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- Build a classic Stickley plant stand with our two easy to make apron jigs
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TODAY'S

Issue 41

WOODWORKER[®]

PROJECTS, TIPS AND TECHNIQUES



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TODAY'S

WOODWORKER®

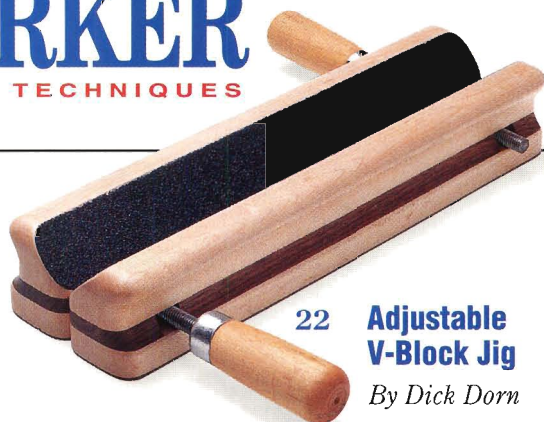
PROJECTS, TIPS AND TECHNIQUES



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Safety First

Learning how to properly operate power and hand tools is essential for developing safe woodworking practices. For purposes of clarity, necessary safety guards have been removed from the equipment shown in some of the photos and illustrations in Today's Woodworker. We in no way recommend using this equipment without safety guards and urge readers to strictly follow manufacturer's instructions and safety precautions.

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ON THE LEVEL

Sawdust Season is Coming

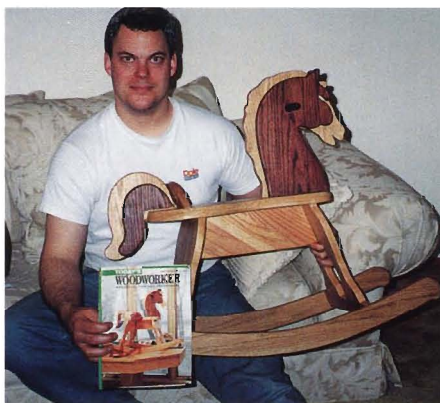
Nothing here makes us quite as happy as the photo of Michael (below) with his recently completed rocking horse from issue 6. Unless of course it's the photo of the biplane shelf and coat rack from issue 39 sent in by George. As I've said many times before, we're especially delighted when a novice trusts us to help him through some tricky cuts or an expert takes our basic idea and soars to the next level with it. (And this time we got both!)

As Michael and George have so ably demonstrated, both of these pro-

jects make great gifts. (Check this issue's back cover if there's still a name on your Christmas list without a little check next to it).

On another note, I'd like to thank all of you who responded to our notice for a new editor in the last issue. It was tough narrowing down the field, especially when it got to the final two candidates. In the end I took the easy way out and just hired both of them! Look for formal introductions in our next issue.

Larry N. Stoiaken



It looks like Uncle Mike is going to be very popular with his sister's new baby boy!

Here's a picture of Lonesome Dovetail from the Nov/Dec 1989 issue six. When beginning this project, I wasn't sure of what I was getting myself into. As you can see, it paid off and I have now given it to my sister and her new baby boy! My wife is wondering when I will make something that will stay in our house.

For this project I edge glued solid oak and used redwood and honey pine stain to create the contrast. The dovetails were delicate, and as a novice I made a couple of errors that led me to buy some additional supplies. One of the reasons this happened was that I used an inexpensive, non-carbide router bit and it ripped the wood apart. Learning from this lesson, it's carbide tips from now on! If there had been no waste in wood, Lonesome Dovetail would have cost me about \$80. The project took me about 40 hours in all to complete.

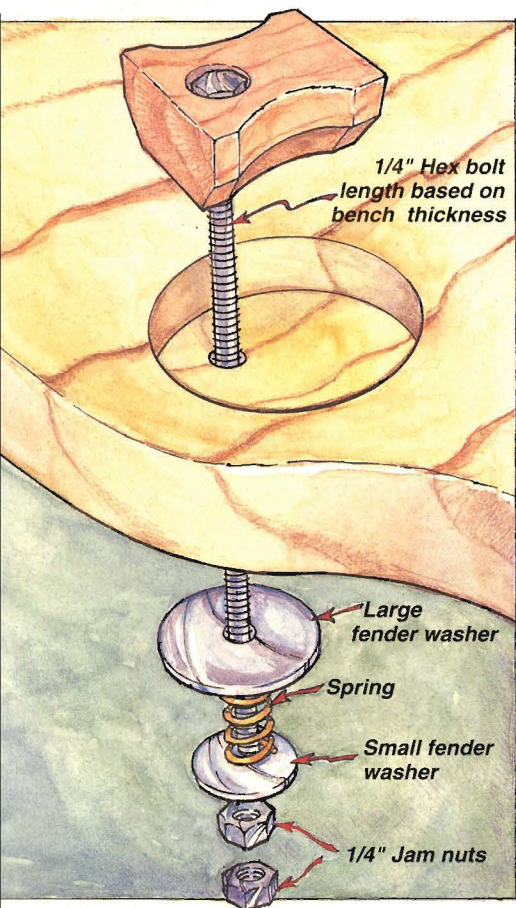
Michael Sandness
Burnsville, Minnesota

I have been receiving Today's Woodworker for a few years and I enjoy the magazine very much. I have used many of the tips and techniques, but this is the first time I have made one of your projects. My wife suggested I make the Biplane Shelf and Coat Rack in issue 38 for my oldest son, who has a pilot's license. I made the fuselage out of twenty one 1/2" wide strips of walnut and poplar cut with the table saw set at 7 1/2 degrees and the base out of poplar cut at 22 1/2 degrees. This gave me a fuselage with a hollow center. I used the space for a battery operated motor and a "C" cell battery holder to power my propeller. Then I put a push button switch behind the pilot's head so I could turn it on and off. The fuselage was easy to make round with a little sanding. I also made the Engine Cowl in two pieces that I cut out on my band saw and jig saw instead of using the template to rout it. I then used the router to round over the rim and the cavity. I do not have a lathe but it was easy enough to finish the engine cowl with my drill press.

This was a neat project and I have had many compliments on it already.

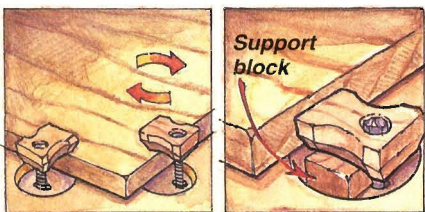
George Bachner
Pittsburg, Pennsylvania





A Spring Loaded, Flush Mounted Hold Down that Doubles as a Bench Dog

I've come up with a great home-made bench fixture that does double duty as a hold-down and bench dog. Unlike a regular hold-down, you don't need a hammer to set or release it. I find my fixture much handier on workpieces (like relief woodcarvings) that need repeated adjustments.



