

**WIN
FREE TOOLS!**
(See page 18!)

2 ROUTERS YOU CAN'T LIVE WITHOUT! (page 64)

WOODWORKER'S JOURNAL

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**NEW! 2011
ROUTER SURVEY:**
Readers' top picks and
surprising trends!
(page 30)

Build this Mission Coffee Table

Our shortcuts and joinery tricks make it easy.

15 Show-stoppers

Behind-the-scenes sneak
peek at the new 2012 tools

(page 54)

**Holiday Gift
PROJECTS**



December
2011



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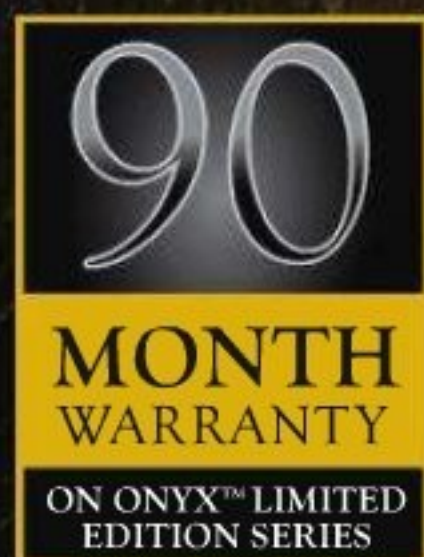
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Woodworker's Journal

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By Rob Johnstone

Contrasting wood species add eye-catching delight to a simple toy for the tub or the floor.

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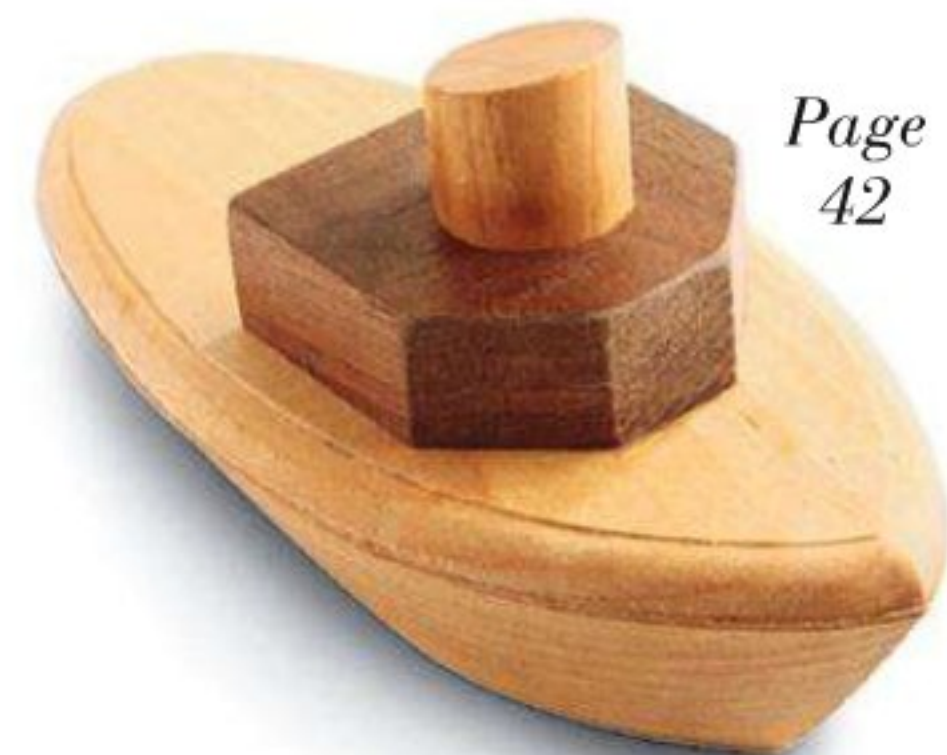
By Frank Grant

Our SketchUp contest winner's gameboard design makes a winning gift, with onboard storage.

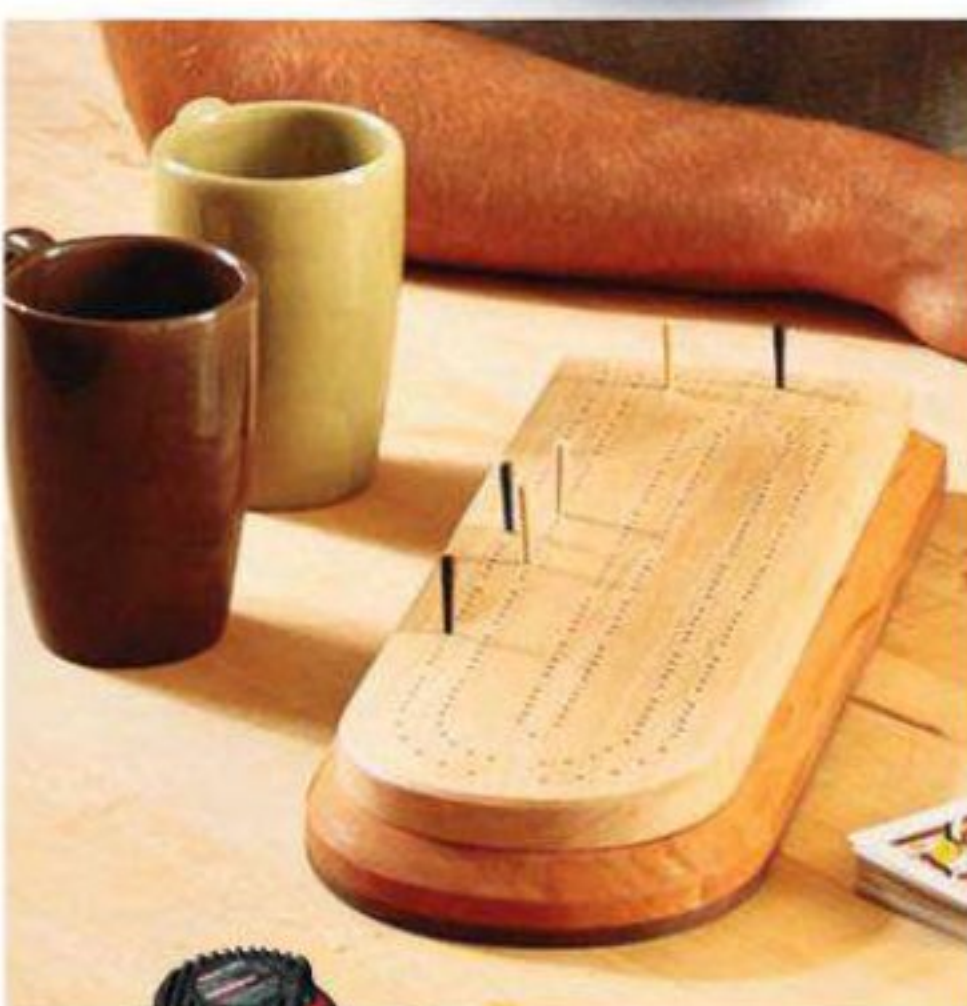
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A pivoting jig offers options for routing out a variety of trivets.



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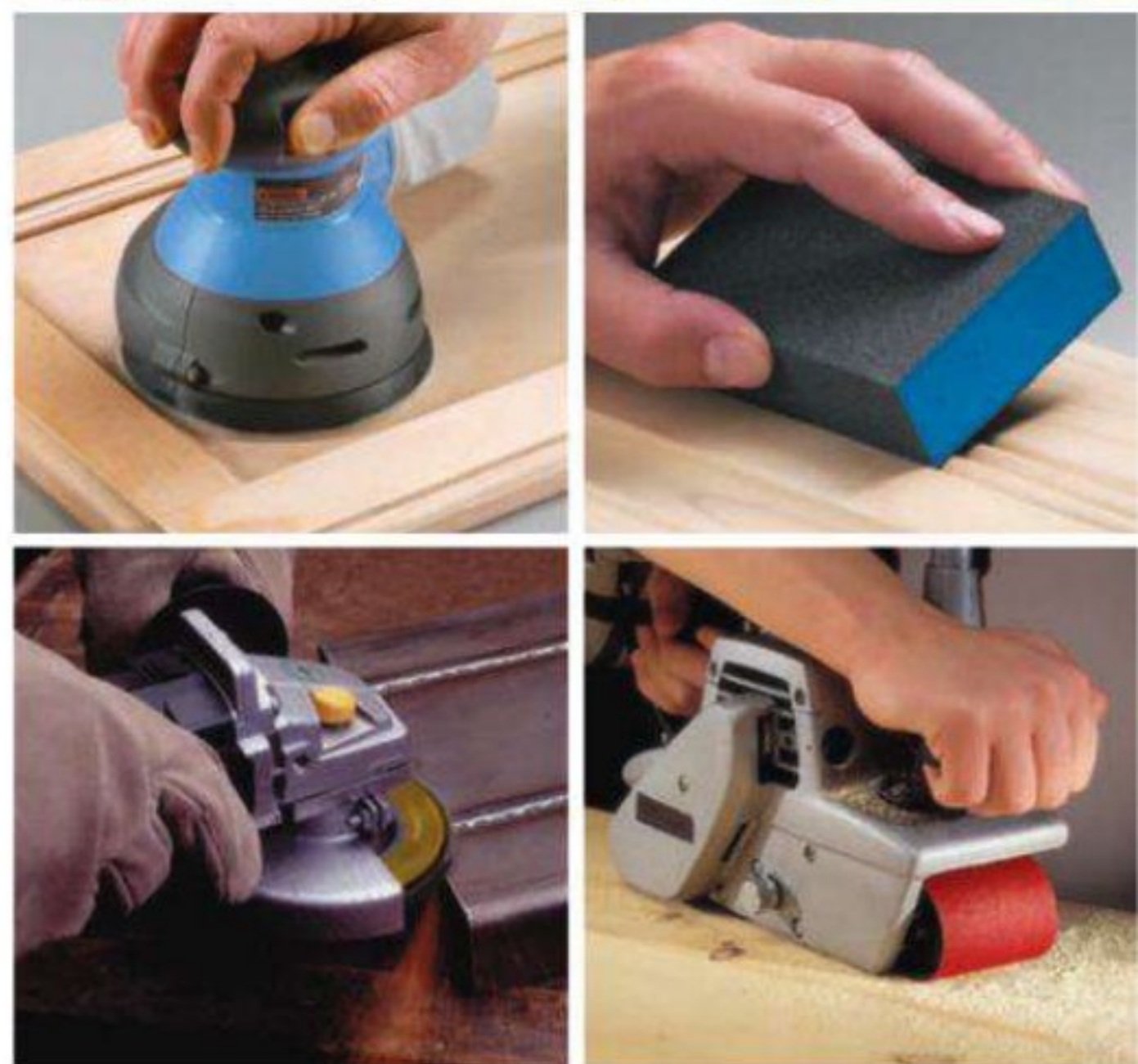


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Letters

In Just a Few Moments

SOMETIMES, YOUR SHOP CAN BE DANGEROUS ...

Our goal here at the *Journal* is to focus on the positive aspects of



woodworking, lifting up and entertaining our readers while providing the best quality woodworking information around. It's a rare thing for us to publish anything that focuses on the potential danger that can be found in a woodshop. But from time to time,

a reminder to be aware and planful regarding shop safety issues can be truly important. Reader Mark Thiergartner suffered an awful loss, and as he indicates, it was preventable. He shared his story to help other woodworkers. That struck me as a great idea, so here is my challenge. Do you have a story or an incident that you can share that will help us put a proper perspective on safety in the shop? If so, drop us a line, and we will share your stories as space allows.

—Rob Johnstone



Sparks Safety Reminder

Please tell your readers to be safe. I made a horrible mistake, and it has cost me dearly! In April, I was working on a project in the basement. The previous day, I had hauled in 15 gallons of gasoline for the yard equipment and 10 gallons of diesel for my tractor. Earlier in the week, I had hauled in about 2,000 pounds of lumber for a furniture project and stacked it next to the table saw. Later, I was using rags to rub paint remover on a piece of equipment. When finished with the rag, I set it on the floor next to my scrap wood,

"Keep your work area
clear of all flammable
materials and liquid.
I will never get back
everything I lost!"



Woodworker Mark Thiergartner lost his house when a fire started in his basement. Wood and other fuel products caught fire in very short order. Burned joist, clamps and a router are just part of his loss.

also near the fuel and lumber. After about two hours, I went upstairs to enjoy an ice tea with my wife.

About 10 minutes went by, and the smoke alarm went off. By the time I walked from the deck to the back of the house, the basement was engulfed in flames and the fuel was beginning to explode. The fire department had another call and took 45 minutes to arrive. I lost 25 years of woodworking tools and everything in the basement. The house is a total loss. The fire was so intense the steel beam in the basement expanded enough to punch a hole in the foundation and partially melt the steel supports under the beam. All of the pieces I have made over the years are destroyed. I recommend the following:

1. Do not keep chemicals or any type of fuel in your house. Especially in the basement near your work area.
2. Keep chemicals locked in a fire-safe cabinet away from open flame and the work area.
3. Do not start any projects in your basement that will involve sparks of any kind.

4. Put all used rags with any chemicals on them in a fire bucket with a lid. Do not leave in a pile on the floor.

This fire was a result of a spark getting in the rags and igniting and burning the wood and then the fuel. So keep your work area clear of all flammable materials and liquid. I will never get back everything I lost! Don't be lazy. Fortunately no one was hurt.

Be safe!

Mark Thiergartner
Fayetteville, Ohio

Leftover Teak Westy

A few days after getting my August 2011 issue, out of nowhere, my wife asked me if I could make a couple of Adirondack chairs. Hmm ... is she reading my magazine? Also, she would like it made out of the leftover teak flooring we had installed.

After about a week of re-sharpening blades, drill bits, and replacing broken countersinks, it's done! I hate any fasteners that show, and I don't think plugs ever "disappear," so I asked my

Letters continues on page 8 ...

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This reader's spouse mysteriously requested an Adirondack chair only a week after our most recent issue arrived at their home.

wife to pick out some screws she wouldn't mind looking at in the finished project.

My beloved 20-something-year-old Skil jigsaw started smoking after a few of the long cuts in the teak. It was the first woodworking tool I purchased in the 1980s after I started my 20 years in the U.S. Air Force. Now I'm retired, so I figured the jigsaw deserved the same.

No kidding about the one degree off here and there the author mentioned in the building article! My old

RIDGID portable table saw must be more than a few degrees off! Teak does NOT bend!

My wife, who was in a motorcycle accident 10 years ago, loves the chair. Her knees are painful all the time, and the angle of the seat makes it easy on her knees. Thanks for a great magazine, and challenging projects!

Michael Mulvey
Belen, New Mexico

Safety First!

Every year, thousands of children are injured with furniture and TVs being pulled over, and several kids are killed each year pulling the generally unstable LCD TVs on top of themselves. Some TVs come with straps to prevent this, but it's up to the owner to install them. In your August 2011 edition, in the article entitled "Slide-out Media Center," I think you could have more strongly stressed the need for these straps, especially with the added instability caused by the movable top.

Bruce Roberts
Magnolia, Texas

Letters continues on page 10 ...



Make sure to secure your TV to protect your loved ones from falling furniture. Children can tip over large TVs with tragic results.

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THE VOICE OF THE WOODWORKING COMMUNITY

DECEMBER 2011

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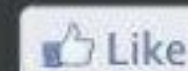
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Future Stumper?

My great-great-great-grandson lives 200 years in the future. He downloaded an article to my computer from his magazine *Mat-45Worker's Journal*. Here is the article:

"What tool is it? GR463Y of New City 48 sent in the answer. Pictured is a battery-powered drill. A battery is what they used to power tools before the invention of the E-chip. A drill was a tool used to make holes and install screws. (Next month *Mat-45* will print an article on what screws are and what they were used for.) They needed tools like this when they were still allowed to work with wood. They did not even have material-3 let alone material-45 or the AMF (Auto Material Former). It is not known how they were able to make round items out of wood. Sometimes they would put pieces of wood together using something called glue. If you have any shows of old tools zing them to us and they may be used. We pay 15 credits for every show used."

Allan Hawley
Wappapello, Missouri

WJ Responds: If this "note from the future" makes no sense to you, you haven't been reading our Stumpers department (see page 18).



Sharp-eyed readers with a head for numbers help our staff to be more careful with cover lines.

Fans of Fractions

Philip Marcuse's letter concerning fractions ["Letters," *August*] brought to mind a day I spent in the shop showing my son the importance of accurate layout. We were building a sideboard and when it came time to assemble the face frame, it almost squared itself. "Wow!" he exclaimed, "Those little marks really do mean something."

I have spent the past 38 years in construction and as an incurable shop-rat and have held a tape measure nearly every day. The irony is that I flunked the fifth grade due to math, largely because I could not grasp fractions. In a moment of anger and frustration, I snapped at my

teacher "Why do I even need to know fractions? What would I ever do with them?"

Maybe feed my family?

Dave Shoblom
Gig Harbor, Washington

Missing Dado Set?

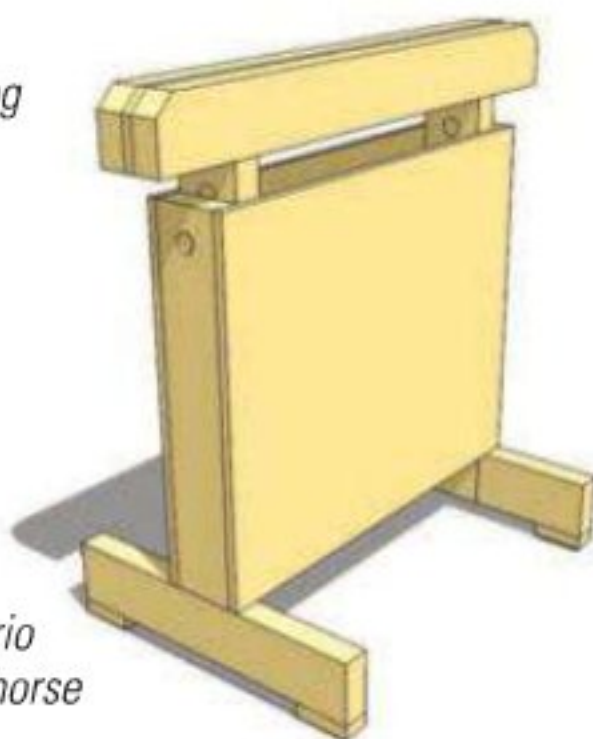
I received my August 2011 edition of *Woodworker's Journal* in the mail yesterday. Just a minor observation: The cover says "9 Dado Sets Tested," but I noticed there were actually 8 dado sets tested.

Dean Blondefield
Portland, Oregon

WJ Responds: You are correct, Dean ... remember that there is a very good reason that editors do not work with numbers.

SketchUp Contest Category Winners

Bruce Beatty of Orangeville, Ontario used SketchUp to design his winning entry in our contest (the cribbage board featured on page 46), but there were others who topped their specific categories. Not every category had entries for us to choose from, but these three were true winners. To see their projects in a larger form, just go to our website and click on our "More on The Web" icon.



Harold Bower
Brampton, Ontario
Adjustable sawhorse



Joe Johns
Ronan, Montana
Spice rack, utensil holder

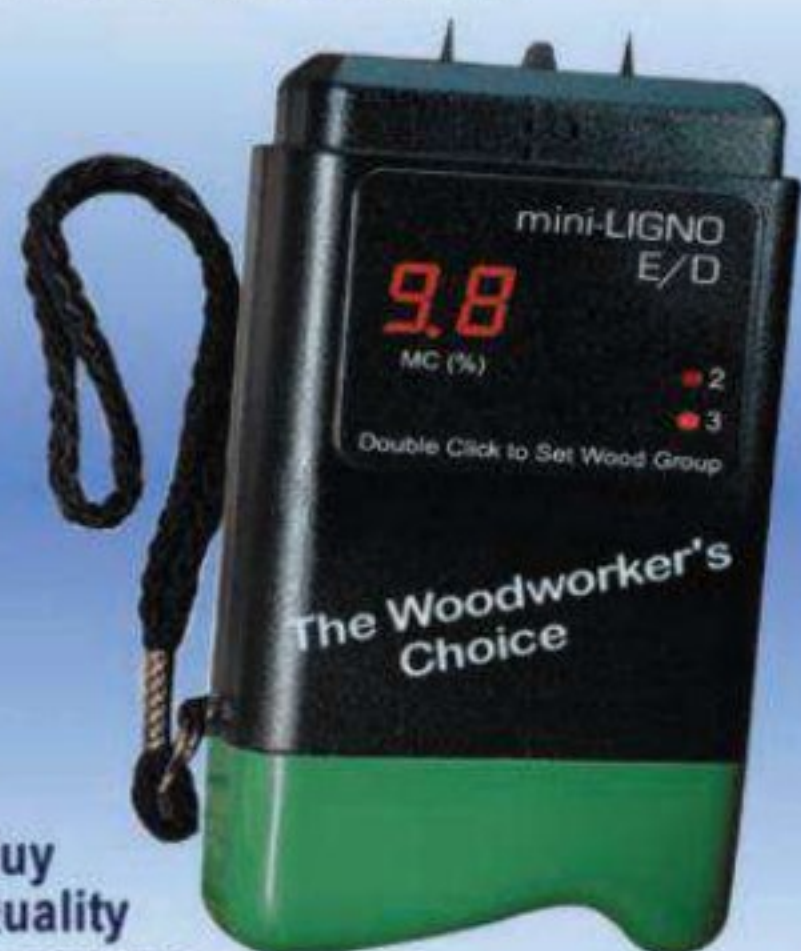


Kyle Ely
Monroe Township, Pennsylvania
Magazine rack

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Tricks of the Trade

Practical Problem Solvers for the Shop



Easy Option for Removing Contact Cement Squeeze-out

Those crepe rubber blocks made for cleaning sanding belts also work great for removing contact cement squeeze-out when installing plastic laminate. Rub the cement residue off in one direction as soon as it cures for best results.

Joshua Reuter
Mullica Hill, New Jersey



A coating of WD-40 prevents finish from sticking to the cookie sheet. Once dry, it comes out easily. This varnish rolled up.

Greener Approach to Finish Disposal

The most responsible way to dispose of old paint or finish cans is when they are empty and dry. I've come up with a way to speed the process along. I bought an inexpensive cookie sheet and cooling rack, and I spray the sheet with WD-40. I place the can upside down and let the remaining contents drain through the rack onto the sheet. The can dries quickly once emptied, and after a few days I use a spatula to scrape the dried cookie sheet clean.

Father Chrysanthos
Etna, California

Label your extension cords before tossing the packaging.



Safety First

To demonstrate techniques and show details, Woodworker's Journal sometimes removes necessary guards from power tools. We do not advocate this practice and urge readers to strictly follow tool manufacturers' instructions and safety precautions.

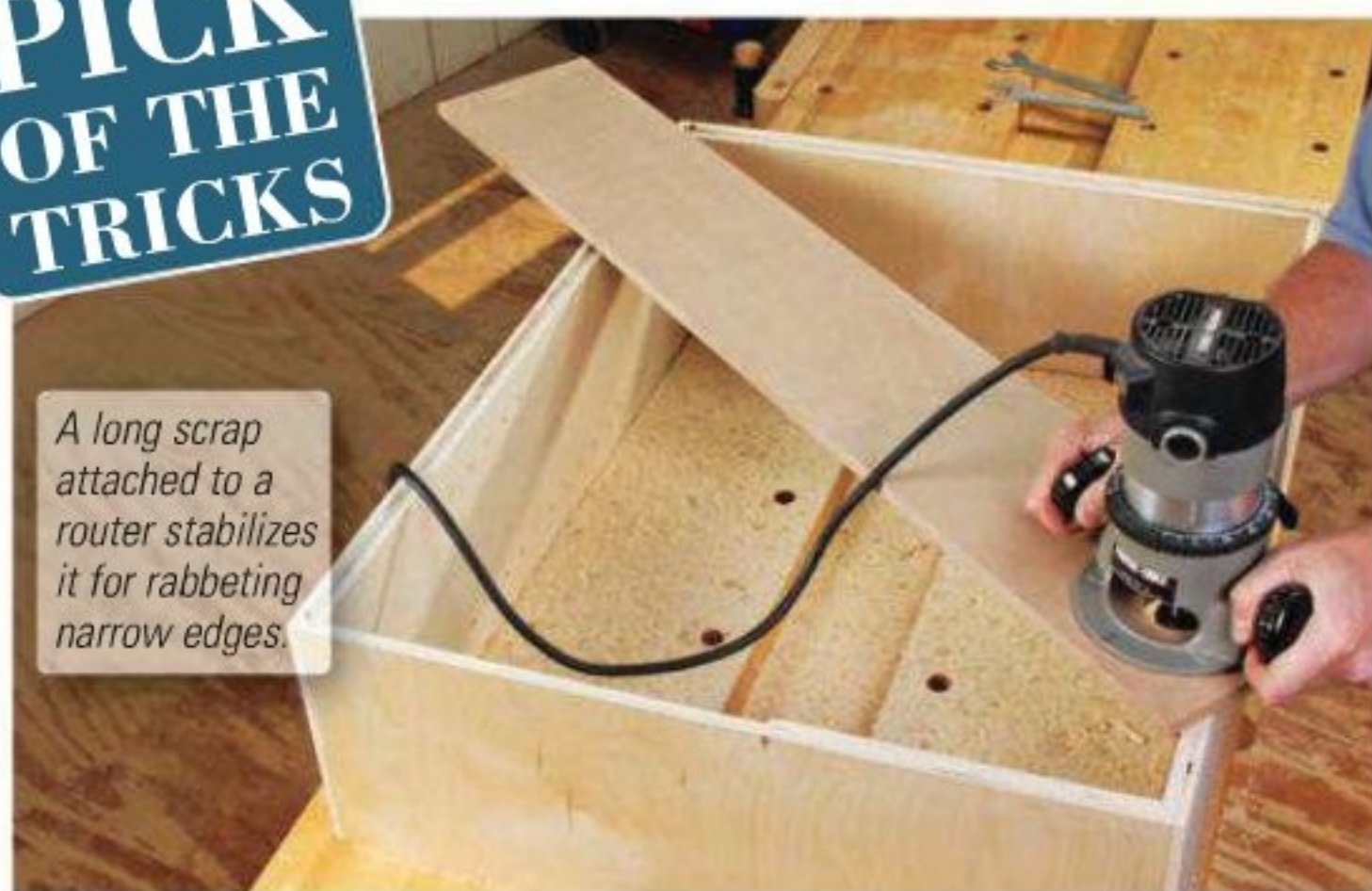
Marking Cord Ratings

Recently, I learned the hard way that the extension cord you use for a tool must be capable of supplying the maximum amperage the tool requires (as indicated on the motor label). I overheated the tool motor because my cord was too long for the necessary amperage. Since this information isn't stamped on the cord, I now write the cord length and amp rating near both plugs of my new cords with a marker. I'll never ruin another power tool again.

John Cusimano
Lansdale, Pennsylvania

PICK OF THE TRICKS

A long scrap attached to a router stabilizes it for rabbeting narrow edges.



Sure Footing When Rabbeting Cabinet Backs

When I build cabinets, I find it easier to rout the rabbeted recess in the carcass for the back panel after the cabinet is assembled. It's hard to do this while balancing the router on the edge of the plywood. My solution is to mount the router to a piece of long, flat scrap to act as a stabilizer. I drill a hole through the scrap to provide clearance for the bit,

then bolt the router right to the scrap. For a large cabinet, I make the scrap about 4' long and as wide as my router's base. Make sure the scrap is longer than the cabinet's diagonal dimension. The stabilizer spans the opening and provides sure footing when I make the rabbet cut.

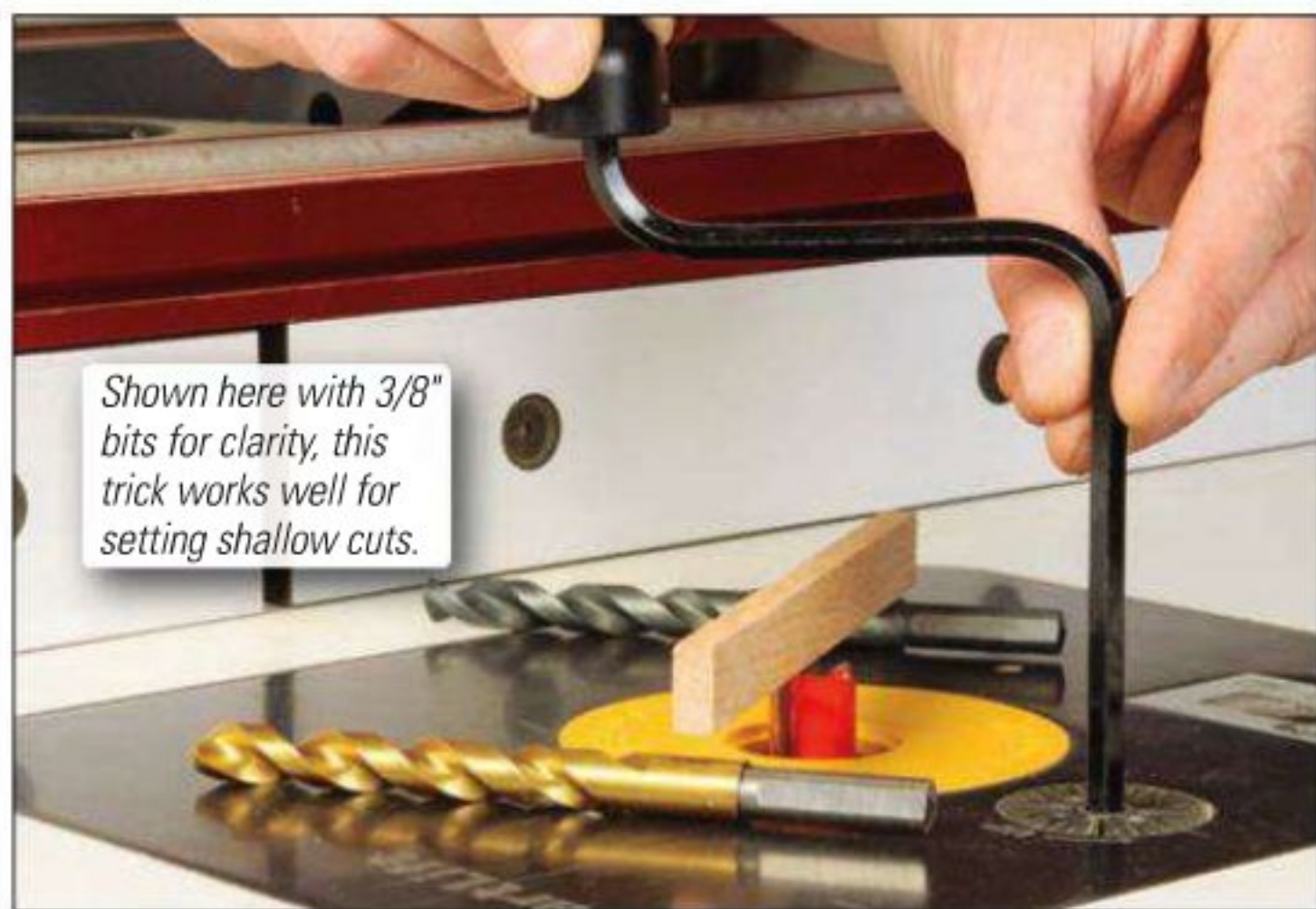
David Juhlin
Winfield, Kansas

Dialing in Your Router Bit Height

When I need to set a precise bit height at my router table, I take two drill bits with diameters that match the router bit height I need. I lay both bits down on the table parallel with one another and on either side of the router bit. Then, with the router bit raised higher than necessary,

I rest a small scrap on the top cutting edges and on one of the two drill bits. I lower the router bit slowly until the other end of the scrap touches the second drill bit. At this point, I know my router bit height is dialed in correctly.

Serge Duclos
Delson, Quebec



Magnetic Saw Fence

Here's a quick band saw fence you can make that requires no clamping. Just fasten a 4"-high scrap to a magnetic tool holder bar with a few screws. Mine stays right where I place it on the saw table, and I can store it on the machine's steel housing when I don't need it.

Alfred J. De Vries
El Cajon, California



Winner!

In addition to our standard payment, David Juhlin of Winfield, Kansas, will receive a Lamello Vario Box 440 Piece Set of Biscuits and Joining Elements from Colonial Saw for being selected as the "Pick of the Tricks" winner. We pay from \$100 to \$200 for all tricks used. Send your original, unpublished trick with a photo or drawing. Submit your Tricks to Woodworker's Journal, Dept. T/T, P.O. Box 261, Medina, MN 55340. Or send us an email: tricks@woodworkersjournal.com

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Questions & Answers

Dealing With Router Burn and Loose Bark

THIS ISSUE'S EXPERTS

Bill Hylton is a woodworker and author of *Woodworking with the Router*.

Michael Dresdner is a nationally known finishing expert and the author of *The New Wood Finishing Book*.

Rob Johnstone is editor in chief of *Woodworker's Journal*.

Contact us

by writing to "Q&A,"
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Medina, MN 55340,
or by emailing us at:

QandA@woodworkersjournal.com

Please include your home
address, phone number and
email address (if you have one)
with your question.

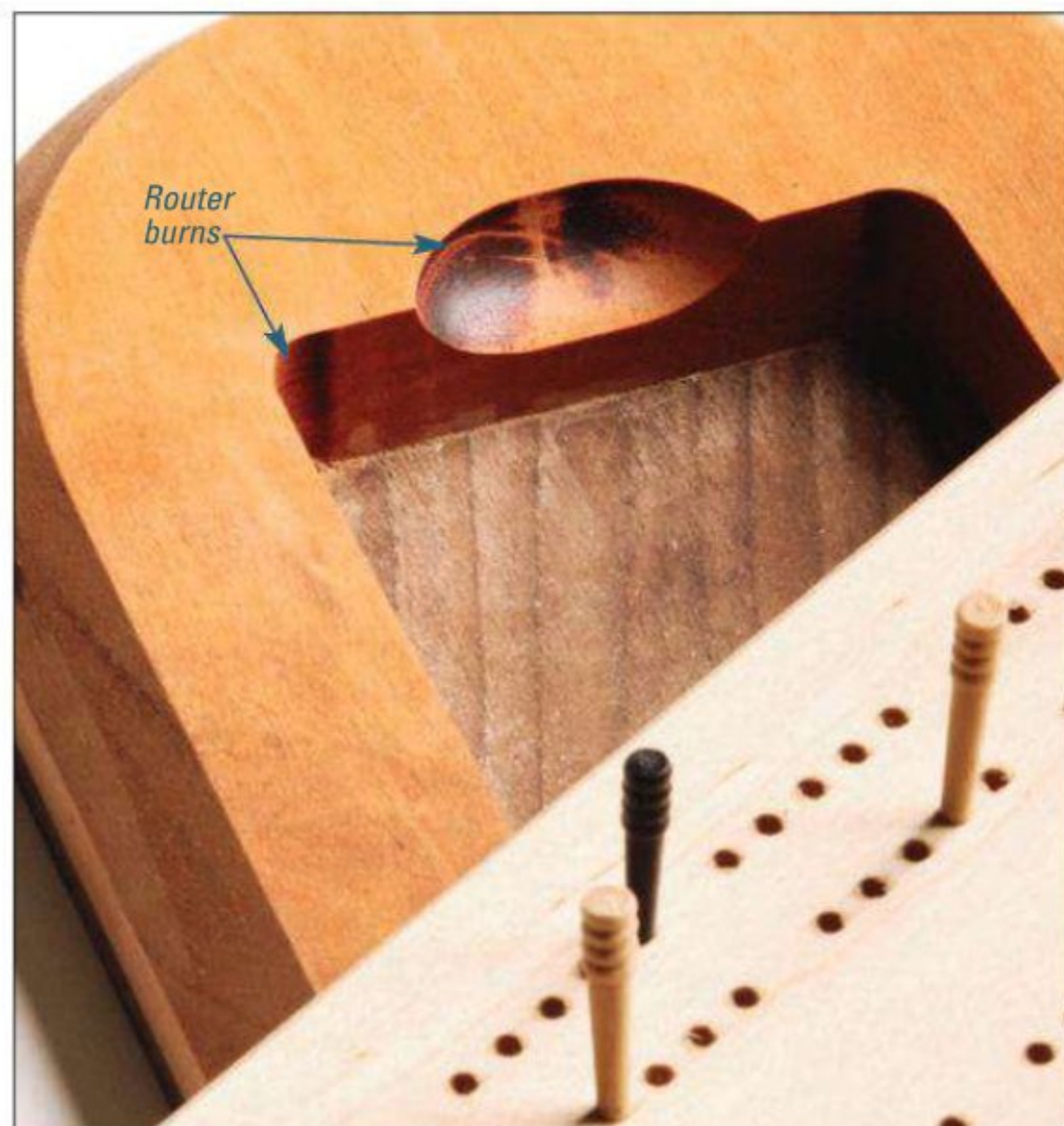
**To balance stain absorption
(color consistency) between
end and face grains, our expert
recommends either wood
conditioner or thinned shellac.**

Q It seems, no matter how careful my technique or sharp my bit, that any time I rout a decorative edge or create a molding, somewhere along the edge I will get router burn. I hate to completely redo an entire piece for just a small area. Is there some way to remove this discoloration?

