

# Make Your Own Bench Brush

This one-day project has endless possibilities

BY ASPEN GOLANN

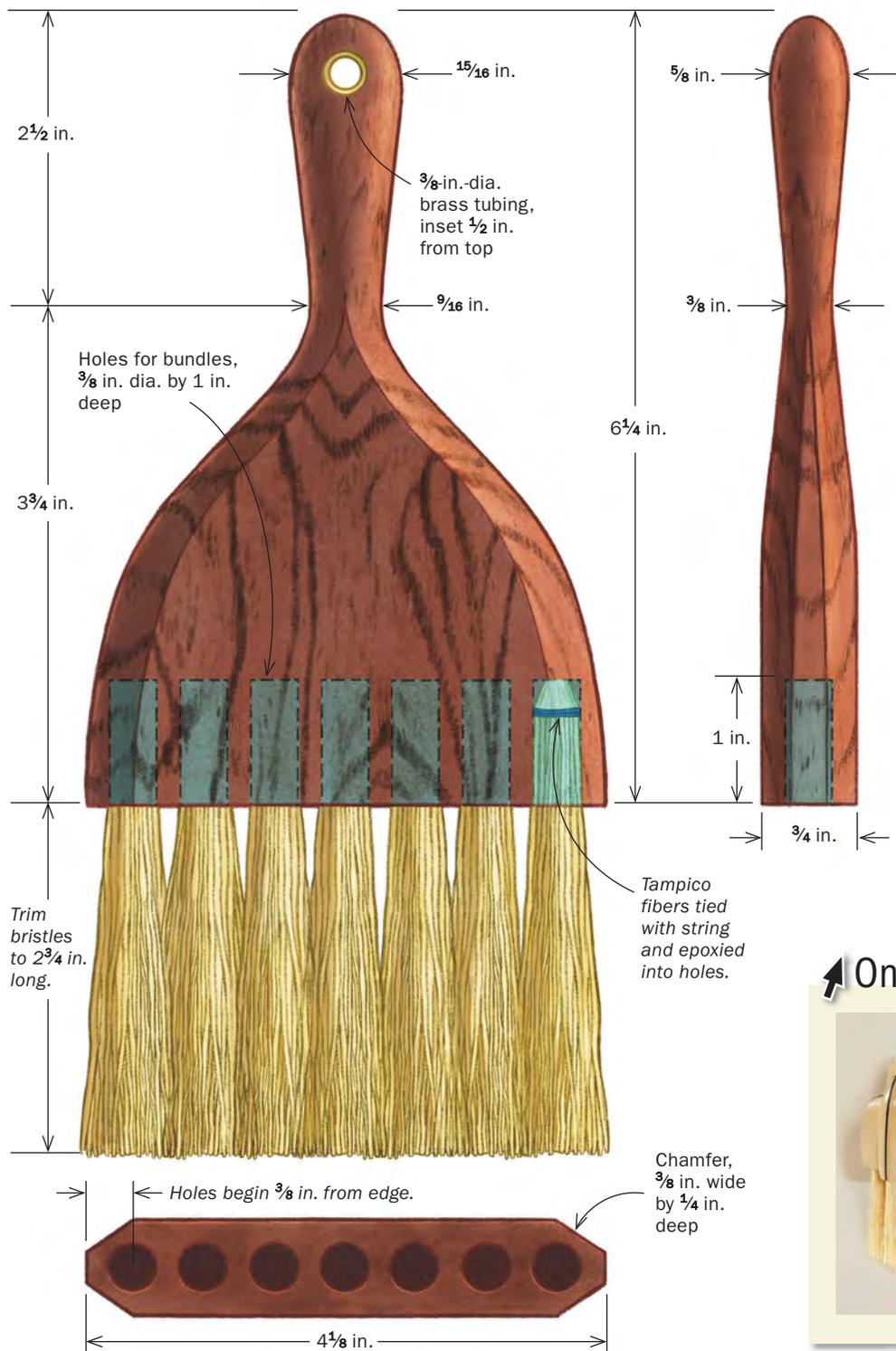
Like a good chair or table, a well-made brush is a blend of function and sculpture. Meant to just sweep away some dust or chips, brushes can be very simple. But, they are also a great way to explore new designs while practicing the decorative skills of a furniture maker—complex shaping, inlay, surface carving—but without the time investment of a chair or table. This particular bench brush was inspired by classic cabriole leg proportions, but the same process can be applied to making any brush your heart desires, from a one-off you keep by your bench to a run of experimental

brushes you make as the years go on. Regardless of which path you take, simple or experimental, they'll all keep your bench clean.