Hold-down

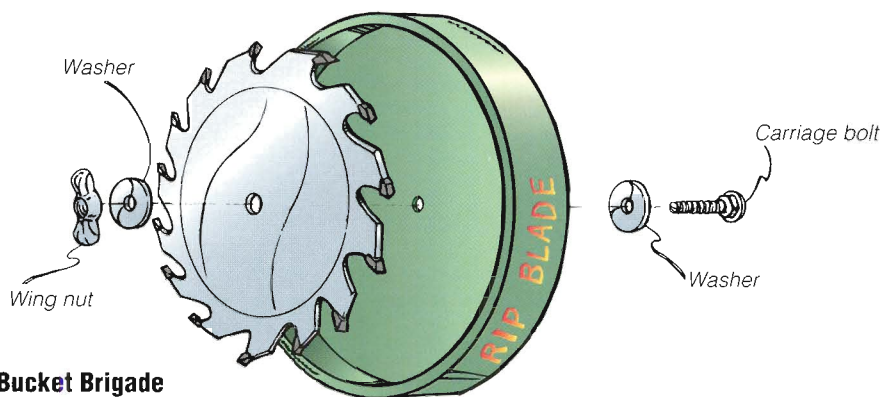
Bench dog

To convert the hold-down into a bench dog I just stick a piece of 3/4" thick scrap under it. And when I don't need either function, this little jig sits flush with the table surface, completely out of the way.

This set up has worked well for me and I hope fellow readers will give it a try.

*R. B. Himes
Vienna, Ohio*

Late Dados and Blade Savers



Bucket Brigade Protects Your Blades

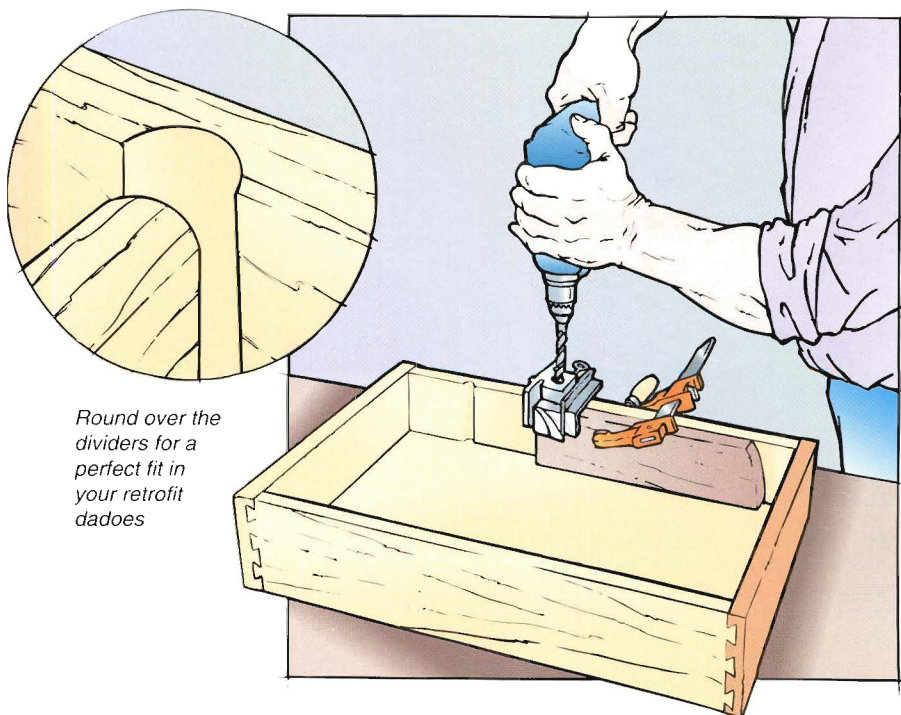
I use bottom cutoffs and lids from plastic buckets to protect my saw blades. To hold them securely in place I first drill a small hole at the center to pass a carriage bolt through (the square shank locks into the drilled hole). Then I slide on a blade and add a large washer and wing nut to hold it in place. I've found that it's easy to label the holders with a marker and they can then be stacked vertically or horizontally to provide readily available, low cost protection.

*Joseph Fetchko
Ocean City, Maryland*

Cutting Dados After the Fact

So you've assembled that last drawer and found that you forgot to cut dados for the dividers. Don't panic, and by all means don't tear the drawers apart to cut the dados. Find a scrap and clamp it to the drawer member that needs the cut. With the aid of a drill press or doweling jig drill a hole at the divider location. Drill so that half the hole is in the drawer member and half is on the scrap piece. Now cut the divider to length and round off the ends with a plane or sanding block. The half round hole provides plenty of support for the divider.

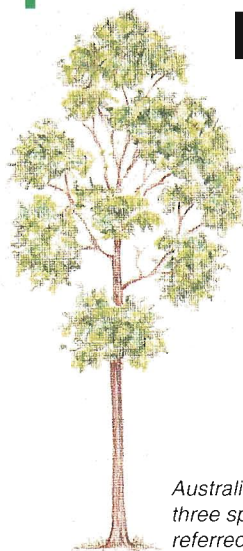
*Michael Burton
Ogden, Utah*



Round over the dividers for a perfect fit in your retrofit dados

Lacewood

By Gordon Hanson

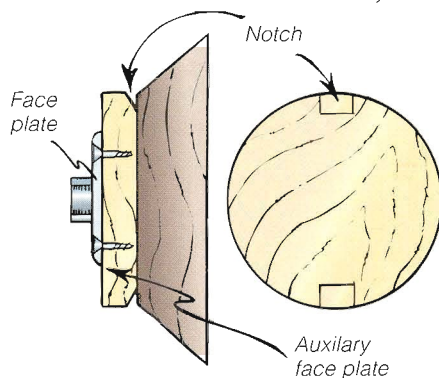


Australian silky oak, one of three species commonly referred to as lacewood.

Freeing Your Face Plate Turnings

When working with face plate turnings on the lathe, it's often necessary to pry the turnings from an auxiliary face plate made of scrap wood. To keep the edges of a turning from being damaged while doing this, give yourself an advantage by notching the face plate just enough to slip in your wedge or chisel in two to four places before gluing the stock to it. This will enable you to pop off the turning without damaging it and will not affect the holding strength between the auxiliary face plate and the turning stock.

*L. K. Bolay
Oak Harbor, Ohio*



Does Your New Tape Measure Up

When shopping for a tape measure, I always use this quick trick to double check for accuracy. Hold your prospective tape and run out about six feet. Now bend the tape back and line up the one foot mark with the five foot mark. Now check the tape at several intervals to ensure that all the increment lines line up with each other perfectly. If they don't match up, the tape is off and should be passed over. Sometimes several tapes need to be checked before one that passes your inspection is found.

*Michael Carroll
Sacramento, California*

Today's Woodworker pays from \$35.00 (for a short tip) to \$150.00 (for each issue's "Pick of the Tricks") for all Tricks of the Trade published. Send yours to Today's Woodworker, Dept. T/T, P.O. Box 261, Medina, MN 55340-0261.