Phil Gilstrap
Hodgen, Oklahoma

A Burn marks on wood result from excessive heat generated by some machinery operation. You can scorch a board while sawing it, drilling it, routing it, even sanding it. Of course, the best strategy for dealing with burn marks is avoidance. Keeping blades and bits both clean and sharp is important. Using good technique, as you indicate, is also important. When profiling an edge, you must feed the router (or, on the router table, the workpiece) briskly and continuously. Every hesitation or pause can result in a burn, especially if you're working a susceptible wood like cherry or maple.

Planing, scraping, filing, and sanding will remove burn marks. But you must work carefully. The hazard is that you'll distort the profile or contour. Take your time. Use a crisp-edged sanding block or a detail block matched to a contour's



Cherry is a species of wood that burns quite easily. The best strategy for removing router burn is to not get it in the first place.

proportion — a convex block for a cove, a concave block for a bead. Begin your work some distance from the burn so you don't produce an obvious hollow in place of the burn.

Depending upon the location and extent of the burn, a redo actually may be the best option. You often can, for example, joint the edge that guides the router, then re-route the profile, removing the burn. The operation can be faster than a lot of persnickety hand-sanding and yield a crisp, unblemished profile.

— Bill Hylton

Q In watching shows and reading articles, people talk about applying shellac to a project, then stain, then a protective coat. Why the shellac before the stain?

Dave Hunter
Truckee, California

A Some woods, notably softwoods, tend to absorb more stain than people would like, often selectively, such as in the early wood bands as opposed to the latewood bands. Other woods, like cherry, tend to blotch under oil-based stains. Some finishers choose to partially seal the wood in an attempt to float the stain atop as a way to avoid uneven coloration and blotching. One way to do that is to use very dilute dewaxed shellac as a sealer.

However, I am not a fan of this method for a number of reasons. It does not work in all situations, it is far from foolproof, and it is frightfully easy to make things a whole lot worse. Along with using only dewaxed and not regular shellac, the method demands

Continues on page 16 ...





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Questions & Answers

that you know exactly how much to thin it, how quickly to wipe it off and when you need to sand afterwards. These things vary with the wood and stain in question. In other words, it is one of those methods that people spend time perfecting and manage to make work with their particular stain products and regimens. It is far from foolproof and therefore is not what I would recommend as a general practice for those who have not practiced it beforehand on scrap with their particular chosen wood and stain.

There is, however, a far easier alternative offered by the same companies who make the affected stains. Companies selling oil-based stains, the ones most prone to blotching, also sell wood conditioner. You flood it on, wipe it all off, then stain while the wood is still wet using the same method: flood the stain on and wipe off all that is not absorbed. You end up with both a safe and uniform alternative, with no risk of layering too much stain or the wrong type of stain atop sealed wood, a situation that can cause not only muddiness but also delamination.

Simply put, wood conditioner is a far less risky alternative, and the companies themselves clue you in to which types of stains may need it by marketing it together with those particular stains. All you need to do is figure out which woods are likely to benefit, and I can tell you that: softwoods, cherry, very absorbent woods like poplar, and in some cases, woods with unattractive twisted grain, such as soft maple.

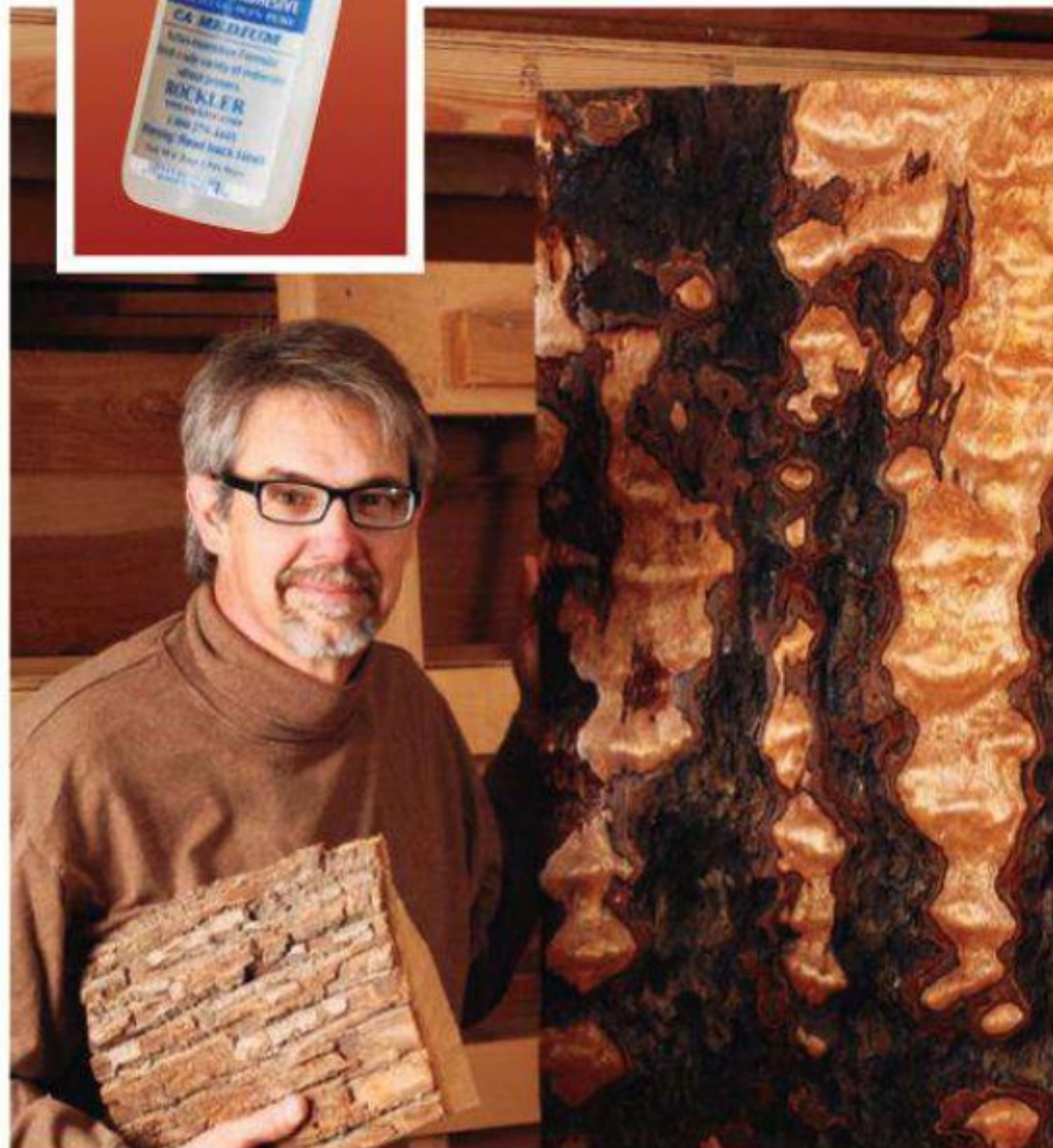


Winner!

For simply sending in his question on sealing wood with bark on, Peter Johnson of Ogden, Utah, wins an Osborne Miter Gage by Excalibur (from General International). Each issue we toss new questions into a hat and draw a winner.



If bark is coming loose from your wood, use a thin CA adhesive to re-secure it.



Bark as art? Species matters when it comes to keeping the bark on a block of wood. So does getting the wood dried to avoid bacteria and molds from growing at the intersection of wood and bark.

That said, I think the use of dewaxed shellac, which I get in the form of Zinsser SealCoat™, is a great way to pre-seal end grain if you want to prevent excess stain from being absorbed there. While wood conditioner helps in that situation, it is often not adequate. By flooding SealCoat only onto the end grain, then wiping off what does not absorb and later sanding lightly, you end up with end grain that takes stain about the same as the flat grain.

— Michael Dresdner

I want to retain as much of the bark as possible for the look I am trying to get.

My question: Is shellac as good a sealer as anything else, as far as being able to penetrate into the bark and make it stable enough for a belt sander or router? I'm leaning toward shellac because its viscosity may allow it to penetrate the bark more easily than a thicker liquid like polyurethane.

Peter Johnson
Ogden, Utah

Q I am starting a few craft projects using whole chunks of tree limbs, limb crotches, and natural divides. I want to keep the bark on the pieces. I'm going to cut pieces to length, and then need to use some kind of sealer on the pieces before I start carving or sanding, and

A Keeping the bark on chunks of wood, in my experience, is a hit-and-miss business. Some species are reputed to shed their bark regardless of treatment (hickory is one with a bad reputation in this regard), while others are more likely to not shed their skin — walnut and basswood have a good reputation here.

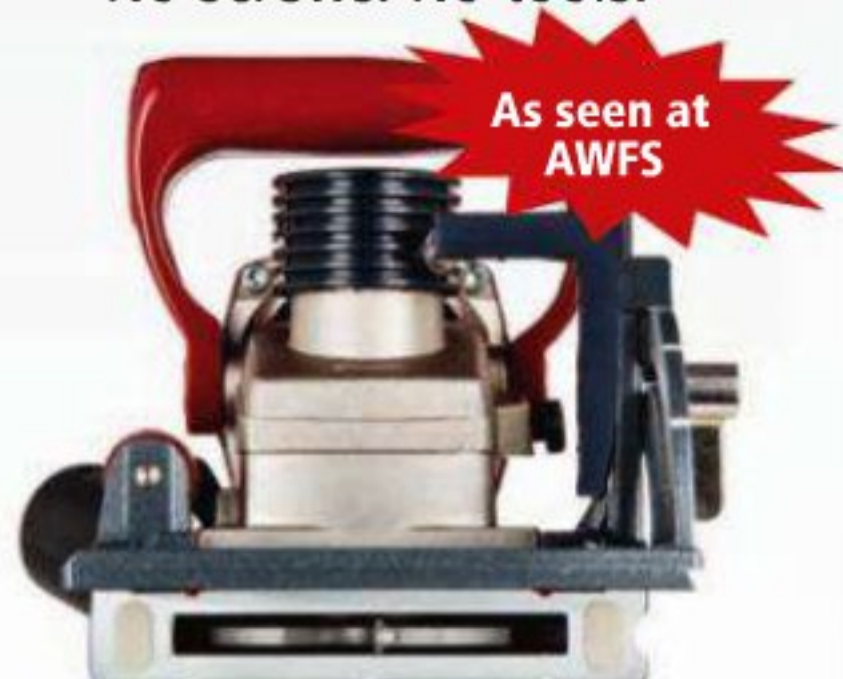
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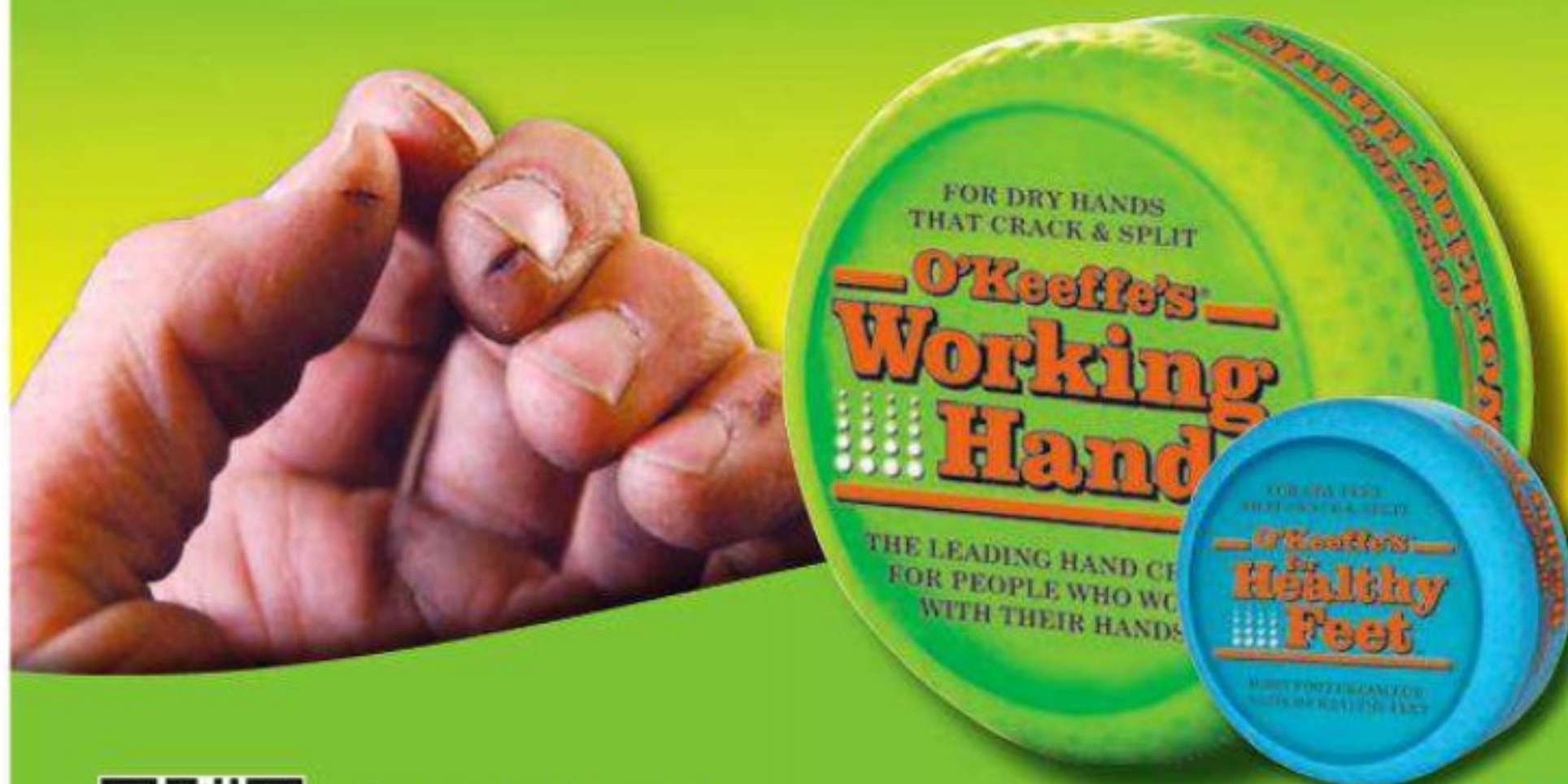
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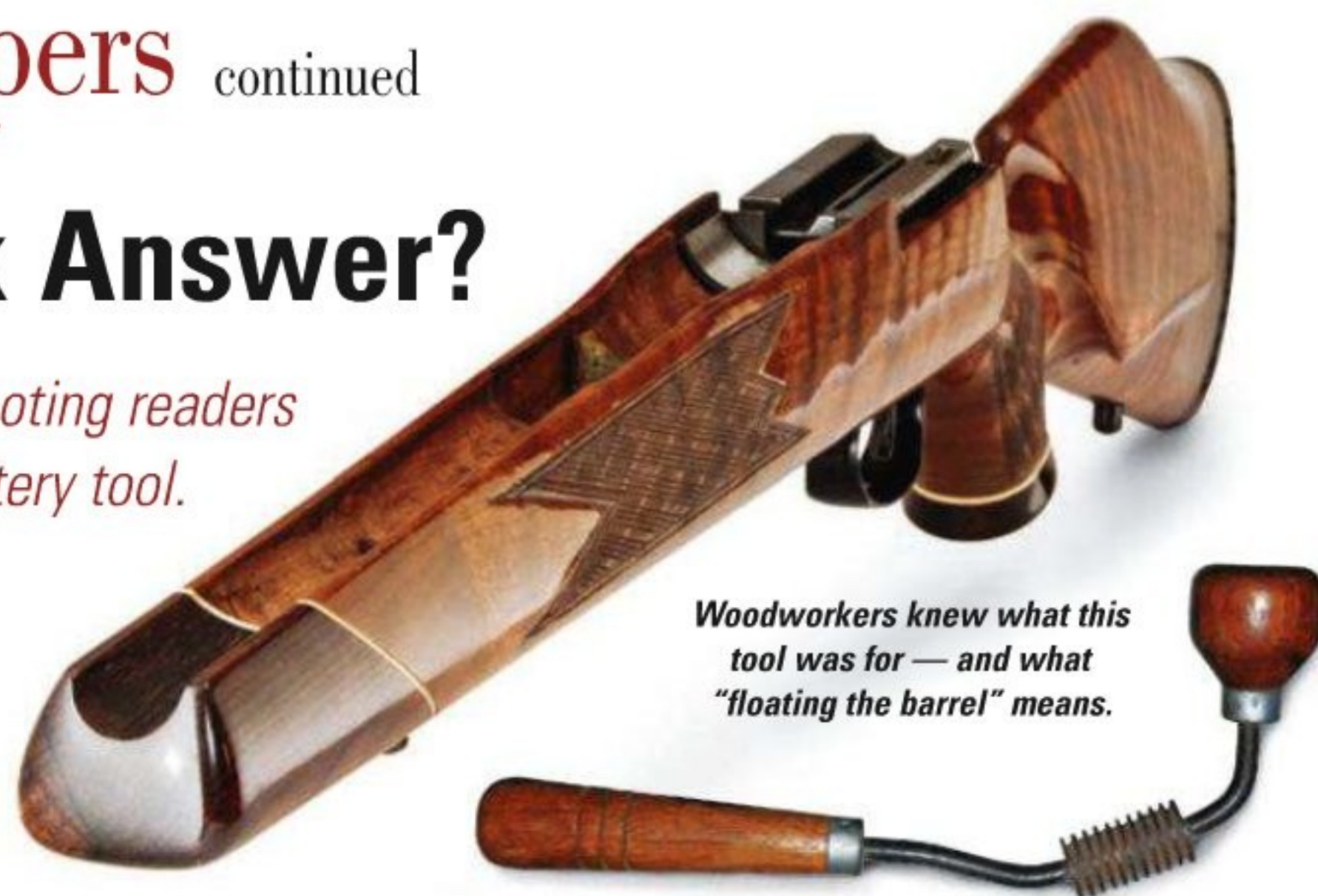
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Stock Answer?

Straight-shooting readers solve a mystery tool.



Woodworkers knew what this tool was for — and what “floating the barrel” means.



What's This?

R. Heppert of Doylestown, Ohio, says our August mystery tool involves two of his hobbies: “making sawdust and target shooting.” The tool from **Robert E. Farwell** of Rutherfordton, North Carolina, is “a barrel bedding tool,” according to **Scott Kuykendall** of Inman, South Carolina (among others). “It is used to remove wood from the barrel channel of a rifle stock,” said **Don Johnson** of Hopkinsville, Kentucky.

“You would use your dado or molding plane to cut the initial channel and then follow up with the inletting tool to produce the round, straight channel,” said **Chris Silveira** of Arroyo Grande, California. “The cutters are the discs between the knob and the handle. They work like individual scrapers,” said **Charles D. Arkon** of Sparta, Tennessee. **Chris Ross** of Sturgis, South Dakota, noted that, “There are small rubber washers in between the metal type washers to let them flex as they are being used,” and **James Rawcliffe** of Sebring, Florida, explained that, “disks

and spacers are changed in size, depending on the width of the barrel.”

William Kennedy of Mumford, New York, notes that, “The handles are elevated above the cutter portion so your hands clear the top of the stock when creating the barrel channel.”

George Hanson of Andover, Kansas, added that, “for a lot of shooters, additional clearance is added to the barrel channel. This is called ‘floating the barrel.’ If you can slide a dollar bill between the barrel and the stock for the full length of the barrel with no resistance or catch points, then the barrel is properly floated.”

Bryan Turner of Wagon Mound, New Mexico, mentions another means of measurement: “When the barrel channel is close to being finished, you coat the barrel with a transfer agent (I use women’s red lipstick). You then assemble the rifle; any high spots are highlighted in red when you disassemble the rifle. Use the bedding tool to scrape them away.”

—Joanna Werch Takes



Winner! Don Read of Lebanon, Missouri, wins a **PORTER-CABLE Oscillating Multi-Tool (Model PC250MTK)**. We toss all the Stumpers letters into a hat to select a winner.



Basswood is a species whose bark is likely to stay stuck.

There are a couple of things that you can do to improve your chances of keeping the bark on your wood. The first thing is to cut the stock in the winter when the sap is not flowing. Bacteria or mold growing under the bark will reduce its bond to the wood, so the next thing to do is to store your harvested pieces in a cool, dry place. Or, if you can put it in a kiln right away — that is even better.

Before I answer your question directly, if you find loose chunks of bark, CA [cyanoacrylate] glue (the thin stuff often used by turners) can be used to secure them. You can indeed use shellac to help stabilize the bark for machining, but it won’t “glue” loose bark back onto the log. What I have done is thin the shellac down by 50% and really soak the bark. This allows it to get into small cracks and crannies. Then I apply a thicker coat of shellac which reinforces the first one. I used Zinsser SealCoat the last time I did this, and it worked well. You can then apply poly over the shellac should you choose, but you would not need to do so.

— Rob Johnstone

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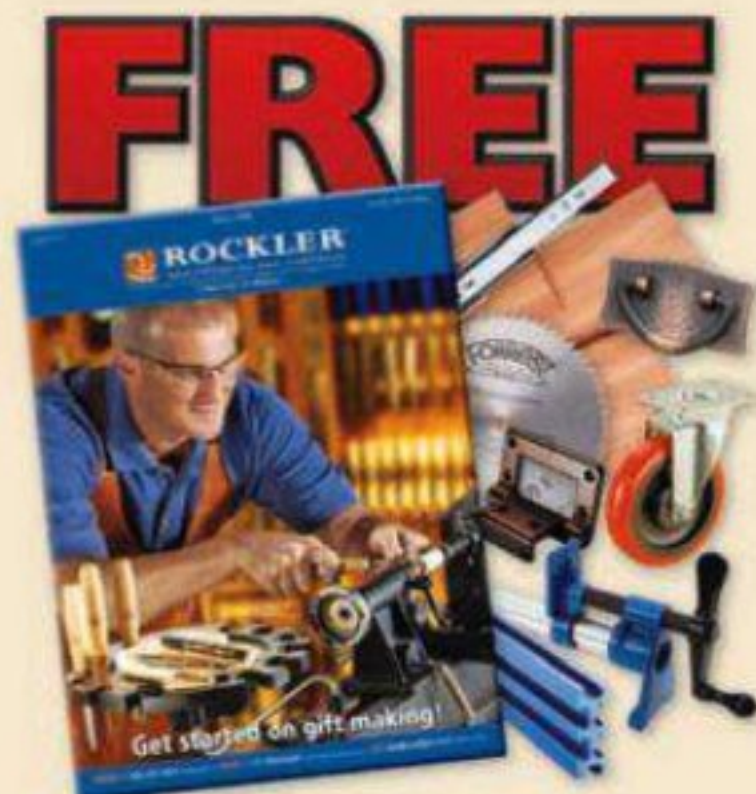
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Shop Talk

Students Compete to Build Cabinets



Daniel Berrios (top) and Kaydee Walters (bottom left and right) competed in a three-day cabinetmaking contest at last summer's AWFS Fair.

SkillsUSA at a glance:

More than 300,000 students and advisors annually join SkillsUSA. Organized into over 17,000 sections and 54 state and territorial associations, SkillsUSA has served more than 10.5 million members.

— Editor



Student Build-off *AWFS hosts WorldSkills*

At last summer's Association of Woodworking and Furnishings Suppliers (AWFS) Fair in Las Vegas, two students competed in a three-day, 21-hour cabinetmaking contest at the WorldSkills Cabinetmaking Qualifying Trial. The winner would advance to Leipzig, Germany, in 2013 to compete as an international WorldSkills Cabinetmaking finalist.

The Trial's project was a small but intricate nightstand. While the competitors each worked on it, they were under the close supervision of three

judges and a trade show's worth of observant spectators. Imagine the pressure of that kind of shop scrutiny!

But Kaydee Walters, a 2011 graduate of Tooele High School in Tooele, Utah, and Daniel Berrios, a graduate of Bethlehem Vo-Tech School in Bethlehem, Pennsylvania, were seasoned veterans of such challenges as gold medalists in high school cabinetmaking through an organization called SkillsUSA. It's a national program serving high school and post-secondary students who are preparing for some 90 different trade careers. Walters and Berrios had won similar competitions

at their respective district and state competitions, then at the national level. Daniel won nationals in 2010, and Kaydee nabbed that victory this past June. Those competitions qualified them for the 2011 AWFS challenge.

Robert Tobias, an associate professor of cabinetmaking and wood technology at Thaddeus Stevens College of Technology in Lancaster, Pennsylvania, was one of three technical experts who oversaw the three-day challenge and judged the competitor projects. Tobias had developed the initial plans for the nightstand project, as well as helped to organize the Trial — a first at AWFS — along with the help of a host of other organizers and technical experts.



Contestants had 21 hours to complete identical nightstand projects, which were judged in an ongoing fashion by three technical experts. The winner would advance to international competition in 2013.

The cherry nightstand was an elegant but demanding amalgamation of joinery styles, millwork exercises and casework details. A copy of the project plans was on display for spectators to study.

Rob explained that, according to rules established by WorldSkills, the Trial project was required to have a hand-dovetailed drawer, some veneer work and a door. It also needed to be buildable in 21 hours, over three seven-hour workdays. Tobias based it loosely on a plan he'd used for college courses at Thaddeus Stevens, but the final design was intentionally modified to satisfy guidelines set forth by WorldSkills.

Competitors received the preliminary nightstand plans three weeks prior to AWFS so they would have a chance to study the drawings. But, in order to ensure transparency and fairness, a few days before AWFS the plans were modified another 30 percent by half of the members of a technical expert forum. These changes made the nightstand

project unique to the two finalists entering competition.

Once the build-off was underway, Tobias and fellow judges evaluated the projects at various stages, using a point distribution system established by WorldSkills that mirrors the evaluation methods followed at the international competition.

When the Trial ended and final points were tallied, Daniel edged ahead of Kaydee to win the AWFS event and move on to the WorldSkills international competition. Tobias says Berrios has an Olympic-class event to look forward to in Leipzig: more than 800 students from 52 countries will be competing in 40 different skill areas. Gold, silver and bronze medals will be awarded to the winners.

The WorldSkills Trial was generously supported by tool and supply donations from 18 leading manufacturers including, among others, Delta, Bosch, Festool, Bessey, Kreg Tool, Grex and Rockler.

— Chris Marshall



Safer Stockings

A Solution for Santa

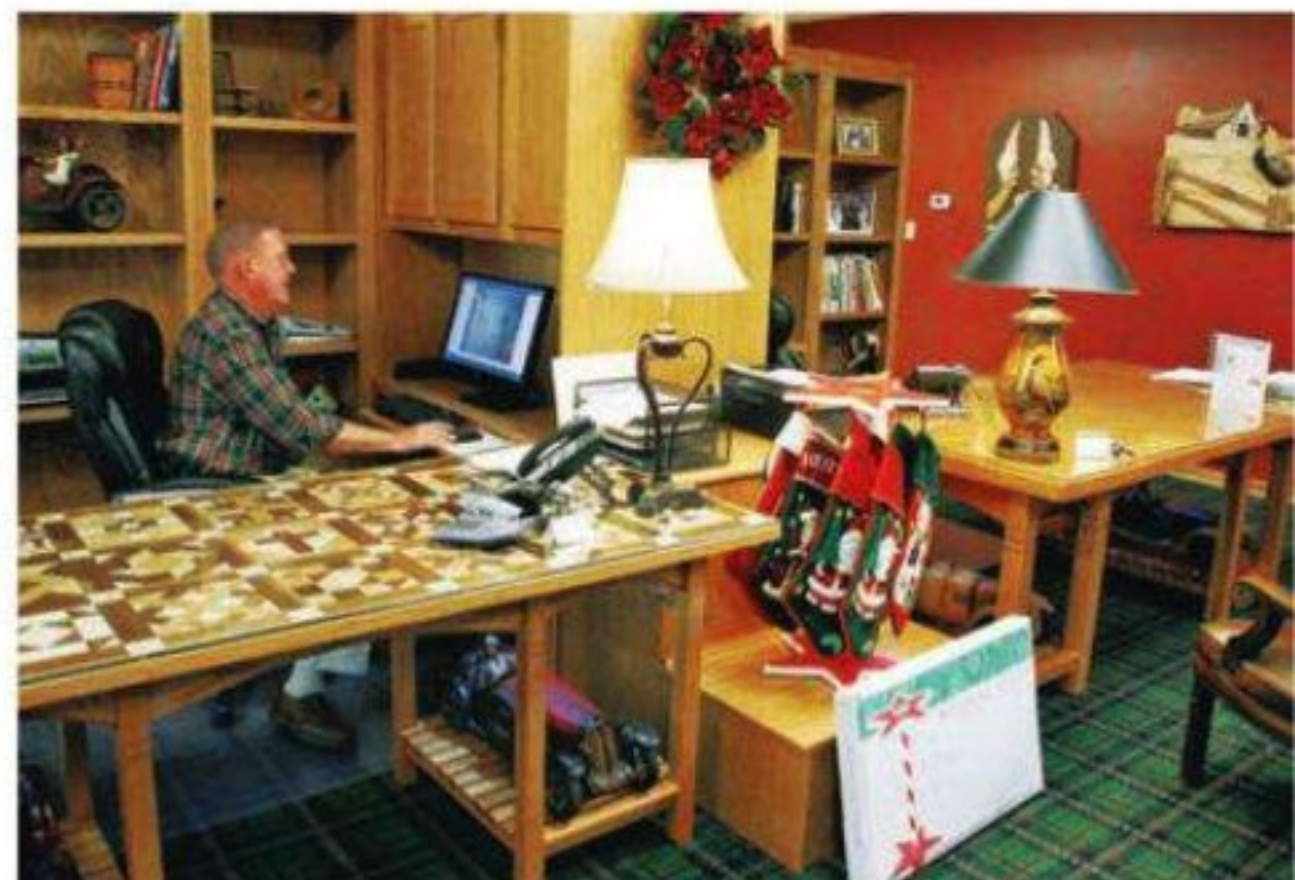
A couple of winters ago, Don Kosten carved a mantel. "My wife loved it," the Indianapolis woodworker said, but "a month later, the grandkids were in, and they panicked because there was no place to hang stockings." His wife sent him to his workshop with instructions to find a solution. Don emerged with the Stocking Caddy™, a freestanding wooden support for up to 10 stockings.

"Friends and neighbors kept coming over and saying, 'We've gotta have one,'" said Don, who noted that metal mantel weight stocking holders can be a cause of injury to children. Plus, some people "don't even have mantels."

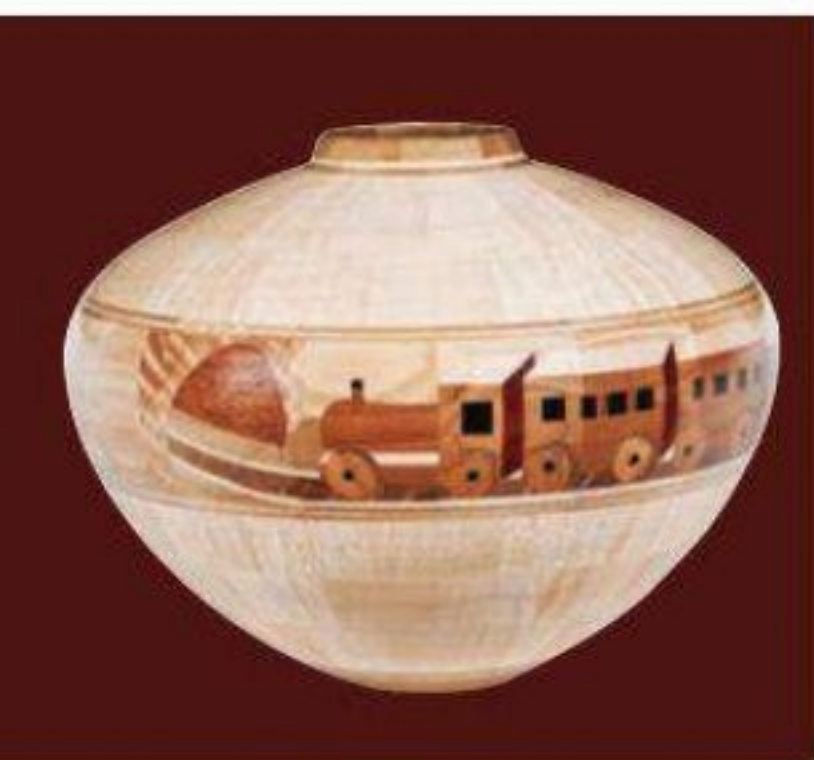
While Don is "supposed to be retired" after 27 years of selling industrial motors, "my business side kicked in," and he patented the Stocking Caddy. He's no longer doing the manufacturing himself, but the Stocking Caddy business (fax 317-882-3767; stockingcaddy.com) is still going strong.

Don, meanwhile, can usually be found in his office/woodshop, a 9,000-square-foot facility in a building he owns. Don built most of the items in the office, including a desk in a "patchwork quilt" pattern that incorporates over 550 pieces of inlay. Don says of his woodworking, "I do it for myself, my family, and my church."

After Don Kosten made his first stocking caddy, friends and neighbors kept him very busy in his shop.



photos by Kelly Wilkinson; courtesy of The Indianapolis Star



"Train Ride"; curly maple, pecan, cherry, ebony, bloodwood; Larry Marley



"Greener Pastures"; lacewood, ebony; Terrell Deering

The 2012 Design in Wood Exhibition will be open from June 8 to July 4, 2012. For entry requirements and deadlines, keep an eye on the SDWFA website at www.sdfwa.org or call Bob Stevenson at 619-422-7338 after January 1, 2012.



"Ginkgo Headboard"; mahogany, sapele, anigre; Craig Thibodeau

San Diego Shines Again *30 Years of Design In Wood Show*

photos by Andrew Patterson

This year marked the 30-year anniversary of the Design in Wood Exhibition sponsored by the San Diego Fine Woodworkers Association. Held in conjunction with the San Diego County Fair, the show saw over 300 juried entries, more than 300 volunteers, and over 1.4 million people in attendance at the fair. Items pictured on this page were winners who received a two-year subscription to *Woodworker's Journal*, one of the sponsors of the show for the past several years.



