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Popular Woodworking

OCTOBER 2022 | #267



FIVE

SPECIALTY CHISELS

Turn to page 22 to reveal what they are.

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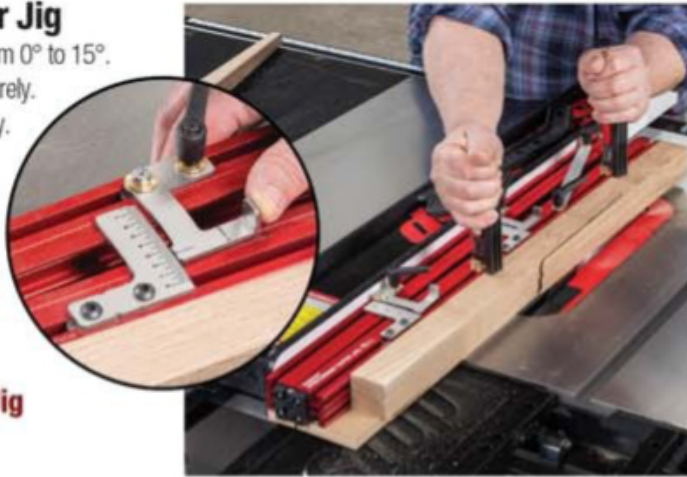


Table Saw not included.

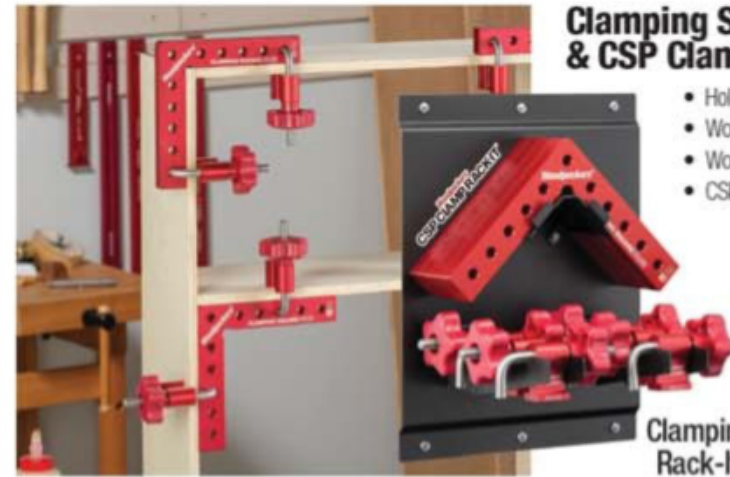
Precision Taper Jig

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AutoScale Miter Sled
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*NOTE: The Festool, Domino, SawStop, Powermatic & Biesemeyer brand names are the registered trademark of the respective company and is not associated with Woodpeckers, LLC.

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BY JIMMY CLEWES



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FROM THE EDITOR

Woodworking Influences

By Logan Wittmer

A few months back, a question came through on our podcast (by the way, we do a weekly podcast—"The ShopNotes Podcast") about woodworking influences. It was a timely subject, as I was just getting ready to take a trip to Santa Rosa, California, to visit David J. Marks and shoot an upcoming magazine feature with him.

Many people got their feet wet woodworking while watching Norm and Roy. Not I (though, I did watch both of them). Instead, I would look forward to Thursday nights when I could catch David's show "Woodworks" on DIY Network. David's work was one of the biggest woodworking influences when I was younger.



Over this summer, I've had the fortune of traveling to various shops, like David's, and shoot photographs for upcoming projects. Hopefully this leads to you seeing less of my name throughout the magazine and more of the woodworkers that helped shape the current generation. So, who's work have you followed and admired as a woodworker, and who are your woodworking influences? Cheers.

Logan Wittmer

ABOUT THE AUTHORS



JIMMY CLEWES: *Carved Rim Bowl* –pg. 46

Hailing from England, Jimmy Clewes now resides in Las Vegas with his wife Mary and dog Seamus. Jimmy has spent the last thirty-five years traveling the world teaching and demonstrating woodturning. His quick wit and straightforward approach have made him a favorite of students from across the globe. When not hosting students at his home in Las Vegas, Jimmy's often found with a gold pan in hand, prospecting in the Vegas desert.



ROB PETRIE: *Working With Defects* –pg. 56

A lifelong woodworking enthusiast, Rob Petrie attended the University of Iowa, majoring in journalism and writing. Enjoying all aspects of woodworking, Rob has been on a particular carving kick lately. He enjoys the feeling of shaping the wood by hand and listening to what the grain has to tell him. If he's not in the shop or the office, you can probably find Rob biking or camping somewhere across the Midwest.



WILLIE SANDRY: *Exact Width Dado Jigs* –pg. 30

Hailing from the Pacific Northwest, Willie Sandry is a long time fan of Arts & Crafts furniture. He enjoys taking inspiration for his projects from antique furniture exhibitions as well as "old barn finds." Never one to do a job part-way, Willie has developed a vast skill set to elevate his projects. From sawing lumber and kiln drying it to finishing a chair with top-notch upholstery, Willie sees a project through from the start until finish. YouTube: The Thoughtful Woodworker.

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■ Connect

■ WORKSHOP TIPS

Longer-Lasting Steel Wool

It's always bugged me that steel wool pads don't last longer. Each pad is made of thousands of sharp-edge steel strands. The problem is, they're packed together so tightly they clog up right away, and most of them never get used.

I'm a die-hard tightwad, so I came up with this trick to extend the life of my steel wool. I unroll each pad and shape it into a fluffy ball before I use it. As the ball gets flattened, I stop and gently pull it back apart. Re-fluffing exposes new sharp edges and releases wood dust and broken-off bits of worn-out steel wool. — *Denny Suttan* (Wilmington, NC)



PHOTO BY BILL ZEHLKE

Make Your Own Wood Putty

Tired of never having fresh wood putty when you need it? You've probably opened a can and found its contents dried out, unusable, or the wrong color.

If you plan to use a clear finish, you can make your own putty from sanding dust (save some when you're sanding your project) and varnish. Just mix the two into a thick dough by adding the varnish to the dust, a little at a time. Varnish makes a good binder. Even though it takes a long time, once dry, it stays dry. Shellac and lacquer may dry faster, but putty made with them tends to dissolve under a fresh topcoat of the same finish.

Apply the dough with a putty knife and let it dry (at least overnight) before sanding. Under a clear finish, this putty closely matches the wood tone, although it may be a slightly darker color.



PHOTO BY MIKE HABERMANN

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WORKSHOP TIPS

Easy-Tighten Bar Clamp

Bar clamps are great tools, but sometimes it's tough to get a good grip on the small wooden handle. To get extra torque, I drilled a hole in the handle and inserted a dowel. It gives me a lot more twisting oomph with a lot less hand strain. I drilled the $\frac{3}{8}$ " hole $\frac{3}{4}$ " from the bottom of the handle to avoid hitting the bolt that extends the top of the handle. (The dowel is $\frac{3}{8}$ " diameter x 5" long.) — *Jon Stumbras*



Organized Storage for Short Stock

My storage bin makes it easy to find the perfect offcut by automatically organizing pieces by length. It has one fixed center divider and six that I can quickly add or remove, to customize the storage as my collection of short pieces changes.

I made the box from a sheet of plywood cut into two 4' x 4' pieces. I cut one piece in half to create the 24" by 48" bottom, the 24" x 18" tall front, and 24" x 30" tall back. I cut the other 4' x 4' piece diagonally to form the two sloping sides. The 4" wide dividers were cut from scrap stock. They install in stopped dadoes routed in the sides. I mounted four heavy-duty swivel casters under the bin, so it steers easily. — *Serge Duclos*



Basic Rules of Epoxy

Epoxy is a two-part glue: a hardener and a resin that combine to form a hard, durable plastic. It's important to follow the manufacturer's recommendations and use correct ratios of resin and hardener to ensure the glue cures fully and reaches its maximum strength. Epoxy generates heat as it cures; in fact, the heat helps it cure. The larger the batch, the more heat it generates. It's best to mix small batches to maximize your working time. If you need a large batch, pour the mixed epoxy into a large flat container, such as a pie pan. This has a cooling effect and increases your work time.

Working with epoxy does require that you take some precautions. Always wear protective clothing and safety glasses when you work with epoxy. Nitrile or Latex gloves are a must. Be sure to work in a well-ventilated space or wear a respirator. Be careful to dispose of used rags in a covered metal container.

PHOTOS PROVIDED BY THE AUTHORS



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NEW TOOLS

18V ONE+™ Random Orbit Sander

Usually, the first steps of reviewing a tool are taking it out of the box, charging the batteries, then photographing the tool while it's still in pristine condition. However, the new *Ryobi* 18V ONE+ Random Orbit Sander didn't get quite that type of treatment. It showed up right as I was undertaking a handful of outdoor projects, like refinishing a neglected chaise lounge on the backyard patio. I had forgotten to charge the batteries for my other cordless sander, and I had no desire to run extension cords, so I grabbed a fresh *Ryobi* battery off the charger (it's also sold with a battery and charger under the model #PCL406K1) and immediately went to work.

While this meant I had to skip the usual photo session, it was a great opportunity to get a bunch of real-world use right off the bat. I was able to use the sander in a variety of situations, holding it at different angles and with different grits of sandpaper. Over the course of the weekend, I found several strengths

and two weaknesses. In the positive column, the sander is comfortable to hold, very well-balanced, and a 4ah battery lasts for quite a while under constant usage. *Ryobi* claims 40% reduced vibrations, and even after using it for long stretches of time, I didn't notice any phantom vibrations or discomfort. I had no complaints with the evenness of the sanding or how quickly the material was being removed. The fixed 10,000 OPM (orbits per minute) speed sits right in the middle range for most random orbit sanders, and I never felt the need to change it for the tasks I was working on.

That being said, I still need to put the lack of speed control in the negative column. Some other sanders at this price point have that feature, and it's nice to have when the need arises. The other annoyance I had was that the dust collection bag would sometimes fly off unexpectedly. The sander actually did a great job of sucking up the dust, so every time the bag was launched it was accom-



■ 18V ONE+™ 5" Random Orbit Sander PCL406B

Ryobi Tools

RyobiTools.com

Price: \$59 (bare tool, 3 sheets of sandpaper)

panied by a large cloud of fine particulate. I can't seem to find anyone else with this issue, so it could just be an unfortunate manufacturing defect on my tool. — *Collin Knoff*

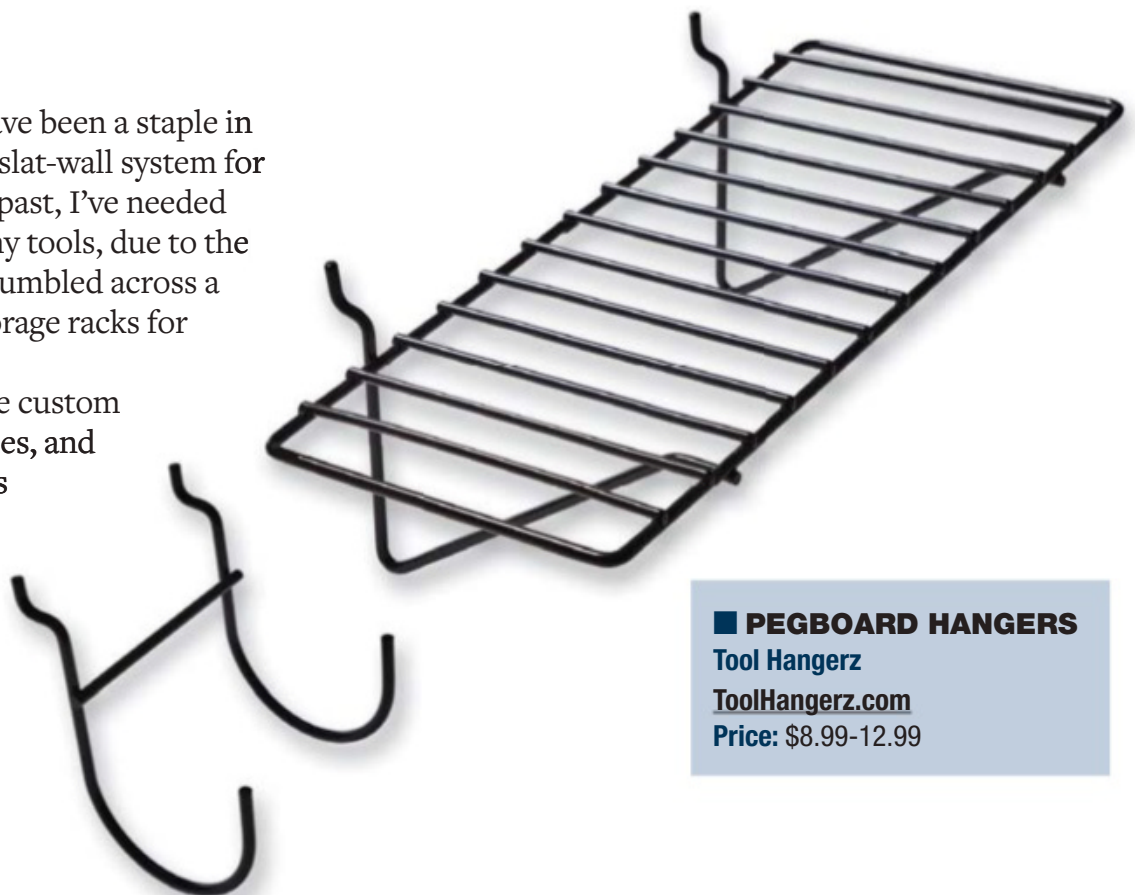
PHOTOS BY THE AUTHORS

Tool Hangerz

Pegboard and slat wall organization have been a staple in shops for years. In my shop, I utilize a slat-wall system for most of my power tool storage. In the past, I've needed to make custom holders for many of my tools, due to the lack of options. Recently, however, I stumbled across a company, *Tool Hangerz*, that makes storage racks for a variety of power tools.

The racks, as you see to the right, are custom designed to hold drills, routers, batteries, and many other cordless tools. The holders work in both slat walls and pegboard, but the company also makes direct-mount style holders that screw to the wall. Overall, it's a great option for tool storage if you utilize pegboard or slat wall-type units in your shop.

— *Logan Wittmer*



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NEW TOOLS

FitFinder

Dialing in a saw blade, router bit, or other cutting tool to make a cut exactly half the depth of stock seems like a simple task. However, if you've ever spent time dialing in a dado or rabbet depth or test fitting a lap joint (such as a half lap), you'll know that it can often be a tedious task. The new FitFinder from *MicroJig* makes setting up a blade height a snap.

The premise behind the fit finder is that it has two sliding, yet affixed to each other, arms. One slider is raised up, and your workpiece is slipped underneath it. When you press down on the arm, the sliding action of the indicator arm lowers down to precisely the halfway point (in thickness) of the stock. As you can see in the photo, you can then use the small arm to help set up the machine that you're working on. The base of the FitFinder has a pair of embedded magnets that help hold everything down firmly to the saw surface for a precise setup.

While it's easy to see the benefits of this tool at the table saw, I think some of the more interesting applications come over at the router table. With the FitFinder, you're able to quickly and easily center router bits on stock. This is especially helpful when you're setting up tedious bits such as bird's mouth bits, finger joint bits, and more, where



having the bit perfectly centered is critical.

While looking at the FitFinder, you may be tempted to use it to simply find the center (thickness) of stock. However, with its 3" height capacity, you can easily mark the center of stock for rails and stiles in your projects. Overall, it's a nifty little tool (like all *MicroJig* products) that can be stored out of the way, under the wing of your table saw.

