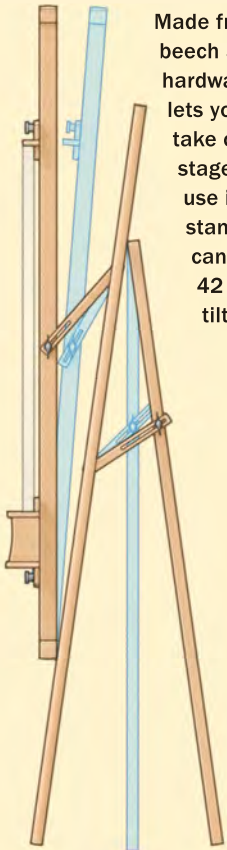
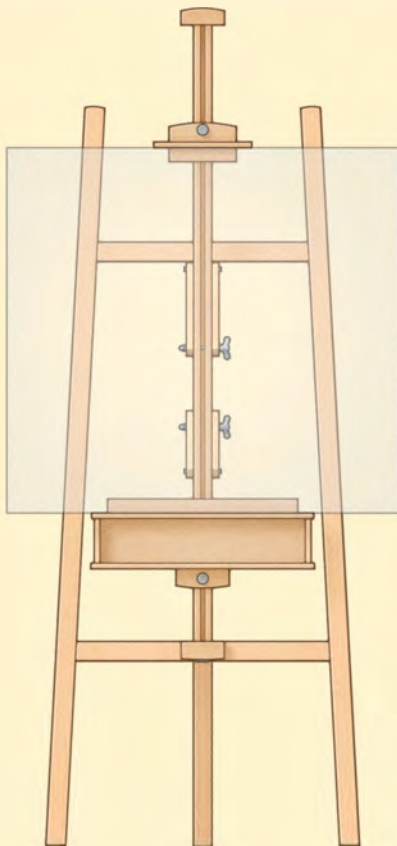


## A PICTURE OF FORM AND FUNCTION



SIDE VIEW



FRONT VIEW

Made from riftsawn beech and steel hardware, this easel lets your painting take center stage. You can use it sitting or standing, clamp canvases up to 42 in. tall, and tilt it 0° to 15°.

