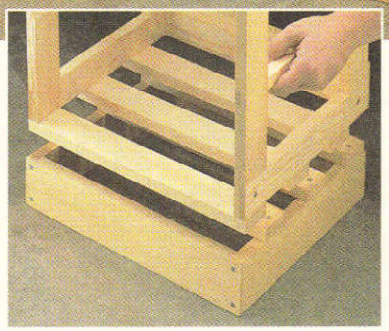
STACKING STORAGE RACKS



▲ *The interlocking design of these crates allows you to stack them in different configurations and move them around easily.*

When I first saw the design for these storage racks sent in by **Arnold Baker** of Independence, Missouri, they reminded me of the old wooden packing crates farmers used for shipping fruits and vegetables.

But as I looked closer, I was intrigued by the way these "crates" stack together. The slats on the top of one crate interlock with the slats on the bottom of the crate above.

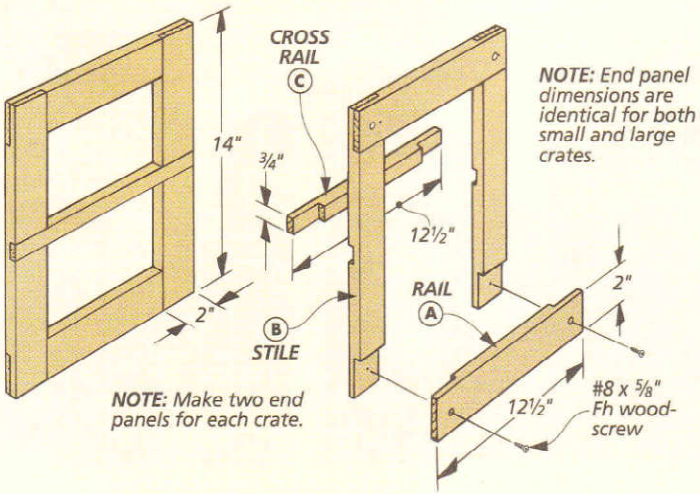
Aside from this neat stacking feature, the crates have other advantages. They're simple to build and don't require much in the way of materials. You can add more units as you need them. And the modular design allows you to move them around easily. This makes them great for shop storage, or for use in a college dorm room.

SIZES. We built two sizes of crates — a small crate 15½" long and a larger one 31" long. You can make the crates any size in between by simply changing the length of the slats and the back pieces. Note: The crates can be made longer than 31", but be sure to take into consideration the weight of the items you wish to store.

END PANELS. The first step in building the crates is to make the end panels. Each one consists of two **rails (A)**, two **stiles (B)**, and a **cross rail (C)**, see drawing. The cross rails also serve as handles to lift the crates.

HALF LAPS. Once all the pieces are cut to size, you can begin on the joinery. The end panels are assembled with half lap joints. To make these, I cut rabbets on the ends of all the rails, stiles, and cross rails using a dado blade and an auxiliary fence on my miter gauge, see Fig. 1. And to ensure all the rabbets were the same length, I used the table saw rip fence as a stop, see Fig. 1a.

With the half laps cut, the rails and stiles can be glued up. In order for the crates to stack properly, the end panels need to perfectly square. To make things easier, I built a simple assembly jig, see box on next page. The jig holds each panel square while a shank hole is drilled and a wood-



screw is inserted into each corner.

Once the glue is dry, centered dadoes can be cut on the stiles for the cross rails, see Fig. 2. These dadoes are sized to fit the half laps on the ends of the cross rails, see Fig. 2a. Then the cross rails are glued in place.

BACK. The end panels are connected by two identical back pieces. These **backs (D)** are just a couple of 3"-wide pieces of ¾"-thick stock. Then the ends of each piece are rabbeted to fit around the end panels, see Fig. 3. (Note: For large crate dimensions, see Fig. 3b.)