If you run across a piece of wood with grain that looks suspiciously like your grandmother's favorite old tablecloth, you've probably uncovered some lacewood. Just don't start searching for a lacewood tree, because there's no such thing. The term has long been applied to the quartersawn wood of various trees growing in Europe, North America and Australia.

The species that produce lacewood are American sycamore, London plane and Australian silky oak. Interestingly enough, London plane (*Platanus acerifolia*) is a hybrid offspring of American sycamore (*Platanus occidentalis*). According to the book *What Wood is That?* by Herbert Edlin, the birth of London plane took place in about 1670 when the American sycamore was bred with a Turkish plane tree. To complicate matters further, Australian silky oak (*Grevillea robusta*) is from a completely different family, and is not a true oak at all.

Sycamore, also called buttonwood (its seeds were used by early settlers as crude buttons), has only held a minor role in domestic woodworking—even though it is a common tree growing over much of the eastern half of the United States. A reputation for significant shrinkage and warpage is one reason for its infrequent use, but this reputation is only deserving for plain sawn sycamore. Quartersawn stock offers average to good stability.

Generally good working properties are typical with sycamore, but be sure to use very sharp cutting edges to minimize binding. The wood's fine and even texture finishes well. To really highlight the figure, try finishing lacewood with a few coats of oil and then follow with a coat of wax. Sycamore should only be used indoors since the wood has little decay resistance. London plane has similar properties, but it is slightly darker and heavier than sycamore.

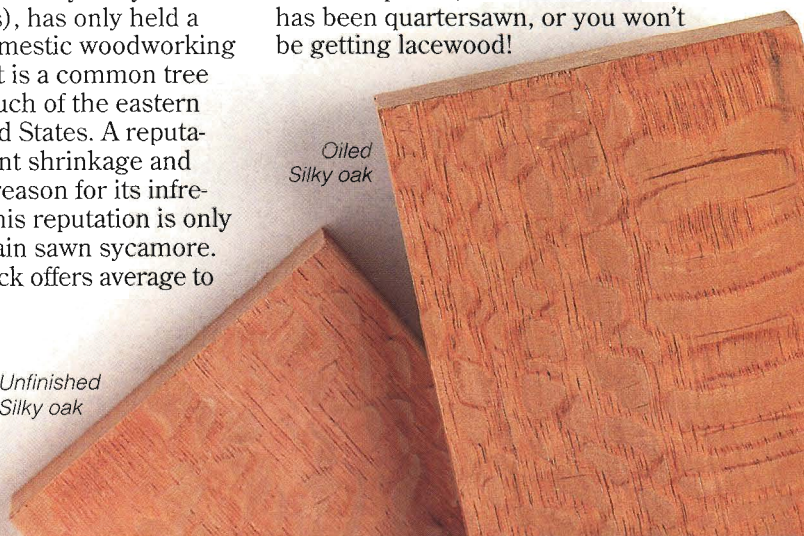
Australian silky oak is a considerably more expensive version of lacewood. Our shop crew did find some pieces at a local importer, but they paid \$13.00 a board foot for it. At this price, and considering the bold ray flecks, silky oak is probably best saved for small projects or as an accent wood on larger pieces.

Our sample piece worked beautifully, cutting smoothly with no kickback during both crosscutting and ripping on a tablesaw. When we cut it on the bandsaw the edges never burned. In addition, chip-out was virtually nonexistent—even when routing around a shaped pattern. The wood also planed, scraped and sanded easily. Silky oak is a porous wood and accepts finish well; a coat of tung oil quickly darkened our sample.

In general, lacewood takes a bit of hunting to find. Your best bet is to locate a supplier who deals in less common domestics for sycamore, or an importer for London plane or Australian silky oak. When ordering any of these species, make sure the wood has been quartersawn, or you won't be getting lacewood!

*Oiled
Silky oak*

*Unfinished
Silky oak*



Honing Stones: Which is Best for You

By Jeff Zagen



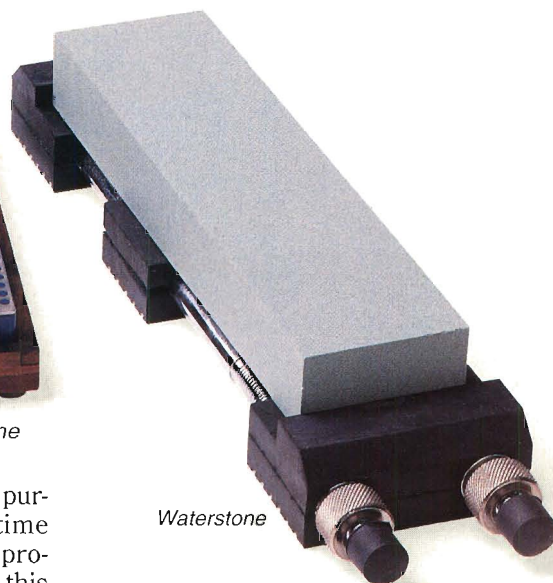
Ceramic stone



Oilstone



Diamond stone



Waterstone

I have a favorite honing stone, and I happen to think that it's the best possible choice. Would other woodworkers agree with me? Probably not. There's a large variety of stones available and everyone has their own particular favorite. Natural stones once ruled, but modern technology has created stones of synthetic abrasives, ceramics, and diamonds. Different lubricants, a choice of grits, countless shapes and sizes, and a range of prices all contribute to the vast selection. Presented with this confusing array, how do you pick your stone.

Start With the Features

All honing stones perform best when used with a lubricant to fill their pores and wash away metal particles. Depending on the type of stone, you need to choose between water or a light, petroleum-based oil. I prefer water because it is cleaner to work with and doesn't permanently spot the wood. When lubricating with water you do have to remember to dry your tools to prevent rusting.

Some woodworkers favor two or three stones to acquire the perfect edge, but I like to grind my tools to produce a hollow ground bevel and follow up with a single 700 grit stone (See photographs at right). This saves me the time and expense of honing on multiple stones and still provides me with a workable,

although not polished, edge. The pursuit of the "perfect edge" is a time consuming indulgence that the professional woodworker, or at least this one, cannot afford. I also prefer a two by six inch bench stone. Smaller stones do not allow proper full length honing strokes, and expensive larger stones aren't really necessary unless you need to sharpen traditional tools, such as large plane irons and slicks. Carving tools, drill and router bits, and other unusually shaped tools require specially shaped stones called slipstones. You can find slipstones in teardrop and angular shapes, as well as file-like shapes such as flat, knife edge, pointed, oval round, triangle and square.

Prices, based on two by six inch stones, range anywhere from \$15.00 to \$50.00. With some stones, the cost rises significantly as their size increases or the grit becomes finer. Be sure to consider how long the stone will last when comparing prices. Diamond or ceramic stones are often a lifetime investment, so it pays to spend more initially. On the other hand, if you are a hobbyist who won't be sharpening all that regularly, a less expensive Arkansas stone should serve you well.

