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- Guide to pine
- Faces of the craft



Traditional plate rack, p. 30



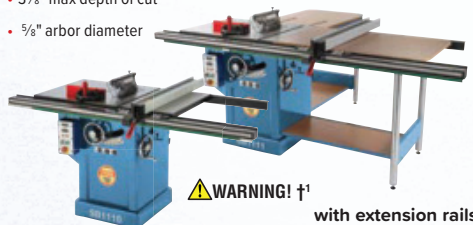
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⚠ WARNING! †¹

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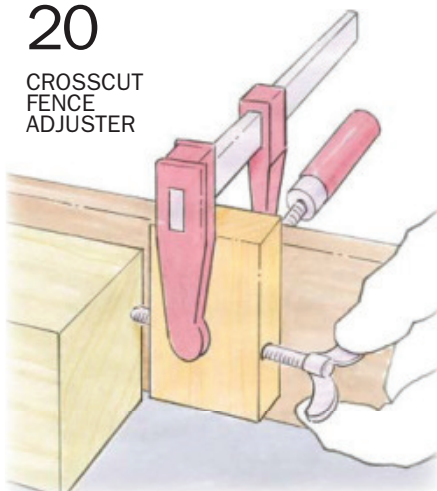
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PROJECT GUIDE

Hand tools

Whether you're a beginner or a pro, this guide will help you improve your hand-tool skills while you enjoy the satisfying relationship between tool and wood.



BLOG

Apartment veneering

In her new blog series, Chelsea Van Voorhis shows how simple, accessible, and most importantly, how fun working with veneer can be.

Online extras

Visit finewoodworking.com/297



BLOG

Origin stories

Nancy Hiller shares the backstory of her plate-rack project (p. 30), which dates to her first professional job as a woodworker in 1980.



VIDEO

A template for your template

Bruce Eaton's brilliant technique for creating a routing template (p. 74) can look tricky at first glance. It isn't. Watch this video to see how simple it really is.

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- The differences between stains and dyes
- How to add depth to a finish with glazes
- Perfecting the final color with spray toner



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A veteran *Fine Woodworking* and *Fine Homebuilding* author, **Nancy Hiller** (pictured here with her husband Mark Longacre) was diagnosed with Stage IV pancreatic cancer in late 2020. Having made no secret of how health challenges are affecting her work, she agreed to shoot this issue's article, "Traditional Plate Rack," mid-treatment. Her prognosis has led Nancy to reflect on the many blessings life has afforded her. "One of those is definitely my work as a contributor to *Fine Woodworking*. For years I had admired the magazine as a source of technical guidance and inspiration. Having my first article ("Updating an Antique: Edwardian Hallstand" *FWW* #165) published in 2003 was one of the high points of my life. Writing for *Fine Woodworking* and presenting at Fine Woodworking Live in 2019 have given me opportunities that I had dreamed of but never imagined possible—meeting some of my woodworking heroes such as Steve Latta and Christian Becksvoort, sharing much of what I've learned on the Pro's Corner blog, sharing other tips on the podcast. I'm just so grateful."



In his own work, **Bruce Eaton** ("Circular Sunburst Veneer Top" and Master Class) takes inspiration from American and European styles of the 19th and 20th centuries, and embraces the challenge of creating pieces that are both visually appealing and built to last. After a career as a civil and environmental engineer, Bruce went to North Bennet Street School's furniture program. He now works out of his studio in Boxford, Mass.



After a stint studying music and playing drums in a couple of trios, **Matt Monaco** ("Turn a Lidded Container") pursued another deep interest, woodworking, as his career path. His formal training and mentorship on the lathe came through the Australian master turner Richard Raffan. For several years Matt worked as a turner for the distinguished Vermont furniture and ceramics company Shackleton Thomas, and he still turns bowls and accessories for them. The owner of Monaco Bowls, he sells his work through craft galleries and on his website (monacobowls.com).

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Explorations
in traditional
hand-tool
woodworking.

From the Editor

Technology and the future of woodworking

Over dinner with some woodworking friends, the question came up: What will woodworking look like 50 years from now? My first thought was that it would look pretty much the same; whether you're talking about building techniques or design trends, things tend to move slowly in the craft. My friend asked, "but what about the new technologies like that self-driving router; doesn't that reduce the amount of skill needed for woodworking?"

I don't think making woodworking easier is a bad thing. If there are ways to lower the barriers of entry to the craft, then we should make them available. Whether you bolt metal legs to a slab of wood or grab some home-center pine and make something with pocket screws, getting that first project under your belt and feeling the sense of accomplishment that comes with it are critical to igniting the passion that will lead to more ambitious projects. One of my first projects as a kid was a small box nailed together and spray-painted gold. Leather laces borrowed from my baseball glove attached the lid, and a square of burlap lined the bottom. I've made quite a few projects since then, but I don't think I've ever matched the satisfaction I got from that first box.

My second point is that new technologies, whether a handplane with a Norris-style adjuster, a tablesaw with a fence that actually stays square, or a CNC router, don't make the building process more "automatic" or less thoughtful. They are just tools that need to be understood and used in a way that will produce the desired results. Personally, I take joy in the ingenuity involved in getting my tablesaw to do some amazingly creative and accurate work. My friend, on the other hand, finds the most satisfaction from "getting in there with hand tools and just making a go of it." And this gets to the heart of an important aspect of woodworking. The tools and methods we choose determine our relationship to the material and our fundamental experience when working with wood. While I'm fond of saying that the end product is what is important to me and not necessarily the means I take to get there, at a certain level, I admit that the methods and tools we choose play a big role in determining the essence of the final product, and certainly our experience along the way. I know of some woodworkers who avoid certain machines they own because "it doesn't feel like woodworking," and I know others who expound with glee about the creative possibilities available with their new computer-guided tools.

In the end, it comes down to the reasons we find ourselves in the shop, the experience we hope to have there, and the things we want to accomplish. That calculus is going to be different for every woodworker. And happily, there is a satisfying path available for each of us. So go ahead: Dive in with that new tool. Or stick with what you have. Either way, you win.

—Michael Pekovich



"Eco-friendly" is misleading

I enjoyed your article "Guide to Sheet Goods" in the April 2022 issue (#295). However, when you discussed "Plyboo" made from bamboo, you called it "eco-friendly bamboo." That immediately implies that native American woods are "eco-unfriendly." Quality forest products have been produced for decades in the United States. I spent 33 years as a forestry professor in two American universities teaching legions of students to manage forests in a manner that was sound environmentally, economically, and ethically so that this country never depletes its supply of a truly "green" product. Our shared hobby—and the future of your magazine—relies on a continuing supply of locally grown and processed native American timber. Although American farmers are investigating bamboo culture within our borders, it will likely be produced on large acreages of monoculture plantations to which native wildlife is not accustomed. Currently, most of our bamboo products originate in Asia with all the attendant problems of shipping our dollars overseas while perhaps importing invasive pests. I appreciate you discussing bamboo sheet goods, but recommend that you be more careful with your terminology in the future.

—MIKE MESSINA, Professor Emeritus,
Penn State University,
Bellefonte, Pa.

Fuming for non professionals

I am a longtime subscriber to your magazine, which has been a huge help over the years, and I enjoy it greatly. But time and again, when you discuss fuming white oak, it is typically a professional who always uses industrial-strength 26% solution. (The latest example is the eletter promoting a video showing Greg Paolini at work.)

I understand this is because the authors are pros, but many of your readers—like me—are not. And anyone watching Mr.

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Paolini putting on his huge rubber gloves and respirator mask might run for cover. On top of which, getting such a strong solution these days is not easy.

So I decided to try finishing a coffee table I just made for my son—borrowing the technique from your past editions but using a 10% solution available at the hardware store. Yes, the fuming process takes a little longer, but amateurs have time, and I was very glad I tried it rather than attempting some dye-and-stain alternative.

It just so happened that the Paolini video came over the wire just after I had finished my table. So I thought I should write and tell you about my experience.

—DAVID ROGERS, Takoma Park, Md.

DIY disc sander

I found Jeff Miller's article on the disc sander (*FWW* #296) very interesting, especially in regard to the jigs he designed. I would like to add that a sanding disc, mounted on the arbor of a tablesaw, will allow those of us without a stand-alone disc sander to make good use of Jeff's techniques and jigs.

—CLAY SAMMIS, Amherst, Mass.

That polka dot drawing was better in metric

I was intrigued by the article "Polka Dot Box" in the June issue (#296), especially the author's refreshing way of cutting the dovetail pins and then finish-paring them to size with a chisel. Even though I've been building harpsichords for nearly 50 years, one is never too old to discover new approaches to standard woodworking tasks—for me the main reason to subscribe to your magazine.

I was less than thrilled, however, by your dimensioned drawing, replete with several dimensions in 64ths. Seriously? Who has the eyesight or determination to deal with such measurements? I know—a disclaimer below the drawing says, "The dimensions were converted from the author's metric ones; find his original CAD drawings and metric dimensions at Finewoodworking.com/296."

Not much help for someone who has just purchased your magazine from the newsstand and lacks access to the Internet. Wouldn't it have been simpler to publish the original metric dims? Or do you think American woodworkers are incapable of dealing with anything

so foreign or esoteric? I hope that's not the case, because it's high time that we divested ourselves of this archaic form of measurement and got in sync with the rest of the overwhelmingly metric-based world. An article or two in *FWW* with metric dimensions would be a good start.

By the way, once you see the original metric dimensions, the logic behind the author's layout and design becomes apparent. This is almost completely obscured in Imperial.

—CHRISTOPHER BRODERSEN, Northville, Mich.

No sanding those polka dots

I was amazed by Mr. Sotirov's box, and totally get not wanting to do final sanding that would get ebony dust into the maple pores.

Since his final woodworking appears to be using "a razor-sharp handplane," does that mean he doesn't sand at all prior to putting on the finish? Thanks.

—WAYNE RICHARD, Seneca, S.C.

I was interested in Vasko Sotirov's Polka Dot Box; enjoyed reading the article. But I was disappointed that he stopped prior to explaining how difficult it is sanding the "ebony dowels" flush with the maple sides! I have designed and constructed many pieces and projects using maple, birch, or other light shades of hardwoods with ebony inlays, pins/pegs or tenons. While sanding the ebony flush, the fine black dust gets embedded into the pores of the maple, even though maple is very strong and dense and has generally straight grain and a fine, uniform texture. One way to avoid or minimize the black dust would be to use a scraper. So I am curious how Vasko handled it and what finish he chose.

—JEFF KRESS, Muskego, Wis.

Editor replies: *Mr. Sotirov takes the piece straight from the handplane to the shellac finish without sanding. And we meant it when we said razor sharp!*

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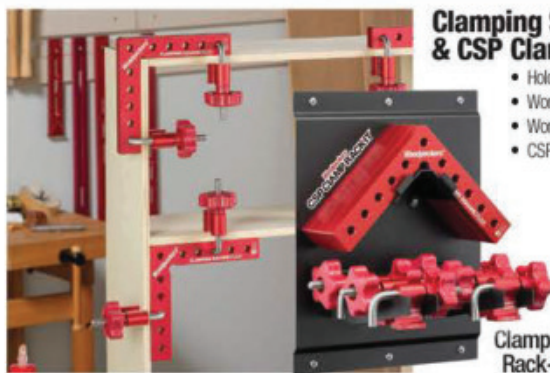
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Clamping Squares PLUS Rack-It™ Kit.....\$259.99

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- Resharpens easily.



EZ Edge Corner Plane

Includes a wall-mountable Rack-It™

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-or- 45° Chamfer.....\$159.99

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Auto-Line Drill Guide
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Deluxe Kit....\$369.99

Drill not included.

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- Dial in exact cutting location.
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- Extra support for edge routing.
- Works with most routers.



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w/ 10mm & 1/4" Guide Rods....\$239.99

Router not included.



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MortiseMatch....\$699.99

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- Teeth engage for repeatable angles.
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- Designed to fit most drill presses 12" & larger.
- Ideal for chair and stool projects.



Duax Angle Drilling Table
Duax....\$299.99
Deluxe Kit....\$339.99



Table Saw not included.

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- Relocates rip fence perfectly.
- Flips out of the way when not needed.
- Couple 2 stops for perfect fitting dados.
- Extra stops & dado couplers available.

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AUTOSCALE™ Miter Sled

- Scale accurate at any angle.
- Miter bar fits any 3/8" x 3/4" slot.
- Flip stop with micro-adjust.
- Stop extends to 50".
- Stops for 3-, 4-, 5-, 6-, 8- and 12-sided miters.

**NEW
TOOL**

AutoScale Miter Sled
Deluxe....\$1089.99
Left-or-Right Miter Sled....\$529.99
Drop Zone....\$129.99



Table Saw not included.

Exact-90 Miter Gauge

- Square cuts every time.
- Miter bar self-adjusts 3/4" slots.
- Micro-adjust flip stop & 45" extension.
- 24" cross-cut capacity on most saws.
- Miter Bar available separately.

Exact-90
Miter Gauge....\$329.99
25.5" Miter Bar....\$69.99

StealthStop™ Miter Saw & Fence Stop System

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- Micro-adjust provides precise control.
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- Include track, stops, brackets & rule.

StealthStop
Left -or- Right
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4' Combination....\$199.99



workshop tips

Extend your jointer tables to support long boards

While milling long lumber for a table-top, I had trouble controlling the planks on my jointer, especially balancing a board to remove twist. I tried using work stands for extra support, but they weren't effective. So I created these extensions for the infeed and outfeed tables. They should work on any jointer with square sides.

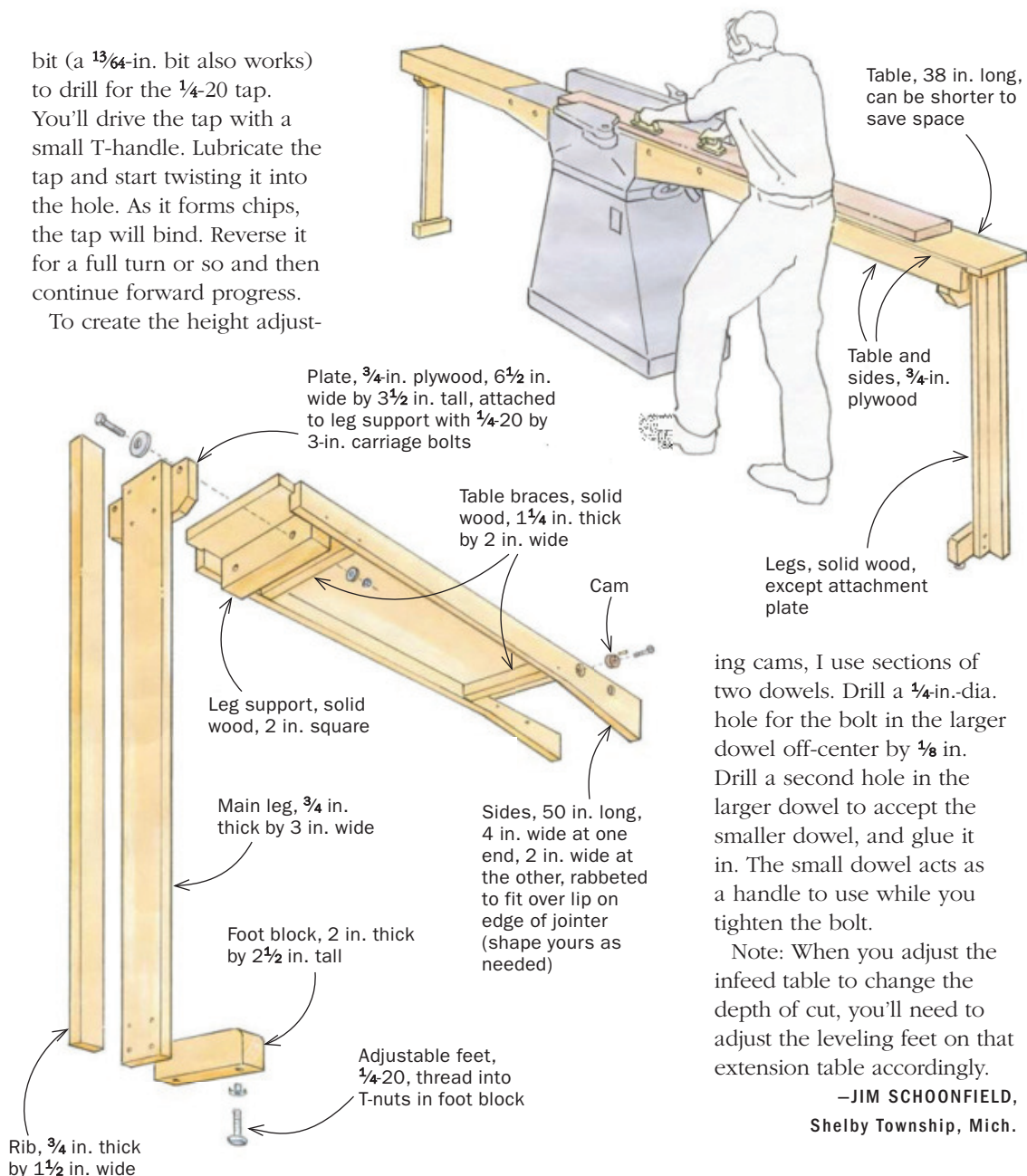
The trick to attaching and supporting the tables is getting them perfectly level with the jointer and keeping them that way. To do so, I made a cam system that bolts to the sides of the jointer.

After ripping and rabbeting the tables and sides to fit my jointer, and cutting the rest of the parts, I joined everything with glue and fasteners. To locate the tapped holes for the cam system, I started by drilling $\frac{1}{16}$ -in. holes in the sides of the extension tables. After clamping the tables level with the top of the jointer tables, I used the holes as a reference to drill into the cast-iron jointer tables with the same bit. When drilling, be sure to lubricate the bit.

Next I removed the wood extensions and used a #7 drill

bit (a $\frac{13}{64}$ -in. bit also works) to drill for the $\frac{1}{4}$ -20 tap. You'll drive the tap with a small T-handle. Lubricate the tap and start twisting it into the hole. As it forms chips, the tap will bind. Reverse it for a full turn or so and then continue forward progress.

To create the height adjust-



ing cams, I use sections of two dowels. Drill a $\frac{1}{4}$ -in.-dia. hole for the bolt in the larger dowel off-center by $\frac{1}{8}$ in. Drill a second hole in the larger dowel to accept the smaller dowel, and glue it in. The small dowel acts as a handle to use while you tighten the bolt.

Note: When you adjust the infeed table to change the depth of cut, you'll need to adjust the leveling feet on that extension table accordingly.

—JIM SCHOONFIELD,
Shelby Township, Mich.

Best Tip



An electrician at General Motors, Jim Schoonfield has been working wood in his spare time for the past 30 years. Stuck on the afternoon shift when his kids were young, he built them an awesome clubhouse to relieve his guilt, he says. Another favorite project was a suite of outdoor furniture for the family's covered porch, including a sectional sofa and a large dining table.

A Reward for the Best Tip

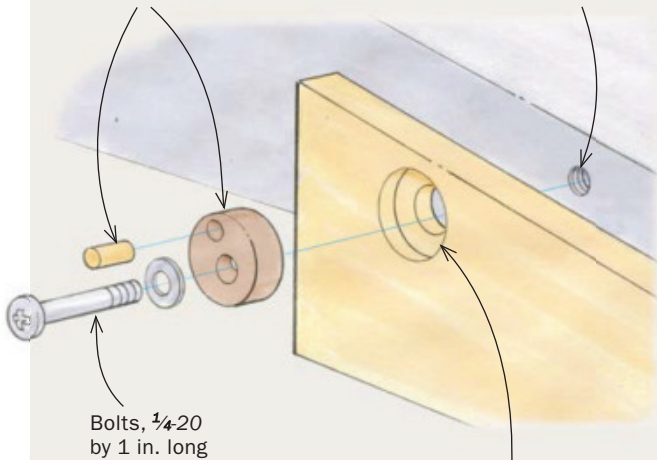
Send your original tips to fwtips@taunton.com. We pay \$100 for a published tip with illustration; \$50 for one without. The prize for this issue's best tip was an Irwin Marples Forstner bit set, sizes 1 in. to 2 1/8 in. dia.



