

Get started in **CHIP CARVING** p.24

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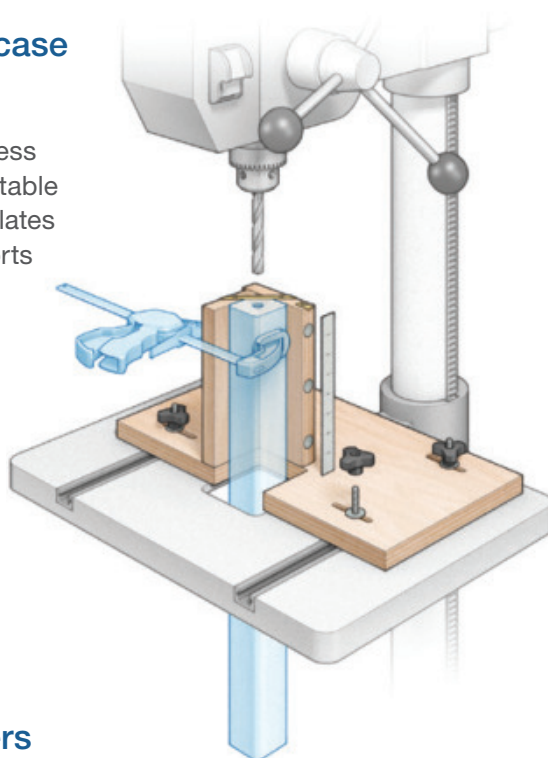
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The trap of comparison

Theodore Roosevelt is said to have coined the phrase, "Comparison is the thief of joy." I've found this to be true. Comparing yourself to others can rob you of your passion for woodworking. It can stifle creativity. When focusing on the accomplishments of others, we tend to disregard our own, and dwelling on how you measure up can be a downward spiral to frustration and self-doubt. Still, it has its uses.

Comparison itself isn't all bad. It's one way we humans find our place in the world. With it, we can discover our interests and talents. This self-evaluation can lay the groundwork for improvement and even spark change in our lives. What's more, looking up to fellow craftspeople can be inspiring, especially while working to make your own mark.

That's one reason why the staff here appreciates the vast spectrum of talent and style exhibited in Reader Showcase (p. 10). Inspired readers reaching for more sparked the four-legged stool on page 42 as well as the vintage toolbox on page 32. To round out the issue, we feature a two-paneled serving tray with dovetailed handles (p. 28), a soap dish with a unique design (p. 51), and a chip-carved board for stamping pasta (p. 21). If you've never taken

the plunge into chip carving, check out how to get started on page 24.

Learning to sidestep the comparison pitfall is one skill most woodworkers could stand to hone. Woodworking is a personal thing; a journey to be appreciated. At the end of said journey, though, you should be proud of your work while aspiring to do better next time. Resist the impulse for unnecessary comparison. Instead, try competing with yourself using past projects as benchmarks. Then take pleasure in watching your skills grow and being part of such a rich and diverse craft.

The woodworking world is not some exclusive club, nor is it a competition. Instead it is a community of folks anxious to exchange ideas and celebrate the material we all love. Allowing the work of others to lift you up rather than bring you down will lead to better woodworking overall. Not only for you, but the community at large. A rising tide, if you will. This refocused worldview may well bring more joy into your shop and everywhere else. ■



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Have a tough woodworking question?

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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.

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Making the cut list

My wife adores the round jewelry box on the cover of the most recent issue (June/July 22). I noticed there was no materials list for this project or any other in the magazine. Older issues of Woodcraft Magazine, as well as other publications, include such a cut list. Are you not publishing them anymore?

—Oscar Abreu,
Indianapolis, IN

**Senior Editor
Ken Burton
replies:**

We stopped
including
materials
lists several

years ago, preferring to include bigger drawings and extra photos. Putting your own list together, gathering information from the comprehensive exploded view, may seem like extra work, but gives a better understanding of the project and its intricacies.

Some dimensions are key to a project, while others are relative. Some pieces need to be cut to fit, and our drawings reflect this with the designation CTF. For more information on developing your own cut list, see A Pro's Guide to Cut Lists in Issue 75 (Feb/Mar 2017).



Selling oneself

I would like to make the three-drawer spinning jewelry box in the latest issue, but if I'm going through the trouble of making the router jigs, may I produce several for sale at craft fairs and the like?

—Roger Anderson, via email

Chief Editor Chad McClung replies:

As a general rule, you're more than welcome to build projects from *Woodcraft Magazine* for yourself or your loved ones – even if they pay you for your work. But if you plan to build multiples of any project as a business venture, you'll need permission from the author. You wouldn't want to profit from someone else's design without consent. Part of our mission is to inspire. While Ken Burton's jewelry box has inspired you to build, allow it to inspire you to design. Use our projects as a launchpad for designing your own work, growing yourself as a builder and a designer.

Robert Sorby

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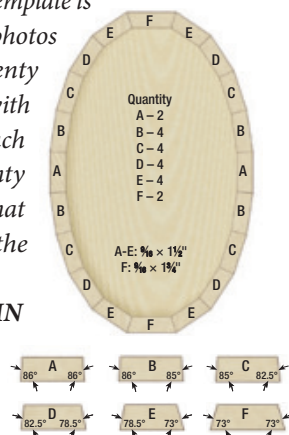
I tried making the Flatware Caddy from the last issue of your magazine, but I'm having a problem with the directions. The article says to make the twenty blank slats 2" wide, then bevel the edges as shown. I did that and the resulting oval is greater than 13 × 9", while the base from the template is smaller. Further I notice in the photos that the author set up her twenty slats against a metal yard stick with clearance on the yard stick on each end. This means that the twenty slats together is less than 36", that is less than 20 × 2". What is the correct width of the slats?

—Les Gagner, Minneapolis, MN

Associate Editor Sarah

Marriage replies:

The information you are looking for is in the "Coopering Angle Diagram" on page 42. Your 2" wide blanks get trimmed to width when you rip the angles on each edge. The angles and the widths are both specified in that diagram. Specifically, staves A-E are 1½" wide and stave F is 1¾" wide. I hope that the rest of the build goes well, and that you are caddying flatware soon!



Down the drain

In your article on Milk Paint (June/July 22), Kimberly Winkle says it can be washed down the drain. Most paints are classified as household hazardous waste because of their chemical contents—VOCs, lead, chromium, among others. Milk paint doesn't contain those chemicals in either its powdered or liquid form. Even so, milk paint shouldn't be washed down the drain, despite some manufacturer claims, because it is clay-based. It can, however, be thrown away with regular trash or even composted. But to be safe, check your local regulations.

—Kendall Pickering, Buckeye, AZ ■

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Reader Showcase

TERRY ACHEY HERSHEY, PA

A gift in itself. Woodworker Achey made a pair of these beautiful gift boxes for his wife and daughter. After building the oak box and adding walnut splines for visual appeal and strength, he cut the top off at the table saw. He profiled the top edges with a $\frac{3}{8}$ " roundover bit, then used a cove bit of the same diameter to create a matching radius on the inside of the walnut ribbons before trimming them to thickness at the bandsaw. He glued the ribbons to the box, then crafted a bow by shaping walnut stock on a disc sander. After stacking and gluing the bow parts, Achey finished the box with spray lacquer, then asked the recipients to put their own keepsakes inside. The box measures $5\frac{1}{2}$ " square by $4\frac{3}{4}$ " high, proving good things come in small packages.



BILL WIESE BARABOO, WI

Boarded up. Wiese says he enjoyed the wall-hung Mini Cutting Board Trio (Issue 104) so much, he made 9 sets! Template routing made the process quick and repeatable. Most of the birdseye maple and wormy cherry kitchen implements became Christmas gifts for Wiese's wife, children, sister, and friends. He also donated one to be auctioned off for charity. Wiese says the recipients were wowed by the cutting boards, and the sets have become the focal points of many kitchens. Gifts like these are certainly a cut above the rest.

ORRIE DUBOIS HAWTHORNE, NJ

Mister Chairman.

DuBois first learned the art of Windsor chair-making 15 years ago from renowned chairmaker James Rendi. Since then, he has built three Windsors, including this one constructed of poplar. DuBois used traditional methods, eschewing power tools in favor of hand planes, spokeshaves, and a draw knife at the shaving horse. In addition to the Windsors and a handful of other chairs, the marine veteran, retired police captain, and grandfather of 19 has built five grandfather clocks, three beds, a half-dozen dining room tables, and more. We'd say he's earned a comfortable seat!



BILL PARKS MAULDIN, SC

Living on the edge. When hobbyist woodworker Parks saw this live-edge cherry slab at his local Woodcraft store, he didn't know what he'd do with it, but knew he had to have it. A few months later, he had turned it into a hall table at his wife's request. Parks added butterfly keys to contain some minor splitting, and filled voids with epoxy. He says the slab shape lent itself to three legs, so he added metal hairpin legs to achieve a 30" height. Finally, Parks finished the roughly 14×60 " slab with polyurethane and wax. ■

Show off your work!



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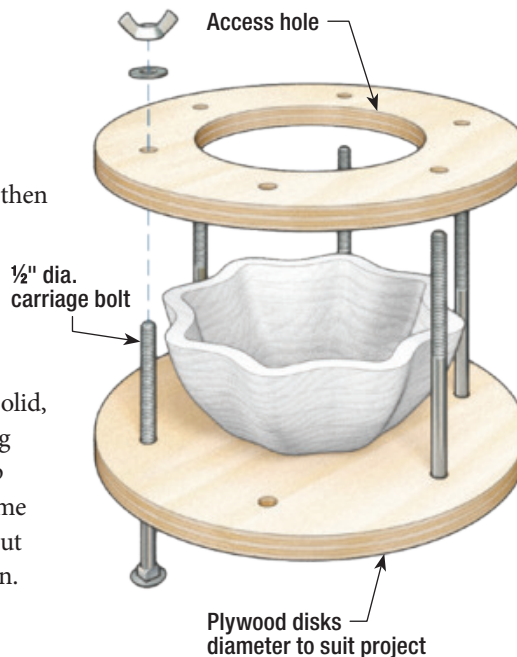


TOP TIP

Scrollsaw bowl press

I make bowls by scrollsawing pieces from thinner stock and then laminating the layers together. To facilitate gluing up the stack, I made a press from two plywood disks connected with ½" bolts, washers, and wingnuts. The bottom disk is solid, but the top disk has an opening big enough for my hand to slip through. This opening allows me to clean up any glue squeeze-out before it has a chance to harden.

—Linda Fitzgerald,
Westport, Massachusetts



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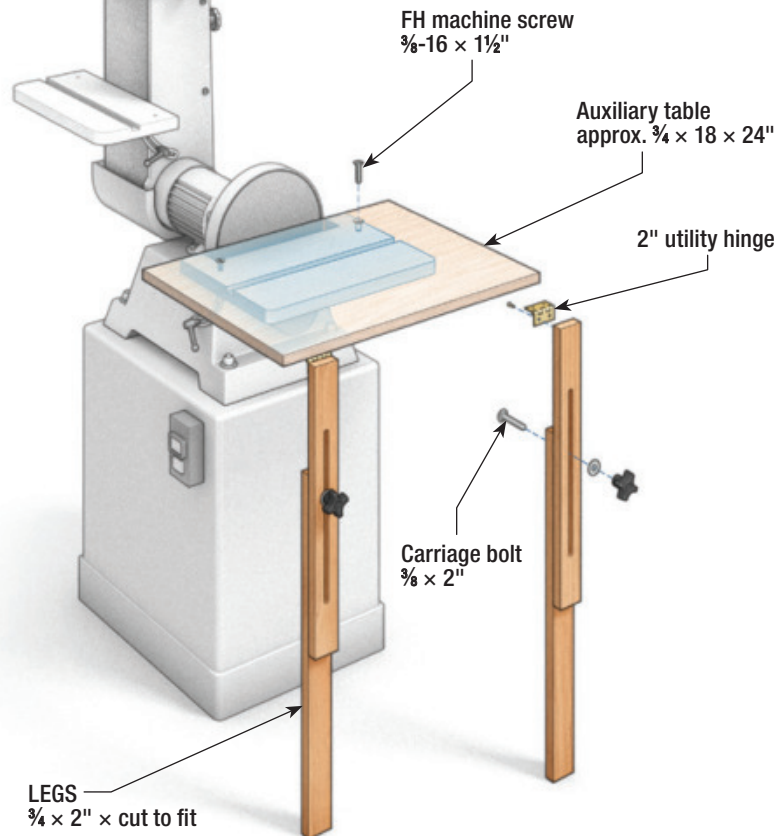


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Sander extension table

I frequently use my stationary belt/disc sander for truing curves and other shaping operations. When used with a light touch, it can produce excellent results. Supporting larger workpieces, however, can be a challenge. To help with this, I made a plywood extension that I can fasten to the machine's existing tables. Adjustable legs attached with hinges keep the larger table from tilting away from the desired angle under load while flathead machine screws thread into holes drilled and tapped in the cast iron to hold the table in place.

