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April/May 2022 | Issue 106

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Cover photo: Ken Burton

What's on *your* bench?

Among the many perks of working at a woodworking magazine is interacting with accomplished craftspeople. A few of these makers I'm lucky enough to meet in the flesh and perhaps even work with shoulder-to-shoulder. Of the woodworkers I can't meet in real life, I have the good fortune to correspond with via email or even with good old-fashioned handwritten letters. I've learned a lot in this way and have been able to give back by sharing the knowledge I've amassed over the years. You've no doubt discovered much in your own woodworking journey, and I welcome you to share those experiences with your fellow *Woodcraft Magazine* readers.

There are myriad ways to join in. Consider submitting to Tips & Tricks (p. 16) to elevate efficiency and safety for woodworkers ranging from newbies to veterans. Our Q&A section (p. 64) provides expert answers to your woodworking questions. And there's the gallery, where you can showcase your skills through photos of your finished projects (p. 12). The News & Views column (p. 6) offers a curation of interesting tidbits from the woodworking world at large and serves as a platform for your opinions on our content. There, you'll also find occasional corrections to the inevitable errors that creep into any magazine that's so jam-packed with information.

The pages ahead reveal what we've been up to. Our lovely, technique-laden café table cover project features a round top with a tapered coopered base (p. 32). Continuing the coopered theme, we offer an elegant caddy for carrying cutlery from kitchen to cookout (p. 40). On page 21, you'll find a modern stand to display your potted plants. For the shop, there's a clever, customizable storage solution for an ever-changing hand-tool collection (p. 47), as well as a breviloquent look at bevel-edge bench chisels (p. 26).

So what are *you* up to? Consider this an invitation to share what's on your bench and to tell us what kind of work you do and how you do it. RSVP in any way you like (see section at right). While you're at it, hop online for submission guidelines and free tips such as how to take great smartphone photos of your work. Hope to hear from you soon! ■

Share your ideas.

We love hearing from readers! And there are all kinds of reasons to get in touch with the crew at *Woodcraft Magazine*. Check out the details below.

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Important: Please include your phone number, as an editor may need to call you if your trick is considered for publication.

Have a tough woodworking question?
We'll do our best to find the expert and provide the answer. Email us at *editor@woodcraftmagazine.com* and put "Expert Answers" in the subject line.

News & Views:
This catch-all column is where we do our best to correct mistakes, publish feedback from readers, and share other noteworthy news items. It's easy to participate in this discussion. Just email us at *editor@woodcraftmagazine.com* and put "N&V" in the subject line.

Submit an article idea:
Do you have a story idea? We'd love to hear about it. To find out how to submit an article, email us at *editor@woodcraftmagazine.com* and put "Submission" in the subject line.

Share photos of your projects:
We'd like to see what you're building. To show off your work send your photos to *editor@woodcraftmagazine.com*, or find us on social media.

WOODCRAFT magazine

April/May 2022 Vol. 18, Issue 106

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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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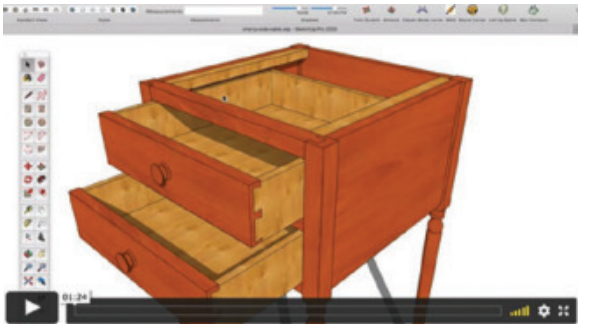

Drawing on experience

David Heim, author of "SketchUp Success for Woodworkers" recently released a series of nine self-guided video lessons on making the 3D design and modeling program work for woodworkers. The course runs 90 minutes and includes topics such as generating measured drawings and cut lists, and best practices for using SketchUp. The course is available at *sketchupforwoodworkers.com* for the cost of $49. Heim has taught SketchUp at the Brookfield Craft Center, Connecticut Valley School of Woodworking, and the Austin School of Furniture.

Jatoba jewelry box

I'm drooling over the cylindrical chest of drawers shown in last issue's WoodSense (pg. 55, Feb/Mar 22). I can usually figure projects out on my own, but this chest has me going in circles. Are there plans for it? Or plans for plans? ***—David Miller, Golden, CO***

Senior Editor Ken Burton replies: That jewelry box graces the cover of my book, *Table Saw Projects with Ken Burton*, and plans for it are inside. You can still find the book online or at used book sellers. And we will be featuring a similarly cylindrical jewelry box in an upcoming issue of *Woodcraft Magazine*.

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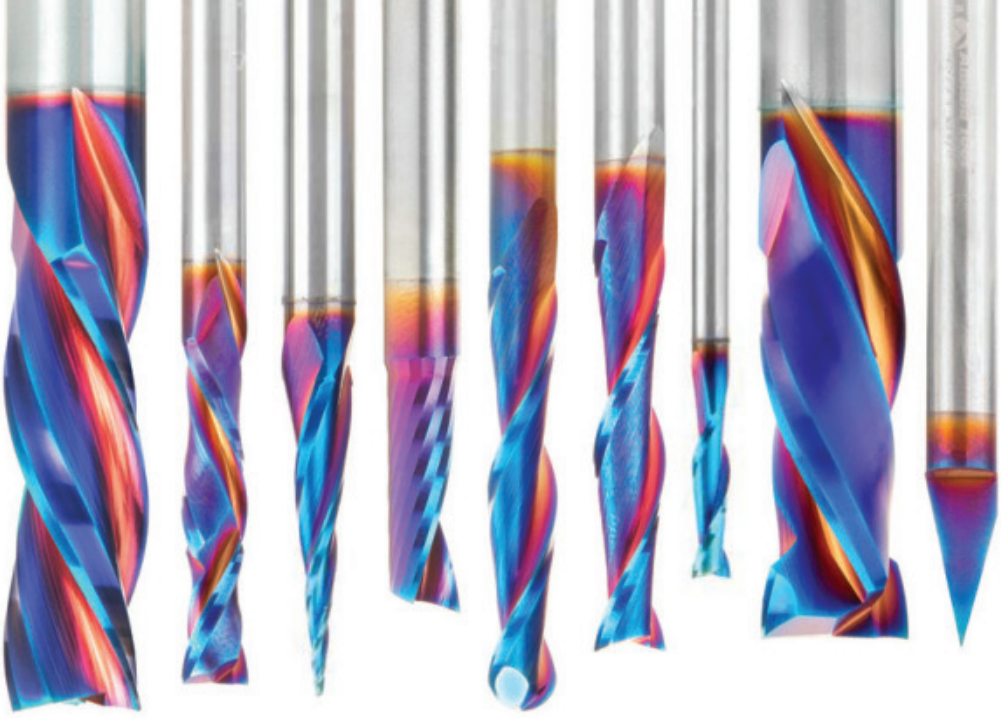

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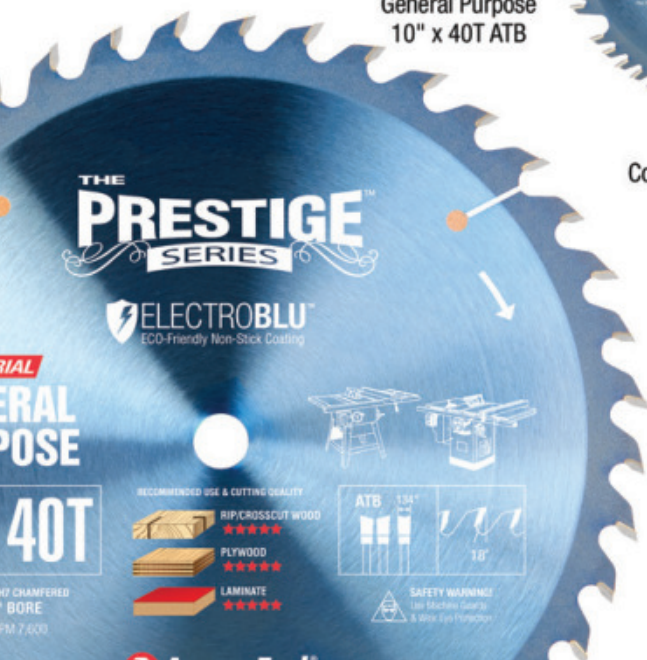

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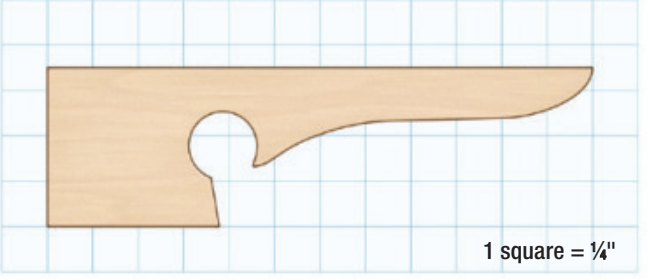
Giant loss to woodworking

Garry Knox Bennett passed away on January 28 at the age of 87. Bennett began his art career as a painter and sculptor before teaching himself woodworking and furniture-making, as well as metalwork. Bennett cut an imposing figure in the woodworking community due not only to his 6-foot-9 frame, but also to his experimental combination of fine woodwork with metal and more unconventional materials. He famously drove a 16d nail into the door of a finely finished padauk cabinet as an irreverent statement on the nature of studio furniture.



Big feet

The dimensions listed in the Keepsake Box drawing (p. 33, Dec/Jan 22) incorrectly showed the length of the feet to be 3½". That length should be 3", as shown in the Foot Pattern template above.

Puzzling offcut

Making some of the cuts on the burr puzzle (Dec/Jan 22) left a small offcut trapped under the saw blade. I found that drilling a hole in the cradle gave that piece a place to go, preventing potential kickback.

—Ted Garrett, Dayton, OH

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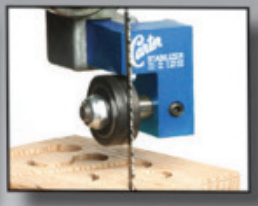

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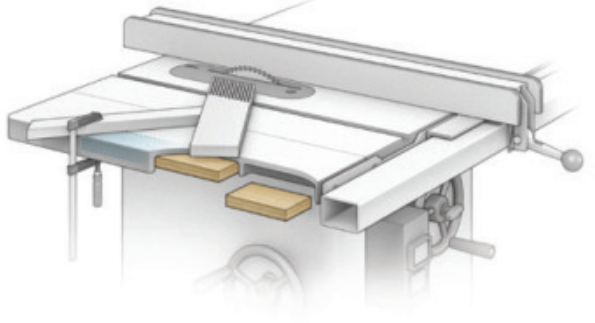
Like oil and water

I went to my local craft supply store for paint markers to decorate the Turned Christmas Tree (Dec/Jan 22) and discovered there are two types. Oil- and water-based paint markers. Is there an advantage to one over the other?

Author Jim Kelly replies:
We've used both oil- and water-based paint markers successfully on the tree. Like acrylic paint, the water-based markers are water-soluble when wet but not when dry, so they'll play nice with finishes such as water-based polyurethane. If you're worried, virtually any finish can be made fast with a coat of spray shellac before applying paint. And of course, it's always a good idea to test your finish combinations on scrap before applying them to your workpiece.



Less stuck in the web

The tip about attaching plywood fillers to the underside of tool tables to create a better clamping surface is great (Feb/Mar 22), but why epoxy the clamp blocks in place permanently? Instead, I counterbore the plywood and epoxy rare earth magnets into it. The magnets hold the plywood blocks in place but make them easy to remove and replace if they get damaged or worn out. ■
—Kory Bricker, Loveland, CO

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Reader **Showcase**

STUART LORD,
SILVER LAKE, NH

Not his grandfather's clock. Inspired by a clock-making 18th-century ancestor, and aided by his own thirty years repairing clocks, Lord built this magnificent Roxbury-style tall case clock. The timepiece measures 9½ × 21 × 96". The case features figured mahogany with inlays of cherry, holly, ebony, canarywood and bloodwood. The spiral trim around the lower case pays homage to a similar detail on a clock built by his forebear circa 1805. Lord also handcrafted the brass clock movement and dial assembly.

BARRY L. EDZANT,
VALENCIA, CA

A river runs through it. Drawing on memories of the southwest, Edzant poured resin between two slabs of live-edge, big leaf maple to make the top for his new table. The tabletop is undergirded by a steel support structure which rests on cherry legs and feet. He used a template to rout cavities in the legs and filled them with resin to complement the top, then inlaid ebony in the feet. Overall dimensions are 21 × 36 × 60". Edzant says the tabletop reminds him of the Colorado River running through the Grand Canyon. We say his river table is absolutely gorges.

JOHN GONDEK,
PLAINVILLE, CT

Tiger king. Retired Air Force veteran John Gondek spent nearly three months of shop time designing and making this intarsia white tiger. The light areas are poplar, while the stripes are cocobolo and bocote scraps sawn to fit into hand-routed cavities. After sanding and scraping to give the tiger's face some depth, Gondek finished the ferocious feline with spray polyurethane. The tiger measures about 7 × 7". We think it's the cat's meow.

ROY HUNTINGTON,
JOPLIN, MO

Cherry on top. Long-time subscriber Roy Huntington crafted this keepsake box for a friend's wedding anniversary. The purpleheart top is adorned with brass knobs and a hand-carved cherry blossom relief in walnut. A first-time carver, Huntington hopes to incorporate carving into future projects. The box sides are made of padak and osage orange with simple joinery to keep the design uncluttered. ■

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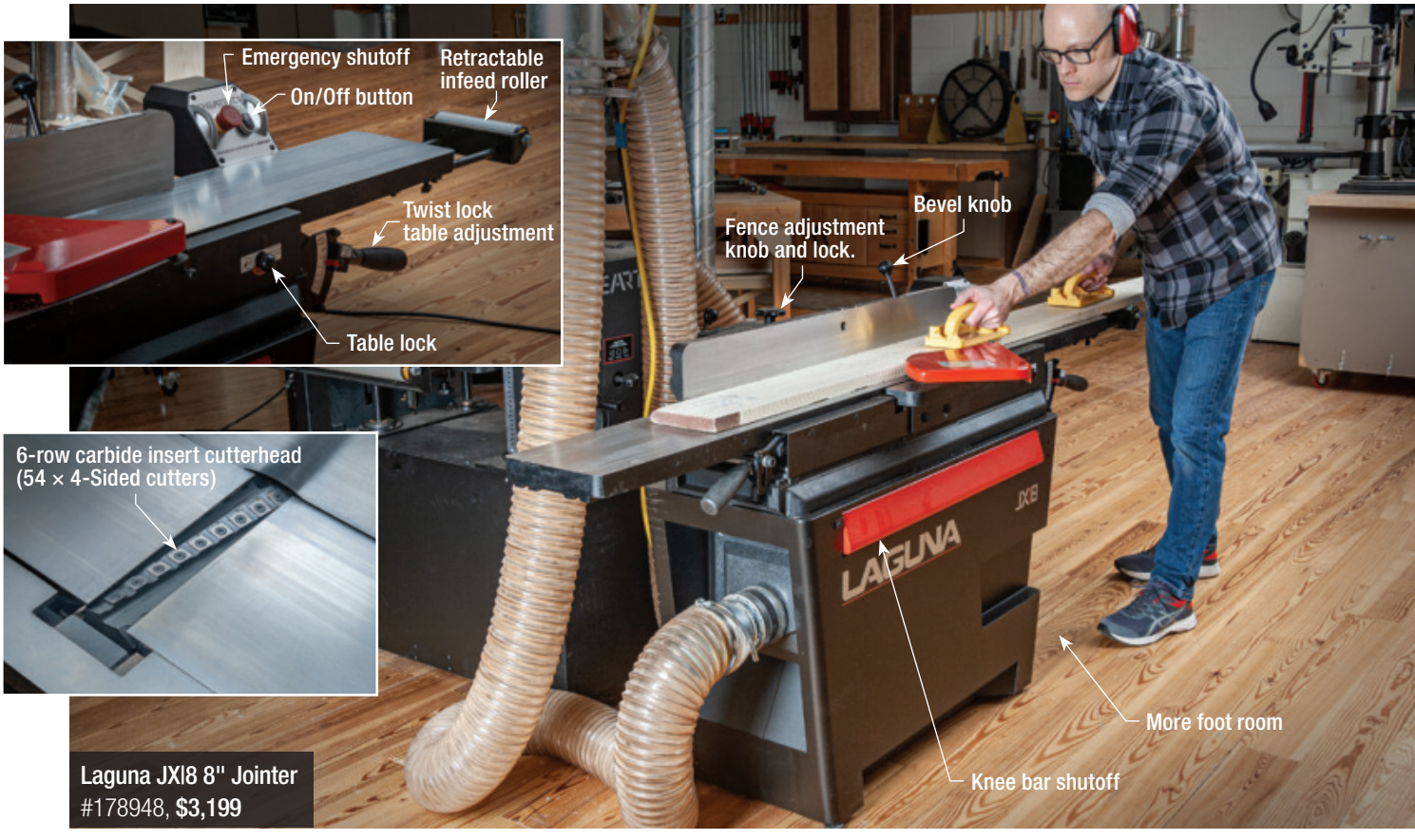


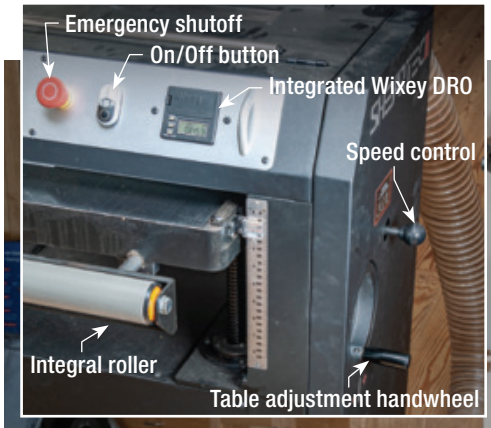
Laguna JX|8 8" Jointer
#178948, **$3,199**

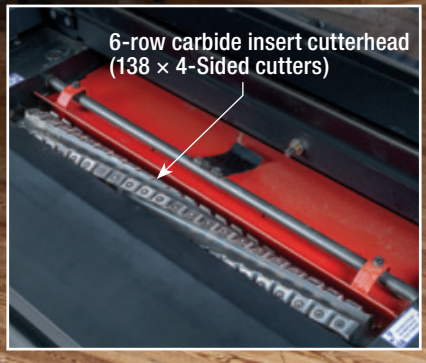
Laguna tools introduced a new lineup of jointers and planers in 2021. As part of this launch, they've redesigned their machines and reworked their cutterheads—the QuadTec I (segmented) and ShearTec II (spiral). I had the opportunity to test the JX|8 ShearTec II, an 8-inch jointer, and the PX|20 ShearTec II, a 20" planer. The first thing I noticed is how cool they look with their matte black skin, modern design, and impeccably-machined cast iron surfaces. Upon further inspection, I found that these machines are not just pretty; they also do their jobs very well.