CAM DETAIL

Cam cut from 1-in. oak dowel; $\frac{3}{16}$ -in. dowel glued in as handle

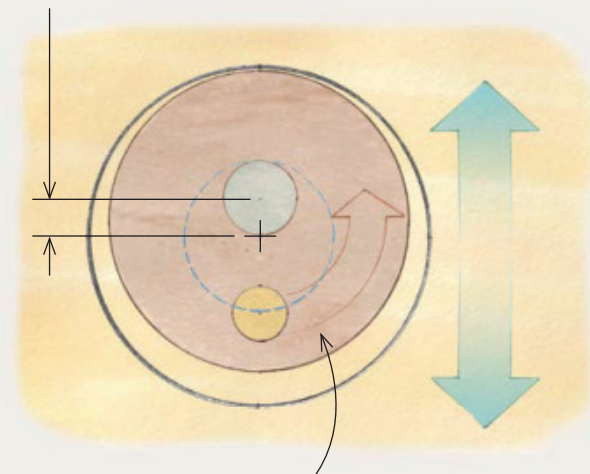
Drill jointer bed with #7 or $\frac{13}{64}$ -in. bit, and thread holes with $\frac{1}{4}$ -20 tap.



Bolts, $\frac{1}{4}$ -20 by 1 in. long

Cam holes, stepped, $1\frac{1}{8}$ in. dia. by $\frac{1}{4}$ in. deep, with $\frac{1}{2}$ -in.-dia. through-hole

Bolt hole, $\frac{1}{4}$ in. dia., $\frac{1}{8}$ in. off-center



Rotate cam to bring extension table level with jointer table, and then tighten the bolt.

Quick Tip

Silicone fittings make great dust-hose adapters

To connect my shop vacuum hose to various power tools, I use silicone automotive hose fittings. They come in a variety of sizes—including both straight couplers and reducers—and they have sufficient friction to keep connections in place. They're inexpensive so I leave one on each of my power tools.

—GEOFF KERSHAW, Beaumaris, Victoria, Australia

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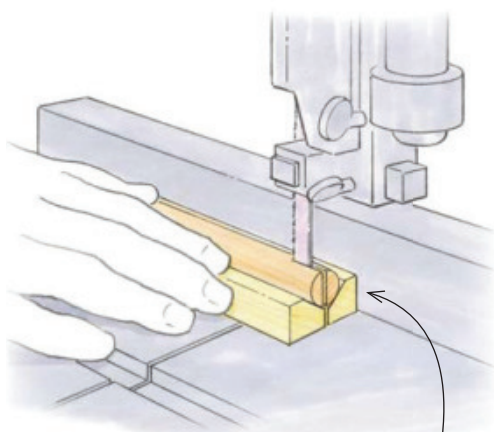
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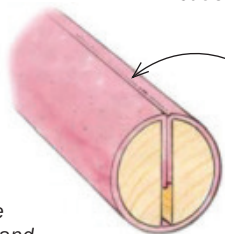
Turn a dowel into a drum sander

I have made several attempts over the years to wrap sandpaper around a dowel for smoothing inside curves, without much success. Then I figured out that I could cut a long stopped slot in the dowel, tuck both ends of the paper into the slot, and then chuck the slotted end of the dowel in my cordless drill or drill press, locking in the sandpaper in the process. It works great, holding the sandpaper tight but also making it easy to change.

—THOMAS MOSS, Bradenton, Fla.

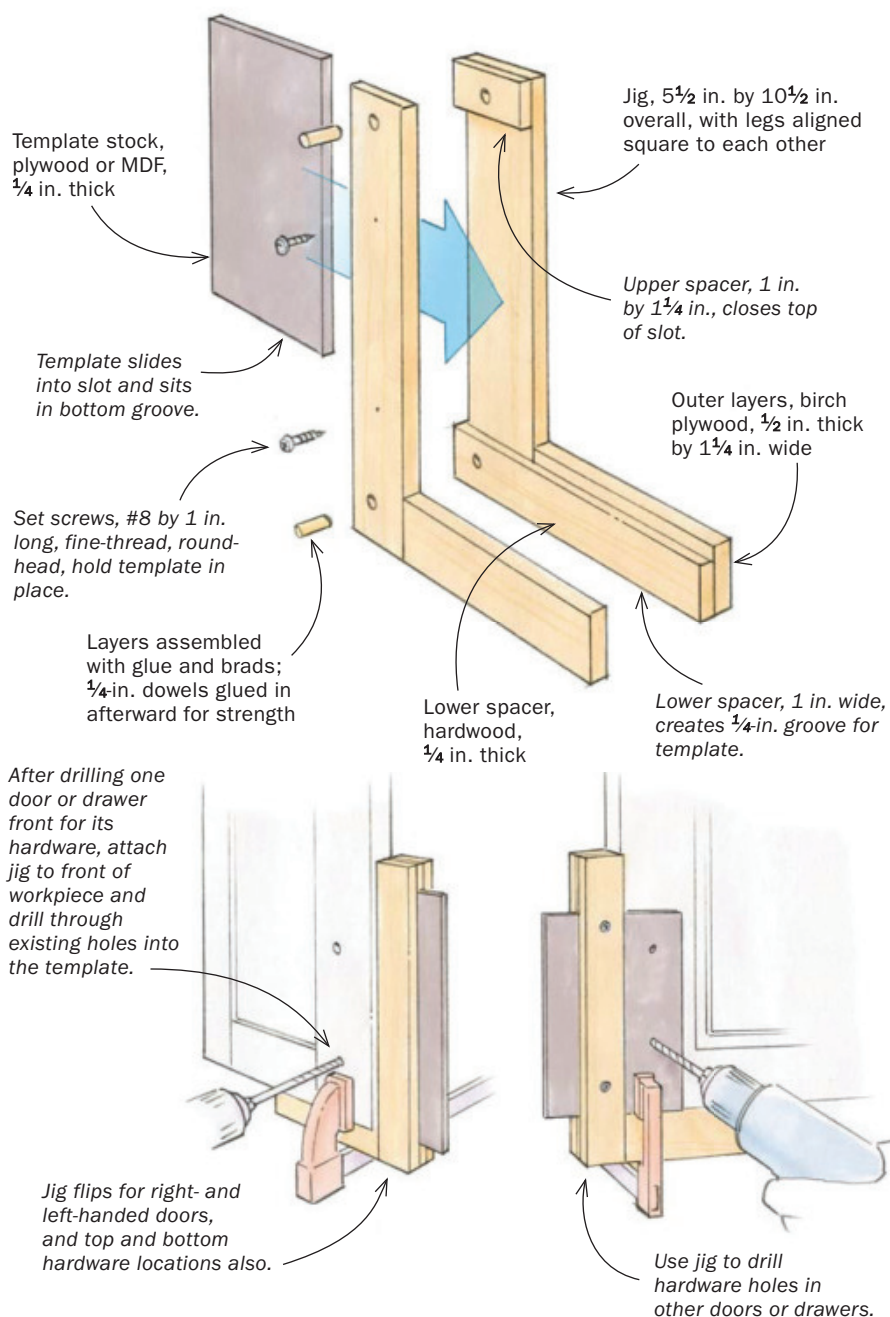
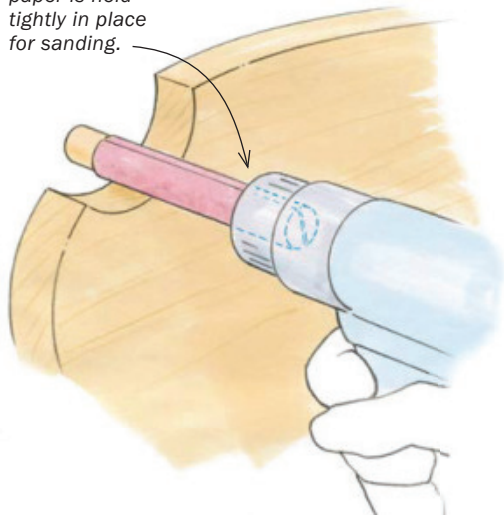


Use bandsaw to cut slot in dowel.



Tuck ends of sandpaper into slot.

Tighten drill chuck on the slotted end, and paper is held tightly in place for sanding.



Re-usable jig locates pulls and handles

I'm a full-time cabinet installer, and I came up with this jig for locating handles and pulls in doors and drawer fronts. It's essentially a square with a slot in the long leg that lets you slide a drilling template in and out. I use toe-kick offcuts for the templates, but any $\frac{1}{4}$ -in. plywood or MDF will work. I assembled the layers of the square with air-driven pins and glue, making sure to keep the inside faces flush and square. After the glue dried, I inserted dowels into the joints for added strength.

To create the template and set up the jig, start by drilling one door or drawer perfectly for your hardware. Then slide a piece of template stock into the jig, lock it in place with the set screws, clamp it onto the front of the door, and drill through the existing holes to continue them into the template. After that you can simply clamp the jig onto any other drawers or doors and drill, flipping the jig as needed for right- or left-handed doors. In practice, I only use the template to score the door or drawer front with my drill bit. Then I remove the jig, clamp a blowout block onto the back of the door, and finish drilling.

—ROBERT ELLIOT, Marshfield, Mass.

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Simple micro-adjuster for any crosscut fence

I needed a micro-adjuster for my miter gauge but was too impatient to order one, so I came up with this simple but effective shopmade version. All you have to do is drill a slightly angled hole in a wood block, and twist a thumbscrew into it. The hole is slightly smaller than the outside diameter of the screw, so it will make its own threads in the wood. And it's drilled at an angle to give the thumb end of the screw the clearance it needs. Because the end of the screw contacts the workpiece at an angle, I rounded over its end. To use the micro-adjuster, just clamp it onto any fence in your shop, including your miter gauge or crosscut sled. It works great.

—STEVE FIKAR, Shalimar, Fla.

Drill a $\frac{1}{4}$ -in.-dia. clearance hole most of the way through the block, and then drill the last $\frac{1}{2}$ in. or so with a slightly smaller $\frac{15}{64}$ -in. or letter C drill so the thumbscrew will cut its own threads.



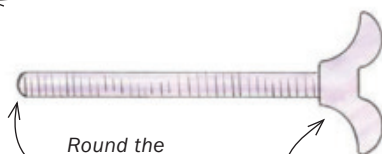
BLOCK TOP VIEW

Hole is at a roughly 8° angle to provide clearance for wings of thumbscrew.



BLOCK SIDE VIEW

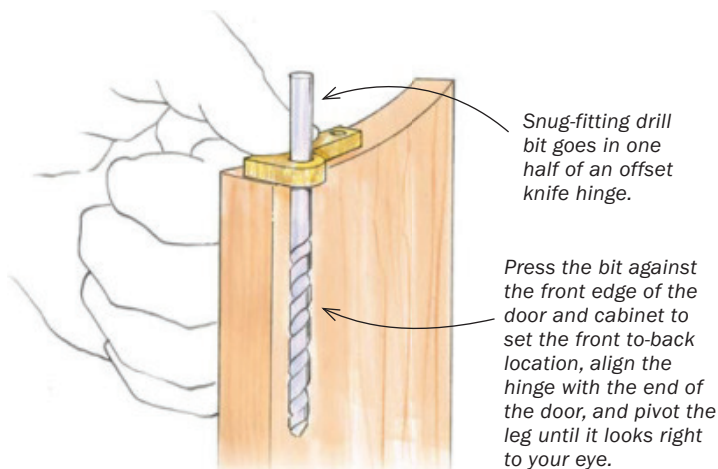
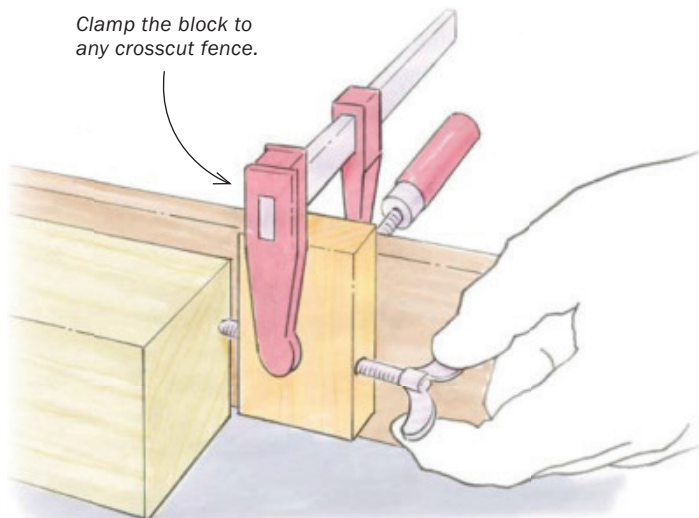
Hardwood block, $\frac{13}{16}$ in. by $1\frac{3}{4}$ in. wide by 3 in. long



Round the contact end of the screw.

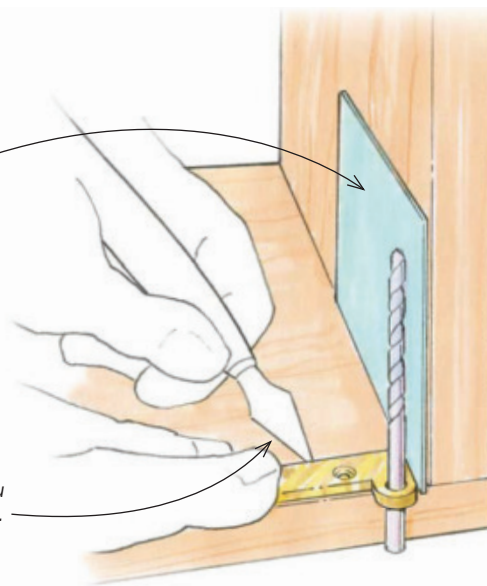
Thumbscrew, $\frac{1}{4}$ -20 by 3 in. long

Clamp the block to any crosscut fence.



To locate the hinge in the cabinet, use the same drill bit and hinge leaf. To set the hinge-side door gap, place a spacer against the cabinet side.

Scribe around the hinge legs and cut their mortises as you normally would.



Drill bit locates knife hinges on curved cabinets

Offset knife hinges are a beautiful solution for cabinets with inset doors, but there are a couple of critical dimensions that must be dialed in for the door to line up and operate correctly. When the cabinet front and door (or doors) are rectilinear, a combination square can establish the front-to-back location of the hinges and a narrow spacer can set the hinge-side gap. When the cabinet and doors are curved, however, it's a real challenge to properly position the straight legs of the hinge.

My solution is to ditch the square and insert a drill bit through the pivot hole in one half of the hinge. To set the front-to-back position of the hinge mortises in both the cabinet and door, hold the bit against the front edge. The hinge-side gap is set as usual, by placing a narrow spacer between the hinge and the cabinet side, and then aligning the end of the hinge with the end of the door. Because the hinge's pivot point is what matters, it makes no difference how the hinge legs are aligned. Just pivot them so they look good, scribe around them with a marking knife, and cut the mortises.

—JEFF PULS, Wildwood, Mo.

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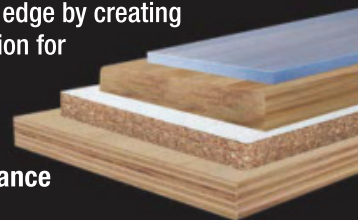


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tools & materials

■ ACCESSORIES

Blade and bit cleaning station

WHEN I FINALLY TAKE THE TIME to scrub hardened resin off my blades and bits, I'm always surprised at how much better they cut—cleaner, faster, with less burning. MicroJig's BladeClean system makes the process simpler, so I'm likely to clean my cutters more often. It works with any common cleaner and includes everything you need to make your carbide edges sparkle again.

The covered tub contains two reservoirs for cleaning solution, one for blades and one for bits. The majority of the mixture goes into the main tank, which has a large abrasive pad on the bottom. Attach the included magnetic handle to any circular blade up to 12 in. dia., give it a few spins against the pad, and the gunk is gone. Flip the blade and repeat. It's just as easy to spin the blade on edge to clean the tips too. The smaller reservoir and holder for router bits allows you to briefly soak them in the cleaning solution before scrubbing in one of two ways: with the included brass-bristle brush, or with a small polishing disk held in a rotary tool or cordless drill. You get



All in one. The main tub holds the blade-cleaning pad and soapy solution. The cover holds a second reservoir for cleaning router bits, along with all of the accessories you need.

Cleaning system by MicroJig
\$100

five of the little disks, and they worked so well I didn't need the brush, though it can be helpful for stubborn sap.

The whole system is very effective, and I love how it stores on a shelf in my shop, with the soapy cleaner inside and the accessories stored on top, all ready for use at a moment's notice. The big blade pad is rated for hundreds of cleanings, and you can cut more of the small disks from any abrasive pad.

—Asa Christiana is the author of *Build Stuff with Wood* (2017, The Taunton Press).



A clean blade in seconds. A magnetic handle attaches to the blade, letting you spin it against the abrasive pad at the bottom of the tub. A few spins on each side will clean off the toughest resin and gunk.



Bit cleaning is also fast and effective. A second cover holds two $\frac{1}{4}$ -in. and two $\frac{1}{2}$ -in. bits at a time, letting you invert them into a smaller reservoir of soapy solution and then flip them upright for cleaning. The small bit-cleaning pads work great in a drill or rotary tool, and there's a brass-bristle brush included.

■ POWER TOOLS

Plug-free pinner

A FINE-GAUGE PIN NAILER is a useful tool for fine moldings and other delicate parts; in most cases, the resulting holes are so tiny that the grain of the wood makes them all but invisible. Because I work primarily in a shop with convenient electrical receptacles, I haven't seen the need for a cordless version. There are times when a cordless pinner could be handy, such as adding trim to freshly finished work that hasn't dried completely—you wouldn't have to worry about the cord accidentally touching or dragging across the finish. It would also be an asset on a job site.

If you're in the market for a cordless one, consider Milwaukee's M12 23-gauge pinner. I tried it with 1-in. pins on cypress, a softwood; and white oak. In both cases, even on the same setting, it sank pins nicely below the surface. This tool is designed for convenience. The battery and pins are easy to load, and the safety lock operates with the same finger you use to pull the trigger. The depth of set is adjustable, there's a work light, and there's a hook for hanging the tool on your toolbelt. A gauge lets you keep track of when you'll need to recharge.

For a pinner, this model is on the heavy side, and I found the handle clunky. I have large hands for a woman and am used to using job-site power tools, but a smaller-diameter handle would be easier to work with, especially for prolonged sessions.

—Nancy R. Hiller runs NR Hiller Design.



Cordless pin nailer by Milwaukee

2540-20

Bare tool, \$200

Tool, 1.5-Ah battery, and charger, \$250

■ ACCESSORIES

Vacuum hose adapters

THE MARKETPLACE IS LITTERED WITH ADAPTERS for connecting shop vacuums to power tools, and so is my shop. Yet I still have a few frustrating connections that require frequent applications of duct tape, an imperfect solution at best.