—Duncan McAllister,
Bozeman, Montana



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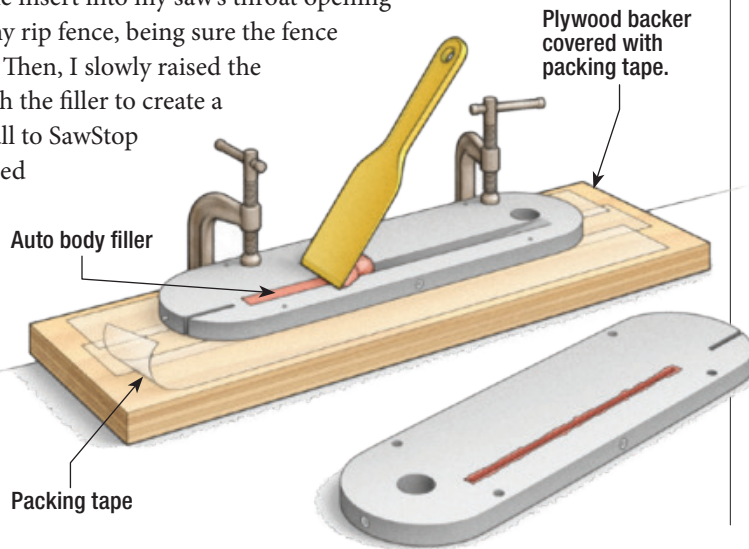
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Restoring throat plates

Over time, the opening in my stock table saw throat plate became ragged. To restore it to true zero-clearance (ZC) performance I packed the underside with auto body filler, clamping a scrap of plywood covered with packing tape to seal the opening. After the filler dried, I placed the insert into my saw's throat opening and clamped it with my rip fence, being sure the fence was clear of the blade. Then, I slowly raised the spinning blade through the filler to create a new ZC opening. A call to SawStop ahead of time confirmed that Bondo brand filler contains no metal and will not interfere with the saw's electronic safety features.

—Charles Mak,
Calgary, Alberta, CA



“Free” finish supports

My local pizza place includes little, three-legged, plastic “tables” in their boxes to keep the lids from sticking to the top of the pies. I wash and save these, using them in the shop to support pieces as I finish them.

—Larry Koch,
North Adams,
Massachusetts

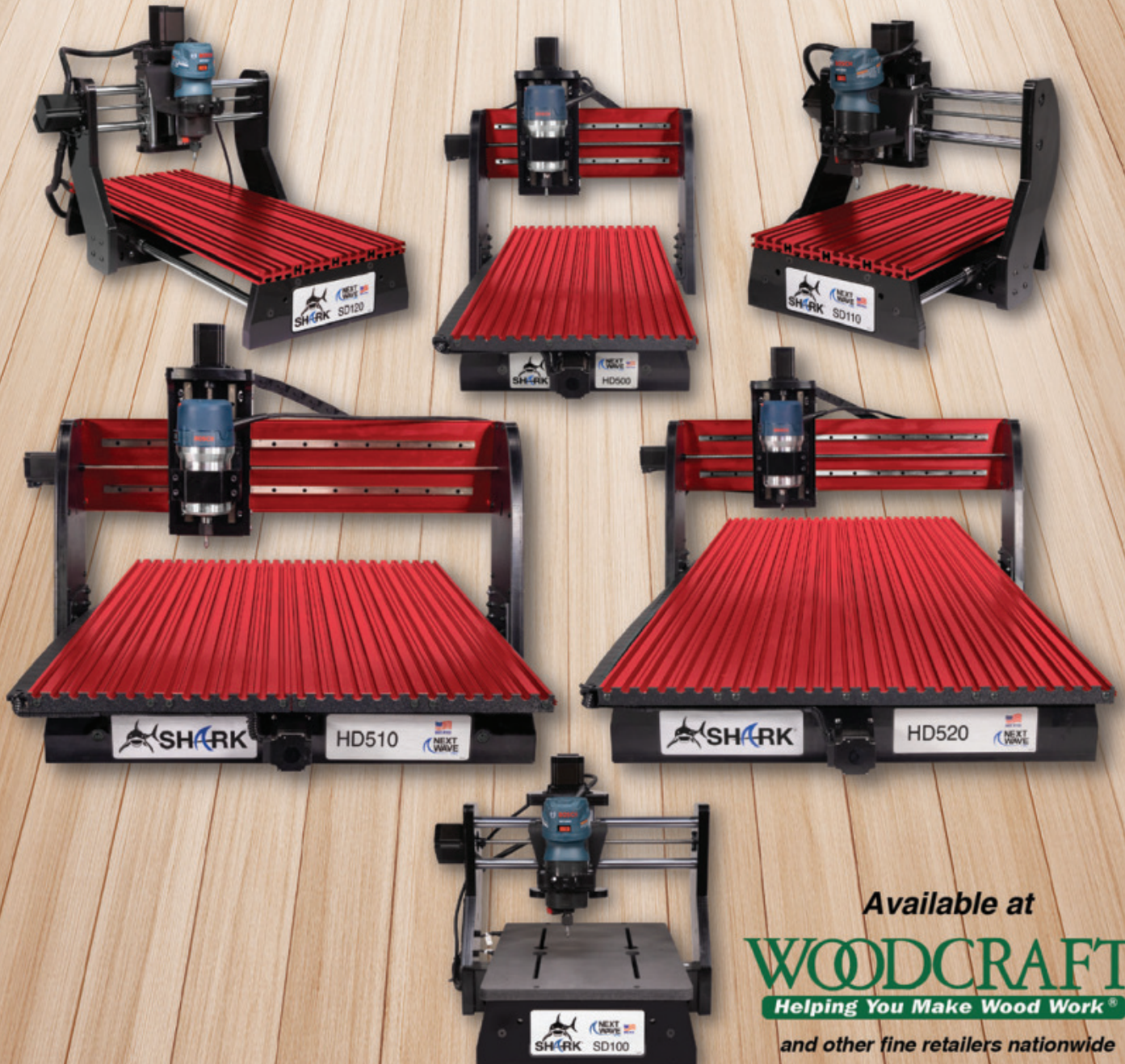
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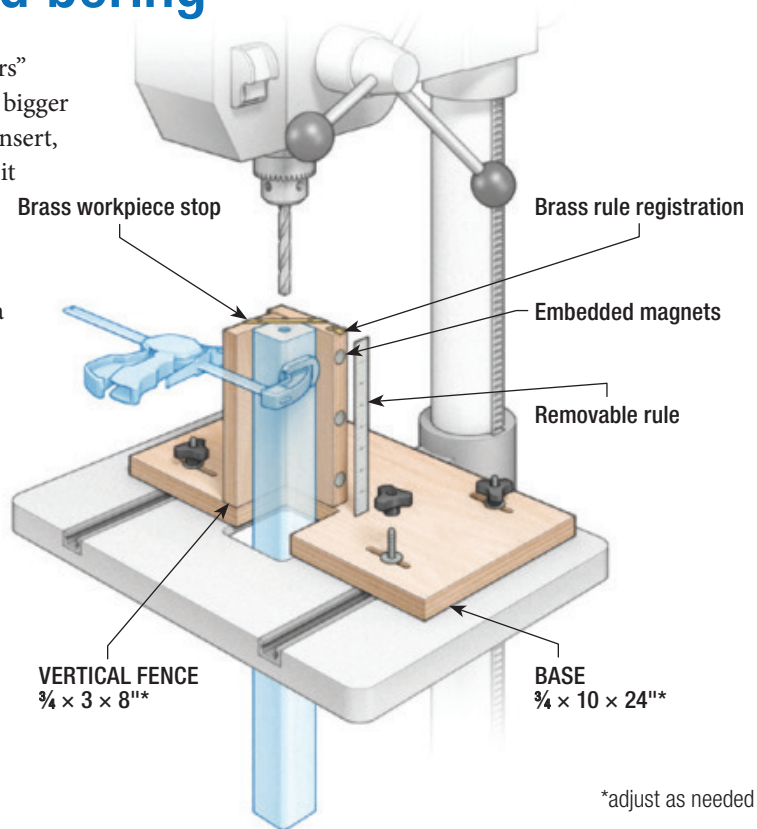
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Through-the-table end boring

I recently upgraded my drill press to a “woodworkers” model with a larger table, offering extra support for bigger workpieces. But it also features a removable center insert, which gave me an idea. Removing the insert makes it possible to feed a long workpiece through the hole for end boring without having to pivot the table to the side (and potentially throw it out of alignment). To aid in this, I made the fixture shown. It features a broad base with a notch sized to match the opening in the table. Four T-bolts with plastic knobs slip through lateral adjustment notches and engage the T-slots in the machine’s table to hold the base in place. Two vertical fences provide plenty of clamping support for workpieces. And atop these fences are two brass strips. The diagonal one provides a positive stop for loading pieces into the fixture, while the shorter one provides registration for a removable steel rule—helpful for setting the drilling depth. Magnets embedded in the side of the fence hold the rule securely when needed. ■

—Dwayne Smyth,
West Springfield, Massachusetts



*adjust as needed



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Pasta BOARD

Pattern your pasta with this chip-carving exercise

By Sarah Marriage

One thing that I've noticed about craftspeople is that we appreciate craft in all its myriad forms. Whether we're admiring hand-crafted furniture, intricate glasswork, or hand-woven textiles, we can see the common threads of skill, care, and time that connect our experience of making things with our hands. This is one of the reasons I enjoy making a project like this that connects carefully carved woodworking to another time-honored craft: pasta-making.

When I heard that Fred and Linda Williams were writing "Get Started with Chip Carving" for this issue p. 24, I knew that this pasta board would be a fun project for new and seasoned chip carvers alike. The board features seven different carving patterns that will employ a variety of basic chip-carving shapes starting with the classic isosceles triangle and including squares, scallops, and long, straight lines.

The project is essentially a carving practice board that converts into a beau-

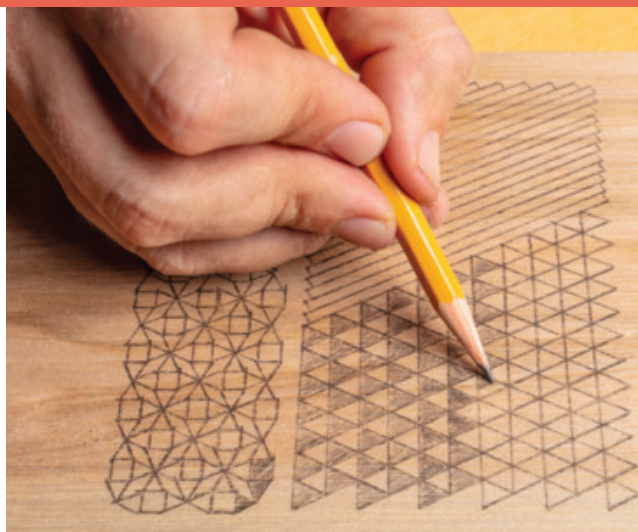
tiful, useful tool for the kitchen. And if you're not interested in making pasta yourself, it makes a beautiful gift for the crafty cooks in your life.



Order of Work

- Transfer pattern
- Chip carve
- Bandsaw board to final size

A practice board with a purpose



Transfer the pattern. After transferring the pattern lines using carbon paper as shown on p. 26, shade in the areas to be removed as needed.

Start by transferring the pasta board pattern to a $\frac{7}{8} \times 5\frac{1}{2} \times 10\frac{1}{2}$ " carving blank. I used butternut for this pasta board, but you may find basswood even easier to carve. Carve the isosceles triangle pattern at the top of the board, then try the straight-line pattern. From there, the patterns become more complicated. For the middle-left pattern with the curved star shapes, cut from one corner of the star along the curved pattern line, continuing through the shaded area, across to the opposite point of the star. Rotate the work and carve from the end point back to the start, removing a scalloped chip. Then carve between the other two points of the star. For the woven fabric pattern, carve the square shapes individually first, then make shallower straight cuts along their connecting lines to complete the pattern. Once all the carving is finished, bandsaw the handle and sand the board. Cut a $\frac{1}{4}$ " diameter dowel 8" long and soak the board and dowel in a neutral oil before using or gifting.



Carving straight lines. Place the tip of the knife at the start of the straight line and plunge the knife into the cut as though you are carving a triangle. Once the blade is submerged in the cut, keep your grip and blade angle locked as you use your arm and shoulder muscles to pull the blade along the rest of the cut.



Squares and triangles. For this pattern, cut the squares first. Begin with the cuts running with the grain and then make the cross-grain cuts. For the triangles, start with the side that is adjacent to a carved square and then continue with the other two sides. This will help avoid chipping out the fragile shared edges.

A Simple Recipe

For making pasta shapes that maintain their structure and hold a pattern well, mix two parts semolina flour to one part warm water by weight. Knead the dough until it forms a smooth ball, and then wrap it in cling film and let it rest for 30 minutes before rolling out and stamping.

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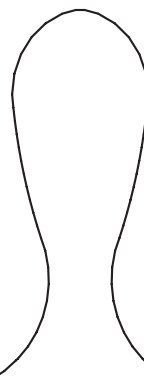
Stamping the pasta



Sprinkle the pasta board with flour to prevent sticking. For tube-shaped pasta, roll out your dough about $\frac{1}{16}$ " thick and cut to 1 × 1" squares. Lay a square on the pasta board and roll onto a dowel while pressing into the pattern.