The JX|8 jointer's ShearTec II 8⅛" wide, 5500 RPM cutterhead features six spiraled rows totaling 54 four-sided angled carbide insert knives that can be rotated or replaced as needed. It produced a clean surface even during deep cuts, and the machine remained relatively quiet. Cast-iron parallelogram tables are solid, smooth, and easy to adjust with a twist-lock handle that doubles as a depth gauge on the infeed side. A pullout support roller helps with feeding longer boards. Other novel additions to this machine include a tapered body for more foot room, an emergency knee stop—a feature I really like—and built-in casters. The cast-iron fence is solid and easy to adjust with its star knob and lock. It tilts to 45° in both directions, but the bevel knob can get in the way of hand travel when edge jointing wider boards. And although it's 38" long, typical of jointers of its ilk, I'd like to see a longer fence on a machine at this price. But at $3,199, it's priced competitively in its class and well worth it if you're in the market.

The PX|20 planer's ShearTec II cutterhead boasts 138 carbide inserts in a six-row spiral configuration. Aside from its impressive teeth, the clear advantage of this planer is its capacity—up to 8"-thick timbers and 20"-wide panels. I rarely need to plane boards of that size, but the ability to run multiple narrow boards simultaneously really speeds up production. But what makes this planer really interesting is its small-shop appeal.

Prices subject to change without notice.





Laguna PX|20 20" Planer
lagunatools.com, **$5,499**

Woodworkers with limited space looking to upgrade from a 12" or 13" benchtop model, take notice. The PX|20 has big capacity in a small footprint. The beds are short but come with 4" retractable infeed and outfeed rollers. When retracted, the planer takes little more space than a benchtop model. And at 85dB, it's only about as loud as a random orbit sander. Your neighbors will thank you. The unit can take a ¼" deep cut at a time at either 16 or 28 feet per minute. A serrated infeed roller and pressure bar help with snipe. The top opens easily to access the cutterhead and for clearing chips that annoyingly build up in one corner, a seeming design flaw. The innovative integral Wixey digital readout (DRO) is a welcome addition and was easy to calibrate to the analog gauge on the face of the machine. It's nice to dial in precise thickness without breaking out the calipers.

Neither machine comes with instructions; you'll have to download them ahead of time as they contain helpful unboxing directions. This and the aforementioned minor inconveniences aside, these are great tools. They are pricey, but you get what you pay for here—machines that look great and work smart. ■

—Chad McClung

JX|8 Overview

- 220V, 3HP, 1 phase, 60 H/12amp
- Bed size: 8" × 72" w/8" infeed roller support
- Fence size: 38" × 4¾", tilt: ±45°/90°
- Bed adjustment: parallelogram
- Max. depth of cut: ⅛", rabbeting capacity: ½"
- Knee bar shutoff
- 4" dust port

PX|20 Overview

- 220V 5HP 1 phase motor
- 20" bed width
- ¼" max depth of cut, 16 and 28 FPM
- Wixey DRO
- Retractable infeed and outfeed rollers
- Serrated infeed roller
- 4" dust port

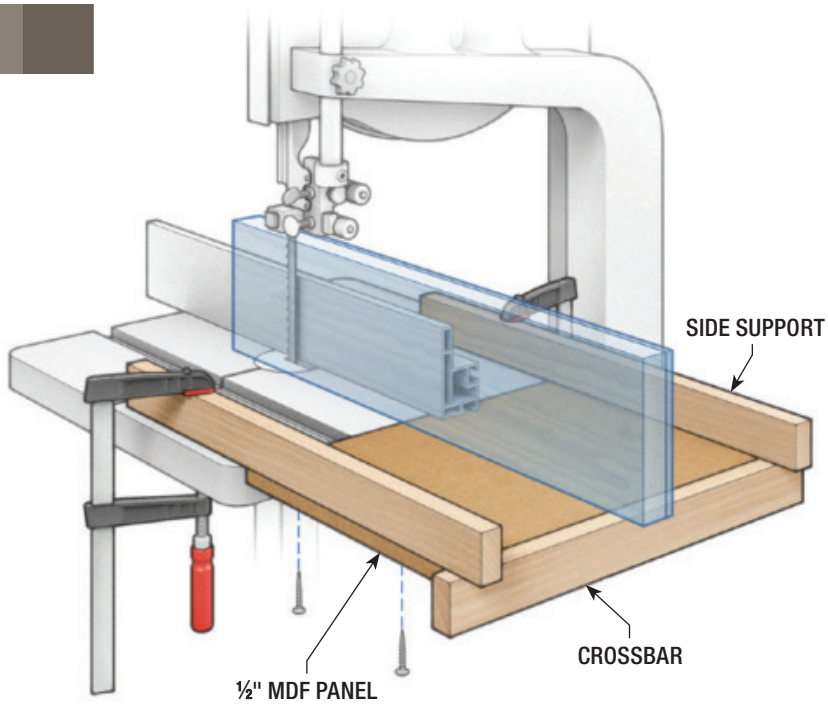
Photos: Chad McClung

TOP TIP

Easy outfeed support

I developed this simple outfeed extension for my band saw to provide extra support while resawing. The fixture consists of a ½" MDF panel screwed to two dressed hardwood side supports that clamp to the saw's table. A hardwood crossbar provides added support and helps to keep the panel flat. Unlike outfeed rollers, my system automatically aligns with the table, reducing setup time. And having the workpiece glide over the flat surface means I don't have to worry about a roller leading it astray.

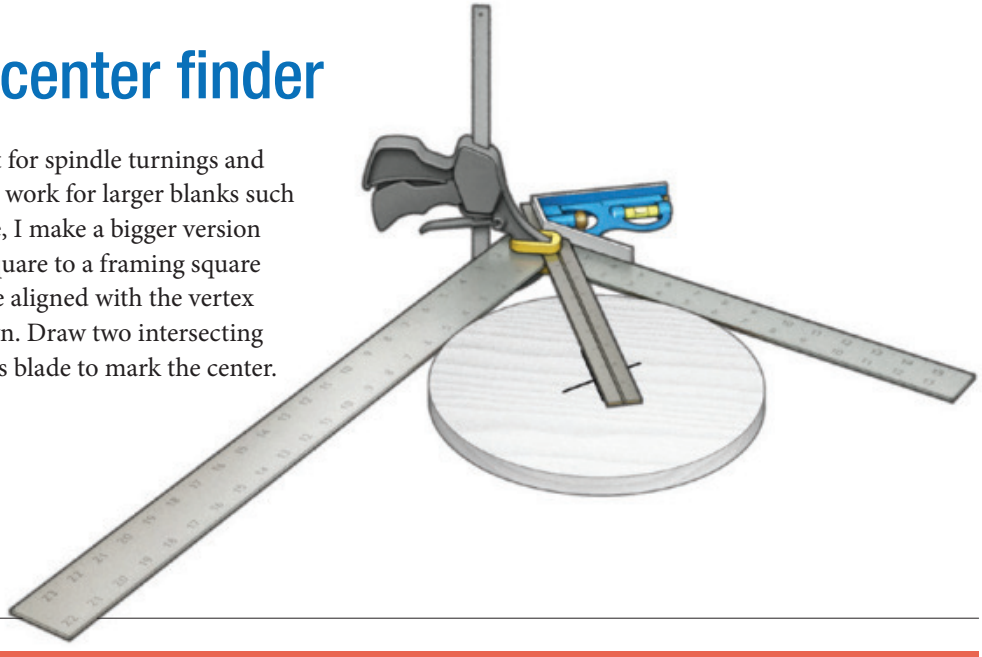
—Dwayne Smyth,
West Springfield, Massachusetts



Large-scale center finder

Plastic center finders are great for spindle turnings and smaller bowl blanks but won't work for larger blanks such as those for platters. For those, I make a bigger version by clamping a combination square to a framing square with the combo-square's blade aligned with the vertex of the framing square as shown. Draw two intersecting lines along the combo-square's blade to mark the center.

—Richard Entwistle
Highland Lakes, New Jersey



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Illustrations: Christopher Mills

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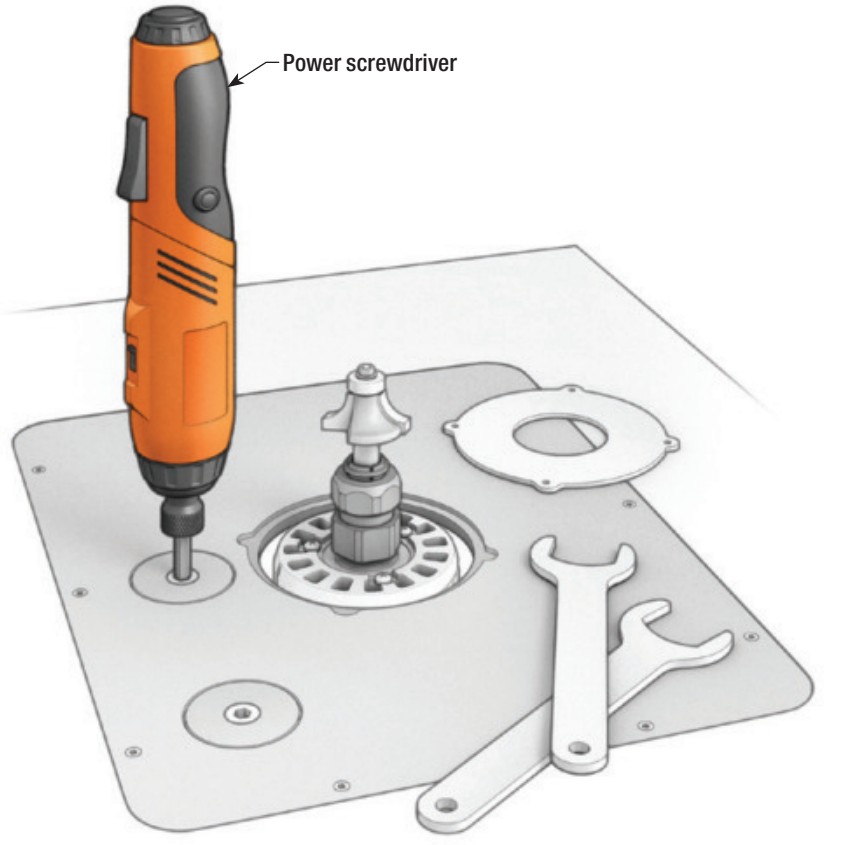
Router power lift

As I was cranking up my router for what seemed like the hundredth bit-change of the day, it dawned on me that the drive on the lift was the same hex drive as on my small cordless screwdriver. Now I can power the lift up and down at the touch of a button. When I get close to the desired setting, I lock the screwdriver in manual mode to make the final adjustments.

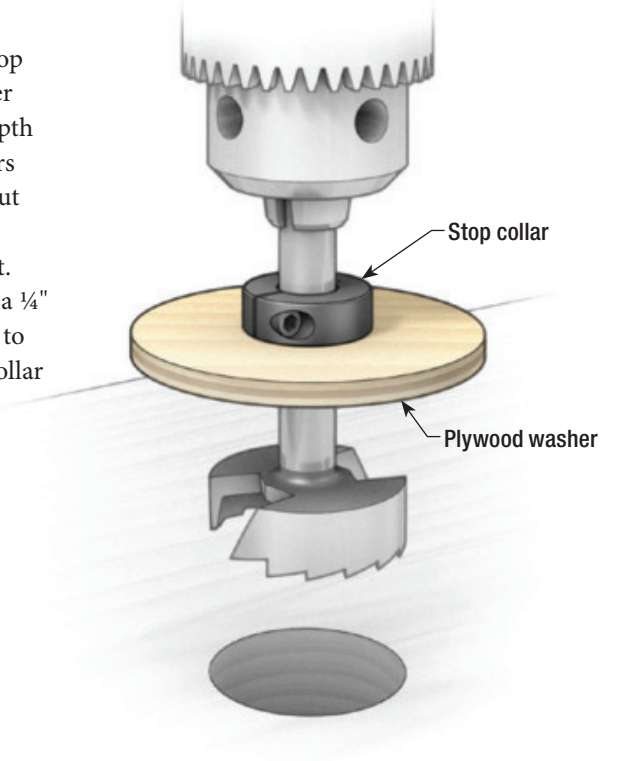
—Ron Moss
Statesboro, Georgia



Stop collar for Forstner bits

For projects requiring several different-sized holes drilled to precise depths, I like to set up stop collars on the bits required rather than constantly changing the depth stop on my drill press. The collars work well on regular drill bits, but their outer diameter is often too small to work with a Forstner bit. I've found that drilling a hole in a ¼" plywood "washer" and sliding it to the desired depth between the collar and the bit's cutting end works with even the biggest of my collection. This trick also works well when using Forstner bits on the lathe.

—Jeff Peters
Redgranite, Wisconsin



Protecting tool rolls

The sharp edges of my turning tools kept cutting the interior of their canvas carrying pouch. As a remedy, I cut the fingers off of a pair of inexpensive leather work gloves, yielding ten protectors to fit over the business end of the cutters. ■

—Linda Halligan
Livonia, New York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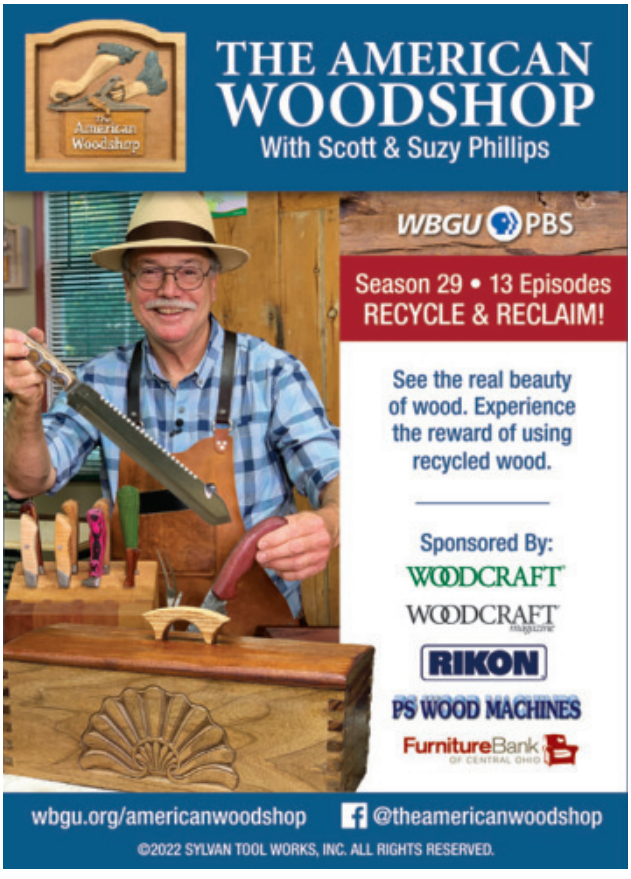
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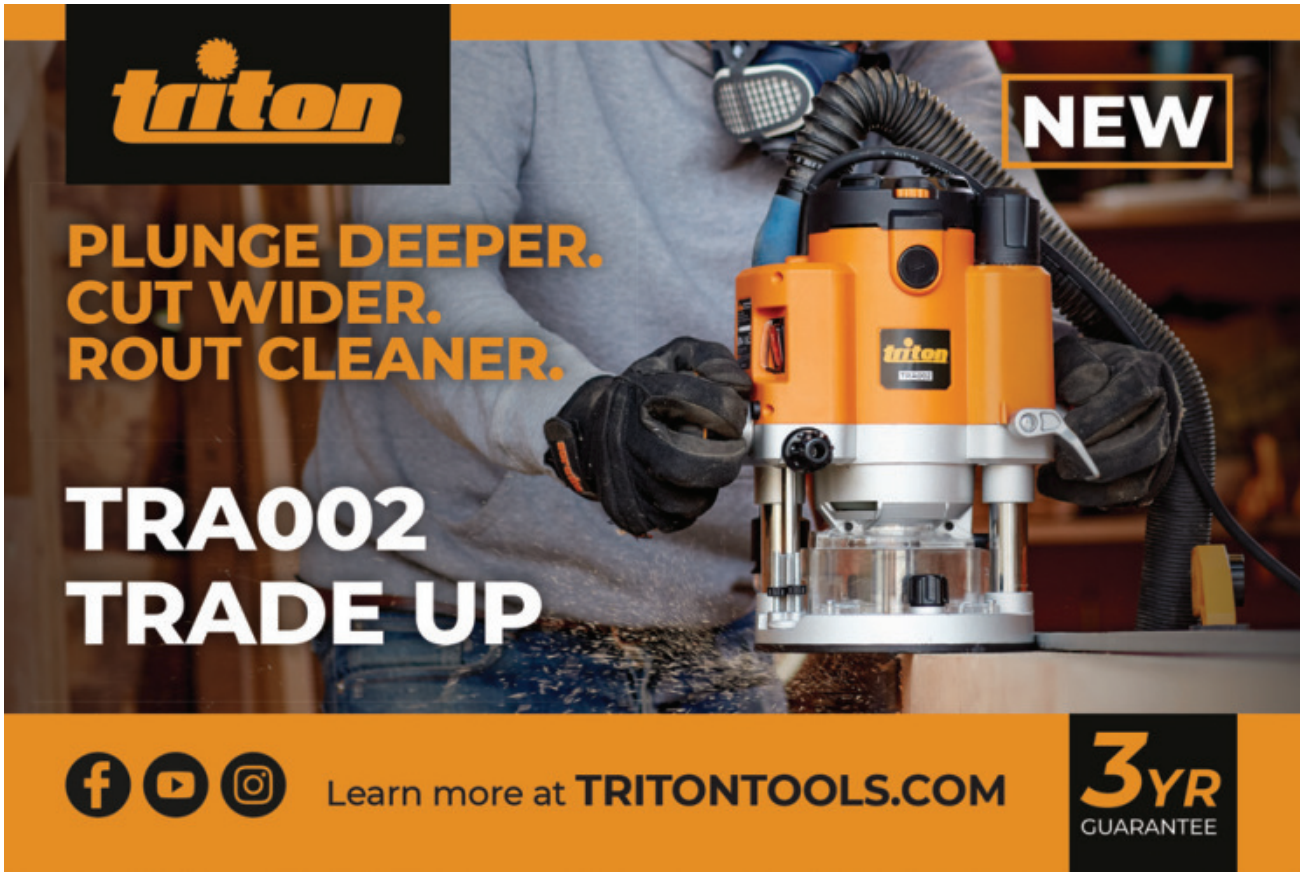
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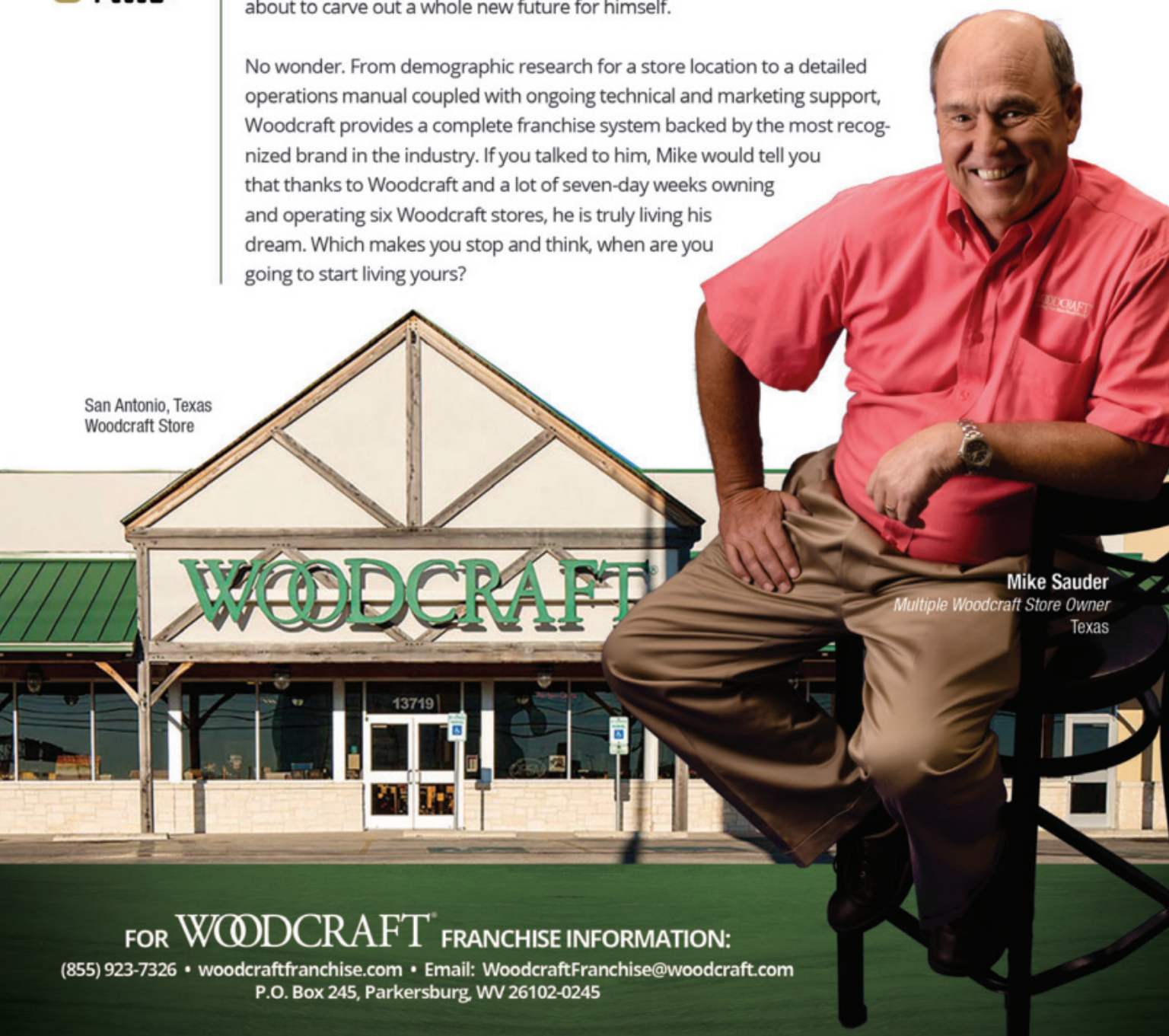

