

Pivoting Plywood

Never wrestle with sheet goods again

I build a variety of furniture using solid wood, veneer, and plywood, and since I work in a one-man shop, I constantly look for ways to make the experience as easy and efficient as possible. One of these ways is my panel cart. With this cart, I can stop struggling with 4x8 sheet goods such as medium-density fiberboard (MDF) and plywood, and easily move them about the shop. And because I built the cart to the height of my tablesaw, I can tilt the sheets horizontally to feed them directly from the cart onto the tablesaw.

Large swivel casters, a brake, and a steering handle make for easy maneuvering. A simple design and very basic joinery, tied together with bolts, make this a project that easily can be built in a day, so you can get right back to making furniture. Next to its usefulness, the best thing about this cart is that the materials

MOVE AND CUT LARGE PANELS WITH EASE



Roll. Large wheels and a pull handle help you tow a heavy load (left). Note that the back side can hold a pile of rough lumber. A foot brake locks the cart in place (above).

Cart

BY
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are relatively inexpensive. Because you can use dimensioned construction lumber and/or scraps you have kicking around the shop, the cost is limited and mostly for the hardware.

Using the cart

I load 4x8 sheets on the panel carrier side and rough lumber on the other. I can then move the cart around the shop wherever it is needed, and it doesn't disturb the lumber when I tilt the sheet goods to the horizontal position. The four swivel casters allow me to push the cart in any direction without having to turn it around, and the handle lets me tow the loaded cart.

The cart lets me store, move, and rip up to eight 4x8 sheets. With multiple sheets stacked on the cart, the top sheet will be higher than your table-saw when you tilt the sheets up into position. But you can still slide it onto the saw table and cut it safely. When you lift the pivoting frame, two latches lock it into position.

To lower the pivoting frame, you pull a cord to release the latches and lower the



