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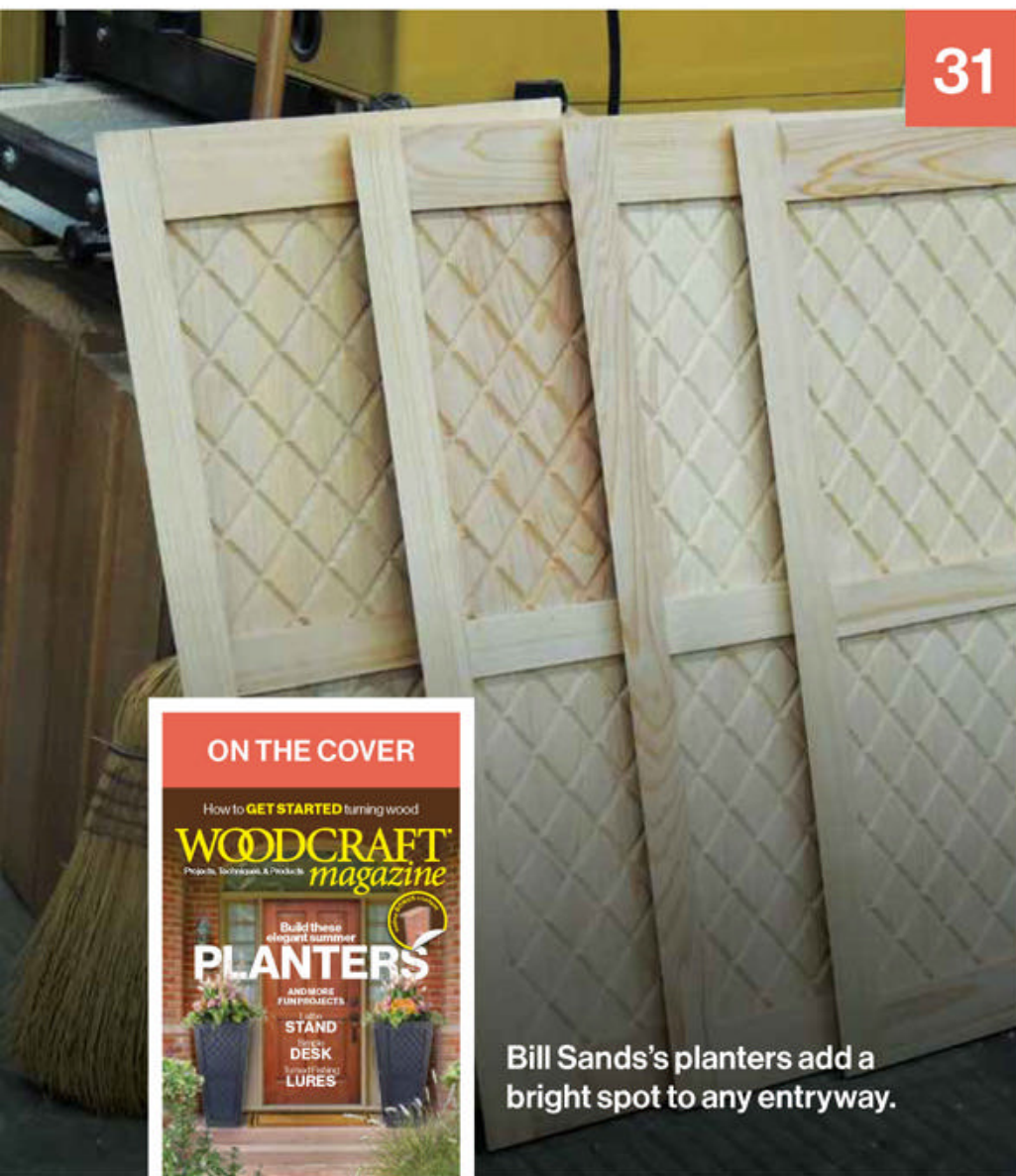
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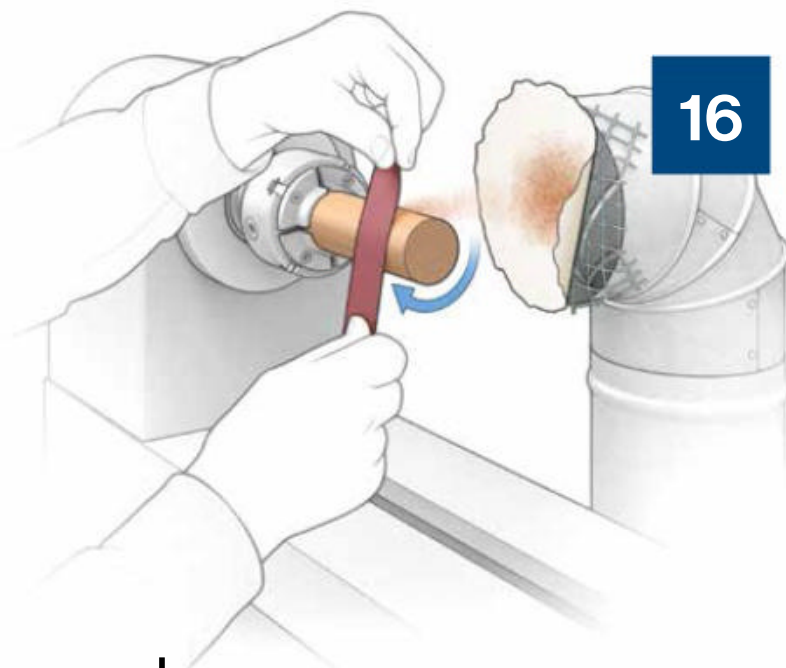
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Woodcraft Magazine

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Birdhouse. Attract some new avian friends to your neighborhood with this thoughtfully designed nesting box.

Contributors



BILL SANDS was an expert woodworker and friend of *Woodcraft Magazine*. A long-time contributor, Bill wrote several articles and designed and built more than two dozen projects to share with our readers over the years. **Read Bill's article on page 31.**



PATTY VERESINK is a veteran's law attorney and amateur maker based in Bethlehem, PA. She works in diverse arts including drawing, painting, wood-carving, pyrography, and even crochet. Her latest endeavor has her decorating traditional Ukrainian Easter eggs called pysanky out of emu and ostrich egg shells. **See her hand-painted fishing lures on page 26.**



BOB BERNER, an Allentown, PA-based woodworker, is a lifelong tinkerer who loves to take things apart, modify, and improve them—even if they don't need fixing. He recently added a CNC router to his garage shop and has been making high-end speaker kits for the audiophile community. **Read Bob's article on page 46.**

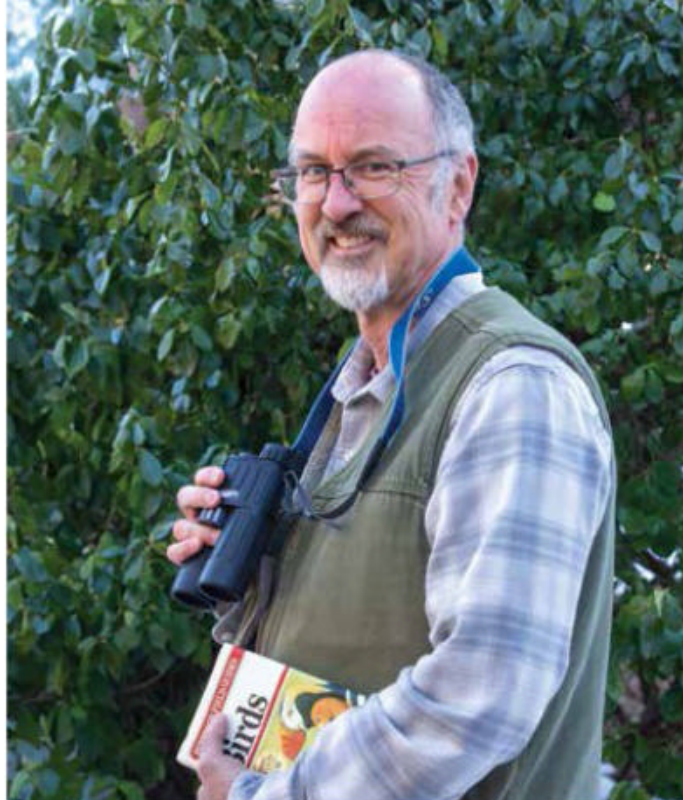


Minnesota resident **ROB JOHNSTONE** has been woodworking since he was a teenager. He trained as a luthier and has spent the last couple of decades with *Woodworker's Journal* magazine. Rob is an expert woodworker with a love of storytelling be it in print, video or in person. **Read Rob's article on page 58.**

Something extra

I enjoy living where I do in Eastern Pennsylvania where each season is distinct. The cold snows of winter slowly give way to warm spring afternoons. Then, the heat and humidity of summer are followed by the crisp, cool days of autumn. The change is refreshing and each season brings with it certain activities, chores and things to get done. I was thinking about this the other day as I was working outside, ostensibly doing spring maintenance, but mostly enjoying the warm sunshine after being cooped up all winter. On my agenda that day was to make the rounds of the six or eight birdhouses we have scattered around the property; cleaning them out and making sure they are in good shape for the coming season. There were several that had seen better days, so I added replacing them to my ongoing to-do list. Actually, this isn't the first time I've added it to my list, but for several years, by the time I had some free shop time to devote to making new birdhouses, the old ones were already occupied. This year, however, I was determined to get the jump on the avian community and get some new houses made.

My motivation was two-fold. In addition to taking care of our local bluebirds and tree swallows, when I took over this column last summer, one of my goals was to increase the number of stories we have in each issue. The results of that effort are finally starting to take root: I was able to sneak an extra story into this issue. Take a look at Finishing Touches, on pg. 58. This is a new department where we plan to touch on all things finish-related. This time around, new contributor Rob Johnstone takes a look at the nuances



Ken Burton, Editor-in-Chief
ken_burton@woodcraftmagazine.com

of hard wax oil finishes. Unfortunately with the cost of paper and postage, I haven't been able to increase our page count. So, to add more projects and techniques without compromising the quality of the stories we already offer, we've turned to our website. First up, here, is a plan for the aforementioned birdhouse. It's a good one, designed with durability and avian health in mind. I encourage you to check it out online.

We're still experimenting with how we present stories on the web, but no matter what the format, you can count on them being full of proven techniques and thoughtful designs, thoroughly vetted by our team of seasoned woodworking experts. We hope you enjoy the online part of the magazine as much as you do the print issue. Now, if you'll excuse me, I need to get back to putting those new houses up before I miss another season. ■



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Safety First! Working wood can be dangerous.

Always make shop safety your first priority by reading and following the recommendations of your machine owner's manuals, using appropriate guards and safety devices, and maintaining all your tools properly. Use adequate sight and hearing protection. Please note that for purposes of illustrative clarity, guards and other safety devices may be removed from tools shown in photographs and illustrations in this publication.

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A site to behold

Woodcraft is pleased to announce the launch of a new, improved *woodcraft.com*. “The new site is fresh, modern and packed with new features that customers will love,” said Kyle Crabtree, Director of Marketing for Woodcraft Supply. In addition to all of the products woodworkers love, the new website will feature free articles from *Woodcraft Magazine*, improved local Woodcraft Store pages, and an overall better shopping experience.

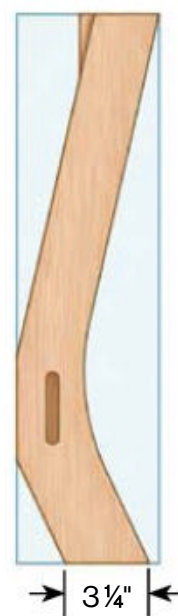


Jig with a leg up

I enjoyed the Three-Legged Stool (Dec/Jan 2024) and the creative jigs it uses. I came up with my own jig similar to the leg mortise drilling ramp, with one advantage. Instead of drilling a hole in the bottom of the seat and rotating it on a peg mounted on the ramp, I have two small dowels at the bottom of the ramp, and a center alignment line between them. The seat sits on the ramp, supported by the dowels. I lay out my leg holes, align the bit with the ramp’s center alignment, clamp down the seat, and drill the leg hole. Then just rotate, and repeat. I don’t end up with a hole in the center of the seat. The stools I’ve made are round with 4 legs, but the jig would also work with the cam shaped seats portrayed in the article.
Jim Kelly, Trappe, PA

Chair troubles

The dimension given for the lower end of the Upholstered Club Chair’s leg was incorrectly given as $3\frac{3}{4}$ " (Feb/Mar 2024, p. 33 Leg Detail). The correct dimension should have read $3\frac{1}{4}$ ". Also, the length of the risers supporting the seat frame should be $3\frac{5}{16}$ ", not $21\frac{1}{2}$ " as printed.



Chestnut setback

Late last year, the American Chestnut Foundation announced it was withdrawing its support for the “Darling 58” genetically engineered American chestnut tree. After years of development and millions spent in research and publicity, recent studies have shown that the Darling 58 is no more resistant to the blight that has ravaged the wild American chestnut population. In fact, the GE trees exhibit stunted growth, brown leaves, and high mortality rates even in the absence of the blight fungus.



Baby on board

The *Woodcraft Magazine* family just got a little bit larger. On December 31, 2023, Associate Editor Sarah Marriage welcomed her latest build, a son named Warren Rose. Mother and baby are both doing well.



Here are a couple of programs we enjoy watching when we’re not making sawdust.



Making Fun

Grumpy craftsman Jimmy DiResta and a madcap band of makers gather in DiResta’s well-equipped shop to give life to fantasy projects suggested by children. Need a guitar-shaped boat that holds two passengers, plays music and actually floats? They built one. How about a 12-foot tall dinosaur that spits candy tacos? Yup, they did that, too. The more outlandish the suggestion the more these guys relish the challenge.
Streaming on Netflix.



The Craftsman

The Craftsman follows Eric Hollenbeck, septuagenarian self-taught woodworker, philosopher, and owner of Blue Ox Millworks as he goes about his business in Eureka, California. With his wife, daughters, and a small crew, Hollenbeck builds and restores architectural woodwork and other projects, much of it from the many Victorian-era buildings along California’s redwood coast. Quintessentially old-school, the machines Hollenbeck uses range from an antique behemoth of a shaper to a pedal-powered scroll saw. Not only does The Craftsman celebrate Hollenbeck’s unique approach to woodworking and community, but it also delves into the challenges he has overcome as a severely dyslexic high school dropout.
Streaming on Max.

A life cut short



Erik Florip—husband, father, toolmaker, and Marine Corps veteran—passed away December 31, 2023 surrounded by friends and family. Erik founded Florip Toolworks in 2012 in his California garage, focusing on making high-quality saws at a price average hobbyists

could afford. In 2015, he moved Florip Toolworks to a permanent shop near Empire, MI, where the company was able to expand its line. Along the way, he partnered with Woodcraft and other vendors to distribute Florip tools nationwide. In June, 2022, Erik was diagnosed with stage 4 glioblastoma, a brain cancer brought on by exposure to burn pits during his military service in Afghanistan. Despite chemotherapy and radiation treatment, he succumbed to the disease late last year. Erik is survived by his wife Temple, their daughter Ella, family, friends, and the woodworking community who benefited from his work and spirit.

Guitar stand goof

Two different measurements are given for the upright of the Bent-Lam Guitar Stand (April/May 2023). Page 47 lists it as 20" long but page 51 shows it being 24" long. Which is it?

Greg Griffin, via email

Associate Editor Derek

Richmond replies:

We try diligently to make sure our measurements are accurate, clear, and consistent, but this one slipped by. The correct measurement for the upright is 24" as shown on page 51. ■



Got a noteworthy news item?

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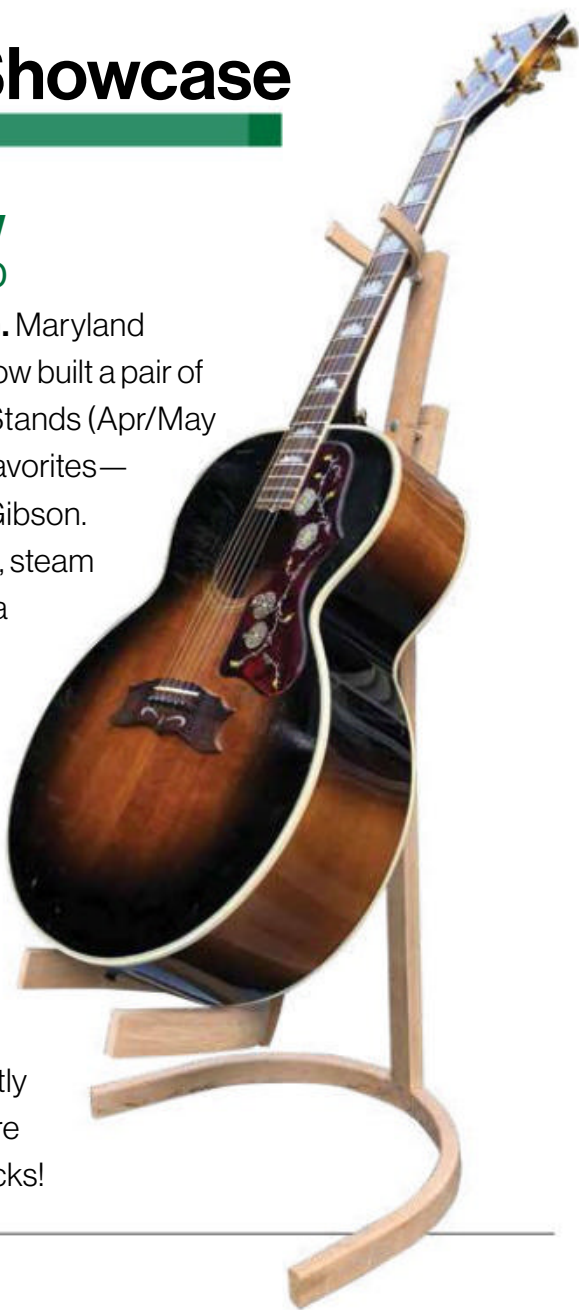
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Reader Showcase

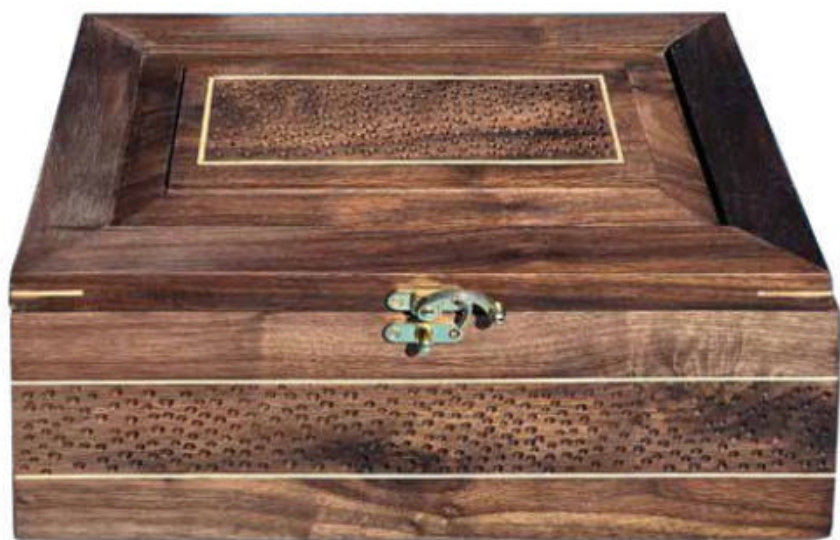
JEFF CASLOW TIMONIUM, MD

Standing ovation. Maryland woodworker Caslow built a pair of Bent-Lam Guitar Stands (Apr/May 2023) for his two favorites—an Ovation and a Gibson. He used white oak, steam bending it around a form rather than laminating veneer strips to make the curved base and supports. He's enjoyed shopping and taking classes at Woodcraft so much, he recently joined the Baltimore store staff. That rocks!



E.D. BOGAN TROY, OH

Right on target. When a customer wanted a keep-safe box for his pistol, Bogan turned to the Dimpled Box (Dec/Jan 2021). He replaced the lift-off lid with one featuring hinges and a clasp for added security. He also modified the dimensions to fit the firearm, and swapped walnut for maple lid splines because he admits he had more maple than walnut on hand. We think this one's a real bullseye.



MIKE KANZER LANDENBERG, PA

Arts & crafts time. There was something about the Arts & Crafts Wall Clock (Oct/Nov 2021) that caught Kanzer's eye. When the hobbyist woodworker retired, he finally had the time to build the piece. Kanzer said he was drawn to the clock's style and wanted to try his hand at cove-cutting. Because he didn't have wall space, he decided to display his finished clock on the mantel. We're just glad he had a good time.



KENNETH JEROME BATAVIA, IL

Joining the club. In need of a shop maul, Jerome remembered seeing the Joiner's Mallet (Aug/Sep 2023). He crafted the head and wedges from hard maple, adding a walnut handle with maple inlays. He notes those woods were suggested in the article, and adds "plus, that's what I happened to have lying around for scraps!" Either way, it's a big hit. ■



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I recently added an Oneida Supercell dust collector system to my shop connecting it to my jointer/planer combination machine and router table. It works just as well as you'd expect from one of the industry leading brands although there are one or two idiosyncrasies I'll get into below.

The Supercell consists of a rolling spider-like base straddling a 14-gallon bucket. Atop the base sits a heavy-gauge steel


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ivacswitch.com, \$99.99

cyclone separator and filter system. Suction comes from three 1½ HP high-pressure fans working in tandem. Their motors are wired together and plug into a single 220V, 20 amp outlet. The fans draw dust and chips through the cyclone which funnels the heavy stuff into the bucket, while fine particulates are trapped by a HEPA-grade filter as air is exhausted out the top of the machine.

Like most smaller dust collectors, The Supercell has a 4" dia. inlet which plays nicely with the 4" ports on many larger shop tools. But the key difference between the Supercell and other collectors is that where traditional dust collectors move high volumes of air at low static pressure, the Supercell produces ten times more static pressure. According to Oneida, this overcomes pressure loss from ducting and simplifies ductwork design—the company claims the Supercell will pull dust and chips through 100' of 4" hose and ductwork, and backs that up by supplying 25' of hose with the machine. With the way I have it set up, it's had no problem pulling chips out of my router table, about 40 feet of ductwork away. Where this added pressure really is noticeable is when the machine is connected to the 2½" ports common to so many smaller machines. In my situation, I have my unit plumbed into Oneida's 25', 2½" hose reel, allowing me to use the Supercell like a giant shop vacuum and to connect it to a lot of my power handtools.