San Antonio, Texas
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Mike Sauder
Multiple Woodcraft Store Owner
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Basic BUILDS

Mid-century Modern PLANT STAND

Prop up your houseplants in style

By Ellen Kaspern

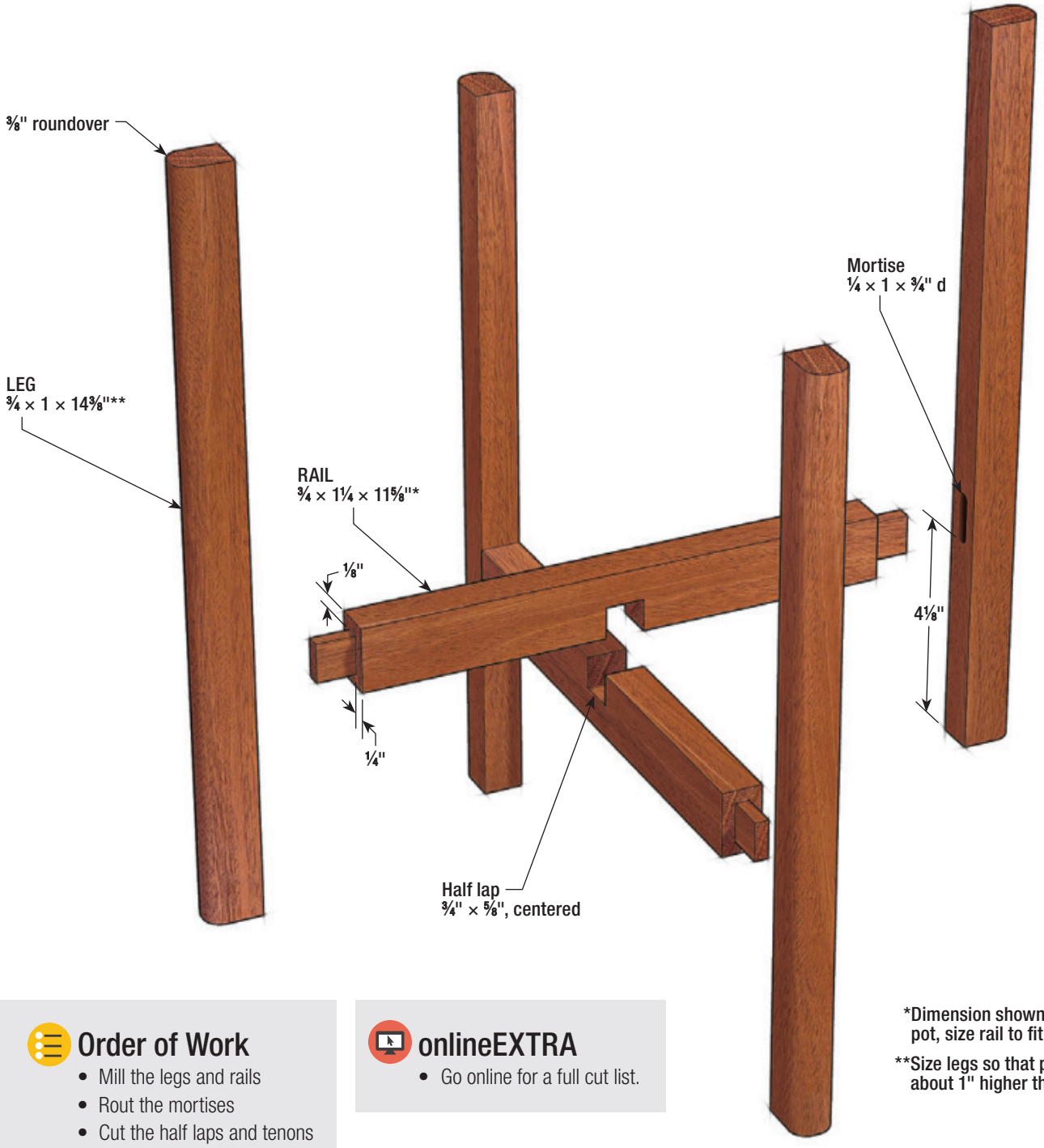
I've always been drawn to the clean lines, gentle curves, and obvious functionality of mid-century modern furniture. This plant stand incorporates all three attributes in its simplicity and usefulness. I designed it as a teaching tool for the two basic woodworking joints it includes: the mortise and tenon and the lap joint. The project is easy enough for a beginner to make in a day while learning valuable woodworking skills and getting time on two of the most-used shop machines: the table saw and the router table. And even if you're an experienced woodworker, the aesthetically pleasing stand will look good in any home. As shown, the design fits a 10" round planter, but you can adapt the dimensions to fit nearly any size pot.

About the Author

Ellen Kaspern is a graduate of the North Bennet Street School's Cabinet & Furniture Making program. She owns Ellen Kaspern Design and is a member of the Charlestown Furniture Makers cooperative in Boston, MA. In addition to designing and building custom furniture, she has been teaching woodworking and furniture making for over 15 years. This is her first article with *Woodcraft Magazine*.

Simple connections for a strong base

The plant stand, made from mahogany, consists of four legs with two rails crossing between. The rails connect to the legs with mortise & tenon joints and have a lap joint in the center where they intersect. The legs are rounded on their outer edges to soften their look and add a touch of flair. The dimensions are based on a 10" tall planter, 10" in diameter. Purchase the planter first so you can adapt the dimensions as necessary.



Order of Work

- Mill the legs and rails
- Rout the mortises
- Cut the half laps and tenons
- Assemble and finish

onlineEXTRA

- Go online for a full cut list.

*Dimension shown for 10" pot, size rail to fit your pot.

**Size legs so that pot sits about 1" higher than legs.

Photos: John Hamel; Illustration: Ryan Tanguay

Make the parts and rout the mortises

Mill stock to the thicknesses and widths specified in the drawing on the facing page, adjusting their lengths to suit your pot. Mill extra for test cuts. Lay out the mortise on one leg and transfer the lines to its outside face. Mount a ¼" straight bit in your router table and set its height to ¼", adjusting the fence to center the mortise on the leg. Mark the bit's location on the fence, then set stop blocks to control the length of the mortise. Place the marked leg against the fence with its bottom end to the left. Align the mark for the mortise bottom with the bit's left location line, and clamp the first block at the end of the leg to the right. Repeat the process with the mortise's top mark and the bit's right location line to locate the left stop block. Using stop blocks ensures consistent mortise length without having to lay out each mortise. Rout the mortises to their full depth in three successively deeper passes. Switch to a ⅜" roundover bit and shape the outer edges of each leg.

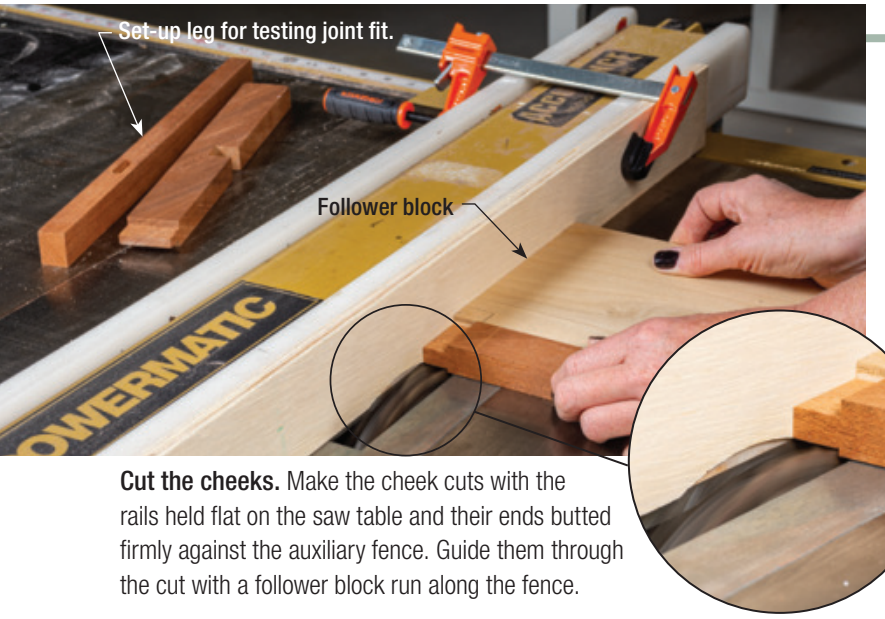
Locate the bit. Hold the head of a square against the fence's face and the bit's cutting flutes, and mark the location of both sides of the bit on the fence.

Rout the mortises. Hold the leg against the right-hand stop and pivot it down the fence onto the spinning bit to start the cut. Push from right to left until you reach the left-hand stop.

Two-pass notch. Saw the rail's lap joint in two passes, rotating it end for end between cuts. To make fine width adjustments, add layers of blue painter's tape to the stop block as needed.

Cut the lap joints

Lay out the lap joint notch at the center of a rail. Rather than trying to set up the dado blade to the perfect width, I prefer to make the notch in two passes, using both ends of the rail as reference to center the cut. Set the dado to ⅝" wide and just under ⅝" high. Attach a wooden auxiliary fence to your miter gauge to support the rail and help prevent tearout. Clamp a stop block to the auxiliary fence aligning the edge of the blade with the layout line nearest the block. Make the cut then flip the leg to widen it, checking the fit against the thickness of the other rail. Adjust as necessary. When you have a good fit, adjust the blade height as needed to make the tops and bottoms of the rails flush.



Cut the cheeks. Make the cheek cuts with the rails held flat on the saw table and their ends butted firmly against the auxiliary fence. Guide them through the cut with a follower block run along the fence.

Saw the tenons

Make a follower block from a piece of ¾" plywood about 6½" wide by 8" long. Clamp a wooden auxiliary fence to your rip fence. Set your dado to about 13⁄16" wide and bury it under the auxiliary fence with 11⁄16" of the blade exposed. Set the blade height to about 3⁄16". Make the cheek cuts as shown. Check the fit and raise the blade as necessary, cutting both sides after each adjustment. The tenon should slide into the mortise with a little hand pressure. If you have to hammer it in, it's too tight, but it shouldn't fall out either. Make the cheek cuts on all the tenons then reset the dado height to saw the tenon shoulders using the same technique.

Cut the shoulders. Reset the dado height to a little less than ⅛" to cut the shoulder. Incrementally raise the blade and make light passes until the tenon fits its mortise. Despite the gaps to accommodate the round mortises, there is plenty of long-grain contact to ensure a strong joint.

Fine tune, assemble, and finish

Trim the rails flush to each other as needed with a hand plane. I also use a hand plane instead of sandpaper to remove the mill marks, as it's less likely to distort the shape of the parts. Dry clamp the assembly to make sure all joints close. Tweak the fit of the joints by paring the tenon cheeks with a shoulder plane or a 1" chisel. Apply glue to the notches in each rail—a tight joint may not require a clamp. Brush glue in the mortises and on the tenons, and attach the legs. When the whole piece is dry, check it for level. If it rocks, sand the feet as shown. Finally, sand the piece through 220 grit, and apply two to three coats of your favorite finish. I used wiping varnish.

Plane to perfection. Making the rails dead flush to each other may require a swipe or two from a hand plane.

Pull it together. Get your glue-up supplies ready first, then draw the joints together with clamps. Wipe away any glue squeezeout.

Level the legs. If you find your stand rocks slightly, level the legs by taping squares of sandpaper to a piece of MDF and scrubbing the stand back and forth across them. ■

Bevel-edge BENCH CHISELS

Getting started with the workhorse of the chisel family

By Chad McClung

Sharp chisels are critical to quality work. But what do you really need? For general shop use, I suggest you start with a good set of four basic, Western-style, bevel-edge chisels. These versatile shop workhorses can perform a multitude of chores from chopping dovetails and fitting joints to trimming plugs flush.

Unlike the stubby butt chisel, bevel-edge chisels have longer blades that provide more control for tasks such as delicate paring. And their angled edges, opposed to the square edges of firmer and mortise chisels, allow access into angled corners. Beyond the tool's specific uses, if you want to do better work, you need to keep your chisels sharp and practice good technique, both of which are discussed here.

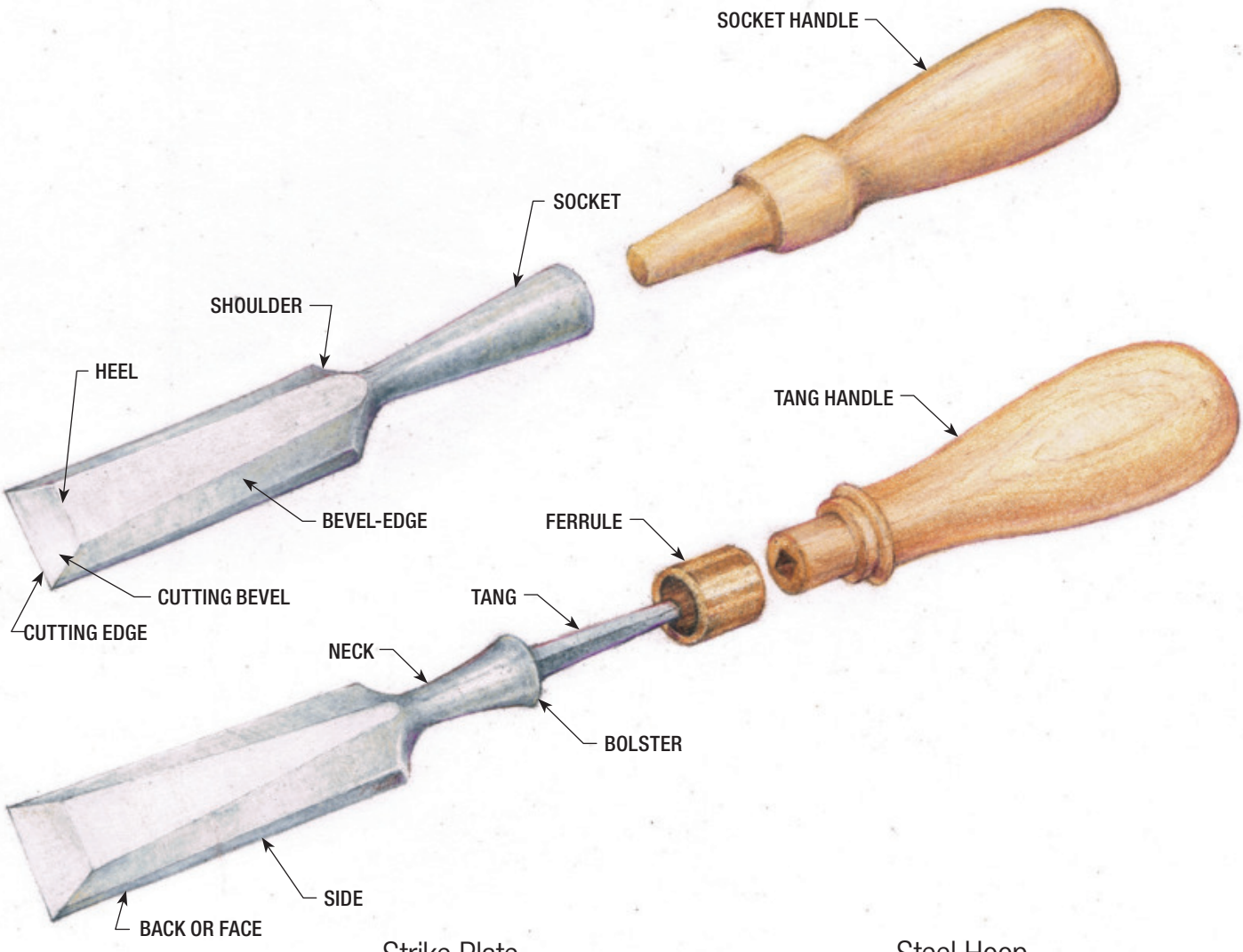
If you've been getting by with a few inexpensive chisels, here's your guide to stepping up to a quality set. If you already own good chisels, consider this article a refresher on anatomy and basic usage technique. Finally, check out p. 47 for a handy chisel holder along with other tool storage ideas.

onlineEXTRA

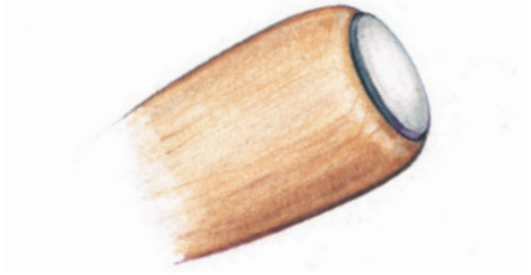
- Put your bench chisels to use with a free article download: Chisel Techniques
- Or find the right tool for the job with Specialty Chisels

Anatomy of a bench chisel

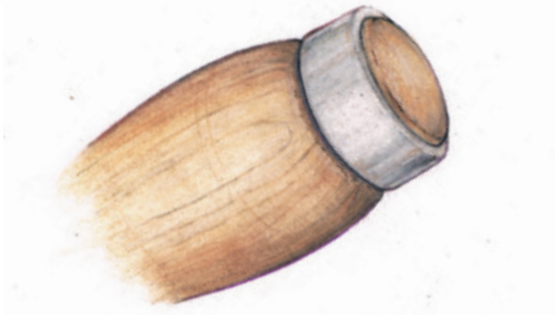
A chisel is a simple tool, essentially a blade with a sharpened end and a handle. The handles are typically made from wood or plastic and connect to the blade in one of two ways: via a socket or a tang. Wood handles are available in numerous shapes and are usually lighter and better balanced. Plastic/composite handles are heftier for heavy chopping and can really take a beating. Wooden handles attached with tang construction are more likely to split than those that fit into sockets. To counter this, tang-style handles often feature ferrules and occasionally steel hoops to prevent splitting. Some chisels are also capped with strike plates that take the brunt of your mallet blow. An added benefit of a socket chisel is that you can easily replace a damaged handle or make a customized one to suit a specific task.