Oilstones

Natural stones, Arkansas and Washita, are quarried in Arkansas. They are sawn from novaculite, a dense, even-textured, silica-bearing rock. They cut well and produce a

fine edge, but are fragile and can break if dropped. Although commonly used with oil, they also work well with water when thoroughly saturated before each use. Arkansas stone: come in soft, hard white, and hard black with grits of 500, 700, and 900, respectively. (Note: Grit references are based on the American system.) The soft stones cut quickly, but the hard stones produce a very fine edge. Washita is the coarsest (350 grit) and fastest cutting natural stone. It's sometimes used before an Arkansas to form bevels or to flatten tool backs. Except for the hard black Arkansas, natural stones are inexpensive. Since natural stones will develop a concave depression in the center with routine use, they require some maintenance to keep them flat, but not as much as man-made oilstones or Japanese waterstones.

Man-made stones have a more consistent grit and texture than natural stones. Also called oilstones, they are manufactured from aluminum oxide or silicon carbide. Aluminum oxide stones, called India stones by some manufacturers, are produced by bonding together aluminum oxide particles with a porous bonding agent that, by design, breaks down with use to expose new, sharp particles. Because of this break down, aluminum oxide stones are fairly inexpensive, but they

do wear more rapidly than natural stones and require more frequent flattening. Since they are oil-filled during manufacture, they only require a few drops of oil before each use. They come in grits of 100, 240, and 320. Silicon carbide stones, also known as Crystolon, are constructed identically to aluminum oxide stones except that they contain silicon carbide as the abrasive. Silicon carbide is harder than aluminum oxide and has more pointed crystals. Choose silicon carbide stones for more aggressive operations that require quickness instead of a fine cut, such as changing the angle of a tool's bevel. The stones are available in grits of 100, 150, and 280. Although oilstones might be a good choice for metal workers, I personally prefer waterstones.

Waterstones

Waterstones can be either natural or man-made. In Japan, the raw material for natural stones has become so scarce that some of the extra fine polishing stones cost over \$1,000! Most of the man-made Japanese stones, produced in similar fashion to aluminum oxide stones, are inexpensive. The coarser grits cut faster than oilstones, but wear down even more quickly and require constant maintenance. Before you use them, soak Japanese man-made stones in water for at least 5 to 10 minutes. Don't soak natural or extra fine grit stones, just sprinkle them with water. If you're up for all the maintenance and soaking, Japanese waterstones will do a fine job, but they're not for me; they take too much time and effort.

My favorite stones contain diamonds, one of the hardest substances known to man. It's widely agreed that they are the most durable stones to be found, but technically, they aren't a stone at all. By cementing them to a flat, steel plate or to a steel screen mounted on a plastic base, manufacturers have created stones that can hone carbide, flatten all other stones, and remain flat and true. I've used the same diamond stone for over ten years and have yet to see any signs of wear. They perform best with water, but I also use mine dry on occasion

and get adequate results. The only maintenance I ever perform is scrubbing the stone with soap and water when it gets dirty, but even this is mainly for cosmetic reasons. Diamond stones are available in all grits, and in many different shapes and sizes. A lifetime of service offsets their high cost.

Ceramic Stones

Ceramic stones are manufactured by mixing aluminum oxide particles with a bonding agent, compressing them at high pressure and then firing them in a kiln at 3000 degrees. The stones produced can sharpen carbide and remain flat longer than any other stone except diamond stones. Ceramic stones do not require lubrication, but they tend to clog easily without it. They can be cleaned with household detergent and a nylon dish pad. They're available in medium to extra fine grits (600 to 1200) and have an excellent service life, considering their moderate cost.



After grinding, the author switches right to a 700 grit diamond stone to achieve a workable edge. He finishes up with a few passes to remove the burr from the back. In the closeup of a properly ground and honed chisel at right you can see vertical scratches from grinding and diagonal scratches from honing.

(Photos on this page by the author.)

Making the Right Choice

Which stone is best for you? If you have been competently using one stone for some time and understand its idiosyncrasies, it's the right choice for you. Some craftsmen select stones for reasons of tradition or aesthetics rather than performance, just as a traditional woodworker might choose a hand plane rather than a jointer to get a square edge on a board. For myself, I expect a stone to meet certain criteria. It should use water for lubrication, remain flat and true with minimum maintenance, give service life proportional to its cost, and be available in the size and grit that I need. On this basis, I use and recommend a diamond stone. A ceramic stone is a more moderately priced alternative. If you're budget conscious or an infrequent user, pick an Arkansas stone. Of course, the cheapest alternative is a piece of 100 to 600 grit sandpaper glued to a flat board. With wet-dry sandpaper, you can even use a lubricant.

It's important to remember that producing sharp edges on your tools requires more than a good honing stone. It takes considerable practice to master proper grinding and honing techniques. Whichever stone you choose, frequent and proper use will give you the edge that you need.



A Stickley Fern Table

Build this reproduction of an original Stickley design with the help of the two simple jigs featured in our full size pattern.

By Mike McGlynn



Admirers and followers of the Stickley brothers were probably as surprised as I was when the brochure featuring their renewed line came out. While the revived company offers plenty of designs popular at the turn of the century, (call 315-682-5500 for info on their catalog), the classic fern table shown here is conspicuously absent.

Today's Woodworker has showcased a few projects based on the work of the Stickleys, most notably the beautiful hutch featured last September in Issue 35. As those of you who built it know, that piece presented quite a workout in joinery. The thing I like about the fern table is that, while it is basically true to the original, it is still well within the reach of the weekend woodworker. To make sure of that, I came up with two easy-to-make jigs to help with the trickiest cuts—the compound miters on the apron edges.

