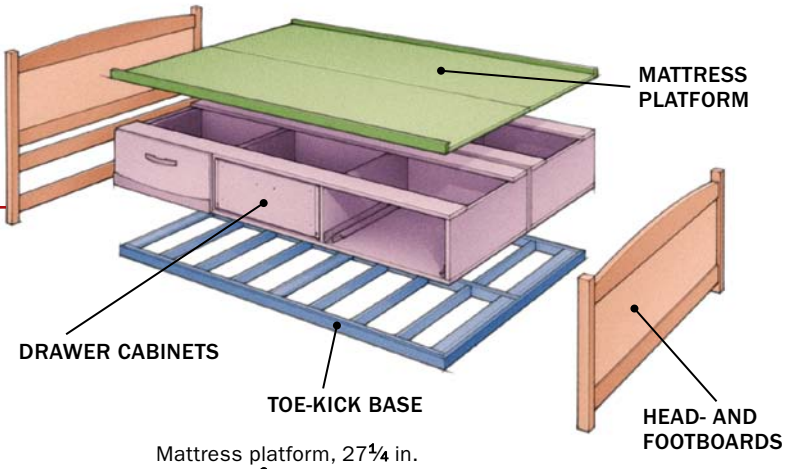
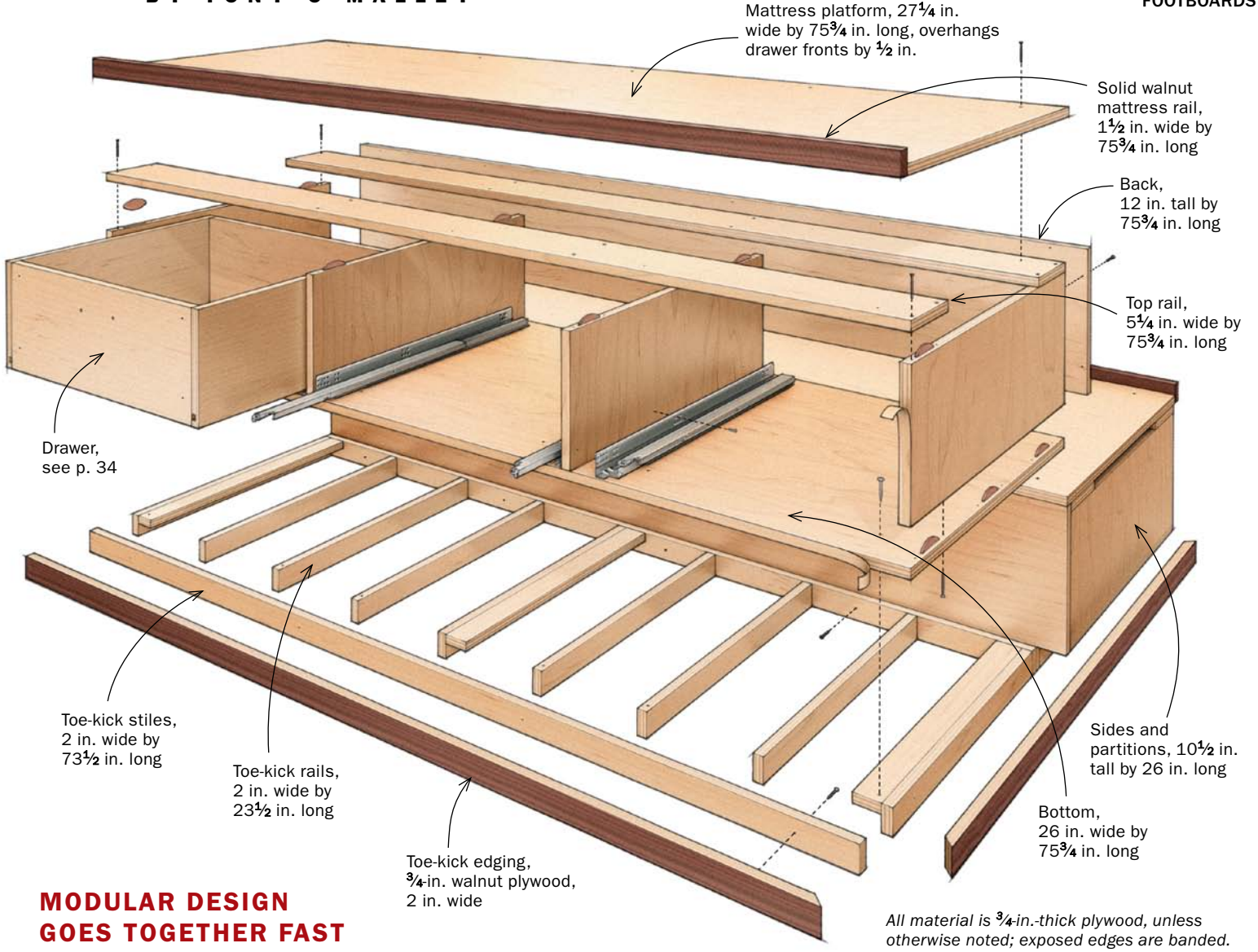
Build Storage into