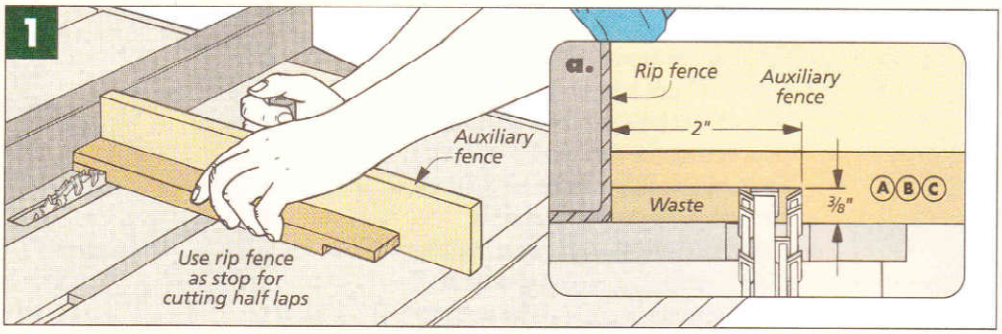
Woodscrews are used to attach the back pieces to the end panels. But I didn't want to drive the screws into the joint line of the half laps, so I positioned the screwholes ½" from the ends, see Fig. 3a.

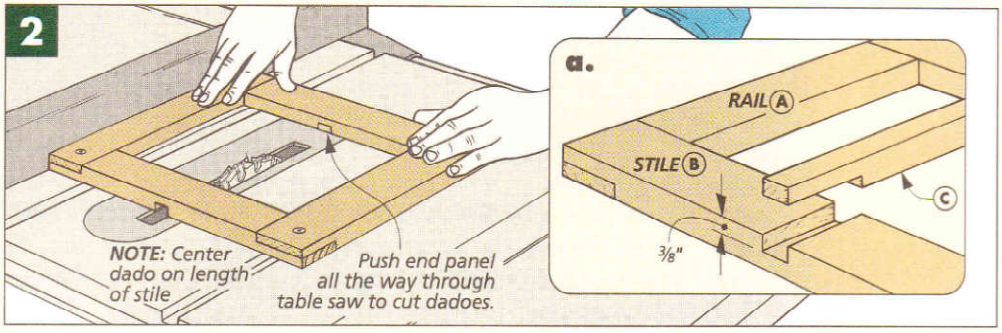
SLATS. To complete the crate, all that's left is to add the **slats (E)**, see Fig. 4. These are nothing more than 2"-wide pieces of wood that are fastened to the end panels.

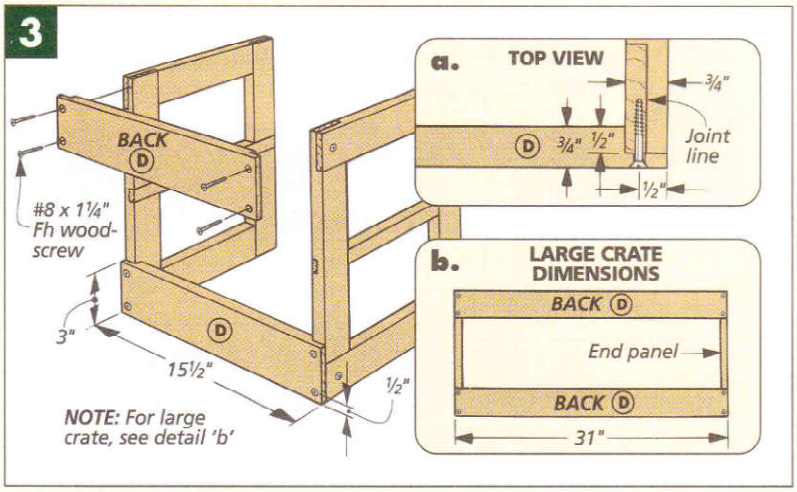
The slats are attached with woodscrews (again, positioning the screws ½" from the ends). But in order for the boxes to stack properly, you need to pay careful attention to how the slats are spaced on the crates, see Fig 4a.