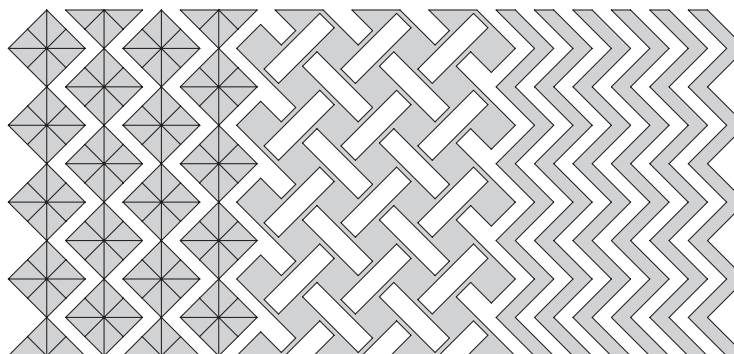
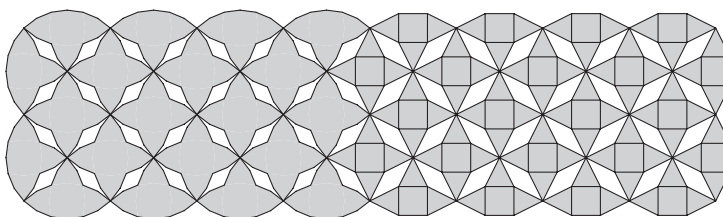
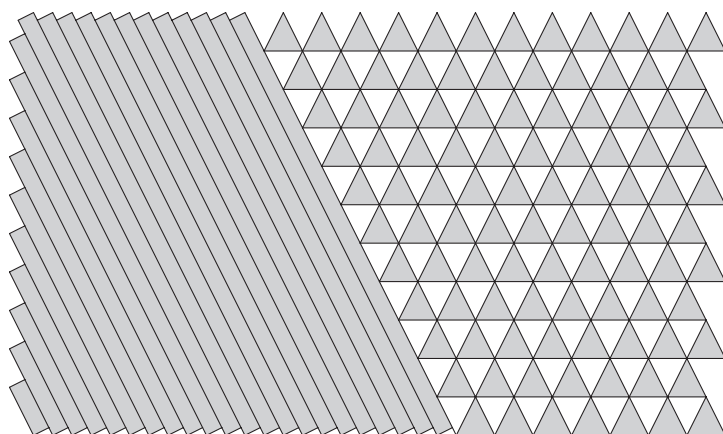
For shell-style pasta, roll out the dough into a $\frac{1}{2}$ " diameter rope and then slice the rope into $\frac{1}{2}$ " segments. Push each segment into and across the board with your thumb. This will create a curled shape similar to a shell. Let the pasta pieces dry, spread out across a floured surface, for at least half an hour. Then boil and enjoy! ■



Pasta Board Pattern

Enlarge 125%

Go to woodcraftmagazine.com to download a full-sized pattern.



Get started in **CHIP CARVING**

A couple of knives and a little practice are all you need

By Fred and Linda Williams

Chip carving is a method of embellishing the surface of plain wood by incising repeating patterns with a specialized knife. There are a series of foundational cuts that can be applied to most patterns; and those patterns can be added to, resized, and reordered to create a near infinite number of original designs. The best things about this craft are that it's fun, easy to learn, and doesn't even require a shop.

Unlike many other aspects of woodworking, chip carving is also relatively inexpensive. You can perform most cuts with one knife that costs around \$25. And with the way you hold the knife and plunge the blade, the whole enterprise is relatively safe, so you typically don't need to buy a carving glove. Pick up a non-slip pad if you plan to work on a bench or table. But you can also carve right in your lap.

The best wood to start chip carving is basswood. It's inexpensive, too, and easy to come by. Other woods such as butternut (See p. 54 for more info on this species.), clear white pine, and cedar are also great starter woods. As your skills increase, you can try your hand at harder, denser woods. Let's get started.



Chip carving assignment:

See page 21 for a simple project and pattern ideas.

About the Authors

Fred and Linda Williams retired after teaching elementary school for over 30 years. These days, they spend their time adorning clocks, boxes, and other small projects with beautiful chip-carved designs.

Non-slip pad

Inexpensive and widely available, these mats keep your work where you want it.

Basswood to start

Widely available in various sizes and prices, it's soft with a low resistance to cutting. You'll eventually work your way up to tougher species.

Skew Knife

\$20.99 from Flexcut.

(woodcraft.com #814265)

This is the next knife to pick up. It's for stabbing cuts and increases the variety of designs you can create.

Chip Carving Knife

\$23.99 from Flexcut.

(woodcraft.com #814845)

You'll do most of your chip carving with this versatile knife that features an ergonomic handle.

Applying a pattern

The best way to learn chip carving is to apply a simple, repeating geometric pattern to a small blank of basswood and start cutting. These “practice boards” are easy to make, fun to do, and, while not technically a project, look pretty cool when done.

Draw your design on graph paper or print out a design and cut it to the size of your practice board. Now, cut a piece of carbon paper (available at office supply and craft stores) to size, and tape both sheets to your practice board. Then, simply trace the pattern. After shading the areas to be cut, chip out your design. When done, sand away any remaining pencil lines, being careful not to blunt the pattern’s sharp lines.



Trace it on. After taping your cut-to-size pattern and carbon paper to your practice board, trace the pattern as shown. Various washer sizes make great guides for curved details.

Getting a grip

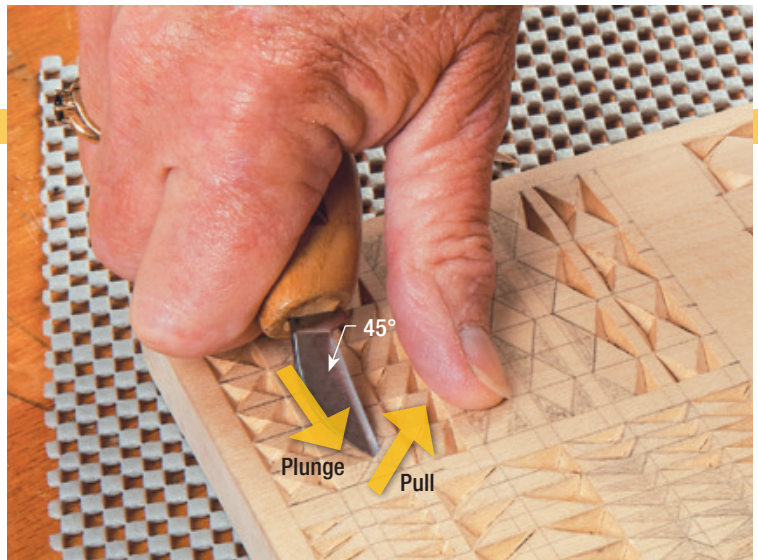
Most chip carving is safe and doesn’t require the use of a glove. Due to the angle of attack, controlled cuts, and limited range of motion, the danger of cutting yourself is relatively low. But understanding how to grip the knife is critical to controlling it. Hold the knife with the cutting edge pointing away from you. Curl your fingers around the handle, rolling the cutting edge toward you. Rotate your wrist, and rest your knuckles on the project with your thumb bracing your hand. Then angle the blade to the workpiece as shown.



Hold Steady. Point the cutting edge away, and rest the handle near your fingertips. Then, grip the knife so that its spine nestles where your palm and fingers meet. Position your middle knuckles on the surface, anchoring with the pad of your thumb. Usually, you want the blade at about 65°, unless you’re making a shallow cut as shown.

Getting to the point

Most chip carving consists of incising pattern shapes with a series of angled cuts that meet at a single point or line in the center. To practice, start with a triangle. For the first cut, plunge the knife along one side, imagining the tip touching the triangle's center. Power comes from your shoulder; keep your wrist locked. Rotate the workpiece rather than moving your arm to make the second cut. Rotate the piece a third time, plunge, and cut to free the chip, completing the triangle. If the chip doesn't pop out, repeat the process cutting a little deeper. With practice, your cuts should intersect in crisp lines and points.



First cut. Place the knife's tip at the triangle's apex with the cutting edge angled at 45°-65° to the first side. Rest your knuckles on the surface and anchor with your thumb. In one motion, plunge the blade toward an imagined center of the triangle, pull the blade toward the triangle's base, and then up and out.



Second cut. Plunge in and pull out as with the first cut, but plunge from the triangle's base to its apex. Rather than twisting your wrist to accommodate the cut, rotate the board to align the pattern line to your blade.



Third cut. Rotate the board again to align the pattern line with your blade. Place the knife tip at one point of the base and pull the blade along the triangle's base to free the chip.

Sharpening your chip carving knives

Starting with a 1000 grit waterstone and the cutting edge toward you, raise the back of the blade 8° to 10° (about the thickness of a dime). Pull the knife toward you a few strokes. Flip the cutting edge away from you, and push the knife the same number of strokes while maintaining the angle. Repeat the process through 8000 grit. To polish the blade, make a strop by gluing two scraps of leather (available at craft supply stores) to both faces on a length of plywood. Using a compound (see p. 60), start on the rough side of the leather but this time, point the cutting edge away from you and pull the knife toward you. Then, flip the edge toward you, and push it away. Finally, flip the strop over and repeat the process to finish polishing on the smoother side as shown. ■



DOVETAILED SERVING TRAY

A minimalist server that delivers big

By Derek Richmond



The inspiration for making this serving tray came from our living room ottoman. In a house with two rambunctious children, the leather ottoman works better in front of our couch than a coffee table. It offers good storage for games, a comfy surface for weary feet, and soft corners to absorb the inevitable collision. But that soft top makes it less than ideal as a serving surface. Hence the need for a tray.

Made from just four pieces of wood, the design is quite simple with a spare aesthetic that pleases my minimalistic sensibilities. The serving panels are joined to the full-width handles with sliding dovetails. The handles extend below

the panels to also serve as feet, giving the tray a wide, stable stance. The tray's low profile makes it easy to store (usually right inside the ottoman) while its outward curves provide plenty of serving surface. The majority of the build happens at the router table where a handful of bits (see Buyers Guide, p. 60) make both shaping the handles and cutting the joinery straightforward operations. I made my tray entirely from quartersawn sycamore, bookmatching the panels for symmetry. Feel free, however, to substitute any hardwood to suit your tastes and even consider selecting contrasting species for a two-tone look.

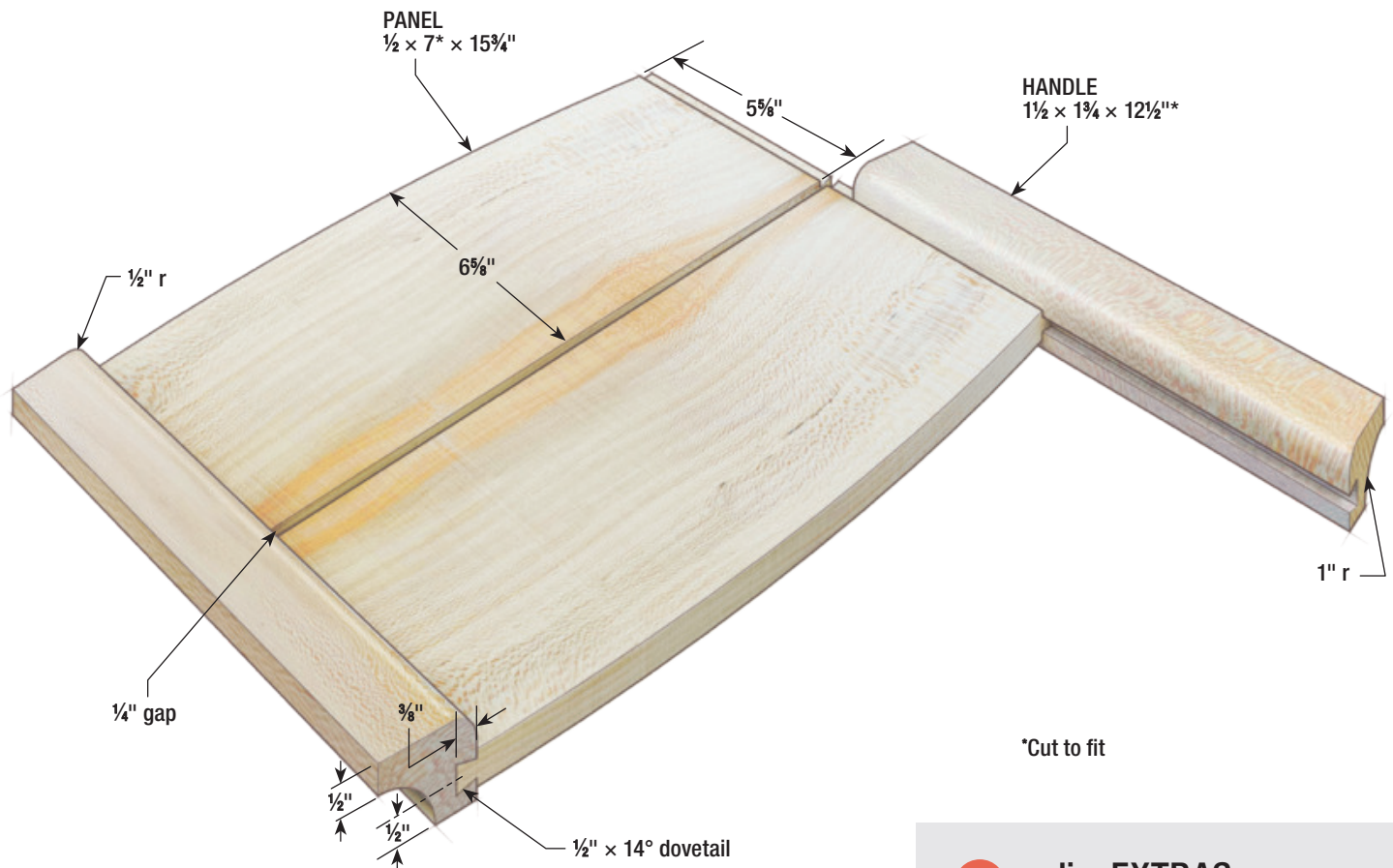
Simple style in a tasteful tray

The serving portion of the tray is made of a pair of bookmatched panels connected to the handles with sliding dovetails. The gap between the panel pieces mitigates seasonal movement and adds visual interest to the tray. The handles also act as feet, spanning the width of the tray to give plenty of stability. The large coves routed along their lower edges provide good purchase for lifting as well as visually lightening the pieces. The convex curves along the tray's edges add serving space along with a certain aesthetic flair.



