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Woodsmith **PLANS**

# ROLL-AROUND SHOP CART



# ROLL-AROUND SHOP CART



One thing that always comes in handy around the shop is an extra helper. Someone to carry parts around or just be “at the ready” whenever the need arises.

Unfortunately, not many of my friends want to hang around the shop waiting for me to need them. That’s what led me to build the roll-around shop cart shown above. Whether you’re moving parts around the shop or working with a number of workpieces at one tool, you’ll always

have a “helper” who’s ready, willing, and able to lend a hand.

**WORKSURFACES.** You’ll notice that the cart has two worksurfaces. The top holds workpieces that are ready to be worked on (like the lumber in the left photo on page 2). And the lower surface stores completed workpieces. The upper surface also works great as an assembly or finishing area (see right photo on page 2).

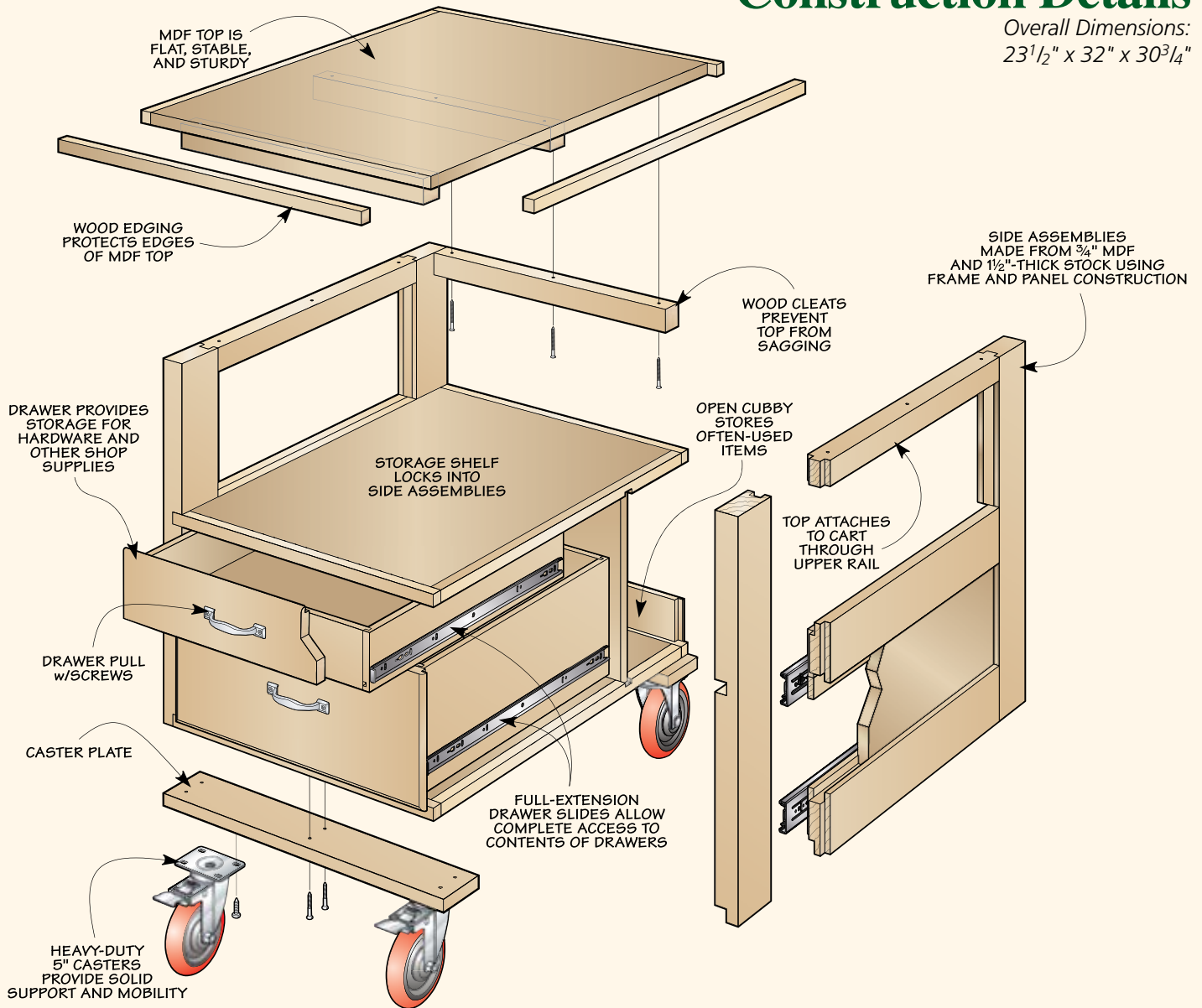
Regardless of the workout you give this cart, when you’re ready to “roll

