into the slit. Then wrap the sandpaper around the tube and hold it tight.

Richard J. Strohman
Mount Pleasant, Iowa



HAND-RUBBING DEFT FINISH

■ I use a lot of Deft Semi-Gloss Wood Finish in my business. While it does give an adequate finish, I could never get that "hand-rubbed" look I wanted. After some experimentation, I found a very simple method to improve the look of this finish.

All you need is a brown paper bag (the kind you get from the grocery store) and lots of elbow grease.

To start, simply cut a few small square pieces of the brown paper bag, and then vigorously rub the finish with these pieces. The paper is slightly abrasive, but it won't cut through the finish.

The paper will actually buff the finish and produce a semi-gloss sheen.

Ben Cagliaro
Murphys, California

SEND IN YOUR TIPS

If you would like to share a tip or idea, just send in your idea to *Woodsmith*, Tips and Techniques, 2200 Grand Ave., Des Moines, Iowa 50312

We will pay upon publication $15 to $100 (depending on the published length of the tip). Please include an explanation and a sketch or photo (we'll draw a new one).

Chairside Chest

The inspiration for this frame and panel walnut chest was an old-fashioned spool cabinet used to display thread at general stores. But it's just as handsome sitting alongside a chair or sofa at home.

One of the most interesting features of this chest is the least obvious — the back of the cabinet is just as beautiful as the top and sides. It's designed to have a finished look wherever it's placed in a room.

The inspiration for this project was an antique spool cabinet. These cabinets were used to display and store thread, and they usually sat on a counter or in the middle of the store. Since they could be viewed from all sides, the back had to look as nice as the front.

DRAWERS. Though frame and panel construction is characteristic of spool cabinets, I've made a couple of changes from the typical design. First, I increased the drawer height so I could store something larger than a spool of thread. But I used traditional dovetail joints on the drawers — a nice feature in these cabinets.

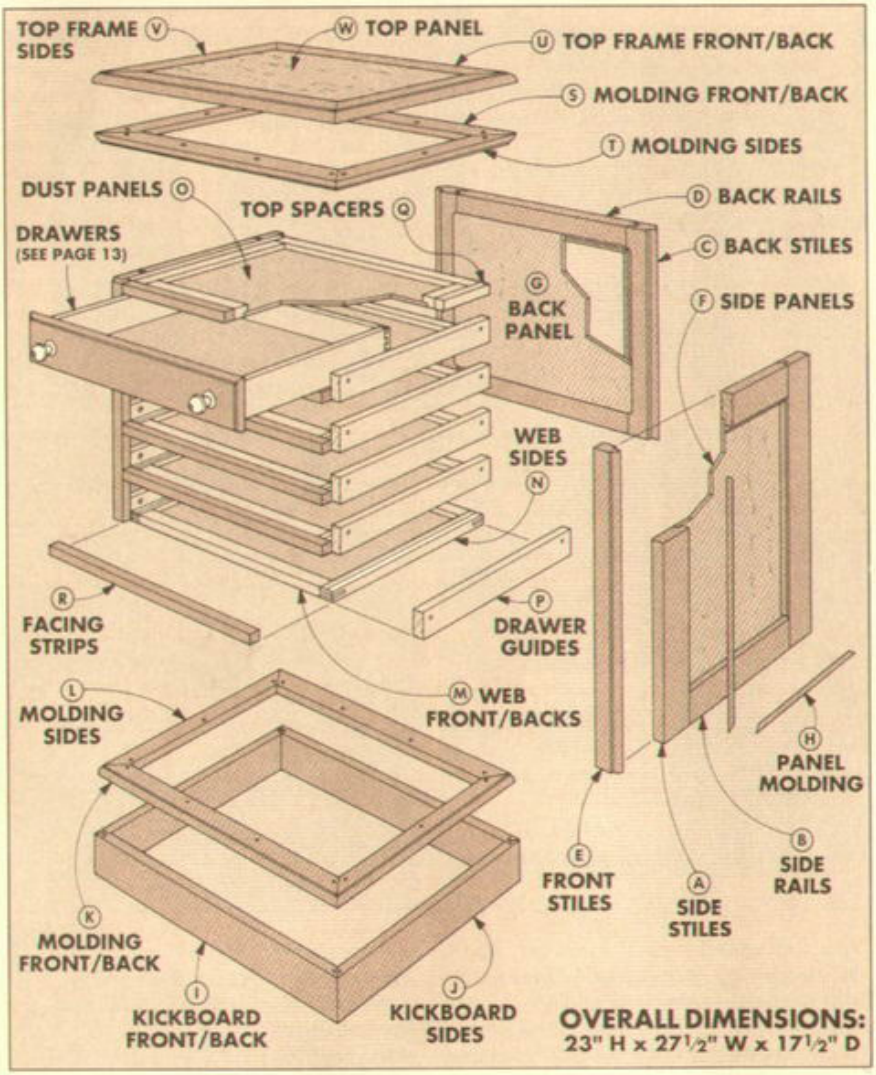
TOP. Another change is the top of this chest. It isn't solid stock, but a walnut frame around a walnut plywood panel. If the top were solid, you'd have to figure out how to anchor it to the case to allow for expansion and contraction with seasonal changes in humidity. Since a frame and *plywood* panel won't expand or contract significantly, it can be glued down to the case.

WOOD. I used walnut and walnut plywood to build the chest. The drawer sides and backs are hard maple, as are the interior web frames.

HARDWARE AND FINISH. The knobs on the drawers are classic fluted brass spool cabinet knobs. (Two other styles are available, see Sources, page 31.)

I finished the chest with two coats of satin polyurethane varnish, sanding lightly between coats.

EXPLODED VIEW



MATERIALS

CASE

A	Side Stiles (4)	¾ x 2 - 18¼
B	Side Rails (4)	¾ x 2 - 12
C	Back Stiles (2)	¾ x 2⅜ - 18¼
D	Back Rails (2)	¾ x 2 - 22
E	Front Stiles (2)	¾ x 1⅜ - 18¼
F	Side Panels (2)	¼ ply - 11¾ x 15
G	Back Panel (1)	¼ ply - 21¾ x 15
H	Panel Molding	⅜ x ⅜ - 16 ft. rgh

BASE

I	Kickboard Frt/Bk (2)	¾ x 3 - 27½
J	Kickboard Sides (2)	¾ x 3 - 17½
K	Molding Frt/Bk (2)	¾ x 1¾ - 27¼
L	Molding Sides (2)	¾ x 1¾ - 17¼

WEB FRAMES

M	Fronts/Backs (12)	¾ x 1 - 23
N	Sides (12)	¾ x 1 - 14½
O	Dust Panels (6)	¼ ply - 13¼ x 21¾
P	Drawer Guides (10)	¾ x 1¾ - 14½
Q	Top Spacers (2)	¾ x ¾ - 14½
R	Facing Strips (6)	¾ x ¾ - 23

TOP

S	Molding Frt/Bk (2)	½ x 2⅛ - 27¼
T	Molding Sides (2)	½ x 2⅛ - 17¼
U	Frame Frt/Bk (2)	¾ x 2¼ - 27½
V	Frame Sides (2)	¾ x 2¼ - 17½
W	Panel (1)	¾ ply - 13 x 23

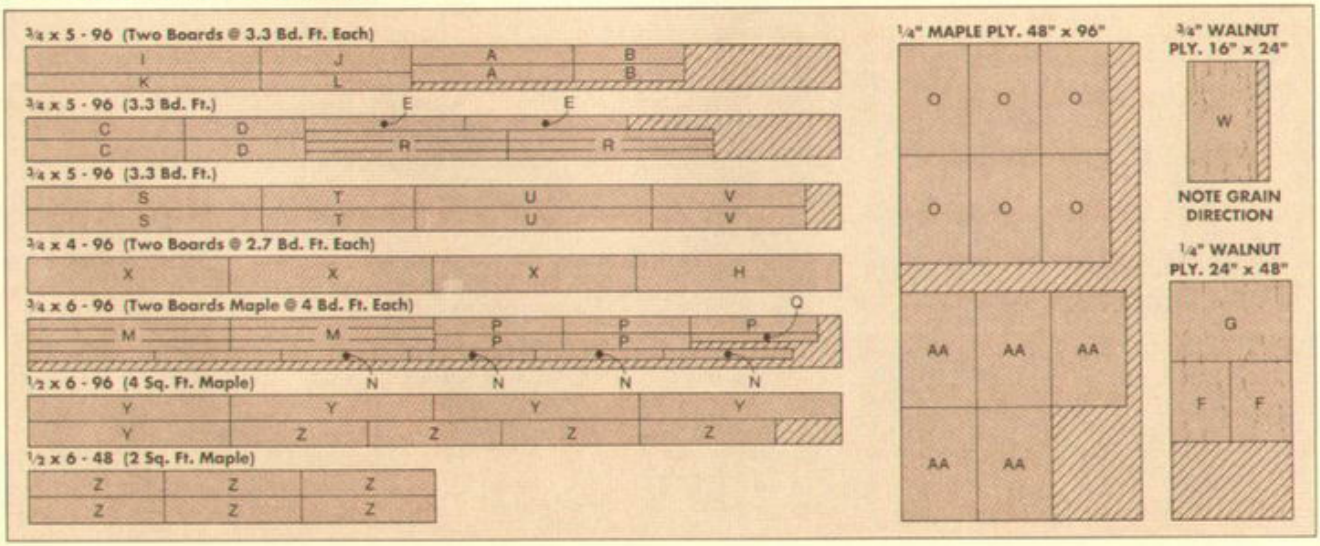
DRAWERS

X	Fronts (5)	¾ x 3⅜ - 23⅝
Y	Backs(5)	½ x 2⅝ - 22⅞
Z	Sides (10)	½ x 2⅝ - 14¾
AA	Bottoms (5)	¼ ply - 14⅝ x 22⅜

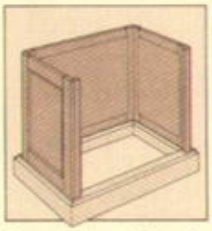
SUPPLIES

- Lumber and plywood (see below)
- 10 Drawer knobs
- 14 Feet of nylon glide tape
- 1 Quart satin polyurethane varnish

CUTTING DIAGRAM



SIDE AND BACK FRAMES



I began building the chairside chest by making the side and back frames of the case. The frames are ¾" hardwood with a ¼" plywood panel.

SIDE FRAME. Start work on the two side frames by cutting four **side stiles (A)** and four **side rails (B)** 2" wide, see Fig. 1. Then cut the stiles 18¼" long and the rails 12" long.

BACK FRAME. Since the back frame has to be the same height as the side frames, I also cut the back frame pieces at this time, see Fig. 4. Start by cutting two **back stiles (C)** 2⅜" wide and the same length as the side frames (18¼"). Then cut the two **back rails (D)** 2" wide and 22" long.

The stiles and rails on all three frames are held together with open-ended mortise and tenon joints, see Fig. 1a.

MORTISE. I cut the mortises in the stiles with a ¼" straight bit on the router table, see Fig. 2. Raise the bit 9/16" above the table, and position the fence so the bit is centered on the workpiece, see Fig. 2a.

Next, I clamped a stop block to the fence to limit the length of cut. Position the stop block so there's 2⅛" from the block to the far side of the bit. (Note: The mortise only has to be 2" long to accept the tenon on the rail. But I cut it ⅛" longer, so I wouldn't have to square up the rounded ends.)

TENON. After the mortises are cut in all the stiles, the next step is to cut ½"-long tenons on the ends of the rails. To make the tenons, I cut rabbets on both faces of the rails with a ¾"-wide dado blade, see Fig. 3.

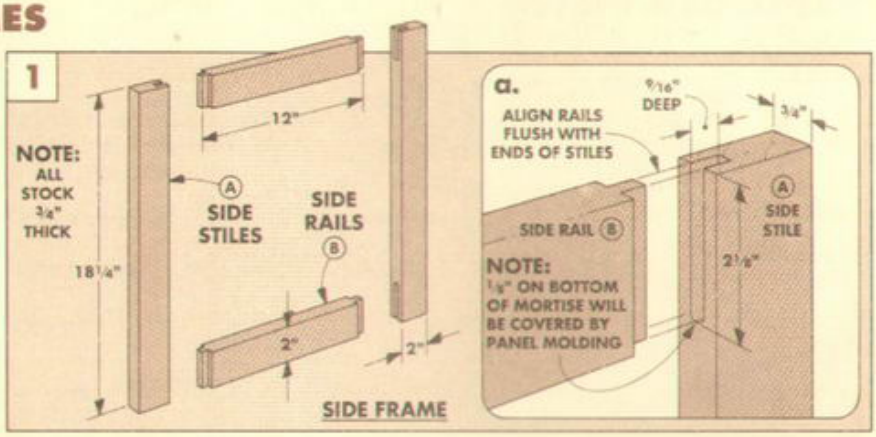
Sneak up on the depth of cut on a test piece until the tenon fits snugly into the mortise in the stile. Then cut tenons on all the rails.

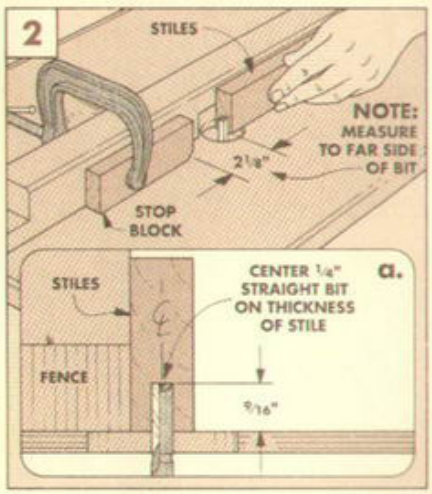
FRONT STILES. After the mortise and tenon joints were complete, I cut two **front stiles (E)** 1⅜" wide by 18¼" long, see Fig. 4. When the case is assembled, these pieces will be glued to the front ends of the side frames, refer to Fig. 10 on page 10. But I wanted to cut them now since they have the same edge profile as the back stiles (C).

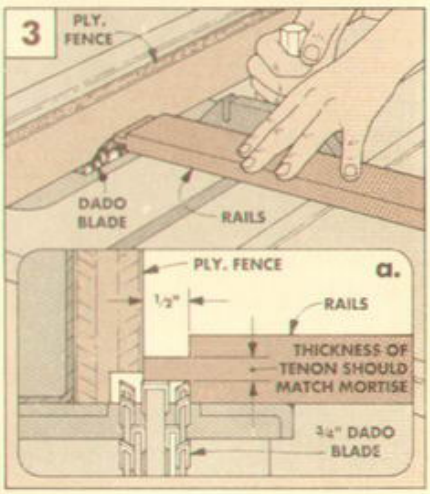
EDGE PROFILE. Next, to dress up the edges, rout a round-over (with a shoulder) on the outside corner of the back stiles (C) and front stiles (E), see Step 1 in Fig. 5.

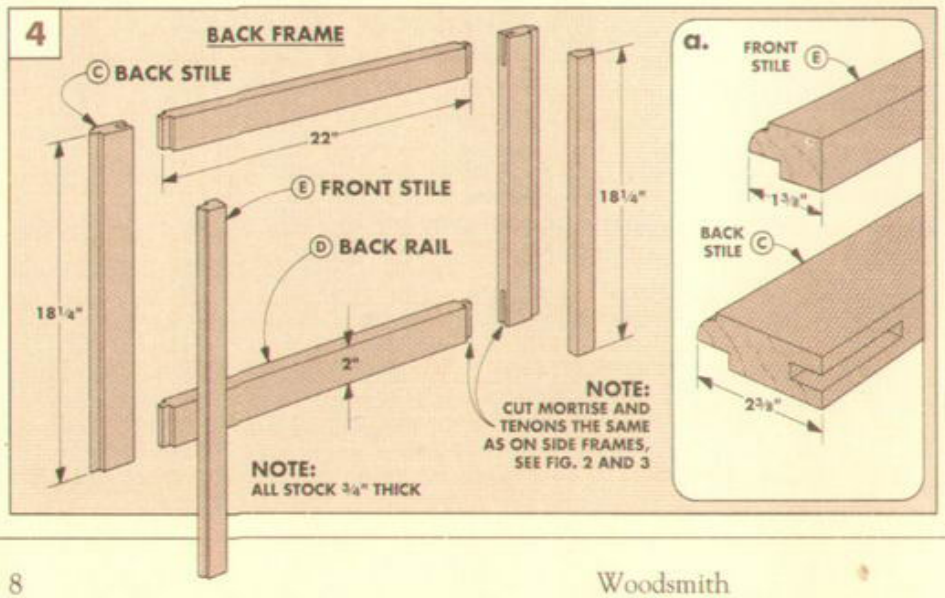
RABBET. Now, rout a ⅝"-wide rabbet on the inside corners (opposite the round-over), see Step 2 in Fig. 5. The side frames fit into this rabbet when the case is assembled.

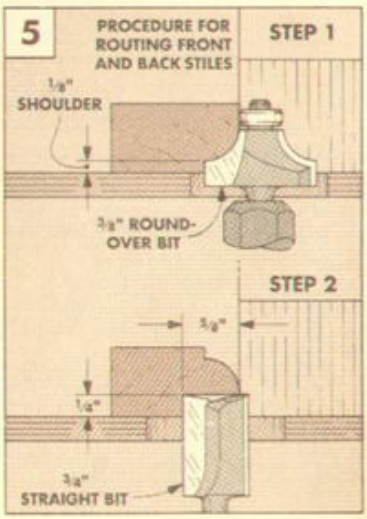
ASSEMBLY. Finally, glue and clamp the three frames checking that they're square.











PANELS AND MOLDING

After the three frames were dry, I routed a rabbet on the inside face of each frame to accept a ¼" plywood panel, refer to Fig. 7.

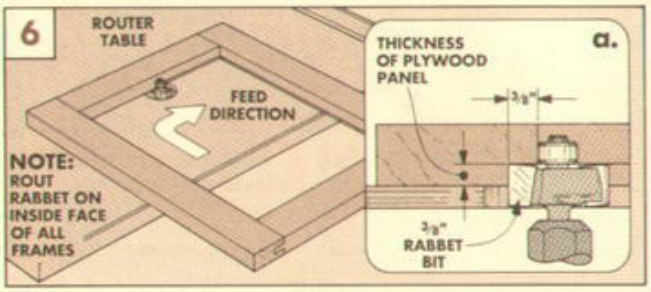
RABBET. To rout the rabbets, mount a ⅜" rabbet bit in the router table and raise it to equal the thickness of the plywood, see Fig. 6a. With the inside of a frame lying face down on the router table, rout a rabbet all the way around the frame, see Fig. 6.

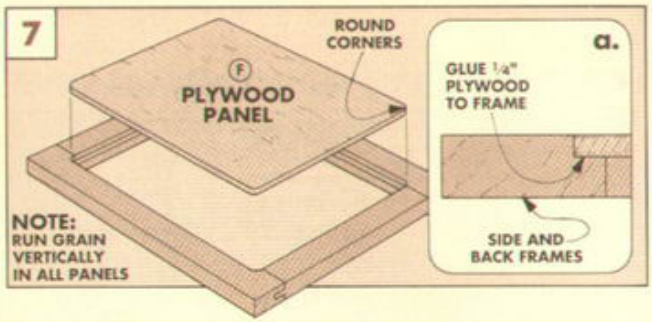
PANELS. Next, cut the two **side panels (F)** and **back panel (G)** to fit between the rabbets. (Note: The grain runs vertically in all three panels.) To make the panels fit, I rounded the corners slightly to match the round corners in the rabbets, see Fig. 7.