Order of Work

- Form handles
- Resaw and dovetail panels
- Assemble



*Cut to fit



onlineEXTRAS

- Bandsaw tuneup
- Resawing basics
- Resawing at the table saw

Make the handles



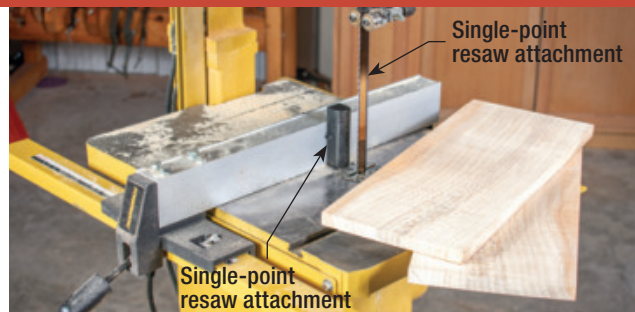
Cove the handles. With such a large bit in play, leave the blank oversized when routing the cove profile to provide added stability. Rout the cove in several passes.

Mill two handle blanks, leaving each piece a few inches overlong and an inch overwide for safety on the router table—the coves you'll be cutting are big ones. Rout the coves, then rip the handles to their final width at the table saw with the coves face-up and towards the fence. Finish-sand the handles' inside face before cutting the dovetail slot—sanding this face after cutting the dovetail can loosen the fit. Rout the dovetail slot in two steps. First chuck a $\frac{1}{4}$ " diameter straight bit in your router table to remove the bulk of the waste in a few successively deeper passes. Then rout the actual dovetail slot in a single pass with a $\frac{1}{2}$ ", 14° dovetail bit. Be sure to leave the dovetail bit set up at this height until you cut the mating tongues in the panels. Then come back and round the upper corner of the handles with a $\frac{1}{2}$ "-radius roundover bit.



Featherboard

Resawing panels



See to the saw. Proper setup and blade selection is key to a good resaw operation. Take the time to install the right blade, then set your guide bearings and fence to minimize drift.

Resawing a thick panel to make the two leaves of the panel allows them to be bookmatched, creating a symmetrical grain pattern. Resawing can be done either with a single-point fence (shown) or with a tall auxiliary fence securely attached to your standard fence. Either way, tune your bandsaw to minimize blade drift (see OnlineEXTRAS) for a straight cut. Also equip your saw with as wide a blade as possible— $\frac{1}{2}$ " minimum—that has only 3 or 4 teeth per inch (TPI). Wider blades have greater beam-strength which translates into less twisting and deflecting under pressure from the material. A blade with fewer TPI means the gullets between the teeth can be bigger which in turn helps carry away accumulated sawdust more effectively. And while you're at it, look for a blade with a positive hook angle. These cut more aggressively so less force is required. Ultimately, the goal is to make a straight, clean cut to minimize the planing needed afterward. This creates the most exact bookmatch.

Rout the dovetail slot. After removing most of the waste material with a straight bit, make the final pass with a dovetail bit. Position a featherboard to ensure the piece stays tight against the fence.

Dovetail the panels

Mill the panels from thick stock, resawing it to create a bookmatched pair. Also mill a piece of scrap to the same thickness as the finished panels for set up. Leave the dovetail bit's height the same as it was for routing the slots, but reposition the router table's fence so the bit is mostly buried behind the front surface. Hold your prepared scrap on end and cut one face, then rotate it and cut the second face. Tweak the fence position until the resulting dovetail tongue is a good fit in the handle slots. Then cut the good panels.



Dovetailed ends.

Adjust the fence to achieve a snug but not too-tight fit in the slot. After dialing in the cut on scrap, rout both faces of both ends of both panels with the same setup.

Assemble and finish

Brush glue into the slots halfway across both handles and install the first panel. Then grip that panel in a vice and apply glue to the remaining slots leaving a dry space in the center. Slide in the second panel. After the assembly is dry, lay out the side curves with a fairing stick. Cut the curves at the bandsaw before sanding and finishing the tray. Since food contact is a possibility, I chose a food-safe, hard wax oil (see Buyers Guide, pg. 60). Then serve up some tasty snacks!



Slide from the side.

After assembling the first panel, use shaped cauls to help apply clamp pressure across the joint. Rest 1/4" spacers on the panel to ensure an even gap as you slide the second panel home. Try to avoid getting glue in the slot at the gap.



Cut the curves. Lay out the curves on both the panel and handles. Then attach an auxiliary table to your bandsaw if necessary to create a stable platform for the tray's feet when cutting the curves. ■

Auxiliary bandsaw table

Vintage TOOLBOX

An iconic tote for your on-the-go tools

By Ken Burton



In the early twentieth century, Stanley made some of the best hand tools then available. Along with their iconic hand planes and chisels they also made a series of toolboxes including the model 888. Recently, a member of the Woodcraft team came across a vintage 888 which was featured on the cover of a recent catalog. After taking a look at this bit of woodworking history, we couldn't help but want to build a similar one, stocking it with a collection of key handtools for bench work. But rather than strictly

reproducing the original, which was simply nailed together, we went with box joint construction for added durability. We also substituted ½" birch plywood for the bottom to avoid the crossgrain construction we would have had to deal with should we have employed solid stock. Our dimensions are very close to the old Stanley's, but feel free to tweak them to suit whatever tools you intend to tote. As a collection of tools can be quite heavy, you'll want to choose a lightweight wood for your box so as not to

add unnecessarily to your burden. We went with butternut (see p. 54 for more about this lightweight species) but white pine or even cedar would also be good choices. Online, you'll find a file for recreating our custom WM logo which we laser-engraved as a nod to the Stanley's brass badge.



Lightweight but solid

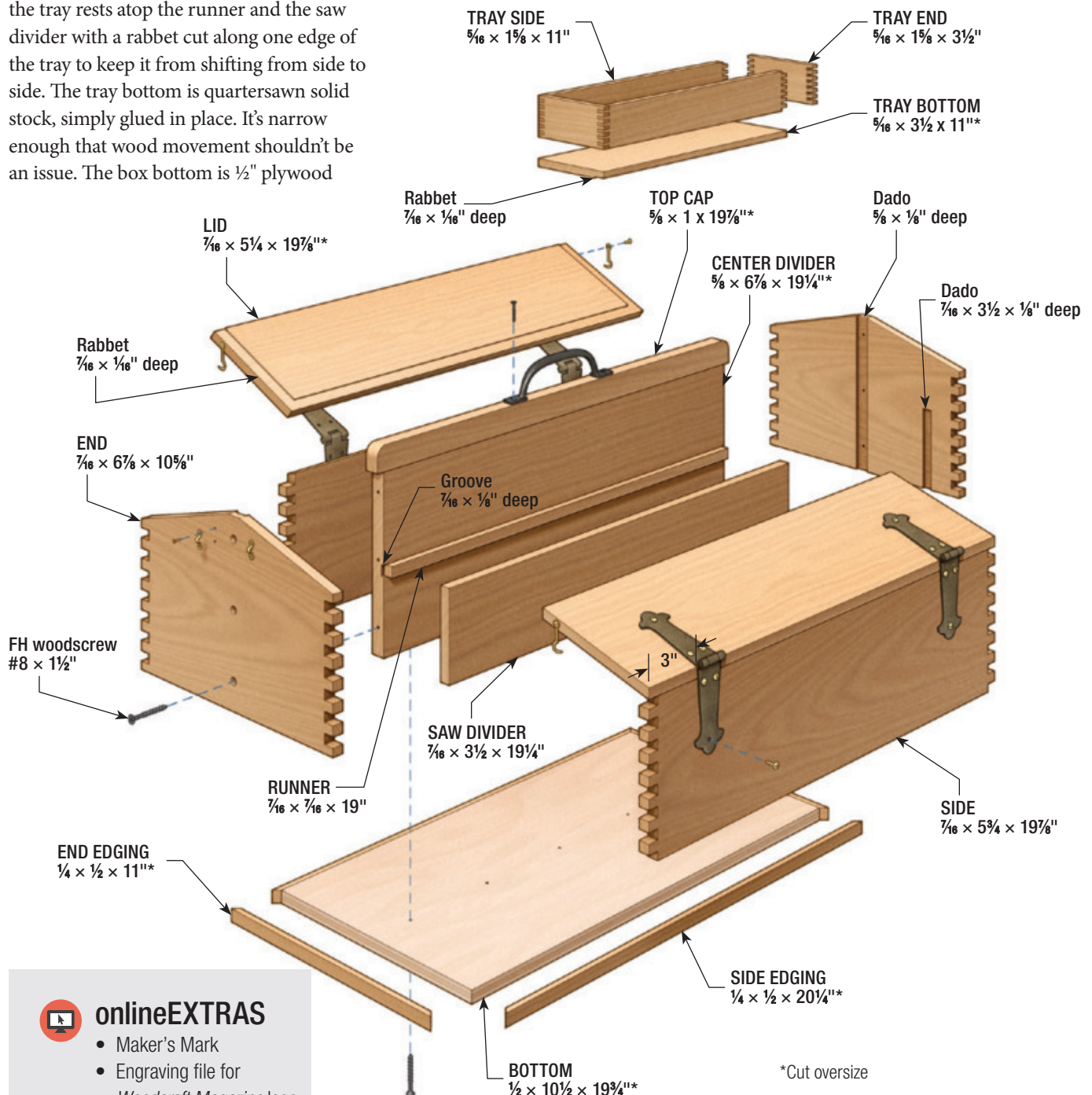
Box joints secure the corners of the both the box and its inner tray. The two interior dividers fit into dados cut in the ends with screws reinforcing the joints between the ends and the center divider. The center divider is made in two pieces with the top cap cut to fully lap the ends. When finished, the tray rests atop the runner and the saw divider with a rabbet cut along one edge of the tray to keep it from shifting from side to side. The tray bottom is quartersawn solid stock, simply glued in place. It's narrow enough that wood movement shouldn't be an issue. The box bottom is $\frac{1}{2}$ " plywood

with mitered edging covering its layered edges. The rabbeted lids pivot on steel strap hinges—as close as we could find to the originals. Brass hooks hold the lids shut while a bronze utility sash handle screwed to the center divider provides for a good grip.



Order of Work

- Make box and dividers
- Make lids and tray
- Assemble bottom
- Apply finish and add hardware



onlineEXTRAS

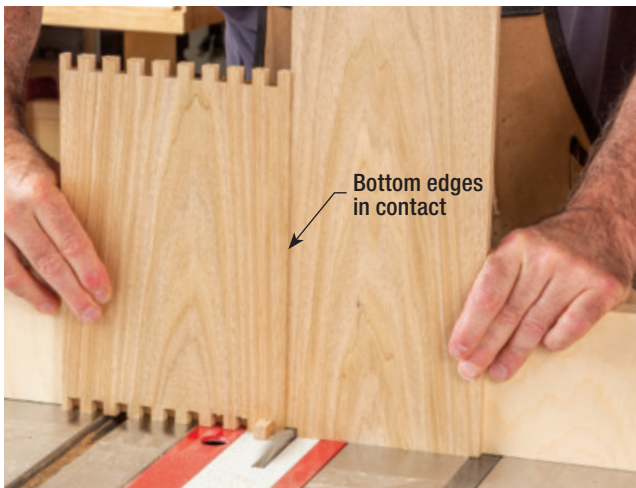
- Maker's Mark
- Engraving file for Woodcraft Magazine logo

Build the box

Mill the stock for the box to the specified sizes along with some extra for testing. Also mill the material for the top cap, dividers and lids, leaving the cap and dividers overlong and the lids oversize in all three dimensions for now. With thin material such as this, it is a good idea to store your pieces on “stickers” ($\frac{3}{4} \times \frac{3}{4}$ strips) in between work sessions to help prevent warpage. Set up a dado and make a simple jig to cut the $\frac{3}{8}$ " box joints at the corners by screwing a piece of $\frac{1}{2}$ " plywood to your miter gauge. Clamp a second piece of ply to the first and cut a slot for the $\frac{3}{8}$ " wide indexing pin. Offset the pin by the thickness of the blade; the blade height should be just shy of the stock thickness. Make a test joint to check your set up. Adjust as needed before cutting your good stock. Then cut the ends to shape by removing their upper corners and bevel the sides to match. Rout the $\frac{5}{8}$ " dadoes for the center divider all the way across the ends. Rout the $\frac{7}{16}$ " dadoes for the saw divider part way across the pieces then square the stopped cuts with a chisel. Sand the inside surfaces before gluing the box together.



Cut the ends first. Cut the notches in the end pieces first. Start with the bottom edge of each piece against the pin (inset). Make the cut, then slip that cut over the pin to register the piece for the next cut.



Cut the sides to match. The notches in the side pieces start with a space. To register them, slide an end on the index pin with its bottom edge *towards* the blade and butt the side piece against it. Make the cut then remove the end piece before continuing.



Cut the corners. Set up a tapering sled to cut the ends so that they are $5\frac{1}{2}$ " wide at joints and have a $\frac{5}{8}$ " wide flat in the center of the top edge.



