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Shaker-inspired standing desk, p. 30



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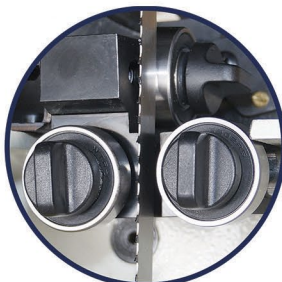
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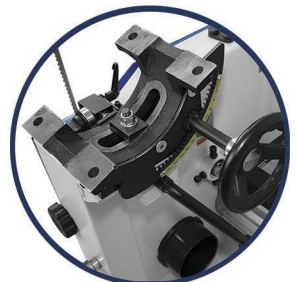
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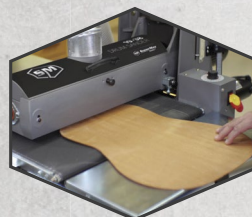
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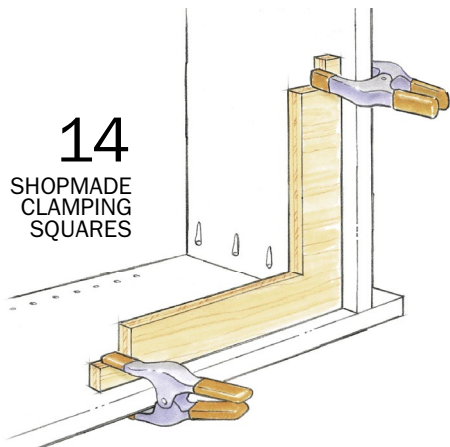


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Cover photo: Michael Pekovich

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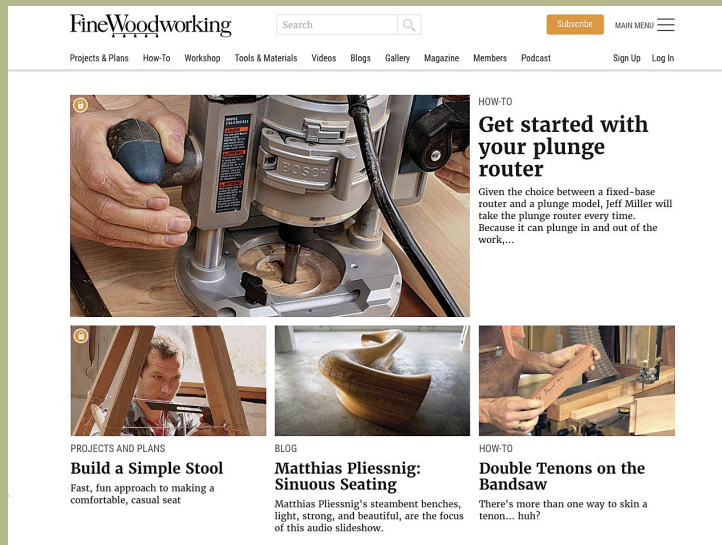
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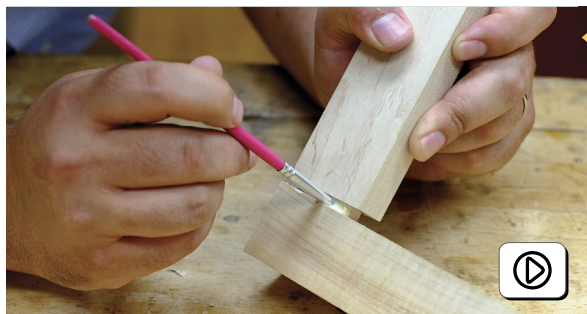
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on the web

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Visit our website to access free online extras, available September 28. While you're there, don't miss our collection of free content, including tool reviews, an extensive project gallery, and must-read blogs.



VIDEO

Squash Squeeze-out Before It Starts

Tim Rousseau (p. 64) proves that with the right techniques, squeeze-out is nothing to be afraid of. But Bob Van Dyke prefers to minimize squeeze-out before it happens. In this video, he shows how he does it.



VIDEO Clamp Straight and True

It doesn't take expensive clamps and lots of cauls to make sure you have flat panels. Web producer Ben Strano shows how easy it is to control your glue-ups with basic clamps.



VIDEO Featherboard Fundamentals

See why you should be using a featherboard, what to look for when buying one, and check out a few shopmade alternatives.



VIDEO

Buying Lumber

Finding the perfect board in a stack can be intimidating. We'll go on a lumber run with special projects editor Matt Kenney.

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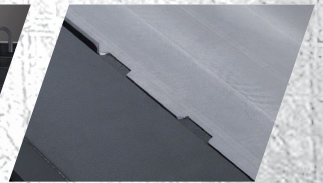


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contributors

For 30 years, **Curtis Buchanan** (“Learn to Love the Skew”) has been building Windsor chairs—and telling uproarious stories—in Jonesborough, a beautiful small town in the northeast corner of Tennessee. For a few days every October, Jonesborough fills with people who tell stories about as well as Curtis does: The town is the site of the National Storytelling Festival, which attracts tellers and listeners from around the world. On that weekend, all the hotels in the area, along with all the spare rooms, are spoken for, and Curtis’s one-man shop becomes a bunkhouse.



After years of making furniture behind his Chicago storefront, and writing for various publications, **Jeff Miller** (“Essential Clamp Kit”) is still passionately pursuing new designs. His latest is a rocking chair, “the most comfortable chair I’ve made so far.” As always, Miller mixes a fair amount of teaching into his shop schedule. His most popular classes are “Day of Hand Tools” and “Dovetail Workshop,” and he says he is seeing more and more students in their 20s, 30s and 40s, with a passion fueled by online exposure to the craft. “It’s been exciting to be able to teach techniques in person that these students have only seen at a distance, and to be able to put skills, techniques, and tips into context for them.”

Andrew Hunter (“Hand-Built Home for Hand Tools”) blends a knowledge of Japanese hand tools and Chinese furniture joinery with an affection for American country furniture forms. An accomplished furniture maker, he’s also built shoji screens, made a sauna house with dovetailed logs, and helped restore historic waterwheels. A visitor to his home and shop in the tiny town of Accord, N.Y., may witness his 3-year-old daughter, Ada, rehearsing her imaginary sharpening regimen with a scrap of wood at her dad’s waterstones. What shop tasks Andrew has planned for his son Jackson, born just this year, isn’t yet clear.



A professional furniture maker for 16 years, **Craig Thibodeau** (“Tablesaw Sled for Mitters”) has made a name for himself by incorporating traditional marquetry and veneer work into his designs using modern materials and methods. His inlay work is second to none, with designs ranging from dizzying contrasting checkerboard patterns on door panels to dazzling string inlay on cabinet tops to marquetry designs that bring his work to life. Trained as a mechanical engineer, Thibodeau has been putting some of that education to work in his shop, building mechanical wonders out of wood, straight from the Roentgen playbook.

For more information on our contributors, go to FineWoodworking.com/authors.

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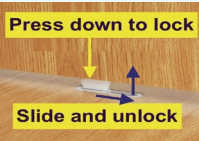
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From the Editor

READERS HAVE SPOKEN: GIVE US THE NEW COVER

I'm lucky to work with imaginative people, and it's often those people who spur change. When art director Mike Pekovich suggested a special throwback cover to celebrate the end of *Fine Woodworking's* 40th anniversary year, we jumped at the chance to shake things up a bit.

Mike and his team created a cover that's quiet and thoughtful. A simple photo, framed in white with minimal text, serves as a visual pallet for inspiration and harkens back to the early days of the magazine. After seeing the design, I'd hoped we could make it permanent, and not just an anniversary special.

Fortunately, thanks to a huge amount of reader feedback and encouragement, we've decided to go forward with the new cover for our subscribers (newsstand versions will be different, depending on where you live, but the content will be identical). This is an exciting change for us, and our family of loyal readers helped make it happen. Here are snippets from emails that led the charge for change.

—TOM McKENNA, editor

I smiled when I saw the vintage cover. Please keep it.

—DOUG JOHNSON

The retro cover is clean, simple, and elegant. As a woodworker, I am always striving for that clean design in my work.

—TOMMY HARRIS

We live in an overstated world ... a little classy understatement is a welcome relief.

—STEVE DORISS

Thanks for a great magazine, and a really striking cover. Michael P. must be in seventh heaven.

—DANIEL E. MOERMAN

The cover reminded me of older issues when I was in high school and college.

The only thing missing was the black-and-white photo. I appreciated the déjà vu moment.

—RICK MUSSELMAN

The new/old cover style represents what attracts me (and others) to woodworking—unadorned, pure beauty.

—KEVIN GUAY

The cover sets you off for what you are—the bible of woodworking. It holds true for both us old-timers and in establishing your brand for a new generation of woodworkers.

—MIKE SUDDER



Looking beyond our borders

The United States is not the only country that practices woodworking. I'm happy to see the article by Fabian Fischer ("Build a Simple Stool," *FWW* #256). I encourage you to add as many international articles as possible. It would be a big plus to *FWW* to see other traditions from Europe, Asia, and Africa. After all, woodworking masters Tage Frid and Frank Klausz both had European training.

—WILLIAM RAE, Groton, Conn.

More thoughts on Andy Rooney

The wonderful piece from the late Andy Rooney (Looking Back, *FWW* #255) ought to be required reading for every woodworking class in the country. It's chockful of useful observations that many a longtime woodworker knows to be true, but never dared admit (e.g. the money I put into my tools greatly exceeds the value of what I've produced with them).

This wonderful American got it. Please don't wait 25 years before reprinting his priceless contribution again.

—BRUCE KINSEY, Shenandoah Valley, Va.

That might have been the best article I've read in the seven years as a subscriber mostly because I could hear Andy speaking in my head. What a treat to listen in again to his thoughts on something so dear to my heart.

I have a couple tools that I think should be buried with me, as no one will care about them like me. Unless I instill a love for woodworking in my grandchildren, my poor wife will be forced to try recouping the small fortune I will leave behind in slightly used tools.

—JOHN COLLICOTT, Omaha, Neb.

Correction

In last issue's (*FWW* #256) Tools & Materials, we incorrectly identified the model number of the Bosch miter saw (p. 18). The correct model number is CM12SD, with a price of \$549.

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Best Tip **Plane shopsawn veneers perfectly smooth**



In his early 20s, Jeffrey Kusama-Hinte set out to become a serious woodworker. Instead, he fell into a career in film production. Now he is returning to his first love, having set up a small woodworking shop in Brooklyn, N.Y., where he builds “a little of everything except chairs.” He plans to confront his “chair phobia” by the end of this year.

Bandsawing your own veneers allows you to spread a beautiful board over an entire piece of furniture.

You joint one face of the board before

each bandsaw cut, but the saw still leaves a rough face on the other side of the veneer, which is tricky to smooth on such a thin piece.

A drum sander or wide-belt sander would do the job, but those are pricey machines. This jig lets me run bandsawn veneers through

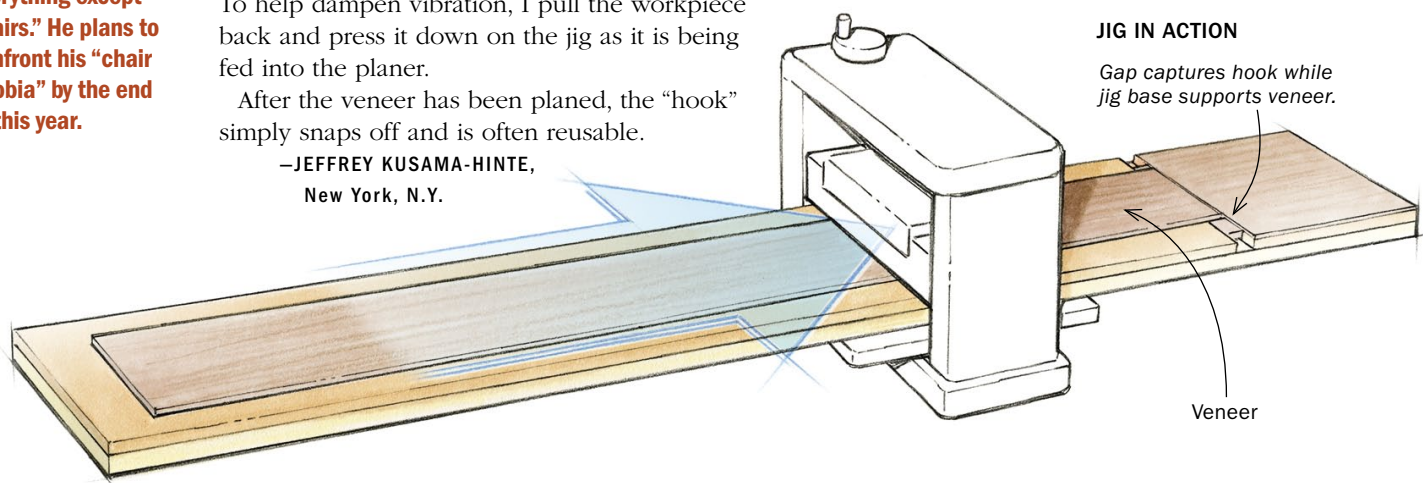
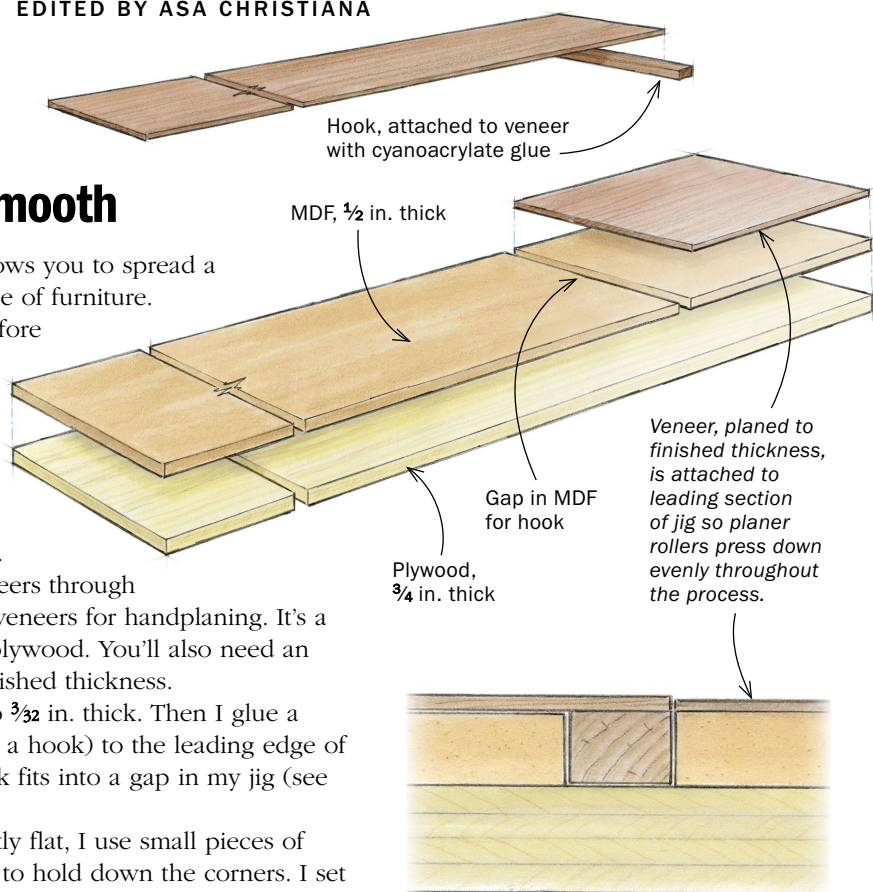
my thickness planer. It also holds veneers for handplaning. It's a simple sled made from MDF and plywood. You'll also need an extra sheet of veneer planed to finished thickness.

I start by resawing the veneers to $\frac{3}{32}$ in. thick. Then I glue a square strip of solid wood (I call it a hook) to the leading edge of each piece (jointed face). The hook fits into a gap in my jig (see drawing, right).

If the veneer is not sitting perfectly flat, I use small pieces of super-thin, two-sided transfer tape to hold down the corners. I set the planer for a $\frac{1}{32}$ -in. cut, which will leave the veneer $\frac{1}{16}$ in. thick. To help dampen vibration, I pull the workpiece back and press it down on the jig as it is being fed into the planer.

After the veneer has been planed, the “hook” simply snaps off and is often reusable.

—JEFFREY KUSAMA-HINTE,
New York, N.Y.



A Reward for the Best Tip

Send your original tips to fwtips@taunton.com or to Workshop Tips, Fine Woodworking, P.O. Box 5506, Newtown, CT 06470. We pay \$100 for a published tip with illustration; \$50 for one without. The prize for this issue's best tip was a Whiteside router-bit set.



Quick Tip **Screen spline silences frame-and-panel doors**

I don't like it when panels shrink and start to rattle in my frame-and-panel doors. There are rubber balls available to fit in the grooves and stop the rattle, but I found an inexpensive alternative: screen window spline. It's available at hardware stores and home centers in diameters ranging from $\frac{1}{8}$ in. to $\frac{1}{4}$ in., and comes in a 25-ft. roll for around \$5. Cut off a few lengths, drop them in the grooves, and assemble the door. The spline compresses and expands as needed to accommodate wood expansion, just like the pricier alternative. But the splines don't roll off the workbench and disappear!

—JOE CARRETTO, Corsicana, Texas

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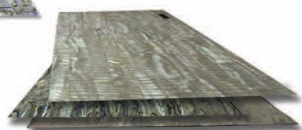
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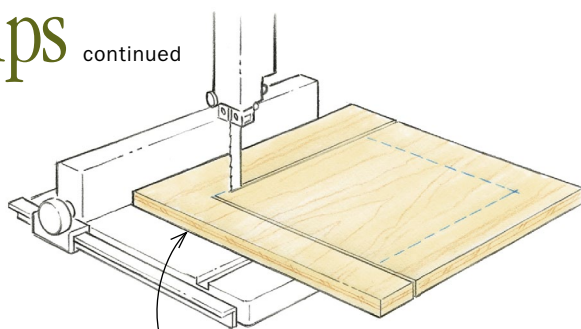
workshop tips continued

Plywood squares are a third hand for cabinetmakers

Clamping squares aren't a new idea, but this is my favorite design for them. When I'm assembling a cabinet, I use these simple plywood braces and spring clamps to ensure that each intersection is square and stable as I drive screws or set clamps.

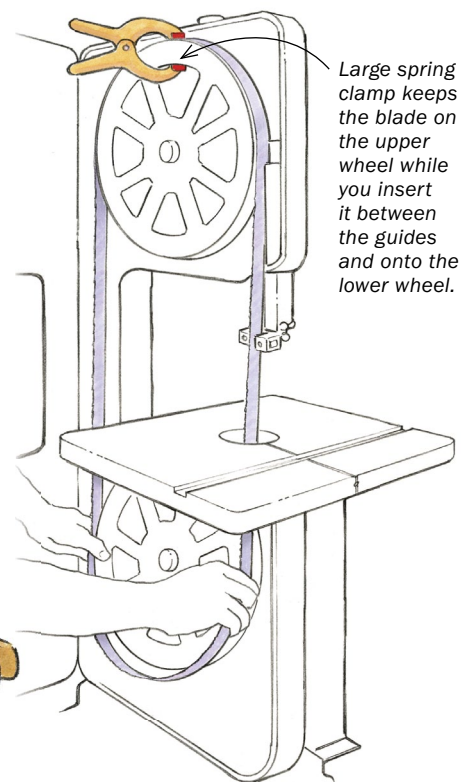
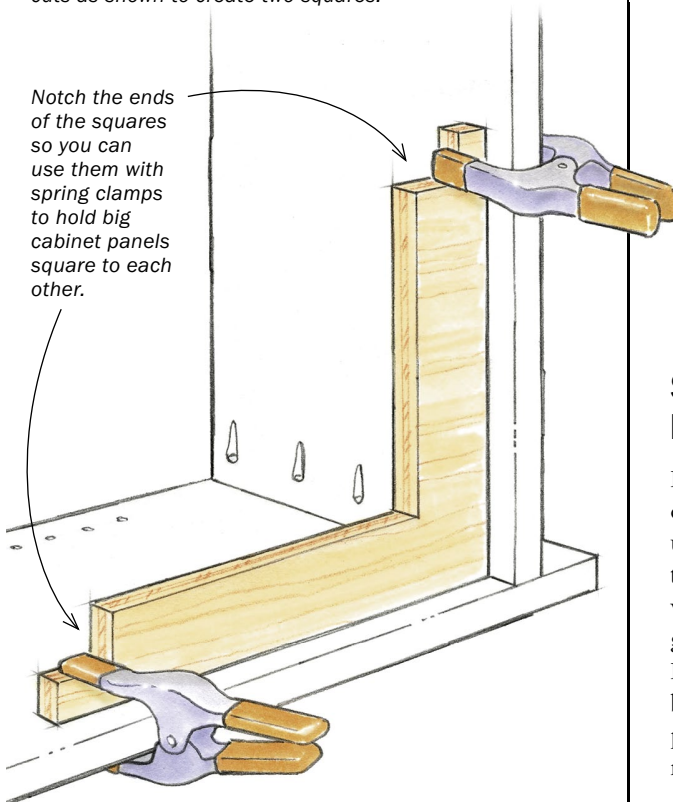
To make them, cut out a square piece of $\frac{3}{4}$ -in.-thick plywood on the tablesaw. Check the corners to be sure they are square. Then make the stopped cuts on the bandsaw as shown with the fence set at $2\frac{1}{2}$ in. To make a second, slightly smaller square, flip the waste piece around to its last two good edges from the tablesaw and repeat the process. To get two pairs of matching squares, repeat the process with a new plywood blank. Last, notch the ends to provide ledges for spring clamps.

—TONY O'MALLEY, Emmaus, Pa.