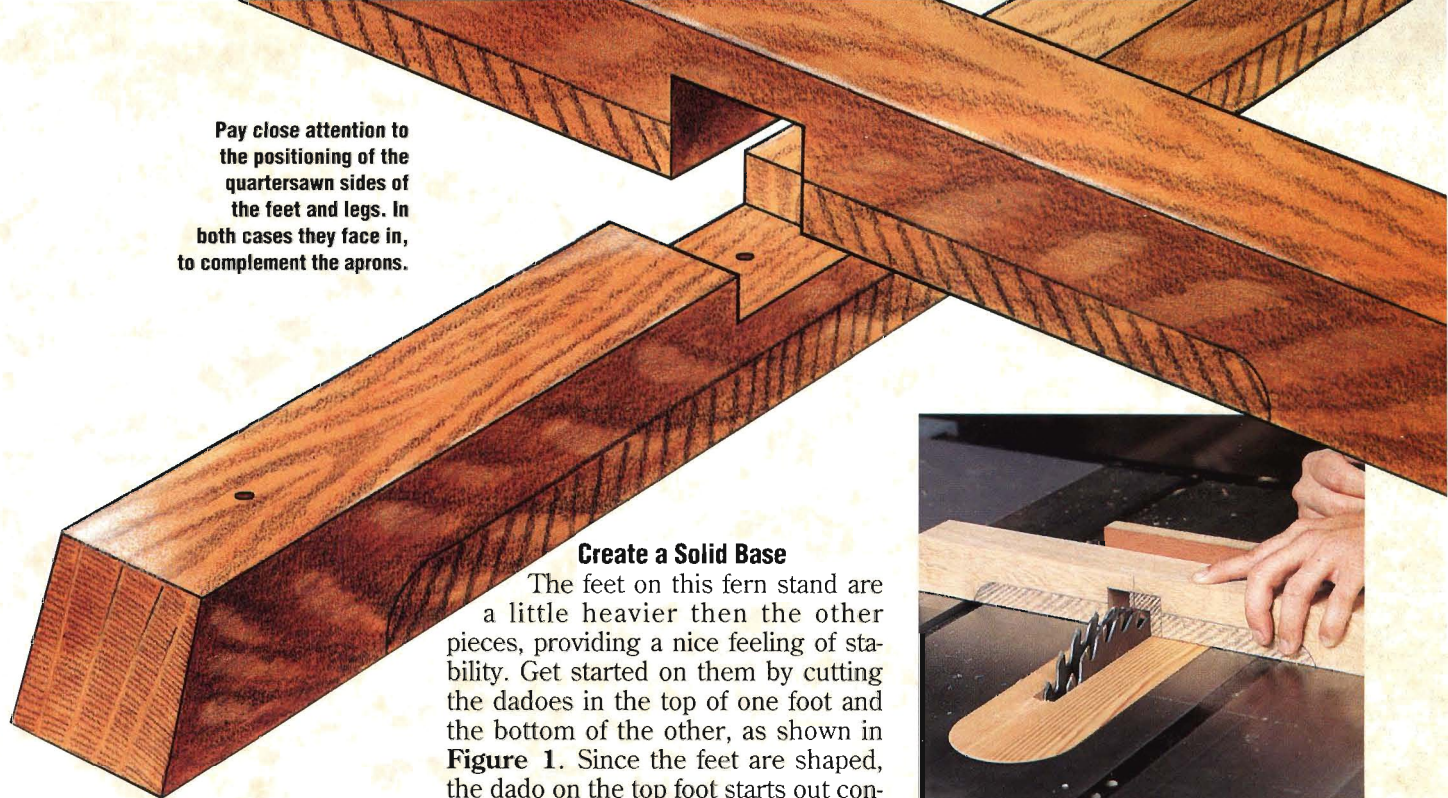
In my research I found that plant stands like this one often featured a slight curve on the bottom of the aprons and no decorative mortises. I borrowed the mortises from other Stickley designs I like and felt they dictated a flat bottom apron.

Selecting and Cutting Stock

As with most Stickley pieces, the fern stand is built with quartersawn white oak. The top (piece 1) should be milled from three pieces of your best 4/4 stock, while the legs (pieces 2) should be cut from 8/4 stock. I recommend cutting the legs about 3/8" oversized and then waiting a couple of days before jointing two



Pay close attention to the positioning of the quartersawn sides of the feet and legs. In both cases they face in, to complement the aprons.



Create a Solid Base

The feet on this fern stand are a little heavier than the other pieces, providing a nice feeling of stability. Get started on them by cutting the dados in the top of one foot and the bottom of the other, as shown in **Figure 1**. Since the feet are shaped, the dado on the top foot starts out considerably deeper than the one on the bottom foot. Use a chisel to smooth the bottoms of the dados until your lap joint fits perfectly on the top. Now transfer the shape of the feet from the **Full Size Pattern** (between pages 12 and 13) and use your bandsaw to remove the waste (See **Figure 2**). A one inch diameter drum sander in the drill press will quickly complete the refining work on this cut. Continue dry fitting throughout this process to make sure the shaped bottoms of the two feet line up as well as the flat tops. Now move back to the tablesaw and, with the miter fence set at 18°, cut both ends of the feet. Complete the base by drilling and countersinking the holes at the ends of the feet and at the lap joint (See **full size pattern**) for the screws (pieces 6).

edges and planing the other two. This will help eliminate twisting and bowing. If you do use 8/4 stock, be sure to save a little cash by purchasing plain sawn lumber. When you square up the legs each piece will have two plain sawn and two quartersawn faces.

Get started by cutting the legs to size, allowing for the slight bevel at the top and bottom. Try to find some extra wide stock for the aprons (pieces 3) so you don't show a glue line on these key pieces. Since fern stands typically sit out in the open (and thus have no hidden sides), be sure to find a pretty piece to cut all four aprons from so you have a good match around the top. Now cut the feet (pieces 4) to size, leaving a little extra for the length. To complete your pile of stock, plane a short piece of 6" wide oak down to 7/16". After your spline grooves are cut you'll use this piece for your splines (pieces 5).

Before moving on, glue up the three pieces for the top. I like to plane my pieces first and then use my biscuit jointer to ensure a perfectly smooth top with a minimum of sanding. In addition, I recommend using either Titebond II or one of the new polyurethane glues (like Gorilla glue) to avoid the dark lines caused by yellow glue. If you use Gorilla glue, try applying it to one surface and wetting the other surface to speed up curing time.

Move onto the legs now to cut the spline grooves. Be sure to cut these grooves on the quartersawn sides of the legs, since these are the sides you want facing the aprons. With the blade set 1/4" high and a stop block in place to limit the length (See **Figure 3**), cut a groove on the right side of each leg. Now readjust the fence to cut the groove on the left side of each leg (See **elevation drawing on page 10**).

For this project the main function of the splines is alignment, not strength, so layout and fit are very important. When you've completed your grooves, cut the splines to fit (using the 7/16" stock you planed earlier).

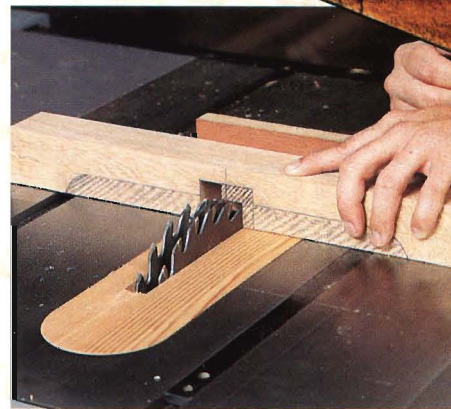


Figure 1: The lap joint dados on the feet are cut first. Clearly mark your stock and remember to reset the blade height for the second foot.

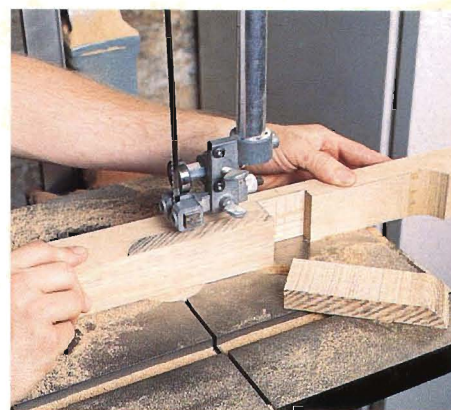


Figure 2: Once the dados are cut, move to the bandsaw to remove the waste at the bottom of each foot. Refine this cut with a drum sander.