The real solution turns out to be Infinity's new "Quick-Snap" hose and adapter kit. At 16 ft. long, the crush-proof hose is an upgrade over most vacuum hoses, with a universal 2¼-in. end that fits into almost all vacuums on the market (measure the inside diameter of your inlet to be sure).

But the real story is at the other end of the hose, where a quick-click connector snaps into four grippy, flexible rubber adapters. Available in diameters of ¾ in., 1 in., 1¼ in., and 1½ in., the adapters have ribbed, tapered interiors that are very hard to shake free in use. And two have tapered exteriors as well, filling in gaps between the ¼-in. increments.

The kit also includes a solution for the larger ports on portable machines: an extra quick-click 1½-in. adapter, with a standard plastic adapter that steps it up to 2¼ in., perfect for my benchtop sander and job-site tablesaw.



Vacuum hose and adapters by Infinity

\$70

For the first time in my woodworking career, my two shop vacs connect quickly and securely to every power tool and small machine in my shop.

By the way, if your vacuum hose has one of those two-button connectors on the end—my Bosch and Fein models both do—the Infinity adapters will pop right on, letting you buy the adapter kit without the hose for just \$36.

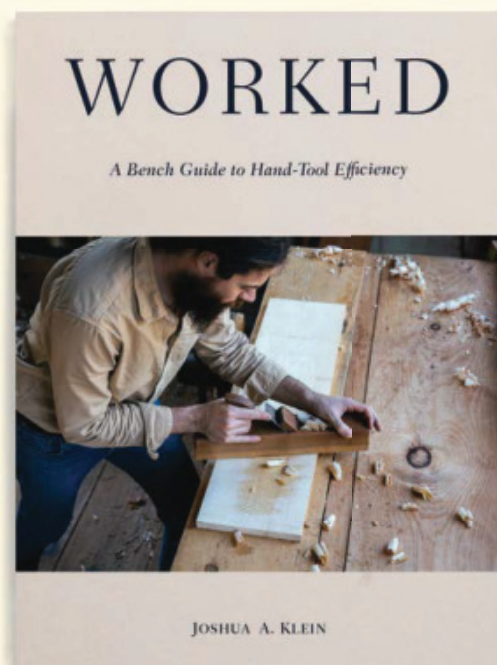
—A.C.

■ NEW TO MARKET

Tools to look out for

Router combo kit

Triton's TMNRTR is a 1.2-hp trim router that comes with both a fixed and plunge base. The soft-start motor has a variable speed of 11,500–31,000 rpm. The plunge base has a height adjust in the bottom, letting you make above-the-table adjustments in a router table. It also has a built-in dust port and microadjust. The kit has a fence and roller-guide for use with bits without guide bearings as well.



Hand-tool book

Joshua Klein continues his argument for hand-tool practicality and satisfaction with his upcoming book *Worked: A Bench Guide to Hand-Tool Efficiency* (2022, Mortise & Tenon.) Seeking to make hand-tool woodworking more practical and accessible by making it more strategic, *Worked* turns its eye to some of the more demanding aspects of woodworking—stock prep, workholding, and workflow—and presents ways to work wood without aiming to be a machine.

Cyclone separator with range

Oneida's recently released Super Dust Deputy 4/5 is a cyclonic separator designed to fit nearly any 1-hp to 3-hp single-stage dust collector. Based on the company's Super Dust Deputy, the 4/5 cyclone's inlet (connects to the woodworking tool) fits 5-in. hose and 4-in. hose with the provided adapter. The outlet to the dust collector fits 6-in. hose and 4-in. hose with the provided adapter. It can also mount to any airtight drum or barrel.



Learning by Doing

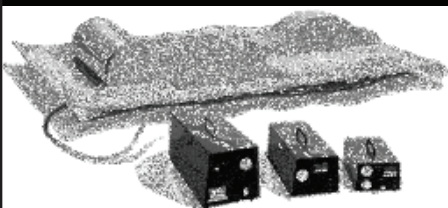
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Kenneth and Angela Kortemeier: A school for simplicity and self-reliance

BY ASA CHRISTIANA



If you were lucky enough over the past four decades to take a hand-tool woodworking class at Country Workshops on a remote hilltop farm in rural North Carolina, joining the happy band of students making shavings with Drew Langsner and sharing the meals Louise Langsner made from her garden, you were doubtless sad to hear that the school closed its doors in 2017.

If you missed out on that unforgettable experience, however, there's good news for you farther up the coast. Off the grid in Bristol, Maine, husband-and-wife team Kenneth and Angela Kortemeier have picked up the Langsner mantle and launched a heartfelt school of their own, adding an extra measure of self-reliance and simplicity.

Following the Langsner model, Kenneth teaches most of the classes at The Maine Coast Craft School, hewing closely to the Country Workshops curriculum, while Angela handles everything else, including tool sales, hospitality, the website, photography, and the big picture.

Offering summer classes only, to just four students and one work-study intern at a time, the Kortemeiers plan to keep the school at its current “human scale,” which fosters the close connections they treasured at Country Workshops. It also fits the off-the-grid life—they harvest solar power and rainwater—that is part of the school's attraction.

Accessibility is another keystone. All classes—from greenwood chairmaking, spoon carving, and timber-framing, to





forging and knife-making, handsaw sharpening, spring-pole turning, and more—accommodate all skill levels, and the small class sizes let Kenneth give less-experienced students more tips and time, and experienced woodworkers extra challenges. “If people have different abilities or different ways of learning, we can cater to that,” Kenneth said. “People get to know each other in a different way in a small group, and we can get to know them better.”

The formula is working. Classes have been full from the beginning, even when the timber-frame barn had a tarp for a roof.

The idea for passing the torch from one couple to the other arose organically, too. Kenneth had interned at Coun-

try Workshops in the 1990s, exchanging work on the farm for classes in greenwood chairmaking with Drew Langsner and John Brown. (He later apprenticed with Brown in Wales, learning the Welsh stick chair.) A career in hand-tool woodworking followed, including 10 years teaching wooden boat building and chairmaking at The Carpenter’s Boat Shop in Pemaquid, Maine.

Over the years, he stayed in close touch with the Langsners, returning to the school occasionally to teach and help out.

In 2016, when the Langsners were slowing down and eying retirement, they surprised the Kortemeiers with an intriguing proposal: Would they like to move south and take over the school?



faces of the craft continued



Tired of the 24-7 demands at The Carpenter's Boat Shop and his lack of control over the curriculum, Kenneth jumped at the chance to run a school of his own. He was the first to move to the Langsner farm, co-teaching with Drew for six months. When his family followed, however, it became apparent that the Langsners's house and life were too intertwined with the school property for the Kortemeiers to live there too.

Already the owners of a rural homestead in Maine, the Kortemeiers realized that they could re-locate the school there, or at least start a very similar one. The Langsners loved the idea, not only giving their blessing but also donating their hand-tool sales business to the cause.

The sales of hand-forged tools from Sweden offered early cash flow as the Kortemeiers built the teaching barn by

hand, with help from their first work-study intern, and the school offered its first summer classes the same year the Langsners retired, 2017.

While guests currently take advantage of Airbnb rentals in nearby towns, the Kortemeiers plan to add yurts onsite for students and guest instructors. A new hand-built timber frame for the office and gathering space has just been completed. "Building the school slowly



lets us avoid debt and grow into this in a more organic way, feeling it out as we go,” Kenneth said. “The school reflects the vision of the classes. We’re building by hand because we can do it ourselves. We’re teaching self-sufficiency.”

The hand tools, self-reliance, and accessibility all work together at The Maine Coast Craft School. Projects are simple yet beautiful and rewarding. Legs and spindles on the rustic Windsors and

ladderback chairs are shaved with a drawknife, not turned, to avoid machine work.

“Lots of people want to do woodworking but don’t want a big, dedicated power-tool workshop,” Kenneth said. “Hand-tool woodworking is small and portable and more affordable. Most folks who come here are interested in woodworking as recreation, and find the quieter

approach, less dust, and lower risk much more approachable.”

“We’re so happy when class is going on,” Angela said. “The workshop is so quiet—just the sounds of hand tools on wood. We feel like we’ve finally figured out what we want to do when we grow up.”



Asa Christiana is a freelance writer, editor, and woodworker in Portland, Ore.

Traditional Plate Rack



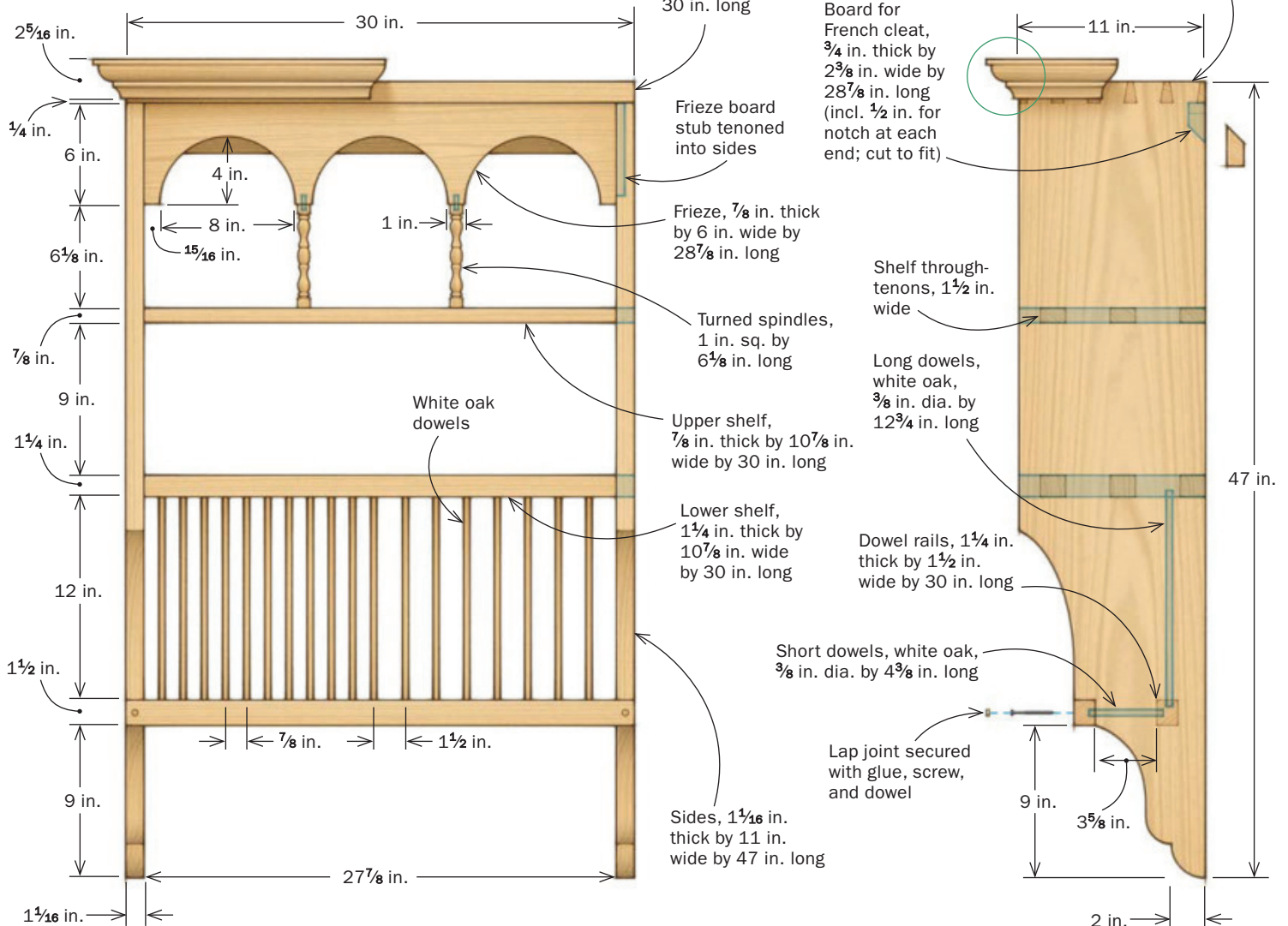
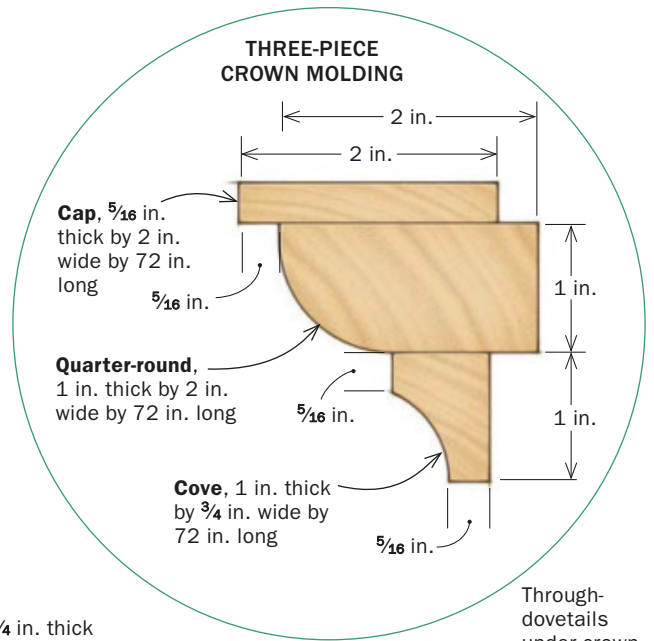
Hone your handwork skills while you update your kitchen

BY NANCY R. HILLER

A traditional feature of many British kitchens, plate racks provide practical and decorative storage. The basic form lends itself to customization for mugs, glasses, bowls, and other kitchenware. Plate racks can also be used to hold dishes for air drying over a sink or drain board, in which case you should use a naturally water-resistant oily hardwood such as teak for all parts that will get wet.

This plate rack is designed with a generous section for vertical storage of plates, cutting boards, and shallow soup dishes. Above this is a shelf for other dishware. At the top, three arched sections make a perfect place for decorative items.

The project offers an opportunity to practice hand-cut dovetails and mortise-and-tenon joinery, create a length of cove molding with a router, and make a French cleat for hanging. The top is dovetailed to the sides, while the shelves are tenoned through



An abundance of joinery

This case is a practice piece for joinery options. The top and sides come together with through-dovetails, the shelves are secured to the sides with through-tenons, the dowel rails fit into notches, and the decorative frieze is joined to the sides with stub tenons into grooves. Hiller makes quick work of it all, mostly by hand.

DOVETAIL THE TOP TO THE SIDES

Tails on the sides.

Mark the top of the sides for the tails by setting a marking gauge to slightly more than the thickness of the top. Lay out and cut the tails on the tops of each side.



Transfer the tails.

With the case top held vertically in a vise (below), lay the corresponding side board onto the end and transfer the tails to the top.



Coping mechanism. Hiller roughs out the pins with a coping saw, and then she chisels to the line.



them, and the dowel rails are fitted into notches. It is also an exercise in accurately laying out and drilling holes for dowels, and incorporates a lesson on the importance of factoring in some play in the vertical fit of dowels to allow for stress-free assembly.

Customize the layout to your dishes

Plate racks are simple forms, but to do their job successfully, they require careful planning. If you intend to customize your rack to fit your dishes, you should mock up the relevant sections in scrap material to make sure you get the spacing right to ease moving things in and out.

To ensure that plates and shallow bowls are stable, the spacing between dowels should be as narrow as pos-



THROUGH-MORTISES



Mortise for the two shelves. Use a handheld drill with a Forstner bit to waste away most of the mortise, and then clean to the lines with a chisel.



NOTCHED MORTISES



Notch the back mortises. The notches at the back of the cabinet (for the shelves and back dowel rail) are made with a series of handsaw kerfs followed by a chisel.

sible while still allowing the dishware to pass between them without getting stuck. This is especially important if you plan to add a row of vertical dowels at the front, as some designs call for.

The distance between the front and back dowel rails will also affect how well the dishes are supported. The plates should drop down into the space between the rails to keep them from rolling out of the rack. But the space between the rails can't be too large, or smaller plates will fall through. Be sure also that there is enough clearance between the top of your largest plate and the shelf above that you can lift the plate over the front dowel rail as you pull it out.

Lay out and cut the joinery

Start with the dovetails that join the sides to the top. Set a cutting gauge to a hair more than the thickness of the top and mark this

GROOVES FOR THE FRIEZE



Get your groove on. To attach the decorative frieze to the case, cut grooves at the top of each side using a router with a guide.

Joinery continued

TACKLE THE TENONS



Locate the tenons. Lay the shelf directly on the case side with their back edges flush, and use the mortises to mark out exactly where the tenons will be on the shelf.



Cope, chisel, and saw. To cut the tenons, first cope out most of the waste on the inside tenons. For the tenons on the front and back edges, use a handsaw to cut near the layout lines, and then fine-tune all the tenons to the line with a chisel.

as the baseline at the tops of the sides. Next, set the cutting gauge to a hair more than the thickness of the sides and transfer this dimension to the ends of the top.

The through-tenons will be laid out with the same setting, so after you've gauged those baselines for the dovetails and pins, mark the same measurement on the ends of the shelves and dowel rails. Even though the dowel rails will not be tenoned, but instead let full-size into notches, it's helpful to have these "shoulder" markings when you lay out the dowel positions.

Lay out the tails with a dovetail template and cut them, then remove the waste with a coping saw and chisels. Decide which end of the top to cut first, and place it in the vise, inside face toward the bench. Set its mating side on the end to transfer the tails onto the pin board, then cut the pins with saws and chisels.

Next, lay out the locations of the through-mortises and notches on the sides. I start with the vertical marks, then move on to the horizontal ones (referencing from the back edge of each side). Mark the outside faces of the sides first, then transfer the relevant marks to the inside face with a square and gauges. Mark the locations in pencil first, then use a knife to score across the grain and a marking gauge to define the edges of the mortises and notches that are parallel with the grain.

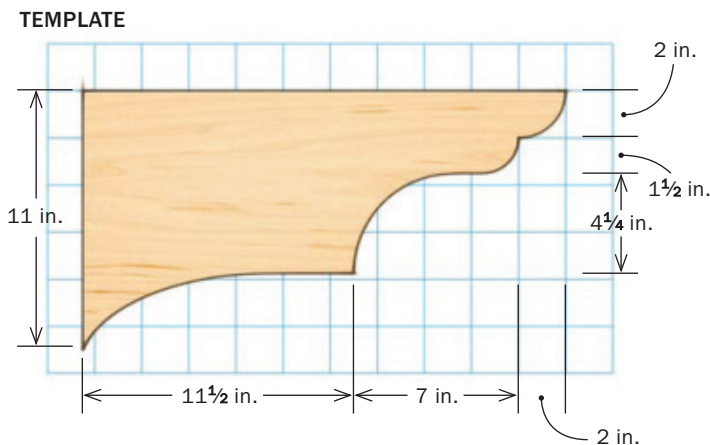


Shaping it up

Once all the joinery except the notch for the front dowel rail is complete, you can shape the sides. After shaping, cut that final bit of joinery.



Trace the pattern. Use the same pattern, flipping it for each side, to trace the shape onto the bottom of the sides.



Start the mortises by drilling out most of the waste, then use a chisel and mallet to clean up the edges. Cut the tenons with a back saw, coping saw, and chisels, then test the fit.

Shape the sides before the last bit of joinery

To determine the location of the notches for the front dowel rail, first cut the decorative profile on each side with a jigsaw, then clean up with a router and pattern-cutting bit. Clean up the inside corner of the quirk with a chisel and mallet.

Now you can lay out the notch for the front dowel rail. Place the rail in its final orientation (with the longer cross-sectional dimension parallel with the length of the plate rack's side). Use a rule or tape measure to



Template rout.

