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Vol. 45 / No. 269

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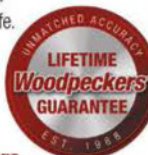
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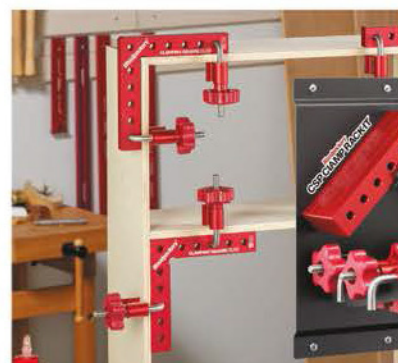
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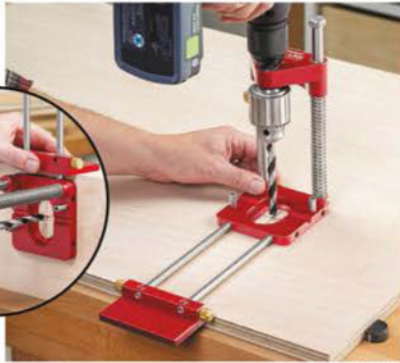


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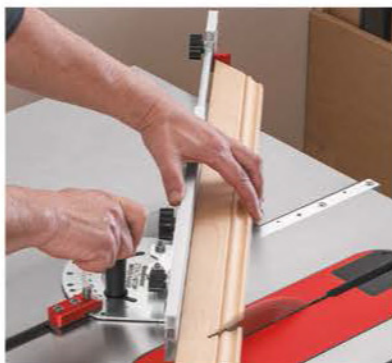


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CAD SPECIALIST/BUILDER Steve Johnson

SHOP MANAGER Marc Hopkins

CONTRIBUTING PHOTOGRAPHERS Chris Hennessey, Logan Wittmer



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EDITORIAL

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847-724-5633
jchristiansen@aimmedia.com

AD PRODUCTION COORDINATOR Julie Dillon

GRAPHIC DESIGNER Julie Green

PRESIDENT, HOME GROUP Peter H. Miller

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from the editor Sawdust

Every project seems to have “that One thing;” the aspect of the project that draws you in like a baited hook. The projects in this issue made this apparent to me in a fresh way.

As a woodworker, it could be a construction method. For example, the Shaker dresser on page 38. The entire project is made from solid wood — no plywood. In building it you need to consider wood movement while sizing parts and assembling the case.

There are some projects that feature a new-to-you technique. The mirror frame (page 52) has carved leaves and flowers. Natural elements like this give you a low-risk foothold into carving. The differences between each leaf blend together into a unified whole when you step back to look at them all.

Another kind of draw could be a design detail that makes the completed project stand out as unique. The head of wheat cutouts in the wall shelf that starts on page 32 highlight this. The design was inspired by a Craftsman book rack that featured four square cutouts.

The chance to work with new (or unfamiliar) materials takes center stage in the stool project found on page 46. The seat is made from woven cane, while the legs are made from a material that incorporates the best of plywood and solid wood.

Once you dive into a project like these four, other details and features come into play. That’s one of the best parts of this craft — there’s always something to grab and hold your attention, making shop time fly by.



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No. 269 • October/November 2023



Projects

weekend project

Farmhouse Shelf 32

This compact shelf has a big impact with its country-flavored cutouts, two shelves, and a pair of drawers. It's the ideal small project.

heirloom project

Shaker Dresser 38

Inspired by a classic Shaker chest, our version scales down the size and leans into the bright historic colors and unique drawer arrangement.

designer project

Cane Seat Stool 46

There's a good chance you'll make several stools based on this design. It features a woven cane seat for comfort and style, and an interesting material for the legs.

carving project

Mirror Frame 52

Hand-carved leaves running around the border and the flower corner blocks make it a challenge to remember what you wanted to look at in the mirror in the first place.



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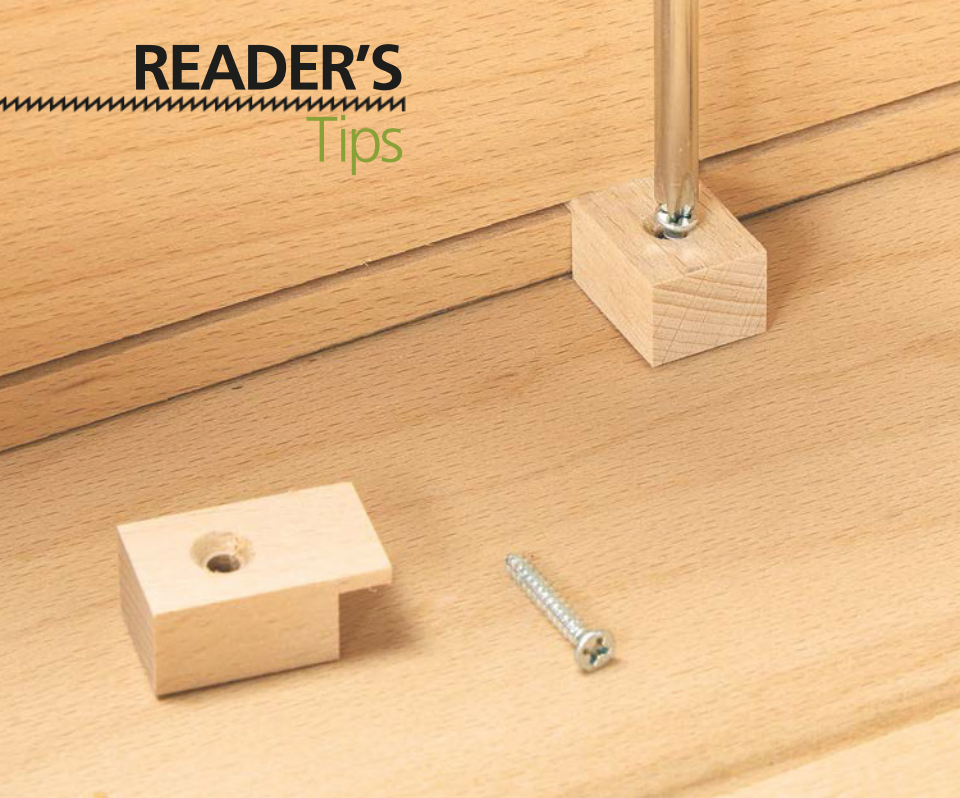
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Hardwood Table Clips

Accounting for the ways wood moves is one thing that often crosses my mind when working on a project. The shop-made fasteners you see here are my answer for attaching solid-wood tops. These are nothing more than blocks of wood that are rabbeted to form a tongue on one end. This tongue then fits into a kerf in the rails.

To make the fasteners, I start by planing down a long, $\frac{3}{4}$ "-wide blank. Using a straight bit at the router table, cut a rabbet on the ends of the strip to create a $\frac{1}{8}$ " tongue (upper right photo). After drilling a pilot hole for the screw, you can cut the fastener to length (lower right photo). From there, head back to the router table and start the process over again, making as many fasteners as you need.

*Stanley Swider
Independence, Missouri*



Rabbeting. First, rabbet the strip's ends to create the tongue, using a scrap backer board to support the strip.



Free the Clips. After drilling the pilot hole for the screw, free the clip from the longer blank at the table saw.



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QUICK TIPS



Prevent Hardware Fugitives. Bob Zimmerman of Beavertdale, IA was getting tired of finding all his hardware mixed together when the plastic dividers in his organizer case would rattle out of place. To make sure they stayed seated and organized, he put a bit of hot glue along their bottoms.



Emergency Eraser. Kyle Billups of Boise, ID had layed out his next cut perfectly — when he realized he marked it on the wrong side of his board. No eraser was in sight, and he didn't want to stop working to look for one, but he found that the rubber corners of his tape measure worked just as well in a pinch.



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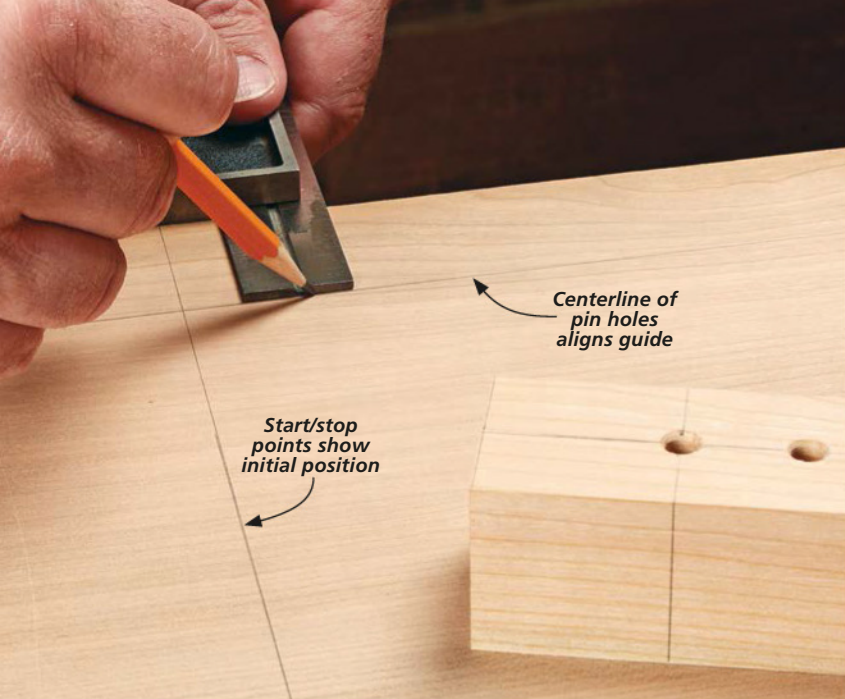
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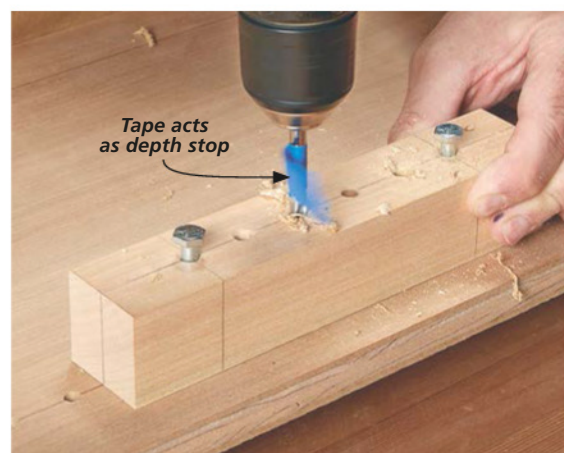
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Drilling Guide Holes. Lay out the centerline of the shelf pin holes, then mark the position of the first and last bolt. Drill these two holes first.



Aligning the Pin Holes. After drilling the initial holes, clevis pins keep the guide aligned. Simply drill through the guide to finish the pin holes.

▼ A simple clevis pin works well to keep the pin holes of the guide aligned with the piece you're drilling.



Shelf Pin Drilling Guide

Evenly spaced shelf pin holes are one of the more notable features of a well-made cabinet. Luckily, keeping the spacing even is an easy task with the right method. You can see my spacing guide here.

The block has a series of holes drilled at the drill press. Centerlines marked on the block help you to align it during use. To put the block to work, I first mark out the centerline of the row of pin holes, as well as their end points. From there, I simply need to align the block with the lines to drill the holes. For longer runs of holes, a clevis pin (or even two) registers the block.

*Stephen Willard
Glendale, Arizona*

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Edge Sanding Block

Hardwood edging is a beautiful addition to the functionality of plywood. However, sanding that edge can be an issue—it's not easy to hit the edging while avoiding the plywood. For that, a simple sanding block can be the answer.

The body has an ergonomic shape that makes it easy to use when there's a good deal of sanding to be done. Below it, a hardwood fence holds the sandpaper in place, exposing only as much as you need, while also guiding the block along the edge of your piece. The sandpaper itself is backed by forgiving cork, granting it a longer lifespan. I use painter's tape to protect the cork as well, ensuring the cork doesn't pull apart as sandpaper is removed.

I began with the body. After gluing it up, I cut the blank to final size and layed out the shape. Starting at the band saw, I removed most of the waste and finished at the edge sander. Next, using a core box bit at the router table, I routed the coved recesses along the sides. I then swapped out for a roundover bit to round off the top edges.

With the body of the sanding block made, I cut the assortment of other parts. This includes the sanding pad, the two heels (both made from hardboard), and the hardwood fence. Both heels and the fence also have a small radius on two corners, which I made at the edge sander.

Next, I drilled the holes for the screws that hold the block together. There's a recess around the holes in the fence to fit the washer and screw head. The cork, painter's tape, and sandpaper (along with the sanding pad) are held in place by the heels and fence as the screws are driven in.

The sanding block is easy to use. Simply adjust the sandpaper to the width of your edging, tighten down the fence, and sand away!

Matt Charon
Corvallis, Oregon

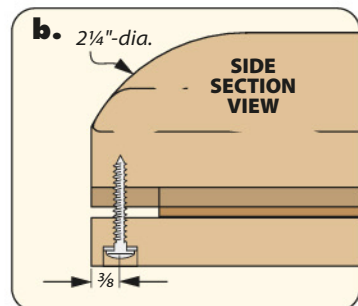
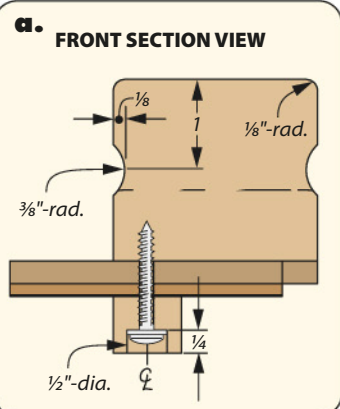
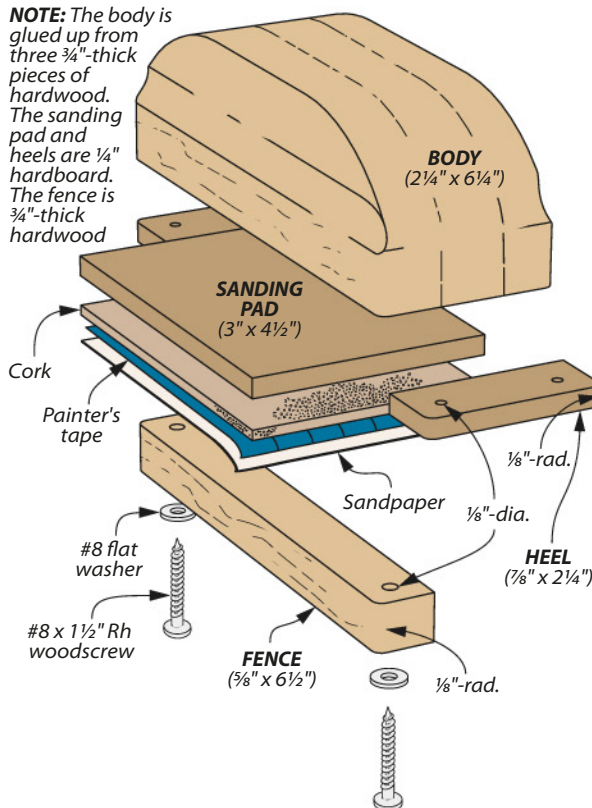


▲ A layer of painter's tape protects the cork layer from wear as adhesive-back sandpaper is applied and removed.



▲ The exposed sandpaper can be easily adjusted by sliding the pad.

NOTE: The body is glued up from three $\frac{3}{4}$ "-thick pieces of hardwood. The sanding pad and heels are $\frac{1}{4}$ " hardboard. The fence is $\frac{3}{4}$ "-thick hardwood





1 Vertical Kerf. A vertical cut along the edge of a plywood piece separates the face veneer to use as banding.



2 Free the Band. Remove the banding from the plywood using a sharp knife. A ruler works well to keep the cut straight.



After applying tape to hold banding in place, add a cawl and some clamps to ensure a flat, smooth result.

Plywood Edgebanding

Plywood is a wonderful material for building cabinets, cases, and even tabletops. Other than the challenge of dealing with the large size of full sheets, working with plywood is pretty straightforward. However, it can be a bit more complex when it comes to dealing with those edges.

There's two reasons to cover up plywood edges. The first is simply appearance. The second is that thin veneers can chip without some protection. A sure-fire way to match the edgebanding

with the plywood is to cut the edging from the same plywood as the rest of the project.

The photos at left show how I do this. At the table saw, I cut a kerf along the edge of a piece of plywood, leaving only the face veneer. I then use a utility knife to remove that veneer. As you can see above, this piece makes perfect banding.

*Kim Cooper
Elgin, Illinois*

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Relief Carving

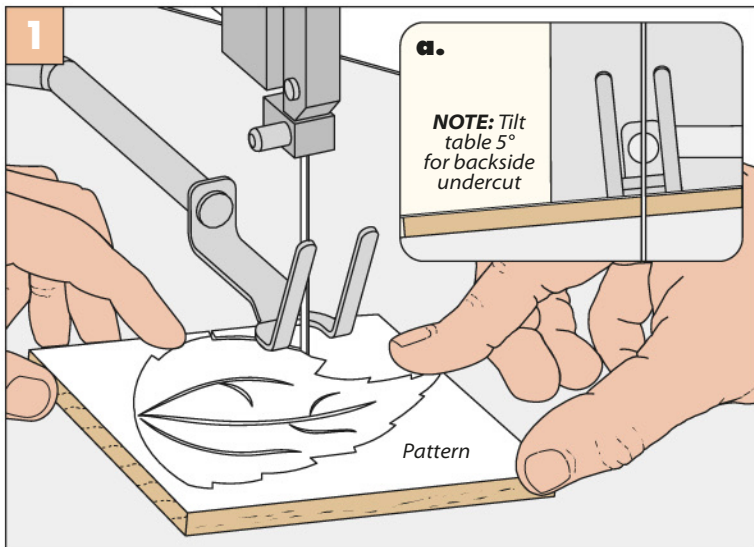


If the idea of woodcarving has often intrigued you but the cash outlay of good tools (you want good woodcarving tools, trust me) has spooked you off — relief carving might be a good place to start. All of the work done on these pages was executed with the four tools you see to the left. Not having deep crevasses or head bust surfaces to snake in and out of means that you can spare your budget from some of the

▲ Some basic woodcarving gouges are all that's needed to carve the leaves and sunflowers. These tools are from the *Swiss Made* line from *Pfeil*.

more exotic carving tools, and still have a lot of quality time and carving challenges on your plate.

A RICH HISTORY. Relief carving can be just as rewarding and challenging as the more ambitious carving projects that are multifaceted. But don't confuse this with the notion that relief carving is just an elementary phase of wood carving — it's not. If you do an online search "relief woodcarving," you'll quickly see that there's a vast collection of high-quality woodcarving that's done in the relief category. Relief carving is an ideal way to dip your toes into the world of woodcarving, if you choose to stay there for your whole woodcarving journey, you'll have plenty to do.



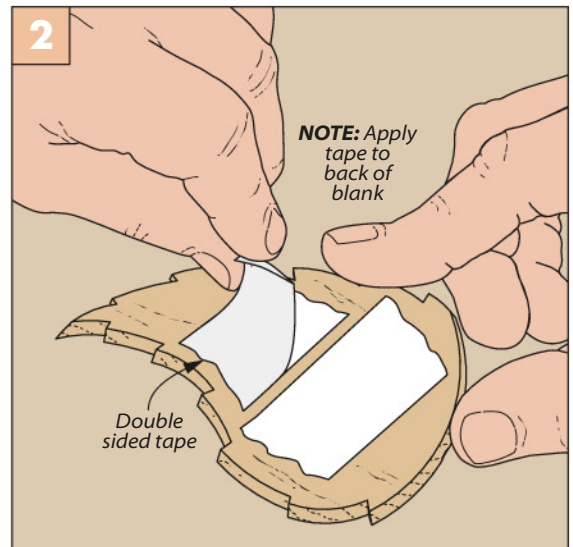
Cut Out the Profile. Spending a little time at the scroll saw is good for the soul. Tilting the bed 5° creates a crisp profile and a sharp line on the edge of the leaves where you want to leave it.

What we're doing here is technically referred to as "low-relief" applique wood carving. This is a type of carving that's done on material that hovers in the area of being a 1/4"-thick. Low-relief carving generally comes in two styles. First, closed carving is where the background surface of the board is left intact. Second, open carving is where all or parts of the background are carved away. Our leaves are similar to open carving.

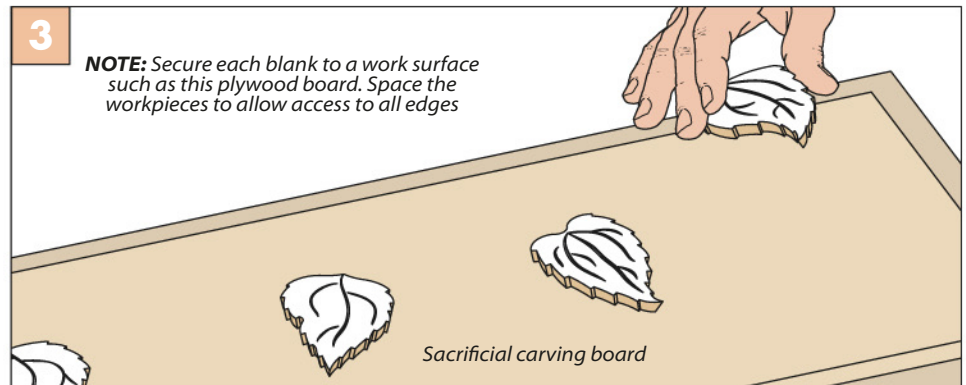
The mirror on page 52 is adorned with a variety of leaves on the frame and punctuated in the corner plinths with a layered sunflower. Here we'll walk you through the steps of creating all the flora that adorns the frame. Starting with the leaves.