Cut out a perfectly square piece of plywood to around 18 in. by 24 in. Then set the bandsaw fence to $2\frac{1}{2}$ in. and make stopped cuts as shown to create two squares.

Notch the ends of the squares so you can use them with spring clamps to hold big cabinet panels square to each other.



Large spring clamp keeps the blade on the upper wheel while you insert it between the guides and onto the lower wheel.

Spring clamp helps with bandsaw blade changes

I really like my 75-year-old bandsaw, but changing the blade is another matter. I used to hang it on the top wheel only to have it fall off every time I began to work it into position between the blade guides and over the bottom wheel. Then I realized that a large spring clamp could be a third hand. It holds the blade in place on the top wheel and makes the rest of the job a cinch.

—DON MESSMER, Blairstown, N.J.

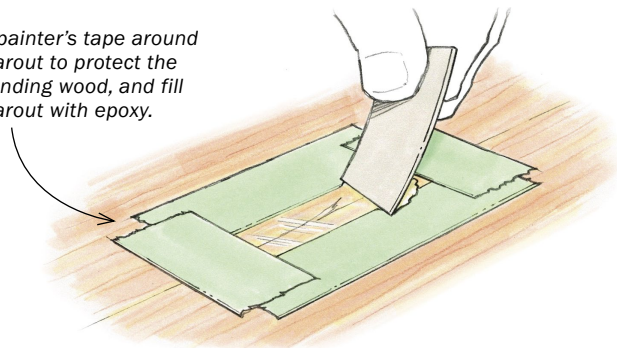


Epoxy makes tearout disappear

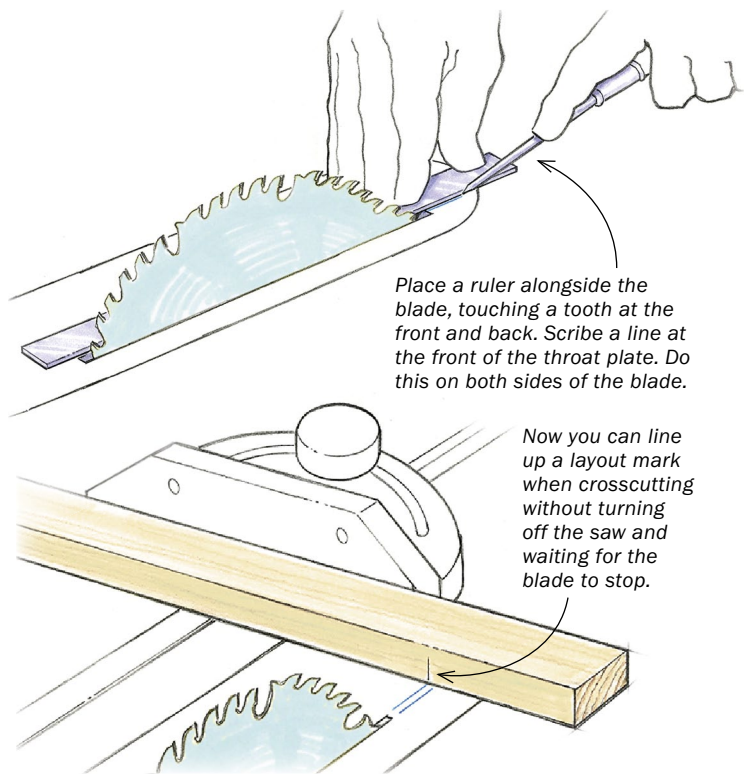
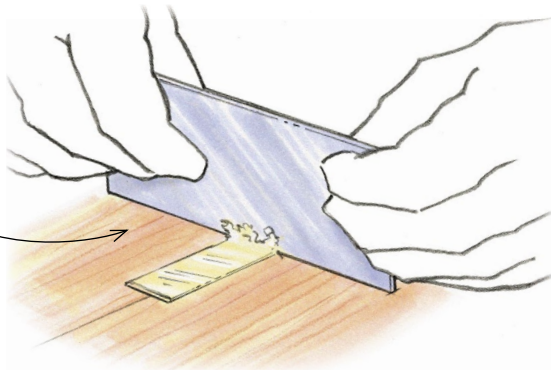
When applying finish to a tabletop recently, I discovered a couple of areas of severe tearout I had missed. To remove it with a card scraper or sandpaper would have left an obvious valley in the finished top, so I came up with a simple alternative. I filled the small voids with epoxy (I use QuickCure 5 Epoxy from LeeValley.com) and then leveled the areas with a sharp chisel and a card scraper. A bit of light sanding and a new coat of finish makes the tearout disappear. My method has worked under simple oil finishes as well as oil-varnish blends.

—CHARLES MAK, Calgary, Alta., Canada

Place painter's tape around the tearout to protect the surrounding wood, and fill the tearout with epoxy.



Scrape the cured epoxy to level it with the surrounding wood, and apply finish for an invisible repair.



Place a ruler alongside the blade, touching a tooth at the front and back. Scribe a line at the front of the throat plate. Do this on both sides of the blade.

Now you can line up a layout mark when crosscutting without turning off the saw and waiting for the blade to stop.

Scribe your table saw's throat plate for quicker crosscuts

When crosscutting with the miter gauge, you have to turn off the saw and let the blade come to a full stop in order to accurately align it with a layout mark on the workpiece. But two simple scribe marks on the table saw's throat plate let you line up a mark perfectly without hitting the off button.

To scribe the lines, unplug the saw and raise the blade. Then place a ruler or straightedge along one side of the blade, with the ruler touching the teeth at the front and back. Use a scribe or awl to scratch a line along the ruler onto the throat plate. Do the same on the other side of the blade, and you'll be able to align workpieces with confidence while the blade is still spinning.

—CHRISTIAN BECKSVOORT, New Gloucester, Maine



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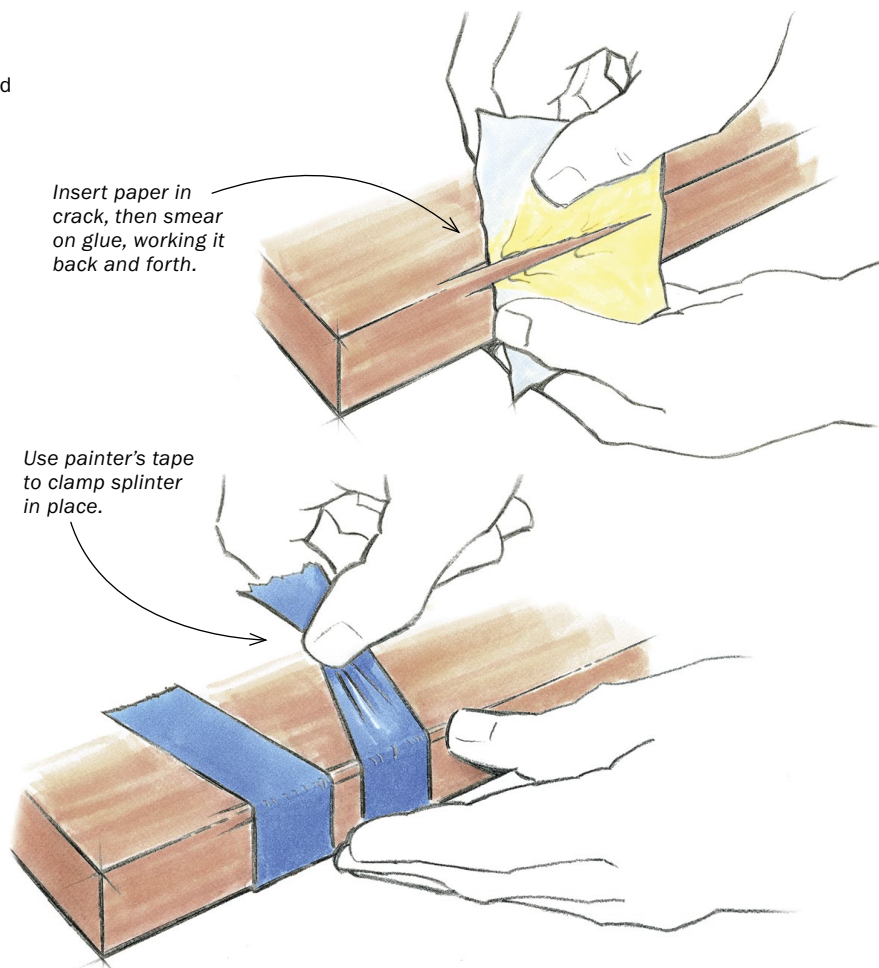
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Invisible repair for splintered corner

When a splintered edge grows to a dagger, well beyond what can be easily rounded over, it can be hard to glue back down, mainly because it's hard to get glue in the crack. Prying open the splinter risks making the crack bigger or, worse, having the piece break off. At some point I realized that a piece of paper is the perfect tool for getting glue into that small space.

First slide the paper under the splinter as far as it will go, and apply a generous amount of glue to the paper on one side of the crack. Then work the paper back and forth to pull the glue under the splinter. When most of the glue is removed from the paper, pull it out and stretch several strips of blue painter's tape across the splinter to clamp it down. It creates an invisible repair.

—MARK EDMUNDSON, Sandpoint, Idaho



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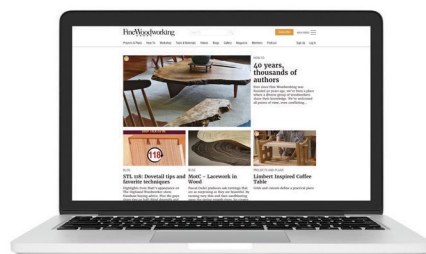


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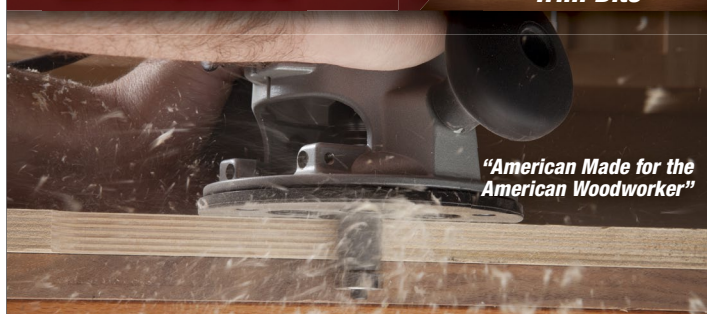
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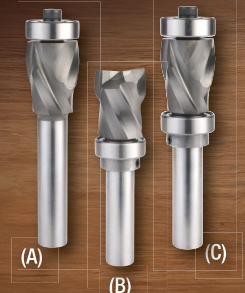
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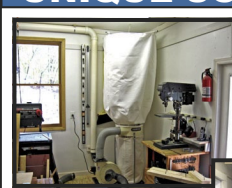


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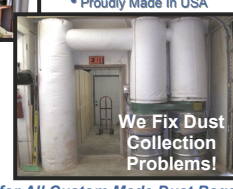


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■ MACHINES

A bandsaw that does everything right

IVERY MUCH LIKED Laguna's 14/Twelve bandsaw when I reviewed it ("High-end bandsaw that won't break the budget," *FWW* #238, p. 16). Their 14BX bandsaw has the best features of the 14/Twelve—tall fence, big table, toolless ceramic guides—and adds a full cabinet (no more stand), and a disc brake to create an awesome bandsaw.

The disc brake is the best brake that I've seen on any bandsaw. A gentle push on a foot pedal cuts the power through a microswitch and mechanically clamps the disc brake, stopping the saw very quickly.

Tool-free adjustments on the ceramic guides and a large throat plate make changing blades a breeze, and dual 4-in. dust ports (one directly below the guides, the other at the bottom of the cabinet) do a good job of keeping up with the sawdust, even when resawing at the saw's full 12-in. capacity.

Nicely balanced cast-iron wheels and true-running urethane tires create a virtually vibration-free saw that tracks blades very accurately. The saw is available with a 1¾-hp or 2½-hp motor, which is the size motor on the saw I tested. The first thing I tried after I had the saw set up was to resaw some hard maple, which it did with absolute precision and no straining. There is virtually no flex in the upper guide post. The 38-in. table height, combined with a high-low fence and a generous 16-in. by 21½-in. table, create a great work surface.

—Roland Johnson is a contributing editor.



14-in. bandsaw by Laguna

Model: 14BX

\$1,399 with 1¾ hp motor

\$1,499 with 2½ hp motor

Warranty: 1 year



Great guides and lots of power.

All adjustments to the guides can be made without tools, which speeds up blade changes. Plus, there's plenty of power to resaw boards up to 12 in. wide.



Well-balanced wheels with a quick stop. Made from cast iron and wrapped in urethane tires, the wheels ran with almost no vibration. Step on the brake pedal and two things happen: The motor switches off and the disc brake brings the wheels—and blade—to a standstill.

Although not standard equipment, the mobile base is worth the \$150 investment.

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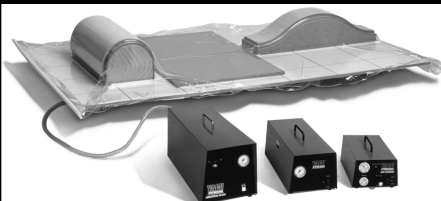
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■ POWER TOOLS

Nailer lets you lose the compressor

AT THE HEART OF THE Grex GC1850 cordless 18-gauge nailer is an internal combustion engine. A fuel cartridge and a pair of AAA batteries provide the energy needed to activate the engine and drive the nails.

The GC1850 shoots standard 18-gauge brads from ½ in. to 2 in. long. A depth-adjustment knob limits fuel flow from the cartridge, so setting this according to nail length and wood density saves fuel. The fuel cartridges, which are specific to this gun, come in packs of 4 and 12 (a 4-pack sells for around \$25). A belt hook and an extra no-mar rubber tip are included.

A couple of things to note. The locking mechanism for the fuel cell was a bit stiff on the model I tested. I also found the handle uncomfortable for my grip, so I'd head to a store for a test run to see if the handle fits your hand. Overall, the fuel-driven Grex is an improvement over other cordless nailers I've used. It's a well-built nailer with good weight and balance that performed well.

—Tony O'Malley is a professional furniture and cabinet maker in Emmaus, Pa.



Cordless nailer by Grex

Model: GC1850
\$440

■ ACCESSORIES

Foam-fingered featherboard is fantastic

I'VE USED A LOT OF FEATHERBOARDS, both shopmade and manufactured, and Bow's FeatherPro stands out from them because of its high-density foam fingers. The foam is dense but with enough give that when set firmly against a thin board, the fingers roll slightly over the board's top surface while still pressing

against its edge. This holds the thin board down to the table and snug against the fence, and effectively

prevents the board from chattering as you feed it through the blade. Also, because of the foam's nature, the fingers have enough give to let a board pass through the blade easily, but also a tremendous amount of resistance to movement back toward the front of the saw and the operator.

The foam fingers are replaceable and available in two different finger profiles: standard and ultralight. They fit into a sturdy plastic holder that locks securely in a miter slot. For use with thicker stock, you can stack one featherboard atop another.

—R.J.



FeatherPro by Bow

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Foam support. The high-density foam fingers of Bow's FeatherPro do a great job holding boards tight against the rip fence for rips and dado cuts (shown).

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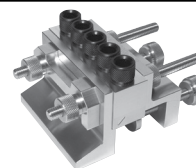
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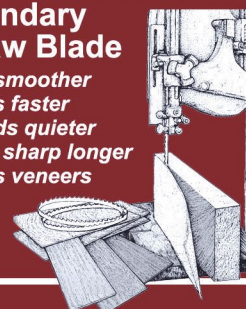
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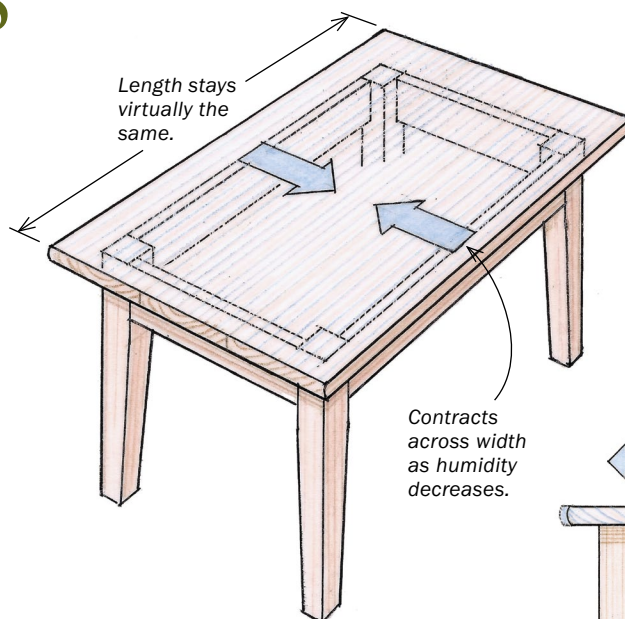
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Attaching solid-wood tabletops

FIVE WAYS TO KEEP YOUR TOP TIGHT AND FLAT THROUGH THE SEASONS

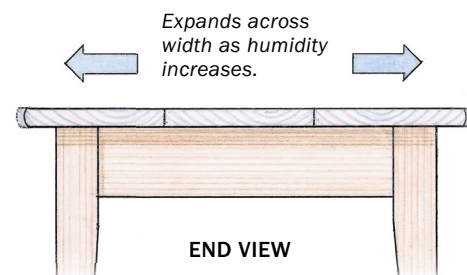
BY BOB VAN DYKE

All solid wood will move with the seasons. A board will increase in width as atmospheric humidity increases and shrink in width when the humidity decreases. Since the beginning, furniture makers have faced the challenge of holding a tabletop securely to its base while allowing for this movement.



CONTROLLING MOVEMENT

Solid-wood tabletops will always succumb to changes in humidity as seasons change, expanding and contracting across their width. To avoid buckling and splitting, furniture makers have to attach tops in secure ways that will accommodate this movement.



There's no shortage of techniques. Here I'll show you a few of the simpler methods available, from shopmade to store-bought. In all cases, be absolutely sure that there is no chance of the screw even coming close to poking through the top. I have seen cases where the tip of the screw is so close to the surface that it creates a small dimple that's visible when the top is viewed in raking light.

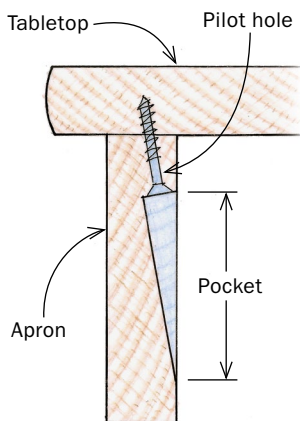
If there is any doubt in your mind, don't hesitate to test the whole process on a mock-up top and apron rather than taking the chance of ruining a perfectly good top.

Bob Van Dyke is the founder and director of the Connecticut Valley School of Woodworking in Manchester, Conn.



Shopmade solutions

SCREW POCKET



Drill the pilot hole and carve the pocket. The pilot hole should enter the top of the apron at the center and be angled properly to give the screw the right protrusion into the top. A long bit and a bevel gauge make drilling the pilot hole easy. After chiseling the baseline, use a large gouge to excavate the waste and form the pocket.

An angled screw in a pocket is one of the simplest and most traditional methods of attaching a top. A long tapered recess, or pocket, is cut into the inside face of the apron using either a flat bench chisel or a large carving gouge. Before you can cut the pocket, you must determine the pilot-hole angle.

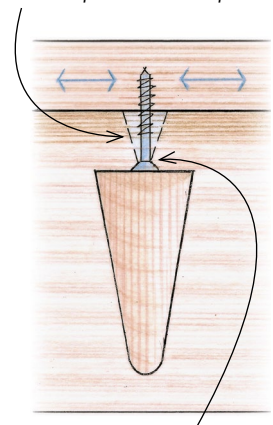
To do this, decide how far you want the screw to project into the thickness of the top. This allows you to locate the screw head so that it seats itself near the center of the apron's thickness. The pilot hole by itself does not allow for wood movement. You have to taper the hole in the apron to allow the screw to pivot. This method keeps the top tight all year long.



Taper the pilot hole. To create the tapered relief on the top edge of the apron, use a $\frac{3}{8}$ -in. chisel and work down toward the countersink. The taper should start about $\frac{3}{16}$ in. from each edge of the pilot hole.

ADD SOME WIGGLE ROOM

The pilot hole in the apron is tapered in the direction that the top will move, which allows the screw to pivot as the top moves.



The taper extends to the bottom of the countersink for the screw head.



CABINETMAKER'S
BUTTONS

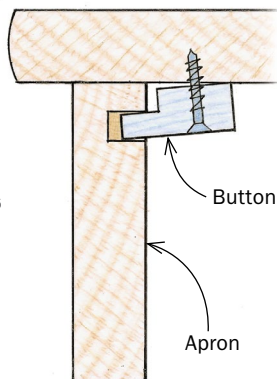
LEDGER STRIPS

CABINETMAKER'S BUTTONS

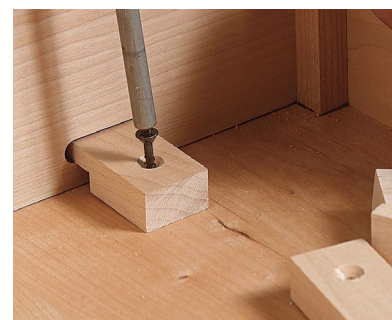
Shopmade buttons are strong and allow for plenty of wood movement. The buttons each have a tongue cut into the end grain that fits into a shallow mortise on the inside face of the apron. The tabletop is free to expand and contract while the buttons slide in their mortises.

The buttons can be made quickly by cutting a rabbet on both ends of some hardwood stock. Cut the ends off at the bandsaw, and repeat the process. Last, drill a countersunk hole through each button.