on” to the next task, you won’t have to worry about spilling a load of workpieces. That’s because the cart rolls on large, heavy-duty casters that won’t get hung up on extension cords, floor cracks, wood chips, or debris.

**STORAGE.** This roll-around cart also offers plenty of storage. A pair of drawers at the front of the cart and an open shelf at the back mean you won’t have to search around your shop for supplies. They’ll always be close at hand.

# Construction Details

Overall Dimensions:  
23<sup>1</sup>/<sub>2</sub>" x 32" x 30<sup>3</sup>/<sub>4</sub>"



▲ **Multiple Worksurfaces.** Whether you're working at the table saw, jointer, or planer (shown above), the lower shelf is the perfect place to store completed workpieces.



▲ **Assembly Station.** When you're not moving parts around the shop, the generously sized top makes a perfect assembly or finishing station for smaller projects.

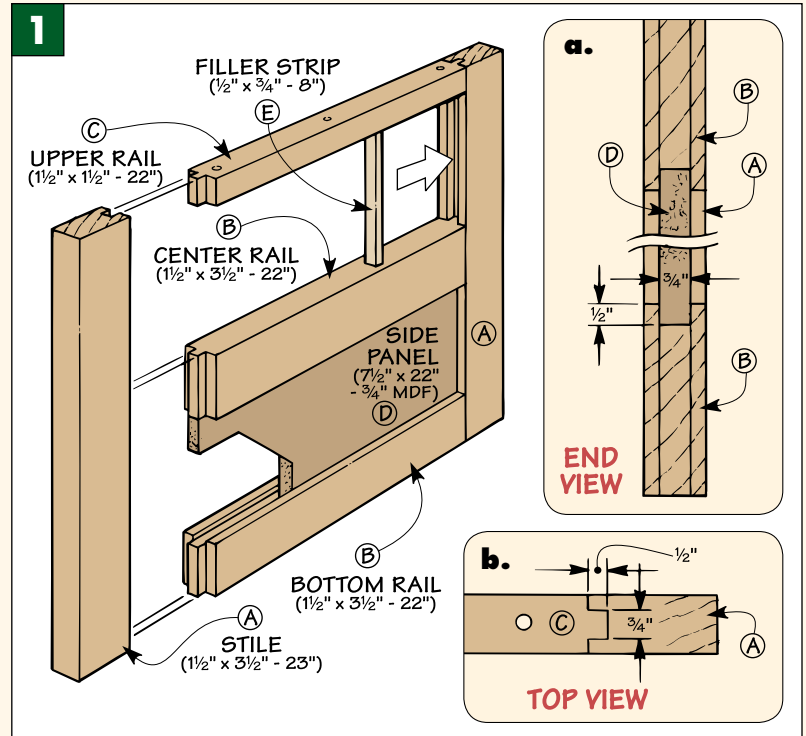
## Base and Top

I started on the roll-around shop cart by building the base. It's basically just a big box made up of two frame and panel assemblies joined by a shelf and bottom panel.