— Logan Wittmer

Dremel® 7350 Rotary Tool

A few years ago, I reorganized all of my toolboxes based on the primary use of the tools inside. One for electrical, one for plumbing, one for general use, etc. Whenever I have a task in one of those areas, I grab the specified toolbox and get to work. I often find myself grabbing my *Dremel* as well, especially when doing renovation work where a small cut-off wheel or grinder is often useful. The *Dremel* 8260 made this process a lot easier by being battery-powered, but the new 7350 takes portability to new heights while also being inexpensive enough that I might just add one to each toolbox.

While the aforementioned 8260 sits on top of the *Dremel* range, the 7350 is their new entry-level model. It features a single-speed 12,000 RPM motor and an internal USB-charge battery in a package that's less than half the size and weight of its big brother. Oh ... it only costs \$30! There are definitely some concessions to that price point—there's no battery meter, for example. But \$30 is nothing in the world of tools.

The best part is that it doesn't feel like a compromised option. It just acts like a normal *Dremel* during regular use. There are a few tasks it's not well suited for, like cutting through thicker metal, but I spent an hour doing some grinding and polishing without

an issue. I especially appreciated how lightweight and comfortable it was to hold. If I had one thing to complain about, it would be the fact that it uses a micro USB to charge instead of the now-common USB-C, but that's not a deal-breaker by any means.

For now, the 7350 resides in my general use toolbox, between the electric screwdriver and a large crescent wrench. But I suspect it won't be long before I pick up another one (or two) as impulse buys to spread around to my other toolkits. — Collin Knoff

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PHOTOS BY THE AUTHORS & MANUFACTURERS

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■ In The Shop

5 Must-Have Clamps For Your Shop

A well-equipped shop will have a variety of clamps for different situations. Here's our favorites.

By PW Editors



I think that you've probably heard the saying that “a woodworker can never have too many clamps.” Heck, you may have even used that as an excuse (or affirmation) about buying additional clamps. I won't tell. However, I feel as though a better saying would be “a woodworker can never have too many of the right clamps.” What I mean by that is an entire shop full of clamps won't do any good if they don't work for the task at hand.

Now, I know that clamps aren't the coolest thing in the world. They're not a sexy, boutique handplane, fancy chisel, or the latest and greatest table saw. However, I think they tend to be one of the last things people think about while buying tools. You would be surprised by the number of shops I walk into full of the newest tools, only to find a hodge-podge of clamps with little thought given to their use or place in the shop ecosystem.

Don't get me wrong, though. If you find a box of clamps at a garage sale, and you need to have some form of consent to get clamps, I give you my full blessing to buy as many as you can fit in the back of your pinto. However, some of us work with limited shop space and storage for clamps. In this case, I've found that being strategic with clamp purchases and making sure that you have the right mix in your shop will alleviate some headaches as you're working on a project, and getting ready to glue up.

I am going to point out that these clamps are particular clamps and styles that I like to use, and you might find useful. I know clamps can be expensive, and some people are fans of buying mass quantities of cheap, discount store clamps. That's perfectly fine and acceptable. However, these are the styles that I like and what I prefer to keep on hand.

PHOTOS BY CHRIS HENNESSEY

■ F-STYLE CLAMPS

If I'm in my shop and someone asks me for a clamp, my first instinct is to grab an F-style clamp. This style of clamp is one of the most versatile clamps that you can have around, in my opinion. Not only can you apply a tremendous amount of force, depending on the style, but they're also available in a ridiculous amount of sizes.

One of my favorite sizes to keep on hand is the mini F-style (the *Semble* brand is shown here — lower left in the photo). These are my go-to for clamping on stop blocks at the router table, table saw, and miter saw. With a 2" depth, they also work well for clamping together plywood when you are laminating sheets together.

For general clamping tasks, a 4" clamping depth is about perfect. I keep a variety of bar lengths around, ranging from 8"-24". Depending on the size, these deliver about 800 lbs of clamping force and are the perfect way to apply precise clamping pressure. Not only do these work for clamping parts together during glue-up, but I'll often use them to hold portable tools to the bench (lower right photo). Generally, the longer the bar on F-style clamps, the more they will flex during use.



I'm not terribly picky about the brand of these clamps, as long as they're quality. I've found that *Bessey* and *Semble* are two of the best, in my opinion. I don't really care for the style that uses a spring trigger on the head. The *Bessey* and *Semble* use a cam-type action to lock the head on the bar. I've never had one of these slip or "go bad", whereas I've had a few older "trigger" styles that will start to slip. At that point, it's time they hit the garbage. These tend to be my go-to clamps for most things.





■ I-BEAM CLAMPS

I know that many woodworkers like to use pipe clamps. I, however, do not like them. I've found that gluing up a panel with pipe clamps will almost always yield black marks all over my workpiece. That combined with the heads always spinning and twisting around, and my hands ending up black — that's a nope from me.

Instead, for my panel glue-ups, or longer clamping needs, I use the *Bessey* I-beam clamps. I like the heft of them, and the lead screws on the heads are quick to adjust and apply great pressure. When it comes to doing a panel glue-up, such as this mahogany top, the clamps sit nicely on a bench, and I can get more than enough clamping pressure. While I do also like using the aluminum-style bar clamps (such as the ones from *Dubuque Clamp Works*), I feel like these I-beams have a slight edge in use. The bars don't bend like the aluminum ones, as the heads are slightly deeper.

Big bar clamps like these start to add up quickly as you buy them, so I try not to go too crazy here. Three clamps are usually good when gluing up a panel, but adding an extra clamp in there is not a bad idea, especially if you like to alternate directions of your clamps as you're gluing up a panel.

■ HANDSCREWS

Now here's a clamp that I feel like is the black sheep in most shops. If there's a clamp that doesn't get sufficient love, it's a handscrew. These clamps are pretty easy to find in flea markets and garage sales, but *Jorgensen* and others still make them new.

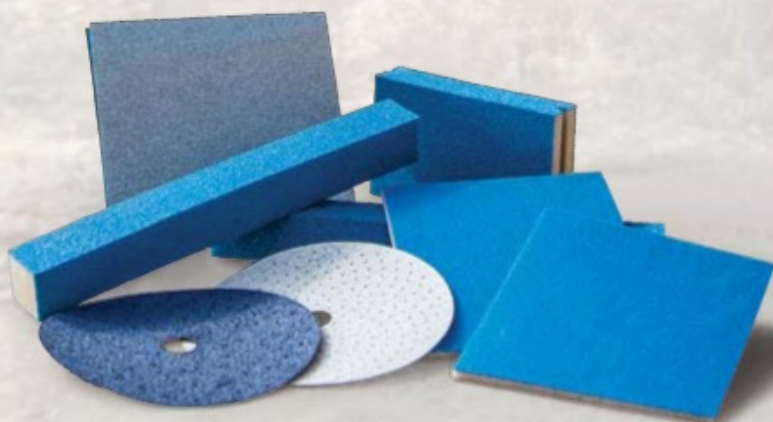
I won't classify handscrews as a workpiece clamp, per se. Instead, I use handscrews as an extra hand in most instances. They're great at holding large plywood panels on edge while working on assembly (top photo, below). You can even hold the handscrew to the bench with another clamp. Because the handscrew is a wood clamp, it's easy to modify the ends of the handscrew for specialty tasks. I have a few different handscrews that I've notched the jaws or drilled holes in for holding round parts. As you see in the lower photo, you can easily hold round parts at the drill press or bandsaw while keeping your hands out of the way. If you add a few of these inexpensive clamps to your shop, I think you'll come to appreciate them.



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■ PARALLEL CLAMPS

If the I-beam clamps are my panel glue-up clamp, then I'd label my parallel clamps as my drawer and case clamps. As the name implies, the wide jaws stay parallel to each other as you apply clamping force. These guys are perfect for clamping up cases, drawer boxes, and boxes... really anything that has the risk of being pulled

out of square while you're applying clamping pressure. The wide jaws also spread the pressure out more, so they have less likelihood of denting your workpiece with excessive clamping pressure (I'm guilty of denting parts with both F-style and I-beam clamps).

The new *Semble* parallel clamps have quickly become one of my favorites, as they have the unique feature that allows the handle to rotate 90° to give you extra torque while clamping. This is a feature that I appreciate, especially once my golfer's elbow starts to flare up during sawmilling season.

An additional feature that is rarely needed, but appreciated when the need does arise, is the ability of most parallel clamps to have the clamp head rotated. This means you can use the clamp as a spreader instead of a clamp. This comes in handy when you need to reverse a glue up when you realize that you forgot to slip a panel in place (ask me how I know).



■ 20" DEEP REACH CLAMP

Finally, this is a clamp that there's no substitute for. While technically, these deep reach clamps from *Bessey* are an F-style clamp, they're so specialized, unique, and absolutely useful that I felt as though they needed a section to themselves. These behemoths have the ability to reach far inland on a workpiece and apply clamping pressure where others can't. I find them particularly useful when working on a panel lamination, such as laminating stock together for thick panels, or holding a lid to the top of a case while assembling a project. They also work well on more delicate tasks, such as clamping runners in place in a deep case.

These aren't a clamp that gets used all of the time in my shop, so a pair of these heifers are about all that I usually need. They are heavy, you can get a ton of pressure out of them, but you don't want to be lugging them all over the shop. These clamps are available in depths of 10", 12", and 20" (all with 24"-length bars), however, I feel as though if you're going to get a deep reach clamp, you might as well just get the deepest reach one available. **PW** — *Logan Wittmer*



Specialty Chisels For Your Shop

By Logan Wittmer

These five specialty chisels will be the perfect compliment to your bench chisels.



The amount of woodworkers that I meet that don't have a good set of chisels nearly floors me. With the work I do, I couldn't survive without my sharp set of bench chisels. Between fine-tuning joints, paring waste, and cleaning up problem areas, they may just be the most used tools in my shop. However, there are certain tasks that my standard bench chisels just don't cut it (pun intended). In these instances, I'll often reach for a set of specialty chisels that I keep on hand. Over the next pages, I want to show you some of my specialty chisels that help get you out of some sticky situations.

FRAMING CHISEL

This first chisel that is in my specialty drawer is a large, 1 1/2" framing chisel. This wide, razor-sharp chisel is just what the doctor ordered when it comes to large paring tasks or taking a beating when hogging out waste. This particular chisel is made by *Barr Quarton* and, while an investment, a worthwhile one.

The benefit of a framing chisel, compared to a bench chisel, is that they have extra weight, length, and mass. This makes them perfect for heavy chopping tasks,

working with large timbers (such as the timber frame pieces above), and when making large paring cuts where the wide, long back of the chisel serves as a reference point. In fact, I used my Barr chisel to pare down the Kumiko pieces that are used in the wall shelf on page 44.

My large framing chisel may not be an everyday tool in my shop, but when I need the wide cutting edge, mass, and a razor-sharp edge, it's hard to beat.



BARR FRAMING CHISEL

BarrTools.com

Price: \$164

PHOTOS BY CHRIS HENNESSEY



**BLUE SPRUCE
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Price: \$115

PARING CHISEL

If my bench chisels are my most used tool in my shop, this next chisel is the second most used. That's my paring chisel. This wider, 1" blade is lightweight and is a paring machine (oddly enough). There are a couple of features of this chisel that make it adept for such a task.

The first, is the blade is long and thin. This thinness makes it feel nearly flexible. And, if you pick up a high-quality chisel, such as the *Optima* paring chisel from *Blue Spruce* (as seen here), the back will be ground and polished completely flat. This means that the back will feel as though it almost suctions down to the reference surface as you are paring.

Another feature that lends itself to this type of chisel is the low bevel angle. While most of my chisels are ground around 25-30°, my paring chisel is ground much lower. I didn't actually measure it, but it's probably in the 17-20° range. This lower bevel angle allows it to have a much keener edge and slice and pare grain more efficiently than a standard bench chisel. This does come with a drawback, however. A paring chisel is meant only for hand-guided work—never with a mallet.

So, how do I use a paring chisel in my shop? Well, one of the most common ways is with the use of a guide block, as you see above. I've found that an accurately made guide block (usually made of hard maple) serves as a great reference for the long blade of the chisel.

With a reference block and a sharp paring chisel, you'll be amazed

at how accurately you can pare miters on the ends of workpieces. Really, any time that you need to pare end grain, the paring chisel is worth its weight in gold.

When looking for a paring chisel, look for a flat back, a long blade (7-10" or so), and a comfortable handle. Some vintage styles that I've found have a crane (or swan) neck handle on them. While I could see these occasionally being useful if you were paring in the middle of a panel, I've never found the need to pull one of them out of my pile and sharpen them up. For my money, however, you can't beat the *Optima* paring chisel from *Blue Spruce*. Then again, I'm a *Blue Spruce* fanboy, so take that for what it's worth. Whatever you do, do yourself a favor and pick up a paring chisel. I've found a 1"-wide chisel to be a great size, but I could be convinced that a 3/4" size would be just as valuable and be able to get into dadoes and grooves.



SKEW CHISEL

This next chisel is actually a pair of chisels. And those are skew chisels. Not to be confused with skew chisels for turning, these are sneaky little buggers that provide some interesting benefits.

Skew chisels, such as these, function like a standard bench chisel, except with a little extra reach into corners. This can be particularly helpful while you're nipping away at a tight corner, such as the inside of a dovetail like you see here. Really, any time that you're trying to accurately reach into a tight corner, joint, or any other area that a standard chisel is just too big and bulky to get into.

Another benefit is that the skewed cutting edge acts like a skewed blade on a plane. That is to say that it slices grain at a shear angle. This leaves a much cleaner cut, especially when dealing with figured wood, timbers prone to chip out, or end grain. Of course, the chisel does need to be sharp to perform well (who would have thought?). Getting a skew chisel sharp can be a daunting task for some woodworkers due to the angle of the bevel.

If you free-hand sharpen, a skew chisel shouldn't be too crazy. The tip of the skew is about 30°, so you will just need to ride the bevel with the handle cocked off to one side. If you use a honing guide, you would not be

able to use a side-clamping version, such as the older *Ellipse* style (or more modern side clamps as well).



Instead, you will want to use a top-clamping guide such as the *Veritas* MKII. The very same reason that I dislike that guide is what makes it work well for a skew chisel—the chisel (or plane iron) can easily be rotated out of square, so you end up sharpening an unintended angle at the end of your tool. Obviously, this works well for a skew chisel.

Like the paring chisel before, skew chisels are only really meant to be used with hand pressure. These chisels are often available in left-hand and right-hand skews, such as the two from *Blue Spruce* below. I like my tools to match, so I grabbed the *Blue Spruce* set.

However, if you want to try one out before you invest in one, it's easy enough to grind an angle on the end of an old, unused chisel. Shape the angle and bevel at the bench grinder—just watch the thin tip, as it can quickly overheat. Final sharpening can be done with whatever method you wish. My *Blue Spruce* skews are 3/8", but if I were to order them again, I'd opt for the 1/4" set, as I feel like the smaller size would work better for narrow dovetails. When you're working in tight corners, skews are surely a handy little chisel to have in the toolbox.

SKEW CHISEL

BlueSpruceToolworks.com

Price: \$90



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W1876
W1879

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- Motor: 1 1/2 HP, 120V, 10A
- Cutterhead (W1876): 2" dia. spiral-style indexable inserts
- Cutterhead (W1879): 1 1/2" dia. straight-knife

⚠ WARNING! †¹



W1876
PICTURED

MADE IN AN ISO 9001
FACTORY



W1878

9" BENCHTOP BANDSAW

- Motor: 1/3 HP, 120V, 2.8A
- Max. cutting width: 8 1/8"
- Resaw capacity: 3 5/8"

⚠ WARNING! †¹



MADE IN AN ISO 9001
FACTORY

W1864

20" 5 HP PLANERS

- Motor: 5 HP, 220V, 23A
- Maximum cutting depth: 1/8"
- Maximum cutting dimensions: 20" W x 8" T

⚠ WARNING! †¹



MADE IN AN ISO 9001
FACTORY



NEW!