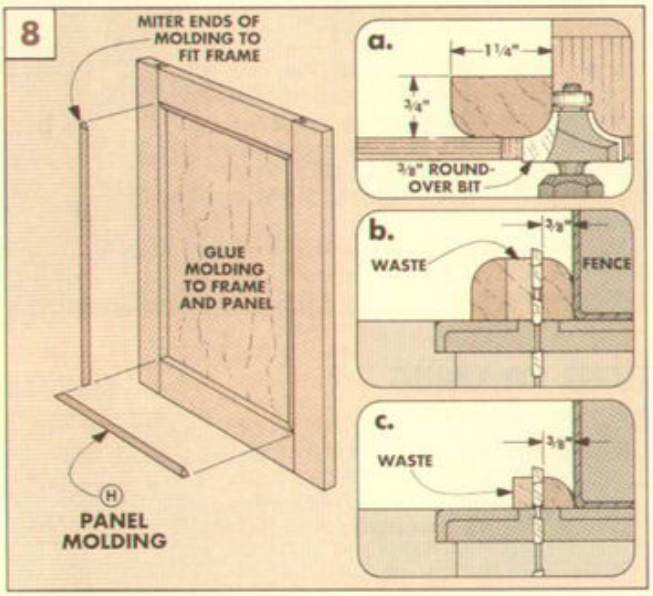
MOLDINGS. After the panels were glued in place, I glued decorative **panel molding strips (H)** on the front face of each frame, see Fig. 8. To make the strips, cut ¾"-thick stock 1¼" wide. Then round over both edges with a ⅜" round-over bit, see Fig. 8a.

Now trim a ⅜" strip off each edge, see Fig. 8b. And cut each strip ⅜" wide, see Fig. 8c.

Once the molding strips were cut to width, I mitered each end to fit inside the frame, see the mitering jig on page 16. Finally, glue the strips to the frame and panel, see Fig. 8.







BASE

The base of the chest consists of a molding frame glued on top of a kickboard frame, see Fig. 9.

KICKBOARD. To build the kickboard frame, start by ripping the **kickboard front/back (I)** and **sides (J)** to a uniform width (height) of 3". Then miter the front and back pieces so they measure 27½" (from long-point to long-point) and the side pieces measure 17½", see Fig. 9.

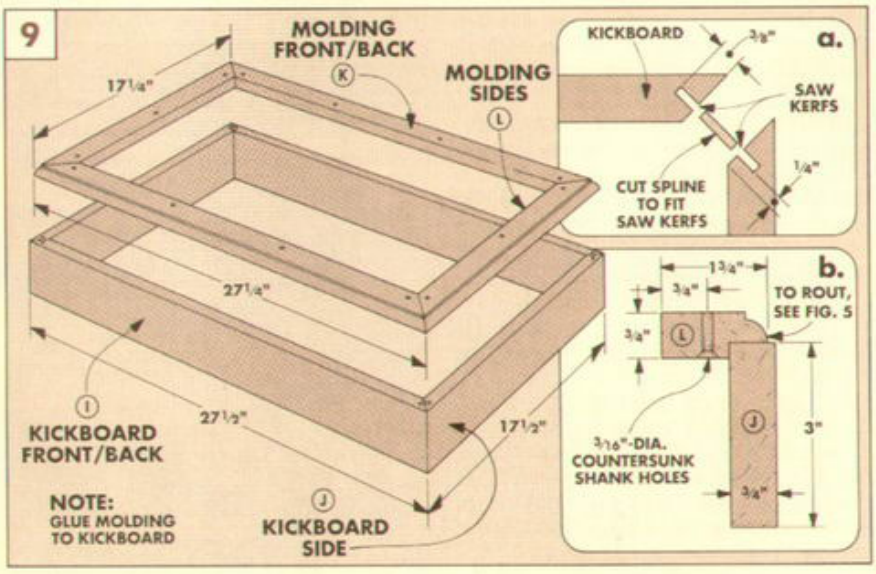
To help align the corners, cut a kerf in each miter, see Fig. 9a. Then cut a spline to fit the kerfs. (Shop Note: Splines can be resawn from solid stock or cut from Masonite.)

MOLDING FRAME. After the kickboard frame is glued together, cut the pieces for the molding frame, see Fig. 9. The **front/back (K)** and **sides (L)** are ripped to a uniform width of 1¾".

Before mitering the pieces to finished length, I routed a ⅜" round-over (with a shoulder) on the top outside edge of each piece, see Fig. 9b. Also rout a ⅝"-wide rabbet to fit over the kickboard frame. (These are the same procedures as on the frame stiles, refer to Fig. 5.) Then miter the pieces to length so the rabbets in the molding frame will sit on the kickboard once it's assembled.

Later, the base is screwed to the bottom of the case, but it's easiest to do this if the countersunk shank holes are drilled in the molding frame now, see Fig. 9b.

After the holes are drilled, glue the molding frame on top of the kickboard frame.



ASSEMBLY

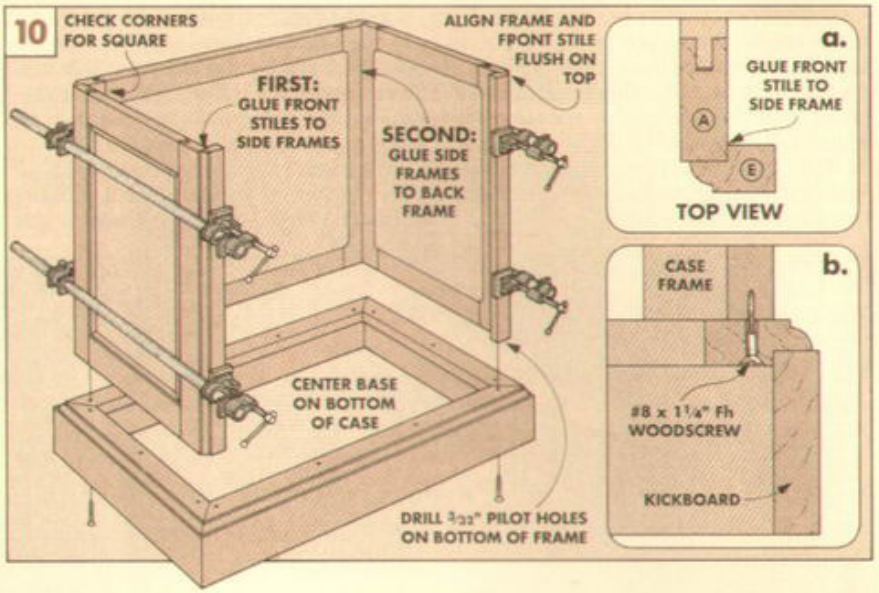
After the base is complete, the case can be assembled and then screwed to the base.

FRONT STILES TO FRAMES. Start assembling the case by gluing the front stiles (E) over the front edges of the side frames, see Fig. 10a. Check that the inside corners are square and the ends of each stile are flush with the top and bottom of the frames.

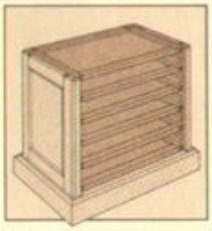
SIDE TO BACK FRAMES. Next, glue and clamp the side frames to the back frame to form a U-shaped assembly that's open in the front, see Fig. 10.

SCREW ON BASE. After the glue dries, turn the case assembly over and center the base on the bottom of the case. Then mark the locations of the screw holes on the bottom edges of the case by pushing an awl through the countersunk screw holes in the base molding strips.

Finally, drill pilot holes and screw the base to the case with No. 8 x 1¼" flathead wood screws, see Fig. 10b.



WEB FRAMES



With the case screwed to the base, the next step is to build six web frames to connect the cabinet sides and support the drawers.

CUT TO SIZE. Begin by cutting all the frame pieces to a width of 1", see Fig. 11. To determine the length of the **front/backs (M)**, measure the distance between the case sides (24½" in my case). Then, since drawer guides will be glued to the sides of the frame (refer to Fig. 14), subtract the thickness of two drawer guides (1½"). So I cut twelve web fronts/backs (M) 23" long, see Fig. 11.

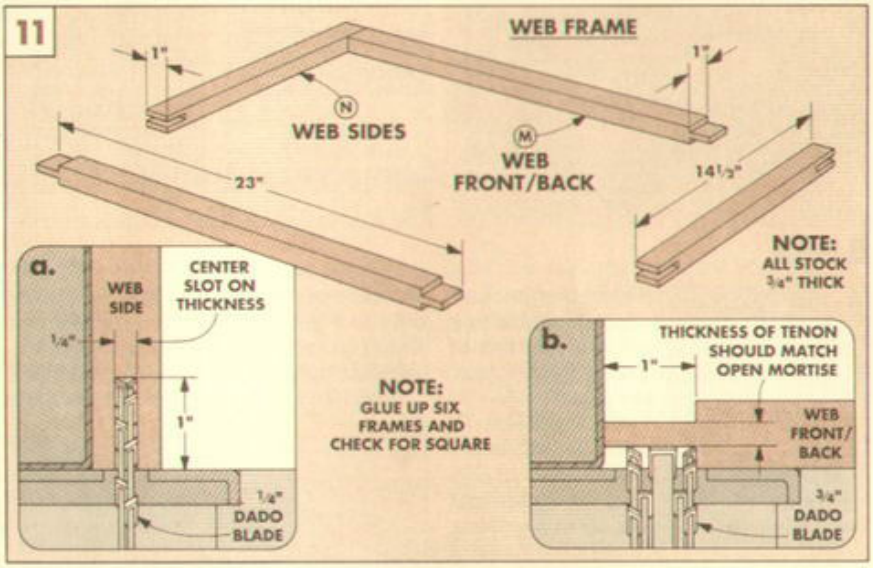
To determine the length of the **web sides (N)**, measure the distance between the front and back stiles (14½"). Now cut twelve sides to this length, see Fig. 11.

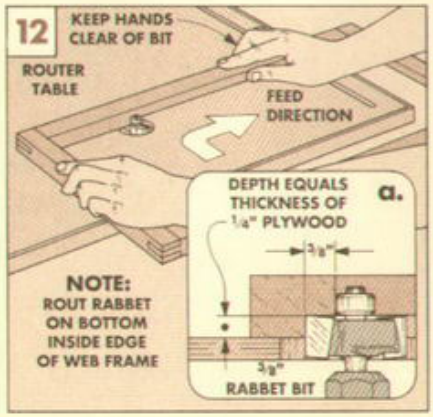
JOINERY. The web frame pieces are joined with open mortise and tenon joints. To make this joint, first cut an open mortise (slot) in the end of each of the web sides (N), see Fig. 11a. Center the mortise on the thickness of the piece, and cut it to depth to match the width of the front/back pieces (1").

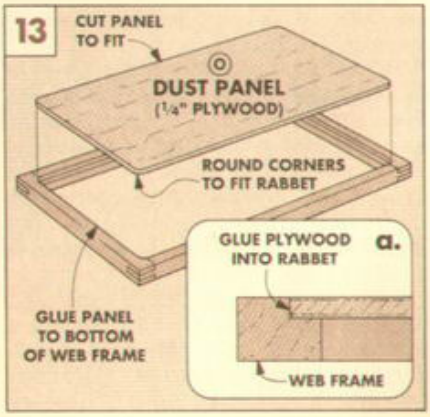
Next, I cut the tenons on the ends of the web front/back pieces (M), see Fig. 11b. Sneak up on the depth of these cuts until the tenons just fits the mortises.

Now glue all six web frames together, checking that the corners are square.

DUST PANELS. To keep a drawer from catching on any items in the drawer below, I glued ¼" plywood **dust panels (O)** to rabbets routed along the inside bottom edge of each web frame, see Figs. 12 and 13.







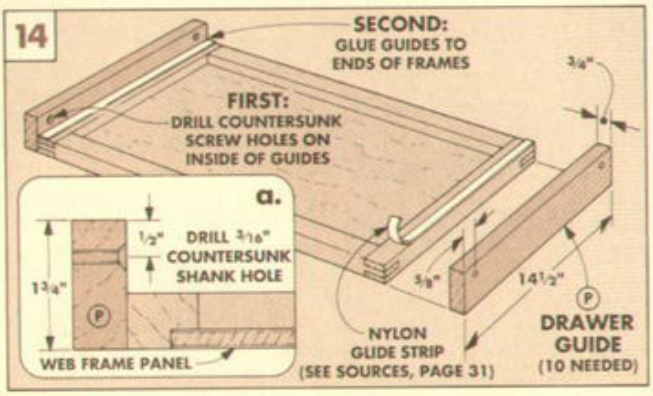
DRAWER GUIDES

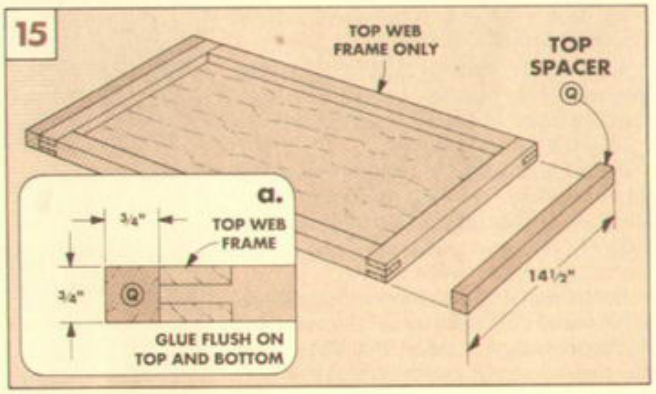
Before installing the web frames in the case, I added drawer guides to five of the frames for the five drawers, see Fig. 14. The top frame doesn't need drawer guides.

DRAWER GUIDES. Cut the ten **drawer guides (P)** to a width of 1¾" and the same length as the web sides (N), see Fig. 14. Before gluing the drawer guides to the web frames, drill countersunk mounting holes through each guide, see Fig. 14a.

After the holes are drilled, glue the drawer guides to the sides of the web frame. To prevent wear, I added self-adhering nylon glide tape to the top of each frame, see Fig. 14.

TOP SPACER. To keep the top frame the same width as the other frames, glue a ¾" x ¾" **spacer (Q)** on each side of this frame, see Fig. 15.





INSTALLING WEB FRAMES AND FACING

To position the web frames in the case, I used a spacer system, refer to Fig 17. This keeps all five drawer openings identical.

BOTTOM FRAME. Start by inserting the bottom web frame through the top of the case until it sits on the base molding, see Fig. 16. Now drill pilot holes through the mounting holes, and screw the frame to the case.

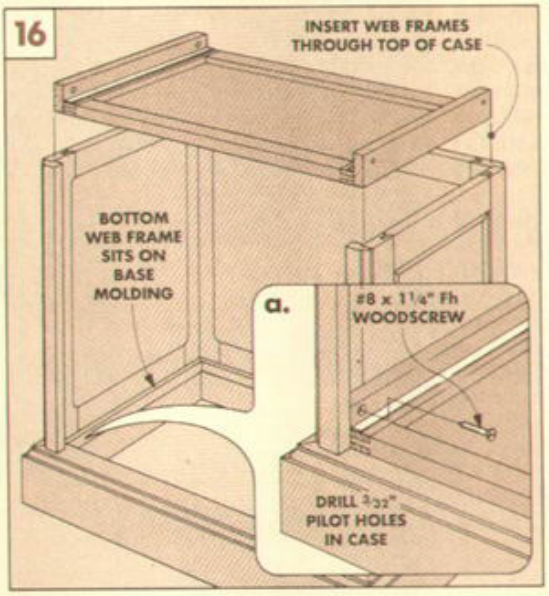
SPACERS. Next, to determine the size of the spacers, measure from the bottom web frame to the top of the case (in my case, 17½"). Then, subtract the combined thickness of the five remaining frames (3¾").

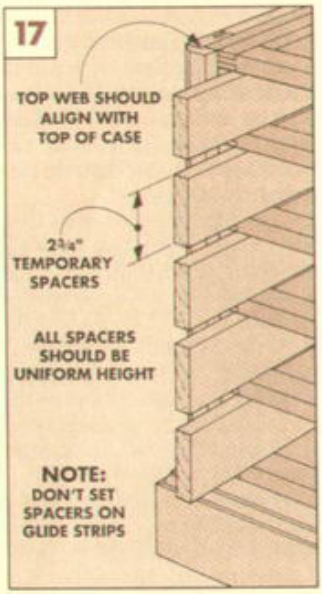
Now, to determine the height of each spacer, take this measurement (13¾") and divide it by five. Then rip ten spacers (one for each side of the drawer opening) to this width (2¾"), see Fig. 17.

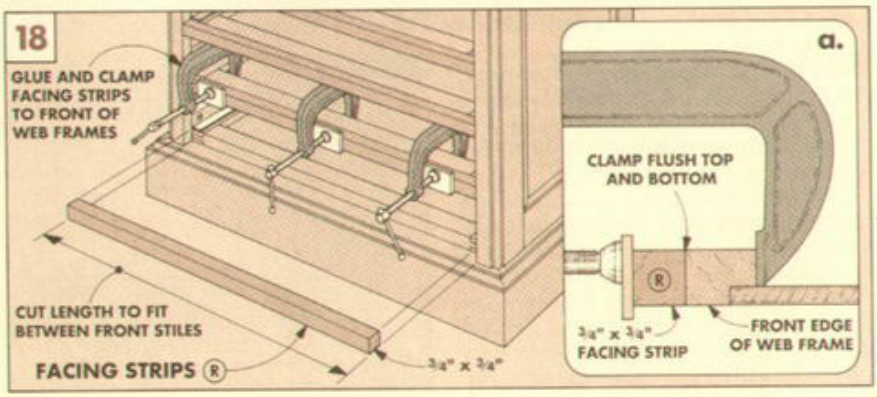
Next, insert all the web frames in the case and separate them with spacers, see Fig. 17. If the top frame isn't flush with the top of the case, adjust the height of *all* the spacers. (Note: Keep all the spacers identical.)

ASSEMBLY. Once the spacers are cut to the correct height, you can remove them and begin assembly. For each frame, insert spacers and then a web frame. Then drill pilot holes and screw the frame to the case.

FACING STRIPS. After all of the web frames are screwed in place, remove the spacers and glue walnut **facing strips (R)** to the front of each frame, see Fig. 18. Cut the strips to fit between the front stiles (E), and clamp them in place with C-clamps, see Fig. 18a.







TOP

After the web frames and facing pieces are in place, work can begin on the top. The top is a mitered hardwood frame around a ¾" plywood panel, refer to Fig. 20.

To make the top look thicker and add an interesting edge profile, I glued a separate molding frame on top of the case first. Then I glued the top to this frame.

MOLDING FRAME. To make the molding frame, start by resawing enough ½"-thick stock for a **front, back (both S)**, and two **side (T)** pieces, see Fig. 19. Then rip the pieces to a uniform width of 2⅛".

Before mitering the pieces to length, rout a ⅜" round-over (with an ⅛" shoulder) on the bottom edge, see Fig. 19a. Then miter the pieces to length so they're 1¼" longer (long-point to long-point) than the width and depth of the case (27¼" and 17¼").

After the frame pieces are cut, screw them down to the top of the case so there's a uniform overhang on all four sides. (In my case, the overhang measured ⅝".)

TOP FRAME. Now work can begin on the frame and panel top. To make the frame, start by cutting enough ¾"-thick stock for a **front, back (both U)**, and two **side (V)** pieces, see Fig. 20. Then rip the pieces to a uniform width of 2¼".

Before cutting the pieces to length there are a number of routing steps to go through, see Fig. 21. First, rout a ¼" round-over (with a shoulder) on the top edge of each piece, see Step 1.

Next, to create a decorative channel between the frame and the plywood panel, I routed a very small rabbet on the inside top corner of each frame piece, see Step 2.

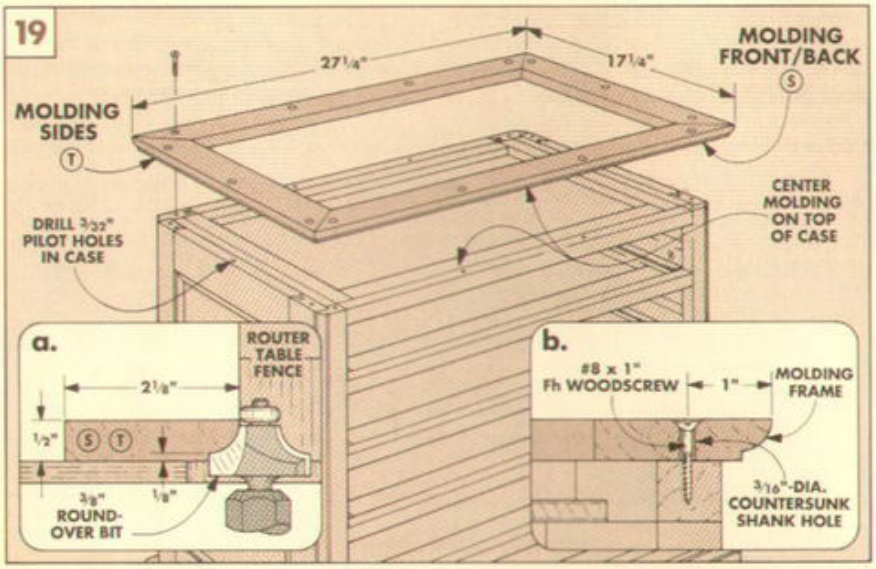
To keep the frame pieces and plywood panel aligned, I used a spline cut from ¼" Masonite, see Fig. 20. To accept the spline in the frame pieces, I routed ¼" slots on the inside edges, see Step 3 in Fig. 21.