**MATERIAL.** Since I expected the cart to see heavy-duty use around the shop, I decided to use construction-grade ("two-by") lumber for the frame pieces. (I used Douglas fir.) Construction lumber has a few things going for it. First, it's beefy and heavy — a perfect choice for a shop cart. And it's fairly inexpensive.

But construction lumber does have a couple drawbacks — which are easy to overcome. For one, you'll have to spend a little time picking through the stack of lumber. I like to separate out the lumber with the straightest grain, fewest knots, and minimal defects. Then I select lumber wider than what I need. This way, I can trim off the rounded edges to square it up and cut around any remaining knots or defects.

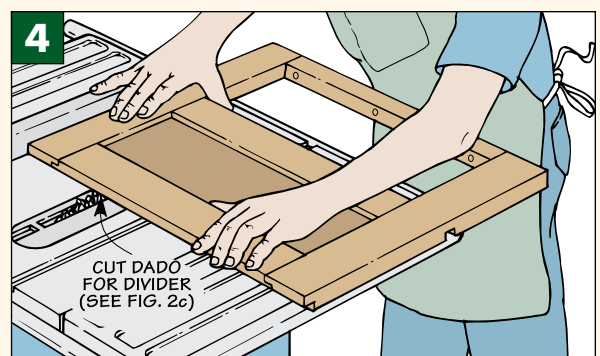
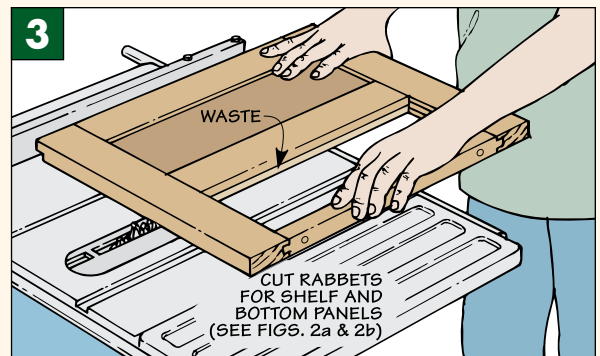
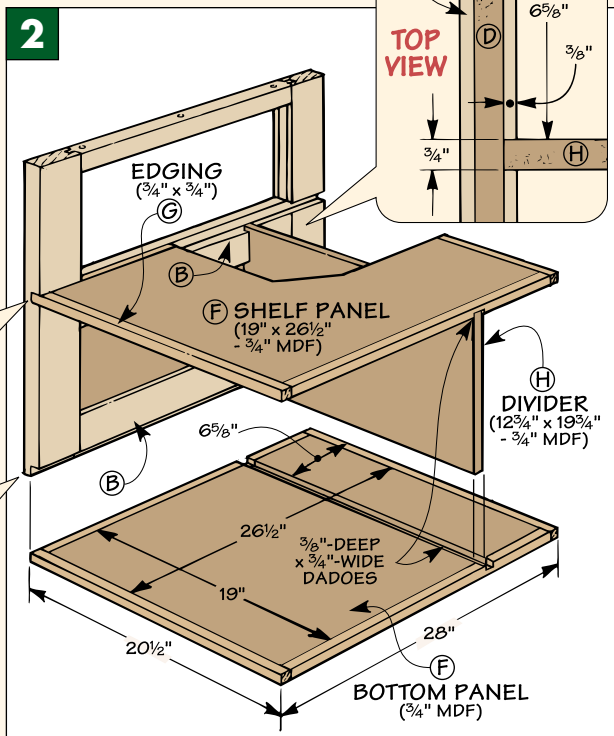
One last thing. Construction lumber often has a high moisture content (the lumber I picked out was sitting outside). So once you get it back to your shop, it's a good idea to sticker it and let it dry out



before you start cutting any workpieces to size. Note: Stickering is a fancy word for propping the lumber up off the floor and separating the pieces with a few strips of scrap lumber so air can circulate around it. After the stock has had

a chance to dry out for a few weeks, you're ready to start cutting.