# An Artful Easel



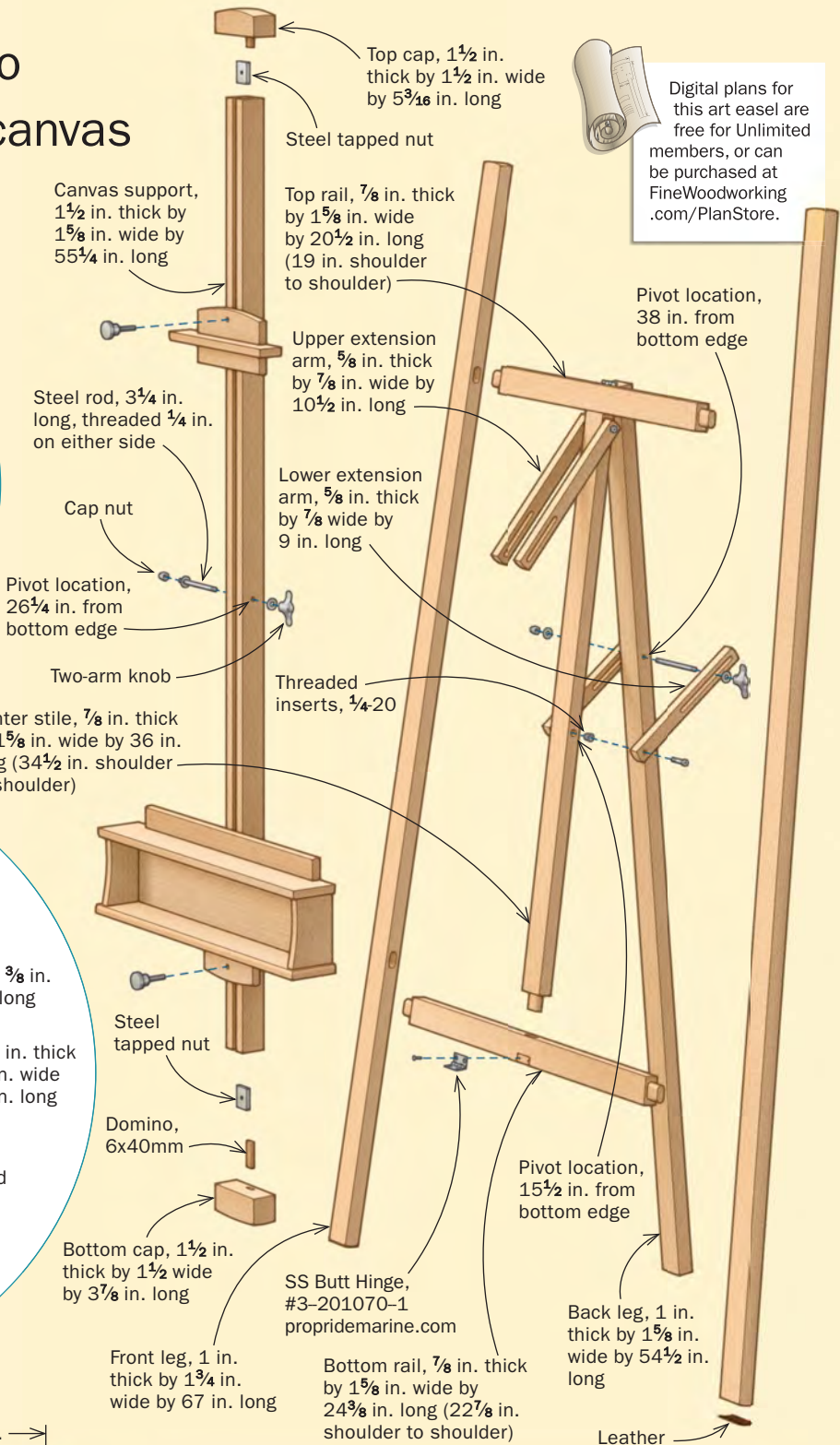
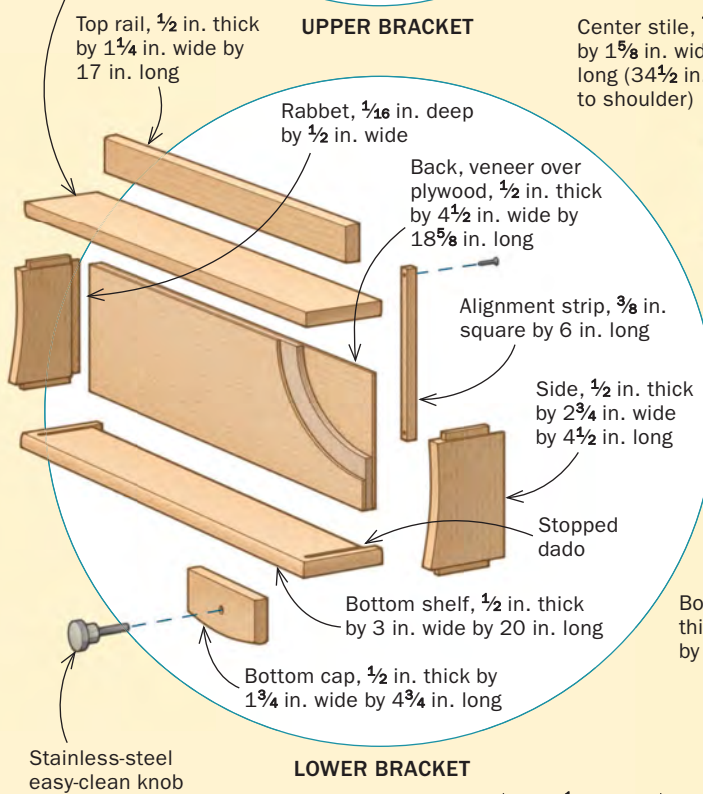
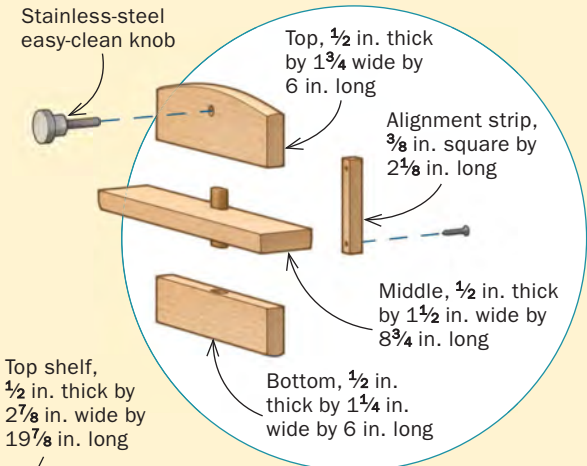
**T**his piece, my Claver Easel, was named for and commissioned by a friend who had begun teaching himself oil painting and was ready to invest in a standing easel. The only parameters he gave me were around functionality, leaving me with complete creative freedom on design.