PATTERNS FIRST. There are patterns available on page 57 that you'll need to print out for the leaves. The mirror frame calls for 22 leaves. Also on the same page is a key that shows where we placed each one on the frame. If you would rather not fuss with enlarging prints, you can go online at Woodsmith.com/269 and print out full-size copies.

After planing all the leaf blanks to their final thickness,



Hold the Leaves in Place. Double sided tape on the back side of the workpieces will hold them firmly in place on the carving board.



Line Them Up. The size of your carving board depends on what's in your scrap bin. The main criteria is that there's enough space between each piece that they don't interfere with the swing of your arms as you're carving the adjacent piece.

you need to attach the patterns. Spray adhesive is the best way to attach the patterns to the blanks. To control the sticky overspray, place the leaf blanks on some kraft paper at the workbench.

SCROLL SAW. Your scroll saw is the ideal tool to cut out the profile of the leaves. (Note the undercut of 5°.) Figure 1 above shows that once you've adjusted the tilt of the table it's clear and quiet sailing while cutting out the shapes. Don't bother sanding the edges, your tool work will take care of that, unless you want an uncarved look on the edge.

BATCH CARVING. Carving the leaves is going to take on the

quality and feel of a production line — mainly because it is. I started by selecting a large, flat piece of scrap wood, or plywood, to serve as the carving board. To prepare for this step, attach double sided tape to the backs of the leaves (Figure 2).

How many leaves you want to work on at one time is completely up to you. The mirror frame's existing design has as many as four leaves in four of the six patterns. You can group them all the same, or mix the different patterns together like you see in Figure 3. Whatever suits your fancy. Then you're ready to start carving.



- ▲ There are six different leaf patterns on the mirror frame. How you choose to carve each will most likely evolve while you work on all 22 leaves. Have fun while you explore.

CARVING LEAVES

Looking at the photo above of one leaf on the finished mirror, you'll notice the main attribute that brings relief carving to life — raking light. Up front it might seem overwhelming as to how to approach carving these magic shapes into the surface. But you'll find out shortly who makes most of those decisions for you — grain direction.

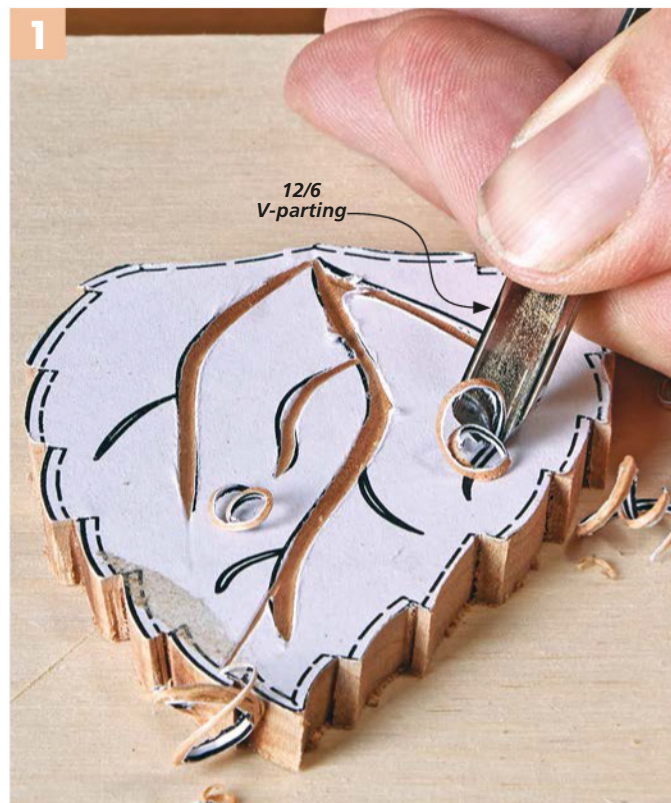
It's a problem that all wood-carvers wrestle with every time they pick up their tools. But they manage to find ways around the trouble. If you're aware of the direction and flow of the grain in the piece of wood you're carving on, you can manipulate those details to make a flaw-free carving. If you don't have a feel for the grain direction you run the risk of chipping or tearing out sections of the workpiece.

Not to worry though, there's a simple way to find the grain

direction on each leaf as you flesh-out the shape step-by-step. It starts with cutting the veins.

VEINS FIRST. Using a V-parting tool, as you see in Step 1, you'll trace the initial shape of the veins in the surface of the leaf. Doing this step on each of the leaves you have attached to the carving board provides you with the first bits of information about the internal workings of each leaf, without the risk of gouging the surface.

In Step 2 you're in essence doing the same thing, except this time it's on the outer perimeter of the leaves. As you see there you can alternate the flow of the leaf edges by rotating the cutting edge of the gouge. This technique lets you change how the leaf looks when the light strikes it. If you vary the edges enough, leaves that come from the same pattern will appear to be completely different.



- ▲ Establishing the veins of the leaf gives you a feel for the underlying grain direction. Knowing that critical bit of information helps you make decisions about how you approach the whole surface.

LEAF FORMS. Now that you're armed with the information provided from cutting the veins and shaping the edges, you can dive into the body of the leaf. Step 3 shows creating the beginning valleys in the surface of the leaves between the veins.

Even now, with what you know about the leaf from what you've already carved, it's wise to make light passes at first. Don't worry, if by chance you still chip out or gouge the surface, all that means is it's an opportunity to take the surface of the leaf in a different direction.

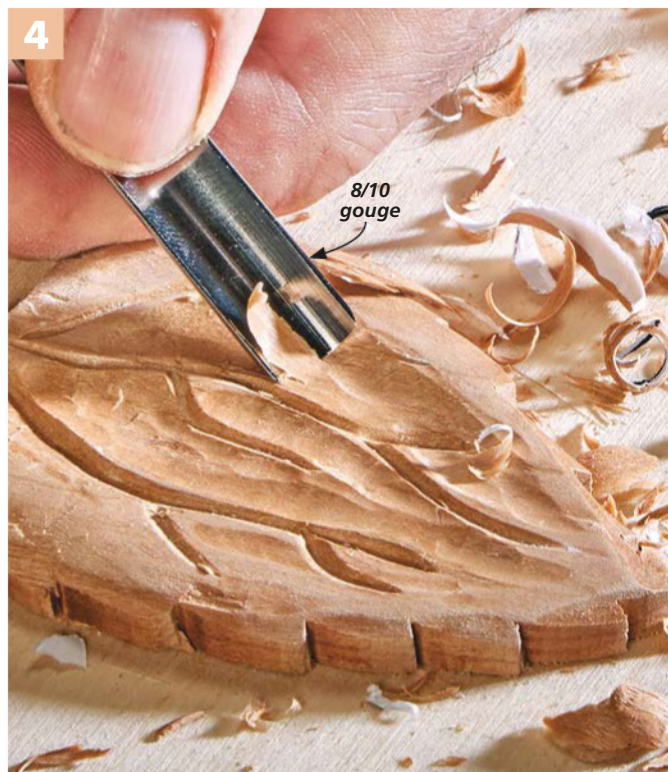
REDEFINE VEINS. Step 4 shows the carving in its final stages. Often as the topology of the leaf changes, you'll have to use the V-parting tool to redefine the veins in the surface of the leaves. Otherwise, it's just a matter of going where the grain allows and the light suggests. As I mentioned above, have fun.



▲ Another easy way to explore grain direction is sculpting the edges. Also, working on the edges of each leaf is an easy way to make leaves that come from the same pattern look different.



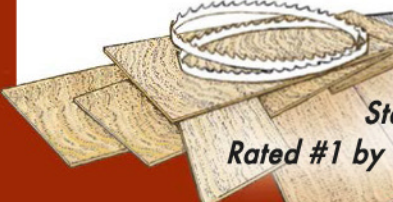
▲ With the grain knowledge in hand from the previous two steps you have a good idea how to attack the surface of the leaf. As you do this you'll probably have to redo some of the veins.



▲ With all the paper removed from surface of the leaf you can work on developing the character of each leaf's veins, edges, and overall surface. In the end, raking light makes each leaf unique.

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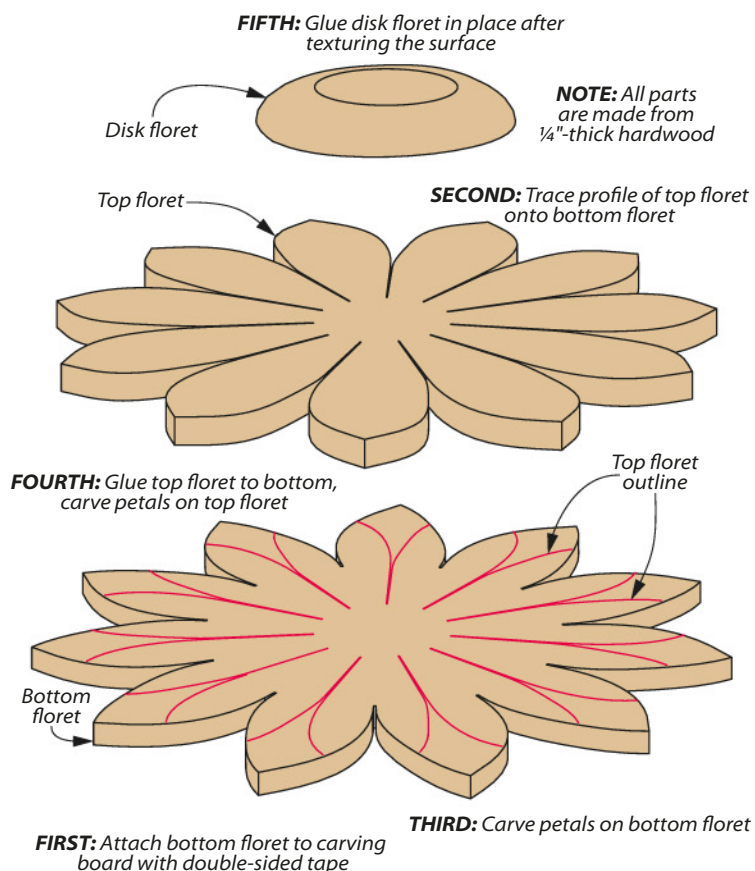


▲ The multi-layered sunflower is an example of an object being greater than the sum of its parts. Each floret's deceptively simple details add up to a pleasing whole.

CARVING THE SUNFLOWER

Now that you're a seasoned veteran of carving almost a couple dozen leaves, sculpting the sunflowers will be a piece of cake. Let's look them over briefly.

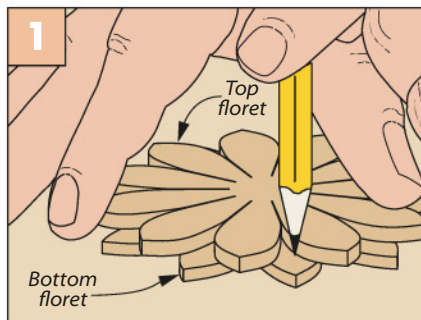
The sunflowers that live in the corners of the mirror are made of three pieces. There are two layers of ray florets (the petals) and on top of them is the disk floret (that's where sunflower seeds reside). As with the leaves, you'll need a carving board to hold each piece in place as it's carved.



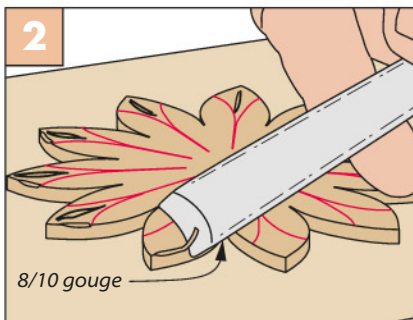
ATTACH THE BOTTOM FLORET. The layers of the flower are shown in the main drawing above. Each step of carving and assembling the flower is shown in the box below. The process starts by attaching the bottom

florets to the carving board with double sided tape. Here, like the leaves before, I chose to attach all four bottom florets to the carving board. This lets you carve and compare each layer of the flower as you go.

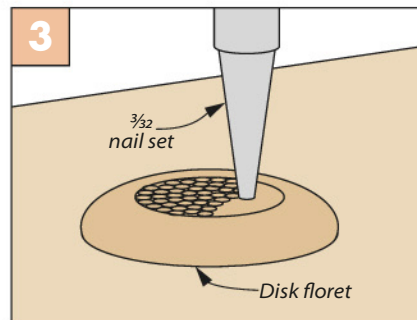
CARVING A SUNFLOWER



Trace the Petals. To avoid unnecessary carving, trace the contour of the top floret onto the bottom floret.



Carve what Shows. You'll see that it's a light touch that's needed on the parts that show on the bottom floret.



Texturing the Disk. A nail set creates the dimpled surface of the disk floret. The size of nail set is up to you.

Remember to space them far enough apart so you have room to dress all edges of the florets.

FORK IN THE ROAD. Following the sage advice of Yogi Berra, “When you come to a fork in the road, take it.” Let’s take a moment and visit about the plan of attack. You can carve each layer of the sunflower separately, then glue them up. Or, as you complete each layer, glue the next on, carve it, then add the disk floret. Well, I chose to take the fork — meaning a third way. How about carving all four bottom florets, then gluing the top florets in place and carving them? But, for the disk floret, I dressed it before gluing it to the others; you’ll see why shortly.

Now, back to carving. As you see in the photo on the previous page, the petals of the two lower florets are offset to each other. Figure 1 shows holding the top floret in its position over

its lower counterpart. Then with a sharp pencil, trace its contour onto the lower floret. This reveals the fact that there’s not much surface to be carved on the bottom floret.

EASY DOES IT. As you see in Figure 2, this is where you’ll find a new challenge in the relief-carving journey — using restraint. If you look closely at the petals of the sunflower, you’ll notice there’s not a lot going on. The surfaces aren’t nearly as complex as the leaves were. So, a modest vein in the center, maybe dish out the petal a little bit, and knock back a few edges for visual interest — easy does it. Rest assured, what seems sparse at the moment will add up nice in the end.

TOP FLORET. When you’re happy with the look of the petals on the bottom floret, glue the top floret in place. You’ll want to let the glue dry before you start carving. One thing you can do in the

meantime is trace the contour of the disk floret so you have a reference for carving.

The top floret has more going on than the bottom — but not much. Here, there’s more undulation in the surface of the petals up to the disk floret line. And you can slice back the petal edges in varying ways as well. A pair of veins in each of the petals adds a surprising amount of energy to the look of the flower. Now it’s time for the disk floret.

DISK FLORET. Texturing the disk floret (Figure 3) involves using a nail set to create the dimples on the crown. This banging on the top and the edges of the disk seemed too much to do while glued to the other florets, so I did this on the carving board, then glued it to complete the sunflower. Clearly, between the leaves and sunflowers, you’ve come a long way on your wood-carving journey. 

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Wall Anchors

It's common knowledge that when hanging something, it's best to secure it to a stud. However, the structure of a building and the nuances of interior design don't always align perfectly. There are going to be times, whether in the shop, the home, or the office, that you'll want to utilize vertical space (or break up a monotonous wall) without a stud available. For that, wall anchors are the answer.

CONSIDERING THE WALL. Naturally, a wall anchor can only ever be as strong as what it's anchored to. Most anchors here will tear through the drywall before shearing. That said, the shape and how the anchor holds makes a big difference in how much weight it can take before tearing.

LIGHT-DUTY ANCHORS (0-25LBS.)

The cheapest kind of anchors are "light-duty." These can be found in any hardware store and even many grocery stores. Most light wall décor—pictures frames, paintings, etc. — fall into this light-duty category.

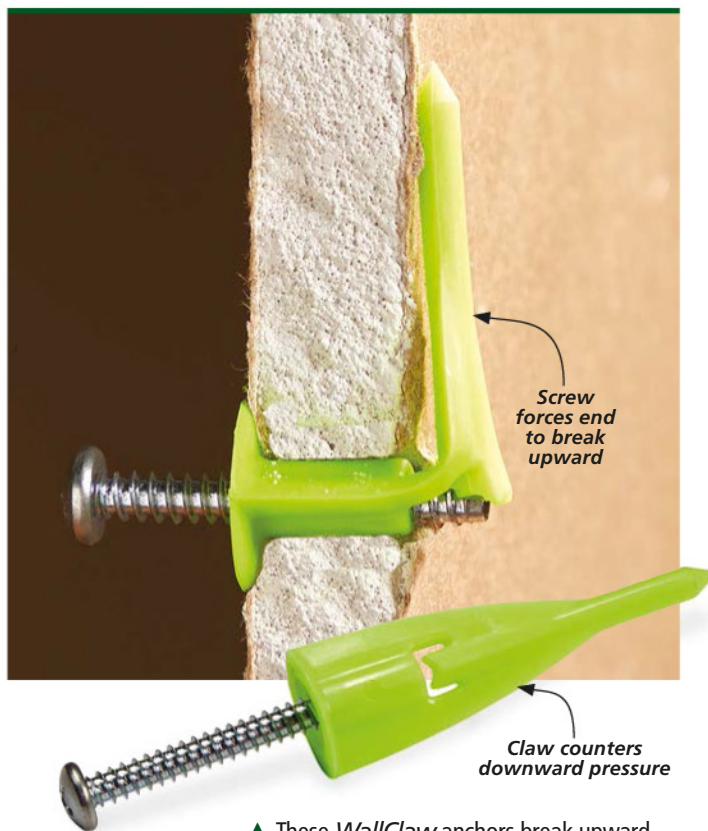


- ▲ The most common wall anchors is an expansion anchor. For most hanging needs, this type is more than enough.

The packaging on these can be a bit deceptive. Both of the ones shown here claim they can hold up to 90 pounds in ½"-thick drywall, and while that isn't false, it's not entirely true either. These tests are done with a winch pulling directly up or down. In practice, most items you'll hang won't pull down that perfectly. These anchors are designed for shear strength — when put under tension (pulling out), they're significantly less strong. This is particularly evident with towel racks. Though the rack and towels can be supported easily enough, the tension from pulling towels off the rack will eventually work these anchors free of the wall.

EXPANSION ANCHOR. The most common kind of light duty anchor is an expansion anchor (shown on the previous page). These work by tapping them into a predrilled hole, then driving in a screw. The screw then forces the anchor to expand. The series of wedges helps the anchor resist pulling, but significant force can still remove them from the wall.

WALLCLAW ANCHOR. The anchor you see at right is a variation on the usual expansion anchor from the brand *WallClaw*. Rather than expanding, the tip breaks upward. As a hanging item pulls down, the claw counteracts the force. Through use, I find both of these anchors to be equally effective. Despite its unique design, the *WallClaw* anchor performs equally to expansion anchors.



▲ These *WallClaw* anchors break upward, using their long, titular “claw” to balance the pressure of what’s being hung.

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MEDIUM-DUTY ANCHOR (25-80LBS.)

Next on the list of wall anchors is our medium-duty selections. As the name implies, these can hold a good amount of weight — significantly more than the screwed-through sleeves we looked at earlier. Additionally, you'll notice that each of these has a way of not just holding the screw (or bolt) in place vertically, but also horizontally, making them ideal for things such as towel racks and coat hangers.

THREADED ANCHOR. The first anchors we have here are threaded wall anchors, shown in the photos above. The broad threads hold quite well in ½" drywall, and the sharp points make these anchors self tapping. However, drilling a pilot hole first is always a good idea. Having that area of clearance makes the anchor less likely to crack the drywall as it's driven in, ensuring the threads will have a firm grip within the wall board.

One great feature of these anchors is how easy they are to remove if you're moving or redecorating. Unlike expansion anchors, these are threaded into the wall instead of hammered in. To remove them, you can simply use a driver to back them out, then patch up the hole.

PLASTIC TOGGLE ANCHOR. Next on the list is one of my favorites for medium-weight installations: the plastic toggle anchor (shown at right). If I need to hang something of significant weight, these toggle anchors are my go-to. Looking at a cost-to-strength ratio, it's hard to beat these.

To install them, you'll first need to drill a pilot hole that will fit the folded wings. The anchor can mostly be pushed in by hand, but you'll likely



- ▲ Plastic toggle anchors offer a balance between the frugality of plastic anchors and the support of heavy duty toggle-style anchors.

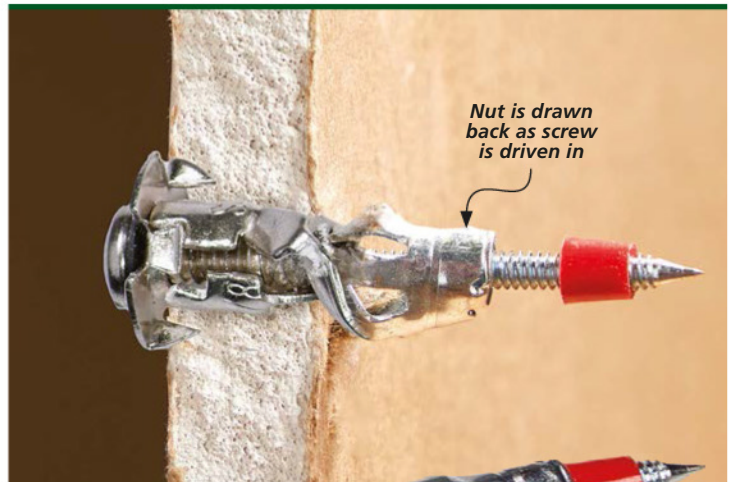
need to tap it in to fully seat it. Some of these anchors come with a small plastic tool to push out the wings, while others simply require you to drive in the screw. You'll see why they're called toggles — it can take a good bit of force to snap these wings into position. Once in position, they offer quite a bit of support. However, they can be a pain if you ever intend to remove them.

The downside of these anchors is that they're a semipermanent installation. Once the wings are "toggled" out, they don't go back. If you end up needing to remove the anchor, your only option is to push it through and let it fall into the wall.

MOLLY BOLT. The final anchor before crossing over into the heavy-duty category is the molly bolt, pictured at right. These work through a nut attached to metal arms mounted on the bolt itself. After drilling a pilot hole and tapping the bolt into the wall, tightening the machine screw draws in the nut. A T-nut keeps the outer shell from spinning, forcing the metal arms to expand and anchor behind the wall. Smaller molly bolts are good for up to thirty pounds, while larger ones can hold up to one hundred pounds.