**SIDE ASSEMBLIES.** Once the stock is ready, you can reference Figure 1 for the dimensions needed to build the side assemblies for the base. Each side assembly starts out as a frame made up of a pair of stiles (A) and three rails (B, C). Note: The upper rail is narrower to provide a



larger opening to the lower shelf and make it easier to attach the top later with shorter screws.

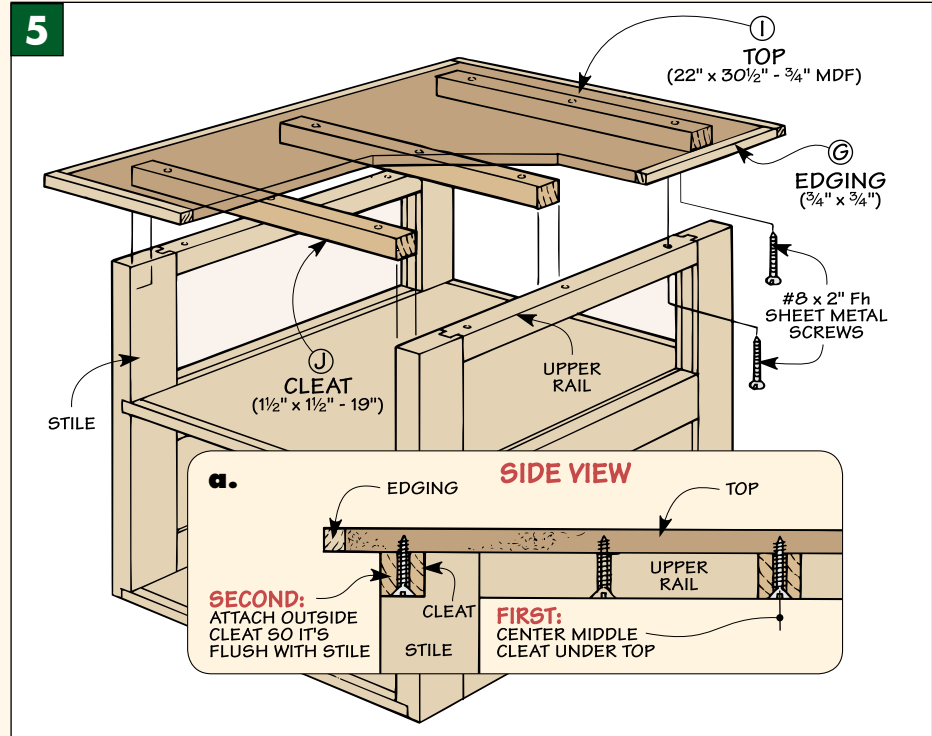
With the frame pieces sized, you can turn your attention to the tongue and groove joints that hold the frame together. You can see in Figure 1a that the centered grooves are sized to fit the  $\frac{3}{4}$ " MDF *side panel (D)*. Then you can cut the tongues on the ends of the rails to match the grooves.

**ASSEMBLY.** With the joinery complete, you're just about ready to glue up each side assembly. But before you do that, it's a good idea to drill a set of three holes in each upper rail for mounting the top later (Figures 1 and 1b).

To glue up each frame, I started with one stile and fit the bottom rail in place. After adding the side panel and center rail, slip the upper rail in place so it's flush with the end of the stile. All that's left is to add the other stile and then clamp up the assembly so it's flat and square.

**FILLER STRIPS.** To fill in the open grooves on the inside face of the stiles, I added some *filler strips (E)*, like you see in Figure 1. I like to size them so they're a bit proud. This way, I can sand them perfectly flush once they're glued in place.

**SHELF & BOTTOM PANEL.** At this point, you can set the frame and panel assemblies aside and turn your attention to the shelf and bottom panel. These two pieces join the side assemblies together to form the base of the cart.



The *shelf* and *bottom panel (F)* are made from  $\frac{3}{4}$ " MDF and are wrapped with  $\frac{3}{4}$ "-thick *edging (G)*, as you can see in Figure 2. Here again, I find it easiest to glue edging in place so that it's a bit proud and then sand it flush.