W1875

2 HP BENCHTOP TABLE SAW WITH STAND

- Motor: 2 HP, 120V, 15A
- Rip capacity: 31-1/8" R, 12" L
- Table size: 28 1/2" W x 23" D

⚠ WARNING! †¹



W1837

10" OPEN STAND HYBRID TABLE SAW

- Motor: 2 HP, 120V/240V, 15A/7.5A
- Rip capacity: 30" R, 15" L
- Table size: 40 1/4" W x 27" D

⚠ WARNING! †¹



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■ FISHTAIL CHISEL

I'm going to eat some of my words here for a minute. I've always said how I do not like one-trick ponies in my shop. Like my kitchen, everything in my shop needs to have more than one use, or it doesn't earn its place. The fishtail chisel is (for me) a one-trick pony that I absolutely adore when I'm doing half-blind dovetails.

As you can see from the photo to the left, the fishtail chisel gets its name from the shape of the cutting edge. The chisel blade is narrow and flairs out as it gets to the bevel. This fishtail shape is one of the easiest and most efficient ways to clean out the inside of half-blind dovetail sockets, as you see below. Without a fishtail shape, I've been in there with my tiniest chisels, utility knives, and really anything I could to clean out the remaining waste in the corners of the sockets. At the end of the day,

I usually end up heavily beveling the back of the tails, so if my socket wasn't clean, I could still get the joint together.

Once I added a fishtail chisel, my world was rocked. All of a sudden, I could easily follow the edge of the socket with the chisel and reach right into the corners. If you don't do half-blind dovetails, you may not see the need for a fishtail chisel. However, if it looks interesting, you can also grind an old chisel into a fishtail.

If you decide to try and grind one, my biggest piece of advice would be not to try and make the blade narrow the entire length like my *Blue Spruce*. Instead, concentrate on the area right around the bevel. All you need is a small neck before the bevel—it only needs to be narrow for about an inch or so. Like the previous chisels, hand pressure only on this guy. No mallet use on the fishtail—this dainty chisel isn't meant for that.



FISHTAIL CHISEL

BlueSpruceToolworks.com

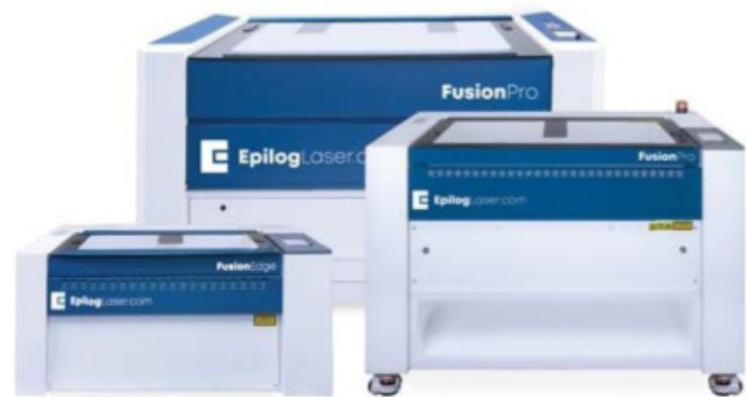
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■ BLUNTED CHISEL

Up until now, you've seen several of my nice chisels. I like good-looking tools. Sue me. However, this final chisel is a dirt-cheap, bargain bin chisel that gets a boat-load of use in my shop. And that's a blunted chisel.

Now, I want to give a little back story here. One of my favorite plane makers, Bill Carter, is the driving force behind this chisel (and, being English, his term is "blunted" instead of "dull"). I first saw Bill use a blunted chisel in one of his videos several years back, and I knew I had to give it a go. Here's the concept:

Any old chisel (I use a vintage *Wetherby* chisel) works for this. You simply take the chisel to the bench grinder and set your platform at 90°. Then, you blunt the tip ever so slightly (with the bevel face down). You're looking for about a 1/16" dull edge that is 90° to the back of the chisel. That's it. All of a sudden, you've made a chisel that acts like a scraper.

Bill totes this chisel for being used on hard, dense timbers. As you see in the photo above, I use this when making wedges for hand planes—here, I'm using it to scrape across the end grain of some Gabon ebony. The chisel only produces small curly shavings. It's not a large waste removal tool. However, it leaves a beautiful surface. The harder the timber, the better the surface it leaves. In fact, I've actually used this to scrape at some of the bronze and brass hand planes I've made, and it works like a charm. Being a scraper, this is also a great way to remove any dried glue.



Now, like any tool, you will wear away the "cutting" edge. A really quick swipe across the grinding stone will quickly restore the edge. You don't have to use this with only standard chisels either. I've got a whole set of gouges that I've blunted, and that allows me to scrape away at curved surfaces such as the swell on plane wedges or on curved work pieces. It's a simple trick that works like a charm.

While nothing replaces a

good, sharp, full set of bench chisels, these few specialty chisels can really compliment your set already in your shop. As I mentioned, apart from the paring chisel, I may not use every one of these chisels on all of my projects, but when I get to a spot where I need them, each and every one is worth its weight in gold. **PW**—*Logan Wittmer*



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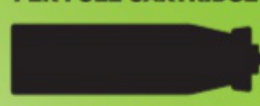
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Exact Width Dado Jigs

PROJECT #2217

Skill Level:

Beginner

Time: 1 Day

Cost: \$75

Two simple router jigs to get perfectly sized dados and grooves, even for undersized plywood. **By Willie Sandry**

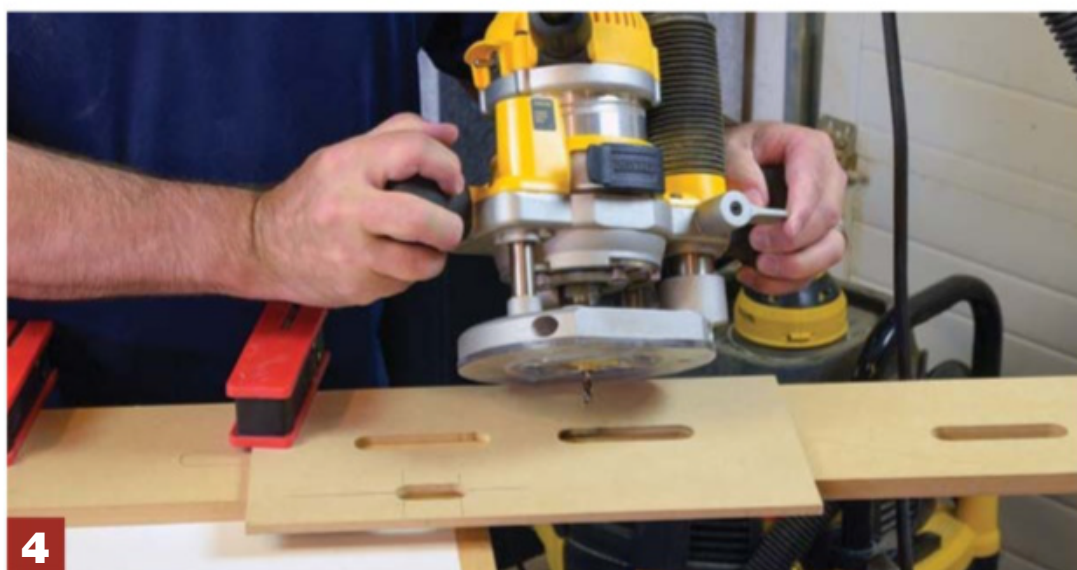
PHOTOS BY THE AUTHOR

The ability to cut perfectly snug fitting dados and grooves is one of those fundamental skills that will catapult your woodworking into the realm of cabinets and fine furniture. Sure, you can cut accurate dados on the table saw with a stacked dado set, but that's a real challenge if you have large workpieces or stopped dados. A bookcase, hutch, or cabinet project may leave you wanting an alternate way to cut dados.

The concept of an exact width dado jig is pretty simple. Just use the actual shelf stock you intend to use for your project as a thickness gauge to set up your jig. From there, you can rout the groove and expect perfect fitting dados each time ... even if your project includes $\frac{3}{4}$ " plywood that actually measures $\frac{23}{32}$ " or some other odd dimension. These jigs aren't new, and I've been using one for the better part of a decade with predictable results. My first jig used a short-length bearing-guided bit, but you can also use a guide bushing, as long as your jig design accounts for the offset between the bit and bushing. So, I came up with a design that can be built for either style of dado jig and made sure to include some creature comforts like 'finger grip' openings to help close the jig on your shelf material and sliding stop blocks. Both versions provide zero clearance to protect delicate plywood veneers and will have you making perfect dados in no time. Choose the version that best fits your shop or make them both!

Build Guide Bushing Jig

This first version uses a $\frac{5}{8}$ " diameter guide bushing and a $\frac{1}{2}$ " diameter router bit. This allows the most efficient and clean cutting of common $\frac{3}{4}$ " wide dados. If you plan to cut $\frac{1}{2}$ " wide dado with the jig, select a $\frac{1}{2}$ " diameter guide bushing and a $\frac{3}{8}$ " diameter bit. It's worth noting that this jig will work with most any medium-length straight bit, but a down-cut spiral bit will give the best results in plywood. Cut parts for the



1 Make a pair of end cleats from $\frac{3}{4}$ " thick plywood (or hardwood) sized $12\frac{3}{4}$ " long x 4" wide. These cleats will hold the rails together and accept the hardware that makes the jig adjustable.

2 You'll need two strips of $\frac{1}{2}$ " thick MDF for the rails of the jig. Make one 7" wide and the other 5" wide. Trim them to $30\frac{1}{2}$ " long.

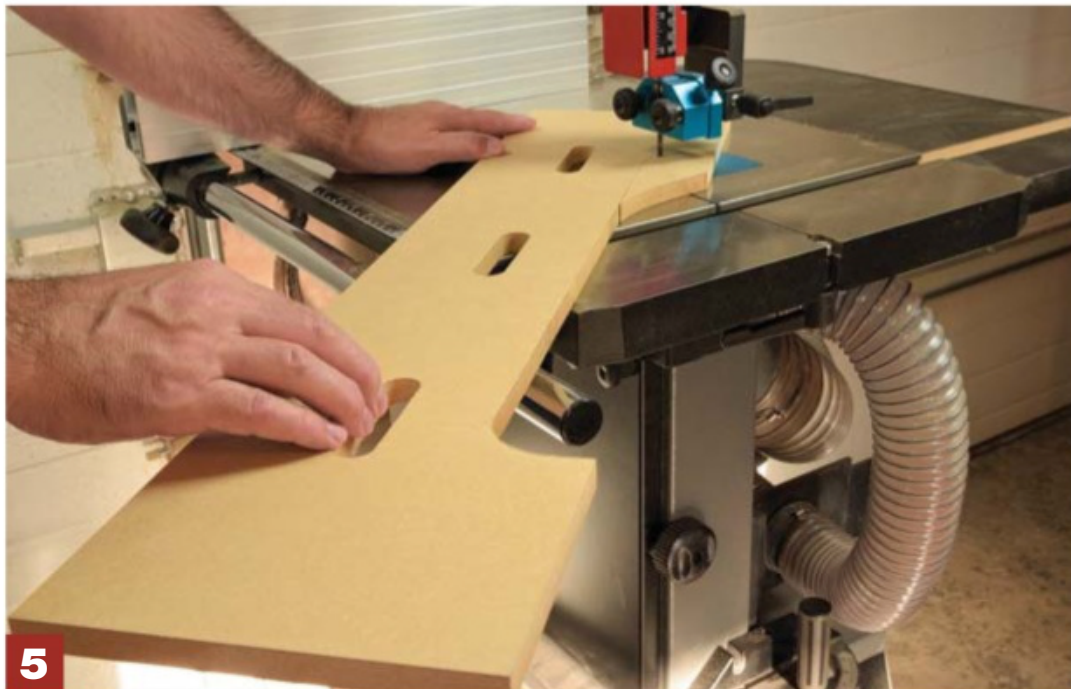
3 Make a small template to help rout the cutouts. I added three openings on each rail — one $5\frac{1}{2}$ " from each end of the jig and one centered between the others. Carpet tape secures the template while you rout the opening with a spiral bit and guide bushing.

4 Rout "finger grip" cutouts in both rails to help pinch the shelf stock in place when using the jig. This solves a common problem with my original shop-made jig and makes it much easier to set the width of your jig.

rails of the jig using $\frac{1}{2}$ " MDF. Make the fixed rail 5" wide and the adjustable rail 7" wide. The length of the rails depends on your needs, but I sized them at $30\frac{1}{2}$ " overall length, which accommodates a $22\frac{1}{2}$ " wide case piece. If you plan on building kitchen cabinets, you can make the jig 2" longer. Then cut the end cleats from $\frac{3}{4}$ " thick plywood or a suitable hardwood.

Shape the Moveable Rail

One thing I learned from using my large, clucky dado jig all those years is you want the jig as small and light as possible. With that goal in mind, I shaped the moveable rail as shown in the detail rendering (page 35). By removing about 2" of material from one side of this rail, you'll trim some weight but still leave plenty of room for the tool-free adjustment knobs.



5 Trim away 2" of width on the moveable rail. This will lighten the jig while still preserving enough room for knobs and clamps.

6 Set the bit height slightly more than the thickness of the T-bolt head. Carefully pass the end cleat over a straight bit. Stop blocks installed on the router table fence control the length of the cut.

Now move on to milling the end cleats to accept $\frac{5}{16}$ " T-bolts. You'll make a shallow recess in the underside of these cleats, as well as a through-slot with two different bits at the router table.

Use a straight bit that matches the width of your T-bolt hardware and create a $2\frac{1}{2}$ " long groove at the router table. Move the cleat between two stop blocks on the router table fence to control the length of the cut.

Then switch to a $\frac{5}{16}$ " spiral bit and make a slot within the groove you just made. This is simple if you keep your stop blocks and fence in the same position and mill the slot in multiple passes. Increase the depth no more than $\frac{1}{4}$ " per pass until the bit breaks through the top side of the cleat.

Next, you'll mark and drill holes in the moveable rail for the T-bolts. Position the jig, so the gap between the rails is $\frac{7}{8}$ " and center the hole in the slot. The jig relies on the inner edges of the rails being straight and true. Take a moment to slide the rails together to confirm that your parts come together without any gaps. If any adjustment is needed, a light pass over the jointer should correct any irregularities.

If you wish to have optional sliding stop blocks for your dado jig, take a minute to drill for a series of $\frac{1}{4}$ " x 20 threaded inserts at the drill press. The threaded inserts are installed 3" apart in the fixed rail. If your threaded inserts have a lip on top, drill a shallow recess first. Then drill a through hole, sized to easily fit your particular threaded inserts. I installed mine with a dab of epoxy for good measure.

Now attach the end cleats to the fixed rail. Glue and screws ensure the jig will hold up to the rigors of everyday shop life. Use an accurate square to set the cleats and fixed rail 90° to one another.

At this point, you're ready to add an important element to the bushing-guided jig. A layer of $\frac{1}{4}$ " MDF is attached to the underside



7

7 Make sure the T-bolt easily slides in the groove. If you need to widen the slot with a second pass, make sure to move the router table fence away from you for the second pass (to avoid making a climb cut).



10



8

8 Switch to $\frac{5}{16}$ " spiral bit and complete the slot in multiple passes. The key here is to leave your router table fence and stop blocks in the same position as the last operation. Make multiple passes, raising the bit no more than $\frac{1}{4}$ " per pass.



11

10 Slide the fixed rail and moveable rail together to make sure the edges come together perfectly. If the edges of your $\frac{1}{2}$ " MDF parts are straight and true, you can move on to marking and drilling holes to mount the end cleats.