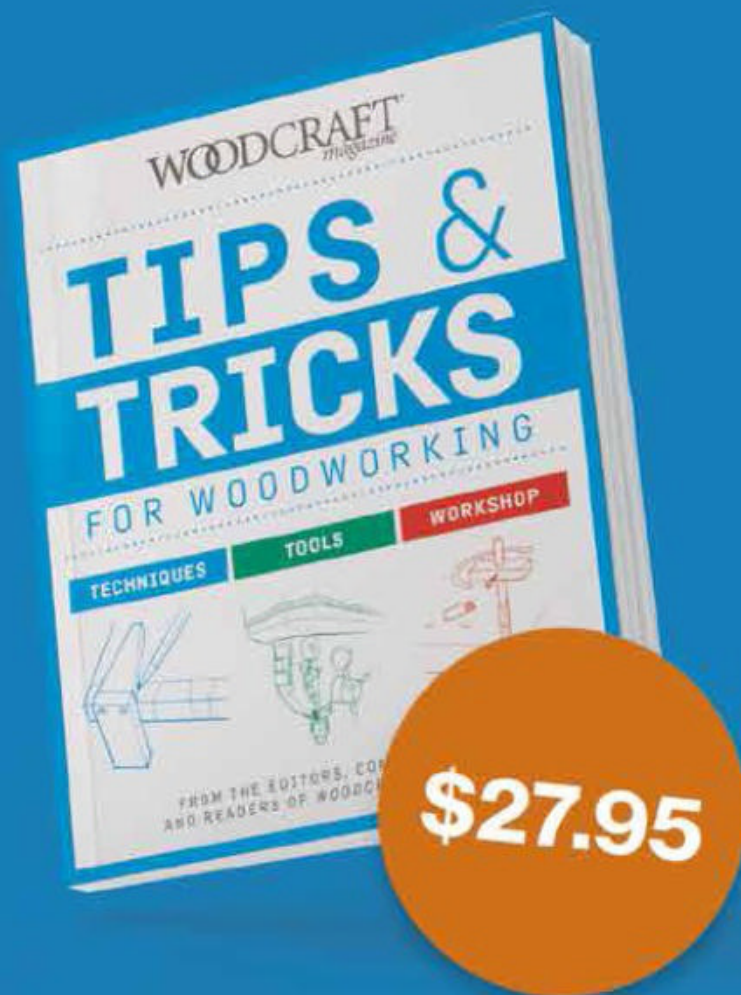
The metal stand and legs are sturdy, set on locking casters. The collection bucket is also on casters, the two being joined with a couple of flip-locks that slightly lift the tank against a foam gasket adhered beneath the base. The bucket's viewing window tends to get dusty quickly, both inside and out; fortunately, Oneida supplies an infrared "dust sentry" monitor pointing down into the bucket, which lights a red strobe when triggered. The sentry's sensitivity is adjustable, but be warned: at its most sensitive, it flashes even on an empty bucket, but when turned way down, the bucket can be full with dust backed up into the cyclone without triggering the strobe.

A few other features of the Supercell are worth noting. The vacuum bag holder draws air from the bottom of the bucket, helping to keep the optional collection bag open and from being sucked up into the cyclone when empty. A quick-turn valve lets you turn this off if you choose to forego a bag. Pulse filter cleaning lets you quickly clear a clogged or dirty exhaust filter—close the blast gate and pump the handle a couple times to clean the filter without even shutting the Supercell off. And a remote control lets you start and stop the dust collector from afar; it includes a small clasp that lets you clip it to a shop apron or tool so it's always at hand. Overall, Oneida's Supercell is a versatile and powerful dust collector, deserving of a spot in a shop of any size. ■

Derek Richmond

Photos: Ken Burton

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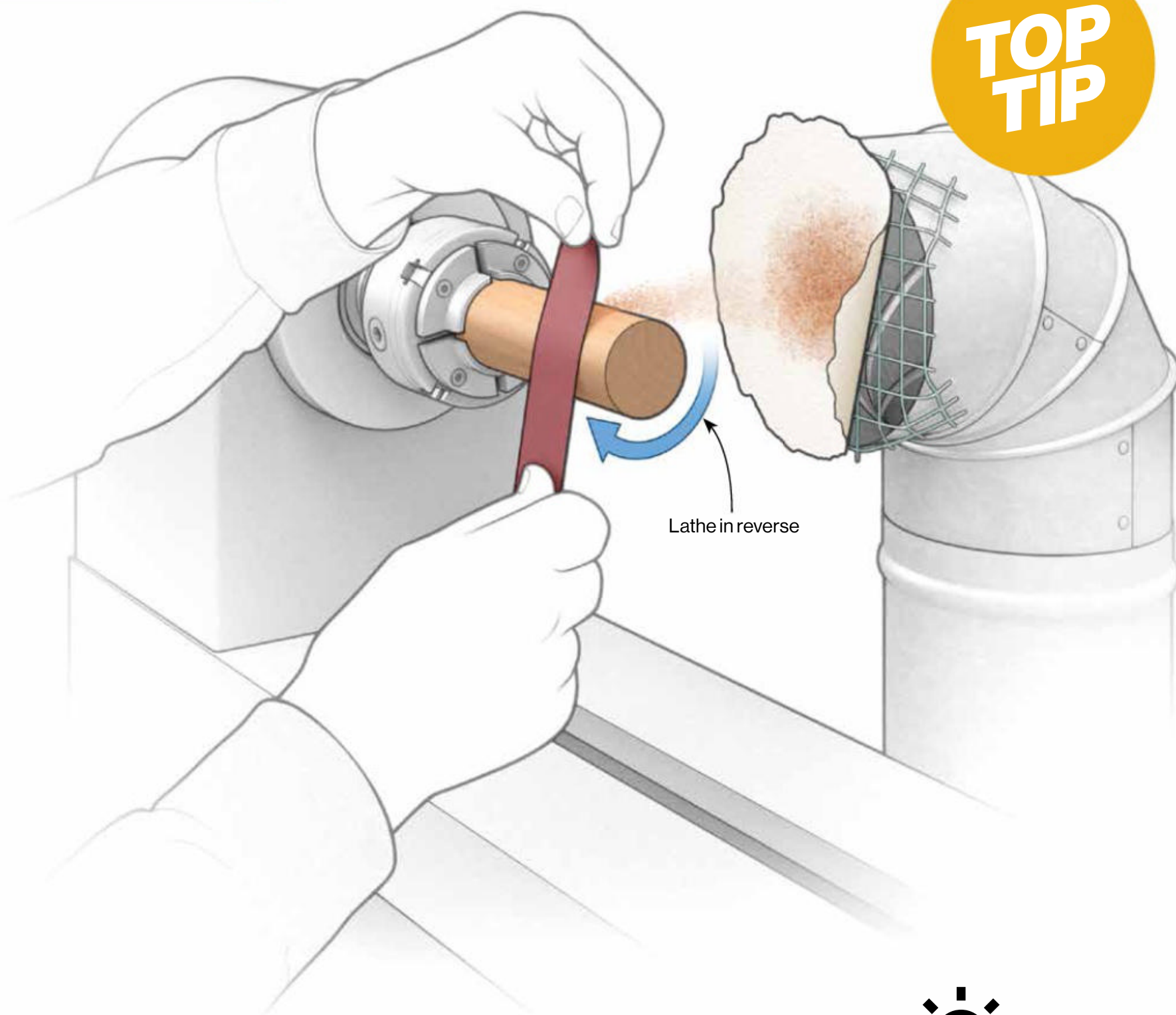
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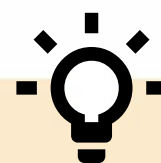


Collect filler wood dust

I find that the best method for repairing cracks and holes in projects is to use a paste made of sanding dust and glue (CA or epoxy) as a filler. The trick is in collecting enough fine dust from the species of wood that I need. My solution is to add a screen I made from $\frac{1}{2}$ " mesh hardware cloth over the dust collection port behind my lathe. Then I cover this with a single ply of paper towel. After turning it round, I run the lathe in reverse and sand a scrap of whatever species I happen to need. In a matter of minutes, I have enough dust collected on the towel to make my filler.

Bill Wells

Olympia, Washington



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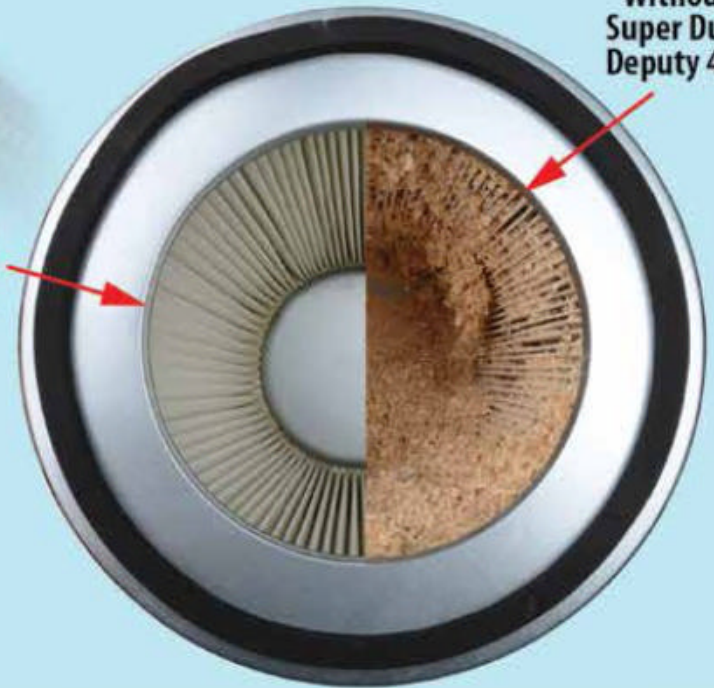
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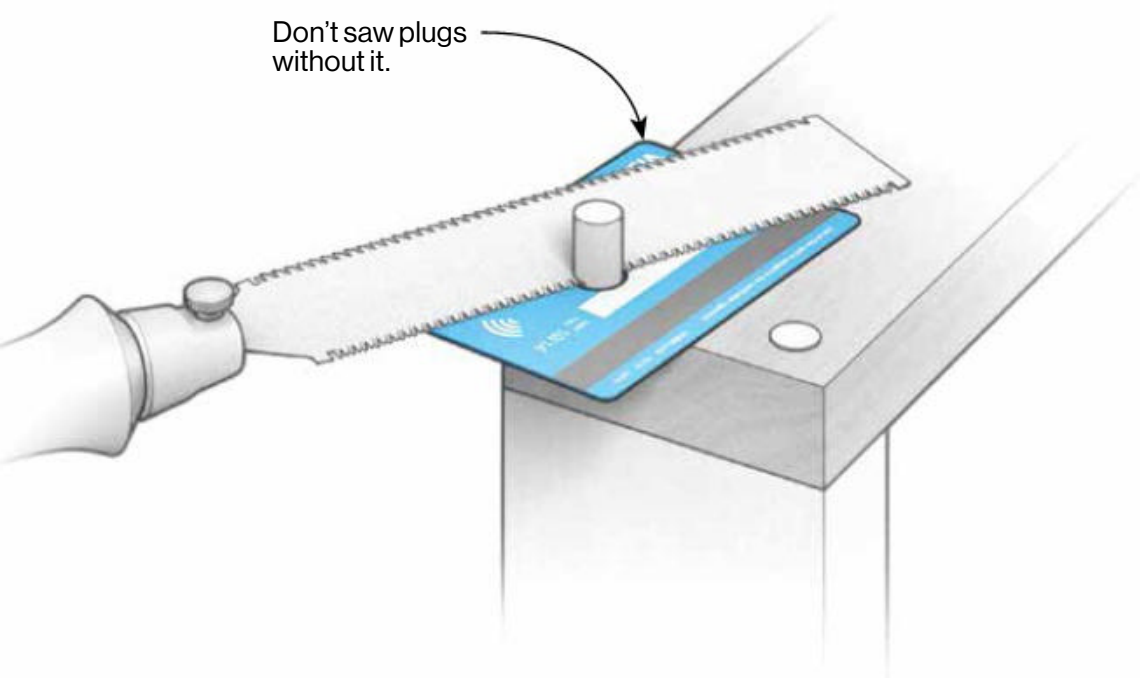
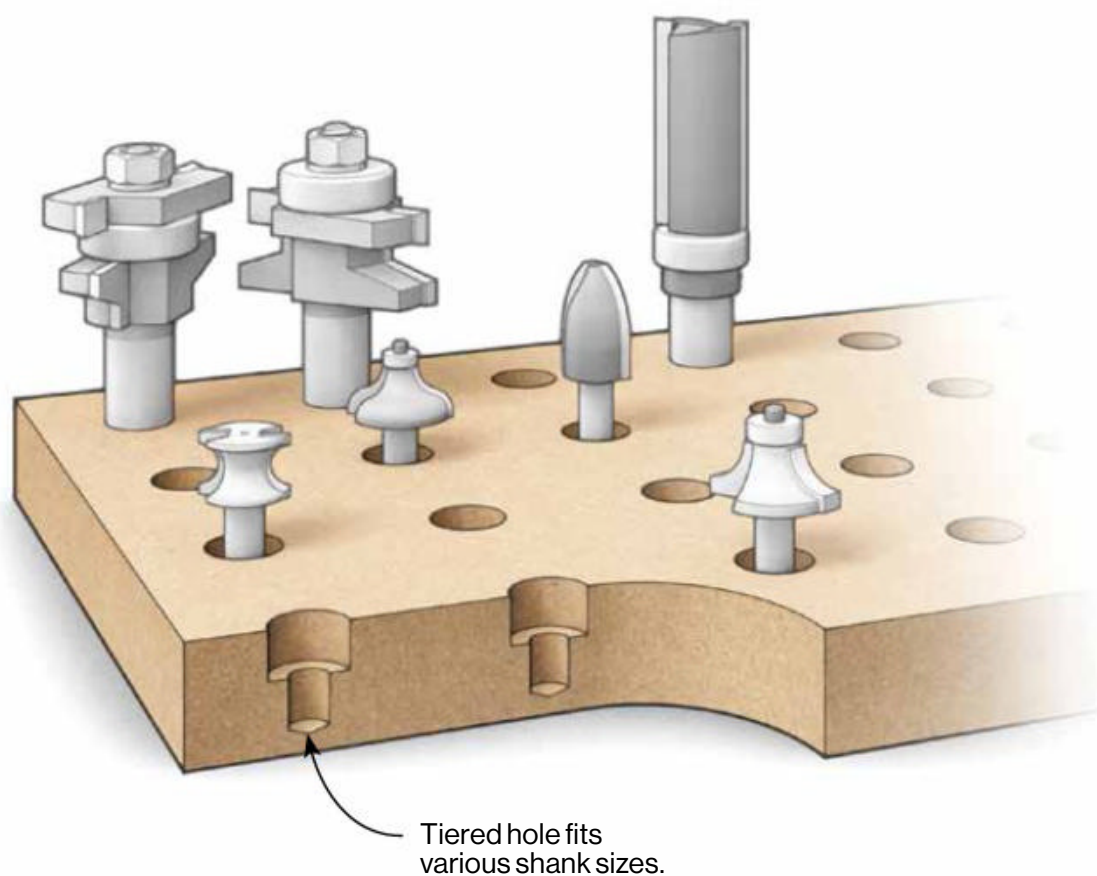
Tips & Tricks

Tiered bit holes

I was recently outfitting the drawers in my router table to hold my growing collection of bits. After pondering whether to drill more $\frac{1}{4}$ " or $\frac{1}{2}$ " holes, it occurred to me that I didn't have to decide. I could simply drill each hole twice: the first time making a somewhat shallow cut with a $\frac{1}{2}$ " bit, then the second time a deeper cut with a $\frac{1}{4}$ " bit. Now I can store bits with similar profiles next to each other without having to worry about what size shank they have. I have since learned that MicroJig makes a stepped router bit that does this all in one go.

Janelle Watson

Spruce Pine, North Carolina

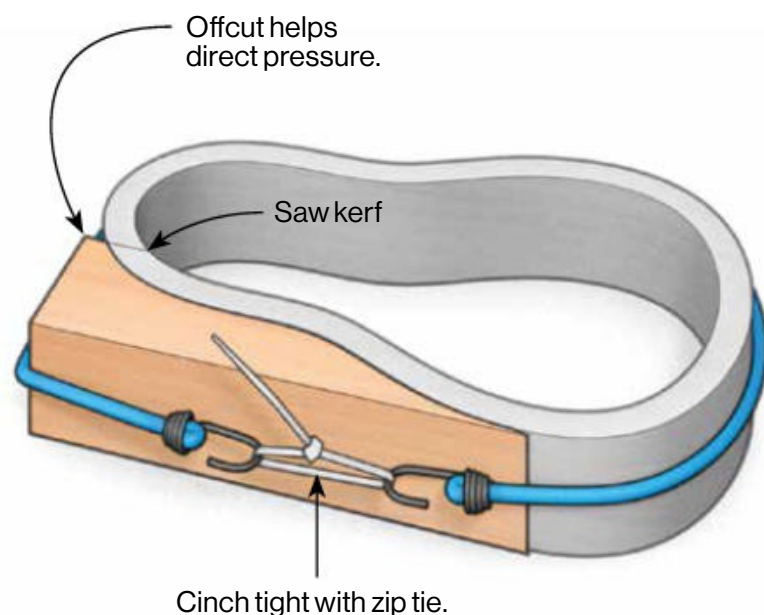


Flush trimming plugs

For as simple a task as it is, trimming plugs flush to a surface can be surprisingly frustrating. If you try to chisel off the excess, the plug frequently tears out beneath the surrounding surface, yet if you try to saw it off, you risk scarring that same surface. To reduce that possibility, I drill a hole slightly larger than the plug through an expired credit card. Then I use the card as a mask to protect the surrounding surface as I saw off the excess plug. That accomplished, it is a simple matter to scrape, sand, or pare what little remains of the excess flush.

Jeff Peters

Redgranite, Wisconsin



Zip clamps

I make a lot of bandsaw boxes. Clamping these irregular shapes to close up the saw kerfs can be a challenge. Both bungee cords and zip ties (or a combination thereof) make excellent and inexpensive clamps. Simply wrap the appropriate combination of these two common hardware store items around your workpiece and cinch them tight. In the event the joint doesn't close, you may be able to add a bit of scrap or a cutoff to direct pressure where it is needed.

Ken Peters

Spring Hill, Florida

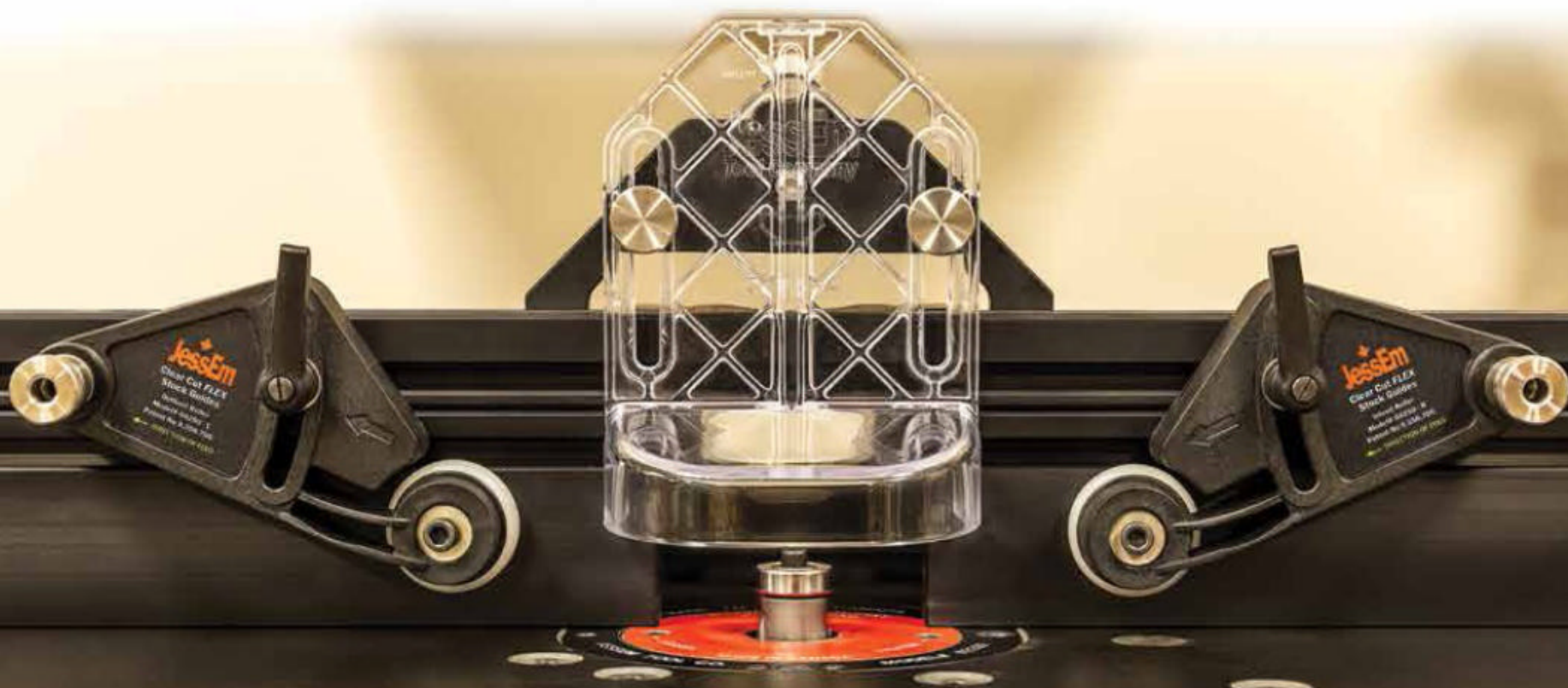



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Getting Started in TURNING

What you need now and what you'll need next

By Derek Richmond

Setting up a full woodshop can be an expensive proposition, but setting up a woodturning studio doesn't require nearly so large an investment. Still, like most new ventures, you're asking yourself, "what do I really need? How do I get started without breaking the bank?" A lathe is an obvious necessity (see "Choosing your lathe" p. 23). After that, gear up with proper protective equipment, then round out your lathe station (see Ken's Lathe Stand, p. 40) with some chisels, and appropriate ways to hold your workpiece while shaping and finishing it.

Gear up

Uvex Bionic Face Shield

If a bowl blank spinning between centers gets loose, eyeglasses simply don't provide enough protection. A full face shield protects your noggin without sacrificing visibility. This polycarbonate visor flips up and down like a welding helmet and can be worn over goggles and glasses, respirators and masks. It's also scratch-resistant and anti-fog. **\$49.99, woodcraft.com, #147814**

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Easy Wood Tools Professional Turners Cool Smock

With a high collar and more coverage than an apron, a turning smock keeps chips off and out of clothes. This model is lightweight and breathable, while its full zip front makes for easy on and off. **\$73.49, easywoodtools.com**



Lathe tools and accessories

Rikon 4-Piece Turning System with Carbide Inserts

Yes, high-speed steel chisels are traditional. But for beginners, carbide scrapers mean fewer catches and less time sharpening. This 4-piece system features a single handle with interchangeable shafts bearing round, square, and detail cutters. A flat-bottomed shaft means easy registration against the tool rest.