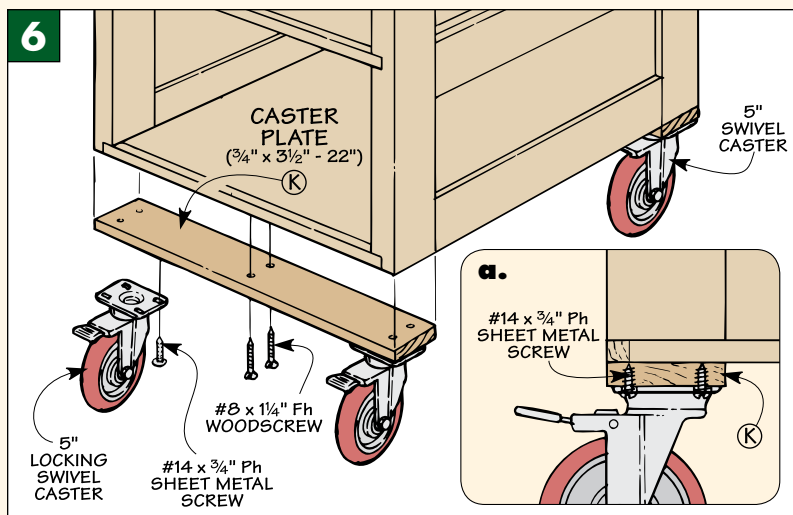
As you see in Figure 2, the bottom panel fits into a rabbet cut along the lower inside edge of each side assembly (Figure 2b) and the shelf fits into a rabbet cut along the top inside edge of the center rail (Figure 2a). A dado blade in the table saw makes quick work of cutting both rabbets, as illustrated in Figure 3.

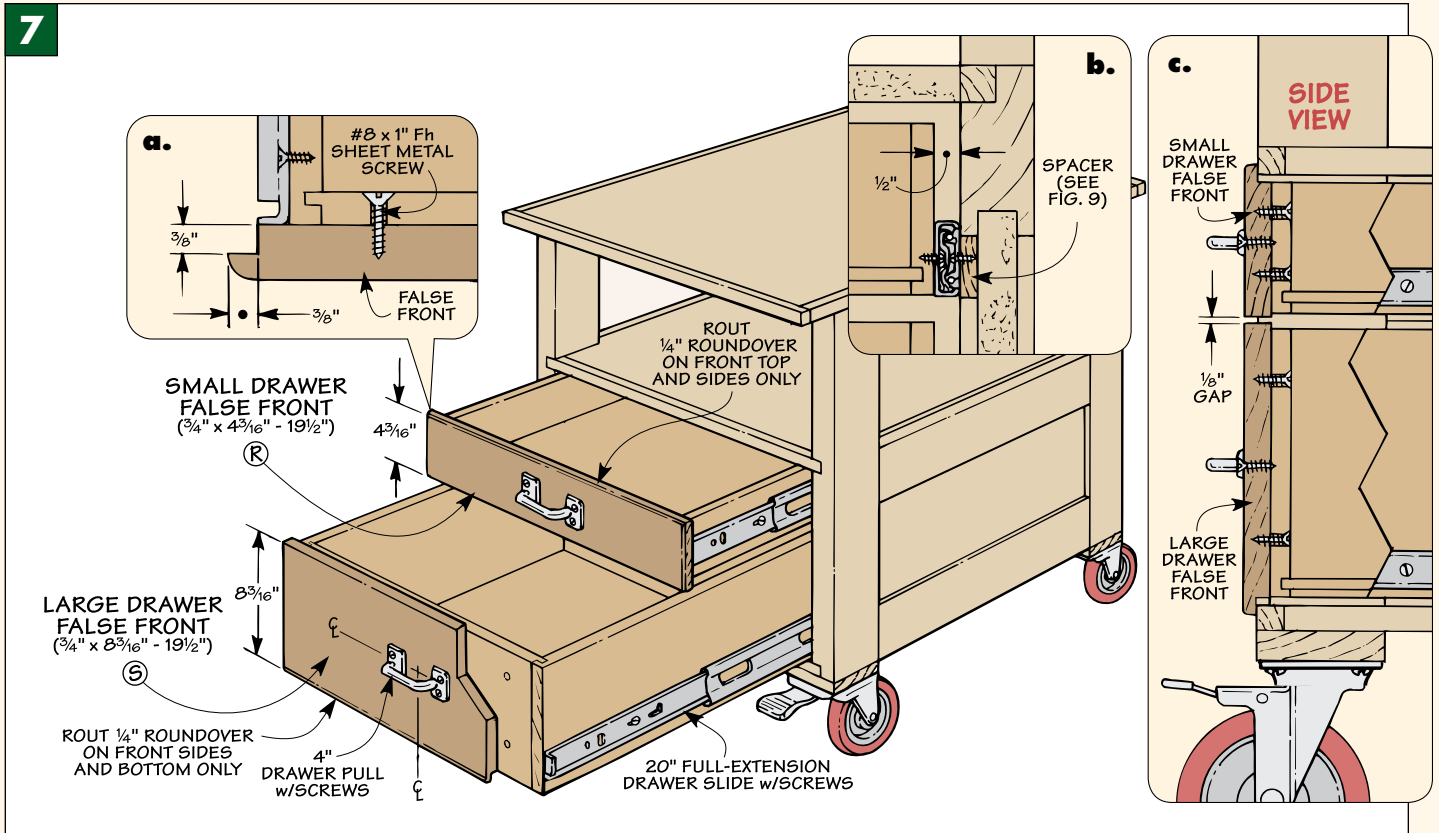
Before you can assemble the cart, there's one last thing to do. And that's to cut dados in the side assemblies, shelf, and bottom panel (Figure 4). These dados trap in place a  $\frac{3}{4}$ " MDF *divider (H)* that separates the drawer compartment from the storage area at the back of the cart (Figure 2). Note: You don't need to cut the dados in the *upper rails*.