11 Use a square to set the cleats 90° to the fixed rail. Although the cleats will be assembled with glue and screws, it's useful to start with a couple of brad nails to lock the parts in position. Then predrill for six screws at each end.



9

9 Now a $\frac{5}{16}$ " T-Bolt will fit perfectly into the cleat from the underside, yet slide freely when adjusting your jig.

of the rails. This functions as a physical indicator of the cut line and helps you set your jig to the correct width. It also makes the jig zero clearance in nature, which leads to some of the cleanest looking dados you'll ever see. Instead

of adding the $\frac{1}{4}$ " MDF as a single piece, I added it in strips. The outer strip on each rail will permanently remain on the jig. The inner strips can be replaced as needed and are attached with #6 x $\frac{5}{8}$ " wood screws from underneath.

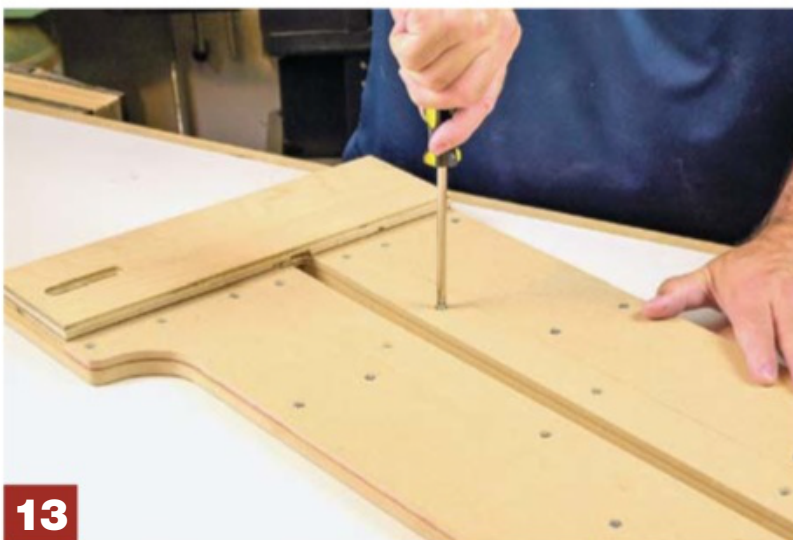


12

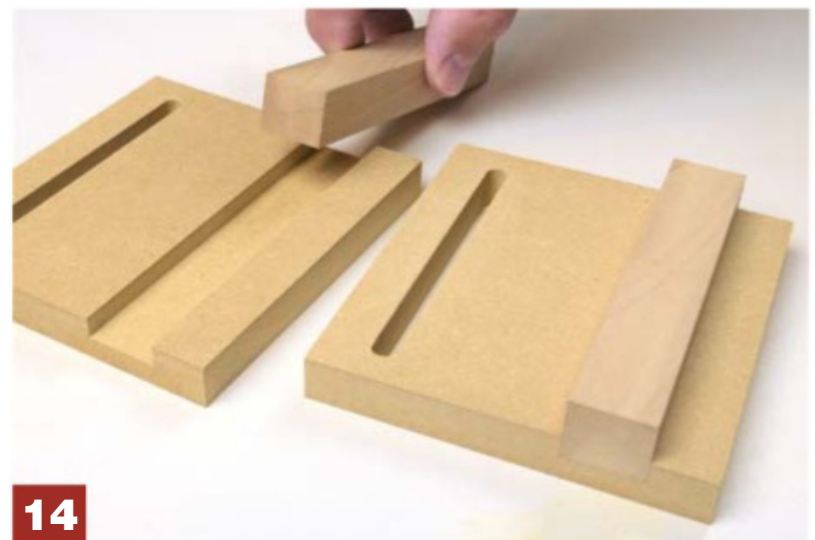
12 Basically, you'll attach 1/4" MDF to the bottom of the jig, between the cleats. Instead of installing it as two large strips, I made 1 1/2" wide strips on either side of the jig opening (painted red for clarity). Now they are easily replaceable if they get damaged or if you change bushing and bit combinations.

13 The thin strips will overhang the opening in the jig about 1/4" and are trimmed the first time it's used. Secure the sacrificial strips through pre-drilled and countersunk holes with five #6 x 5/8" screws.

14 Make stop blocks starting with pieces of 1/2" MDF. Once cut and routed, glue a hardwood strip in the groove to complete the stop blocks.



13



14

Now all that's left to do is trim the jig to suit your bit and bushing combination (remember to carefully center your router sub-base first!). Once that's taken care of, you can pinch the shelf stock between the rails of the jig and tighten down the knobs. Then clamp the jig to your workpiece with a few small F-style clamps and rout the dado.

Sliding Stop Blocks Add Functionality

Since the template-guided jig is made from 1/2" thick MDF rails, mounting T-track isn't really an option. So, I came up with an alternate method using sliding stop blocks. The stop blocks have a slot that allows adjustability, and they lock

in place with a single male threaded knob. A hardwood strip attached to the stop block helps hold it in position. Just make sure the hardwood strip is sized to fit in the opening of the jig when in use. Since I only use my jigs to make 3/4" dados, I sized the strips 13/16" wide and 11/16" tall. If you like to make 1/2" dados, you'll need a thinner hardwood strip.

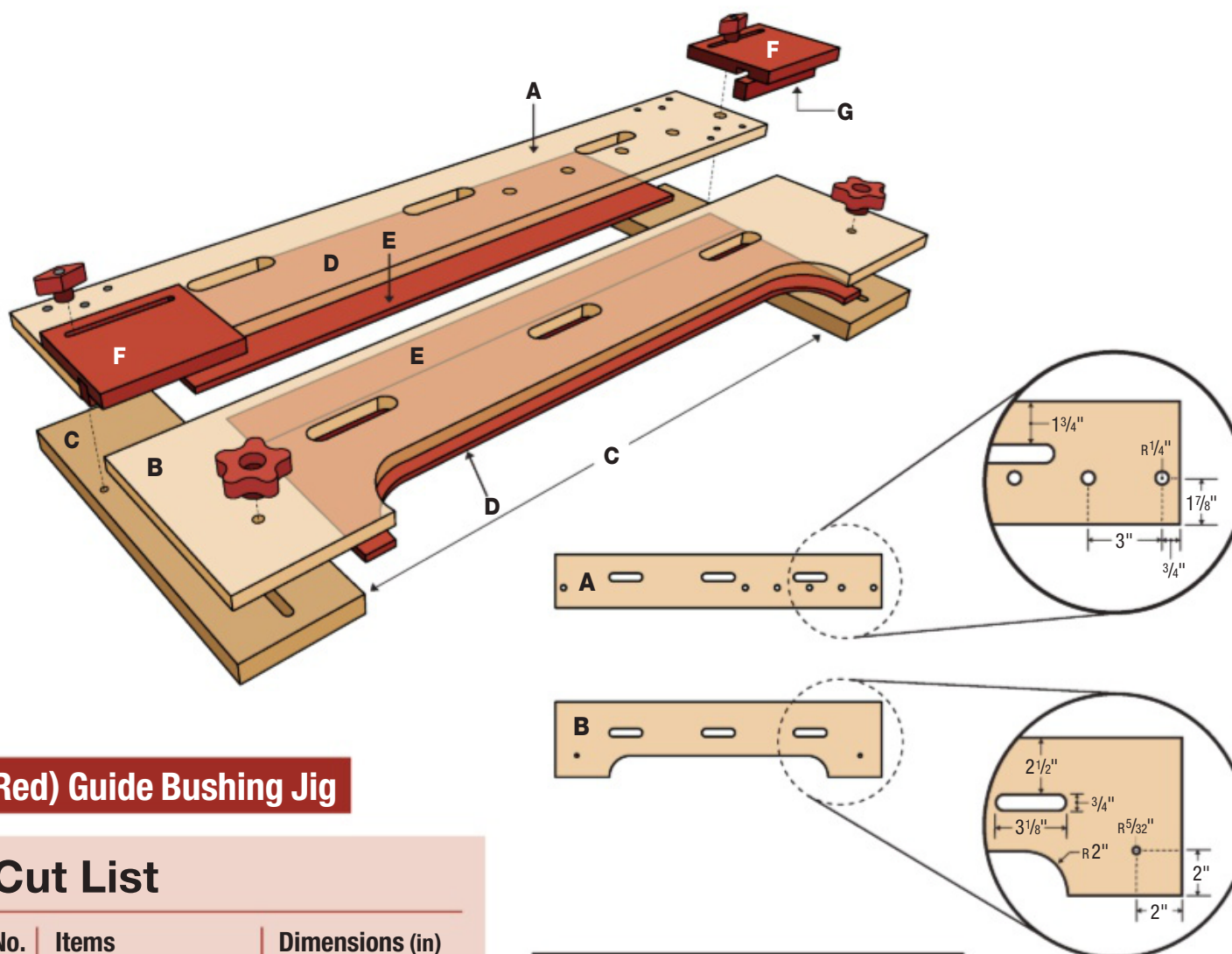
Make Bearing-Guided Jig

If you prefer to use a bearing-guided bit, and skip the guide bushing altogether, this is the jig for you. The black bearing-guided jig is simplicity at its best. The bearing simply rides along the rails of the jig to create a perfectly sized dado every time. The extra thickness of the 3/4" MDF rails

and short-length pattern bit are keys to making the jig work.

When it comes to building this jig, luckily, the two jigs share the major parts in common, and in fact the cleats and rails of the jig are identical except the rails are made from 3/4" MDF. I built both jigs at the same time, so I made the wide curved rail for one jig, and pattern routed the other to match. Assembly proceeds just the same as before, although you won't need to add 1/4" MDF to the underside of the bearing guided jig. In operation, you'll want to use a 1/2" long x 1/2" diameter router bit. One other minor difference relates to the stop blocks for the bearing guided jig. Make the hardwood strip 11/16" wide, so it will fit between the rails.

Exact Width Dado Jig



(Red) Guide Bushing Jig

Cut List

No.	Items	Dimensions (in)		
		T	W	L
1	A Fixed rail	1/2	5	30 1/2
1	B Movable rail	1/2	7	30 1/2
2	C Cleats	3/4	4	12 3/4
2	D Base*	1/4	10	22 1/2
2	E Strips*	1/4	1 1/2	22 1/2
2	F Stop block*	1/2	4	4 1/2
2	G Stop block strip*	11/16	13/16	4 1/2

MATERIALS: All items are made using MDF with the exception of the cleats which are plywood.

* Base (D) is cut to fit. D-G are painted red.

Supplies

No.	Items
6	1/4" x 20 threaded inserts
2	5/16" multi-knobs; Woodpeckers
2	5/16" x 18 nuts for multi-knobs
2	1/4" mini-T multi-knobs; Woodpeckers
2	1/4" x 20 bolts for mini-T multi-knobs
-	#6 x 5/8" wood screws to attach 1/4" MDF
-	#8 x 1" wood screws to attach cleats to rails
2	5/16" T-bolts, 2 1/2" long

(Black) Bearing-Guided Jig

Cut List

No.	Items	Dimensions (in)		
		T	W	L
1	A Fixed rail	3/4	5	30 1/2
1	B Movable rail	3/4	7	30 1/2
2	C Cleats	3/4	4	12 3/4
2	F Stop block*	1/2	4	4 1/2
2	G Stop block strip*	11/16	13/16	4 1/2

* F & G are painted black.

Note: Black bearing-guided jig is assembled the same as the (red) guide bushing jig, but without Base & Strips.

Supplies

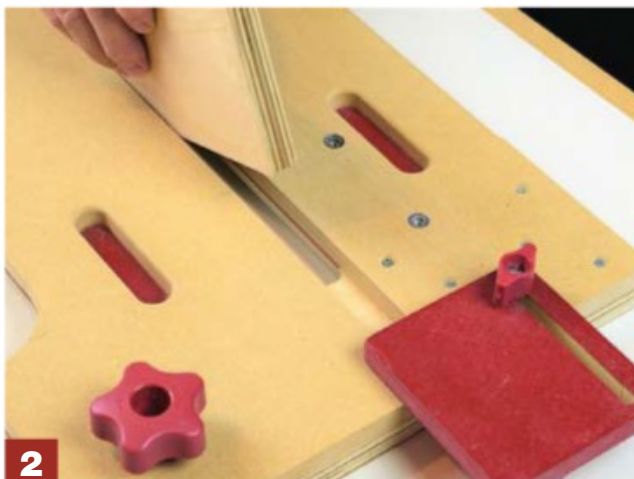
No.	Items
6	1/4" x 20 threaded inserts
2	5/16" 5-star female knobs; Rockler #51036
2	1/4" 4-star male knobs; Rockler #51597
-	#8 x 1" wood screws to attach cleats to rails
2	5/16" T-bolts, 2 1/2" long

Using the Exact Width Dado Jigs

(Red) Guide Bushing Jig



1



2



3

1 - Calibrate

Select the bit and bushing combination you'll use with this jig. I use a 1/2" down-cut spiral bit and 5/8" O.D. bushing. Use the same combination each time you use the jig. Simply move the router in a clockwise direction to cut the dado or groove. My favorite thing about exact width jigs is that they show you precisely where the cut will be made. There's no offset to measure or calculations to make. It removes the guesswork and inspires confidence in your work.

2 - Set Width

But first — use your actual shelf stock to set the width of the opening and tighten the knobs. Note that with the bushing guide jig, you'll pinch the shelf stock between the sacrificial red strips. Next clamp the jig and workpiece securely to a bench to prepare for the cut. If you need a stopped dado, take a minute to set the extent of the cut with the sliding stock blocks.

3 - Test Fit

Now test the fit of your shelf stock in the dado. I've come to expect precisely fitting grooves and dados with this jig and rely on it for large and small cases alike. It handles hardwood shelves just as well as undersized plywood.



15

15 If you'd rather spend your time getting straight to work on projects, consider *Woodpecker's* Exact Width Dado Jig. It has several built-in features including dado stops and a scale, as well as secure clamping plates. It's very solidly built and performed well in testing.

Pros & Cons of Each Jig

I enjoy using these jigs and reach for both quite often. The bushing-guided jig requires you to install and carefully center the router sub-base. If your sub-base isn't centered, it will trim more of the sacrificial strip on one side than the other. This can cause fitment issues the next time you use the jig. Luckily, the MDF strips are easily replaceable. On the plus side, the guide bushing lets you plunge into your workpiece at any point without damage to the jig.

(Black) Bearing-Guided Jig



1 - Set Width

Place a scrap of your intended shelf stock between the rails and pinch the jig closed. Tighten the knobs to secure the movable rail and chuck a 1/2" diameter by 1/2" long bearing-guided bit in your router. Clamp the jig down over workpiece so it's firmly anchored to the bench. Set the stop blocks as required for your project and rout the dado in a clockwise direction.



2 - Rout Dado

Make sure to keep the router bit between the rails as you make the initial plunge. With the bearing-guided jig, it's also critical that the router stays fully plunged for the entire cut. Don't raise the router bit until after you shut off the router.

The bearing-guided jig is a little trickier to use. In order to not cut into the rails, you need to plunge the bit between them carefully. Once the bearing reaches the guide surface, the cut will proceed predictably. If you make the plunge cut starting over the end cleat, an accidental nick in the guide rail won't affect the operation of the jig. Or better yet, start with the router plunged just enough for the bearing to contact the rail of the jig. I'm so accustomed to this style of dado jig,

that's not an issue for me. I encourage you to build both versions and see which jig fits best for the work you do.

How Do They Compare to Commercial Jigs?