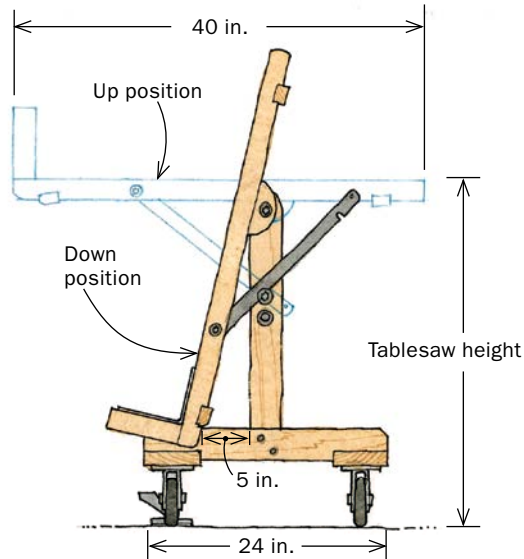
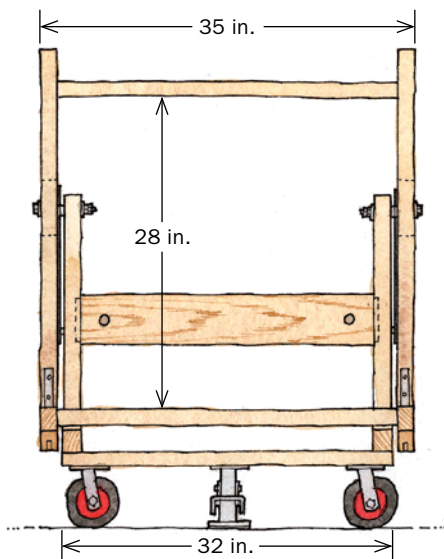
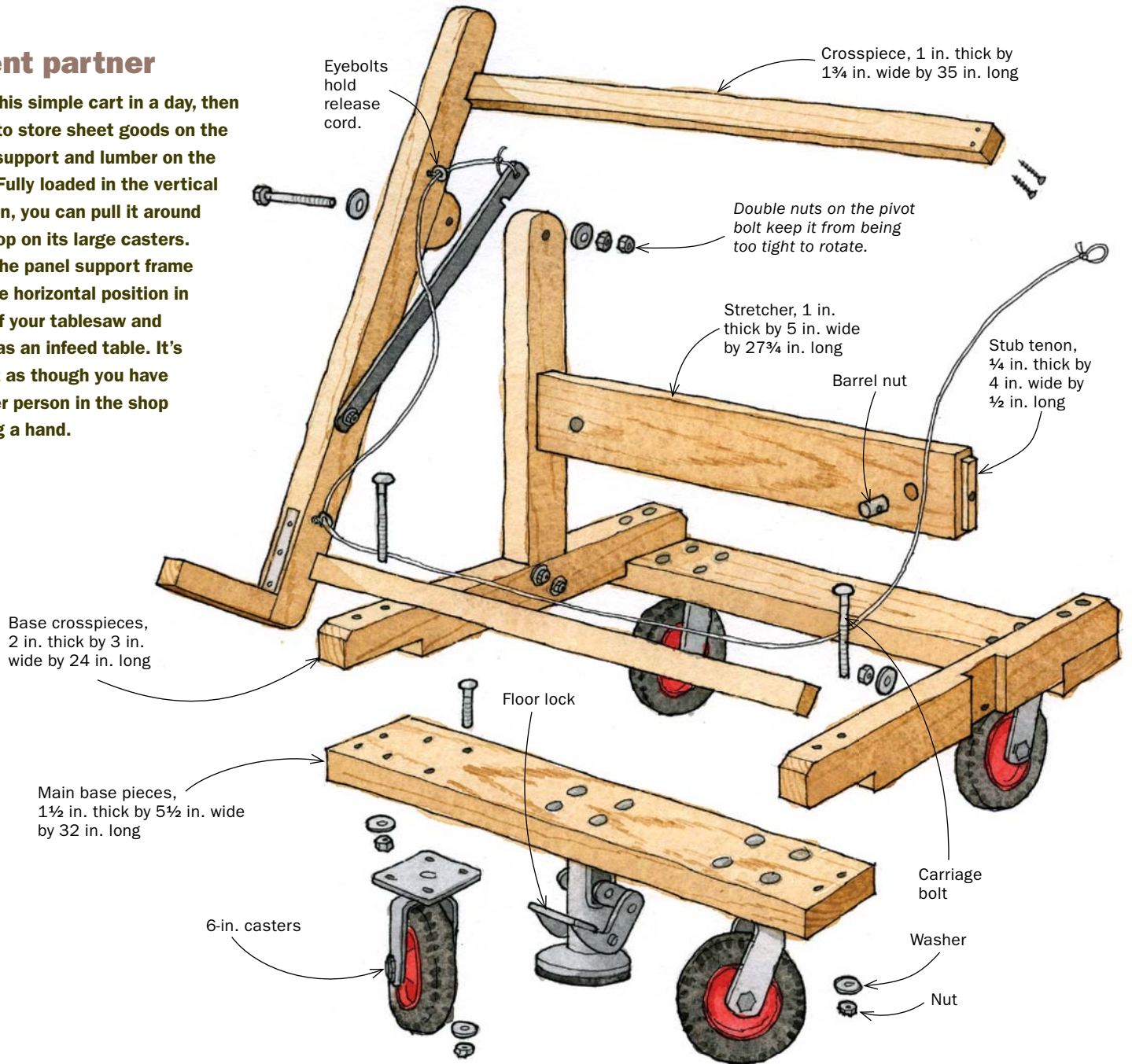
Pivot. Tip the support frame that holds the sheet goods into the horizontal position, where it locks automatically. Then move the cart into position and apply the brake.



Push. The cart supports the back end of the plywood, freeing you up to feed the material and apply pressure against the fence.

Silent partner

Build this simple cart in a day, then use it to store sheet goods on the panel support and lumber on the deck. Fully loaded in the vertical position, you can pull it around the shop on its large casters. Pivot the panel support frame into the horizontal position in front of your tablesaw and use it as an infeed table. It's almost as though you have another person in the shop lending a hand.



SOURCES OF SUPPLY

DRAWBOLTS AND BARREL NUTS

leevalley.com (No. 05G07.01)

PULL HANDLE

harborfreight.com (No. 94354)