Strike Plate



Steel Hoop



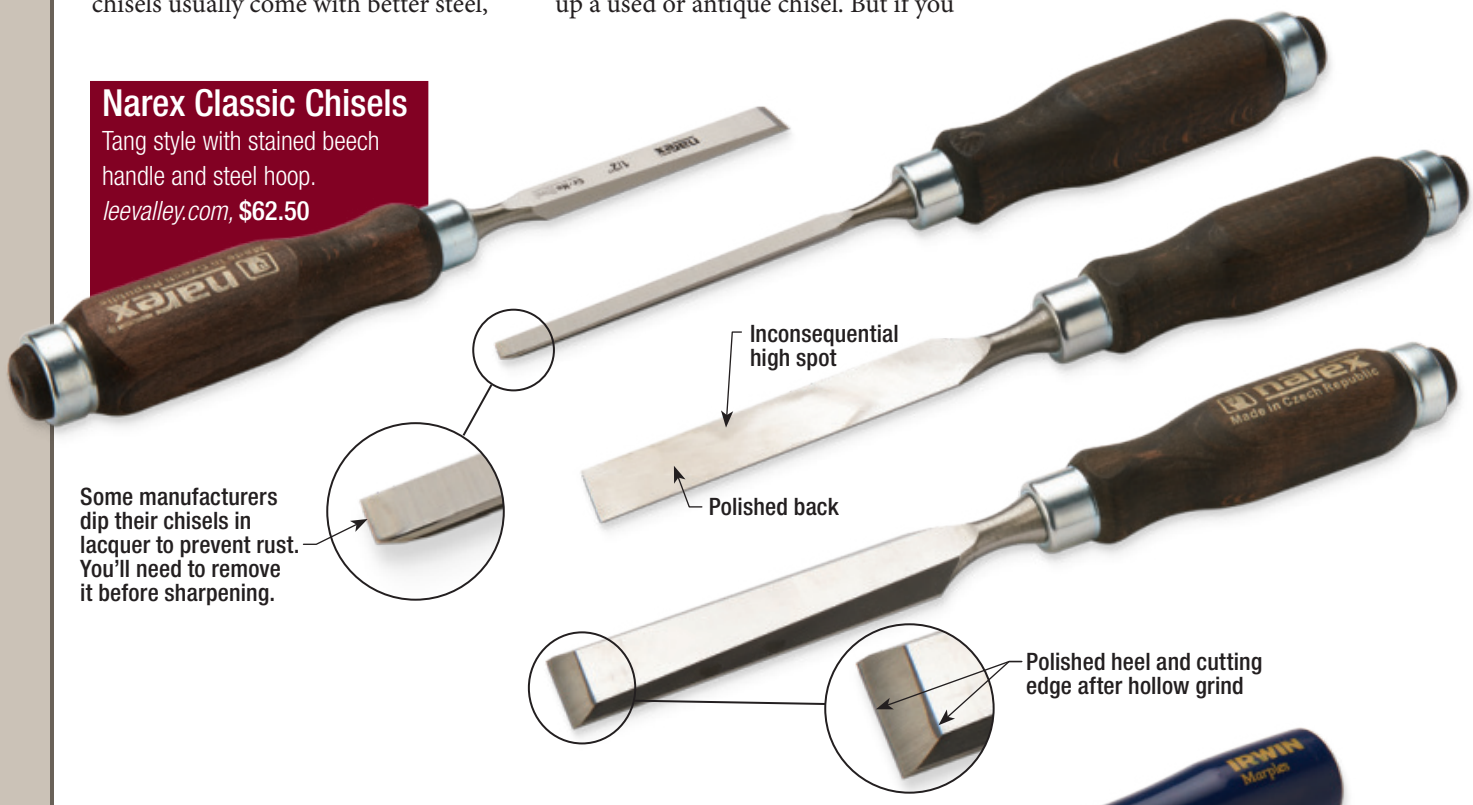
Photos: Doug Loyer; Illustrations: Scott Wynn

What chisels to buy first

I suggest starting with a new set of four (¼", ½", ¾", and 1") western-style bevel-edge bench chisels such as the ones shown here. You can purchase a decent set starting around $50. If you tune them up and maintain them well, they'll likely outlast you. Pricier chisels usually come with better steel, resulting in faster sharpening and/or longer-lasting keen edges. If you can, get your hands on a few different kinds of chisels to see how they feel in your hand. Check the weight and balance; the chisel should feel like an extension of your hand. You can indeed buy and tune up a used or antique chisel. But if you don't know what a flat, sharp chisel is like, then you'll have a rough road ahead. Try using a well-tuned chisel from an experienced woodworker first, or start with a quality set such as one of these.

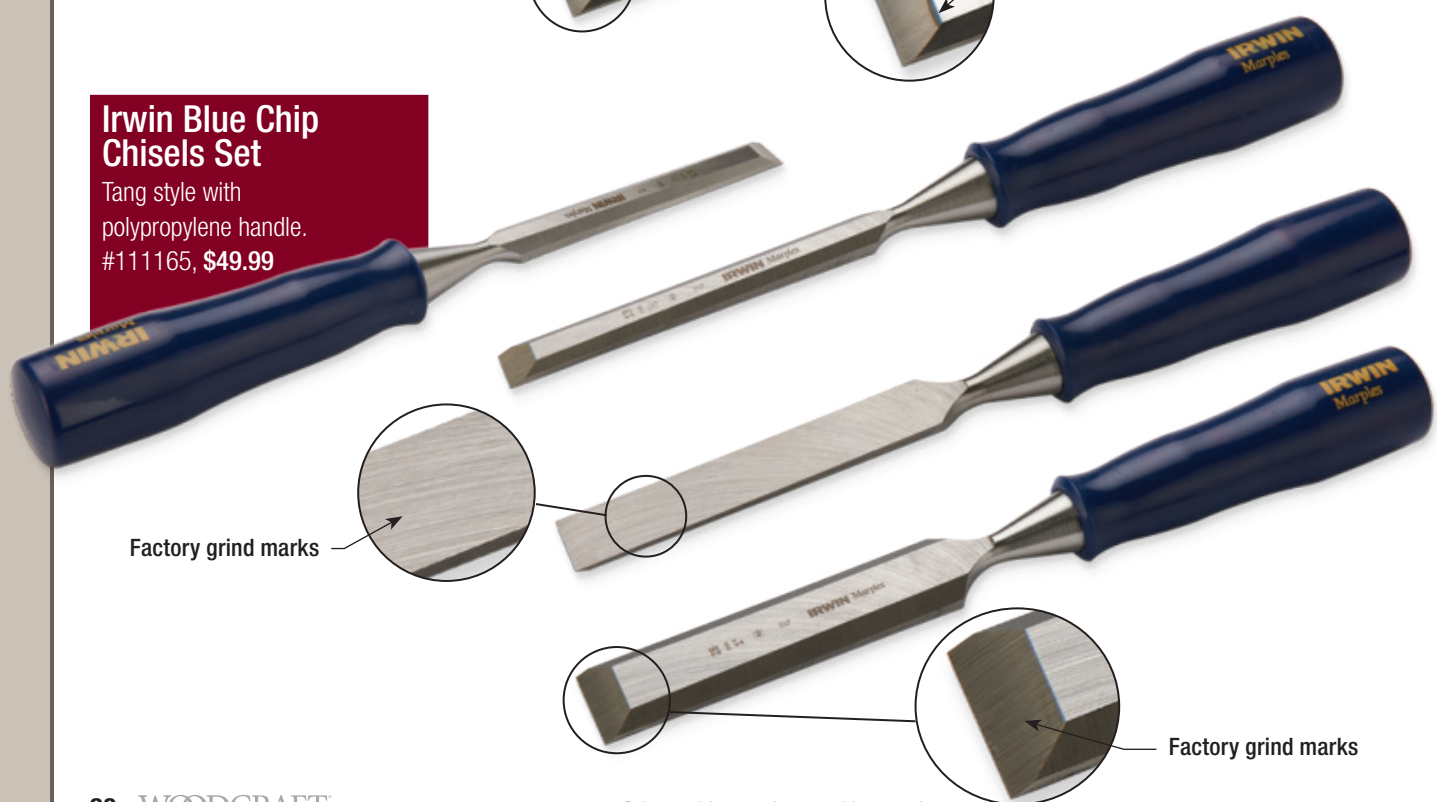
Narex Classic Chisels

Tang style with stained beech handle and steel hoop.
leevalley.com, **$62.50**



Irwin Blue Chip Chisels Set

Tang style with polypropylene handle.
#111165, **$49.99**



Prices subject to change without notice.

Hirsch Chisel Set

Tang style with octagonal hornbeam handle and steel hoop and strike plate. *higlandwoodworking.com*, **$109.99**

WoodRiver Socket Chisels

Socket style with bubinga handle. #161640, **$179.99**

What to buy next

Depending on the kind of work you do, you may want to go wider with a 1½" or smaller with a ⅛". Later, you can fill in with sizes such as ⅜", ⅝", and so on. I found the former to be more useful early on than the latter. From there, you should know enough about your woodworking to select your first specialty chisel. See online extras for a free article on this topic.

1½" Two Cherries

(similar to Hirsch), **$70.44**
twocherriesusa.com

⅛" pfeil

#162515, **$38.99**

⅜" WoodRiver

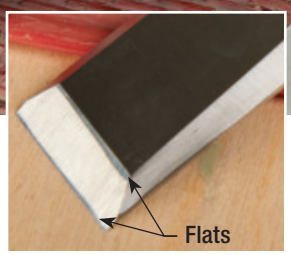
#161643, **$39.99**

Sharpening a chisel

For a fresh-out-of-the-box chisel to work well, it must first be sharpened. The process I use involves flattening the back using a medium grit waterstone and then honing it to a mirror polish on a fine-grit stone. (For more information, see Buyer's Guide, p. 60.) Apply firm finger pressure to the end of the chisel to keep it flat and work the entire surface of the stone. Your waterstones will need to be dressed regularly with a flattening stone. Move to your slow-speed grinder outfitted with a 150-grit aluminum oxide wheel to shape the bevel. Color the bevel with a marker to track your progress. Most new chisels come with a 25° bevel angle, a good compromise for general woodworking. Set the tool rest so the wheel makes contact in the center of the chisel's factory bevel. Pinch the chisel below the tool rest and, using your finger as a guide/stop, slide the chisel side to side. Keep moving and use a light touch to prevent bluing the tool. Check your progress often, and give the steel time to cool between passes without losing your pinched position.

Return to the waterstones to hone your freshly-ground edge. Mount the chisel in a honing guide and rest the two points of the hollow-ground bevel on a 1000-grit stone before locking it in place. Pull toward you at first, and then glide the chisel back and forth over the waterstone until you've honed uniform flats across the heel and the entire width of the cutting edge. Move to your fine-grit stone and repeat the process until the flats are evenly polished. Remove any burr from the tip by alternately stroking the chisel's back and bevel.

Flatten the back. After achieving a consistent scratch pattern on the first inch or more of the back with a 1000-grit stone, hone it on an 8000-grit stone as shown. You'll know you're done when the polish reveals a clean reflection (inset).



Hone the bevel. First, pull the chisel toward you. Then, go back-and-forth a few strokes, maintaining pressure at the tip. Once you have narrow flats across the cutting edge and heel (inset), repeat the process on the 8000-grit stone.

Check for sharpness. A sharp chisel will produce a clean curl of end-grain pine without a fight.

Putting your chisels to use

Your sharp chisel is designed to both quickly chop the waste away from joints and then finely pare for fit. When chopping, you typically drive the chisel into the wood with a mallet. Paring, usually powered by your hands, consists of slicing away thin layers of wood with the bevel up or down—a much less aggressive cut. For example, you can use your chisel to chop out the waste from between the pins and tails for dovetails and then finesse the joint's fit through paring. You can also pare plugs flush, square routed corners, and clean up tenons, as shown here. Learn a few basics maneuvers and practice. In general, always secure your work, keep your chisels sharp, and make light cuts to ensure clean, square work. When chopping, don't ask too much of your chisel. Removing a lot of material at once and really banging on the handle can dull your tool by rolling back the edge. And you risk cutting past your baseline as the force from a heavy mallet blow can kick the chisel edge backward. When paring a plug flush with a surface, one hand holds the blade flat on the work surface as your upper body transfers force to your other hand on the handle. Lock your elbows and rely on your upper body to make paring cuts. For paring in the center of surfaces where you can't hold the chisel flat, use the bevel edge down. For the smoothest and the most precise cuts, pare across the grain in multiple shallow passes. In addition to what you see here, you can also accomplish many other tasks such as paring tenons and splines, and cutting mortises for hinges, see onlineEXTRAS for more.

Dovetail detail. Start chopping a scant 1/16" in front of your scribe line. Remove the bulk of the waste before cutting on the line. Cut halfway through, then flip the board over and repeat the process to meet in the middle.

Paring plugs. Rest the back of the chisel on the work's surface (bevel up) when paring. Take small slices with the grain of the plugs to prevent tearout.

Squaring a routed corner. After scribing your layout lines, chop away the waste. Clean up the corner of any leftover wood fibers with the bevel down as shown.

Pare tenon shoulders. Start with light cuts, registering the chisel's back on the section you just cut and pivoting into the area. Then push the chisel toward the tenon, taking thin slices. ■

COOPERED Café Table

An intimate outdoor setting loaded with lessons

By Ken Burton

Ah, Paris in the spring. A stroll along the Seine followed by a warm baguette and a cup of coffee at a sidewalk café. While it won't get you to France, this delightful, counter-height café table will help you simulate that experience in your own home. Its 30" diameter top is just right for breakfast for four without taking up too much of your outdoor space. The tapered cylinder that makes up the base provides a solid anchor against windy days and presents an excellent opportunity for you to try your hand at coopering as you bevel the staves from which it is made. After gluing the staves together, rout the base round using a fixture that serves as a large lathe. Then use the same fixture for routing a series of V-grooves to add a certain je ne sais quoi. While I made my table from black locust, a tough wood that lasts practically forever outside, other weather-resistant species such as white oak would also be appropriate. (See page 54 for more information about black locust.)

Order of Work

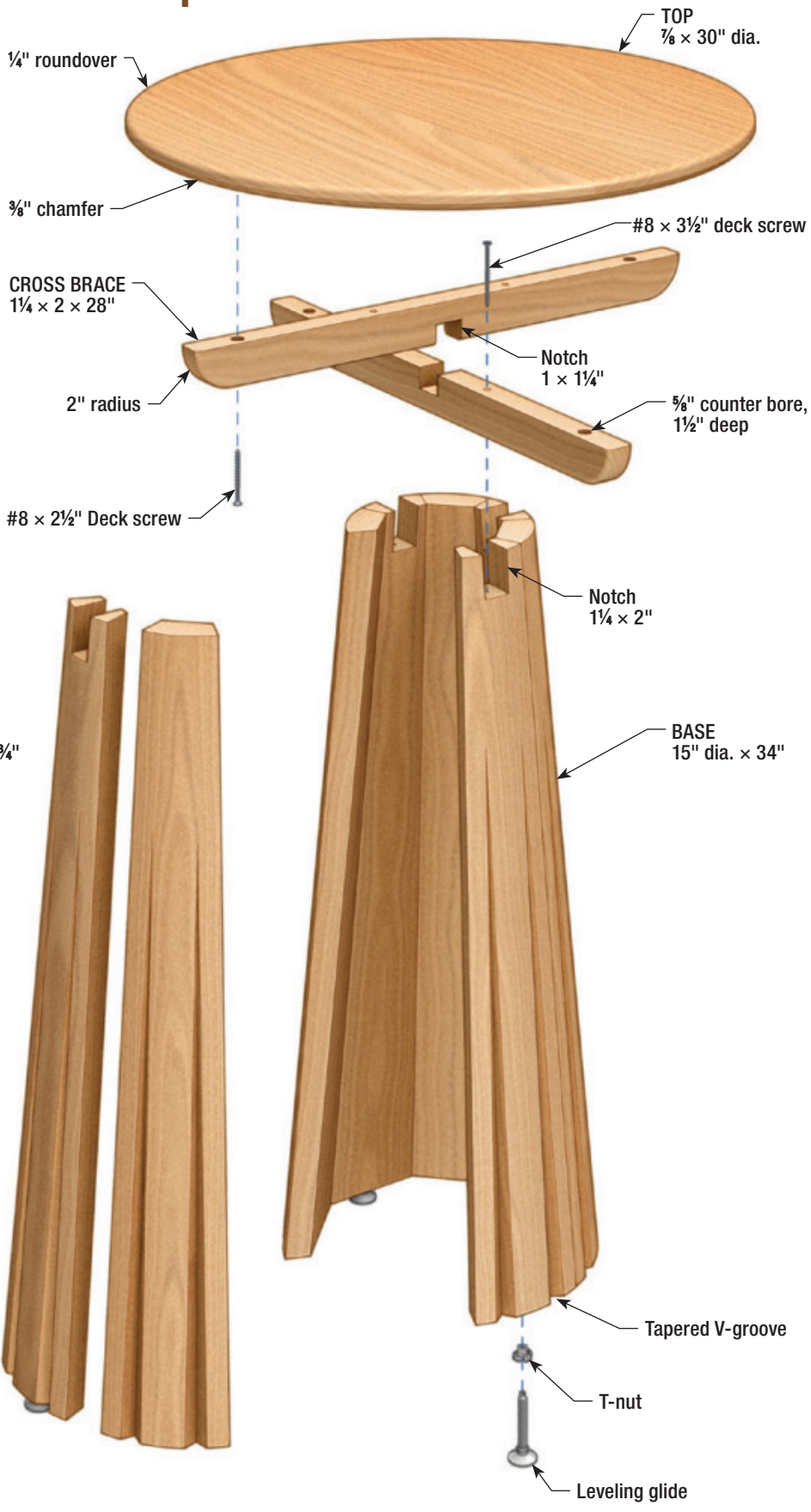
- Make the staves
- Glue up the base
- Shape the base
- Make the cross braces
- Make the top
- Finish and assemble

onlineEXTRA

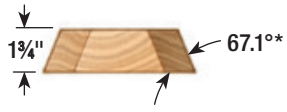
- Router Trammel free project download
- Full-size indexing wheel layout
- Plan for a shop-made edge guide

A table with a tapered coopered base

The table's base is a truncated cone sitting on leveling feet and is made of eight tapered staves cut from 8/4 black locust and edge-glued together. A series of tapered V-grooves adds visual interest and texture. Deep notches in the top end of the base hold a pair of half-lapped cross braces that screw into the edge-glued top.