I selected beech for the main components, using riftsawn whenever possible. Since beech has prominent ray flecks, the difference between flat and quartersawn is significant. The quiet grain, density, and non-porous surface lend well to an easel, which is often exposed to moisture and paint. I

# A handmade piece to complement any artist's canvas

BY AMANDA RUSSELL

Digital plans for this art easel are free for Unlimited members, or can be purchased at [FineWoodworking.com/PlanStore](http://FineWoodworking.com/PlanStore).

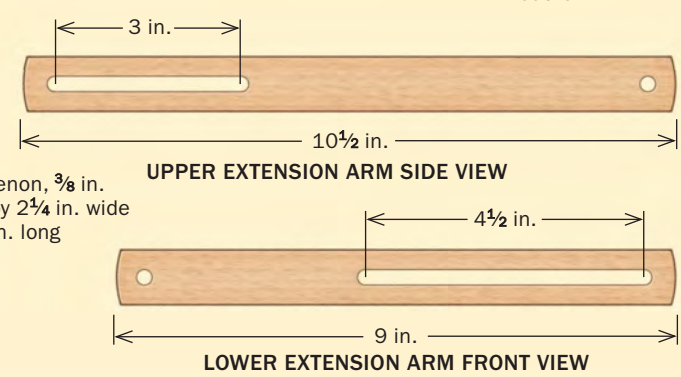
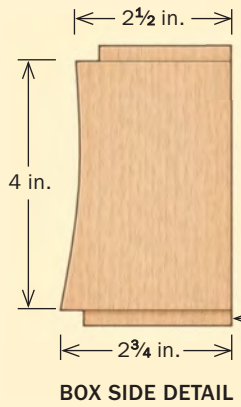


**SOURCES OF SUPPLY**

**HARDWARE**

Steel Bar: #9517K435  
 SS Shoulder Screw: #91273A155  
 SS Cap Nut: #91855A360  
 SS Two Arm Knob: #4276T44  
 SS Easy-Clean Knob: #6890K1

[mcmaster.com](http://mcmaster.com)

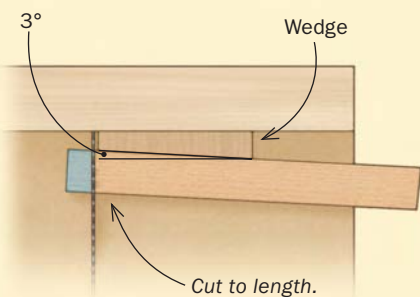


# Angled tenons with a 3° wedge

## CUT TO LENGTH



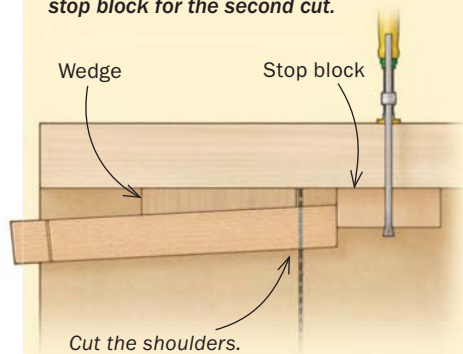
**A wedge taped to the sled holds the rails at the correct angle.** By using the same wedge throughout the process, Russell guarantees all cuts are to the same angle, simplifying the complexity of the joint. She starts by cutting the angled ends to length.



## CUT THE SHOULDERS



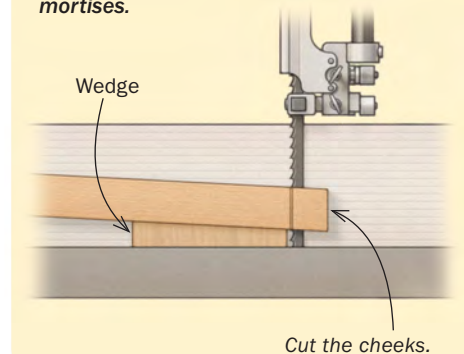
**Use the wedge and a stop on both sides of the blade to cut the shoulders.** After cutting the first shoulder, transfer the kerf to the other face with a square and knife. Reset the wedge and stop block for the second cut.