Unlike expansion anchors, a molly bolt holds better under tension due to the mushroomed anchor. This means they're not only useful for heavy loads, like wall shelves, but also for anything which will be pulled in different directions as it's used. A couple of molly bolts are great for hanging a coat rack, which will vary widely in how much weight is being held at any given time, and can be put under a significant amount of tension if a few coats are being pulled free at once.

Pictures you see of molly bolts will often show perfectly splayed arms behind the wall. In reality,



Nut is drawn back as screw is driven in



Machine screw expands arms

▲ The arms on a molly bolt dig in and expand behind the wall. Among medium-duty anchors, these resist tension the best.

they rarely come out so pretty. If you were to cut one free of the wall after installing it, you'll find something more like what you see above. Don't be worried though — even if the arms aren't pretty, they're still plenty strong.



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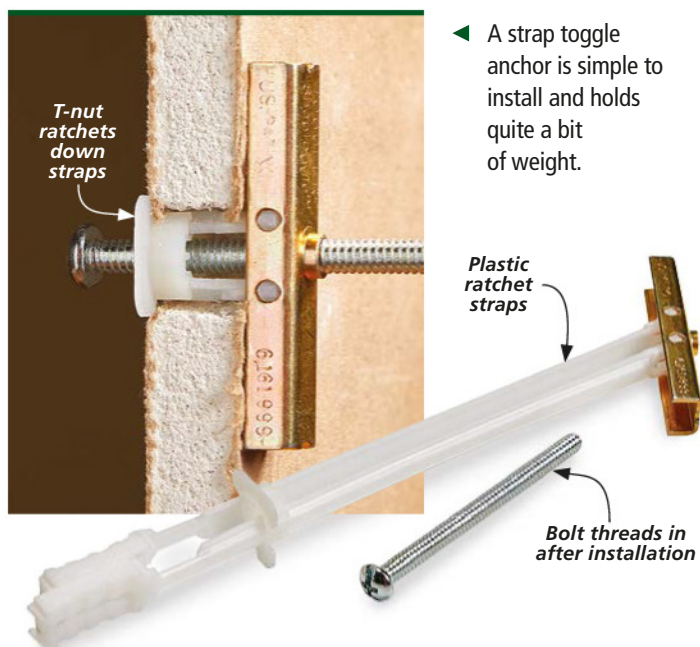


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◀ A strap toggle anchor is simple to install and holds quite a bit of weight.



▲ Traditional toggle bolts are a supremely reliable choice, able to support significant weight.

HEAVY-DUTY ANCHORS (80LBS. AND UP)

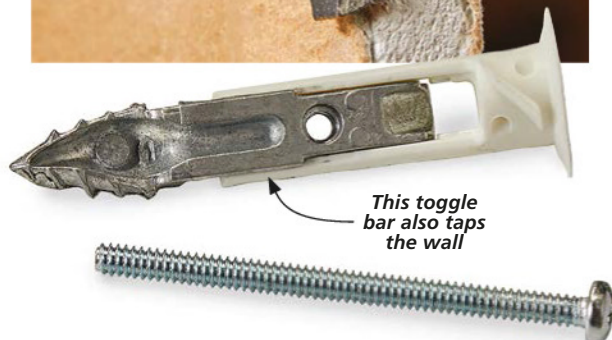
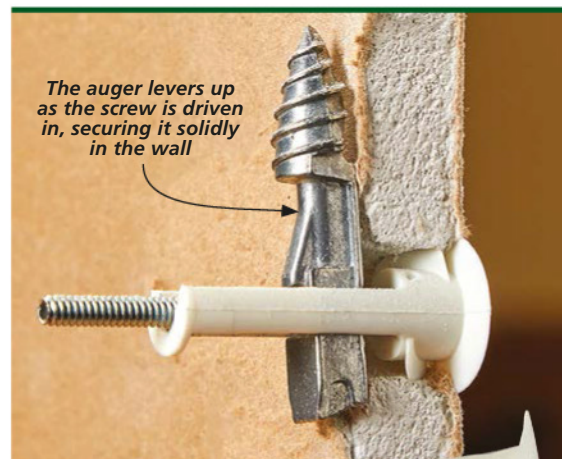
Now we're to the highest grade of wall anchors. The ones shown here are more expensive than the others we've looked at so far, and they do take more work to install (though only marginally so). However, each of these is rated to hold at least 80 pounds, and unlike the light-duty anchor claims, these are quite reliable. Despite that though, I still recommend using two anchors when hanging something of particular weight, such as a heavier set of shelves or a full-length mirror.

STRAP TOGGLE. The easiest heavy-duty anchor to install is a strap toggle, shown in the upper left. These are made of a metal toggle bar (acting as the anchor) attached to two ratchet straps. Once installed, a threaded, plastic T-nut ratchets down the straps like a cable tie. These anchors come with a bolt that threads through the nut and the bar to clamp the toggle into the wall.

The pilot hole simply needs to be sized to the width of the toggle. Slide the bar in sideways, then pivot it using the ratchet straps. Removing these can be a pain however, as the T-nut will need to be pushed through the wall, letting the anchor fall within.

TRADITIONAL TOGGLE. When strength and support are the primary objective, a traditional toggle bolt is your best choice of wall anchor. As you can see in the right photo above, these bolts have two steel wings that extend after being inserted. Some toggle bolts are spring loaded while others simply flip down after going through.

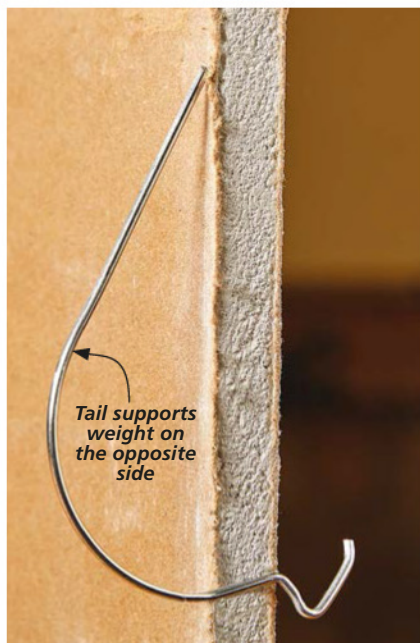
There really is no beating a traditional toggle bolt. While they may need a large pilot hole, they hold better than any other anchor. Removing them is easy as well — you'll have to leave the wings in the wall, but otherwise you simply unthread the bolt.



▲ Self-tapping toggle bolts combine the strength of a toggle with an easy installation, though drilling a pilot hole beforehand will ensure a more secure hold.

SELF-TAPPING TOGGLE. Last on our list is self-tapping toggle bolts, shown in the photos directly above. These are roughly equal in strength to strap toggles, but they do feature self-tapping threads. As I mentioned before however, drilling a pilot hole is still the best practice. Similar to strap toggles, to remove these anchors you'll need drive them through and let them fall into the wall. **W**

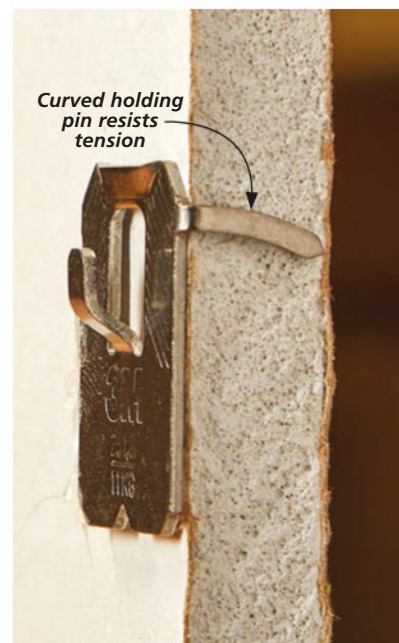
FRAME HANGERS



Monkey Hook. This anchor can be fed through the wall by hand, with the tail offering surprising support.



Nail-in Hanger. An extruded hanger balances downward force against the slightly angled nails holding it in place.



Push-In Hanger. The curved pins here can be pushed in by hand, and work great for artwork.

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3 Ways to Ebonize Wood



▲ Black dye mixed with water is a simple way to make a stain that gives the ebonizing effect. Make sure to use gloves if you choose this process.

Contrasting woods in a piece of furniture adds interest and energy to most any project. And not many woods bring more visual punch and contrast to the table than ebony. But this black-brown wood from Africa can be often spendy and hard to work with. Here we're going to dive into three ways of making wood look like ebony without actually using the expensive exotic wood in the building process.

It's been suggested that you could just paint the contrasting parts with black paint. True — but it really doesn't have the same effect.

The film that's created by paint has a muting effect on the grain and surface of the wood that these three ebonizing techniques don't. At the core of these methods are dyes, inks, and iron (in the form of steel wool). The main photo above shows the method using steel wool — we'll talk about that later. Let's look at using dye first.

DYE. The first method for ebonizing is to use black, water-based aniline dye, as shown in the photo at left. To get a deep black color, I mixed three teaspoons of dye with a quart of hot water.

Before applying the stain, you'll want to raise the grain of the wood.

You can do this by wetting the wood with water, and then sanding it smooth after it dries. After you remove the sanding dust, brush on a coat or two of the stain. To get a deep, dark black color, I didn't even wipe off the excess in this case, I simply just let it dry on the surface.

INK. Another way to effectively ebonize wood is to use black India ink. This method is shown in

the two photos below. To ebonize in this manner, all you do is spread a small amount of ink on the wood with a dropper. Then follow up with a foam brush to smooth the ink out evenly.

As shown, you only want to do a small area at a time, and work back and forth frequently between the ink dropper and the brush. This will ensure a smooth, even black finish without any blotches or smears. Note that you'll also need to raise the grain before applying the ink, just as you'd do with the water-based dye.

DYE & INK UPSIDE. There are benefits to the two versions of ebonizing we just reviewed. First, both techniques don't take a lot of time to prepare. You'll understand this better when you compare it to the ebony stain that's made from iron on the next page. The second benefit is that with both of these techniques you don't have to do a tannin wash, or use a wood that has tannins in the makeup of the wood. This frees you to use any wood you choose.

DOWNSIDES. The only downside that I can think of involves using ink on larger pieces. That technique is best for pieces like you see in the photos to the left. For bigger pieces and more subtle control over the ebonizing process, turn to the next page.



▲ After raising the grain and sanding it smooth, you can start to apply the ink. The dropper that comes with the bottle is handy for dousing the surface with a lot of ink in a controlled fashion.



▲ Instead of permanently staining a good brush, the use of a disposable foam brush is an ideal tool for spreading the ink. It will quickly absorb any excess ink and let you spread it where needed.

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CLASSIC EBONIZING

Now we're going to look at a technique of ebonizing that has a long tradition. It starts with making a solution out of metal and vinegar that turns the surface of

the wood black when it reacts to the tannins in the wood. Oak, walnut, and cherry are the woods most receptive to this ebonizing process because they have tannins in their makeup.

But to ensure consistent results, we'll make a tannin pre-wash that boosts the wood's receptivity to the ebonizing solution. Before we get into all that, let's take a look at the ingredients and the supplies needed. They're shown in the photo to the left.

White vinegar is used along with a steel wool pad to make the ebony stain. Brewery tannins can be purchased from a local brewer or online. You'll need two jars to mix and store the tannin wash and the ebony stain. The size of these jars is dictated by the volume of wash and stain you want to mix.

Straining supplies such as coffee filters and a sieve to support it while straining are required.

If you have heavy duty paint straining filters like you see in Step 1 below you won't need the sieve.

Dedicate brushes for each solution. They don't have to be fancy at all, disposable foam brushes are fine. Just remember that this whole process is a "pour it forward" regimen. Don't dip the brushes back into the reserve solutions. Ever. That's why you need two paint trays to dip your brush in to apply to the wood. When you're done, don't pour any leftover solutions back in the jars — they'll contaminate the fine stains you've worked so hard on.

Lastly, gloves, paper towels, and kraft paper to cover your work surface — creating cool things can get messy. So go make a mess, after you've mixed your ebony stain.

MIX AHEAD. Pour the vinegar in one of the storage jars and place



▲ These are all the supplies needed for making the tannin wash and ebonizing stain. When it comes to application, you want some paper towels and kraft paper on hand.

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Strain Mixture. A coffee filter or paint strainer is all that's needed to sift out any metal bits from the stain.



Mix the Tannin. Use an old mason jar for mixing the tannin wash. It's best to mix plenty rather than running short.



Raise the Grain. Soak the surface of the workpiece and lightly sand off the lifted grain when dry.

the steel wool in the jar. (Make sure to use soap and water to wash out the oils from the steel wool.) For maximum effect, let this ebony stain solution stew for a week. You'll want to drill a small hole in the lid to allow gas to escape.

STRAIN THE MIX. Step 1 shows straining the stain using a paint filter. If you go the coffee filter route, use a sieve to support the flimsier filter.

Next, mixing the tannin wash is shown in Step 2. Place two heaping teaspoons per cup of water in the other storage jar.

RAISE THE GRAIN. As you see in Step 3, you need to wet the surface with water and sand smooth any raised fibers (sand with 320 grit). I recommend doing this step twice. Judge the final surface by touch, not sight.

FLOOD THE SURFACE. Moving on to Step 4, it's time to pour off some of the tannin wash into one of

the paint trays. Using the brush of your choice, flood all the surfaces of the workpiece.

If you need more of the mix, pour it into the painting tray. Don't dip the brush into the jar of tannin mix. As I said earlier, this prevents you from contaminating the source mix.

Let the wash soak into to surface of the workpiece. You can let the surface dry completely or move on to the next step when any puddles of the wash have been absorbed into the wood or dabbed away with a sponge as you see in Step 5.

EBONY STAIN. Next, pour some of the ebony stain solution into a painting tray. Flood the surface with the stain and let it soak in. You can do multiple coats for a deeper color.

The dry stain may look dull and patchy at this point with lap marks across the surface. Don't panic — they're not permanent.



▲ In issue 268 of *Woodsmith* we built a luscious kitchen table that has an ebonized base. Ebonizing at this scale is hard to do with dyes and inks.

The marks are sometimes the results of this shop-made solution. Once you apply the top coat, the ebony finish will even out and come back to life.

I think you'll agree that between these three techniques you'll find one that suits your needs at one time or another. **W**



Flood the Surface. Next comes the tannin wash. Remember to pour off the wash from the jar to the paint tray.



No Puddles. You want the surface to be damp, not wet, for the next step. Use a sponge to dab up the excess.



Apply the Ebony Stain. Brush on the ebony stain in the same manner you did with the tannin wash.

The Simple, Versatile Cove



▲ Gather up a small handful of cove and core box bits over time to create a collection of sizes that let you customize all kinds of woodworking projects.

For three summers during college, I worked at a camp in northern Wisconsin. The camp's game room was called "The Cove," named after a sheltered coastal bay.

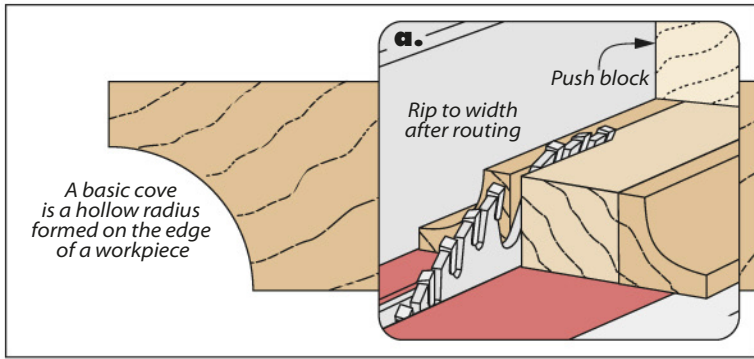
It's also the name of an equally inviting woodworking profile. This humble hollow often gets passed over by roundovers and chamfers on one side, and on the other side by complex ogee shapes. However, it's time to take a fresh look at the cove.

TWO BIT TYPES. Creating cove profiles on my projects usually

means router work. (Let's save making hand-shaped hollows for another time.) The left photo shows a few bit options. I can understand if they look the same at first glance.

A standard cove bit (rear center and right) has a bearing to guide the bit along the edge, to create a smooth radius. To the left is a classical cove bit that adds a square fillet to one or both sides of the radius.

The two bits in the front are usually called core box bits or round nose bits. The advantage



A Basic Cove. The curved hollow of a cove changes how light reflects off a surface. Routing narrow molding puts your fingers too close to the bit. Instead, a wide blank offers increased safety and smoother cuts.

of this style is that it frees you to create a hollow profile away from the edge of a workpiece.

SEVERAL SIZES. In addition to the style of bit, you'll want to consider the size. Cove bits are identified by the radius of the curve. Core box bits are described by the width.

I recommend that for best effect, it's good to have at least two sizes of each bit. This allows you to scale the profile to match the size of the workpiece — and the project itself.

COVES AT WORK

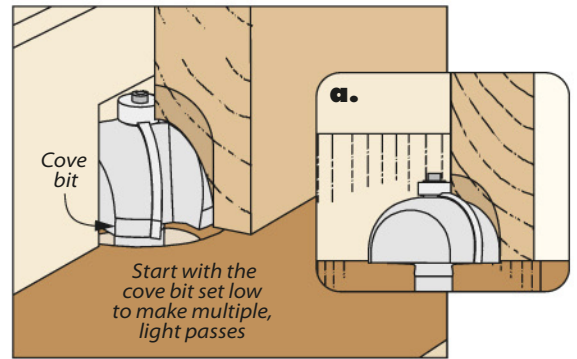
Let's take a look at a few applications of these bits in creating cove shapes. The upper left

drawing shows the cove at its most familiar — cove molding.

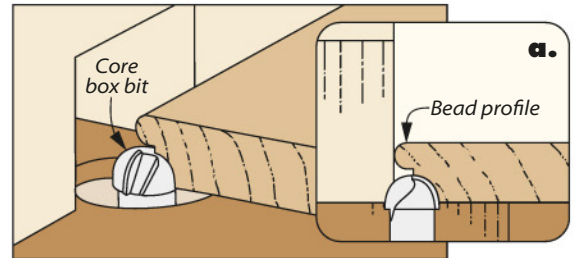
Narrow strips of cove molding tuck under overhangs, forming transitions. Routing narrow parts is hair raising. So the solution is to rout the profile on wide blanks and rip them to width afterwards (detail 'a').

LARGE COVES. Routing a large cove along the edge of a workpiece is best done in several passes. Raise the bit between each pass until you reach the final size, as shown in the upper right drawing.

CORE BOX COVES. The right drawing reveals how a core box bit can shape a cove where a typical cove bit couldn't reach. With no



Small Bites for Large Coves. Light passes minimize the strain on the router bit and motor while making coves.

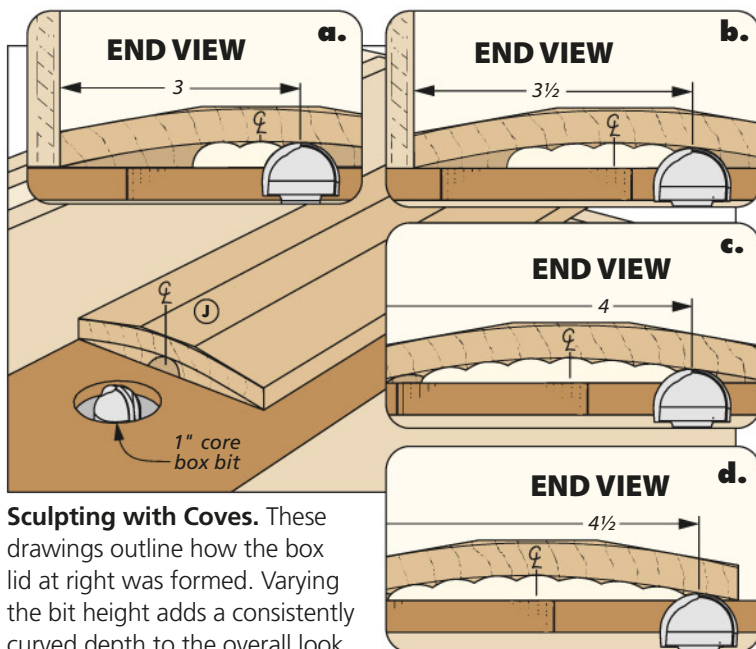


Combination Profile. Team up a core box bit with a small roundover to create a complex shape.

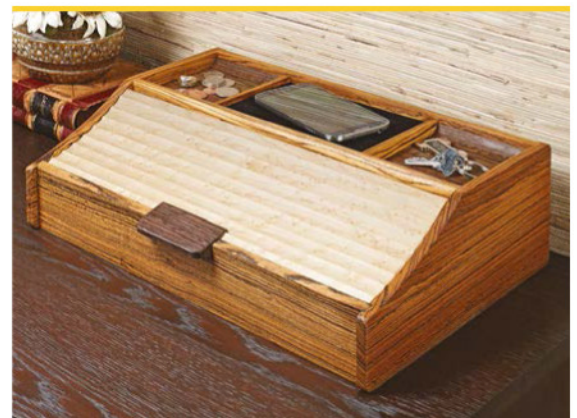
bearing, the bit can easily slide under the bead profile (above).

COVES INTO FLUTES. You can turn a cove into a more sculptural effect by grouping them together, as you can see below. Here a series of coves routed at different bit heights forms the shape of the box lid.

Seductive, complex profiles may tempt. Yet simple profiles like coves prove more versatile. **W**



Sculpting with Coves. These drawings outline how the box lid at right was formed. Varying the bit height adds a consistently curved depth to the overall look.



▲ The lid of this valet box takes the form of a wide, shallow cove punctuated with a series of narrow cove cuts. The result is an eye-catching, textured effect.



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Rustic Wall Shelf

Vertical storage is just as welcome in the home as it is in the shop. The elegant charm of this shelf is matched only by its sturdy construction.