First use a jigsaw to cut close to the line. Clamp the pattern to the side piece and use a router with a bearing-guided bit to cut the final shape on the sides. Go in afterward with a chisel to clean up any tight corners the router wasn't able to reach.

Final bit of joinery.

With a handsaw and chisel, notch for the front dowel rail. Hitter references from the back edge when marking it out just in case the front isn't parallel with the back.



Decorative frieze

The arched frieze with turned spindles adds visual interest and compartmentalizes the area in the top shelf.



Stub tenon. Cut the stub tenon on each end of the frieze with multiple passes on the tablesaw.



Shape the arches. As with the shape of the sides, rough out close to the line, and template rout the final shape of the arches on the frieze.



Drill dowel holes for the spindles. Mark the center point on the top of the spindles and on the squares at the bottom of the center arch. Then drill holes for the dowels that will join the spindles to the center arch. Spindles turned by Julie Jackson (surclewood.com).

ensure consistent distance from the back edge of the side. Trace the rail with a pencil, then use a steel rule to mark the lines with a knife. Cut the notch with a saw.

Dowels

It's fine to modify the length of the dowels and the other vertical spacings to fit your dishes; just be sure to be consistent on all of the parts. And if you're going to alter the vertical spacing for your dishes, be sure you lay out the mortises described in the steps above with these modified locations in mind, not per the drawing that fits *my* dishes.

When the basic joinery is done, lay out the locations for the dowel holes, marking each on center. Be sure you take the diameter of the dowels into account, adding the diameter to the width your dishes require. Carefully transfer the marks from the dowel rail to the underside of the shelf. Drill the holes.

Assemble the plate rack

After pre-sanding all the interior parts, set the dowels dry in the dowel rails.



Assemble

Assemble the plate rack

The plate rack portion is made with dowels that connect the bottom shelf to the back dowel rail. Shorter dowels connect the two dowel rails to each other. No glue is used to set the dowels.

Many holes.

Hiller lays out the center points of the dowel holes on the insides of both dowel rails, on the top of the back dowel rail, and on the underside of the lower shelf, at the back. She uses a Forstner bit and drills $\frac{1}{2}$ in. deep, providing a little extra depth to help during assembly.



Starting at one end, ease the dowels into the holes on the underside of the shelf. The rest of the assembly is far easier with someone helping, because the dowels, not being glued, have a tendency to pop out of their holes. That said, I manage the assembly solo. Apply glue to the dovetail pins and tenons on one side, then fit those joints together. Add glue to the other side and clamp. Check for square and for twist.

Make and mount the crown molding

The compound crown is made in three parts, then glued together. I use pins to hold the parts together during glue-up. Select a board wide enough to produce all three of the separate elements and long enough to make the entire length of molding. This helps to ensure the profile is consistent and the miters will come together cleanly. Rout the quarter-round on one edge of the blank, then rip that off. Next, rout the cove and rip that off. Finally, rip off the rectangular cap. Sand all the parts, taking care to keep their edges crisp, and glue



Connect the dowel rails. Start by setting the short dowels between the two dowel rails. No glue is necessary; it will only make your life harder.



Add the dowel rails to the shelf. With the longer dowels, connect the first dowel assembly to the bottom of the lower shelf.

Bringing it all together

First side first.
Begin with the dovetails on one side. Glue them and connect the top to the side.



Finish up the first side. Next add the upper shelf, then the dowel rails assembly and lower shelf assembly to the first side.



Add the frieze and spindles.

Insert one end of the frieze into the first side. Put the second side in place and knock the joinery home. Then add the spindles. They are doweled into the arch, press fit onto the upper shelf, and secured with pin nails from below.

Set your clamps.

Make sure to apply pressure to the top and bottom of all the joints. Check for square and adjust if needed.



Final construction details

Details

Secure the front dowel rail with a screw and install the French cleat.



Reinforce the front dowel rail. Because the front dowel rail sits in a notch that's open at the bottom, Hiller reinforces the joint with a screw and plugs it.



Add a hanging cleat. Hiller installs the French cleat in the case after glue-up. She notches the ends of the cabinet cleat, mortises the sides of the case, and glues it in. She reinforces the glue with a countersunk screw.

them together, using spacers to ensure consistency. While the glue dries, you can hold the parts together with masking tape or pins.

Miter the crown, being mindful that the quarter-round portion will sit on top of the plate rack, and secure the molding to the case. The miters are pinned and glued, but there's no glue holding the crown to the sides.



French cleat

A French cleat, with its interlocking bevels, is a strong, simple means to hang cabinetry. One mitered piece goes on the cabinet, the other mitered piece on the wall. To make the two cleats, mill a board, then rip it in half with the blade at 45°.

Cut the wall cleat to the interior width of the plate rack. The cabinet cleat will be notched into the back edges of the sides. Lay out the position of the notch on each side with a marking gauge or knife, then cut the cabinet cleat to length. Next, remove the beveled section from each end. Cut the notches with a saw and chisel and test the fit. Now glue the cabinet cleat to the notches.

Screw the wall cleat into studs or with proper wall anchors and lift the plate rack onto the cleat. I finished my plate rack with Osmo 3041 oil. □

Frequent contributor and FWW ambassador Nancy R. Hiller runs NR Hiller Design in Bloomington, Ind.



Install the cleat. Secure the mating part of the cleat to the wall and hang the finished plate rack on it.



To purchase expanded plans and a complete parts list for this plate rack and other projects, go to FineWoodworking.com/PlanStore.

Make Your Own Handles and Pulls

Simple construction opens up endless design possibilities

BY RON KUHN, MATT GIOSSI,
AND HANK GILPIN



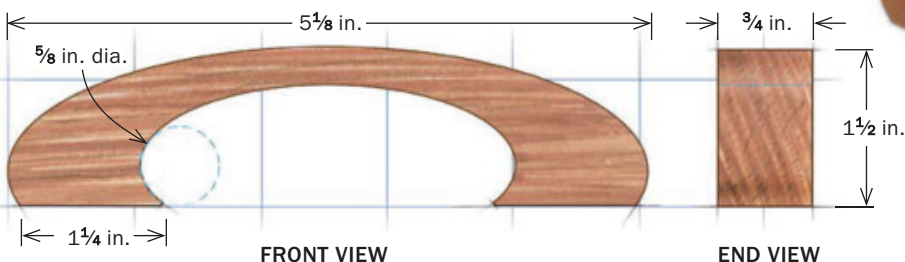
DESIGNING HANDLES AND PULLS

Start with drawing. Have fun. Don't feel trapped in traditional shapes. Play with your sketchbook. Fill the pages with anything that comes to mind. It doesn't have to be great drawing. But if the drawing is daunting at first, find something you like and copy it. Do the build process a few times, and that will be liberating. Then you can get more complicated, moving into shapes and ideas that are more creative and original. You'll know when it's right.

The simplest approach

Screwing from the back of the drawer or door into a pre-drilled hole in the handle is the easiest way to make and attach a handle or pull. And if the handles are too small or delicate to accommodate a threaded insert, it is the only way to do it.

Desoto pull



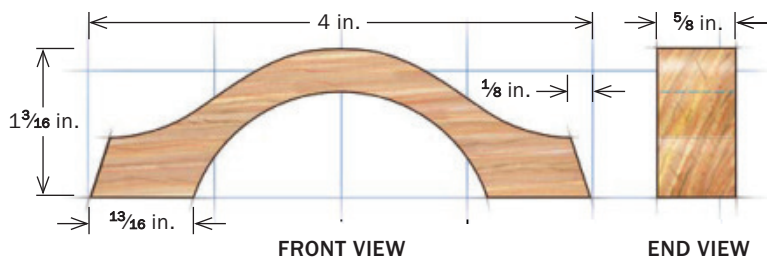
Designing and making wooden handles can be one of the more fun parts of what we do. You can design a fairly simple single-shape handle or a more complex layered pull that has multiple relief cuts and requires a great deal of handwork.

The scale of the piece of furniture and its purpose will completely drive the scale and design of the handle. Is this a pull that will open the heavy drawers of a sideboard filled to the brim, or will it just be



Forstner bit aids in shaping. For this handle, use a Forstner bit in the drill press to cut out the tight radius on the inside of the pull. Then go to the bandsaw to clean out the rest.

Yew pull



Pilot hole first. After drawing the shape of the handle on the stock, mark the center of the foot and drill a hole to thread the screw in when you attach the handle to the door.



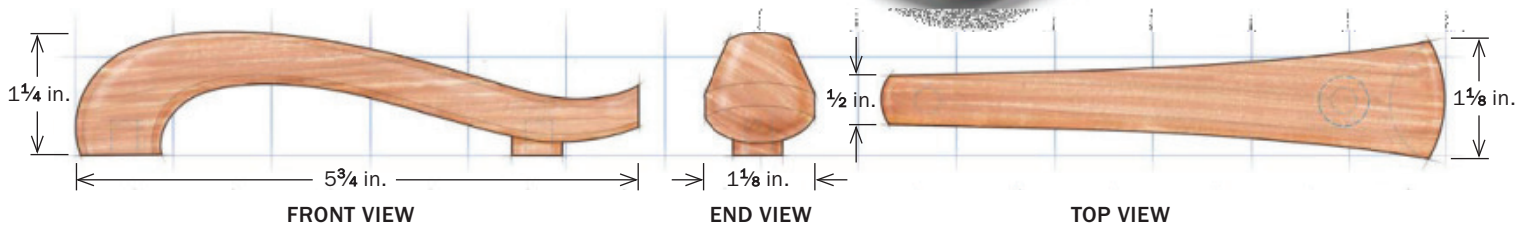
Bandsaw the shape. Drawing multiple pulls on a long blank allows you to work with larger stock until the end. Cut the shapes on the bandsaw and then take them to the bench to fine-tune with hand tools. Use multiple kerf cuts to notch out the curve, and then saw and clean the shape to the line.



Asymmetry captivates

Nobody ever said handles and pulls must be symmetrical, and this example makes that clear. Reduction cuts, templates, and a bandsaw can get you close to finished.

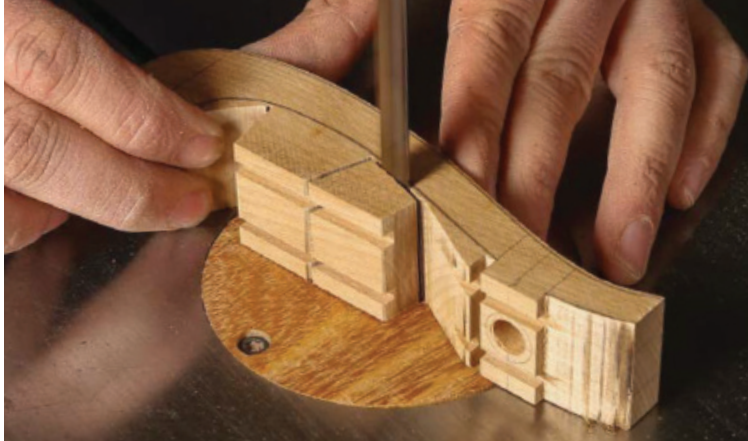
Vanity pull



Reduction cutting. At the tablesaw, make preliminary cuts to create points that are locked in. This handle has two ripcuts and two crosscuts that locate where the threaded inserts will go.



Drill and shape. After drilling for the threaded inserts, bandsaw the curves on the top and bottom of the handle, cutting kerfs perpendicular to the line and then sawing to the line.



used for two small doors on a cabinet in the front hall?

You can attach your handles and pulls with a simple screw from the back without using hardware, or you can use hardware such as threaded inserts.

Remember to have fun and don't feel trapped in traditional shapes. We will sometimes fill five pages in a sketchbook with ideas before we even start to figure out the details of a good pull. There are a few things that are important to keep in

Tackle the taper. Use a paper template to flex over the curve of the top and trace the shape of the taper onto the handle. Then cut that taper out on the bandsaw.





FINESSING AT THE BENCH

Once the machine work is over, the final stage is cleaning up and refining the shape with hand tools.



Bottoms up.
Working on the underside of the pull first, hold the pull in a hand screw and set that in your bench vise. Use a chisel to shape the foot that will hold the threaded insert. File the curves clean and smooth.



Right side up.
Using a simple holding fixture, screw the handle to the fixture and clamp the fixture in the bench vise. Smooth the top of the handle with files.

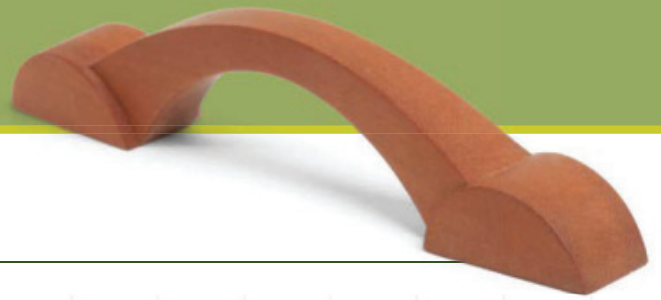
mind while designing pulls and handles: What is the construction process? Can I make multiple pulls from a single blank? Can I shape three pulls at once? Can I cut and shape 90% of this pull on a tablesaw before I cut out the handle? Particularly if you have a batch of like pulls to make, the process of cuts and steps involved has to be a key thought. When it comes to making multiple pulls, the more you can do on a machine the better. But always add a little something you can only do by hand!

The main point is to encourage drawing. It doesn't have to be great drawing. It



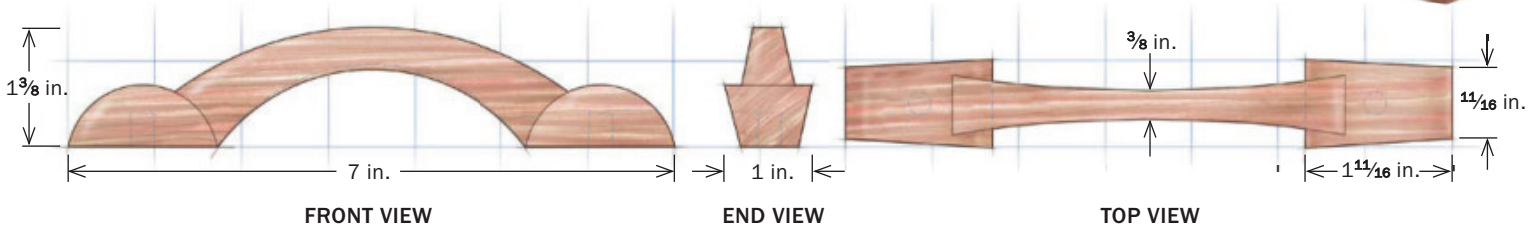
A nice surprise.
A little gouge work underneath adds texture and lightens the front of the pull.

Symmetry with curves and depth



This pull's complexity and panache derive from tapering curves and a chiseled step.

Blip pull



Establish your lines. After drilling for the threaded inserts, go to the tablesaw and crosscut two shallow kerfs on each side of the pull to establish where the curve on the bottom starts and stops. Then cut two deeper angled kerfs into the top of the pull to establish where the top curve begins and ends.



Kerf and cut. Waste away the shape of the curves on the bandsaw with a series of kerf cuts and then curving cuts to the layout line.

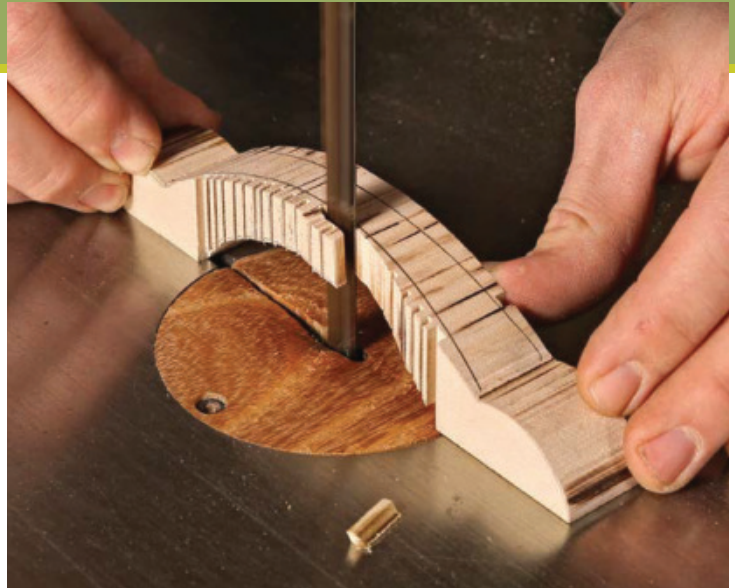
doesn't have to be three-dimensional. It can be a whole bunch of silhouettes and simple sketches. Cultivate the creativity that's generated by drawing and do not be trapped in the first thing you draw. The key is to sit back and let it go. Let it sit. Come back to it. Think about it. Revise it. You'll know when it's right.

If drawing your own shapes feels daunting, find something you like and copy it. Do the process a few times. That will be liberating. Then you can get more complex, branch out, and start moving into shapes and ideas that are more experimental. When we design things, the idea is that it should look good, but it shouldn't scream "look at me, think about me!"

Hank Gilpin, Matt Giossi, and Ron Kuhn work in Hank's shop in Lincoln, R.I.



A flexible template. Use stiff paper to make a template that will mold to the shape of the curve. Trace the template onto the pull, and then cut out the tapering curve on the bandsaw.



Finish at the bench. Use a handsaw to establish the inset of the middle of the pull, and then clean that up with a chisel. Use files and sandpaper to clean and smooth the pull to a finished state.



Add an easy finish. After sanding to 320 grit, softening all the edges, burnish with an extrafine ScotchBrite pad and a cotton T-shirt, and apply three light coats of Watco Danish oil to finish.

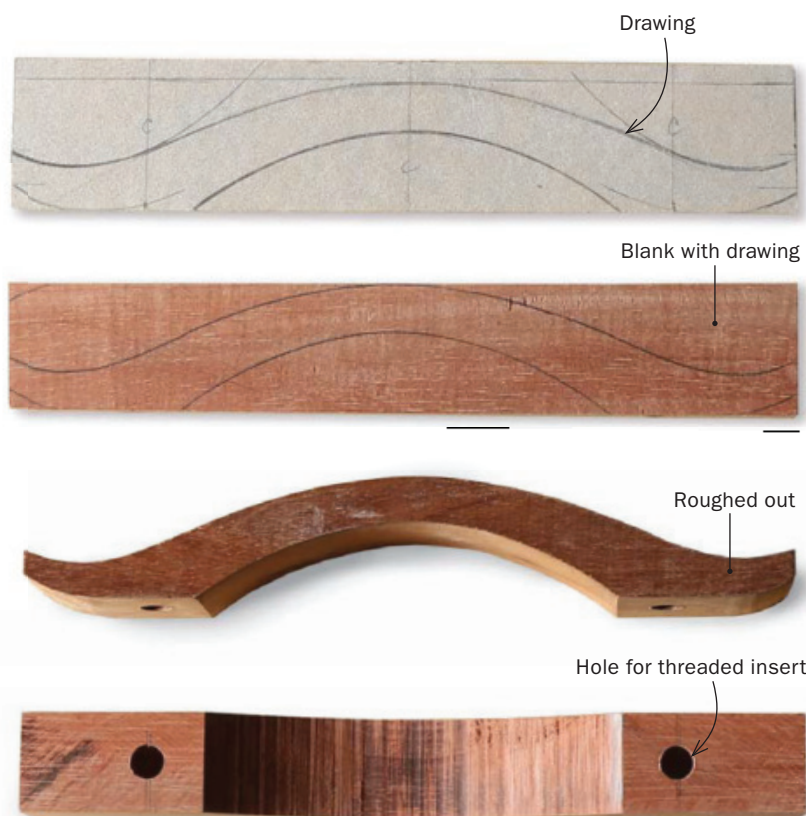


Ribbon

Ribbon pull



The Ribbon pull has become a shop favorite because it has a lot of versatility in its design. Depending on the species of wood chosen and the dimension of stock you work from, the result can be light and graceful or sturdy and robust. We've made them in pearwood, Cuban mahogany, sea grape, yew wood, bubinga, and even ipé, which was the largest batch (around 64 pulls). It is an excellent example of hand shaped, tapering crowns. The gouge detail on the underside at the ends is an unexpected bit of handwork, mostly to please the maker as it is not often seen.