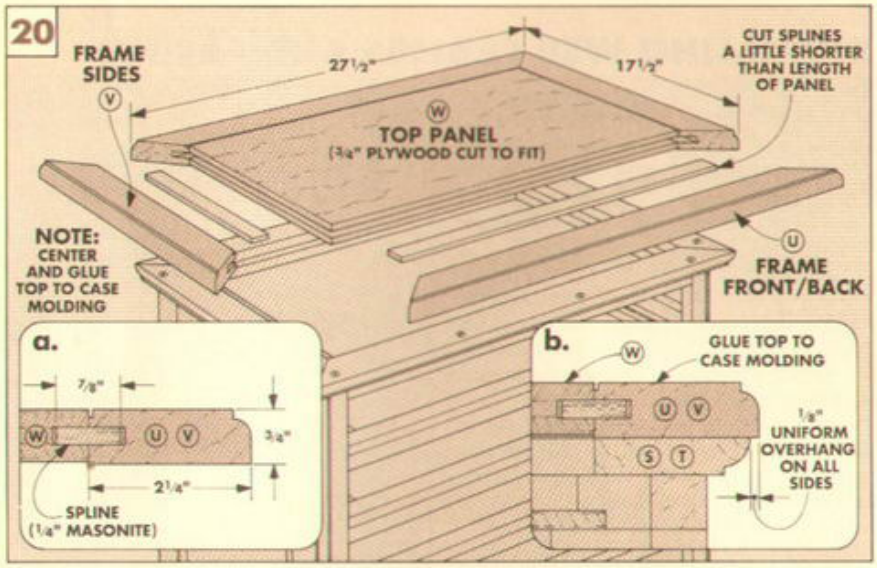
After routing the slots, miter the four frame pieces (U,V) to length so they're ¼" longer (long-point to long-point) than the molding frame.

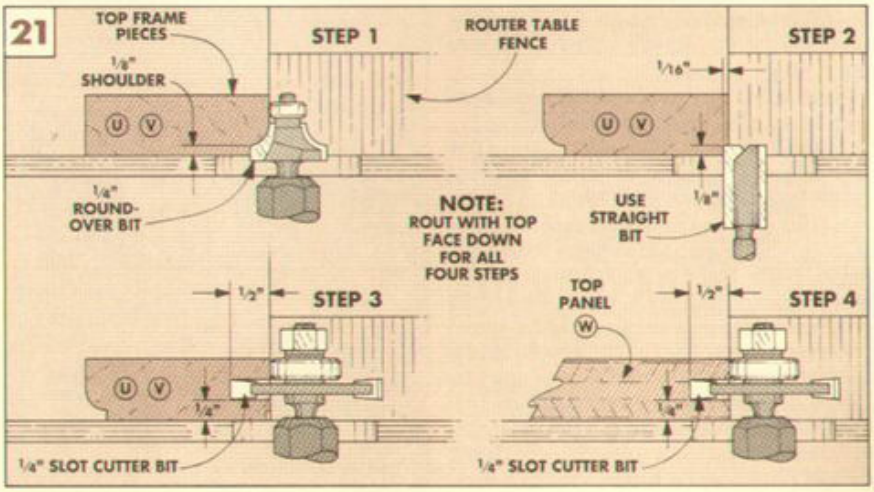
PANEL. Next, cut a ¾" plywood **top panel (W)** to fit within the frame. Once the panel is cut to size, use the same router set-up as with the frame pieces to rout a ¼" slot on all four edges, see Step 4 in Fig. 21.

ASSEMBLY. Now cut the splines from ¼" Masonite to fit between the frame and panel. Then glue the frame around the panel with the splines in place, see Fig. 20a.

After the glue dries, glue the frame and panel assembly down to the top of the case. Center it on the case so there's a uniform overhang (⅛") on all four sides, see Fig. 20b.







DRAWERS

The last step on the chest is to make the drawers. I started by making the lipped drawer fronts.

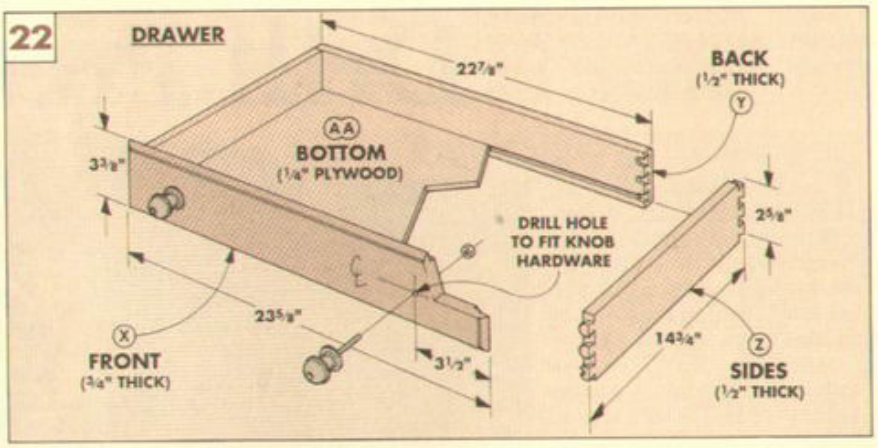
DRAWER FRONTS. To determine the size of the **drawer fronts (X),** measure a drawer opening (not including the glide strip) and add ⅝" to the height and width. This allows for a ⅜" lip on all edges of the drawer, less ⅛" for drawer clearance, see Fig. 23. (In my case, 3⅜" x 23⅝".) Then cut five drawer fronts from ¾"-thick stock.

PROFILE EDGE. After the drawer fronts are cut to size, rout a round-over with a shoulder on all four edges of each drawer front, see Step 1 in Fig. 24. Then, to create a lip, rout a ⅜" rabbet on the back side, see Step 2.

BACKS AND SIDES. When the drawer front is complete, rip ½"-thick **drawer backs (Y)** and **sides (Z)** to match the shoulder-to-shoulder width of the drawer front, see Fig. 25.

Then cut the five drawer backs (Y) to the same length as the shoulder-to-shoulder length of the drawer front (22⅞"), see Fig. 22. Finally, cut the ten drawer sides (Z) 14¾" long.

JOINERY. After all of the pieces were cut, I routed ½" dovetail joints on the corners, see Fig. 25. (For more on routing dovetails and a dovetail jig, see *Woodsmith* No. 58.)



BOTTOM GROOVE. Next, cut grooves in all the drawer pieces for the ¼" plywood **bottoms (AA).** To prevent the groove from showing on the side of the drawers, I located it so it would cut through the dovetail sockets in the drawer front, see Fig. 26.

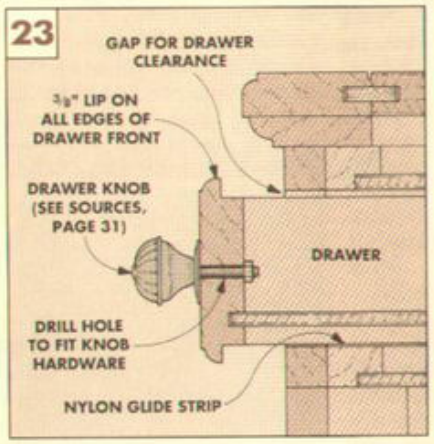
I wanted this groove in the same location on the drawer front, back, and sides. But there's a problem — the drawer lip. It makes the drawer front wider than the other pieces.

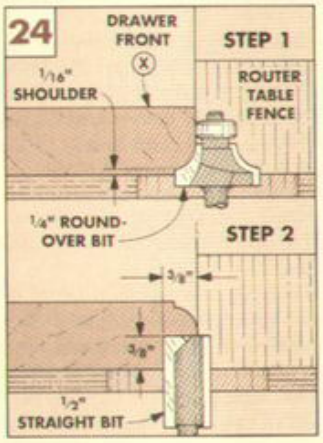
To solve this problem, I made an auxiliary fence that fits *under* the lip, see Fig. 27. Then the shoulder of the drawer front (not the lip) rides against the fence. If you use this same fence for all the pieces, the groove will be cut the same distance from the shoulder on the drawer front as it is from the the bottom edge of the drawer back and sides, see Fig. 28.

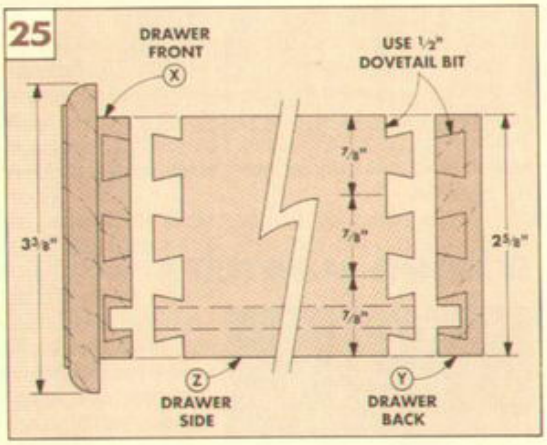
When cutting the groove, I did it in two passes, moving the fence between passes. Since ¼" hardwood plywood is often less than ¼" thick, sneak up on the final cut until the plywood just fits the groove. Then, cut the bottoms (AA) to size to fit the drawers.

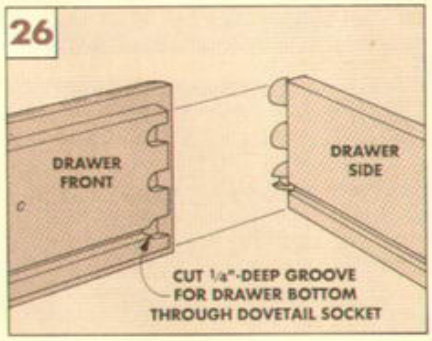
PULLS. Before assembly, I drilled shank holes to mount the knobs. Locate the holes 3½" from each end and centered on the height of the drawer, see Fig. 22.

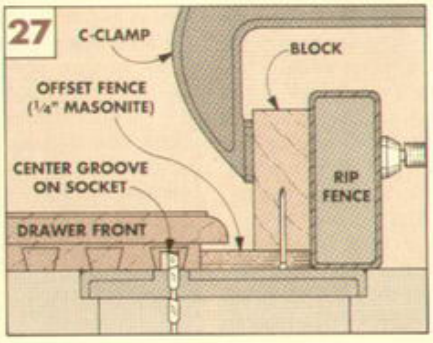
Finally, I assembled the drawers and finished the chest with polyurethane.

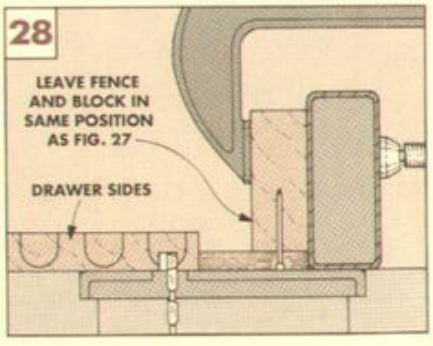




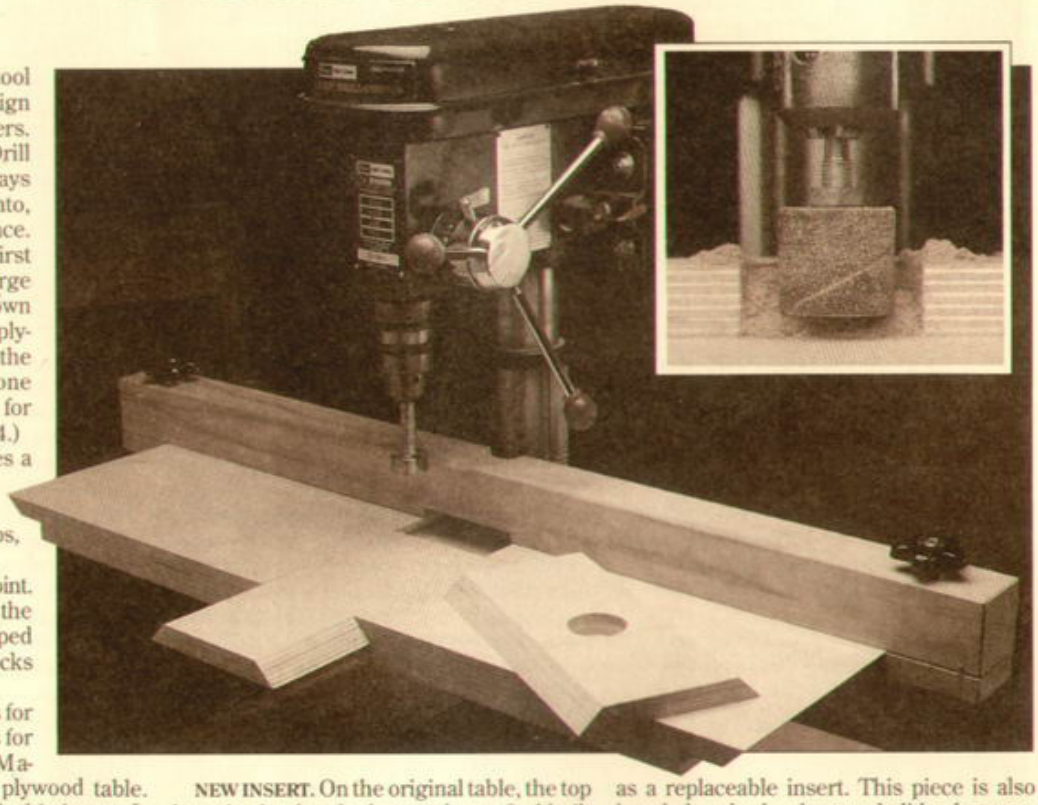








Drill Press



I've often wondered why tool manufacturers don't design drill presses for woodworkers. The problem is the table. Drill press tables are almost always too small, hard to clamp onto, and don't work well with a fence.

TABLE AND FENCE. The first addition I would make is a large auxiliary table. The table shown here is just two pieces of plywood, a bottom one bolted to the metal table, and another one screwed on top. (The plans for this are in *Woodsmith* No. 54.)

This type of table provides a surface to support large and long workpieces. It also provides a way to clamp jigs, stops, and a fence to the table.

Which brings up another point. I would also add a fence to the table. The one shown is clamped to the table with mitered blocks on the bottom of the fence.

INSERT. The original plans for this table also show a recess for a replaceable insert (¼" Masonite) in the center of the plywood table.

There was a problem with this insert. It didn't stay in place very well, so chips and sawdust collected under the insert and kept it from lying flush with the top. The solution was to replace it with an insert made from ¾" plywood.

NEW INSERT. On the original table, the top layer is glued to the bottom layer. So I built a new table and made the top layer in two sections. These have 45° bevels on the outer edges to hold the fence, and bevels on the inside edges to hold the insert in place.

Then I added a new center section to serve as a replaceable insert. This piece is also beveled on both edges and slides between the outer sections — like a sliding dovetail.

While I was at it, I made several extra inserts to slide in as the old ones get chewed up. I drilled a hole in one insert so I could lower a drum sander into it, see inset photo.

BORING MORTISES

■ As mentioned above, I added a fence to the auxiliary table. This fence comes in handy when drilling out mortises.

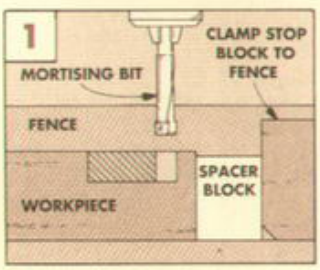
The basic procedure here is to adjust the fence so the mortising bit is centered on the thickness of the workpiece. Then just drill a series of holes to rough out the mortise, see photo at left. (For more on this technique, see *Woodsmith* No. 64.)

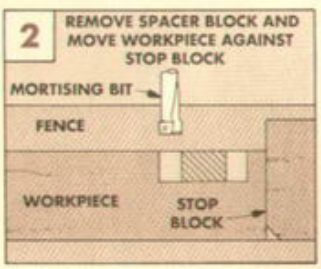
STOP BLOCK. The fence not only helps align the workpiece and the bit, it also provides a way to clamp on a stop block. If you clamp stop blocks on the fence at both ends of the workpiece, they define the limits of the mortise. This way you can repeat the mortise on several pieces.

SPACER BLOCKS. However, if the workpiece is very long, you can't get the second stop block on the fence. In this case you can use a set-up that involves one stop block and a spacer.

Cut a spacer and place it against the stop block to position the first hole, see Fig. 1. After drilling the first hole, remove the spacer and drill a second hole at the other end of the mortise, see Fig. 2. (The length of the spacer should equal the distance between the centerpoints of the first and second holes.)

Then drill out the waste between the two holes, and use a chisel to clean up the sides and the ends of the mortise.





DRILLING DOWELS OR BALLS

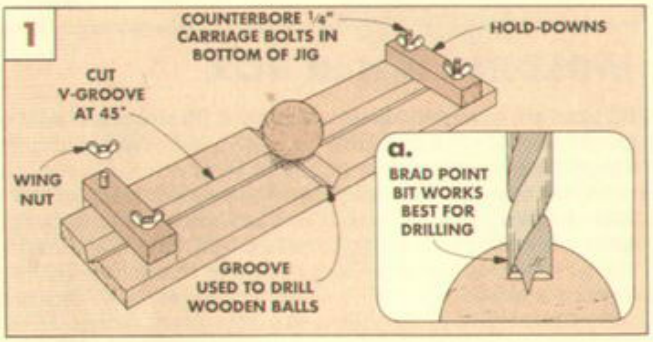
■ If you've ever tried to drill a hole in a dowel or a ball, you know how tough it is to keep the piece from sliding around. This jig solves that problem.

BUILDING THE JIG. The base of the jig is cut from a piece of ¾"-thick stock 4" wide by 16" long, see Fig. 1. Then a V-groove is cut down the length of the base.

To do this, I set the blade on my table saw to 45° and raised it ⅜" above the table. Then I positioned the fence so the deepest part of the cut was centered on the width of the base. Now make two passes, turning the piece end-for-end between passes. By adding a second groove *across* the base, you can drill into balls.

Finally, I cut two short hold-downs and attached them to the base with carriage bolts.

USING THE JIG. To drill a hole centered on the width of a dowel, position the fence so the point of a brad point bit lines up with the bottom of the long groove. To drill a hole in a wooden ball, position the point of the bit where the two V's intersect.



THICKNESS SANDING

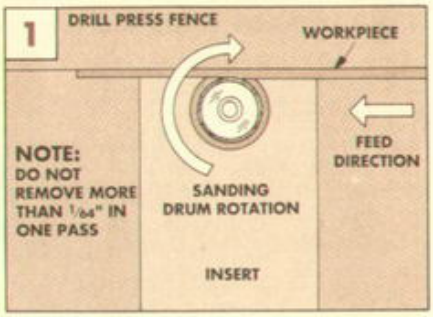
■ When I need to sand thin strips to a uniform thickness, I use a drum sander on the drill press. For pieces like drawer dividers or tambour (roll top) strips you need strips that are exactly the same thickness. The set-up I use requires a fence and drum sander, see photo at left.

SANDING INSERT. To ensure the drum makes contact with the full width of the strip, it has to be lowered slightly below the surface of the table. You can lower the drum into a hole drilled in a piece of plywood that's clamped to the table, or make the table shown on the previous page.