Stave End View



*Adjust to suit your staves.

Stave Detail

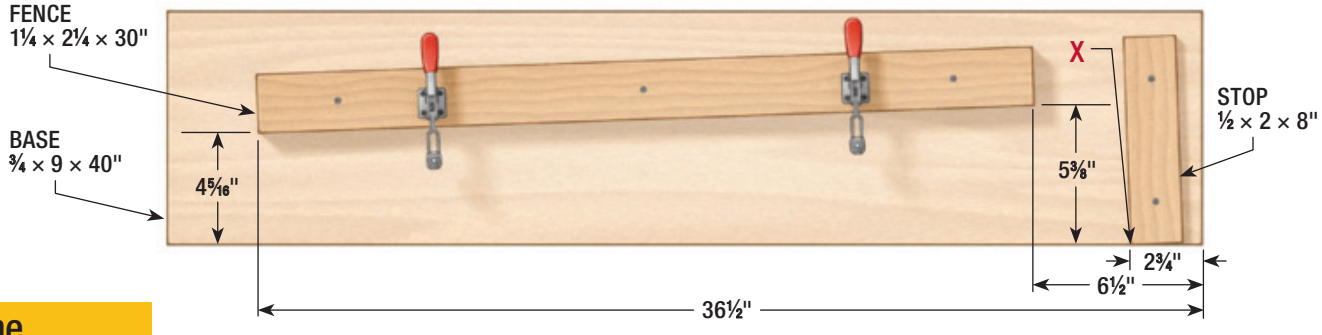
Photos: Ken Burton; Illustrations: Christopher Mills

Bevel and taper the staves

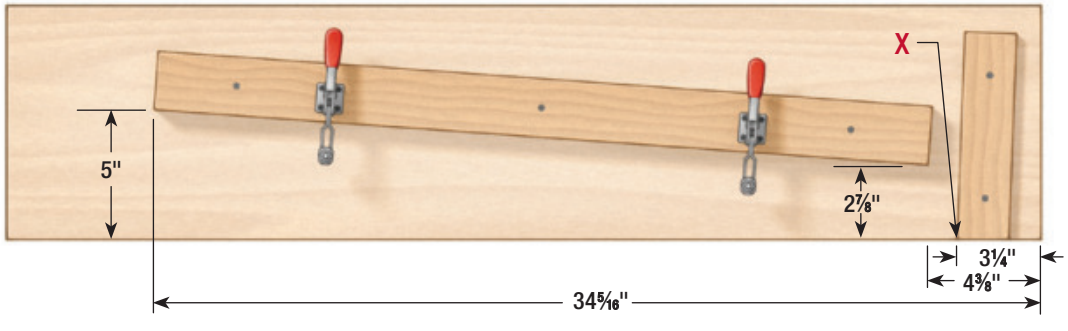
Mill stock for the staves so that all the pieces are consistent in size, as shown in the Stave Detail on page 33. Mill the stock for the tabletop, too (you'll need enough material to make a 30" diameter circle). Set that aside for now. Make the tapering sled, positioning the fence and stop block as shown in Configuration A below. Tilt the blade on your table saw to approximately 67.1° and load the staves onto the tapering sled with their bottom end against the stop. Clamp them in place with two toggle clamps attached to the fence and cut the first side of each piece. Reposition the stop and fence as shown in Configuration B and taper the second side of each piece with the blade at the same angle. A number of variables are at play here, and your bevel angles and tapers may not match mine exactly.

Bevel and taper. After ripping the first edge of each stave with the jig in Configuration A, set up the jig for Configuration B. Rip each stave as before, only this time with the top end against the stop as shown here.

Tapering Jig Configuration A



Tapering Jig Configuration B



Using the tapering jig

1. Screw fence to base as indicated.
2. Position stave against fence with its end aligned with the base at point **X**.
3. Screw stop in place against the end of the stave.

Glue up the cylindrical base

Once the staves are cut and tapered, dry-fit them to check the bevel angles. Glue three clamp blocks along the face of each stave to help keep the band clamps from slipping. I used superglue to expedite the process, but regular wood glue will suffice. After dry clamping, tweak the bevels on the jointer to fine-tune the fit. As you'll be cutting all sixteen bevels, any adjustments you make will likely be half a degree or less. Here, a digital T-bevel (or angle gauge) can help make fractional degree adjustments easier. When you are satisfied with the fit, glue the staves together. Be sure to use waterproof glue such as Titebond 3 for all the glue joints throughout the build.

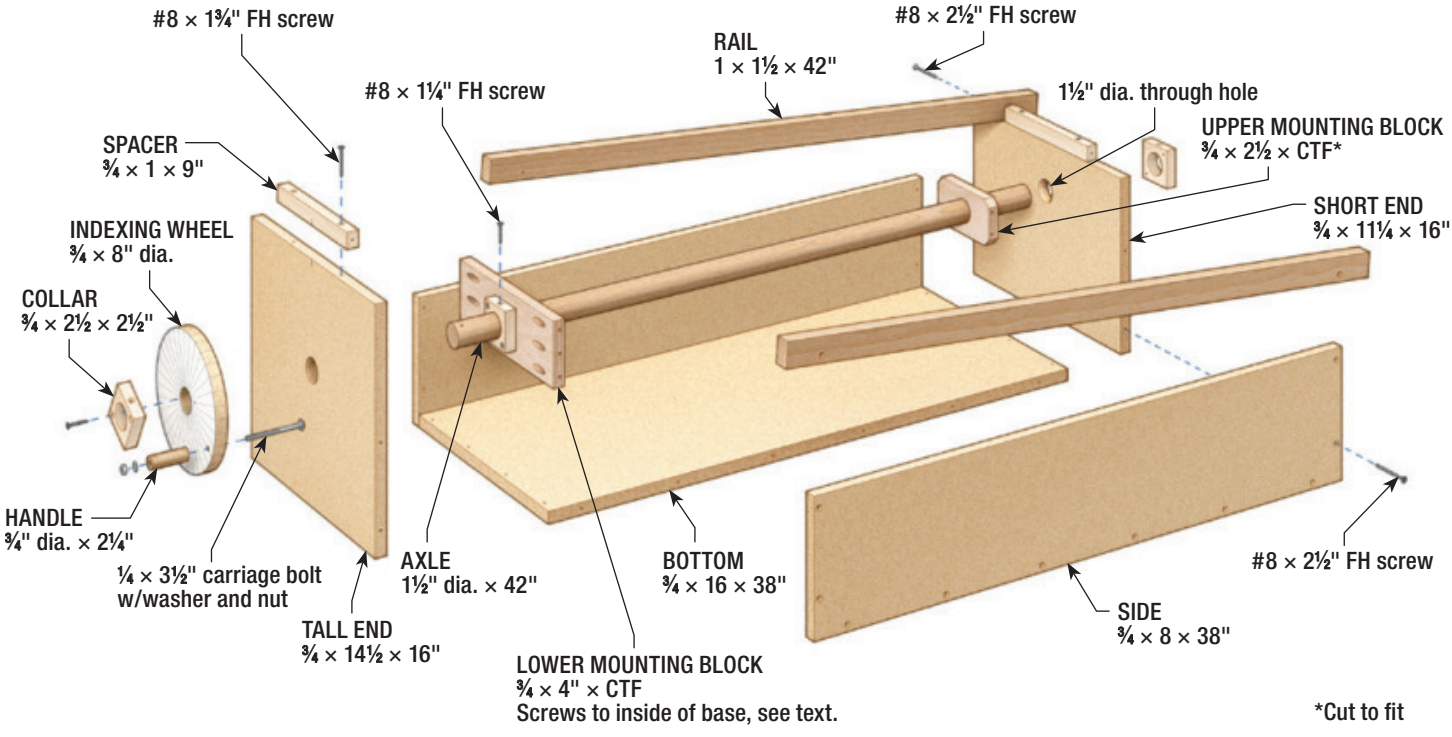
A dry run. Dry-fit to check the angles. Tighten band clamps around the staves to draw the joints closed. Thump them with a soft-faced mallet to bring the corners into alignment, if necessary.

Tweak the bevels. If the joints don't close, finesse the fit by running the pieces over the jointer. Have the machine set for a light (<1/16") pass, as one of the two cuts you'll be making on each piece (the one with the top end leading) will be against the grain.

Make the fixture to shape the cylinder

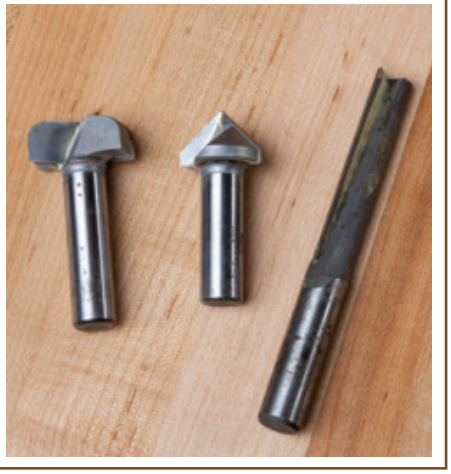
To make the base round and then to rout the decorative V-grooves, you'll need to hold it so that it pivots around its central axis as you cut it. While you could turn it, the base is too big for all but the largest lathes. So instead, I devised the fixture shown here to make these cuts with a router. Build the fixture leaving the tall end off for now. Add mounting blocks to the ends of the base as shown. Slide the axle through the fixture's short end and the upper and lower mounting blocks. Then slide on one of the collars and screw it to the lower mounting block and the axle to lock the pieces together. Slide the tall end on the axle and screw it in place to the sides and bottom. Then add the indexing wheel and the remaining two collars to the axle to lock the base in place laterally. Attach the rails to the top of the fixture and rout the base round. Add a spacer under the rails at their low ends and swap bits to rout the tapered V-grooves. Space them with help from the indexing wheel—I used every other division. Remove the rails and sand the base smooth. Level the router and true the top and bottom of the base with a long straight bit.

Router Fixture

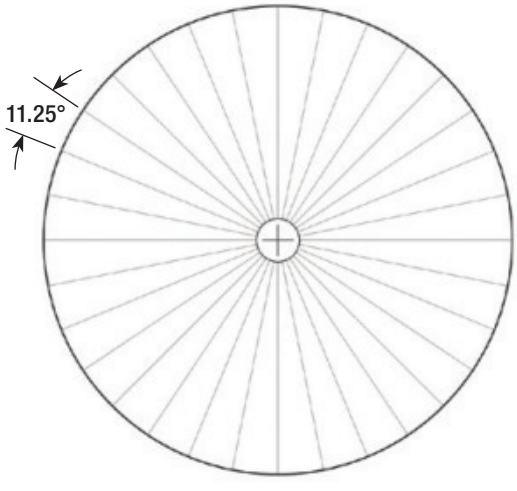


Bits for the base

You'll need these three bits to round, groove, and trim the base: a 1¼" tray bit, a 1" Vee bit, and a long ½" straight bit. See the Buyer's Guide on page 60 for more information.



Indexing Wheel



Mounting support. Bevel the ends of ¾"-thick mounting blocks to match the taper of the sides, and drill 1½" holes in their centers before pocket screwing them inside the base. Mount them ½" in from the rim of the top and bottom.

Rout the round. Mount your router to an auxiliary base that spans both rails. Attach a fence to the auxiliary base to guide the router along the rails. Rout the table base round using a tray bit. Rotate the base slightly after each pass and steady it with your hand as you cut.

Tapered groove. Switch to a V-bit to rout the grooves. Add a ⅝"-thick spacer under the rails at the short end of the fixture to taper the grooves' width toward the top of the base. Use the indexing wheel to space the grooves and a clamp to lock the base in position for each cut.

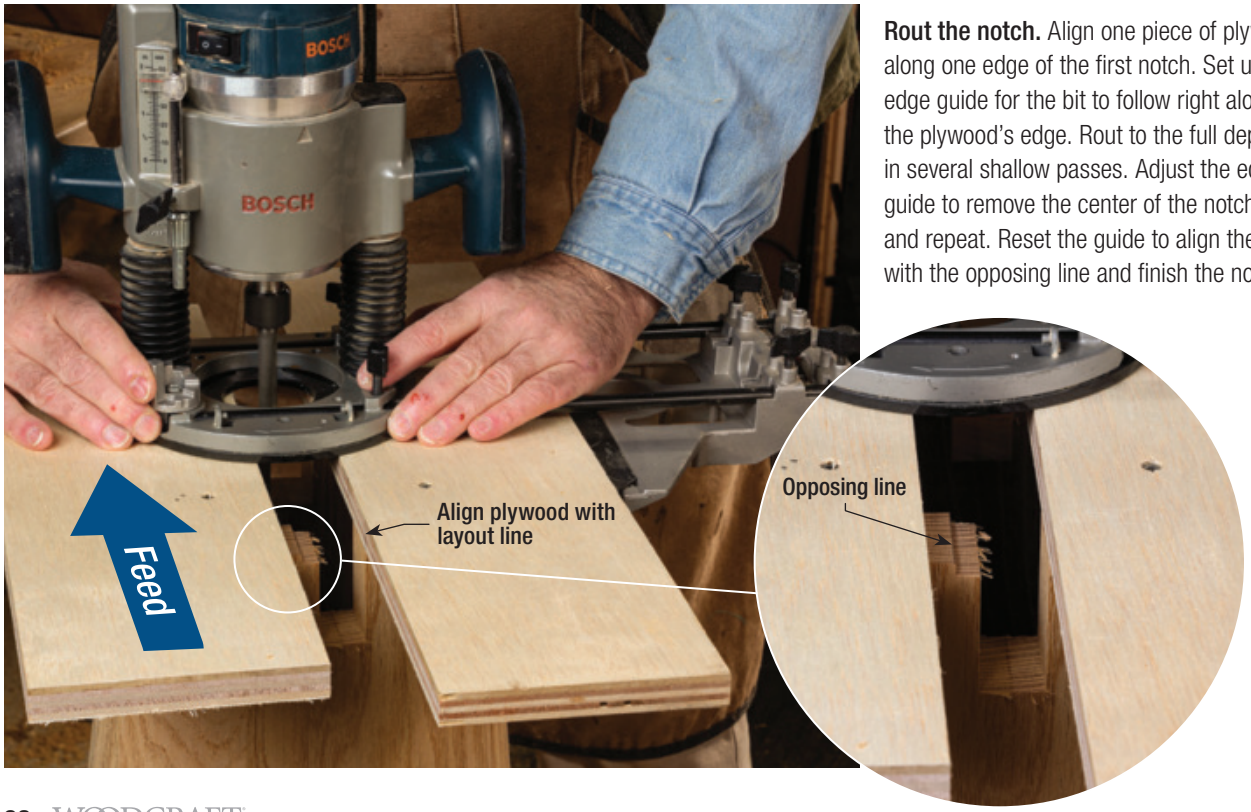
True the cylinder. Shim the router's auxiliary base level with your bench and clamp it to the rails with the bit positioned to trim the bottom of the table base. Rotate the base to trim the bottom in six to eight shallow passes. Repeat the process to trim the top end of the base.

Make and notch the cross braces

Size the cross braces and radius their ends. Cut the centered half-lap notches at the table saw. Drill the mounting holes and countersinks near the ends of both pieces. Also, drill ⅝" diameter, 1½" deep counterbores from the topside to allow room for the screws to shift as the top expands and contracts. Round over the bottom edges, sand the pieces and glue them together. Position the cross brace assembly on the base to mark its notches. Screw two 16" lengths of plywood to the top of the base to create a platform for your router. Guide your router along the plywood to cut the notches.

Saw half-laps. Set up a ¾" wide dado on your table saw. Lay out the notch on one of the cross braces. Set a stop on the miter gauge fence to cut the left side of the notch. Spin the brace end-for-end to widen the notch using shims as needed.

Measure and mark. Measure in along all four arms to center the cross braces on the top of the base. Pencil the base on each side of the braces to mark where to cut the notches.



Rout the notch. Align one piece of plywood along one edge of the first notch. Set up an edge guide for the bit to follow right along the plywood's edge. Rout to the full depth in several shallow passes. Adjust the edge guide to remove the center of the notch and repeat. Reset the guide to align the bit with the opposing line and finish the notch.

Make the top, finish, and assemble braces

Arrange the pieces for a harmonious grain match, then edge-glue them to form the panel. Make the circular cut with a jigsaw, following up with a router at the end of a trammel (see onlineEXTRAS on page 32, for a free plan). Profile the edges before sanding. I used a ¼" roundover bit on the top edge and a 45° chamfer bit on the underside. Finish the parts with a suitable outdoor finish (I used Osmo's UV Protection Oil). Then screw the cross braces to the base. Invert the assembly and rest it on the top, centered. Drive screws through the holes in the cross braces into the top and add the leveling feet to the base. Place the table base-side down on your patio and serve up a nice café au lait et croissant. C'est magnifique!

Router follow-up. Cut the top roughly to shape with a jigsaw, then trim it to its final size with a router attached to a trammel in a few passes.

Profile the edges. Switch to a trim router to round over the top edge, then chamfer the underside

Center the base. Draw a circle on the underside of the top slightly larger than the diameter of the base's top to help center the base. Then measure to double-check before screwing everything together.