## CUT THE CHEEKS



**Cut the cheeks at the bandsaw with the wedge under the rail.** Tape the wedge to the fence to avoid damaging it. After sawing to the shoulder, Russell rounds the tenons to fit their rounded mortises.



chose stainless-steel hardware for the same reasons. The density and strength of the hardwood allowed me to scale down the angled legs and canvas support, two key components, for a much more elegant frame. I opted for locally harvested pear for a decorative panel in a cubby that holds brushes and paint. It complements the beech, and makes a statement without distracting from the overall piece. Together, my friend and I landed an understated

piece that would not compete with the artwork but still stand beautifully on its own.

### Master wedge ensures matching angled joinery

The main frame is A-shaped, with its angled legs providing a steady stance. This, in turn, means angled mortise-and-tenons. To minimize the hassle of angled joinery, I cut out a 3° plywood master wedge with my chopsaw. A taper jig on the table saw

would work as well. The key is to use only this wedge when angling parts for joinery.

For the tenons, start with the shoulders. Use a standard crosscut sled and just tape the wedge in place, flipping it from right to left between shoulder cuts. The cheek cuts are equally simple. At the bandsaw, place the wedge on the table and tape it to the fence. Then use it as an angled platform when ripping the cheeks. The wedge also comes in handy when cutting angled mortises.

# Hardware



**The rear leg and canvas support need hinges.** Rout these mortises in the easel's A-frame before glue-up. Russell routs them using a template and pattern bit before squaring up the corners with a chisel.



**Install the threaded inserts before glue-up.** The stile gets threaded inserts for the shoulder bolts that anchor the extension arms. Pre-drill for the inserts at the drill press before installing them with an Allen key.

The rails connect to an intermediary stile with straight mortise-and-tenons. To get the stile's shoulder-to-shoulder length, dry-fit the A-frame and then measure between the rails. Before gluing up the A-frame, install the threaded inserts and hinges, and drill the through-holes for the extension arms.

More shaping is needed before glue-up. The legs get a slight curve at the top that matches the curved pieces on the brackets and end caps. And at the bottom they get cut with the same 3° master wedge at the crosscut sled, so they sit flush to the floor. Then slightly radius the bottoms and line them with leather. The legs' outside edges get profiled with a 1¾-in. fingernail bit with a center bearing. Use this profile as a reference to shape the top of the extension

# Glue-up



**Glue the stile to the rails first.** Determine the stile's length after dry-fitting the rails to the legs. This subassembly uses 90° joints, so the glue-up should be easy. Just be sure the clamp runs parallel with the stile.



**Attach the legs using special cauls.** To clamp squarely across the angled joints, Russell made custom cauls. On one end they are cut to a 3° angle; on the other they are covered to fit around the legs' rounded-over outside edges, and lined with yoga mat foam for better grip and protection.



**Attach the rear leg to the A-frame via its hinge.** Be careful when attaching the rear leg. Being so long and, for now, only secured by a hinge, it has a lot of leverage and could rip the hinge out of place.

# Canvas support holds the brackets

**Rout a T-slot in stages.** Start with several passes with a straight bit (right) to clear waste from the stem of the T-slot. This reduces the strain on your router when you finish with a T-slot bit (far right). Use push pads for control and safety.