There are several jigs and gadgets on the market to help woodworkers make dados with a router. Some of them work, and others are a bit gimmicky. *Woodpeckers* makes a no-compromises premium dado jig that I've tested in my shop. It

creates accurate grooves and dados and features robust construction from anodized aluminum, phenolic rails, and stainless-steel clamping plates. If 'only the best' will do in your shop, then you should give it a look. You can see the *Woodpeckers* jig in the photo at the bottom of the previous page.

To see both of these jigs in action, you can watch a video of them on my YouTube channel, The Thoughtful Woodworker. (<https://youtu.be/YZ-laZihco>) **PW** — Willie Sandry



PROJECT #2218

Skill Level:
Intermediate
Time: 2 Days
Cost: \$75

Kumiko Wall Shelf

This wall shelf is an elegant, simple way to showcase a special piece of woodworking —an Asa-no-ha Kumiko panel. **By Logan Wittmer**

PHOTOS BY LOGAN WITTMER

Inspiration can come from any number of places. Often, I find (furniture) pieces in antique stores, flea markets, and garage sales. I don't buy them usually—I have too many hobbies the way it is. What I do instead is take photos of them. That way, as I'm working on a design, I can reach back into my phone's library and pull design elements from these pieces I've come across.

Sometimes, however, it isn't a design or furniture piece that inspires. Instead, it's a technique. That's precisely what happened when I got a hold of a copy of Matt Kenney's book, "The Art of Kumiko," a couple of years back. Not that I hadn't been aware of Kumiko. In fact, it seems to have been the "in" thing the last few years. What really struck me was the way that Matt laid out the process. It seemed approachable and logical, so off into the mental design library it went. When I started working on the design for a wall shelf, I thought this was the perfect place to incorporate one of these Kumiko panels.

Break Down the Stock

This wall shelf doesn't take a ton of stock. I usually try and sell relatively high-quality material that I've cut, but I always end up with a "bargain bin" stack that I like to use where I can. The walnut for this shelf came from that stack—it had some knots, cracks, and pith streaks. But, nothing we can't work around.

After laying out all the parts on my rough stock, I spent a few minutes breaking down parts with a hand saw. There were a few major defects that I wanted to cut out, so I made a few strategic cuts at the table saw. Sometimes this means jointing an edge, ripping off the opposite side, and re-ripping the jointed edge. Once I had my final width dialed in, I ripped all of the stock at the same time, as this keeps all of the parts the exact same width.

While at the table saw, I also set up a thin ripping guide to rip a series of basswood strips for the Kumiko panel. The thin ripping guide allows you to safely rip consistent-sized strips quickly. I ripped a small trailer full, which ended up being almost three times the amount I needed.



THE ART OF KUMIKO

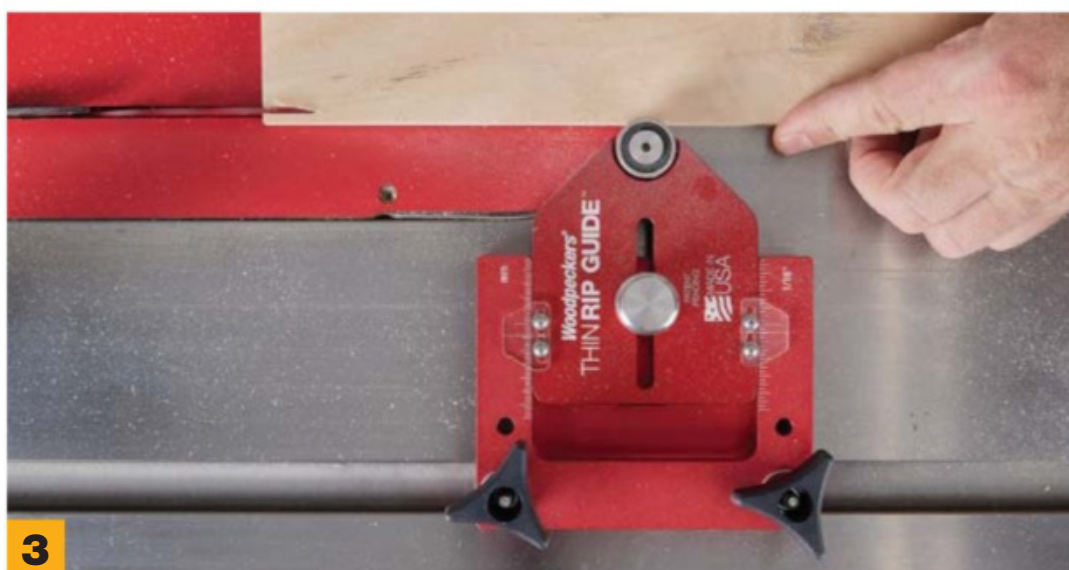
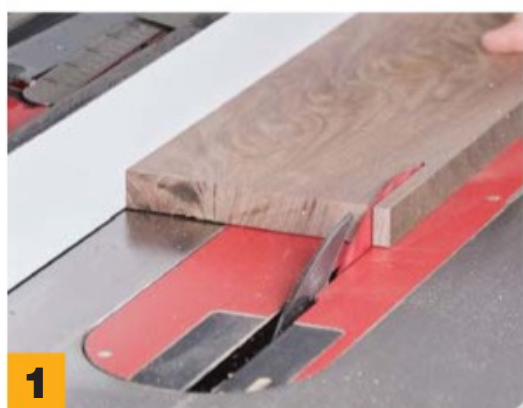
Learn to Make Beautiful Panels by Hand

AUTHOR: Matt Kenney

PUBLISHER: Blue Hills Press

PRICE: \$19.95 + shipping

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1 The wall shelf requires a small amount of stock. I selected a piece of walnut I had in my collection that was too "gnarly" to sell. Some strategic ripping removed most of the defects.

2 A crosscut sled is a great way to cut parts to length accurately.

3 While at the table saw, I used a thin rip guide to rip a small semi-trailer full of strips for the Kumiko panel.

Joinery Before Shaping

The joinery for this wall shelf is fairly straightforward. The two shelves, which are asymmetrical, are joined to one side with a stopped dado and the other side with a half-lap. You'll see what I mean when you check out the drawing on page 43. Before cutting either the tapers on the uprights or the curves on the shelves, it's best to take care of the joinery while the parts are still square.

After dialing in a dado blade to match the stock thickness, I cut the half-lap as deep as possible, using the miter gauge with an auxiliary fence to guide it. Now, this notch

isn't deep enough—but the dado blade at least gives you a start. After notching the uprights and the shelves, I used a marking knife to lay out the rest of the notch and cut it at the bandsaw (Photo 5). Any final paring can be done with a chisel.

While the dado blade is loaded in the saw, you might as well cut the stopped dado as well. Here, we don't want to cut all the way through the part (the "stopped" part of the stopped dado). To do this, I mark a "ballpark" mark on the table saw insert and stop my cut when the part touches that

mark. The sloped dado can quickly be cleaned up once you return to the bench. Just square up the end with a chisel (Photo 10), and then hog out the waste. A router plane will help make the end of the dado the same depth as the dado-blade cut portion.

Shape the Parts

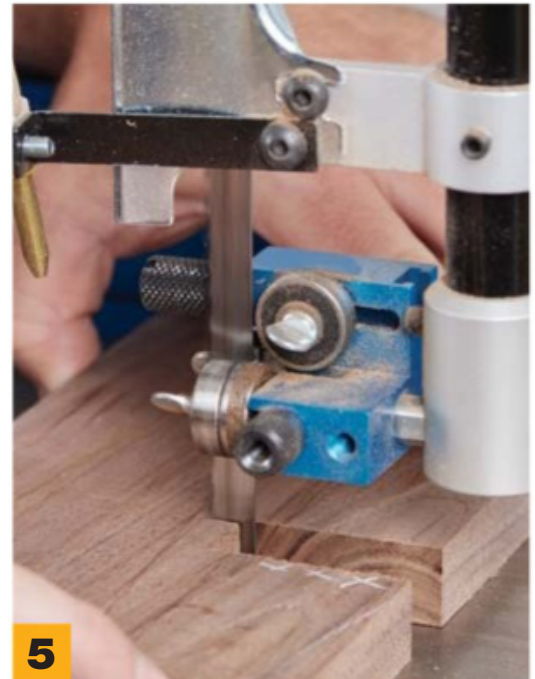
With the joinery cut, you can now start shaping all of the parts. The uprights get a pair of tapers on them. To make the parts consistent, I used carpet tape to hold them together and cut the taper at the bandsaw. Any marks left from the



4 Cutting the large half-lap in the sides and shelves can be a trick. Start with a dado blade set at maximum height. An 8" dado blade will cut approximately 2" deep. This design calls for 2½" deep laps.

5 Extend the half-lap lines by making a marking knife mark and cut rough cut them at the bandsaw. You can then use a chisel in the knife line to clean up the laps for a perfect fit.

6 On the side opposite each half-lap, there's a stopped dado for the end of the shelf. This can be cut with the same dado blade. Simply mark the table saw insert plate with a stopping point, and stop the cut when your part kisses the mark.



bandsaw can be cleaned up at the bench with a handplane.

The shelves get a gentle curve on the front edge. The radius of each is a little different due to the shelf lengths, so I just used a flexible straightedge to mark a gentle curve and cut it to shape at the bandsaw. Cleaning up this curved shape can be done with sandpaper or a rasp, but a sharp block plane will follow the curve pretty well and leave you a nice surface.

While at the bandsaw, spend a moment cutting the notch in the front edge of each shelf. This will mate inside the uprights on the shelf

and will conceal the dado. As when working the half-lap, a sharp knife line, careful cutting, and paring to the line with a chisel will yield a clean, gap-free fit.

There are two final tasks to take care of on the shelf before assembly. The first is routing a stopped dado for the top. This can be done using a dado clean-out bit and an MDF template, like you see in Photo 12. The resulting dado will have rounded corners that can be cleaned up with a chisel. The top itself is simply cut to size, notched like the ends of the shelves, and a roundover routed on the front edge.

One final small detail that's easier to do now is to plane a chamfer along the bottom edge of each shelf. The chamfer is tapered, however. Instead of being a consistent size, the chamfer starts at the upright and gets larger toward the end of the shelves. This adds a little lightness to the shelf, along with a little movement.

7 Some wide carpet tape is a quick way to gang cut parts.

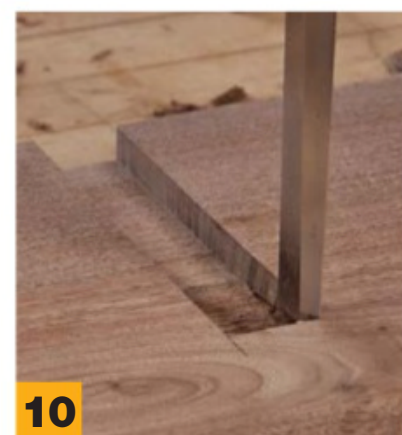
8 A well-tuned saw will track straight and just leave you with only minor cleanup.



9 Clean up the curved front of the shelves with a block plane. Some gentle rolling strokes will clean up any saw marks from the band saw.

10-11 Square up the sloped end of the stopped dado with a chisel and router plane.

12 A simple MDF template allows you to rout a stopped dado for the top.



Assembly

The glue up on this shelf should go pretty smoothly if you've done your due diligence as you cut everything. There is a process that I found works the best, however. I start by assembling one upright with its corresponding shelf. Spread a little glue inside the half-lap and slide them together. There's a lot of end grain in that joint, so the glue won't do much, but it makes me feel better having a little bit of glue spread in there. Once you have the pair of uprights assembled with the shelves, you can bring the two halves together. Spread some glue in the dadoes and slip the shelf ends in place. As you start bringing everything tight, glue the top in place as well. Here, I like to use some parallel clamps to spread the clamping pressure, especially since the end of the shelf is narrower than the upright. You can see this in Photo 13.

As the glue cures, you can contemplate whether you want to add some form of a decorative panel or not. As I mentioned earlier, and as you could surmise from the lead photo, I included a Kumiko panel. To house the panel, I decided a rabbet along the back was appropriate. A rabbeting bit in the router table makes quick, albeit messy, work of this. As with any routing operation like this, a little chisel work will square up the corners.

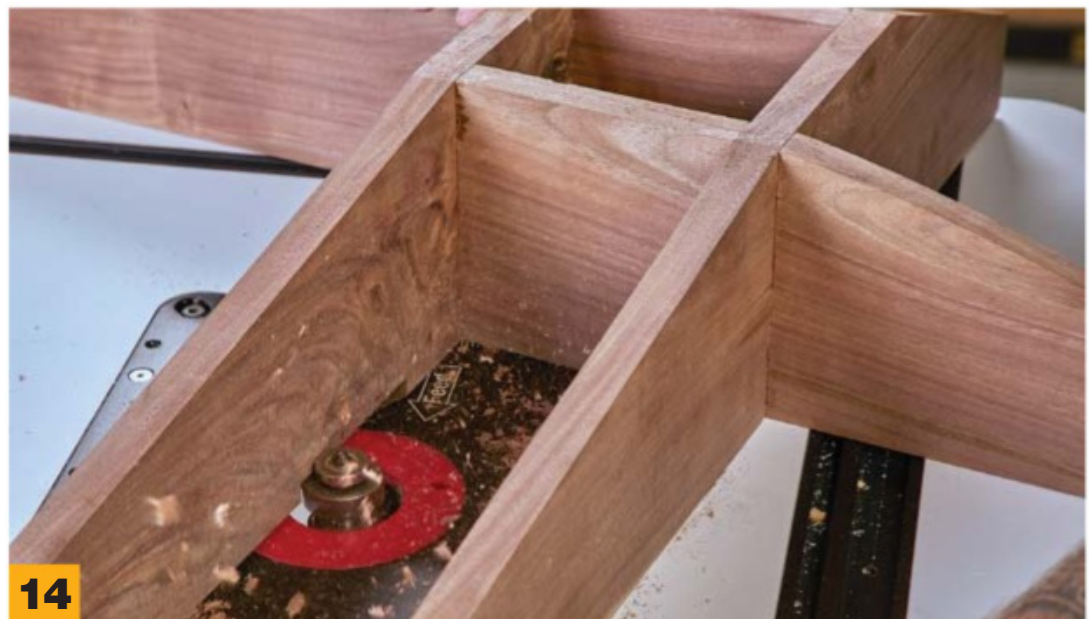
Little Drawer

The opening between the shelves begged to have a drawer in it. It's a small drawer, sure. However, I'm sure we all have those odds and ends that could fit well in there. Because I had already milled up a bunch of basswood for the Kumiko, it seemed appropriate to make the drawer out of this lightweight wood as well.

The joinery I chose to use on this drawer is a simple locking rabbet joint. With the thin stock, you can easily rout all of this joinery with a small straight bit at the router table. My only complaint about the bass-



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13 Assemble the shelf. Some long parallel clamps apply even clamping pressure.

14 After assembly, rout a rabbet for the Kumiko panel.

wood and router bit is that it has a tendency to fuzz a little bit. It just means a little extra time to sand and smooth out the mating joints before applying glue.

To create the locking rabbet, we'll first need to rout a groove in the ends of the drawer front. The bit needs to be centered on the drawer stock, and set to the height of the drawer sides. You can see this in Photo 15.

Next, the bit is lowered a little, and the inside tongue on the front is nipped in half. This leaves one long tongue and one short tongue on each end (Photo 16). Finally, the drawer

sides get a dado routed in them. This dado grabs the short tongue on the drawer front and locks everything together. Lastly, rout a groove along the bottom edge for a plywood bottom.

It's best to try out a sample piece to dial everything in. Once you do, this is a great, quick-to-make joint that looks good and is strong. With that said, these small parts are delicate, so be careful with the joint until it's glued together.