Make the mortise a bit wider than the button and locate it so that the top of the button sits about $\frac{1}{16}$ in. below the top of the apron. This forms a gap that will make the button pull the top down tightly to the apron as it's screwed in place, and the side gaps allow it to move side to side as needed.



Make some buttons. Cut a rabbet in the end of a flat, wide board and crosscut the buttons to length at the bandsaw. Then move the fence and cut them to width.



Positioned to allow movement. The buttons will move with the tabletop while keeping it tightly secured. Insert the buttons about halfway into the mortises, then screw them in place.

LEDGER STRIPS

Another effective and low-tech method is to glue or screw ledger strips about $\frac{1}{32}$ in. below the top edge of the inside face of the apron. Round-head screws are then driven into the tabletop from underneath. The pilot holes in the side apron ledger strips must be tapered (see p. 23) to accommodate the

movement of the top from front to back. The back edge of the top is secured by cutting a few sawkerfs into the face of the rear ledger strip and then gluing that face to the apron. A screw through the center of each sawkerf will have complete freedom to pivot front to back with the seasonal movement of the top.



Glue the strips. The ledger strips along the front and back of the table get kerfed at the tablesaw and glued in place about $\frac{1}{32}$ in. from the apron's top edge. The slots in the front and rear strips, as well as the pivoting screws in the side strips, will let the top move without binding.

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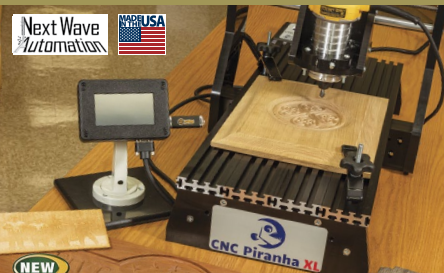
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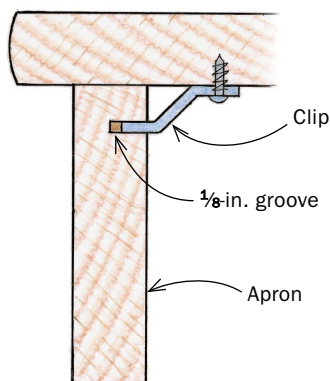
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TABLE MOUNTING CLIPS



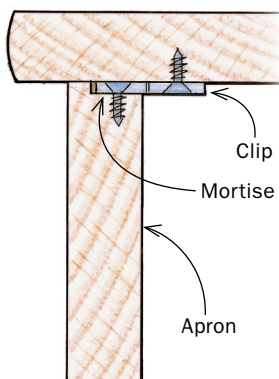
Also known as Z-clips, these can be found at most hardware stores and retailers. Installation is fast and easy. The clips fit into a tablesawn groove on the inside face of the apron. The groove should be located far enough below the apron's top edge so the clip exerts constant pressure, ensuring that the top stays tight.

Simply groove and attach. Table clips are very similar to cabinetmaker's buttons, except they are attached to the aprons via a 1/8-in. groove cut into the aprons at the tablesaw. Just like the buttons, leave space between the clip and the back of the groove to let the top move.



FIGURE-8 CLIP

These fasteners are also easy to use and fairly unobtrusive. The name comes from the clip's shape, which allows it to pivot around the two screws in the apron and the top as the top moves front to back. A shallow hole drilled into the top edge of the apron houses the clip, which is screwed in place before the top is set onto the frame. Locate the hole so that the center of the clip hangs beyond the inside face of the apron. The top is then screwed on through the second hole in the clip. The clips on the front and back aprons should be angled slightly so that the clip will pivot to either side when the top expands or contracts across its width.



Attach to the apron first. The figure-8 clips are screwed into a shallow, oversize hole drilled into the top edge of the apron with a Forstner bit.



Then to the top. The clips at the front and back should be screwed at an angle to allow movement. Clips on the ends can stay perpendicular to the apron.

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5 takes on the tea box

The idea was simple: Ask a few *Fine Woodworking* contributing editors to make a box to hold tea bags. We gave them dimensions for the bags, but no other design constraints. Then we waited for the boxes to get made and sent to us. As we expected, Christian Becksvoort, Michael Fortune, Garrett Hack, Roland Johnson, and Steve Latta created boxes that are beautiful, elegant, practical, and charming. However, we were a bit surprised by just how well each box expressed the personality of its creator. There's just no mistaking who made which box.



The power of waves

My tea box evolved from my fascination with the patterns formed by waves and running water. Construction is simple and elegant—sliding dovetails join the sides to the top and bottom—and creates overhangs that I shaped into asymmetric curves based on the irregularity and randomness of waves. The drawer fronts are wavy, too. I find slight differences in the alignment of the waves across the front more alluring than perfect consistency between top, drawers, and bottom. The figure of the curly pear I used for the case and drawer fronts enhances this wave energy, and the rosewood bead below the bottom reinforces the shape.

—Garrett Hack

A handy tea tote

When I first considered the tea caddy, I envisioned one with a shape that matched the simplicity of its purpose. I also wanted the caddy to express my sense of humor, which is unusual according to many of my friends. The idea of using a handplane came about while I was discussing Bailey transitional planes with another woodworker, who remarked that they make better decorations than tools. Thinking about this, I had an epiphany in my shop, realizing that a jack plane blade is the exact width of many tea bags. After removing the blade assembly, the frog, and a bit of cast iron, there was just enough room for an assortment of tea bags. I had my plain (or plane) tea caddy. I added a bit of material on each end of the plane body for jars that could hold sugar.

—Roland Johnson





Swirling, turning, stirring

I usually have at least a vague idea of the form I'd like to pursue when I begin designing, but in this case I started with just two words: spin and fold. "Spin" implies movement, in this case visual movement, and "fold" plays with angles and changes of plane. I built a series of 1/4-scale models, letting the shape evolve as I went. I introduced light and dark woods when I thought the "spin" detail was not emphasized enough. After I was happy with the design, I made full-size models to nail down the joinery. The design of the top represented a separate dilemma. At one point it was quite tall and looked like a dunce cap—and it went downhill from there when it started to look like the proportions of a concrete bunker. The final design solves that problem, and the lid must be twisted slightly to get it on and off.

—Michael Fortune



Light, refreshing, and practical

This tea box is one of four I designed and made (not one of them was made of cherry!). This one became more of a tea basket. The material—white pine and torried poplar—was left over from a previous project. I wanted a little contrast between the woods in the basket, and the torried poplar, which looks almost like black walnut, looks great set against the pine. I milled all of the pieces 1/4 in. square, then cut them to length. The solid bottom has alternating strips of pine and poplar, while the sides and dividers are stacked to give it a light, airy look. Pine handles on each end are carved with slight curves to keep the basket from looking like just another rectilinear box.

—Christian Becksvoort

Pennsylvania tea box

Outside Philadelphia, a venerable Quaker retreat center has some of Pennsylvania's oldest trees. Several were damaged by storms that have pounded the East Coast in recent years. One storm took out a walnut tree. Another took down a limb of a beech believed to be the largest and oldest of its kind in the state. The retreat center contacted about 30 woodworkers to make and donate a piece made from the fallen trees to be auctioned as a fund-raiser. This box is one of a pair I made from that truly amazing wood. When I picked up the material, the walnut was what I expected: medium-size boards with several defects but truly great color. The beech was a different story—stacks of 4/4 and 8/4 spalted planks both wide and long. The branch that had dropped was larger than many of the "mature" trees around it. Respecting the Quaker value of simplicity, I made a basic box accentuating the figure of the beech and adding inlay, in this case tea leaves, to the top. It was a humbling experience working with wood from a tree that was standing when William Penn was granted the charter for his colony.

—Steve Latta





Stand Up to This Desk

Shaker-inspired design is comfortable and practical

BY CHRISTIAN BECKSVOORT

The office corner of my shop wasn't really an office. It had the file cabinet, the phone, a sound system, and a stool, but what it really needed was a desk. I'm not a sit-down kind of guy, and I've had my share of back issues. So I started exploring stand-up desks, since I've heard they can do wonders for your posture and productivity. Most of the

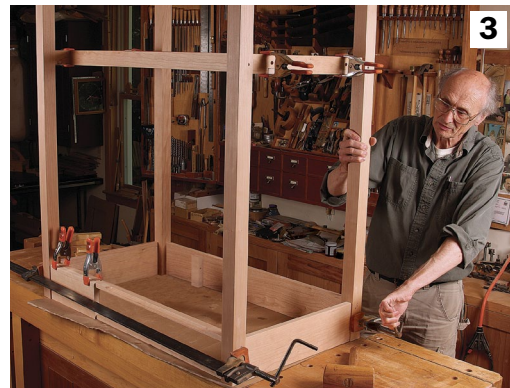
ones made today have a flat surface of the appropriate height, but lacked what I consider essential, a foot rail. Also, I wanted a slanted surface to draw on, much like an architect's drawing board, or a sloped desk box or schoolmaster's desk.

I also had several other requirements. It had to be built to my height, so you may need to tweak the



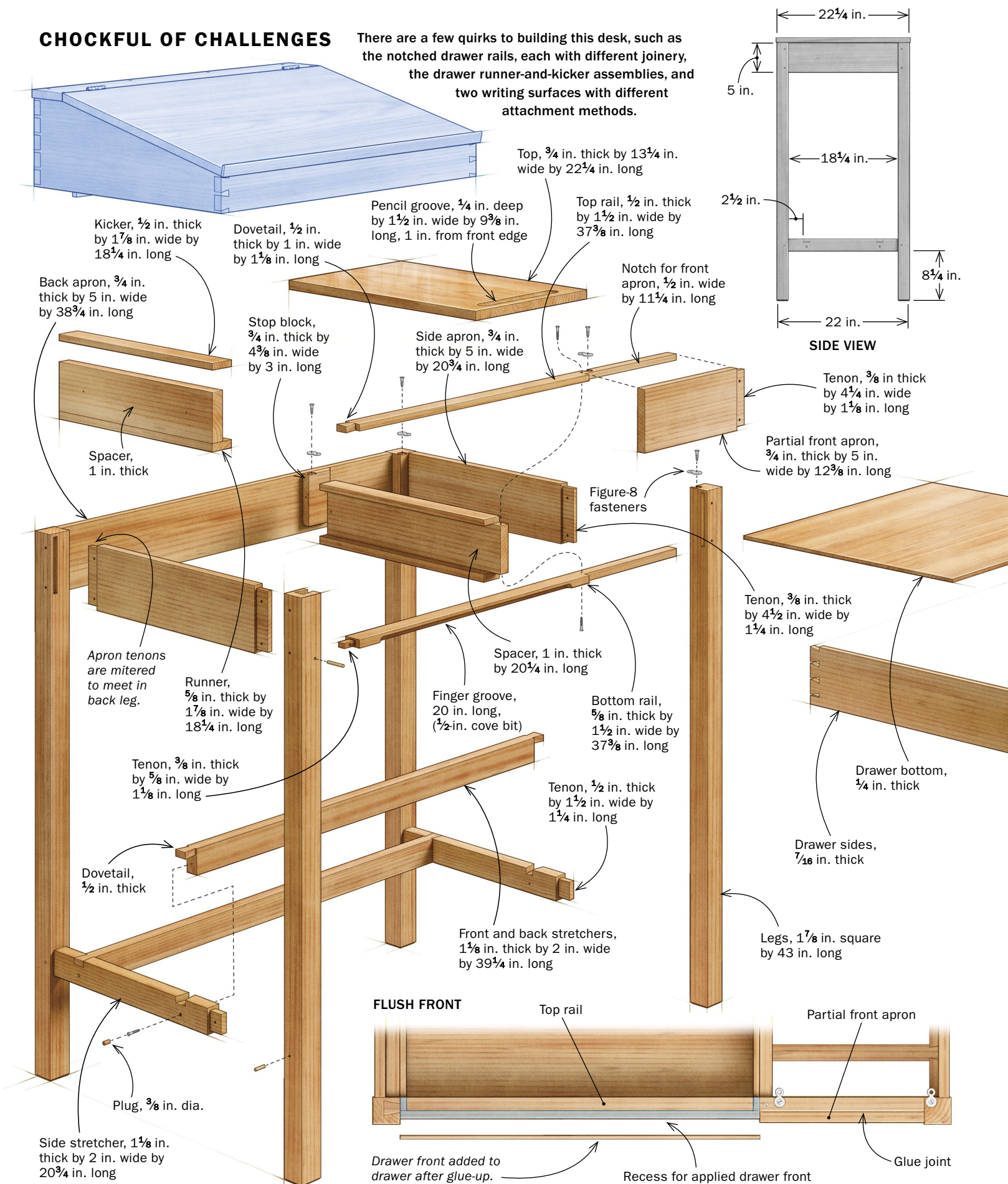
MAKE THE BASE

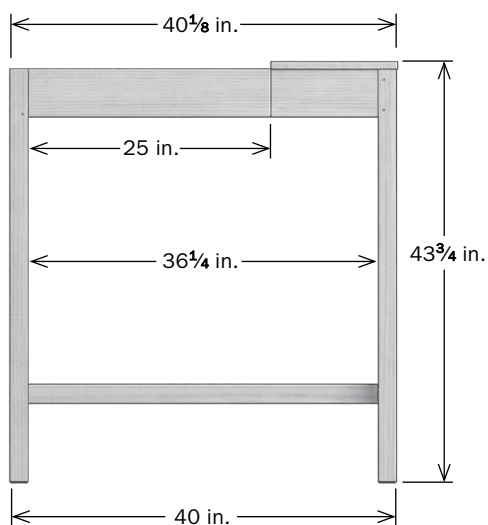
The order of the aprons. Once you've glued the legs to the side aprons and side stretchers, add the front and back aprons (1). Then add the dovetailed stretchers (2) and the top and bottom drawer rails (3). The drawer kickers and runners are attached to spacers. The right assembly is screwed to the rails at the front and a screw block on the back apron (4). The left assembly is glued or screwed to the side apron.



CHOCKFUL OF CHALLENGES

There are a few quirks to building this desk, such as the notched drawer rails, each with different joinery, the drawer runner-and-kicker assemblies, and two writing surfaces with different attachment methods.

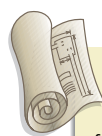
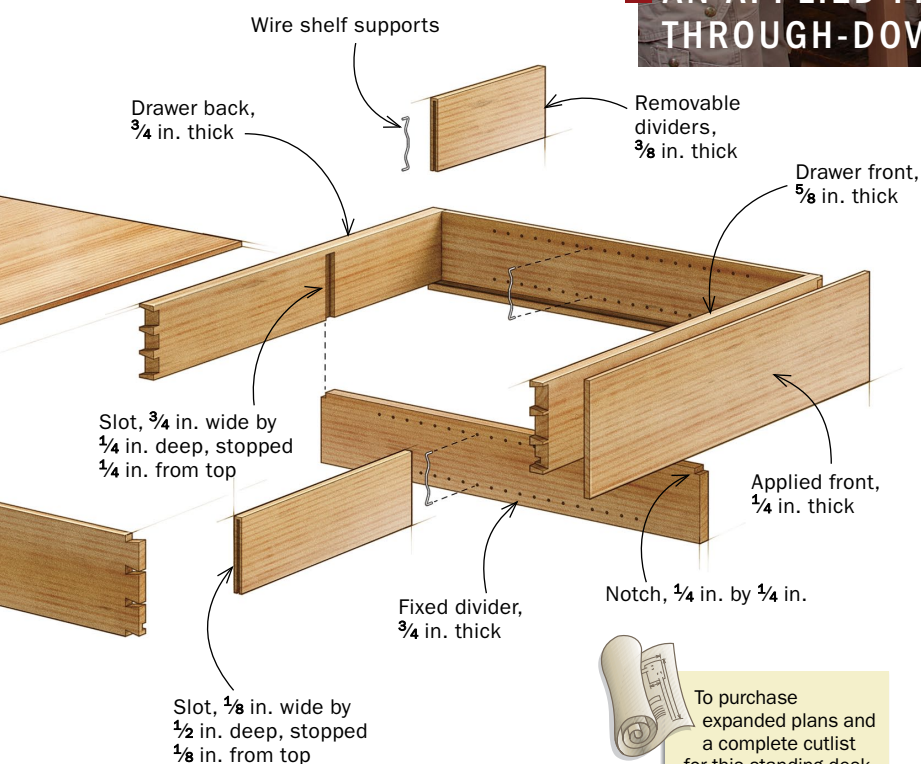




FRONT VIEW



AN APPLIED FRONT ON A THROUGH-DOVETAILED DRAWER



To purchase expanded plans and a complete cutlist for this standing desk and other projects, go to FineWoodworking.com/PlanStore.



Add the applied front while the drawer is in place. This allows you to locate it precisely. The applied front conceals the drawer rails and, with the finger groove in the bottom rail, serves as the drawer pull.

A drawer divided

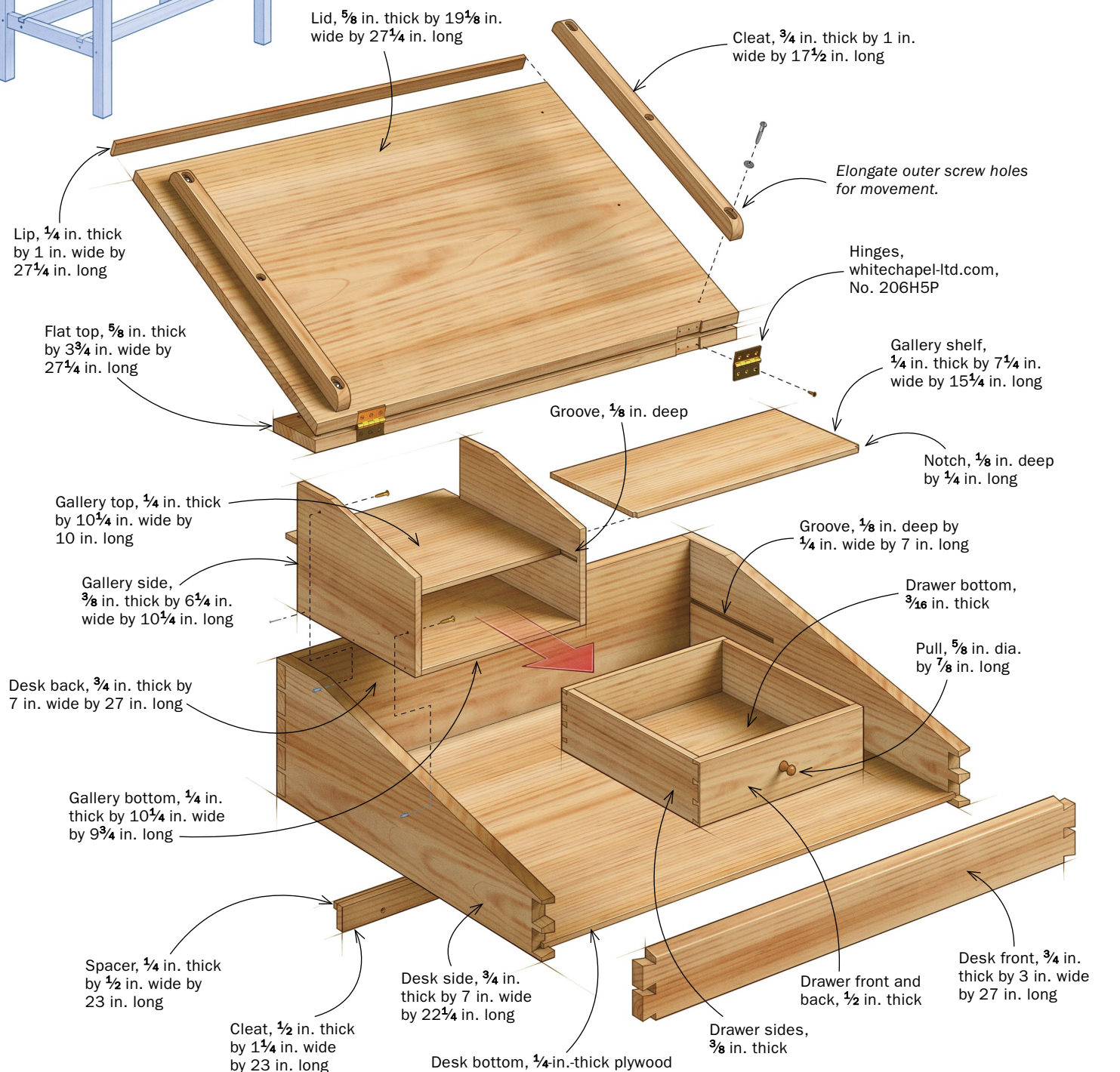
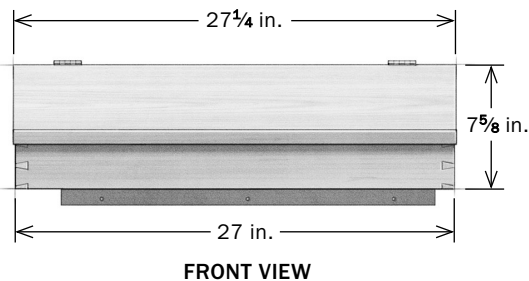
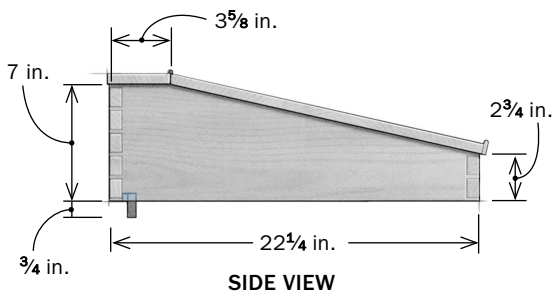
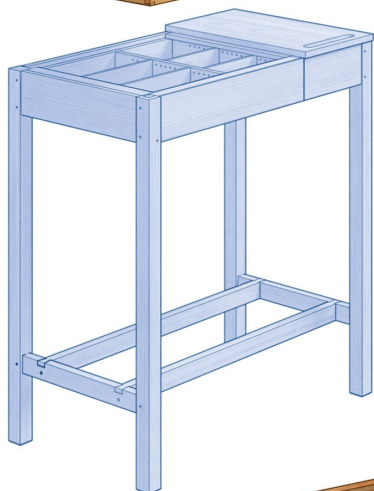
Before installing the drawer bottom, glue the permanent divider into the slots in the front and back of the drawer. The other dividers are adjustable. These grooved dividers slide in wherever you want them. Becksvoort uses hidden wire shelf supports to hold the dividers (leevalley.com; No. 00S05.51) and nips the ends off the two prongs before installing them.