Flatware CADDY

A small container with big techniques

By Sarah Marriage

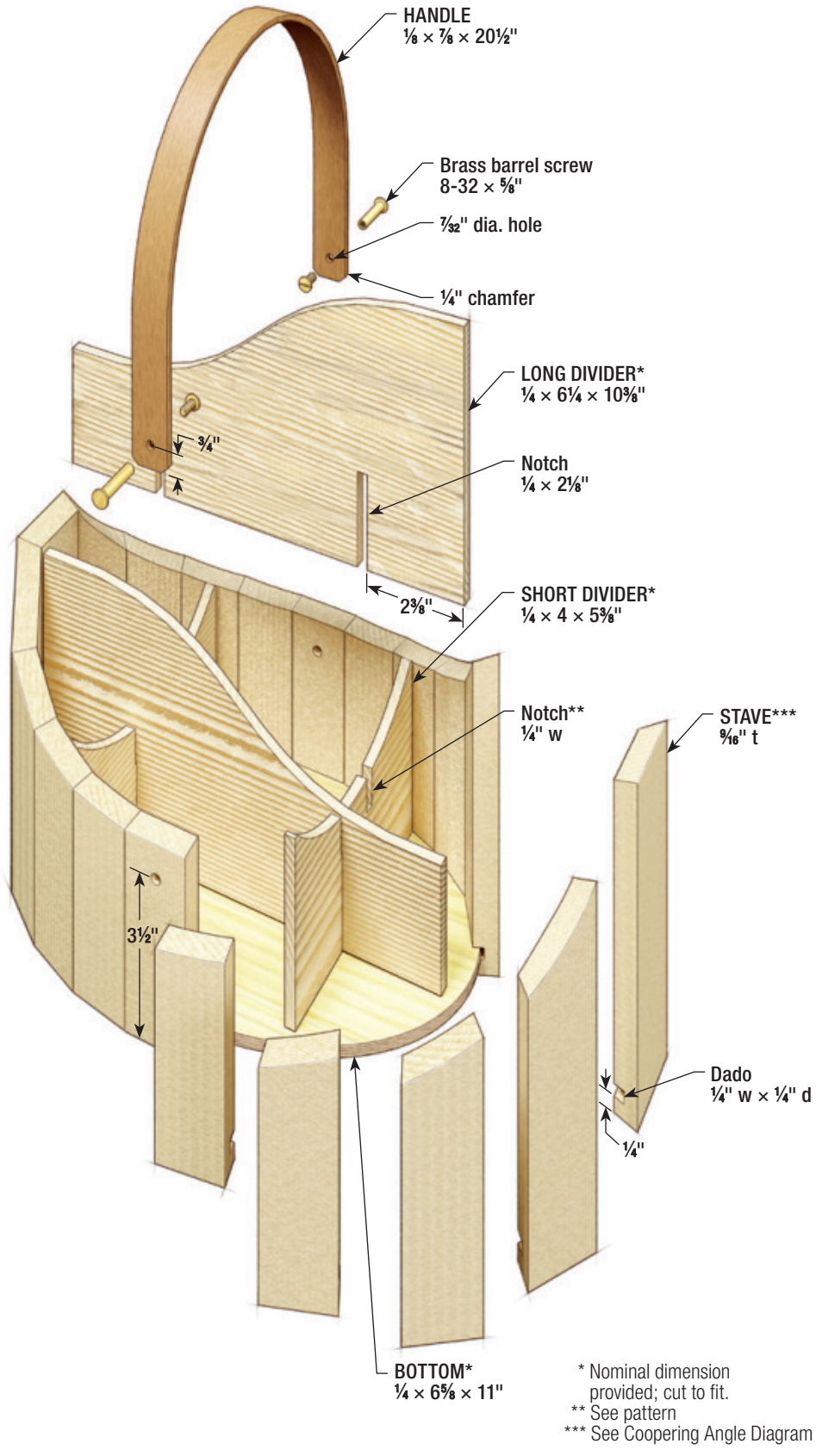
As the sun returns and spring blooms, my thoughts turn to heading outdoors and sharing meals with friends and family. But carrying all the accouterments of a backyard feast can require a lot of trips in and out of the house and result in a pile of cluttered cutlery. This flatware caddy provides a solution for organizing, transporting, and displaying your dining supplies in a simple design inspired by the curve and overlap of garden leaves.

The basic construction draws inspiration from historic coopered vessels, but I elongated the traditionally circular footprint to create an ellipse. The caddy achieves this elliptic shape by carefully adjusting the coopering angle between each stave. Luckily, that's not as fussy as it sounds. There are 20 staves but only five bevel angles that repeat around the ellipse. The trick is to bevel long strips of stave stock first, then crosscut them to length, ensuring all your angles match. The compound curve on the top edge of the caddy is made easy by bandsawing the shape onto the staves while they are laid flat and then fairing out the curve after gluing up.

The container's interior is organized with removable, half-lapped dividers, making clean-up easier in the event of messy condiment spills. And the steam-bent handle, attached with brass barrel screws, swivels out of the way for easy utensil access.

An elegant, convenient solution for carrying cutlery

An elliptic bottom panel of ¼" Baltic ply floats inside dadoes sawn into the caddy's staves. The removable compartment dividers connect with half-lap notches. They are trimmed to a slightly loose fit inside the container to allow easy removal and avoidance of interference with the coopered walls during seasonal changes. The staves and dividers are made from paulownia, but any lightweight wood will do. The handle attaches to the caddy via barrel screws. Walnut is used to provide contrast and an amenable species for steam bending.



* Nominal dimension provided; cut to fit.
** See pattern
*** See Coopering Angle Diagram

onlineEXTRAS

- The patterns on page 46 are available on our website at full-size:
  - bottom panel
  - caddy wall profile curve
  - short and long dividers
  - steam bending form
- Read a free article on ripping bevels at the table saw.

Order of Work

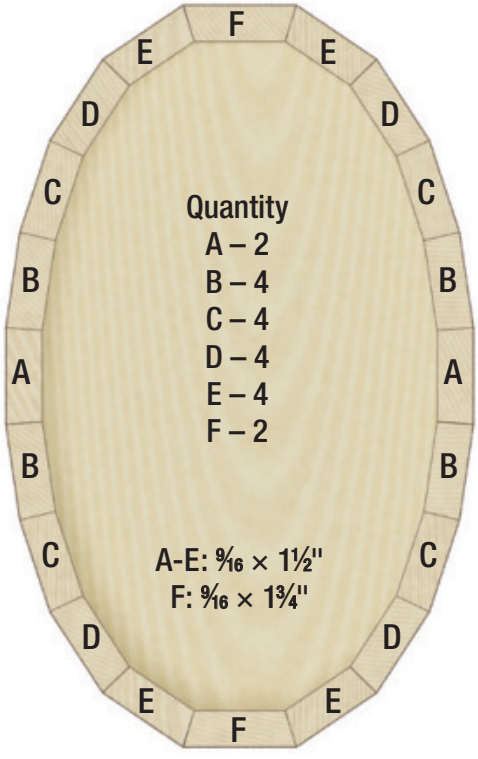
- Make the staves
- Make and fit bottom panel
- Assemble and glue-up
- Make removable compartments
- Steam bend handle
- Attach handle

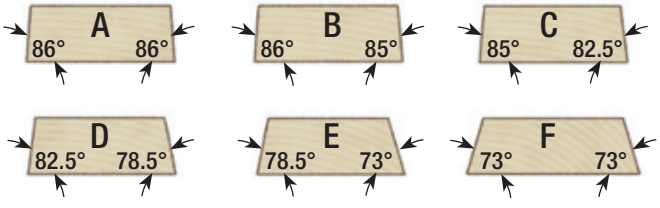
Photo: Ken Burton; Illustrations: Dan Thornton

Making an ellipse

Mill several long strips of stave stock to 2" wide. You'll need two strips (A and F) at 15" long, and four strips (B through E) at 36" long, plus extras for table saw set up. Tilt your table saw blade to 17°, and bevel both sides of strip F and one side of strip E. Then set the blade to the next angle in the diagram, and so on. After all six strips of stave stock are beveled, crosscut the strips into individual overlong staves and cut the dado for the bottom panel, as shown.

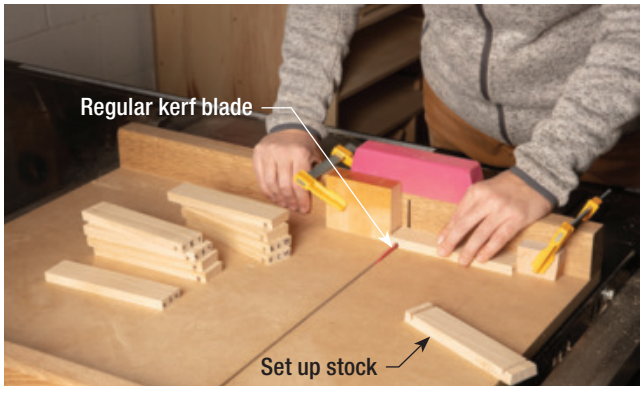
Coopering Angle Diagram





Bevel the stave stock. Before you rip the second bevel on each strip of stave stock as shown, use your set up stock to dial in the fence to the correct final width. Mark one end of your pieces with their part letters (A-F) and bevel angles.

Cut staves overlong. Return your table saw blade to 90° and crosscut the beveled stave stock to 7" lengths. Mark each piece with its part letter and bevel angles on one end only (critical for the next step). This will result in two staves each of A and F and four staves each of B through E.

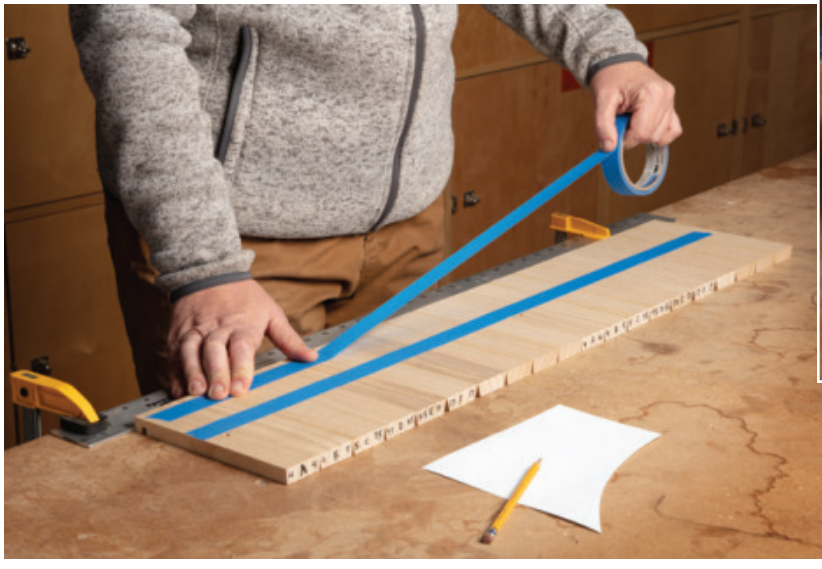


Brain-teasing dadoes. Use two stop blocks clamped to your crosscut sled to set the width of the bottom panel dado. Set the blade height to a ¼" above the sled's bed. Be sure to place staves bevel side down when cutting. Group the staves in two halves. Saw the dado toward the unmarked end of one half of A through F, then toward the marked end of the other half, as shown.

Assembling the container

Arrange staves in order and apply a few strips of painter's tape to keep them assembled. Lift up the assembly and roll it into an ellipse. If there are gaps, carefully adjust one joint to bring the assembly home. Print the Bottom Panel pattern and adhere it to the panel before bandsawing it to shape. Trim it as needed to fit the ellipse assembly. Unroll the assembly and lay it flat on a ¼" plywood backer board.

Print the Caddy Wall Profile Curve half pattern and make a template. Draw the curve on the still-taped staves, flipping the template to complete the shape. Then bandsaw to the waste side of the line. While still on the backer board, drill the holes for attaching the handle. Prefinish the bottom panel and the inside of the ellipse. Assemble, and glue up.



Tape it up. Using a straight-edge clamped to your bench to register the bottom edges, arrange staves in order, bevel side down. Apply painter's tape as shown, creating a tape clamp, and dry-fit the ellipse (inset).

Cut the caddy wall curve. A backer board supports the flexible stave assembly, keeping it flat and manageable at the bandsaw.

Glue up the container. Apply glue between each stave, but let the bottom panel float freely inside its dado. Painter's tape works well to clamp the assembly, but you could use lightweight band clamps for more force.

Photos: Greg Pease Photography

Dividing the interior

Mill stock for dividers and cut template blanks of the same size from ¼" ply. Use the Short and Long Divider patterns to make plywood templates. Cut the half-lap joinery at the table saw first. Then bandsaw the profile curves on the dividers as shown. Assemble them outside of the caddy, as they will be too big to drop down into the piece at first. Mark out where trimming is needed and mark the joints for orientation on the divider's undersides. Then disassemble, and trim them on a shooting board.

Once the divider assembly fits easily in the caddy, remove it to clean up all top edges of the container. Remember this is coopered, so the top edge of the caddy wall is all end grain: here a sharp spokeshave is your friend, and uphill is actually downhill. Once you've finished the outer top edge, use a spokeshave or file to clean up the curves of the dividers, making sure they fit well in relation to the caddy and each other. Sand and finish top and outside of caddy. Sand and finish dividers.

Cut the joinery first. At the crosscut sled, raise the table saw blade to the depth of the half lap notch and use two stop blocks to set the width to match the thickness of your divider material, taking multiple passes to nibble away the notch. Flip the piece and cut the second notch.

Add curves. After tracing the curves from your plywood templates onto the dividers, bandsaw them to shape.

Clean up top edges. Quick-grip clamps are a handy way to secure this irregular object to your work surface while you fair the curve along the top edge.

Fashioning a handle

Print the Steam Bending Form pattern. Cut it from thick stock or stacked plywood. I used 8/4 pine. Fair out any bumps on your form; they'll show up in your handle. Cut the handle blanks overlong by 6" for clamping. Steam the blanks for 15 minutes. Then remove one and bend it around the form. If it breaks, discard and bend the next blank. Clamp until fully dry, at least 24 hours. Transfer the cut marks from the bending pattern to the handle before removing it from the form. Cut the handle to the marked length. Drill holes in the handle and chamfer the corners with a block plane. Sand and finish the handle, install the barrel screws, drop in the dividers, and start caddying!

Bend the handle. Holding the piece toward its ends, gently coax the steamed stock over the form. Secure in place with one clamp.

Attach handle. A short flat-head screwdriver on the screw side of the barrel screw and light hand pressure on the barrel side is all you need to tighten these fasteners. Apply a reversible thread locker to keep everything in place. ■

Small-scale Steam Bending

Steam bending might seem risky. Building a form, making a compression strap, and spending hours steaming thick timber can end in heartbreak when you hear a loud crack as you finish clamping the piece around the form. But starting at a small scale is much more forgiving. And once you get a feel for small bends, it's easy to scale up.

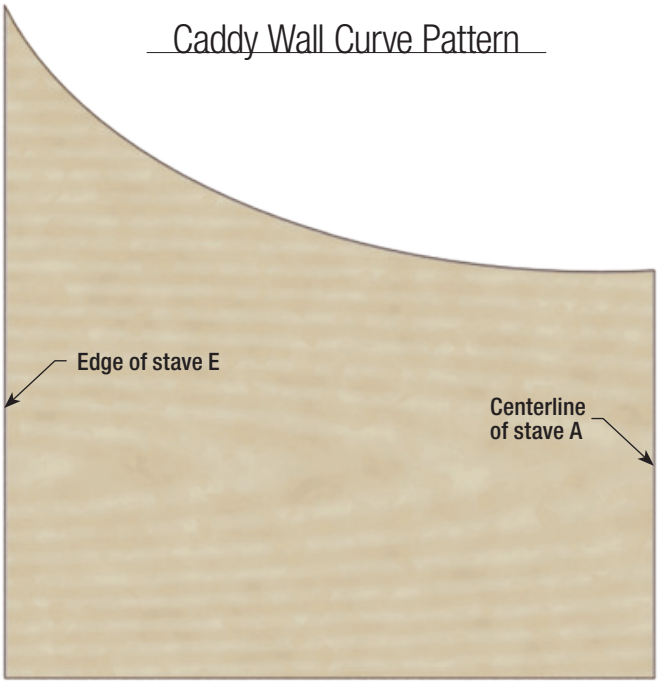
Once your setup is running (see photo at right), fill the Earlex with water, plug it in, and wait. Keep an eye on your thermometer as the steam starts to flow. When the temperature passes 210°F, load your blanks into the box. The temperature will drop when you open the door, so wait until it reaches 210° again before you start timing. The rule of thumb is one hour per inch of thickness, but I err on the side of extra steam. I steamed the ⅛" thick caddy handle for 15 min. It's possible to oversteam, but the benefit of starting small is that you get to experiment quickly to get a feel for different factors.

Making a steam box. My system is easy to replicate. You need an Earlex steamer (See Buyers Guide, p. 60), water, a shop-made steam box, and a digital meat thermometer. Screw together a narrow plywood box with a front door that hinges at the top. Elevate the front. Drill a hole in the center of the bottom to attach the fitting that comes with the steamer. Drill another hole at the rear end of the bottom for drainage, one in the top to fit your thermometer, and several along the sides to run dowels across, creating interior shelving.

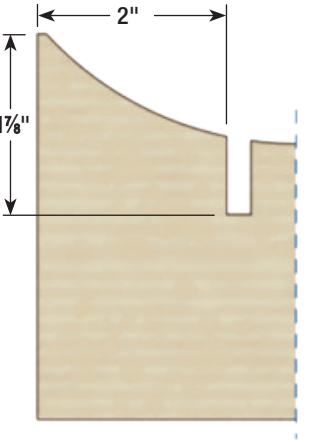
Patterns

All patterns shown at 50%.