As you probably noticed in the main photo, I chose to paint the drawer front to match the panel behind the Kumiko (more on that in a



15 Groove the end of the front.

16 With the same set up, nip off one of the tongues.

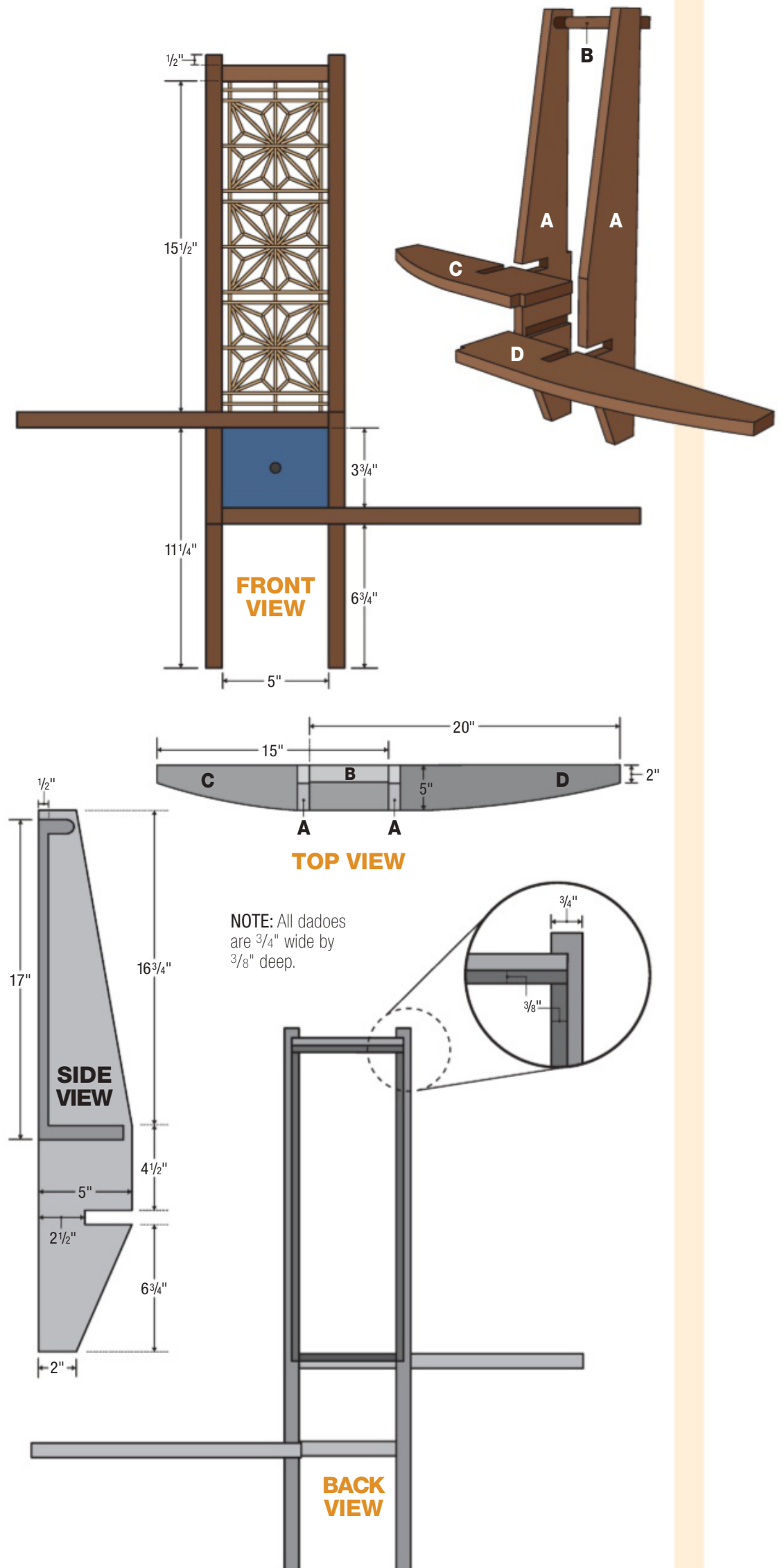
17 Finally, rout the dado in the sides. This same setup can be used for the bottom groove.

Cutlist

No.	Items	Dimensions (in)		
		T	W	L
2	A Sides	3/4	5	28 3/4
1	B Top/bottom	3/4	1 7/8	5 3/4
1	C Top shelf	3/4	5	15
1	D Bottom shelf	3/4	5	20
2	E Drawer F/B	3/8	3 5/8	4 7/8
2	F Drawer sides	3/8	3 5/8	4 1/16
1	G Drawer bottom	1/8	3 3/4	3 3/4
-	H Kumiko strips	1/8	3/8	-
1	I Back panel	1/8	5 3/4	16 3/4

MATERIALS: The shelf is walnut, while the Kumiko and drawer parts are basswood.

Kumiko Wall Shelf



minute). I feel like it's a bit easier to paint the drawer front before gluing up. Basswood tends to fuzz a little bit, so when painting it, I use shellac as a sealer. Not only does it keep any grain from raising, but it also provides a good "primer" coat and allows you to get a smooth surface.

After glue up, you can spend a few minutes fitting the drawer. Basswood doesn't move much with humidity



18 Carefully glue up the drawer. The small size of the joinery makes this a very delicate process due to the short grain. If you're going to paint the drawer front like I did, I suggest doing so before you assemble the drawer.

changes, so I planed it down with a handplane for a good, suction type fit. A simple style drawer pull looks best on this shelf, I think (my wife, however, thought it looks a little too plain). Pick a style you like, but ask your significant other's opinion first! The one I added is a simple little walnut pull that I turned at the lathe.

Before we tackle the Kumiko panel, let's talk about hanging it. Because of the asymmetrical design, I used a pair of keyhole hangers routed into one upright. This provides two attachment points, and I just make sure to drive the mounting screws into studs.

Kumiko Panel

The defining feature of this wall shelf is the Kumiko panel. While the process of creating the Kumiko panel isn't difficult, it does take some careful setup. Matt's book does a fantastic job of explaining the process in depth, and if this is something you're interested in, I suggest you pick up a copy for the entire process. (Full disclosure—"The Art of Kumiko" is available for purchase on PopularWoodworking.com.) What I'll give you here is a brief synopsis.

The Kumiko panel is made of basswood strips. The framework (horizontal and vertical pieces) are half-lapped together at the table saw. There are several traditional designs that you can use in the Kumiko. The one shown here (and on the front of Matt's book) is the Asa-no-ha, or hemp leaf pattern. The various diagonal pieces that make up the hemp leaf pattern need to be accurately cut and mitered to fit into place. To do this, you use a set of mitered guide blocks, as you see in Photo 19 and 21.

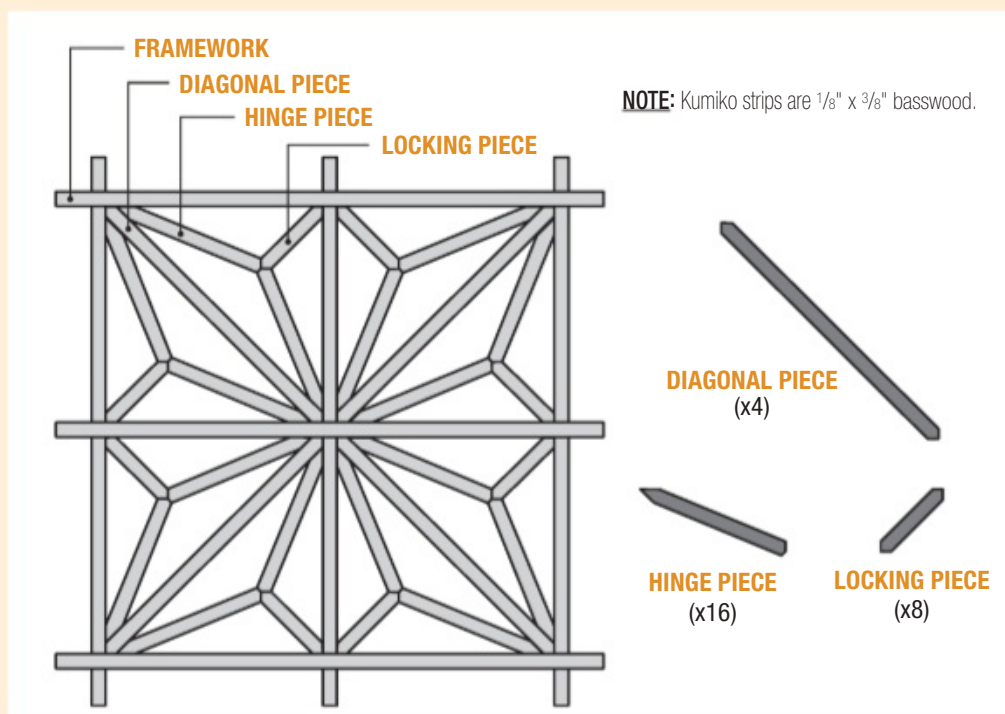
The guide blocks have an adjustable stop recessed into them. This allows you to precisely dial in the length of the part, and the angled face of the block gives you a reference surface for your chisel to ride against as you pare the basswood to the proper angle and length. A sharp, wide chisel (I use my Barr framing chisel for this — you can read more about it on page 22) makes the process go smoothly.

The guide blocks are easy to make, but if you want to purchase them, Matt and others sell pre-made blocks. While the process seems tedious, after dialing everything in, it goes quickly. The panel you see in Photo 21 took me about four hours to put together. It takes a very small amount of material and a bit more time, but it yields some impressive results. To be honest, I picked up a set of Matt's guide blocks and milled a bunch of the basswood strips, as I thought these panels would be a very good project to throw in a tote and bring with me as I'm camping.

After completing the panel, I installed it into the rabbet on the back of the shelf. To add a little bit of contrast to the Kumiko, I added a thin panel of painted plywood behind the Kumiko. The entire assembly (Kumiko and plywood panel) are held in place with a series of brass toggles installed on the edges of the uprights. Then, the shelf is hung up with screws into studs.

PW — Logan Wittmer

Hemp Leaf Panel





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19 The Kumiko panel consists of small parts that are accurately mitered to fit together with only tension holding them in place. A sharp chisel (wide Barr framing chisel) and guide blocks help achieve this precise fit.



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20 The subtle beauty behind a Kumiko panel is the fact that the entire thing is assembled without glue. Once the pieces are fit, a final locking piece tensions the entire quadrant and holds it in place.

21 Creating the Kumiko panel is a zen-like practice. It takes a little getting used to, but Matt Kenney's book "The Art of Kumiko" is the perfect guide for this fun technique.



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Carved Rim Bowl

PROJECT #2219

Skill Level:
Intermediate
Time: 1 Day
Cost: \$75



PHOTOS BY LOGAN WITTMER



A little bit of carving and gilding on the rim of this bowl transforms it from a nice piece to an extraordinary one.

By Jimmy Clewes

A step away from your ordinary bowl, this cherry bowl with a carved rim is subtle yet powerful. The simple ogee curve on the bottom of the bowl makes it lovely to hold, and the carved and gilded rim not only catches the light, but it also catches your eye. The best part of all, however, is that it's a simple bowl to make.

First, find a good piece of cherry for your blank that is approximately a 12" diameter x 4" thick square. Cherry is a good choice of wood for this project, as it is often favored by carvers throughout history for its closed, even grain. Kiln dried is the best here. After finding the center and using a compass to scribe a circle, move to the bandsaw to cut the circle out. This removes a lot of waste wood initially. I like to save the corner pieces which could be used to turn small projects like bottle stoppers.

Prepare to Turn

To begin turning, mount the blank on a screw chuck or a faceplate if you prefer. When using a screw chuck, make sure that the chuck is tight against the face of the blank. If it's not, you may experience some vibration in the blank, which would reflect in and give a less smooth quality of cut. Begin with a 1/2" long grind bowl gouge to true up the outside of the blank. This will help to balance and true up the piece. If the surface is not smooth after the cut, the bevel is not "floating" behind the cutting edge and is not in contact with the wood. You would be effectively cutting with the point or tip of the tool, a common mistake that practice will improve!

After the outside of the blank has been trued up, we will now clean up the bottom of the blank using the long grind on the wing of your 1/2" gouge to "draw" cut and clean up the base face. This is a really nice peeling cut with a lot of control as you are pulling or drawing the tool towards you just as you would with Japanese saws and planes.



1 Start by mounting the kiln-dried blank on a screw chuck.

2 Use a push cut to true up the outside edge of the blank. By floating the bevel along the cut, you'll end up with a smooth surface.

3 Use a series of draw cuts to face off the blank. This removes any high spots and helps balance the blank better.

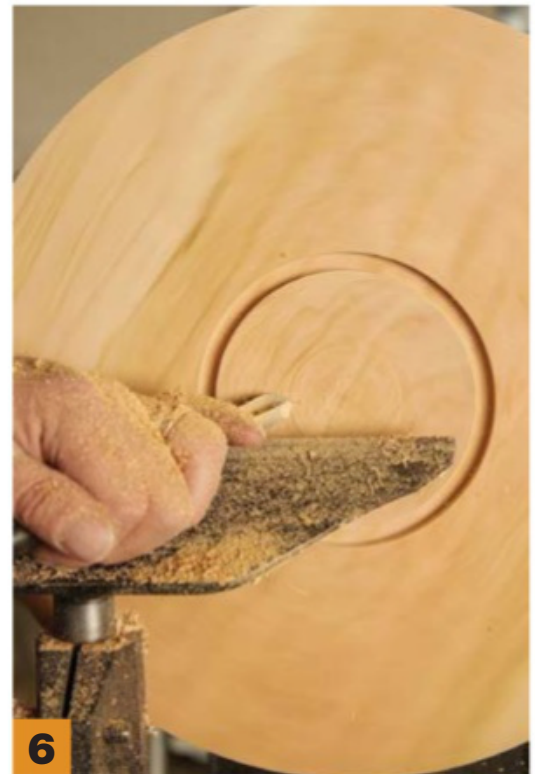
Turning the Foot

Once this surface is true, we can then mark out the diameter of the foot on which to hold the piece when it is reversed and ready to be hollowed. From a design point of view, I decided to turn a larger foot and therefore used a larger set of jaws which are available for most chucks along with the standard jaws

provided. I use a *Vicmarc* 100 chuck with the 90mm jaws. The foot is, therefore, approximately a third of the diameter, which looks aesthetically proportionate, particularly for the ogee curve that I am going to turn for the outside shape of the bowl. To mark the foot, I use a set of dividers and scribe a line with the left leg of the dividers in a trailing

fashion, making sure that the right leg matches the scribed line. If not, be sure to adjust it until it does. Be mindful not to let the right leg touch the wood as it could flick out of your grip!

Then, using a $\frac{1}{8}$ " standard parting tool, I make a cut $\frac{1}{4}$ " deep to the left of the scribed line to define the foot. Going back to the long



4 Set your dividers to match the size jaws that you have for your scroll chuck, and mark the blank for a tenon.

5 Use a parting tool to define the outside edge of the tenon. A couple of plunges, side-by-side, give you room to work.

6 Slightly hollow the tenon, as you'll be using the tenon as a foot later.

7 Remove the outside waste with a series of draw cuts. You're looking to level the surface outside of the tenon.

8 Now, form the dovetail on the outside of the tenon. I do this with a parting tool ground at a slight angle (to match the jaws of my chuck).

grind bowl gouge, I then use a push cut to slightly hollow out the foot. The reason for this is that even if the wood moves slightly after turning the bowl, it will still sit evenly on at least 3 points if undercut and not rock when placed on a flat surface. Again, using a draw cut as I did to true the base, I remove what is effectively waste wood from the foot to the outside edge. You should, at this stage, end up with a flat surface with the foot sitting $\frac{1}{4}$ " proud. It would be easy and preferable now to cut the slight dovetail on the foot to match the dovetail on your chuck. I use a $\frac{1}{8}$ " parting tool sharpened to the angle of the dovetail required. A skew would do the same thing as well.