**ASSEMBLE BASE.** Once the dados are cut, you can assemble the base of the cart by gluing the shelf and bottom into the side assemblies, trapping the divider in place as you do this (Figure 2).

**TOP.** Like the shelf and bottom panel, the *top (I)* is just a piece of  $\frac{3}{4}$ " MDF wrapped with *edging (G)*. Since I was a bit worried about the MDF top sagging over time, I "beefed" it up by screwing a set of  $1\frac{1}{2}$ "-square *cleats (J)* to the bottom side, as you can see in Figures 5 and 5a. After positioning the top on the base of the cart, I screwed it in place, as shown in Figure 5.

**CASTERS.** Finally, to make the cart mobile, I added casters to the bottom. To provide solid support, they're attached to *caster plates (K)* that are glued and screwed to the bottom of the cart (Figures 6 and 6a).





With the base of the cart complete, you're ready to add the two drawers, as shown in Figure 7.

**SIZE DRAWERS.** Although I could have made the two storage drawers the exact same size, I decided to make one shallow drawer and one deep drawer. This way, I could store a wider variety of tools, clamps, and finishing supplies.

Besides keeping the height in mind as you size the parts, you'll also need to consider how you're going to mount the drawers inside the base. As you can see in Figure 7, I used full-extension, metal drawer slides.