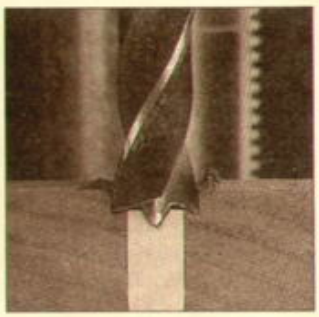
THICKNESS SAND. To thickness sand the strips, mount your largest drum in the drill chuck. (Set the speed to no more than 2,000 RPM.)

Now feed the workpiece between the drum and the fence from right to left (against the direction of the drum's rotation), see Fig. 1. If you feed it from left to right, the spinning drum will grab the workpiece, pull it through, and shoot it off the table. To be safe, use a push stick (a spinning drum can take off skin as well as wood).

For the smoothest results when using this technique, maintain a steady feed rate, and make light passes (about the thickness of a playing card). Periodically clean the drum with a rubber belt cleaner so it doesn't burn the wood.



ENLARGING HOLES



■ How many times have you drilled a hole only to discover that you needed a slightly larger hole? Or you needed to add a *counterbore* after the pilot hole was already drilled?

The problem you face with either of these situations is that the drill bit will drift off center or wobble because there's nothing to support the point of the bit in the first hole, refer to the photo at left.

Of course, you can avoid the problem by drilling the counterbore hole first, then centering the smaller bit in the point left by the larger bit.

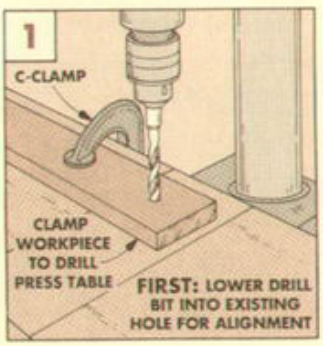
ENLARGING HOLES. But if you've already drilled the smaller hole, or if you want to enlarge an existing hole, you've got to provide support for the drill point.

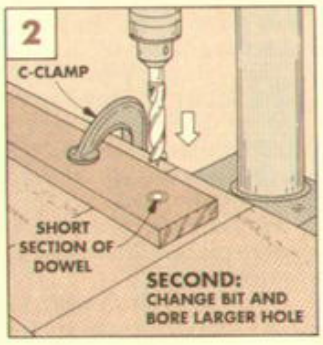
Plugging the first hole with a dowel will give support for the larger drill bit. But how do you make sure the bit is exactly centered to drill the second hole? If you want the new hole to be exactly concentric with the existing hole, they must have the same centerpoint.

To do this, find a bit the same size as the first hole. Chuck this bit in the drill, then lower it into the hole (with the power turned off), see Fig. 1. Now clamp the workpiece to the table in this position, and retract the bit from the hole.

Next, put a tight-fitting dowel into the first hole. Then replace the first bit with one for the larger hole size, see Fig. 2.

Now when you bore the larger hole, it will be exactly centered on the smaller one. And since the point of the bit is supported by the dowel, it won't drift off center or wobble.





Shop Notes

MOLDING MITER BOX

■ There are several tools that can be used to cut miters. But the problem I faced was how to cut miters on the small molding strips for the Chairside Chest. I spent a few minutes building a special miter box just for small pieces of molding.

FEATURES. What's nice about this miter box is the thick fence. It has two slots that are sized to hold my saw without any wobble, and guide it at exactly 45°.

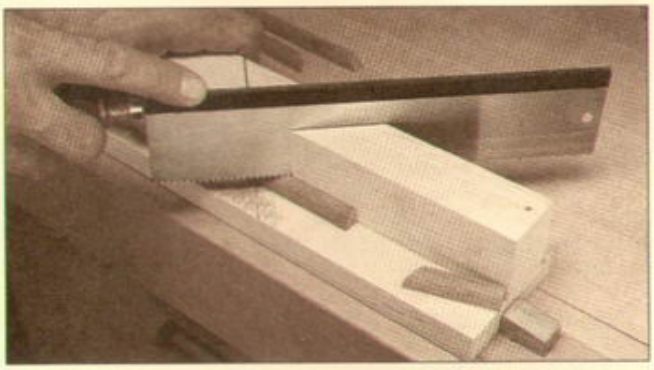
BASE. To build this miter box, start by cutting a base out of ¾" plywood 3" wide by 12" long. Then, to hold the fence in place, cut a groove along the base ¼" from the back edge, see Fig. 1.

FENCE. The fence starts out as a block of 1½"-thick hardwood, 12¼" long.

The width of the fence (which will be it's height when mounted on the base) should be ¼" taller than the maximum cutting depth of the saw you'll be using to cut the miters, see Fig. 2. (The ¼" allows for the depth of the groove in the base.)

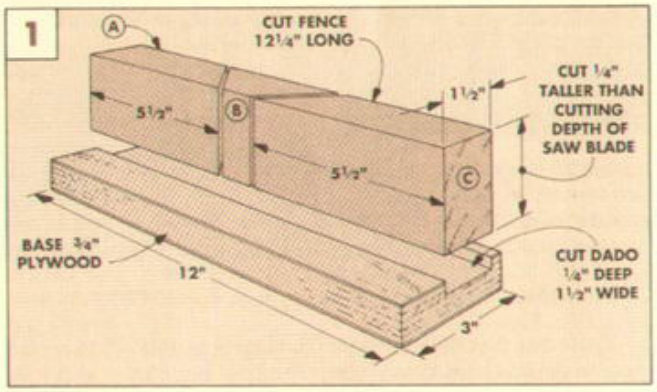
If you use a back saw, the stiff back will control the depth of cut as you're cutting the miters, see photo at right.

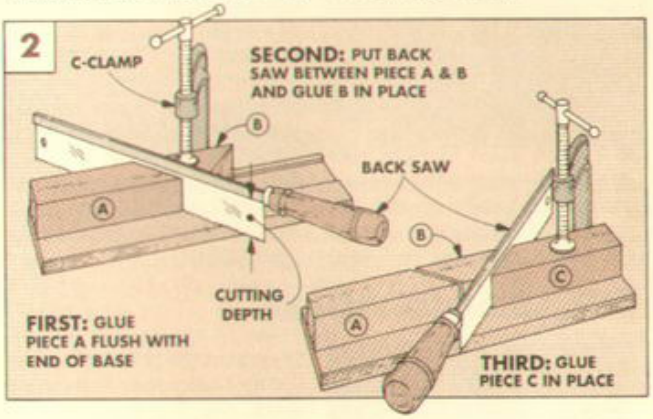
Next, cut the fence block into three sections at 45° angles, so the left (A) and right (C) sections are both 5½" long. Save the middle section (B).



ASSEMBLY. To assemble the miter box, glue the left piece (A) down first. Then place your saw against the end of the left piece to position the middle piece (B) and glue it in place. Finally, use your saw again to position the right piece (C).

When using the miter box, I clamp it to my bench to keep everything steady.





DUPLICATE TENONS

■ Ordinarily when I cut tenons on rails, I cut them one at a time. But for the small rails on the Plant Stand in this issue, I did something different.

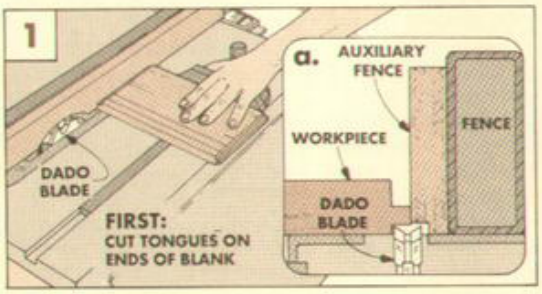
First, I started out with a wide blank. Then I cut tongues on the ends of this blank. When the blank is ripped into equal-size strips, you've got rails with tenons on the ends.

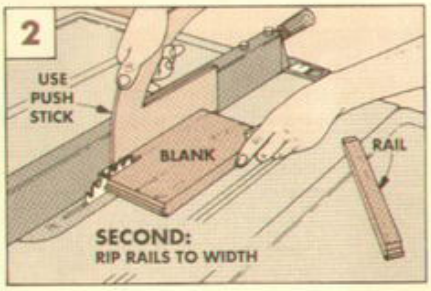
PREPARATION. To do this, attach an auxiliary fence to the rip fence, see Fig. 1a.

Then start with a blank wide enough for all the rails needed. Be sure to allow for the saw kerfs and also for chipout as the blade completes its cut.

RIPPING THE RAILS. After cutting the tongues, rip the blank into strips to produce rails with identical tenons on their ends, see Fig. 2.

NO CHIPOUT. This method eliminates chipout that can occur when cutting tenons one at a time.





DRAWER CATCHES

■ There's nothing more frustrating than opening a drawer and having the contents dump out on the floor. To prevent this on the drawer in the Plant Stand (page 18) I added a catch on the back of the drawer.

TURNBUCKLE. There are two different catch designs I've used where a drawer fits into a cabinet that has a top rail. The first uses a ¼"-thick wooden turnbuckle screwed on the *inside* face of the drawer back, see Fig. 1.

To get the drawer in or out of the cabinet, pivot the turnbuckle so it clears the top rail. Then, to set the catch, reach inside the open drawer and pivot the turnbuckle vertically, see Fig. 1a.

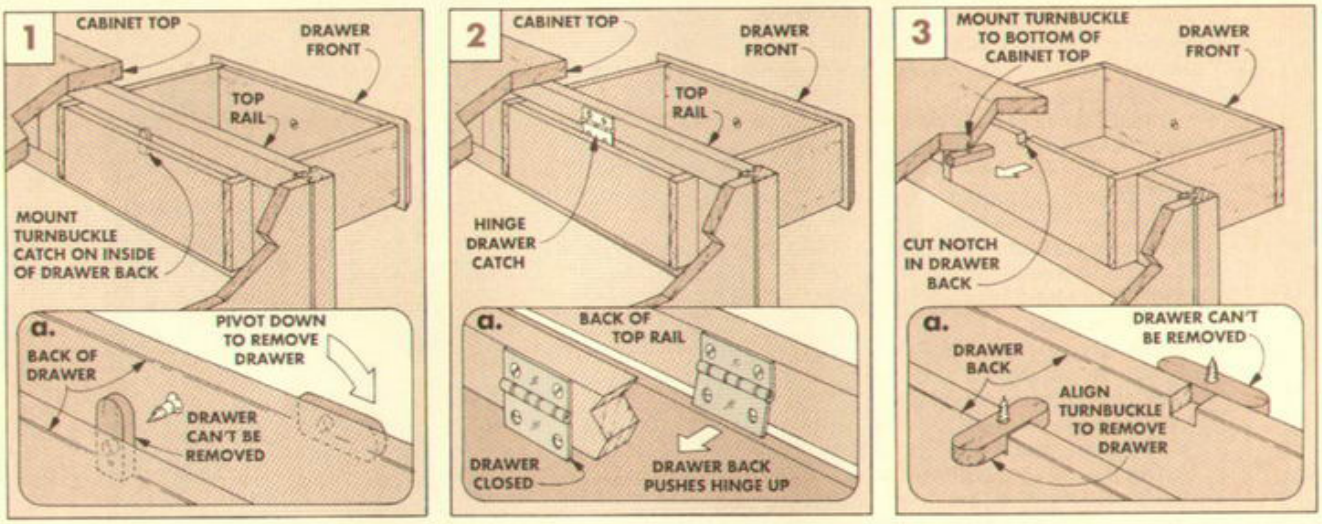
HINGE CATCH. The second method uses a hinge as a catch, see Fig. 2. Screw one leaf of the hinge to the back of the cabinet rail so the pin is above the bottom of the rail, see Fig. 2a.

When the drawer is pushed into the cabinet, the loose hinge leaf is pushed out of the way. Then the leaf will fall down and keep the drawer from being pulled all the way out.

To remove the drawer, pull it out halfway and reach into the drawer. Then flip the loose leaf up and remove the drawer.

CATCH WITHOUT A RAIL. If the cabinet doesn't have a top rail, I cut a notch in the top edge of the drawer back, see Fig. 3. This aligns with a turnbuckle screwed up into the cabinet frame or top.

To insert or remove the drawer, pivot the turnbuckle to align with the notch, see Fig. 3a. With the turnbuckle closed, the drawer can't come out.



CLAMPING MORTISE AND TENON JOINTS

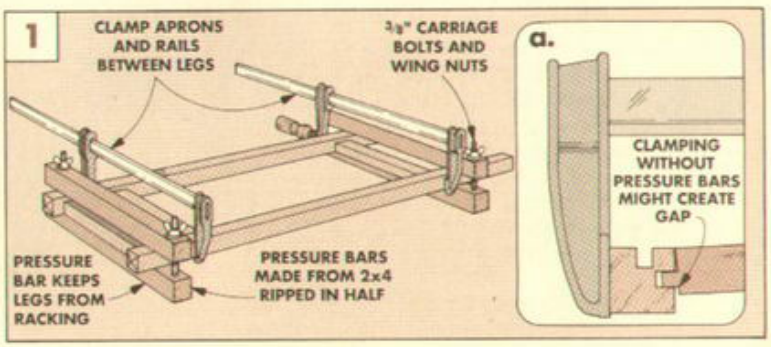
■ The traditional way to join aprons or rails to legs is with a mortise and tenon joint. And that's the joint I used on the Plant Stand on page 18. While the mortise and tenons aren't difficult to make, they can be difficult to clamp up correctly.

The clamps don't always apply pressure in line with the mortise and tenon. This can cause the pieces to rack, leaving a gap at the joint line, see Fig. 1a.

PRESSURE BARS. I solved the problem by making a set of pressure bars from two strips of wood connected by carriage bolts and wing nuts. By tightening down the wing nuts, the bars keep the legs aligned and counter the racking caused by the clamps.

To make a set of pressure bars, start with a couple of 16"-long 2x4's. Then, drill holes for the ⅜"-dia. carriage bolts, centered on the thickness of each piece and 1" in from the ends. Now, measure across their width and rip them in half, see Fig. 1.

CLAMPING. I use the pressure bars in combination with a conventional clamp for each tenoned member in the project. After the joint is glued and put together, alternate tightening the pressure bar and the clamp until the joints close tight.



Plant Stand

The simple lines and the straight-forward joinery borrow heavily from traditional Craftsman-style furniture. But that doesn't mean it won't fit in today's home. In fact it's a perfect place for a desk phone.

I've always admired the idea behind the Craftsman-style furniture that was made in the early 1900's and featured very little ornamentation.

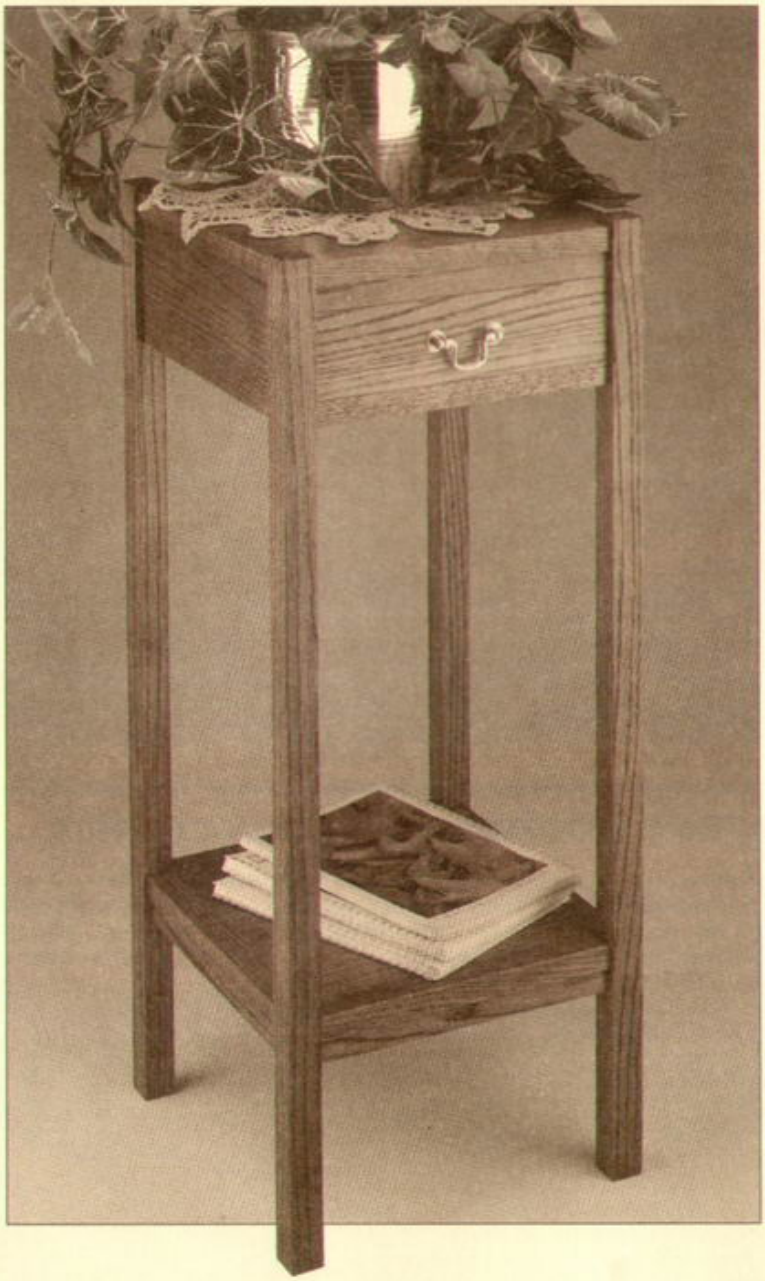
But, often it looks heavy and out-of-place, especially when surrounded by other styles of furniture. That's why, when I built this plant stand, I trimmed down the traditional heavy legs and top to fit in a more contemporary setting.

THE LEGS. One of the most distinctive features of this plant stand is it's legs. As is typical with this style of furniture, the legs are *carried through* the top. This makes for an interesting design, but notching the top and the shelf for a tight fit around the legs can be tricky.

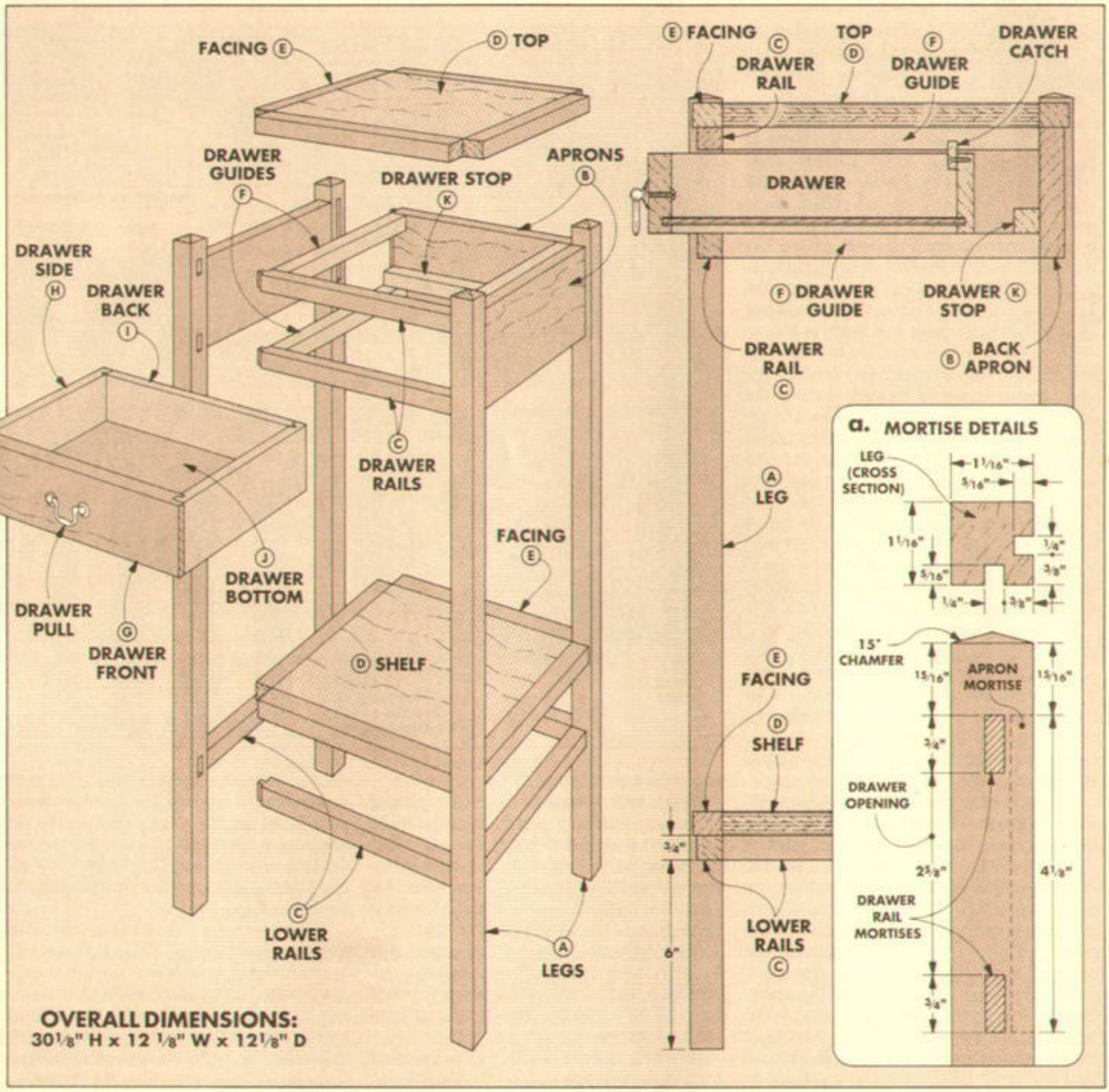
The biggest problem in making the top and the shelf is allowing for expansion and contraction around the legs. To solve this problem, I cut the top and shelf out of plywood. Then I used facing pieces to make them *appear* to be notched.