Mirrored pieces. For the stopped dado on one end, you can start with the piece flat on the table and cut until it reaches a stop clamped 3" to the left of the bit. For the second "mirrored" cut (shown), clamp the stop 3" to the right of the bit. Hold the piece against the stop and pivot it down the fence into the spinning bit to start. Then push it to the left to finish the cut.



Square the ends. Square the ends of the stopped dadoes with a chisel. Fit the divider in place to make sure the cuts are long enough.



Check for square. Apply glue to the mating surfaces and clamp the pieces together. Measure the diagonals to check for square. I found it easier to do this with the assembly upside down.

Fit the dividers

Cut the dividers to fit, measuring from dado to dado on the box to get an exact length. Rout a groove the length of the center divider for the runner, locating it so that the top of the runner will be $\frac{1}{16}$ " below the top of the saw divider. Glue the end cap to the top edge of the center divider before cutting it to length and rounding its corners. Cut and hand plane the runner to fit before gluing it into its groove. Drill and countersink clearance holes in the box ends for the screws that will hold the center divider in place. Then glue the dividers in place before drilling pilot holes and driving home the screws.

Add the cap. Rather than trying to notch the ends of the center divider to lap the box ends, it is easier to edge glue a separate piece to the divider after cutting it to length.



Plane for a snug fit.

Fine tune the runner's fit with a block plane before gluing it into its groove.



Tap, tap, tap. If necessary, help the dividers into place with gentle taps from a mallet.

If you're using a softer wood such as butternut, be very careful not to dent and splinter the edges.





Mark for length and shape. Mark the overall length of the cap, then use a circle template to lay out the rounded corners before bandsawing the piece to shape.



Better by hand. When driving screws that will show, you'll have less chance of slipping and causing damage or over driving the screws if you tighten them by hand. Be sure to drill pilot holes first.



Trim things flush. Hand plane the bevels at the top of the sides as well as the bottom edges of the dividers to make everything flush.

Make the lids

Finish milling the lids to thickness, jointing one face again if necessary to restore flatness. By thickening these pieces in stages, they are more likely to stay flat when you're finished. Cut the pieces to length, then bevel both edges to match the end slopes, cutting the lids to final width in the process. Finish shaping the lids by rabbeting them at the router table.

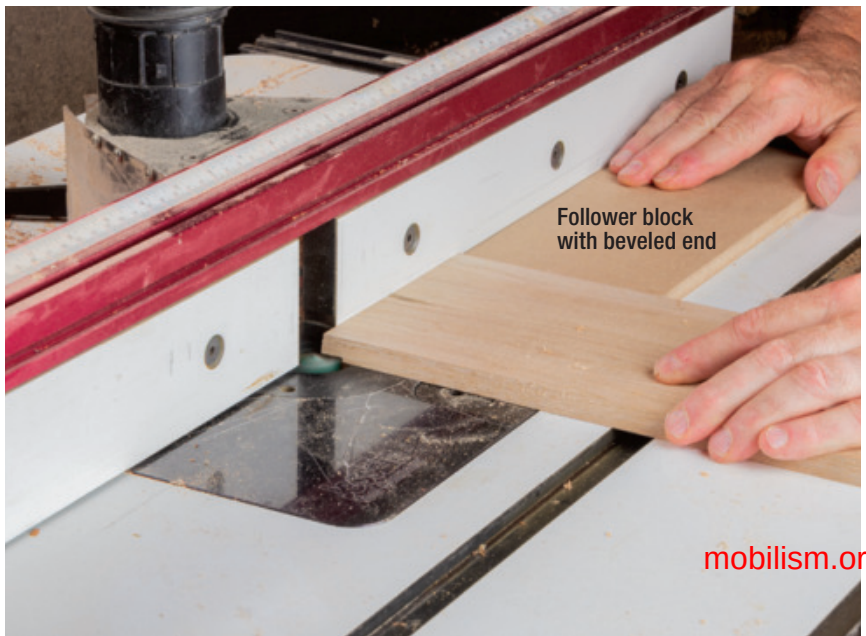
Crosscut to length. Cut both lids to length, guiding them across the table saw with the miter gauge.



Bevel to match. Tilt the blade on your saw to compliment the slope of the box ends. Rip one edge of each piece, then reset the fence before cutting the second edge.

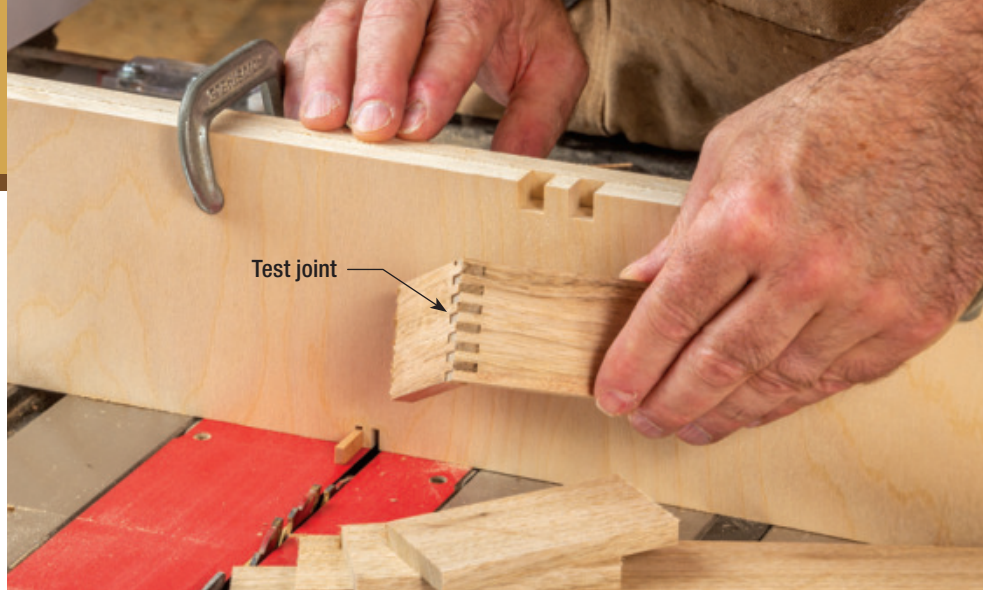


Rout the rabbets. Partially bury a large diameter straight bit behind your router table fence, exposing slightly more than $\frac{7}{16}$ " of it. Set the bit height to $\frac{1}{16}$ " and rabbet the underside of both ends of both lids, helping to push the pieces through the cut with a beveled follower. Also rabbet the lower edge of each lid.



Build the tray

Cut the tray parts to size, leaving the bottom at least $\frac{1}{4}$ " oversize in both width and length. To minimize any potential problems with wood movement, try to cut the bottom from quartersawn stock. Cut some extra side/end pieces to use for testing. Reconfigure your box joint set up with a $\frac{1}{8}$ " pin (or one that's thickness matches the kerf of your saw blade). Ideally, equip your saw with a square-ground blade and adjust its height to slightly less than the stock thickness. Test your set up then cut box joints for the four corners of the tray. Glue the tray up, checking for square. Make sure the bottom edges are flush then glue the tray to the oversized bottom. Trim the overhanging edges flush at the table saw before cutting a rabbet along one side of the bottom to serve as a retainer when the tray is sitting in place.



Testing, testing. Getting a box joint set up to work perfectly takes patience. The pin needs to be set precisely, or the joint won't fit. If the fit is too loose, move the pin slightly away from the blade. If too tight, move the pin closer to the blade.



Table saw flush trim. To flush trim at the table saw, make an auxiliary fence that rests about $\frac{3}{4}$ " above the blade. Set the fence so the left side of the blade is aligned with the outside face of the auxiliary fence. Run the tray along this fence to trim the bottom flush.

Retaining rabbet.

Rout a rabbet along one edge at the router table as you did for the lid pieces. This cut will engage with the saw divider and help keep the tray from sliding laterally in the box.



Fit the bottom

Cut the plywood bottom about $\frac{1}{2}$ " oversize in width and length and glue it to the underside of the box, driving several screws into the center divider for added reinforcement. Trim the overhang on the table saw as you did with the tray. This time, however, adjust the fence so the blade undercuts the box by $\frac{1}{16}$ ". Cut the edging strips at the table saw, leaving them slightly wider than the plywood thickness and long enough to trim to fit as you miter the corners. Cut the ends at 45° as you fit the pieces, gluing first the ends, then the sides in place. Trim the edging flush to the bottom with a block plane.



Undercut. Set the blade height to match the plywood bottom's thickness. Position the auxiliary fence so it aligns with the center of the blade. Trim away the overhang and undercut the plywood in the same pass.



Cut to fit. Miter cut the end pieces and glue them in place. Then use these pieces as a guide as you trim the side edging to fit. Pad your workbench to protect the box as you work with it upside down.



Trim flush. Once the glue has set, trim the edging flush with the bottom surface of the plywood with a block plane and/or a card scraper.

Finish up

Lay out the locations for the hardware. Mark the holes carefully with an awl then drill pilot holes for the screws. Also engrave and attach a maker's mark/logo if desired. On our website, we've included the file for laser engraving the WM logo shown here. Finish the box inside and out before doing the final hardware installation. I used a hard wax/oil, but any wipe-on finish would be appropriate.



Mark and drill. Hold the hinges in place as you mark the holes. When you drill the pilot holes, be very careful not to drill through the thin box parts.

Logo adds a nice touch. Attaching a laser engraved logo or maker's mark to the lid makes the box that much nicer and is a tip-of-the-hat to Stanley's original design. A wipe-on finish enhances and protects your hard work.



Paraffin for the screws. Scrape a little paraffin on the screws before driving them home. The wax acts as a lubricant making the screws turn easier. ■



Four-Legged STOOL

Tapered and curved for a comfy seat

By Ken Burton



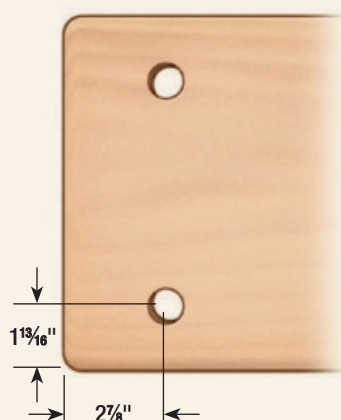
I've made several versions of this stool over the years including one iteration in hickory which we featured in our WoodSense column in Issue 103 (Oct/Nov 2021).

We received enough requests for plans for that piece that I was pleased to have the chance to revisit the design for this story. The stool's splayed legs give it a wide, stable stance, and its scooped seat makes for a comfortable perch. I find the finished product equally at home as a shop stool or snugged up to the breakfast bar in the kitchen. The build is straightforward, but still presents some challenges when it comes to joinery as there are compound bevels involved. For those unfamiliar with the term, a compound bevel is a cut angled away from 90° in two directions, whereas a standard bevel is angled in just one direction. To simplify the process, I developed a system for making these compound cuts using shop-made wedges that eliminate some of the set up hassles. I also used "loose" dowel joinery for the leg to seat connections so the shoulders at the top of the legs are made with a single cut and fit firmly against the underside of the seat for added strength. The stretchers are placed to serve well as footrests while also lending structural support.

Splayed legs with "loose" joinery

Four wedged dowels fit through angled holes to join the tapered legs to the scooped seat. Loose Domino tenons join the inner stretchers to the front and rear stretchers and the front and rear stretchers to the legs.

Seat Detail

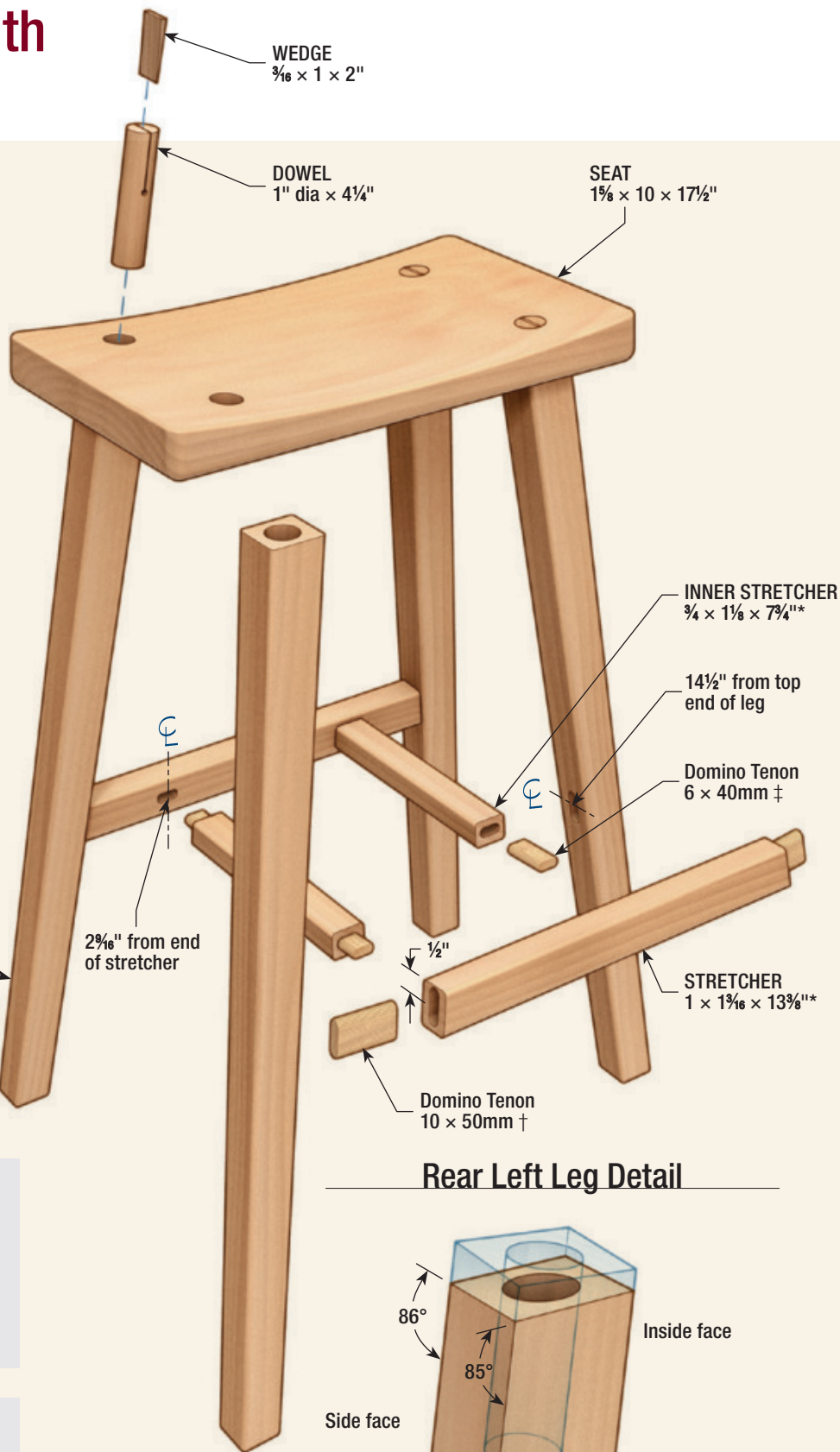


LEG
1 5/8" x 1 1/4" x 22 3/4"