SLANTED-LID DESK IS A BIG COMPONENT

The slanted lid creates a traditional look and opens to reveal a gallery with lots of storage options.





BUILD THE DESK BOX

Dovetail as if the angle didn't matter. After cutting the dovetails, Becksvoort dry-fits the desk box and bevels the top edge of the front with a handplane. After drawing a layout line across the front, he starts by using the sides as an angle reference and planes his way across the front.

dimensions to suit your own height. Next, it required the aforementioned foot rail to improve comfort and posture. In addition to the slanted surface for drawing, I wanted a flat area for a coffee mug, books, or laptop, as well as a few drawers for paper, pencils, invoices, and the usual office accoutrements. With a few sketches, I settled on a design that looks and functions very well. But I've since built a few (all in cherry) with slightly different layouts, drawers, and dimensions. When I decide I want to have a seat at this desk, I just pull up my stool ("Sturdy Stool for Home or Shop," *FWW* #245).

Slanted desk adds a classic touch

I built the base first using mostly mortise-and-tenon joinery, and added the drawer. With that done, I started the desk box with the slanted lid.

First I milled the front, back, and angled sides. Next I dovetailed the corners. Then I cut grooves for the bottom, and one stopped groove on the right side for the

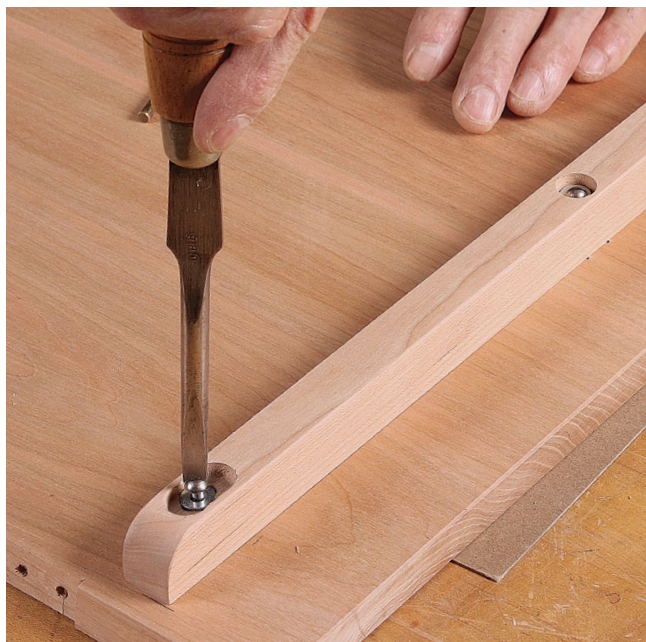


Install the flat part of the lid. After the bottom is installed and the desk box is glued, predrill, screw, and plug the flat part of the lid to the top of the desk. The next step will be angling the slanted part to meet this flat.

TACKLE THE LID AND THE INTERIOR



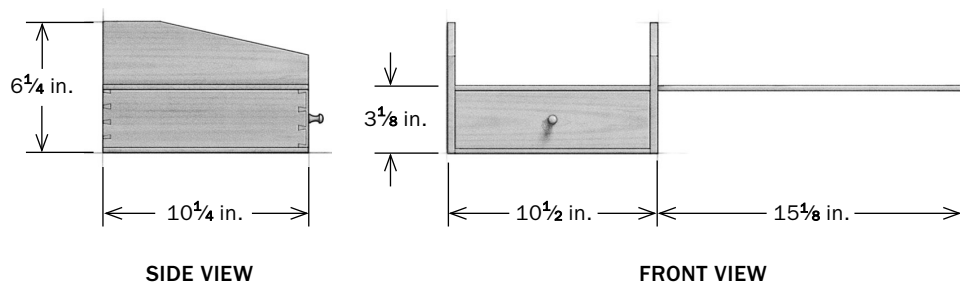
Mark and cut the angle. Using a bevel gauge, slide the lid up to the flat and mark the angle where they meet. Then rip the lid to that angle on the tablesaw.



Cleats keep lid flat. Install solid-wood cleats, with elongated holes to accommodate movement, just in from the desk sides.



Install the gallery. Build the drawer box first and slide it into place. The shelf on the right fits into grooves in the drawer box and desk side.



Hinge the lid. With the lid resting on the flat and supported beyond that, screw the hinges into their mortises.

interior shelf. Once the box was glued and sanded, I attached the flat top, and then I glued up the lid. When the glue was dry, I cut the lid to size, sanded it, and added two cleats below to keep it flat. A small lip on the front edge keeps papers from sliding off.

A simple gallery keeps you organized

The interior consists of a drawer box with storage space above, and a shelf spanning the distance to the other side. After everything was dry-fitted and sanded, I made

■ MAKE A BIG ASSEMBLY EASIER

Becksvoort clamps the desk to the base (making sure to clamp the lid closed as well), and then rests the whole desk on its back.



Screw the desk to the base. At the front, the desk gets predrilled and screwed to the base through the top drawer divider. At the back, screw through the applied cleat on the desk into the back apron of the base (inset).

the small drawer. When the interior was completed, I hinged the lid to the top of the box. Then I attached the box to the base, screwing through the top rail at the front and an applied cleat at the back.

Finally, I cut the horizontal surface to size and routed in a pencil groove near the front. That piece was firmly attached to the front and back rails with figure-8 fasteners.

I finished the desk with three coats of Tried & True Varnish Oil, mixed about 50/50 with spar varnish. The desk has worked well, as expected and designed.□

Contributing editor Christian Becksvoort designs and makes furniture in New Gloucester, Maine.



Attach the horizontal surface. Use figure-8 fasteners, mortised into the base.

Essential Clamp Kit

What clamps to have and why you should have them

BY JEFF MILLER

The old chestnut is true—you can never have too many clamps. But which clamps you need depends on the type of work you're doing. As a general rule, you should buy the clamps best suited for the primary work you do, but you'll also need a more general selection of clamps for the wide range of projects and shop tasks you'll encounter. Assuming a finite budget, you'll need to make some choices to build an appropriate clamp kit for your shop.

After years of building custom furniture, I've come to learn what makes one clamp really shine, and what causes others to collect dust in the corner. Here's a roundup of the clamps I use every day that allow me to tackle any project or task quickly and efficiently, and some pointers on where to start if you're just beginning to outfit your shop.

Jeff Miller makes custom furniture and teaches woodworking in his Chicago shop (furnituremaking.com).





Bar clamps

Bar clamps are the shop workhorse. They excel at gluing up panels, assembling carcasses, building chairs, clamping up large laminations, and even serving as a vise when working on shaped legs. They come in a variety of lengths and are capable of exerting a great deal of pressure, or of clamping gently if needed. Bar clamps also come in a variety of forms and prices, each with corresponding benefits and drawbacks. No matter which type of bar clamp fits your budget and needs, they will form the core of your clamp kit.

WHERE TO START

A stable of 36-in. and 48-in. clamps will be enough to tackle most jobs, but you'll need a few shorter ones for gluing up small tables and panels where the larger clamps can be cumbersome. For long glue-ups, such as tabletops, benches, and beds, a few 72-in. clamps will be vital.

6 at 24 in. long 6–8 at 36–48 in. long 2–4 at 72 in. long

I-BEAM CLAMPS ARE HEAVY-DUTY

These are the most expensive bar clamps but also the most heavy-duty, with cast-iron heads and a bar styled after steel girders. All this metal gives them incredible rigidity and lots of clamping power. Rigidity is one of the main reasons these clamps are so potent. A super-rigid bar not only allows more pressure to be applied but also keeps the clamping pressure directly in line with the clamp heads—exactly where you want it. I-beam clamps are typically equipped with plate clutches and heavy-duty screw mechanisms, both of which make setting up a clamp on the work as painless as possible.



ALUMINUM CLAMPS ARE LIGHTWEIGHT

Aluminum bar clamps are a far less expensive option than I-beam clamps. The tradeoff with these lightweight clamps is that they exert less pressure, flex more, and are generally more cumbersome to adjust. However, the lighter weight can be a tremendous benefit when you're working alone on a tabletop or case glue-up. Unlike cast-iron clamps, the aluminum won't react with the water in glues and the tannins in wood to stain your work. Clamps with wing-type handles are the best, but those with a sliding pin work fine as well.

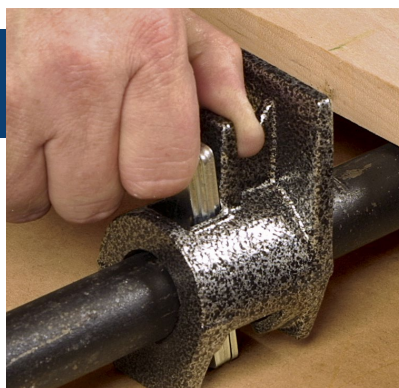


Article Extra

Watch how to use clamps to keep your glue-ups flat

PIPE CLAMPS ARE INEXPENSIVE

Pipe clamps are less expensive than aluminum bar clamps, and can be found at most hardware stores. Pipes can't match I-beam bars for rigidity, and some brands of pipe clamps don't have the jaw depth found on the other bar clamps. But even in a shop well equipped with bar clamps, pipe clamps are good to have around for unusual clamping situations. With a handful of lengths and a few couplers, you can easily create clamps of any size to tackle projects the others can't reach. I recommend getting $\frac{3}{4}$ -in. pipe clamps if you can. They are more rigid and have better handles compared with the fittings for $\frac{1}{2}$ -in. pipe.



Cheap and versatile. The head of the pipe clamp threads onto the end of the pipe, while the tail (above) slides on and retains its position with a plate clutch. The pipe comes threaded at both ends, so all you need to create a longer clamp is an inexpensive coupler and another length of pipe (right).



Protect your work

Many bar clamps come with plastic or rubber pads from the factory (left). If yours don't, attaching some $\frac{1}{4}$ -in. plywood and leather pads will keep your work from getting dinged. Miller uses silicone adhesive to attach the pads (right); it's flexible and easy to remove when the pads need changing.



F-style clamps

F-style clamps, sometimes referred to as steel bar clamps, are great for most smaller tasks, such as gluing up drawers and boxes, and clamping narrower stock together. Larger versions are useful for holding work or jigs on a bench, for smaller lamination work, and for persuading joints to close on smaller pieces. It's important to align them well, because if the bar isn't parallel to the intended direction of pressure (usually perpendicular to the surfaces being glued), they can cause parts to slip as pressure is applied. Two of the most important features to look for are smooth adjustment and adequately sized handles.

Parallel-jaw clamps are a popular variation on the F-style clamp. But I don't use them because I find them cumbersome to adjust, which makes glue-ups more difficult.



Pinpoint clamping. F-style clamps are great for smaller jobs that don't need high pressure or large clamps, such as gluing up a drawer (above). Versions with an extra-deep throat make it easy to clamp jigs to benchtops and work surfaces (left).

WHERE TO START

2-4 at 12 in. long 2-4 at 18 in. long
2-4 at 12 in. long, deep throat

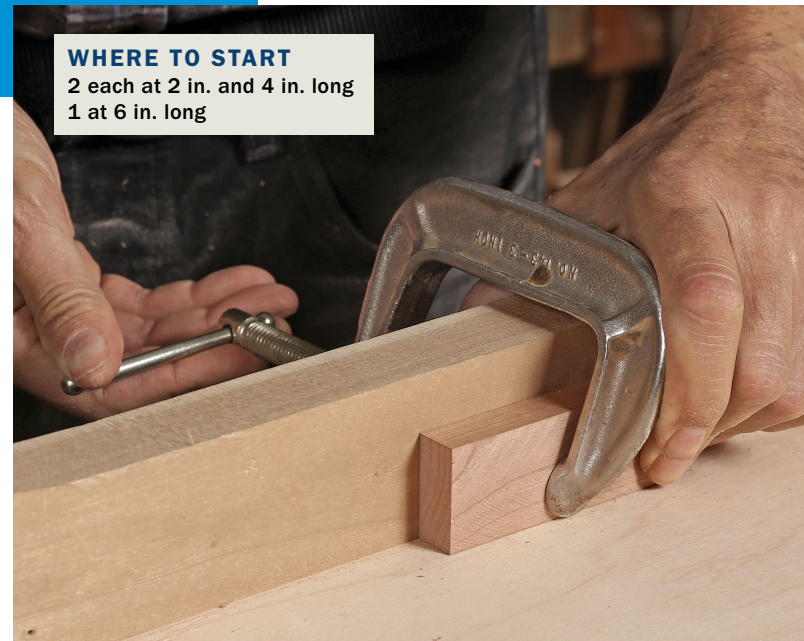
Quick-Grip clamps



WHERE TO START
2-4 at 12 in. long

A few of these are terrific to have because they are easy to use with one hand and provide a quick and easy hold. They can exert a lot of pressure, but there is little fine control of that pressure. They're great for getting something in clamps easily, whether it is a part in a jig, a glue-up where you have only one hand free, or a quick patch-and-repair job.

C-clamps



WHERE TO START
2 each at 2 in. and 4 in. long
1 at 6 in. long

C-clamps are always useful to have around, mostly because of their good functionality and low level of fussiness. They're small but strong and are unlikely to distort under pressure. They are used for a variety of tasks, but are especially useful for clamping down stops on tablesaw sleds and other jigs with a fence, or any small jobs where an F-style clamp would be unwieldy.

Hand-screw clamps

They may seem like a throwback, but hand screws are great for a number of jobs. Use them for holding odd-shaped pieces safely when cutting on the bandsaw or when drilling on the drill press. They are also good as a vise for holding small parts on the bench or in a bench vise. Hand screws are easy to find and even easier to modify. If you find yourself trying to get a firm grasp on oddly shaped parts, modify the jaws to fit your need. For example, adding V-notches across or along the jaws makes clamping round parts much easier.



A helping hand for big glue-ups. Use a hand screw to align the ends of boards while gluing tabletops, benchtops, or panels.



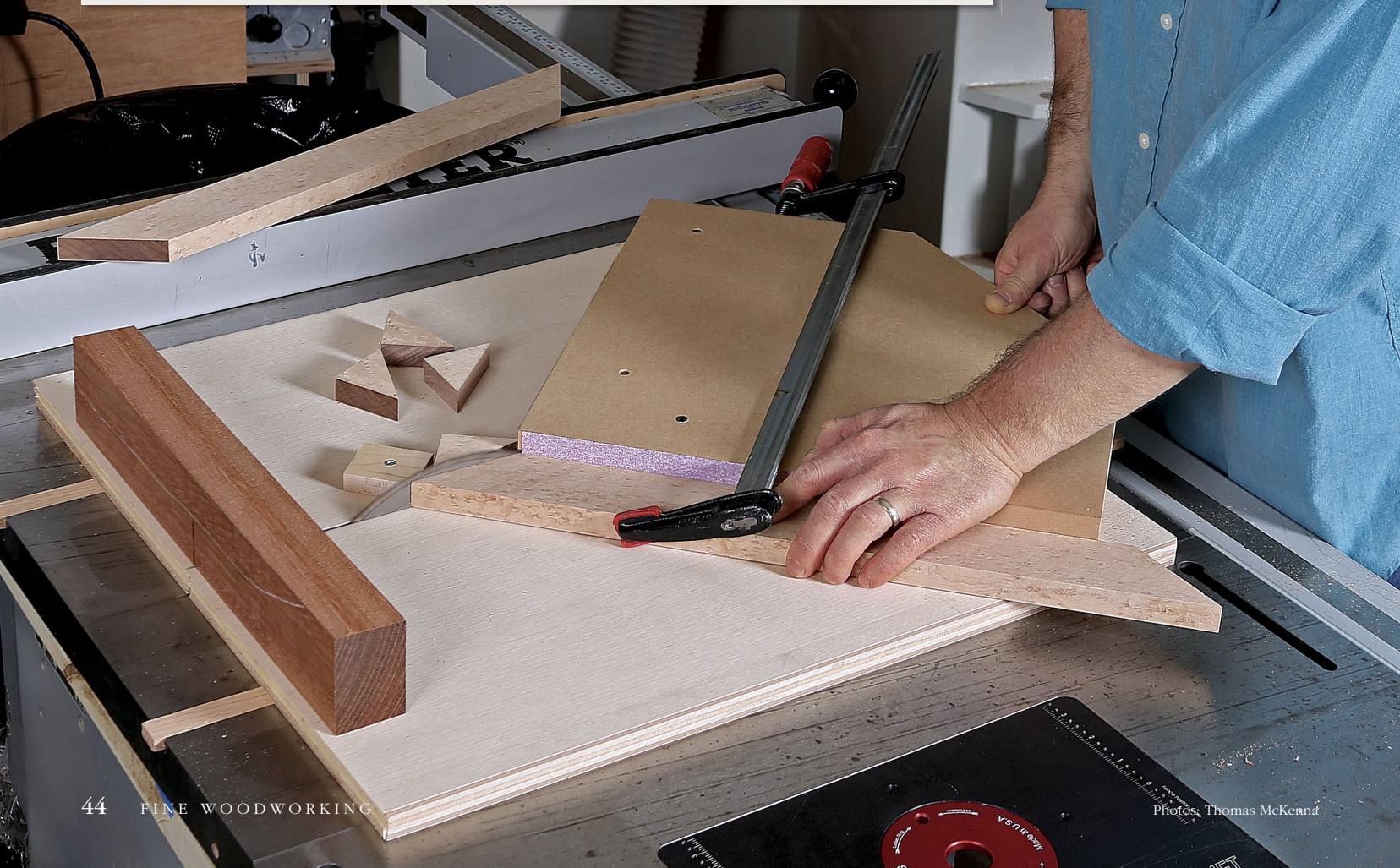
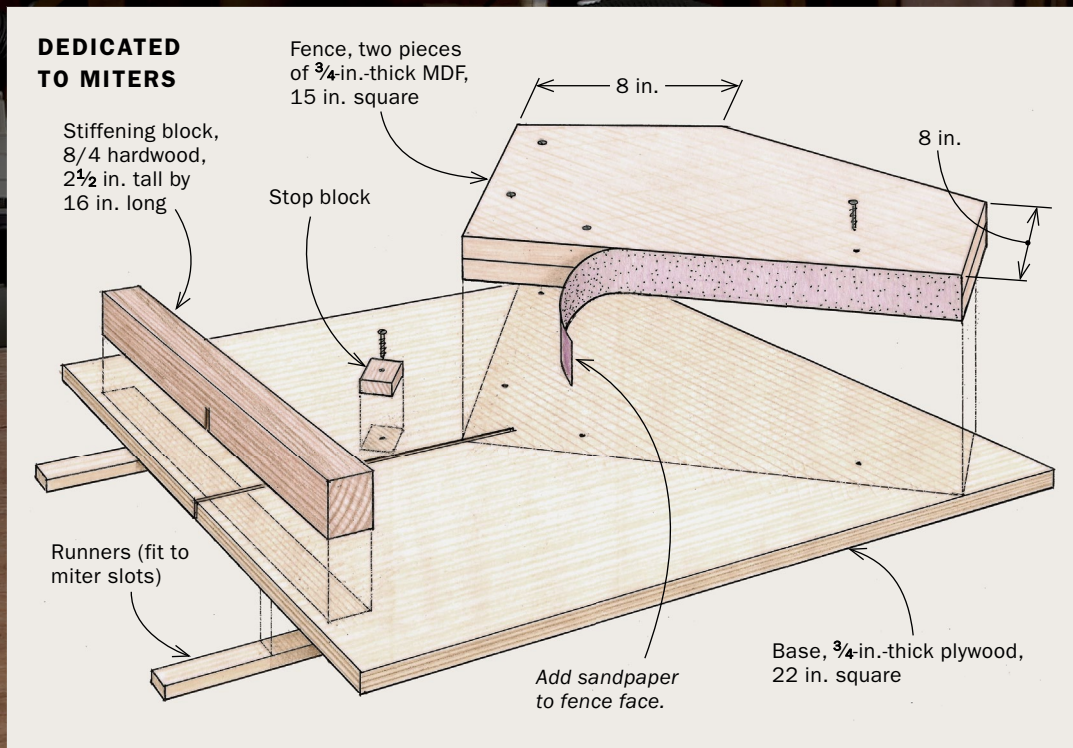
Perfect for small or odd-shaped parts. Getting a steady hold on turned or round work can be tricky. Adding notches to hand screws is an easy and secure way to hold round stock at the bandsaw (above) or upright in a bench vise (left).

Spring clamps

These are generally cheap and useful for holding parts in jigs, for holding templates in place when marking out parts, and even for light-duty gluing. One big drawback is that there is little to no control over the amount of clamping pressure they provide. In general, the bigger ones apply more pressure. They can be found cheaply in sets and are worth having in the shop.



Tablesaw Sled for



Miters

Precision jig eliminates gaps and headaches

BY CRAIG THIBODEAU

Frame miters—used to make doors, face frames, and picture frames—look easy but are deceptively difficult to do cleanly and without gaps. Not only do the parts need to be cut at exactly 45° (and any inaccuracy is compounded in the two halves of each joint), but the parts also need to be cut to the correct length. Even if you cut the parts and miters right, you still have the challenge of getting the angled surfaces clamped and glued properly.