\$249.99, woodcraft.com, #870031



Sorby 6-Piece Intermediate HSS Turning Tools Set,

\$389.99, woodcraft.com, #146162



High Quality Tools and Sharpening

This 6-piece HSS turning set from British maker Robert Sorby includes 3 gouges, a scraper, skew, and parting tool. But with steel tools comes the need to sharpen them, so the pairing of Rikon's slow-speed grinder and Wolverine sharpening kit makes perfect sense.



**Rikon Slow-Speed Grinder and Wolverine Sharpening Kit,
\$329.99, woodcraft.com, #158820**



Work holders

WoodRiver #2 MT Professional Pen Turning Mandrel

Your new lathe likely included a faceplate and spur drive—fine for holding some turnings. A mandrel expands those capabilities, letting you turn pens, along with rings, ornaments, keychains, kitchen utensils, and a host of other unique kits.

\$29.99, woodcraft.com, #145997



Scroll Chuck

A chuck gives you a lot of options for how to mount a blank on your lathe. The four included jaws can hold in contraction, squeezing a tenon turned while the piece is between centers, or in expansion, fitting into a mortise turned or drilled into the workpiece. Just make sure your chuck is compatible with the outer threads on your lathe's spindle—typically 1" × 8 tpi on all but the largest or smallest machines. This WoodRiver chuck's jaws can also be replaced with task-specific jaw sets. Pen jaws let you drill right on the lathe while flat jaws let you hold large bowls or platters for light cuts or finishing their undersides.



WoodRiver 4-Jaw Chuck

\$149.99, woodcraft.com, #183464



WoodRiver #1 Profiled Step Jaws

\$34.99, woodcraft.com, #183465



WoodRiver Pen Jaws

\$27.99, woodcraft.com, #183466



WoodRiver Dovetails Step Jaws

\$40.99, woodcraft.com, #183467



WoodRiver 10" Flat Jaws

\$57.99, woodcraft.com, #183468

More

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WoodRiver #2 MT Keyed Lathe Drill Chuck

A drill chuck, sometimes called a Jacob's chuck, lets you bore centered holes into or even through a workpiece as it spins on the lathe. The chuck mounts in the tailstock while the workpiece is secured to the headstock. So unlike a drill press, the bit stays stationary while the wood spins. A keyed chuck provides a bit more control and security than a keyless drill chuck. Just make sure the chuck's Morse taper (either #1 or #2) matches that of your lathe.

\$59.99, woodcraft.com, #154750

**THEN
THIS**

WoodRiver #2 MT Collet Chuck Set

The drill chuck's headstock-mounted cousin, the collet chuck holds a round tenon in interchangeable collets ranging in size from $\frac{1}{8}$ " to $\frac{5}{8}$ ". It's perfect for holding small workpieces and even some mandrels, balancing a tight grip with no marring.

\$139.99, woodcraft.com, #146110



OneWay #2 MT Safe Driver

Unlike the spur drive that comes with your lathe, this one drives by friction. And a less tenacious grip means less chance a catch becoming catastrophic.

\$48.50, packardwoodworks.com, #112616



**GET
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WoodRiver #2 MT Multi-Tooth Drive Center

A multi-tooth drive center provides plenty of grip without deeply penetrating your stock, ideal for working those beautiful, but hard and dense exotic species of wood.

\$34.99, woodcraft.com, #149173



**THEN
THIS**

Choosing your lathe

Lathes come in various sizes (with commensurate price tags): full-size, mid-size, mini, and pen. When picking out your starting lathe, it's important to balance what you want to turn now with what you will want to turn eventually. A pen lathe is great for pens and similar small projects, but doesn't have the power or capacity for much bowl turning. A mini lathe adds the capacity for bowl turning, as long as you're serving side salads instead of displaying a cornucopia's worth of fruit. A mid-size (often marketed as a "midi") adds capacity and, for not much more money, gets you a lathe you're less likely to outgrow quickly. But ultimately, the lathe that's right for you is the one that best balances your space, budget, and interest. ■



Pen lathe. King Industrial 8" x 13" Variable Speed Pen Lathe - $\frac{1}{8}$ HP, 110V, \$349.99, woodcraft.com, #172656



Mini lathe. Jet 10" x 15" Variable Speed Mini Lathe - $\frac{1}{2}$ HP - 1015VS, \$749.99, woodcraft.com, #858828

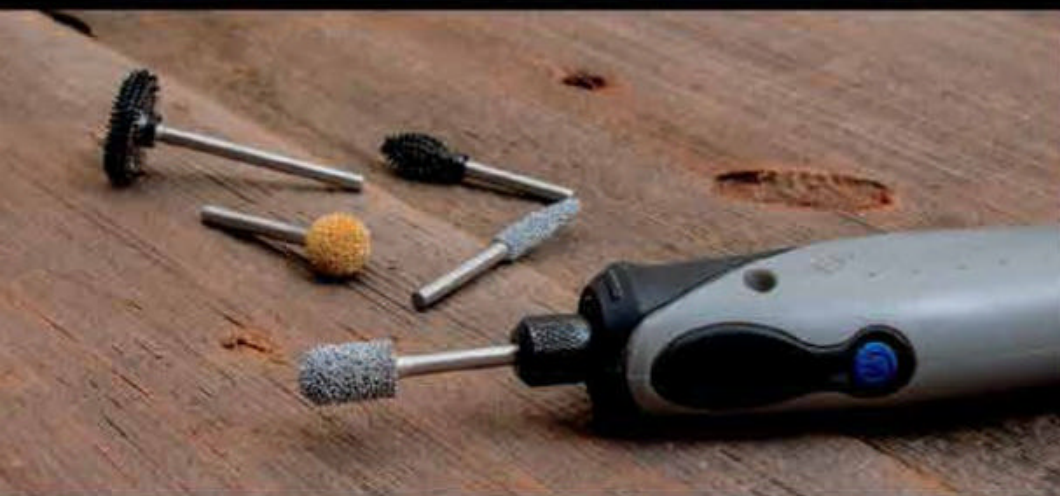


Midi lathe. Laguna Revo 12 | 16 Midi Lathe EVS, \$999.00, woodcraft.com, #172164



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Best buds

Spring is upon us, the bulbs are up, and what Frame & Panel Planter would be complete without at least a few tulips? Okay, maybe we made that last bit up, but there are still tulips to be found. For this issue's hunt we've scattered a handful of the blossoms throughout the magazine. Find 'em and you could win!

Which pages are these tulips on?



This issue's prize:
SAWSTOP
REVOLUTION
MITER GAUGE

#189413



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or go to woodcraftmagazine.com
Entry opens March 11, 2024



Turned Fishing LURES

Have some reel fun at the lathe

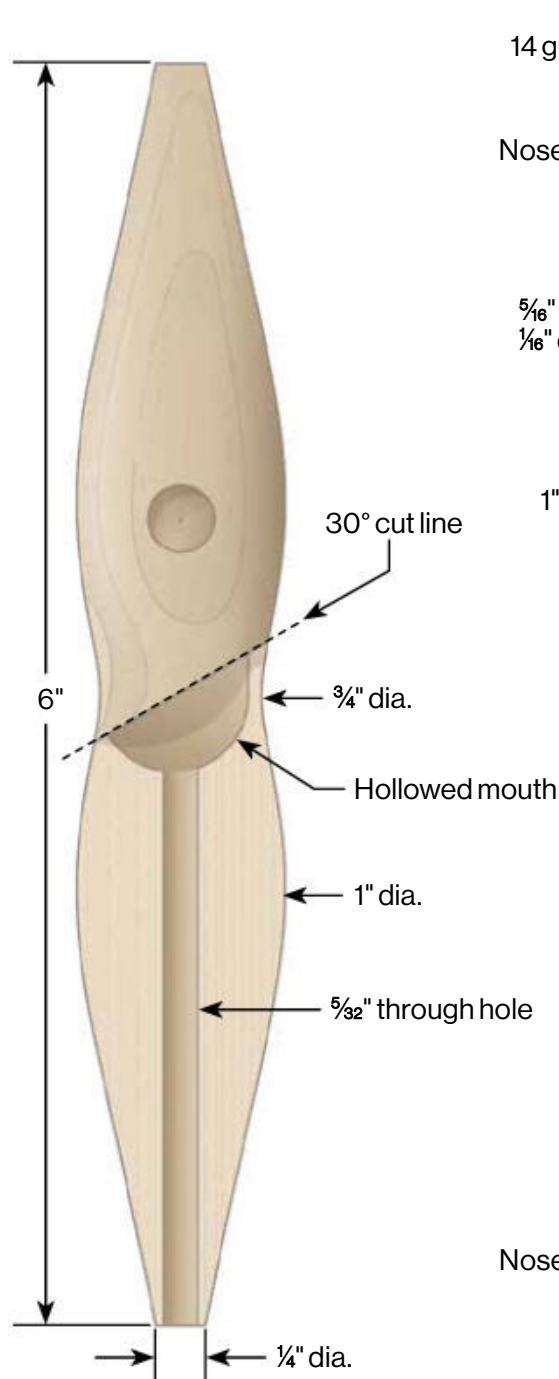
By Derek Richmond

Some years ago, I came into possession of my grandfather's tackle box: a well-seasoned Bakelite affair containing dozens of tangled lures. Some were modern, made of colorful plastic. Others were metal, rusted from years of casting for stripers in the salt waters of the Massachusetts Bay. Then there were a few hand-carved wooden lures complete with glass eyes. As a woodworker, it was these that really caught my eye.

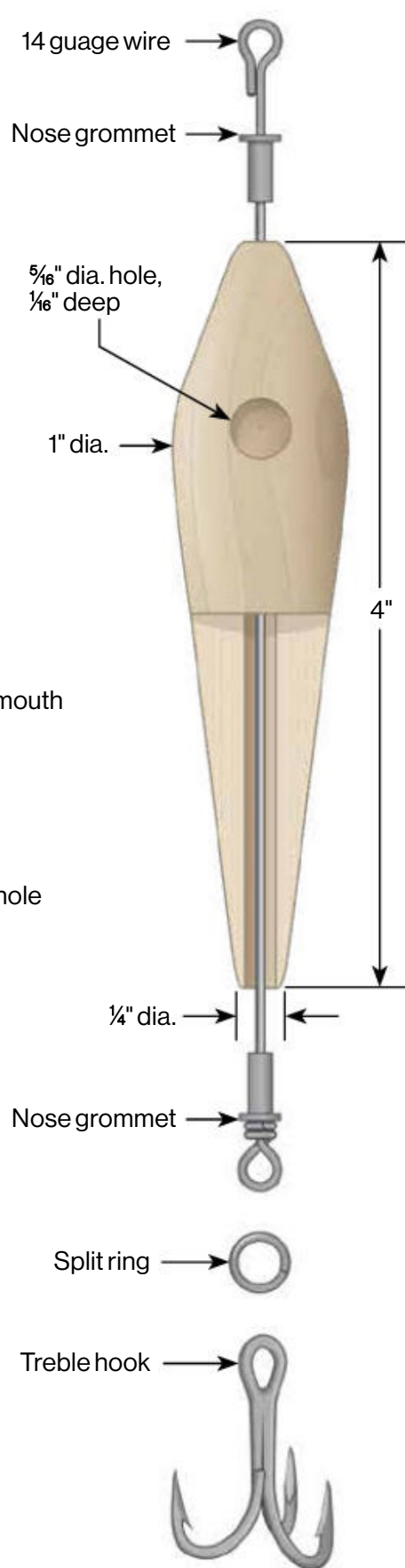
Being no great shakes at carving, I wondered whether I might get a nibble or two with a turned lure. After a few fun hours in the shop followed by some time down at the river, I had my answer...of course you can turn your own lures. The hardware can be procured online (see Buyer's Guide, p. 62) or at your local bait & tackle shop. Here, I'll show you how to make a couple of models—a walker and a popper—that work well for topwater bass fishing. I made the walker from cedar and the popper from maple, but poplar, basswood, or even balsa wood will also work. Try different shapes, sizes, and even materials—acrylic lures float well and don't require paint or epoxy—to find the best lure for your fishing hole. Then reel in the big one.



POPPER



WALKER



Order of Work

- ✓ Drill the body
- ✓ Turn to shape
- ✓ Drill for eyes
- ✓ Trim to length
- ✓ Shape the mouth
- ✓ Finish and accessorize



onlineEXTRAS

Scan here for videos of the author wrapping the end of the through-wire, and of his very artistic sister-in-law painting lures.



For more online content visit
woodcraftmagazine.com

School of Fish

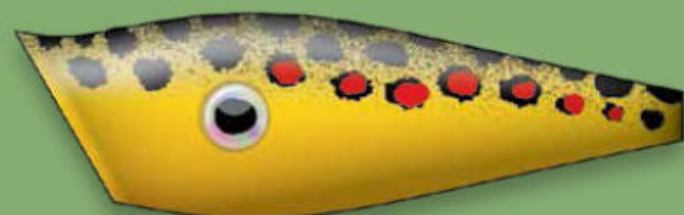
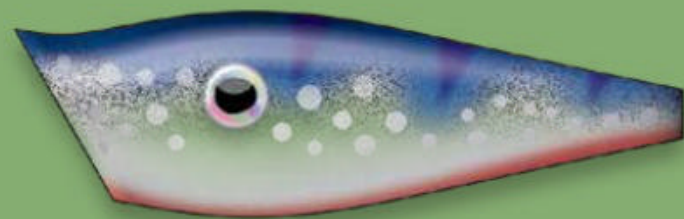
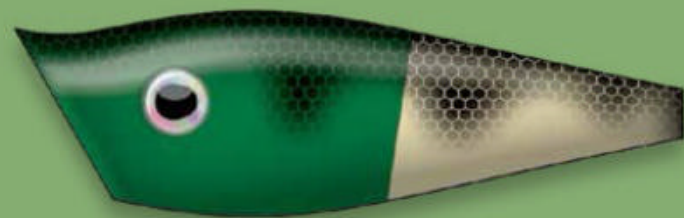
The walker gets a straightforward torpedo shape, while the poppers are made two-at-a-time. The drilling, turning, and hardware are the same. A through-wire connects the tail hook to the fishing line so your catch can't easily pull it off the lure. Add additional hooks on the belly using eye hooks. Penetrating epoxy goes on first to protect the wood, which is then painted. An epoxy overcoat provides another layer of protection and a clear shiny finish. Adhesive reflective eyes (see Buyer's Guide, p. 62) give the fish some added flash.

Poppers vs. Walkers

Poppers have a flat or concave face, which creates splashing and popping noises to attract fish. When reeling in, twitch the rod sporadically with a reel-reel-pause cadence to imitate a struggling baitfish. Walkers tend to be longer and more slender. Cast a walker long, then twitch the rod tip rhythmically, causing the lure to dart left and right as you reel in.

Paint scheming

See onlineEXTRAS for a video on painting realistic lures. Use the paint schemes below, or create your own. Or keep it simple and opt for a classic white and red paint scheme. Paint the body white. Then, when dry, dunk the head end into red paint at a slight angle. Either way, splashy movement, bright colors, and shiny eyes will trigger a fish to strike. Here are some other paint scheme examples:



Drill and shape

Start with a blank at least 1½" square and an inch or two longer than your planned lure. Mark the center of one end and drill a 5/32"-dia. hole through the length of the body. The bit might drift as you drill, but that's not a problem. Mount the blank on the lathe between centers, using the drill holes as center points. Turn the blank round first before turning the lure to shape with a spindle gouge or scraper. Sand through 220 grit.

With the blank mounted between centers, turn it to shape. Leave the last ½" of each end square, separating the lure body from the squared ends by a small tenon.



Drill the body. Bore through the center of the blank with a 5/32" drill bit. Start with a standard bit to minimize flex when switching to an extended length drill bit.



Trim to size

Decide where the eyes will go, and draw a line around the turned lure at that location. Note, if you're making a pair of poppers, you'll mark and drill for two sets of eyes near the blank's center. Chuck a $\frac{5}{16}$ " brad-point bit in your drill press and bore a shallow hole into the lure on the marked line. Then rotate the lure 180 degrees and repeat for the second eye. To add a hook along the belly of the lure, drill a hole now to receive a small eye hook. Then use either a handsaw or bandsaw to split the poppers, then cut the lure free of its square ends. Hollow the mouth of the poppers using a rotary carving burr. I mounted it in my drill press, but you can also turn to a rotary tool or flex shaft.



Drill for the eyes. Register the square ends against the drill press table and fence. Bore a $\frac{1}{16}$ " deep hole on the layout line you marked, centered across the thickness of the lure.



Cut the poppers. Split the poppers with an angled cut at the bandsaw. Take extra care when cutting, because the piece is unsupported right under the cut. Skip this step if you're making a walker style lure.



Mill the mouth. For safety, grip the lure body in a handscrew clamp. Adjust the speed—these burrs are designed to work at 5000-25,000 RPM, but will work at slower speeds. Carefully lower the carving burr against the lure to create the mouth hollow, moving the clamp as necessary to get the right shape.

Finish and tackle

After sanding, coat the lure inside and out with penetrating epoxy. Once dry, give the lure a light sanding with 320 grit then apply your chosen paint scheme—choose from one of ours on p. 27 or create your own design. Adhere the eyes in their holes. Then overcoat the whole lure with tabletop epoxy to add shine and protection. Press nose grommets into the ends of your lure. Then slide the wire through and tie it off at the tail. Install a split ring onto the tail loop (and onto any additional screw eyes) and attach a hook. Then get out there and cast a line. ■



Paint the lure. For a classic, two-color lure, paint the body white, then dip the head at an angle into another color. Or see onlineEXTRAS for a video on airbrushing some realism onto your lure.



Nose grommets

Premade loop

Wire through. With the nose grommets in place, thread the long end of the wire through the lure from nose to tail until the premade loop butts against the nose with the doubled-back portion tucked inside.



Wrap and cinch the tail

Split ring and hook

45° bend

Completed tail loop

Tie it off. Create a second loop at the tail end by bending the wire at about 45° before wrapping it around a $\frac{3}{16}$ " drill bit held upright in a vise. Tie the loop off and cinch things tight by wrapping the wire around itself where it emerges from the lure. Clip off the excess.



Frame & Panel PLANTERS

A pair of pretty planters for your front porch

By Bill Sands

Over the years, longtime contributor Bill Sands designed and built many projects that have graced the pages of Woodcraft Magazine. Unfortunately, Bill passed away in April 2023, in the middle of building what would become his last project for us: these elegant frame and panel planters. In honor of Bill, we took over the build and are pleased to share it with you here.

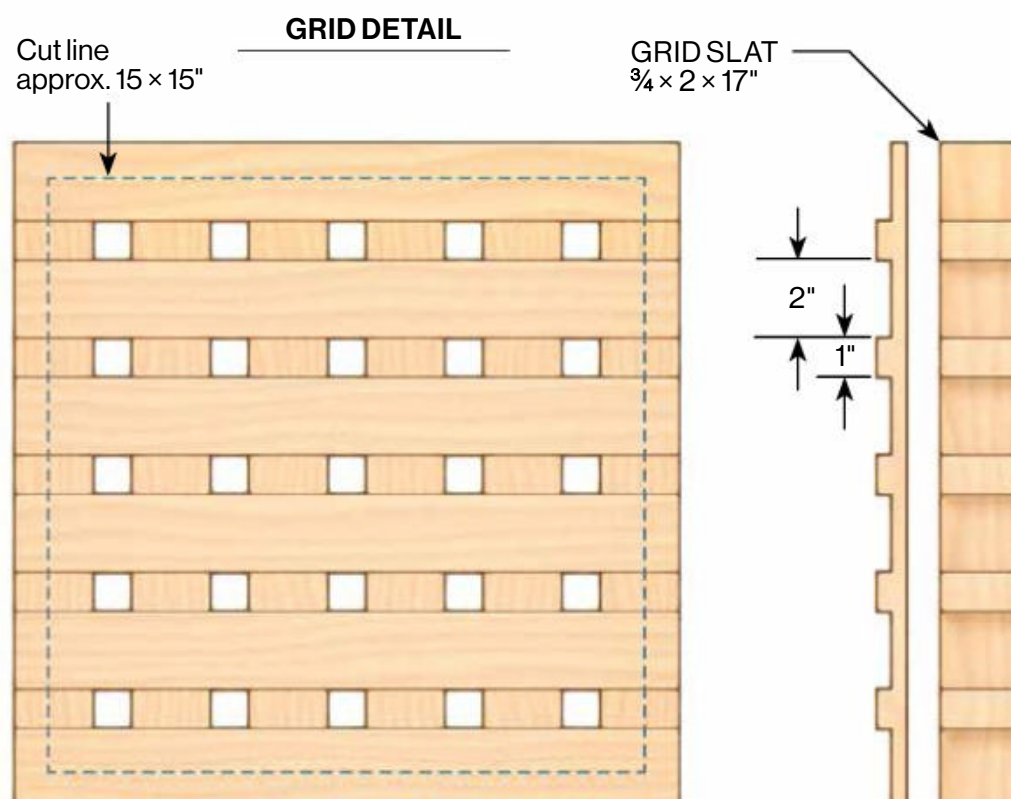
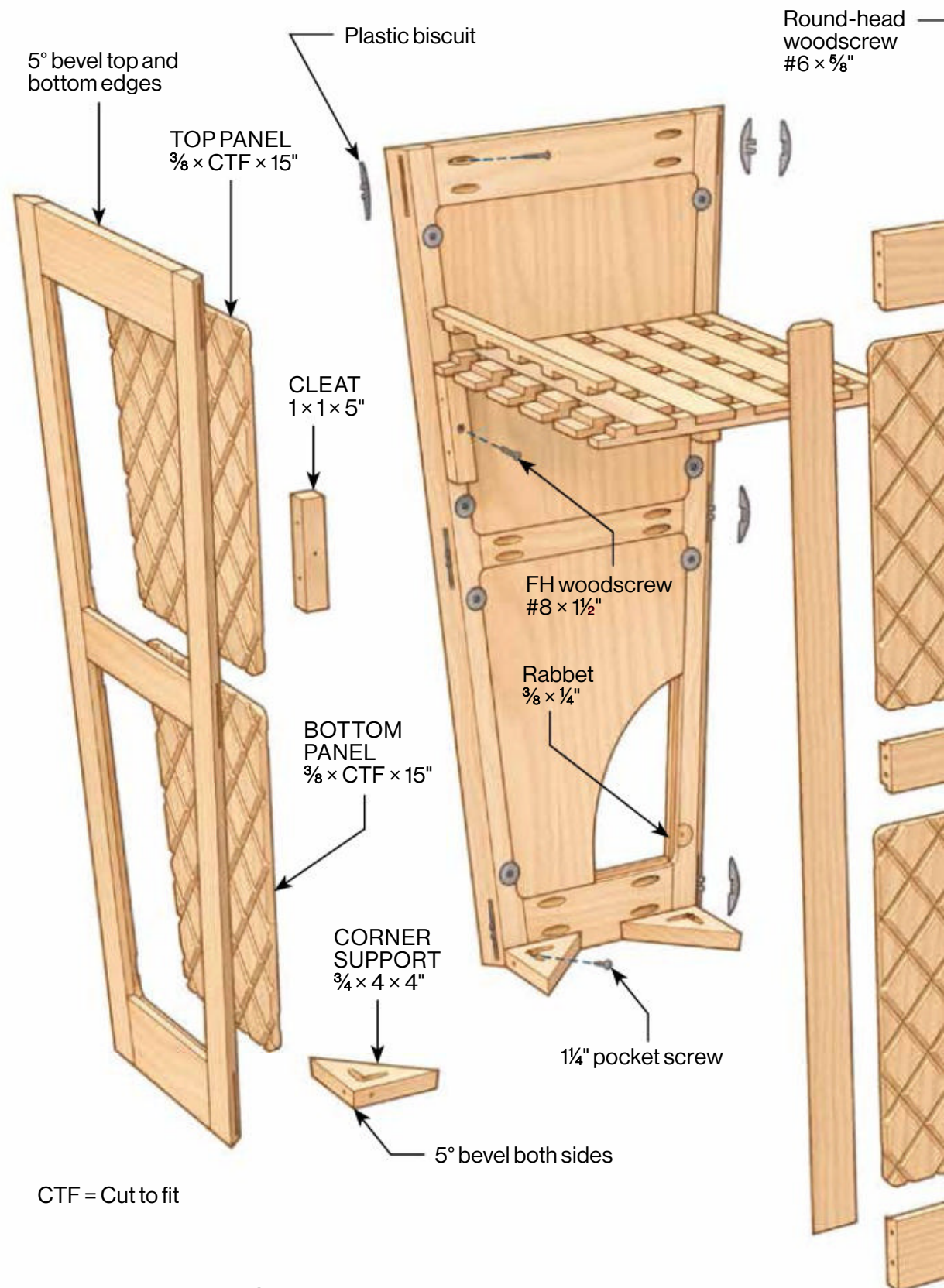
Designed to grace an entryway, the planters elevate a floral display to a pleasing eye level. The tapered shape lightens the base, while cleverly crosshatched

panels add dimension and detail. Made of cypress and assembled with rot-proof plastic biscuits, they're designed to weather the outdoor world. In the shop, a handful of useful jigs simplify the tasks of assembling the frames, crosshatching the panels, and milling the grid that supports the pots. Plus, these jigs make it easy to build a matched set with not much more effort than it would take to build one. So elevate your plants—and your front porch décor—with your own paneled pair.