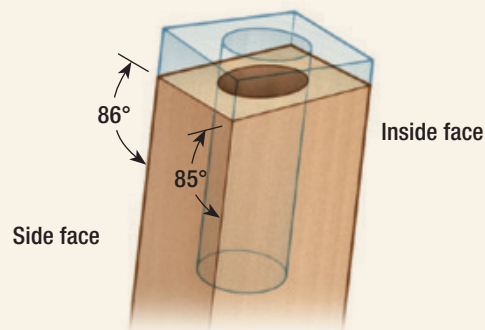
* Adjust length as needed

† Or 3/8 x 7/8 x 2" tenon and matching mortises

‡ Or 1/4 x 7/8 x 1 1/2" tenon and matching mortises



Rear Left Leg Detail



Order of Work

- Make the legs
- Drill and shape the seat
- Add the stretchers
- Assemble and finish



onlineEXTRAS

- Mortising jig plan
- Sled-Style Tapering Jig

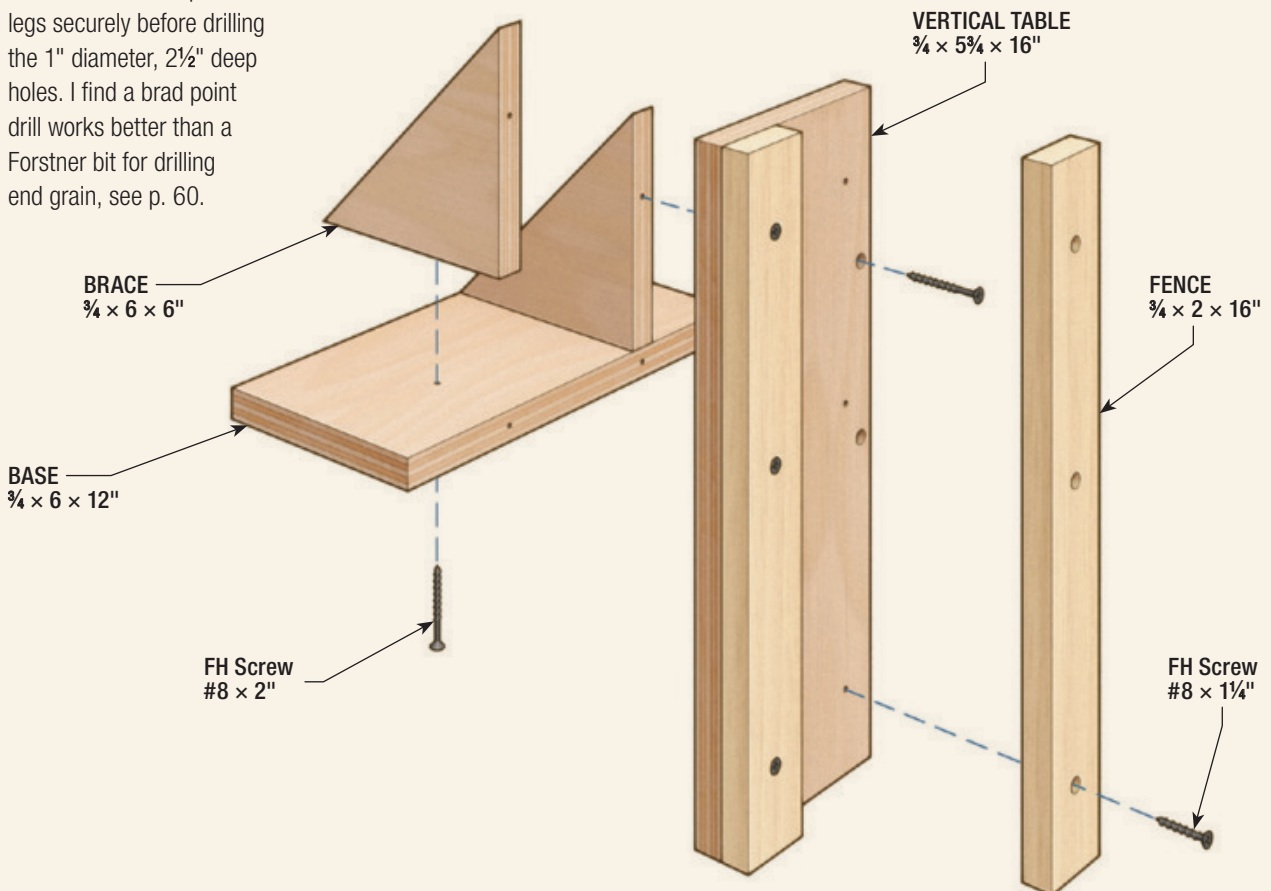


Legs: holes, bevels, tapers

Mill stock for the four legs to the specified size. Mark the two outer faces on each leg. Set up a vertical drilling fixture on your drill press and clamp the legs in place with the wider marked face against the vertical table. See p. 22 for a similar setup. Drill a 1" diameter hole in the end of each leg. At the table saw, bevel the ends of the legs, tilting the blade to produce the side-to-side splay and positioning a wedge against the miter gauge for the front-to-back rake. Finish shaping the legs by tapering their inside faces.

Drill the legs. Position the fixture to center the legs under the bit. Clamp the legs securely before drilling the 1" diameter, 2½" deep holes. I find a brad point drill works better than a Forstner bit for drilling end grain, see p. 60.

Vertical Drilling Fence



Wedges for good measure

When a project requires setting up different machines to cut the same angles—for example the angled holes drilled through the stool seat on the drill press and the compound bevel on the top of the legs cut on the table saw—making wedges can help make those cuts match. Once you have the wedges, you won't need to measure, and even if the wedges aren't perfect, all the angles will be consistent which is more important. Cutting the wedges with a tapering jig that is calibrated in degrees makes the process that much more straightforward.

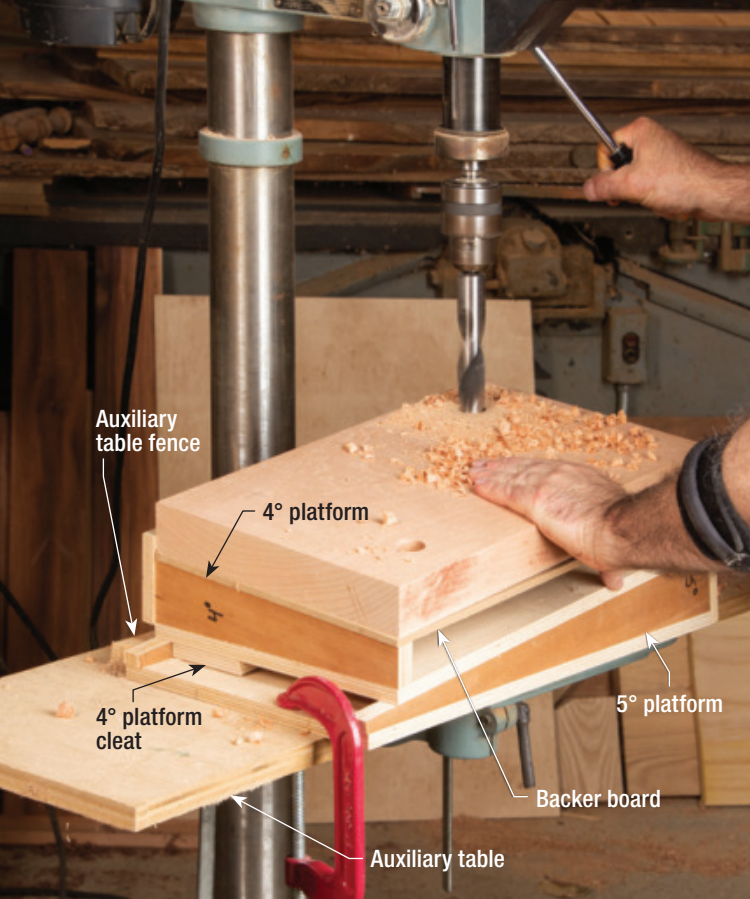


Mirrored compound angles. Tilt the blade on your table saw to 5°. Fasten a 4° wedge to the miter gauge with double-faced tape with the narrow end of the wedge toward the blade. Bevel the tops of the first two legs with the wider marked face against the miter gauge and the narrower one against the table. Reverse the wedge and cut the second two legs with the marked faces in the same orientation.

Taper the legs. Taper the two inside faces of each leg guiding the pieces with a shop-made tapering sled. The tapers should leave the piece full width and thickness at the top, decreasing to 1½" square at the bottom. Because the legs are rectangular, you'll need to reconfigure the sled after cutting the first side of each leg.



Drill and shape the seat



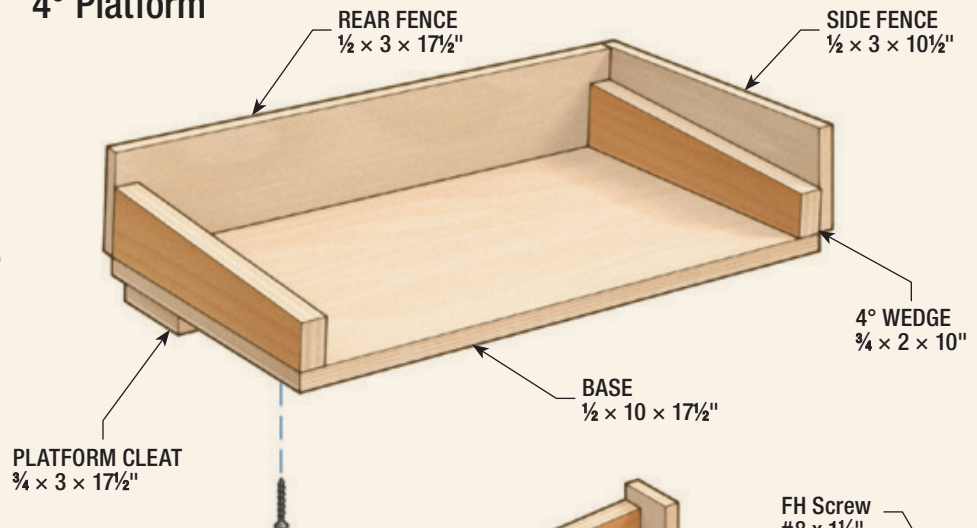
Mill the seat blank to size, edge gluing pieces if necessary to make up the required width. Clamp an auxiliary table with an attached fence to your drill press. Make a 4° and a 5° sloped platform from tapered wedges screwed to a plywood base. Stack the platforms one atop the other on the auxiliary table to position and drill the four angled holes through seat with a backer board underneath the blank to minimize tearout. Then lay out the seat's curvature and cut away the majority of the waste on the table saw before routing the seat to shape.

Drill Press Platforms

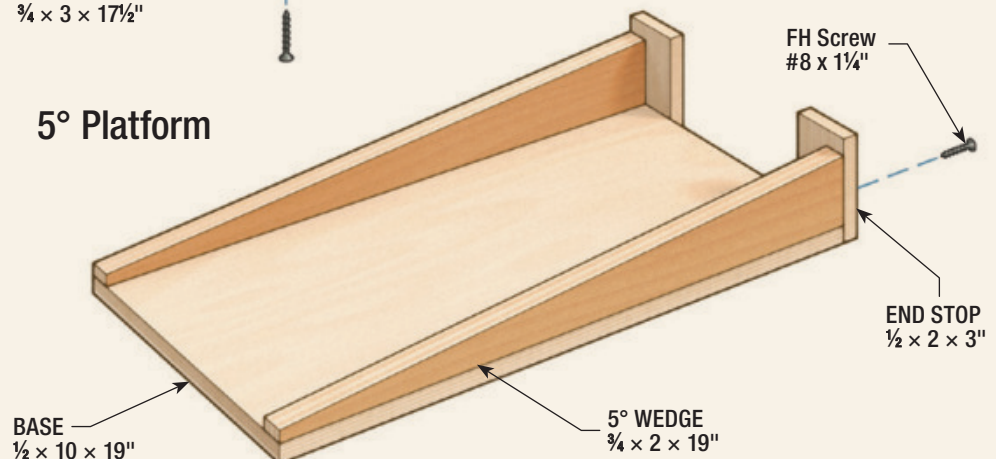
Wedges set the angle.