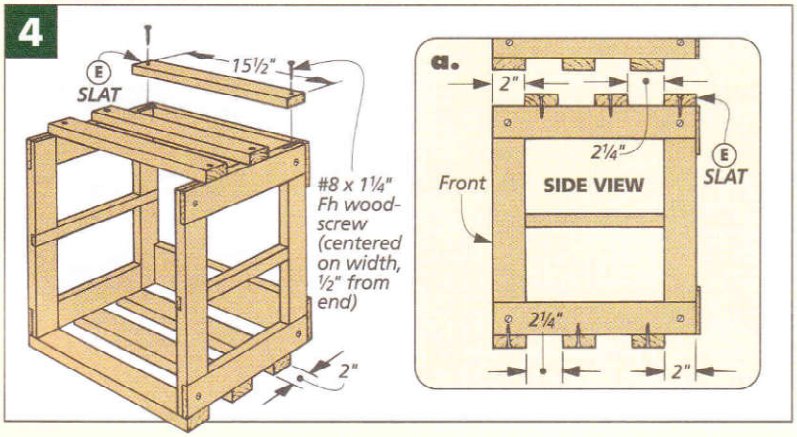
On the top of each crate, the front slat is set back 2" from the front of the end panels. Then the second and third slats are spaced 2¼" apart.

On the bottom of the crates, the front slat is set flush with the end panels. Then the second and third slats are attached, again spaced 2¼" apart.







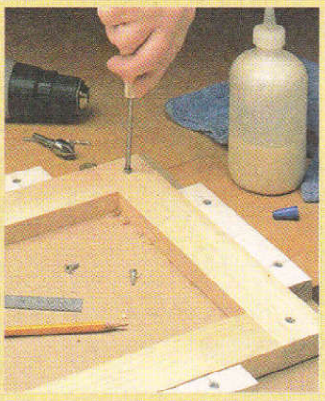


ASSEMBLY JIG

To help keep the end panels square while gluing them up, I made a simple assembly jig.

It's just four cleats screwed to a base. (I used a square to position the cleats.) The cleats hold the panel square.

I inserted a screw in each corner while the panel was still in the jig, see photo. This way, the panel can be removed immediately without waiting for the glue to dry.