Tall, Tapered, and Crosshatched

Each planter consists of four identical, tapered frame-and-panel assemblies that are mitered together at the corners to form an inverted, truncated pyramid. The rails are connected to the stiles with pocket screws. The top and bottom end of each frame is beveled at 5° and their long edges are mitered at 44.8°. The miter joints are aligned and reinforced with two-piece plastic biscuits (see Buyer's Guide, p. 62) instead of standard beechwood biscuits, which tend to rot. Each frame contains two panels that receive a crosshatch pattern courtesy of a simple router jig. The panels are rabbeted into the frame openings and are held in place with fender washers. A half-lapped grid panel sits on cleats installed inside the planter, ready to support a potted plant while allowing drainage.



Order of Work

- ✓ Make frame and frame jig
- ✓ Assemble frames
- ✓ Make panels
- ✓ Assemble planter
- ✓ Make and install grids
- ✓ Finish and plant

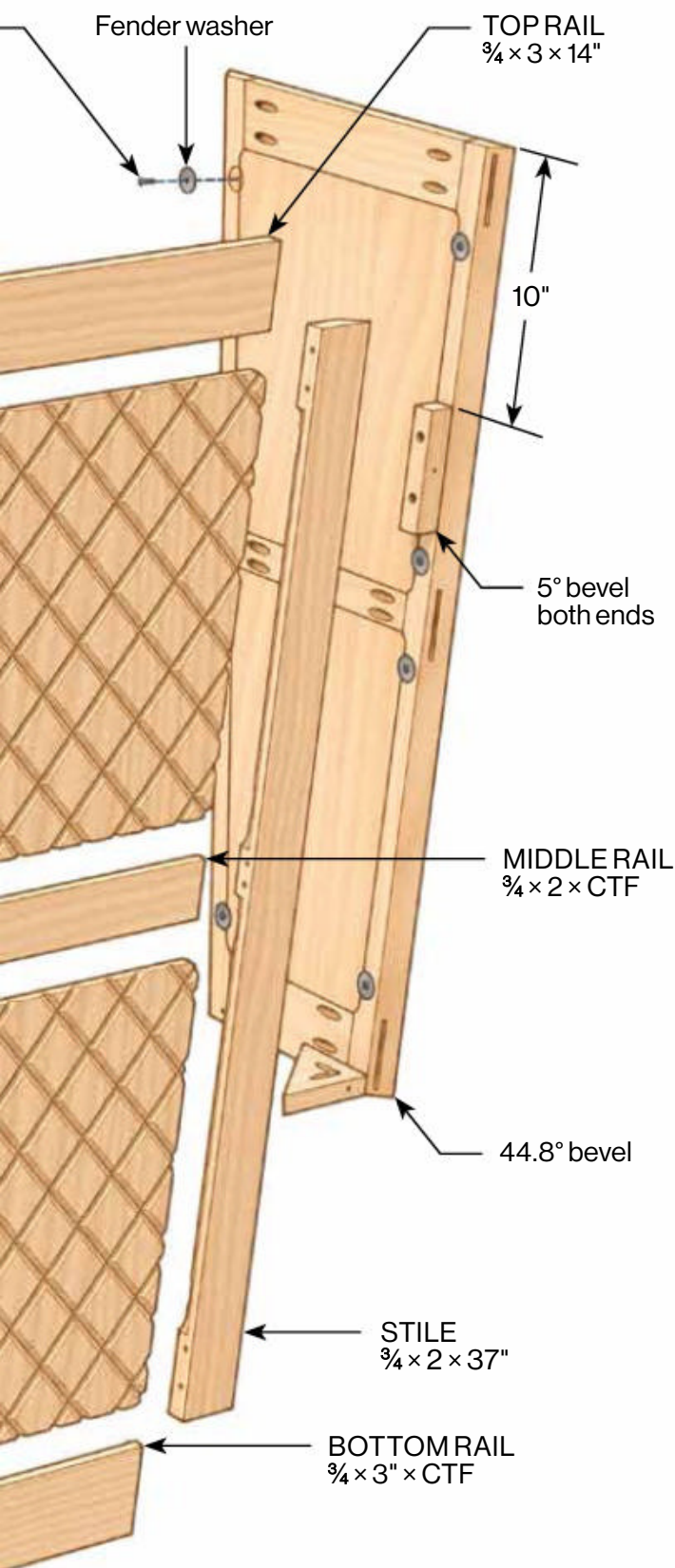


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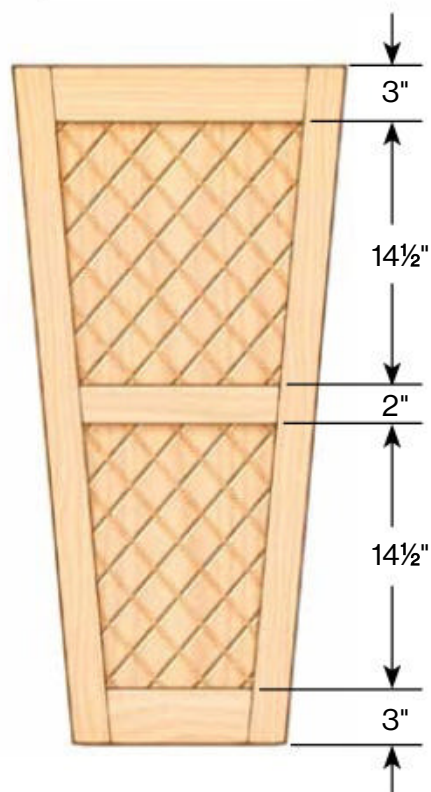
This is Bill's last project for us, but scan here to check out the other projects he's done in the past. Plus, download plans for the horizontal fence used in this story.



For more onlineEXTRAS visit
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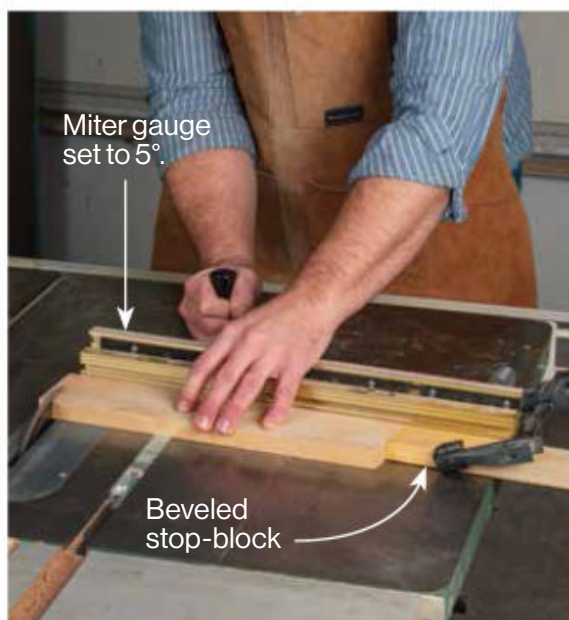


SIDE DETAIL



Make the side frame

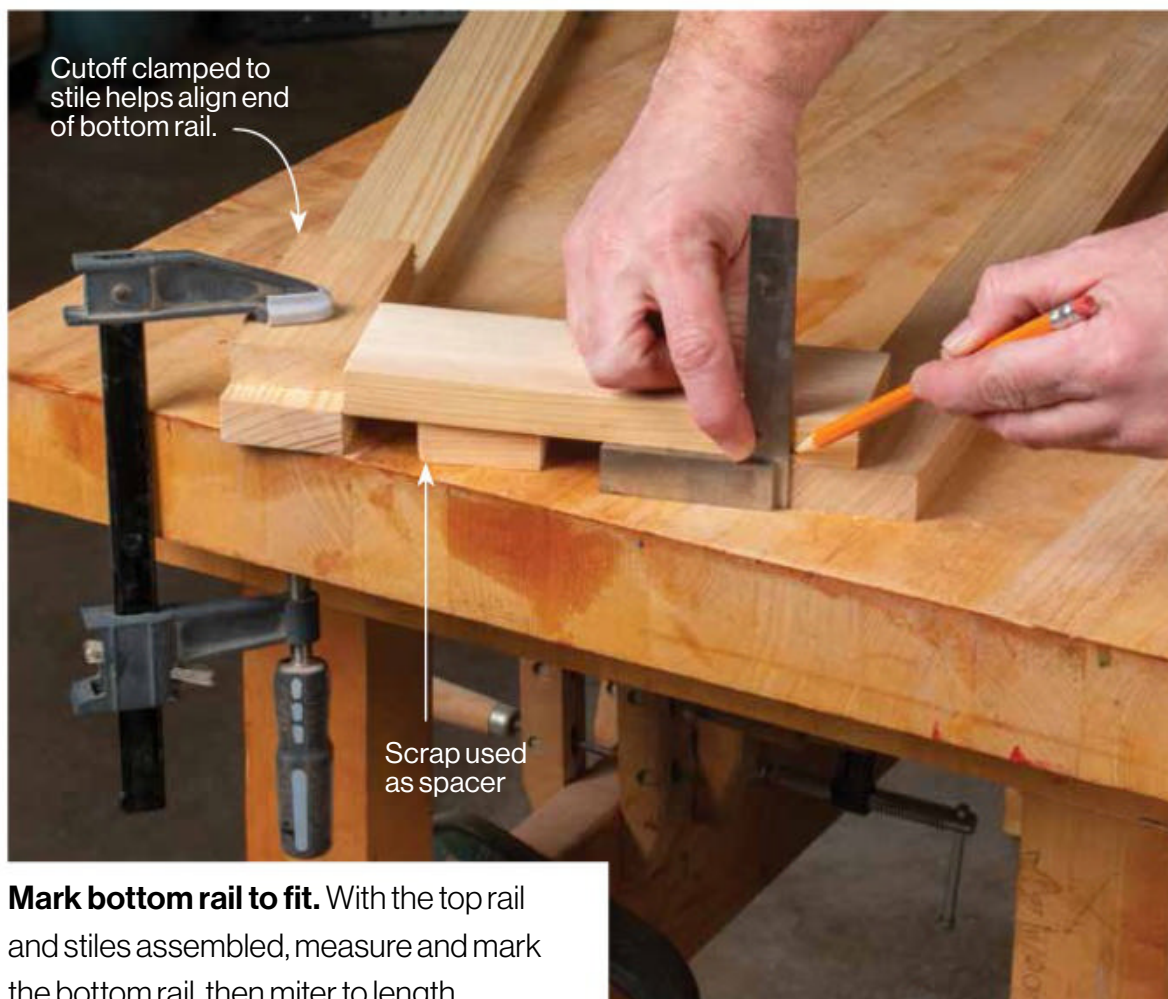
To start, make a single frame, then use that frame to make a jig to aid in constructing the other seven frames. At the table saw, adjust a miter gauge 5° off square. Cut one top rail to become a 14" long trapezoid and two stiles to become 37" long parallelograms. Drill pocket holes in the top rail before gluing and screwing it in between the stiles. Measure the diagonals to ensure symmetry. Hold the bottom rail in place and mark it for length before cutting it with the same table saw set up. Glue and screw the bottom rail in place.



Miter top rail. With the miter gauge set at 5°, cut the top rail and both of the stiles to the lengths specified.



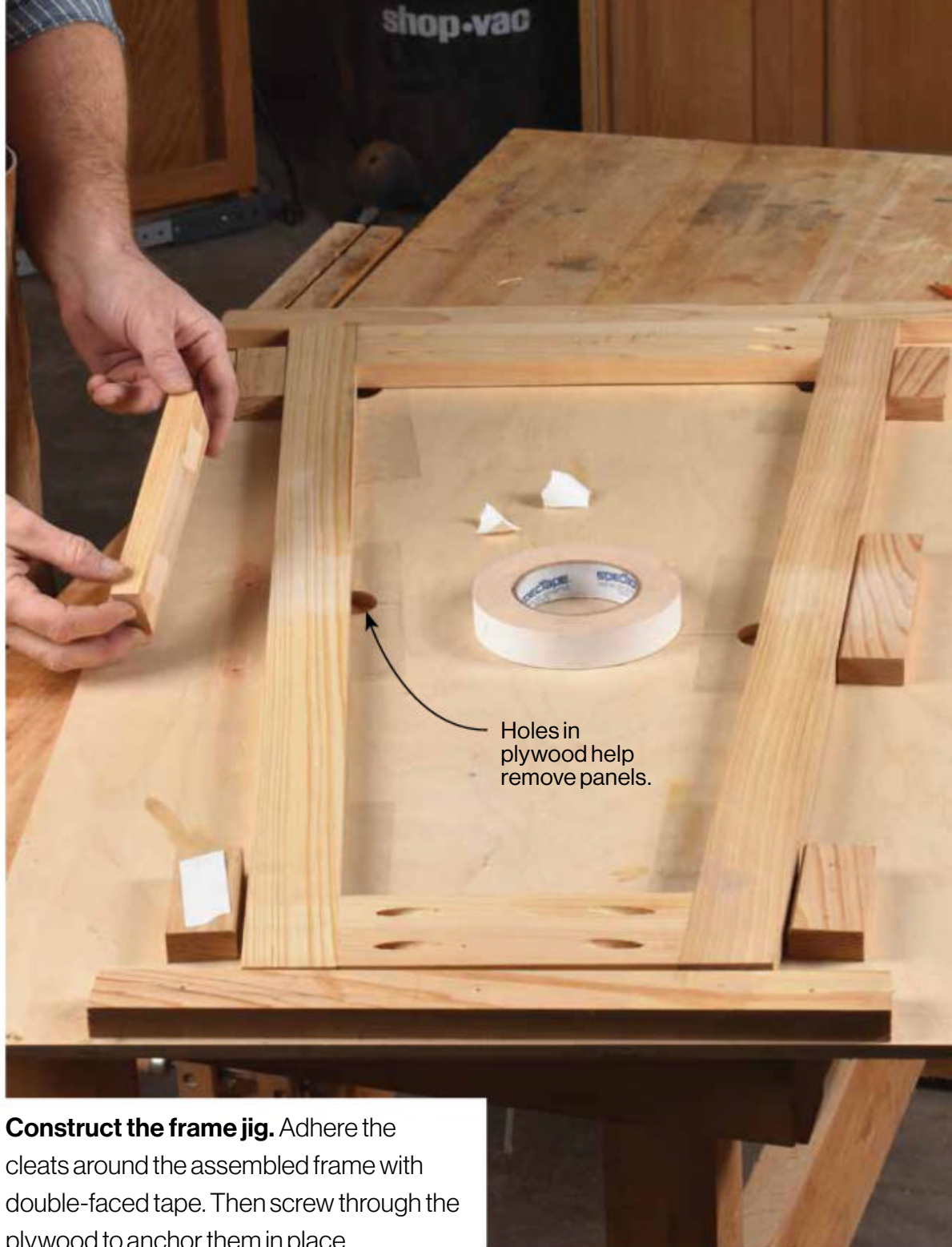
Angled drilling. Register the rail in the pocket-hole jig with it tilted to match the angled cut on the end. Drill two holes, then flip and repeat. Keep each hole at least 1/2" from the edge, allowing for the rabbet later.



Mark bottom rail to fit. With the top rail and stiles assembled, measure and mark the bottom rail, then miter to length.

Make the frame jig

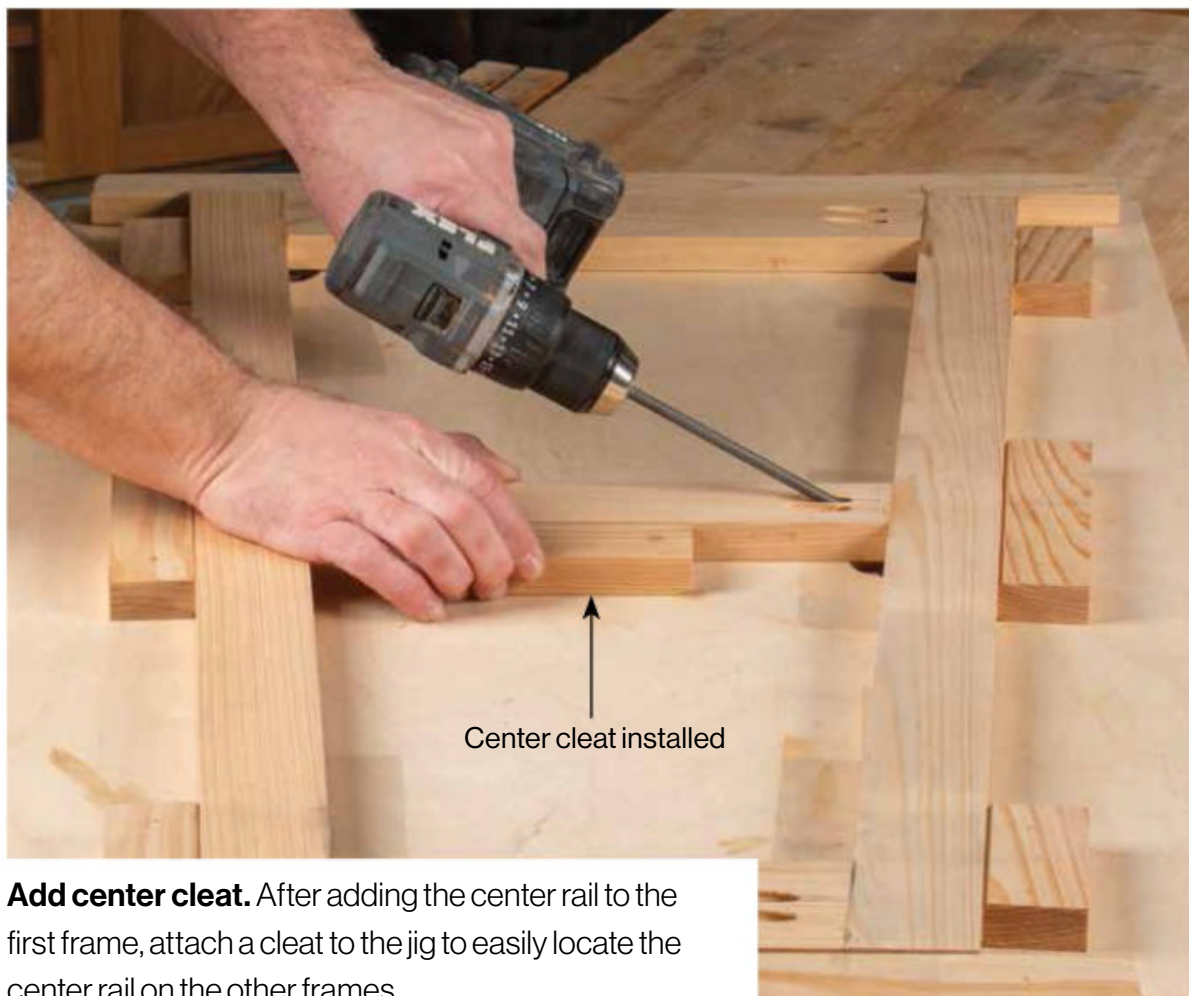
Set the assembled frame on a $\frac{1}{2} \times 24 \times 42$ " sheet of plywood. Make cleats from $\frac{3}{4}$ " hardwood and chamfer their edges to help ease the frames in place and for sawdust relief. Fasten the cleats to the plywood surrounding the frame as shown. Mark the stiles for the center rail halfway along their length and draw a centerline along the length of the center rail. Align the center marks, then mark and cut the center rail to length as you did with the bottom rail. Drill pocket holes in the center rail keeping them near the center to allow room for the rabbets that will hold the panels. Glue and screw the center rail in place and attach the center cleat to the jig. Also drill $1\frac{1}{2}$ " dia. holes through the plywood to facilitate popping the frames free after assembly. Cut the parts for, and assemble the remaining frames, aligning the pieces with help from the jig.