JOINERY. The mortise and tenon joints used to join the rails to the legs call for a very precise fit because there are no top and bottom shoulders on the tenons. I didn't cut these shoulders to allow for the maximum possible glue area on the ¾"-wide rails. Since there aren't any shoulders on the tenons, you have to cut the mortises to the exact size.

MATERIAL AND FINISH. Most Craftsman furniture was made from white oak, and so is our plant stand. To give it an authentic color, I used Minwax Provincial stain. And two coats of Minwax Satin Polyurethane.



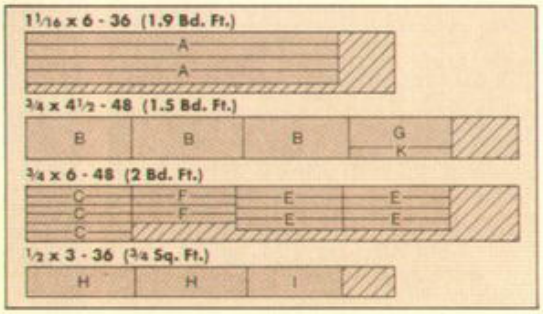
EXPLODED VIEW



MATERIALS AND SUPPLIES

A	Legs (4)	1 1/16 x 1 1/16 - 30 1/8	• 1.9 Bd. Ft., 1 1/16"-thick white oak.
B	Aprons (3)	3/4 x 4 1/8 - 10 1/2	• 3.5 Bd. Ft., 3/4"-thick white oak.
C	Rails (6)	3/4 x 3/4 - 10 1/2	• 2 Sq. Ft., 3/4"-thick white oak plywood.
D	Top/Shelf (2)	3/4 Ply- 10 x 10	• 3/4 Sq. Ft., 1/2"-thick maple.
E	Facing Pieces (8)	3/4 x 7/8 - 10	• 1/4"-thick plywood for drawer bottom.
F	Drawer Guides (4)	3/4 x 3/4 - 10	• Minwax Provincial stain, 1/2 pt.
G	Drawer Front (1)	3/4 x 2 19/32 - 9 15/16	• Satin polyurethane, 1/2 pt.
H	Drawer Sides (2)	1/2 x 2 19/32 - 9	• Brass bail drawer pull. (See Sources, page 31.)
I	Drawer Back (1)	1/2 x 2 19/32 - 9 7/16	
J	Drawer Bottom (1)	1/4 Ply - 9 3/8 x 10	
K	Drawer Stop (1)	Cut to Fit	

CUTTING DIAGRAM



THE LEGS

The first step in building the plant stand is to make the four square legs.

CUT TO SIZE. Start work on the **legs (A)** by cutting four blanks from 5/4 stock (1 1/16" actual thickness) to 1 1/16" square. To allow room for the pyramid shape at top of each leg, cut the four leg blanks a little longer than needed (32").

CHAMFER THE LEGS. To form the pyramid, I cut four chamfers on the end of each leg. Start by tilting the table saw blade to 15°.

To make sure that each leg is cut to the same length, screw an auxiliary fence to the miter gauge and clamp a stop block to the fence, see Fig. 1. Adjust the stop block so the base of the chamfer is 30" from the bottom of the leg (A), see Fig. 1a. To cut the four sided chamfer, simply make four passes, rotating the piece between passes.

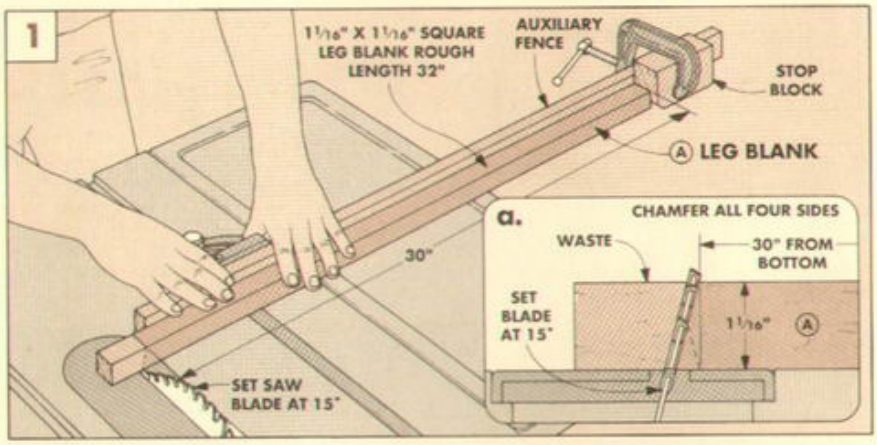
MORTISE AND TENON. The legs are joined to the aprons on the sides and back with mortise and tenon joints. Across the front of the stand, I used two 3/4"-wide rails to make a drawer opening.

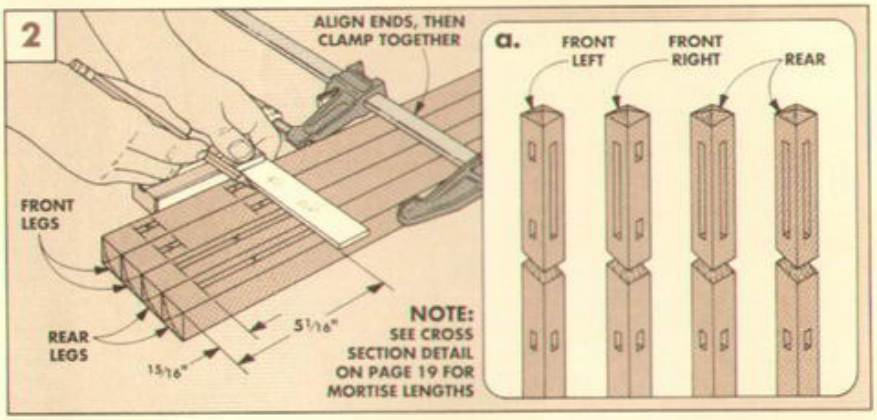
To keep the mortise locations aligned, clamp the legs together so the chamfered shoulders are flush, see Fig. 2. Then, locate the upper and lower limits of the mortises for the aprons and drawer rails, by measuring down 15/16" and 5 1/16" from the shoulder line. Now use a square to mark the limits across the four legs, see Fig. 2.

DRAWER RAIL MORTISES. Next, you can finish laying out the *drawer rail* mortises. The limit lines represent the outer edge of the mortises. So, on two of the legs, measure 3/4" (the length of the mortise) in from the limit lines, see Fig. 2.

BOTTOM MORTISES. Now lay out the mortises for the lower rails, 6" from the bottom of the legs, refer to the side view on page 19.

To complete the layout, use a square to transfer the mortise locations around to the adjacent side of each leg. Note: The front legs are made as a mirrored set (right and left) and must be laid out and mortised as shown, see Fig. 2a.





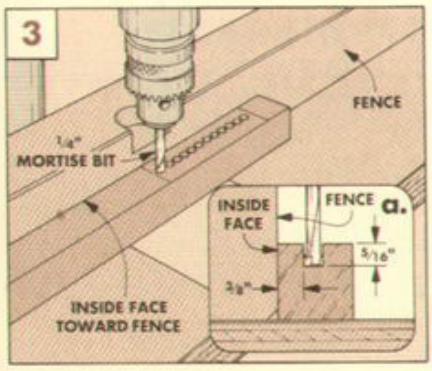
DRILL THE MORTISES. After completing the layout, the next step is to drill out the mortises. I used the drill press and a 1/4" mortising bit, see Fig. 3. For more information on drilling mortises, see page 14. (Another method is to use the Mortising Table featured in *Woodsmith* No. 67.)

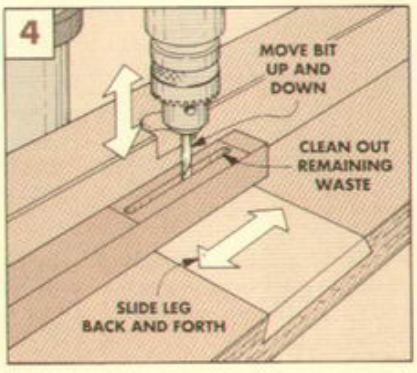
To drill the mortises, start by mounting a 1/4" bit in the drill press. Then attach an auxiliary fence to the drill press table. This will keep all the mortises equally spaced from the *inside* corner of each leg.

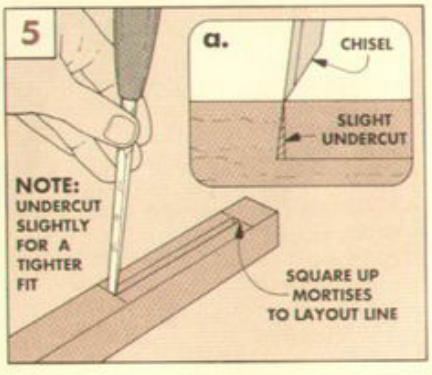
POSITION THE FENCE. Clamp the fence 3/8" from the inside edge of the bit, see Fig. 3a. (To keep the aprons and rails flush to the inside edge of the legs, the mortises are offset.) Then set the depth stop on the drill press to produce a 5/16"-deep mortise, and drill a series of overlapping holes, see Fig. 3. Next clean out the mortise, stopping short of the layout lines, see Fig. 4.

Note: Because the mortises are offset, keep the inside edge of the leg (the edge between the mortises) against the fence.

SQUARE UP THE MORTISES. After removing most of the waste with the drill bit, square the mortises to the layout line with a chisel, see Fig. 5. Tip: It's easier to fit the tenon if you undercut the mortise, see Fig. 5a.







APRONS AND RAILS

The next step is to make the aprons (B) and rails (C) that fit into the mortised legs. To maintain the plant stand's simple style, I made all the aprons and rails the same length. However, the aprons and rails have to fit flush to the inside corner of each leg. To do this, offset tenons need to be cut on the ends of the aprons and rails.

TENONS. Start by cutting three oversize (4½"-wide) blanks for the **aprons (B)** and one 6"-wide blank for all six **rails (C)**, to an overall finished length of 10½".

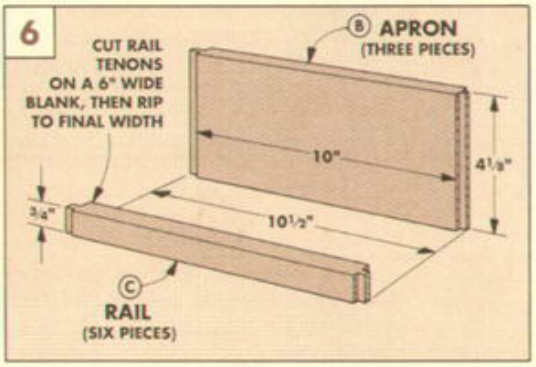
The problem is keeping the tenons accurate and avoiding chipout on the ends. To solve the problem I cut the tenons on a wide blank, then ripped the blank to make the aprons and rails, see Shop Notes, page 16.

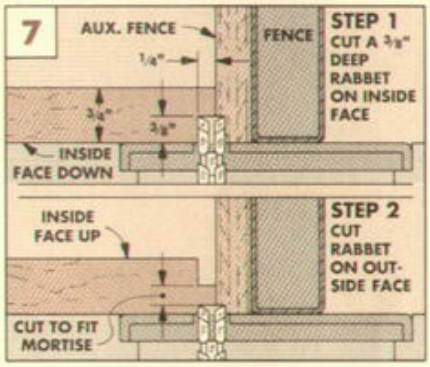
STEP ONE. To make the aprons and rails, cut the offset tenons on the ends of the blanks in two steps with a dado blade. First, attach an auxiliary fence to the table saw rip fence and position it so the blade will cut a ¼"-wide rabbet, see Step 1 in Fig. 7.

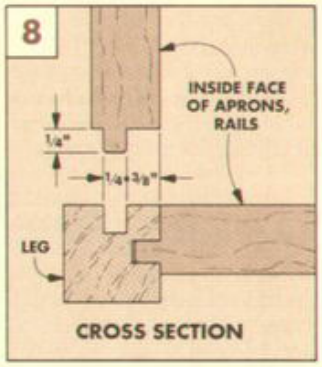
Then, using a test piece, adjust the height of the cut until it equals the distance between the inside edge of the leg and the mortise (⅜"), refer to Fig. 8. When the height is set, rabbet both ends of the blanks on the same *inside* face.

STEP TWO. To finish the tenons, I cut a rabbet on the *outside* face of the blanks. To do this, start by flipping the test piece over. Now, adjust the blade height to produce a ¼" tenon and make a pass over the blade, see Step Two in Fig. 7. If the tenon doesn't fit the mortise, adjust the blade height until you have a good fit.

Finally, rip the aprons (B) to a finished width of 4⅛", and cut the six rails (C) from the other blank to a width of ¾", see Fig. 6.







TOP AND SHELF

Once I completed the aprons (B) and the rails (C), I started working on the top and shelf (both labeled D). (The top and the shelf are interchangeable.) My first thought was to use a hardwood blank, then notch the corners around the legs. But this creates a couple of problems.

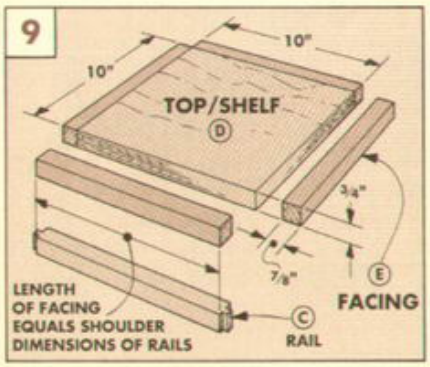
The first problem has to do with the way solid wood expands and contracts with changes in humidity. As the wood expands, it pushes the legs apart. When it contracts, it leaves a gap between the legs. Plus, notching around four legs to get a tight fit isn't easy.

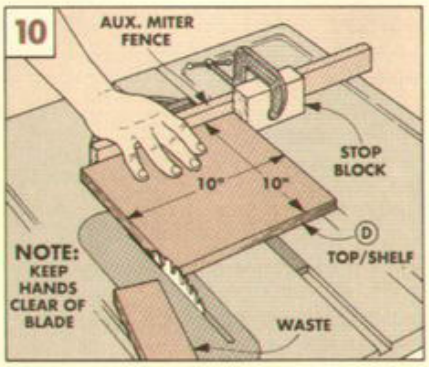
PLYWOOD TOP AND SHELF. Instead, I made the **top/shelf (D)** from ¾" plywood. (Plywood is more stable than hardwood, so movement shouldn't be a problem.) Then I attached ¾"-thick hardwood facings (E) to cover the plywood edges and create the tight fitting notched corners. see Fig. 9.

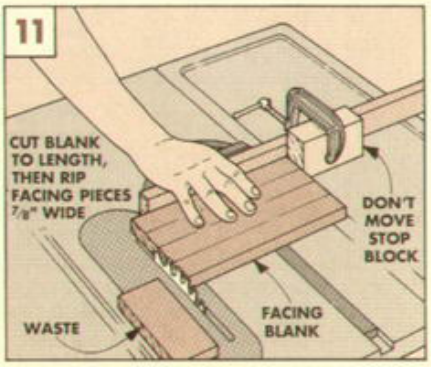
DETERMINE THE CORRECT SIZE. The plywood top and shelf are cut to fit between the legs of the stand. This means the length of the plywood sides is the same as the shoulder-to-shoulder length of the aprons and rails (10" in my case), see Fig. 9.

CUTTING THE PLYWOOD. After you've determined the correct size the next step is to cut the plywood top and shelf. Start by screwing an auxiliary fence to the miter gauge. Then position a stop on the auxiliary fence so it's 10" away from the blade. Cut the two 10" blanks in two passes, turning the pieces 90° between passes, see Fig. 10.

The next step is to make the facing pieces. Using the same method as on the aprons and rails I cut a wide blank to length, then ripped the pieces to width. Since the **facing pieces (E)** are the same length as the sides of the plywood, I used the same stop block setting to cut the ¾"-thick facing blank to length, see Fig. 11. With the blank cut to length, all that's left is to rip the facing pieces to a finished width of ⅞".







TOP AND SHELF ASSEMBLY

Cutting the pieces for the top and shelf is fairly easy. The tricky part is gluing the facing pieces *flush* to the edges of the plywood. To do this, I set up a clamping fixture on a ¾" plywood base.

CLAMPING FIXTURE. Start by placing the top piece (D) on the plywood base between a couple of 14"-long straightedges, see Fig. 12. Then tack the straightedges down to the plywood base.

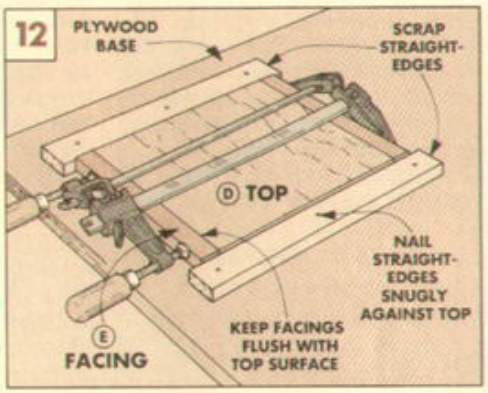
GLUE FACING ON. Now, glue and clamp the facing pieces (E) in place. The straightedges will keep them flush to the ends of the top piece (D). Check that the facing is flush to the top surface of the top piece, see Fig. 12.

USING SPACER BLOCKS. After two facing pieces are attached to the top and the shelf, the other facing pieces can be glued on.

Begin by removing one straightedge from the plywood base and rotate the top piece 90°. Then tack the straightedge back in place, see Fig. 13.

Next, to keep the last two facing pieces flush with the sides of the plywood top, I cut four ⅞"-wide spacer blocks, see Fig. 13.

Finally, slide the two remaining facing pieces (E) between the spacer blocks and clamp the assembly in place until the glue dries, see Fig. 13. Then repeat this procedure for the shelf.



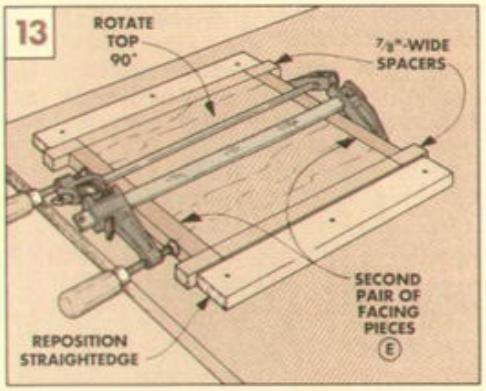


TABLE ASSEMBLY

Once you've completed attaching the facing pieces, final assembly can begin. Instead of trying to glue up all the pieces at the same time, I divided the assembly into two stages.