"Performance"; cherry and padauk; Henry Strause



"Greenov Cabinet"; sipo; David Wade



"3D Long Horns"; American walnut, Peruvian walnut; Paul Lusteg

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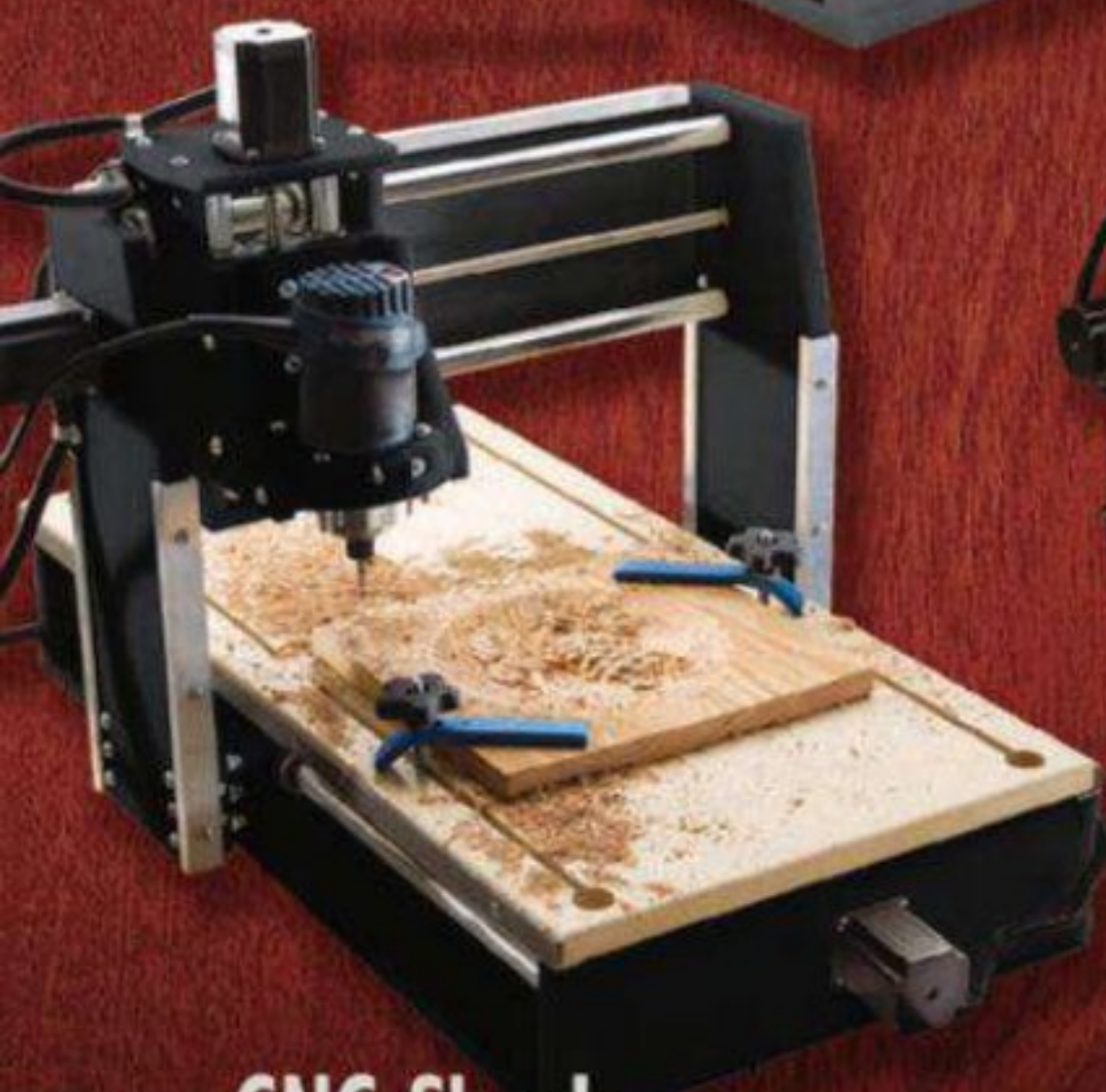
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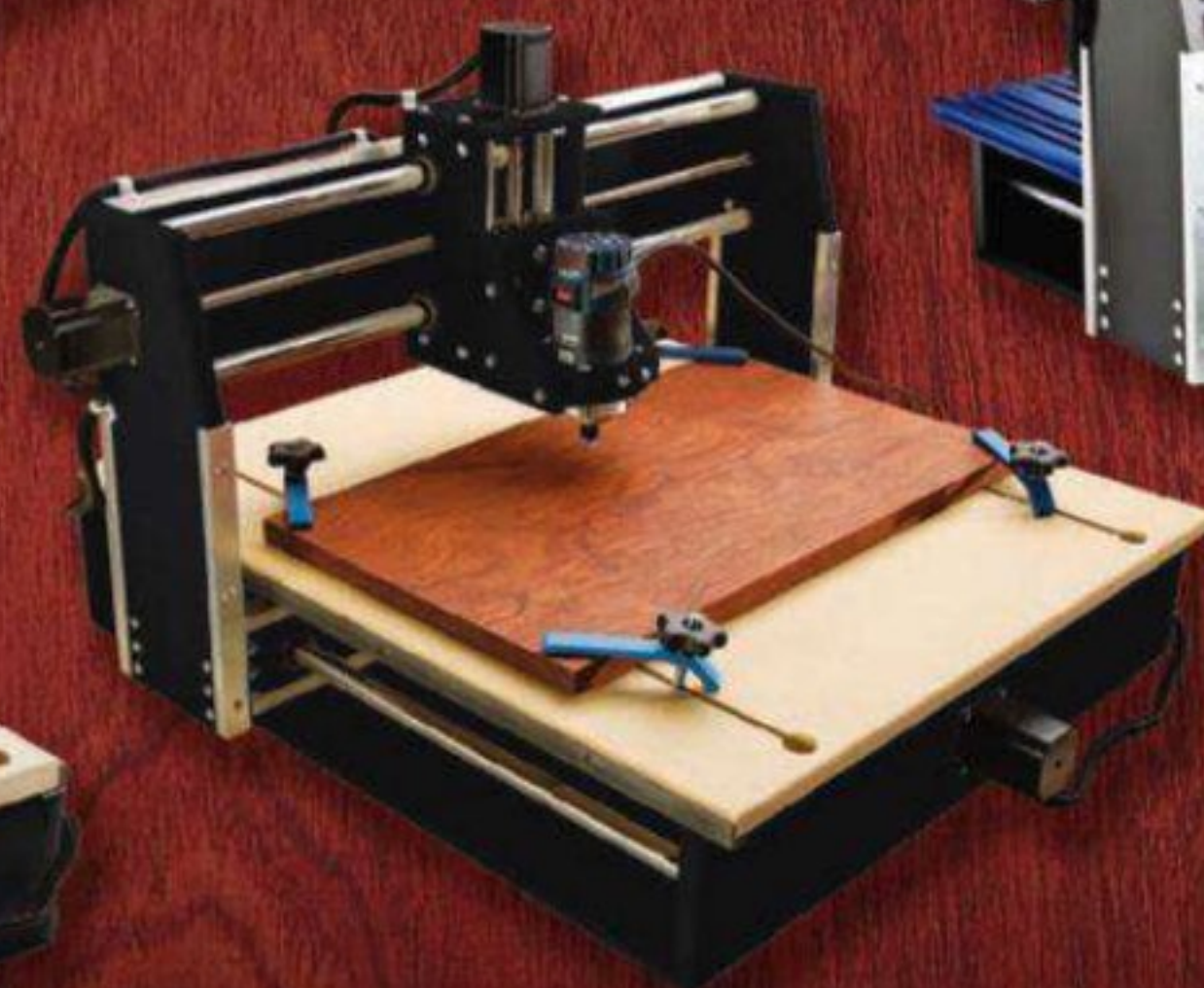


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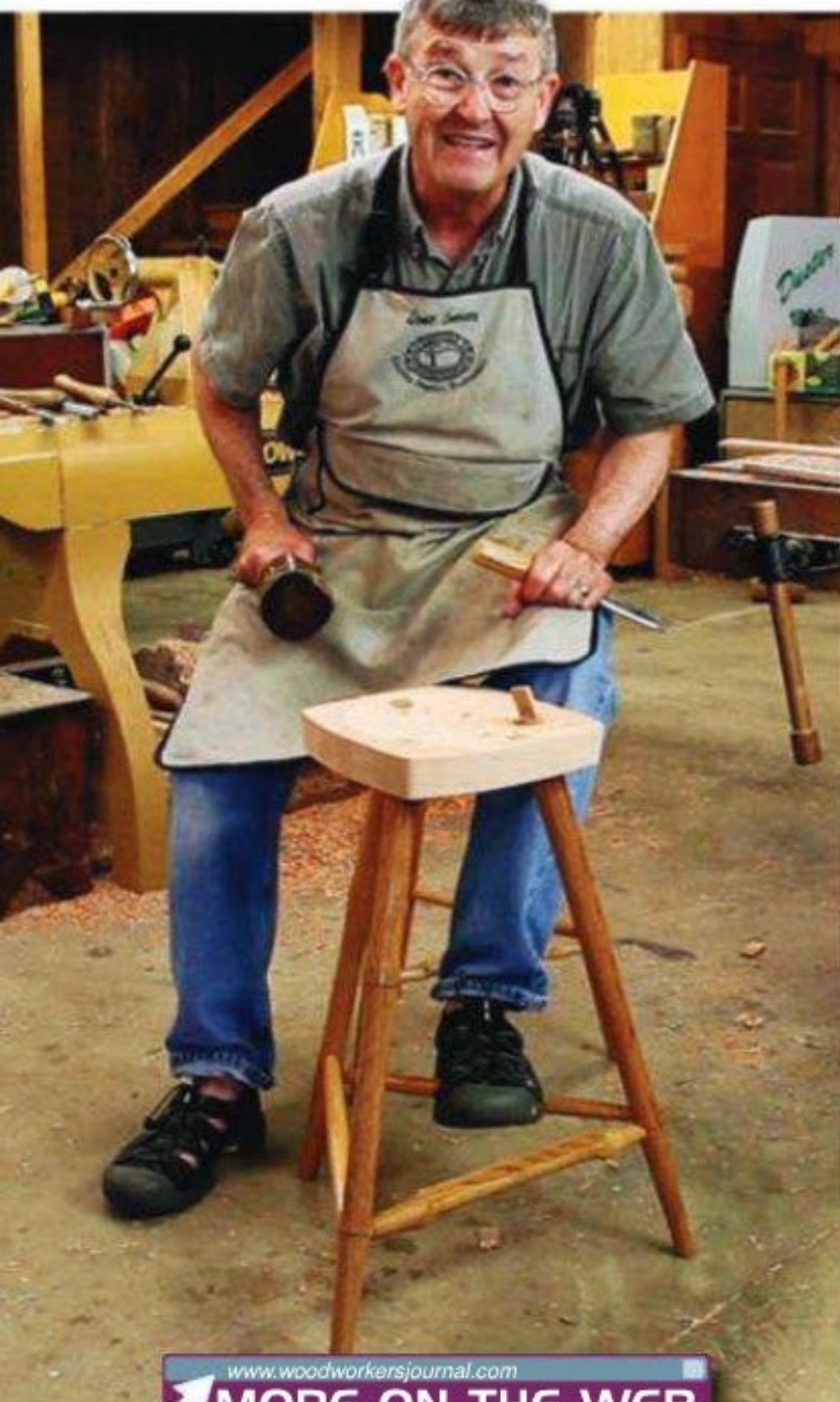
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Woodturning

Sturdy Shop Stool

By Ernie Conover

Faceplate and spindle work, with a multi-axis turned stretcher, create a cool footrest.



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MORE ON THE WEB

To see the author discuss this project, go to woodworkersjournal.com and click on the "More on the Web" tab to watch his video overview.



The stretchers are one of the superior features of this stool. The stretcher oriented to the front of the stool seat has a footrest as part of its shape. The other two stretchers have offset mortises drilled onto the back and front legs.

Palmer Sharpless, a fondly remembered fellow founding member of the American Association of Woodturners, showed this nifty project to me. He originally designed it for the right height and comfort while filing saws, and I still have one of his originals in front of my saw filing vise. It is a standard project in my weeklong turning classes because it teaches so many things. Accurate layout and simple faceplate turning are required to make the seat. Turning of relatively lengthy 27"-long spindles for the legs teaches how to deal with vibration in long work, duplication of pieces



Lay out perfect centers on each of the leg billets and mount one in the lathe. The tenon end will go toward the tailstock and the part of the leg that rests on the floor toward the headstock. Use a spindle roughing-out gouge to bring it just round. Make bamboo grooves with a skew. Turn a gentle concave depression between the grooves such that the edge of the groove is the biggest diameter on the turning. See the Drawings for dimensions and layout details.

and how to accurately size a tenon for attachment to the seat. One, or all, of the stretchers can be turned in two axes to allow them to double as a nifty footrest. The drilling scheme to gain maximum strength from the legs and stretchers teaches wood technology. The project is also well within the capacity of most lathes.

The stool can be turned out of most any wood and can make good use of cutoffs from other woodworking projects. Contrasting woods give the stool a more modern custom look, while like-colored woods make it unobtrusive.

All sizes in the cutting list are dimensions that have worked well over the years, both in terms of lathe capacity and functionality of the finished stool. The height is excellent at a kitchen counter for reading recipes or making shopping lists. Do not be afraid to make the stool taller or shorter to suit your needs. While the seat and legs can be cut before commencing work, the stretchers are best cut and turned after you have a dry assembly and can make actual measurements. The length can vary quite a bit because, unless the hole is drilled on an exact radius of the 4" diameter layout circle, the distance will not be equal. In practice, no matter how careful the drilling, there is up to 1" difference in stretcher lengths. The 17" dimension I have given is significantly longer than normally needed.

I usually turn the legs first, then turn and drill the seat. I drill the holes for the legs on about a 15° angle. "About" as you can vary a degree or two more or less from 15° and everything works out fine.

I simply block up a piece of plywood on the drill press table at a 15° angle and secure it with C clamps. I then dry assemble the legs into the seat to measure, turn and dry assemble the first stretcher. I then move on to the second and third.

Making the Stool

Lay out perfect centers on each of the leg billets and mount one in the lathe. The tenon end will go toward the tailstock and the part of the leg that rests on the floor toward the headstock. Use a spindle roughing-out gouge to bring it just round. The legs are made in a bamboo style set off by shallow grooves matched with gentle dips. Form the shallow grooves (see the *Drawings* for locations) with the point of a skew. Then turn a gentle concave depression between the grooves such that the edge of the groove is the biggest diameter on the turning. The tenon section should be kept at 2" long; the floor end of the leg should be about 1" diameter. This shaping can be done with a spindle roughing-out gouge, but if you are handy with a skew for a final cut you will be rewarded with needing very little sanding. I sand and finish (using shellac) the spindles in the lathe.

Now we turn our attention to the seat. On the bottom side, draw diagonals between the corners of the blank to find its center. Using dividers or a compass, lay out an 8" circle. Once drawn, use this radius to lay out three leg holes. Two radii (or a diameter) are approximately 1/3 of the circumference. Center punch the first hole on the circle line at the center of the backside.



Now turn your attention to the seat. Draw diagonals between the bottom corners to find center. Using dividers or a compass, lay out an 8" circle and place the leg mortises at equal thirds around the circle.

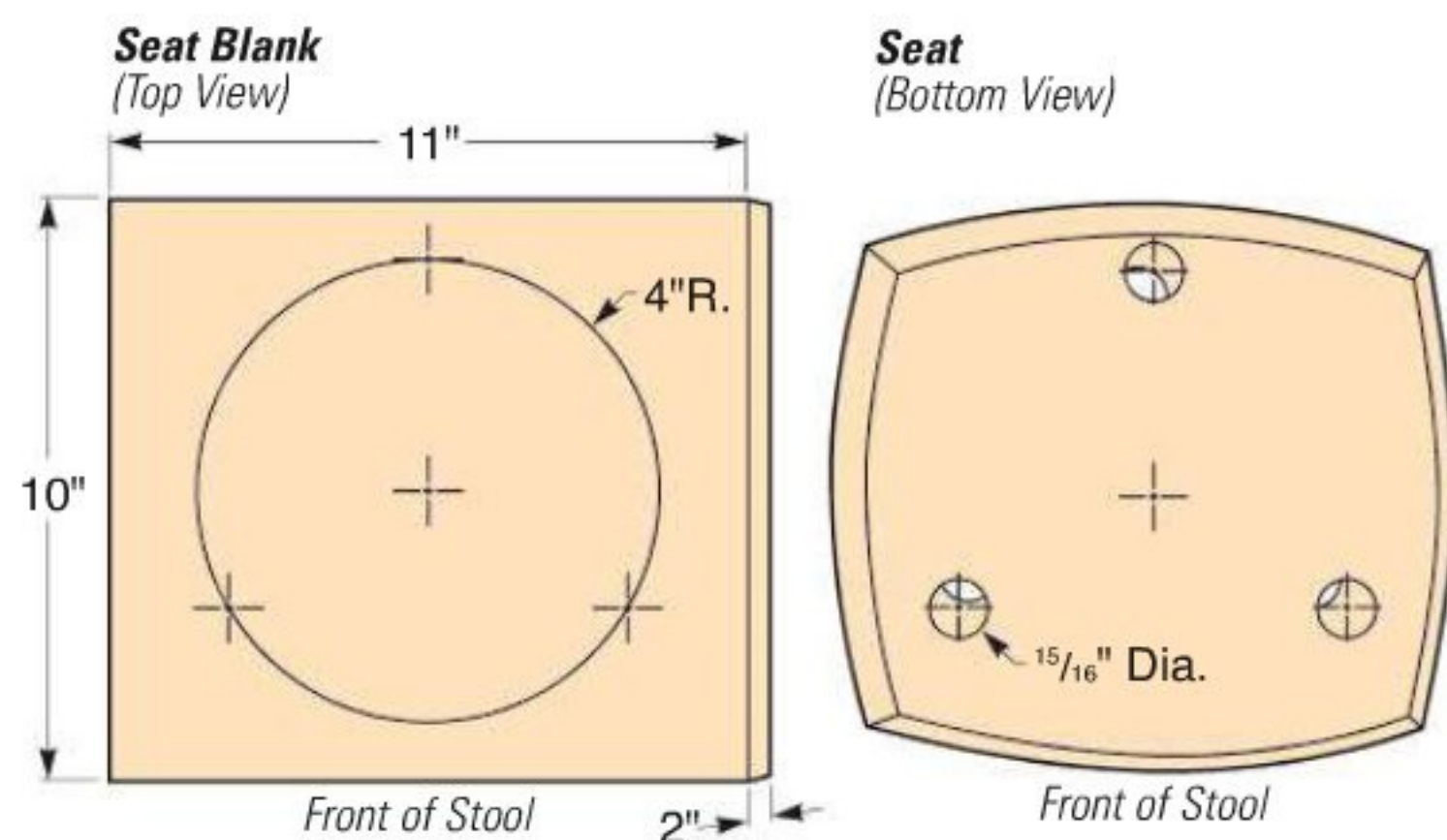


Set up for drilling at about a 15° angle. Drill each of the holes 15/16" with the layout mark on a line between the center of the 8" circle and the center of the column of the drill press. Drill through to a backup board.



Now mount the seat on a faceplate or screw chuck and turn the top to a gentle concave shape. The depression should end just outside the holes for the legs but not extend to the edges of the blank.

Woodturning continued



Material List

Species	Part	Thickness	Width	Length
Walnut, Cherry or Maple	Seat (1)	1 1/2"	10"	11"
Ash, Oak or Maple	Legs (3)	1 1/2"	1 1/2"	27"
Ash, Oak or Maple	Stretchers (3)	1 1/4"	1 1/4"	17"

*This dimension is for the front stretcher. If side stretchers are a simple tapered dowel shape and not a footrest with a flat, they can be as little as 15/16" square.

**Stretcher length should be less than 16", but I have allowed lots of excess in case your drilling angle is large.



The front stretcher goes between the bottom grooves in the front. Measure the exact distance, then add 1 3/8" to the distance. A stretcher should be just what the name implies: it pushes the legs outward.



The front stretcher/footrest is turned on one off-center axis and a perfectly centered axis.



The author used a beading and parting tool for this job with a 5/8" open-end wrench as a caliper. It yields a press fit with a 5/8" drilled hole. It is a nice trick that many turners use to their advantage.

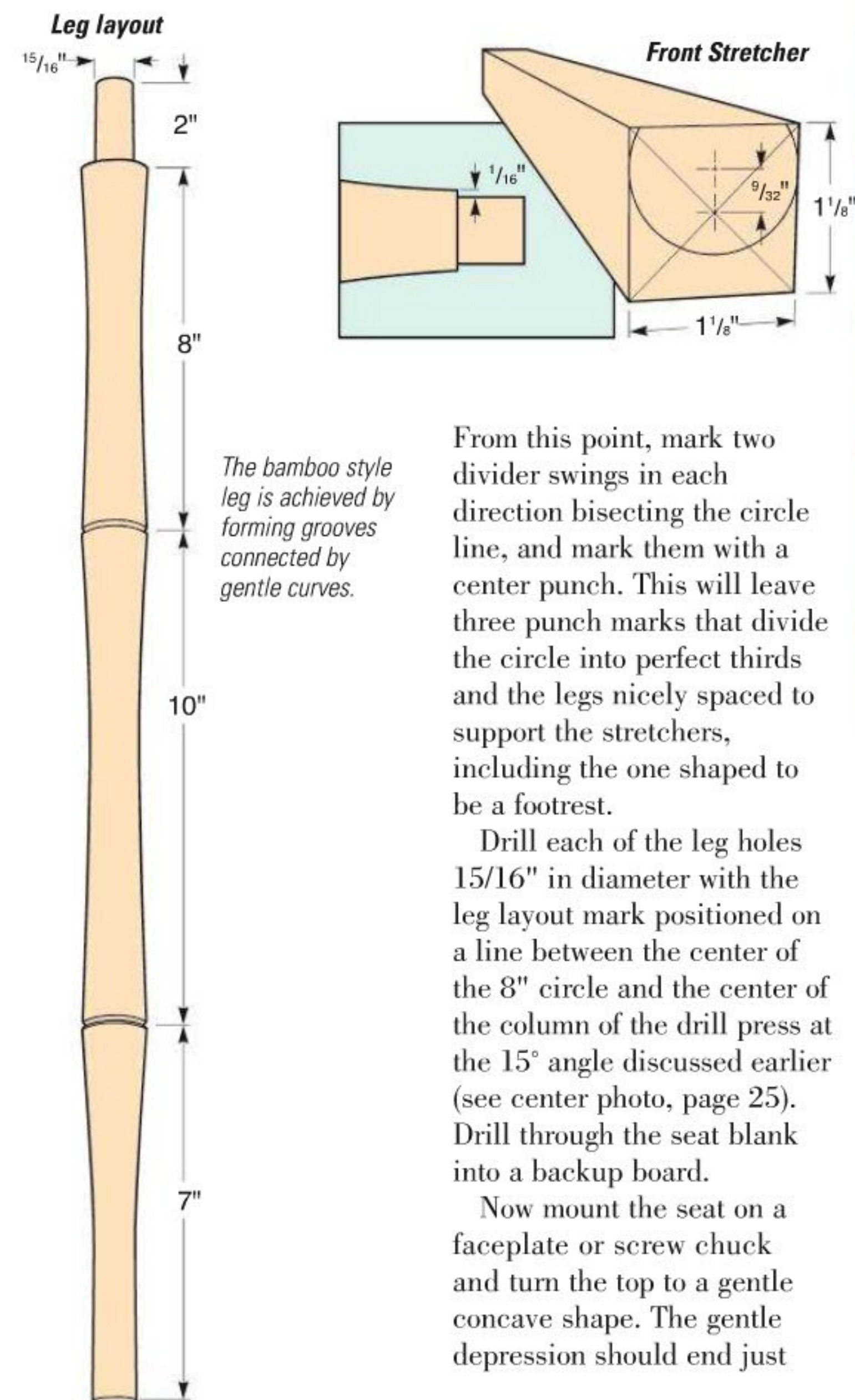
outside the holes for the legs but not extend to the edges of the blank. A large round-nose scraper is a great tool for this job. When this is done, place the seat top down on a bench and dry fit the legs.

The front stretcher goes between the bottom grooves of the legs positioned in the front. To find its length, measure the exact distance between the legs, then add 1 3/8" to the measurement. This

allows for a 5/8" tenon on each end but makes the stretcher 1/8" longer than the distance between the legs. A stretcher should do just that, push the legs outward.

The stretcher which becomes the footrest, the front stretcher, is turned in two axes as per the *Drawing* and center photo, above. Starting on the off-center axis,

Continues on page 28 ...



From this point, mark two divider swings in each direction bisecting the circle line, and mark them with a center punch. This will leave three punch marks that divide the circle into perfect thirds and the legs nicely spaced to support the stretchers, including the one shaped to be a footrest.

Drill each of the leg holes 15/16" in diameter with the leg layout mark positioned on a line between the center of the 8" circle and the center of the column of the drill press at the 15° angle discussed earlier (see center photo, page 25). Drill through the seat blank into a backup board.

Now mount the seat on a faceplate or screw chuck and turn the top to a gentle concave shape. The gentle depression should end just



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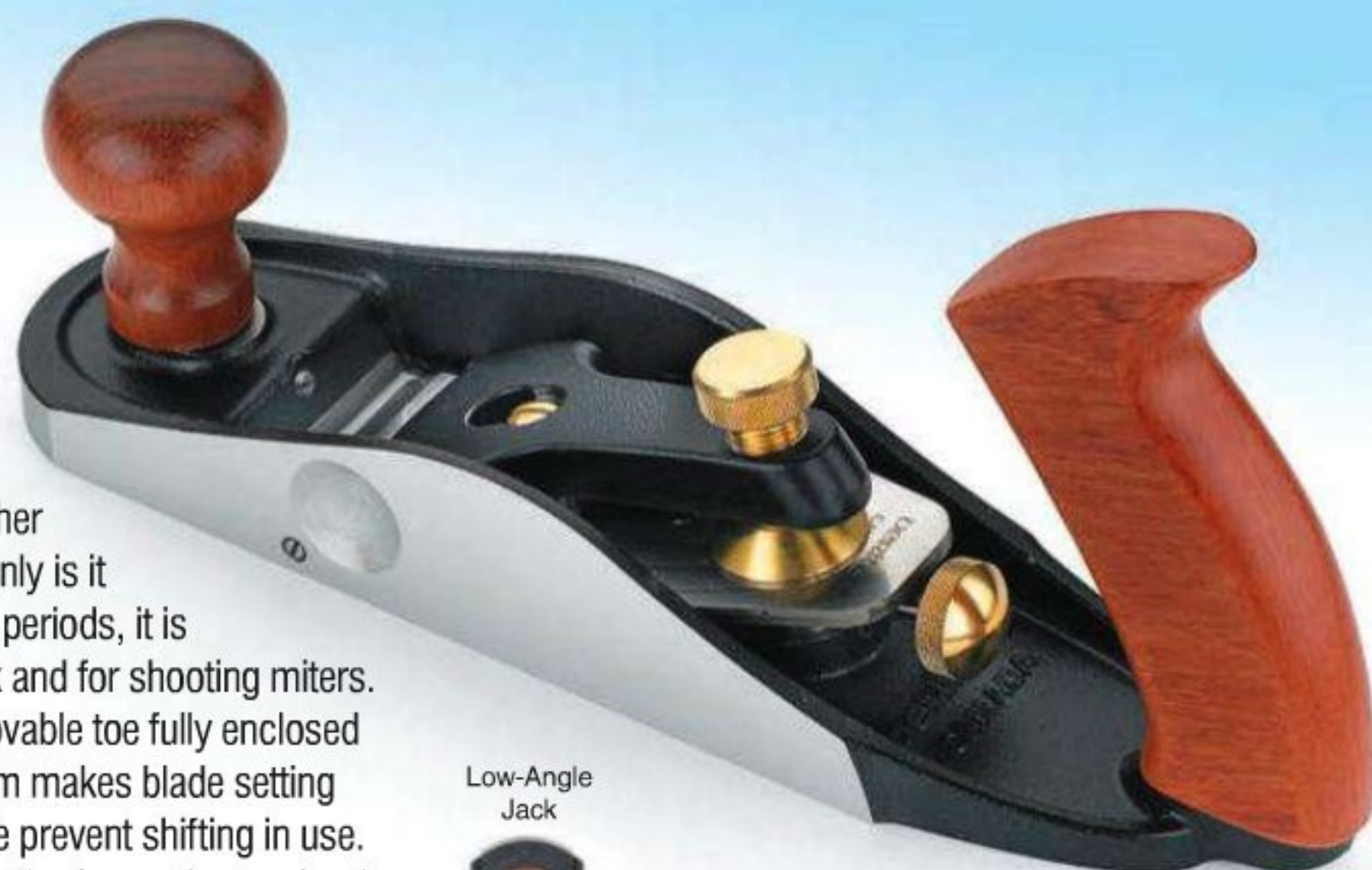
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Size Comparison of Planes

(Circle No. 30 on PRODUCT INFORMATION form)

Woodturning continued



The easiest way to drill the holes in the legs to accept the stretcher is with a handheld drill. Start the drill square to the leg turning, then bring the drill down until it lines up with the mark in the other leg.

I made pencil marks about 3" from each end and turned the center to a cylinder, stopping when the rounding just touched the flat spot on both edges. Now go to the true center of the billet and turn the ends. Start by sizing a 5/8"-diameter by 5/8"-long tenon on each end. I use a beading and parting tool for

this job with a 5/8" open-end wrench as a caliper. It yields a press fit with a 5/8" drilled hole. Taper the area between the tenon and the 3" mark to a pleasing shape, leaving about a 1/16" shoulder.

The easiest way to drill the holes in the legs to accept the stretcher is with a handheld electric drill. Start the drill square to the leg turning, then bring the drill down until it lines up with the mark in the other leg. You are now drilling at the correct angle (see left photo). Dry assemble the front stretcher, and now measure one of the side stretchers. It goes from just below the front groove to above the groove on the back leg. The other side stretcher does the opposite; it goes from just above the front groove to just below the groove in the back. They form an "X" in side view. The reason for

staggering the holes is to keep strength in the legs. Dry assemble the second stretcher before measuring and turning the third. Center punch all the holes that are not on a groove to make starting the drill more accurate. The last step is to lay out and cut slots into the tops of the legs for wedges. Orient the slots so they run across the seat grain so you won't split the seat during assembly.

Apply glue to the tenons and brush a bit into each mortise. Now assemble the parts quickly and pound the wedges home to lock the legs. Once the glue is dry, clean up the tenons with a fishtail gouge and a mallet. Sand and finish as you wish.

Ernie Conover is a founder of Conover Workshops and the author of The Lathe Book.

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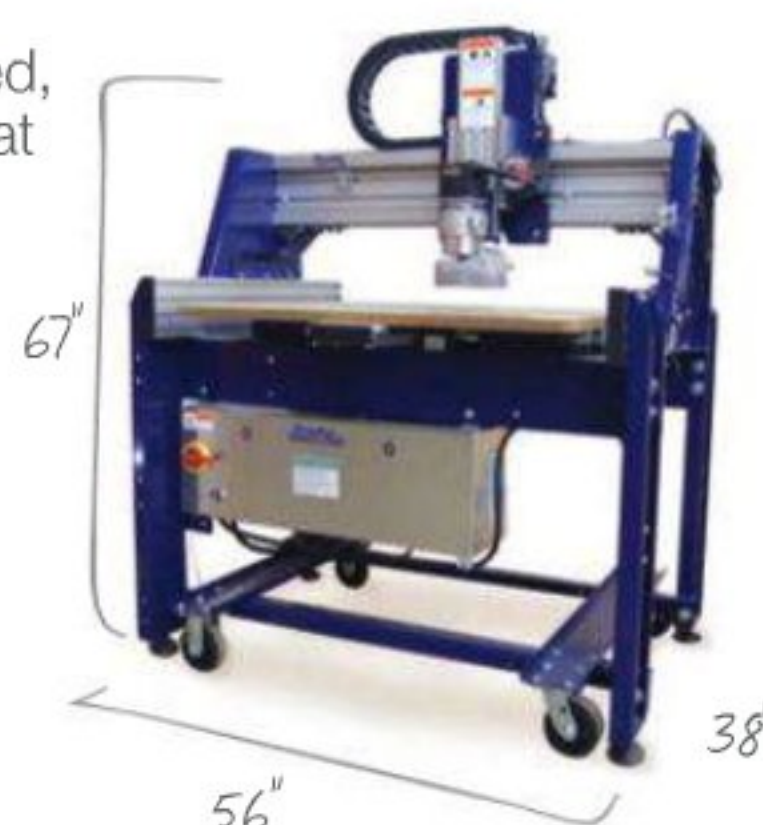
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WHAT DO YOU THINK?

We recently reached out to nearly 20,000 woodworkers and played a game of 20 Questions on the topic of handheld routers. Here's the skinny on what home shop woodworkers like you think about routers. After checking out what your fellow readers think, turn to page 64 and find out how a select group of woodworking experts answered one of these questions.



What are the most important router features?

The items that topped the list of desired features all add to the ability to control and be accurate when using a router.

23% Variable Speed

20% Switch on Handle

15% Multi-Base Styles

12% Micro-adjustability

10% Above-Table Adjustment

6% Electronic Feedback Circuitry

5% Dust Collection

5% Spindle Lock

Do you own a handheld router?

Yes! 99%

Well, we're talking to the right crowd, that's for sure.

Kind of makes you wonder what that other 1% is doing in their shops!



23%
CRAFTSMAN



20%
PORTER-CABLE



11%
BOSCH

What brand(s) of router do you own?

What brand of routers is owned by more of you than any other? The answer is Craftsman! Nearly 23% of woodworkers said they own a Craftsman router, followed closely by PORTER-CABLE at 20%. At the bottom of the list were some of the higher priced or lesser known offerings, like Festool, Triton and Trend.

How many routers do you own?

70% — two or more!

We thought 1 or 2 would be the winner here, but that only accounted for 40% of our responders. The other 60% are making sawdust with 3 or more routers in their shop ... with an overall average of 2.97 routers per woodworker. If you were going to only own .97 of a router, you might be looking for a new compact router!



1% own 0

13% own 1

26% own 2

26% own 3

18% own 4

16% own 5

WHAT SIZE SHANK DO YOU PREFER?

65% of our survey group said they preferred 1/2" shank router bits. But to be fair, 20% said shank size makes no difference to them.

65%

Preferred larger shanks



If you could only own two routers, what would they be?

20% said...

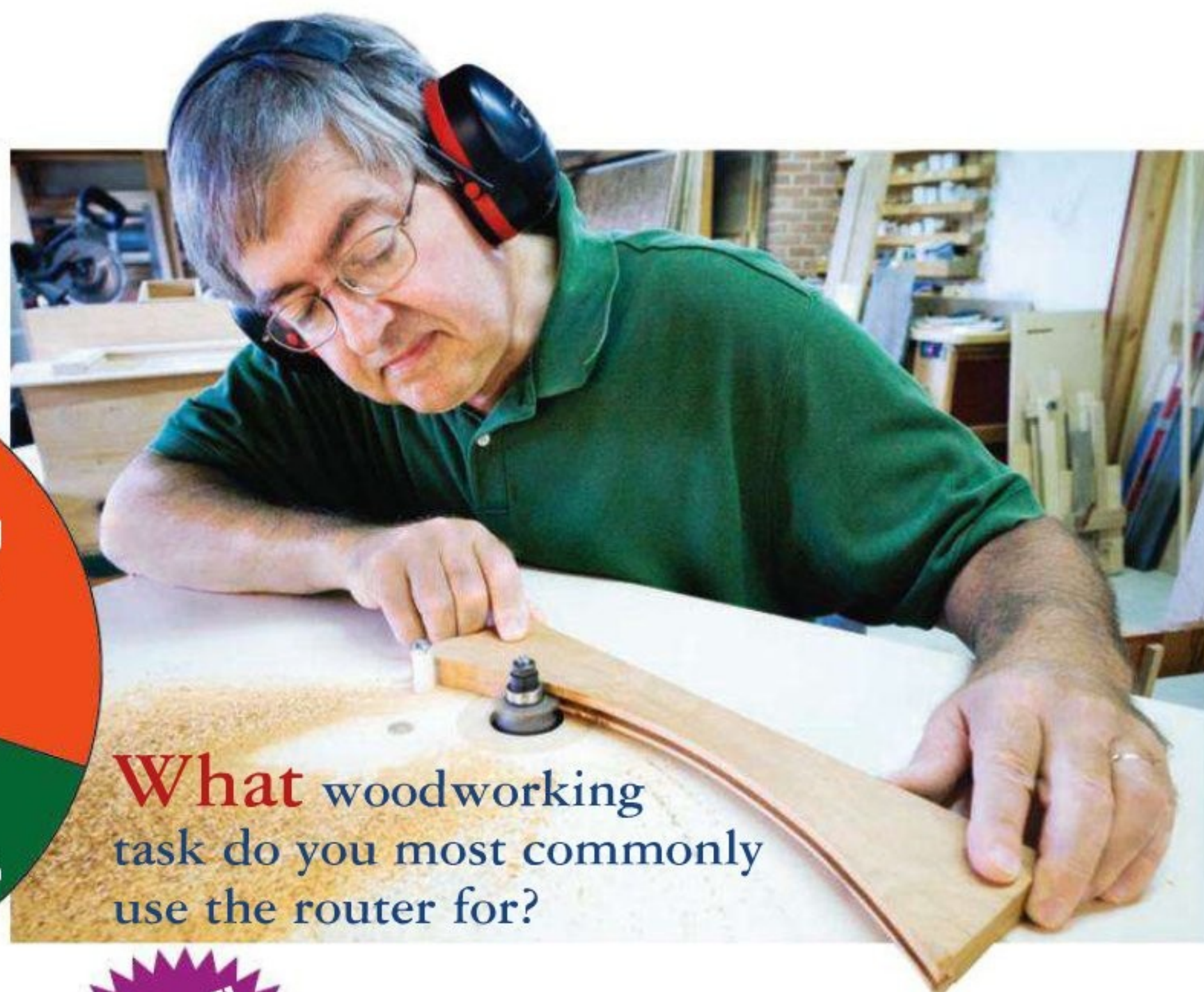
Your most popular answer was "Two Full-size Routers" (3hp or greater): specifically one fixed-base, one plunge-base. Shades of Tim the Tool Man Taylor!