When it comes to furnishing a home in the modern day, our cups truly runneth over. However, there are some areas of the home — spaces unutilized, a few canvases unpainted — that often remain empty. If you've flipped through enough issues of *Woodsmith*, you'll likely find a discussion on the use of vertical space in the shop, and that space is no less important in the home.

This wall shelf brings a lot to the table in a little package. Whether it's spices in the pantry or curios in the living room, it adds utility wherever it resides.

Several elements easily catch the eye: cutouts in the sides panels, a shiplapped back, and drawers whose only hardware is a pair of ring pulls. This shelf doesn't shout for attention, but instead draws in your gaze. All in all, it provides beginners a chance to practice the basics, experts a chance to flex their skills, and all woodworkers with a beautiful addition to their home.

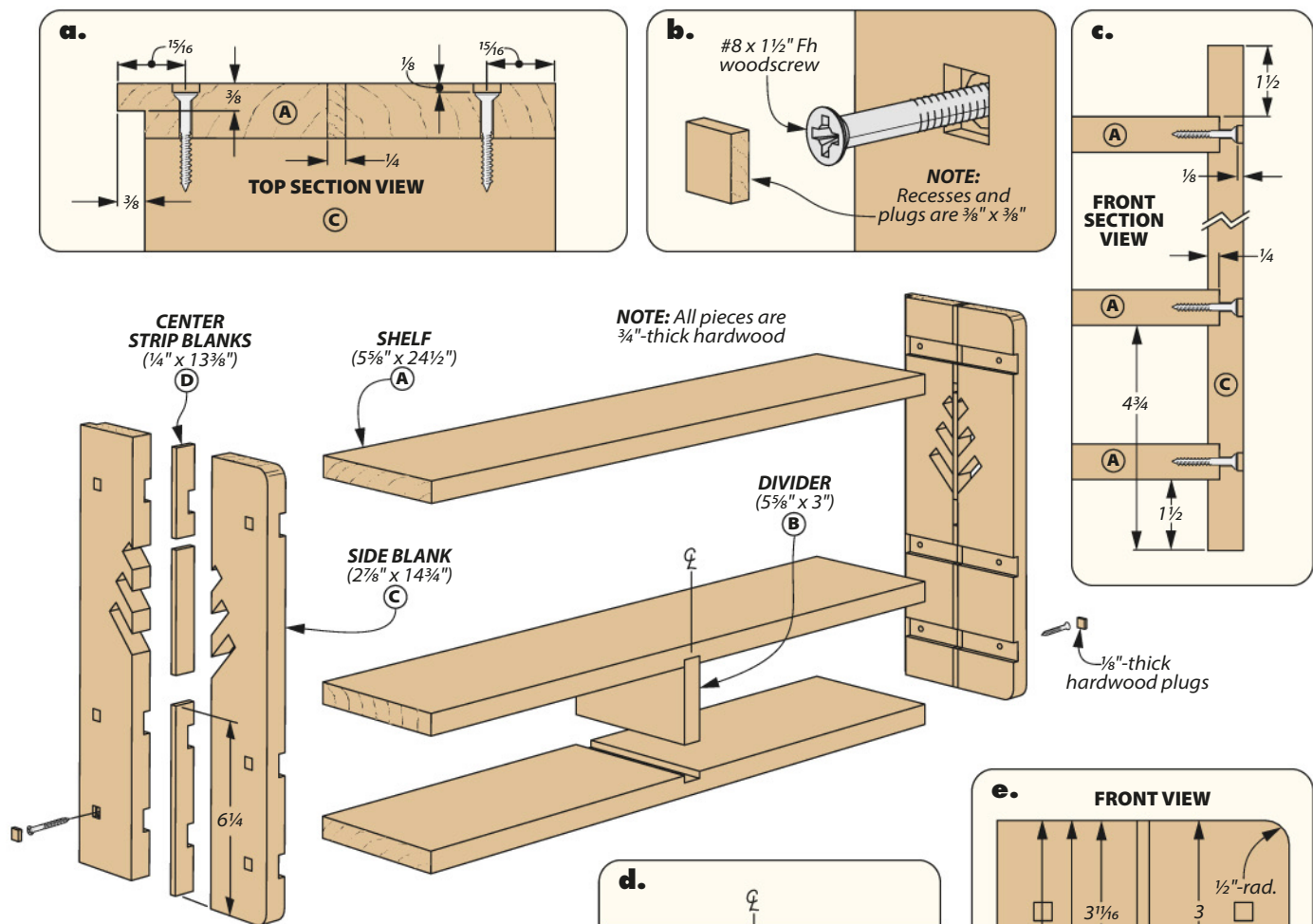


▲ The simple yet stylish cutouts add a sense of openness to the shelf, and are easy to make from a few pieces and a couple cuts at the table saw.

▼ These drawers exemplify simplicity and solid construction. The only hardware you'll find here are the traditional ring pulls.







Framing the **SHELVES**

Building this wall shelf begins with the framing — namely the eye-catching sides and the shelves themselves. As you can see above, the sides are the most complex parts here (though they're easier to make than they look). Because of that, I chose to get the shelves and divider done first before moving onto the meatier bits of this assembly.

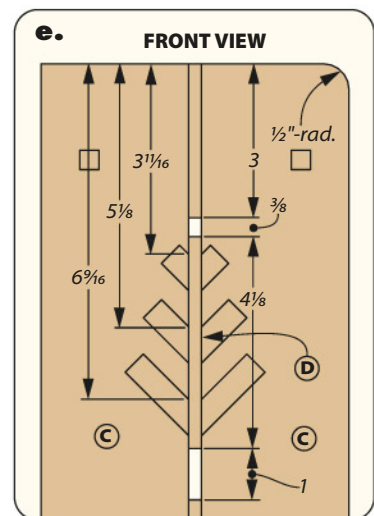
SHELVES. Three shelves make up this project: two to hold the drawers and one to use as an actual shelf. After cutting these three pieces to size, the top shelf will already be complete. The other two will need a centered dado (detail 'd') to hold the divider. Once these were cut, I sized the divider as well. With the first four parts of the project

finished, it's now time to dip into something more complex.

SIDE PANELS. The sides of the wall shelf feature a cutout shaped like a head of wheat. Each side is made of five pieces, and while there is some juggling to be done, each piece is fairly simple.

Both sides consist of a pair of side blanks joined by three center strips. To make these, I started out with two boards that each would be wide enough to cut the two side blanks and three center strip from. Doing this ensures that the sides will look like one solid piece after gluing them back up.

The next step will be making those decorative cutaways (detail 'e'). The box at the top of

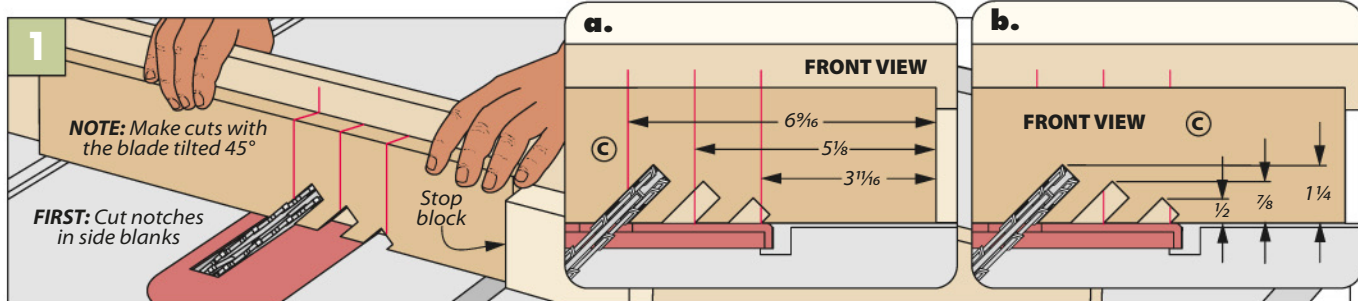


the next page show how to create cutouts that make the head of wheat.

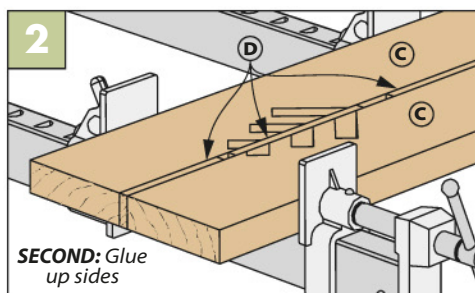
Once the notches are in place, cut the strip blanks to their final lengths (detail 'e'). Next, glue up the sides, positioning the strips between the blanks (Figure 2).

To finish the sides, return to the table saw to cut the shelf dados (Figure 3). The back edges need a rabbet as well (detail 'a' above). Lastly, rounding off their front corners wraps these pieces up.

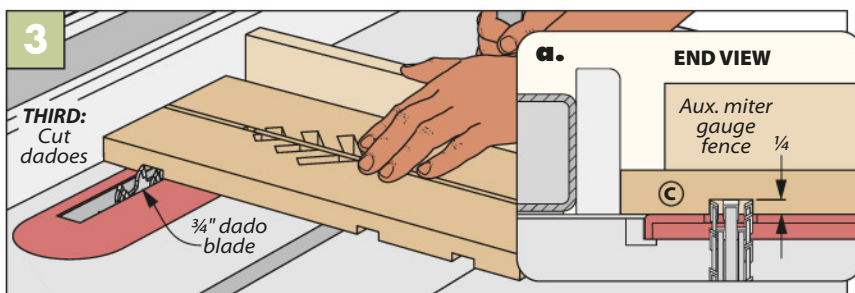
DECORATIVE CUTOUTS



Notching the Blanks. After sizing the side blanks, install a dado blade at the table saw. Once the first notch is cut, raise the blade to cut the next notches in the blanks as shown above. A stop block ensures the cuts stay at the same place on the pieces.



Bring Them Together. To form the sides, glue up the two pairs of blanks with the center strips in, keeping the faces flush.



Shelf Dadoes. Once the sides have dried, the final piece of joinery can be made on the sides. Return to the table saw and widen the dado stack, then cut the dadoes that will accept the shelves.

PUTTING IT TOGETHER. As you can see on the previous page, the main assembly of the wall shelf is held together by woodscrews. These provide more strength when connecting the end grain of the shelves than glue, and are hidden using hardwood plugs.

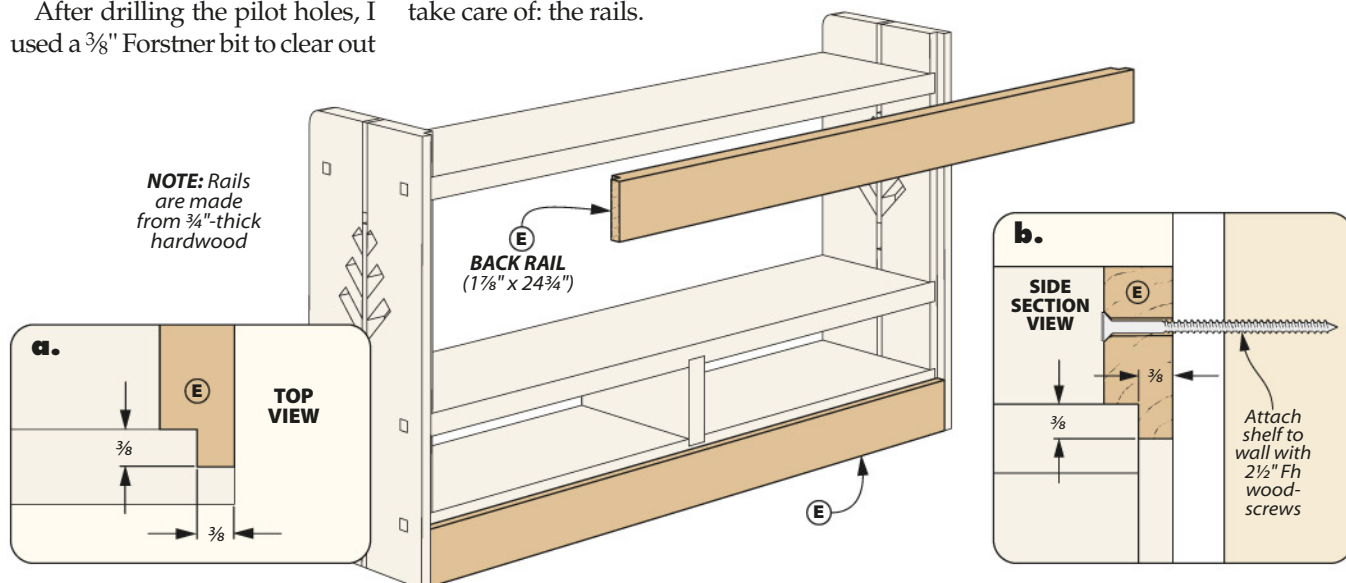
After drilling the pilot holes, I used a 3/8" Forstner bit to clear out

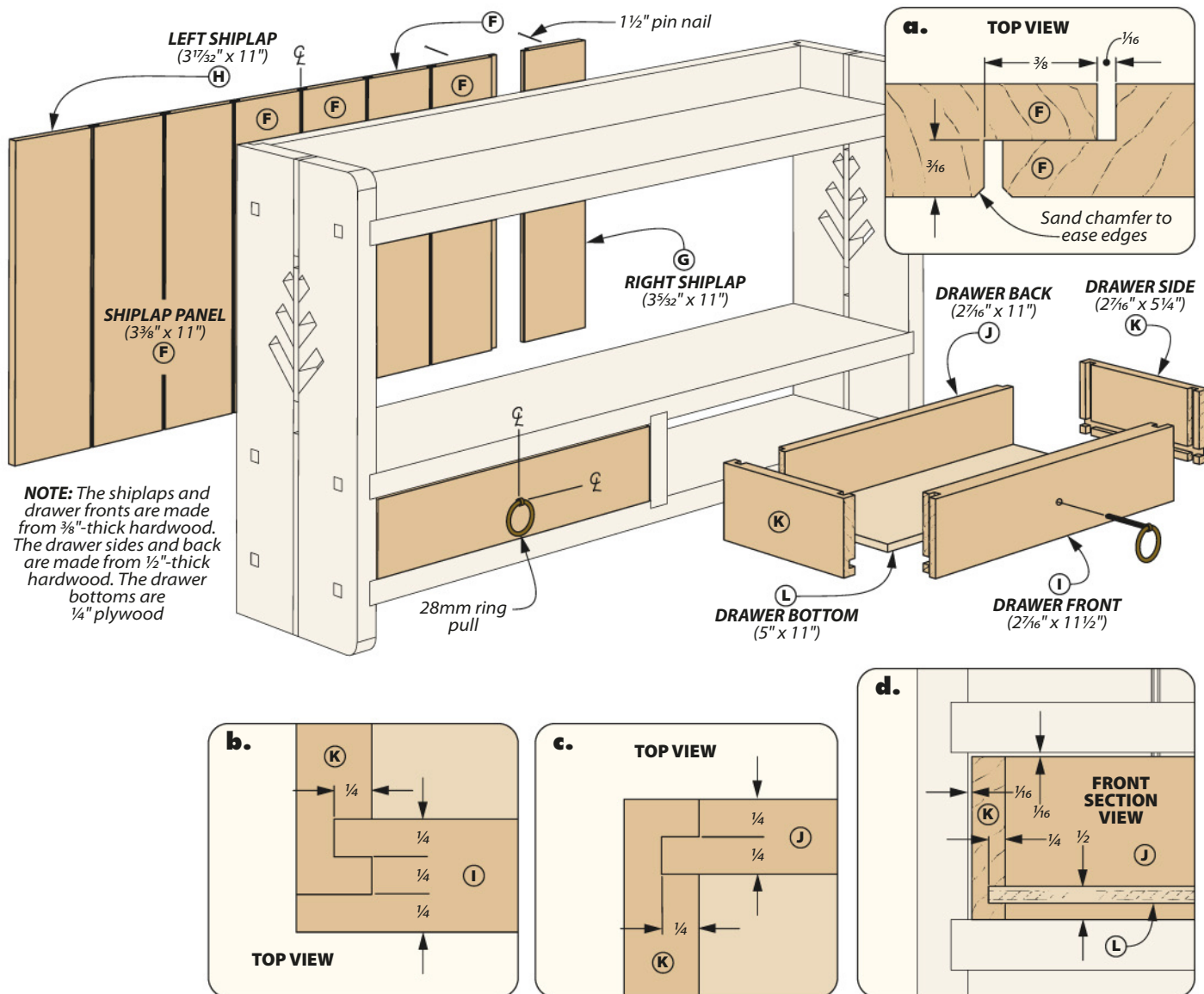
most of the waste for plug holes. I then squared up the corners with a chisel. Lastly, I drove the screws in and glued in the plugs.

RAILS

Before moving onto the back and drawers, there's a pair of parts to take care of: the rails.

After sizing these pieces (illustration below), I headed over to the table saw. I cut the rabbets with a dado blade buried in an auxiliary fence (details 'a' and 'b' below). Once these were complete, I glued the rails in place.





Shiplapped BACK

While the sides may catch the eye first, a longer look at the wall shelf will reveal one of its other notable features: the shiplapped back. Though lapping is certainly more work than adding a simple panel, it's an excellent way to give depth and visual interest to an otherwise overlooked area. Plus, as with the cutout sides, shiplapping is easier to accomplish than it looks.

SIZING THE PANELS. The back begins with eight panels (illustration above). When sizing them, match their lengths to the distance between the top and bottom rails.

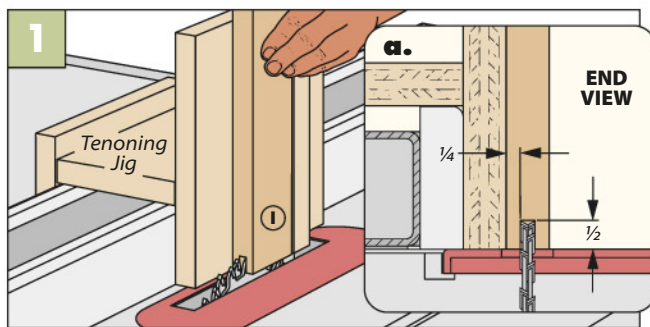
There's a slight difference in width on the end panels. Size these two pieces last. The intent here is to make each shiplapped panel appear equal in width when viewed from the front, so take the measurements directly after fitting the other panels in place.

LAPPING. As the name implies, this technique descends from the craft of shipbuilding. This method offered our ancestors a way to build water-tight structures without our modern conveniences. Shiplapping has since been used in exterior siding, as it provides excellent

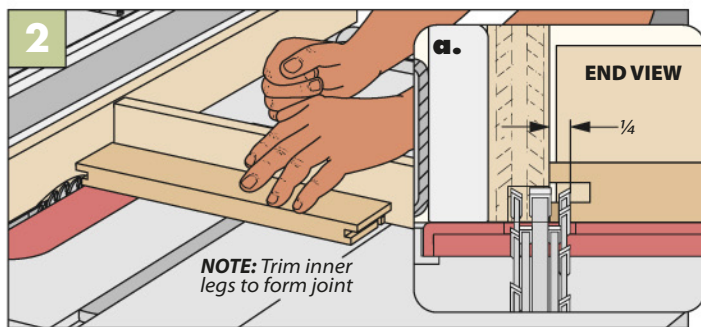
weather resistance. Of course, our wall shelf doesn't need that kind of protection, but it still offers a sense of rustic style.

Shiplapping is made by overlapping rabbets with slight gaps in between to form shadow lines (detail 'a' above). Making it is easy at the table saw, using a dado blade buried in an auxiliary fence. The middle panels have rabbets on opposing edges, while the far left and right panels only have one rabbet. After making the cuts, I sanded a slight chamfer onto the front edges to accentuate the channels.

LOCKING RABBIT JOINT



Vertical Cut. The locking rabbit joint first needs a slot cut into both ends of the drawer fronts. This is best done with a vertical cut at the table saw using a dado blade.



Trimming the Inside. To finish the locking rabbet, cut the inner “legs” formed after the vertical cut, as shown above. This will fit the dado cut into the drawer sides.

ATTACHING THE BACK. It’s necessary to leave some room for seasonal movement when attaching the back pieces. While the shiplap joint partially accounts for this, I also pin nailed these pieces in place rather than gluing them. I began on the right, then worked my way across.

DRAWERS

The final element is the drawers. Tongues and dados hold

together most of the drawers (details ‘c’ and ‘d’), though a locking rabbet provides extra strength to the fronts.

LOCKING RABBETS. After initially sizing the drawer pieces, I began with the fronts. You can see how to make the joinery here in the illustrations above. A vertical cut at the table saw starts things off (Figure 1). From there, trimming down the inner “legs” completes the fronts (Figure 2).

DRAWER JOINERY. To accept the front and back pieces, a dado needs to be cut on each end of the sides. In turn, the backs are rabbeted as well. Finally, a groove is cut at the bottom for the plywood panel.