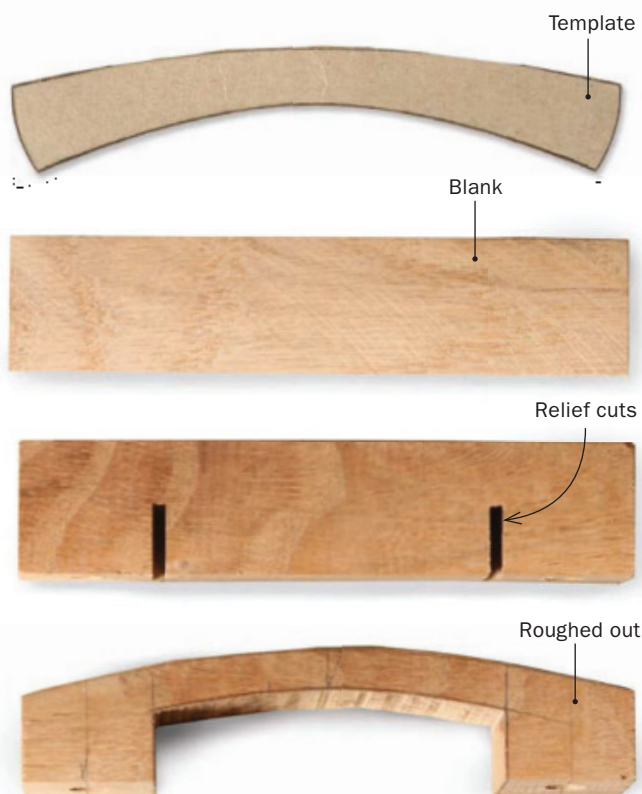


Arched

Arched pull



The Arched pull becomes playful when you plan several of them on one piece, and you can orient them in different ways to almost make them look like they are different designs, working together in one vocabulary. They are fairly easy to make if you pay attention to the process of bandsaw cuts, and most of the relief shaping is actually on the underside. In short, they look trickier to make than they actually are, and though they aren't quite as jovial as the bubble pulls, they certainly stand out.





Template



Blank with drawing



Roughed out



Bubble pull

The Bubble pull is pure fun. Its flashy form brings instant joy. It showcases an immense amount of handwork. This is a case where you could use the pull as a primary detail, a true flair on an otherwise conservative chest of drawers or side table. We first designed these for a row of built-in cabinets, where they played perfectly off floating panels.

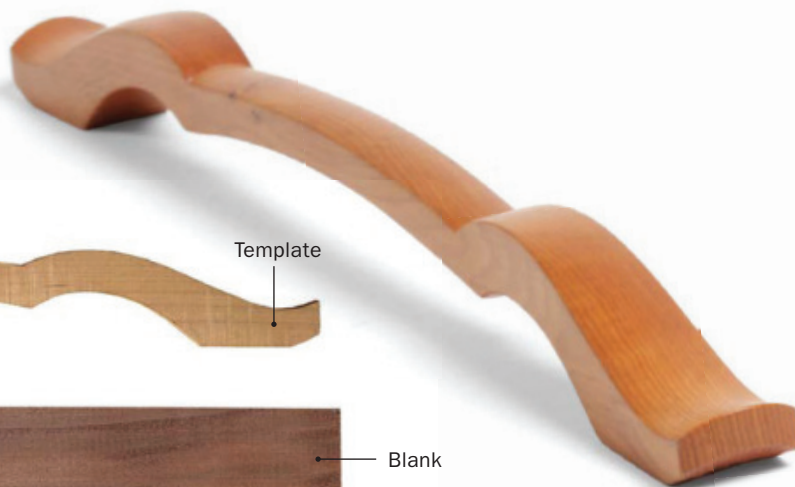
Long ribbon pull



Template



Blank



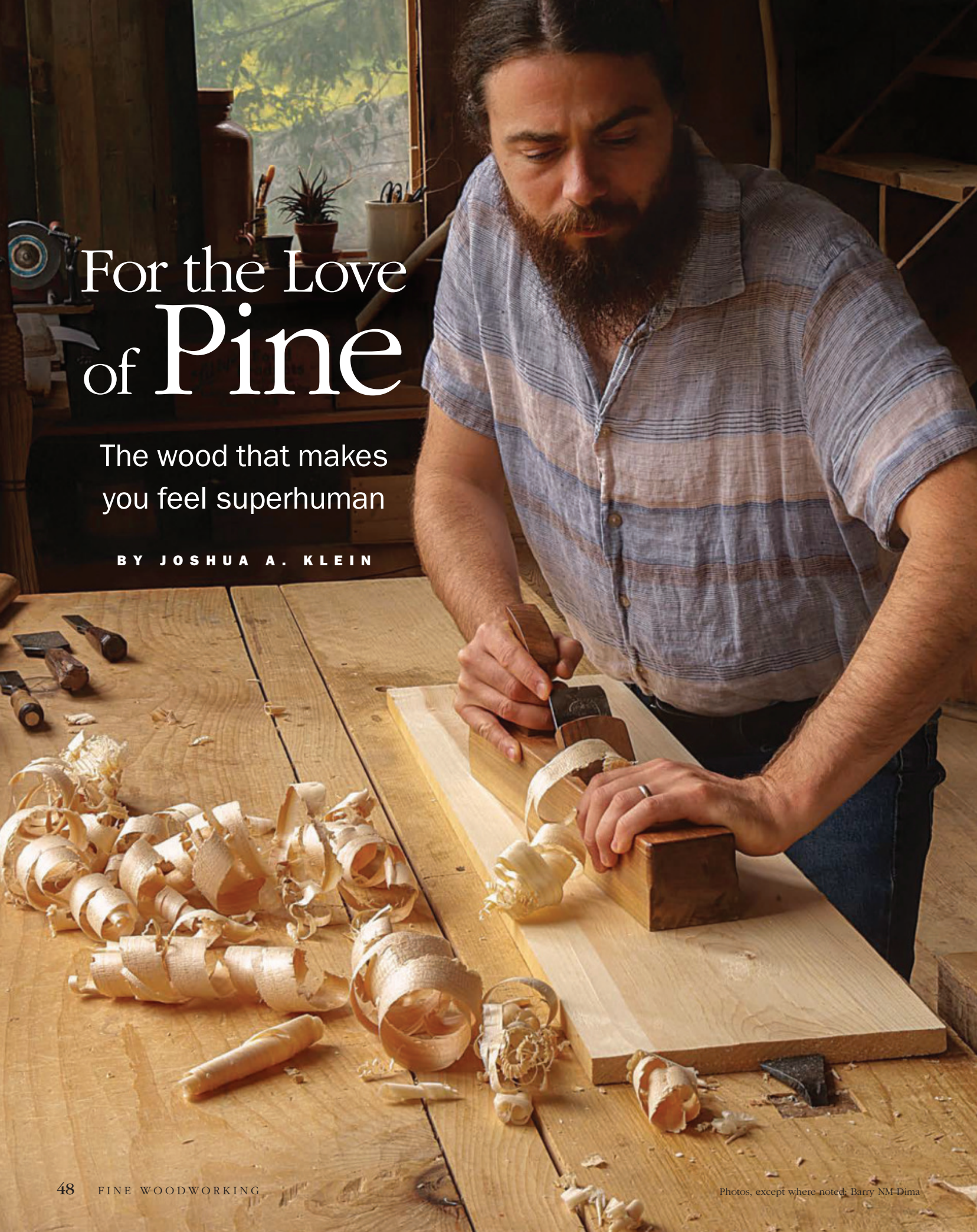
The Long Ribbon pull is an extended version of the Ribbon pull we developed to work on larger scale kitchen drawers and doors. We found it was impossible to scale up the Ribbon pull to suit a refrigerator door. It compromised the elegance and felt awkward. We needed to take the Ribbon's primary element, the symmetrical fanned tails, and elongate them in a way that wasn't clunky. The transition to the arched middle section was the breakthrough modification and presented another opportunity to showcase some handwork.



Blank with drawing



Roughed out



For the Love of Pine

The wood that makes
you feel superhuman

BY JOSHUA A. KLEIN

There is no wood I'd rather work than Eastern white pine. As a hand-tool woodworker, the ability to plane a chunky curl off a creamy smooth board gives me a sense of power that most folks don't associate with working by hand. There is a reason that pine was used so extensively in historic furniture before the mechanization of the Industrial Revolution: It works like a dream. The good news for us is that these big trees, though massively diminished in the overharvesting and clear-cutting of the early colonists and the subsequent logging industry, are still around, and they're still as workable, so pine remains an optimal choice for furniture, and also for enjoying yourself in the shop.

Wide boards are accessible and inexpensive

Who doesn't love wide boards? Visiting historic houses or living-history museums, one of the most common remarks I overhear from other guests is how remarkable the wide boards are. It's not uncommon to see boards 20 in. wide in historic homes and furniture. Especially when they're prominently displayed in flooring or tabletops, we can't help but wonder at the size of the tree they came from. But as hard as it is to believe, no one in the 1700s drooled at boards that wide. These boards were practical because they were local, abundant, easy to work, and inexpensive. Wide boards were barely more than the pre-industrial equivalent of plywood—economical, but not out to impress.

Since moderns like us relish the single-board glory of antiques, it's noteworthy that to this day, wide pine remains relatively affordable and available.

Ease of construction

Craftspeople love wide boards for reasons other than their majesty and economy: Building with them is just so dang quick. When you have access to wide stock, edge jointing is rare. This task is so time-consuming in a hand-tool shop that traditionally craftspeople tried to use the widest stock they could find. And when they did join edges, they weren't particularly fussy about it. Jointing added so much labor in planing square and straight, gluing, and planing flush, that it's typical to find the underside/inside of the boards out of plane with each other and slathered in hardened glue squeeze-out. This no-nonsense approach is what furniture historian Myrna Kaye calls "economy of labor." Only the show surface needed to look good.

Edge joints require surfacing, jointing the edges, gluing, and then resurfacing to flush the boards to each other. In contrast, if you have a wide enough board, you can build a chest out of it without any edge jointing. Think about the time savings on a small tabletop made of one board: Just plane it and cut it to size. Large dining tables can be two boards—only one joint. And the labor-saving benefit of wide stock also applies for those who use machines. However you work your wood, if you've ever spent time edge-jointing and gluing up 8-in.-wide boards to make a top, try a single-board top sometime. It feels like cheating.

What milling you do need to do is much easier on pine than hardwoods. Probably 75% of my planing is done with a heavily set jack plane. With this tool, I can take numerous deep bites without fatigue. When I work in hardwood, however, I have to take about half as much material per stroke. This difference adds up considerably by the end of the project. Sawing is faster, too.

EASTERN WHITE PINE (*PINUS STROBUS*)



WHERE IT GROWS



PROPERTIES

Specific gravity at 12% moisture content:
0.40

Average weight, dried:
25 lb./cubic foot

Janka hardness:
380 lbf

Radial shrinkage:
2.1%

Tangential shrinkage:
6.1%



Eastern white pine is wide, clear, and cheap, making it an excellent candidate for fast, beautiful, wallet-friendly projects, like this blanket chest made from single boards.

Wonderfully workable

Eastern white pine's softness makes it a joy to use. From planing to sawing to joinery to planing again, you'll rarely have to fight the wood to get the results you want.

SAWING



Long rip? No sweat. When ripping 4/4 pine with his 4-tpi rip saw, Klein can progress at about 1 in. per stroke, and it's enjoyable. Ripping hardwoods isn't terrible either, but it does take him about twice as much time. "Pine, by contrast," he says, "makes you feel superhuman."

MORTISING



Mortise in minutes. Pine's softness means even heavy joinery, like deep mortises, is light work. But use hardwood for smaller-scale mortise-and-tenons, like those for chairs, since they're more vulnerable to breakage in soft pine.

Light weight

Furniture makers don't tend to think of lightness as a beneficial characteristic in wood. For some reason, people seem to believe that furniture should be heavy. I've seen a lot of 20th-century oak blanket chests, and I always feel sympathy twinges in my lower back for the owner. A blanket chest that will sit in one spot, holding family treasures, doesn't need to weigh hundreds of pounds. It should be made of pine.

As an antique furniture restorer, I've moved many pieces out of my clients' homes, into my van, and into my studio for repair before loading them back up to return home. I'm always relieved to be called out to repair a pine piece. The owners also benefit from the weight savings as they use the piece and move it around to meet whatever hospitality need arises. Lightness is also helpful during the construction process. It's no big deal to haul pine

DOVETAILING



Soar through dovetails. Fast sawing and chopping are both at play when cutting dovetails in pine. Come assembly time, the wood's softness lends a hand again, allowing an otherwise tight joint to smooch together nicely without splitting the boards.

PLANING



Stay sharp and pine will treat you well. Pine will crush or tear out if your edges aren't razor sharp. Thankfully, with a honed iron on Eastern white pine, your show surfaces will shimmer off the blade.

boards around or to lift an assembly onto a workbench. Every time I've manhandled larger projects of denser hardwoods, I feel it at the end of the day.

But I suspect some readers are wondering, "If we want to build for future generations to admire and appreciate, wouldn't it be better to use something more robust, such as maple or cherry? Won't pine get dented and broken?"

I think it's helpful to think of wood selection in terms of the Goldilocks principle. The ideal wood for any project is one that's hard enough to withstand the use it will see over its life, but soft enough to be easy (and therefore enjoyable) to work. The reality is that many antiques were made of pine and have withstood centuries of use. Six-board blanket chests, chests of drawers, bookcases, benches, and tables of all sorts and sizes are often completely or mostly made of pine. And they're still standing.

Fine finishes

Pine's notoriously blotchy thanks to its uneven density, but that doesn't mean it's unusable. From subtle coloring to full-on painting, there are numerous routes for success.

Pine even resists abrasion. Consider that pine was one of the go-to woods for drawer sides and runners, the components that receive more wear than any others. Pine drawers survived more than a century or two of regular use, sliding in and out, before they wore down significantly. The ubiquity of pine drawers in historic furniture tells me that modern woodworkers' fear of pine's softness is vastly out of proportion.

Selecting the right wood for a given use is a matter of experience, but I wouldn't recommend trusting only your own experience. Our craft was built on centuries of observation and wisdom. Since pine has been used successfully generation after generation, I am suspicious of modern claims to the contrary.

Some fear that the quality of pine lumber today doesn't match the old-growth boards that were used to make these antiques. I won't dispute that the fast-grown material around now is not the same quality as the old-growth lumber, but good stuff is still available. If you want something denser, take a look at the growth rings on the end grain. Anything less than 10 rings per inch will be pretty soft. I like boards with rings closer to 20 per inch, but I've also built with fast-growth material and found it perfectly sufficient for interior use. Indoor furniture doesn't need the rot resistance of old-growth material; it just needs to be sturdy enough for its purposes.

Downsides

Despite its upsides, pine is not optimal for all situations. Any softwood kitchen countertop would get pretty ugly after years of hard use; those dings and dents would fill with food and discolor over time. The tops of historic kitchen tables were often scoured and bleached ("scrubbed," as antiques dealers say) from the maintenance necessary in keeping those surfaces hygienic.

Stains and dyes often make pine blotchy. This happens in woods with uneven densities, since they tend to absorb colorants inconsistently, and dark blotches appear in areas that absorb more stain.

TIP



Go darker, not deeper. You can also successfully color pine with diluted dyes or gel stains that don't penetrate as deep, thereby avoiding highlighting the pine's blotch-prone uneven density.

PRETREAT



Apply a touch of colorant and a layer of dark shellac. One of Klein's preferred methods for working around pine's blotchiness is to go light on the colorant (top) and use a darker shellac (bottom) as either the base layer or the final finish.

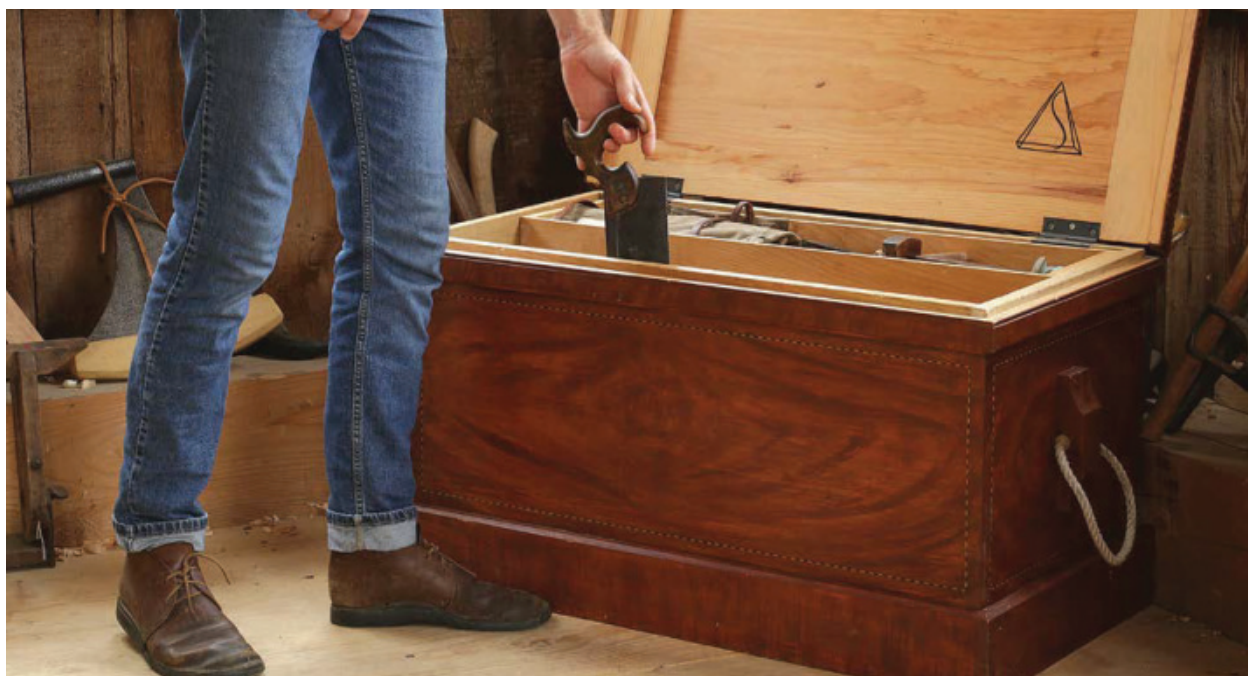
PAINT



Painted pine's a traditional option... Pursuing functional joy, Jim McConnell's chest balances the practicality of pine with the playfulness of painted patterns.



... that's still evergreen today. Although his design is more contemporary, Barry NM Dima knew from the outset he was going to use milk paint on the base on this coffee table as a counterpoint to the thick, natural Eastern white pine top.



Get the grain and paint with grain painting. Klein's tool chest is Eastern white pine, but you wouldn't know it at first glance. He experimented with grain painting on the outside, using colors and patterns that mimic mahogany. He even painted the banding. This traditional technique let him combine the working benefits of pine with the look of a more expensive wood.