Any Bed

Simple-to-make drawer cabinet solves space problems

BY TONY O'MALLEY





All material is ¾-in.-thick plywood, unless otherwise noted; exposed edges are banded.

MODULAR DESIGN GOES TOGETHER FAST

Plywood and biscuit construction makes assembly straightforward. Although this design is for a full-size bed, some quick adjustments to the length and width of the parts will allow you to adapt this space-saving design to almost any size bed.

I've always liked the idea of using the wasted space under a traditional bed frame. Some people put plastic storage containers there, which are handy but not attractive, and they don't really use the space efficiently. A better option is to build drawers into the bed.

This bed has six drawers that provide as much storage as a large dresser, and the design can easily be adapted to fit any style headboard and footboard. The platform eliminates the need for a box spring, making it compact and elegant. You can even skip the headboard and footboard altogether, keeping all the storage benefits for a bed that's simple and inexpensive.

The bed is constructed in halves, to ease installation in tight quarters. The main structure

Photo, opposite: Michael Pekovich; drawings: Christopher Mills

Biscuits are simple and fast

Biscuit joints make it easy to line up and assemble parts accurately. O'Malley reinforces the joints with screws, which also eliminates the need to clamp these big assemblies.

TIP

FAST EDGING FOR PLYWOOD

Bring the heat. *Iron-on edge-banding is easy to use and works great. Using firm pressure, gradually work your way down the edge. It's important to keep the iron moving until the whole edge is glued on.*

Trim it. *An edge-trimming tool makes quick work of cleaning up the long edges of the banding.*

Do the ends first. *Mark the centers of the middle slots on the face of each piece, and match them up with the center mark on the biscuit joiner (above). No pencil marks are needed for the outer slots (left). Simply align the side of the biscuit joiner with the edge of the work.*

is a pair of three-bay drawer cabinets made from ¾-in.-thick maple plywood, joined with biscuits and screws. The two cabinets are then joined to form the full-size platform. The whole unit is elevated on a toe-kick base, and the mattress platform is finished with a solid walnut rail that trims the full-size mattress and keeps it in place. Finally, the drawers are assembled using biscuits (see drawing, p. 34), and ride on Blum full-extension, soft-closing undermount slides that make their action pleasant and quiet.

Edge-banding hides plywood

To get this project started, cut out all the parts on the tablesaw. I used iron-on maple edge-banding to tame the layered look of the plywood where it would be visible. It is available at local home centers or woodworking specialty stores.

Set the iron on high and let it get up to temperature. Clamp the part in a vise, and then cut a piece of edge-banding a few inches longer than you need. To attach the banding, hold it on the plywood edge so that it overhangs evenly on the sides and ends, and then apply the iron. Start at one end, and move the iron slowly along the edge while pressing down on the banding. It takes several seconds to melt the glue, and only a few seconds longer to start burning the banding, so you'll need to find the right balance of pressure and time. Watch closely at first to see how long it takes to melt the glue. When it melts, you'll feel the tape sticking to the plywood edge, and see a little glue squeeze-out from under the banding. After the banding is attached, and while the glue is still warm, run a sanding block along the edge, using

Now biscuit the faces. *It's faster to clamp the bottom and top rails together to cut the joinery. Clamp a straightedge to the work to ensure that the slots will line up.*

Photos, except where noted: Ben Blackmar

Add the screw holes. *Predrilling clearance holes from the inside adds strength and makes assembly easy. A backer block prevents blowout on the outside.*

TIP

PRE-GLUE THE BISCUITS

O'Malley first glues the biscuits to the top rails and bottom, breaking the assembly process into more manageable steps.

firm pressure. This step ensures a good bond and forces out any air bubbles or wrinkles.

Flush the ends of the edge-banding with a chisel. For the long edges, I use an inexpensive edge-trimming tool. Available at most home centers, it's easy to use and won't gouge the face of the hardwood plywood. After the edges are trimmed, run over them a few times with a sanding block and P150-grit sandpaper to lightly break the corners and take off the hard edge.