If you're wondering why I purchased metal slides for a utility shop cart, there are a couple good reasons. First, metal slides are

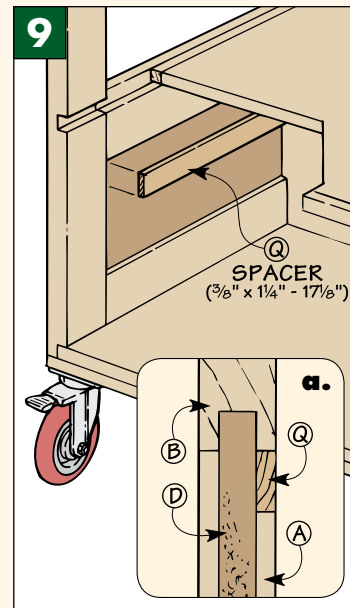
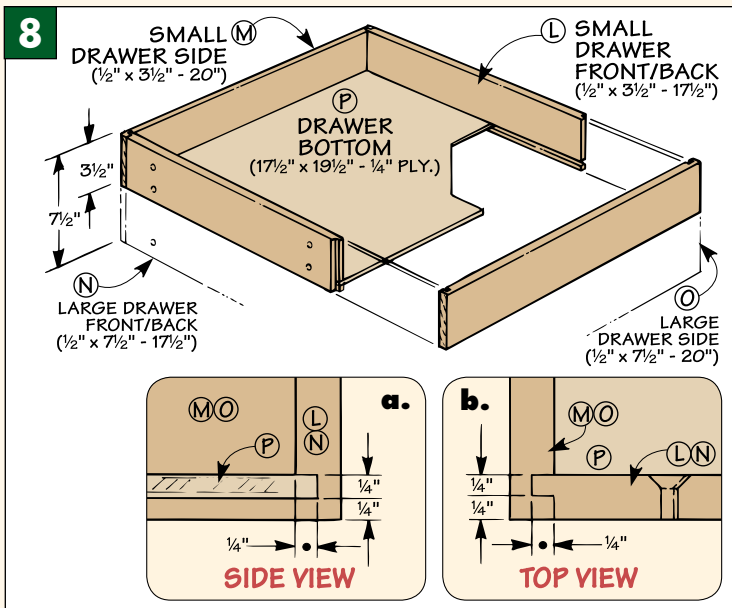
strong — an important feature for a drawer loaded with heavy shop tools and supplies. And second, the full-extension feature ensures you'll be able to reach the entire contents of the drawer easily.

For the slides I used, I had to allow for 1/2" of clearance on each side of the drawer (Figure 7b). After allowing for this clearance and the

tongue and dado joinery used to hold the drawers together, I cut the 1/2"-thick drawer fronts, backs (L, N), and sides (M, O), shown in Figure 8, to size.

The nice thing about the tongue and dado joinery for the drawers is that you can cut it entirely on the table saw. A 1/4"-wide dado cut on the ends of each side accepts a tongue cut on the ends of the fronts and backs, as in Figure 8b.

Before assembling the drawers there are a couple things to do. First, you'll need to cut a groove near the bottom edge to hold the 1/4" plywood bottom



(P), as in Figure 8a. And second, I've found when making drawers it's easiest to drill holes for mounting the false fronts *before* assembly (Figures 8 and 8b).

**SPACERS.** After gluing up each drawer, there's one last thing to do before installing them. And that's to add a couple spacers to the inside of the cart. The *spacer* (Q) fills out the side assembly to provide a smooth, even surface for installing the drawer slides, as in Figures 9 and 9a.

**INSTALL DRAWERS.** After gluing the spacers in place, you're ready to install the drawers. To install the full-extension, metal slides, you'll need to separate each one into two parts. Then you can screw one half to the cart and the other half to the drawer so the slides are flush with the bottom edge of each drawer (Figure 7b). Note: The half of the slide installed in the cart is set back  $\frac{3}{8}$ " to allow for the lip of the false fronts that are added next (Figure 7a).

**FALSE FRONTS.** With the drawers in place, all that's left to complete them

is to add some rabbeted *false fronts* (R, S). The rabbets make it easy to install the false fronts so they're perfectly aligned.

When sizing the false fronts, allow for a  $\frac{1}{4}$ " overlap on the top, bottom, and sides, and an  $\frac{1}{8}$ " gap between the drawers. Then you can rabbet the *top* and sides of the small false front, and the *bottom* and sides of the large false front. (There are no rabbets where the false fronts meet.)