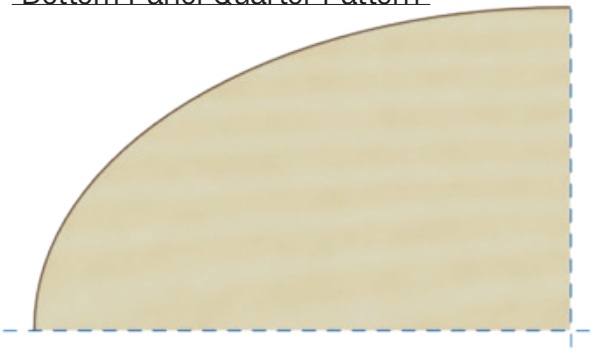
Caddy Wall Curve Pattern



Short Divider Half Pattern

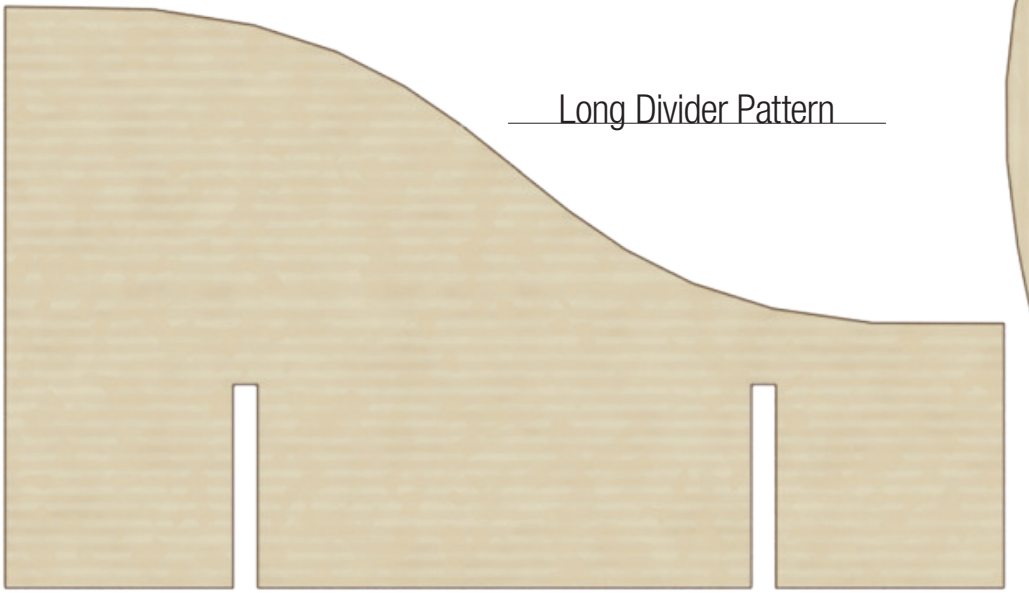


Bottom Panel Quarter Pattern



Steam Bending Half Pattern

Long Divider Pattern



TOOL STORAGE Wall

A modular system built for an expanding tool collection

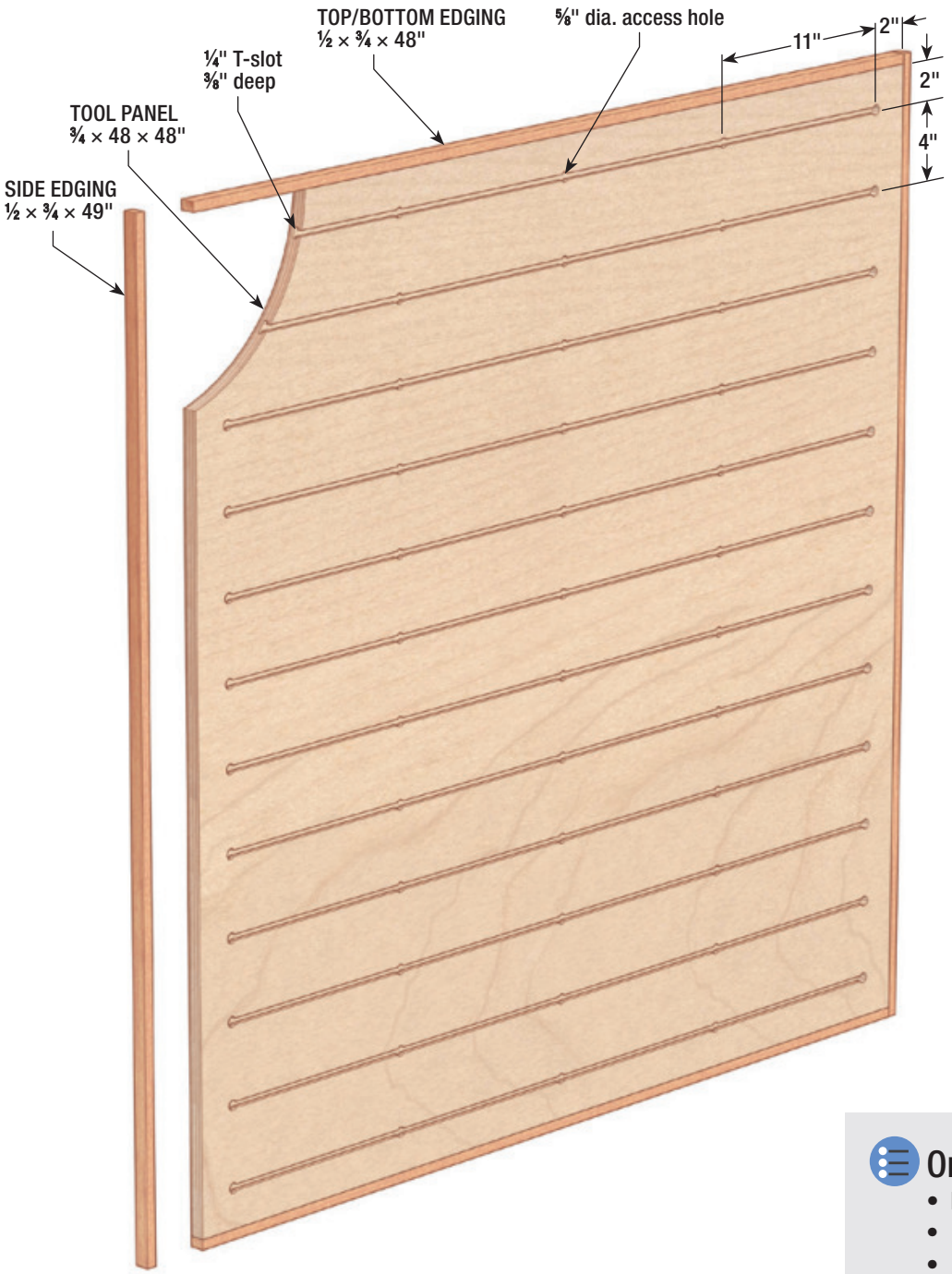
By Derek Richmond

For efficient woodworking, having your hand tools organized and stored close to your bench is ideal. But how best to do this, especially if you're still building to your collection? A dedicated hand-tool cabinet looks great, but adding a new tool may be difficult. Tool hangers attached to French cleats provide versatility and flexibility, but those cleats are, at best, utilitarian in appearance. Instead of taking either of these approaches, I wanted my storage system to strike a balance: good-looking custom brackets for the hand tools I use most often along with the flexibility to rearrange them as needed. I devised individual tool brackets outfitted with 1¾" T-bolts that slide into slots routed in a 4 × 4 sheet of plywood. Knurled knobs lock the brackets in place. As my collection grows, I can craft new brackets and slide my current arsenal around to make room. The order gives me a sense of peace in the workshop, and makes me a more efficient woodworker. I suspect observant readers will be able to watch as my tool collection evolves in issues to come.

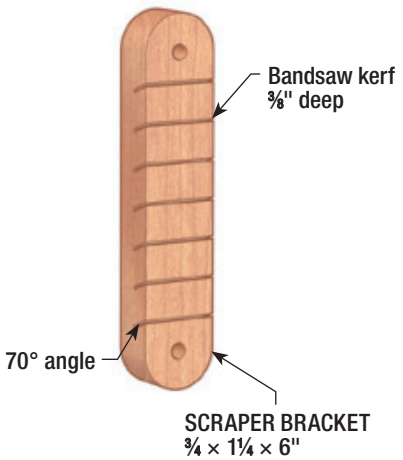
Photos: John Hamel

A slotted panel with simple brackets

The tool panel is ¾" maple plywood wrapped in ½" hardwood edging, with horizontal T-slots spaced every 4". Regularly-placed access holes in the slots make adding and reorganizing the custom tool brackets easy. The brackets are hardwood and attached with T-bolts and knurled knobs (see Buyers Guide on page 60 for details). A few small, single-tool brackets are illustrated here to give you some ideas, but build brackets to suit your own tool collection. The larger units are designed to keep similar tools grouped together. In this case, one holds planes, while the other corrals layout tools. When attaching the board to your shop wall (I used French cleats), add a 1½"-thick spacer at the bottom end to give the entire panel a slight lean, to help the tools stay in place.



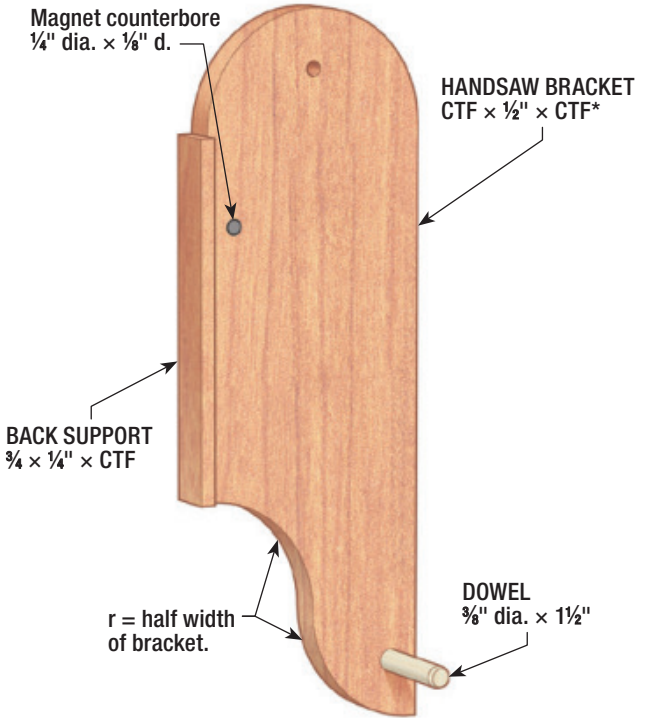
Scraper Bracket



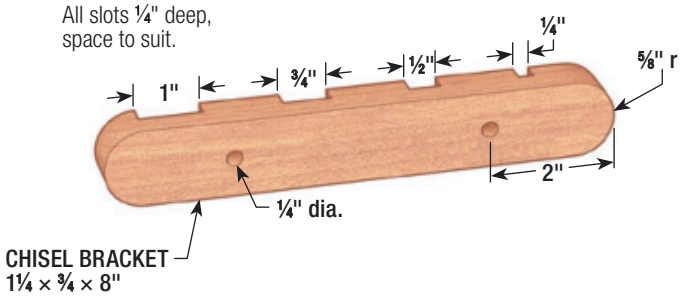
Order of Work

- Rout and edge panel
- Build custom tool brackets
- Build plane holder
- Build layout tools holder

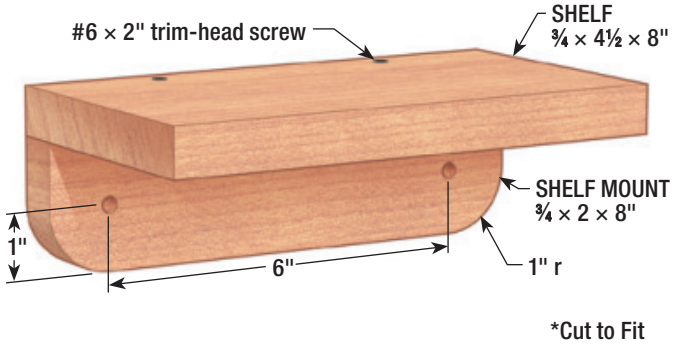
Handsaw Bracket



Chisel Bracket



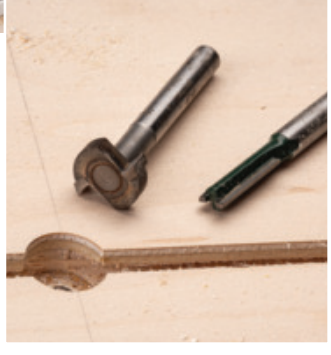
Shelf



Make the panel

Size the plywood panel, then lay out horizontal slots every 4", stopping them 2" from the sides. Routing the T-slots is a three-step process. First, use a plunge router with a ¼" straight bit to rout slots halfway through the panel's thickness. Second, repeat the process with the T-slot cutting bit. Finally, plunge-cut the access holes at 11" intervals as shown to create the openings for adding and removing tool holders. Cut the hardwood edging strips 1/16" wider than the panel's thickness, and attach them with glue and brads before routing them flush with the panel's surface. Mount the panel on the wall with appropriate hardware. Then turn to making tool brackets, customizing them to suit your tools. The shelf bracket, shown lower left, for example, can be slotted for files, or drilled for screwdrivers.

Three-step T-slot. After routing the slots with a ¼" straight bit, plunge in at one end of each slot and rout the full length of the slot. Return to the start to raise the bit. Then plunge at the other end and at regular intervals along the slot to cut the access holes as shown here. Cutting up from within the slot can ruin the veneer on the plywood.

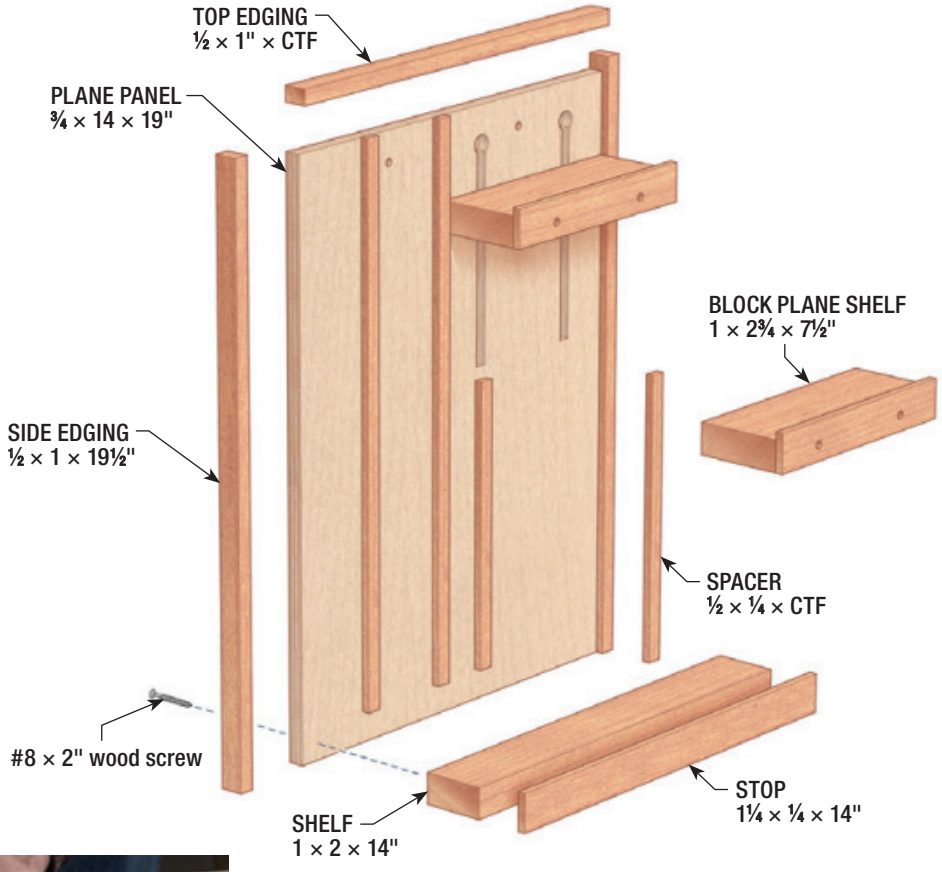


Nuts and Bolts. The bolt head fits into the routed slot through the access holes. Tighten the knurled knobs against the bracket to hold it in place.

Illustrations: Greg Maxson

Build the handplane holder

Size the panel to fit your handplanes including a ½"-wide spacer between each, but leave the panel about ½" oversized in width to allow for trimming later. Lay out and rout T-slots for adjustable shelves to hold block planes. Attach the top edging flush to the back of the panel using glue and brads, then trim the panel to final width as shown. Screw the lower shelf to the panel from behind, countersinking the screws. Attach the side edging, then locate and pin the spacers in place. Finally, drill mounting holes for the T-bolts in the panel and the block plane shelves.

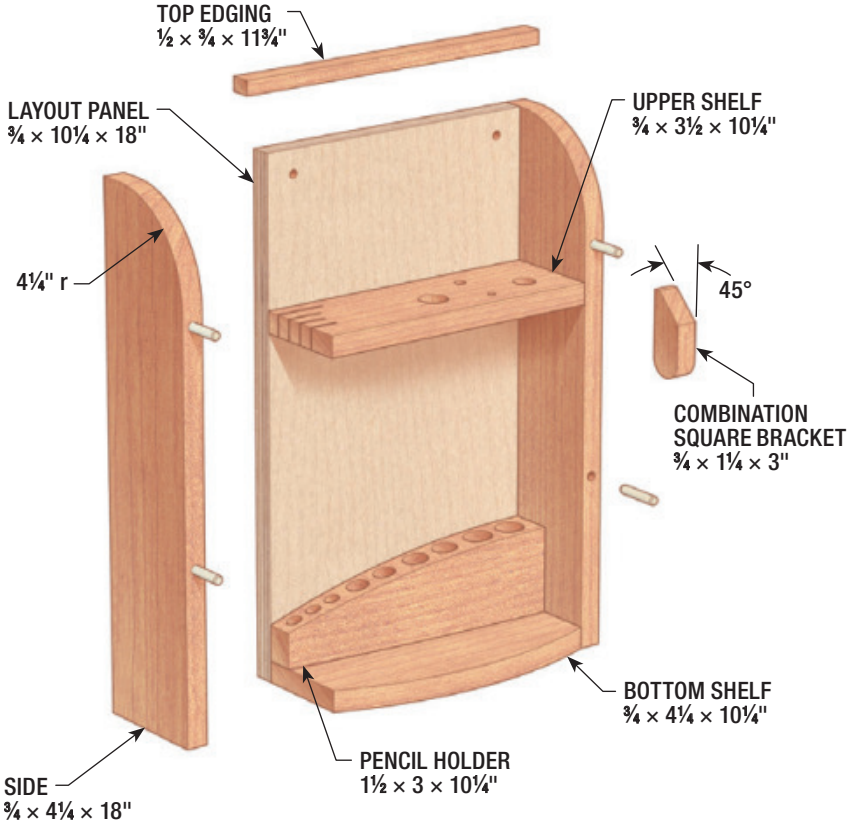


Trim the plane panel. Trim the panel and top edging to width at the table saw, leaving a flush edge to attach the side edging.

Pin in place. Use your handplanes to locate the spacers on the panel, adding a few playing cards to allow clearance. Fasten the spacers in place with pins.

Build the layout tools holder

After cutting the parts to size, attach the top edging to the panel. Screw the bottom shelf in place and glue on the sides. The bottom shelf's front is curved to provide room for tool holes or slots to be added, while the large sides provide plenty of real estate for hangers such as dowels, cup hooks, and the combination square bracket (shown below). Lay out and cut the curves in the pencil-holder, that also holds chalk, markers, small rulers, and similar items) and glue in place. After sizing the upper shelf, cut slots in one end to suit the blades of your squares. Then drill holes to hold tools such as marking gauges and knives, calipers, and awls. Screw the shelf into place from behind sans glue so it can be removed and revised later.



Curves add style. Lay out the gentle curves on the front and top edge of the pencil-holder block, then drill a variety of holes to suit your storage needs. Cut the top curve at the bandsaw, then double-face tape the cutoff back in place to cut the front curve.