ASSEMBLY. Now the drawers can be glued up. The only hardware here are the two ring pulls, otherwise the drawers simply fit in place. After installing them, all that’s left is to find the right place to install the shelf. **W**

Materials, Supplies & Cutting Diagram

A Shelves (3)	$\frac{3}{4}$ x $5\frac{5}{8}$ - $24\frac{1}{2}$	F Shiplap Panels (6)	$\frac{3}{8}$ x $3\frac{3}{8}$ - 11	K Drawer Sides (4)	$\frac{1}{2}$ x $2\frac{7}{16}$ - $5\frac{1}{4}$
B Divider (1)	$\frac{3}{4}$ x $5\frac{5}{8}$ - 3	G Right Shiplap (1)	$\frac{3}{8}$ x $3\frac{5}{32}$ - 11	L Drawer Bottoms (2)	$\frac{1}{4}$ ply. - 5 x 11
C Side Blanks (4)	$\frac{3}{4}$ x $2\frac{7}{8}$ - $14\frac{3}{4}$	H Left Shiplap (1)	$\frac{3}{8}$ x $3\frac{17}{32}$ - 11		
D Center Strip Blanks (2)	$\frac{3}{4}$ x $\frac{1}{4}$ - $13\frac{3}{8}$ rgh.	I Drawer Fronts (2)	$\frac{3}{4}$ x $2\frac{7}{16}$ - $11\frac{1}{2}$		
E Rails (2)	$\frac{3}{4}$ - $1\frac{7}{8}$ x $24\frac{3}{4}$	J Drawer Backs (2)	$\frac{1}{2}$ x $2\frac{7}{16}$ - 11		
					• (2) 28mm Ring Pulls
					• (16) $1\frac{1}{2}$ Pin nails

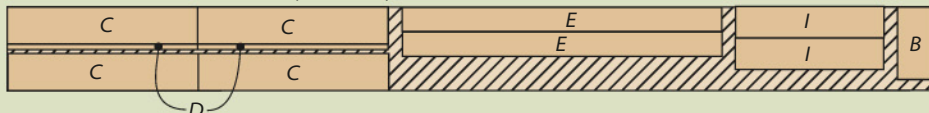
$\frac{1}{2}$ " x $6\frac{1}{2}$ " - 96" Riftsawn Red Oak (4.0 Bd. Ft.)



$\frac{3}{4}$ " x 6" - 96" Riftsawn Red Oak (2.2 Bd. Ft.)



$\frac{3}{4}$ " x $6\frac{1}{2}$ " - 72" Riftsawn Red Oak (1.8 Bd. Ft.)



ALSO NEEDED: One 5' x 5' sheet of maple plywood.

Shaker Dresser

Sublimely austere, dresser this is the perfect example of a project being greater than the sum of its parts.

This dresser is inspired by the work of Abner Allen, who was associated with the Enfield Shaker group based in Enfield, Connecticut, in the early 19th century. He shunned the vanity of veneers, and ostentatious ornamentation.

It's fascinating to me that the enduring gift of a group of people whose main goal was to separate themselves from the rest of what they called the "world," has been the simple gift of their unpretentious furniture. While they were determined to remain separate, they lured our spirits into their homes with humble, yet enchanting design.

ALL WOOD. In keeping with the historical background of this dresser, there's no plywood used — it's all pine and cherry for this project. As you see in the lower inset photo, the case and drawer fronts are fashioned from pine (a wood that's used often in Shaker furniture). As somber as the Shakers were, they mostly used soulful colors such as blue, red, green, and yellows to adorn their furniture. The yellow milk paint used here on the dresser brings some cheer to the project. Combined with the drawer boxes and bottoms that are made of cherry — you also have a dresser that has hidden beauty.

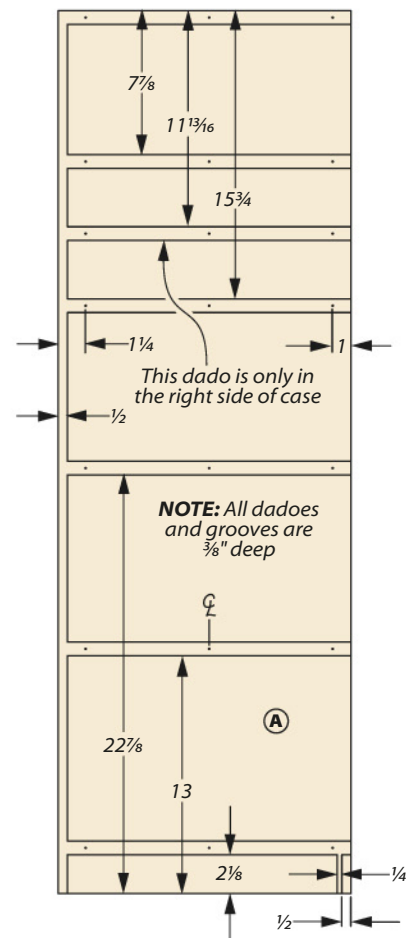
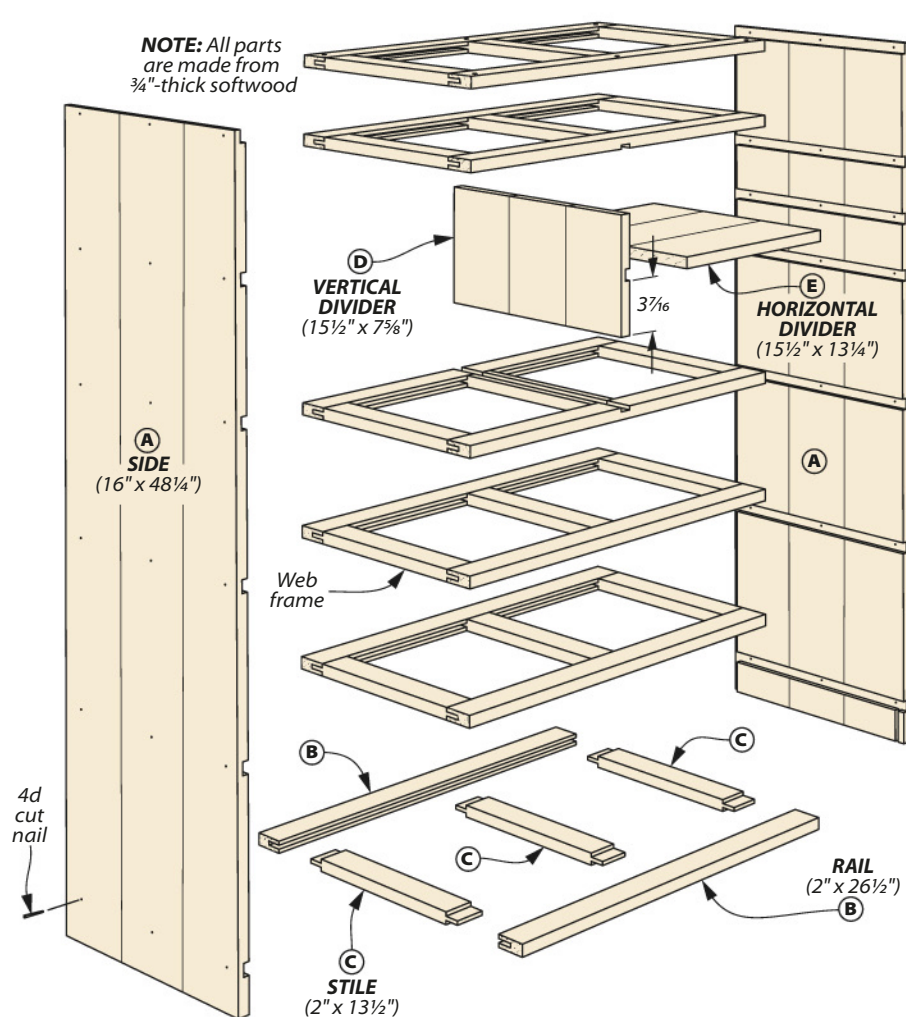


▲ A stack of drawers is often bland on its own. But throwing in an asymmetrical trio in the second row ups the interest.

▼ Subdued, yet elegant, cherry drawer pulls provide long years of service while grooved drawer sides ride on guides attached to the dresser.



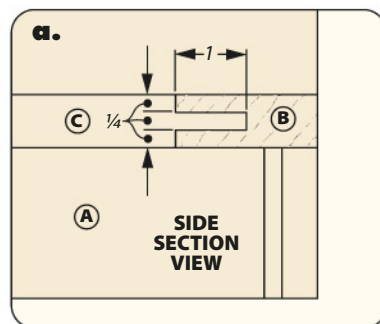




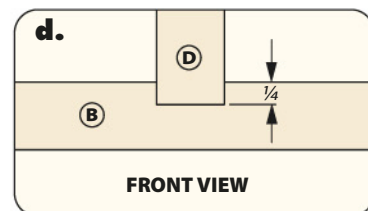
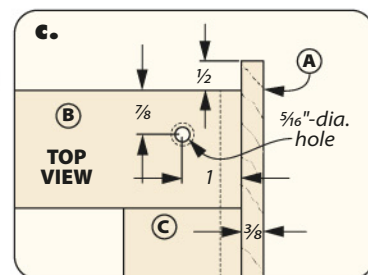
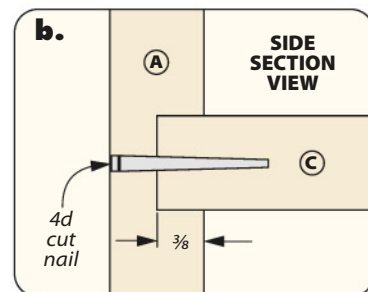
A no-nonsense CASE

There's resident charm to be had in the look and feel of an authentic piece of Shaker furniture, but there are challenges as well — mainly in regards to wood movement. So throughout this project we'll be paying close attention to when and how we allow room for the wood to move, starting with the case.

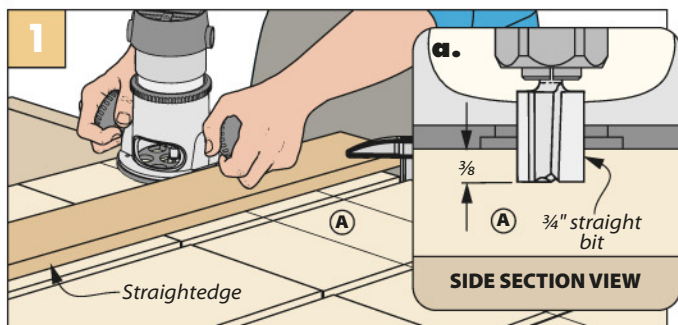
The pine you choose for the sides of the dresser is up to you. If you're looking for a more accurate representation of Shaker furniture, I would suggest a clear grade that is knot-free. This lumber will cost you a little more, but it's easier to work with.



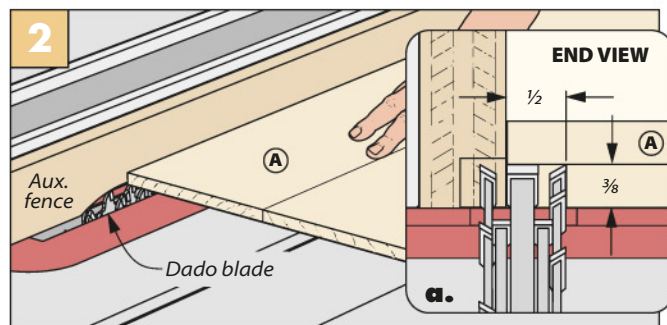
GLUEUP, PART 1. Gluing up the case sides and the internal dividers, is the first order of business. The vertical divider separates the second drawer opening in two. The horizontal divider splits the right opening in half for the smallest drawers. Trim the panels to final size after you've put the clamps away. Next you'll need to cut some dados on the inside face of both sides.



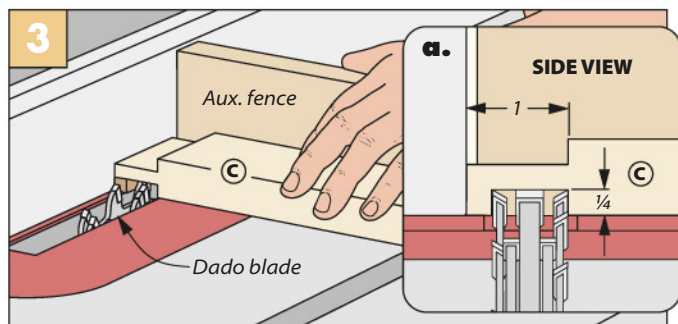
CASE JOINERY DETAILS



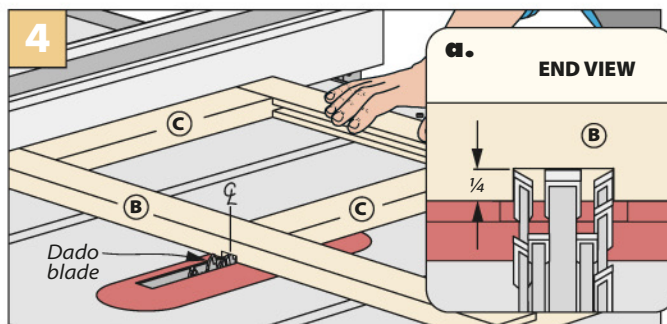
Dadoes First. A straightedge clamped to the case side is a perfect guide for routing the dadoes needed for the dividers. A humble straight bit is perfect for the job.



A Long Rabbet. Over at the table saw you'll cut the rabbet along the back edge of the case sides. These rabbets accommodate the back that gets installed later.



Time for Tenons. After cutting the grooves in the rails, set up the table saw to make the tenons on the ends of the stretchers. The rip fence is the stop for the shoulder cut.



A Dado for Dividers. To hold the vertical divider in place you need to cut a dado in the mating web frames. The dado is centered in the frame parts.

The dadoes hold a set of web frames that you'll make shortly. For me, cutting these dadoes at the table saw is a little unwieldy, so I resorted to my handheld router guided by a straightedge clamped to the workpiece. This process is shown in Figure 1 above. The location of the dadoes are shown in the side view on the previous page.

LONG RABBET. There's a rabbet along the rear edge of the sides that is easy to do at the table saw (Figure 2). This leaves you with the last bit of joinery to do on the sides — the little groove you see in detail 'a' on the previous page. It accepts a skirt stretcher you'll make later on. As when you made the dadoes, a router guided by a straightedge is just the ticket here.

WEB FRAMES

The six web frames that tie the sides together are identical in size. Two of them feature a dado to hold the vertical divider. The frames create openings to accept the drawers of the case. The web frames are lightweight and save on material cost in comparison to solid panels.

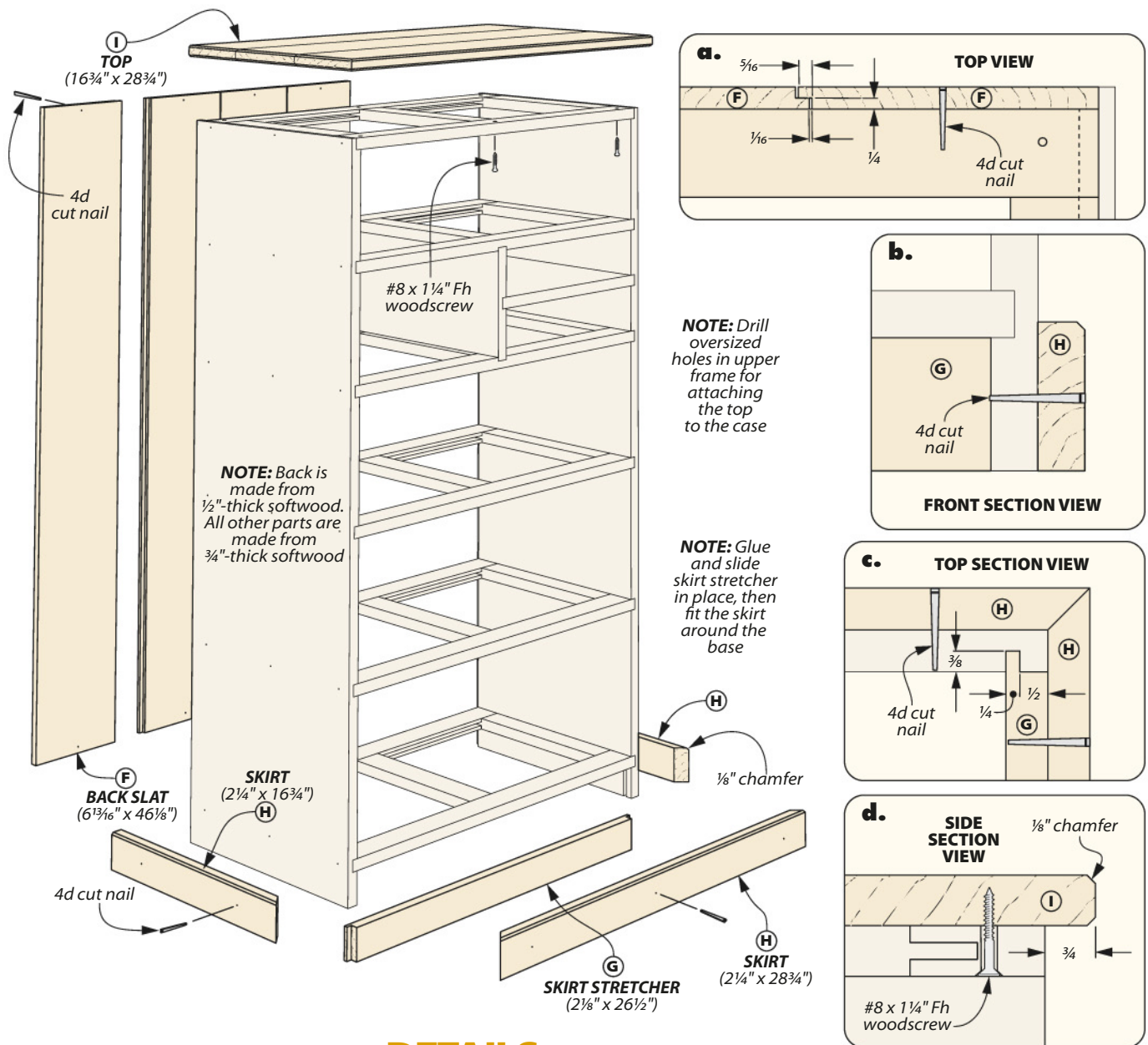
FRAME PARTS. Cutting the rails and stiles starts the process. Detail 'a' on the previous page shows the centered groove cut in the rails at the table saw. Finally, cut the tenons on the ends of the stiles that will fit into the grooves (Figure 3).

GLUEUP, PART 2. Yep. But before you glue up all the frames you need to draw a centerline on the top face of the rails (and the shoulders of the center stiles) to

align the center stiles properly. Then you can let the glue fly and the clamps creak.

Once the glue has dried on the frames, you can cut the centered dadoes on the two that hold the vertical divider I mentioned earlier (Figure 4). The vertical divider needs a dado (main drawing) to hold the horizontal divider in place.

GLUEUP, PART 3. When gluing up the case, use glue in just a little over the front third of the length of the dado. This is to allow the case sides to move in seasonal changes. Glue has an ally in the wood-movement wars — nails. The nails you see in these drawings are strong, yet flexible enough to move with the case parts. And they add to the dresser's authentic look.



Fleshing out the case **DETAILS**

Now that the challenging task of making the case is done, you can focus first on tidying it up. (Then add the drawer runners to the inside of the case.)

The main drawing above and the details show you the tasks at hand. You've got the back boards to make and install. At the bottom of the case there's the skirt stretcher and the skirt that wraps around it. Finally, there's the top to tackle. I chose to start by working on the boards that make up the back of the dresser, and that means spending some

time at the planer bringing the stock to proper thickness (1/2" in this situation).

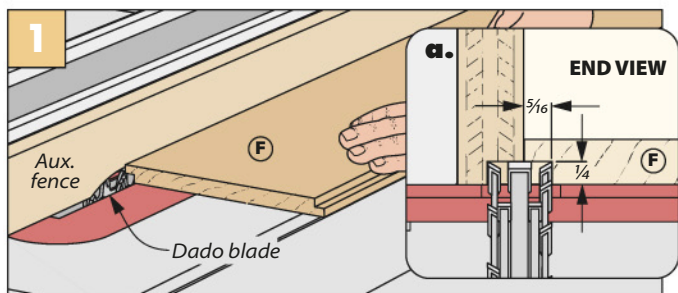
SHIPLAP. Why would we want to go to the trouble of making the back out of four independent boards? That's right — to allow for seasonal wood movement. But instead of butting four boards edge to edge across the back we used a shiplap detail on the edges that allows the boards to move while keeping the back enclosed.

When you look at detail 'a' above you'll see that a shiplap

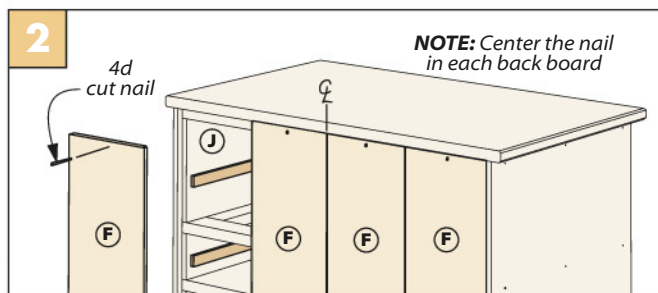
joint is nothing more than overlapping rabbets that are half the thickness of the workpieces. The rabbets are on both edges of the middle boards and the inside edges of the boards that meet up with the case sides.

Figure 1 on the next page shows the details of making the rabbets. Let's wait to install the boards until the drawer runners are in place — we'll do that shortly. There's some more work to do on the case itself, starting at the bottom with the skirt stretcher and skirt.

MILLING THE BACK BOARDS



Rabbets. The middle boards on the back feature opposing rabbets cut into their edges at the table saw. To allow for seasonal movement, the rabbets are not tight-fitting.



Nailed in Place. After you've installed the drawer runners and finished up any work on the inside of the case, nail the back panels in place with one nail in each frame.

SKIRT WORK. Detail 'c' on the previous page shows how the skirt stretcher and skirt attach to the case of the dresser. After the stretcher is sized, cut the tongues on the ends and glue it in place under the bottom web.