Construct the frame jig. Adhere the cleats around the assembled frame with double-faced tape. Then screw through the plywood to anchor them in place.



Mark the center rail. Locate the center rail in the frame and mark it for length before mitering the ends at the table saw.



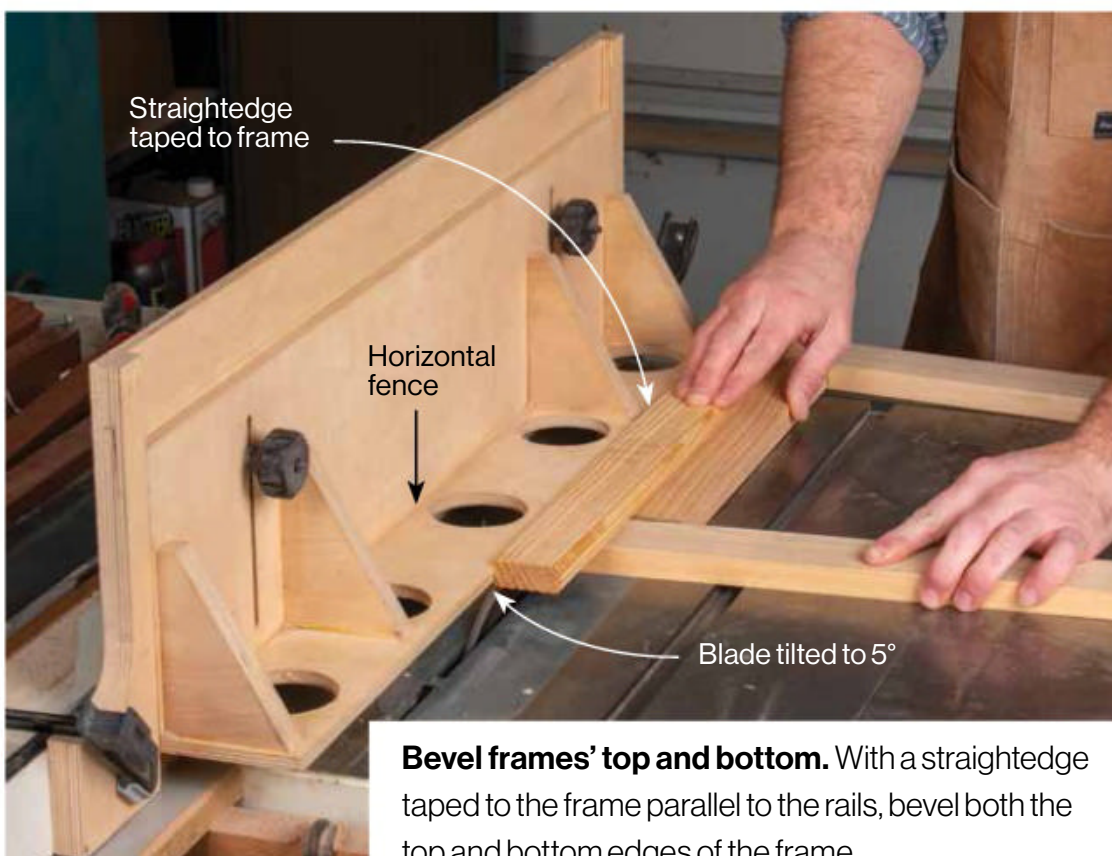
Add center cleat. After adding the center rail to the first frame, attach a cleat to the jig to easily locate the center rail on the other frames.

Shape and miter the frames

At the router table, cut $\frac{1}{4}$ " wide $\times$ $\frac{3}{8}$ " deep rabbets for the panels around the inside of the frame openings in several shallow passes. Add a horizontal fence to your table saw (download plans for the one used here from [onlineEXTRAS](#)) and tilt the blade to 5° . Adhere a straightedge to the frame with double-faced tape. Run the straightedge along the horizontal fence to bevel the top and bottom of each frame. To miter the long edges, tilt your table saw blade to 44.8° . Tape a spacer to the frame's outside face, and adjust the fence so the blade cuts right to the corner of the stile. Run the frame on edge to make the cut. Note that on a right-tilting saw, you'll need to place the fence to the left of the blade.



Route the recess. Rabbet around the inside of the frame openings, guiding the pieces against the bit's bearing, and feeding against the rotation of the bit.



Bevel frames' top and bottom. With a straightedge taped to the frame parallel to the rails, bevel both the top and bottom edges of the frame.



Miter frame edges. Tape a spacer to the stile, parallel to its outside edge. Adjust the fence to position the frame so the cut leaves a knife-edge bevel on the frame stiles.



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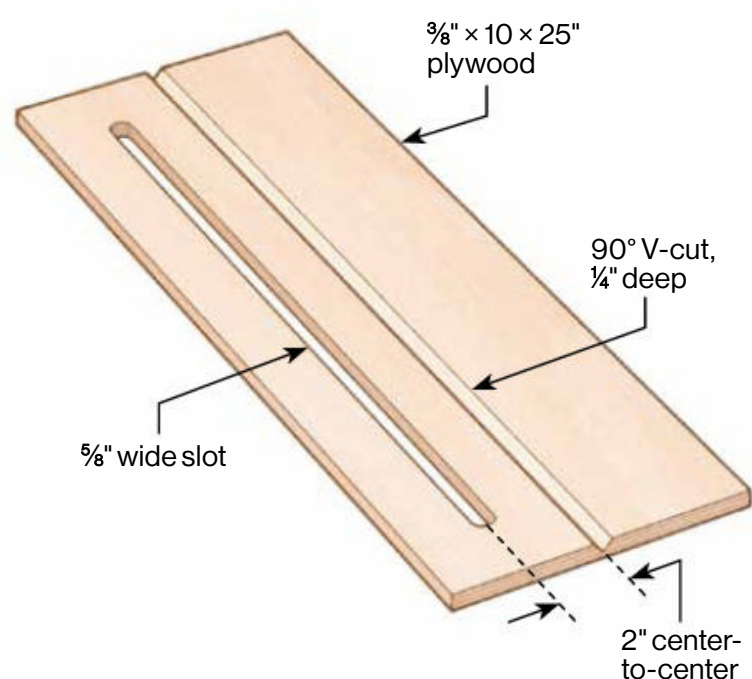
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Make and crosshatch the panels

Resaw and edge glue stock as needed to make the wide, thin panel blanks. Cut one top and one bottom panel to serve as templates, sizing them to fit in the openings of one frame. Make the tapered cuts with the help of a horizontal fence attached to your table saw fence as shown. Round the corners to fit in the rabbets. Then tape these templates to the rest of the panel blanks and trim the blanks to size at the table saw. Cut the panels' crosshatch pattern guiding the router with the jig shown below. For the top panels, start by aligning the jig over lines drawn from corner to corner. Rout an $\times$ across the panel, then register the jig with a $\frac{5}{16}$ " dowel as you make subsequent cuts across the panel. The process is the same for the bottom panels, but instead of making the initial cuts from corner to corner, start them in the top corner and copy the angle from the top panel.

PANEL HATCHING JIG

(shown upside down)



Make panel template. Align the horizontal fence with the outside of the blade. Tape a pushpad along the layout lines and guide it along the fence to trim the panel to shape.



Trim to size. With the template taped on top, guide the sandwich along the horizontal fence to cut the blank to shape. Then nibble away at the corners to round them.

Hatch a plan. Align and clamp the crosshatching jig to mill a $\frac{1}{8}$ " deep v-groove corner-to-corner across the panel. Then install a dowel to align the new cut with the groove in the jig, before plowing another v-groove parallel to the first. Work your way to the corner, then start at the center again to groove the other half. Repeat the process to finish the crosshatch pattern.

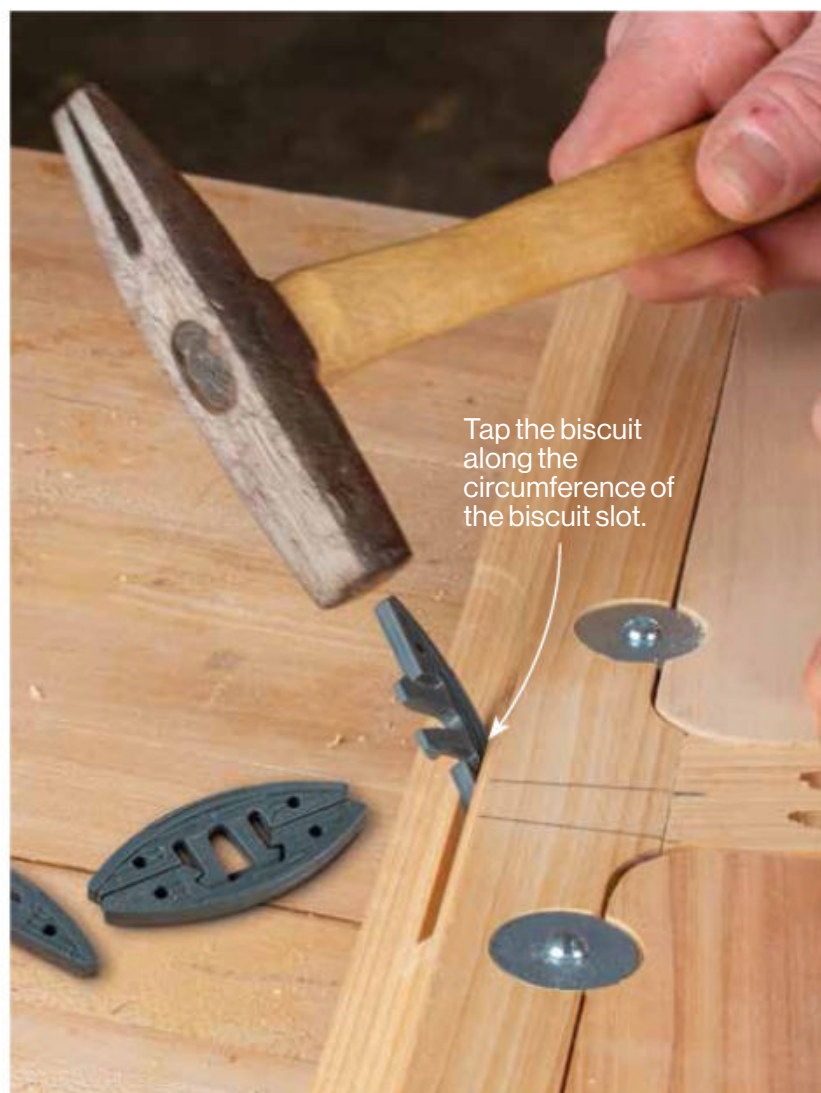
90° V-groove bit
with $\frac{5}{8}$ " O.D. guide
bushing

V-groove routed
along underside
of jig.

$\frac{5}{16}$ " dowel registers jig for
each subsequent cut.

Assemble the frames

Make a drilling guide by boring two 1"-dia. holes through a $\frac{1}{2} \times 3 \times 17$ " scrap of plywood. Space the holes 12" apart, and center them across the piece's width. Place the panels in their rabbets, then drill two $\frac{1}{16}$ " deep recesses along the sides of each panel. Drill pilot holes in the center of the recesses and fasten the panels in place with #6 $\times \frac{3}{4}$ " screws and fender washers. Lay out and cut biscuit slots along the length of the beveled edge, keeping the biscuit slots close to the panels' inside face. Install one half of the plastic biscuit in the slots along one edge, and the complementary half in the mating edge's slots. Apply glue to the edges and assemble. Clamp to dry.



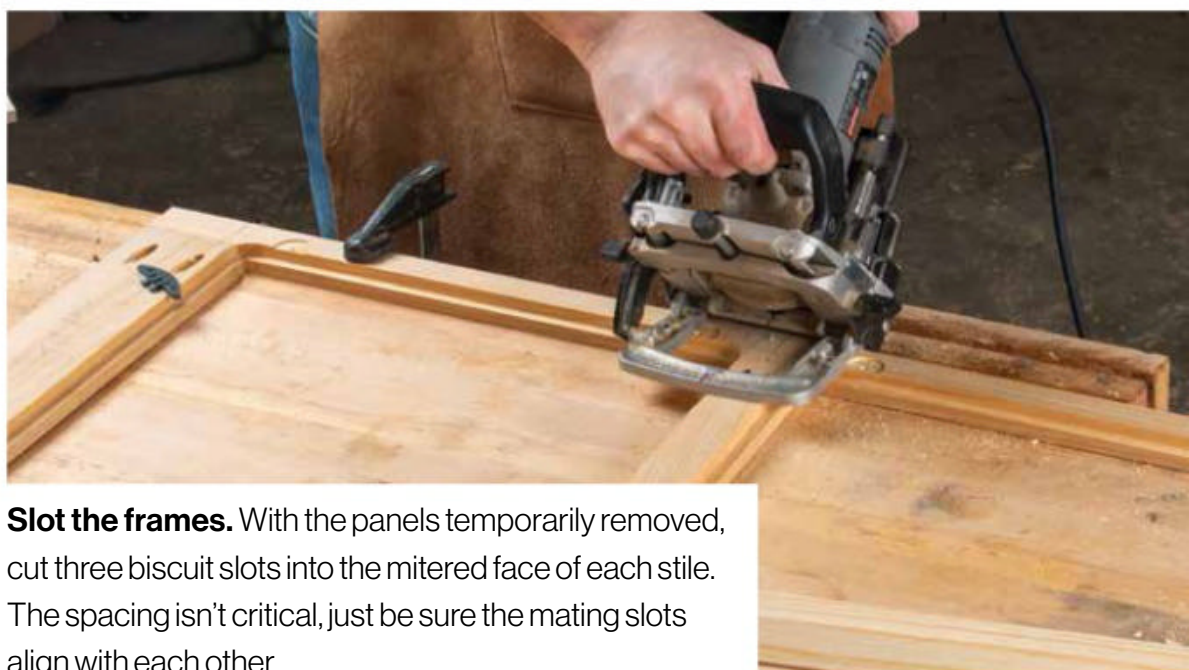
Tap the biscuit along the circumference of the biscuit slot.

Add the biscuits. Place the tip of the biscuit at one end of the slot and tap it into place. Repeat the process with the mating pieces.

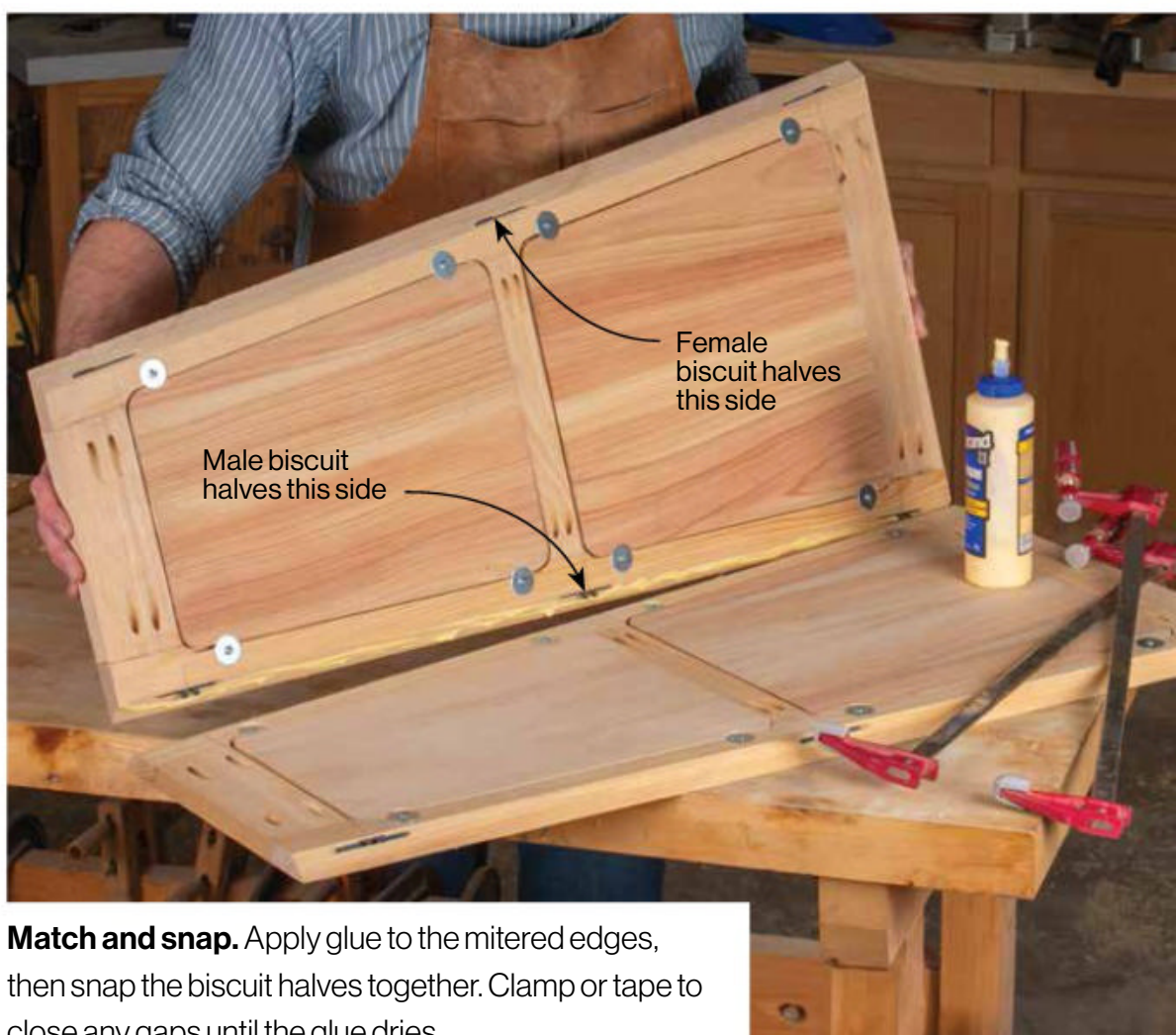


Drilling guide

Drill for washers. Drill the washer recesses with a 1" Forstner bit. The centers of the recesses should be on the stiles, about $\frac{1}{8}$ " in from the rabbet's edge.



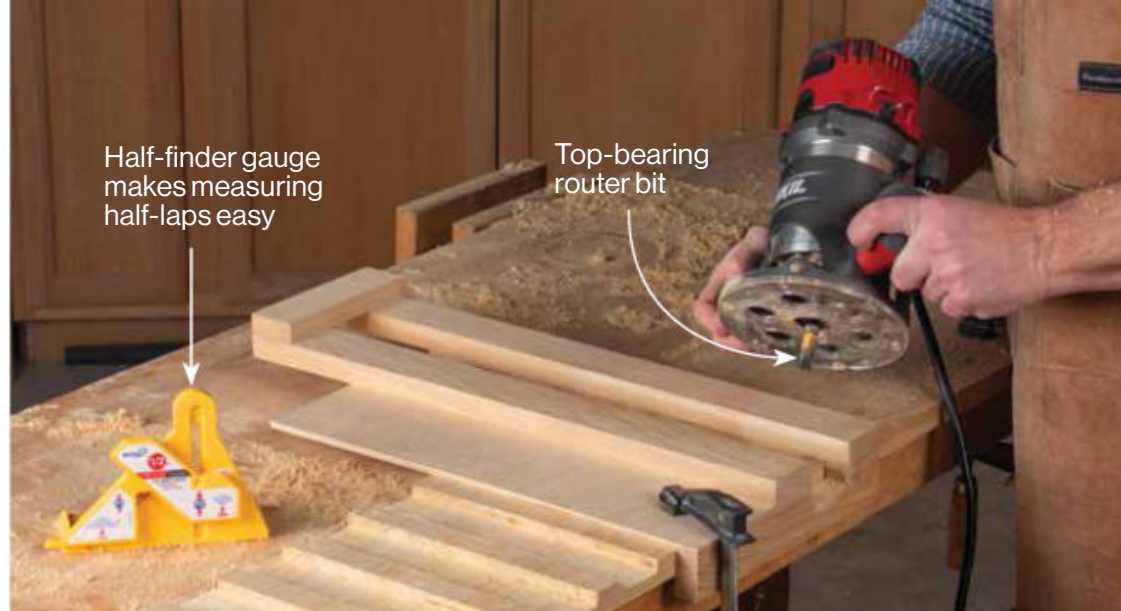
Slot the frames. With the panels temporarily removed, cut three biscuit slots into the mitered face of each stile. The spacing isn't critical, just be sure the mating slots align with each other.



Male biscuit halves this side

Female biscuit halves this side

Match and snap. Apply glue to the mitered edges, then snap the biscuit halves together. Clamp or tape to close any gaps until the glue dries.



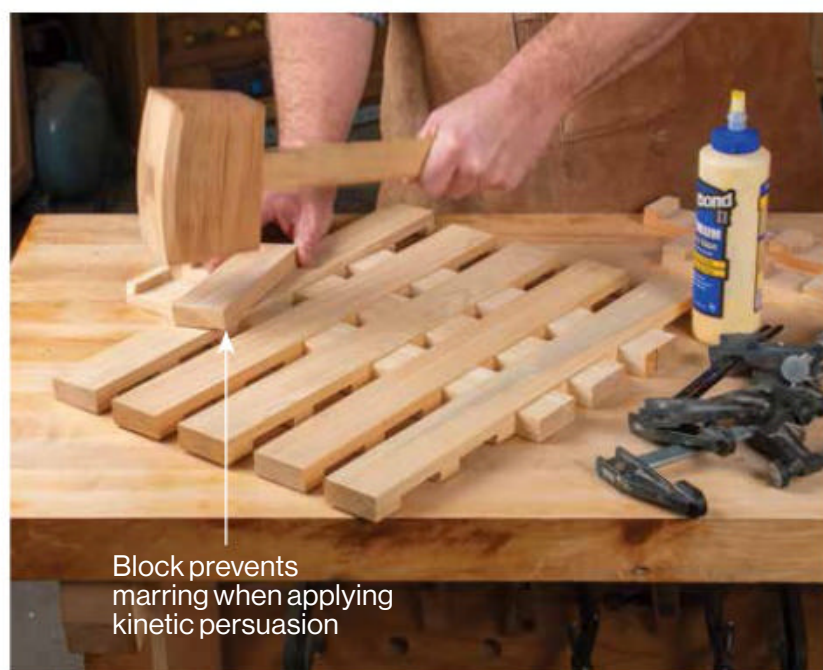
Half-finder gauge makes measuring half-laps easy

Top-bearing router bit

Rout half laps. Cut the first dado about 1" from one end of the grid stock. Then register the grid jig's 2"-wide underside guide in that cut to position the jig for the next cut. Repeat along the length of the board.



Rip grid pieces. Cut the grid stock into a series of strips measuring 2" wide and 18" long.