Figure 3: With a stop block in place to create a 7" spline groove, cut the right side of each leg, then reset the fence to cut the opposite sides.

MATERIAL LIST

	T x W x L
1 Top (1)	3/4" x 14" x 14"
2 Legs (4)	1 3/8" x 1 3/8" x 31 1/4"
3 Aprons (4)	3/4" x 8" x 6 1/4"
4 Feet (2)	1 7/8" x 1 7/8" x 16 5/8"

	T x W x L
5 Splines (4)	1/8" x 7/16" x 6"
6 Screws (5)	#8 x 2"
7 Desk Top Fasteners (4)	

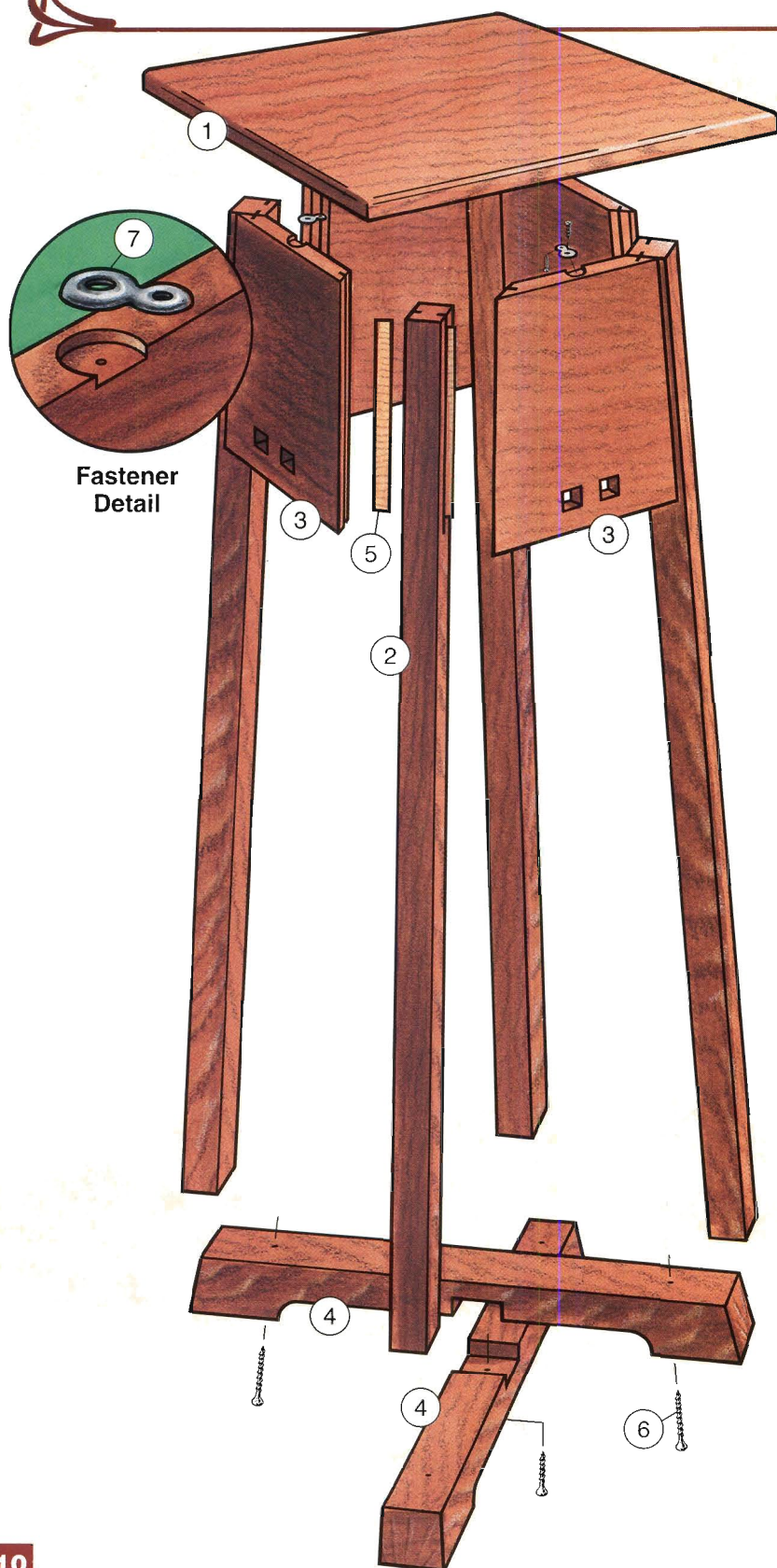


Figure 4: Tilt your blade 45° away from the rip fence and use Jig #1 (see full size pattern) to cut the right side of each apron first.



Figure 5: Keep your blade and rip fence in position and switch to Jig #2 to cut the left side of each apron. The scab piece on top keeps the newly mitered edge from riding up during the cut.

Leg and Apron Assembly (Top View)

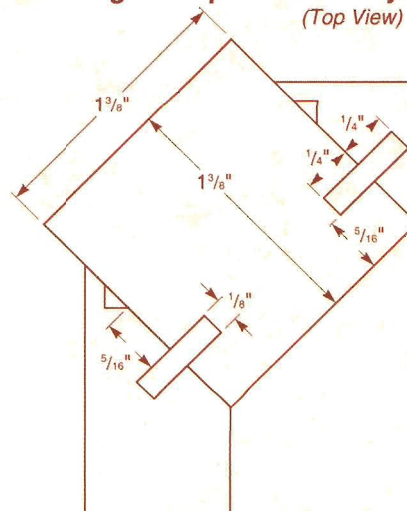
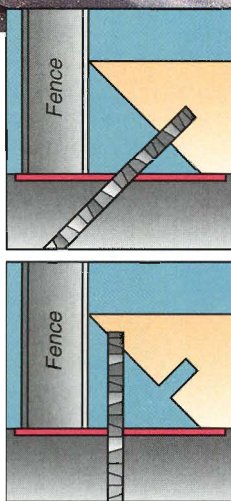




Figure 6: After all aprons are cut to size, remove the two jigs and reset the blade to make the 1/4" deep kerf cuts for the spines, as shown at right.

Next, straighten the blade and reset it to nick the apron between the spline groove and outside edge. This little relief groove will catch any glue squeeze out during assembly.



Compound Miter Aprons the Easy Way

Before you start on your apron jigs, take a moment to layout the decorative mortises now, while the pieces are still square. This will help keep your pieces oriented when cutting your miters (be sure the grain is horizontal). Now turn your attention to the two jigs shown above (See Figures 4 and 5) and on the full size pattern. Use some 3/4" plywood to complete your jigs, making sure you are right on target with your measurements and cuts. Make a few sample aprons, completing whatever refining is neces-

sary, and then move on to your actual pieces. In operation your fence will be on the left side of the blade for these cuts (for most tablesaws), with the blade tilted away. The extra piece glued onto the second jig keeps the aprons from climbing during the cuts.