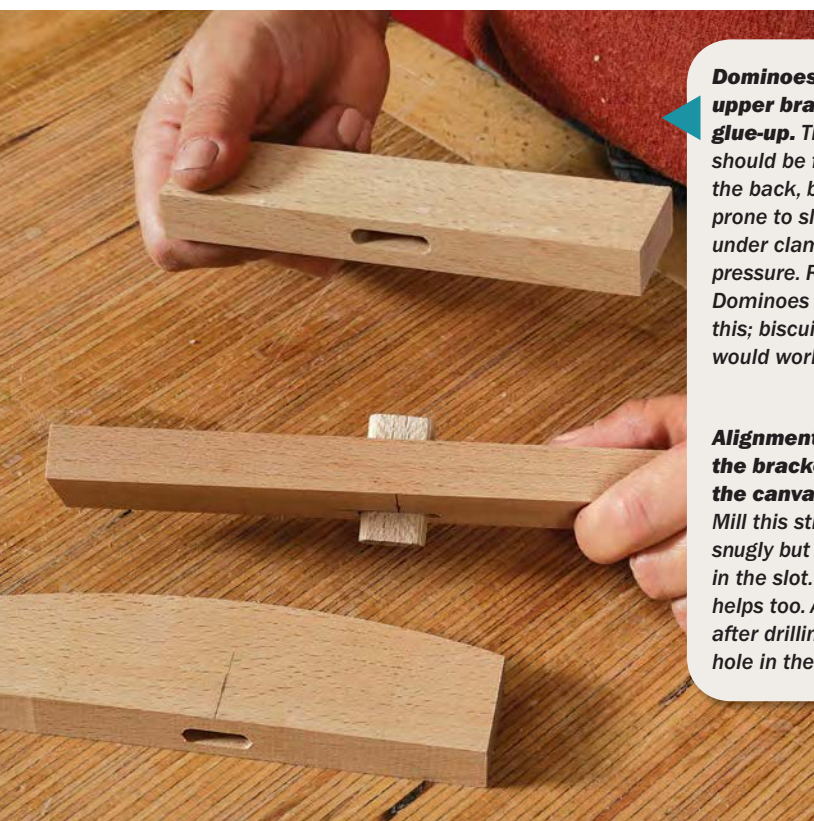
**The ends get Dominoes for the caps.** Space this mortise away from the T-slot so neither is compromised.

arms. But use a rasp and sandpaper here, since end grain and narrow pieces are more prone to blowout on the router.

With joinery and shaping complete, glue up the rails-and-stile subassembly before attaching the legs. You can attach the rear leg too, although do so after joinery and shaping. The back leg's final length should be the measurement from the top of the top rail to the floor when A-frame legs are perpendicular to the ground.

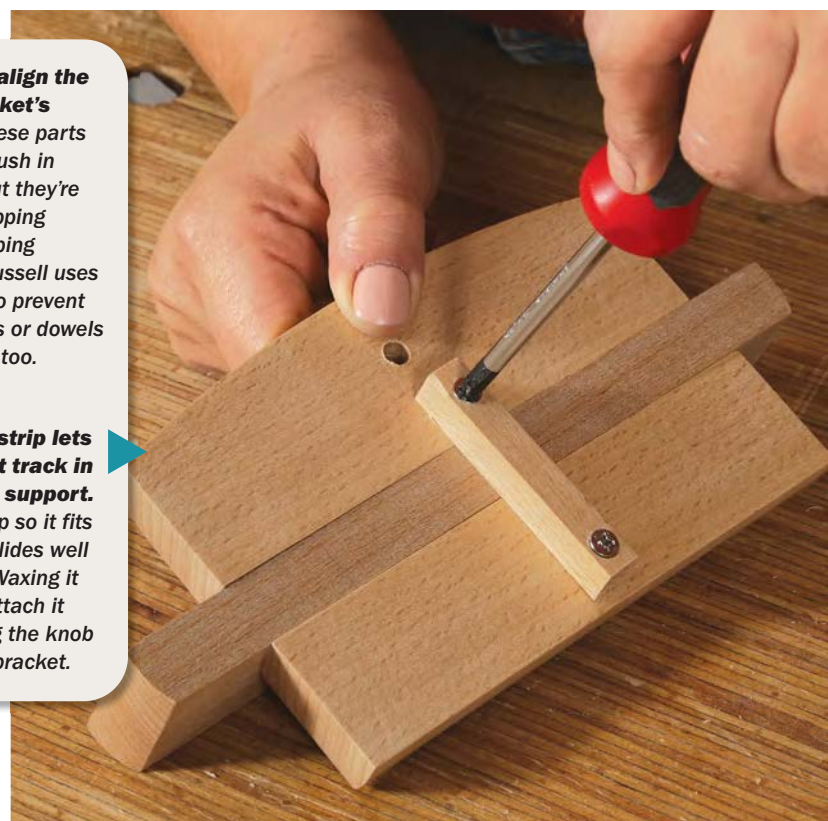
## Central support tilts, and holds canvas

If the leg frame makes up the bones of the easel, the canvas support is its heart. It tilts up to 15° off vertical to suit the painter's ergonomics, and its T-slot lets the



**Dominoes align the upper bracket's glue-up.** These parts should be flush in the back, but they're prone to slipping under clamping pressure. Russell uses Dominoes to prevent this; biscuits or dowels would work too.