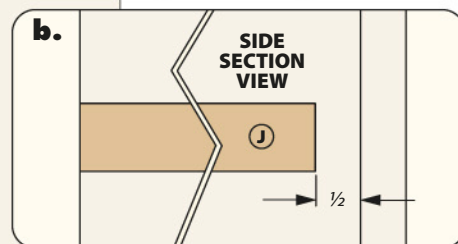
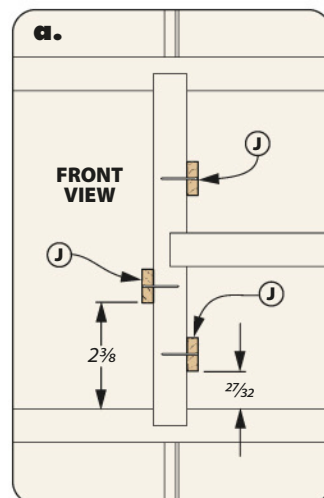
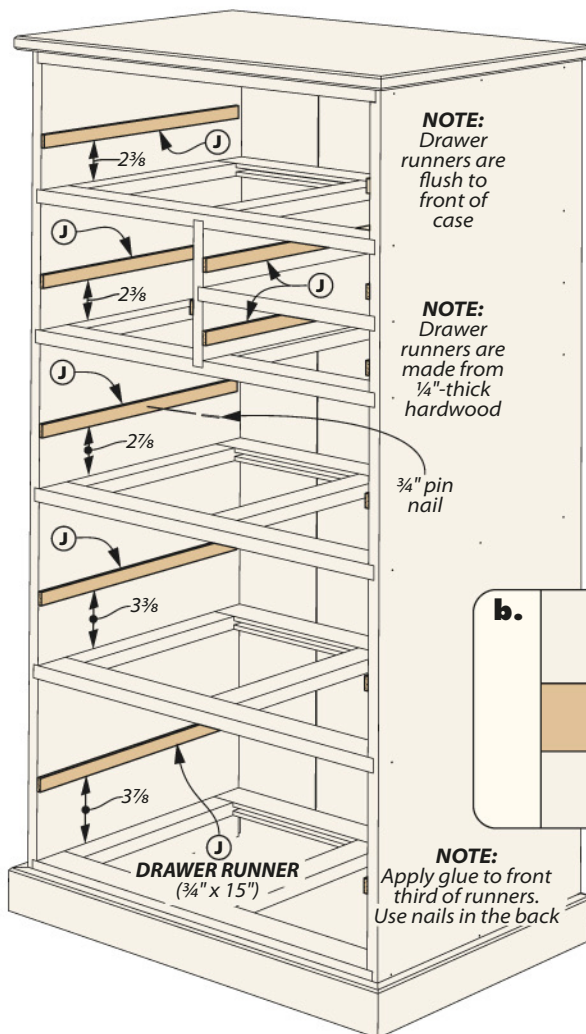
As for the skirt, I started with a board longer than the front and two sides combined and ripped it to width. Next, I routed a chamfer (detail 'b,' previous page) across the top edge.

Since the front miters are key, I began with them. I started on the front of the case and worked my way around, fitting the side miters to the front, gluing and nailing the boards in place as each board was fit.

THE TOP. As you see in the main drawing on the previous page, the top is large enough that it requires gluing up some boards. After the clamps are stowed, scrape and smooth the panel and cut it to its final dimensions. Add a 1/8" chamfer to the top and bottom edges of the ends and front. Attach the top to the case with screws through oversized holes in the frame to allow for wood movement (detail 'd').

DRAWER RUNNERS

The last work to be done on the case is to add the drawer runners on the inside of the case.



The runners are thin strips of hardwood that guide the drawers in and out of the cabinet via the grooves in the sides of the drawers. After sizing the strips,

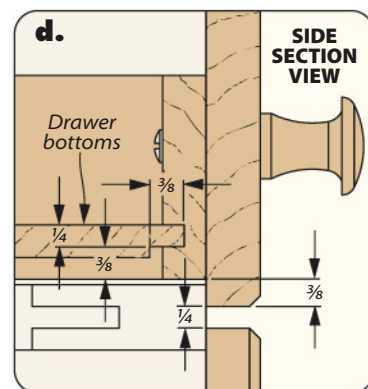
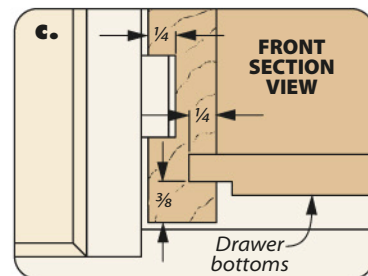
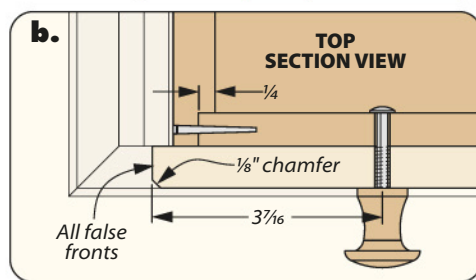
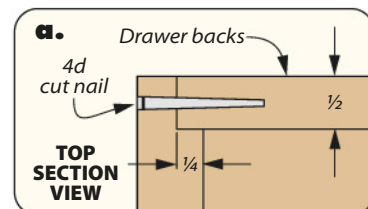
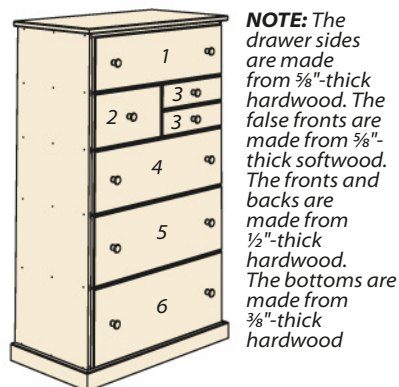
I eased the edges then glued and pinned nailed them to the sides of the case. The drawings and details above show the runner locations for all the drawers.

Making a pile of **DRAWERS**

Staying with Shaker ideals does have some benefits. Not having to purchase drawer slides for all these drawers is a definite upside to this project. We chose to use cherry for the drawer boxes — just to add a dash of soul.

There's a lot of benefits to the variety of drawer sizes this dresser contains. The challenge can be keeping track of all the parts. That's why we included the little drawing at the top right of this page. The numbers assigned to each correspond to the parts in the main drawing and material list.

BOTTOMS UP. Start by gluing up the drawer bottoms. In keeping



with the Shaker tradition, the bottoms are solid-wood panels. You'll rout a rabbet on the underside (detail 'd') after they're trimmed to final size.

While the panels are drying in the clamps you can work on the other drawer box parts. After cutting them all to size, focus on the drawer sides. You'll need to cut a groove for the runners that you installed in the case earlier. The main drawing on the previous page shows the locations for the centered grooves in each drawer. Cutting the rabbet for the front and back on the ends of the sides is up next, as details 'a' and 'b' show. Lastly, cut the grooves along the lower edge of the sides and fronts for the drawer bottoms (detail 'c').

GLUE UP. Gluing up each drawer box brings you that much closer to the completion of the dresser. Don't glue the drawer bottom, slide it in place and nail it to the back from beneath. I added the nails (details 'a' and 'b') after the clamps came off.

FALSE FRONTS. The false fronts are thicker than the drawer boxes and have a chamfered edge. After you've made these parts, it's time to attach them to the drawers. To do this start with the bottom drawer, put the box back in its opening. Apply double sided tape to the back side

of the false front and place a 1/4" spacer on the top of the skirt board. Center the false front on the case and press it into place on the drawer box. Remove the drawer and screw the false front to the box. Now, put the drawer back in the case, place the spacer on the top edge of the false front, and repeat the process for the next drawer.

To complete the building phase, install the drawer pulls. When the paint and finish is dry, you'll see that you have one fine dresser that is sure to add charm to any room. **W**

Materials, Supplies & Cutting Diagram

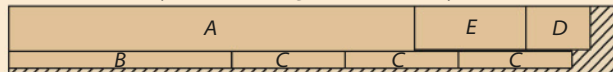
A Sides (2)	$\frac{3}{4} \times 16 - 48\frac{1}{4}$	N Drawer 1 Back (1)	$\frac{1}{2} \times 4\frac{3}{4} - 24\frac{7}{8}$	AA Drawer 4 False Front (1)	$\frac{5}{8} \times 8\frac{5}{8} - 26\frac{1}{4}$
B Rails (12)	$\frac{3}{4} \times 2 - 26\frac{1}{2}$	O Drawer 1 False Front (1)	$\frac{5}{8} \times 7\frac{5}{8} - 26\frac{1}{4}$	BB Drawer 5 Sides (2)	$\frac{5}{8} \times 7\frac{3}{8} - 15$
C Stiles (18)	$\frac{3}{4} \times 2 - 13\frac{1}{2}$	P Drawer 2 Front (1)	$\frac{1}{2} \times 5\frac{3}{8} - 11\frac{5}{8}$	CC Drawer 5 Front (1)	$\frac{1}{2} \times 7\frac{3}{8} - 24\frac{7}{8}$
D Vertical Divider (1)	$\frac{3}{4} \times 15\frac{1}{2} - 7\frac{5}{8}$	Q Drawer 2 Back (1)	$\frac{1}{2} \times 4\frac{3}{4} - 11\frac{5}{8}$	DD Drawer 5 Back (1)	$\frac{1}{2} \times 6\frac{3}{4} - 24\frac{7}{8}$
E Horizontal Divider (1)	$\frac{3}{4} \times 15\frac{1}{2} - 13\frac{1}{4}$	R Drawers 2/3 Bottoms (3)	$\frac{3}{8} \times 14\frac{3}{4} - 11\frac{5}{8}$	EE Drawer 5 False Front (1)	$\frac{5}{8} \times 9\frac{5}{8} - 26\frac{1}{4}$
F Back Slats (4)	$\frac{1}{2} \times 6\frac{13}{16} - 46\frac{1}{8}$	S Drawer 2 False Front (1)	$\frac{5}{8} \times 7\frac{5}{8} - 13$	FF Drawer 6 Sides (2)	$\frac{5}{8} \times 8\frac{3}{8} - 15$
G Skirt Stretcher (1)	$\frac{3}{4} \times 2\frac{1}{8} - 26\frac{1}{2}$	T Drawer 3 Sides (4)	$\frac{5}{8} \times 2\frac{3}{8} - 15$	GG Drawer 6 Front (1)	$\frac{1}{2} \times 8\frac{3}{8} - 24\frac{7}{8}$
H Skirt (1)	$\frac{3}{4} \times 2\frac{1}{4} - 65$ rgh.	U Drawer 3 Fronts (2)	$\frac{1}{2} \times 2\frac{3}{8} - 11\frac{5}{8}$	HH Drawer 6 Back (1)	$\frac{1}{2} \times 7\frac{3}{4} - 24\frac{7}{8}$
I Top (1)	$\frac{3}{4} \times 16\frac{3}{4} - 28\frac{3}{4}$	V Drawer 3 Backs (2)	$\frac{1}{2} \times 1\frac{3}{4} - 11\frac{5}{8}$	II Drawer 6 False Front (1)	$\frac{5}{8} \times 10\frac{5}{8} - 26\frac{1}{4}$
J Drawer Runners (14)	$\frac{1}{4} \times \frac{3}{4} - 15$	W Drawer 3 False Fronts (2)	$\frac{5}{8} \times 3\frac{11}{16} - 13$		
K Drwrs. 1/4-6 Bottoms (4)	$\frac{3}{8} \times 14\frac{3}{4} - 24\frac{7}{8}$	X Drawer 4 Sides (2)	$\frac{5}{8} \times 6\frac{3}{8} - 15$		
L Drawers 1/2 Sides (4)	$\frac{5}{8} \times 5\frac{3}{8} - 15$	Y Drawer 4 Front (1)	$\frac{1}{2} \times 6\frac{3}{8} - 24\frac{7}{8}$		
M Drawer 1 Front (1)	$\frac{1}{2} \times 5\frac{3}{8} - 24\frac{7}{8}$	Z Drawer 4 Back (1)	$\frac{1}{2} \times 5\frac{3}{4} - 24\frac{7}{8}$		

- (2 boxes) 4d Nails
- (6) #8 x 1 1/4" Fh Woodscrews
- (11) Drawer Pulls with screws

$\frac{3}{4}$ " x 8" - 96" Pine (Three Boards @ 5.3 Bd. Ft. Each)



$\frac{3}{4}$ " x 8" - 72" Pine (Three Boards @ 4.0 Bd. Ft. Each)



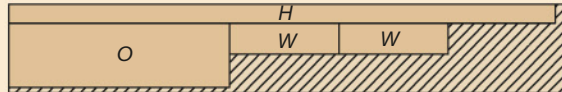
$\frac{1}{2}$ " x 6" - 42" Cherry (Four Boards @ 1.8 Sq. Ft. Each)



$\frac{3}{4}$ " x 11" - 96" Pine (7.3 Bd. Ft.)



$\frac{3}{4}$ " x 10 1/2" - 66" Pine (4.8 Bd. Ft.)



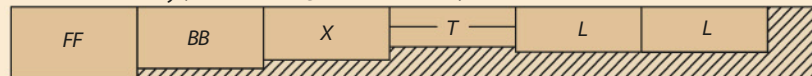
$\frac{1}{2}$ " x 7" - 66" Cherry (Eight boards @ 3.2 Sq. Ft. each)



$\frac{1}{2}$ " x 9 1/2" - 112" Cherry (7.4 Sq. Ft.)



$\frac{3}{4}$ " x 9" - 96" Cherry (Two Boards @ 6.0 Bd. Ft. Each)



$\frac{1}{2}$ " x 7" - 48" Pine (Four Boards @ 2.3 Sq. Ft. Each)





Occasional Stool

A distinctive combo of materials, patterns, and grains makes this stool stand out from other seats, while also offering sturdiness and comfort.

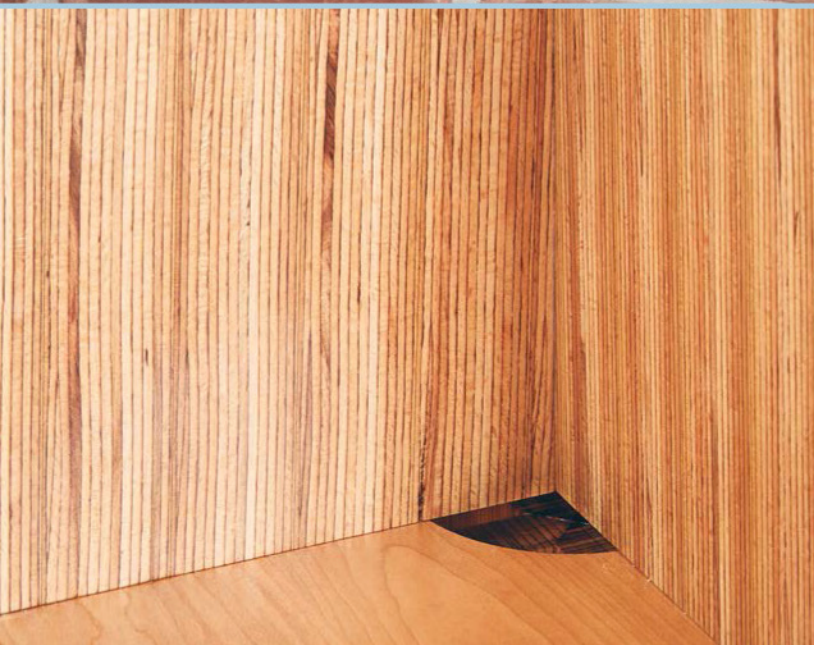
In my mind, one of the great joys of building something yourself is getting to work with and learn about a variety of materials. As you can see, the stool featured here has a rather rudimentary design, and that's no bad thing. The basic joints allow the stool to instead lean into its two unique materials: the baubuche legs and woven cane seat.

Baubuche is a laminated sheet good made from layers of European beech. For those who may need to brush up on their *Deutsche*, the word "baubuche" translates literally from German to "building beech." It's grown in popularity in recent years, being used for anything from butcher blocks to bar tops to construction timbers. The orientation of the layers grants these panels a compression strength on par and even exceeding some concretes. For our purposes, it ensures a strong stool while also drawing the eye upward toward the other highlight of the project.

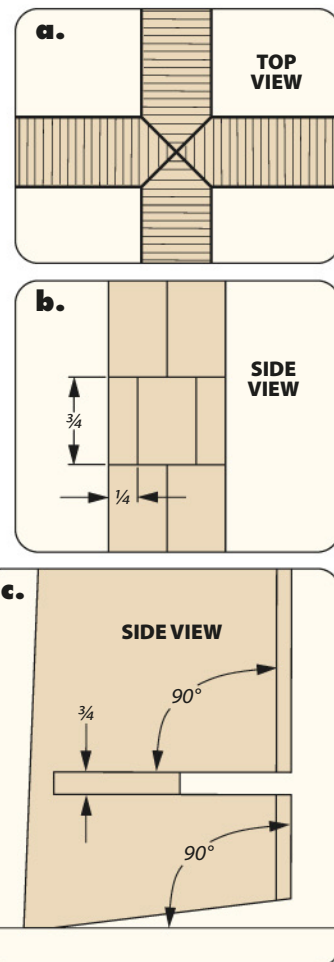
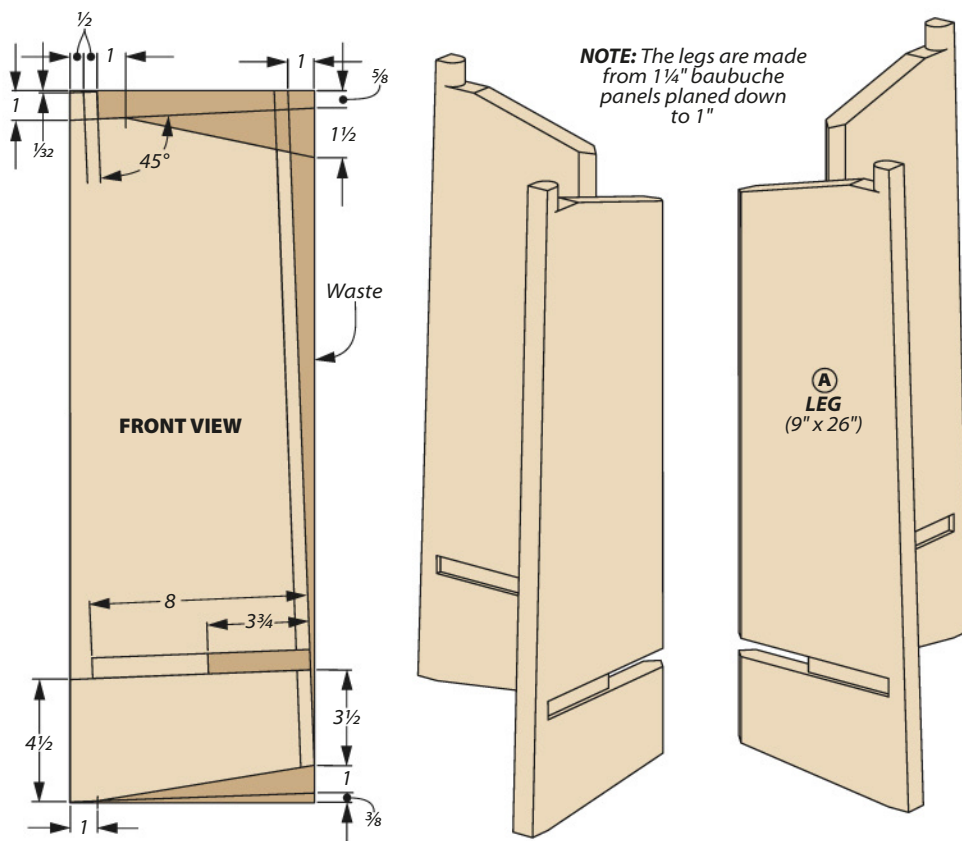
CANE WEAVE. A seat of woven cane webbing tops off the stool. Cane weave has been used as long as wood itself, and for good reason. Quality cane webbing is both strong and flexible, making it an excellent material for seating. Although we won't be weaving the material ourselves in this project, there are a few tricks worth looking into. All things considered, you'll find this stool to be a wonderful weekend build, and an even better addition to your counter, bar, or high-top table.



▲ A seat of closed weave cane webbing provides not only comfort, but also a unique accent to the top of the stool. The webbing is press-fit with a reed spline and hollow beneath, offering the perfect balance of forgiveness and support.



▲ The legs of the stool are made of baubuche, a laminated panel of European beech. A single ringed stretcher of cherry offsets the laminated legs, joining them with interlocking notches and dadoes.



Four Laminated **LEGS**

The baubuche legs give this project a distinct verticality. However, any kind of 1"-thick hardwood you choose will do just as well.

LEG PROFILES. First, you'll need to plane the baubuche to thickness, as most panels are 1 1/4" thick.

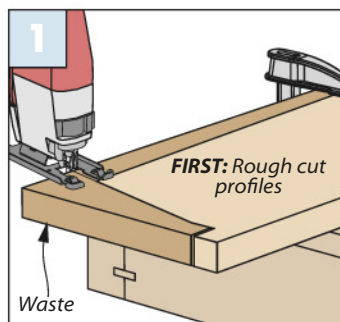
Once planed, cut the blanks to size. Figures 1 through 3 below show how to bring them to shape.

Use the left elevation above to make a template. First, use a jig saw to remove most of the waste (Figure 1). Make sure that the outer edge is aligned with the edge of the blanks (shown above), otherwise you'll

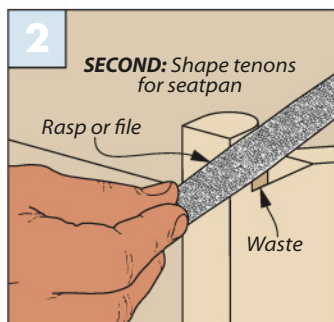
be left with some unsightly marks where the layers are cut through. Lastly, use a template and pattern bit to rout the final shape.

TENONS. Rounded tenons will join these legs to the seatpan.

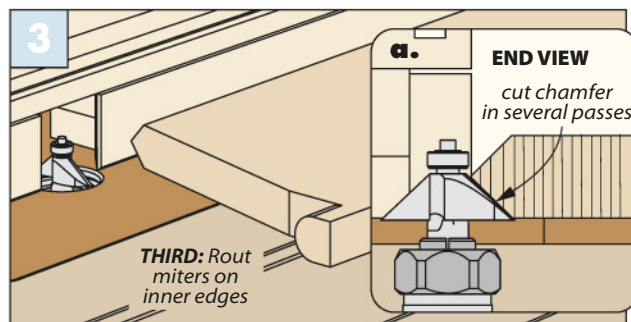
SHAPING THE LEGS



Profile. Rough shape the legs with a jig saw first, then use a template to rout the edges.