See the photo captions for my solutions to this.

As for strength, though small pine tables were common, smaller-scale joinery would be much stronger in hardwood. Pine's softness means its tenons break more easily than tenons in maple or birch. This is, consequently, why you don't find antique pine chairs; chairmakers knew they should use hardwood.

The softness of pine means there's another important aspect to consider: tool sharpness. Your planes and chisels need to be razor

sharp at all times or the grain will not cut cleanly. The end grain is especially vulnerable to tearout when pared with subpar edges. However, in practice, traditional furniture construction has very few show surfaces with exposed end grain, so its need for sharp edges is not as big a deal as you might think. Plus, in material this soft, your tool edges will last a long time. □

Joshua A. Klein is editor-in-chief of *Mortise & Tenon Magazine*.



Circular Sunburst Veneer Top

This adaptable method relies on fundamental veneering

BY BRUCE EATON

The few pieces of furniture I've made for our home have been relatively simple and quick to build. A couple of years ago, we moved into a new home and after a year or so without a coffee table, I made one based loosely on Art Deco tables with radially matched veneer and raised edging (I describe how to make the edging in this issue's Master Class, pp. 74–80). Since making that first table in black limba wood, I've made a couple more versions, refining my process while testing out the look in cherry and in oak, which I'm using here.

Adaptability is one of the strengths of this sunburst design. You can vary the num-

ber of segments in the burst, the type of wood, and the diameter of the top, while still applying the methods I describe in this article. Even if you change the type of burst pattern—I use a radial burst—your approach will need only a slight tweak.

Drawing helps with angles

The veneer pattern is built up from a bunch of wedge-shaped segments that make a circle, which means angles—but don't let that scare you. A tried-and-true method for tackling angles without guesswork is to use a drawing. With one in hand, there's no math involved since you can just set a bevel gauge to the drawing.

To start, draw the tabletop on MDF or paper and use a compass to step off the segments around the perimeter. The top veneer comes together in two half circles, so you're shooting for an even number of segments. To make them narrow enough to fit within the width of my quartersawn veneer, I ended up with 26 segments. You may require a different number of them.

Start with the segments

I like to use quartersawn veneer with a consistent grain. This lets me slip-match my segments for a radial burst. If you book-match your veneer with matching grain at each joint, purchase enough sheets (plus

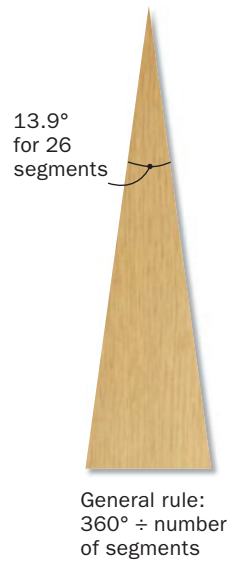
Create the segments



Trace the segment pattern onto a short stack of veneer. Eaton makes a template of the pattern, a wedge cut to the correct angle. He uses it for fast, repetitive marking on three to four pieces of veneer at a time.



Saw through the stack using a straightedge and backer board. The straightedge is a piece of MDF that Eaton holds in place by hand. The backer board protects both his bench and the bottom face of the veneer.



Joint the edges using a shooting board with an angled fence. This quick-to-make jig holds the segments at the appropriate angle for truing up their edges so they're glue-ready later. To hold the segments flat to the jig, Eaton tops them with a wedge of $\frac{3}{4}$ -in. MDF.

a couple extra) so you can use the same part of each sheet for each segment. With my table's slip-match and straight grain, matching is almost guaranteed.

My tool kit for creating the segments is minimal. To lay them out, I use a wedge of plywood trimmed to their size. To cut them out, I grab a veneer saw and a couple of important helpers. First is a straightedge that keeps my saw in line and the veneer flat. Second is a backer board, which helps protect the bottom face of the veneer.

Tape the veneer twice

With the pieces cut out, joint their edges and assemble them into half circles. I joint



Mark mating edges. Eaton's table ended up with 26 segments, all of which need to get glued together. To keep the parts in order, he labeled each edge.

Masking tape in back for now

Tape the backs of the segments to make a half circle. Stretch masking tape across each joint to keep it closed. Add segments until you have two halves. Add extra tape at the middle of the semicircle to stabilize the segments' fragile tips.



Clamp the halves together, then joint them simultaneously. Clamp the halves between strips of MDF to keep them rigid. You may need to plane from both ends because the grain reverses at the center.



them using a handplane and a dedicated shooting board that has a fence screwed down at the angle of the segments.

To create the half circles, first use masking tape to attach the segments on their back faces. Later you'll add proper veneer tape to the front, but the masking tape holds the assembly together until then. Stretch the masking tape over the joints to keep the seams closed. Before taping the two half circles together, saw off any extra from each semicircle and joint their mating edges. Add masking tape to the back when you're finished to complete the circle.

With the backside of the veneer taped, flip the circle over and apply veneer tape to the front. Avoid layering the tape more than two or three high or you risk denting the veneer when you glue it to the substrate. Afterward, remove the masking tape from the back.

You'll need a balancing veneer on the top's underside to prevent warping. In this case, I used the same veneer, and the same jointing and taping techniques that I used for the top layer. But for simplicity's sake I joined the pieces in rectangular strips rather than a sunburst and created a square rather than a circle.

Glue to the substrate

For the top's core, I used a square of $\frac{3}{4}$ -in. MDF sized slightly larger than the circular veneer layout. You can press both layers of veneer at the same time or you can do

Veneer tape in front for glue-up



Tape the halves in back to hold the circle together. Now jointed, the halves are ready for masking tape on their back faces. As before, pull the tape taut across the seam.

one side for an hour or so, remove the assembly from the press, and then veneer the other side.

I use a vacuum bag for adhering the veneer; if you don't have a vacuum bag, consider using clamps, platens, and cauls. It's important to stay organized and follow a set of rehearsed steps to minimize mistakes. When I put the whole assembly—the substrate and two layers of veneer—in the press, the top veneer is facedown against the melamine platen. The bottom veneer is faceup under a mesh or caul, which also distributes the load from the bag; without one, you're more likely to get wrinkles or bubbles because the bag did not solidly contact the entire veneer.

I first apply glue to the top of the substrate, spreading it with a roller. You want



Apply veneer tape to the front. Stretch multiple short pieces across each joint and then one long piece along its length. To minimize denting, don't stack more than two or three strips of tape. Shorten or stagger the tape toward the center. Finally, remove the masking tape from the back.

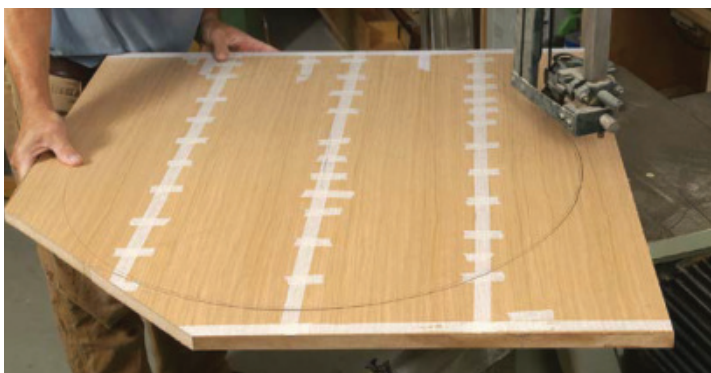


Glue the veneer to the substrate. Eaton uses a square of $\frac{3}{4}$ -in. MDF a couple inches larger than the diameter of the veneer circle. He applies glue evenly to the substrate only, not the veneer.

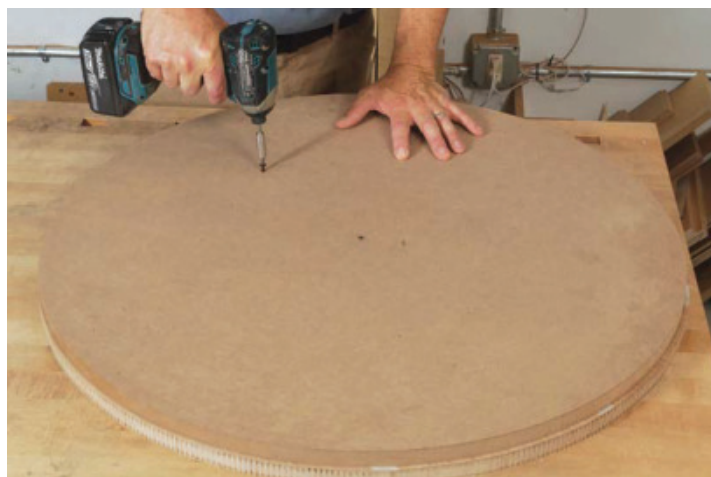


Painter's tape keeps the veneer from slipping in the vacuum press. The tape holds the layers in place as you slide the panel into the press and also secures the package as the press tightens.

Shape the circular top



Bandsaw the circle. Stay $\frac{1}{16}$ in. from your line. Eaton traces the circle on the bottom balancing veneer, where he can use a trammel point without fear of the centerpoint showing on the final table.



Secure a circle template in two places. Screwing it to the top's underside in two places keeps the MDF from spinning, which could spoil the top if the center screw wasn't in the exact center.



Pattern-route the top to shape. To keep the piece secure, Eaton uses beefy clamps and hangs only a bit of the top off the bench. This means he can rout only a little before having to rotate the top, but it keeps the setup vibration-free.



to spread the glue so it's just opaque and even across the entire panel. If it pools or you're getting big ridges, push or roll some glue off the panel to thin it out. Too much glue can bleed through, wrinkle, or bubble the veneer. After spreading the glue, position the veneer. Then repeat for the bottom face.

Before placing the assembly in the vacuum press, I use gentle painter's tape to keep the veneer from sliding around on the MDF. It comes off easily after glue-up. The same goes for any glue that gets on the bag or platen.

Cut the top to shape

After the glue dries, you can cut and rout the top into a circle. I rough in the shape at the bandsaw before finishing with a circular MDF template. To make the template, I used a router on a trammel.

To shape the panel, I first transfer the sunburst's center to the panel's underside. Then I use a compass or trammel to draw the circle on the underside to keep from marring the sunburst. After rough cutting the top, center and screw the MDF pattern to the underside and flush-cut with a router.

Finally, you can remove the veneer tape. I spray the tape to remove it, working in small areas to avoid dampening the panel more than necessary. You may need to spray each area more than once.

Now you can prep the panel for your preferred finish. □

Remove the veneer tape. Spritz it with water, letting it soak in for a minute or so, and then use a card scraper to gently lift the tape off. Typically the long piece will come off with the first spritz and then a second spritz is needed to get the smaller pieces. Sand the top, being careful not to sand through the veneer.

Bruce Eaton is a furniture maker in Boxford, Mass.

Turn a Lidded Container

An ebony finial caps this graceful cherry keepsake box

BY MATT MONACO

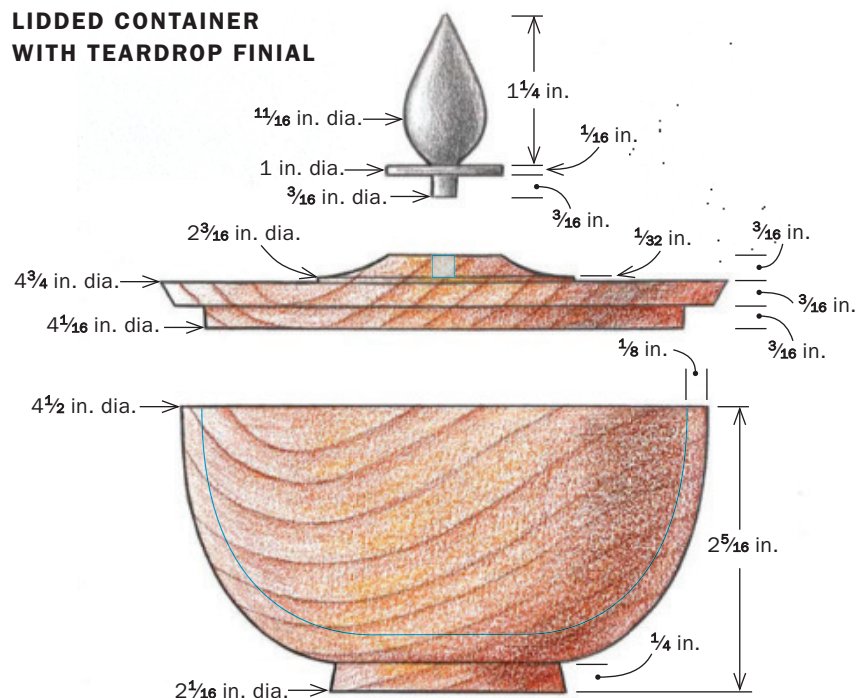


This simple container, perfect for storing keepsakes, is designed to draw the eye and hand with the appeal of form, line, and detail. I made the lid and base with black cherry and turned the finial from ebony. Although exotics can offer highly figured grain and an array of colors, a domestic hardwood such as cherry is ideal for a piece that will see frequent use. With greater fiber elasticity, cherry is less likely to fracture over time than many exotic woods with their hard, brittle fibers. For aesthetic reasons, I prefer to make the lid and base from the same species, similar in grain tone and pattern. But most important is that both pieces be air- or kiln-dried, so that the snug fit of lid to base will remain true over time.

Getting ready

After selecting my base and lid blanks, I cut them round on the bandsaw and

LIDDED CONTAINER WITH TEARDROP FINIAL



Shape the exterior



Secured with a screw. After bandsawing the base blank round, Monaco mounts it on a worm screw chuck, then snugs up the tailstock to begin shaping the exterior.

Bringing the basic shape into being. Use a $\frac{1}{2}$ -in. deep-fluted gouge to true up the face and exterior of the cylinder. Then, with a $\frac{3}{8}$ -in. deep-fluted gouge, shape the exterior curves with a series of downhill push cuts.



Fine-tuning. With the shape established, Monaco uses a $\frac{3}{8}$ -in. spindle gouge with bevel-rubbing push cuts to refine the surface.



marked the top of the lid and the bottom of the base. On the marked sides I'll turn a tenon that will mate with a four-jaw chuck for much of the turning.

I started with the base, mounting it between centers with a worm screw in the headstock. After truing up the blank's face and perimeter, I began shaping the exterior with downhill push cuts using a $\frac{3}{8}$ -in. deep-fluted gouge. As I refined the exterior curves, I switched to a $\frac{3}{8}$ -in. spindle gouge and downhill bevel-rubbing cuts.

If I need to achieve specific dimensions, I use a parting tool and calipers to establish various diameters before shaping the curves of the container. But most of the time, as I did here, I turn by eye—designing as you go is one of the great pleasures of lathe work.

When it was time to turn the tenon on the bottom of the base, I set dividers to the inside span of the four-jaw chuck, and transferred that dimension to the base. I cut the tenon with a $\frac{1}{2}$ -in. deep-fluted gouge in sweeping passes; then I cleaned up the tenon with a $\frac{3}{8}$ -in. shallow gouge, being sure to create a 90° shoulder so there would be no gaps between the workpiece and the jaws of the chuck.

Exploring the interior

With the tenon turned, I removed the base from the worm screw chuck and remounted



Then a tenon. At the bottom of the base, Monaco makes a tenon sized to his four-jaw chuck. The tenon will enable him to mount the workpiece to hollow the interior. Afterward, the tenon will be trimmed down and become the vessel's foot.

Excavate the interior



Remount and ream out. After backing off the tailstock, Monaco reverses the blank and mounts the tenon in a four-jaw chuck. With the lathe running slowly, he drills a depth hole, using blue tape around the bit as a depth stop.



Open up the inside. With a $\frac{1}{2}$ -in. deep-fluted gouge, make a series of progressively wider and deeper hollowing passes toward the center depth hole.



Work the walls. Using bevel-rubbing push cuts with $\frac{1}{4}$ -in. and $\frac{3}{8}$ -in. deep-fluted gouges, Monaco establishes the vessel's final wall thickness.

it, inserting the tenon in the four-jaw chuck. After truing the face, I drilled a depth hole into the center of the blank. I wound tape onto the bit to ensure the hole stopped $\frac{1}{4}$ in. shy of the chuck's jaws.

Next, using a $\frac{1}{2}$ -in. deep-fluted gouge, I took hollowing passes toward the middle of the container's interior. As I enlarged the excavation, I made sure to retain a wall thickness of $\frac{1}{2}$ in. or so. I continued refining the interior with $\frac{3}{8}$ -in. and $\frac{1}{4}$ -in. deep-fluted gouges, establishing the final wall thickness with bevel-rubbing push cuts. Then I finished hollowing the interior by making finish cuts with a $\frac{1}{2}$ -in. deep-fluted interior gouge, going just slightly beyond the depth of the hole I drilled.

Before removing the base from the lathe,



Finessing the flatter parts. A $\frac{1}{2}$ -in. deep-fluted interior gouge, with its snub-nosed grind, lets Monaco finish the bottom of the interior. Before removing the base from the lathe, he applies oil and wax.

Create the foot



In order to turn the foot, Monaco makes a jam chuck to fit the top of the vessel. He uses the lid blank as the jam chuck.



Make a jam chuck. To use the lid blank as a jam chuck, Monaco first creates a tenon (left), which he makes with the blank between centers. Then, with the blank's tenon mounted in the four-jaw chuck, he cuts a shoulder (right) sized to the opening in the base.

Finish the foot.

After mounting the base on the jam chuck, Monaco makes final refining cuts to the lower curve of the base and transforms the tenon into a foot. He dishes the bottom of the foot slightly so the vessel will be stable.



Cut it free at

the foot. Having oiled and waxed the foot, Monaco uses a flush-cutting saw with the lathe stopped to cut through the waste plug below the foot.



I used cloth-backed abrasives to sand both the interior and exterior, alternating the spin direction after each grit. Then I buffed the surfaces with a Scotch-Brite pad before applying a food-safe oil to the spinning container. I followed that with wax, buffing it out with a lint-free rag.

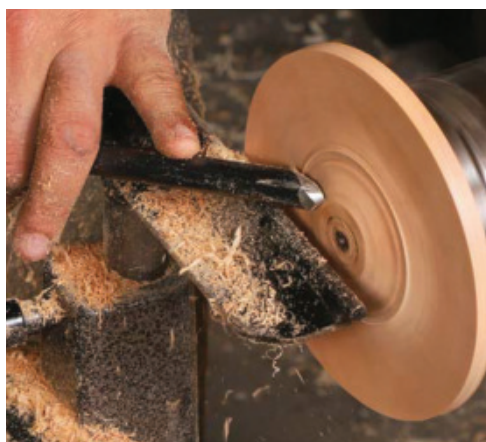
Reverse the base to finish the foot

To complete the base, I made a jam chuck sized to fit inside the rim. I often make jam chucks from scrapwood, but in this case, I used the lid blank to make a jam chuck; when its duty as a jam chuck is over, I shape it further and it becomes the lid.

To make the jam chuck, I mounted the lid blank between centers and trued up

Make the lid

Turn a dovetailed recess. On the underside of the lid, Monaco makes a shallow recess to fit the outside dimension of the four-jaw chuck. He creates the recess with a push cut using a $\frac{3}{4}$ -in. square-end scraper. Then, with a $\frac{3}{8}$ -in. spindle gouge, he cuts a fine bead at the perimeter of the recess (right). He oils and waxes the underside, then reverses and remounts it (far right).