## Shape the brush's outline

To get the shape just right, I make half-patterns for laying out the brush's face, edge, and bristle holes. When making a symmetrical workpiece I almost always opt for a half-pattern oriented across a centerline so opposing sides will match.

I bandsaw the handle profile, working outside the line to preserve it for the handwork that follows. Spokeshaves and half-round rasps



## A SIMPLE DESIGN THAT FITS THE HAND

This brush uses the proportions and subtle shaping of traditional furniture, but its principles can serve contemporary takes, too.

### SOURCE OF SUPPLY

Tampico fibers  
Caddy Supply Co.  
(caddysupply.com)



### Online Extra



For Golann, brushes are a fun, productive, low-stakes way to test techniques and designs. Get inspired by some of her more bombastic and bizarre beauties at [FineWoodworking.com/296](http://FineWoodworking.com/296).

are my favorite tools for fairing curves like these. I usually reach for a spokeshave to fair the brush profile, but a rasp also works if used carefully and at an angle. I often finish with a card scraper, especially around grain changes.

### Drilling as considered as joinery

Once I've faired the outside profile, I lay out the holes with an awl to give the brad-point bit an assist when it bites into end grain. Brush bristles are installed as bundles, and the holes for them can range from ¼ in. to ½ in. diameter. For Tampico bundles, like those

in this brush, 3/8 in. is the Goldilocks diameter. Drilling these holes at least 1 in. deep helps prevent messy squeeze-out, improves the glue joint, and hides the bundles' rough ends. Drill each bristle hole straight and square to the handle. Otherwise, you'll get a windswept brush, or worse, the bit could break through the side of the handle. At this point I also drill for the brass tube.

### Add contours and chamfers

Once the holes are drilled, you can refine the handle. Start by tracing your edge template on both edges of the brush. In this stage,

# Handle

## CREATE THE PROFILE

**Pencil the shape using a half-pattern.** By using a half-pattern, you guarantee the handle is symmetrical across a centerline. Make sure the centerline is parallel to the blank's grain.



**Cut out the handle.** A bandsaw with a  $\frac{1}{4}$ -in. blade makes quick work of the shape, but a coping saw will get the job done too. Either way, stay  $\frac{1}{16}$  in. away from the line. You'll work back to it with hand tools.



you'll remove significant material from the neck of the brush and minimal (or none) from the base and the top. Work across the faces of the handle with a rasp and files until you reach the lines. I consistently use my forefinger and palm to check for even curves.

Next, I chamfer the handle. I start by drawing a layout line on each face of the brush. Using a pencil with my fingers as a gauge, I draw a line parallel to the curving edge and inset  $\frac{3}{8}$  in. It goes from the bristle end up one side of the brush, around the top of the handle, and back down the other side. That defines one edge of the chamfer. To establish the other one, I divide the edge of the brush into thirds. I make two tick marks at the base, neck, and top of the handle. Then I connect those marks in an even, flowing line. I shape to those lines using the same tools as before.

I epoxy in the brass tube before fully rounding the top of the handle. I don't leave much extra brass; it's a pain to file or saw away.



**Carefully refine the handle while working to the line.** Golann uses a spokeshave, rasps, and files before ending with a card scraper. Between cuts, she runs the length of her forefinger along the surface to test for bumps or concavities.

## BORE FOR THE BRISTLES

**Drill the holes for the bundles.** Triple-check the setup, since even a slight inaccuracy repeated across seven holes will be very noticeable—and unattractive. Also, these are deep holes, and you don't want to risk drilling through the side of the brush.



### NO DRILL PRESS? USE MIRRORS AND SQUARES



To adapt this chairmaker's technique, secure the handle so its fiber end is parallel to the benchtop. Then set up two mirrors, one parallel to the handle and the other perpendicular to it, before placing a square in front of each. Position the drill bit so you can see both it and the squares in both mirrors without moving your body. As you drill, watch the mirrors to make sure the bit stays parallel to the squares.

## ROUND AND CHAMFER

**Shape the handle for a friendly fit.** The edge pattern, like the face pattern, gets flipped and used for both sides to guarantee symmetry. With a rasp, shape across the face of the brush to the layout lines on the edge. You'll remove a lot of wood from the neck and little to no wood elsewhere. Use a finger to regularly check your progress. The handle should start to feel comfortable.



Before I insert the fibers, I apply finish, often shellac or Rubio Monocoat. If it seems strange to apply finish before you're actually finished, just think about how hard it would be to apply finish around fibers—no thanks! I even wax the handle now to make it easier to remove any potential epoxy squeeze-out.