To ease the edges of the false fronts, I used the router table to round over the outside face of the same edges that were rabbeted, as you can see in Figure 7.

Now, you can screw the false fronts to the drawers. Then center a pull on each false front and screw it in place, as you see in Figure 7.

**CUBBY.** All that's left at this point is to install a "false front" to form the cubby for storage at the back of the cart, as you can see in the photo above.

Like the large false front on the drawers, the *cubby front* (T) is rab-



▲ **Storage Cubby.** Adding a false front to the opening at the back of the cart creates a handy storage area for often-used items.

beted to form a lip and rounded over on the bottom and ends (Figures 10a and 10b). Then, it's simply glued in place.

**FINISH.** After wiping on a couple coats of an oil finish, your new "helper" will be ready to lend a hand in the shop. The nice thing is, this helper won't need a break, and you won't hear any complaints.

## MATERIALS

### CART

<b>A</b> Stiles (4)	$1\frac{1}{2} \times 3\frac{1}{2} - 23$
<b>B</b> Center/Bottom Rails (4)	$1\frac{1}{2} \times 3\frac{1}{2} - 22$
<b>C</b> Upper Rails (2)	$1\frac{1}{2} \times 1\frac{1}{2} - 22$
<b>D</b> Side Panels (2)	$7\frac{1}{2} \times 22 - \frac{3}{4}$ MDF
<b>E</b> Filler Strips (4)	$\frac{1}{2} \times \frac{3}{4} - 8$
<b>F</b> Shelf/Bottom Panel (2)	$19 \times 26\frac{1}{2} - \frac{3}{4}$ MDF
<b>G</b> Edging	$\frac{3}{4} \times \frac{3}{4} - 25$ Ln. Ft.
<b>H</b> Divider (1)	$12\frac{3}{4} \times 19\frac{3}{4} - \frac{3}{4}$ MDF
<b>I</b> Top (1)	$22 \times 30\frac{1}{2} - \frac{3}{4}$ MDF
<b>J</b> Cleats (3)	$1\frac{1}{2} \times 1\frac{1}{2} - 19$
<b>K</b> Caster Plates (2)	$\frac{3}{4} \times 3\frac{1}{2} - 22$
<b>L</b> Small Drawer Front/Back (2)	$\frac{1}{2} \times 3\frac{1}{2} - 17\frac{1}{2}$
<b>M</b> Small Drawer Sides (2)	$\frac{1}{2} \times 3\frac{1}{2} - 20$
<b>N</b> Large Drawer Front/Back (2)	$\frac{1}{2} \times 7\frac{1}{2} - 17\frac{1}{2}$
<b>O</b> Large Drawer Sides (2)	$\frac{1}{2} \times 7\frac{1}{2} - 20$
<b>P</b> Drawer Bottoms (2)	$17\frac{1}{2} \times 19\frac{1}{2} - \frac{1}{4}$ Ply.
<b>Q</b> Spacers (2)	$\frac{3}{8} \times 1\frac{1}{4} - 17\frac{1}{8}$
<b>R</b> Small Drawer False Front (1)	$\frac{3}{4} \times 4\frac{3}{16} - 19\frac{1}{2}$
<b>S</b> Large Drawer False Front (1)	$\frac{3}{4} \times 8\frac{3}{16} - 19\frac{1}{2}$
<b>T</b> Cubby Front (1)	$\frac{3}{4} \times 3\frac{1}{8} - 19\frac{3}{4}$

### HARDWARE

- (8) #8 x 1" Fh sheet metal screws
- (12) #8 x  $1\frac{1}{4}$ " Fh sheet metal screws
- (15) #8 x 2" Fh sheet metal screws
- (16) #14 x  $\frac{3}{4}$ " Ph sheet metal screws
- (2 pr.) 20" Full-extension drawer slides w/screws
- (2) 4" Drawer pulls w/screws
- (2) 5" Locking swivel casters
- (2) 5" Swivel casters