When you've completed all your bevels and miters with the two jigs, keep the blade at 45°, but adjust the height to create the 1/4" deep spline cuts in the aprons, as shown in **Figure 6** at left. Once all eight of these cuts are made, readjust the blade to 90° and notch the glue relief grooves shown in the bottom detail at left.

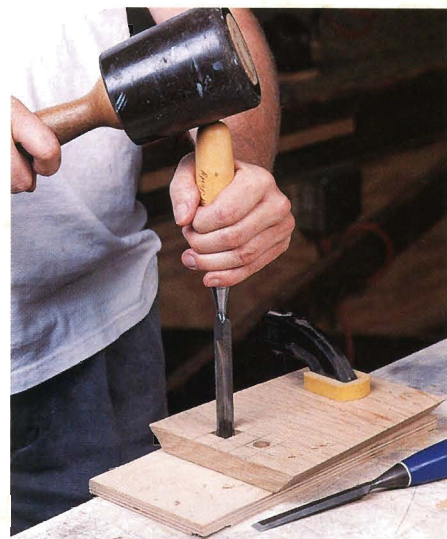
Chopping Decorative Mortises

The decorative mortises (See **full size pattern**) are easy to cut, but be sure to take your time with the layout and execution, as these features are very important to the overall success of the project. Get started by drilling out most of the waste from each mortise, as shown in **Figure 7**. Use a backup board to avoid tear out on this step. If you have a corner chisel this would be a nice time to sharpen it up; otherwise use your chisel to first define your perimeters and then carefully complete each mortise.

Before moving on to finishing and final assembly, chuck a 3/4" Forstner bit in your drill press and make a half moon on the top edge of each apron. Drill a pilot hole and attach the desk top fasteners (pieces 7), as shown in the **fastener detail** of the exploded view at left. Now chuck a 1/2" roundover bit in your router and soften the top edge of the top.

Lay the top on a clean rag and dry assemble the aprons, splines and legs, using a band clamp to hold everything in place. When you're satisfied with the fits, extend the pilot holes through the desk top fasteners into the top, and disassemble all your pieces.

Figure 7: The last machining step on the aprons is to cut the decorative mortises. Be sure to transfer the layout lines before cutting the bevels.



Staining Before you Glue

The fern stand is finished with brown mahogany water based analine dye, followed by Bartley's Satin Topcoat Finish, (available from *The Woodworkers' Store*). If you're after a really nice look, complete the dyeing process before final assembly. Start by raising the grain on all the pieces with warm water and a damp sponge. As each piece dries, sand the fuzz with 220 grit paper and repeat the process. Now apply the dye, one piece at a time, wiping everything as you go to avoid blotching. Wear finishing gloves for this process and don't let sweat from your brow ruin the surface you're working on. Continue being careful with these surfaces until you apply your topcoat, after assembly.

Once your dye is dry, call a friend to help you with the assembly. Aside from perspiration, the one thing that can ruin your stained pieces in a hurry is glue squeeze out. Run a light bead in each spline mortise and along the apron miters between the grooves and glue channels. With your friend's help, use band clamps to snug the aprons and legs together (upside down). When that glue dries, attach the table top fasteners to the aprons and screw the top in place. Do the same with the feet and then apply a final topcoat or two, using 0000 steel wool in between coats.

Mike McGlynn is a professional woodworker specializing in Arts and Crafts furniture.

Enhance Your Painting with a Coat of Glaze

By Steve Jordan

Did you ever struggle to choose just the right paint color for your latest project, put in a lot of hard work and then step back and realize the result was boring? Don't give up or run out and buy a different color paint. Adding a final glaze over your last coat might be all you need to create the desired effect.

A glaze is a tinted transparent material applied over another finish to enhance or alter the final appearance. Unlike a stain or paint, a glaze should not level out but must "stay put" so that the design you fashion remains on the surface. Long a trusted technique of decorative painters, glazing is also a time honored method of artists, enabling them to achieve color and depth impossible with paint alone.

The most difficult part of glazing is determining which color will best complement your work. If your base color is white, your options are limitless - from color glazes that will brighten the underlying paint to earth-tones that suggest age, patina or years of use. Other colors, however, can be harder to work with. A green glaze over a red base, for example will look muddy. That's one of the reasons it always pays to experiment with scrap wood.

Mix Your Own

Before commercial glazing liquids were available, painters mixed their own formulations using boiled linseed oil, turpentine (or mineral spirits) and pigment. Another popular formula consisted of water soluble pigment and beer. To this basic formula, most professionals added a "secret" ingredient - additives like whiting, wax or dryers. With a little experimenting, a thin mixture of

the linseed oil formula should work for you. Try one part boiled linseed oil, four parts mineral spirits and enough pigment to adequately tint the mixture.

Alkyd Glazing for Large Projects

Alkyd glazing liquids (manufactured by Pratt & Lambert, McClosky, Benjamin Moore and others) have been popular for decades. Tint alkyd glazing liquid with oil base paint or stain, artist oil colors or universal tints. Your base or painted coat can be either low sheen oil or low sheen latex paint. Transparency and workability can be improved by adding mineral spirits or linseed oil (which lengthens the drying time), or both. Neither will compromise the formula's special properties, but don't add Japan dryer, it's already in the mix.

The beauty of alkyd glazing liquid is its ample wet edge or set up time. This allows for good brush stroke blending or, if you are dissatisfied, gives you time to wipe off your work and start over. It's the best option when it comes to large projects or expansive areas. You can use it as packaged (with tint) but my basic formula is about four parts glazing liquid, one part linseed oil, one part mineral spirits and adequate pigment. The highest quality work is generally attained with thin mixtures.

Latex Glazing for Small Projects

Water soluble (latex) glazing liquid is quickly claiming part of the alkyd market. It is ideally suited for working in enclosed areas since it produces no objectionable odors, or for smaller projects where a quicker wet-edge time is not a problem. Tint latex glazing liquid with latex paint, acrylic tints or univer-

sal colors and apply it only over low sheen latex paint, not over oil enamel. Work quickly with latex glazes; the time you have to change your mind or start over is greatly reduced. Once the glaze has set-up, it's difficult to remove.

Beginner's Technique

There are limitless techniques you can try with alkyd or latex glazing, but one of the easiest to master is the simple brush glaze. To create this look, begin by experimenting with your glaze formula on a sample board finished with the same paint as your actual project. Apply the glaze just as you would paint but make one final sweep to even it out across an entire board or surface. Next, take a clean brush and sweep over the glaze again to refine the striated effect. Be mindful of the direction of the various boards or parts that comprise your project and be sure to wipe off any excess glaze that strays onto perpendicular boards.