8%
DEWALT

7%
BLACK &
DECKER

WHAT DO YOU THINK?



What woodworking task do you most commonly use the router for?

BEST BETS!

Router Brand	Best Value	Best Quality
Black & Decker	2.6%	--
Bosch	10.4%	14.2%
Craftsman	16.3%	4.6%
DeWALT	9.7%	10.9%
Festool	--	10.2%
Freud	--	4.4%
Hitachi	3.7%	2.6%
Makita	2.8%	2.8%
Milwaukee	---	3.8%
PORTER-CABLE	31.7%	36.6%
RIDGID	4.2%	--
Ryobi	5%	--
Stanley	--	2.7%
Triton	2.5%	--
Other	8.6%	7.2%



Do you own a router table?

YES:
89%

Do you own more than one router table?

YES:
25%



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MISSION COFFEE TABLE

Beautiful, practical and substantial, this Arts & Crafts inspired coffee table is an heirloom project that everyone can build.

By Mike Stevesand

My wife has practical ideas about what makes a piece of furniture useful ... “I have to be able to put my feet up on it.”

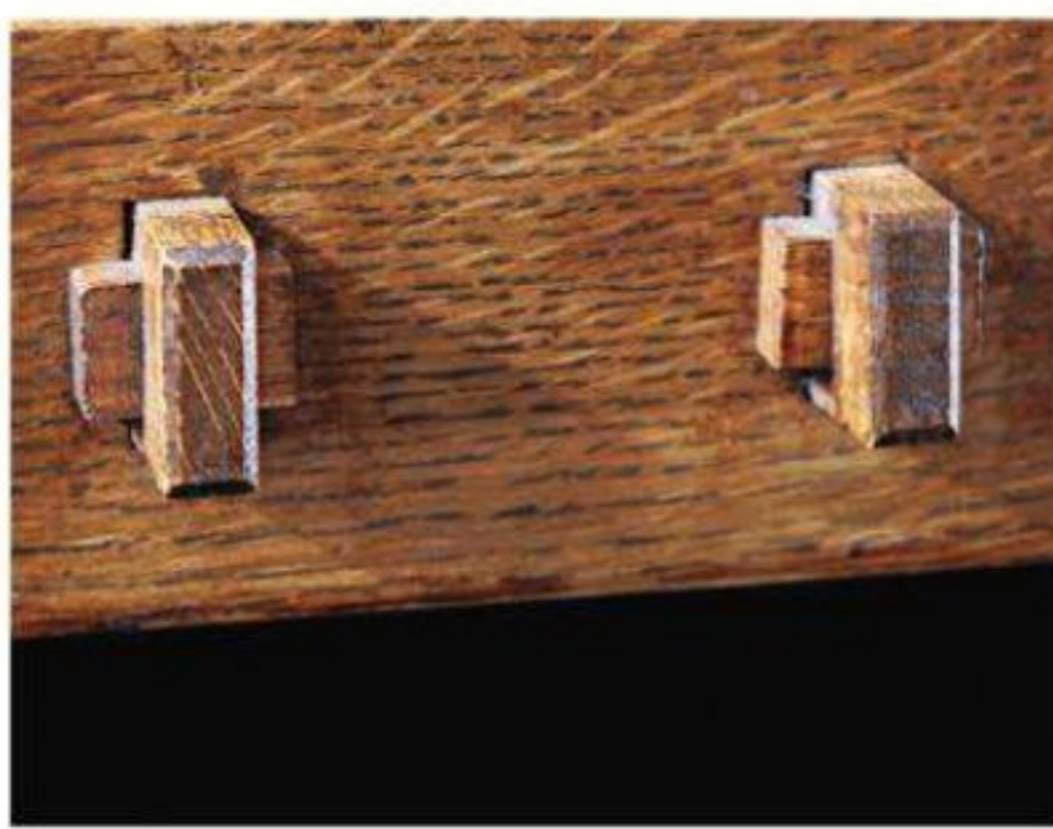
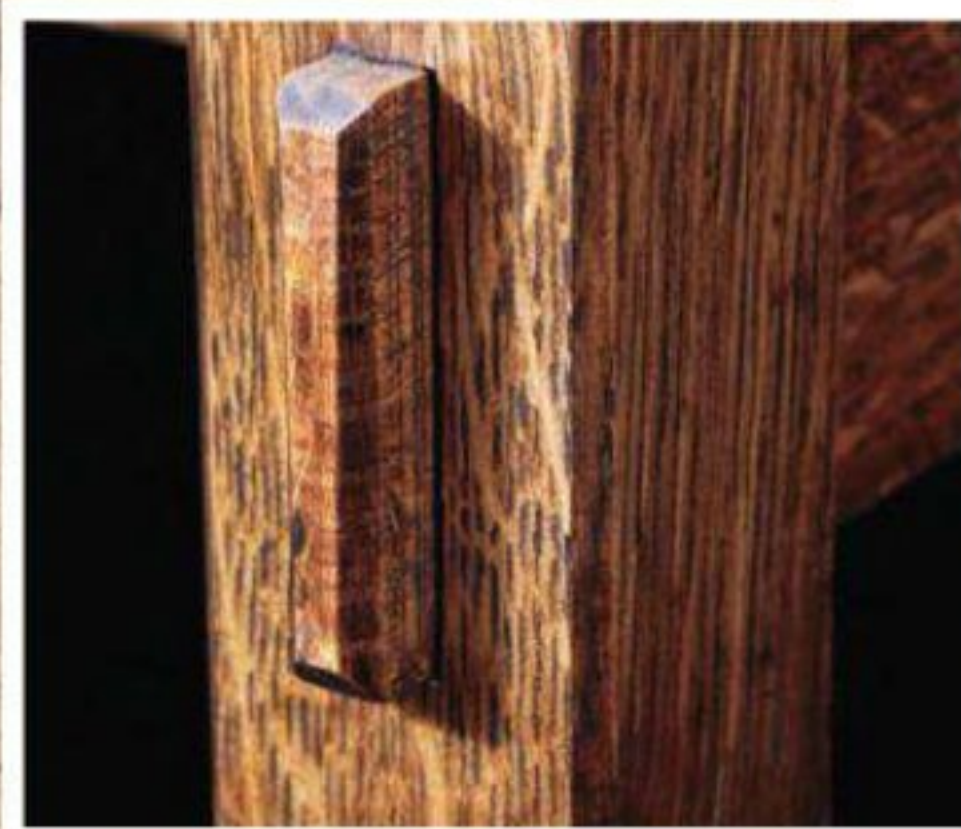
When a new couch and loveseat for our living room dictated a new coffee table to fit the L-shaped arrangement, she knew what was important. She often watches TV from that vantage point and wanted to be able to rest her legs on the table, in lieu of a vetoed recliner.

We have an eclectic mix of furniture styles in our home — mostly pieces that I’ve built. The common theme is simplicity and clean lines. Modern, Shaker, Scandinavian, Arts and Crafts designs — all with a minimum of ornamentation — share our space and aesthetic.

Clearly a light-looking turned-leg Shaker table or an airy Danish Modern design was not going to cut it. This piece had to be physically and visually substantial — it needed to support at least two pairs of feet and not move under the load — as well as not look so delicate as to discourage informal kick-back comfort.

An Arts and Crafts design seemed to fit all our requirements. The top could be thick enough to be substantive and the substructure could be constructed to suggest rock-solidity. We decided on a trestle design to maximize the visual weight of the support structure. Legs, rails, slats, beveled support beams ... all were part of the A&C vocabulary I could use.

To keep the trestles from looking monolithic, I decided to use setbacks and shadow lines to break up the visual mass and give the eye something to play with. This, in turn, dictated making it from stock of varying thickness. For ease of measurement and construction as well as convenience in setting up all the mortise, tenon and groove locations, I decided to use multiples of 1/4" for the setbacks and 1/2" for the stock. So, 2" legs, 1" rails and 1/2" slats would result in 1/2" setbacks between legs and rails and 1/4" between rails and slats. The beveled support beams for the top would be 1 1/2" thick and continue the 1/4" relationship to the top rails. The top would be 1 1/4"



“This piece had to be physically and visually substantial — it needed to support at least two pairs of feet and not move under the load — as well as not look so delicate as to discourage informal kick-back comfort.”

thick, plenty massive for doubling as a footstool, but perfectly proportionate to the rest of the piece.

Now, designing with these thicknesses is easy enough; sourcing the stock is another matter, especially with the added consideration of using quartersawn white oak with its distinctive ray flake figure. The legs, for instance, needed to be 2" thick and show quartersawn faces on all four sides; however, a quartersawn piece of oak will only show ray flake on two sides. Since a thick slab of plainsawn oak will show ray flake on its thickness, I didn't need to find thick quartersawn oak — a thick plainsawn piece would provide quartersawn surfaces along its edges. And since I wanted to veneer the plainsawn

faces, 2" stock would have wound up too thick. Luckily, a better solution presented itself: I found some nice surfaced, 1¾"-thick plainsawn lumber. Resawing 1/8"-thick veneers from quartersawn stock and applying them to the flatsawn faces would result in 2"-square legs with quartersawn faces all around.

Likewise, I wanted 1" quartersawn stock for the rails, and this is not a common finished size either. I could have milled 5/4 stock to 1" finished thickness, but this seemed wasteful, especially since 1/2" quartersawn stock is easy to find. I opted to build the 1" pieces up from laminated 1/2" stock and buy enough to make the 1/2" slats as well.

For the top, I definitely needed quartersawn stock, and it needed to be 1¼" thick. Building up this stock would have resulted in very visible seams on the edges, so I decided to put all my milling time and energy into surfacing 6/4 rough stock down to 1¼" for the top. My favorite lumberyard had a pallet full of 6/4 quartersawn boards; picking through them yielded two with good figure and enough width and length to make four 6" x 40" pieces to glue up into the 24" x 40" finished-size top.

Start Machining with the Legs

I began with the legs. I sawed four pieces from my 1¾"-thick lumber, 15" long and 2½" wide, allowing extra length to square up the ends and a little extra width to clean up the glue lines on the jointer after laminating the veneers onto the plainsawn faces. While I was at it, I sawed a couple of extra “test legs” exactly 2" wide to use for setting up the mortises and the grooves for the slats. (Since I was only interested in the 2" width and I was not veneering or jointing these test pieces, I didn't need any extra width.)

Next were the veneers for the flatsawn faces. I resawed 1/2"-thick quartersawn stock into roughly 3/16" veneers on my table saw, and then cleaned them up, bringing them down to 1/8" thickness with my planer. As I planed them, I tested them on the legs until the finished thickness was exactly 2". I then cut them to the same 15" x 2½" size as the legs, and I glued them to the legs. I used all the clamps I own to ensure that the seams were tight all along their length. Later, when I was ready to assemble, I would bevel their edges to hide the veneers. I wanted square edges to reference the mortises and grooves I was about to machine.

After jointing and cutting the legs to finished size and sanding them to 100-grit, I moved to the mortising machine to cut the mortises for the bottom rails. Since these were through mortises and I didn't want to cut them from both sides, I

To put true quartersawn grain on all four faces of the legs, the author glued 1/8"-thick veneer to the plainsawn faces. He applied a thin coat of glue to all the faces before clamping them up.



clamped a 1/2" sacrificial board to the mortiser's table and adjusted the bit to plunge about 1/8" into it; this also helped ensure that the bottoms of the mortises wouldn't chip out. Even so, I always put the "show" surfaces up as I cut. My experience is that the top surface ends up with the cleanest cuts.

To achieve absolute uniformity from leg to leg, I marked the mortise location carefully on one test leg, set the machine up for the first plunge cut and clamped a stop to the fence. I then made a test cut and, when everything was accurate, I made the first cut in all the legs, butting them against the stop before repositioning the marked leg for the second cut and resetting the stop. Two tips for accurate mortises with a mortiser: first, make the two end cuts first and then make the intermediate cuts in between them (to avoid drift that might move the final end cut out of position) and second, clamp the workpiece solidly to the fence for every cut with a C-clamp (the hold-down on the machine does not always hold securely, making the bit difficult to withdraw and possibly causing slop). I cut the mortises in my other test leg at this time, too.

At this point, I cut and laminated the top and bottom rails from my 1/2" stock (allowing a little extra length and width



The through mortises on the legs (and the stretchers, not shown here) were chopped out using a mortising machine. Through tenons are not only a sound structural bit of joinery, but they also are a significant part of the Arts & Crafts vocabulary of style.

for cleanup), jointed them and cut them to length. As before with the legs, I made up a couple of extra test pieces.

The next step is plowing the grooves that hold the slats in the inner faces of the legs and the rails. I used a dado blade in the table saw for this (be sure to use a throat plate with an opening of appropriate size for the dado blade), configuring the blade for a 1/2"-wide cut to match the mortises in the legs. Here is where the consistent thickness of stock really began to pay off. It was easy to set the fence exactly 3/4" from the blade to keep the grooves exactly centered in the legs. I set the depth of cut to 1/4" and plowed a test groove in one of my test legs to see if everything was accurate. I didn't need to set up any stops for this

cut, since the legs were already mortised. Because the groove is full length until it joins the through mortise, I could simply start the cut at the upper end and look down into the mortise as the blade entered it, stopping the cut once the groove fully intersected the mortise. I reset the fence to 1/4" from the blade, tested it on my test rails, and plowed the centered groove full-length in the rails.

Making the Rails and Slats

While the dado blade was on the saw, I used it to cut the exposed tenons on the lower rails and the stub tenons on the upper rails in multiple passes. Again, the consistency of stock thickness and reveals paid off, as the same 1/4" depth served for the shoulders of all the tenons.



The rails for this table are built up from 1/2" stock laminated together. A groove plowed the length of the rails (left photo) captures the slats and spacers. The lower rails also need tenons raised on their ends. These are through tenons that pierce the 2"-thick legs. The tenons are made on the table saw using a registration block that determines the length of the tenons and also keeps the rail clear of the fence when making the cut (right photo).

“I have tried to bang home rails that were just a hair too long for the available space, and I do not want to try that again!”

I made test cuts in my test pieces and the real cuts in the rails when the fit was accurate.

Now for the slats in the trestles. These would be inset into the groove I made in the legs and rails. I had to tweak things a little — as the board's 1/2" was a trifle fatter than the dado blade's 1/2" dimension. A quick pass through the planer fixed that in a snap. With the planer set for the right thickness to fit the grooves, I also planed a 24"-long scrap piece of 1/2" stock from which to make the spacer

pieces that would go between the slats. Since the slats were less than 10" long and 2" wide, I had plenty of area within my stock from which to select the best grain figure. I chose a piece for the four curved outer slats that had a slope to the figure that complemented the curve. With the selection process done, I cut these and the stiles to 2" wide. Then I carefully measured the space between the top and bottom rails (8 5/8") and added 1/2" for the top and bottom grooves (9 1/8" total) and cut them to just a tiny bit shorter than

this measurement — I have tried to bang home rails that were just a hair too long for the available space, and I do not want to try that again!

I cut the curves on the outer stiles in two operations, first ripping the bottom to 1 3/8" about 2/3 of the way up on the table saw and then cutting the curve to the full 2" at the top on the band saw, using the first one as a pattern for the rest. (See photos at left.) I stopped the curve 1/4" from the top, leaving the part that would go into the groove straight. This way the visible top of the slat would be full-width and the filler pieces there would not have to be cut to an angle.

When I originally considered the slats, I thought about the spacing between them and how it impacted the layout of the mortises for the stretchers, which are centered on the two spaces adjacent to the center slat. The 1/4" spacing resulted in a pleasing space between the mortises

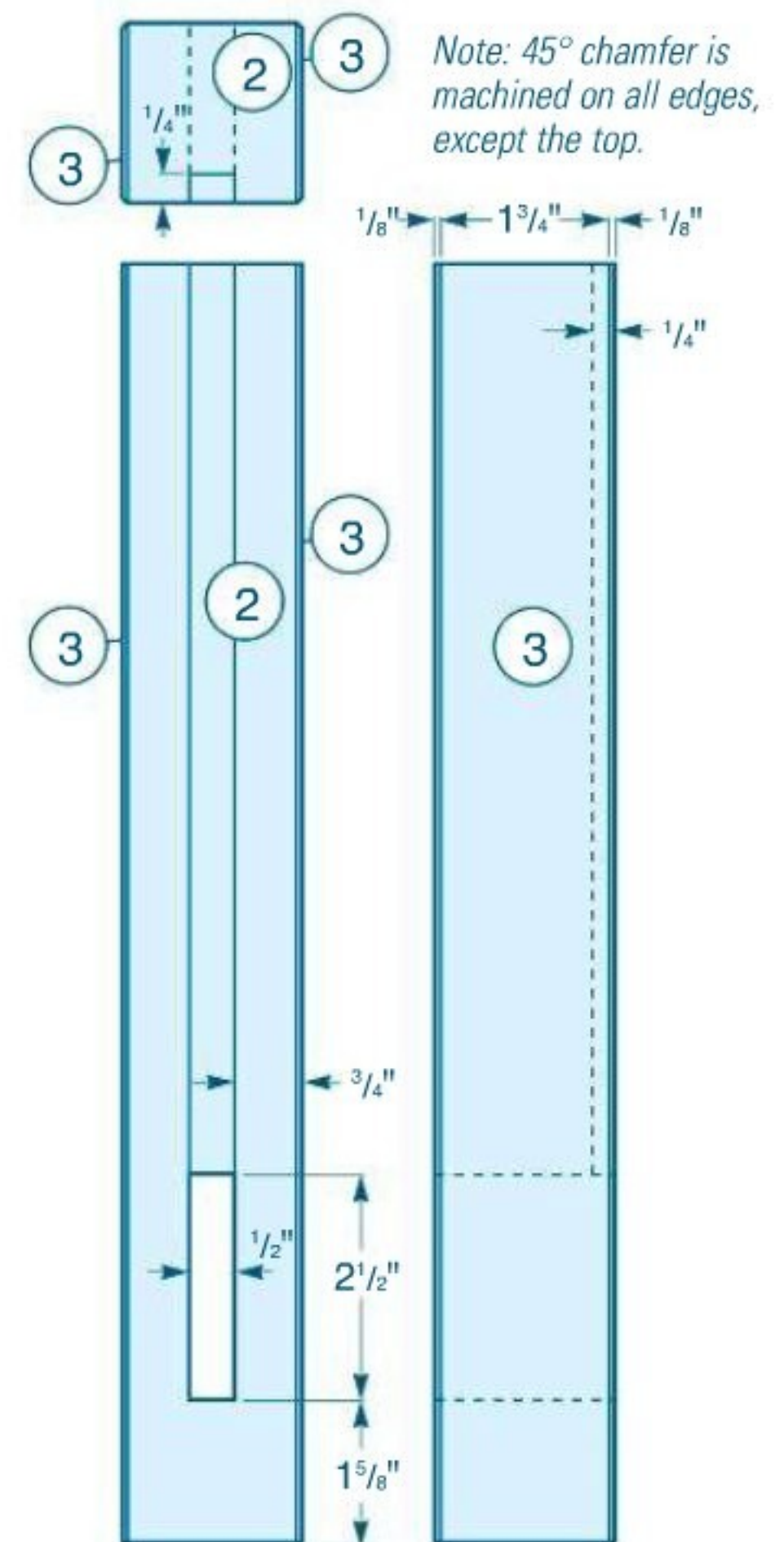


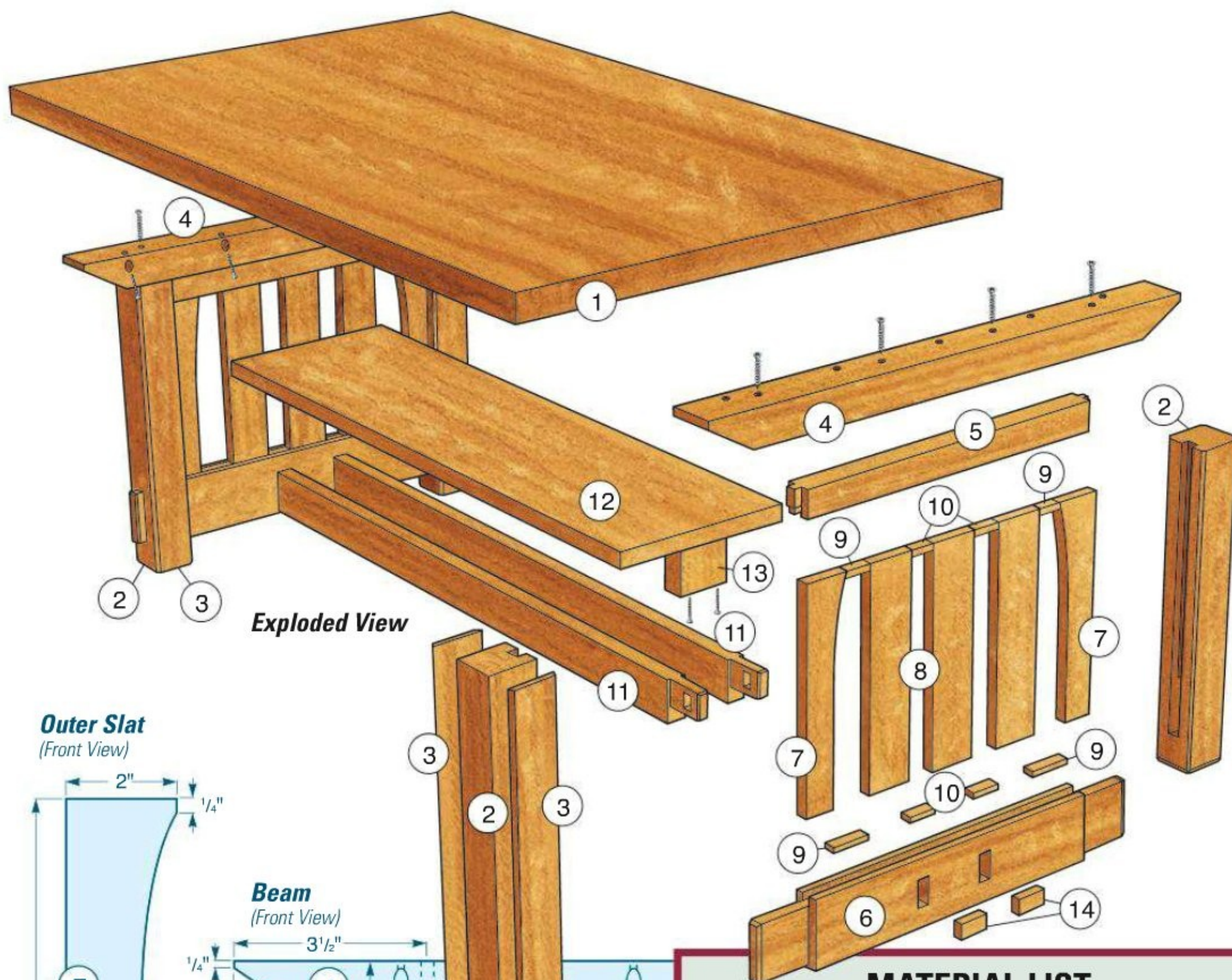
Making a curved slat is a two-step process: Using a table saw, the author first makes a stopped cut, as shown at left. Then, moving to the band saw, he completes the curved aspect of the slat.



Leg Assembly

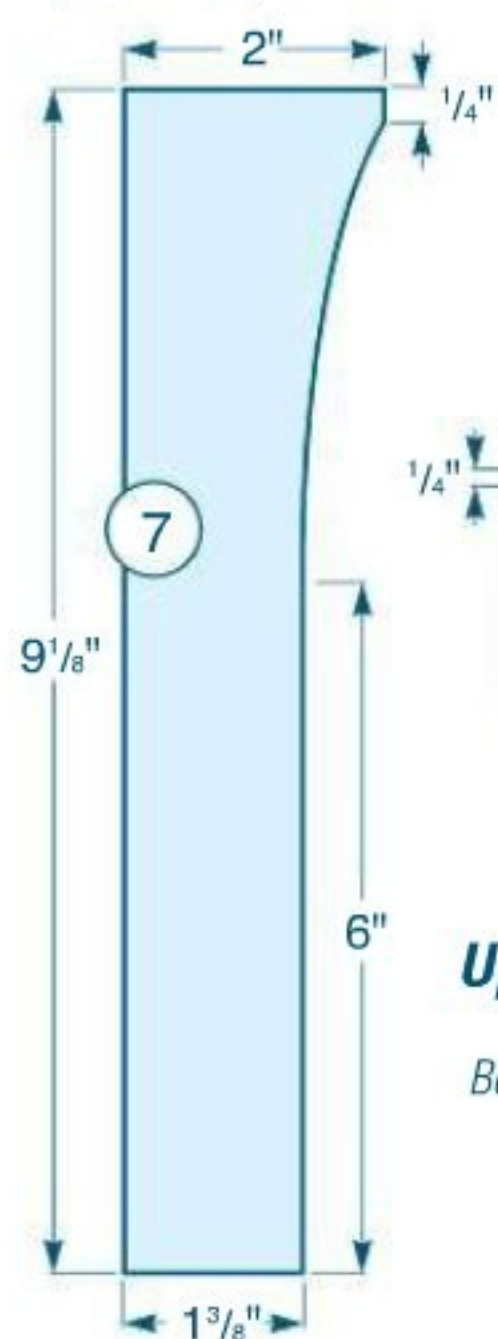
(Top, Inside and Front Views)



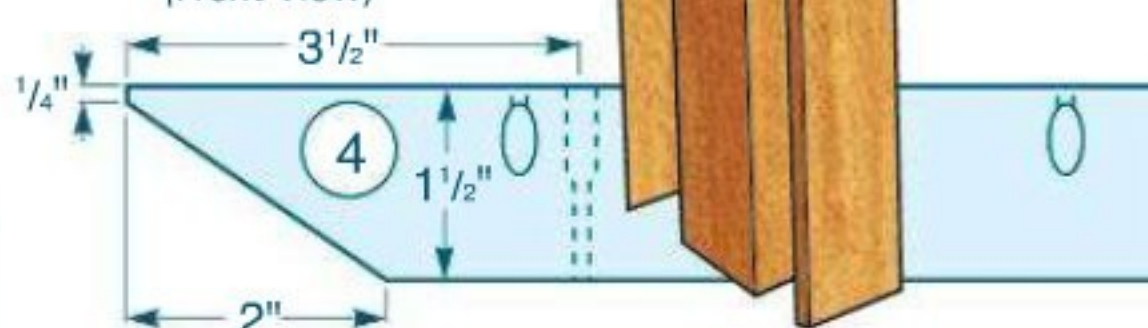


Exploded View

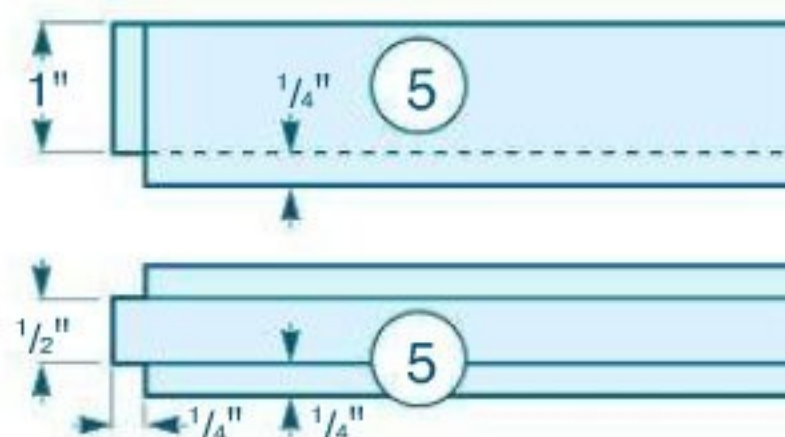
Outer Slat
(Front View)



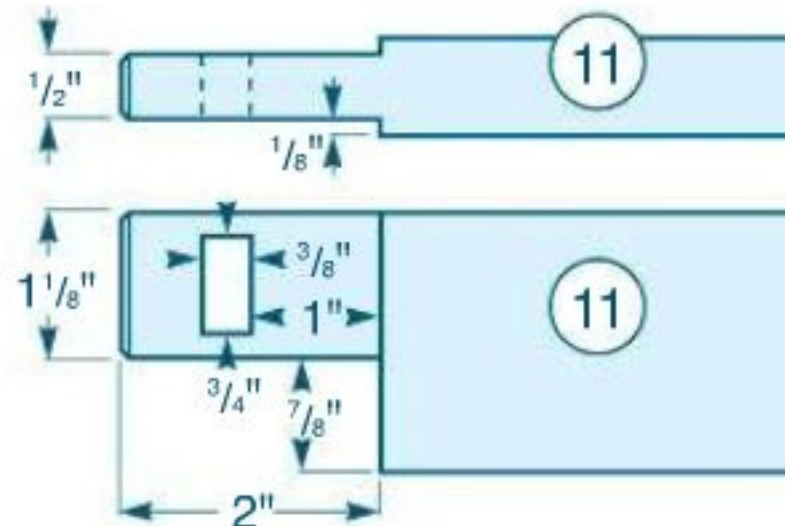
Beam
(Front View)



Upper Rail
(Front and Bottom Views)

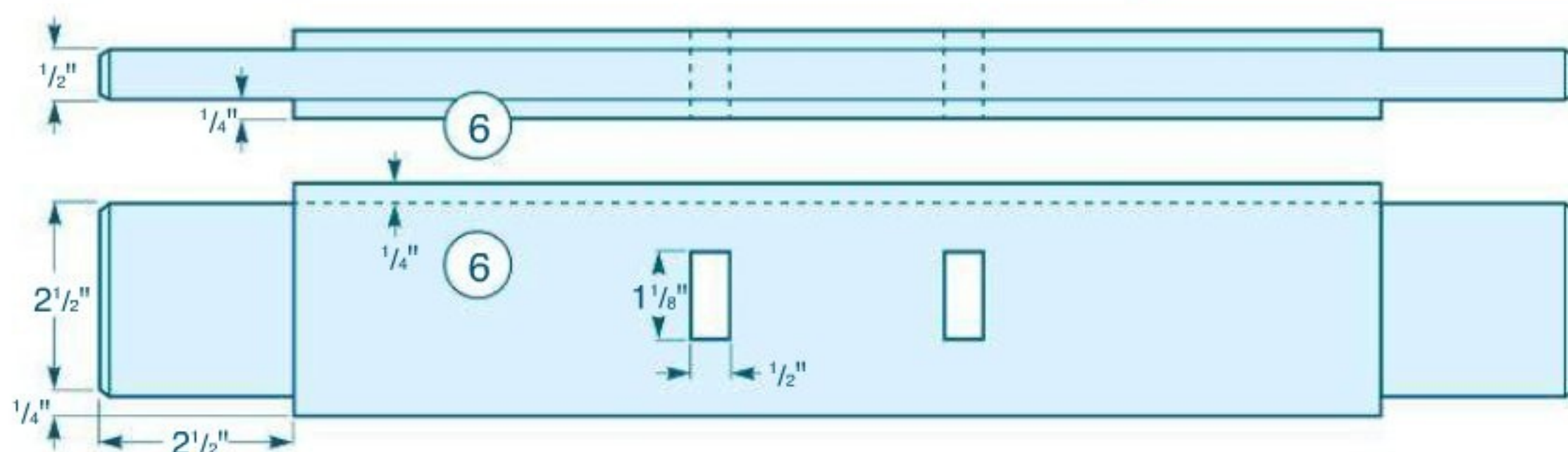


Stretcher
(Top and Front Views)

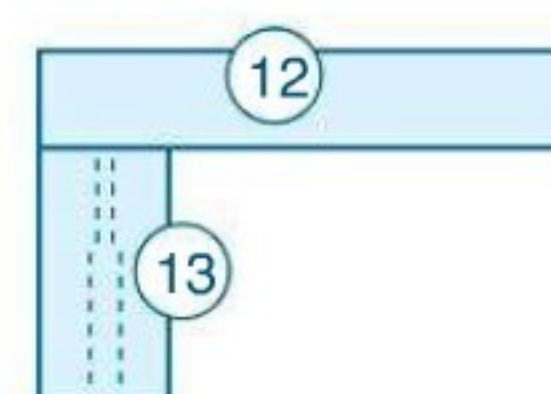


Lower Rail

(Top and Front Views)



Shelf and Shelf Block
(Side View)



MATERIAL LIST

	T x W x L
1 Top (1)	1 1/4" x 24" x 40"
2 Legs (4)	1 3/4" x 2" x 14 1/4"
3 Leg Veneers (8)	1/8" x 2" x 14 1/4"
4 Beams (2)	1 1/2" x 2" x 23"
5 Upper Rails (2)	1" x 1 1/4" x 14 1/2"
6 Lower Rails (2)	1" x 3" x 19"
7 Outer Slats (4)	1/2" x 2" x 9 7/8"
8 Inner Slats (6)	1/2" x 2" x 9 7/8"
9 Outer Slat Spacers (8)	1/4" x 1/2" x 1 3/4"
10 Inner Slat Spacers (8)	1/4" x 1/2" x 1 1/4"
11 Stretchers (2)	3/4" x 2" x 35"
12 Shelf (1)	3/4" x 8 3/8" x 30 7/8"
13 Shelf Blocks (2)	1" x 2" x 2 1/2"
14 Wedges (4)	3/8" x 3/4" x 1"

“It is worth reflecting on milling roughsawn lumber, however. It is something of a Forrest Gump process, in that ‘you’re never sure what you’re going to get.’”

so I cut two spacer pieces to that length, centered the middle slat in the space, fit the filler pieces on either side and made reference marks from the center of each spacer for laying out the stretchers’ mortises. The outer spaces between the slats would need to be wider, because 1/4" of the outer slats is inset into the leg grooves — an arrangement that I thought would look good.

Making the Beams

I turned my attention to the beams that would support the top. I had enough 1 3/4" stock remaining to make them (again with the quartersawn faces on the thickness), and I milled them down to 1 1/2" thick. I cut the beams 2" wide to match the legs and to a final length of 23". The bevels on the beams start 2" from the ends and taper down to 1/4". I cut them vertically on the table saw, clamping them to a purpose-built jig that rides on the fence. At this point, I began to think about how to attach the top and decided that pocket-hole screws were my best option. So, before going any further, I clamped a couple of long scrap pieces to

the drill press table to hold the beams securely at an angle relative to the drill bit, tweaked them a bit to center them and leave a sufficient thickness of wood for the screws to bear on, and bored five pocket holes in the inside face of each beam with a 3/8" Forstner bit. I then went back and drilled oversize holes for the screws centered in the pockets — it allows for seasonal movement in the top.

With the dry-fitting done, I disassembled the trestles and laid out the mortises for the stretchers. I centered them on the reference marks I had taken from the spacer pieces, starting them 7/8" from the top of the bottom rails to leave a little step-down when the 3/4" shelf was installed. These details are shown in the *Drawings* on page 39. I made the stretchers from 3/4" stock, since their thickness isn’t visible. I cut the tenons with my dado blade, then laid out and cut the 3/8"-wide by 3/4"-long mortises for the wedges that lock the stretchers in place. As is standard practice, mortises extend just a hair inside the thickness of the lower rails, so the wedges pull the stretchers tight.

Final Assembly

In the last steps before final assembly, I sanded everything to 220-grit and routed the bevels on the edges and bottoms of the legs and on the ends of the exposed tenons on the bottom rails and stretchers.

I started by gluing the lower rails into the legs, carefully brushing glue on only the 2" of the tenons that would be buried in the legs’ mortises. I then glued the outer edges of the outer slats (but not the tops and bottoms) into the grooves on the legs. I centered the middle slat in the groove but did not glue it, but I did glue my 1/4"-long spacers into the grooves on either side — making sure they were centered over the mortises below. I added the next two slats, again without glue, and finally I could measure and cut the remaining spacer lengths exactly. These spacers are approximately 1 1/2", but this distance may vary slightly.