Onto the Ogee Curve

The ogee curve can be formed using simple geometry. To start, I divide it into thirds from the outside edge of the foot to the outside edge of the bowl. I then scribe a line approximately $\frac{3}{8}$ " from the face of the bowl. This will not be the final thickness of the rim but allows a little



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9 Start laying out the ogee. First, divide the bottom into thirds, and make a mark.

10 Cut a large bevel, connecting your rim mark and the mark you made at the bottom of the bowl blank.

11-14 After connecting the rim and bottom mark to form a bevel, you can start to form a curve under the bowl. Push cuts, from the rim to the foot, are against the grain but actually allow you to watch the curve being formed, ensuring that it's smooth and even.



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Carved Rim Bowl

extra wood in case you are slightly off with the next few cuts. Starting from the bottom corner edge of the blank, use a $\frac{1}{2}$ " bowl gouge to draw cut a chamfer between the two marked lines.

After producing the chamfer, I then cut the initial curve of the ogee between the same two scribed lines. This will be done using a push cut with the bevel "floating" behind the cut for the same control as I did when truing up the outside edge of the blank. You may notice that I am cutting against the grain as the grain on the bowl runs from the foot to the outside edge of the bowl. This may seem strange but creating the bevel in this way allows for a more accurate curve as I can look at the profile and see the curve as I am cutting. I will deal with any torn grain later when refining the finished ogee curve with a shear cut.

So now that I have a curve between the two reference lines, I can mark the halfway point between the left edge of the foot and the outside edge of the bowl. I then use a draw cut with the grain to complete the basic ogee curve. The ogee curve is basically a 50/50 curve where one curve should look the same as the other but only the opposite way. The two curves will blend at the inflection point, which is where the halfway mark is scribed. This is very similar to a sine wave.

The next step is to deal with any torn grain from the initial first cut against the grain. I employ a shear cut with the wing of the bowl gouge and draw the tool towards me but at a much more shear angle. In the right position, this cut will produce "angel hair" fine shavings and leave a finish on the wood that is ready for sanding and no longer has torn grain.

Sanding & Finishing

I like to sand and finish the outside of the bowl before I reverse chuck it and start work on the rim and hollow out the bowl. It makes sense



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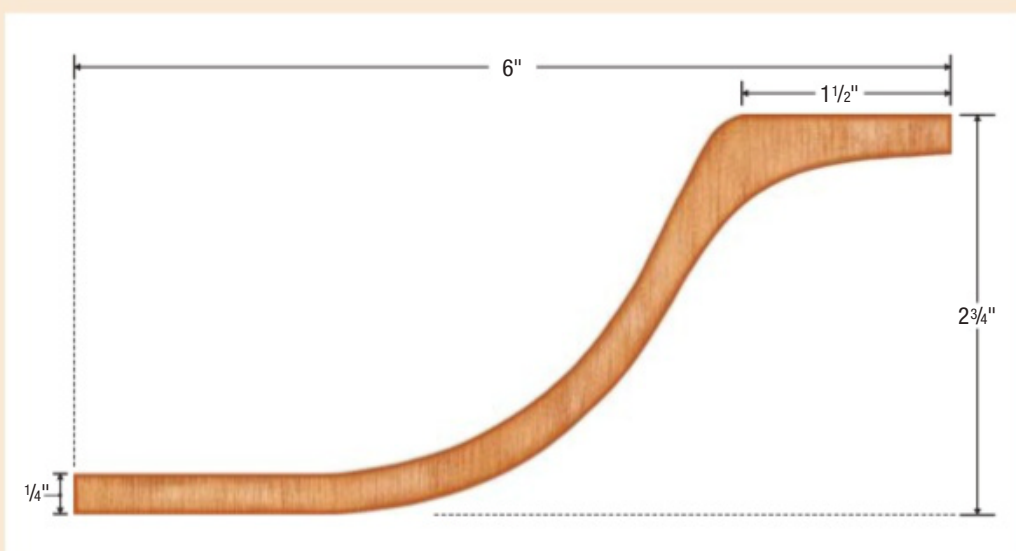


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15 Divide the current diameter in half, and make another pencil mark.

16 Now, to form the ogee, blend the two curves together, meeting right where your pencil line was.

Carved Rim Bowl



to finish the bowl in order rather than having to go back and finish later. I prefer to use the 2" *Skilton* brand of sanding pads, which are great quality and have just the right amount of firmness in the pad for efficient sanding. They are also tapered which helps when sanding an undercut rim as they will form a soft curve. The 2" sanding discs I use are available from TurningWood.com. (Check out the Top-Notch Bowl Turning article in the August 2022 *Popular Woodworking's* for more information on these pads.)

When sanding, I like to start with a 180-grit and finish with a 400-grit disc on a power drill and go through the grits in order. Be sure to check that there is no torn or disturbed grain after the first grit. If there is, it will be on the area of the end grain on the bowl blank and will show up as lighter lines on the surface. After making sure there is no torn or disturbed grain on the surface, continue through the grits. With each grit, you are making the "scratches" smaller and smaller.

My preferred finish for most of my woodturnings is very simple. With the piece stationary, I seal the wood first using a thinned-down mixture of 75% *Zinsser's* clear coat shellac and 25% denatured alcohol. This thinned-down mix will penetrate further into the wood, and any woodworker will tell you it's better to apply several thin coats and built it up as opposed to a thick syrupy finish and need to sand it back! I pay particular attention to the end grain as the finish tends to soak in a little more than the long grain.

When the sealer is completely dry, I turn on the lathe and remove any slightly raised grain using a fine *ScotchBrite* type of plastic abrasive pad. Then, I apply a light coat of *Watco "Natural"* Danish oil which will pop the grain and give the wood a beautiful luster. After allowing it to soak in for several minutes, come back and wipe off any excess oil with a clean piece of paper towel. Next,

turn the lathe back on and apply a little pressure to help dry and burnish the oil on the surface.

Carved Rim

After removing the blank from the screw chuck, mount it in the scroll chuck and make sure that you tighten the chuck securely on the foot and that the piece is fully in the jaws. It

is important that the foot or tenon is cut accurately to allow for this. If the piece is running out of true and you start to turn it, you would end up with a different rim and wall thickness throughout the bowl.

After the blank is mounted in the chuck and is running true, I use a draw or pull cut and clean up the face of the bowl until it runs true as well. I



17 Sand the bottom of the bowl. Use a soft sanding pad, and sand clear up through 400-grit sandpaper.

18-19 Seal the bottom of the bowl with sanding sealer (shellac), and then finish it with a coat of natural color Danish oil.

20 After turning the blank around, true up the surface with a series of draw cuts, to give you a clean starting surface.



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then turn the rim to about $\frac{3}{16}$ " thick, which allows enough thickness to take into account the carving I will be doing. Using an aesthetic measurement, I scribed a pencil line to mark the width of the rim which is to be carved. I prefer to carve the rim first and then hollow out the bowl as this greatly reduces the risk of tear out on the inner edge of the bowl.

It's time to start carving. I use the *Foredom* range of power carving equipment. In my opinion, it's top-notch, and it also has a reciprocal carving attachment in addition to the standard rotating head that I use for sanding and grinding ... not to mention a host of other attach-

ments. To carve the rim, I am using the reciprocal carving attachment with a *Flexcut* "V" shaped carving blade inserted. I then made a series of radial cuts from the inside to the outside of the rim of the bowl. A good tip is to divide the rim into four quarters so the cuts remain radial and won't wander to one side, which would form a spiral. (You could use the spiral cuts as a different design in the future.) Remember, the cuts for this rim are randomly organized if that makes sense. If they are slightly different widths or cross over a little, it doesn't matter as it will not affect the end visual result.

After carving, I use a rotary sanding disc to remove any torn grain, especially on the end grain. Again, choosing cherry for the bowl, which carves beautifully, greatly reduces this from happening. Next, you need to seal the carved area in order for the adhesive for the metal

21-23 After locking the spindle, use a *Foredom* power carver to carve lines in the rim. A sharp chisel cuts clean, but any fuzz can be cleaned up with a sanding flap in the *Foredom*.

24 Seal the rim with a few coats of spray lacquer.

leaf to adhere. I use a can of stain spray lacquer to seal the surface. This will allow the adhesive to cure on the surface and not soak into the grain of the wood.

Hollowing the Bowl

After the carving of the rim is completed and sanded, if necessary, I then use a $\frac{1}{8}$ " parting tool to make a cut about $\frac{1}{4}$ " deep to define the rim of the bowl. This cut gives you a flat support to place the bevel for control when hollowing from the rim of the bowl into the center of the blank.

Using my $\frac{1}{2}$ " bowl gouge and push cuts, I proceed to hollow from the center of the bowl to about half the depth and work towards the outside

of the bowl. I prefer to turn a bowl in stages depending on how large it is, a deeper bowl may take 3 stages of hollowing, again because of the support. When you start to hollow a bowl, you are releasing tension and stress. If you take too much of the waste wood in one go, the wood can move, making it more difficult to pick up a finishing cut. That's why I only hollowing to half the depth of the bowl is simply for more support.

I turn the first part of the inside curve to the correct thickness and then return to the middle and hollow to the final thickness, blending the outer curve of the bowl into the curve flowing to the bottom of the bowl. Watch out for a depression or



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25 Define the rim of the bowl using a parting tool, cutting at a slight angle to match the inside curve.



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26-29 Hollow out the inside of the bowl with your tool of choice. A swept back grind on a bowl gouge works well here, but you can switch over to a traditional grind or a bottom bowl gouge to help get an even, consistent curve along the inside bottom of the bowl.

30 After sanding back through 400 grit, apply the same finish you did on the outside — sanding sealer followed by a couple of coats of natural colored Danish oil. Try to not get any oil on the rim, as that will interfere with the next step.



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a hump in the middle of the bowl, a common error. After hollowing the bowl, I sand and finish the inside of the bowl as I did on the outside minus the rim as this is where we will apply the adhesive and metal leaf into the carving.

Applying Metal Leaf

For the metal leaf, I am using the brand called “Cosmic shimmer,” which I purchased off *Amazon*. There are several color variations of flake available to choose from. I first applied the adhesive or size for the metal leaf using a soft bristle brush. When the adhesive is applied, it is milky white in color. When it turns clear, it is ready for the metal leaf to be applied. It only takes a few minutes to go from milky white to clear.

Applying the leaf is very simple, just take a pinch at a time and cover the carved area. Then using a soft paper tissue, push the leaf into the carving. Any excess leaf can then be removed using a soft bristle brush or a new toothbrush (don’t get caught using your significant others!). The excess leaf can be col-

31 With an artists brush, apply a thin coat of gilding size (glue) to the lines on the rim of the bowl.



32 Set the chuck and bowl on the lathe bed, and crumble the leaf of your choice along the set-up size. Here, I’m using a variegated (multi-colored) leaf.

33 After the rim has been covered, use a soft tissue to push down the leaf into the size.

34 Grab an old toothbrush and flake away loose the leaf.



lected and used again in the future.

The effect I am looking for is to have the metal leaf just in the carved area, so in order to get that effect, I simply sand away the leaf on the surface with 400-grit sandpaper. Any dust that is on the surface of the metal leaf can be blown away using an air compressor or wiped away gently using a paper tissue. All that is left now is a great finish for the carved rim and leaf. I recommend a spray lacquer, whichever sheen you prefer.

35 Give it a final once-over with the tissue to make sure everything's stuck.

36 Gently sand away excess leaf and curve the rim, causing the carved cuts to feather out.

37 The look you're going for is a feathered, leafed cut in the rim.

38 Seal the leaf and rim with spray lacquer.

With this knowledge, you can use this relatively simple technique to embellish the rim of your bowls and make them just a little differ-

ent from others. Also, with a little imagination, this technique can be applied to flat work also. Happy Turning. **PW** — Jimmy Clewes

■ In The Shop

Working with Defects in Wood

Don't let cracks and knots get you down. There's plenty of ways to make rough spots into functional and interesting features of a piece.

By Rob Petrie



I have been charitably described as “frugal” before. I’ll collect any free wood I come by, no matter the condition, and I won’t let an inch go to waste if I can help it. Naturally, this mentality means that sometimes I need to get creative with my boards. However, as you’ll see in the following pages, they’re reasons to save a piece with a defect, even if you may not share my frugality.

Epoxy

The most inconspicuous way to deal with many defects is epoxy. Epoxy creates a strong, translucent filler for cracks, checks, and knots alike. While it takes a little care to get a smooth surface, the process is relatively easy overall.

First tape over all holes and cracks on the opposite face from the defect. There’s no telling how far some holes go.

After taping up the piece, the defect can be filled. Mix the epoxy with the hardener for about a minute to a minute and a half. Once thoroughly mixed, pour the epoxy into any voids.

The goal is to seal and reinforce the defect by filling all the nooks and crannies. Overfill the voids slightly, as the epoxy will keep seeping deeper until it cures. When working with knots, start at one side and slowly work across. If (and when) bubbles form, a heat gun can get rid of them. Gently heating up the surface pops any bubbles.

Once the epoxy seeps in and cures, you may find that some spots need to be filled in more. Sand down the first layer to reveal any air pockets that might have formed, then apply a second layer of epoxy. After the second coat cures, sand it to a high grit for a glass-smooth surface.

Wood Filler

Using a filler is one of the cheapest and easiest options for fixing defects. While a filler isn’t going to perfectly match the wood around it, choosing the right kind goes a long way toward making it blend in.

SUPER GLUE: Glue by itself is the simplest choice of filler. A clear, thick-viscosity super glue is a great option for small cracks and knots, filling them in without affecting the color. On the other hand, colored super glues are available as well to better match the wood. For instance, black super glue fills dark knots without drawing the eye.

When using super glue, first coat the surrounding wood with shellac. If super glue seeps into bare wood, that spot will have trouble taking stain and finish. A coat of shellac seals the wood and can be sanded off after.

EPOXY:

- 1** Apply tape to cover the hole (or holes) on one side of the piece.
- 2** Pour in the epoxy/hardener mix, allowing it to seep into the knot.
- 3** Once the epoxy cures, sand it flush with the wood surface. High grits leave a smooth epoxy surface.



COLORED SUPER GLUE:

- 4** Super glue comes in a variety of colors and viscosities, such as these from Starbond. Thick glue works well on its own, while thin is useful for adhering some of the fillers discussed later on.
- 5** After shellacing around the defect, a thick, dark glue can be used to fill the defect. I used black glue to blend with the wood.
- 6** A spritz of accelerator will cure the glue instantly. If the glue sinks below the surface of the wood, apply more layers until it can be sanded flush.



WOOD PUTTY: An easy fix for short surface checks is wood putty (filler). It masks small defects well, but personally, I don't care for the look on larger cracks, as it's hard to match the rest of the wood when finishing.

Wood putty doesn't have to be store-bought. To make your own filler, apply hide glue around the defect, then sand it with a sacrificial piece of sandpaper until a paste forms. Pack the paste into the defect and sand it down once dry. The filler will match exactly, and it only costs one old piece of sandpaper.

SYNTHETIC SAND: Sometimes, the best way to hide something is in plain sight. If you're looking to draw attention to a defect rather than away from it, Synthetic Sand (wood-worldtx.com) makes for a bold look. Available in a wide array of colors, it can be mixed with a thin super glue and used to fill cracks and checks like any other wood filler. I find it best to fill voids up by building several layers. Follow the steps below, packing in the filler and sanding in between layers until the surface can be sanded flush to the wood.