Biscuits are simple but rock-solid

After applying the edge-banding, it's time to work on the joinery. Nothing fancy here, just biscuits and screws. The backs get screwed on.

Start by cutting slots for #20 biscuits in the ends of all the vertical parts (sides and partitions). Next, cut the corresponding slots in the top rails and bottom of each cabinet. To ensure that the partition slots align perfectly, clamp the parts together side by side, and use a tape measure and a straightedge to carefully mark the partition locations on all three parts at once. Clamp a straight piece of wood along your layout lines and use it as a fence as you cut the biscuit slots.

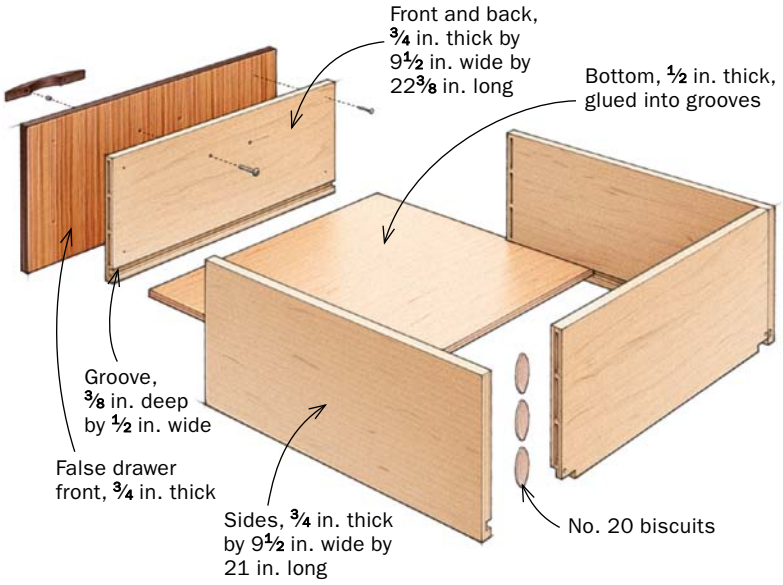
After cutting the slots in the top rails and bottom, drill screw holes at each end of the biscuit slots from the inside. To split the glue-up into more manageable steps, I usually glue the biscuits into the top rails and bottom first, then I apply glue to the bottom slots of the vertical pieces and set them in place on the bottom. Next I glue the top slots and set the top rails in place. Tap everything together with a hammer and block, making sure the front edges are flush before the glue sets. Run a countersink bit into the holes that were drilled earlier, and drive 1⅝-in.-long #6 screws into all the holes. Don't forget to put screws into the bottom the

Clamp-free glue-up. *Glue the verticals in place, then add the top rails (above). Make sure everything is flush, then run a countersink in the pre-drilled holes and drive the screws (left).*

Back goes on last. *Once the cabinet is together, position the back, tack it in place with brads, then add the screws.*

Quick-to-make drawers

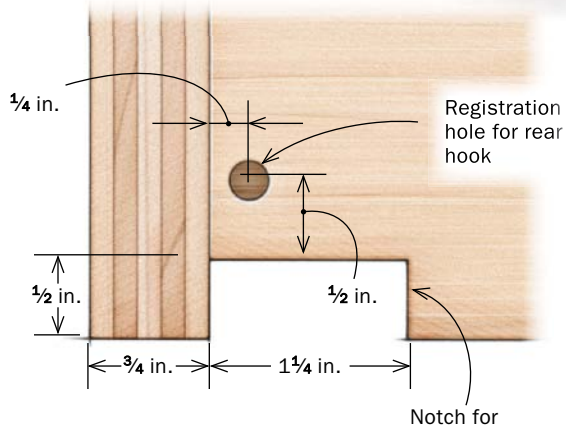
The plywood drawers are built with biscuits, too. After they are assembled, cut the notches and drill for the commercial slides.



Use a simple jig to slot the sides. *O'Malley uses a shopmade L-shaped jig to hold the sides upright, and references off the biscuit joiner's base to cut the slots.*

MAKE WAY FOR THE SLIDES

Notch the back. *To fit the slides, each drawer needs two notches in the back. O'Malley cuts all the notches on one side of the drawers first. Then he moves the fence over to make the remaining cuts.*



Dimensions specific to Blum undermount slides, model No. 563F5330B.