I use frame miters quite often in my contemporary-style work, most frequently on the tops of tables and cabinets, where the frame surrounds and protects a veneered panel. Through experience, I've developed some surefire methods for cutting and clamping these joints.

The key to my success is two-fold. First, I use a dedicated miter sled for the tablesaw. Second, I cut the parts to final length at 90° first, then I use the fresh-cut ends as the reference for the actual miter cuts done on the sled. This method helps me cut miters precisely the first time, without a lot of test-fitting and recutting.

Sled guarantees a perfect joint

My miter sled cuts both left- and right-hand miters easily and accurately. It's essentially a standard crosscut sled, but I add a 45° fence to it.



THE SLED IS EASY TO MAKE

Cut a kerf. After attaching a stiffening block to the front of the base and installing runners, cut a kerf in the base, stopping the cut a little more than halfway through.



Add a guide line. Use a drafting triangle to draw a perfect 45° line to set up the fence. Align the edge of the triangle with the left edge of the sawkerf.



Install the fence. Align it with the 45° line and screw it down on one side.



Get a grip. Glue a thin strip of 100-grit sandpaper to the fence face.

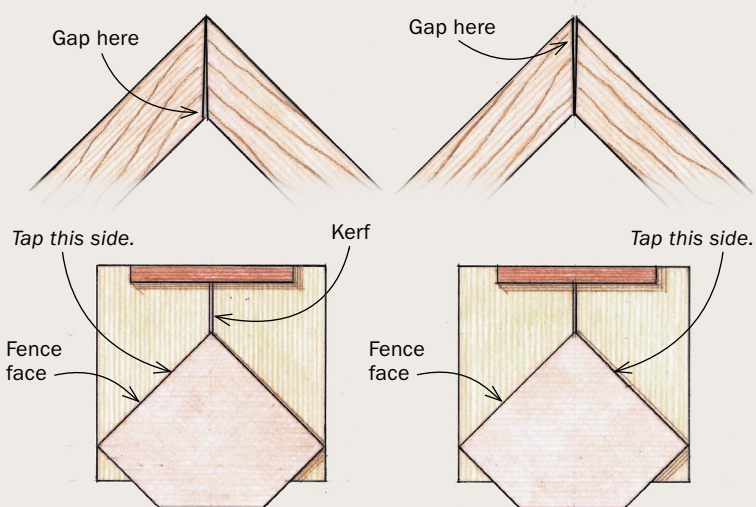


DIAL IN THE FENCE

Make a test cut. Cut miters on the ends of two frame pieces using the same fence face, then check the fit around a machinist's square (right).



Adjust the fence as needed. If the test miters show a gap, it should be small. The solution is to give the fence a light tap on the edge to move it left or right. Then make another round of test cuts. Keep adjusting until you no longer have a gap.



Lock it down. Once the jig is making perfect miter cuts, screw down the fence on both sides of the kerf. Clamp the fence down tightly while you do this.

Once you have the runners and stiffening block on your sled, make a stopped cut down the center of the sled base. Then mark a 45° line on one side of the kerf, using a 45° drafting square placed against the sawkerf. You'll use this line to adjust the fence at roughly 45°. Screw down one side of the fence, then make some test cuts using frame offcuts. Cut the mitered pieces all on one side of the sled only. That way when you put them together, the error is doubled. If you were to cut one piece on each side of the sled, the corner would end up 90° but one side might be 47° and the other 43°. The test pieces and all the frame pieces you make must be flat, straight, and square.

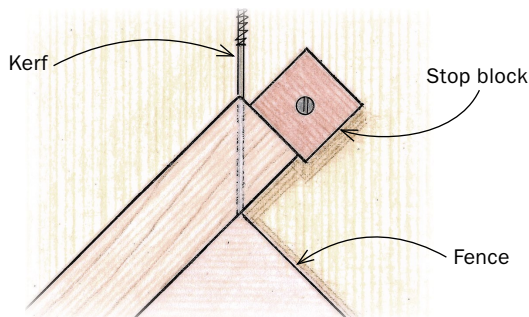
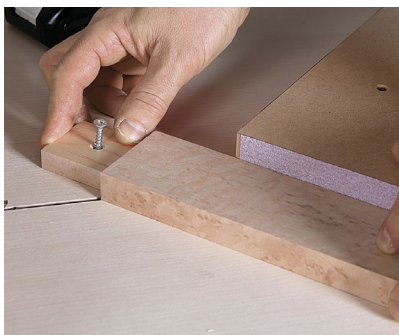
Your first test cuts should be very close to 45°. Once they are exactly 45°, clamp and screw down the opposite side of the fence. Be sure to locate the screws so they will not be in the path of the blade. Then cut another set of miters and check to make sure they are perfect. If they are not, loosen the screws



The secret to success. Cut all the frame parts to final length. Use a stop block for accuracy and a backer to prevent blowout.

Add a stop block.

With a frame piece against the fence, align its forward corner with the left edge of the sawkerf and position a stop block against its end. Clamp the frame piece in place and screw down the block.



Happy mitering.

With the parts cut to final length, all you have to do is align them with the stop block, add a clamp, and cut. The offcuts simply fall away, leaving perfect miters behind.



slightly and give the fence a light tap with a mallet to adjust it in the correct direction.

Stop block ensures success

When the sled is finished and cutting perfectly, you're ready to cut some miters. As I mentioned, I cut the parts to length before mitering them. This enables me to use an unusual stop-block setup that ensures accuracy and keeps me from ever having to use the point of a miter for measurement or reference. The key to the setup is that the stop block is placed on the cutoff side of the blade. I locate the block by placing one frame piece on the sled with the forward corner aligned with the edge of the sawkerf. Then I place the stop block flush with the end and screw it in place. The stop block can then be used to index all of the frame



parts by cutting them all on one side of the sled and it will cut them all the same. You'll have to change out the block for different-size frame pieces.

I use a standard combination blade for these cuts and they come out very clean with no tearout, because the bottom of the crosscut sled is essentially a zero-clearance surface. Try to push the sled from the center so that you're not favoring one side or the other while cutting. If you've taken the time necessary to get the sled aligned perfectly, there is no need for additional adjustment of any of the miter joints on a disk sander or other tool.

Craig Thibodeau is a professional furniture maker in San Diego (ctfinefurniture.com).

Clever clamping tricks ease assembly

When it comes to gluing miters, there are two big issues. First, this is a weak end-grain joint, so you have to take extra steps to ensure a good bond. Because the end grain will soak up glue quickly, I recommend double-coating the joint. Apply glue to all the end-grain parts, wait a few minutes until the first application of glue has soaked into the end grain, and then coat them all again before assembly.

To ensure a long, gap-free life, I reinforce miters with Domino slip tenons (biscuits and splines work, too). The Dominos also keep parts aligned while clamping, reducing the need for sanding or planing later.

The next challenge with miters is applying pressure at 90° to the mitered surfaces, and in the center of the joint. To help, I use the small triangular offcuts from the mitering process as clamping cauls. Sometimes I glue them to thin ¼-in. MDF strips. I clamp a pair of these at each corner of the frame during glue-up. These work very well for picture frames, but I take a different approach for situations where it's not convenient to clamp them to a frame from the inside, such as a frame-and-panel assembly. In these cases I just glue the offcuts to the frame pieces and then bandsaw and plane them off after assembly.

When I have a frame with molded edges, I make cauls that are roughly the reverse of the molding profile. They don't need to be exact, but they should make enough contact to be glued securely in place. Once the caul is shaped, glue it in place with a bit of yellow glue, making sure the clamping surface lines up with the miter. After the frame is assembled, these blocks will be cut off using a bandsaw or handsaw. Then the frame gets planed and sanded smooth.

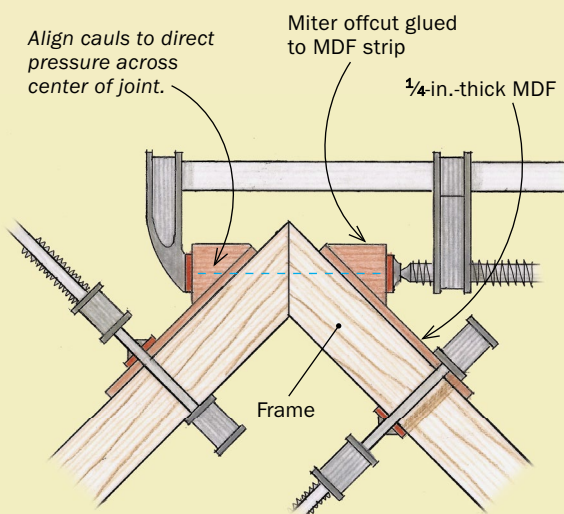
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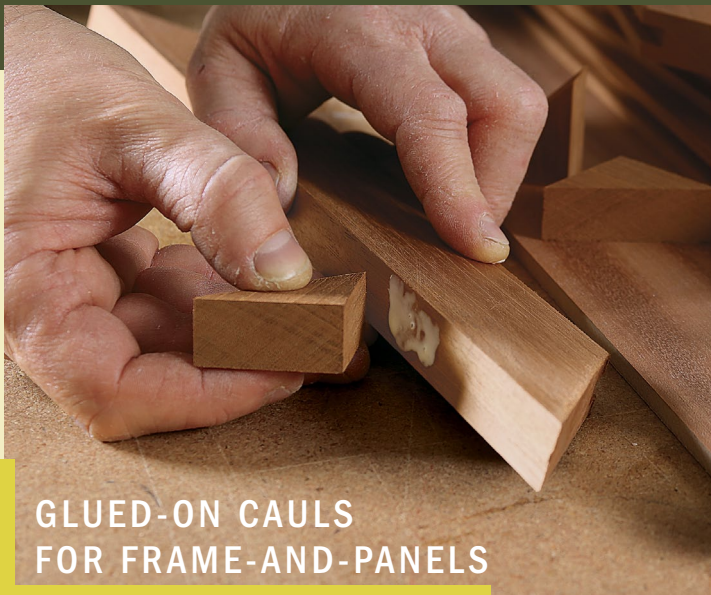
No-slip zone. To prevent the parts from sliding out of alignment, Thibodeau uses slip tenons inside and clamped-on cauls on the outside. The tenons add strength, too. The cauls are made by gluing the miter offcuts to strips of MDF.



Pressure where you need it. When clamping on the cauls, align the corner blocks so that clamping pressure is centered across the joints (see drawing, below).



The final step. Even with a tenon in the middle, parts can slip slightly. To lock them flush, use waxed cauls above and below the joints.



GLUED-ON CAULS FOR FRAME-AND-PANELS

Use the offcuts. In situations where the clamped-on caul won't work, such as door panels, Thibodeau glues the miter offcuts to the frame parts. He glues the caul in place with yellow glue and a rub joint.



Good pressure in the right spot. Position the caul so that you get clamping pressure across the center of the joint.

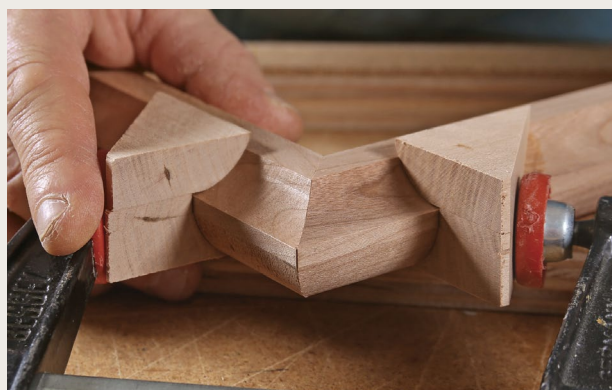
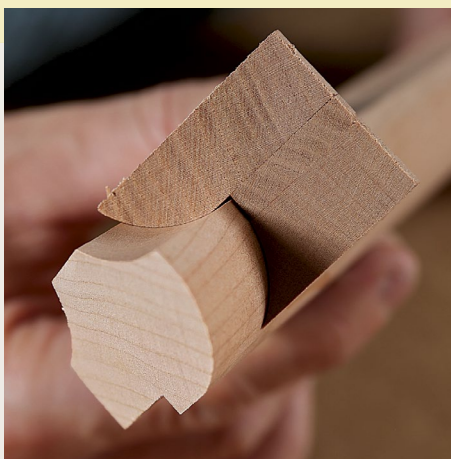


Cut them off when you're done. After the glue dries on the assembly, cut off the caul just proud of the frame edge, then plane the area flat.



SOLUTION FOR SHAPELY FRAMES

To handle frames with complex shapes, Thibodeau fashions mirror-image caul to fit the profile. He glues them to the frame to get solid pressure across the center of the joint. The caul has to be cut off after the glue-up, and then the frame is planed, sanded, and sanded.



How Pros Look at Lumber

There's more to selecting boards than counting board feet

BY MATT KENNEY



When I first got into woodworking, most of my energy was spent learning and developing the skills required to turn lumber into furniture. I also spent a healthy amount of time reading about and acquiring tools. It's understandable. You can't make furniture if you don't know how it's constructed and don't have the necessary tools. However, because I gave so much attention to these aspects of the craft, I gave almost no thought to the material I was using, and the furniture I made suffered as a result. Sure, my joinery was improving but I was using wood with ugly grain, or the cherry I picked for the legs of a table was a noticeably different color than the boards I picked for the top.

Eventually, I had cut enough joinery and really didn't need more tools, so I began to think about the wood. This is when I realized that the wood you use shouldn't be an afterthought, at least not if you want to make truly beautiful furniture. You must be as thoughtful about the color, grain, figure, and cut of the wood as you are about the proportions, dimensions, and details of the design.

Since then I've developed a very clear and thorough vision of the aesthetic qualities that I look for in lumber. This made me curious about how other furniture makers think about wood, so I called several whose work I admire. Not surprisingly, they provided a wealth of insight that covered aspects of selecting lumber from the very specific (avoid boards with twist) to the conceptual (the need to create harmony with the grain throughout every part in a piece of furniture).

Matt Kenney is the special projects editor.



Article Extra

Go on a lumber run with Matt Kenney.

Wood is the furniture's skin

Massachusetts furniture maker **John Cameron** calls wood “the skin” of a piece of furniture. It’s what you see as you walk past it everyday. It’s what a visitor to your house sees first. A great deal of work goes into building a piece, from milling the lumber and cutting joinery to prepping the surface and applying a finish. However, Cameron says, all that work is invisible. All you see is the completed piece, and there is no doubt that its most prominent



feature is the wood used to make it. This is why Cameron believes it’s so important to select lumber carefully. Choose well and the piece will shine; choose poorly and you can end up with a piece that can’t be saved no matter how crisp and tight the joinery is.

Cameron says that it’s not enough to simply buy beautiful boards. A piece of furniture is made from numerous parts, and you must be deliberate and thoughtful when cutting up the boards to make them. He selects and orients the grain for each part so that when they all come together he’s created a harmonious whole rather than a discordant mess. This orchestration, he says, is the artistry of our craft.

Cameron favors quiet, straight grain, so he tends to buy thick boards and resaw them, cutting



Don’t overlook the obvious. Many furniture makers tend to get lost in the construction of a piece and forget why they are going through all the milling and joinery: to create something beautiful and useful. Cameron says to take your time picking lumber. It’s the most visible feature of any piece.



as needed to straighten the grain, even if this means sawing diagonally across the board. Thoughtful milling is just as important to the success of a piece as the beauty of the wood.

At the lumberyard, Cameron keeps his eyes open for beautiful boards, and when he finds them he buys them. Even if they’re not needed for a specific piece of furniture, he says eventually he’ll make use of a beautiful board. In the meantime, they rest in the ever-growing lumber stack in the loft above his shop.



Throw out the cutlist

Creating custom furniture requires the application of skill, knowledge, and artistic intent. It is very much a personal activity, which is why **John Reed Fox** warns against letting a cutlist take priority when selecting lumber. Fox, a furniture maker in Massachusetts, calls the cutlist an artifact of industry, where efficiency often trumps beauty.

Fox says because the grain of individual parts is so important to the success of the entire piece, you should not allow a part's dimensions to determine its visual quality. Don't think, "I need a leg 2 in. square and 30 in. long," and just cut it from the board, Fox suggests. Instead, find the right grain—no matter its orientation relative to the board's "factory" edges—and then figure out how to get the part from that particular section of the board. Your goal should not be to slice up a board most efficiently, Fox says, but to create beautiful parts that can be brought together into a unified whole.

With his own furniture, Fox is a master at controlling grain. There is no guesswork involved, he says: Grain is predictable. Careful observation of how it moves through a piece of wood is all you need to determine what it will do when you cut that piece a particular way. This allows him to ensure that the grain follows the curve of a leg or the arc of an apron.

Fox begins thinking about grain long before the board enters his shop. In search of the finest lumber, a trusted sawyer keeps an eye out for veneer-quality logs and then they discuss how to cut them. He prefers the understated beauty of straight grain and often has entire logs cut into riftsawn boards. He also uses flatsawn lumber, but wants it cut following the pith, which creates very tight grain on the face. The resulting boards have straight grain across their width.



Beautiful lumber is worth the cost. Fox is happy to pay a premium for high-quality boards and logs, because they enhance the visual appeal of his furniture.



Keep a lumberyard in your shop...

As a professional specializing in Shaker furniture, **Christian Becksvoort** goes through a lot of cherry during the course of a year, and it's impractical to head off to the lumberyard at the start of each piece he builds. So he brings the yard to his shop. Twice a year Becksvoort takes delivery of 500 board feet of cherry. Having such a stockpile allows Becksvoort to be more selective about color and grain.

The boards are all FAS quality, 10 in. or wider (maxing out at 16 in. wide), and skip-planed to $\frac{19}{16}$ in. thick. Becksvoort orders only wide boards because they come from near the tree's center and they have less sapwood than narrow boards cut farther from the tree's pith. He has them skip-planed so that he can evaluate their grain and color more quickly. This speeds up the process of selecting boards for tabletops and panels, where Becksvoort takes care to ensure consistent color and grain among the boards.

Becksvoort stores the lumber in a loft above his shop, which means he must carry one board at a time up a set of stairs. It's a lot of work, but he says it gives him the opportunity to inspect each board and write detailed notes on the end grain about its color, grain, and figure.



...Or buy for one project at a time

Although it's certainly nice to house hundreds of boards of a single species in your shop, it's not a practical solution for many furniture makers—professional or hobbyist. Instead, many woodworkers, like **Tim Coleman**, buy their lumber for one piece of furniture at a time. This gives them excellent control over the color and grain. Coleman buys boards from a single tree, and sometimes he buys the entire flitch-cut log. This is more expensive than buying random boards from a stack at the lumberyard, but this Massachusetts furniture maker says it is worth the investment. He says there is a consistency in the color of boards taken from a single tree that's tremendously difficult, if not impossible, to achieve with boards sourced from multiple trees. And then there's the advantage of having flatsawn, riftsawn, and quartersawn boards available. With every cut of grain at his disposal, each part in a piece can have the perfect grain orientation for strength and beauty.



Keep an eye on figure

Like color and grain, figure varies from board to board and tree to tree. That's why Massachusetts furniture maker **Peter Shepard**, who works extensively with figured maple, cuts parts from a single log when building a piece of furniture. When you use figured boards from a number of trees, the noticeable variation in figure disrupts the unity of the piece, he says. But when all of the boards come from a single log, the figure flows seamlessly from one part to the next.

Shepard prefers figured soft maple over figured hard maple. In his experience, soft maple is figured across the entire width of the board, including the edges. The figure in hard maple can be wonderful near the edges, but tends to peter out near the middle of the board. Shepard uses the more complete figure of soft maple to emphasize the apparent three-dimensionality of the curl so it appears to have texture, like a rippled fabric.



Spin the grain

All of the furniture makers that I spoke with mentioned, even if only in passing, the importance of accounting for wood grain as a visual detail when designing furniture. It's a truth that Maine woodworker **Brian Reid** puts to astonishing use in his furniture. Reid cuts a board into small tiles and then arranges them into a rigid geometric pattern. To emphasize the pattern, he often rotates the tiles so that the grain on one tile runs in a different direction from the grain on the tiles around it. As a result, the light interacts with each tile differently, giving them all a unique luster or chatoyance.

This technique works best with straight-grained wood, so Reid is very selective when it comes to lumber. He looks for boards with truly straight, uniform grain. He usually avoids figure, because it can interfere with the overall pattern and the predictability of the luster created by rotating the tiles.



Stability matters

Best known for his elegant synthesis of Shaker and Federal furniture with a contemporary current running through it, **Garrett Hack** possesses an excellent eye for combining quiet, straight-grained wood with accents of figured and exotic woods. So I was a bit surprised that he spoke at length about stability when asked to explain what he looks for when selecting lumber for a piece. Of course, it makes sense when you consider that no matter how beautiful and well-chosen the wood, a sideboard (for example) is a failure if its door frames warp or its top curls up. Hack says the first thing he looks for is cup, bow, and twist. These defects, according to Hack, if present in the raw plank have a tendency to return no matter how carefully you mill the wood. Avoid them, especially twist, at all costs.

When it comes time to cut out parts, Hack is still thinking about stability. When he makes door frames, for instance, which have nothing beyond hinges to keep them flat, he chooses truly flat boards with dead-straight grain. A few moments of care at this stage of construction can ensure a long, useful life for the entire piece.