GLUE & GROUNDS: Using super glue with coffee grounds is a subtle (and low-cost) way of filling larger cracks. Shellac around the defect first to prevent the super glue from staining the surrounding wood. After the shellac dries, fill the defect with grounds. A thin super glue does a good job of adhering the grounds. As with the Synthetic Sand, it may take a few layers to fill everything in. Once dry and sanded down, the grounds create a smooth, dark surface that doesn't draw too much attention to itself.



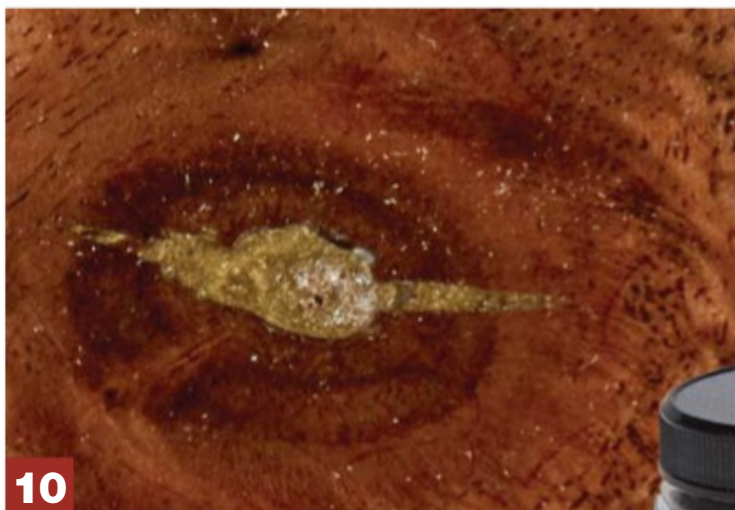
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SYNTHETIC SANDS:

7 After filling the crack or check with *Synthetic Sand*, apply a few drops of thin super glue to adhere the filler in place.

8 Pack the sand and glue in, tamping it down to fill the voids. Any air pockets that form now will show up after sanding down the dried filler.

9 Accelerator will sometimes cause the glue and *Synthetic Sand* to bubble, but these bubbles are easy to sand down.

10 Sand the filler flush with the wood. If this reveals any air pockets, apply more filler and glue until you're left with a smooth, even surface.





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SUPER GLUE WITH COFFEE GROUNDS:

11 A layer of shellac prevents the super glue from staining the wood.

12 Pack the defect with coffee grounds and tamp them in place.

13 A thin super glue seeps between the grounds to cement them in.

14 Starbond's accelerator keeps the super glue from whitening.

15 Once cured, the grounds can be sanded flush to the wood's surface.



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Patching

Some defects are too large to be simply filled in. In these cases, patching the defect with an inlay can be the best option. While patching is the most conspicuous choice, it offers a chance to use different shapes, colors, and woods together. Alternatively, a cleverly made patch can blend in shockingly well.

Start by determining the shape of the patch, then create a template to help you rout out that shape in the piece. Double-sided tape makes it easy to stick a template to your piece, then a plunge router with a bushing and straight bit can be used to remove the waste.

On round pieces, such as a turned bowl, a template won't stay taped while you rout. Hot glue does a great job of keeping a template attached. Gluing the template to a bit of painter's tape rather than to the piece



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itself makes for easy removal.

When creating the inlays to match the template, it's best to leave them a little thicker, as they can always be sanded or planed down later. Once an inlay is shaped, coat its edges in glue and tap it in place.

Patches vary widely in style to suit all tastes. Some are relatively cam-

PATCHING:

16 Matching color and grain goes a long way to help a patch blend in.

ouflaged, like what you see above. Others provide wild contrasts of colors, woods, and shapes.

Chipout

As many reading this may know, chipout can be quite troublesome in highly figured grains, especially when jointing or planing. To help ease the rough look of chipped out sections, the defect can be smoothed and disguised to look like the rest of the wood.

Start by scooping out the afflicted area with a ballpoint *Dremel*. Use the *Dremel* to shear the rough, torn fibers into long divot.

Next apply accelerator, then put a few droplets of clear super glue on the chipped section of the piece. Once the glue cures, it can be sanded flush with the wood.

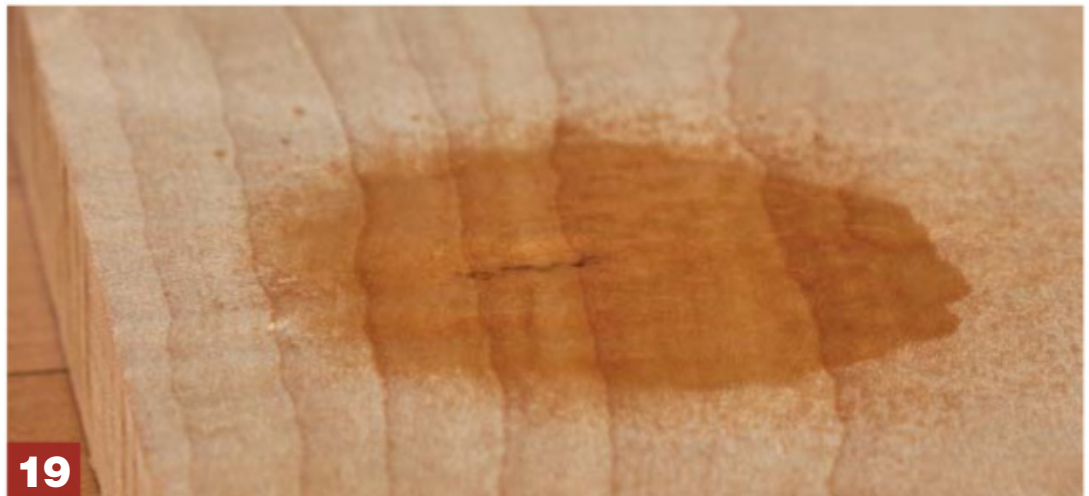
This method works best when the piece can be kept mostly out of view, such as on the inside of a drawer or cabinet. It doesn't mask the chipout entirely, but like many fixes we've discussed, it does help prevent the chipped area from catching the eye.



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CHIPOUT:

17 Chipout is a common issue in figured grains, resulting in an unsightly rough patch on the face of a piece.

18 Dish-out the torn fibers with a ballpoint *Dremel* tool.

19 Start with a spritz of accelerator to help quickly build the first drops of super glue.

20 Apply clear super glue over the chipped area.

21 Once dry, the glued section can be sanded down.

22 The super glue gives the defect a “fisheye” look that blends in with the figuring in the grain once dry.



20



21



22

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Spalting

Spalted wood can contain some of the most fascinating natural figures. As fungi invades the wood, the colonies bleach and dye it to a uniquely gorgeous design. The trouble is that fungi also soften the wood, posing a problem for us woodworkers. Luckily, we have solutions available.

The first step is to have a dry piece. If you've bought dried wood with spalting already on it, then you're good to go. If you're working with greener timber, however, you'll need to stop the mold before you can strengthen the wood. Fungi won't survive in wood with less than a 20% moisture content. Once the wood is sufficiently dry, the colonies will die out.

After you've got a dry piece, the next step is to stabilize it. Even if it's not visible, the mold will have eaten away at the wood fibers. These fibers need to be reinforced by something that can seep in and harden. There are two answers here, and which one you should go with depends on the severity of the spalting on the wood.

For smaller areas, ones that only cover a portion of the wood and haven't softened much, super glue is (again) a great choice. Apply a little to the spalted area and wait for it to seep in. Depending on how much damage was done within the wood, it may take a few coats to seep in fully. Once dry, the glued area can be sanded down.

For particularly punky pieces, a wood fortifier (or wood hardener) is the best choice, such as the Polycryl you see in the photo at right. These fortifiers can be applied by soaking a piece or by brushing it on, but brushing is my usual method, as I rarely work with pieces small enough for soaking to be effective.

When brushing a hardener on, make an extra-diluted solution for the first coat. This allows the solution to soak deeper into the wood. Once the wood has been

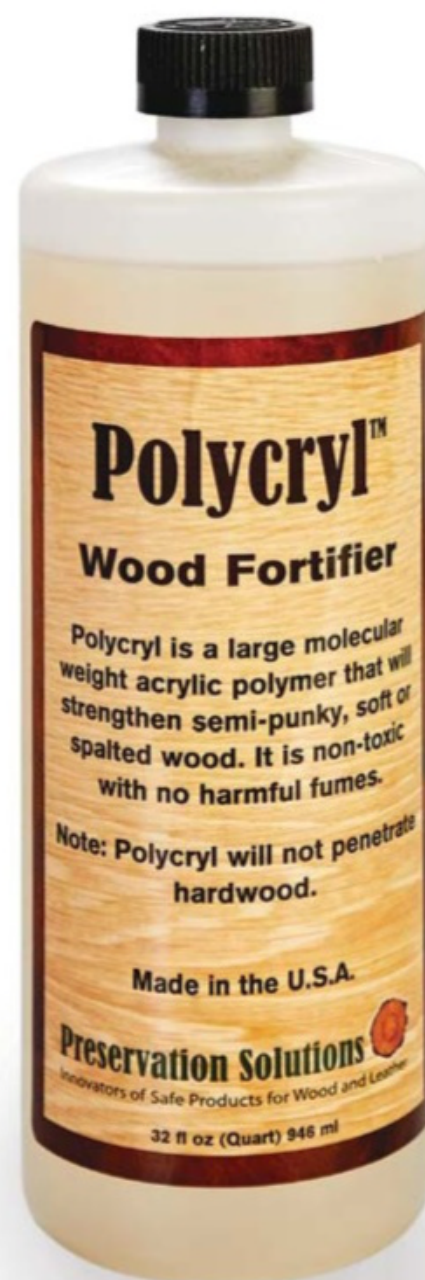


SPALTING:

23 Wood fortifiers, such as *Polycryl*, make punky, spalted wood useable. Many must be diluted with water before use. It's best to start with a weak solution to ensure the fortifier penetrates deep in the wood.

entirely coated, cover it in plastic to prevent the solution from drying out while it seeps into the piece. After it has soaked in, make a full-strength mix and coat the piece again, setting it under it plastic afterward to absorb the fortifier. Repeat this process until the wood no longer absorbs any solution. At that point the piece has taken on all the hardener it can, and it's time to let it dry without plastic. Once dry, you'll be left with a stable, workable piece.

While these methods work to strengthen the spalting, keep in mind that you'll need to finish the piece with a film-forming finish, such as lacquer or polyurethane. Because the cells have all been filled with the fortifier, they won't take a finish that needs to penetrate the wood. **PW** - Rob Petrie



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David J. Marks

Internationally acclaimed furniture designer, craftsman, turner, and sculptor, David J. Marks has traveled the world teaching his craft.

The year is 2002, and David J. Marks is hosting his first episode of the show “Woodworks” which is making its debut on HGTV and DIY Network. Over the course of the next several years, David films a total of 91 episodes, introducing millions of woodworkers to a different kind of woodworking. A kind of wood-working that blends flawless design, exotic woods, and absolutely perfect execution. Woodworks was my first introduction to David J. Marks, but his notable career started well before he was selected as the host of the critically acclaimed show.

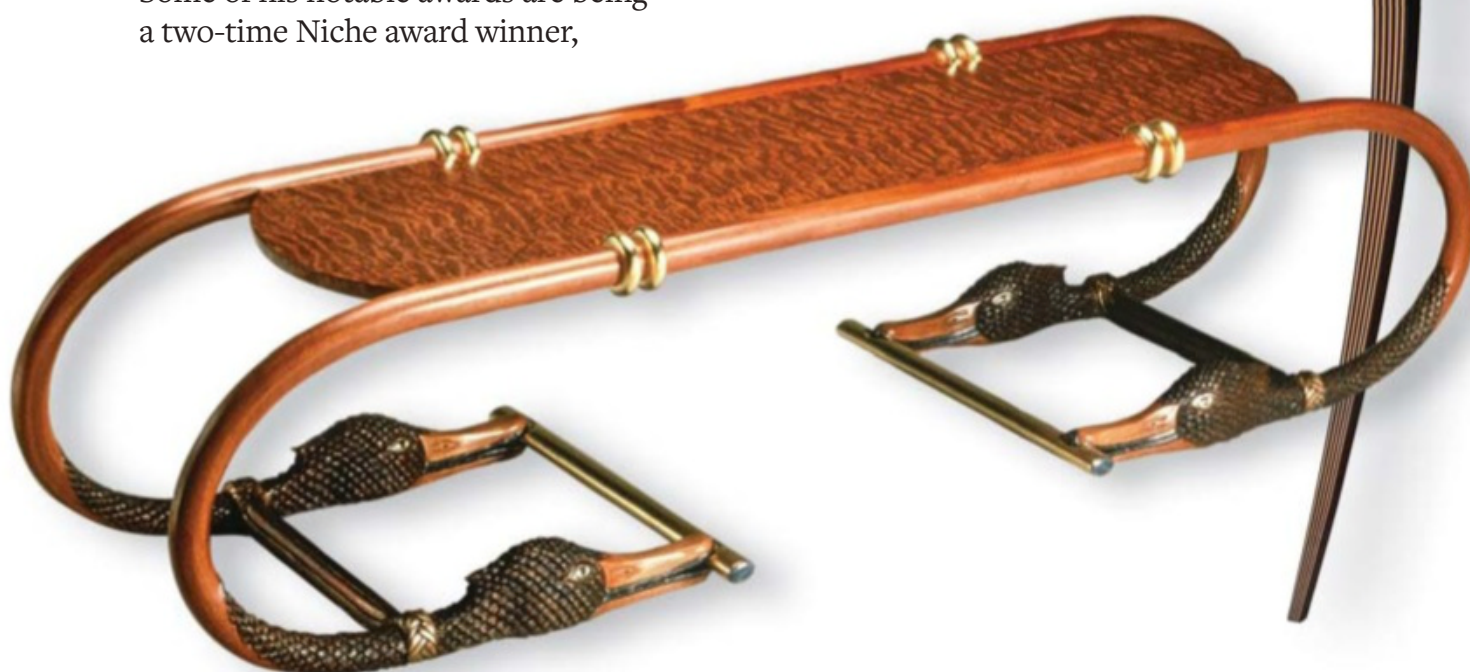
In 1981, David opened his own studio at his home in Santa Rosa, California. Having worked in a variety of cabinet shops and other endeavors in woodworking, David started to design and build distinctive furniture for clients across the US. In the late 80’s, David started to focus on his sculpture and turning work. Some of David’s most recognizable pieces feature turnings, extensive gildings, and intricate marquetry.

Over the years, David’s been the recipient of many notable awards from furniture design to turning. Some of his notable awards are being a two-time Niche award winner,

a four-time best in show at the “Artistry in Wood” (Sonoma County, CA), and first place (Wood Turning/ Embellished Mixed Media) at the prestigious Design in Wood show (San Diego, CA).

One of my personal favorite pieces of David’s, and one that’s always stuck with me since I saw it, is his 1991 piece, “Ancient Egyptian Inspired Table,” below. David stated that he became mesmerized by ancient craftsmen after a trip to see “Treasures of Tutankhamen” in the late 70’s. It was this fascination that drove him to build this piece, which appears in Fine Woodworking’s “Design Book 6.”

Of late, David’s spent most of his time teaching private classes out of his Santa Rosa, CA shop and working on turnings. His turnings, such as “Sensi” (shown at right), often feature David’s signature patina and bent-lamination stands. It was one of these stands that became the inspiration for an upcoming *Popular Woodworking* project from the master himself, David J. Marks. Stay tuned for it... you won’t want to miss it. **PW** — Logan Wittmer



(Left) “ANCIENT EGYPTIAN INSPIRED TABLE.” 1991. MAHOGANY, GOLD LEAF, LAPIS LAZULI, IVORY & EBONY. PHOTO BY DON RUSSEL



(Right) “SENSI.” 57”-TALL WITH STAND. PHOTO BY DON RUSSEL.



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