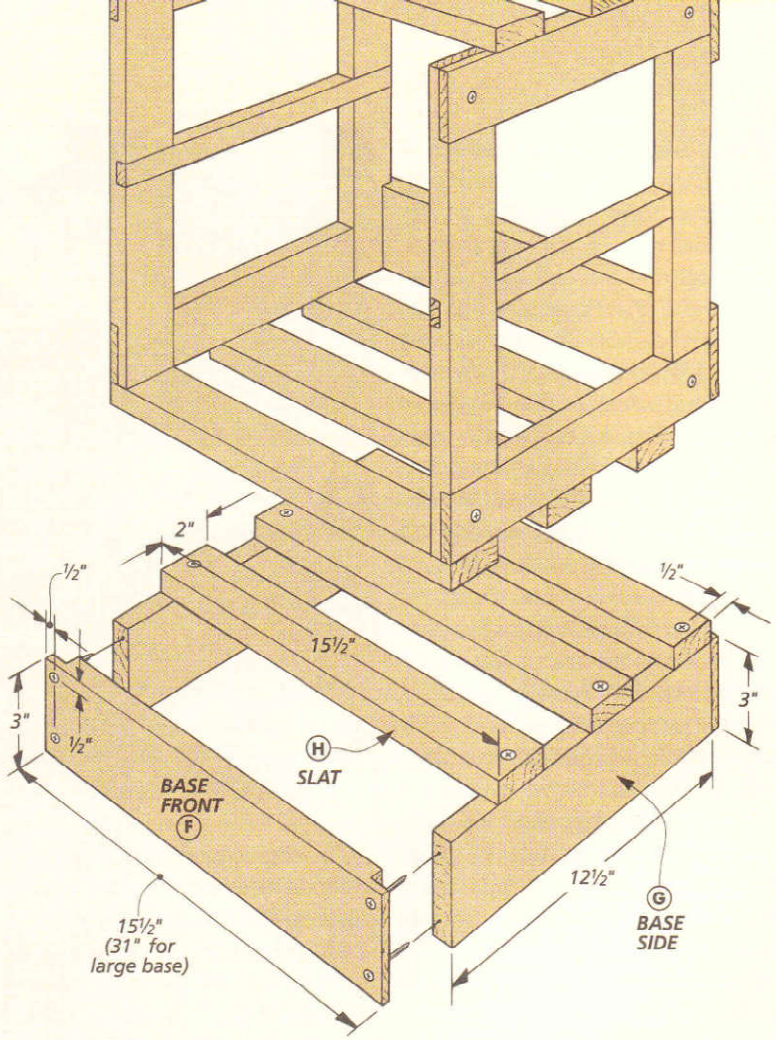
BASE

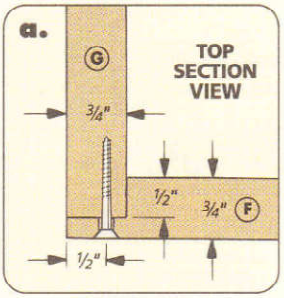
To lift the crates up off the floor a few inches, I built a base. Basically, this base is just an open box with three slats across the top. And it uses the same interlocking feature found on the crates, see drawing at right.

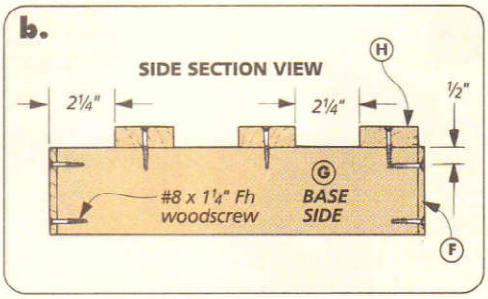
MAKING THE BOX. After cutting the front and back pieces of the base to size, the ends of both pieces are rabbeted for the sides, see drawing at right and detail 'a'. (Note: The front and back pieces of the base are identical to the backs of the crates.)

Next, the sides are cut to size, see drawing. Then the front and back can be screwed to the sides.

ADDING THE SLATS. The front of the base projects slightly (¼") from the stack of crates. To create this projection, the first slat is set back 2¼" from the front of the base. Then the other two slats are spaced 2¼" apart from one another, see detail 'b' at right.







SHOP STORAGE CONTEST

Do you have an original idea for shop storage? A great way to store tools, lumber, or shop supplies? If so, we'd like to hear about it.

We'll publish the best shop storage ideas in a future issue of *Woodsmith*. Winners will receive $150. Duplicate or similar entries will be considered in the order we receive them. Send your ideas (postmarked no later than May 15, 1997) to *Woodsmith*, Shop Storage Contest, 2200 Grand Ave., Des Moines, IA 50312.

MATERIALS

Large/Small Rack

A	Rails (4)	¾ x 2 - 12½
B	Stiles (4)	¾ x 2 - 14
C	Cross Rails (2)	¾ x ¾ - 12½
D	Backs (2)	¾ x 3 - (31 or 15½)
E	Slats (6)	¾ x 2 - (31 or 15½)

Note: Materials shown are for one rack.

Large/Small Base

F	Front/Back (2)	¾ x 3 - (31 or 15½)
G	Sides (2)	¾ x 3 - 12½
H	Slats (3)	¾ x 2 - (31 or 15½)

SUPPLIES

- #8 x ⅝" Fh woodscrews
- #8 x 1¼" Fh woodscrews

CUTTING DIAGRAM