**Alignment strip lets the bracket track in the canvas support.** Mill this strip so it fits snugly but slides well in the slot. Waxing it helps too. Attach it after drilling the knob hole in the bracket.



# Lower bracket's a box



**Top and bottom attach to sides with stub tenons in stopped dadoes.** The top and bottom are different lengths and widths, so their mirrored dadoes are situated using a centerline. Cut the curves after joinery but before assembly.

two brackets slide up and down to clamp canvases in place. It's not complicated to make, but the importance of its role led me to take each step extra carefully, from milling to joinery to installation.

To cut the T-slot, start by removing much of the waste in the slot's stem with a straight bit at the router table. Then swap out the straight bit for a large T-slot bit to cut the rest. The large bit cuts a slot that lets you use off-the-shelf steel bar as a nut for the tightening knob on each bracket. The brackets each have an alignment strip attached vertically at the back that keeps them tracking in the T-slot and prevents spinning. Caps, held in place with Domino tenons, go on the support's ends.

The top bracket has a gentle curve on top that echoes those on the legs and the canvas support caps. And it gets a fingernail profile. Do all of this shaping before glue-up.

The bottom bracket has some of the same elements, but also includes a box used to store brushes and paint. The box's sides have stub tenons that fit into dadoes in the top and bottom, but with a crucial caveat: The dadoes, while mirror images, must be laid out from a centerline. This is because the box's top and bottom are different in both width and length.

The box's back panel, which sits in a rabbet, has  $\frac{1}{8}$ -in.-thick veneer glued to both faces of a  $\frac{1}{4}$ -in. Baltic-birch substrate. The panel should fit tight end-to-end in the



**Rabbet the box for its back.** Do this at the router table with a rabbeting bit paired with the appropriate bearing to match the depth of the rabbet. Raise the bit in passes until you reach the rabbet's width. Move the box clockwise while cutting with the front of the bit. Square the corners of the rabbet after routing.



**Finish assembling the rest of the lower bracket.** The pieces above and below the box give it a similar look to the upper bracket. These are also Dominoed for alignment. The veneered plywood back panel is pinned into the rabbet.

# Extension arms

**Rout the extension arm slots.** The slots in each pair of arms need to match perfectly. Russell accomplished this with a mortising jig. She stuck each pair of arms together with double-face tape and routed their slots at the same time.



**Shoulder bolts allow the arms to rotate around the A-frame.** These bolts have a threaded portion that screws into the threaded insert, and an unthreaded sleeve that lets the extension arm rotate without damaging the wood.



rabbet, but leave  $\frac{1}{32}$  in. for movement over the width. Tack its ends in place in the center of the width for the same reason.

## Extension arms allow for adjustment

The most intricate part of the easel is the extension arms. Their placement and execution are critical to the overall function of the piece. The hole placement and slot length permit you to adjust the easel for use or close it up flat for storage. The holes and slots in each pair of arms need to match exactly. After drilling and routing these, I slightly rounded the ends of the arms with a rasp and sandpaper.

Most of the arms' hardware comes from McMaster-Carr. The exception is the steel rod for the slots. For these, I cut stainless-steel rod to length and threaded the ends.

## Easy assembly, but mind the brackets

There are several remaining parts to bring together, but they're mostly a matter of attaching a hinge or securing the extension arms—in other words, reversible steps. The brackets, in contrast, get locked in place once both end caps are glued on. Before adding those caps, install the brackets and make sure their nuts and alignment strips travel smoothly.

My finish of choice here is three coats of Osmo Poly-X Oil Clear Satin 3043. I prefinish parts before glue-up where helpful. □

Associate editor Amanda Russell is a furniture maker and teacher based in Philadelphia.



**Thread steel rod for the arms' slots.** The ends of the rod get threaded to accommodate a large wingnut and an acorn nut. The middle section is left smooth to protect the wood when the arms move out and back as you adjust the easel.



# Add the brackets and canvas support



**Knobs thread into tapped nut.** The nut is a piece of mild steel you drill and tap yourself.



**Top off the canvas support with caps.** These pieces block the T-track, so glue them on only after the brackets are in place.



**Install the canvas support.** Like the rear leg, this piece is hinged to the A-frame and also attached with extension arms. By adjusting the arms on the canvas support and the rear leg, the artist can quickly manipulate the angle of the canvas for painting or flatten the easel for storage.