SIDE UNITS. The first stage is to glue together the two side units. Each unit is a mirrored set and is made up of one front and back leg (A), an apron (B) and a rail (C), refer to Exploded View, page 19.

Note: I made a jig to keep the legs from racking during glue up, see page 17.

JOIN THE SIDES. After the side units are assembled, the next stage is to join them together with the remaining apron (B) and the rails (C), see Fig. 14.

Start by gluing the lower rails into the lower mortises in the side units. Then, to keep the stand square during clamping, lay the shelf on top of the lower rails, see Fig. 14.

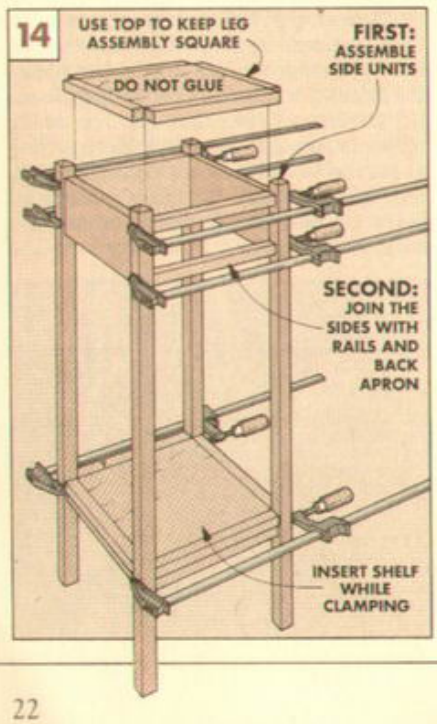
Now, glue the two front drawer rails and the back apron in place. This time I used the top to keep the assembly square, see Fig. 14. (*Don't* glue the top on yet.)

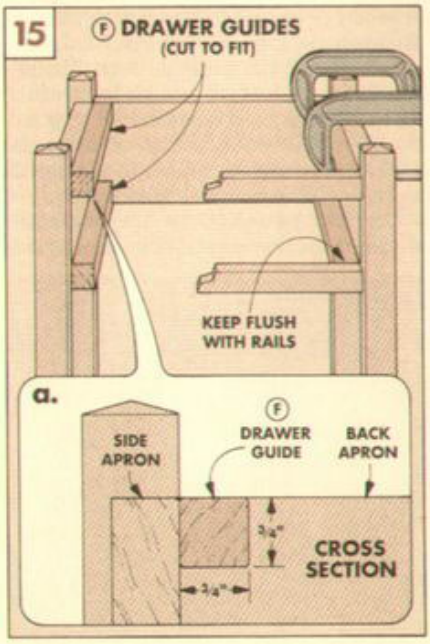
DRAWER GUIDES. While the table is drying, you can start working on the drawer guides. The **drawer guides (F)** are cut from ¾" square stock to fit between the upper rails and the back apron, see Fig. 15. (In my case this was 10".)

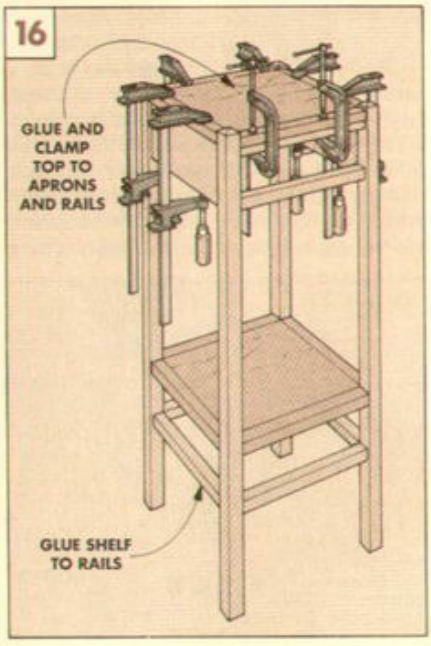
CHECK THE FIT. Position the drawer guides so they're flush with the drawer rails (C). Then, glue the drawer guides to the inside of the side aprons, see Fig. 15.

TOP/SHELF. Finally, to secure the top, apply glue to the top edge of the aprons and the upper drawer rail, and clamp the top in place, see Fig. 16.

Then lift the shelf, apply glue to the top of the rails, and clamp the shelf down.







THE DRAWER

Once the stand is assembled, all that's left is to build the drawer. However, since the drawer fits flush to the front face of the rails (it's not lipped) there will be a gap at the top and on the sides when the drawer is installed. The trick is to make this gap as small as possible.

Note: If you prefer to dovetail the drawer, the opening is sized for ½" dovetails. For more information, see *Woodsmith* No. 58.

DRAWER FRONT. Since the size of the **drawer front (G)** determines the size of the other pieces, I made this piece first. To do this, start by measuring the size of the opening. (In my case this was 2⅝" x 10".) Then using ¾"-thick stock, cut the drawer front (G) 1/16" less than the width of the opening (9 15/16"), and 1/32" less than the height of the opening (2 19/32"), see Fig. 17.

SIDES AND BACK. Now cut the **drawer sides (H)** and **back (I)** to the same height as the drawer front (2 19/32"). Then trim the drawer sides 9" long, and the back ½" shorter than the drawer front, see Fig. 17.

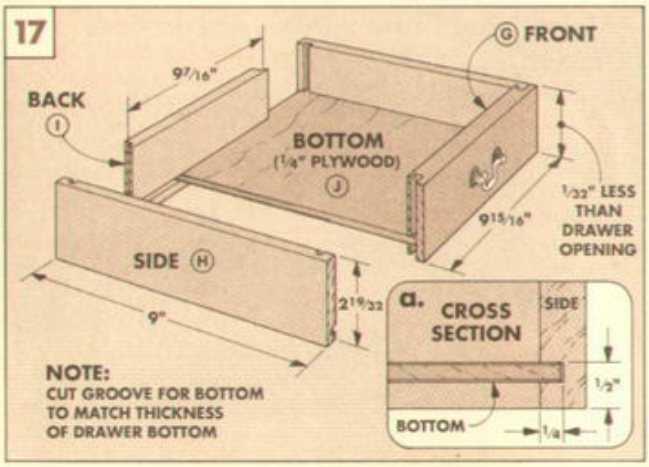
Once the drawer pieces are cut to size, cut a groove for the drawer bottom, see Fig. 17a.

CORNER JOINT. Finally, to make the corner joint, follow the step-by-step instructions below. Then, dry assemble the drawer to measure for the **drawer bottom (J)**. And cut the drawer bottom from ¼" plywood.

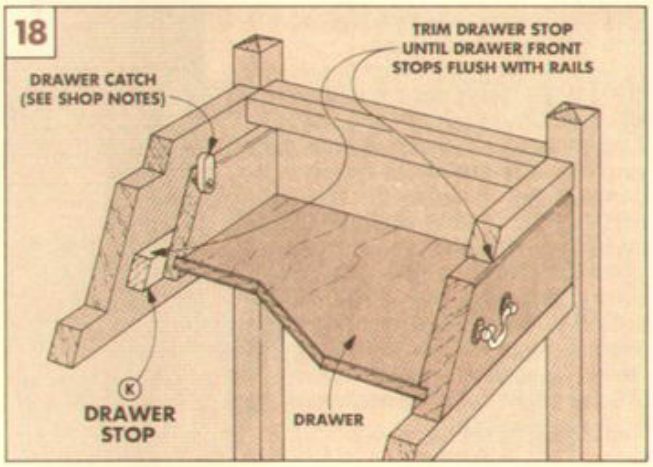
DRAWER STOP. To keep the drawer flush in front when it's closed, I glued a **drawer stop (K)** to the back apron. To determine the correct size of the stop, position the drawer front flush with the drawer rails. Then trim the stop so it fits between the back of the drawer and the inside of the back apron, see Fig. 18.

Finally, I added a turnbuckle catch to the back of the drawer. For more on drawer catches, see page 17.

17



18

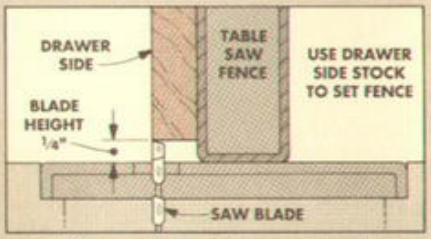


LOCKING DRAWER JOINT

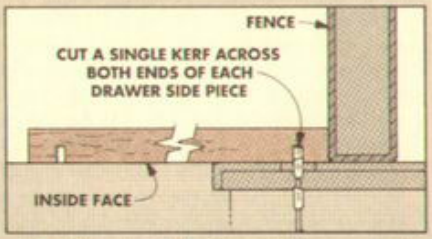
Besides being strong and easy to make, this drawer joint doesn't require any special equipment. All you need is a table saw with a combination blade.

This joint is sized for a ¾"-thick drawer front with ½"-thick sides and back.

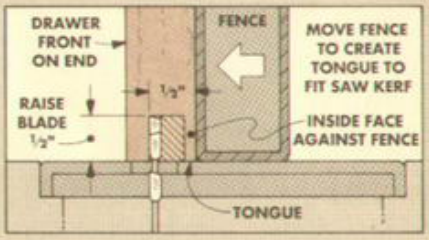
Since the drawer in the plant stand fits flush, you'll need to be careful of the fit. I'd recommend using test pieces and sneaking up on all of the cuts until they're perfect.



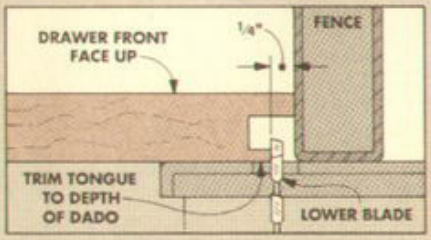
1 *To make the first cut, use the ½"-thick drawer side to position the fence. Then raise the blade height to ¼".*



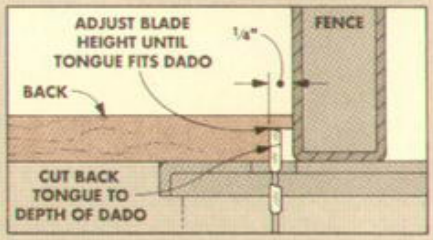
2 *Now, with the fence acting as a stop, kerf both ends of the drawer sides with the inside face down against the table.*



3 *Raise blade and adjust fence to make a series of passes in end of drawer front, leaving a tongue to fit kerf.*



4 *To trim the tongue to length, lower the blade and move the fence until tongue bottoms out in kerf in drawer side.*



5 *Finally, cut tongue on drawer back piece. Adjust the blade height until the tongue fits kerf in drawer sides.*

Sandpaper Storage

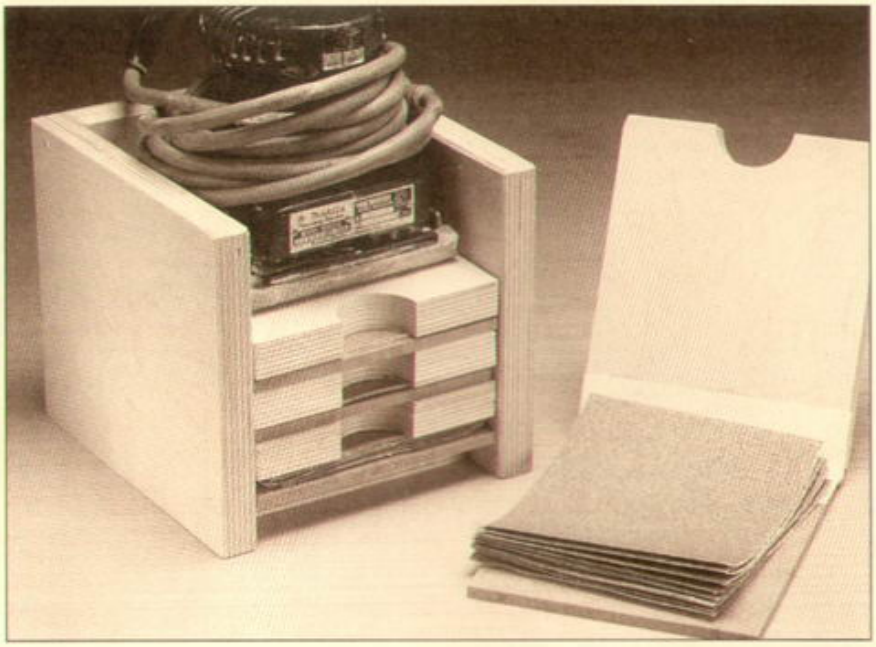
Whenever I use a finish sander I'm amazed at what a great timesaver it is. However, the time I save using the sander is usually lost trying to locate and then cut sheets of sandpaper.

Not any more. We've designed a system of flip-open sleeves to store pre-cut sheets of sandpaper so they stay flat. And, to hold the sleeves, I made a storage bin that also holds the sander, see photo at right.

SLEEVES. The sleeve design is simple. It's a ¾" plywood cover piece and a base of ¼" Masonite, connected by a fabric "hinge".

SHEET SIZE. I made the sleeves to hold sandpaper for a quarter-sheet finish sander. However, by changing the size of the sleeves, they could be made to hold half sheets or even full sheets of sandpaper.

STORAGE BIN. Once I finished making the sleeves, I decided to make a bin to keep them in. The bin is sized to hold four sleeves, with plenty of room left over to hold my palm sander. By putting the sander on top of the bin, the weight helps keep the sandpaper flat, see photo at right.



THE SLEEVES

To make the sleeves, first determine the size of sandpaper sheet you need. In my case this is 4½" x 5½". Then add ½" to both dimensions to get the sleeve size (5" x 6").

THE COVERS. After you've determined the size of the sleeve, you can cut out the ¾" **plywood covers (A)**. To do this, cut a plywood blank 5"-wide by 12⅛"-long. This is enough for two covers plus ⅛" for the saw kerf. (Two blanks will make four sleeves.)

CUT-OUTS. To make it easy to pull the sleeves out of the bin, the covers have a semi-circular cut-out. To make the cut-outs, drill or cut a 1½"-diameter hole in the center of the blank. Then cut the blank in half, see Fig. 1.

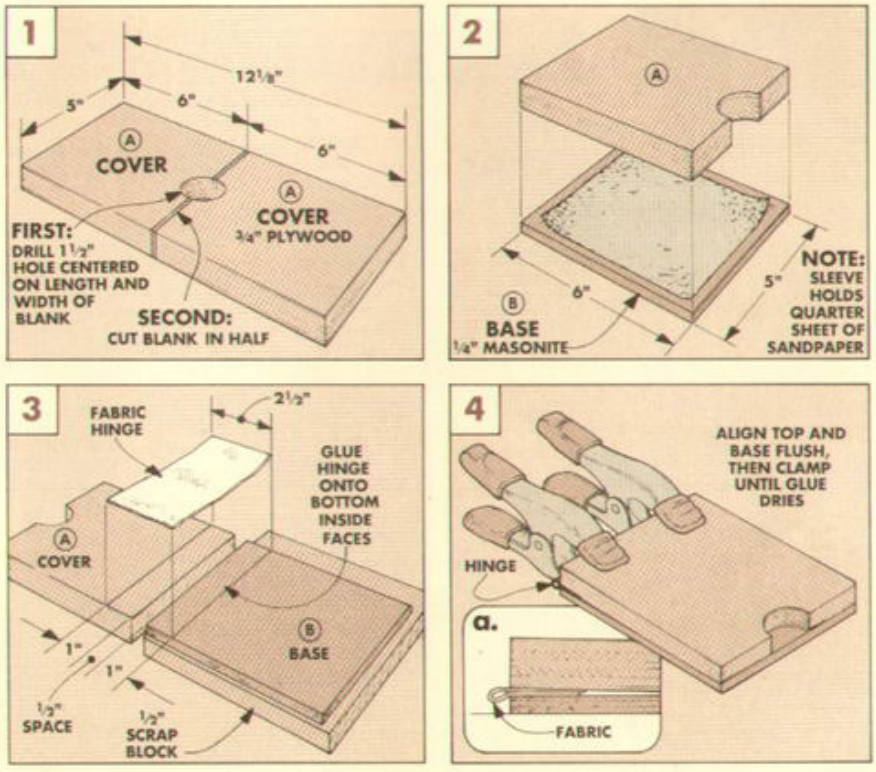
MASONITE BASES. Once the covers are cut to size, cut the **bases (B)** out of ¼" Masonite to match the covers (5" x 6"), see Fig. 2.

FABRIC HINGE. With the bases cut, the next step is to glue on a fabric hinge (I used canvas).

Start by placing a scrap block under the base to keep it level with the cover, see Fig. 3. Then, align the bottom edges ½" apart.

Now apply glue to the bottom inside 1" of both pieces. Then place a 2½"-wide piece of fabric over the glue, so it's flush to the outside edges of the cover and base.

Finally, fold the sleeve so the edges of the cover and base are flush, and clamp the bottom edge until the glue dries, see Fig. 4.



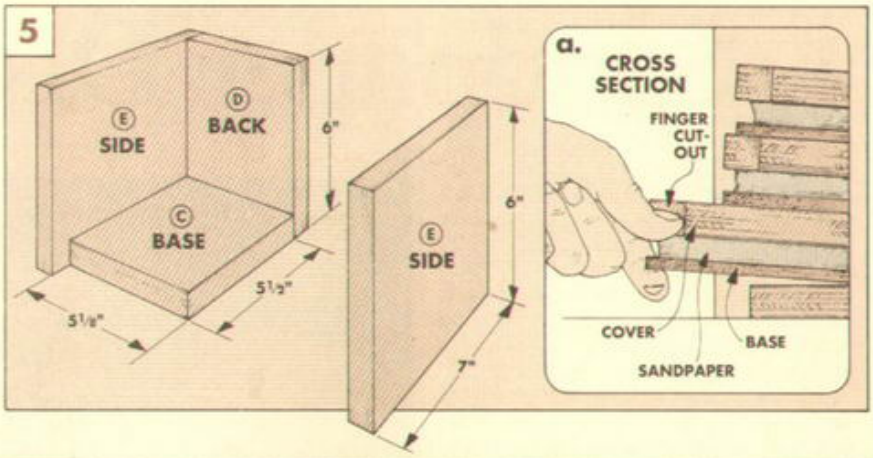
STORAGE BIN

After organizing my sandpaper in the sleeves, I still needed a way to keep the sleeves in order. So I made a simple storage bin out of scrap plywood, see photo.

THE BASE AND BACK. To make the storage bin, begin by cutting a ¾" plywood **base (C)** and **back (D)** slightly wider than the sleeves (5⅛"). Then, trim the base (C) ½" less than the length of the sleeve (5½"). And cut the back (D) 6" high.

THE SIDES. To complete the bin cut two **sides (E)**, 6"-high and 7"-long, see Fig. 5.

Finally, assemble the bin by gluing the back piece (D) behind the base (C), see Fig. 5. Then glue the sides (E) to the base (C) and back (D), see Fig. 5.



SANDPAPER CUTTER

Storing sandpaper is one thing, cutting it to size is another. I built this jig so I could quickly cut sheets of sandpaper.