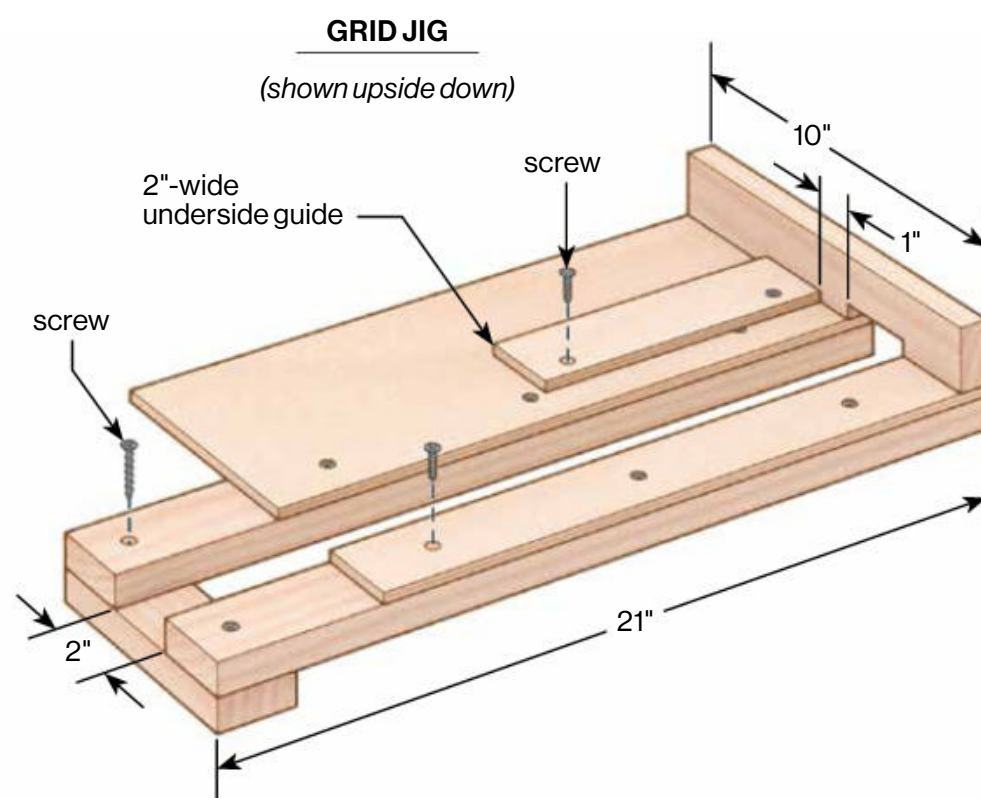


Block prevents marring when applying kinetic persuasion

Assemble the grid. Fit the grid pieces together, applying glue to the mating surfaces. Clamp the outer joints and apply a weight to the middle until the glue dries.

Make the brackets and grids, and finish up

Cut four pieces of 1 × 12 to 18" long. Install a top-bearing router bit in a hand router and cut a series of $\frac{3}{8}$ " deep × 2" wide dados across the pieces, guiding the router with the jig shown at bottom. Rip the stock into 2" wide strips. Apply glue to the mating surfaces and lap the pieces together to form the grids. Tilt your table saw blade over 5° and cut the grids to the size shown on p. 32 employing the horizontal fence and pushpad as you did when making the panel templates. Cut the cleats to size and screw them in place inside the planters. Also cut the triangular feet to size and screw them in place. Finish the entire planter with a durable outdoor finish. We chose General Finish's milk paint, topcoated with GF Satin Exterior for added gloss. Put the planters in place and fill the base with sandbags resting on the triangular feet. Install the grid and top with a potted plant. ■



Notched stretchers slot into splayed legs

All parts are cut from $\frac{3}{4}$ " BC plywood except the edging around the top and shelf and the grooved stiffeners running up the sides of the legs. These are made from hardwood—I used ash. Both sets of stretchers are slotted to fit in matching slots cut in the A-shaped legs. Because the legs are splayed, you'll need to lay out the slots in the stretchers very accurately so everything fits together as it should. The top is a double layer of plywood covered on both sides with plastic laminate. The edging is glued and screwed in place with plugs covering the screw heads. The shelf is a single layer of laminated plywood with hardwood edging that is glued and pinned in place. Both the top and shelf have cleats screwed to their undersides to register them in place between the stretchers.

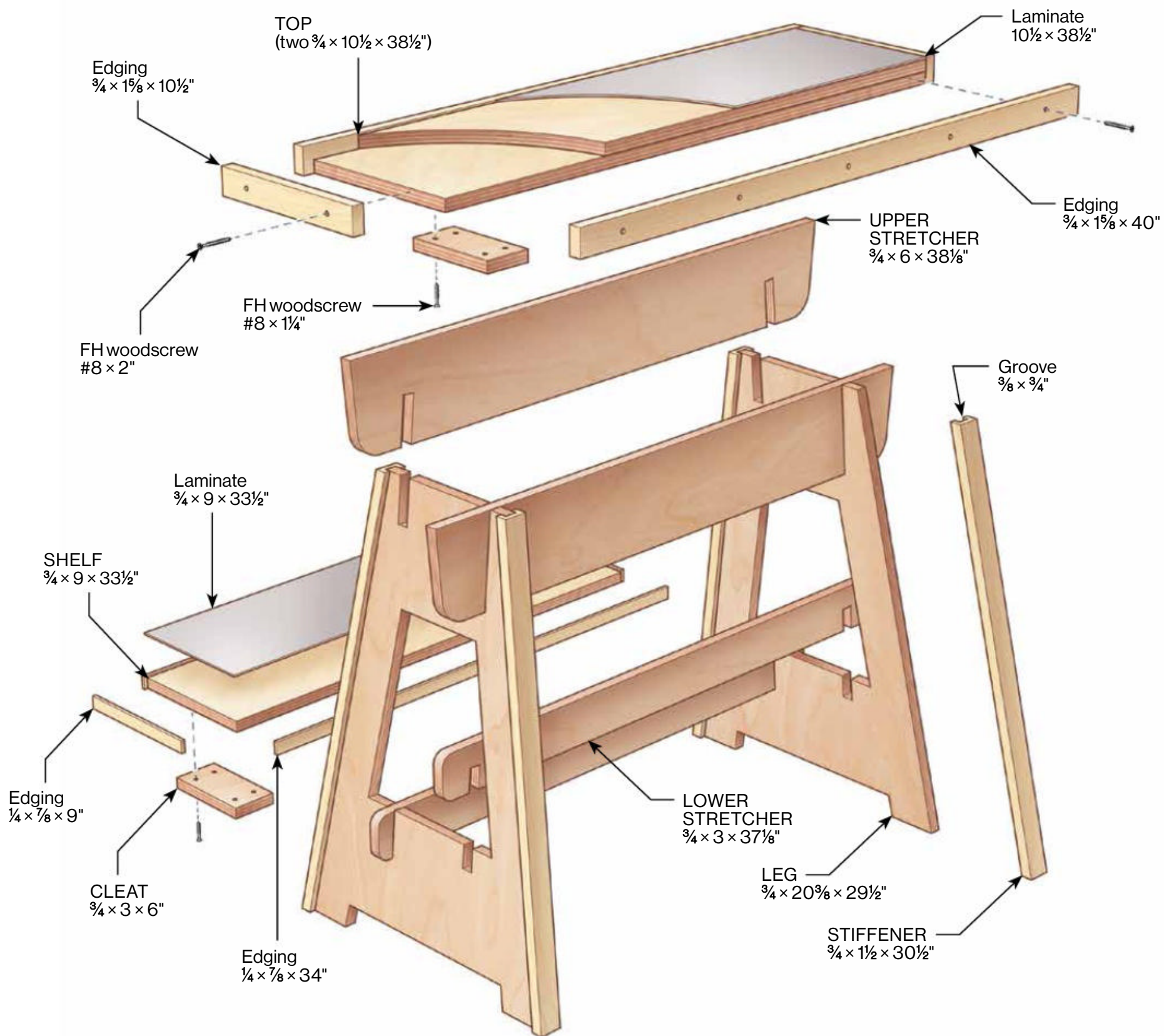
Benchtop Lathe STAND

A sturdy horse with knock-down capability

By Ken Burton

I first built a version of this stand when I was developing a turning program for the high school where I was teaching. I had enough money in my budget for five mini lathes and an assortment of tools, but not enough for stands. No worries. A few sketches and a bit of scrounged plywood later, I had a set of serviceable, knock-down stands that actually outlasted the electronics in those mini lathes. (If you want to test anything for durability, just put it in room full of adolescents...) Making those stands knock-down was important because I needed to

be able to store them flat on a shelf when not in use. Knowing that few of us have enough shop space, keeping that feature seemed like a good idea when I revisited the design. The stand parts slot together, with the splayed legs both adding stability and locking the structure tight. For additional rigidity, you could also drive in a few pocket screws if you don't need the stand to come apart. Add a little paint along with a laminated top and shelf and, for a fraction of the cost of a commercial stand, you'll be up and turning in no time.



UPPER STRETCHER DETAIL

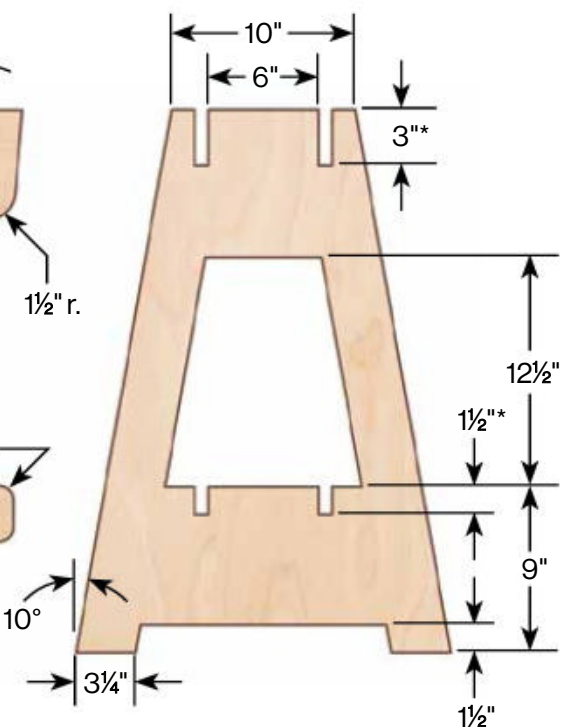


LOWER STRETCHER DETAIL



* = Cut to fit

LEG DETAIL



Order of Work

- ✓ Make the legs
- ✓ Cut and notch the stretchers
- ✓ Laminate the top
- ✓ Finish and Assemble



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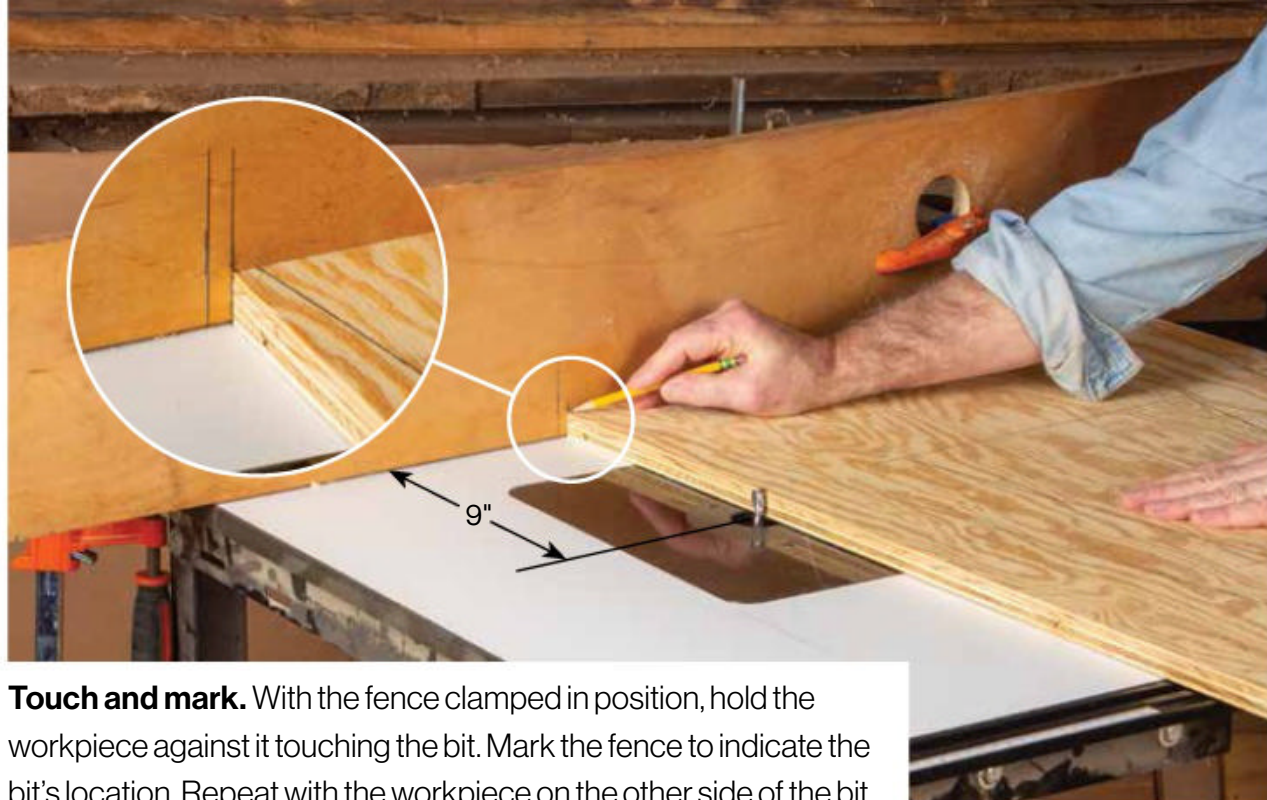
Download the leg CNC cutting files from our website.



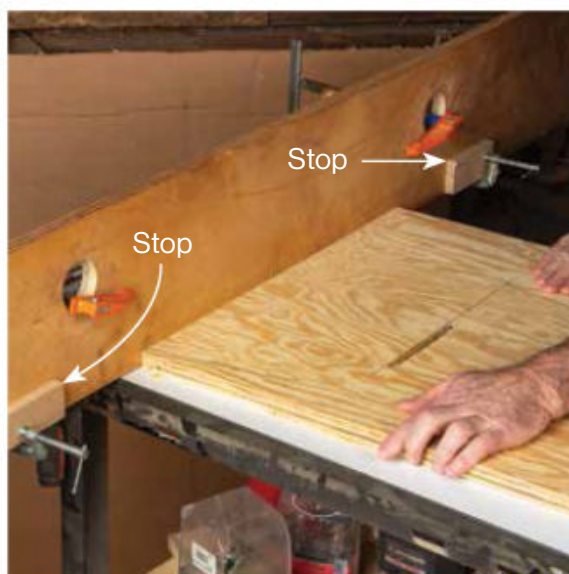
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Make the legs

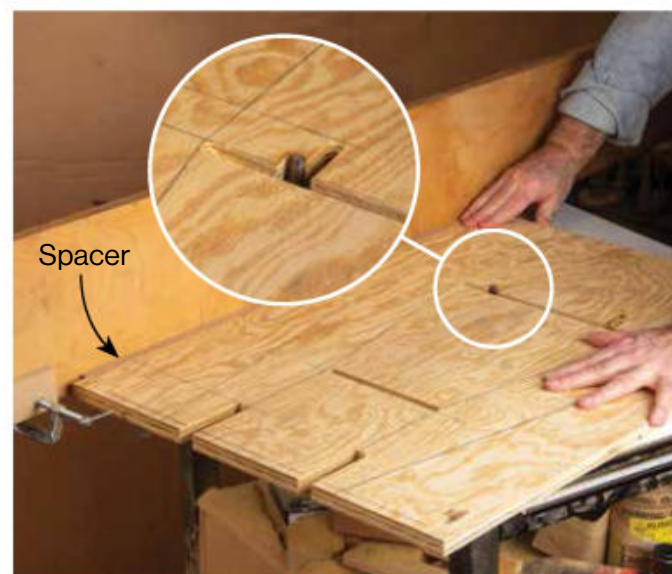
Cut two pieces of plywood to 21×30 ". On one of the pieces, lay out the leg's tapered shape along with the inside cutout and notches as shown in the Leg Pattern on p. 41. Leave the extra length at the top. Chuck a $\frac{3}{8}$ " spiral upcut (or straight) bit in your router table. Add a long extension to the router table's fence and clamp it 9" away from the bit. Note, I had to rotate my table and run the fence across its shorter dimension to have enough clearance. Mark the bit's location on the fence as shown. You'll need to repeat this process each time you move the fence. Transfer the starting and stopping points for the interior cutout and slots to the piece's edges. Rout the bottom edge of the interior cutout, then reposition the fence and make the top cut. Cut the slots in two passes by running the long edge of the piece along the fence, adding a spacer before making the second pass. To calculate the thickness of the spacer, measure the thickness of the plywood with a caliper and subtract the bit diameter. Taper the piece with a track saw, then finish the interior and foot cutouts at the router table. Trace the first leg onto the second plywood piece and rough cut it to shape with a jig saw. Then screw the two pieces together and rout the second leg to match the first with a flush trim bit.



Touch and mark. With the fence clamped in position, hold the workpiece against it touching the bit. Mark the fence to indicate the bit's location. Repeat with the workpiece on the other side of the bit.



Make the bottom cut. Align the layout marks with the bit location marks and clamp stops to the fence to control the cut's start and stop points. Plunge the piece onto the spinning bit and feed from right to left to make the cut.



Cut the notches. Make the notch cuts with the same $\frac{3}{8}$ " bit. After making the first pass, add a spacer between the workpiece and the fence, then cut again. Clamp stops to the fence to control the lengths of the cuts.



Taper the sides. Clamp a saw track along the slanted layout lines and make the tapering cuts with a circular saw.





Fence is back in its regular orientation

Locate fence to leave this portion 3¼" wide.

Make the first cut, then flip the piece to make the second cut.

Make the stretchers, top, and shelf

Cut the stretchers to width, but leave them about 40" long for now. Also cut the pieces for the top and shelf, leaving the top pieces ¼" oversize in both length and width. Rout both slots in one of the upper stretchers, and one of the slots in one of the lower stretchers. Partially assemble the stand to determine the location of the second slot in the bottom stretcher. Rout the second slot, then cut the two notched stretchers to length and shape their ends. Screw the stretchers to their unnotched counterparts and pattern rout to make the second stretchers match the first ones. Face glue and screw the two top pieces together, then cut to final size on the table saw. Apply laminate to both surfaces of the top and shelf and flush trim the edges. For more on working with laminate, see onlineEXTRAS. Attach the edging to both the top and shelf. Ease the edges of the top with a ¼" roundover bit at the router table.



Rout the notches. Screw together a simple router fence to guide your router as you cut the notches in the stretchers. Rout the notches with the same bit/spacer combination you used for the notches in the legs.



Locate the second notch. Install the two notched stretchers in one leg. Slot the second lower stretcher into the notch at the free end of the upper stretcher and clamp it so the two installed stretchers are parallel. Mark the installed lower stretcher for its second notch.



Apply the edging. Cut the top edging overwide, then glue and screw it in place. Hand plane it to make the overhang flush with the surfaces. Repeat the process for the shelf, but with brads in lieu of screws.



Find your groove. Rather than trying to match the width of the dado blade to the plywood thickness, set up a ½" dado and make the cuts in two passes, adjusting the fence position in between to dial in a perfect fit.



Bevel the ends. Bevel the stiffener ends with the blade tilted to 10° and the miter gauge angled at 5°. Cut two stiffeners with the groove up and two with the groove down. Then shift the miter gauge to the other side of the blade to cut the other ends.

Finish up

Install both upper stretchers and mark the top of the legs for length. Bevel the top of the legs at 5° to make them flush with the surface defined by the tops of the upper stretchers. Cut the stiffeners to size and groove them to fit on the legs. Bevel their ends to match the leg splay. Round over the edges of the stiffeners, as well as the edges of the inside openings on the legs, the bottom of the legs, and the ends and lower edges of the stretchers. Sand everything. Paint the legs and stretchers, leaving the outside edges of the legs bare so you can glue the stiffeners to them. I went with General Finishes Basil Milk Paint. Apply finish to the stiffeners and edges of the shelf—I used Watco Danish Oil. Glue and pin the stiffeners to the legs. Slot the stretchers into the legs. Screw the cleats to the underside of the top and shelf to hold them in place. Set up your lathe and get to work. ■



One leg at a time. To assemble, install all four stretchers on one leg, then slot them into the second leg all at once.