FLOOR LOCK AND CASTERS

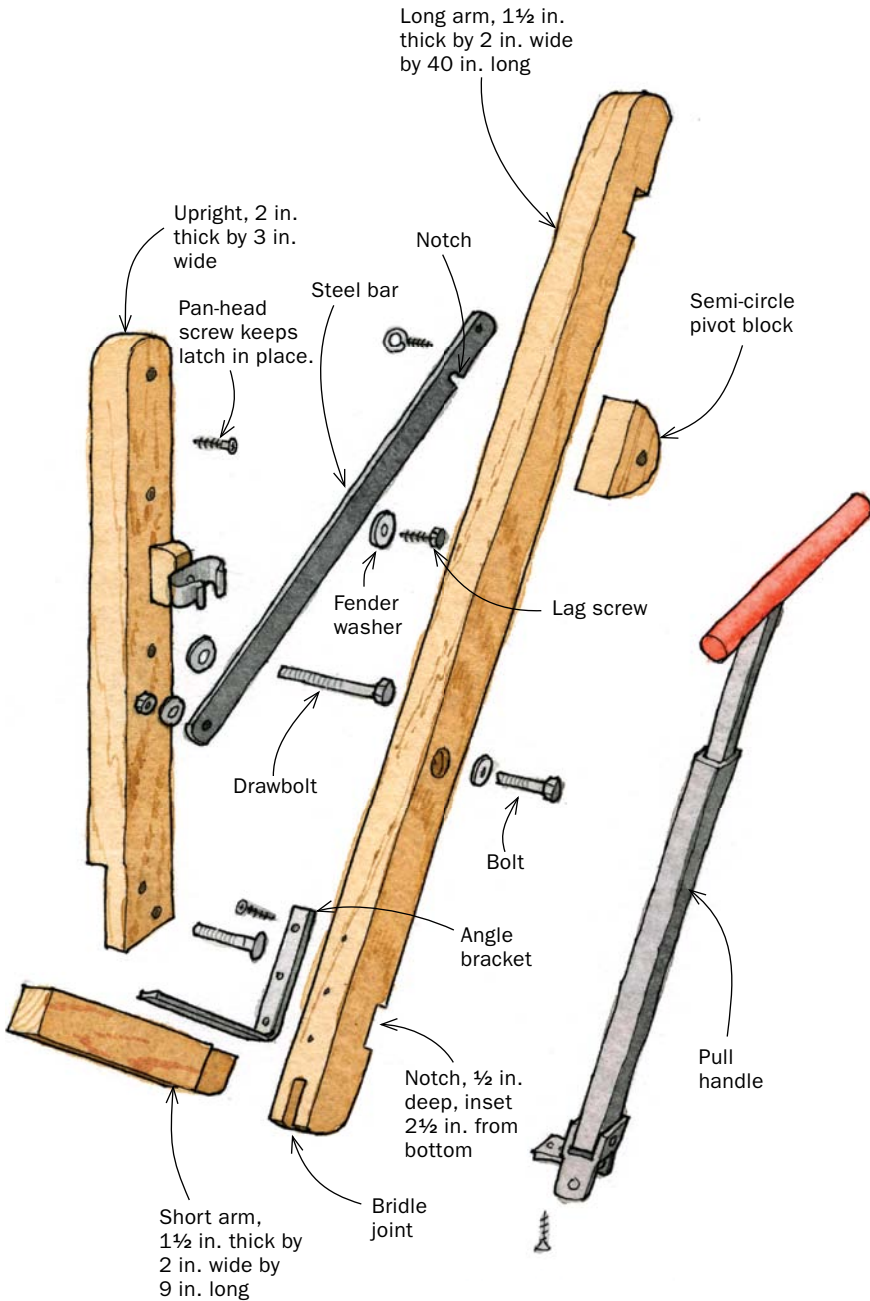
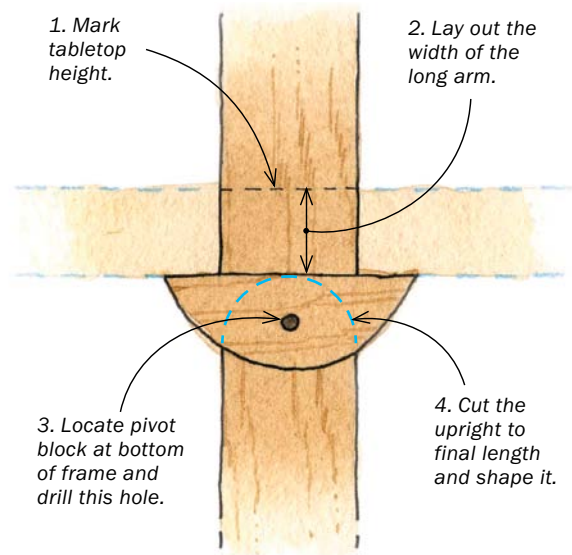
globalindustrial.com (No. CJ241851, lock; No. WB601122, casters);
harborfreight.com
(No. 41565, casters)

SET THE PIVOT HEIGHT

The frame's height is important. It can be a little higher than the tablesaw height, but not lower.



Take time to get it right. Once the base frame is built, add the casters and clamp an upright to the base. Adjust a marking tool to the tablesaw table. Puryear uses an Accuscribe from FastCap, and then he transfers that mark to the upright.



structure. What a pleasure not having to wrestle sheet goods onto the tablesaw when working alone.