### Fiber bundles should be just right

I use Tampico fibers, which come from plants, for this brush because they have good stiffness and memory, meaning they respond to and remember any angle you bend them to. I bundle the fibers before installing them. To make the bundles, I use super-thin cyanoacrylate (CA) glue, sewing thread, and a simple tying jig, which for me is a piece of  $\frac{3}{4}$ -in.-thick plywood about  $2\frac{3}{4}$  in. wide by 11 in. long. This length lets me clamp it in the vise and work at shoulder height or sit in a chair while holding the jig between my knees. The width leaves plenty of room for tying, and lets the jig pull double-duty later when I use it as a paring guide to trim the fibers to length. Using the same bit I used for the handle, I drill 10 holes in the plywood, spacing them at least  $\frac{3}{4}$  in. apart. I



**Chamfer the handle's body.** Start by laying out the chamfer in pencil on the handle's face and edge. Then shape to those lines. Golann cuts most of the chamfer with a spokeshave, sometimes switching to a rasp as she nears the line. She finishes with a card scraper.

## FINISHING TOUCHES

### Brass tube bolsters the hanging hole.

Size the tube so it doesn't protrude too much from the wood, since it's much harder to shape. Epoxy it in place, and wait until the adhesive cures to finish rounding the handle.



**Prefinish now to make life easier later.** After rounding the handle's neck, add finish to the entire handle. Applying finish would be much trickier with the bristles in place.

# Bristles

## TIE THE BUNDLES

**Run a loop of thread through the tying rack.** Take a 3-ft. length of sewing thread, fold it in half, and feed the looped end through one of the holes in the jig. Drill these holes with the same bit you used for the bristle holes in the brush handle.



**Put some Tampico fibers in the loop, bend them in half, and press them through the hole.** You'll need to use some force to bend the fibers. The bundles should not be loose in the hole or extremely difficult to push through. Do not pull them, either, since that's likely to break the thread.



then lay out 10 equally sized piles of Tampico fiber. Ideally, since the bunches will be bent, each pile should compress to half the diameter of the hole, in this case  $\frac{3}{16}$  in.

Even though this brush only calls for seven bundles, a few extra lets me choose the best for the brush and saves me in case I break one during the fitting. Because the Tampico source sells it only in 10-lb. packages, you'll have plenty of extra fiber even beyond these piles. I create the bundles using the steps laid out in the photos. You'll likely need to add or remove fibers from the stacks as you tie them, but you should have the size down before the end.

For gluing the bundles, I use super-thin CA glue because it wicks through the thread and into and among the fibers so well. Just don't overdo it, as too much CA glue can adhere the fibers to the jig or travel too far up the bundle, making it rigid and crusty.

Once the finish on the handle is dry, I test-fit the fibers. Using a utility knife, I taper the end of each bundle so it slides more easily into the hole. The CA glue will keep the bundle together even if you cut through the thread. I keep tapering if the bundle is still too big, and I'm not too disappointed if the bundle pops open; I tied extras. If the bundle is too small, I add some fibers



**Wrap and glue.** Use the remaining thread to tightly wrap the folded end of the bundle (left). Avoid creating a little thread bump that will prevent the bundle from fitting into the drilled hole. If you've wrapped tightly enough, there is no need to tie a knot; simply put three to five drops of super-thin cyanoacrylate (CA) glue directly on the thread (above).



**Taper the end of the bundle.** This will help with installation. Cutting into the threads here is OK, since the CA glue, not the thread, is now holding the fibers together.



**Dab and spread epoxy into the holes with a toothpick.** Golann likes epoxy here because it's waterproof, rigid, and fills the gap between the fiber and the walls of the hole. She uses a toothpick because it allows her to apply minimal epoxy, minimizing or preventing squeeze-out.



**Add the bundles.** Push the bundles into the holes very slowly while watching and listening for squeeze-out (left). It's very hard (maybe impossible) to get epoxy out of fibers, so try to avoid squeeze-out. Let the fibers set until the epoxy cures, then trim them to length (above). Scissors work well, but a wide bench chisel and a straightedge yields better results. The Tampico will dull the edge, so don't hesitate to resharpen as necessary.

evenly all around (so that the bundle stays round), wrap it with thread, and add a bit more glue.

When I have seven bundles that work, it's time for epoxy. I mix only enough for a few holes, encouraging me to take my time and be clean. Applying the epoxy with a toothpick helps too. Cleanly trim the fibers to length after the epoxy cures. I use the tying jig as a paring guide to chisel a perfect line every time. □

*Aspen Golann is a FWW ambassador and leads The Chairmaker's Toolbox, a group seeking to increase access and equity in chairmaking.*