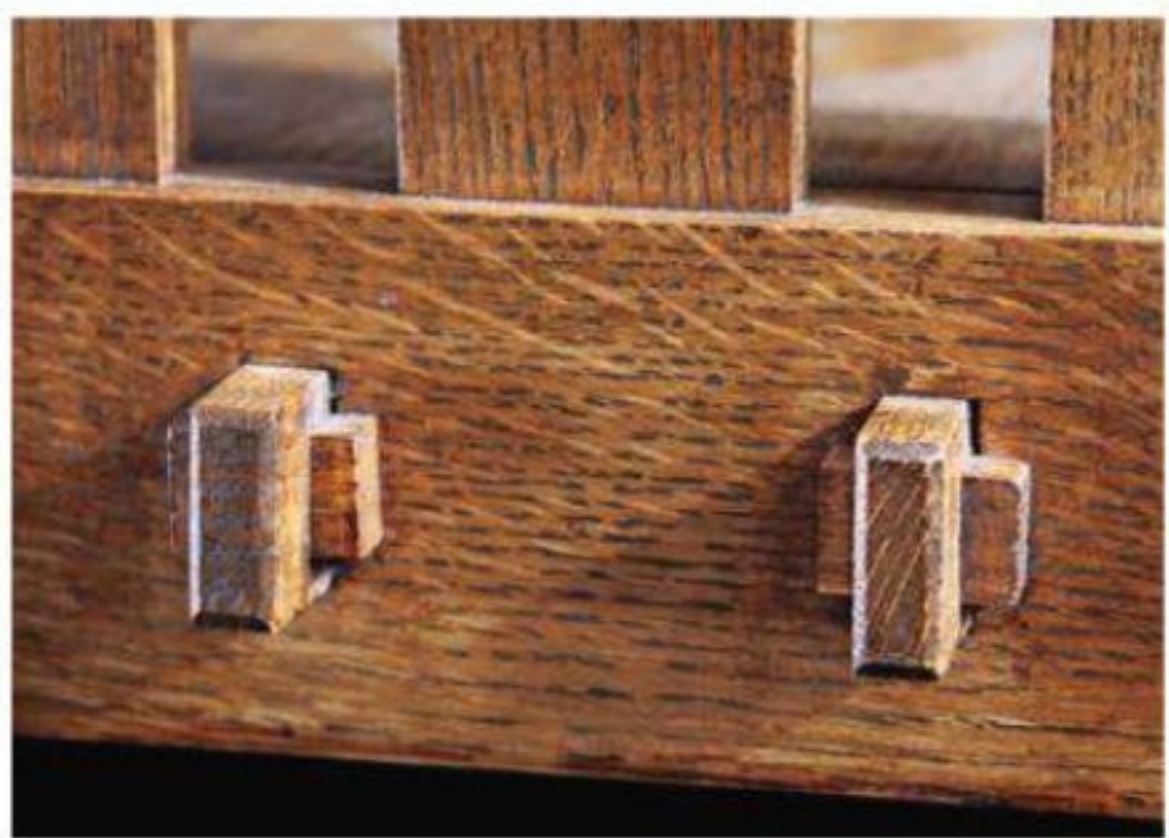
Then I added the top rail and did the same process over again on top (the outer filler pieces on the top are, of course, narrower than those on the bottom) and clamped the whole thing up.

When the trestle assemblies were dry, I decided which sides looked best and would



The angled end of the beams were formed on the table saw using a simple rip fence sliding jig. The workpiece is secured to the jig with a C-clamp.





The wedges on the stretcher tenons are simply decorative. The author marked out mortises and chopped the openings with his mortising machine. Note the offset nature of the tenons.

face out ... and I glued the top support beams to the top rails. They are flush with the legs and present an even overhang on both sides (pocket holes to the inside). I clamped them tight, drilled countersunk screw holes centered on each leg and screwed the beams down to the legs. To keep the three middle slats from rattling if they ever shrank, I shot a brad into the top and bottom of each from the back side of the top and bottom rails. Finally, I glued the stretchers into the mortises on the bottom rails and clamped the assembly overnight. I left room next to the clamps to fit and glue in the wedges in the stretchers' mortises.

The shelf came next. I chose some nicely figured 3/4" boards and edge-glued them up into the 8 3/8"-wide shelf. When they were dry and finish-sanded to 220-grit, I cut the shelf to final length, placed it on top of the stretchers, centered it so it hit just inside the outer edges of the 2nd and 4th slats in the trestles and clamped it in place. I then flipped the assembly over, cut two shelf blocks to the width of the space between the stretchers (with the grain running the same direction as the shelf), spread glue on one end of each (keeping the glue in the center so it wouldn't squeeze out and stick the blocks to the stretchers or the bottom rails) and dropped them into the space, tight against the inside faces of the bottom rails. Once the glue set, I took the shelf off and drilled countersunk holes to screw the blocking to the shelf on from the bottom. The shelf simply drops into place — gravity keeps it there nicely.

Making the Top

Making the top was a straightforward job of planing, jointing, ripping, gluing and crosscutting. It is worth reflecting on milling roughsawn lumber, however. It is something of a Forrest Gump process, in that "you're never sure what you're going

to get." It's easy to find quartersawn 6/4 stock at a decent lumberyard, and the figure is often dimly visible through the rough surface, but the final look will only be revealed in the milling process. Also possibly revealed will be knots, voids, cracks, splits, whorls and other impediments to clear lengths and widths that go into a top that will be the star attraction of a piece like this. So it's important to get stock as wide as possible, consistent with the final dimensions of the top (I needed four 6"-wide by 40"-long boards) to allow for piecing the top together. By that I mean matching the grain harmoniously from board to board and working around defects. If one plank winds up narrower than ideal, it's good to have another that's wider to compensate. In this case, to make the grain match, I settled on two 6 1/2" inner planks and two 5 1/2" outers, and even so, there was only one way the boards went together into a pleasing composition.

I like to glue a big, thick piece like this into as close to final dimension as possible, since trimming it can be awkward ... and wrestling a thick, 50-lb. plank over a table saw can be dangerous. It turned out that I glued it up to exact width and only about 1/4" over length for squaring up. In my opinion, that is a job best done with a straight bit in a router run along a clamped straightedge.

Here's a tip for screwing the top in place. The trestles are linked together only at the bottom by the stretchers and will likely move a bit at the top when driving the

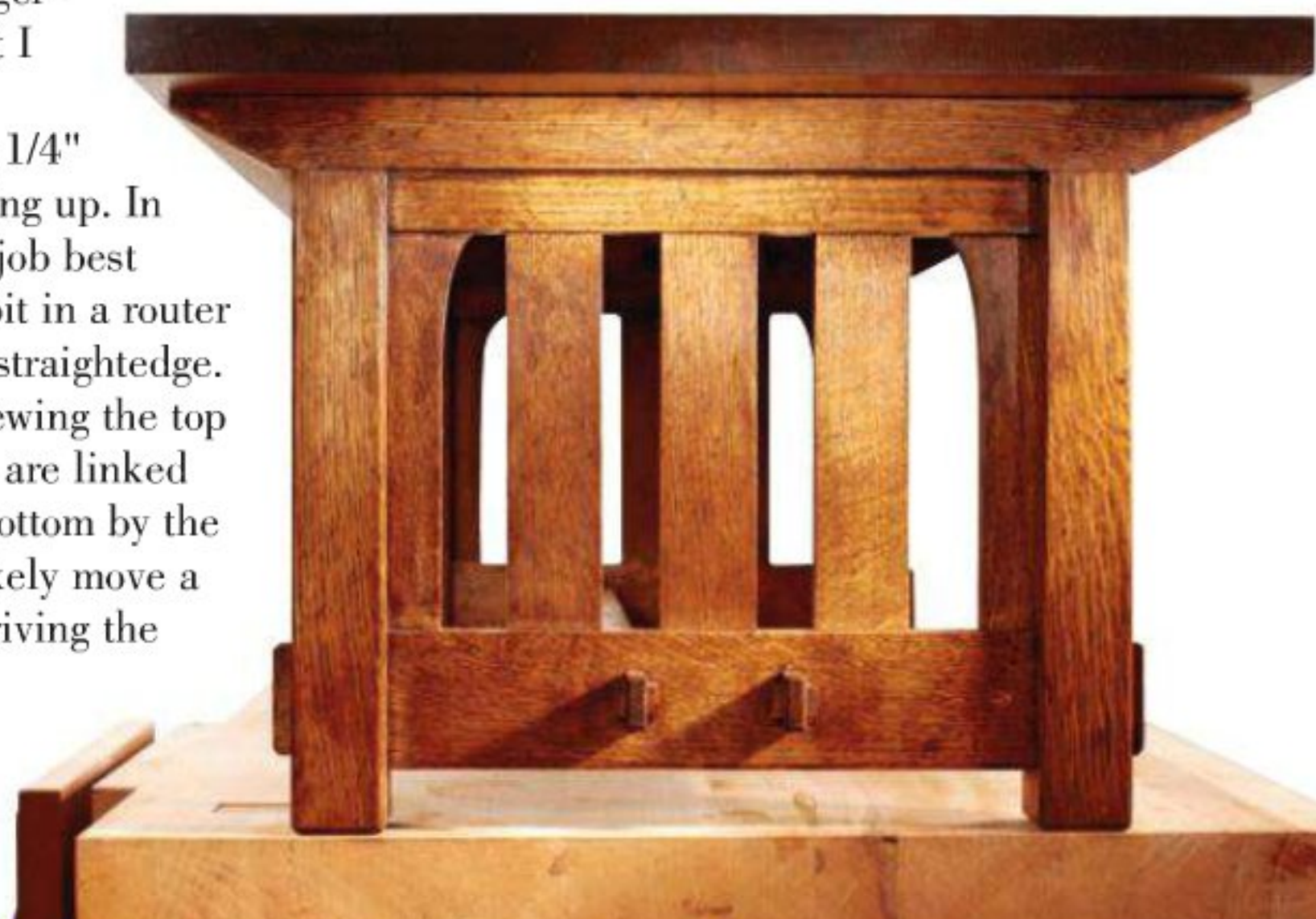
pocket-hole screws home because they go in at an angle, no matter how firmly you clamp the top to the stretchers. Use a couple of 36" bar clamps bridging the top rails to keep them in alignment while driving the screws.

Finishing

To finish the piece, I took a page from a previous *Woodworker's Journal* and mimicked the traditional fumed Arts and Crafts finish with General Finishes wipe-on gel stain in Antique Walnut, followed by a satin polyurethane topcoat. The self-leveling wipe-on topcoat is especially convenient on a piece with this many surface planes, reveals and exposed tenons and wedges. I finished it off with dark Briwax and buffed it for a nice antique-looking sheen.

The piece has been in service for about a month now, and my wife reports that not only is it a beautiful looking coffee table, but a solid footrest as well.

Mike Stevesand is a woodworking hobbyist. His last project with the Journal was in October 2003.





Use three species of wood to help define the main components of the tugboat. Here, the hull is birch, the cabin is walnut, and it's topped off with a cherry smokestack. Other species would do fine.



Trace the shape of the tugboat's hull onto your 1 3/4" stock — the author used a template. Start cutting the hull by setting your band saw to a 30° angle. Cut smoothly around the entire shape.

Rootin' Tootin' Tugboat

by Rob Johnstone

A few pieces of wood and a couple of hours or so in the shop and you can create a whole fleet!



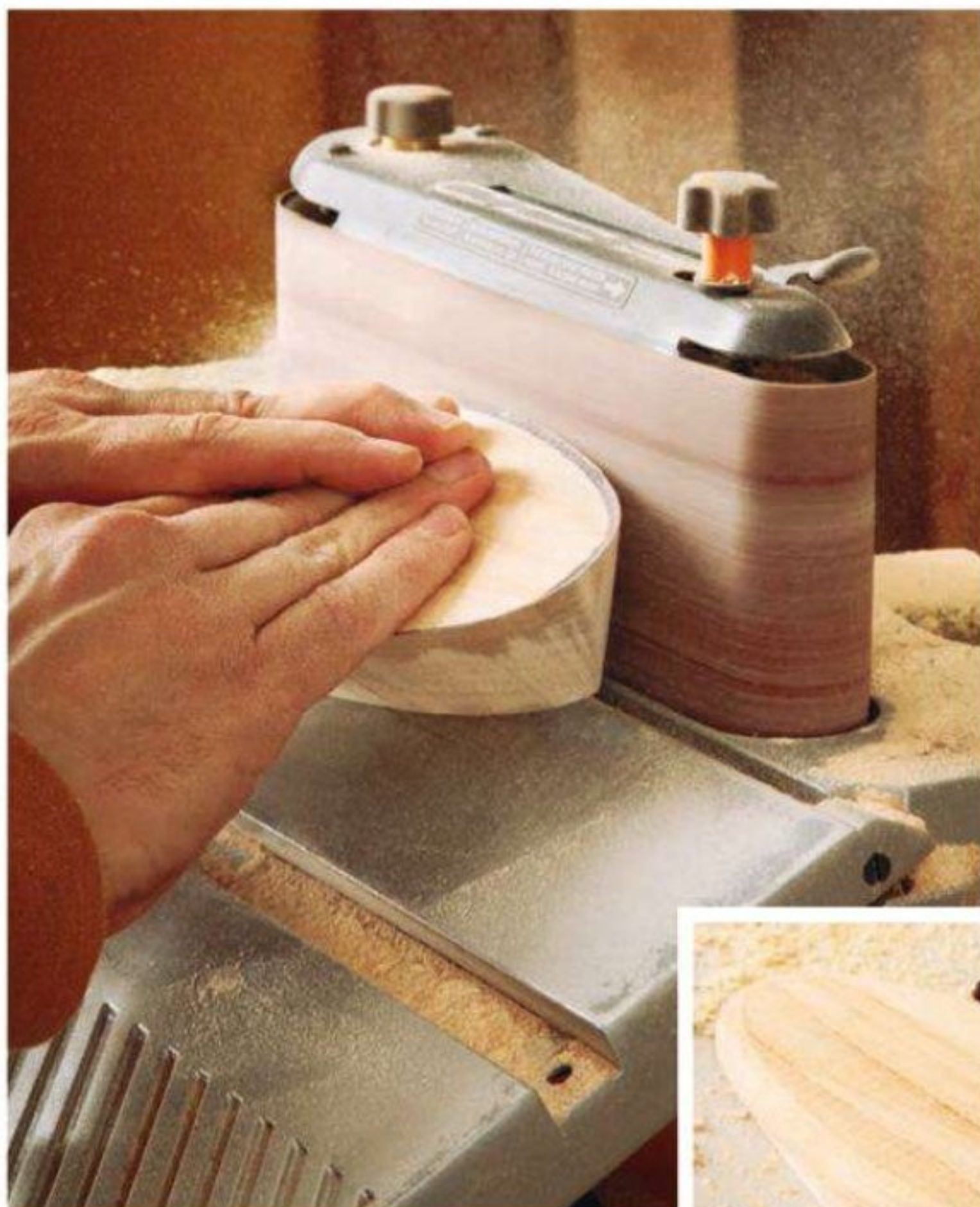
It was so long ago that I can't recall which of us came up with the idea. I think it was my buddy and woodworking coworker at the time, Rolf Peterson. We were both employed at my father's and uncle's professional woodshop — Rolf between college classes, me between life stages, figuring out what to do next.

I had a few little kids at the time, so I regularly made small wooden toys for them. Rolf didn't have children, but he did have a strong interest in boats. He and his dad were sailors. Rolf decided that we should make some toy boats, and I said why not. I should preface this by saying that we were doing production work at the time — so it was not too surprising that after an evening's work, we had about 50 wooden boats: a fleet that included both the precursor to this little

tugboat, plus a flotilla of small sailboats. When it came time to select a simple-to-make toy for our pages in this issue, that little boat drifted forth from the dark reaches of my memory. It is a sweet little craft that's kid-tested, and as I have indicated already, you can make a pile of them in no time. So if you have a few little ones that might enjoy a tub companion, or who might want to sail them across the carpet, this toy is for you.

Making the Hull

To look their best, the hull, cabin and smokestack (pieces 1, 2 and 3) should be made from different species of wood. We chose Douglas fir for the hulls that we made so many years ago, because we had it on hand. This time, I used birch lumber. Use the full-size pattern on page 45 to



Sanding the hull smooth is an important step. Here, an oscillating belt sander makes short work of this dusty task.



A 3/8" bearing-guided roundover bit shapes the edge nicely. Set it to cut into the top just a bit (inset) — creating a nifty nautical “rub rail.”



make templates for the hull and the cabin. Start making the hull by tracing its shape on a properly sized piece of 1 3/4"-thick stock. Step over to your band saw and set the table to a 30° angle. I recommend a 1/4"-wide or narrower band saw blade for this cut. Any wider and the shape at the stern (back of the boat for you landlubbers) would be harder to cut. With a slow, controlled pace, cut out the hull as shown in the main photo on page 42. If you are going to make a few of these toys, line them up and cut them out one after the other. Your next step is at a power sander of some sort. I have a 4 x 24 oscillating belt sander that worked great for this task. A vertical disk sander would likely work just as well. Get busy and remove all the saw marks from the cut you just made. If your saw blade cuts similar to mine, the stern of your boat will need a little extra attention to clean things up.

After the hull is sanded smooth, you need to shape

the top edge of the boat. A 3/8" bearing-guided roundover bit chucked into a router table will do this job nicely. Set the bit high enough to cut into the “deck” of your toy boat. Be careful here, because the angled shape of the hull will exaggerate

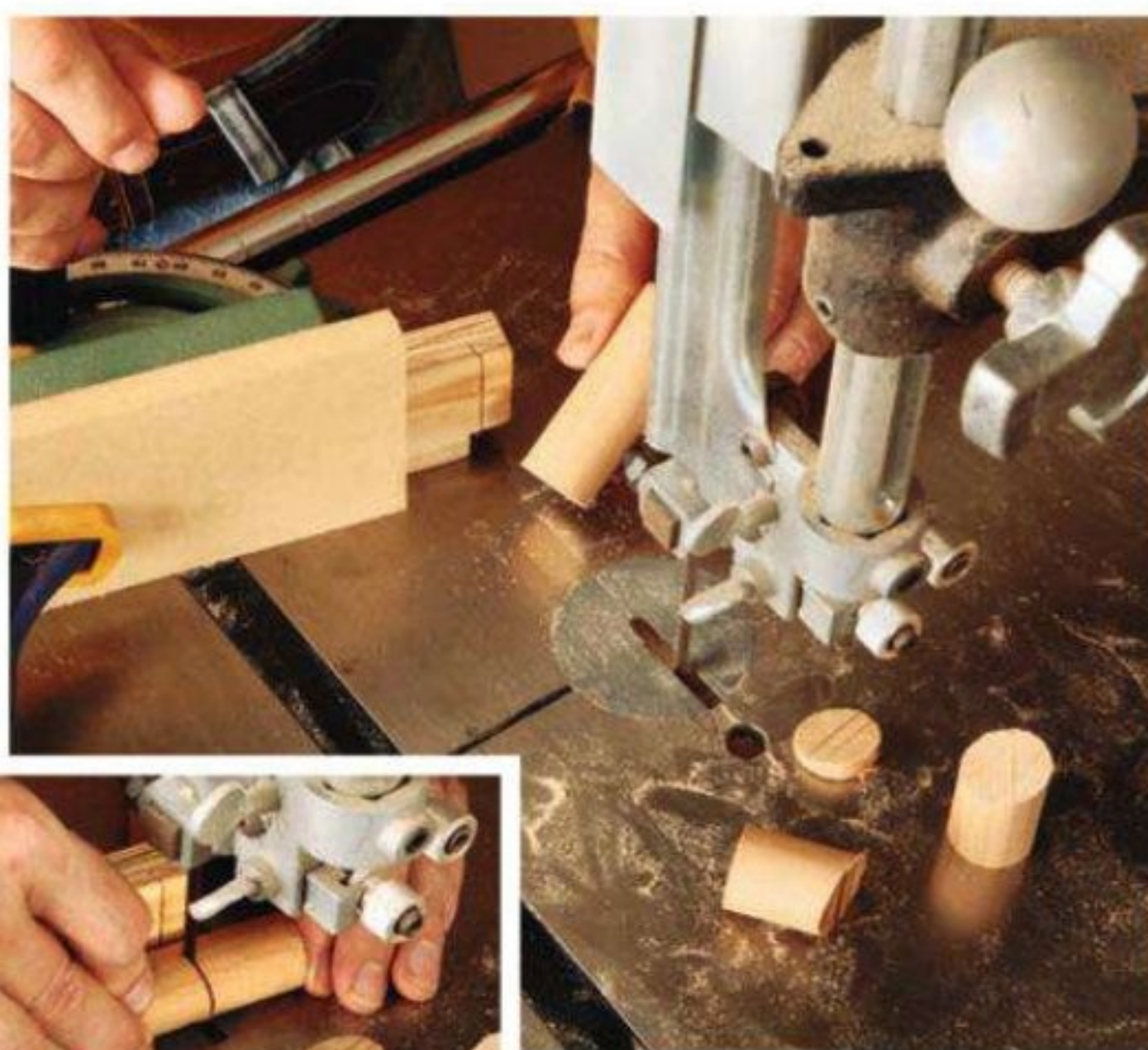
this cut. Work up to it in steps. The result of this operation is that you will clean up the edge and form a shape that looks a bit like a boat’s rub rail.

As just makes sense, when you complete each component of the boat, take a few minutes and sand it smooth, removing any machine marks or defects. I used a palm sander for this task.

Building Above Decks

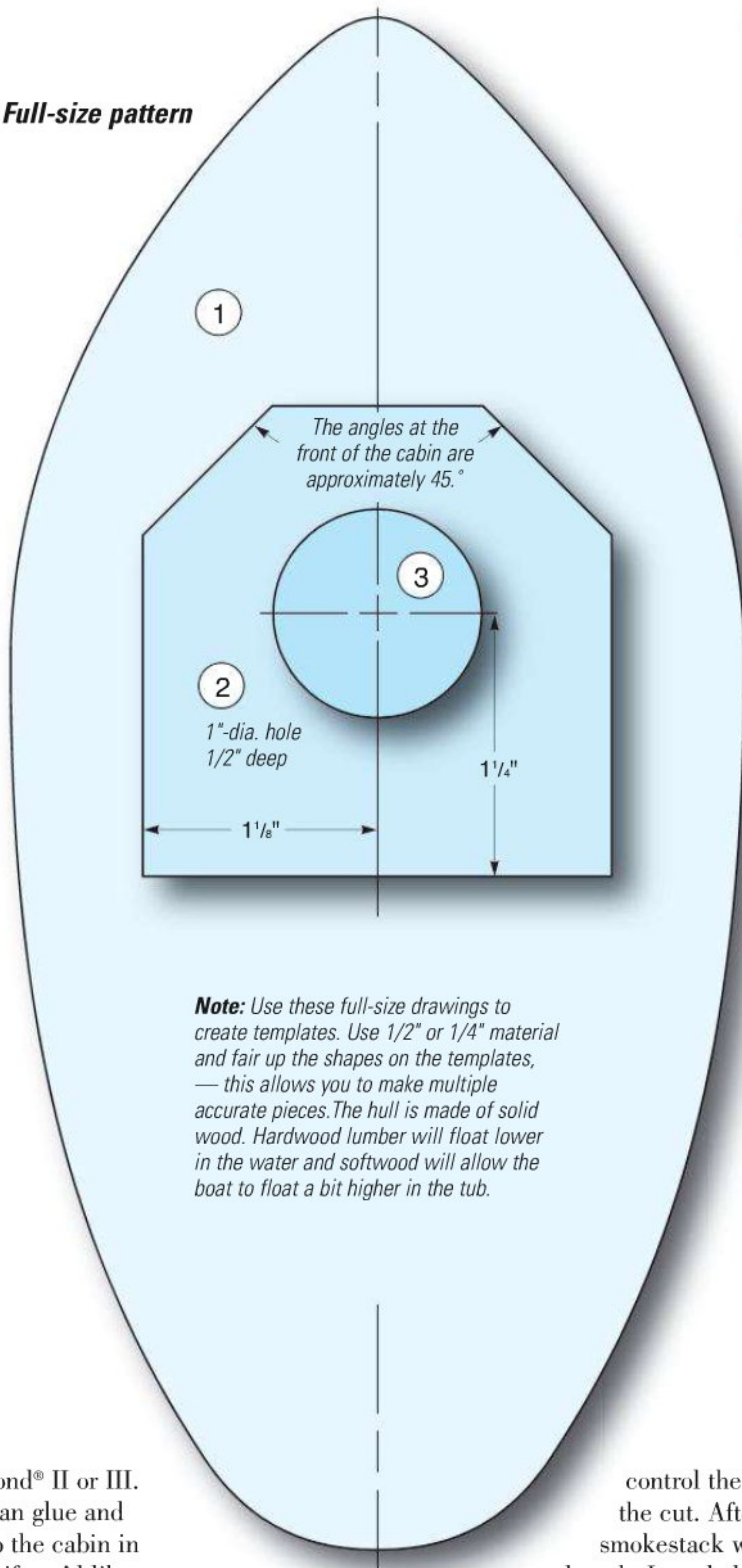
Now you can move on to the cabin. I made mine from 3/4" walnut, to visually separate it from the hull. It is quick and easy to make on the band saw, but you could use a table saw to form it if you so choose. (Again, if you are making a whole fleet, go ahead and chop them out by the dozen.) Sand the edges and then move over to the drill press. Bore a 1"-diameter hole 1/2" deep with a Forstner bit in the location shown in the *Drawing* at right, although the exact location is not critical as long as it looks good.

Secure the cabin to the hull with a water-resistant glue like

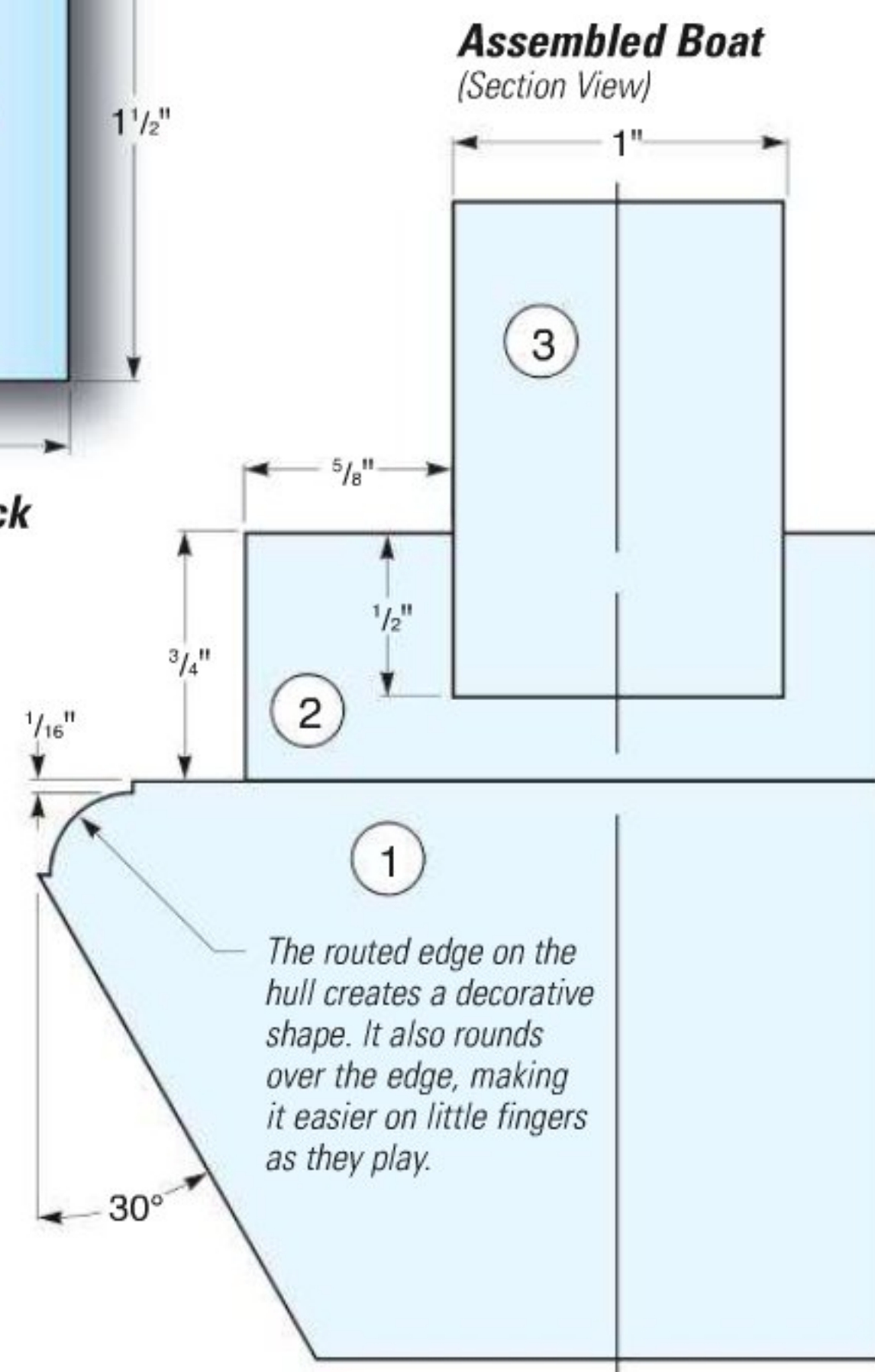
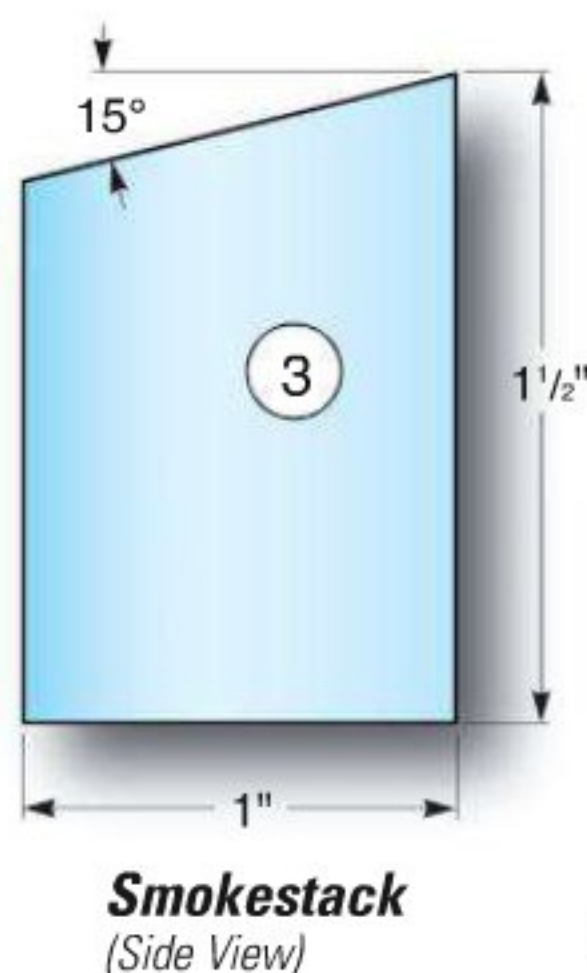


Use a miter gauge on your band saw with a short fence set to 15° and a registration block to cut the angled top on the 1" dowel smokestack.

Full-size pattern



Note: Use these full-size drawings to create templates. Use 1/2" or 1/4" material and fair up the shapes on the templates, — this allows you to make multiple accurate pieces. The hull is made of solid wood. Hardwood lumber will float lower in the water and softwood will allow the boat to float a bit higher in the tub.



MATERIAL LIST

	T x W x L
1 Hull (1)	1 3/4" x 3 1/2" x 7 3/8"
2 Cabin (1)	3/4" x 2 1/4" x 2 1/4"
3 Smokestack (1)	1" Dia. x 1 1/2"

Titebond® II or III. You can glue and clamp the cabin in place if you'd like — or you can cheat like I did and use a 1" brad nail as a "clamp," driven down through the hole you just bored in the cabin.

The last part to make is the smokestack. In this model, I used a 1"-diameter cherry dowel. As you can see in the photos on the opposite page, I once again used my band saw. This time, I set my miter gauge to a 15° angle and used an auxiliary fence and stop combination to

control the length of the cut. After the smokestack was cut to length, I sanded the top smooth, removing the saw marks.

To secure the smokestack in the hole I had prepared for it, I simply squirted an appropriate amount of glue into the hole, then stuck the piece into the hole ... I rotated it a bit back and forth, and then just left it to dry with the angle of the stack adjusted properly. Then, to prevent any possible future choking hazard, I drove a small brad into the stack.

After the glue cured, all that was left to

do was to complete the last bit of sanding on the boat. Well, there is one more thing — the finish. I suppose there are several good types of product you could apply to this toy that would do the job well. There might even be an argument for not applying any finish at all. My personal preference for this sort of toy is to use mineral oil (sold as Butcher Block Oil). It is completely nontoxic, and you can reapply it any time you like. I just slather mineral oil all over the toy and let it soak in and dry for a day or so.

Well, Captain, this ship has now sailed. Now all you need is to find a child — or 50 — to give the tiny tugboat to.

Rob Johnstone is editor in chief of the Woodworker's Journal. And, while he was a U.S. Navy hospital corpsman, he never went to sea ... in a tugboat or otherwise.

Cribbage Board

By Frank Grant

Although often called a “gentleman’s game,” cribbage is something even a couple of shop rats like the ones shown below can enjoy. Here we provide a cribbage board plan with a twist!

During those long, cold winters I spent growing up along the shores of Lake Vermilion in the far north of Minnesota, one of the ways that we wiled away the long dark evenings was playing cribbage. Young or old, it made no difference. It is such a popular pastime “up North,” that I would not be surprised if it was the primary way most of my friends learned to count and to add. (One of the ways you earn points in cribbage is by combining cards that add up to 15 or 31.) I can still hear someone counting out “that’s 15 for two and a pair is four!” Which is why when editor in

chief Rob Johnstone asked if I was interested in making a cribbage board for this issue, I said, “Oh, you betcha!” (And, oh, he does pay me to do this stuff, too ...)

How did Rob decide on this specific version of a cribbage board? If you can believe it, this design was sent to us from a person who lives even further north than where I grew up. Bruce Beatty, a fire department training officer and woodworker from Orangeville, Ontario, submitted this project to the *Woodworker’s Journal* Google SketchUp contest. As the winner, his

And the winner is...

Bruce Beatty, who hails from Orangeville, Ontario, created this project using Google SketchUp. Bruce constructs games every year for holiday gifts — and this season, it’s cribbage. We selected Bruce’s board as the winner of our SketchUp contest.

He’ll get the completed project in time for the holidays!



project was built for this issue, and when we finished photographing it, we sent it to Bruce as sort of a solid wood trophy.

But before that could happen, I had to figure out how to build it.



Author Frank Grant and editor in chief Rob Johnstone are pictured here hard at work — testing the cribbage board’s durability — in Rob’s shop.

Starting with the Middle

Using Bruce's CAD drawings as my starting point, I quickly did what all woodworkers do when working from a plan supplied by someone else: I changed it! After a couple of test cuts in 3/4" stock, I was worried that the recess that stores the cards could become a problem. When I routed the recess, the amount of material remaining seemed a little too thin for my liking. I could, of course, make that piece from 7/8"-thick stock, but it looked a bit bulky. So, after a bit of noodling, I decided to rout the card recess completely through the 3/4" stock and glue a 1/4"-thick piece of black walnut to the bottom as a base. To my eyes, that dark base visually anchored the cribbage board to the table and provided a nice three-layered look to the project. (You can choose either solution.) I also decided to use a pivot hinge and included a small magnet to keep the board closed.

With those choices made, I went ahead and cut blanks from which to form the three pieces that make up the cribbage board: the core, base and playing surface (pieces 1, 2 and 3). You can find the sizes for the blanks in the *Material List* on the following page. While the choice is up to you, I made the base from walnut, the core from cherry lumber and the playing surface from maple.

You have another choice to make now: if you are going to make several cribbage boards (say, perhaps to give away as presents ...) I recommend that you make two separate templates — one sized for the core and base, and one for the playing surface. If you are only going to make one or two cribbage boards, simply make the template for the core. (You can lay out and make the playing surface easily enough without resorting to pattern routing if you are only making a few of these cribbage boards.)



After tracing the core's shape onto a piece of cherry lumber, the author uses a band saw to cut it out. Note that the position of the roto hinge and other details are marked as well.

The core template needs to locate the positions of the rotating hinge, the peg storage hole, magnet hole and the card storage recess I talked about earlier. And the best way to make the card recess hole includes pattern routing as one of the steps. Look to the *Drawings* on the following page to give you all the dimensions and locations for these details. Consider this as a tip: I made my templates from 1/2" MDF because it is easy to work with and inexpensive. But more than that, 1/2" thickness, in my opinion, is better than 1/4" for pattern routing with a bearing-guided router bit because the bearing can be shielded within the thickness of the MDF (see the top photo on page 49). Take your time and make the template (or templates) accurately ... any mistakes here will show up on your finished project.