Buy beautiful

Giant slabs of wood have inspired many furniture makers. Count **Greg Klassen** among them. To his eyes, a slab is a unique piece of art—a sculpture created by nature—and he designs to highlight its beauty. He calls it an attempt to amplify the slab's own voice without turning up the volume so much that it screams. When looking for slabs, Klassen pays attention to how a slab makes him feel. The best, he says, have a depth of detail in their grain, color, edges, and shape that stands up to prolonged examination. He says he could look at them all day and not grow tired of their beauty. The species that excites him the most is big-leaf maple, because of the wide range of colors it can feature in a single slab. When he began working with slabs, the Washington woodworker would inspect them in person, but now he buys online, too, as long as he can see photos of each slab. In addition to determining a slab's size, he looks at its colors, the undulations of its wane edges, and the nature of its grain.



Grain is graphic

Like Brian Reid, **Thomas Throop** stresses the thoughtful use of wood grain when designing furniture. He says the grain should be in sympathy with the shape of a part and the overall lines of a piece: arcing grain for curved parts, straight grain for straight parts. But it also can be used with a stronger voice. Throop, who works in Connecticut, likes to combine straight-grained and figured woods, creating quiet frames that allow figured panels to shine like jewels. The understated straight grain recedes into the background, pushing the figured grain to the fore.



Design to the board

When it comes time to select lumber for their next piece of furniture, many woodworkers already have a design in hand and know what they need to make it, but not **John Tetreault**. Before he designs, *Fine Woodworking's* deputy art director goes in search of lumber. He looks for a board—or set of boards—to inspire him, and after he's found it he designs a piece of furniture to highlight the board's unique beauty. This is one reason he prefers to work with reclaimed wood. It offers an abundance of character in its grain, color, and texture. He prefers the warm, earthy brown tones of weathered chestnut and butternut, but doesn't hesitate to build with beaten heart pine flooring either. Even resurfaced, these old boards still have a patina to them, and Tetreault does an amazing job highlighting their tight grain and well-worn colors. However, the best argument for using salvaged lumber, he says, is the wonderful, weathered texture it can have, and he often leaves the worn surfaces untouched. Tetreault buys in bulk, which means that he drives the back roads looking for old timber-frame homes and barns that need to come down.





Quiet grain emphasizes good design

Asked to describe what he looks for in lumber, **Philip Morley** says he wants peaceful, graphically balanced boards with tight, straight grain. He finds it in riftsawn lumber, whether the entire board is riftsawn, or it's just the section along the edge of a wide flatsawn board. The clean lines of riftsawn grain help to bring out the lines and details of the clean, contemporary furniture he designs in his Texas shop. It's not surprising, then, that he avoids boards with figure, and dislikes mixing woods that contrast harshly.



Become a sawyer

Michael Fortune wants complete control over the wood he uses to make furniture. That's what initially drove him to seek out sawyers who would cut logs to his specifications. After they were cut, Fortune would air-dry them in open-walled sheds outside his shop. However, after years of getting boards that weren't cut as he had asked and often waiting too long to get them, he bought a portable sawmill.

Now he cuts all of his own lumber. Not only does this allow him to cut boards as he wishes (flat, rift, or quartered) but he also knows what part of the tree the board came from. This is critical knowledge. The closer a board was to the center of a tree, the less stable it is. The less-stable boards get used where he can manage movement with joinery or construction techniques (as panels held in frames, for example). The more stable boards can be used for legs and door frames.

Fortune also built a solar kiln, which, because he lives so far north (a few hours northeast of Toronto), never heats up the wood so much that the lignin sets. It retains the workability of air-dried lumber and he can still use it for steam-bending.

What Fortune likes most about owning his own sawmill and kiln is that he now has complete design freedom, because he can always get the lumber he needs to make the furniture found in the pages of his sketchbooks.



Make your own lumber. To achieve consistency in color and grain, and have better control over the cut of his boards, Fortune bought a portable sawmill and began slicing logs.



Creativity unbound. Cutting and then drying his own lumber allows Fortune to design without limitation. He always has stock on hand for steam-bending (left) and has even used the sawmill to create texture (above).

Hand-Built Home for

Cut nails and a clever lid clinch a traditional Japanese toolbox

Japanese carpenters are renowned for the sophistication of their wooden joinery, yet they typically build toolboxes of the simplest sort. A traditional Japanese toolbox, butt-joined or dadoed and nailed together, speaks of utility and practicality. It is durable, stackable, and eminently portable.

Although I favor utilitarian toolboxes, I relate to the impulse to make a special project out of creating a home for beloved tools—that's why I build my boxes with hand tools. I still look with pride

at the resaw marks on the underside of the lid on my original toolbox, made when I was just starting out and absorbing all I could from Toshio Odate's book, *Japanese Woodworking Tools: Their Tradition, Spirit and Use* (The Taunton Press, 1984). I used Odate's toolbox as a model for my own. The sliding lid provides a strong, satisfying closure, and when removed, is a convenient place to lay out tools for the work at hand. And the inset ends of the box make for stronger joints while also providing handholds.



PREP THE PARTS

Lay out and cut out. Hunter rough-cut all the parts but the handles from a 12-ft.-long white pine 1x12.

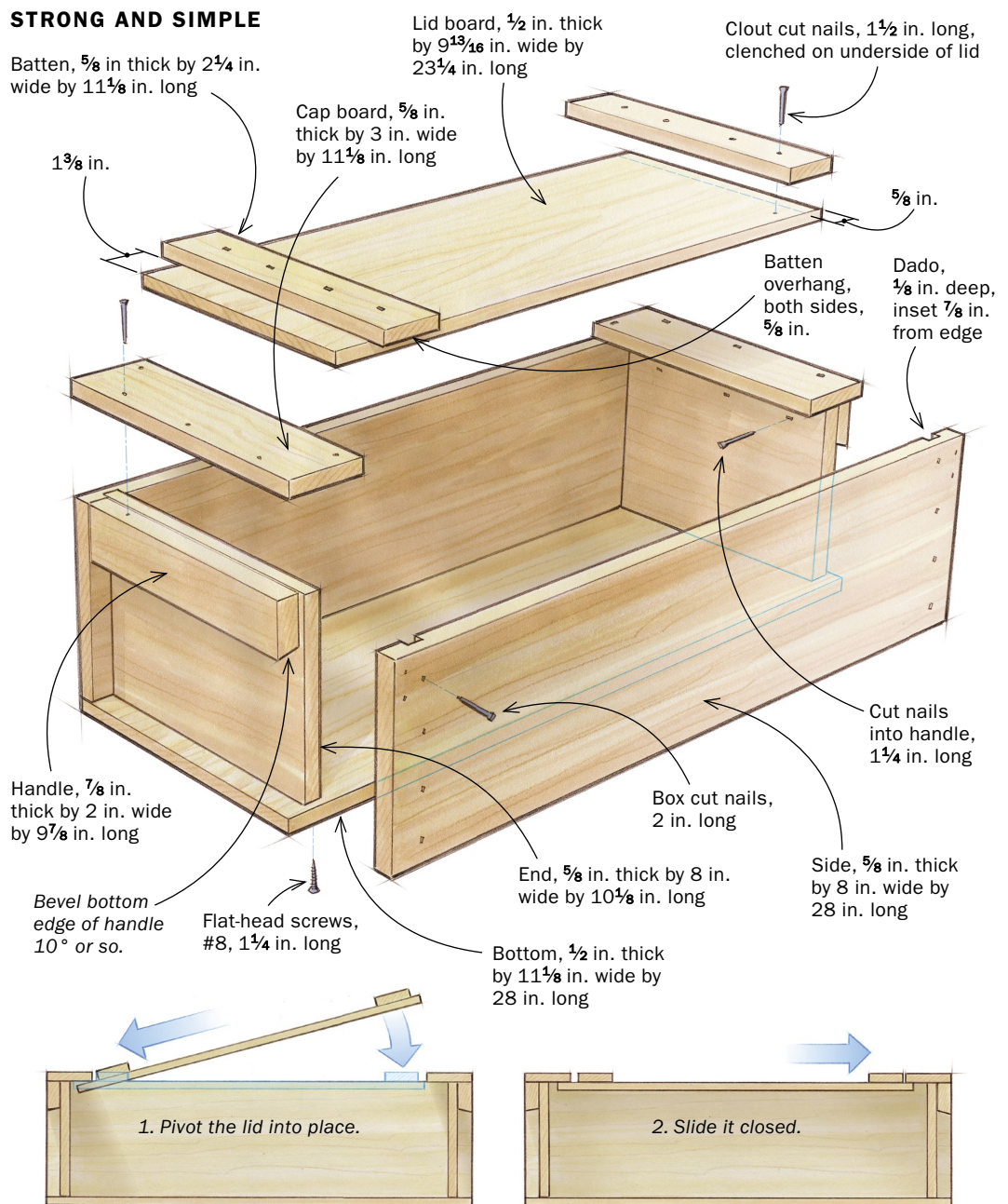


Flatten, then thickness. You can flatten and thickness the parts by hand, as Hunter does, or by machine.



Clean up and crosscut. After thicknessing the sides and jointing their edges, saw the ends square and true the cut with a handplane.

STRONG AND SIMPLE



Hand Tools

BY ANDREW HUNTER



Make the case



CUT THE JOINERY

Dado layout. Use the handle board (above) to determine how far to inset the dado from the end of the side. Then lay out the dado's width directly from the mating end board (right).



As I've built more boxes over the years—for toys as well as tools—I've stuck with the original design. I've been tempted to add some furniture-level joinery, but my original nailed toolboxes, going on 15 years old now, are holding up fine and I really like the way they look, so I've stayed with the traditional nailed joints.

Produce the parts

I built my latest box with a 12-ft.-long 1x12 of white pine—and a thicker scrap for the handles. Although the 1x12 came from my hardware store milled $\frac{3}{4}$ in. thick, it was far from true, so it required jointing and thicknessing. That was fine, because even in my largest boxes I find that parts a full $\frac{3}{4}$ in. thick look chunky. As with other projects in white pine, I gave this box a hand-planed surface and left the wood untreated, letting it acquire a patina over time.

Before any cuts are made, lay out the parts on the board, starting with the large pieces. Because the box has cross-grain construction, I try to find pieces for the top and bottom that are largely



Saw the shoulders. Hunter uses a Japanese panel saw guided by a fence to cut the dado shoulders. A line he marked on the sawblade governs the depth of cut.



Get the meat out of the middle. A bench chisel wielded bevel-down removes the waste between the dado shoulders. To refine the cut, Hunter will use a paring action with the chisel held bevel up and parallel to the benchtop.

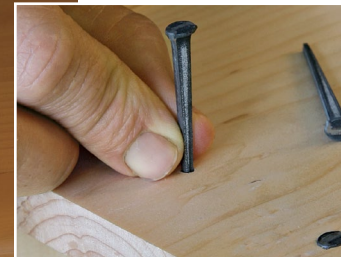
NAIL THE ASSEMBLY



Cut nails get pilot holes. Pre-drill for the nails using a bit whose diameter matches the thickness (not the full taper) of the cut nails.



The bottom squares up the box. After jointing one long edge of the bottom and cutting one end of it square, clamp it in place to help align the box parts for nailing.



Careful with the cut nails. To prevent splitting the top board, turn the cut nail so its taper lines up with the long grain.

quartersawn. I also save the outer, clear, radial sections of the board for narrower parts like the lid battens.

Next rough-cut the parts and mill them to thickness. To see how I do this by hand, check out my article “Prep rough lumber with hand tools” (Handwork, *FWW* #239). With the parts milled, cut the sides and ends to size. From there, cut parts as needed during the project, taking measurements directly from the box.

Cut the dadoes

With the sides and end pieces ready, locate the dadoes in the sides that will receive the end boards. The amount the dado is inset

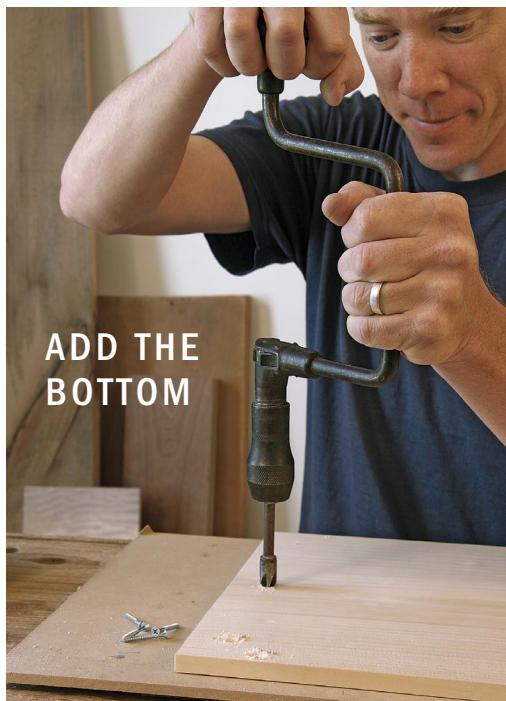
from the end of the side board is determined by the thickness of the handle. Mark this distance and then, with all the parts labeled, use the end boards to lay out the width of their mating dadoes.

I use a Japanese panel saw, or *azebiki*, to cut the kerfs that define the dado. Clear the waste between the kerfs with a chisel or a specialty plane. Now you're ready to nail the sides together.

Nails and screws

Pre-drill for the nails, choosing a bit sized to the thickness of the cut nails (not to their width, which tapers), and drill only through the piece the nail enters first. To help align and stabilize the parts

ADD THE BOTTOM



Bottom's up. After trimming the bottom board flush to the outside of the box, drill clearance holes and countersinks, and attach it with screws.

Finish off the box

FIT THE HANDLES



The handle gets a bevel. To make the grip more positive when you lift the box, bevel the bottom edge of the handle at 10° or so.



Secure the handle. After beveling the handle, cut it to length so it's a press-fit between the sides. Then nail it in with short nails from inside the box (left) and longer ones into the end grain from outside (above).



Attach and trim the cap boards. Nail on the cap boards while they're still overlong (above) to prevent splitting them at the ends. Then saw them flush (right), being careful to keep the sawblade from contacting the proud nail heads below.



while nailing, clamp the box to the bottom board. The bottom will still be oversize at this point, but it should have one long edge jointed and one end cut square. Once the sides and ends of the box are nailed, you can mark the final length and width of the bottom from the box.

The bottom of the box is simply screwed to the sides. This is not only the simplest solution, but I believe it is also the most durable. There are no fragile edges as with a bottom that is let into a rabbet or a groove. Like an applied back in a cabinet, the bottom of this box offers support against racking, and using screws gives me confidence that the bottom will not be pushed off under a heavy load. Building this way does raise the issue of restricting seasonal movement, but using white pine, a very stable wood, and quartersawn white pine at that, I have had no problems with the boxes I have made in the past.

Create the top

The lid is one of my favorite things about this box. To close it, you tip the long tongue of the lid under either cap board, lower the lid, then slide it so the short tongue presses under the opposite cap board. It's a snug fit, and no locking mechanism is needed to keep the lid firmly closed.

Before dimensioning the top, I fit the handles. You can bevel their bottom edge to make the grip more positive. Nail into these parts from the inside of the box and through the sides. You'll also be nailing into them through the cap board; this multi-directional nailing brings real rigidity.

Next, nail the two cap boards that retain the lid at the ends of the top. To avoid the splitting that can occur when nailing close to the end of a board, leave them long until they are nailed in place. Then trim them flush with the sides.

ADD THE LID



Now it's time to plane the lid board to width. Leave enough of a gap on both sides to accommodate seasonal movement. To determine the final length of the lid board, add $1\frac{1}{4}$ in. to the distance between the cap boards. This extra length is for the two tongues beyond the cleats that hold the lid shut.

The cleats that keep the lid flat and hold it in position are next. Cut them to length and clench-nail them to the lid board. This simple solution is much stronger than just nailing. Place a sacrificial board on your bench and drive each nail through the cleat and the lid so the nails extend an extra $\frac{3}{8}$ in. or so. After prying the lid assembly off the sacrificial board, clench over the end of the nails. This will suck the two pieces together. Finally, chamfer any edges that need it and fill your new box with tools. □

Andrew Hunter builds furniture in Accord, N.Y.



Clench the battens. With a sacrificial backer board protecting the bench, drive overlong cut nails through the battens and the lid board (top left). Then, after prying the nailed parts off the backer board, bend the tip of each cut nail (above). As you clench the nails (left), use an anvil or other rock-solid surface to back up the nail head.



A man with dark hair, wearing a red t-shirt and a brown leather apron, is focused on his work in a well-lit workshop. He is using a hand tool to work on a large, light-colored wooden board that is clamped to a workbench. The board has several parallel lines of glue or wood grain visible. The workshop is filled with various tools and materials, and a window in the background shows green foliage outside.

Strategies for Squeeze-out

Expert tips and tricks for cleaning up glue

**BY TIMOTHY
ROUSSEAU**

I've been teaching furniture making for more than 15 years. I'm a fairly relaxed person, so I rarely get too worked up when my students make mistakes. That being said, when I find hard, dried glue somewhere on a student's piece, I start to hear the voice of master craftsman and teacher Alan Peters: "We've taught them nothing—*nothing*." With Alan, it was the random-orbit sander that got him going; for me, it's the dried glue.

When I learned to make furniture, the emphasis was placed on not using too

much glue. As the years passed, I've had a few joints come loose and I have come to believe that when in doubt, it is better to err on the side of too much glue than too little. (Of course, I've also figured out where I should spare the glue.) Along the way, I've come up with a ton of tips and tricks for managing the inevitable squeeze-out. Here I'll share my secrets.

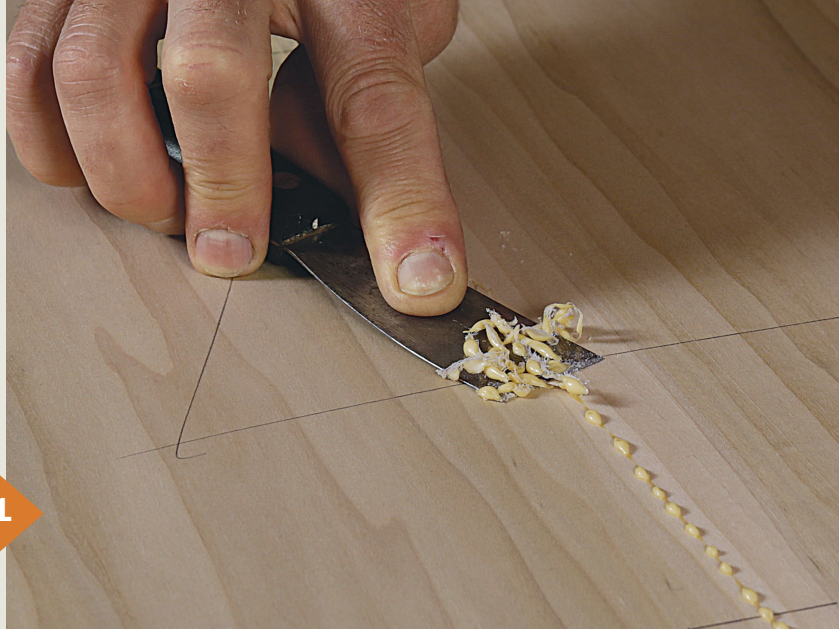
Timothy Rousseau is a furniture maker in Appleton, Maine, and a regular instructor at the nearby Center for Furniture Craftsmanship.

THREE APPROACHES FOR PANELS

Panel glue-ups offer some latitude because they are accessible on both sides and the flat surfaces are easy to clean up. Rousseau puts a good film of glue on both edges with the goal of getting about a 1/8-in. bead of glue squeezed out of the joint.

The best approach? Let it set. Wait about 30 to 45 minutes for the glue to gel, and then scrape down the glueline with a putty knife. Rousseau sharpens his putty knife much like a chisel, with the back flattened and beveled on one face. Tuned like this, it leaves virtually no glue behind.

1



2

Get it while it's wet. If you don't have time to wait, carefully scrape up the excess glue with the sharpened putty knife. Clean the knife frequently and wipe the surface clean with a damp rag.



3

The hard way. You let the glue set all night? The best tool to conquer the rock-hard glue is a carbide-tipped paint scraper.

GEAR UP FOR GLUING

Rousseau's cleanup tools range from a paint scraper for rock-hard dried glue to a soft toothbrush for glue that's still wet.

Soft tools for soft glue. If the glue's still wet, you can use a straw, a toothbrush and warm water, or a shopmade wood chisel and damp cloth.



Scrape it when it's dry. Depending on how hard the squeeze-out is, you can use a paint scraper, chisel, putty knife, or plane iron to scrape it off.

MORTISE-AND-TENONS

By its nature, a mortise-and-tenon joint is prone to squeeze-out. As a tight-fitting tenon is pushed into the mortise, the glue gets squeezed back to the tenon shoulder and squeezes out of the joint. The level of difficulty in removing that squeeze-out depends on whether the surfaces of the rail and stile (or leg) are flush or offset. If the parts are flush, it's fairly easy to remove excess glue simply by wiping or scraping. But when the parts are offset, glue removal is trickier.



Flat is easy. Wait for the glue to gel, then scrape it using a crank-neck chisel or putty knife. Then sand and plane.

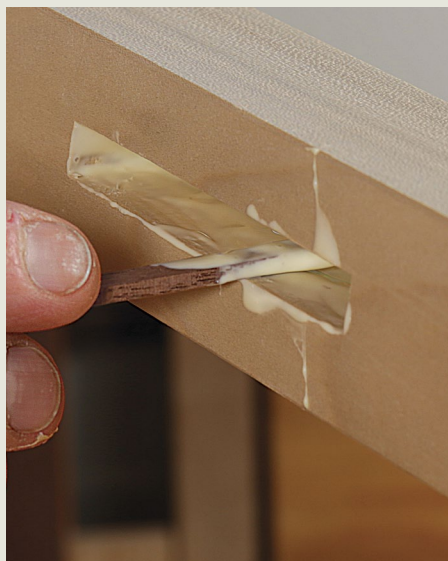


Corners are tricky. After clamping, and while the glue is very fresh, use a straw. With its tip cut at a slight angle, it will remove 90% of the excess glue. Then remove the rest with a wood chisel (opposite page) and a wet rag.