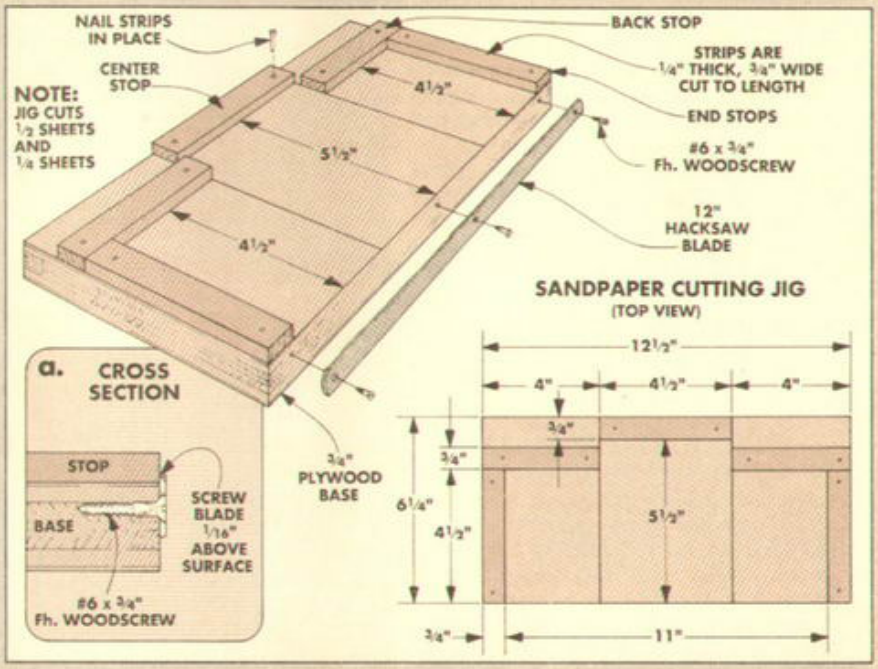
The jig acts as a gauge to measure and cut quarter sheets of sandpaper to fit my finish sander. Using the jig is a two-step operation. First, a full (9" x 11") sheet of sandpaper is put into the jig and cut in half. Then the half sheets are turned 90° in the jig and cut in half again. So you end up with quarter-sheet (4½" x 5½") pieces of sandpaper.

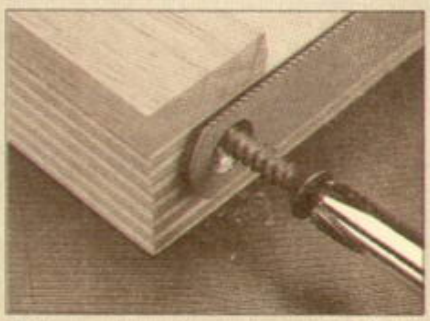
MATERIALS. All that's needed for the jig is a piece of ¾" plywood for a base, five ¼"-thick stops, and a 12"-long hacksaw blade, see drawing at right.

ATTACH THE STOPS. Starting with a 6¼" x 12½" plywood base, nail the end and back stops flush with the ends of the base, leaving 11" between them. These stops are for tearing the full sheet lengthwise.

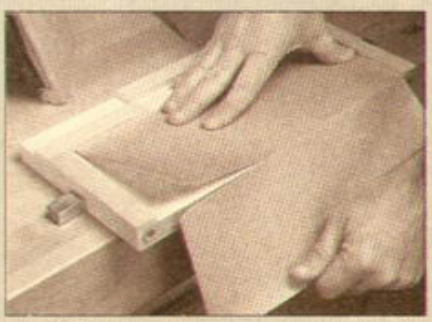
Once the paper is torn lengthwise, it needs to be torn in half again. That's why the center stop is positioned back 5½".

CUTTING EDGE. After the stops are nailed down, I screwed on a cutting edge made from a 12"-long hacksaw blade.

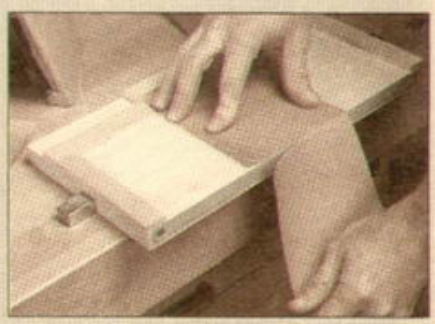




Before screwing the hacksaw blade to the front of the jig, countersink three mounting holes. Then position the teeth slightly above plywood base and screw in place.



***First:** To make first cut, place sheet lengthwise between the two L-shaped stops. Hold sheet in jig with one hand while pulling down across hacksaw blade with the other.*



***Second:** To cut sandpaper to finished size, place narrow end of piece against center stop. Hold in place and tear free end of paper down across hacksaw blade.*

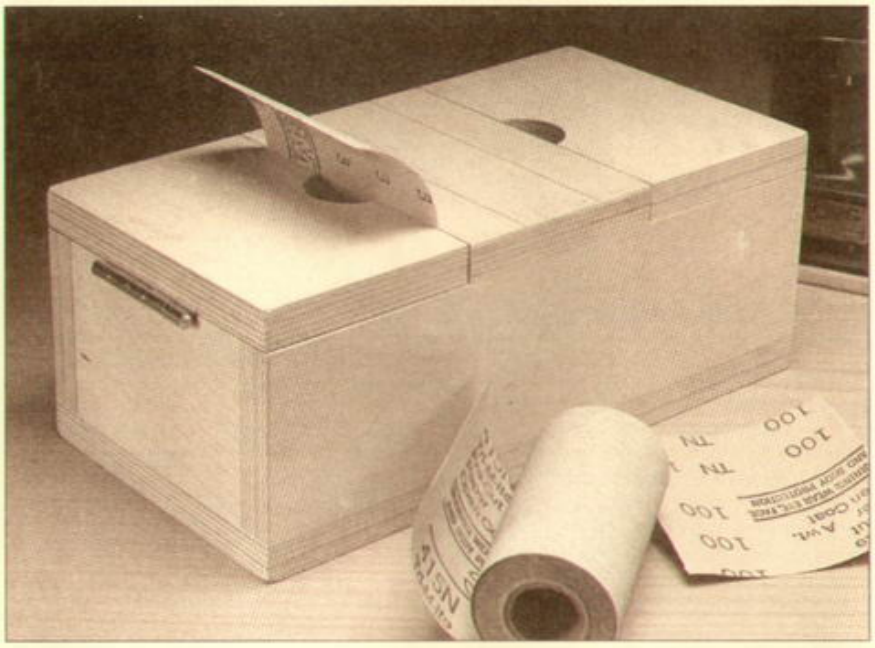
Sandpaper Dispenser

There's a relatively new type of sandpaper that we've started using in the *Woodsmith* shop. It's called Stikit and it's made by 3M. This paper comes in 4½"-wide rolls and has a sticky adhesive on the back. It's designed to adhere tightly to a special pad that's mounted to the base of an orbital finish sander.

The whole idea is that you can tear off a piece of this sticky sandpaper, slap it on the bottom of the sander, and go to work. You don't have to fight the clamps that hold the paper in the sander. (For more on Stikit paper, see Tools of the Trade on page 28.)

DISPENSER. Once we bought some rolls of this paper, we wanted a way to store it. And it would be nice to have a way to measure and tear off the right amount of paper for the sander. I decided to make a dispenser that would do all this.

This plywood dispenser holds two rolls of Stikit paper. Plus, it provides a measuring surface so you can determine the exact amount of paper you need before you tear it off, see photos on opposite page.



ASSEMBLY

This dispenser is just a box made from ¾" plywood with two hinged lids.

CUT PIECES TO SIZE. To make the dispenser, first cut a 6⅛" x 12" **base (A)**. Then cut two **front/back (B)** pieces to a finished size of 3¼" x 12", see Fig. 1.

Once the base and front/back pieces are cut, the next step is to cut four 3¼" x 4⅝" **sides/dividers (C)**. Then cut mortises for hinges in the two side pieces, refer to Fig. 3.

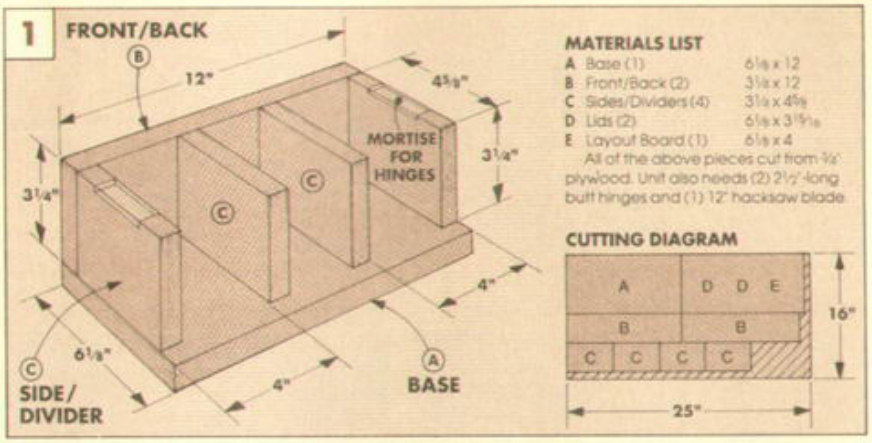
ASSEMBLY. I started assembly by gluing a front/back piece (B) flush to the edge of the base, see Fig. 1. Then I glued the four sides/dividers (C) in place onto the base.

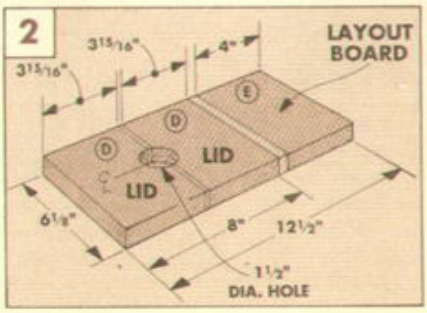
Once the sides/dividers are glued in place, the remaining front/back piece can be glued on. Note: If you don't want to wait for the glue to dry, you can tack the pieces together with finish nails.

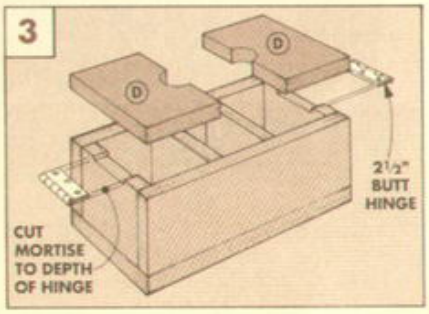
TOP. The top of the dispenser is actually two **lids (D)** and a **layout board (E)**. I cut all three pieces from the same 6⅛" x 12½" blank of ¾" plywood, see Fig. 2.

For the lids, cut an 8"-long piece from one end of this blank, and drill a 1½"-diameter finger hole in the center of this piece. Now cut it in half to produce two lids, each 3 15/16" x 6⅛", see Fig. 2.

ATTACH LIDS. Finally, attach the lids with two 2½"-long butt hinges, see Fig. 3.







LAYOUT BOARD

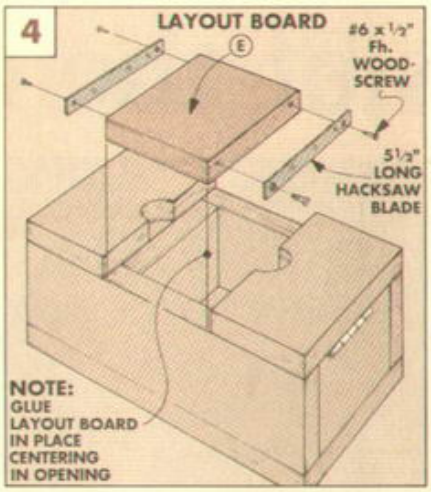
Once the hinged lids are screwed to the dispenser, the next step is to attach the **layout board (E)**. This board is made out of the leftover piece from the top blank, refer to Fig. 2. Since this piece is already cut to the correct width (6⅛"), all you have to do is trim it to length (4"), see Fig. 4.

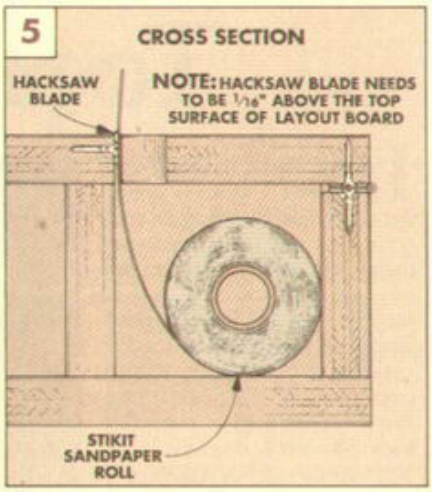
The layout board is both a length gauge and a cutting device. The length of the board (4") matches the length of paper needed for my quarter-sheet pad sander. This means I can pull out the paper until I reach the end of the layout board, and then tear off just the amount I need. (Or if you have a sixth-sheet sander you'll need to mark reference lines on the layout board, refer to the Step-by-Step below.) There's only one problem — the edge of the plywood isn't sharp enough to tear the paper.

CUTTING EDGES. To solve this problem I screwed sections of a hacksaw blade to the edges of the layout board (E), see Fig. 4.

To mount these blade sections, start with a 12" hacksaw blade. Using a pair of pliers with side cutters, snip off the mounting holes on either end of the blade. Then, cut the blade into two 5½"-long sections, see Fig. 6.

MOUNTING HOLES. The next step is to locate and mark two mounting holes in each blade section with a punch, see Fig. 7.



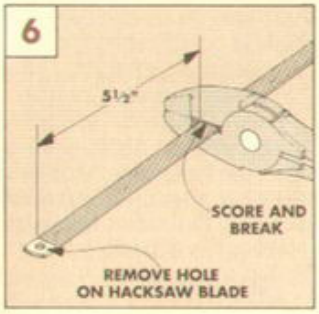


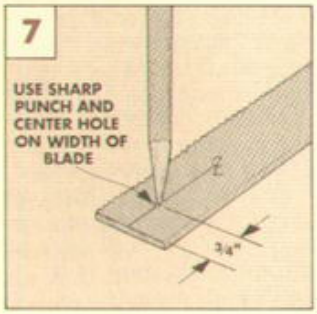
Once the hole locations are marked on both pieces, the mounting holes can be drilled. Because the blade is so thin, it's not necessary to drill a shank hole. I just used a countersink bit to drill the hole. This way all you have to do is stop drilling once the widest part of the hole is the same size as the screw head, see Fig. 8.

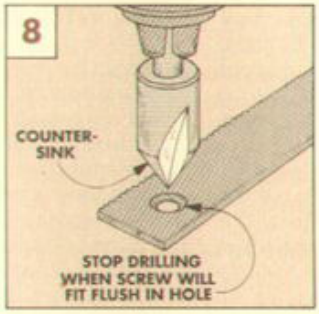
SCREW THE EDGE ON. Finally, position the blade section so it's centered on the width of the layout board. The teeth of the blades should stick 1/16" above the surface of the layout board, see Fig. 5. Then screw the blade sections in place with No. 6 x ½" flathead woodscrews, see Fig. 9.

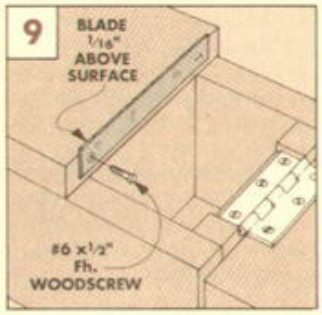
GLUE IN PLACE. Now glue the layout board in place on top of the dispenser so it's centered between the lid pieces, see Fig. 4.

To use the dispenser, follow the Step-by-Step directions below.



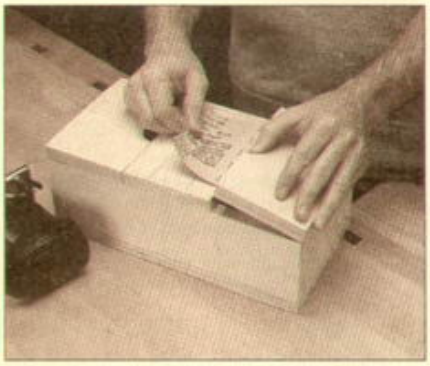






USING THE DISPENSER

1 *The dispenser can be used for quarter or sixth-sheet size sanders. If you're using a sixth-sheet sander, mark the layout board to indicate its width.*



2 *Lift the lid and unroll enough paper to fit your pad size. Cover the layout board for a quarter-sheet; stop at the pencil line for a sixth-sheet size. Then close the lid.*

3 *With the correct length of paper unrolled, hold the lid closed and tear off the paper. The two storage chambers can hold two different grits of Stikit paper.*

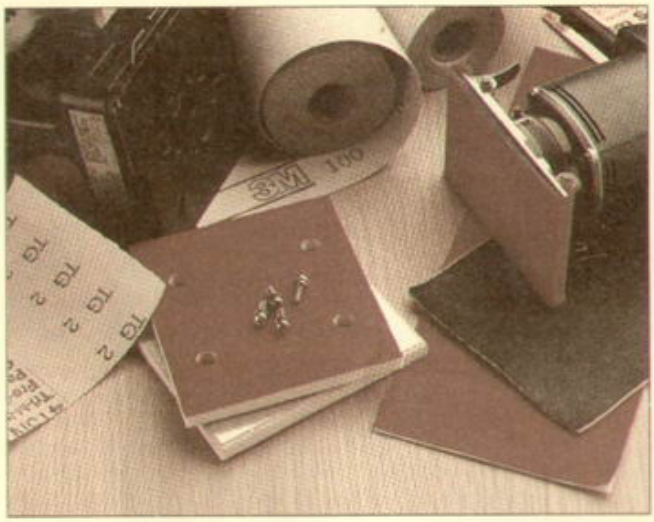
Tools of the Trade

I think finish sanders are great. But, I seem to spend too much time fumbling around trying to get the sandpaper tucked under the clamps on the sander. One solution to this problem is an adhesive-backed sandpaper from 3M called Stikit.

TIME AND ENERGY. Rather than wasting a lot of time trying to get the sandpaper under the paper-holding clamps, with Stikit sandpaper you simply peel off the old piece of sandpaper and stick on a new one. It's quick, it's easy and there's no fumbling around with the clamps.

But, even more important is that it actually improves the way the sander works. If the sandpaper is held to the sander with clamps, it's hard to secure the paper tight against the pad. There's always some "slop." (Even if the paper is tight to begin with, it loosens up as you're using it.) This allows the pad to move independently of the paper, so the orbital action of the sander is not being transferred to the workpiece. The sander is just sliding around in little circles on top of the sandpaper.

With Stikit sandpaper there's no "slop" between the pad and the paper. So all the energy is transferred directly from the sander to the workpiece. This makes the paper cut much faster.



STIKIT

Stikit paper isn't really new. In fact, it's been used on disc sanders in the automotive and metal-working industries for over ten years. The only real difference is that it's now available in rolls for quarter and half-sheet pad sanders.

But this stuff is not just a piece of sticky sandpaper. It's a two-part "system."

ABRASIVES. The first part of the system is the sandpaper, which is coated with a silicon carbide abrasive. Typically when you buy silicon carbide paper (such as 3M's "Tri-M-Ite" or "Wet-or-Dry") it's a dark gray color, yet the Stikit paper is almost white.

"The white color on the Stikit paper comes from a coating of zinc sterate applied over the silicon carbide," explained Red Peloquin, Technical Service Specialist for 3M. "This coating helps prevent loading and clogging of the paper, especially when sanding finishes or paint."

THE PAD

The other part of the "system" is the special pad on the bottom of the sander. The pad has a metal backing plate with fabric-covered urethane foam glued to it. The foam is made to an exact hardness. If the foam is too soft it will delaminate during use. Too hard and the sander will jump around on the workpiece.

AVAILABILITY. For the past few years, Porter-Cable has been fitting their quarter and half-sheet sanders with Stikit pads as standard equipment. However you can also buy a replacement pad for older model Porter-Cable (Rockwell) and Makita quarter-sheet sanders through several different mail order companies, see Sources, page 31. (Note: You have to remove the felt pad on these sanders before installing the Stikit replacement pad.)

What about attaching the Stikit paper directly to the rubber or felt base of my sander?

It's probably not a good idea. We found out the hard way how sticky Stikit can be. We attached a piece of Stikit paper to the rubber base of a Ryobi sander and used it for couple of days. When we removed the paper, part of the rubber base came with it.

And, if you use Stikit paper with a felt pad, each time you remove the paper, some of the felt comes with it.

CONVERSION FACING. That's why 3M makes a Stikit Conversion Facing. It's an adhesive-backed piece of fabric (the same fabric that's on the Stikit pads), and it comes in a sheet large enough to fit a half-sheet sander. But it can be cut down to fit smaller rubber or felt-based orbital finish sanders.

(Note: The manufacturer doesn't recommend fastening the facing to a felt pad. I've found, though, that it's fine to use the conversion facing on a felt pad *as long as you leave it in place*. But if you ever try to remove the facing you'll probably tear the pad.)