A very basic base with casters

The base construction is simple. Except for the mortises in the uprights, I cut all of the joinery on the tablesaw. To line up everything perfectly, cut both crosspieces at once, clamping them together and using a miter gauge and dado blades with multiple passes. The uprights that hold the tilting panel support frame determine the final height of the cart in its horizontal position. Base their length on your caster height and the height of your tablesaw. Right now, cut them longer than you will need until you settle on a final height (a little later in the process).

The bottom end of each upright gets a half-lap that corresponds with the half-lap in the base of the crosspieces. Each upright also

PUT THE PIECES TOGETHER

The final assembly is straightforward. Work from the ground up.

FINISH THE BASE



Assemble the base. Connect the four base pieces, attach the casters, and add the stretchers and two uprights.

LOCATE THE PANEL SUPPORT



One L at a time. After making the two L-shaped pieces and notching them for the crosspieces, but before gluing in the crosspieces, you need to locate the Ls on the uprights. To do this, bolt a semi-circle pivot block to its upright, and clamp one of the Ls to the base (above) so its lower crosspiece will hit the base about 5 in. from the upright. Mark the block's location on the L.



gets a centered mortise (cut with an edge guide on a router) to hold the stub tenon of the stretcher. I reinforce this joint with a drawbolt. I clamp the stretcher to the uprights and drill through both for the drawbolt and barrel nut. Once this joinery is cut, bolt the casters and the crosspieces to the main base. Don't attach the uprights yet.

This is a good time to talk about the casters. The loaded cart can get heavy. I use four heavy-duty 6-in. swivel casters rated at 330 lb. each, which are not available with total locking brakes. In lieu of brakes, I added a floor lock. I prefer all four casters to swivel because it makes maneuvering around the shop easier. I wouldn't use casters smaller than 5 in., because small obstacles on the floor will stop them dead.

Tilting panel support affects the height of the uprights

To build the panel support frame, start by making the two L-shaped pieces. Cut the notches for the crosspieces using a dado blade. The elbow is a bridle joint that I reinforced with angle brackets because they will carry all the weight of the 4x8 sheets.

To determine the height, clamp an upright to the base. Roll this assembly up to your tablesaw and mark the height of the table on the upright.



Glue on the pivot block. With the pivot blocks marked for position, glue and clamp one to each L. Now you can glue in the crosspieces to complete the panel support frame.

ATTACH THE PANEL SUPPORT AND RELEASE



Connect the panel support frame to the base. Nuts and bolts with washers on either side keep things together (far left). The notch in the latch rests on a lag screw between a washer and the upright (left). An extra screw will act as a stop and keep the latch from jumping out of line. The washer guides the bar back in place.



Simple release. A cord that runs from the end of one latch around the frame through eyebolts and to the end of the second latch is pulled to lift the latches, releasing the panel frame so it can pivot into the vertical position.

Then move to the bandsaw and cut two semicircular pivot blocks from 1½-in.-thick lumber and drill a hole centered between the corners and 1 in. from the flat side. Clamp each block to its upright with the flat side parallel to and 2 in. below the line marked as the tablesaw height. Center the hole in the block on the upright, and drill through it into the upright. Repeat for the second upright. Now the pivot blocks are located on the uprights so that they will hold the support frame level with the top of the tablesaw when the frame is tilted to the horizontal position.

Cut the uprights to length, radius their tops, and bolt each one to the base. Then round over the top and bottom of each L (for aesthetic purposes only). Once that's done, insert a bolt through one pivot block and into its upright. Rest one of the Ls on the block and adjust it so that the bottom of the lower crosspiece will land on the base 5 in. from the upright. Clamp the L to the base and then to the pivot block and mark the block's location on the L. Transfer the marks to the other L and glue the blocks in place.

Latch system holds panel support horizontally

For the latch system, I use two steel bars (available at most hardware stores). I drill holes on each end and use a hacksaw to turn one hole into a notch (I also drill a smaller hole for the release cord). One end gets screwed to the L of the support, and the notched end hooks over a lag screw in the upright. To mark the latch's bolt hole on the L, pivot the panel support horizontal and level and place the latch notch over the lag screw on the upright. Drill the bolt holes, then bolt the latches loosely in place so they move easily using locking nuts. Place pan-head screws on the uprights above each latch so that the latches can disengage but not rise above the fender washer. Leave ⅛ in. between the head and the upright.

Because I can't unhook both of those bars and hold the cart support while it's pivoting, I attached a cord that runs between the bars and allows me to unhook them at the same time. Finally, attach a pull handle to one end of the cart. □

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