THROUGH-TENONS

This visible joint presents a challenge. If the through-tenon will be trimmed flush to the surface after the glue-up is complete, Rousseau doesn't worry about cleaning the glue off the exterior of the joint. He'll just plane it off the following day, much like he does on dovetails or finger joints. However, if the through-tenon will remain proud of the outside surface, he cleans off the squeeze-out immediately to prevent it from staining the end grain.



Spread glue with a thin wood scrap. Generously apply the glue inside the mortise and around the tenon.



Straw and a wooden chisel again. After removing most of the fresh glue with a straw (above), Rousseau uses a piece of softer hardwood like walnut or mahogany, cut at an angle and wrapped in a damp cloth, to remove what's left (right).



TIP

When the straw loads up with glue, snip off that section with scissors and get back to removing squeeze-out.



Chisel without the cloth. Shed the damp cloth and the chisel gets right into the corner to clean out the micro residue. This wooden chisel is used only when the glue is wet.

CASE CORNERS

When gluing a carcass together, the best time to remove any squeeze-out from the interior is immediately after gluing up. The second best way is to wait for the glue to gel and pare it out with a chisel or plane iron an hour or so after glue-up. It's a bad idea to let it dry hard and hope to clean it up the next day because the wood is likely to chip out with the glue. On the exterior, however, you can wait until the following day and plane it off when cleaning up the joinery.

Not too much, not too little. On a carcass glue-up, spread glue on both faces of the joint and aim for $\frac{1}{16}$ in. of squeeze-out once clamped.



Straw first, then toothbrush.

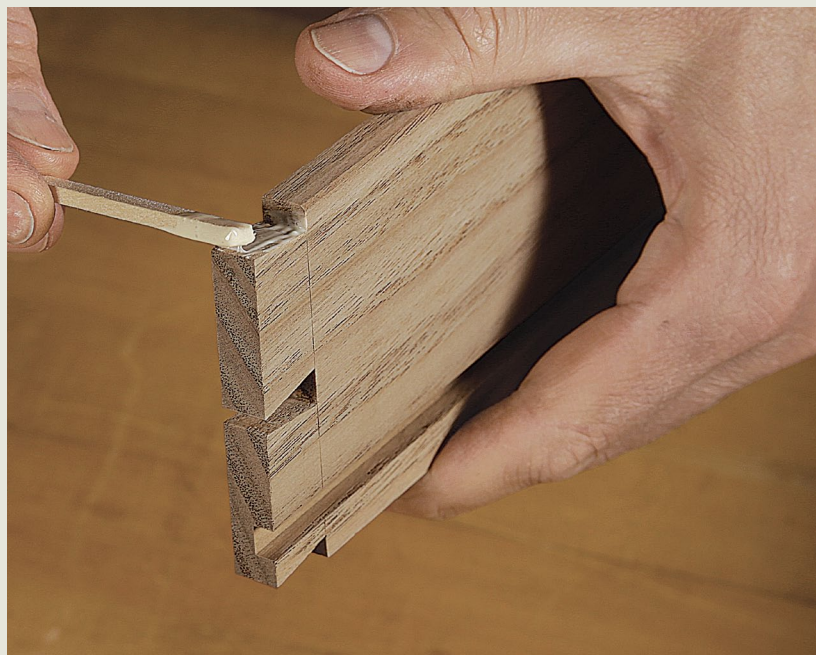
Remove most of the wet glue using a straw with an angled tip. On porous woods, move to a toothbrush dipped in warm water. On non-porous woods, the wood chisel, with or without a damp cloth around it, works great.



Use a chisel or plane iron for gelled glue. A crank-neck chisel (top) is handy to have, but a plane iron works as well. Work into the corner from both directions to remove the glue. Tape at the back of the plane iron (center and bottom) angles the blade enough that it cuts at the surface but not so much that it digs into the wood.

DOVETAILS

As a dovetail joint is assembled, the glue squeeze-out is directed toward the inside corner of the case or drawer. That tight area is difficult to access, so gluing drawers together is one place where it's best to work sparingly with the glue.



A little glue will do. On drawers, place a thin film of glue on the walls of the pins and tails. The end-grain areas provide no glue strength, so adding glue there will only lead to a bigger cleanup.



Assemble and check for square. Use a block that fits between the pins when tapping the drawer parts together (left). Check for square by measuring the diagonals (above) and adjust as needed until both measurements match.



Don't wait too long for cleanup. If there is any squeeze-out, pare it off with a crank-neck chisel an hour or so after gluing. The chisel or plane iron are a delicate way to remove squeeze-out without disturbing the drawer's squareness before the glue has dried.



Article Extra

Watch another way to deal with glue squeeze-out.

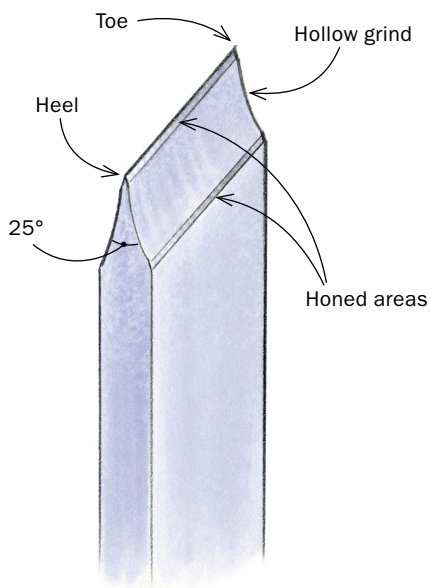


Learn to Love the Skew

When you get the hang of it, your skew will leave a surface so nice and slick that 600-grit sandpaper would mess it up

BY CURTIS BUCHANAN

SKREW ANATOMY



When I started making chairs I did the turning with a dull gouge, scraping and jerking wood fibers with the lathe running at mind-boggling speed. Then I broke out the sandpaper, working my way through the grits. The process was loud, nerve-wracking, dusty, and expensive. It was like making war. Then I had a chance to watch Vermont chairmaker Dave Sawyer at the lathe. His skew glided over the surface of the wood, leaving a glass finish—no sanding needed. His fillets were sharp enough to cut you, his beads were beautifully formed, and his V-cuts were crisp and clean right to the bottom. He did all this with the lathe running at a moderate speed. And it looked like fun. He explained that the skew takes time to master, but no other tool leaves such a flawless surface. In the months that followed, there were times I sulked into the house dejected; my good wife would patch me up and point me toward the shop. At other times I would hit the sweet spot, and that kept me inspired. In hindsight I see the time I put in learning the skew as a small sacrifice that pays off now every time I switch on the lathe.

Get it sharp

You can get away with just one skew, but I use two ½-in. skew chisels. One is ground in a straight line, and the other to a slight convex arc, which makes the center of the cutting edge more prominent and tucks the heel and toe back a bit. With the arced skew you have more control

TWO TYPES

STRAIGHT-GROUND

With toe prominent, the straight-ground skew excels in making V-cuts.

Toe

ARCED

With the center of the cutting edge prominent, the arced skew is best for beads.

Toe



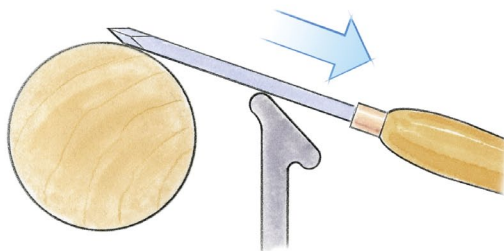
Keep the skew sharp



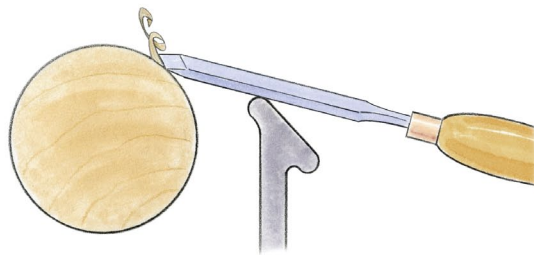
Buchanan uses a light touch with an aluminum-oxide wheel on a slow-speed grinder (left) to hollow-grind both sides of the skew chisel's tip. He swings the handle sideways to achieve an arced grind. To hone, press down on the bevel, making certain that both the tip and the back edge of the hollow grind are in contact with the stone (right).

Planing cuts

When making planing cuts and beads, the bevel must always be in contact with the workpiece to support and control the cutting edge.

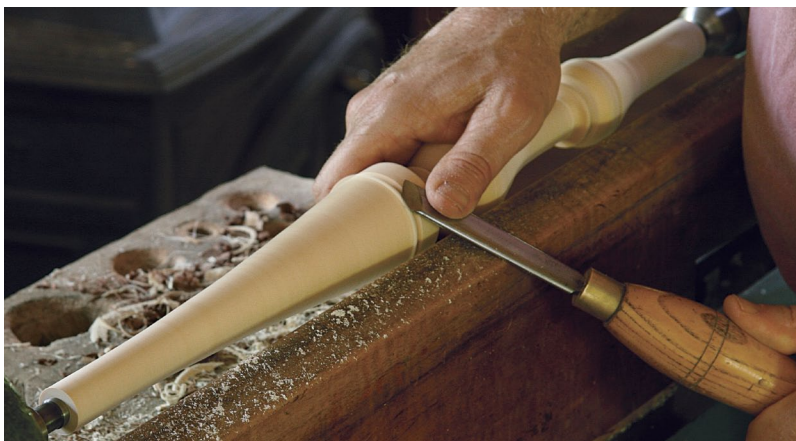


1. To start a cut, rest the shaft of the skew wide face down on the workpiece.



2. Then gradually draw the handle back until the tip engages and shavings appear.

TAPERED PLANING CUT

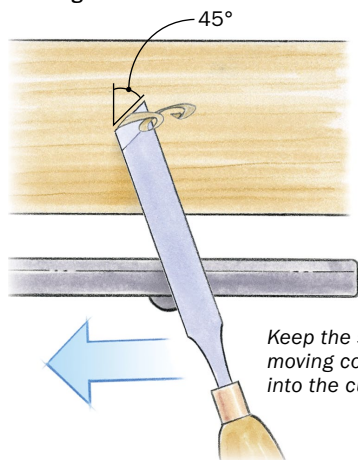
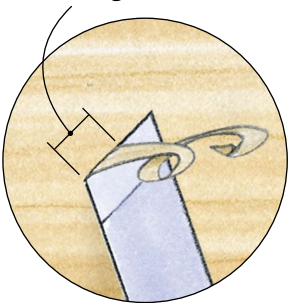


Tuck in with the heel. For a tapered planing cut, begin at the high point and cut steadily downhill with the bevel rubbing.



PLANING CUT

Safe cutting zone



For the cleanest cut, keep the cutting edge at about 45° to the long axis of the workpiece.

Keep the skew moving constantly into the cut.

and less risk of catches while making planing cuts and rolling beads. For V-cuts, which are made with the toe, the straight-ground skew is better. In either case your skew needs to be, using Sawyer's phrase, "fiendishly sharp." I hollow-grind my skews at a 12½° angle on each side (25° total); this makes it a little race car—it really zings across the wood. Whatever angle you choose, use a light touch and grind both bevels equally.

Once it's hollow ground, I hone the skew first on a 1,000-grit waterstone, and then on an 8,000-grit stone. During honing, both the very tip and the back edge of the hollow grind must be in contact with the stone. It can be difficult to balance on those two points, but it's essential to avoid rounding over the honed area at the tip. I re-hone very frequently while turning; 10 seconds or so at the stone keeps the skew razor-sharp.

Stay on the bevel

When making a planing cut or a bead, it's vital that the bevel is contacting the workpiece—without that contact, you can't control the depth of cut and you can't control the tool. To begin a planing or bead cut, lay the



Keep it constant. With the cutting edge angled at about 45° to the long axis of the workpiece and the handle tucked close to your hip, move your body laterally to make a smooth cut.

CURVED PLANING CUT



Start at the top. A hybrid of planing and bead cutting, the curved planing cut begins with the skew high on the turning (above) and heads downhill. To cut the section where the curve flattens (right), swing the skew's handle toward your body and move the cutting edge lower on the workpiece.



BEADS

A cluster of movements combine to create a bead. In a coordinated motion, the skew's handle is raised, swung sideways, and rotated while the shank stays in one spot on the tool rest—the pivot point. To cut the last third of the bead, the shank moves laterally along the tool rest.



1

Top dead center. Having roughed out the beads with a gouge, Buchanan refines them with an arced skew. Making sure the bevel is rubbing to support the cut, he begins at the very top of the bead and cuts downhill.

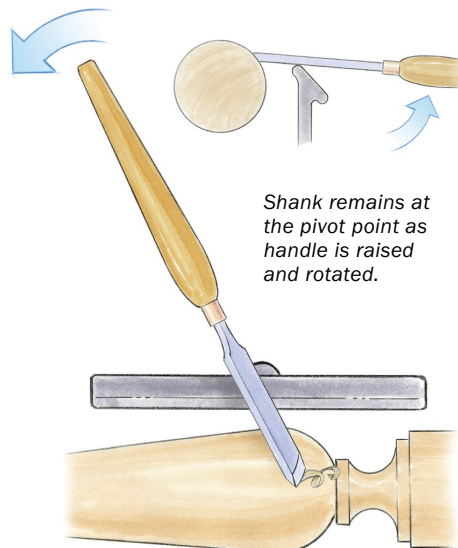
Start the bead at the top of the turning.

Pivot the skew from one point on the tool rest.

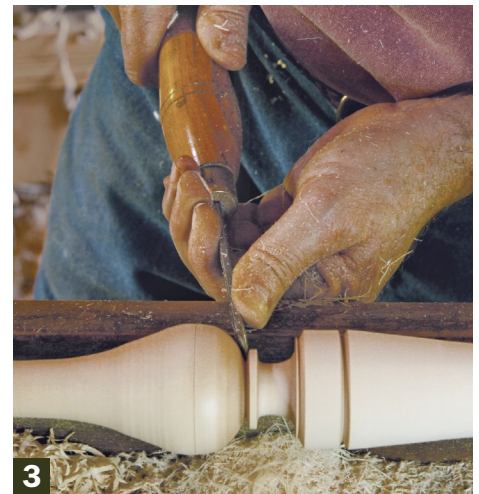


2

Lift and rotate. The first half of the cut is made without moving laterally along the tool rest. Keep the bevel rubbing and the cutting edge engaged with a combination of lifting, rotating, and swinging the handle.

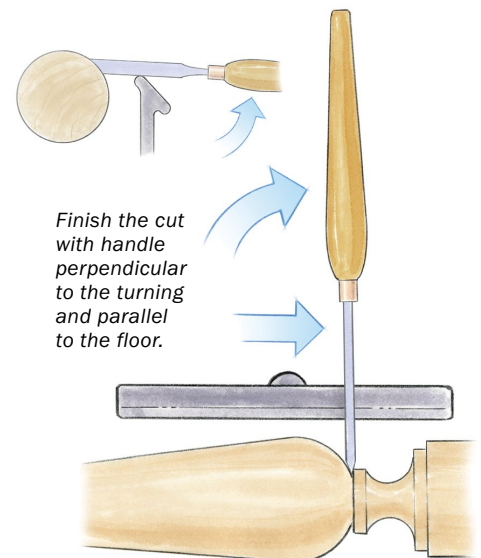


Shank remains at the pivot point as handle is raised and rotated.



3

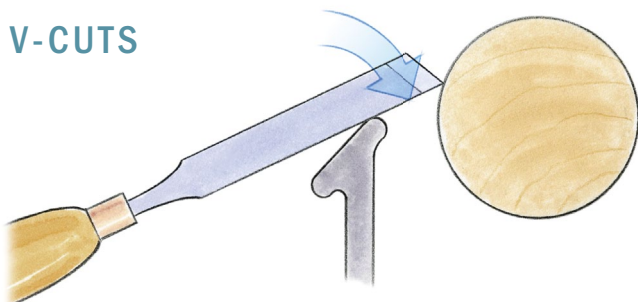
The lateral move. To finish the bead, continue raising and rotating the skew's handle but now move laterally along the tool rest as well.



Finish the cut with handle perpendicular to the turning and parallel to the floor.

Specialty cuts

V-CUTS



Lead with the toe and raise the handle to enter the turning.

skew on the rotating workpiece so the contact is just behind the hollow grind. Then gradually pull the tool back until the cutting edge engages. As soon as you raise a shaving, begin moving forward across the workpiece. The cutting should take place to the heel side of the center of the skewed edge. If you cut too close to the toe, the skew could catch. To shift the cutting zone toward the heel, rotate the handle slightly to lift the toe.

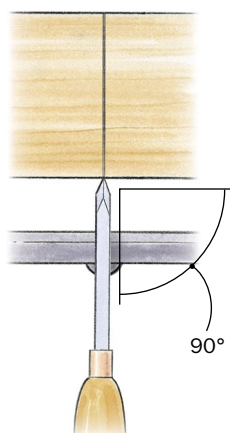
Beadwork can be befuddling

Beads are the trickiest shapes to cut. The bevel and the cutting edge both need to be in contact with the surface throughout the cut, so start by laying the bevel on the workpiece and gradually lifting the handle until the edge engages; then start rolling. Continue swinging and rotating the handle so the cutting edge and the bevel maintain contact throughout



1

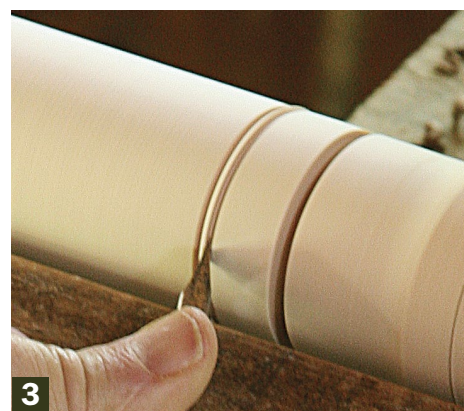
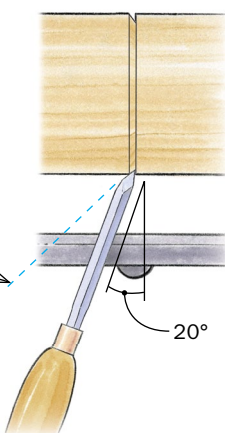
Plunge straight in. With the narrow edge of the skew on the tool rest and the toe down, hold the handle perpendicular to the long axis of the turning and push directly in. This scores the turning but doesn't cut shavings.



2

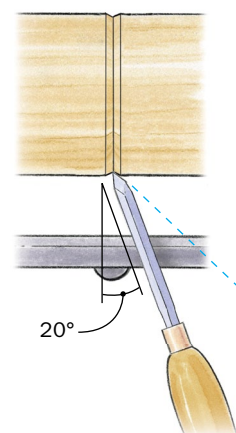
One angled wing. Create one side of the V-cut by swinging the skew's handle to the side and rotating it slightly to tilt the top edge of the blade outward, then push in.

Align outside bevel with direction of cut.



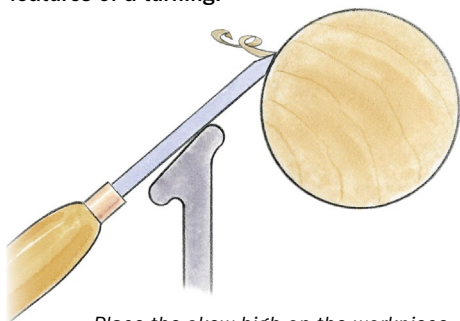
3

Complete the cut. Swing the handle to the opposite side to finish the V-cut. Take additional angled cuts to widen or deepen the V. On these angled cuts, only the tip of the toe should contact the wood.



PEELING CUTS

The peeling cut is a handy technique for sizing tenons and forming other flat features of a turning.



Place the skew high on the workpiece to produce a clean peeling cut.



Fast flattening. Keeping the handle low, use a peeling cut to quickly create a flat surface. Here the peeling cut is a preliminary step for making a bird's beak.

Online Extra

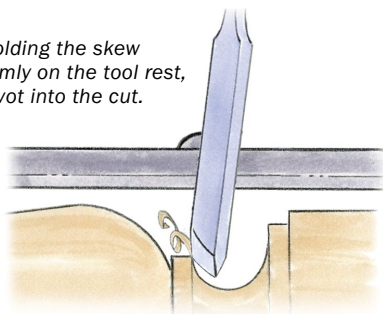
To see a video with Curtis Buchanan describing how he uses a skew, go to FineWoodworking.com/extras.

BIRD'S BEAK



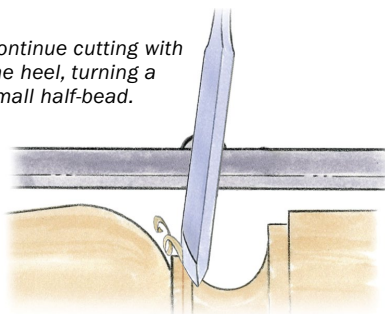
The bird's beak is half a bead. With no wood to support the bevel at the start, the cut begins with the cutting edge in midair.

Holding the skew firmly on the tool rest, pivot into the cut.

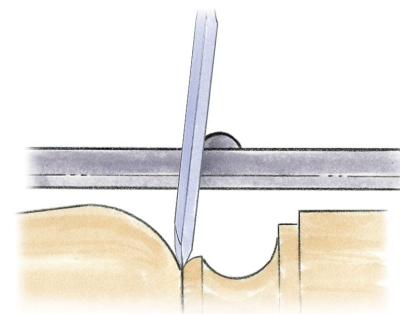


Lead with the heel. Use the point of the heel to raise a thin shaving, then roll the cut using only the heel.