To the top of the lid. Monaco gives the top of the lid its shallow ogee curve contour by taking pull cuts with a $\frac{3}{8}$ -in. deep-fluted gouge. He removes the lid from the lathe periodically to see how the emerging shape of the lid suits the base.

the edge and the face. I used compass dividers to measure the base's rim diameter and transferred that dimension to the face of the blank. Using a $\frac{3}{8}$ -in. deep-fluted gouge, I removed material outside the rim mark, creating a flange. I switched to a $\frac{3}{8}$ -in. shallow gouge to clean up the flange, working carefully with light push cuts until the base fit tightly to the flange.

When the base fit, I used the tailstock to help support it while I finished shaping the curve in the lower portion of the container and transformed the tenon into a foot.

Jam chuck becomes the lid

With the base complete, I removed it from the lathe to work on the lid blank. The



Add the finial



Tweak the edge.

To create the slight chamfer at the rim of the lid, Monaco uses a downhill cut with a $\frac{1}{4}$ -in. deep-fluted gouge.

A resting place for the finial. After drilling a depth hole, Monaco uses a square-ended scraper and a push cut to create the mortise for the finial's tenon.



Glue in the finial blank. After turning an ebony finial blank with a tenon to fit the mortise in the lid, Monaco secures it with CA glue.



Forming the finial. To turn the finial to a teardrop shape, Monaco uses a skew chisel and a $\frac{3}{4}$ -in. spindle gouge. He does the delicate work with the tailstock snugged up to support the finial's tip.

flange I cut in it would serve to locate the lid on the base, so I left it. I also needed to make a shallow recess with a dovetailed shoulder on the underside of the lid; the recess lets me use the four-jaw chuck in expansion mode to turn the top of the lid. I laid out the recess with dividers and used a $\frac{3}{4}$ -in. square-end scraper to make a single push cut to create it. I cut to a depth of $\frac{3}{16}$ in. Switching to a $\frac{3}{8}$ -in. spindle gouge, I cut a fine bead at the perimeter of the

recess. The bead makes the recess look decorative rather than nakedly functional.

Turn the top of the lid

With its underside shaped, oiled, and waxed, I turned the lid around and expanded the chuck jaws into the dovetailed recess so I could turn the top side. Using a $\frac{3}{8}$ -in. deep-fluted gouge, I began making light pull cuts, sweeping from the outside edge toward the center of the lid. I left the

rim a little over $\frac{1}{4}$ in. thick, allowing more wood to be removed in final shaping.

Using a $\frac{1}{4}$ -in. deep-fluted gouge, I made a downhill cut to bevel the lid's rim. And to contour the lid and establish the platform at the center where the finial will be attached, I made a series of bevel-rubbing push cuts, gliding the tool through an arc that creates a soft ogee shape. Where the slope of the curve breaks, I created a small step detail to define the finial platform.

This is an ideal time to determine, either with calipers or fingers, that the lid is reaching its proper thickness. It's important that the central portion of the lid remains thick enough to accommodate the finial's tenon.

For my final cleaning cuts, I switched to a curved shear scraper using sweeping pull cuts to further refine the outline of the ogee. And last, before making the finial, I drilled a shallow pilot hole at the center of the lid and then, with a modified square-end scraper, I turned a mortise to receive the finial's tenon.

Finally, the finial

After roughing down a square chunk of ebony between centers, I mounted the now-cylindrical finial blank in the 4-jaw chuck. With a $\frac{1}{2}$ -in. skew chisel, I trued across the end grain with a shear cut, then made a pencil line $\frac{3}{16}$ in. from the end of the blank in preparation for cutting the tenon. I made a peeling cut with the skew just shy of the pencil line so the tenon would be slightly shorter than mortise depth, ensuring it wouldn't bottom out.

With the tenon fitted, I removed the blank from the chuck and applied a few small drops of thick cyanoacrylate (CA) glue to the mortise and a thin layer to the surface of the tenon. I pressed the tenon into the mortise, quickly wiped away any excess glue, sprayed on some accelerator, and remounted the lid in the chuck.

To turn the finial to its teardrop shape, I used a skew to make a series of downhill cuts, first arcing the tool toward the finial's tip, then toward its base. I also used the skew to form the flat area of the finial at the foot of the teardrop.

My finish of choice for this project was Danish oil, and a food-safe wax for buffing into a soft matte sheen. Danish oil enhances the dark richness of the grain in black cherry, and when those tones are combined with ebony, they speak to the kind of beauty found in many classic forms that inspire my eye for design. □

Matt Monaco is a wood turner and owner of Monaco Bowls in Missouri.



Off with the disk. After the teardrop shape is complete, back off the tailstock and use a handsaw to remove the disk of waste wood at the tip of the finial.



Flatten the finial's base. The final bit of shaping involves skew work to refine the base of the finial.



Oil, wax, enjoy. With the lathe spinning, pad on Danish oil, then apply paste wax.

Inspiration for our readers, from our readers

PETER FOLLANSBEE

Kingston, Mass.

This piece is Peter's version of a 1680s cupboard made in Newbury, Mass. Twenty years ago, he co-authored an article about 12 surviving cupboards from this group and finally got a chance to make a full copy. All the oak except the carcass tops is riven—and all the work was done with period-style hand tools. Built as two cases, it's essentially a chest of drawers with a trapezoidal cupboard on top. The front upper pillars are tenoned into the upper cornice stiles and into mortises bored in the top of the lower case. Lift the upper case and the pillars come free.

RED OAK, WHITE PINE, MAPLE, CHERRY, 22D X 48³/₄W X 58H



ETHAN KROETSCH

Guelph, Ont., Canada

This Krenov-inspired cabinet-on-stand was Ethan's second-year project at Conestoga College's woodworking technology program. He dedicated the piece to all his woodworking mentors along the way, but especially to his high school shop teacher, Dan Sernaie, who inspired him to continue woodworking. It was one of the most challenging builds Ethan has done, and he tried to remain true to the small details Krenov incorporated in his work.

WENGE, MAHOGANY, AND CURLY MAPLE, 10³/₄ D X 20¹/₈ W X 60⁵/₈ H



JIM GREENE

Midland Park, N.J.

When Jim upgraded his television, he decided to update the cabinet for it as well. Turning to his scrap bin for inspiration, he built the cabinet out of beech cutoffs with contrasting lacewood accents.

BEECH AND LACEWOOD, 22D X 42W X 21H

Photo: Paul Tillinghast

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JOHN OLENIK

Ballston Spa, N.Y.

John originally built this sideboard for the 2020 juried showcase in the Northeast Woodworkers Association's annual event. Two weeks before the show, the Covid pandemic struck and everything was shut down, so he never got to show the piece. It was heavily influenced by Chris Gochnour's sideboard and Garrett Hack's huntboard, combining elements of both. And the fun part: The carcass has three hidden compartments.

WHITE OAK, 18½ D X 55W X 38½H



CRAIG KOSONEN

Toronto, Ont., Canada

Influenced by traditional step tansu, Craig built this shelf using the overall form but only doing a single step due to space constraints. The marquetry design on the drawer fronts was inspired by the hibiscus flowers he had grown in his summer garden.

CHERRY, PINE, VARIOUS VENEERS, 15D X 44W X 31H



BRENNAN SIMPSON

Cambridge, Mass.

The texture of adze-hewn surfaces sometimes seen in rustic English furniture intrigued Brennan, and he wanted to convey that in this table. He created his pattern with a precise layout grid, a plunge router, and a massive crown molding bit. The overlapping cuts left hexagonal silhouettes that play on light and shadow. The base has stopped lamb's-tongue chamfers along each corner that react similarly.

QUARTERSAWN WHITE OAK, 48D X 48W X 30H

Photo: Lance Patterson





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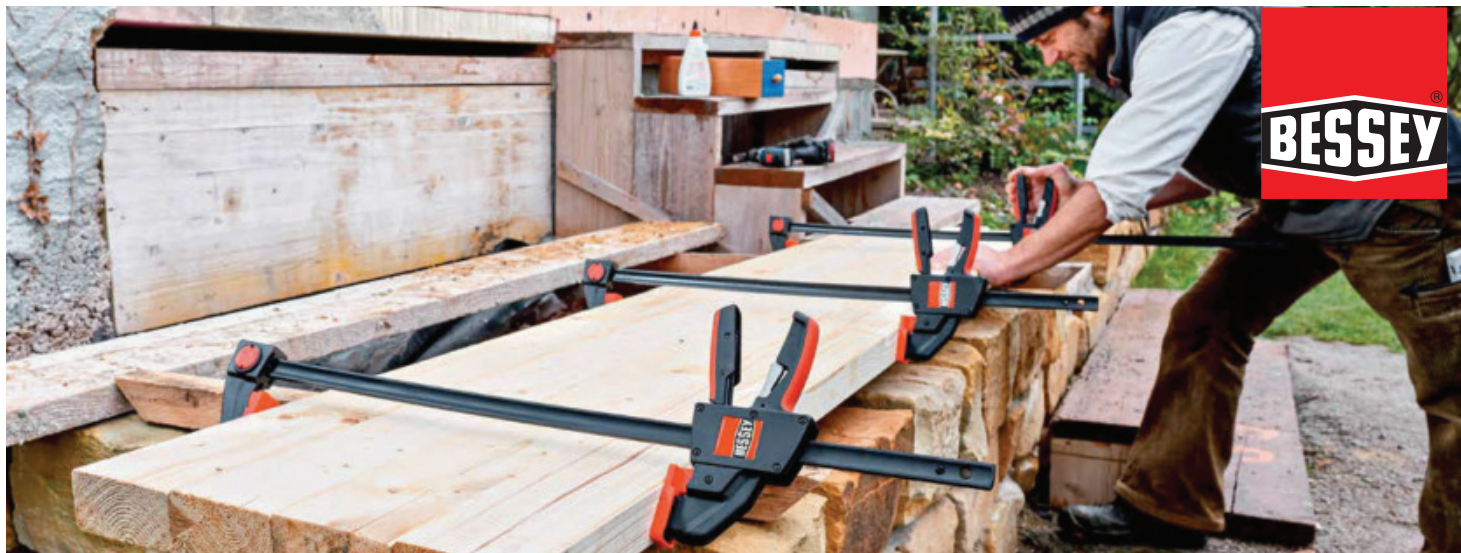


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LUCINDA DALY

Berkeley, Calif.

Lucinda designed this stool to be short enough to go under a kitchen island and comfortable enough to be used regularly. Her design process started with researching standard sizes for counter stools and then moved through sketching, crafting a full-scale plan, a full-size mockup complete with joinery, and finally to the finished piece.

EBONIZED CHERRY, 13D X 17W X 27H



ROSS NORDQUIST

Eau Claire, Wis.

Ross hand-carved this table from a 9-in.-thick tree cookie he found in a pile of firewood. Wanting to make it into a functional piece of furniture rather than sculpture, he turned legs to add height to the top.

SPALTED MAPLE, WALNUT, 32D X 30W X 17H



KEN CARPENTER

Tucker, Ga.

Ken said while building this Federal period sideboard he kept “bumping up against the ceiling of my skill level.” But he was inspired and supported by his fellow members of the Peach State Chapter of SAPFM, Cartouche Award recipient Ronnie Young and former Woodcraft store owner Steve Quehl.

MAHOGANY, 23½ D X 66W X 40H

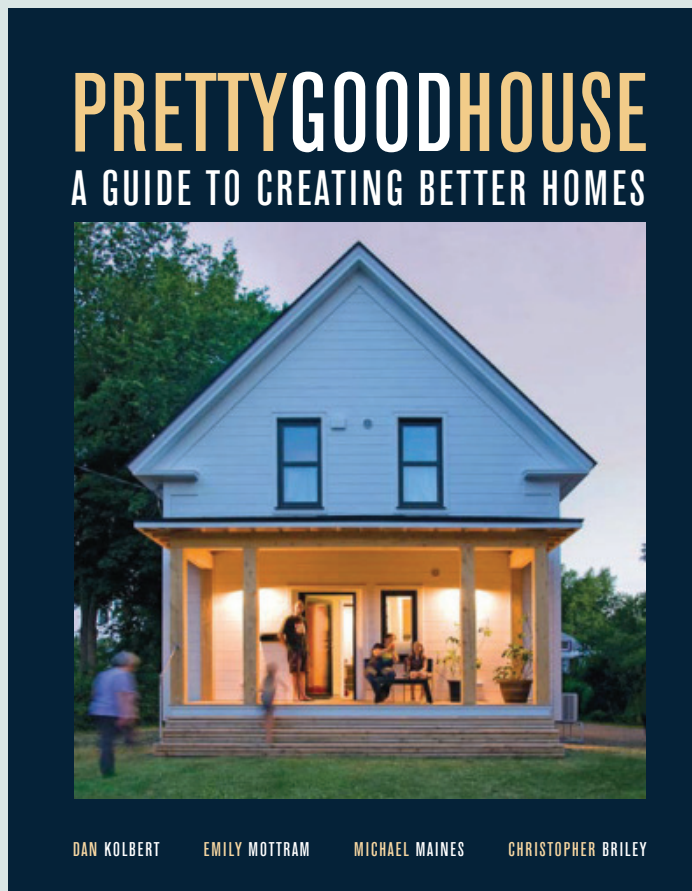


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*by Christopher Briley, Dan Kolbert,
Michael Maines, and Emily Mottram*

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GLEN GUARINO

Cedar Grove, N.J.

Glen was inspired by the elegant curves, fine materials, attention to detail, and outstanding craftsmanship of his favorite furniture period, Art Deco, when building this gift for his wife. He began by designing the legs, which then influenced all other aspects of the table. The biggest challenge proved to be hand-carving the curved legs so they all matched.

HONDURAN MAHOGANY RESCUED FROM A DUMP,
20D X 42¾ W X 29H

Photo: Klaus Schnitzer



YAIR GOLDSHMIDT

Haifa, Israel

When Yair's wife found out she was pregnant, she asked him to build her a chair to sit in while breastfeeding and rocking the baby to sleep. This is his interpretation of a Maloof rocker, and he chose maple because to him it felt "impressive and modest at the same time."

MAPLE AND WENGE, 49D X 27½ W X 45½H



JOSEPH (JEPH) HARRISON

Wilmette, Ill.

Jeph had made a changing table for each of his children when they had their first child. When his fourth child announced that she was pregnant with her first, she wanted a lighter-colored wood and a more modern feel. At 26 weeks into the pregnancy, she and her husband were told that the baby had a problem that would require surgery soon after birth. Inspired by Steve Latta, Jeph added an inlaid bird as a symbol of hope. Cecilia Jane was born Oct. 10, 2019, and had a very successful surgery four days later.

WHITE OAK AND SPALTED MAPLE, 20¼ D X 45½W X 37H

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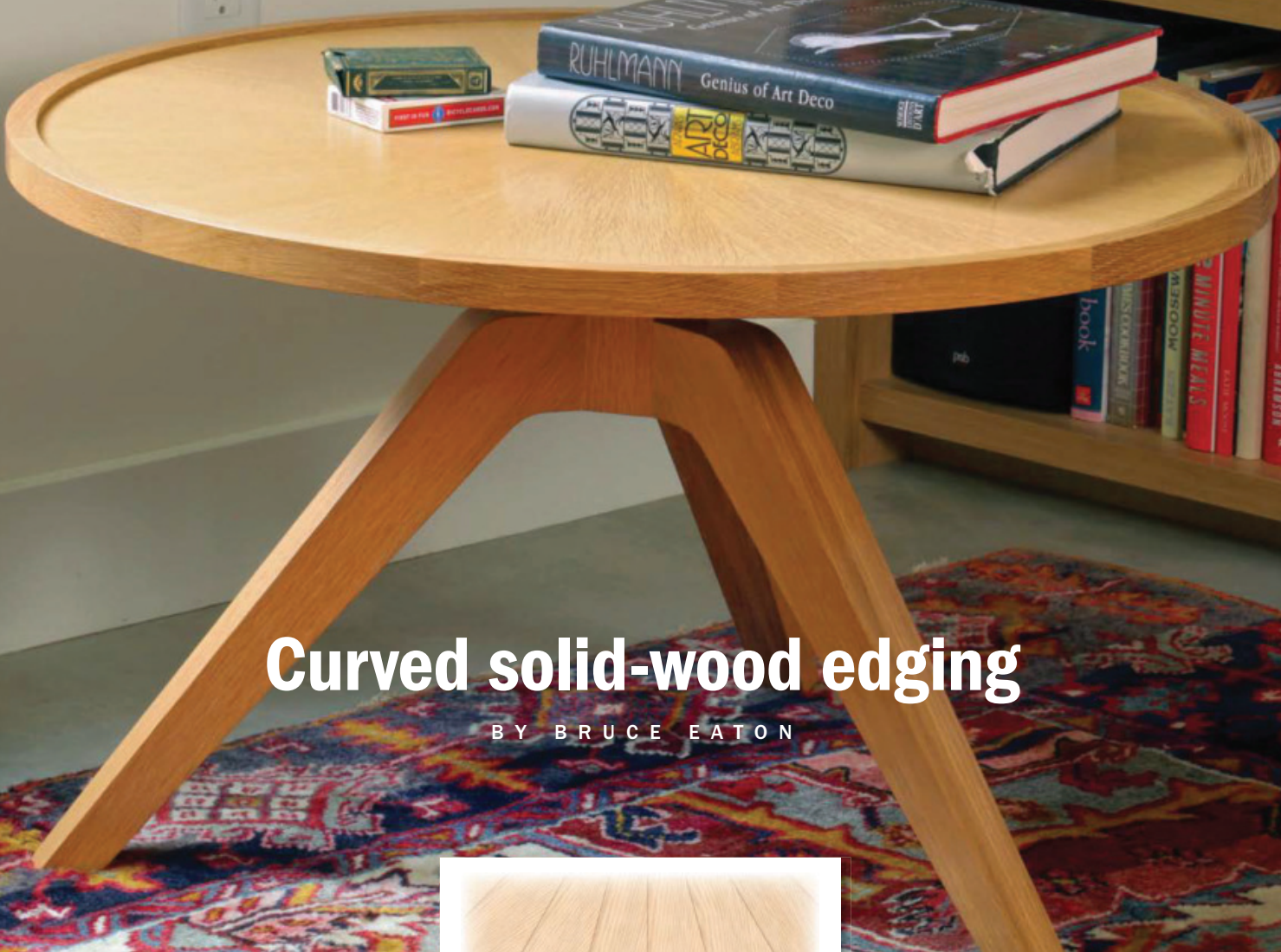
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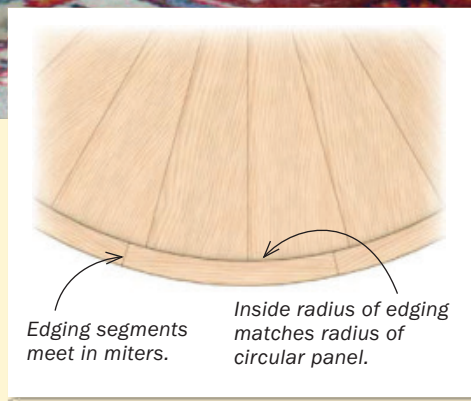


Curved solid-wood edging

BY BRUCE EATON

In “Circular Sunburst Veneer Top” (pp. 54–58), I take you through veneering a round tabletop. A veneered panel needs edging, though, to protect the veneer and hide the substrate. For the table shown here, I wrap pieces of solid wood around the perimeter. On a circular top, this process can feel like a high bar to clear: The edging pieces must be shaped to match the curve of the top, and they’ll be fitted together with multiple miters.

There are two strategies to greatly lower that bar. The first is a straightforward full-size drawing. The second, a sled for template routing, is almost as straightforward, but the path to get there involves a little more ingenuity. It will yield spot-on, fuss-free results, though, without leaving you scratching your head. I’ll show you how to apply edging to my table’s top,



using a process that will work on any circle. As an added bonus, the edging will be proud of the table’s surface, creating a lip around the perimeter.