PALM SANDER KIT. Then, as if this isn't confusing enough, there's one other option. It's called a Palm Sander Kit and is distributed through 3M's Home Products Division to hardware and home centers. (Stikit is distributed through the Construction Division.)

The Palm Sander Kit is a piece of adhesive-backed vinyl that can be permanently attached to the base of your sander. The good news is it only costs about two dollars. The bad news is it only comes in a quarter-sheet size. Available along with this kit are pre-cut quarter sheets of adhesive-backed sandpaper. (They're called "Adhesive Backed Palm Sander Sheets.")

There's one more thing I should mention about the Stikit and Palm Sander Kit systems. Even if you use these systems, you can still use standard sandpaper. Simply place the sandpaper over the pad or facing and *clamp* it in place as you normally would.

ECONOMY

Some catalogs say you save 22% over regular paper by using Stikit. Does this mean it costs 22% less?

If you buy the Stikit system to save money, I think you're going to be disappointed. The 22% savings the catalogs refer to is the amount of paper that's wasted under the clamps of a sander. You save on paper, but the Stikit paper is much more expensive per square inch. In fact, compared to standard aluminum oxide or garnet sandpaper without an adhesive backing, it can be over twice as expensive per square inch.

Even though the paper is more expensive than regular sandpaper, I still like using the Stikit system. It's quick and easy to change the paper and all of the energy of the sander is transferred to the workpiece.

Also, once you've mounted a Stikit pad or conversion facing on your sander, you have the choice of using *either* regular sandpaper or the adhesive-backed Stikit paper.

Talking Shop

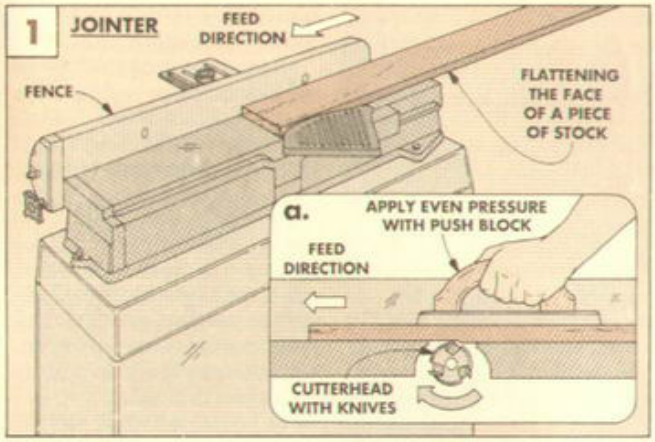
JOINTERS AND PLANERS

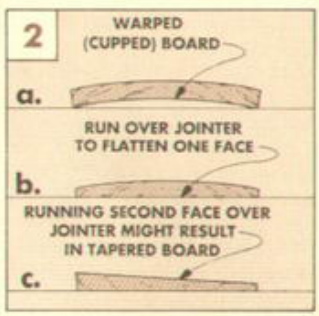
■ *I'm considering buying a jointer or a jointer/planer for my shop. Do you have any advice on which way to go?*

Joe Blackwell
Greenville, South Carolina

Before I make any recommendations, it's important to have an understanding of what a jointer *or* a planer can do for you. Note that I listed these as two separate machines.

The confusion in the terminology comes when a dealer tries to sell a "jointer/planer." Unless it's a combination machine (and they're usually expensive), it's probably only a jointer. It won't plane stock to a uniform thickness.





JOINTER. A jointer is designed to perform a couple of operations. First, it can be used to clean up and square one edge of a board 90° (or any angle) to an adjacent surface. This is useful when you're preparing stock for edge-gluing.

A jointer can also be used to flatten a face on a board, see Fig. 1. In performing this operation it's limited to the width of the knives. A 4" jointer, for example, will only flatten a piece 4" wide.

There are usually two or three knives in the cutterhead that take small chips out of the workpiece as it's pushed over the knives, see Fig. 1a. With the cutterhead revolving fast enough, the chips overlap each other and result in a flat surface.

So a jointer is a perfect tool for *quickly* flattening or removing warp from a one face of a narrow board, see Fig. 2a and b. What a jointer can't do is plane a board to a *uniform* thickness.

If you turn the board over and run the other face over the jointer, the face will be flat, but there's no guarantee it will be parallel with the first face, see Fig. 2c. That's the job of a planer.

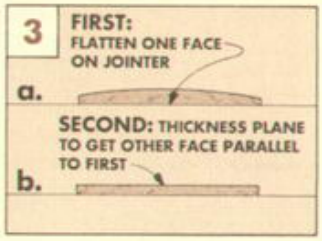
PLANER. Actually, I prefer to call a planer a "thickness planer" to indicate its sole purpose. As the workpiece is fed into a thickness planer, a spring-loaded feed roller (and, on some thickness planers, a pressure bar) flattens the workpiece tight against a table or bed, see Fig. 4. Then knives in the cutterhead above the workpiece trim the top face parallel to the table, see Fig. 4a.

Before deciding to buy a thickness planer, you should be aware of what it *won't* do for you. It won't take twist or warp out of a board. If you run a warped board through a thickness planer, the infeed roller flattens the board against the bed, but the board will return to its warped state when it comes out the outfeed side. What you end up with is a board that's planed to a uniform thickness and smooth, but it's still not flat along its entire width or length.

THE BEST APPROACH. The easiest method for getting wood both flat and to a consistent thickness is to use *both* a jointer and a thickness planer. The jointer is used to get one face of the board flat, and then the thickness planer planes the other side parallel to the flat side, see Fig. 3.

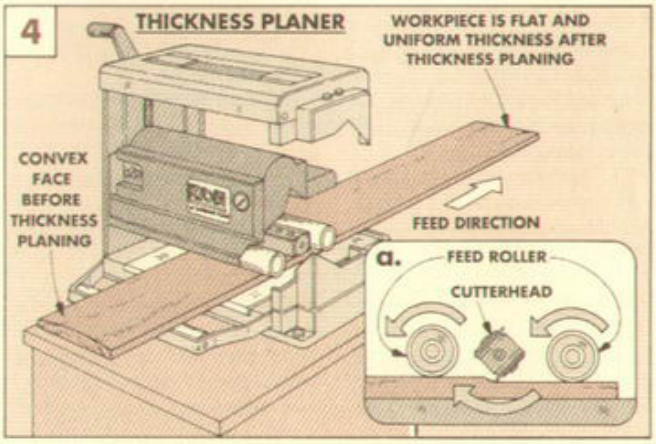
JOINTER OR PLANER? Now back to the original question. Technically, it's probably best to buy a jointer first. You can use it to square two adjacent edges for edge-gluing stock. And, as explained above, you shouldn't feed a piece into a thickness planer until one face has been flattened (on a jointer) first.

But realistically, I think I would buy a thickness planer first. Especially since the introduction of home shop thickness planers for under $500.



In many situations, there are other tools that can be used in place of a jointer. To prepare stock for edge-gluing, a good blade on a well-tuned table saw will work. Narrow stock can be stood on edge and run through a thickness planer. As for flattening one face before thickness planing, you can use a hand plane or belt sander.

But a thickness planer really shines when you need to "thickness" plane a board (¾" down to ½" for example). It's time consuming and difficult to do this with a hand plane, and almost impossible to do accurately with a jointer.

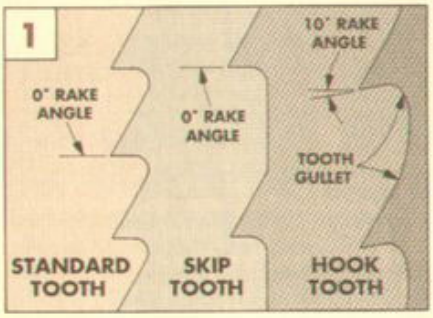


BAND SAW BLADES

I've heard that there are different tooth patterns available on band saw blades. What's the difference, and when should I use each type of blade?

William Paulson
Marietta, Georgia

There are two main tooth patterns: standard (also called regular) and skip. On a standard blade, the teeth and the gullets (valleys) between each tooth are the same size, see photo. On a skip tooth blade, every other tooth in the pattern is missing.

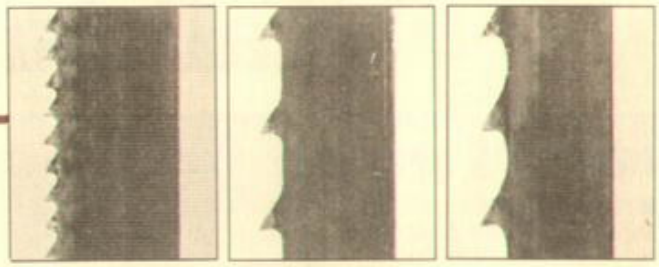


STANDARD TOOTH. The standard pattern allows more teeth per inch. It cuts the smoothest, but doesn't cut as quickly in thick or gummy woods. The problem is the gullets are so small that they can fill up with sawdust and overheat the blade.

SKIP TOOTH. The larger gullets on a skip tooth blade scoop up more sawdust and carry it through the stock. But it's a trade-off. Since there are fewer teeth per inch, you sacrifice quality.

HOOK TOOTH. In addition to these tooth patterns, there's another tooth design available on band saw blades — the hook tooth, see photo. A hook tooth is usually put on a skip pattern. That is, the gullet is large.

But there's an important difference with a hook tooth—the tooth rake angle. This is the angle between the face of the tooth and a line perpendicular to the back of the blade.



Typically, standard and skip tooth blades have a 0° rake angle, see Fig. 1. On a hook tooth, the angle is between 5° and 10°, but typically it's 10°. This angle cuts the wood rather than scraping it like a 0° rake angle tooth. This means a hook tooth blade will cut more aggressively, pulling the workpiece into the blade.

There's another important difference. The gullets between the teeth of a hook tooth blade are rounded, providing a perfect pocket for chips as they curl off the wood. The positive rake angle and rounded gullet make for a fast cut with less feed pressure and less heat build-up.

USES. Okay, which is the best blade to use? Just like table saw blades, there isn't a blade that will do everything perfectly. You should switch blades depending on what kind of cuts you're making. The problem with band saw blades is they're inconvenient to change.

I keep a standard tooth ⅛" or ¼"-wide blade on my band saw most of the time. For crosscuts and curves a standard blade with 12 to 14 teeth per inch results in a smooth surface in most wood.

If I'm ripping thick stock, resawing wide stock, or cutting plywood or particleboard, I switch to a ½"-wide hook tooth with 3 to 6 teeth per inch. The sawdust clears out easily and the blade isn't as likely to heat up and deflect or break.

No matter which blade you use, it's best to cut at a slow, steady rate. Don't stop, but allow the teeth to do their job by feeding at a constant rate.

JIG RUNNERS

■ Every season the humidity in our shop changes — and the wood in our shop changes with it. One of the first places I notice this is when pushing a shop-built jig across the table saw. Many of these jigs have wood runners on the bottom that slide in the table saw's miter gauge slot.

The problem is that I've made these runners for a fairly tight fit. But when the wood swells or shrinks, the fit is too tight or too loose in the slot.

PLASTIC RUNNERS. Recently I've been replacing the wood runners with strips of ¼" Plexiglas scrap I buy at a local plastics distributor. (Look under "Plastics" in the Yellow Pages.)

Plexiglas can be cut on a table saw and sanded like wood. (I use 400-grit wet-or-dry sandpaper for final sanding.) Then simply countersink and screw it to the bottom of the jig.

OTHER OPTIONS. There are some other options for runners as well. Steel bar would be ideal, but it might be difficult to find a piece that fits perfectly in *your* miter gauge slot. If the steel bar doesn't fit, it takes a lot of work to make it fit.

Another possibility is Masonite. It's stable, and can easily be worked with woodworking tools. Though it doesn't stand up to abrasion as well as Plexiglas, it's an alternative to solid stock.

OILY RAGS

■ R.T. Lamoureux, a reader from Hawthorne, CA offered the following on shop fires:

"Spontaneous combustion needs three things to occur: a source of heat, something to burn (fuel), and oxygen. Heat comes from the oxidation of reactive materials in finishing rags. Fuels are rags, solvents, or sawdust. And oxygen is in the air.

"Removal of any one of the three ingredients can stop the process. Since fuel will be present, you need to remove oxygen or the heat source to prevent a fire. To exclude oxygen, place oily rags in a sealed can. A fire might start, but would run out of oxygen and stop. However, if the can itself gets hot enough, materials close to the can could ignite.

"The remaining option is to eliminate the heat source. The heat comes from chemical reactions caused by the paints or varnishes in the rags. (Solvents will ignite at low temperatures, but don't produce heat themselves.)

"Once heat accumulates, the temperature rises to ignite the solvents in the paint or varnish. The trick is to not let the heat gather.

"I hang my rags on the clothesline (away from the kids) until the reactive materials have had a chance to react and the solvents evaporate. Once they are dry and stiff they can be discarded without fear of fire."

Sources

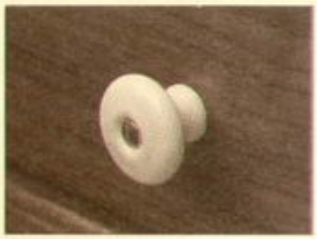
CHAIRSIDE CHEST: DRAWER KNOBS

Since we designed the Chairside Chest to look like an antique spool cabinet, we wanted to add the right drawer knobs for that style cabinet. The classic design is a brass, fluted spool cabinet knob, see photo at right.

We also found two other styles that look good on the Chairside Chest — a simple white porcelain knob and a more stylish brass teardrop knob.

We're offering all three styles through **Woodsmith Project Supplies**. Each knob comes with mounting hardware.

Fluted Spool Cabinet Knob
- 768-101 1 3/16"-Dia. Brass $3.75 ea.; 10 or more: $3.50 ea.



Porcelain Knob
- 753-131 1"-Dia. Porcelain $1.50 ea.; 10 or more: $1.25 ea.

Teardrop Knob
- 768-102 1½"Solid Brass $4.25 ea.; 10 or more: $3.95 ea.

CHAIRSIDE CHEST: NYLON GLIDE STRIP

To resist wear on the drawer guides and drawers of the Chairside Chest, we added self-adhesive nylon glide strips to the top of each of the drawer guides. The nylon strips help the drawers glide easily in and out of the chest.

This tape is available through **Woodsmith Project Supplies.** For the Chairside Chest, you will need about 14 feet.

Nylon Glide Strips
- 753-109 ½" Wide (Specify the number of feet you need, 14 feet recommended for Chest) ..... $.50 per foot

PLANT STAND

The only piece of hardware needed for the Plant Stand is a small pull for the drawer. We found many types we liked but narrowed it down to two — a small bail pull and a round knob (see photos at right). Both are solid brass.

Woodsmith Project Supplies is offering the brass bail pull and round brass knob. The necessary mounting hardware is also included for each of these items.

Bail Pull
- 768-201 2" Bore, 2⅝" Wide 1¼" High Overall..... $3.95 ea.

Round Brass Knob
- 768-202 1"-Diameter Solid Brass ..... $3.95 ea.

STIKIT SANDPAPER

On page 28 (Tools of the Trade) we talked about 3M's adhesive-backed sandpaper called Stikit. It's sold in 4½" wide, 10 yard long rolls.

To use Stikit sandpaper on your sander you need to replace the felt pad with a replacement pad (unless it's a new Porter-Cable sander) or add a conversion facing. (See the article on page 28.)

Woodsmith Project Supplies is offering the replacement pads for two of the most common orbital sanders as well as the conversion facing that can be cut to fit any size sander.

Stikit Sandpaper
4½"-Wide x 10 Yard-Long Rolls. Specify Grit When Ordering:
- 768-310 80 Grit..... $13.95
- 768-320 100 Grit..... $13.95
- 768-330 120 Grit..... $13.95
- 768-340 180 Grit..... $13.95
- 768-350 220 Grit..... $13.95

Two or more rolls: $12.95 ea.

Replacement Pads For Quarter-Sheet Sanders
- 768-400 For All Makita (Qrtr. Sheet) Sanders..... $5.95
- 768-500 For All Porter Cable (Qrtr. Sheet) Sanders..... $5.95

Conversion Facing
- 768-600 4½" x 11", Can Be Cut To Any Smaller Size..... $3.95

ORDER INFORMATION

BY MAIL

To order by mail, use the form enclosed with a current issue or write your order on a piece of paper, and send it with your check or money order. (Please include $3.50 handling and shipping charge with each order.) IA residents add 4% sales tax. Send order to:

Woodsmith Project Supplies
P.O. Box 10350
Des Moines, IA 50306

BY PHONE

For faster service use our Toll Free order line. Phone orders can be placed Monday through Friday, 8:00 AM to 5:00 PM Central Standard Time.

Before calling, have your VISA or Master Card ready.

1-800-444-7002

Allow 4 to 6 weeks for delivery. Note: Prices subject to change after June, 1990.

ALTERNATE CATALOG SOURCES

Similar hardware and supplies may be found in the following catalogs. Please call each company for a catalog or information.

Meisel Hardware Specialties
800–441–9870
Glide Strip

Shopsmith, Inc.
800–543–7586
Stikit Sandpaper

Trendlines
800–767–9999
Stikit Sandpaper

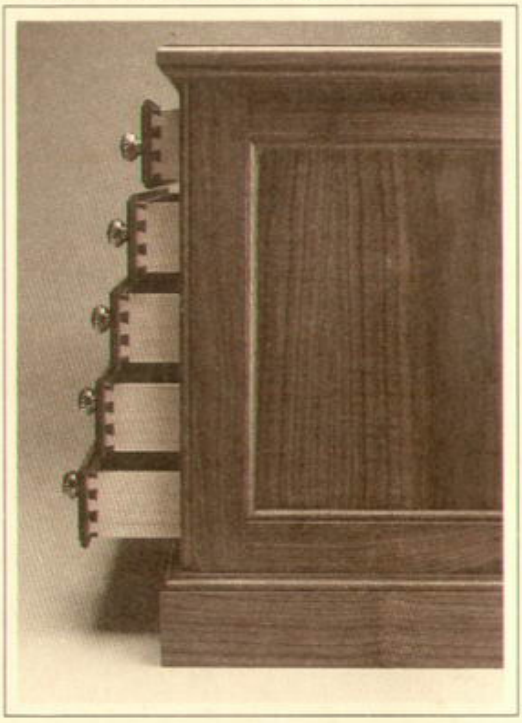
Woodcraft
800–225–1153
Stikit Sandpaper

The Woodworkers' Store
612–428–2199
Knobs, Pulls, Stikit Sandpaper

Woodworker's Supply of NM
800–645–9292
Stikit Sandpaper

Final Details

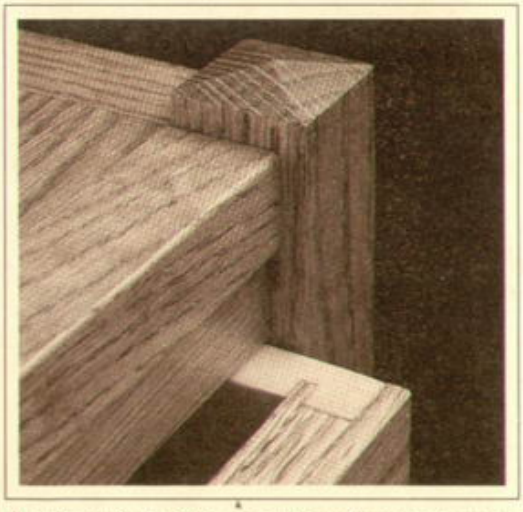
Chairside Chest



▲ *A mitered solid walnut frame surrounds an inset plywood panel on the top of the Chest. To highlight this feature, a small accent channel is cut around the inside edge of the walnut frame.*

◀ *The dovetailed joinery and the brass spool cabinet knobs are a few of the elegant details of this chest. The hard maple drawer sides are not only durable, they contrast nicely with the walnut side panels.*

Plant Stand



▲ *As is typical of this style of furniture, the legs rise slightly above the top of the Plant Stand. The slight pyramid shape on top of each leg softens the end of the leg and provides another subtle point of interest.*

▲ *The simple, uncluttered style of the stand can be seen in the precise fitting of the drawer within the opening. Then, to brighten up the front of the drawer, we added a solid brass bail pull.*