Continue cutting with the heel, turning a small half-bead.



End at 90. Finish with the heel down, the blade's wide faces vertical, and the skew pointing directly into the cut.



the cut. Eventually, to maintain contact, you'll need to start moving the tool along the tool rest. Finish the cut with the skew handle perpendicular to the workpiece and the wide faces of the blade vertical. It's more complicated to explain it than to do it, but you'll soon get the hang of it.

The vital V-cut

The V-cut is often used as a finished detail in a turning, but it's also useful for defining the width and depth of a number of other shapes, and for providing tool access while creating them. It's a simple, three-step procedure. First, make a scoring cut with the skew held at 90° to the axis of the turning and the blade resting on its narrow edge, toe down. You're not really cutting wood here, just parting the wood fibers. Next, swing the handle 20° or so to one side, and rotate the handle very slightly so the top edge of the blade tilts outward. Align the outside bevel with the direction of cut and push the toe into the turning. Then swing the skew to the other side of the centerpoint and make a mating cut to establish the V.

Small essentials

Fillets are flat sections separating other elements of the turning. You can rough-size a fillet by making a peeling cut. To complete the fillet with a very clean surface, take the last bit of material by swinging the handle so the heel angles in and takes a slicing cut.

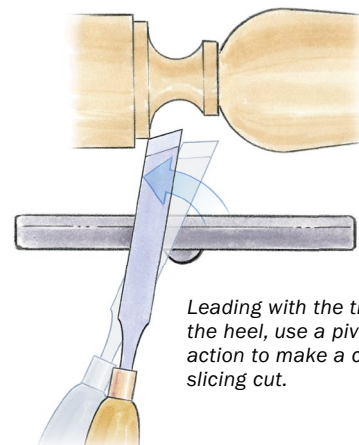
Bird's beaks are a bit tricky because there's no bearing surface for the bevel at the start, so you have to enter the cut in mid-air. With the skew's wide face resting flat on the tool rest, swing the handle and catch a wisp of wood with the heel of the skew. Then roll the bead using only the heel. □

Curtis Buchanan, of Jonesborough, Tenn., has turned some 20,000 chair legs.

FILLETS



A clean-cut fillet. To produce a beautifully crisp fillet, first reduce the diameter with a peeling cut. Then finish by pinning the skew's shank to the tool rest and swinging the handle sideways to take a light slicing cut.



Leading with the tip of the heel, use a pivoting action to make a clean slicing cut.



DAVID BEKER

Philadelphia, Pa.

Beker took a traditional dresser shape and wrapped a live-edge slab around it to create this piece, which he calls a modern tallboy. "I wanted the two elements to connect to each other, with each needing the other to be a complete piece of furniture."

WALNUT AND POPLAR,
15D X 24W X 60H



THOMAS SCHLACK

Glen Gardner, N.J.

This chest was designed for an entry hall, to set the stage for a client "whose residence is more of a museum of modern art and architecture than a home." Two lights hidden within the piece rise up from the top to illuminate the hall.

POMMELE SAPELE, MAPLE, WENGE, HOLLY, AND EBONY, 18D X 30W X 44H



RICHARD CIUPKA

Mont-Royal, Que., Canada

When Ciupka saw a table by Belgian Art Nouveau furniture designer Gustave Serrurier-Bovy (1858-1910) at a Paris museum, he was inspired to build a similar one, but with a glass top instead of wood.

MAPLE, 36W X 80L X 31H



FEDERICO MENDEZ-CASTRO

Vancouver, B.C., Canada

Mendez-Castro combined two powerful design philosophies when making his desk. The lines are Mid-Century Modern, he said, while the shopsawn veneer parquetry was influenced by the work of James Krenov.

WALNUT (CLARO, BLACK, AND SOUTH AMERICAN), WHITE OAK, SPANISH CEDAR, 32D X 54W X 30H

Photo: Stephen Mitchell

BOB TUTTLE

Tehachapi, Calif.

When the tool chest company Gerstner & Sons produced a special chest to celebrate its 100th anniversary in 2006, Tuttle bought one for his wife. Then recently, as he was setting up his new shop, his daughter was setting up a jewelry studio. So he built matching chests—one for him, one for her—inspired by the Gerstner chest and using hardware bought from the company. “I incorporated the idea of the commemorative medallion by using silver inlay with our names on each chest.”

WHITE OAK, WENGE, MAPLE, EBONY, 12D X 26W X 16H

Photo: Les Siemens



DOUG LAWRENCE

Nashville, Tenn.

Inspired by his work as an environmental conservation volunteer for the Peace Corps in Paraguay, Lawrence carved this table and chair set to look like trees. “My idea was to create a finished product that related back to the natural material from which it came.”

WHITE OAK, 21 DIA. X 25H (TABLE), 19D X 21W X 36H (CHAIR)



DESIGN IN WOOD

Design in Wood, sponsored by the San Diego Fine Woodworkers Association, takes place every summer. This year the 35th annual show attracted a wide range of fabulous work in 25 different classes. Here are a few of our favorites. To see more pieces from the show, go to sdfwa.org.



THOMAS S. STOCKTON

Montgomery Creek, Calif.

Like much of his work, Stockton says, this walnut buffet was inspired by federal furniture. "I really enjoy the shapes and proportions they used but usually feel it is overly ornamental ... although my using abalone for the inlay and highly figured grain patterns is just as over the top in a different way."

CLARO WALNUT, EBONY, ABALONE, AND MOTHER OF PEARL, 16D BY 42W BY 35H

WILLIAM GOURLAY

Anaheim, Calif.

This classical guitar was inspired by "La Emperatriz" (the empress), an 1884 Spanish guitar by Antonio de Torres. Gourlay replicated it from detailed photos he found in a book.

BRAZILIAN ROSEWOOD, EUROPEAN SPRUCE, SPANISH CEDAR, EBONY, HOLLY, AND NATURAL AND DYED VENEERS, 4½D X 14½W X 39½H



DANIEL HERBST

Chula Vista, Calif.

Herbst collaborated with Jessica Van Arsdale on this bench, which is called "Land, Water, and Air." The two specialize in using reclaimed lumber, and this bench uses a slab from a standing dead 100-year-old eucalyptus they found in Yorba Linda. "We added an epoxy resin casting inspired by coastal water and air." For more on their work, go to FineWoodworking.com/extras.

BLUE GUM EUCALYPTUS, RESIN, AND RECLAIMED STEEL, 14D X 60W X 18H





KEN COWELL

Yorba Linda, Calif.

This dresser, "Tree of Life," won the Best of Show award given by *Fine Woodworking*. It's the second piece in a bedroom set Cowell is making for his wife, Elly. "I wanted the marquetry picture to be the central focus, uninterrupted by anything, including drawer knobs." The center drawers open using finger pulls on both sides.

MAHOGANY, EBONY, WHITE OAK, AND VARIOUS MARQUETRY WOODS,
21D X 73W X 50H

WILLIAM BARDICK

Temecula, Calif.

"One day last winter, my wife and I were wandering around town in Taos and came upon a tall, narrow boulder with a pile of snow perfectly balanced on top. As I stared at this boulder, I began to see a dresser." This tall six-drawer dresser and mirror grew out of that inspiration.

MAHOGANY, MAPLE, PURPLEHEART,
19D X 25W X 76H



CHANCE COALTER

San Diego, Calif.

Although it looks like a sculpture, this chair is "first and foremost, a functional object," Coalter says. It is made using a form of stack lamination known as bricklaying, and the laminations make it "incredibly strong; in contrast to furniture with traditional joinery, there is no weak point in the form."

BLACK ACACIA, 24D X 18W X 38H



Cutting the bridle joint

BY CHRIS GOCHNOUR

In a recent *Handwork* I demonstrated how to cut the half-lap—and its close cousin, the T-lap (*FWW* #252, p. 74). It's a great joint for honing your hand-tool skills because it teaches the fundamentals of accurate layout and cutting technique.

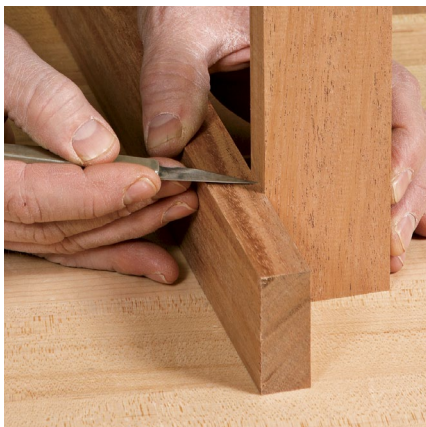
Here I'll demonstrate how to cut the bridle joint, a strong joint that's widely used in door and face frames. The anatomy is

simple. A tenon on the rail fits an open-ended mortise on the end of the stile. Cutting the joint is another great exercise for your hand-tool skills. There are a few quirks to laying out the joint, but I'll show you how to do it, then I'll demonstrate how to cut the housing and tenon to create a perfect-fitting, strong joint.

Chris Gochmour is a contributing editor.

Start with the mortise

Accurate layout is the critical first step. From there, three cuts remove the waste with just a bit of material to pare to the lines.



Mark the baseline. Knifing directly from the rail's width, make a tick mark on the corner of the stile.



Scribe a line. Aligned with the tick mark, this line shows where to stop the mortise gauge in the next step. Carry it over one face and onto the second edge.



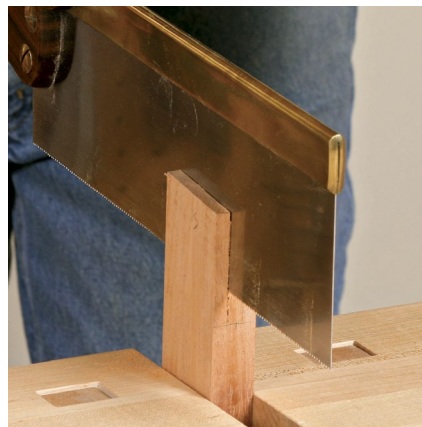
Lay out the cheeks. Start at the pencil line on one edge, come up and over the end grain and then back down on the second edge, stopping at the pencil line. Reference the fence on the stile's front face.



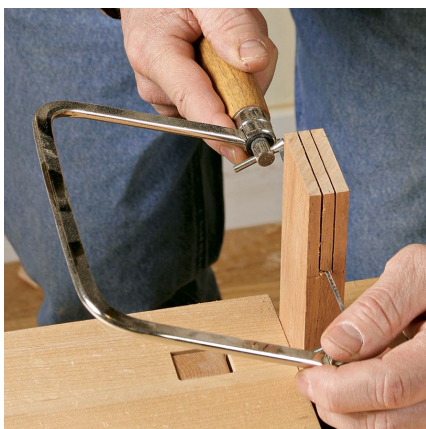
Knife the shoulder on the second edge. Guiding the knife with a square, cut a line between the mortise gauge's lines.



Start the cheeks at an angle. Cut a shallow kerf across the end grain, working down the edge of the mortise until you've cut a sloped kerf. Flip the stile around and make the same cut on the other edge.



Level off to finish off. This cut takes care of the triangular bit of waste and makes it easier to get a flat bottom at the shoulder.



Remove the waste. A coping saw quickly cuts across the shoulder. Be sure to cut proud of the knifed shoulder lines.



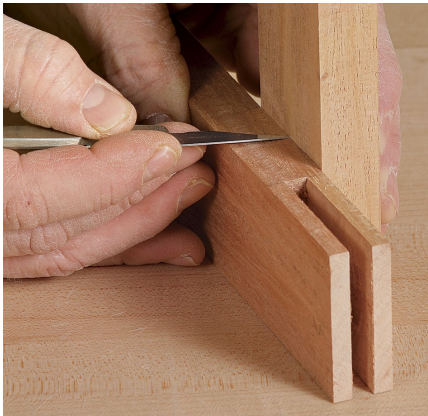
Pare the shoulder. Work in from both edges to create a flat shoulder.



Shave the cheeks, too. Use a wide chisel and come in from both sides to work down to the lines cut by the mortise gauge.

Cut and fit the tenon

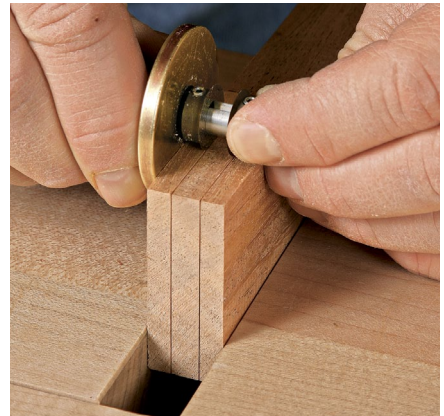
The top edge and end of the tenon are visible in the assembled joint, so take care when sawing and trimming the cheeks. Work to your layout lines, but not inside them.



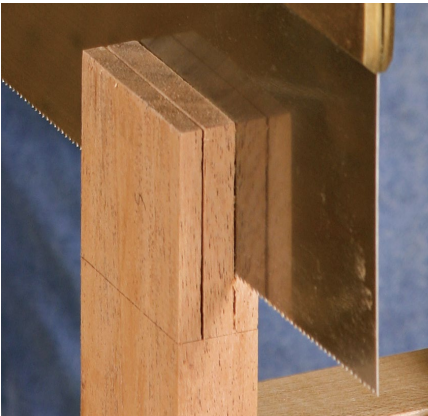
Mark the tenon's length. This time mark directly from the stile's width, making just a short tick on the rail.



Mark the shoulders. Working from the tick mark you just made, make a cut along the shoulder on all four sides.



Lay out the cheeks. Register the gauge's fence against the rail's front face, and cut the two edges and the end grain.



Saw the cheeks. Use the same technique you did for the mortise: across the end grain, angled down both edges, then flat across for the bottom.



Create a shallow shoulder. Use a wide chisel to cut a shallow V-groove on both sides. This guides the saw for the shoulder cut and gives you a clean shoulder.



Cut away the cheek waste. Keep the saw level so you don't cut too far on either edge. The waste should fall away freely, or you can pop it off with a chisel.



Pare the shoulder. Clamp the rail vertically and use the clean shoulder (created when you pared the V-groove before sawing) as a guide.



Clean up the cheeks. A shoulder plane takes controlled shavings as you work down to your layout lines.



Hand cut and tight. The payoff for careful layout and working meticulously to those lines is a gap-free joint that is as strong as it is beautiful.

MIGHTY MINI-SCRAPER

Carbide Blade Features Four Sharp, Long-Lasting Edges

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You can scrape dry wood using a pushing motion for an aggressive, bulldozer-like cut. To get a finish quality cut, use a pulling motion.

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removal. It's also an effective wood scraper that can get into tight corners. Our standard blade is ground with a slight camber to help prevent marring your work. An optional, perfectly square blade is available for use in square corners.

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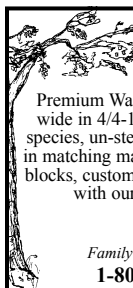
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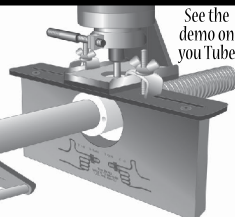
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how they did it



The zipper and the feather. The dark fissure in the birch bark—the zipper—where the trunk separates, telegraphs the fountain of feathery grain within.



Billets into blanks. After cutting the crotches into billets on the bandsaw mill, then air-drying the billets, Lamb slices the wood into veneers on the bandsaw.

Fabricating frost

BY JONATHAN BINZEN

David Lamb's frost-patterned marquetry (see the back cover) begins with birch crotch sections 3 or 4 ft. long. When he's collected a few, he takes them to a friend with a bandsaw mill. One cut through the crotch reveals whether the figure within is strong enough to warrant the effort of cutting it into billets. Lamb air-dries the billets for some months on a hot, high shelf in his shop, then cuts them into veneers. He likes to get the veneers down to about 6% moisture content, using a moisture meter to check and a microwave oven to finish the job, if necessary. Then he sends them through a thickness sander. Lamb likes birch for its warm tone and for the connection to so much American period furniture in which birch was used as a substitute for satinwood. He also doesn't mind that birch is so commercially neglected that he often gets the material for free.



Nature's templates. Having drawn out the marquetry pattern, Lamb cuts up the component pieces to use as templates, which he'll glue to the veneer.



Careful placement. Lamb orients the paper templates to take best advantage of the crotch figure. He keeps an extra copy of the overall drawing and numbers all the parts to guide both grain selection and reassembly.



Perfect joints without a knife. After rough-cutting on the bandsaw, Lamb makes finish cuts with a sliding miter saw. His sandwiching jig, made with $\frac{3}{4}$ -in. MDF, keeps the marquetry pieces still and the joint lines perfect.



Piece it up. Lamb edge-glues adjacent pieces, clamping them with tape on the show face and the underside. Then he'll cut any joints that cross both pieces.



Nearly in the bag. With the marquetry for one quadrant of the design complete, Lamb peels off the tape on the underside, then scrapes the joints flat to prepare for gluing the sheet to a substrate in the vacuum bag.

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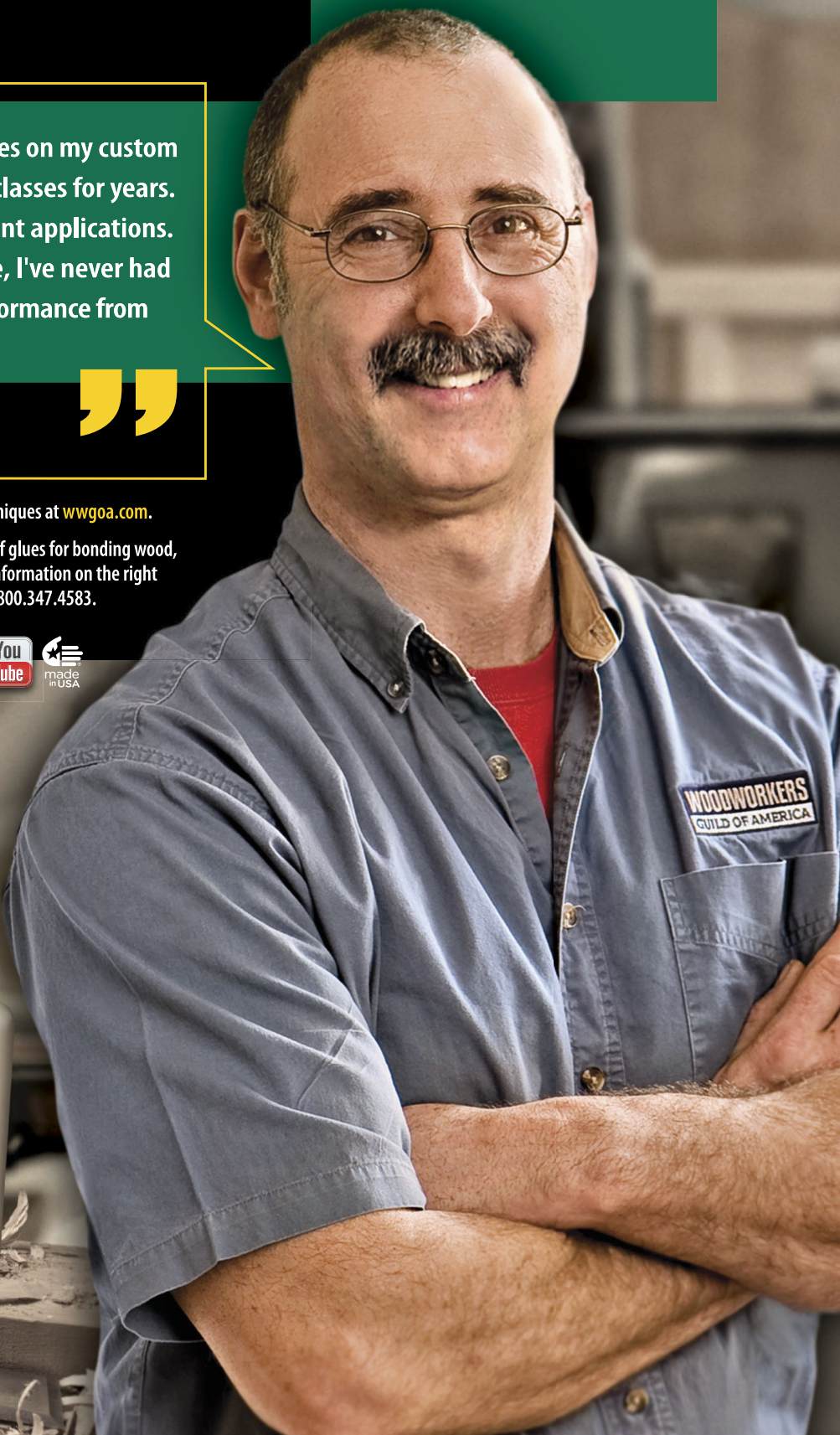


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Black Ice

Growing up in New Hampshire, David Lamb was fascinated by the feathery frost patterns that often filled his bedroom windows on winter mornings. He was beguiled by similar fractal patterns where ice formed on puddles and ponds, or where currents converged on the surface of a stream. A few years ago, four decades into a celebrated career building furniture with roots in 18th and 19th century American work, Lamb began trying to capture these patterns in wood. Using veneers he sliced from the crotch sections of birch trees, he pieced together patchworks of sharp-edged polygons in arrangements that blended feathery figure with abstract geometry, and symmetry with asymmetry. For this cabinet, built to honor the 100th anniversary of Maine's Acadia National Park this

year, Lamb carved a scene on the interior door to represent spring, summer, and fall in the park, and he ebonized the marquetry of the crotch birch exterior to recall the black ice of a deep New England winter.

—Jonathan Binzen



Photos: Bill Truslow

How They Did It Turn to p. 86 to see how Lamb creates the marquetry patterns on his furniture.



See more of Lamb's marquetry and furniture design and to hear him discuss it, go to FineWoodworking.com/extras.