Combo-square bracket. Bevel one end of a length of stock, then kerf the unbeveled edge. The kerf holds the blade of a combination square while the square's angled shoulder sits on the bevel. Cut away the waste at the band saw. ■

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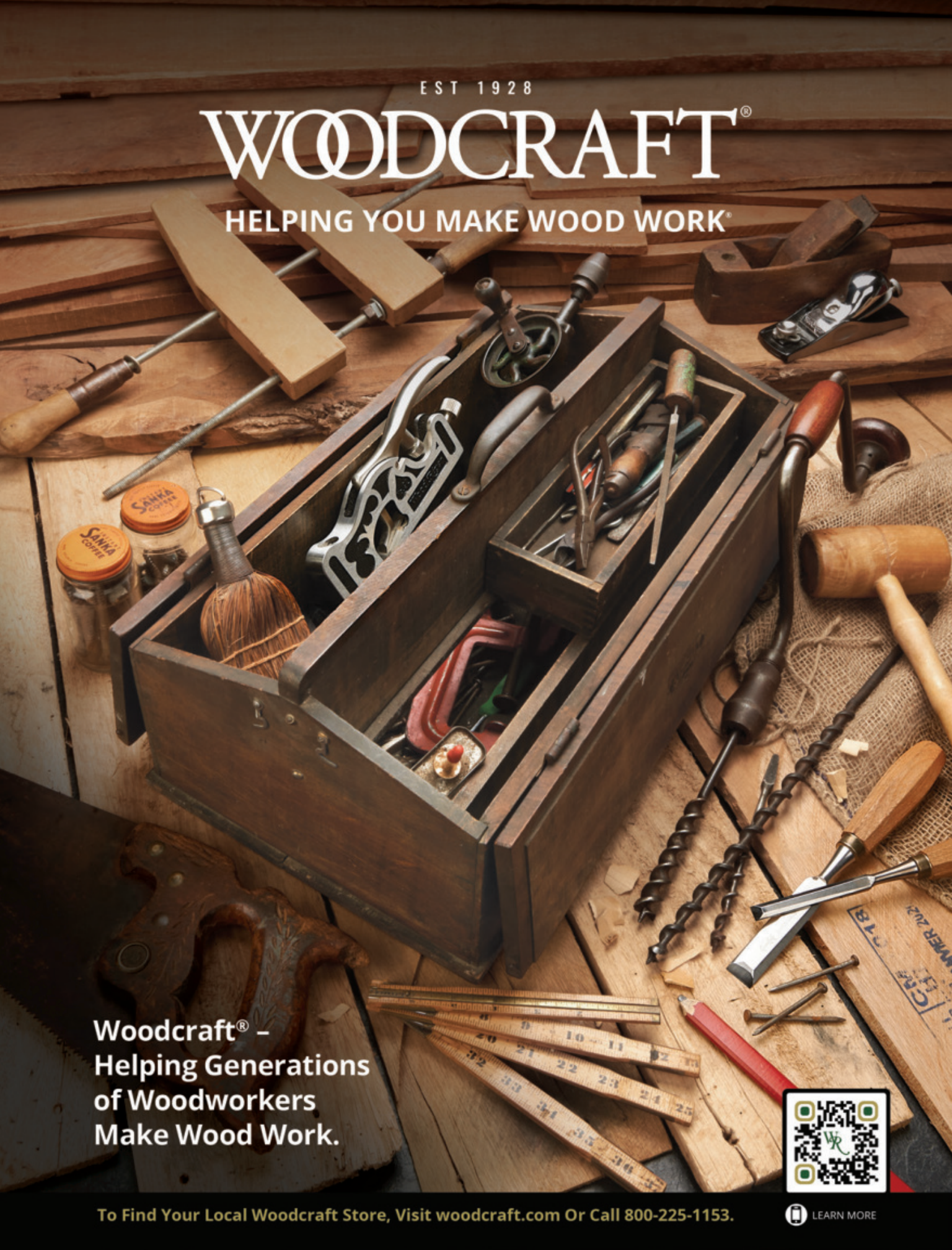
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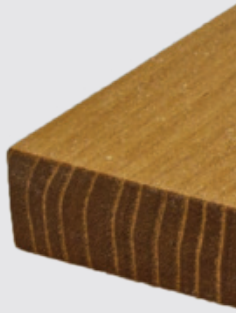
BLACK LOCUST



Hard, durable, and controversial

By Ken Burton

In some ways, black locust might be considered a superhero (or maybe a supervillain). The tree the lumber comes from is one of the fastest-growing hardwoods, and the wood is one of the hardest, stiffest, and most rot-resistant species native to North America. It's rapidly gaining traction as a "greener," more sustainable alternative to both pressure-treated lumber and many of the rainforest species imported for decking. When properly dried, the wood is quite stable and relatively easy to work given its hardness. Even as firewood, black locust stands out as having one of the highest BTU values of any North American species. The tree is also quite hardy and adaptable to many climates. Strong, resilient, easy to work—super.

But black locust has a sinister side. When planted, it can quickly gain a foothold and crowd out other native species. It also grows back quickly from stumps and roots after being cut down making it hard to eradicate. Because of these aggressive tendencies, some areas and even states consider it an invasive species and outlaw its propagation.

Where the wood comes from

To the best of our knowledge, black locust (*Robinia pseudoacacia*) is native to the Appalachian region. But Native Americans saw the benefit to this species and transplanted it throughout what would become the coastal plains of Virginia long before Europeans began colonizing. Since then, the tree has spread across North America and around the world. In fact, some of the finest black locust lumber comes from plantations in Hungary, where the species has been selectively cultivated for centuries. Sadly, little of that is imported to the U.S. What you're likely to find here comes from small (60-70' tall, 15-20" diameter) hedgerow trees. As a fast-growing "weed" tree, black locust is not listed on the CITES or IUCN Red List and is considered a species of least concern.

History in woodworking

Black locust's desirable characteristics have been known for centuries. When the first Europeans crossed the Atlantic, they found Native Americans utilizing it for hunting bows made from the strong yet springy wood. These early colonists soon took advantage of the wood's rot resistance, using it for the foundations of their houses in Jamestown. Later, during the War of 1812, one reason the Americans bested the English in the decisive battle of Plattsburg Bay on Lake Champlain had to do with black locust. The U.S. warships were held together with black locust trunnels ("tree nails") that withstood cannon fire much better than the British ships with their oak trunnels. Afterward, Britain began importing thousands of black locust trunnels to refit its naval vessels. Since then, the wood has been used for everything from fence posts to furniture.

Whistle while you turn. These small black locust whistles proved to be a fun project for my beginning spindle-turning students. Everyone smiles after their first tootle. Despite its hardness, the wood turns well even when cutting against the grain.

TEXTURE	TOXICITY	ROT/INSECT RESISTANCE	STABILITY	HARDNESS	DENSITY
MEDIUM	LOW-MEDIUM	HIGH	MEDIUM	VERY HARD	48 LBS./CU. FT.

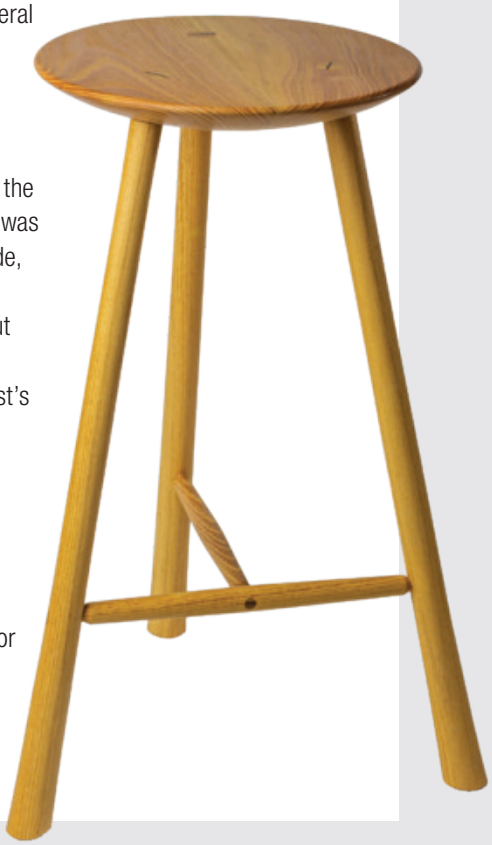
Misnomer. Despite its name, black locust is more tan with a greenish-yellow cast. Its wide growth rings give the wood a bold, somewhat streaky character. Its heartwood is quite durable, but the sapwood quickly succumbs to insects and rot.

Working and finishing

Black locust is primarily sold as solid lumber, though some veneer is available. The trees are small and grow crookedly, yielding boards typically shorter (8-12') and narrower (<10") than many other species. For best rot resistance, seek lumber without sapwood and early growth, as these parts of the tree will decay. Pricing ranges from $5-7 per board foot. Once dry, the wood is reasonably stable. But as the trees are crooked, the boards tend to warp when cut. (For more about this, see sidebar at right.) So you'll want to sight down the edges of your boards to find the straighter pieces. Black locust lumber is quite hard and dense, but it mills and saws well. Standard precautions such as predrilling for fasteners are in order. The wood accepts both glue and finishes readily. It is also a good choice for bending with either steam or lamination.

A black locust adventure

In early November, as I developed my outdoor café table (see p. 32), making it from black locust seemed like a good idea. My lumber dealer had plenty of 4/4 in stock but no 8/4 for the base. "No problem," he said, "I just got a couple black locust logs and can cut what you need. I can dry it and have it for you by Christmas." When I picked up the order, I was a bit dismayed at how bowed many boards were. According to the sawyer, some of the boards dramatically peeled away from the blade as the logs were sawn. After several weeks of acclimation time in my shop, I crosscut the pieces to rough length. By the next day, every board had developed end checks. It was discouraging. My supplier said, "In hindsight, it probably would have been better to let those logs air-dry for several months before attempting to cut and dry them." Lesson learned. But what about my table? A week passed before I summoned the courage to cut the stock to its final size. Milling went well; the hard lumber didn't even do appreciable damage to my steel jointer knives. Even better, the end checks proved to be surprisingly shallow, less than an inch deep in most cases. As I write this several days later, the checks haven't reappeared (knock on, well, wood). Even more impressive was how the wood behaved as I beveled the tapered staves that make up the table's base. To adjust the bevel angle, I ran the staves over the jointer. The cut on the first edge of each piece was with the grain, but when cutting the second side, the grain was definitely against me. Amazingly, even on the uphill cuts, the wood didn't tear out at all. Nice. In the meantime, I had made the whistles and the stool shown here. I think locust's hardness works in its favor when milling and making shear cuts on the lathe. Sharp spindle gouges and skews left a highly burnished surface requiring little sanding. And the lack of tearout was just shy of miraculous. ■



Graceful integrity. Locust is an ideal wood for three-legged stools. Its exceptional strength allows you to size the parts to look graceful without compromising structural integrity.

Black Locust Uses

- Fence posts
- Decking
- Furniture
- Turnings
- Veneer

Photos: Ken Burton

Mullet dust separator

Cyclone dust separators for shop vacuums have been around for a while. They excel at keeping the vac's filter clean by dropping debris out of the airstream ahead of the filter. The folks at Mullet have taken this basic idea and improved it by making the connection between their separator and the vac rigid. This means the two units move as one when you tug on the hose—a welcome convenience when cleaning up the shop.

I've been using the U.S.-made Mullet for several months now and like it a lot. As advertised, it keeps my vac's filter clean, and the suction strong. Their instruction manual was clear and actually fun to read with some Texas humor thrown in for good measure. The initial setup took about 10 minutes, the included adaptors mating perfectly with my Craftsman vac. (Mullet includes adaptors for all the major brands.) The clear plastic lid and the translucent hopper make it easy to tell when it's time to empty the canister, which is a fast, easy, tool-free operation. The only troubles I've had have been a couple of clogs after sucking up too many hand-plane shavings. I can live with that.

—Ken Burton

M5 Dust Cyclone Collection
mullettools.com, $229.99

Prices subject to change without notice.

Photo: Ken Burton

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Better rust-buster

Until I inherited them, my dad's hand tools sat unused for 20 years in the heat and humidity of his Florida workshop. They were rusty, to put it mildly. Obliged to recondition them, I took a friend's recommendation and soaked the still good tools in Evapo-Rust. Immediately, I noticed that rust began dissolving, and within 20 minutes, knobs and screws could be loosened. I soaked chisels and plane irons for an hour, wiped them down, and they were ready to sharpen. Inspired, I set about de-rusting the rest of my shop. I dipped old saws in a bath of Evapo-Rust; I soaked a rag in the liquid to wrap around turning tools and plane bodies, and used another to wipe machine tables. And because it's re-usable, I'm still on my first jug. Best of all it, it attacks the rust but not the metal beneath. I accidentally left a rusty old square soaking all weekend, but when I saw it again on Monday morning, it was rust free and intact. To top it off, Evapo-Rust is non-toxic, non-corrosive, contains no acids or bases, and doesn't produce harmful fumes. ■

—Derek Richmond

Evapo-Rust

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Photo: Derek Richmond

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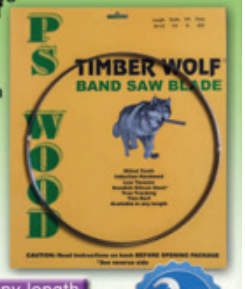

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Tool Reviews (p. 14)

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2. Laguna PXI20 20" Planer with ShearTec II ..... *lagunatools.com*, $5,499.00

Mid-century Modern Plant Stand (p. 21)

1. SONGMICS 10-Inch Ceramic Plant Pot ..... *amazon.com*, $49.99
2. Whiteside Straight Bit, ¼" D, 1" CL, ¼" SH ..... #819072, $15.99
3. Whiteside Roundover Bit, ⅜"R, 1¼" D, ⅝" CL, ¼" SH..... #24B96, $27.99

Bevel-edge Bench Chisels (p. 26)

1. WoodRiver Socket Chisel, 4 pc. ..... #161640, $179.99
2. WoodRiver Socket Chisel, ⅜" ..... #161643, $39.99
3. Pfeil Swiss Made 4mm (5/32") Beveled Edge Chisel ..... #162515, $38.99
4. Irwin Blue Chip Chisel Set, 4 pc. ..... #111165, $49.99
5. Bevel Edge Chisel with Octagon Handle, 40mm (1½") ..... *twocherriesusa.com* #4001440, $70.44
6. Narex Classic Bevel Edge Chisel Set, 4 pc. ..... *leevalley.com* #10S0976, $62.50
7. Hirsch Bevel Edge Chisel Set, 4 pc. ..... *highlandwoodworking.com* #449710, $109.99
8. Norton Combination Waterstone, 1000/8000 Grit..... #830575, $99.99
9. WoodRiver Honing Guide ..... #03A21, $17.99
10. WoodRiver Stone Holder ..... #09T12, $21.99
11. DMT Dia-Sharp Coarse Diamond Bench Stone 8" × 3" ..... #147303, $62.99
12. Norton Aluminum Oxide 8 × 1 × 1" Wheel, 150 grit..... #163282, $42.99

Coopered Café Table (p. 32)

1. WoodRiver Low Silhouette Toggle Clamp..... #143933, $23.99
2. Whiteside Bowl and Tray Bit, 1¼" D, ½" CL, ¼" R, ½" SH..... #24B86, $30.99
3. Whiteside 90-degree V-Groove Bit, 1" D, ½" P, ½" SH ..... #842400, $48.99
4. CMT Straight Bit, ½" D, 2-½" CL, ½" SH ..... #403379, $41.20
5. Whiteside Chamfer Bit, 7/16" CH, ⅝" CL, ¼" SH..... #24L08, $28.99
6. Whiteside Roundover Bit, 1" D, ½" CL, ¼" R, ¼" SH..... #24B94, $24.99
7. Titebond III Waterproof Glue, 16 oz. ..... #145562, $9.99
8. HIGHPOINT T-Nut Levelers, 4 pc. ..... #160701, $9.49

Flatware Caddy (p. 40)

1. Earlex Steam Generator for Bending Wood..... #851322, $79.99
2. Brass Low-profile Binding Barrel and Screw, 8-32 × ⅝", 10 pc..... *mcmaster.com*, #93813A336, $11.89

Tool Storage Wall (p. 47)

1. Whiteside Small T-Slot Bit, ⅝" D, 3/16" CL, ¼" SH..... #128256, $20.99
2. Whiteside Straight Bit, ¼" D, 1" CL, ¼" SH ..... #819072, $15.99
3. WoodRiver T-Bolts, ¼" × 20 TPI, 1¾", 10 pc. ..... #130435, $8.99
4. WoodRiver T-Bolts, ¼" × 20 TPI, 3½", 10 pc..... #130437, $11.99
5. WoodRiver Knurled Thumb Nut Knobs, ¼" × 20 TPI, 6 pc. ..... #172005, $9.99
6. WoodRiver Rare Earth Magnets, ¼" × 1/10", 10 pc..... #150949, $5.49

Great Gear (p. 56)

1. Mullet M5 Dust Cyclone Collection..... *mullettools.com*, $229.99
2. Evapo-Rust Remover, 1 qt. ..... *evapo-rust.com*, $8.99

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Read this issue closely to answer the following questions.

1. How many chisels appear in the Table of Contents?
2. What outdoor-appropriate wood did Ken Burton use in the Coopered Café Table?
3. How many staves make up the Flatware Caddy?

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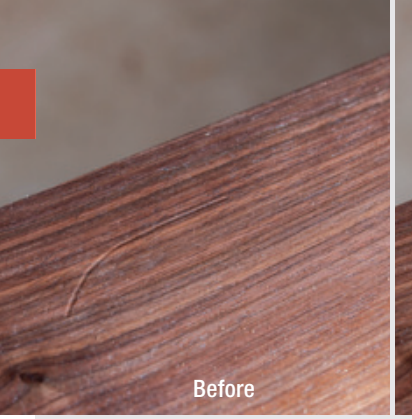

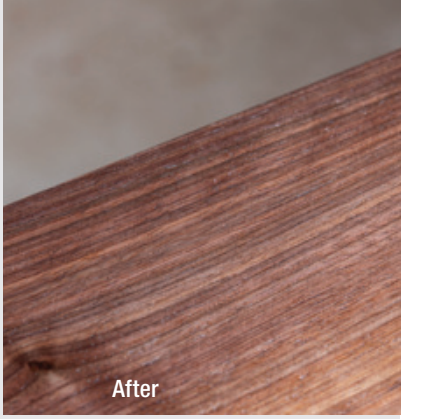

Q: *I was using plastic pyramid risers to support a large walnut tabletop that I was varnishing, when I accidentally shifted the panel a few inches. After turning it back over, I noticed a narrow, shallow scar near each corner created by the pyramid tips pressing into the finished surface. I'm heartsick. Is there any way to fix these, short of sanding down and refinishing the areas?*

Mack Berger
Phoenix, Arizona

A: I feel your pain. I've found that such pyramids are fine for smaller work, but not heavy stuff. However, take heart; you can probably fix the damage fairly easily using a modified version of the old "wet cloth-and-iron" trick used to repair dings on raw wood. The technique works great on solvent-based finishes; I haven't tried it on water-based products.

The first order of business is to perforate the finish at the scar as shown. Don't overdo it: just barely break through the finish layer, and don't make too many slits at first. Try to mimic the spacing of the adjacent wood pores if possible.

Next, lay a wet strip of cloth such as a cotton T-shirt hem over the scar and let it sit for 5 or 10 minutes. Then steam the area with a wood burning tool. Afterward, inspect the scar to see if it has filled out. If not, repeat the water and heat applications until the affected area has swollen slightly above the adjacent surface. If necessary, poke more slits. Then let the water completely evaporate from the uncovered scar.

Finally, scrape the raised area with a razor blade to level it, then follow up by sanding the area with 400-grit paper. After applying varnish, the completed repair should be barely discernable, if at all. ■

Paul Anthony
former senior editor
Woodcraft Magazine

Perforate. Use a narrow-tipped craft knife to poke a series of tiny, closely spaced slits into the scar, orienting them in the direction of the grain.

Steam. Slowly drag a wood-burning tool over a sopping wet strip of cloth laid over the scar. This will cause the perforated area to swell up.

Scrape. Flex a brand new single-edged razor blade as you would a card scraper, and scrape the swollen scar to level it out.

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