Making Some Sawdust

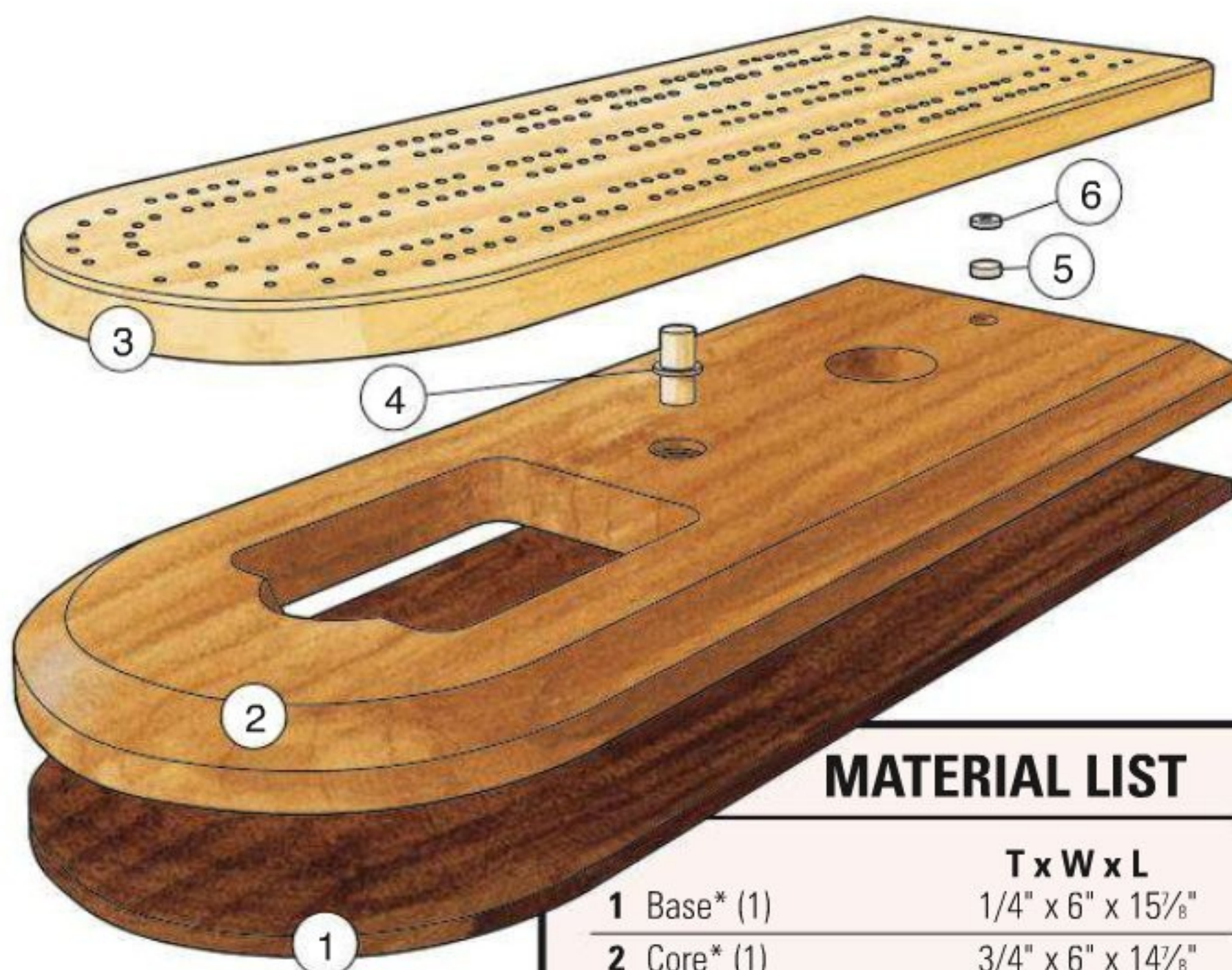
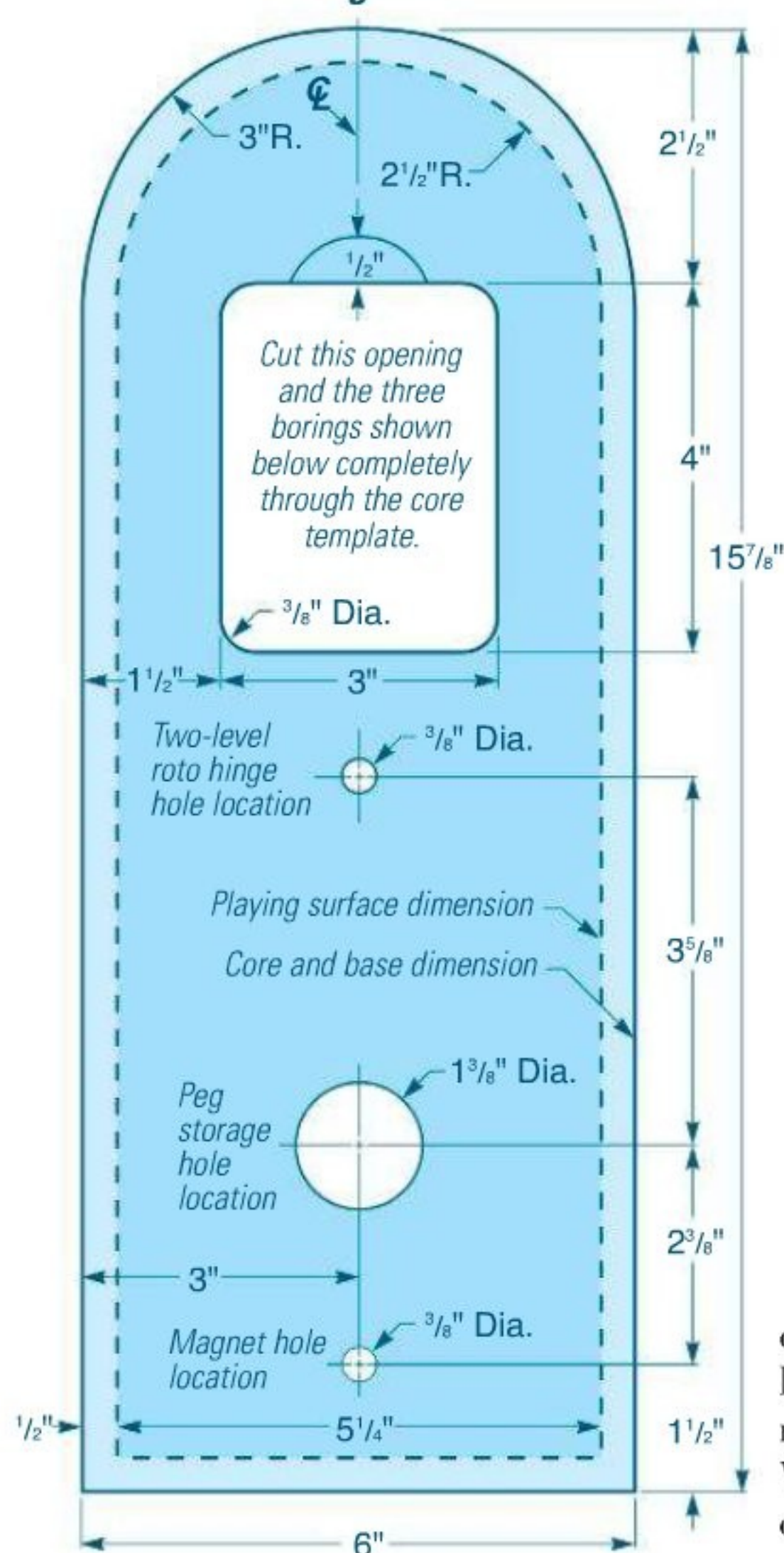
Grab the core blank you cut earlier and the core template and trace the shape onto your blank. As shown in the photo above, if your blank is a bit oversized, align the template with two edges of the blank when you trace the shape, so it will reduce your cutting on the band saw.

When you've completed the band saw cut, step over to your drill press to bore a 1/2"-deep hole for peg storage and a two-step hole for the pivot hinge. When forming this two-step hole with Forstner bits, make the shallowest hole (5/8" diameter by 1/16" deep) first. Then you can easily align the deeper hole (3/8" diameter by 3/8" deep) by using the spur depression left by the first Forstner bit. Go ahead and drill the small hole for the magnet at this time, too.

The modified cribbage board's design requires three pieces of wood, a rotating hinge, a magnet and, of course, some pegs to keep score.



Template Diagrams



Exploded View

MATERIAL LIST

	T x W x L
1 Base* (1)	1/4" x 6" x 15 7/8"
2 Core* (1)	3/4" x 6" x 14 7/8"
3 Playing Surface* (1)	5/8" x 5" x 15 7/8"
4 Roto Hinge (1)	3/8" Dia.
5 Magnet (1)	3/8" Dia.
6 Magnet Washer (1)	3/8" Dia.

*Cut the blanks to make these pieces slightly oversized.

Next, drill out the four corners of the card recess as shown in the photo, below left. I used a handheld jigsaw to remove most of the waste from the card recess. When that is done, use a couple of pieces of two-sided carpet tape (not too much!) to secure the core template onto the core.

Then chuck a 1/2" bearing-guided pattern routing bit into your router table. Trim the card recess opening as shown in the photo, above right. Then you can shape the outside of the core in the same manner. Cutting the curved shape at the end of the board with a router bit can be a bit tricky. You may be better off just sanding it smooth to your marked line, although I did OK by climb-cutting around the radius. Pop the template off of the core and set it aside for now.

Building on the Base

Grab the base blank that you made earlier. Use the core (or, if you wish, the core template) to trace its shape onto the base blank. Use the band saw to cut the base to shape, but stay outside of the lines by a strong 1/16" and set it aside with the core.

It's now time to move on to the playing surface. If you made a template for this piece, grab it and the blank you cut earlier and go through the same shaping process you did with the core. (But don't drill the peg holes yet; just make the outside shape.) If you did not make a template, you have a bit more layout to do, but it shouldn't take long. Once the piece is

The core gets several holes bored into it and even through the piece. Here, the four corners of the card recess are drilled out.



shaped, grab the drilling jig you ordered and the self-centering drill bit and head over to the drill press. (What's that? You didn't order the drilling jig and bit? What are you, crazy? Let me strongly affirm, here and now, that you should not try to make this project without the jig ... sorry. It is simply too hard to get all those holes placed properly without it. There are 260 or so holes to drill — that's a lot of alignment!)

Again, reach for the double-sided tape and secure the drilling jig to the playing surface. Chuck the bit in the drill press and start drilling. But go slow! Even with the jig as a guide, I found that I had to take my time and be very deliberate about this process. It was also useful to free any tiny wood chips that clog the centering sleeve on the drill bit.

When that was done, I bored the pivot hinge hole on the back of the playing surface and the magnet washer hole and set it aside. Grabbing the core one more time, I chucked a 3/4" cove-cutting bit into a handheld router and shaped the finger opening on the edge of the card recess as shown in the photo, center right. Then I glued the base onto the core and let the glue cure. Once the glue was dry, I used the pattern-routing bit to trim the base to perfectly match the core.

You are almost done. Changing out the pattern-routing bit in the router table for a large chamfer bit in the router table, I shaped the top edge of the core so that the inside of the chamfered profile matched the size of the playing surface. (See the lead photo on page 46.) With that cut completed, lower the chamfer bit



With the template aligned (and attached with double sided tape) to the dark lines marked earlier — which guided the rough cut on the band saw — it was time to start template routing. A pattern routing bit is used to refine the card recess opening and then to shape the exterior profile.

and shape the top edge of the playing surface with a slight bevel. Now it's time for sanding. Work up through the grits to at least 180, but I recommend 220-grit. With this done, take a moment to secure the magnet and washer in their holes with five-minute epoxy.

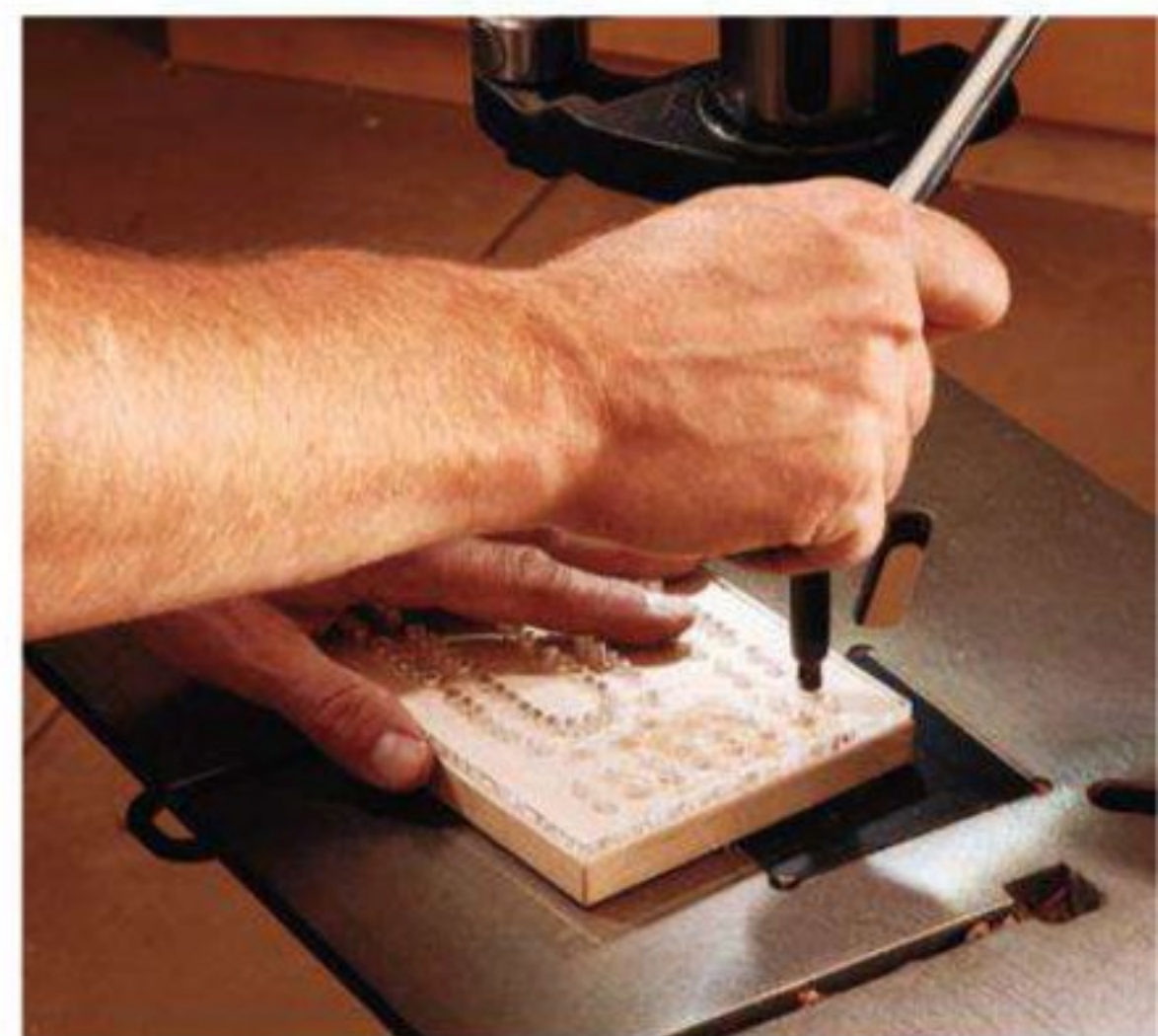
For finish on this project, I used a natural Watco oil. Try not to get too much into the peg holes — even though that is hard to avoid. Three coats of oil and a rubdown with some paste wax, and you'll have a proper finish on your gameboard.

The last thing you need to do is assemble the two pieces by driving the pivot hinge into the core and tapping the playing surface down onto the hinge. You'll notice that the magnet pulls the two pieces into alignment when you get them close to the right spot. Nifty, huh?

Now all you need to do is find a partner and a deck of cards, and you'll have yourself a game going in no time! Fifteen for two, anyone?



The final bit of shaping on the card recess is made with a large bearing-guided cove bit. The author cut this finger opening "freehand."



Even with the aid of a hole-drilling jig and a self-centering bit, you should still go slowly and clear the bit often to help keep the holes aligned.

Cribbage Board Hard-to-Find Hardware

The following supplies are available from Woodworker's Journal.

3/8" Roto Hinge (1) #36244\$4.69 pk.

Board Drilling System #34540\$41.99 ea.

Self-Centering Bit #69007\$10.99 ea.

Wooden Pegs #21741\$4.89 pk.

3/8" Magnet #32907\$9.29 pk.

3/8" Magnet Washer #38348\$5.39 pk.

To purchase products online, visit www.woodworkersjournal.com and click on the "Store" tab. Or, to order by phone, call 800-610-0883 and mention code WJ1161.

Frank Grant is a professional woodworker from Minneapolis, Minnesota.



A pivoting trammel jig and a plunge router can make these latticed trivets one after the next in very little time. You can even mix species, bits, spacer widths and edge treatments to create your own custom designs.

Trammel-Jig Trivets

Try variations of species as well as framed and unframed styles to create these routed trivets for your holiday gift list.

By Chris Marshall

If it's time to purge the scrap bin or you're just looking for a way to turn your router into Santa's mechanical elf, here's a clever little project to try this holiday season. You may have seen "waffle" style trivets before, but we're giving ours a twist by milling them with a router mounted on a pivoting trammel jig. Stopping the swooping cuts short of the edges of the trivets creates a "captured" one-piece design, or you can rout right through the edges of the blanks and wrap a frame around the routed core as seen on the facing page. I used a 1/2"-diameter spiral bit and 3/4"-wide spacers to form this pattern, but you could certainly experiment with other bits and spacer sizes to produce more unique styles. The only requirement is that the bit be set slightly deeper than half the thickness of the trivet. That way, a series of cuts on both faces opens up the lattice pattern. Once you have the jig built and your blanks made, these trivets are perfect for production-style gift making.

Building the Trammel Jig

The jig is really simple to build. Start with a 22"-square scrap of 3/4" plywood or MDF, and draw a diagonal line connecting two corners. Cut a 6"-square trammel support from 1/2" scrap and bisect it with a pencil line. Fasten it to the base with glue and brads so the outermost corners of the support align with the edges of the base and the pencil marks of the two jig parts line up. Now rip a pair of 1/2" by 2" fences, cut them to an overall length of 15 5/8" and miter-cut one end of each to 45°. Butt the fences against the support piece so the tips of the miters touch. Make sure they form a square "pocket" for the trivet blanks to register against before nailing the fences to the jig base.

Line the "field" area inside the fences with sandpaper attached with spray adhesive. Later, this will hold the trivets stationary as you rout them. I left the base's outer corner bare where the trivets and spacers don't reach it.



The router's cutting radius doesn't change — it is fixed to a trammel and dowel pivot point. Instead, adding pairs of spacers creates the repetitive cutting pattern on both trivet faces.

Adding the Trammel

The trammel is a scrap of 1/2" material cut 6" wide and 20" long; this width fit my router base nicely. If your router has a wider base, change the trammel width to suit it. Set the router near the trammel's end to mark mounting holes for screws, as well as to establish where to bore a clearance hole for the router bit. Mark the trammel carefully with two layout lines: one identifying the centerpoint of the router bit and a second drawn 12" back from this line, before making the bit clearance hole and fastening the router to it.

You'll need one of your 6"-square trivet blanks to mount the trammel properly on the jig. With the router bit installed, set the trivet blank in the corner formed by the fences and balance the trammel on it and the square support block. Slide the trammel along the support until the inside edge of the bit just kisses the outer corner of the trivet blank. Make sure it lines up evenly over the support before boring a 5/16" dowel hole through the trammel and support — right into the base. Center this hole on your 12" layout line drawn previously. Now insert a 2" length of 5/16" dowel to engage the trammel's pivot action. You're nearly ready to start routing trivets, but first, make up 14 spacer strips from 1/2" scrap. Mine were 3/4" x 14".

Making Tricked-out Trivets

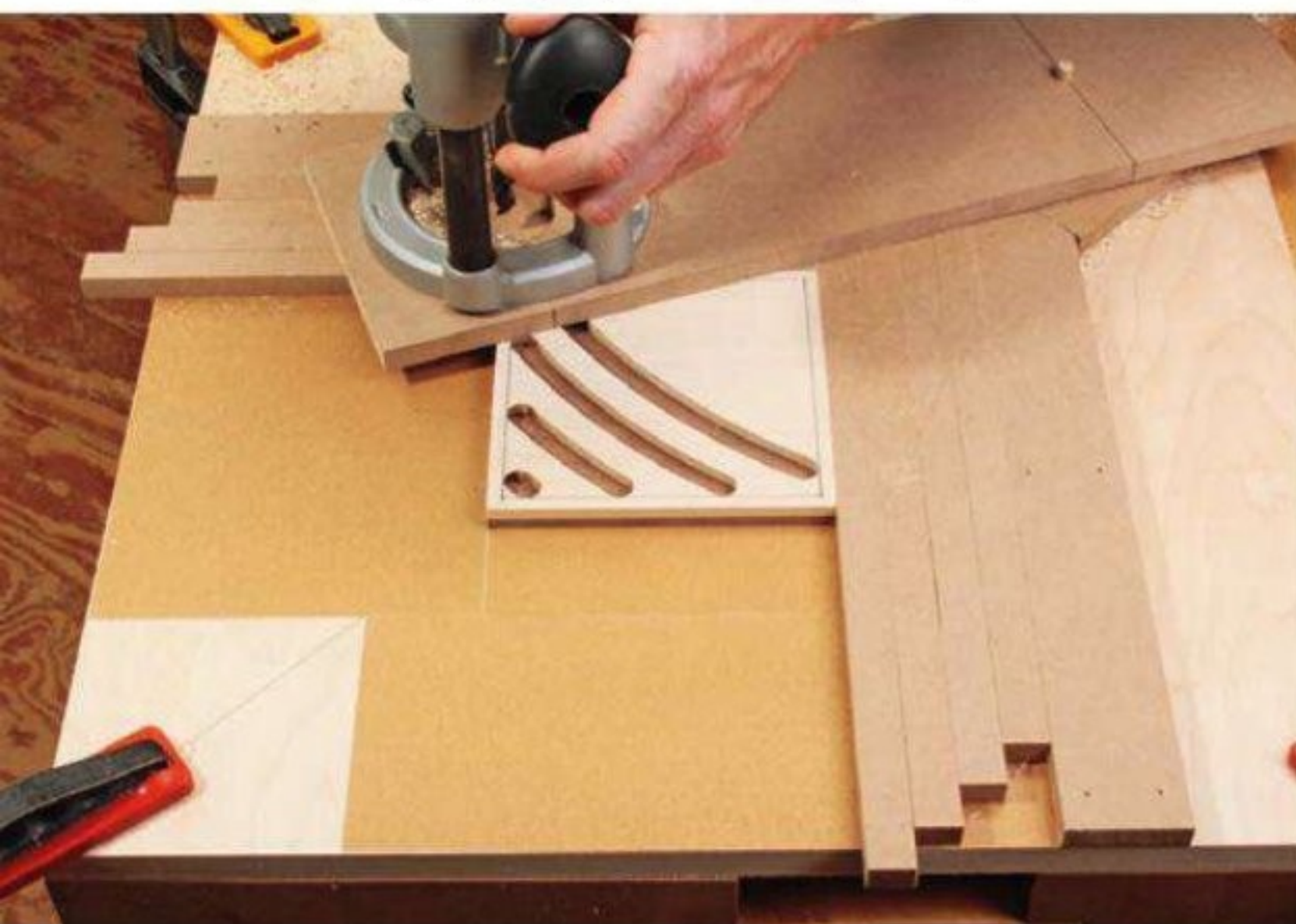
After you've prepared some snazzy trivet blanks (I tried patterns of contrasting species, glued side-by-side or as two 1/4"-thick face-glued laminations), making the trivets is easy.



Butt the mitered ends of the jig fences against the trammel support block so they form a square corner, and nail them to the base (left). Establish the pivot point of the trammel by drawing a layout line 12" from the bit's centerline (top right). To set the correct position of the trammel on the jig, slide the trammel along the support block until the inside edge of the router bit touches the outer corner of a trivet blank placed in the jig (center right). Finally, bore a dowel hole, centered on the trammel's pivot point line (bottom right).



To start the cutting pattern on the trivet's first face, set a pair of spacers against the jig fences. Position a trivet against these spacers and mill the first slot, routing slightly deeper than halfway through the blank.



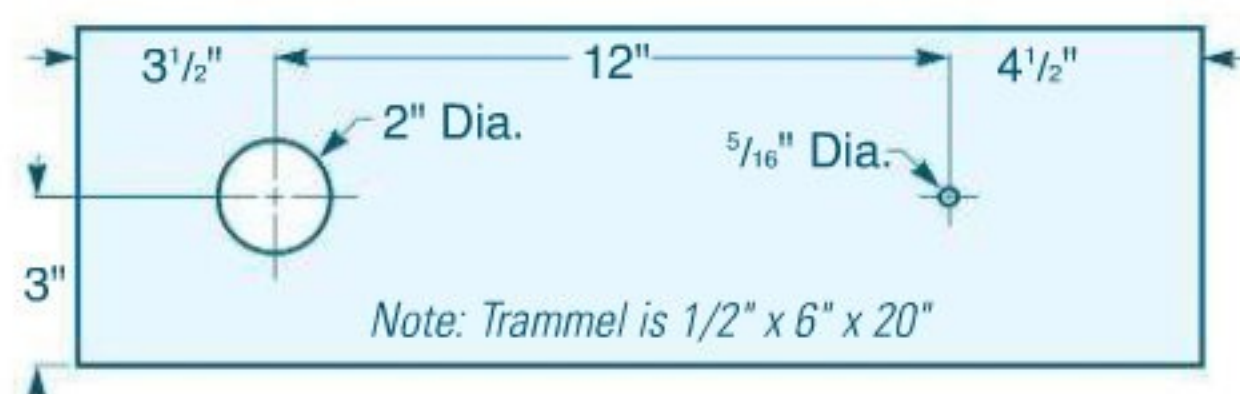
Mill subsequent arched cuts by adding pairs of spacers. You can feed the router clockwise or counterclockwise, but be careful to keep the trivet stationary as you pivot the router. Downward pressure is sufficient.



Flip the trivet over and pivot it a quarter turn to establish the "X" cutting pattern on the second face. Rout the first slot with all spacers in place, then work in reverse, removing one pair at a time to make the other cuts.

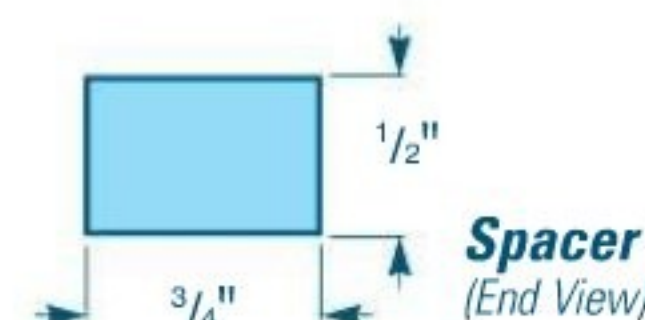
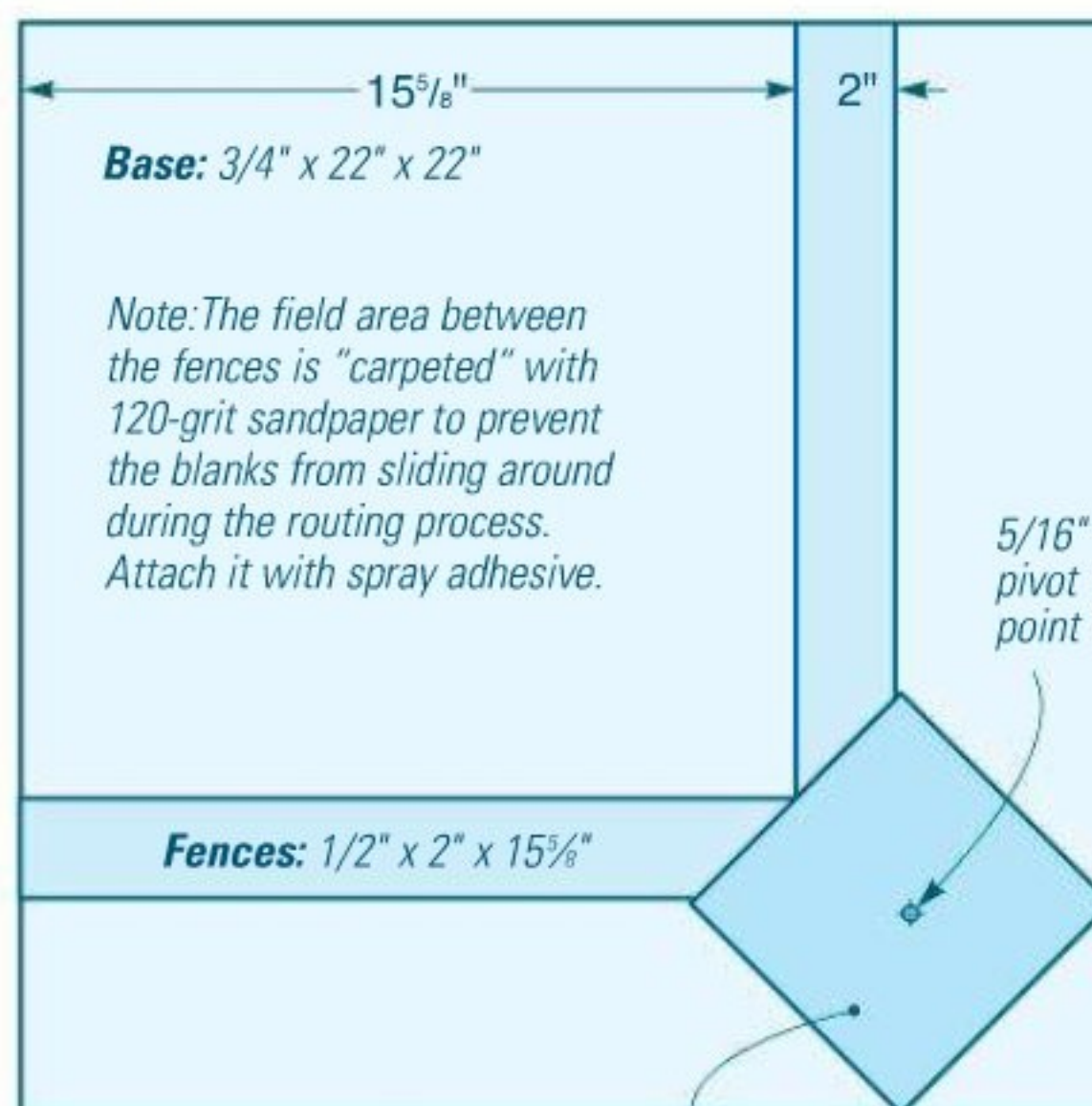
Trammel

(Top View)



Base Subassembly

(Top View)



Set one pair of spacers against the fences so their intersecting ends overlap in the jig's inside corner. Set your bit depth, and lock your plunge router's base accordingly. For trivets with stopped router cuts, I drew layout lines 1/4" in from the edges of the blanks to set the starting and stopping points for each cut. Trivets with separate frames don't need these lines.

Start the router and make your first cut, milling to final depth in two passes. I used a 1/2" upspiral router bit — but any sharp straight bit should do fine. Swing the router clockwise or counterclockwise — either works fine, but keep the trammel pressed down firmly against the trivet blank to prevent it from shifting. Once you complete the first cut, pull the trivet forward, insert another pair of spacers and repeat for the second, longer "swoop." Continue adding spacer pairs between subsequent cuts until you reach the other corner of the blank. Now flip the blank over, give it a quarter turn to establish the "X" pattern and repeat the whole routing process. This time remove one pair of spacers after each pass. In minutes, you'll have your first trivet knocked out and be on to the second. Sand away any bit burn marks or fuzz, and round over the edges. For trivets with frames around them, I used quick-set epoxy to secure the mitered frame pieces.

The recipients of your curvy kitchen coasters will no doubt appreciate their delicate look ... but secretly you'll know that the bigger satisfaction — plowing those arching cuts and seeing the pattern develop before your eyes — was really all yours.

Chris Marshall is Woodworker's Journal's field editor.

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NOTE: See Quik-Link at woodworkersjournal.com for web links to all of these products.



"Lost Vegas," Nevada.

Entering into this year's crop of woodworking shows bright-eyed and full of vigor, *Woodworker's Journal* editors scoured the booths to discover the tools that would be of the most interest and use to you. After attending the huge AWFS (Association of Woodworking and Furnishings Suppliers) Fair and making trips to various destinations to see the latest from Milwaukee, Bosch, DeWALT and many others, our staff was footsore and bleary-eyed — but check out what they uncovered . . .

Unveiled at the 2011 AWFS, **Bessey's** new *Auto-Adjust Toggle Clamps*, thanks to an integrated clamping force adjustment screw located under the

Bessey Auto-Adjust Toggle Clamps



clamp handle, automatically adjust to variations in workpiece thickness while still applying the same amount of clamping force. Two models of horizontal toggle clamps can secure workpieces up to 2 or 2½" thick, and an inline version can handle workpieces up to 1" thick. All three clamps have a holding capacity of 700 lbs. The clamp handles are over-molded for comfort, and a plastic cap prevents marring. Prices range from \$20 to \$22, depending on the model.

Bosch is adding accessories to its *Daredevil*™ line, including a *Framing Blade*, *Spade Bit* and *NailKiller*™ *Auger Bit*. The Framing Blades, available in sizes of 6½" to 8¼", have control-cut shoulders to reduce kickback, expansion slots to control blade warp and thinner, extra-hard steel plate blades with triple-sharp carbide teeth. They're covered in a



Bosch Daredevil Framing Blade and Spade Bit

Speed Coat™ finish to add speed and avoid binding, and sell for about \$9.95.

Bits in the Daredevil line include a spade and auger bit. First of its kind among spade bits, the Daredevil (\$3.47) has a full-cone threaded tip to drill faster and pull through material with less effort and vibration, while the NailKiller (\$29.99) has a double cutter and reamer edge for clean hole quality and a center spine for additional strength during aggressive drilling, plus wider flutes for chip removal.

Also debuting at AWFS was the 10-350 14" Professional Bandsaw from **Rikon**.

Although incorporating features from other Rikon band saws, such as a stout cast trunnion system and a large 21" x 19" table with dual miter slots, the most noteworthy features of the 10-350 are likely the safety ones. If any of the doors are opened while the saw is in operation, the saw will shut down. If any of the doors are left open, the



Rikon 10-350 14" Professional Bandsaw

saw will not start. If the quick-release blade tension is disengaged, the saw will not start. And, the saw shuts off as the foot brake is pressed. The 10-350 comes with two motor options: a 2.5hp Rikon or a 3hp Baldor, and a 4 $\frac{3}{8}$ "-tall resaw fence. Pricing for the 2.5hp motor is \$1,500, and for the 3hp \$1,800.

Weighing in at one third the weight and size of a traditional circular power saw, the **Dremel Saw-Max** is a new option for cutting wood. It features a system of compact cutting wheels that are quick to change out for the options of making straight, plunge or flush cuts up to 3/4" deep through wood, plastic, laminates, and drywall, as well as sheet metal and tiles. You can use the Dremel Saw-Max with one hand, handy for working in tight spaces. It has a dust extraction port and trigger lock-out and a variable depth guide that maximizes the 17,000 rpm speed of cut. Suggested retail price for the Saw-Max is \$129.99.