Drill the hole for the slide's rear hook. *A simple T-shaped jig helps get the holes in the right spot every time, and works for both sides of the drawer.*

same way. Finally, turn the assembled cabinet facedown, position the back, and attach the corners with an air nailer. Then pre-drill and add screws to permanently secure the back.

Commercial slides are great for big drawers

For the large drawers, I chose full-extension undermount slides, which are quick to install, are not visible after installation, and give total access to the drawer contents. The slides also are soft closing, which will help keep these big drawers closed and will never slam shut, making them quiet to use.

There are two important details to know when installing these slides. The method for sizing the drawer cabinet is different than for side-mount slides, and the location of the bottom relative to the bottom edge of the sides is critical, so check the hardware instructions before you build the drawers.

Use a tablesaw with a dado blade to cut a groove in the drawer sides for the ½-in.-thick plywood bottoms. Next, put banding on the top edges, cut biscuit slots in the drawer parts, and assemble the drawers. Because the bottoms are plywood, you can glue them in place. Now use a dado blade to cut two notches in the bottom of the drawer backs for the slides. Follow the hardware instructions for the width of the notches. The dado blade needs to be just high enough to touch the drawer bottom. To be efficient, cut the notches on one side of all the drawers, then reset the fence and cut all the notches on the other side. Now locate and drill the mounting hole for the slide's rear hook, and attach the two drawer-box clips, following the instructions.

Installing the slides inside the cabinet is easy. Use a combination square to mark the 3/16-in. setback for the front edge of the slides, then screw the slides to the cabinet sides with 5/8-in.-long #6 screws. Set each drawer onto the slides and slide them back until they engage the mounting clips.

Add the base and assemble the bed

With the cabinets and drawers completed, it's time to build the toe-kick base. The base elevates the bed platform off the floor and makes it easy to level the bed if necessary.

Start by clamping the four stiles together and marking centerlines for the rails. Starting with the corners, nail the parts together. Add the flat strips at the ends and middle—these help square up the bases and provide a large surface for screwing the cabinets to the toe kicks. Clamp and screw the halves together. To give it a nice clean look, I added strips of walnut plywood around the sides and end. Position the cabinets flush with the toe-kick at the

INSTALL THE HARDWARE

Slides and drawer-box clips. *Use a combination square to mark the setback of the slides (top). Attach the drawer-box clips to the bottom of the drawers (bottom).*

Sink the screws. *Finish the cabinet assembly by screwing down the drawer slides. Then set the drawers in place.*

Assemble on site

Get the toe-kick base into position and assemble the bed from the ground up. The modular construction makes it easier to get all the parts in place.

Set the cabinets onto the toe-kick base. *Connect them by driving screws through the backs. Make sure they are centered over the base, and then screw them to it.*

Attach the headboard. *Line up the headboard and attach it with screws from inside the cabinets (above). Then add the mattress platform. Slide the halves into position (right) and screw them down to the cabinets.*

Photos, this page and opposite: Michael Pekovich

TRICKS FOR FALSE FRONTS

Align it first. *Stack blocking under the drawer front to shim into place, and temporarily secure it with a screw through the hardware mounting hole.*

headboard end, and overhanging the toe-kick equally at the sides and footboard. Screw the cabinets together, and then screw the cabinets to the toe-kick.

Next add the two halves of the mattress platform. A solid-wood rail on the edge prevents the mattress from sliding off the platform.

The headboard and footboard are screwed to the ends of the cabinets. Position the headboard carefully, clamp it in place, and connect it using washer-head screws. You can use threaded inserts instead of screws for repeat assembly/disassembly if the bed will be moved often.

When a drawer has a separate, or false, front, mounting it and getting precise reveals can be tricky. The easiest way I've found is to first drill the holes for the drawer handle or knob, and use those holes to position the drawer front. Then, permanently attach it using four holes in the front of the drawer cabinet.

Get the drawer front in place by stacking blocking on the floor under the edges to get the right height, line up the sides, and use a washer-head screw to temporarily attach the front. Carefully open the drawer and drive one of the four mounting screws from inside the cabinet. Close the drawer and make sure it hasn't shifted, and drive the remaining screws. Finally, attach the handles.

Now, plop the mattress down and grab a pillow. You're ready for a good night's rest. □

Tony O'Malley runs a custom woodworking shop in Emmaus, Pa.

Final attachment. *Carefully open the drawer and drive a screw in from the back. Check the fit one more time, then sink the other screws.*

The final touch. *O'Malley connects handmade drawer pulls to complete the bed.*