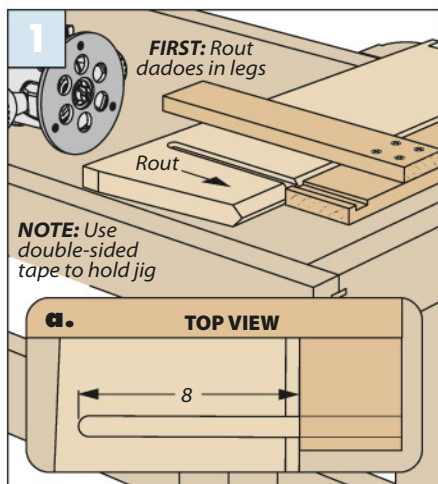


Tenons. Use a 1/2" roundover bit to shape the tenons. Use a rasp to clean up the shoulder.

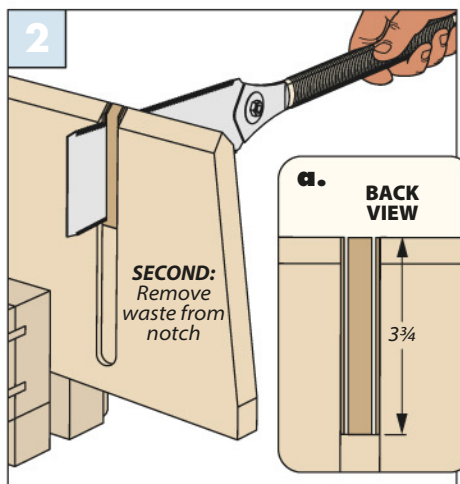


Inner Miters. To cut the mitered inner edges, use a large chamfer bit at the router table. Set the bit and fence to cut only half the edge, then make the cut on both sides.

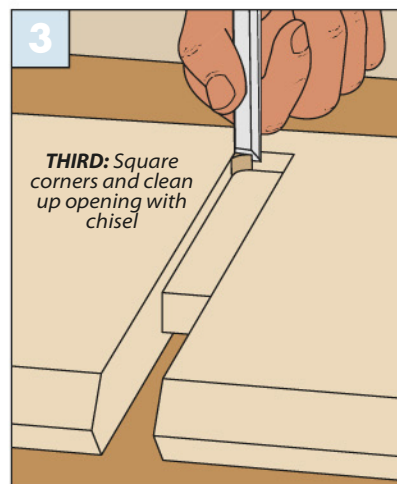
DADOES & NOTCHES



Dadoes. First, rout the dados for the stretcher ring. Rout from the stopped end first, toward the edge.



Cut Notches. Rough cut the waste from the notches. Leave enough material to rout the edges straight afterward.



Squaring. Once most of the waste is removed, use a chisel to square up the dados and notches.

I used a roundover bit to remove most of the waste, finishing up the radius with a rasp (Figure 2). Before moving on, I took care of the mitered inner edges. As you can see in Figure 3, I routed these with a chamfer bit.

STRETCHER JOINTS. The joints for the stretcher come next. Figure 1 above shows how I started. I first routed out the area, using a T-square dado jig to guide it in a straight path.

Next, I sawed out most of the waste from the notch (Figure 2) and cleaned the area up with a pattern bit. A chisel helped me square the corners (as in Figure 3).

STRETCHER RING

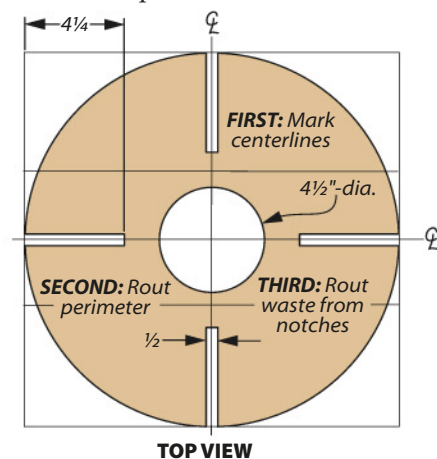
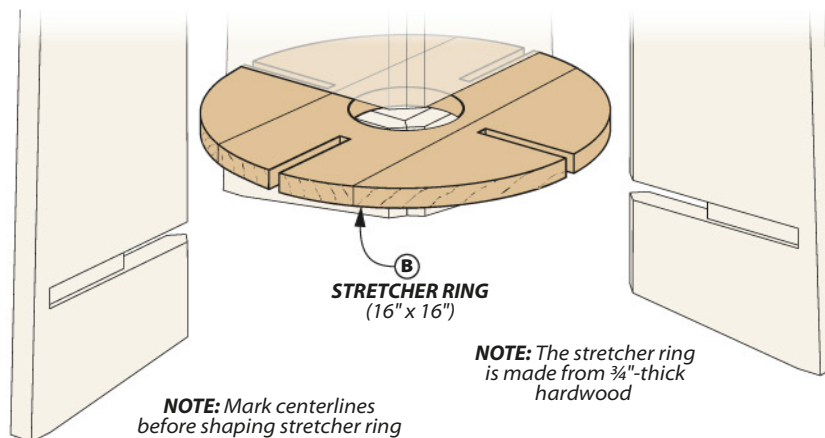
The four legs are joined by one ring-shaped stretcher. The notches in the stretcher will fit in the joints you just cut.

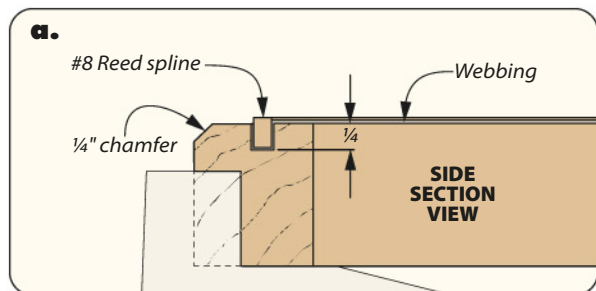
LAYOUT. After sizing, the first task is to mark out the stretcher's centerlines, shown in the right illustration below. These act as guides when cutting the notches.

NOTCHES. The notches' locations are shown by the centerlines. I removed most of the waste at the band saw, then used a straightedge and pattern bit to clean their edges. Lastly, I squared up their corners with a chisel.

TRAMMEL ROUTING. Tape the blank down to a sacrificial board on your workbench. Use a trammel, router, and straight bit to round the blank's perimeter in several passes. To remove the center of the foot ring, use a shorter trammel and rout out the center of the ring, again making several passes to complete the cut.

LOWER ASSEMBLY. The legs can now be glued up with the stretcher ring pinned in between. Band clamps and patience are key here. Leave the ring unglued — the legs will hold it in place fine.



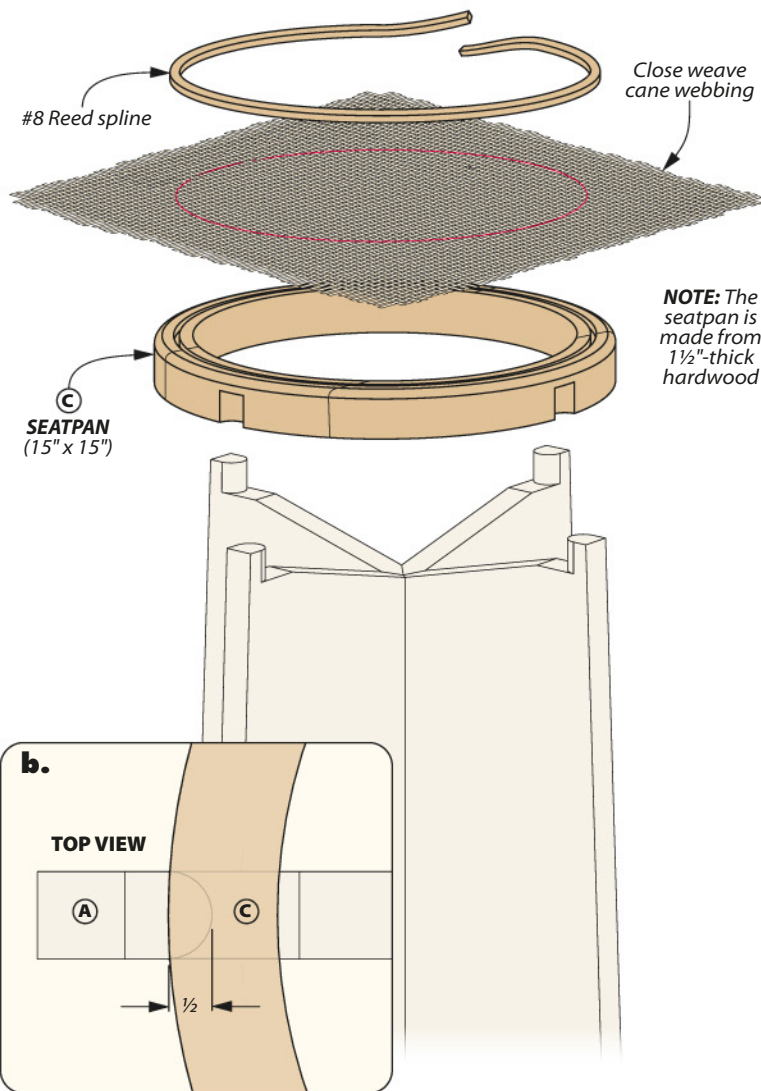


Completing the SEAT

The crowning piece of this project is the seat. A ringed seatpan suspends the cane webbing, while a reed spline fits into a groove to hold it in place. But let's not put the cart before the horse — the first step is to make the seatpan to fit the leg assembly.

LAYOUT. The seat begins with a square blank. Initially, I marked the center corner to corner and used that to mark out the two inner and outer diameters. This gave me the general shape of the seatpan, and an idea of where I would need to make the mortises to match the tenons on the legs. Of course, I'd need to account for any variation.

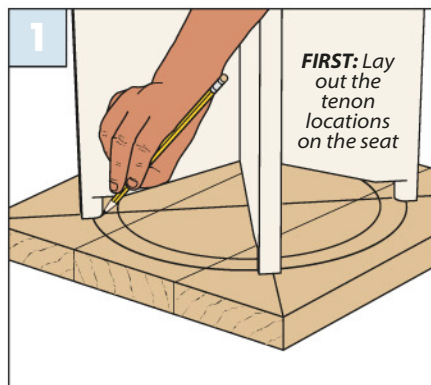
As you can see in Figure 1 below, I did this by setting the leg assembly on top of the seat and



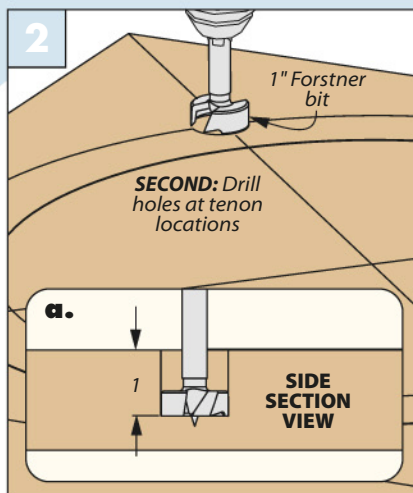
For more on making and using a router trammel, go to:

Woodsmith.com/269

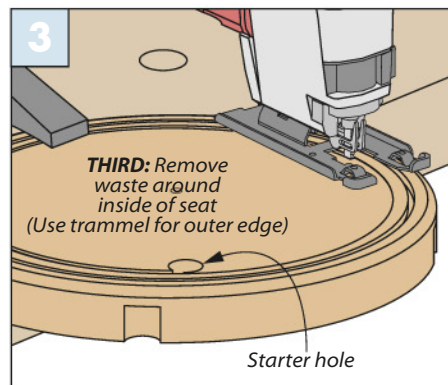
FITTING THE SEAT



Mark Tenons. After laying out the centerlines and scribing the circles, use the legs to mark the tenon locations.

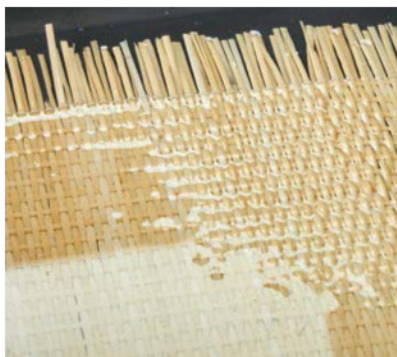


Make Mortises. Use a Forstner bit to drill out holes at the tenon locations, making their mortises.

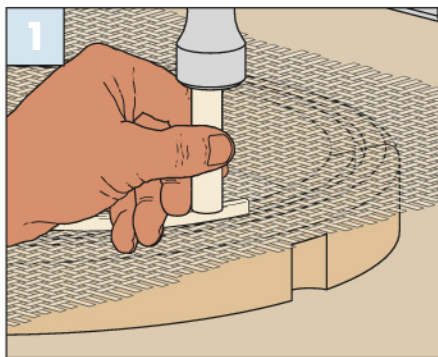


Remove the Waste. Rough cut the waste from the seatpan. Then use a router and trammel to clean the edges.

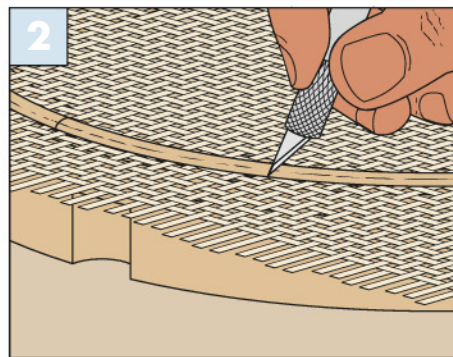
ATTACHING THE CANE WEBBING



Soak. To make the webbing pliable, let it soak in warm water for two hours, then pat it dry.



Insert Spline. Drive the spline into the groove to hold the webbing in place. I used a dowel to protect the spline.



Trim Weave. After the spline has been fit, use a sharp knife to trace the spline's edge, removing the excess webbing.

marking out the tenon locations along the outer diameter. With that done, I drilled the holes to form these mortises.

TRAMMEL ROUTING. The next step is to make the groove that fits the spline. I did this with a plunge router, a 1/4" straight bit, and a router trammel. If you're unfamiliar with trammel routing, visit Woodsmith.com/269.

Now the blank can be shaped. As with the legs, I first removed most of the waste with a jig saw, starting with the perimeter and then moving to the inside. (Figure 3). Lastly, I used the centerpoint to rout with the trammel and straight bit to rout out the center.

ASSEMBLY. Finish up the seat pan by routing a chamfer along the upper edge (detail 'a,' previous page). Glue the tenons into their mortises to finish up the wood portion of the stool.

WOVEN CANE SEAT

The final step in making the stool is attaching the cane webbing. Of course, you'll want to finish the stool first. I used two coats of spray lacquer, and once dry, it was time for the cane.

PREPARING THE WEAVE. When cutting the webbing at first, oversize it so it can be cut flush later on. You'll find the cane is also a bit stiff. To make it pliable

enough to fit into the groove along with the spline, you'll need to soak the webbing, as in Figure 1 above.

ATTACHING THE CANE. After softening the webbing, pat it dry and begin fitting it with the spline. Figure 2 shows this. I tapped them both in using a dowel to keep from damaging the spline.

Once you've come full circle, trim off the end of the spline. Finally, use a sharp knife to cut the webbing flush with the spline (Figure 3). The cane should dry shortly, tightening the cane weave like a drum and leaving you with a beautiful stool fit for any occasion. [W](#)

Materials, Supplies & Cutting Diagram

- | | | |
|-----------------------------|-----------------|------------------------------|
| A Legs (4) | 1 x 9 - 26 | |
| B Stretcher Ring (1) | 3/4 x 16 - 16 | • (1) 18" x 16" Cane Webbing |
| C Seatpan (1) | 1 1/2 x 15 - 15 | • (1) 6' #8 Reed Spline Coil |

ALSO NEEDED: One 4' x 8' sheet of baubuche

3/4" x 4 1/2" - 72" Cherry (2.3 Bd. Ft.)



1 1/2" x 4 1/2" - 72" Cherry (4.5 Bd. Ft.)



CARVING

Project



Carved Mirror Frame

There's hardly a better way to hone your carving skills than to dive into the parade of hand-carved flora that adorns the rim of this mirror.

The quiet craft of carving, and the resulting objects — such as this mirror — have layers of rewards that unfold from the time it comes to life in the shop and into the years it graces your home. The mirror you see here pays homage to the rustic charm of eastern European folk carving and is a perfect project for a woodcarving novice or pro.

ANATOMY. At the core of the frame are maple plywood strips that provide contrast for the cherry banding, leaves, and sunflowers. The leaves are carved from a single thin piece of cherry. But the sunflowers that anchor the corners are a three-layer assembly that will challenge you in a different way.

If you're new to woodcarving, don't let all these parts shown in the inset photos intimidate you. In fact this project is the perfect primer for a novice to try their hands at carving. Each leaf along with the layered sunflowers are carved independently. So if one of them gives you fits, or you're just not happy with the outcome, it's not a big deal to start over. Also, there are step-by-step instructions on page 12 that point you in the right direction and give you a solid foundation on carving the leaves and the sunflowers.



▲ Six beautiful leaf patterns are used to decorate the frame sides, top, and bottom. You can carve them in any manner that suits your fancy, or follow the steps in the article on page 12.



▲ The multi-layered sunflowers that live in the corners of the mirror are fun to carve, easy to assemble, and add greater depth to the mirror frame in both subject matter as well as the play of light and shadow.

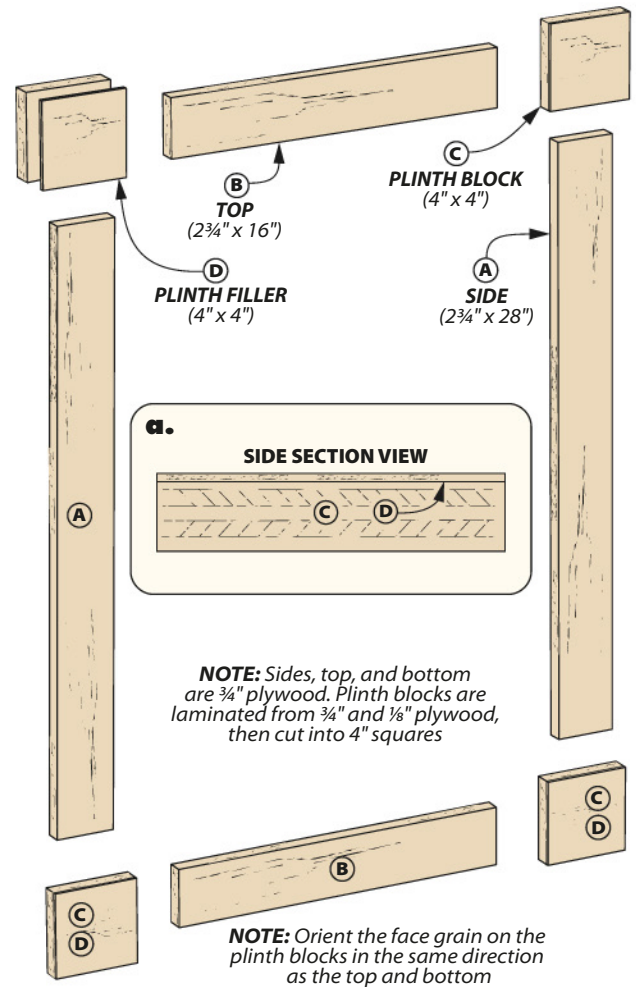
In the beginning ... **FRAME PARTS**

If there is one overriding problem that arises with frames made for display (regardless of the content) it's that mitered corners will open up over time. Wood moves with seasonal changes — period. No matter how tight you fit the miters, or the type of adhesive you use to bond them together, there's a good chance the joint will open up in time. For this mirror frame we've done two things to eliminate that problem.

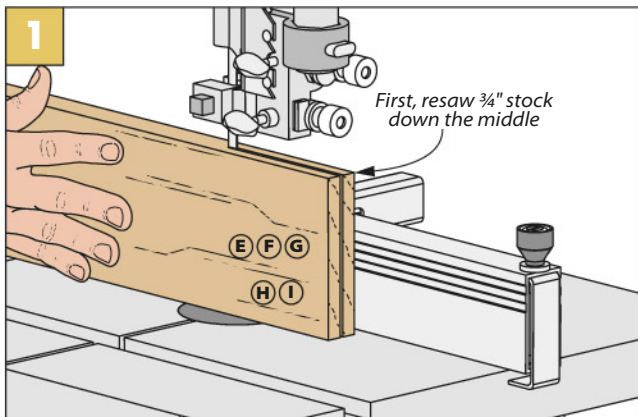
ONE-TWO PUNCH. First, we used plywood as the core of the mirror frame. It's a stable material that remains unaffected by changes in humidity. Second, as you see in the main drawing here, we've joined the corners of the frame with squares (known as plinth blocks in the building trades) instead of mitering the opposing frame pieces.

So the process starts at the table saw ripping the pieces to width for the sides, top, and bottom of the mirror frame, then cutting them to final length. Next comes the plinth blocks, there's a touch more work to do on them.