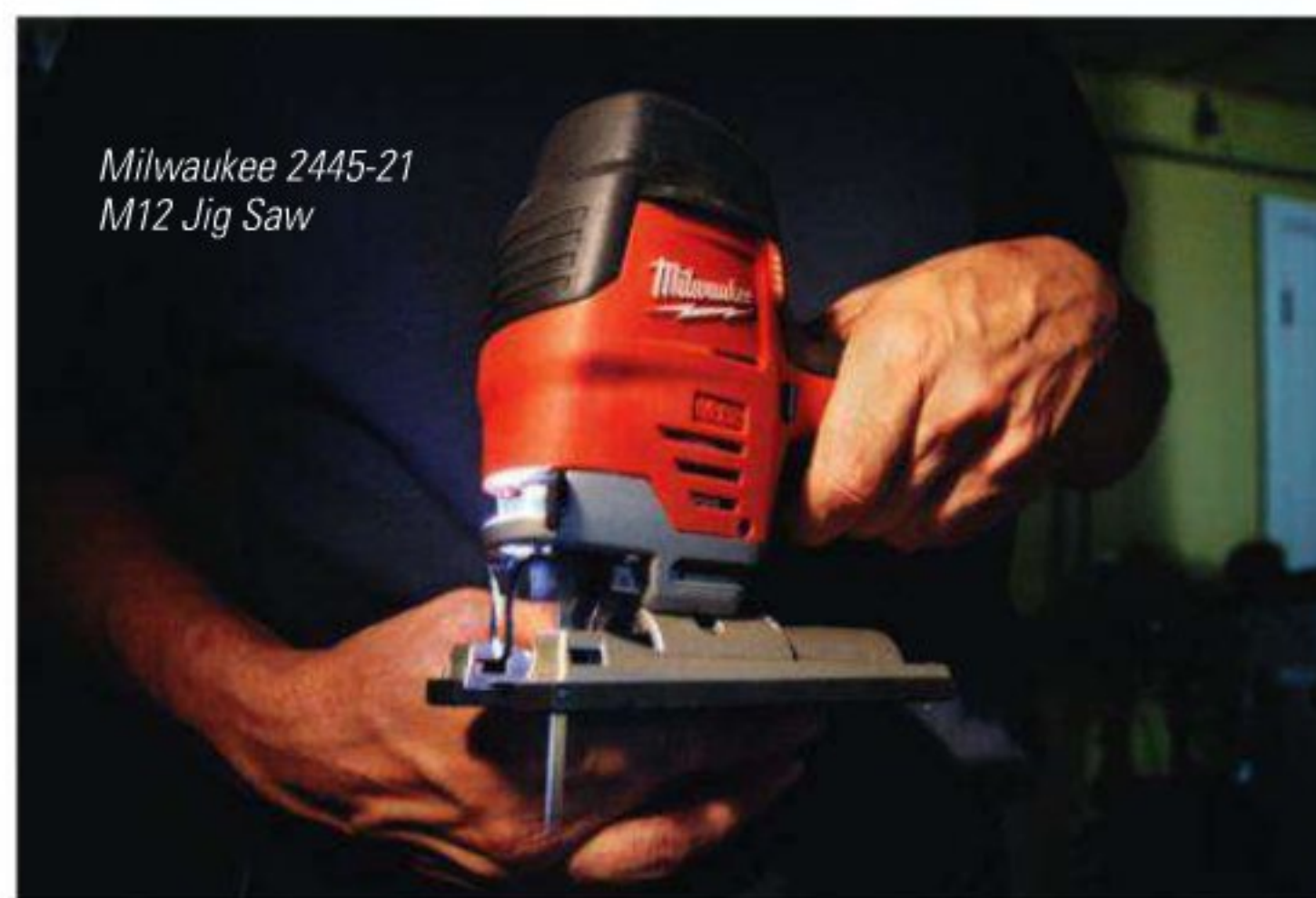
Seen at the summer shows but released this November, the **CNC Shark Pro Plus HD** is designed specifically for 1 $\frac{1}{2}$ hp to 2 $\frac{1}{2}$ hp routers commonly used in small shops, adding to their options for computer-controlled machinery. Available exclusively through Rockler, the CNC Shark Pro Plus HD has a table measuring 28 $\frac{1}{2}$ " x 36", useful for carvings and machinery operations on doors, cabinetry, signs and other projects. Steel and high-density polyethylene construction add durability, allowing it to withstand accidental impacts that could destroy an aluminum or MDF surface. Compatible with several different routers, the CNC Shark Pro Plus HD requires a



PC computer with a USB port. The tool, made in the U.S.A., has a Z travel of up to 7 inches maximum (2 inches more than regular) and a maximum cutting capacity of 25 x 25 x 7 inches, with a Y axis expandable to 48 inches. It's priced at \$3,999.99.

The **Milwaukee 2445-21 M12™ Jig Saw** unveiled this summer is neither a top handle nor a barrel-grip saw —

instead, it combines the best features from both to create a compact Hybrid Grip™ with maximum control. The compact saw is 8 $\frac{3}{4}$ " long and 7" high (with a 45 degree bevel). The unit has a 3/4" stroke and 2,800 spm with a variable speed trigger, a Quik-Lok™ T-shank blade clamp for quick and accurate blade insertion and release and an LED light. Suggested price is \$149.



Milwaukee 2445-21 M12 Jig Saw

What's In Store continued



RIDGID JobMax
AC Multi-tool
Starter Kit and
Jigsaw Head



The **RIDGID® JobMax™ AC Multi-tool Starter Kit (R28600)** was definitely turning some heads. Designed to function as a corded power base for a system of interchangeable tool heads, the kit comes with the R2850 JobMax Power Handle and universal adaptor to accept all popular multi-tool accessories. Also included are RIDGID's own R8223404 Multi-tool head, a wood/metal blade and a sanding pad and paper assortment for the tasks of cutting, sanding and scraping. Tool-less changes can also add other tool heads —

including, at the moment, the RIDGID Jigsaw Head (R8223407) — with more to come. The Power Handle has four directional head positions for the attachment heads, as well as an LED light for illuminating your work. It's powered at 3 amps, with the torque depending on what tool head is attached. Price for the Multi-tool Starter Kit, with the Power Handle and Multi-tool Head, is \$129; the jigsaw attachment head is priced at \$69.

The *Zeta dual-purpose biscuit joiner* from **Lamello**, distributed in the U.S. by Colonial Saw, functions as both a traditional biscuit joiner and a tool for creating profile grooves for Lamello's *Clamex P connector system*. Using a compact vertical mechanical drive — it's the first handheld tool to have one — the Zeta cutter plunges



Lamello Zeta dual-purpose biscuit joiner and Clamex P connector system



to the maximum depth during the cutting process, then quickly moves up and down to create the profile groove, and finally moves back to the center position to complete the machining of the slot — where the Clamex P connector, made from fiberglass-reinforced plastic with a metal cam lever, is inserted by hand. Price for the Zeta is \$1,400 and, for the Clamex connectors, starts at \$52 for 18 pairs.

Continues on page 58 ...



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Rockler Trim Router Table

Ready to be on-the-go just as much as our editors, the *Trim Router Table* from **Rockler Woodworking and Hardware** combines mobility with stability for a portable 11½" x 15" surface of vinyl covered MDF that can easily clamp to horizontal surfaces. The ¼"-thick acrylic base is predrilled for common trim routers and can also serve as an oversized base for freehand work. The Trim Router Table is priced below \$60.

Franklin International has released two new glues: *Titebond® No-Run, No-Drip Wood Glue* and *Titebond Translucent Wood Glue*. The translucent glue dries to a translucent shade that is paintable and helps to hide



Franklin International Titebond No-Run, No-Drip Wood Glue and Translucent Wood Glue

the glue line. It's also heat-resistant for easy sanding, fast-setting and nontoxic, with water cleanup. The No-Run, No-Drip glue is also a water-based formula with easy sanding and water cleanup — and it's the highest viscosity PVA wood glue on the market, as well as the fastest drying, with three to five minutes of working time. It works quickly, and it doesn't drip as it dries. Both glues are available in eight- and 16-ounce bottles, with retail prices between \$4.25 and \$6.69.

Another star of the AWFS show, from **Teknatool**, was the *NOVA™ Comet II Midi Lathe*. The unit features a variable-speed motor with an rpm range from 250 to 4,000 rpm and capacities of a 12" swing over bed and 16½" between centers (expandable to 42" with an accessory). But that's not all: the Comet II Midi Lathe, with the NOVA Versaturn™ Adaptable Coupler,

can also turn the lathe into an 8" wet stone, 6" x 3/4" belt sander, flexible-shaft carving tool, grinding wheel, 6" sanding disk or 6" by 1" wire brush with the use of accessory attachments. Suggested price is \$499.



General Tools & Instruments pin and pinless moisture meters

Whether you prefer a pinless or a pin-type moisture meter, **General Tools & Instruments** has developed a low-cost option for you. Their *MMD4E pin-type moisture meter* has two replaceable stainless-steel pins that can be covered with a protective cap. A selection switch changes its sensing from wood to building materials (concrete, drywall), and its overall moisture measurement range is 5 to 50 percent for wood (1.5 to 33 percent for building materials). The MMD4E costs \$49.95. For a pinless moisture meter, General Tools has the *MMD5NP*, with a range of 0 to 99.9 percent wood moisture equivalent for wood and 0 to 56.5 percent WME for building materials. The MMD5NP costs \$89.99.



Teknatool NOVA Comet II Midi Lathe

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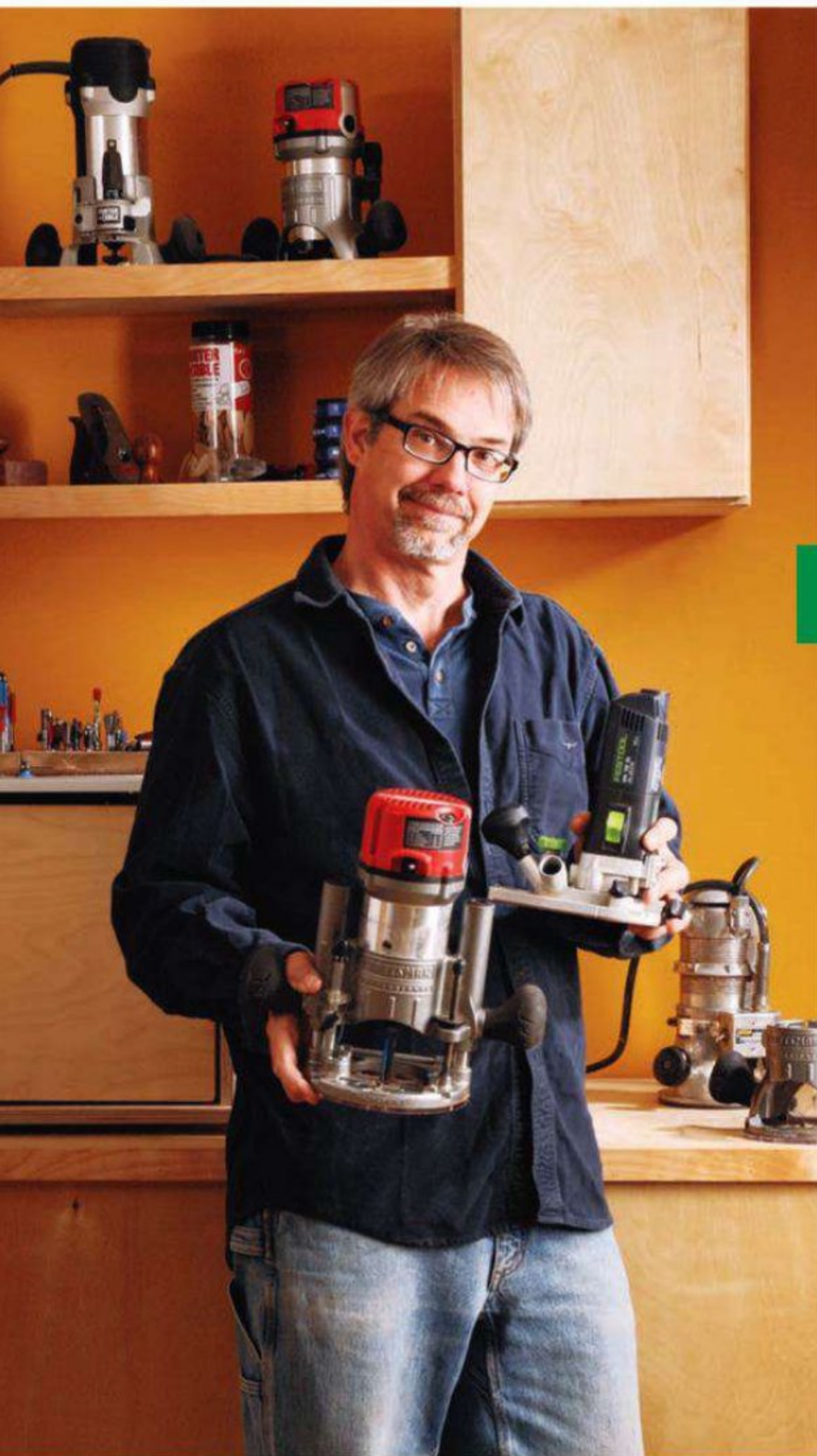
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Today's Shop

Routers: Picking the Dynamic Duo!

By Rob Johnstone

We asked four woodworking experts, including yours truly, and 20,000 or so home shop woodworkers, just like you: "If you could only own two routers in your shop, which ones would they be?" The survey results are on page 30. The experts hold forth here. Let the debate begin!



Selecting only two routers to keep in his shop for the rest of eternity (or at least until their brushes wear out) was a revealing exercise for our editor in chief.

Is it possible for only two routers to do everything a woodworker would want a router to do? That's a good question, and it's one about which many woodworkers have strong opinions.

Some say that the tipping point between a DIY home handyman and a home shop woodworker boils down to just one tool: the router. And that concept has some truth to it; you won't find many highly motivated woodworkers' shops without a router ... or two, or three — and perhaps a lot more than that. I confess to owning more than eight. But it's a legitimate question to ask whether I really need all those routers. After all, a router is just an electric motor spinning a bit ... how many variations on that theme does a person really need?



Expert #1: Rob Johnstone

At first blush, confronted by the variety of routers from which to choose my dynamic duo, I felt a bit daunted. Even just the eight in my shop represent a significant continuum of costs, styles and features ... and just think of the task before poor Bill Hylton (page 70)! But the crux of solving the challenge revolved around the various woodworking tasks I use my routers for in my day-to-day shop routine.

When I put my noodle to that question, the list of tasks quickly got pretty long. Looking back, I do a significant amount of pattern or template routing. Using a router paired with a template to machine perfectly matching components is an invaluable process in making furniture. I had to keep that in my bag of tricks, for sure. And, while I

generally prefer to plow dados and rabbets on my table saw, there are times when a router is the more practical choice. My router table (in truth, I have three ... hey, I am a woodworking magazine editor) is in use all the time. I use the table for machining as varied as rounding over an edge, to cope-and-rail-cutting and raising hardwood door panels. So I certainly need a router with enough power to do some occasional "heavy lifting." But as a 55-year-old guy, I am beginning to realize that my upper body strength is not what it was when I was 25. So for my workhorse router, in the last year or so, I have found myself reaching for a mid-sized machine. In fact, I have used a Craftsman combo kit that combines a mid-size router motor with a plunge

Readers' Choice



When it comes to routers, readers clearly think big is better (see page 30). In response to the question "If you could only own two routers, what would they be?" the winning combo was "two full-size routers": one plunge and one fixed-base.

Coming in second were two mid-sized routers: one fixed-base and one plunge. To see the entire survey and get the complete picture, go to our homepage and click on the "More on the Web" icon.

In the last couple of years, a mid-priced but well-featured Craftsman router combo kit is the router that Rob Johnstone reaches for most often in his shop.



base and a fixed-base. While not very expensive, it has done yeoman duty and provided excellent service.

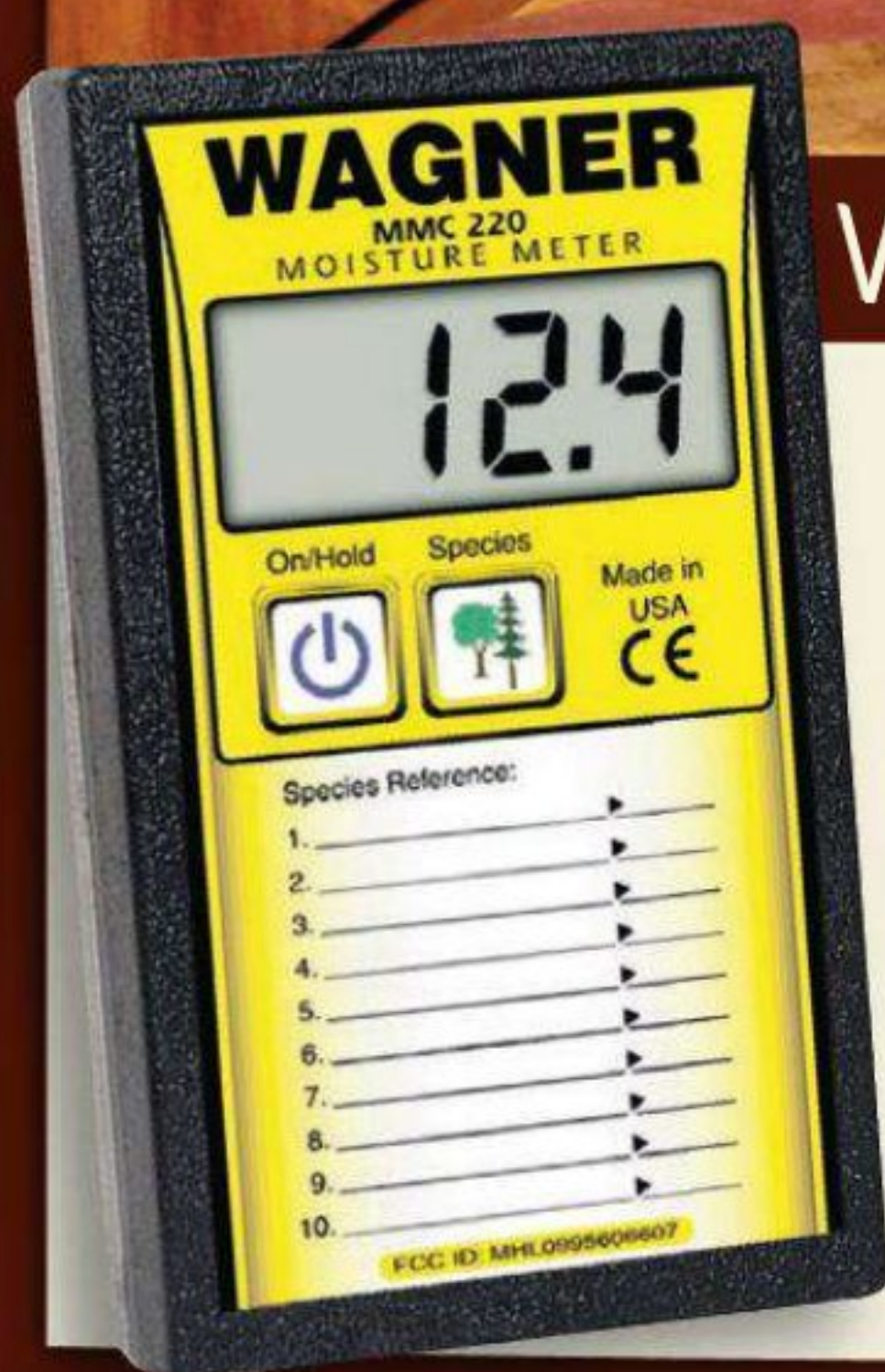
So my first selection, based on my day-to-day use, was relatively easy to choose. What about my second and final choice? Once again, I simply looked back at my history of work, and the choice was easy. I use the Festool trim router for tasks like cutting out hinge mortises, routing decorative reveals, inlay work — tasks that require more nimbleness than power. It runs like a champ and, paired with the Festool dust extraction system, it is a pleasure to use. To be fair, if I had spent more time using the new category of palm and compact routers, like the Bosch Colt and the

offerings from DeWALT and PORTER-CABLE, they may have been tops on my list. But the Festool has proved so good to use, that I have not given the others a fair shake.

So for good or ill, those are my choices. But as you know, if you put a dozen woodworkers in a room and ask a woodworking question, you can easily end up with 12 different answers. So read on and find out what our corps of woodworking experts selected as their dynamic duo. And if you have some duos we all missed, feel free to share them with us.

Today's Shop continues on page 66 ...

We thought
"two is plenty"
but it turned out
that our average
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Swiss and Sweet

Two "oldies but goodies" make it to the top of our expert #2's short list.



Expert #2: Sandor Nagyszalanczy

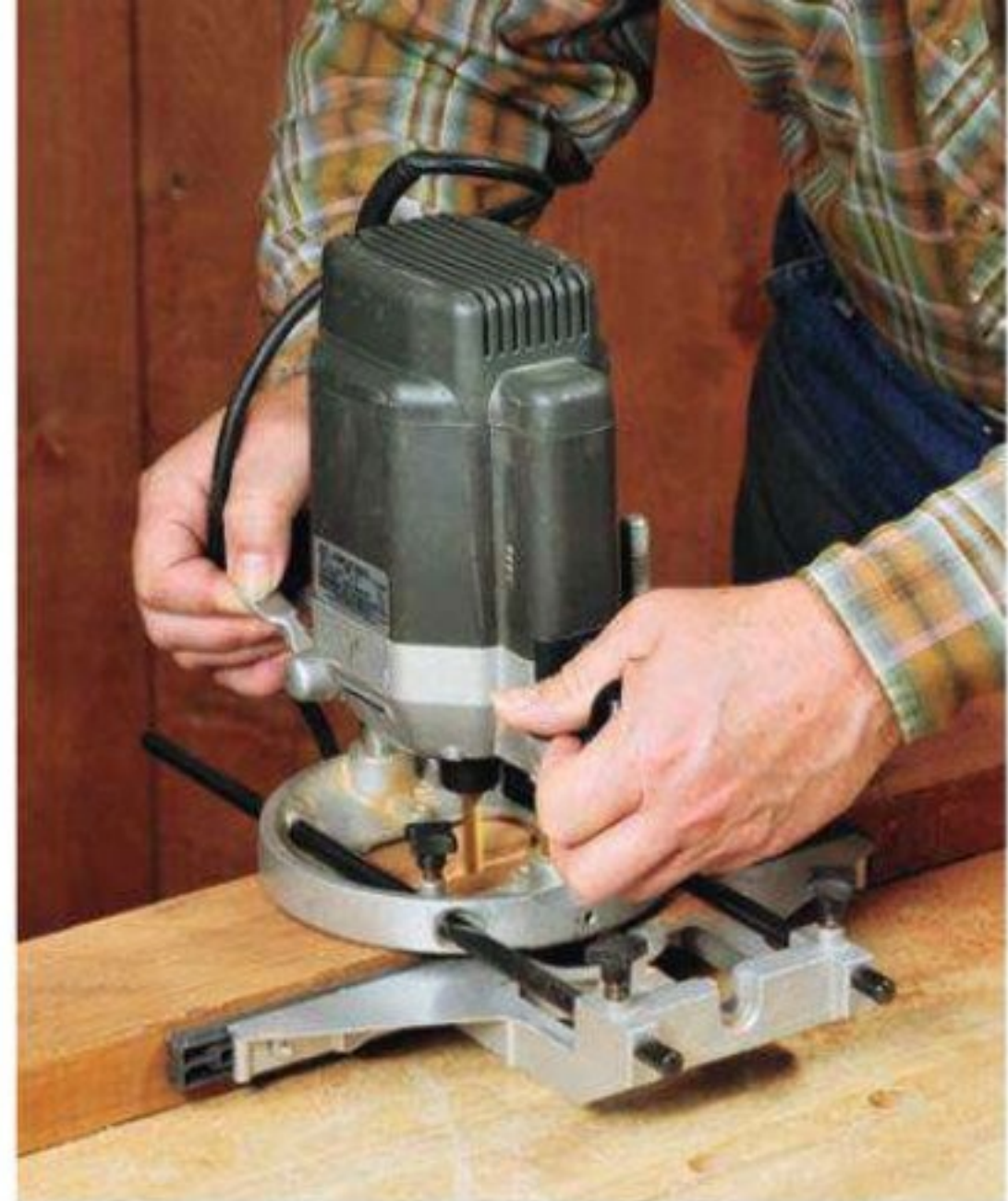
I don't think I'll ever forget the excitement I felt on the day I bought my first router, a shiny, all-cast-aluminum Rockwell Speedmatic D-handle. What manly joy it gave me to trigger that tool on and hear it scream as it plowed through a thick plank like a John Deere tractor furrowing a field. Now, several decades later, an embarrassment of router riches graces my power tool cabinet (I've often fantasized about how cool it would be to have one router for each bit!).

But if I had to choose only two models from the vast ranks of these versatile portables, I'd pick my Elu model 3337 plunge router and PORTER-CABLE 310 trim router. Although neither is currently in production, these two noble routers are my "deserted island" selections because I use them more often than any of the other routers I have on hand. The Swiss-made Elu just oozes European class and precision and employs a blend of sensible features that make it a versatile woodshop player. I regularly use it for such diverse tasks as plowing

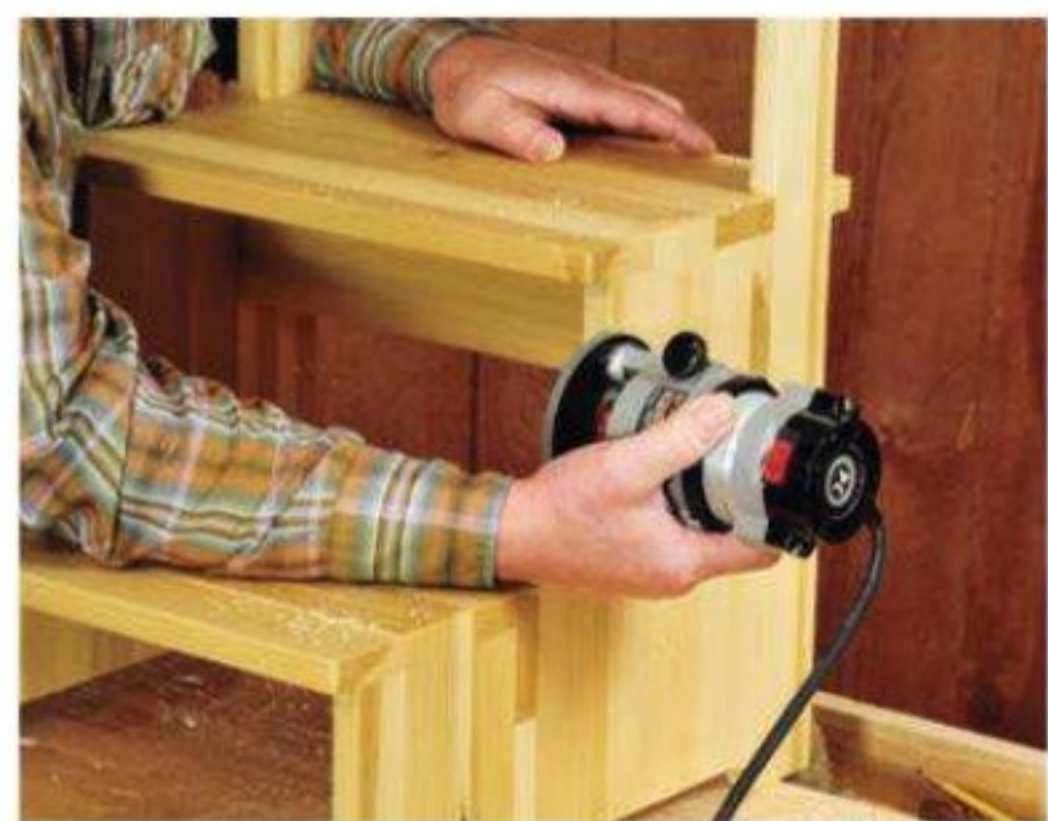
dadoes and grooves, plunging mortises, cutting precise dovetails and shaping flutes, coves and ogees. For stable, edge-referenced routing, the Elu comes with the largest, sturdiest fence on the planet (photo above). The 3337 is such a smooth, dependable performer that I can easily imagine a retired James Bond having one in his tricked-out workshop (careful, that isn't really a hand plane!). The Elu packs enough power to handle all but the biggest helicopter-rotor-sized panel-raising bits. Yet it is light and portable enough that even woodworkers lacking a British secret agent's strength and stamina (yours truly included) can easily handle it.

Speaking of size and weight, my other router pick is a bit of a pit bull: PORTER-CABLE's 310 trim model is more potent than its smallish stature portends. It's my first choice any time I've got to run a 1/4" shank bit (the only size this router's collet accepts). The reason is that the 310 is compact and easy to maneuver, yet it packs more punch than other trim routers

The Swiss-made Elu 3337, while not in production any longer, remains a highly desirable tool. Its elegant style is coupled to tough-as-nails construction.



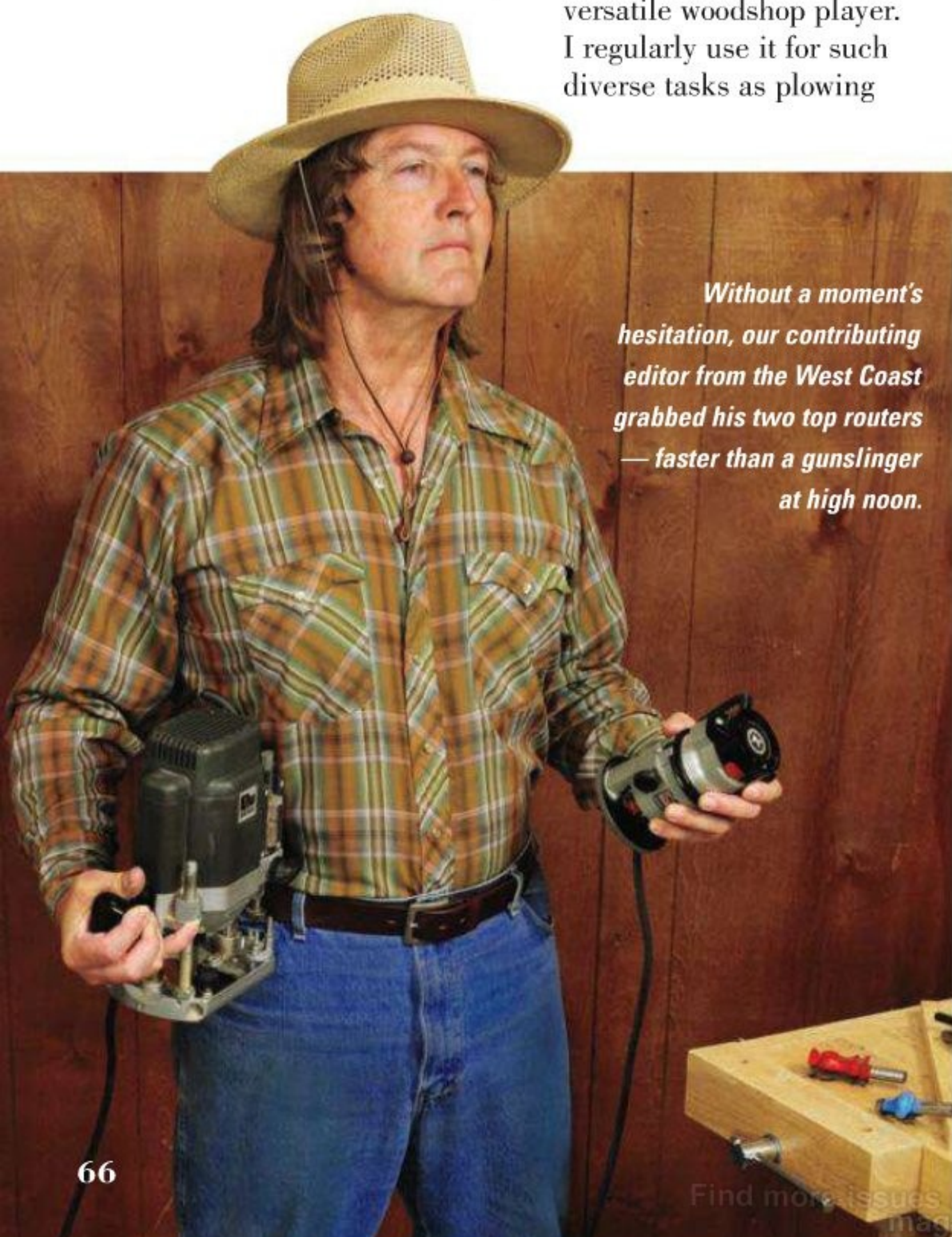
I've used. It's sized just right for my grip, so I have good control when tackling a delicate task, such as routing a sign or decorative plaque, jobs made even easier when the 310's motor is mounted in my favorite accessory: The MicroFence plunge router base. Setting bit depth is a quick and easy task, thanks to the 310's simple threaded body and adjustment ring design. And because this mini PORTER-CABLE is so light and handy, it's a breeze to use



PORTER-CABLE's 310 is a favorite in almost every woodshop that it has been in. The compact yet peppy product does its duty, and does it well.

for edge shaping work on horizontal or vertical parts, say when rounding over the edges of a large bookcase or furniture piece. I'm just glad I bought two of these little beauties before they decided to discontinue them.

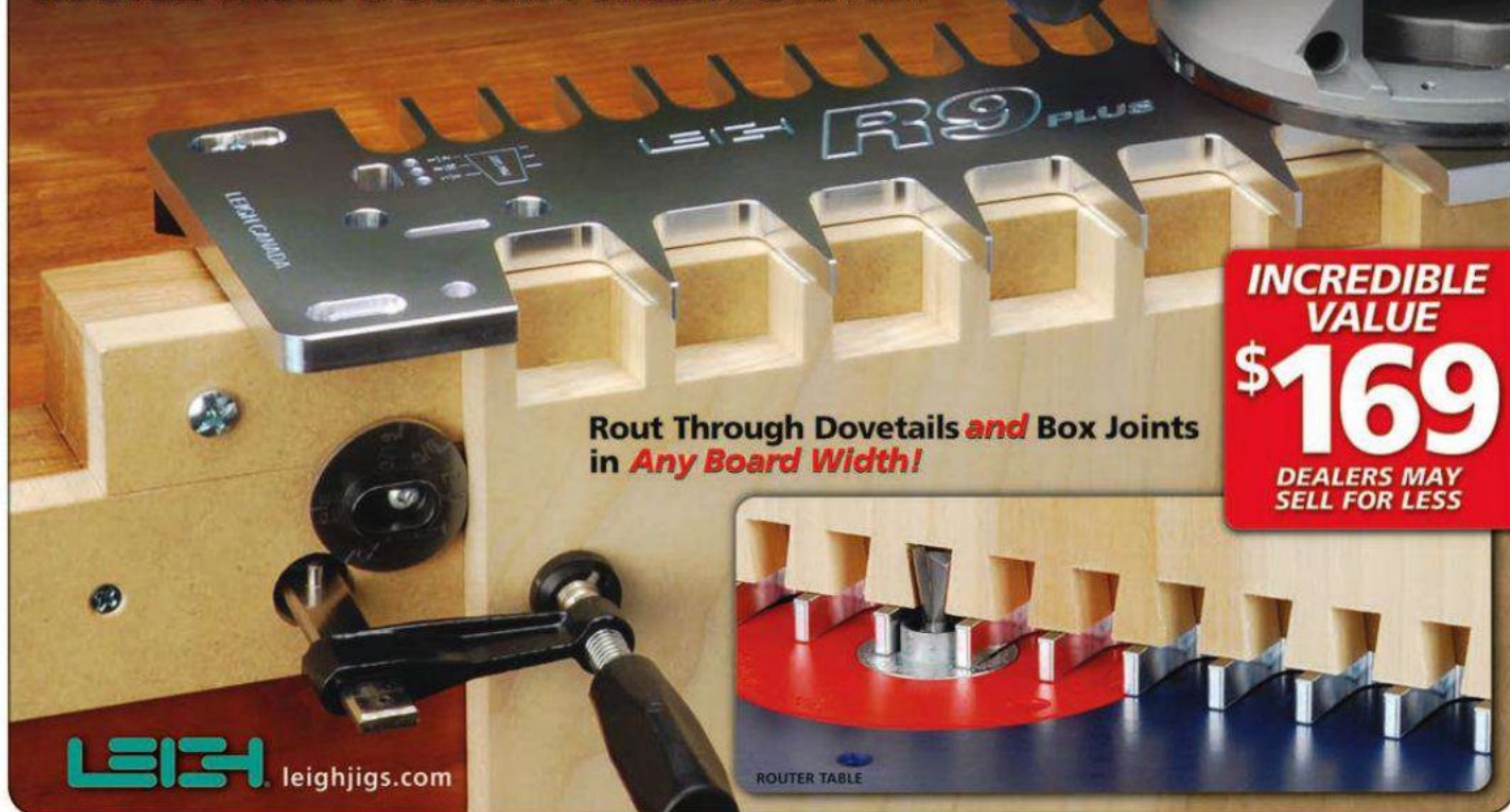
Today's Shop continues on page 68 ...



Without a moment's hesitation, our contributing editor from the West Coast grabbed his two top routers — faster than a gunslinger at high noon.