Simple DESK

A stylish, easy-to-build workstation

By Bob Berner



I needed a place to do deskwork without taking my laptop and setting up camp on the kitchen table. I wanted something attractive and sturdy that was also relatively lightweight, knock down, and easy to repurpose as needed. After noodling about with these criteria in mind, I decided on this design that features removable hardwood legs and a laminated plywood top with a drawer to hold my laptop and other bits and bobs. The build was quite straightforward, and relatively simple. The drawer depth is

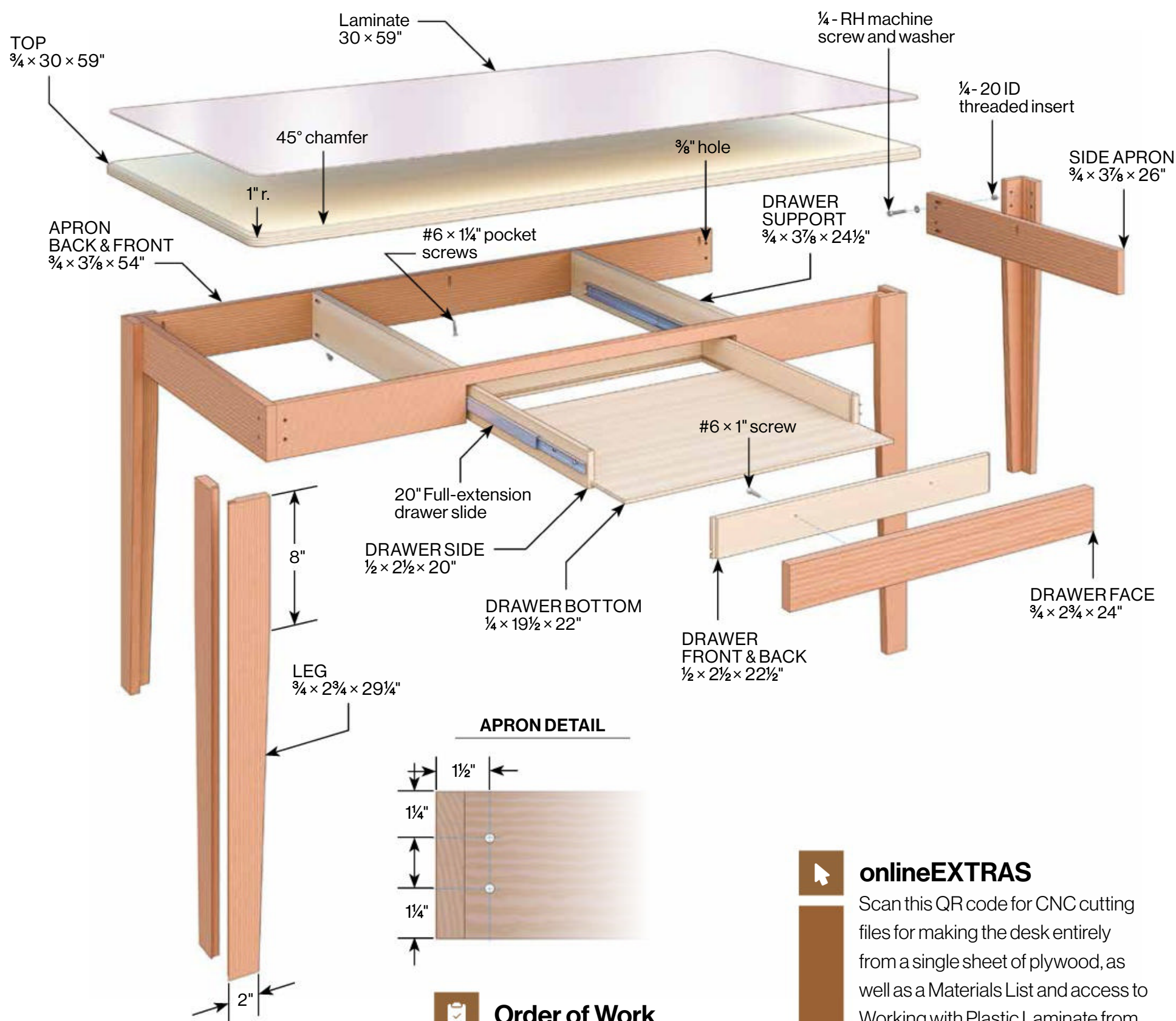
limited by the apron width, but that is really the only constraint. The desk is light enough for one person to move and sturdy enough for just about any use. Making the legs detachable makes the desk much easier to move, store, or even ship. All that is needed for disassembly is a $\frac{7}{16}$ " wrench or socket. You can simplify the construction by omitting the drawer if you like, and then the legs will fit within the apron to make storage (and shipping) even easier.

Clean lines and simple joinery

The legs and aprons are made from cherry—chosen for its color, durability, and availability—though nearly any species will work. The top is Baltic birch plywood with plastic laminate applied to both sides and

its edges left exposed. The two-part legs meet in a lock miter joint at the corners. The aprons are pocket screwed together at the corners and also pocket screwed to the underside of the top. The front apron is cut into

four parts and reglued to keep the grain continuous across the drawer front. The drawer sides and back are made from precut and finished stock (See Buyer's Guide on p. 62) and are joined with simple lock rabbet joints.



Order of Work

- ✓ Make the legs
- ✓ Make the top and attach the aprons
- ✓ Make the drawer
- ✓ Assemble

onlineEXTRAS

Scan this QR code for CNC cutting files for making the desk entirely from a single sheet of plywood, as well as a Materials List and access to Working with Plastic Laminate from our Aug/Sep 2023 issue.



For more onlineEXTRAS visit woodcraftmagazine.com

Make the legs

Cut the eight leg blanks to size and joint one edge of each piece. At the router table, set up the lock miter bit and rout the lock miters on all leg blanks. I used MicoJig's lock miter bit (see p. 62) for its ease of set up. Glue the mating pairs together before tapering them at the table saw.



Set up is critical! Set the bit height with the help of MicroJig's Fit Finder. Then adjust the fence so that its front plane intersects with the bit's edge at a point that matches the material thickness.



Half and half. Rout four of your blanks with their inside face flat on the table. Rout the other four with their inside face against the fence to create mating pairs.



Glue up. Apply glue along the miter cuts and fit the pieces together. Clamp in both directions. Be careful not to use too much glue as it may keep the pieces from seating.



Taper the outside edges. I taper on the table saw by attaching a fence to a carrier board at the appropriate angle. These legs required two setups, the second with the leg rotated end-for-end and the fence repositioned.

Make the top

After cutting the top to size, radius the corners to make them friendlier. Then apply laminate to the top surface. A lot of times, you'd want to laminate both surfaces to prevent warping, but here the aprons serve to keep the top flat. Flush trim the laminate, then rout a $\frac{1}{8}$ " deep 45° chamfer around both the top and bottom edges. Mill the aprons to thickness, but leave them about $\frac{1}{4}$ " over-long and over-wide for now. Rip the front apron to the width of the drawer front. Crosscut the drawer front to length, then glue the remaining three pieces of the front apron back together. Cut all four aprons to their finish size and pocket screw them together at the corners. Also cut the drawer supports to size and pocket screw them in place. Drill clearance holes for the leg assembly bolts before pocket screwing the apron assembly to the underside of the top.

One of a select few southpaws

Measure front-to-back and side-to-side to get the overhang right.



Laminate scraps create gaps around drawer front

Reassemble the apron. After cutting the drawer face free, carefully mark the pieces for alignment. Then glue the two sides to the top rail using some laminate scraps as spacers for the gap on each side of the face.



Corner radius template

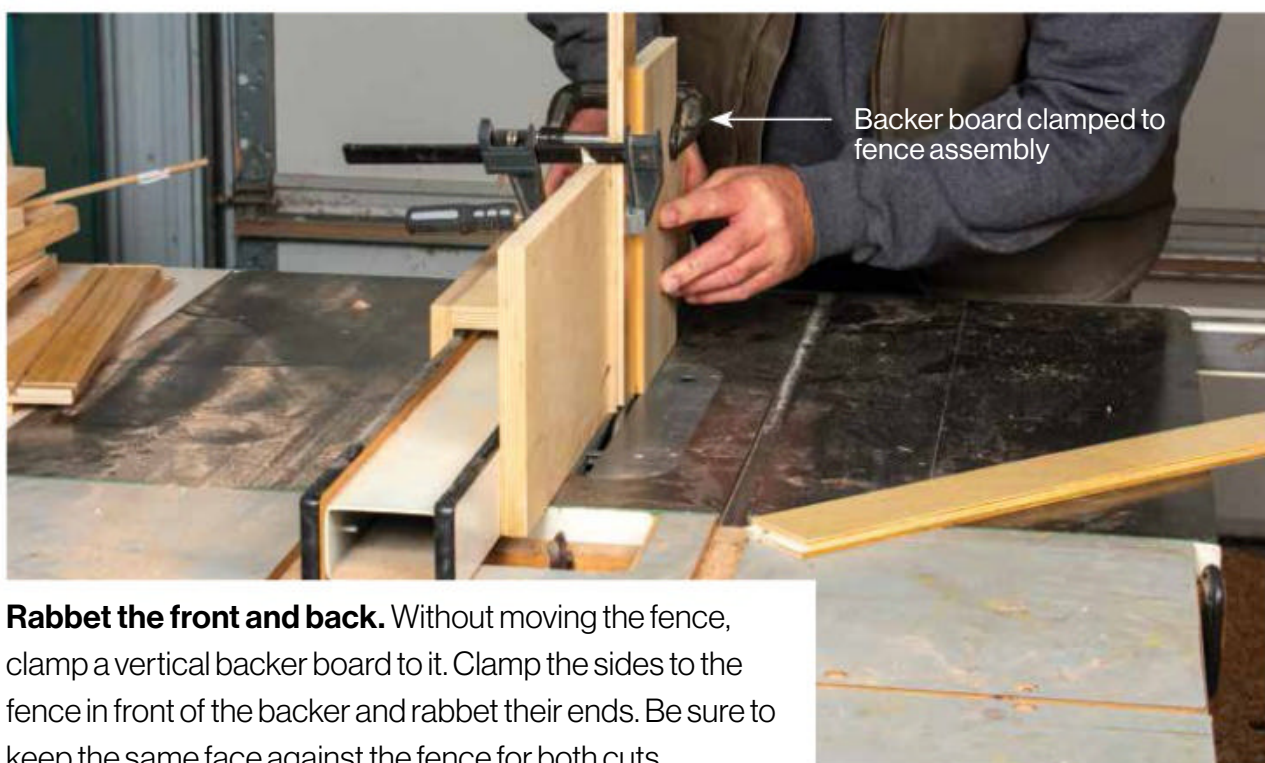
Round the corners. I used a top bearing bit in conjunction with a template to rout the 1" radius on the corners.

Make the drawer

Cut the drawer box parts to size. I used precut and prefinished plywood sides and bottom on this build to save time and effort. And by choosing plywood, the bottom can be glued in place for a stronger drawer. The lock rabbet joint is my go-to for an easy and quick way to make drawers. One tool setup is all you need to cut all your drawer joints. Chuck a $\frac{1}{4}$ " bit in your router table, or mount a $\frac{1}{4}$ " dado on your table saw (shown) and adjust the cutter height to half the stock thickness. Cut dados at the ends of the sides and rabbet the ends of the front and back. Also cut a $\frac{1}{4}$ " groove for the bottom in all four pieces. After gluing the parts together I added some brads through the joints to keep everything together while the glue sets.



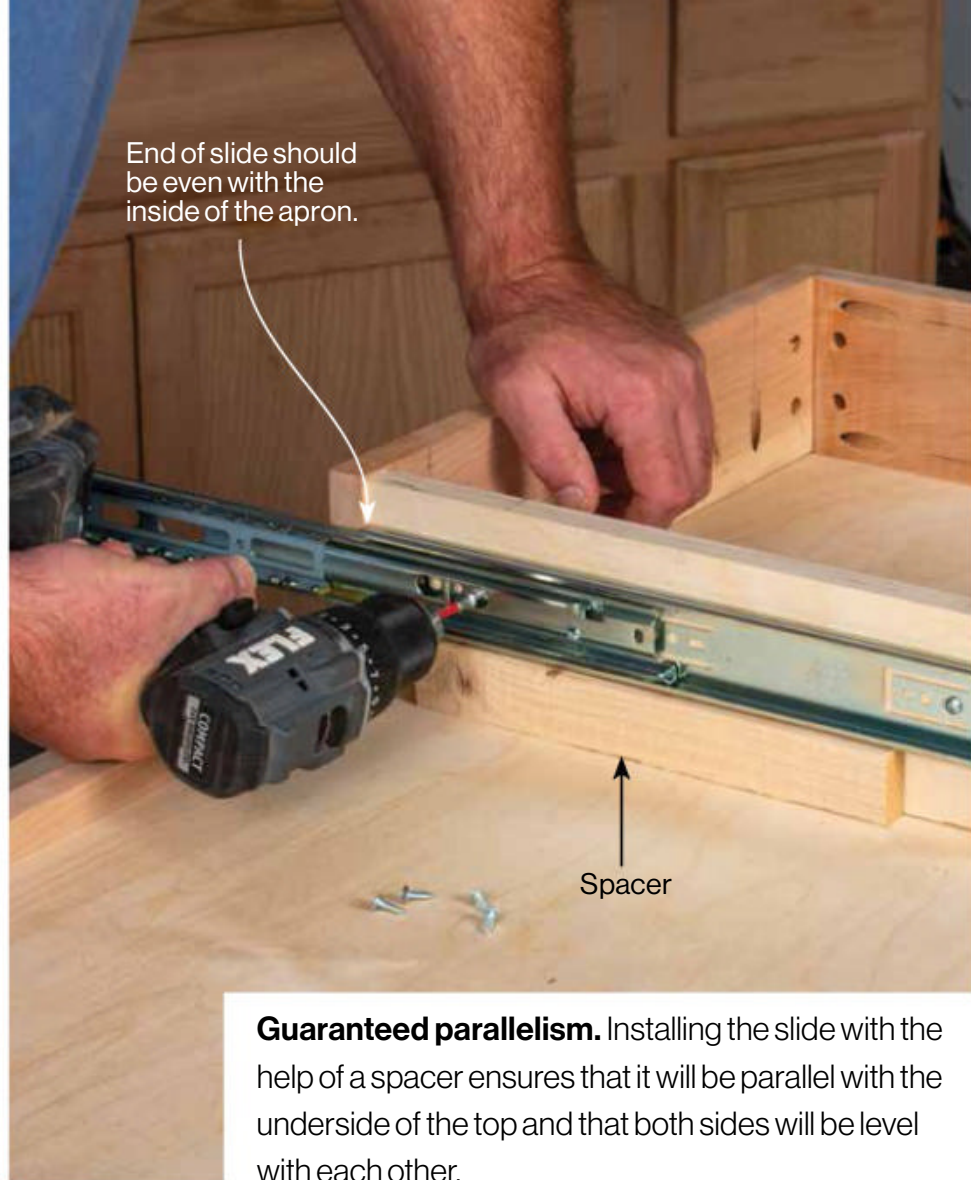
Dado the sides. With a sliding auxiliary fence in place, adjust the fence so the distance from it to the cutter equals the cutter thickness. Dado the sides, pushing them through the cut with a miter gauge.



Rabbet the front and back. Without moving the fence, clamp a vertical backer board to it. Clamp the sides to the fence in front of the backer and rabbet their ends. Be sure to keep the same face against the fence for both cuts.



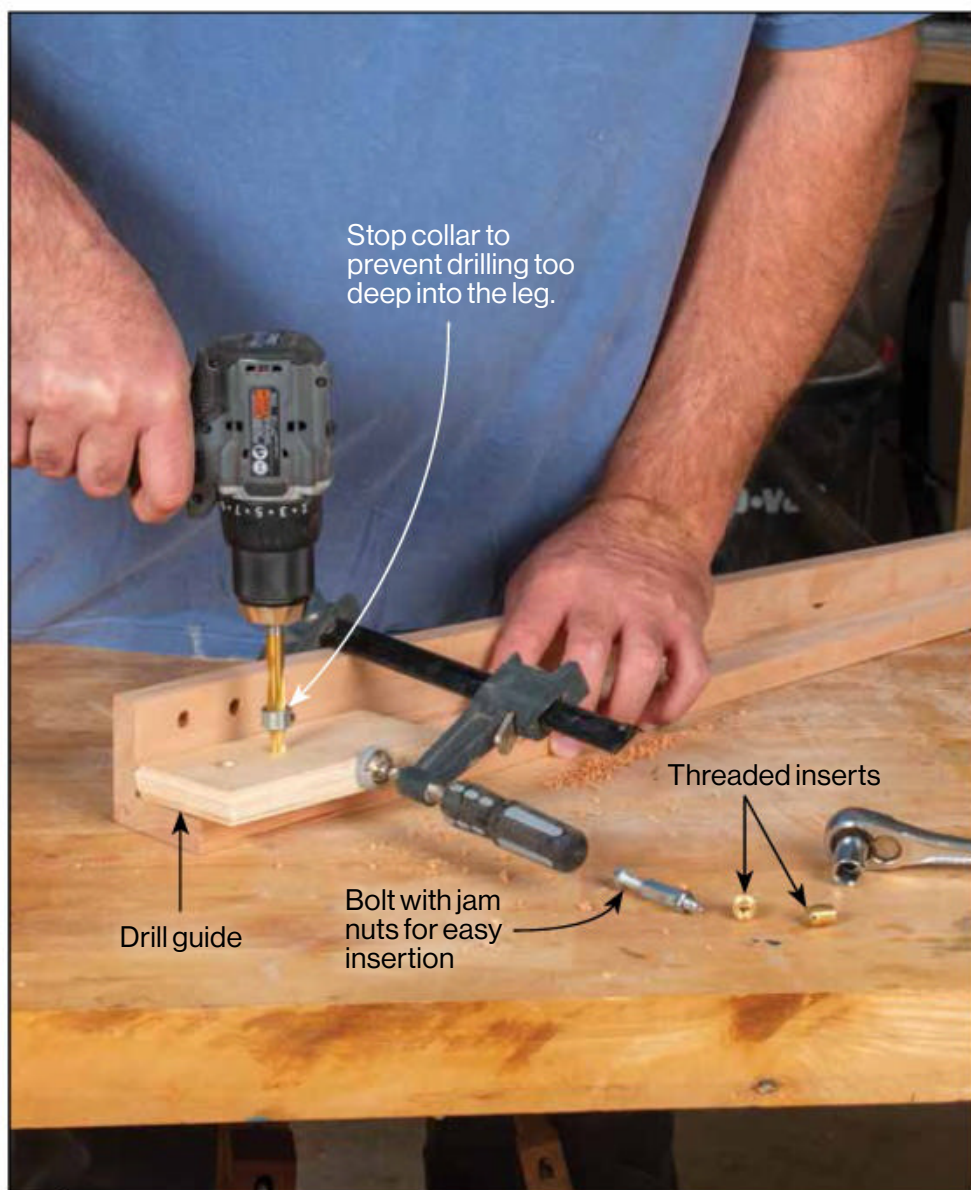
Slide and glue. Don't forget to insert the drawer bottom before you attach the final piece of the drawer box. A few brads driven through the joints add reinforcement and serve as clamps.



Guaranteed parallelism. Installing the slide with the help of a spacer ensures that it will be parallel with the underside of the top and that both sides will be level with each other.

Assemble

The drawer runs on full extension drawer slides. Cut a 1 3/4" wide spacer to make installation easier. Position the drawer slides with the spacer and screw them to the insides of the supports as shown. Lay out center lines for the slides on the sides of the drawer box and screw the removable portion of the slides in place along these lines. The ends of these pieces should be flush with the front of the box. Make a drill guide to help in positioning the 3/8" diameter leg-mounting holes in the aprons as well as the threaded insert pilot holes in the back of the legs. Drill four holes per leg and four holes in each corner of the apron assembly. Add a jam nut to a 1/4" bolt to install the threaded inserts. Bolt the legs in place then slide the drawer into its opening. Position the drawer face, holding it temporarily with double-faced tape while you fasten it to the box with screws driven through the box's front. Add your favorite finish to wrap things up. I used Odie's Oil. ■



Guided drilling. My drill guide is a scrap of plywood with two holes spaced as shown in the Apron Detail (p. 47). On the legs, clamp it flush with the end as you drill. For the aprons, hold it against the underside of the top and flush with the outside corner.



Socket to 'em. Installing the legs is as simple as tightening four bolts. Take care not to overdo it. Snug is sufficient.

Southern Yellow Pine

The tree family that builds and connects America

By Robert J. Settich

In the early days of the American South, cotton may have been king, but southern yellow pine (SYP) was—and still is—the crown prince. Early European settlers used the lumber for everything from houses and ships to railroad ties. The trees and roots were also tapped for chemical “naval stores,” such as pitch, rosin, and turpentine. Today SYP is in high demand as utility poles, framing lumber, pressure-treated lumber, plywood, and flooring; and for a wide range of paper products including corrugated cardboard and high-pressure laminate. In fact, the print version of this magazine may even have SYP content.

For woodworkers, SYP is a great choice for shop furniture, though perhaps not for your bench top because it can be a bit restless, refusing to stay flat. It's also great for making inexpensive full-scale project prototypes. Inside your home, SYP's character is well-suited to all types of rustic furniture, cabinetry, and millwork. Outdoors, you can utilize the wood for patio

furniture, planting boxes, trellises, and other structures. The raw wood isn't very rot resistant, but holds up well if painted or finished properly.

All in the family

Southern yellow pine (SYP) is not a single variety of tree, but any of ten species that grow from southern New Jersey down to Florida and westward to east Texas. Of these, four species account for 90% of SYP timber products in the US: shortleaf pine (*Pinus echinata*), slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), and loblolly pine (*Pinus taeda*). While each of these trees has distinct characteristics, the milled lumber is so similar that the US Forest Service admits that “pieces of wood are impossible to separate into species.” As part of the *Pinus* genus called hard pines, shortleaf and loblolly pine have a Janka rating of 690, with longleaf at 870. Old growth heart pine, the dense heartwood of hard pines, scores 1225. For reference, red oak is only slightly harder at 1290 whereas white pine, at 380, is much softer. These days, heart pine is generally only found as reclaimed wood from rivers or old buildings. Lumber from modern plantation-raised trees consists

almost entirely of sapwood. Trees in the SYP group typically grow straight, tall, and fast. As conifers, or softwoods, SYP trees have resin instead of sap, and it moves through microscopic canals instead of the pores typical of hardwoods. These canals make SYP well-suited for pressure treatment with chemical preservatives. Note, if you're working with treated SYP, never burn the scraps. The flames produce toxic ash and other unsavory compounds.

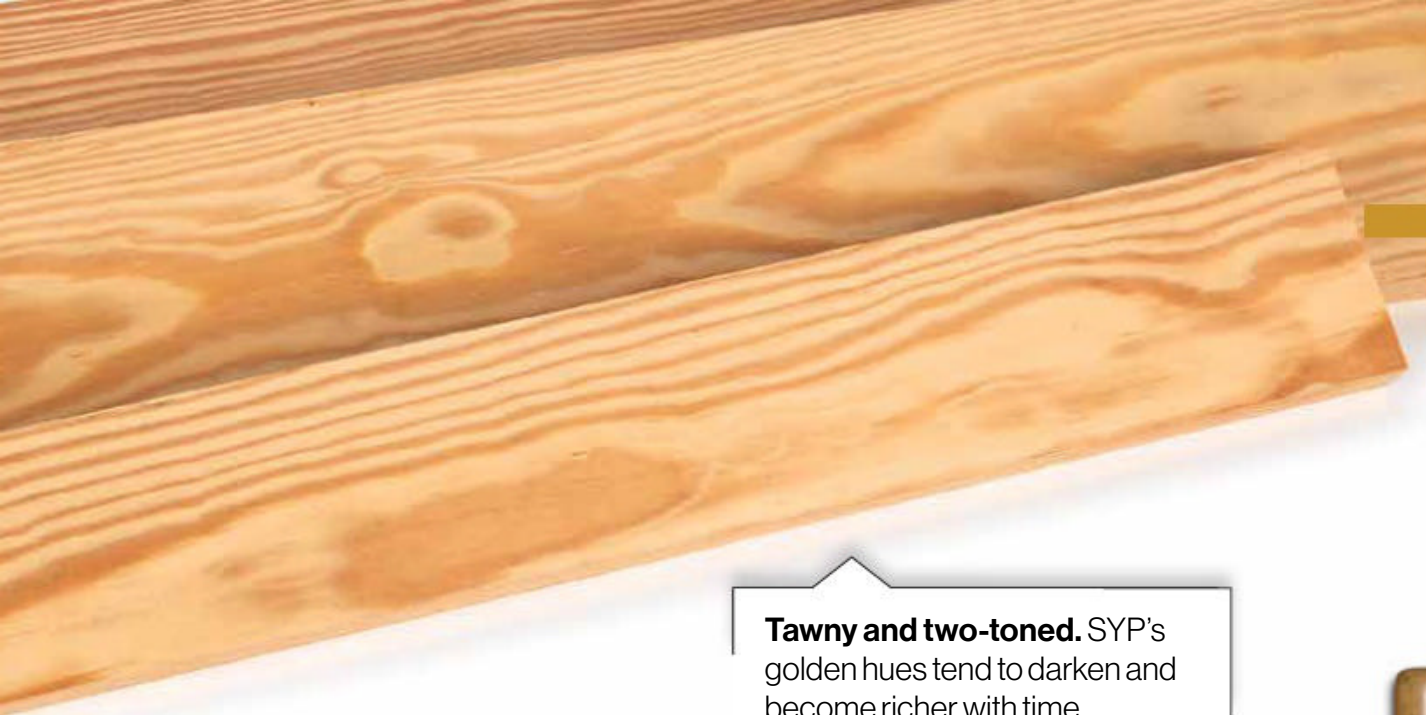
Finding and working with SYP

Depending on your location, your local big box store may stock SYP. In Kansas City, one nearby store has clear, S4S SYP in an extensive selection of widths and lengths. They weren't giving the stuff away, but I didn't hyperventilate either. Working with SYP is straightforward. It rips cleanly, though I experienced some minor tearout from crosscutting. I got slicker results than I expected at the thickness planer and jointer. Past experience with other pine species taught me to use a light touch when power sanding to avoid gumming up the paper. Edge routing presented no problems, but if you use a lot of SYP, all cutting edges are likely to experience buildup from this resin-rich wood. SYP



Golden beauty. On this plant stand, a clear finish emphasizes SYP's contrasting hues.