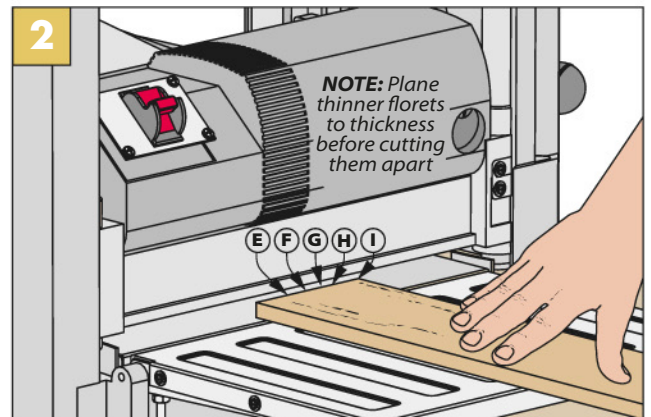
PLINTH BLOCKS. You'll need to bump the rip fence out a bit to rip the larger plinth blocks. If you look closely at the main



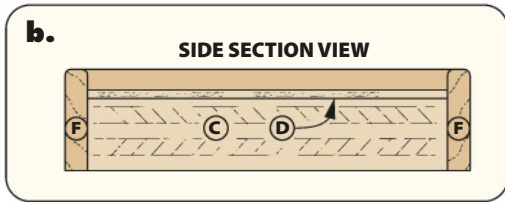
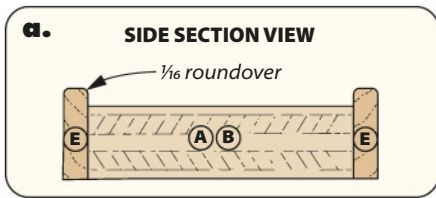
MAKING FRAME & PLINTH BANDING



Resaw the stock. The band saw is the tool of choice when resawing material for the banding. It will bring the stock close to final thickness without wasting wood.



Planer Power. Time at the planer removes the blade marks of the band saw, smooths the surface, and leaves the blanks ready to be ripped into strips, leaves, and florets.

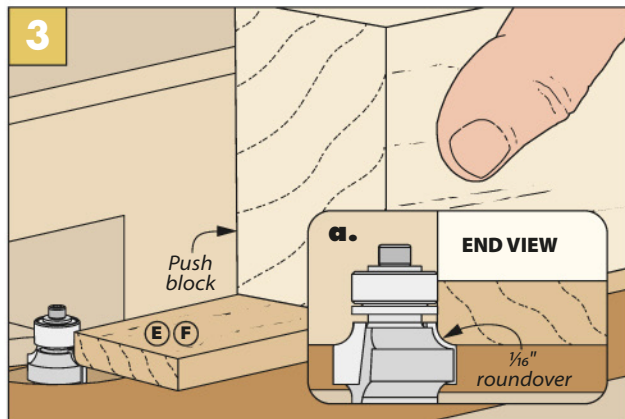
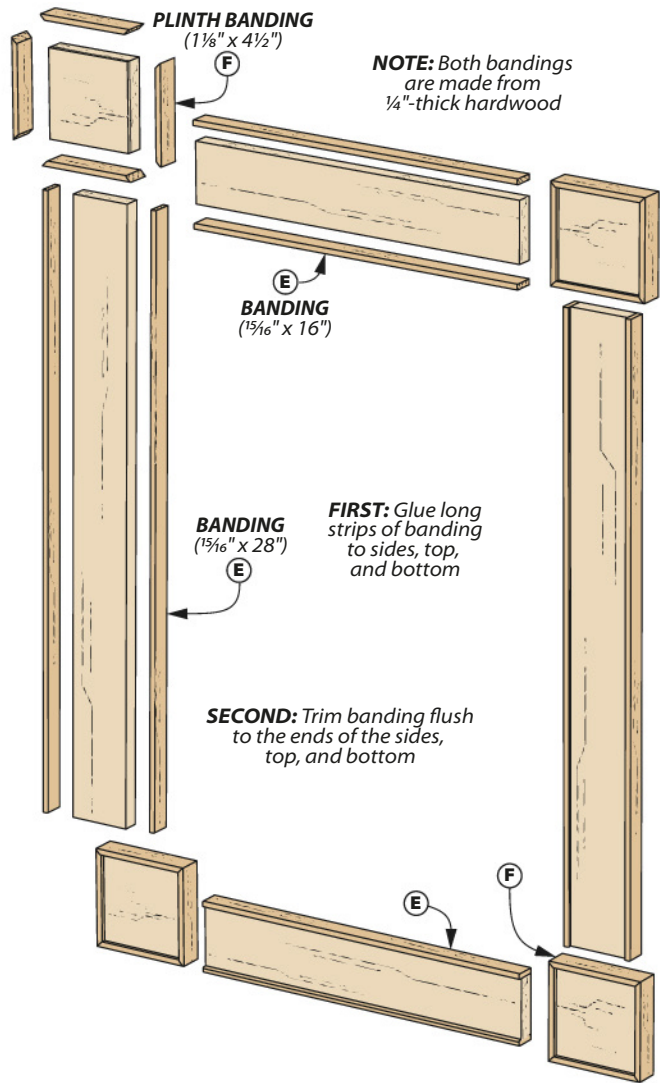


drawings and detail 'b' above you'll see that the plinth block has an additional layer of plywood ($\frac{1}{8}$ ") to elevate and add visual punch to the corners. Rip the strip needed for this as well, then glue up the two. Once the glue dries, cut the blocks to final size.

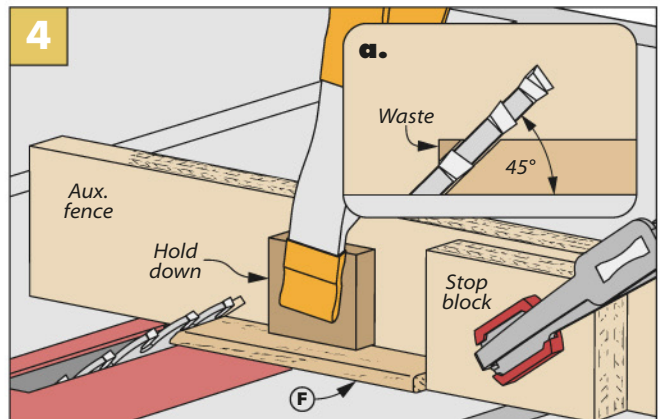
MAKE THE BANDING

All the information you need to make the banding is marching across the bottom of these two pages. Resawing and planing the stock is up first (Figures 1 and 2). When ripping the strips remember there are two widths: one for the frame parts, and the wider pieces for the plinth blocks.

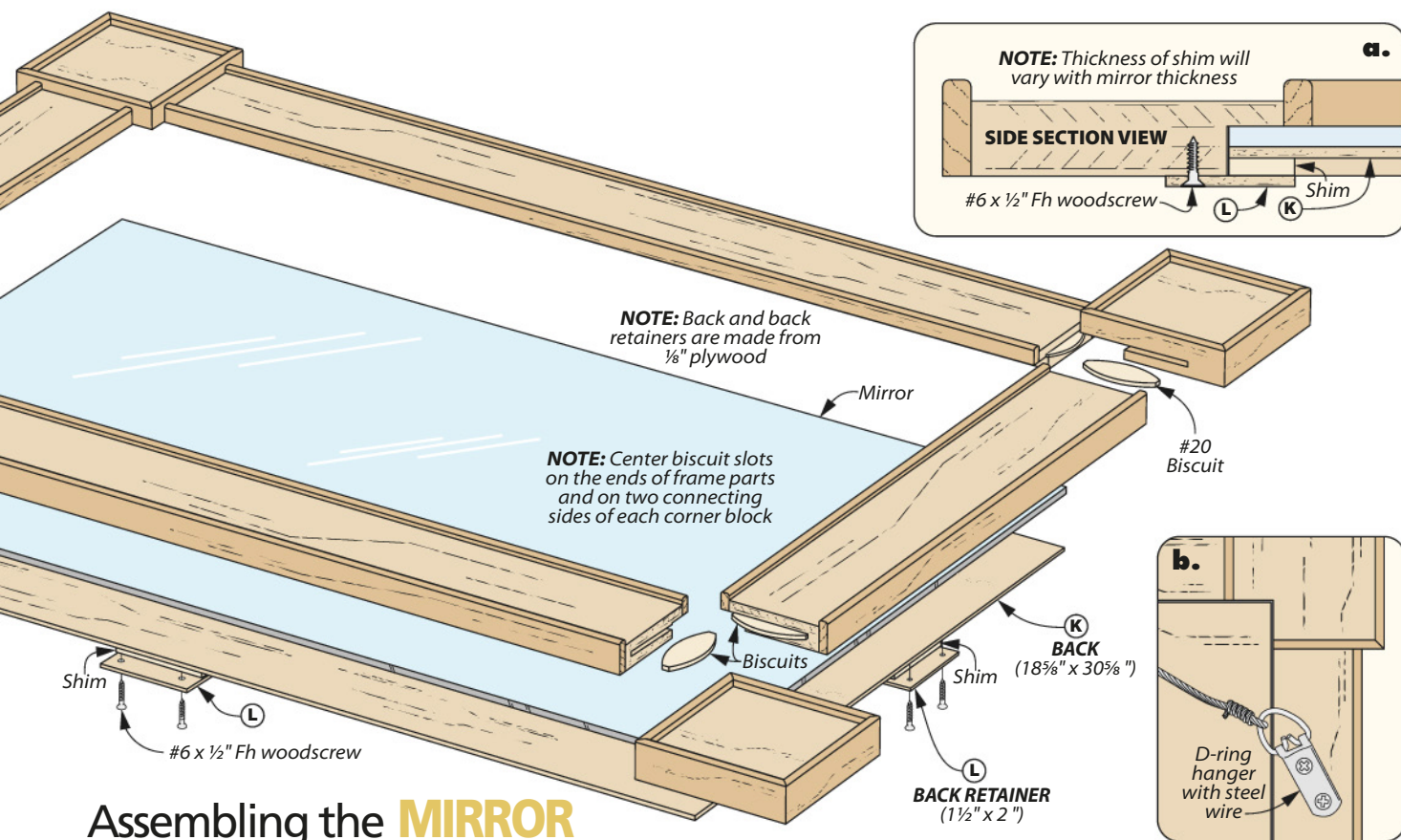
Rounding over the outer edge of all the strips is shown in Figure 3. Leave the thinner strips long and trim them flush to the sides, top, and bottom when the glue dries. Last, wrap the plinth blocks with their banding. The miter gauge, auxiliary fence, and a stop block are your friends here.



Roundovers. A roundover bit installed in your router table is the easiest way to shape the edges of the banding. The push block holds the banding safely against the fence.



Multiple Miters. The setup you see here is fully adjustable and ensures that each piece is cut precisely. It comes in very handy when wrapping the plinth blocks with banding.



Assembling the MIRROR

Up to this point you've gone to all the effort to make a stable frame for your mirror, it would be a shame to pull up short at the finish line. With that in mind you'll see in the drawing above that using biscuits to join the frame pieces to the plinth corners is a good way to ensure a long

lasting bond between the frame parts. Sound biscuit joinery starts with laying out the location of the biscuit slots.

LAYOUT. You'll note in the elevation drawing of the frame on the next page that the sides, top, and bottom are centered on the plinth assemblies.

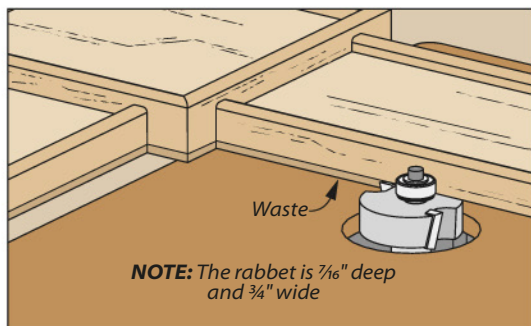
Draw the centerlines of each piece on their back sides (transfer that line around to the sides and front face as well) and use those marks to reference your slots with the biscuit joiner.

GLUEUP. I'm guessing that this isn't the first time you've used a biscuit joiner — but if it is, you need to know that the slots that hold the biscuits leave room for play in the placement of the biscuit. This is the reason I glued the frame up in two stages.

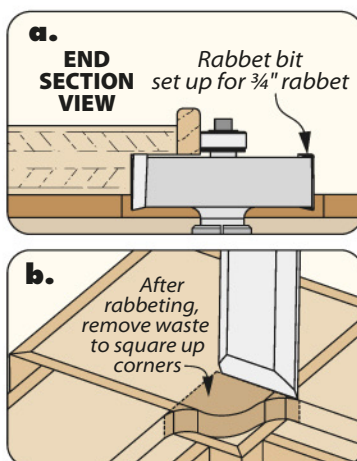
The first stage involves the sides and the plinth assemblies. When the glue and biscuits are in place, and the three pieces are perfectly centered, I tighten the clamps. Now you see why I transferred the centerlines to the front of the parts.

Completing the glueup of the frame is just a matter of repeating the process with the top and bottom parts brought into the mix. Once the glue and clamps are done doing their work on the frame you can focus on making

RABBETING THE FRAME



Multiple Passes. Making the rabbet on the assembled frame gets a little bumpy in the corners. The rest of the material can be removed with a chisel after the routing is done.



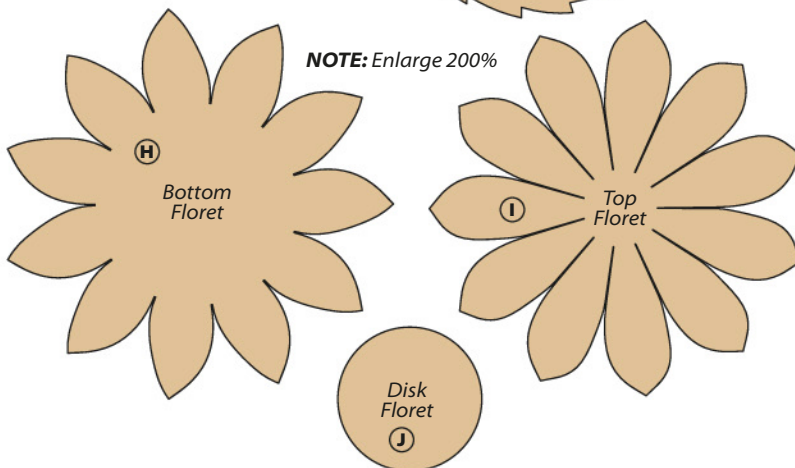
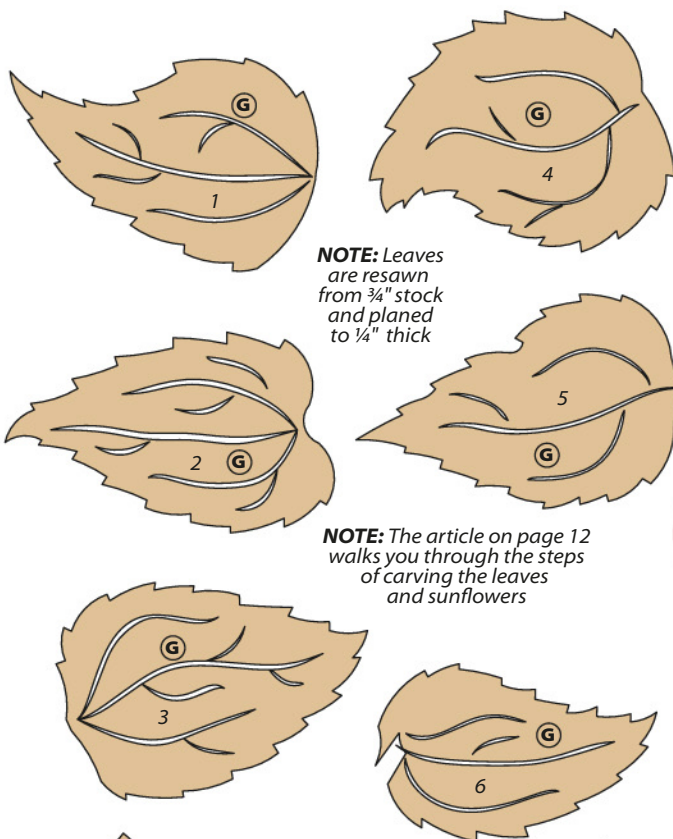
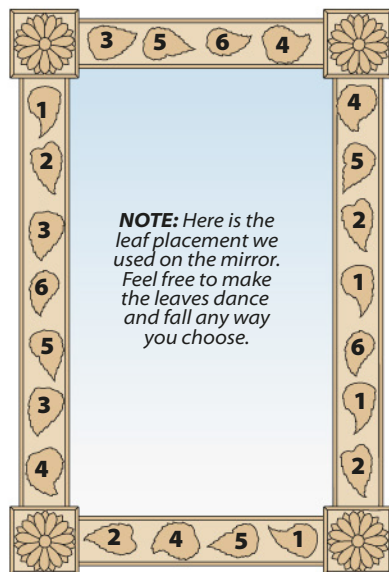
the rabbit that holds the mirror and the plywood back.

RABBIT FRAME. The box at the bottom of the previous page show you what you're up against when it comes to rabbeting the backside of the frame at the router table. Because of the bump of the plinth assembly corner there's a little more work squaring up the corner, but you can handle it — no problem.

MAKE THE LEAVES & FLOWER

Now for the fun stuff. All you have to do is print four copies of this page at 200% and glue the patterns to the wood blanks. Or go online at Woodsmith.com/269 for full-size patterns.

The drawing below shows you the leaf arrangement we used. Feel free to arrange the leaves how you like. All said and done, this project is a perfect reflection of your wood-working and woodcarving skills. **W**



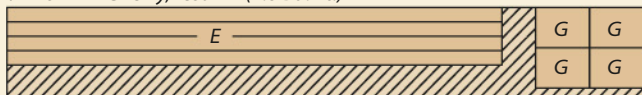
For full-size
Leaf and
sunflower
patterns,
go to:

Woodsmith.com/269

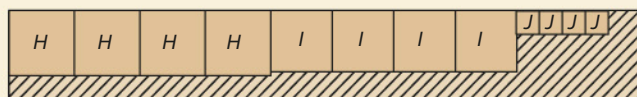
Materials, Supplies & Cutting Diagram

A Sides (2)	$\frac{3}{4}$ ply. - $2\frac{3}{4}$ x 28	F Plinth Banding	$\frac{1}{4}$ x $1\frac{1}{8}$ - 90 rgh.	K Back (1)	$\frac{1}{8}$ ply. - $18\frac{5}{8}$ x $30\frac{5}{8}$
B Top/Bottom (2)	$\frac{3}{4}$ ply. - $2\frac{3}{4}$ x 16	G Leaves (22)	$\frac{1}{4}$ x $2\frac{5}{8}$ - $3\frac{1}{2}$	L Back Retainers (4)	$\frac{1}{8}$ ply. - $1\frac{1}{2}$ x 2
C Plinth Blocks (4)	$\frac{3}{4}$ ply. - 4 x 4	H Bottom Florets (4)	$\frac{1}{8}$ x $4\frac{1}{4}$ - $4\frac{1}{4}$	• (1pr.) D-Hangers & 110lb Wire	
D Plinth Fillers (4)	$\frac{1}{8}$ ply. - 4 x 4	I Top Florets (4)	$\frac{3}{16}$ x 4 - 4	• (1) $\frac{1}{4}$ " - $18\frac{5}{8}$ " x $30\frac{5}{8}$ " Mirror	
E Banding	$\frac{1}{4}$ x $1\frac{5}{16}$ - 192 rgh.	J Disk Florets (4)	$\frac{1}{4}$ x $1\frac{1}{2}$ - $1\frac{1}{2}$	• (8) #6 x $\frac{1}{2}$ " Fh Woodscrews	

$\frac{3}{4}$ "x 6"- 42" Cherry, resawn (1.8 Bd. Ft.)



$\frac{3}{4}$ "x 6"- 42" Cherry, resawn (1.8 Bd. Ft.)



ALSO NEEDED: One 24"x 48" Sheet of $\frac{3}{4}$ " Maple Plywood, One 24"x 48" Sheet of $\frac{1}{8}$ " Birch Plywood

MAIL ORDER SOURCES

Project supplies may be ordered from the following companies:

Woodsmith Store
800-444-7527
store.woodsmith.com

amazon.com

Amana Tools
631-752-1300
amanatool.com

Benjamin Moore
benjaminmoore.com

Brusso Hardware
212-337-8510
brusso.com

General Finishes
800-783-6050
generalfinishes.com

Hardwick and Sons
hardwickandsons.com

The Home Depot
800-466-3337
homedepot.com

Infinity Cutting Tools
877-872-2487
infinitytools.com

Lee Valley
800-871-8158
leevalley.com

McMaster-Carr
630-833-0300
mcmaster.com

Microjig
855-747-7233
microjig.com

MSC Industrial
800-645-7270
mscdirect.com

The Real Milk Paint Co.
800-339-9748
realmilkpaint.com

Rockler
800-279-4441
rockler.com

Tremont Nail Company
503-339-4500
tremontnail.com

Van Dyke's Restorers
800-237-8833
vandykes.com

Sources

Most of the materials and supplies you'll need to build the projects are available at hardware stores or home centers. For specific products or hard-to-find items, take a look at the sources listed here. You'll find each part number listed by the company name. See the left margin for contact information.

WALL SHELF (p.32)

The wall shelf was simply finished with a few coats of boiled linseed oil.

- **Lee Valley**
28mm Ring Pull 01A6128

SHAKER DRESSER (p.38)

A mellow yellow milk paint is what's called for on the exterior of the dresser, so "Yellow Ochre" from "The Real Milk Paint Company," was employed. Then the paint was topped off with a good buffing of wax. Two coats of lacquer on the

beautiful drawer boxes was the only place we strayed from the Shaker tradition.

- **The Real Milk Paint Co.**
Yellow Ochre PP10
- **Tremont Nail Co.**
4d Cut Nail (two boxes). #CE4
- **Hardwick and Sons.**
11/8" Cherry Knobs . . BMH-4217-C

OCCASIONAL STOOL (p.46)

Before attaching the closed weave cane webbing, I finished the stool with two coats of satin spray lacquer.

- **Van Dyke's Restorers**

18" Cane Webbing 02356421
#8 Reed Spline Coil 12174879

CARVED MIRROR (p.52)

The frame of the mirror was left unstained, but sprayed with two coats of lacquer to highlight the glowing contrast of the cherry leaves, sunflowers, and banding. The mirror can be purchased at a local glass shop or home center.

- **Amazon**
D-Hangers B071X4MZTD
Hanging Wire B001Y3YSJG

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