Register the 5° platform against the auxiliary table's fence and the 4° platform's cleat against the inside of the rear 5° wedge. Locate the seat blank against the 4° platform's side and rear fences as shown and drill the first two holes through the seat, rotating the blank in between holes. Reverse the 5° platform to drill the second set of holes.

4° Platform



5° Platform

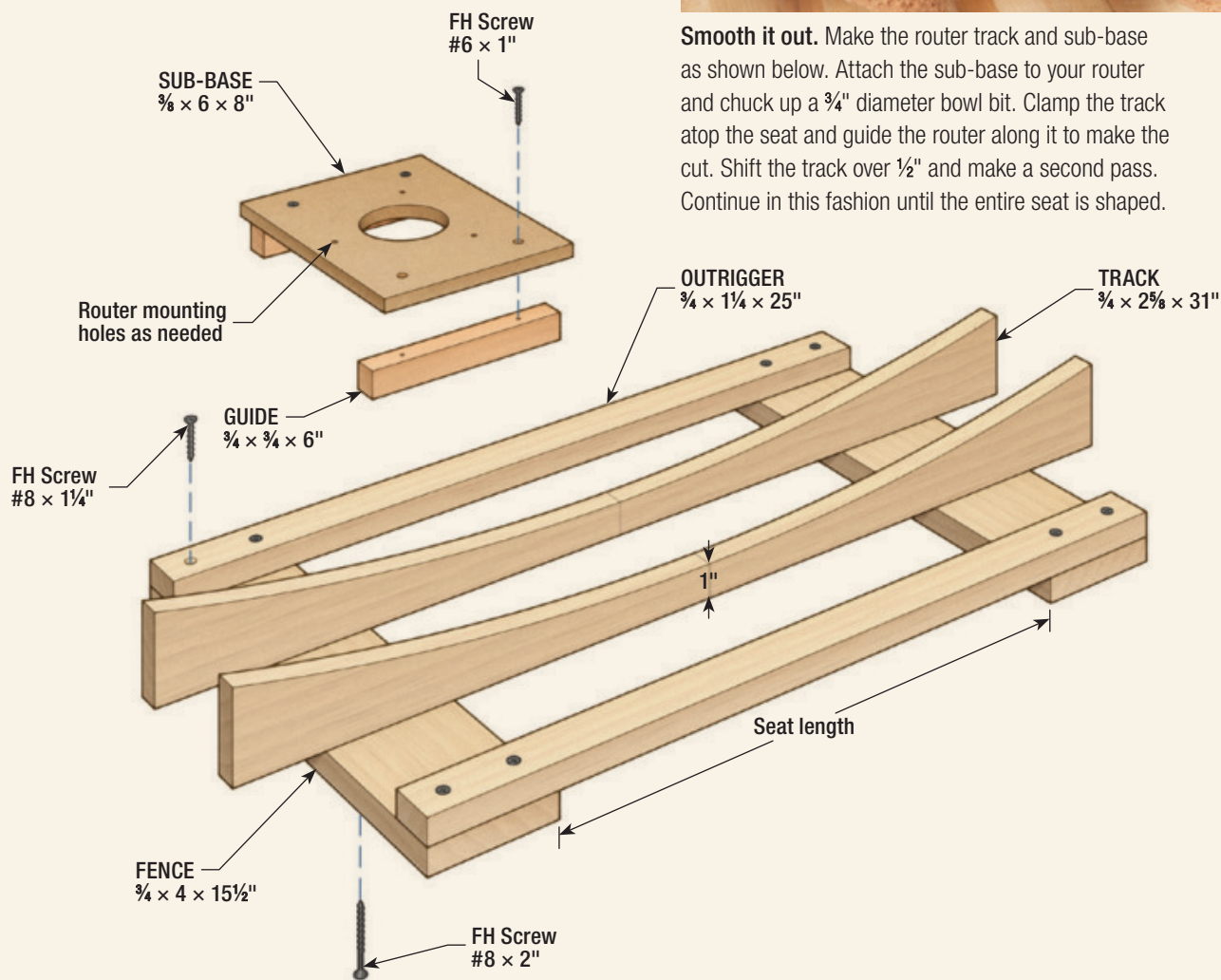




Rough cut the seat curve. Draw the seat curvature on one edge of the blank with a fairing stick. Set up a dado blade and make multiple passes across the table saw to remove the bulk of the waste. Guide the piece through the cuts with a miter gauge.



Smooth it out. Make the router track and sub-base as shown below. Attach the sub-base to your router and chuck up a $\frac{3}{4}$ " diameter bowl bit. Clamp the track atop the seat and guide the router along it to make the cut. Shift the track over $\frac{1}{2}$ " and make a second pass. Continue in this fashion until the entire seat is shaped.



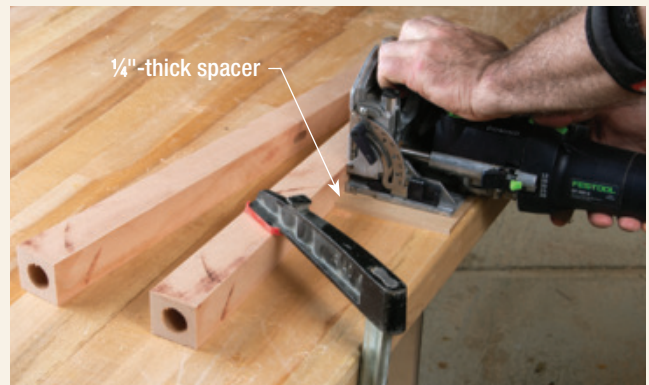


Cut the stretcher joinery

Cut the dowels to length and fit those into the legs. Then dry fit the legs to the seat. Measure down 14½" along the inside corners of the legs and mark a centerline for the front and rear stretcher mortises. Draw a line along the length of front and rear stretchers ½" down from the top edge. Align these layout lines and mark the stretchers for length. Cut the stretchers to length at the table saw, guiding the pieces at the appropriate angle with a miter gauge. To cut the stretcher mortises, I used a Domino machine, but you could also use a shop-made mortising jig with a plunge router. Check online for plans for one such jig. Mortise the legs and ends of the front and rear stretchers, then reassemble the stool with the stretchers in place and repeat the process to size and cut the inner stretchers. Cut the inner stretcher mortises and the mating ones in the front and rear stretchers.

Clamp and measure. Clamp the legs in place to make sure they are fully seated. Make clamp pads with a hole in their undersides to accommodate the dowels poking thru the seat. Align the layout marks, clamp the stretchers in place and mark them for length.

Mortise the legs. Clamp the legs to your bench with their outside face down. Mortise them with the Domino machine sitting atop a ¼" thick spacer. Align the machine with the layout lines you drew earlier.



Mortise the front and rear stretchers. To help with mortising the ends of the front and rear stretchers, I made a simple alignment fixture that included toggle clamps to hold the pieces in place. Cut the mortises with a ¼" spacer under the machine, aligning the machine with the ½" line you drew earlier.



Mortise the inner stretchers. To cut the mortises in the ends of the inner stretchers you need to hold the stretchers at a 4° incline so the cut is perpendicular to the beveled face. To do this, I made another simple fixture using a pair of 4° wedges let into the edge of a piece of particle board.

Assemble and finish

Ease the edges of the legs and stretchers with a $\frac{1}{8}$ " roundover bit and the bottom edges of the seat with a $\frac{1}{2}$ " roundover bit. Sand everything through 220 grit. Glue the dowels into the legs, taking care to align the growth rings of the two pieces as closely as possible. Cut the wedges and the wedge slots in the center of the dowels at the bandsaw so that the slots are perpendicular to the wider side of the legs. Drill holes at the bottom of the slots to help prevent splitting. Dry fit everything to rehearse the process, first fitting the stretchers to the legs, and then fitting the leg assembly to the seat. Then spread glue on the all the mating surfaces and fit the pieces together. Clamp the legs to the seat before driving in the wedges. Clamp the stretcher joints and allow the glue to set. Afterwards, cut and sand the dowels flush with the seat surface and trim the legs so the stool sits level. Finish as desired. I used polyurethane.



Drill for insurance. Drill a $\frac{3}{16}$ " hole at the bottom of each wedge slot, angling the bit so it makes the hole parallel to the beveled leg top.



Clamp and wedge. To keep the legs tight against the underside of the seat, clamp the entire stool to your benchtop. If necessary to seat individual legs, you can clamp them directly with help from the drilled-out clamping pads you made earlier. Tap in the wedge to secure the legs.

Pull everything together. Once the wedges are in place, you can remove the clamp holding the stool to the bench. Clamp across the stretcher joints, holding the clamp pads in place with double-sided tape. ■





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ZIGZAG Soap Dish

Raise the bar with this suds saver

By Sarah Marriage

Every woodworker faces that perennial question of what to do with all those wood scraps too small for most projects but just a bit too large for the burn bin. After a little experimentation, these zigzag soap dishes were born of this question.

Over the years I've made many different versions of these using various techniques on a variety of machines, and I've arrived at a sleek process that is simple and repeatable. It starts with an overlong blank and results in two complete soap dishes.

After dressing the initial blank, every step of this project is a 45° cut at the table saw. The key is spacing these cuts correctly.

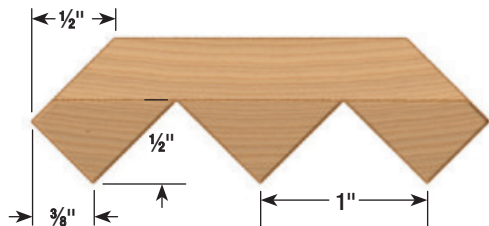
You can use just about any scrap wood, but I prefer water-friendly woods like cedar or acacia. Denser woods add a little weight to the feel of the dish, so black locust or osage orange are top choices as well. I used a traditional soap finish for moderate protection and a soft sheen.

Criss-cross grooves for a design that drains

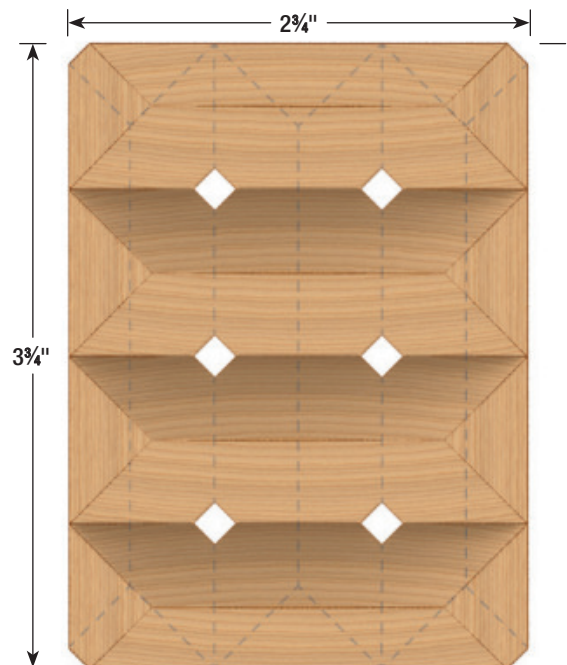
Table sawn v-grooves are cut along the grain on one side of the dish, and across the grain on the other side. The intersections of these grooves create convenient drainage holes for soapy water, and the zigzag design allows for plenty of airflow around the dish and under the bar of soap.



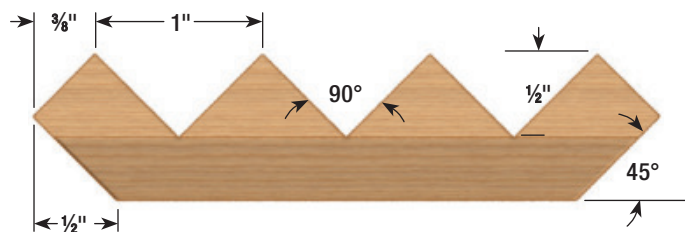
Short Elevation



Plan View



Long Elevation



Order of Work

- Rip zigzag grooves and edge bevels
- Crosscut zigzag grooves and end bevels
- Crosscut to length

Rip, crosscut, and finish

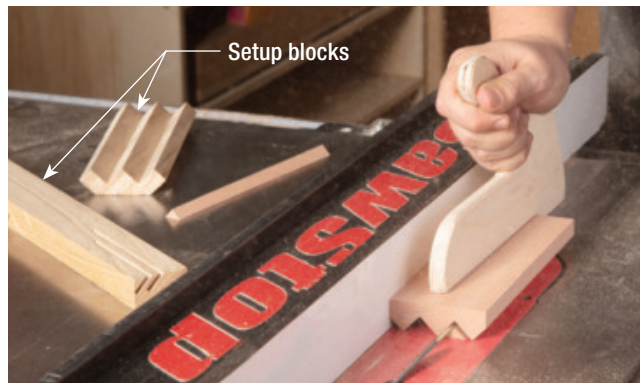
Start with an overlong blank of $\frac{7}{8} \times 2\frac{3}{4} \times 7\frac{3}{4}$ ". Set the table saw blade to a 45° angle, then raise it to a $\frac{1}{2}$ " height. Rip a $\frac{3}{8}$ " chamfer on one edge of the blank. Rotate the blank end-for-end and chamfer the other edge. Move the fence 2" closer to the blade and rip a kerf. Rotate the blank again and rip another kerf. Move the fence 1" further from the blade and rip another kerf before rotating and ripping one final time as shown. Save these two offcuts for later use. Chamfer the top edges as shown.