WORKABILITY	
TOXICITY	
ROT/INSECT RESISTANCE	
HARDNESS	



SYP trivialities

Tawny and two-toned. SYP's golden hues tend to darken and become richer with time.

does an outstanding job of gripping mechanical fasteners, an enviable quality in construction lumber. The wood glues well, but finishing SYP can be a bit tricky given the wood's resin content. Imperfectly dried boards can sometimes exhibit tacky areas where the resin has oozed. If you can't cut away and discard this part, use a card scraper to remove the resin, then seal the area with shellac. Resin also inhibits uniform stain penetration, producing blotchy results. Some stain manufacturers offer a conditioning treatment that you slather on the surface, then apply the stain while the conditioner is still wet. To finish the plant stand

pictured left, I experimented with a homebrew: 80% pine tar cut with 20% turpentine. An all-pine finish for a pine project. My goal is to develop a sealing stain for exterior use, as opposed to a film-building finish. So far, my research indicates that a warm mix applied on a hot day gives the best results. I may be able to write up my results in a future article, so stay tuned. ■



Get a grip in the orchestra pit. Pine rosin in stick form is an essential part of the kit for every musician bowing a stringed instrument. It helps the bow achieve the correct grip on the strings. Without it, both symphonic music and bluegrass fiddlin' would be impossible.

The "Pine Tar Game" and the Hall of Fame. The Royals were playing the Yankees on July 24, 1983 when Kansas City slugger George Brett blasted a home run off pitcher "Goose" Gossage in the ninth inning that would have put his team in the lead. But New York protested that Brett's bat had too much pine tar. The umpires agreed, nullifying the home run and calling the batter out. Brett and the Royals stormed out of the dugout and started a wild argument. In the confusion, Royals player Gaylord Perry stole the bat and tried to hide it. Brett, Perry, and Gossage were all later inducted into the Hall of Fame (for completely unrelated reasons), and the bat is there too.

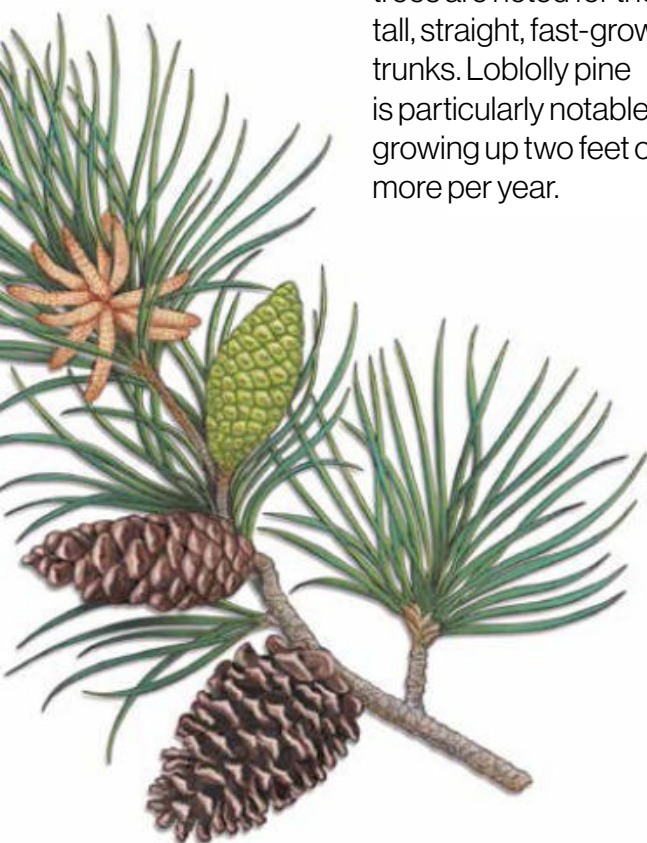
Timber as a liquid asset. In the late 1800s, pine trees were frequently floated down river to awaiting sawmills. Along the way, an estimated 15% of the timber became so waterlogged that it sank. Modern sawyers are now salvaging these old-growth logs, converting them into premium-priced heart pine flooring.



That name's a little tacky. North Carolina residents were once called "tarboilers" and similar derogatory names related to the production of pine tar. But the citizens at large and the University of North Carolina sports teams in particular turned the attempted insults into the proud nickname "Tar Heels," denoting steadfast courage in the face of adversity.

Shooting upwards. SYP trees are noted for their tall, straight, fast-growing trunks. Loblolly pine is particularly notable, growing up two feet or more per year.

One tree, two flowers. SYP trees are monoecious, which means that each tree produces both male and female flowers/cones. The male cones open in April, coating the surrounding area with yellow pollen. The female, seed-bearing cones have hard, stout prickles.



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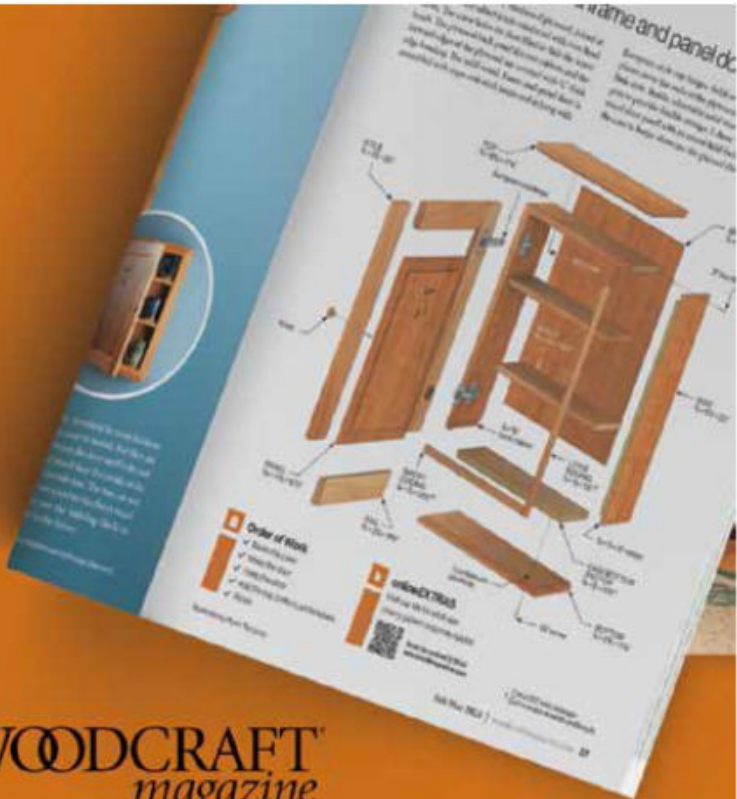
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Kutzall has built their business around applying abrasive tungsten-carbide coatings to a variety of wood-shaping tools including these wonderful little carving burrs. Available with ⅛ or ¼" diameter shanks, they come in a variety of sizes and shapes and in three color-coded grits. Designed to work in flex shafts and other rotary tools, they excel at carving, shaping, and applying texture to wood as well as fiberglass, rubber, foam, resin, and even soft stone. The coatings are quite durable and don't tend to load up with swarf, however if they do you can easily clean them with a gas torch without harming the grit or its bond. Personally, I like them for applying texture to turnings and for shaping wooden pulls. The black "very coarse" grit removes material fast, while the silver "coarse" and gold "fine" leave a more refined surface.



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All are easy to control. The ⅛" shank burrs are great for detail work when mounted in my handheld rotary tool, while the larger shanked versions do well in a drill press.

Ken Burton

A less aggressive carving disc

Arbortech Turbo Scraper

Carbide-tipped power carving discs are great tools for shaping and sculpting wood, capable of removing a lot of material in a hurry. But achieving a really smooth, true surface with these aggressive cutters takes some practice and finesse. Recently, however, Arbortech added a higher level of precision to their disc lineup with their new Turbo Scraper. I've found that when making bowls such as those I did for our June/July 2023 issue, switching over to the turbo scraper for the last bit of shaping makes a big difference in the amount of clean up and sanding I have to do to finish each piece. Equipped with replaceable carbide tips ground to a negative rake, it takes a much smaller bite and leaves a smooth surface with minimal tearout. Its gentler action makes it a good choice when accuracy and fine detail are in order. It's designed to work with Arbortech's Power Carving Unit, or any regular 4 or 4½" angle grinder.

Ken Burton



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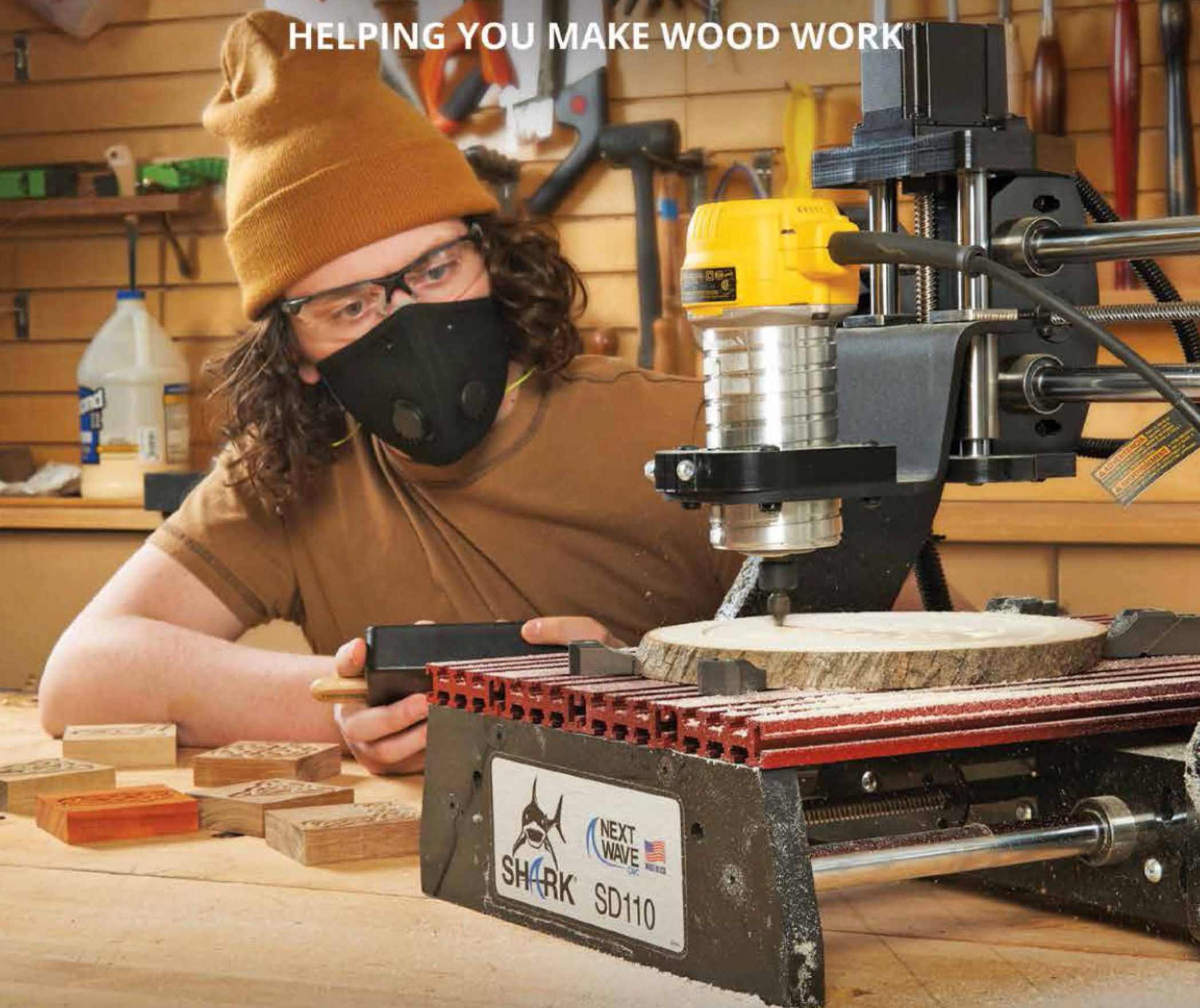
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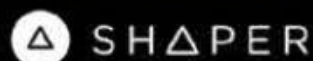
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Hard Wax Oil Finishes

Versatile, durable, and easy to apply

By Rob Johnstone

In recent years, hard wax oil finishes have roared onto the finishing scene, and for good reasons. They are dead-simple to apply and deliver excellent results, while containing low or no VOCs (Volatile Organic Compounds—potentially harmful solvents). Many woodworkers look at finishing as that somewhat annoying step you have to do after the fun part is over. Additionally, we prefer not to become finishing experts, learning about the intricacies of various types of lacquers, sanding sealer, catalyzed lacquer, polyurethanes—waterborne, or oil-based, shellac, dewaxed shellac... you get the drift. Most of us just want to find a way to get a predictable, high-quality finish applied with the least amount of effort and little chance that it will mess up and ruin our project. Hard wax oil finishes check all those boxes.

What's in the can?

While the various brands of hard wax oil products vary significantly, they all combine waxes such as beeswax and carnauba, with an organic/vegetable-based oil of some sort. My favorite, Briwax, has a thick viscosity; think of it being halfway between a gel-poly and regular polyurethane. (Or perhaps like a really good gravy, but not nearly as tasty.) That viscosity answered one of my questions regarding its successful use in open-grained hardwoods such as oak and ash. I've had poor results

using Danish oil on those species as the pores will weep uncured oil for a good while after application. (I find it annoying to have to go back and wipe up this excess several times after applying a coat.) I had no trouble with the Briwax on oak or mahogany.



Slather and wipe. When applying hard wax oil, wipe on a generous amount of the product. Leave it on the wood for about 15 minutes and then wipe it off with a clean cotton cloth.

Application

A universal component of achieving a great (or even a good) finish is surface preparation. I found sanding through 220-grit to be the minimum in terms of smoothing the wood. And by taking it up to 320-grit, the results were even better. Once the sanding is done, wipe away the swarf with a dry shop towel. When you open the can, it is important to give hard wax oil a thorough stirring, taking a couple of minutes to do a good job of it. Then use a clean cotton cloth, sponge, or ultra-fine synthetic



Hard wax oils make finishing a bit easier. They can be used on everything from hardwood floors to fine furniture.



A low-luster sheen. Hard wax oil finishes are a good choice for fine furniture, small projects and even do a great job on turned objects like this maple bowl.

abrasive pad to wipe on the product. Make sure to work it into all the nooks and crannies. When you're done, the surfaces should look very wet and even a bit drippy. Allow the oil to sit on the wood for about 15 minutes. Then, using a clean cotton cloth, wipe off the excess, removing puddles and drips. Do not try to wipe it dry, a sheen should remain. It takes a couple of hours (depending on your shop's temperature) before you can handle the finished piece, and 4 to 6 hours before you can apply a second coat. Err on the side of a longer wait to

make certain of the best re-coating results. The long drying time is one of the downsides of hard wax oils (even the two-part types with an additive hardener suffer this shortcoming). But the good news is that dust nibs do not cure into the finish like film-coat products and are easily buffed away. I recommend a minimum of two coats for a tabletop or something that will get heavy use. Three coats are even better. Note: These directions apply specifically Briwax. Other brands of hard wax oil have their own (quite similar) recommendations for application.

Finishing Thoughts

The results of your efforts will be a beautiful—both to the touch and to the eye—low-luster finish. Hard wax oil enhances any properly prepared wood surface but truly pops curly and other highly figured grain patterns as in birds-eye or fiddleback maple. Another benefit of this finish is that if it becomes worn, it is easily touched up. Cleanup is with mineral spirits. And be sure to dispose of the oily cloths properly to avoid a possible fire.

I've found hard wax oils are a great way to finish your projects easily with consistent, great results. While I'll continue to use a variety of finishes on my projects, if I was only allowed to choose one finish for the rest of my life, hard wax oil might just make the cut. ■



“Pop” goes the grain. Hard wax oil truly brings out the depth of highly figured wood. Here two pieces of crotch cut walnut from the same log section: one with hard wax oil, the other sanded but with no finish.



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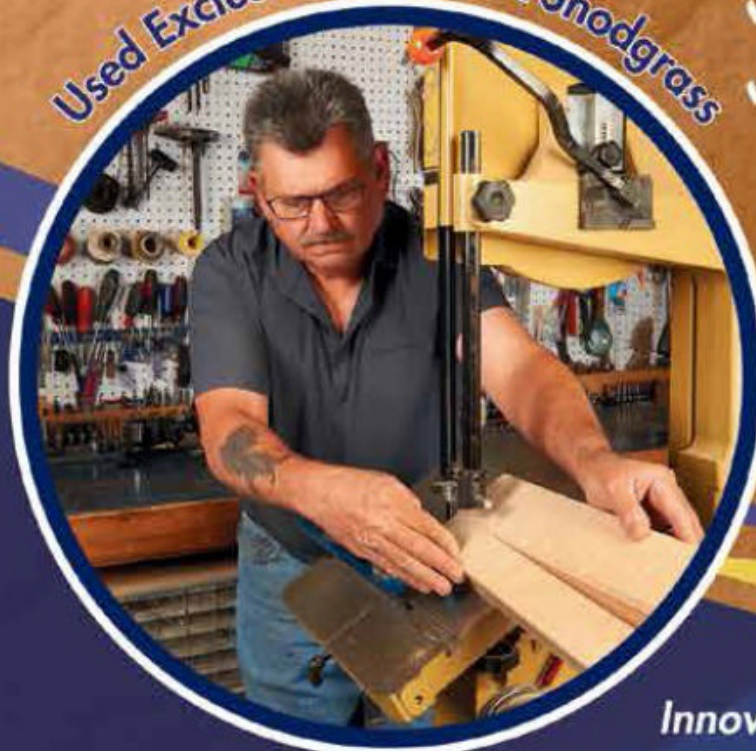
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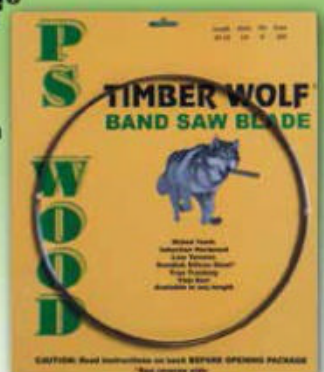
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- 6. Flex FX722110" Table Saw.....flexpowertools.com, **\$749.99**
- 7. iVac MSCA-RC.....ivacswitch.com, **\$99.99**

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My collection? 12' tape measure (A), 6" rule (B), pencil (C), Sharpie (D), clicker for my camera (E), clicker for my dust collector (F), 4" square (G), small adjustable wrench (H), allen key set (I), eraser (J), utility knife (K).

What's in your pocket?

By Ken Burton

One of the things I love about my job is getting to rub elbows with other woodworkers across the country. It is always fun to see how they've organized their shops and how they work. I am constantly amazed by how many different approaches there are, and yet by how similarly we all work. I guess it shouldn't be too surprising given that folks have been working with wood for thousands of years, and the basic techniques haven't changed all that much.

One thing I'm always curious about is what tools people like to have right at hand. With a nod to a certain series of credit card ads, I posed the question: "What's in Your Pocket?" to a number of my fellow woodworkers. As you might expect, the responses generated a short list of tools that are handy no matter what flavor of woodworking you do. At the top of the list is a tape measure, though **Ernie Conover**, longtime woodworking author of Middlefield, OH prefers a folding rule. "My favorite is a small, fiberglass Life Long model with both

metric and standard scales. Most of my machines are European, so the metric markings match those on the fences." In second place is a pencil, though preferences vary from a .2mm mechanical pencil to the ubiquitous #2 Ticonderoga. Tied for third are a 6" rule and a utility knife. After that, things got a little more personalized.

"It depends on which hat I'm wearing" says furniture maker and turner **Keith Gotschall** of Selena, CO. "In my shop apron (for when I'm doing flat work), I have whittled it down to a 6" ruler, .5 mm mechanical pencil, #2 pencil, 16' tape measure, 4" square, utility knife, small putty knife, small file, and a small nail set. A leather headed mallet completes the apron. But if I'm doing lathe work, close at hand I generally have a 12" center finding rule and 6" plastic dial calipers, plus all the turning tools, chuck keys, sand paper, etc., I will be using, all set out on a tray that fits the lathe bed."

"I'm more of a minimalist and don't wear an apron or keep any woodworking-related items on

my person", says **Rob Spiece**, Director of Woodcraft at Berea College in Kentucky. "So beyond a 12' tape measure? – iPhone, car keys, pack of smokes, lighter, and a few wood chips from the lathe."

"I usually have on me a small pocket knife, a 12' tape measure, Sharpies (the industrial variety; the marks hold up better on metal), a pencil or pen, and a small sketchbook/notebook," says Pennsylvania-based furniture artist and maker **Sophie Glenn**. "I'll also carry a Silver Streak pencil or soapstone if I'm shopping for and/or working with steel."

And **Steve Butler**, host of *The Garage with Steve Butler*, a PBS woodworking show based in Mill River, MA, shares, "I keep five main things handy in a bench well or in an apron pocket: a small combination square, a 12' tape measure, a piece of chalk, a work knife, and an old piece of candle."

So there you have it. The same, but different. Still, I'm curious, what's in *your* pocket? ■





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