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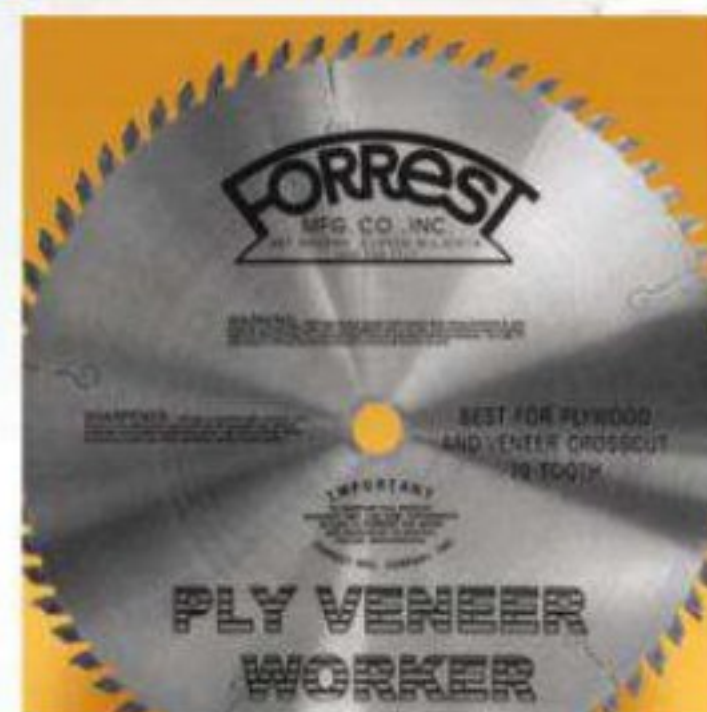
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Mid-size versatility and a tough pint-sized router get it done for this field editor. But he just won't settle for just two!



Expert #3: Chris Marshall

No fair, I say.

Why do we “experts” have to limit our picks to two when the average number of routers owned by our survey group is 2.97? Oh, well ... I'll play by the rules — but I may just sneak my “.97” unit into the end of this overview.

When it comes to handheld routing, there's always a twinge of fear in my gut. All of that spinning carbide and brute torque has the potential to do dastardly things to both lumber and limb, so I want a machine I know I can control. That's why I'll part ways with those who would pick two full-size machines and choose Milwaukee's 5616-24 mid-



sized combo kit instead. Here's why: the 2.25hp motor is detailed with sensible stuff — feedback electronics to keep rpm up under load, soft

start and variable speed. It slides in and out of either plunge or fixed bases like a well-oiled piston, once you flip a lever and push a button. Micro-adjustment is a simple twist of the Acme-threaded rod — no annoying wingdings to it — and the rubber grips are rock-solid. I like the BodyGrip wraparound on the fixed-base: it fits my hand like a broken-in outfielder's glove and straps up tight. The plunge action on the other base is nice and smooth. I've never bested the power of this tool for profiling or joinery work. It is plenty for me.

Pick number two: RIDGID's R2401 trim router. This was a really tough decision, because I've got a soft spot for Bosch's extremely apt Colt compact router. Notice that both are trim routers. If you read my article about how to expand the use of these underrated tools back in our December 2010 issue (“Shop Test,” page 60), a trim router offers the

While the “big gun” machines may be many readers' picks for top two, our field editor appreciates the manageable control of a mid-sized combo kit and a potent trim router.



ultimate in manageability for inlay, mortising and balancing the tool over narrow edges or small workpieces. Both Bosch and RIDGID have powerful motors and straightforward bit adjusters, but RIDGID adds a sweet perk: an LED light. My gosh, that's handy when you're tracking a freehand line or sneaking up on a mortise! If Bosch ever adds one, the scales could tip back for me.

Now, I'm digging in my heels on good old .97: there's a PORTER-CABLE 7518 Speedmatic 3.25hp router bolted inside my router table, and I wouldn't trade it. It takes care of business for any job — burly tasks like panel-raising as well as delicate profiling and joinery. Mine just keeps whipping up chips, hidden out of view. It's a trusted router you'll find in many pros' shops — who work this full-size machine a heckuva lot harder than I do.

Today's Shop continues on page 70 ...

Our field editor was unable to limit himself to just two machines ... and paid his respects to a hidden third partner: the PORTER-CABLE 3.25hp Speedmatic, tucked away in his router table.



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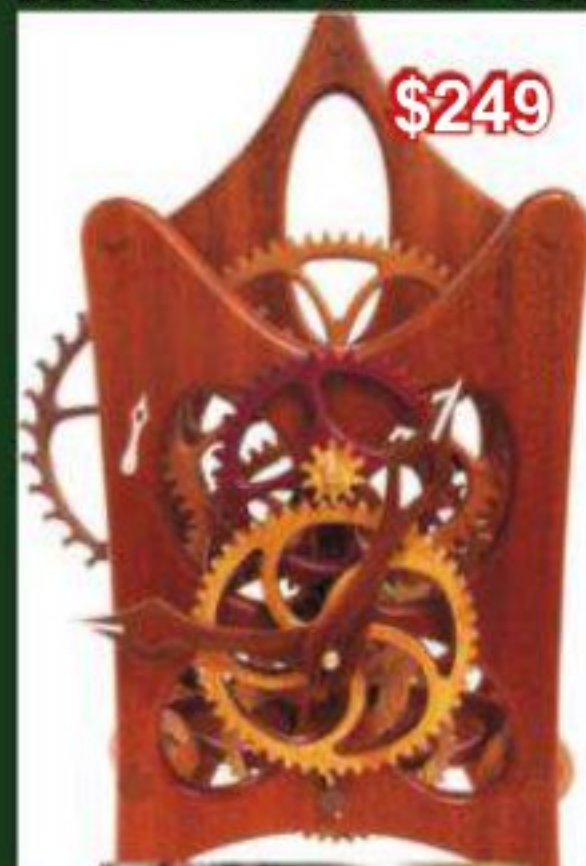
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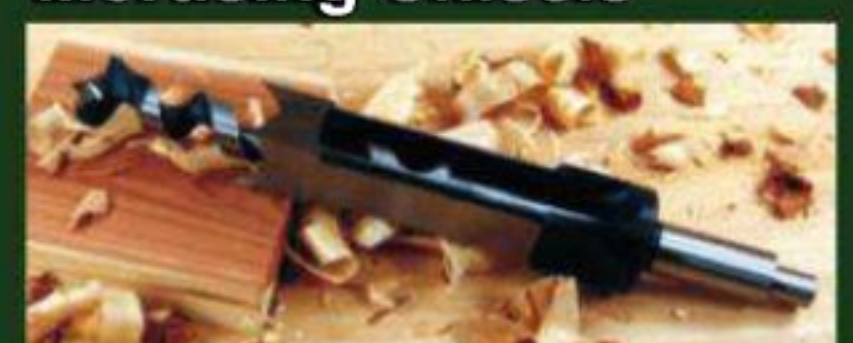
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Extreme Routing Adventures

Cutting depth and power were the two features that led to one of our country's top router expert's picks.



Expert #4: Bill Hylton

I use routers in the woodworking I do. Lots of different routers for lots of different tasks. Whittling my collection down to a pair is ... ahh ... difficult.

Small routers have always been my preference. Haven't I often said, "You don't need 3 horsepower to spin a 1/2" bit"? Yes, I have. So you'd think the essential routers for me would be small. But I'm surprising even myself here.

The first time I handled the Milwaukee 5625, the first of my "indispensables," I knew it was perfect for mounting in a table. I like the router table for many routing jobs. But give me a simple, functional table, please; spare me the lift. With the right router and

setup, a lift is irrelevant.

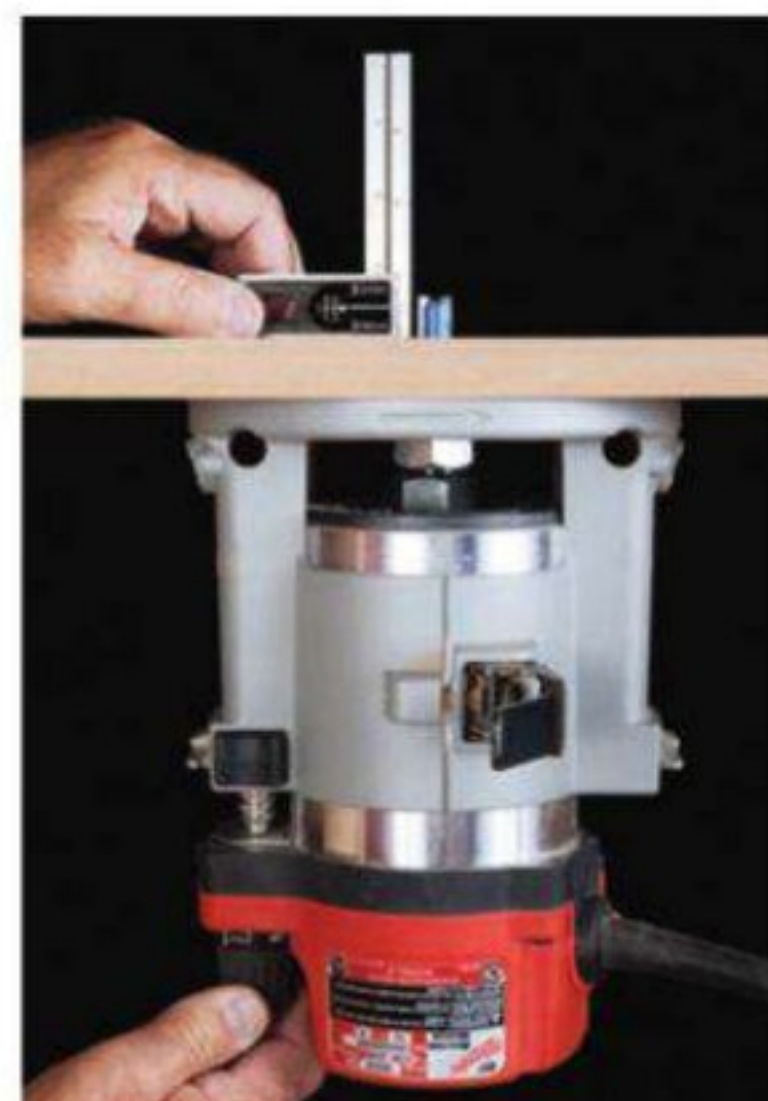
Big Red is just right: powerful, good speed control, deep self-releasing collet, two wrenches for bit changes and a handle-free base. But best of all is its crackerjack vertical adjustment mechanism. You raise and lower the motor (and thus the bit) by way of a stout Acme-thread screw. (Oh, if only the screw were a little bit longer.) Truly coarse adjustments (including removing the motor from the base) are made by pressing a screw release button and sliding the motor up or down in the base.

Note that all the movement is vertical. The motor doesn't rotate in

the base; the switch, speed control, and power cord are always in the same position.

My second indispensable — DeWALT's DW625 plunge router — has been a favorite for close to 20 years, primarily as a table router. For plunge operations, I favored smaller routers, notably the DW621. The DW625 recaptured my attention when I started making architectural doors. That's when I carefully checked the maximum plunge depth of every plunge router I could get my hands on. I wanted mortises just as deep as I could make them.

With a bit of tinkering, the DW625 will plunge



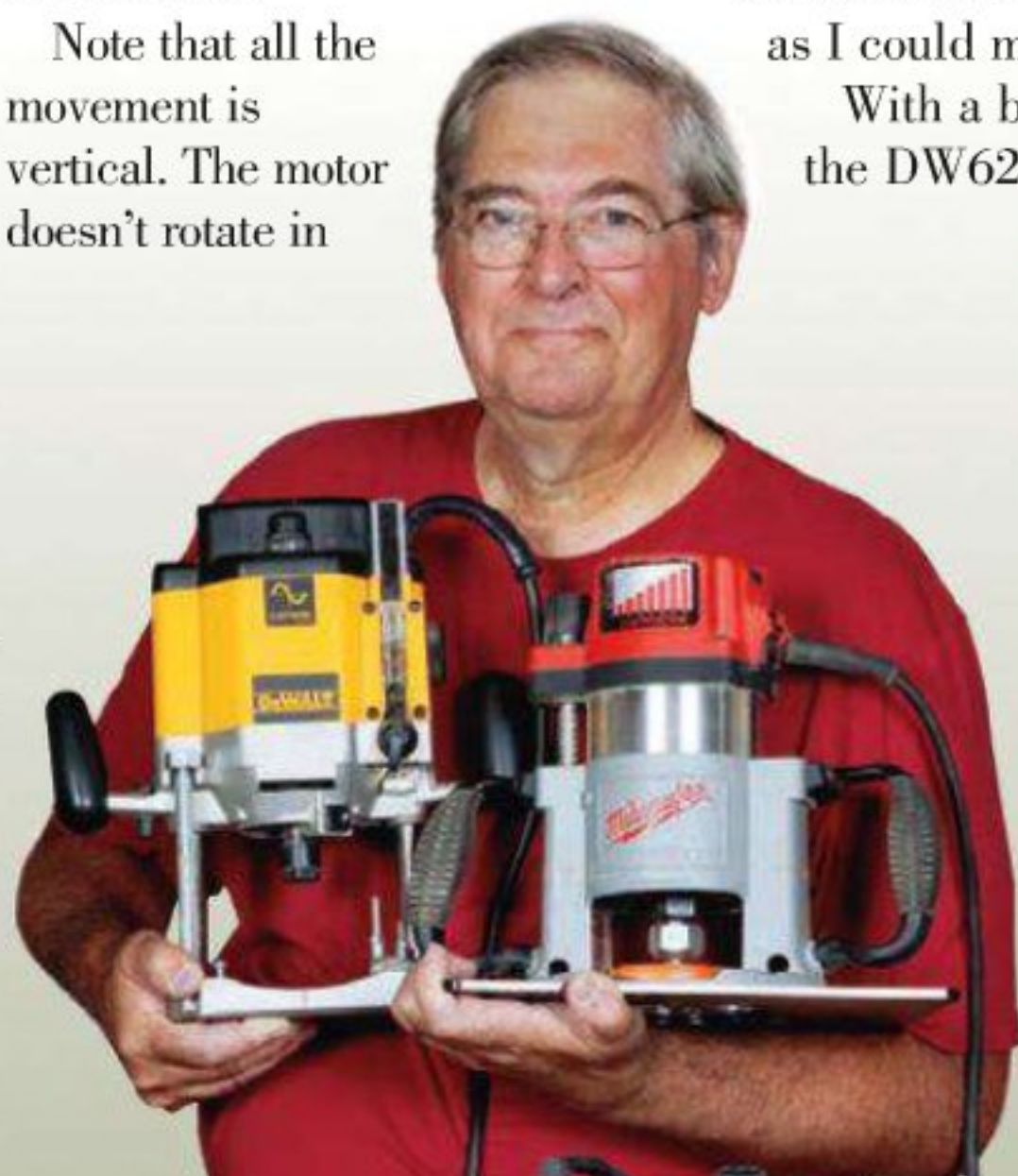
For our author, the simple but effective vertical adjustment system on Milwaukee's routers obviates the value of any lift for a table mounting.

3 3/8", bottoming with the collet nut against the work. That's a good 1/2" better than any other model. Having used it for the mortising jobs, I've found it manageable for all sorts of other handheld routing.

I've always known that small is beautiful, but I've discovered that, every now and then, big is indispensable.

ONLY TWO?

Picking only two routers for woodworker and router expert Bill Hylton proved to be a trying task. As is evident, he has more routers to choose from than the average Joe or Josephine.



Now We Want to Hear From You!

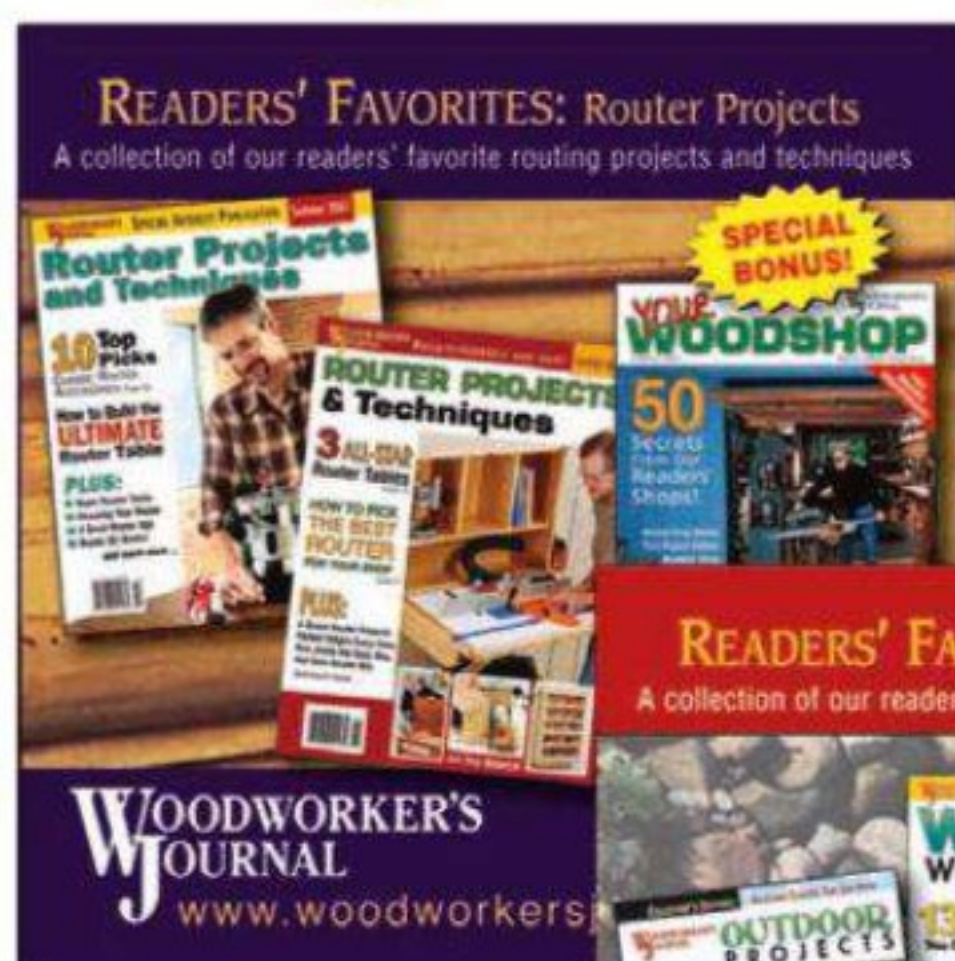


Write or email your personal two-router selection, and we will share them as space permits.

— editor@woodworkersjournal.com

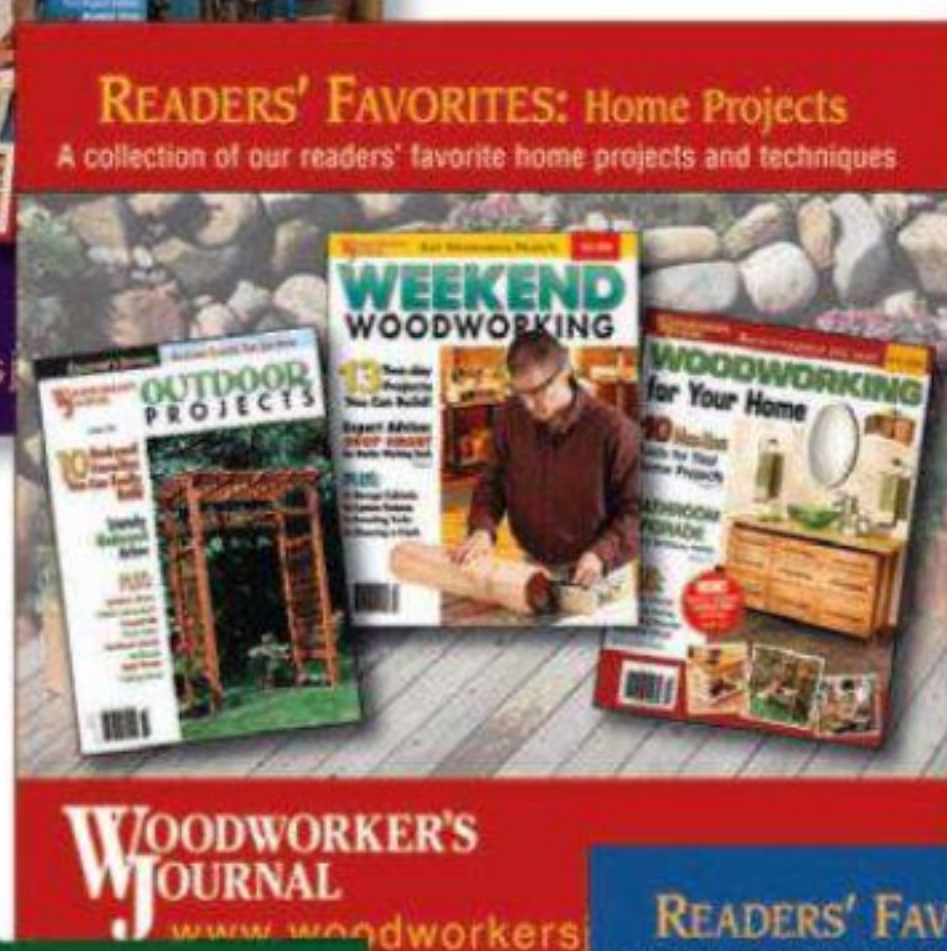
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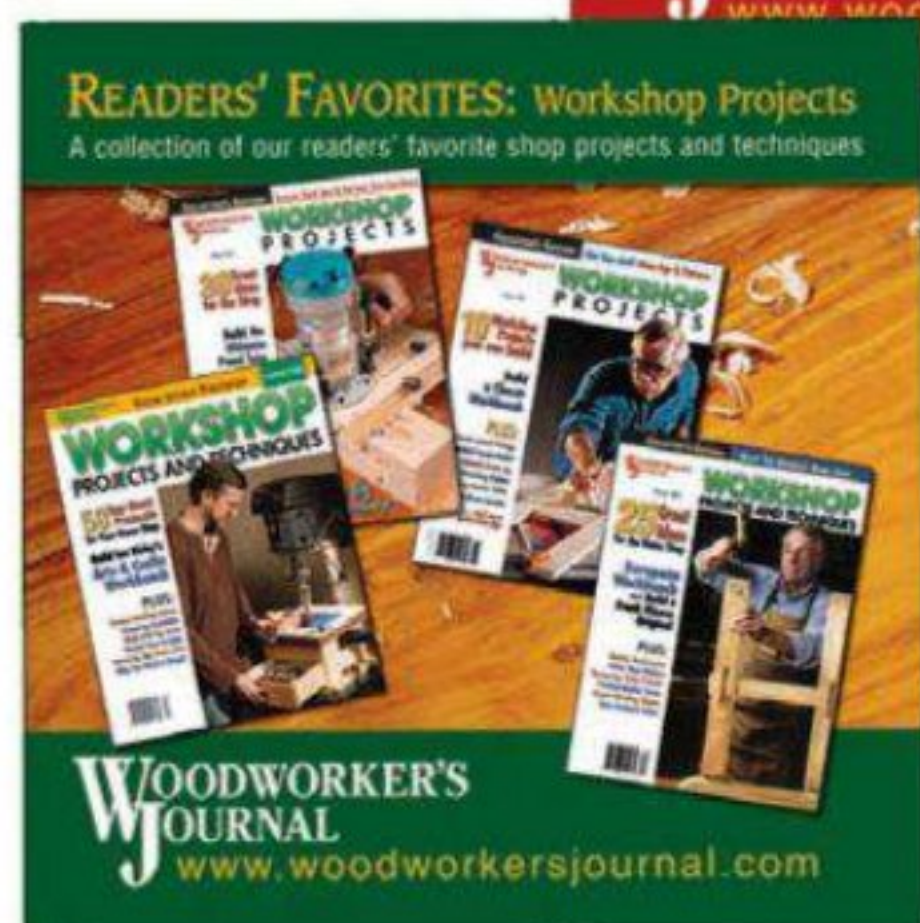
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Skill Builder

Dust Collector Maintenance

By Sandor Nagyszalanczy

Collecting dust is not the sexiest topic in the shop ... but it is one of the most important.

Power Tool Tune-ups: 2011 Schedule

Table Saw
February

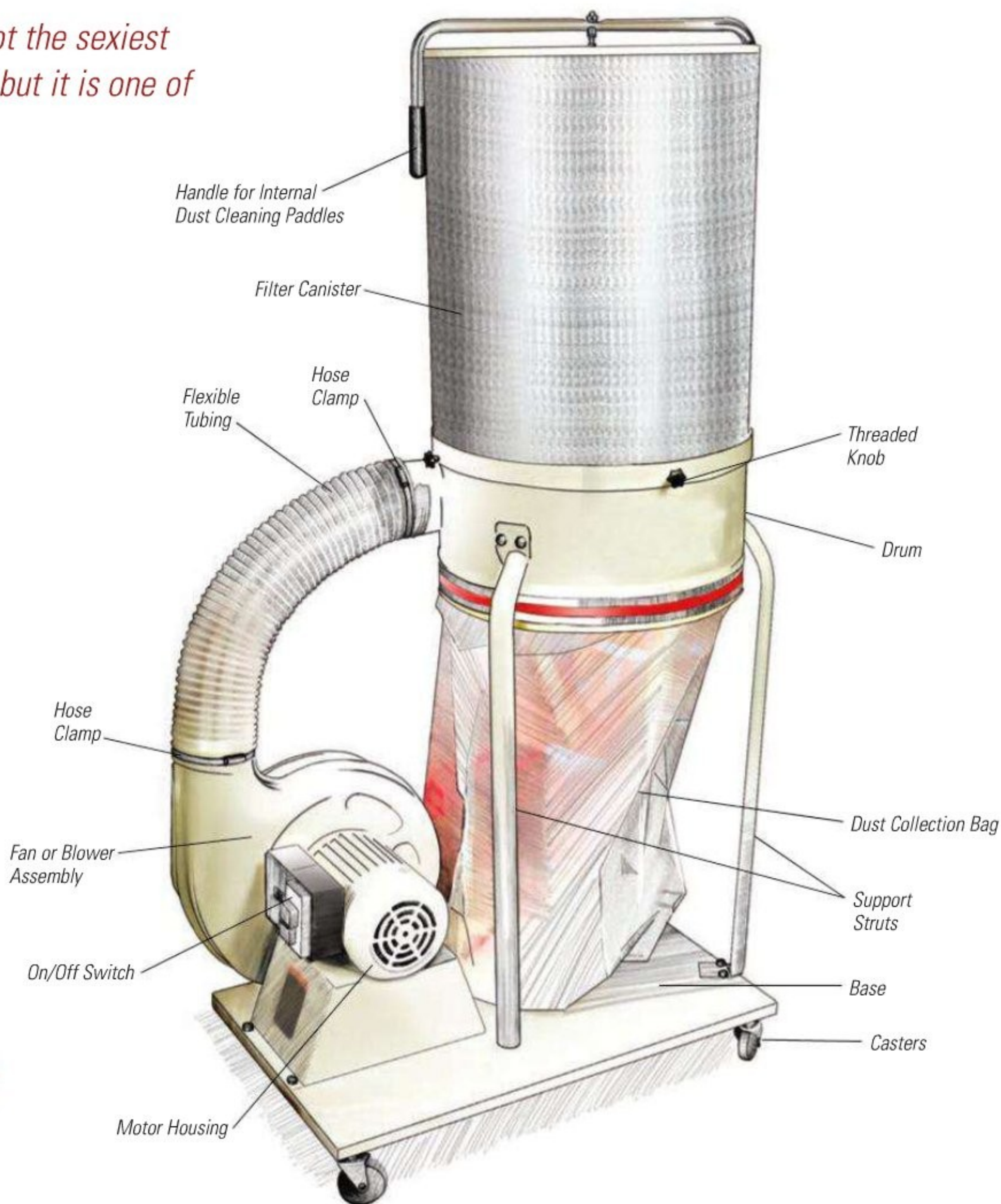
Band Saw
April

Jointer
June

Drill Press
August

Planer
October

Dust Collection
December



www.woodworkersjournal.com MORE ON THE WEB

For a more extensive article and complementary video on maintaining your dust collector, visit woodworkersjournal.com and click on the "More on the Web" tab shown above. Or send a large SASE to Woodworker's Journal, Skill Builder 24, 4365 Willow Drive, Medina, MN 55340.

Maintaining most of the machines in your shop — table saws, planers, band saws — means keeping them running at peak performance, so they'll do precise work. A well-maintained dust collector won't make your cuts more accurate, but it will help keep your shop cleaner and safer and, more importantly,

help prevent damage to your respiratory system. Whether you own a portable chip collector or have a full central system, most collector maintenance is very straightforward: Empty the unit's bins/bags regularly and keep the unit's filters reasonably clean and you're halfway there. Other regular maintenance steps, including

checking the fan, vacuuming the electrical boxes and making sure hose and ductwork connections are tight, will assure that your collector will operate at peak performance for years to come. For an expanded version of this article along with further video explanations, go to our homepage and click on the "More on the Web" icon.



The fans on single-stage dust collectors can take a lot of abuse from day-to-day use and even foreign objects that may be inadvertently vacuumed up. Doing a visual and tactile examination of the fan blades is an important step in keeping your dust collector working well.



Check the Fan

If you have a single-stage dust collector where dust and chips pass directly through the fan before being deposited in a bin or bag, it's important to check the fan occasionally for damage. Early portable collectors and "economy" models were often fitted with plastic-bladed fans that are very prone to damage from impact with larger chips, screws and nails or small cutoffs. Even the

metal-bladed fans found on better-quality collectors may be damaged from contact with larger debris that's occasionally sucked up accidentally.

To check out your collector's fan, unplug the collector, then remove any ductwork or fittings that are attached to the flange on the intake side of the fan. There's usually a large enough opening to allow viewing the

bladed fan inside; if not, unscrew and remove the fan's intake shroud. Use a flashlight, if necessary, and carefully inspect the entire surface of the fan. Make sure that none of the fan's blades have been cracked or broken. Metal blades fabricated from sheet steel that are bent can usually be straightened out, but a damaged fan made from cast plastic or aluminum will need to be replaced.

Sandor's complete book on the topic of dust control, *Woodshop Dust Control - 2nd edition*, is available at Rockler.com.

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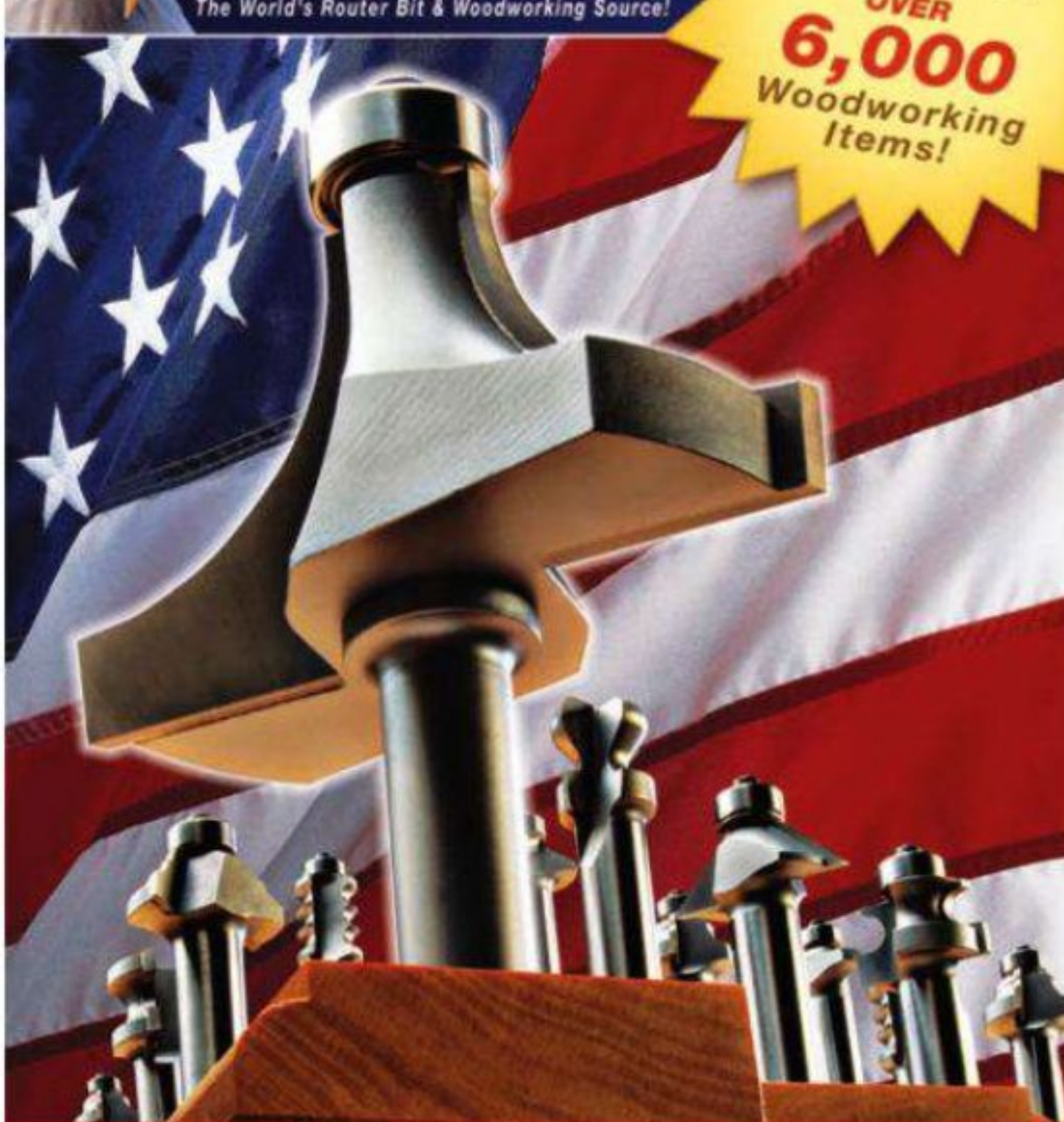
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Finishing Thoughts

The Big Easy

By Michael Dresdner

Nothing suggested here will do any harm, nor will it make stripping harder if you must resort to that. However, these spruce-up products might just eliminate the need to refinish.

CONTACT US

with your "Finishing Thoughts" by writing to Woodworker's Journal, 4365 Willow Drive, Medina, MN 55340, or by emailing us at:

finishing@woodworkersjournal.com.

Please include your contact information with your thoughts or questions.

The holidays are a great time to give your furniture a quick facelift; something well short of refinishing, but more than dusting. You've probably heard of, and wondered about, products that promise to eradicate minor scratches, reverse color fading and restore sheen with just one swipe.

Are these miracle potions really safe and effective, or are they more snake oil than tung oil? Let's look at a few to see what they will and won't do, and talk about homespun alternatives using ingredients commonly found in woodshops. Though I was unable to find these specialty products at the hardware store or home store in my neighborhood, I was able to find them all at my local Rockler store and on their website, www.rockler.com.

One-wipe Rejuvenation

Two very different looking products both claim to remove fine and, in some cases, even fairly deep scratches while restoring the color and sheen to worn finishes. Further, they'll eliminate that pallid look caused by fine surface scratches or fine aging cracks. Both do a very decent job and are embarrassingly easy to use.

Tibet Almond Stick scratch remover is a tightly wound tube of cloth thoroughly impregnated with an oily, waxy substance. Rub the exposed end over scratches, rub-throughs, or finish that's riddled with fine cracks and they instantly disappear, leaving a slightly shiny surface. Because it is uncolored, it works best on natural finishes or stained ones in which the scratches do not go through the stain.

For darker stained furniture where the scratches or rubs go through the color, choose Howard's Restor-a-Finish. It's a thin liquid in a can that you simply wipe on with a soft cloth, and it, too, removes scratches and whitish cracked finish immediately. Unlike the

Almond Stick, which comes only in clear, Howard's comes in a range of nine common furniture colors from natural to ebony brown, allowing you to match the finish. The can also claims it eliminates white rings, though in my tests, it did a poor job of that. There are other products that work better.

The homespun alternative to these two handy helpers is Watco Danish Oil, which, like Howard's, comes in a wide range of colors. Many shops already have Watco on hand, and it will do the same tasks when wiped on, then off.

Removing White Rings

Liberon Ring Remover is made specifically for removing white rings. It's also part of the Liberon Repair, Renovate, Revive kit. The kit also contains three wax crayons (for filling and coloring deep gouges), steel wool, paste wax, and a can of wax and polish remover — because it's best to clean off any wax or polish before you have a go at white rings. The shop alternative for removing wax and polish is mineral spirits; denatured alcohol will remove white rings.

By the way, these won't work on black rings, which are below the finish and into the wood itself. More often than not, they can only be removed during complete refinishing.

Use one of these products to give your furniture a facelift without resorting to refinishing.



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