Set up a crosscut sled with a zero

clearance bed for 45° cuts. Clamp a stop block $7\frac{3}{8}$ " to the right of the zero-clearance kerf and another stop block on the opposite side of the blade $14\frac{3}{4}$ " away from the first. Place four 1" spacers against the right stop block, clamping the spacer closest to the blade. Raise the blade to $\frac{1}{2}$ " above the sled's bed. Register the blank against the clamped spacer with the ripped grooves facing upward and make the crosscut. Rotate the blank end-for-end and make another cut. Remove the clamped spacer and move the clamp to the next spacer.

Register the blank against this spacer and make a cut. Rotate the blank end-for-end and make another cut. Repeat this process until all the spacers are gone. Then place two 1" spacers against the left stop block and repeat the process in that direction.

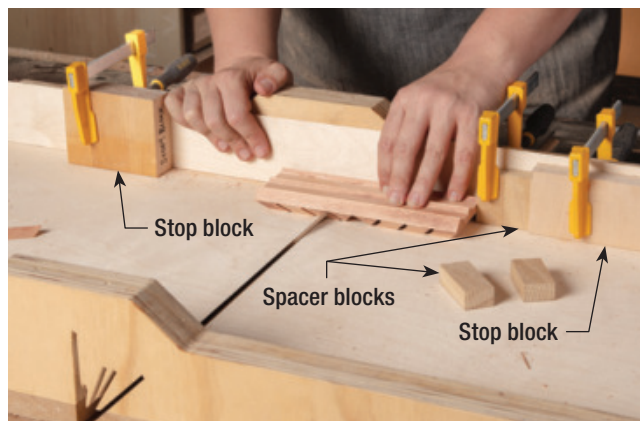
Flip the blank over and crosscut a $\frac{1}{2}$ " chamfer on each end. Clamp a stop block $3\frac{1}{4}$ " to the right of the kerf and cut the first soap dish to length. Rotate the remaining portion of the blank end-for-end and cut the second soap dish to length. Sand and finish.



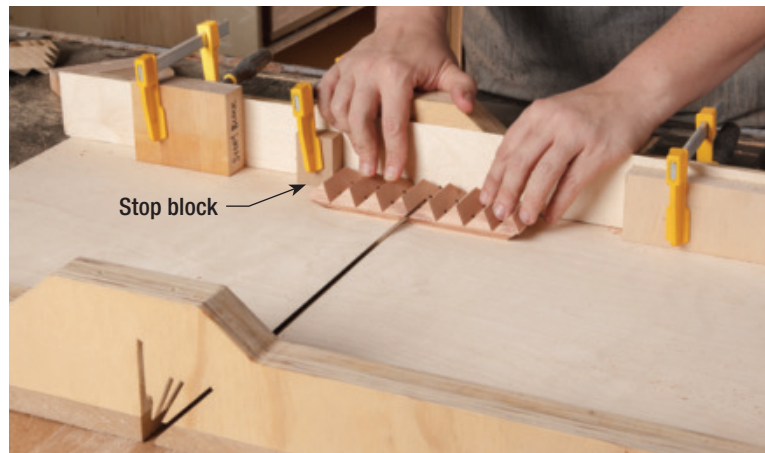
Rip the long grooves. After chamfering the edges and ripping the outer face of the v-grooves, move the fence to rip the inner face of the v-grooves. This order lets the offcut drop safely to the table, while the blank is supported on either side of the blade.



Chamfer the top edges. Chamfer the long edges on the top of the blank, setting the fence so those cuts meet the first chamfers without reducing the width of the piece.



Crosscut the short grooves. Clamp the outer stop blocks in place and use 1"-wide spacer blocks to shift the blank laterally, crosscutting at each spacer setting. Press the saved offcuts into the long grooves to minimize tearout.



Cut to length. Clamp a stop block $3\frac{1}{4}$ " from the crosscut sled's kerf. Register the blank against the stop block with the blank's crosscut grooves facing up and saw through, resulting in one soap dish. Rotate the offcut end-for-end to cut the second soap dish to length. ■

BUTTERNUT

Black walnut's pale cousin

By Ken Burton

Even though it is sometimes called white or blonde walnut, to dismiss butternut as simply an under-pigmented version of black walnut is to do it a disservice. The grain structure of the two species is similar as is the appearance of the source trees, so you can see how the comparison was drawn. But there are some significant differences. Obviously, butternut's tawny coloring is quite different from walnut. It is also softer, lighter in weight, a bit weaker, and less expensive. As I'll explain, these differences are what set the species apart and make it worthy of consideration for a variety of projects. I am also saddened to tell you that this noble species is threatened across its range.

Where the wood comes from

Butternut (*Juglans cinerea*) is a denizen of eastern North America. While

old-growth trees used to reach impressive size—4'+ in diameter and 100'+ tall, today's butternut trees are smaller—up to 2' in diameter and 40-60' tall—and only grow in about 10% of their former range. The species is not listed on either the CITES or IUCN Red List, but that may soon change. The trees are suffering from a widespread fungal disease called "Butternut Canker" that is worrisome enough that the US Fish and Wildlife Service has listed it as a "species of federal concern." When and while you can still find it, butternut is available as lumber in thicknesses from 4/4 - 16/4, in widths typically from 4-10" and in lengths to 12'. Pricing is generally under \$10/board foot. Butternut plywood and veneer are also available.

History in woodworking

In the days when horses provided most of the power for transportation, butternut's light weight made it a favored choice for carriage paneling. It was also frequently used for architectural detail-

ing in fine homes. If you have the opportunity to visit Grey Towers, the Milford, PA, home of Gifford Pinchot, first head of the U.S. Forest Service, you'll find the entire library trimmed and paneled in butternut. And as the wood is quite soft and easy to shape, it was often used for heavily carved church altars and lecterns. These days you're more likely to see butternut, in veneer form, incorporated into high end cabinetry and other millwork. Aside from woodworking, eighteenth and nineteenth century farmers also extracted a dye from butternut trees that they used to color their clothing. During the Civil War, Confederate soldiers were sometimes referred to as "Butternuts" for the brownish-yellow hue of their hand-made uniforms.

Working and finishing

In many ways, butternut is a joy to work, especially with handtools. It carves extremely well, so is an excellent choice for sculpted work and its lightness makes it a good candidate for projects such as

Waves on a beach. Butternut tree trunks are fluted, which makes their annual rings wavy. This contributes to the cathedral patterns on flatsawn boards looking like water washing sand along a shore.



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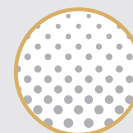
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MEDIUM-HIGH



HARDNESS

SOFT



DENSITY

27 LBS./CU. FT.



Sapwood

Tan to Gold. Butternut's tawny heartwood ranges from a bronze tan to a golden brown. Occasional black streaks provide contrast and color. Its sapwood is a creamy white.

the tool box on page 32 that will be toted about. It is nearly as soft as white pine, and cuts with little effort when worked with the grain. Cutting against the grain, however, is a different story. The wood is so soft that it doesn't resist being cut the wrong way. Instead, the stringy nature of the wood's structure becomes apparent as the surface fuzzes and tears out in long fibers ahead of the tool. This fuzziness can make milling and even sanding a bit tricky. The wood abrades quickly with coarse sandpaper, but instead of cutting through the fuzz, the abrasive seems to emphasize it. So rather than starting with 60 or 80 grit, I found it worked better to start at about 120 and then to spend extra time with the finer grits. The wood glues and finishes well, with no special preparation required. Take care not to strip the holes when driving screws, especially with a power driver. And be careful not to bump it or place it on debris-covered surfaces as it dents readily. Because it isn't especially strong and is a bit brittle, it isn't a good choice for bending.



Butternut

- Carving
- Cabinetry
- Furniture
- Crates
- Veneer
- Paneling
- Musical instruments

In the classroom

When I teach beginning woodworkers how to use hand planes, butternut is frequently my wood of choice. It is soft enough that even those without a lot of upper body or hand strength can immediately have success. It also gives immediate feedback as to how to read grain. Cuts made with the grain yield a silky smooth, shimmering surface, while those against it tear, although usually without the tool digging in too badly — perfect for giving beginners confidence in their budding skills. The wood is also nice for handsawing joints such as dovetails, though chopping out the waste begs for *sharp* chisels as the soft fibers crush and tear readily under all but the keenest of edges.

As for beginning projects, I am fond of using butternut for small pieces such as boxes though I tend to avoid it for larger furniture work as it dents so easily. That said, I have used it very successfully in hand-tool classes where students have made small Shaker-style end tables, planing all the surfaces and cutting all the joints entirely by hand. ■



Confidence booster. Butternut is soft enough that nearly anyone can get the hang of using a block plane and reading grain in a short amount of time.

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Not half bad!

Of all the fractions used in woodworking, half is the easiest to calculate. It can also be frustratingly difficult to accurately measure, particularly on thin or imprecisely milled stock. Three-quarter inch plywood rarely is, and even that $\frac{3}{8}$ " door stile you meticulously milled may be off a few hundredths under or over. Microjig's Fitfinder $\frac{1}{2}$ Gauge removes those inaccuracies, quickly, easily, and accurately locating the center of pieces up to 3" thick. Put one leg on your workpiece, and the other leg automatically adjusts to half that thickness. There's no slop, and the legs can be locked in place with knobs, making it easy to transfer the measurement to your dado stack, router bit, or an adjoining board. What little space it takes up in the shop is well worth the essential tasks it performs: ensuring that your half-lap joints are exactly that; finding centerline on sheet goods and milled stock; helping to set up a bandsaw fence for resawing boards; and finding dowel centers to name a few.

—Staff



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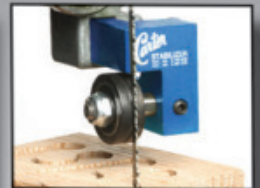
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8. Cindoco Cherry Wood Dowel, 1×36 ", Round#50B05, **\$13.99**

Great Gear (p. 58)

1. Microjig FitFinder $\frac{1}{2}$ Gauge *microjig.com*, **\$34.99**



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Read this issue closely to answer the following questions.

1. How many patterns are used in the Pasta Board shown on page 21?
2. What do Fred and Linda say is the best wood to begin chip carving?
3. What wood does Derek bookmatch to make the Dovetailed Serving Tray?

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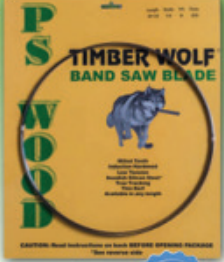



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A wipe-on finish that builds quickly

Q: I like the look of poly finishes, but they take a long time to apply, and my projects feel rough. How do I get a good, smooth – and fast – application using these wipe-on finishes?

Sam St. Pierre
New Haven, CT.

A: I prefer to use Minwax Wipe-On Poly for most of my projects. It's absolutely my favorite among wiping varnishes for a variety of reasons. But first, here's how to apply it. Start by sanding all of your surfaces to 220 grit and vacuuming away the dust. Then apply the first coat, which acts as a sealer and raises the grain. I like to flood on this coat (and the others) with a foam brush, let it sit for 5 to 20 minutes, and then wipe it off with thick paper towels (the kind sold for shop use). To prevent spontaneous combustion, be sure to lay oily rags out flat to dry before discarding them.

Let the first coat dry for a couple hours, and then sand it lightly with 320-grit paper, folded in your hand, just until the surface feels smooth. Once again, vacuum away all dust. After that, you can apply any number of coats in quick succession, with just an hour or so between them. I usually apply three more at this stage. Because there's so little time for dust to settle into the wet finish, you don't have to sand between these coats.

Once you like the look, let those

multiple coats dry overnight, and you're ready for one final pass. Sand once more with 320-grit paper, stir the can well, and apply one last coat, very thin this time, so it will dry even more quickly. If there are a few dust nibs in the final surface, just rub it with a paper bag to leave it buttery smooth. With this technique, you'll have a nice, smooth-to-touch finish in short order. As a bonus, Minwax Wipe-On Poly is affordable and widely available at hardware stores and home centers. Additionally, for some reason related to its formulation, it adds a less yellow color to lighter woods than the brushed version, meaning I can use it for almost everything I build, dark or light.

And last, like all wiping varnishes, Minwax Wipe-On Poly can be applied more thinly to the base of a table, for example, with additional coats added to the top for more protection and a deeper sheen—without making the two parts of the project look different. I prefer the satin variety of this finish, which doesn't need to be rubbed out at the end to produce a soft sheen. But be sure to stir the can before each use.



Flood it on. Start by sanding all surfaces to 220 grit and vacuuming away the dust. The bare wood will drink up quite a bit of finish, so apply the first coat liberally with a foam brush.



Wipe it off. The key to quickly building this finish is wiping lightly. The goal is to get rid of drips and runs, leaving an even layer of finish without removing too much.

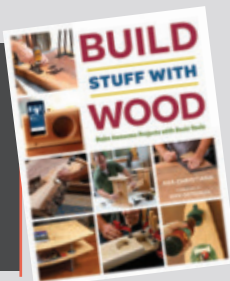


Sand the first coat. Use 320-grit paper, folded into a pad, and sand lightly until the surface is smooth. Then vacuum away the dust.



Asa Christiana

Asa is a former editor at *Fine Woodworking* magazine and the author of "Build Stuff with Wood" (2017, Taunton Press). Book 2 of the series arrives in fall of 2022.



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