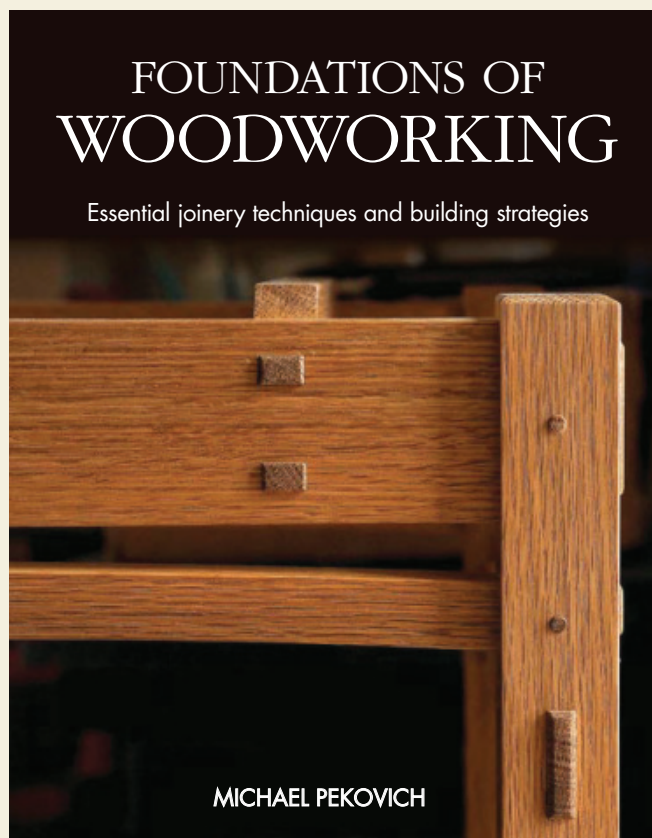
Full-size drawing shows angles

I recommend a drawing for the table’s top veneer in addition to the one for

the edging. When you draw out the pieces, you also draw the angles. As a result, the edging pieces, which start out as trapezoidal blanks, are no longer complex shapes with uncertain angles; they’re something you can set your bevel gauge against. The drawing has all the information necessary.

The number of edging pieces can differ from the number of veneer segments. For this table, I milled each edging blank about $\frac{3}{4}$ in. wider than its final dimension to let me adjust the arc of the inside curve during construction. While the drawing

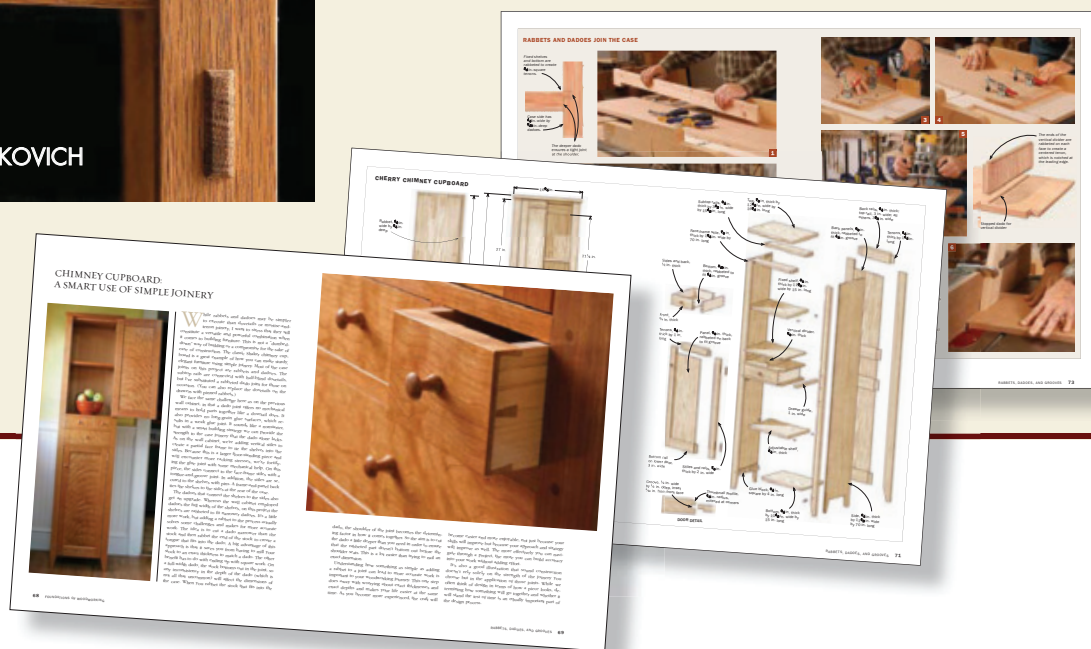
NEW FROM MICHAEL PEKOVICH



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gets to the very core of the craft of woodworking: laying out, cutting, and assembling joinery for furniture and other treasured wood objects. Michael Pekovich dives into a step-by-step, project-by-project description of the essential wood joints, from rabbets and dados through mortise-and-tenons to dovetails and miters. Master these joints and the door is open to create just about any design you can think of.

The book concludes with a selection of inspiring projects, including a wall cabinet, a chimney cupboard, an arched entry table, a desk divider, a dining chair, and many more.



Michael Pekovich's first book, *The Why & How of Woodworking*, was the woodworking event of the year when it was published in 2018. *Foundations of Woodworking* is sure to pick up where *Why & How* left off, inspiring and instructing thousands of woodworkers worldwide.

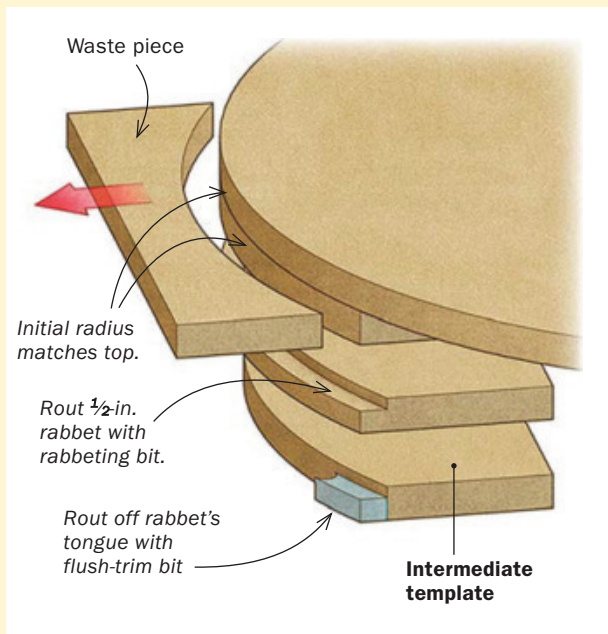
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Two templates match

Make an intermediate template, and use it to create the final template. The final template becomes the jig for routing the curve in the edging segments.

INTERMEDIATE TEMPLATE



Match the radius of the circular top. To start, the intermediate template needs to match the radius of your top. Trace the top (or a pattern the same size as the top, as here) onto a piece of MDF, bandsaw close to the line, and then use the top to pattern-route the workpiece.



Rout a rabbet before pattern-routing it off. This two-step process reduces the intermediate template's diameter by a fixed amount. Here, Eaton cuts a 1/2-in.-wide rabbet.



helps you get to the finish line, there will be some fussing and fitting, especially on the final piece.

This jig's a two-step

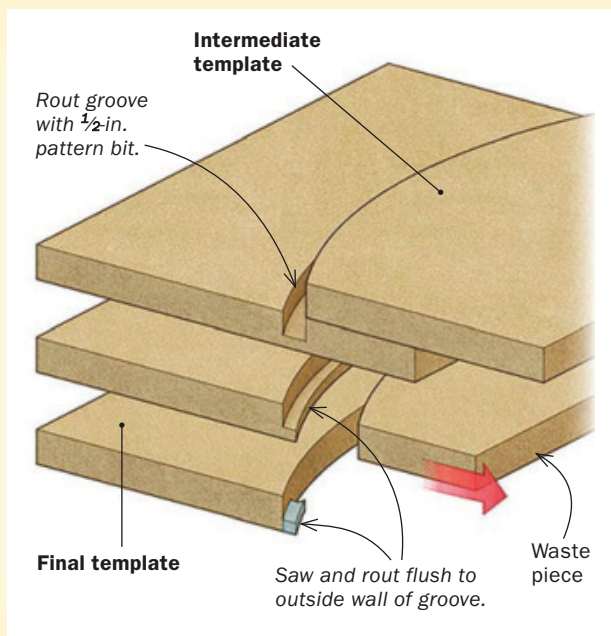
The edging's inside curve needs to match the circular panel's radius precisely. For consistent results, I use a routing sled to cut the curve in each of the edging segments. Making the sled is a two-step process: First I make an intermediate template, and then I use that to generate the final template, which will be the base of the sled.

Start the intermediate template by flush trimming a piece of MDF to match a section of the tabletop's perimeter. Next, with a rabbeting bit, rout a 1/2-in.-wide rabbet along the curved edge of the intermediate template. Then, with a flush-trimming bit, cut off the tongue of the rabbet. Now the curved edge of the intermediate template is exactly 1/2 in. smaller in radius than the circular top.

To make the final template, clamp the intermediate template to a blank of MDF. Using a 1/2-in. pattern bit, plow a curving groove in the blank. Because the diameter of the pattern bit matches the amount you removed from the intermediate template, the outside wall of this groove will match the curve of the tabletop. Saw off the inner part of the blank, then flush-trim off the remaining tongue to form the final template. Turn this template into a sled by attaching



FINAL TEMPLATE



Rout a groove in the final template using a pattern bit the same width as the rabbet. Because the rabbet in the intermediate template was $\frac{1}{2}$ in. wide, Eaton uses a $\frac{1}{2}$ -in. bit for this groove. As a result, the outer wall of the groove matches the curve of the tabletop.



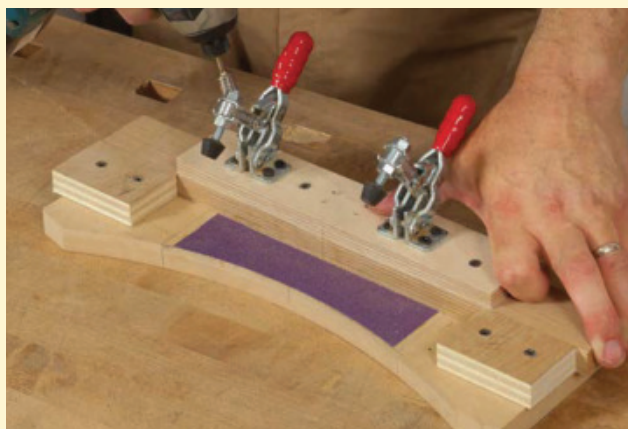
Trim away the waste before pattern-routing flush. This yields a template that will let you repetitively shape an inside curve that matches the tabletop's radius.

a fence, two end stops, and two toggle clamps.

Why this two-step process? Because if you were to forgo the intermediate template and employ the same plowed-groove method to make a final template directly from the tabletop, the resulting curve would be off by the diameter of the router bit. But having cut the $\frac{1}{2}$ -in.-wide rabbet in the intermediate template and then removed its tongue, you can duplicate the table's curve.

Make and apply the edging

For color and grain conformity along the edging, lay out the pieces from continuous or adjacent



Turn the final template into a sled. To the top of the final template, secure a fence, two end stops, and two toggle clamps. Sticky-back sandpaper on the sled helps keep the edging blanks from shifting as you secure them in the jig.

Make and apply edging



Angled ends. To wrap the edging segments around the circle, miter their ends. After mitering one end on every segment, Eaton resets his miter gauge and adds a stop to angle the other ends and cut the pieces to equal length.

Apply glue only where the edging meets the panel.

Because the edging on Eaton's table is lipped on top, he doesn't apply glue to the entire inside edge. Otherwise, he'd have to deal with obvious squeeze-out in tight quarters.



Shape the inside of the edging using the sled. If your curve is gentle enough, like it is here, you can rout this curve in one pass. For steeper curves, you'll need to flip the workpiece end-for-end to avoid routing against the grain. Either way, center each workpiece in the sled before routing.



Glue on the first piece of edging while using another piece dry as a caul. By using a piece of edging as a caul on the opposite side of the circle, you can apply even clamping pressure to the glued-on piece without damaging the circular panel.

parts of a board and keep track of orientation while milling. The goal is to limit changes of color and grain direction as the segments go around the circle. While you're at it, cut out a few extra segment blanks for test-fitting and mishaps.

Using your drawing as reference, cut the edge pieces to length and miter their ends. Next, shape their inside edges with the router sled. Before machining all the real segments, use a few extra pieces to check that the curved edge and the miters close when several segments are clamped to the tabletop. If necessary, adjust the miters until they fit. If you adjust the angles as you go around with the real pieces, the joints can start to get out of square as the error compounds. Check the miters for square vertically too. Finally, check the fit all the way around.

Glue on the edge pieces, clamping across the table. Set them slightly proud of the bottom. Use



Pinch dogs close the miters. After gluing on the first segment, add the edging one piece at a time, locating it using the previous piece. The pinch dogs, whose two teeth are a pair of mating wedges, draw the miter tight as you hammer them in.



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Shape the edging's perimeter



Clean up the edging. Eaton attaches the edging so it's slightly proud on the bottom face, letting him flush it up after assembly. It's a fast process with a sharp handplane.

a pinch dog to first draw the miter tight and then clamp across the tabletop and clean up glue as you go. I've had good luck using Titebond Molding and Trim Glue for the edging. It doesn't run and leaves just a nice, clean bead to clean up. It also dries clear, and if you're having trouble getting the joints completely closed it will help fill them. The last edging segment will likely need to be recut to fit. Once all the segments are attached, handplane, scrape, and sand the edging flush with the bottom of the panel.

The outside face of the edging now needs to be cut into a circle. I use a larger MDF disk, created with a router in a trammel, to flush-cut the edging to final shape after bandsawing it close. □

Bruce Eaton's shop is near Boston, Mass.



Use a template to form the outer diameter. Center the template on the panel and trace its perimeter. Bandsaw close to the line before securing the template to the panel and pattern-routing to final shape. This step also removes the holes made by the pinch dogs.



A lip means careful finishing. Eaton's edging has a raised lip. Because of its inside corner, he needs to be extra attentive during surface prep and finishing.

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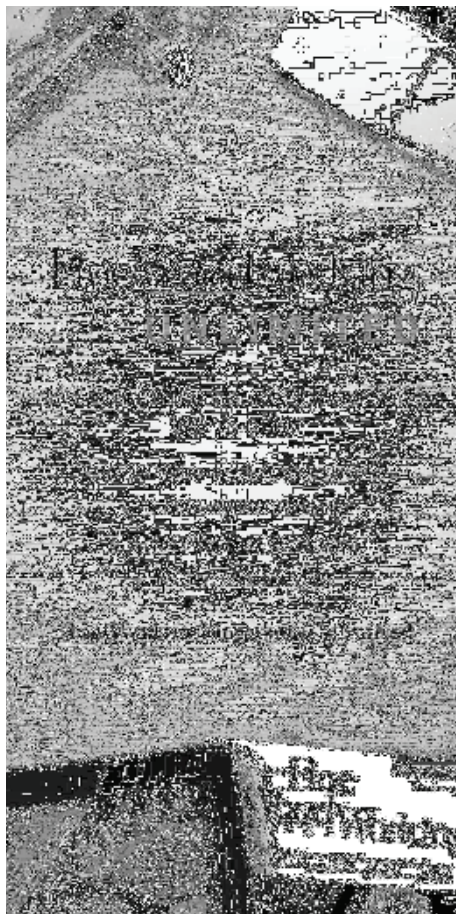
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Penguins to planes

BY JACK A. CERCHIARA

What was my preparation for a career making fine furniture? Studying penguins. I did my field work in Patagonia, hiking many miles daily to track, weigh, and measure penguins, from newly hatched chicks to adults 35 years old. And I spent countless hours in the lab analyzing samples and data and writing up research. When I finished my PhD in biology, I had completed nearly seven years of study and research on the DNA of Magellanic penguins. Then I entered my fellowships—more study and research. To unwind in off hours, I began to delve into woodworking.

Making small pieces for my family and for friends, I dove headlong back into a hobby I'd first taken up in high school. One piece for a friend turned into pieces for more friends...and then their friends. There were soon enough projects to keep me busy most nights and weekends. I experienced such excitement, challenge, and joy in furniture making that I decided to leave my career in science and open Salish Sea Woodworks full time, building handcrafted, fine hardwood furniture.

My origin story as a woodworker may seem like a sharp turn from academics, but there are things I learned in my scientific career that couldn't be more at home in woodworking. I often reflect on three lessons in particular.

1. Never turn away from a problem, especially one for which you don't have an answer.

My academic mentor used to tell me that being a scientist really isn't about being smart, it's about "stick-to-itiveness."

For a biologist, pursuing challenging problems is a regular occurrence, and with that pursuit comes the excitement of discovery; but also feelings of uncertainty, failure, imposter syndrome.

As a self-taught woodworker, I found similar challenges. But I've always believed in a growth mindset: That in woodworking, as in science, with enough research, practice, and effort, most things can be learned and mastered. I was willing to pour myself entirely into the craft. Early on, I accepted nearly every project I was asked to build, and I learned by doing. I found that when I committed to this approach, I was able to find more joy in the challenges, more lessons from the failures, and more satisfaction from my time at the workbench.

2. Always be a student

There's a common misconception that experts in a field have the answer to everything, that having attained the pinnacle of knowledge, they are infallible. My experience indicates the opposite. I've been in the room with some of the world's leading experts, literal Nobel Prize winners. What set them apart was humility about the limits of their knowledge, acceptance that there was so much more to learn, and excitement about the unknown.

I try to approach woodworking in a similar way, remembering that whatever understanding I gain or techniques I master, there is so much more to learn, and so much I am green toward. I am excited to be a "forever student." Working this way has made me more excited about my accomplishments, more passionate about pushing myself to try



new techniques, designs or joinery, and more accepting of my failures.

3. Care about your impact

A scientist once said to me, "In order to make a difference, you need to focus on your impact on two things: the environment, and people."

Much of my work in academia supported conservation science, protecting ecosystems, habitats, and species. Now, in my woodworking, I embrace the same principles, seeking out locally sourced lumber and natural finishes, and endeavoring to build pieces that stand the test of time. Working with a beautiful natural resource, I'm committed to protecting it and the habitat in which it grows and to being thoughtful about its harvest.

In science, every discovery is cradled in the foundation of those who came before. When I began woodworking, I thought of it as a solo endeavor. But what I found instead is that, as in science, no journey of discovery in woodworking is without a community. In my time learning and growing as a maker, I have received guidance, inspiration, and support in a community of passionate craftspeople. A number of wonderful woodworkers have been virtual mentors for me; they have no idea how much impact they've had on my craft and career. I hope that as part of this community, I too can help others find joy and inspiration in woodworking.

Jack A. Cerchiara works wood in Seattle.

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Squiggles

Working out of a shop in Union City, N.J., Christopher Miano found a profitable niche making everything from custom furniture on commission to decorative props for photographers. But when Covid struck and work got tight, Miano decided to build a line of speculative furniture, aiming to blend sculptural ideas with good craftsmanship. “I wanted to design something that lightened the mood in that difficult time,” he says, “something that would bring a smile to your face—and make you wonder how it was made.” With his suite of squiggly furniture, whose serpentine shapes are sawn from the solid and routed round, he’s done just that.

—Jonathan Binzen