It's usually a good idea to protect your work with a coat of non-yellowing clear finish like shellac or one of the new water-based finishes. Since most polyurethanes and oil based varnishes yellow with age, you'll want to be careful which finishes you apply them to. For example, a white or off-white finish will eventually look dirty under a yellowing varnish, or a pale blue finish might start to turn green. Conversely, this ambering effect can be used to enhance earth-tone or woody finishes.

Steve Jordan is the finishing expert at The Landmark Society of Western New York in Rochester, New York.

All three samples were painted with a low sheen latex paint. A mixture of eight parts latex glazing liquid, one part universal color and a splash of water was added to the two samples at right. Both were then top-coated with a water-based polyurethane.



A Simple Shaker Bench

Don't have a lathe? Don't worry. This little bench and the vanity mirror coming up next both make use of a new line of readymade Shaker legs.

By Rick White



his bench started out as part of the vanity mirror project on page 16. Once I completed it, however, I got so many compliments that I decided it could really stand on its own (if you know what I mean).

The Shakers were no strangers to turned legs or dovetail joinery and I decided early on that both of these features would play key roles in these projects. The only problem arose when it was time to turn the legs.

That's right; I don't own a lathe.

Tapered legs came to mind, and they sure are common enough with this style, but I really liked the look of a maple table I saw in John Shea's book "Making Authentic Shaker Furniture" (Dover Publications; Mineola, New York). That table, on display at the Shaker Museum in Old Chatham, New York, has an oversized top and turned legs. By scaling it down and adding an arc to the front and back aprons I managed to keep the bench true to the Shaker style, but I still needed my legs. After some searching, I found a source for pre-turned legs, available in maple or cherry, that go perfectly with this design (See *Shaker Bench Leg Set*, page 15).

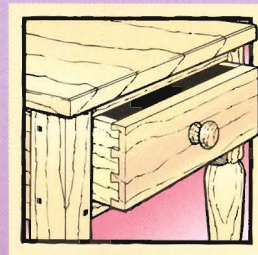
Matching Up your Stock

Whether you're ordering hardware or wood parts, I always recommend that you have your material on hand before getting too many steps into your new project. Once you have your legs in the shop, you can begin accumulating stock for the aprons and top, making sure you don't stray too far from the look and feel of the legs in grain and color. Get started by picking the stock for your top (piece 1). I had a couple of nice wide maple boards that I'd been saving for a pro-

ject like this, but using them at full width would have been asking for trouble. To avoid cupping and splitting, I ripped them down to 4" in width and glued them right back together to form the top (See Box on page 17). Once you've glued up your top, lay it aside to dry completely before you start sanding.

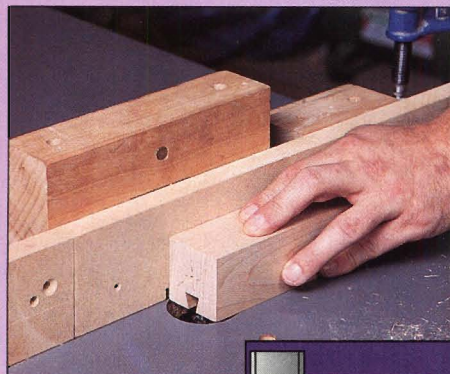
Cut your aprons (pieces 2 and 3) to size next, leaving the front and back about six inches long for now. After you lay out the arcs you can trim these pieces to size and use the cut-offs for the top fasteners (pieces 4).

In his book *Making Authentic Shaker Furniture*, John G. Shea marvels at "...the economy of structure that produces strength even when all parts were lightly and delicately made." But the beauty of Shaker work, he is quick to add, "came only as a by-product of its strict adherence to functional requirements."

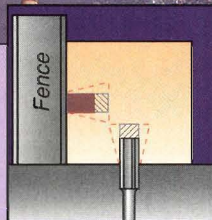


This simple Shaker-inspired bench is the perfect project to get you ready for the beautiful vanity mirror starting on page 16.

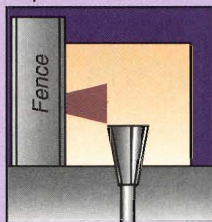
How To Cut Sliding Dovetails



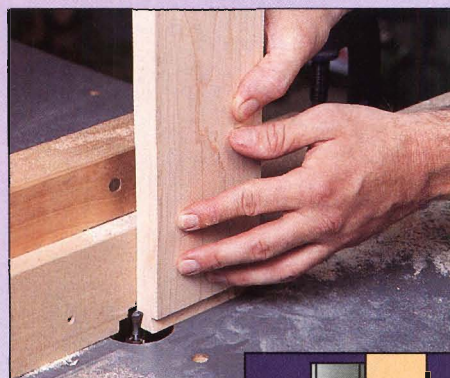
Draw a line on the fence so you'll know exactly where to stop your leg mortises. To preserve your dovetail bits and router motor, it's a good idea to hog out the waste from this joint in multiple passes with a 1/4" straight bit. Switch over to your dovetail bit for the last pass.



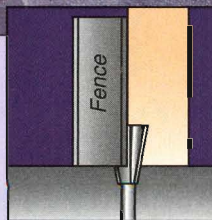
Step 1



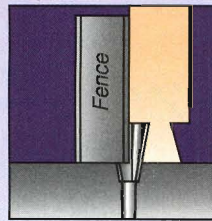
Step 2



The setting for the apron tenons is best established with a piece of scrap wood exactly the same thickness as the aprons. Move your fence back in tiny increments, taking a pass on each side, until the scrap tenon slides into its mortise with little resistance.



Step 1



Step 2

Hold your four legs (pieces 5) together (forming a larger square), and rotate them until you find the best two outside faces of each leg. Now mark the inside corners with a marker so you'll have a guide for cutting the sliding dovetail mortises.

Forming the Apron Arcs

To lay out the arcs on the front and back aprons, draw a center line on each of these pieces and another line 7 3/4" to each side. Clamp a piece of scrap right on the line on each side and make a mark 5/8" up on the center line. Now use a piece of 1/4" hardboard to form the arc, holding it in place with one hand and tracing the arc with the other (See Figure 1). Switch to the bandsaw to remove the waste, trim each apron to length (allowing 1/2" for the tenon at each end) and use your cutoffs to form the four table top fasteners (See elevation drawing at right). Just make sure that the grain runs the length of these pieces or they'll break off the first time you screw them tight.

With sliding dovetails it's a good idea to complete your mortises before the tenons, so switch back to your legs for now. Chuck a 1/4" straight bit in your router table and set the fence to make a dead center cut on one of the legs. Draw a line on the fence (or clamp a stop block in place) to limit the length of the cut to 3/4". Continue raising the bit a little for each pass on each leg until the bit is 7/16" high. Now switch over to a 14° half inch dovetail bit and, with the height set right at 1/2", remove the rest of the waste to form your mortises (See Sliding Dovetail details at left).

Now it's time to switch back to the aprons, but the best way to start is with a piece of scrap wood of exactly the same thickness. Set the router table fence so about a third of the bit is exposed. Make a pass on each side of the scrap piece and test the fit.



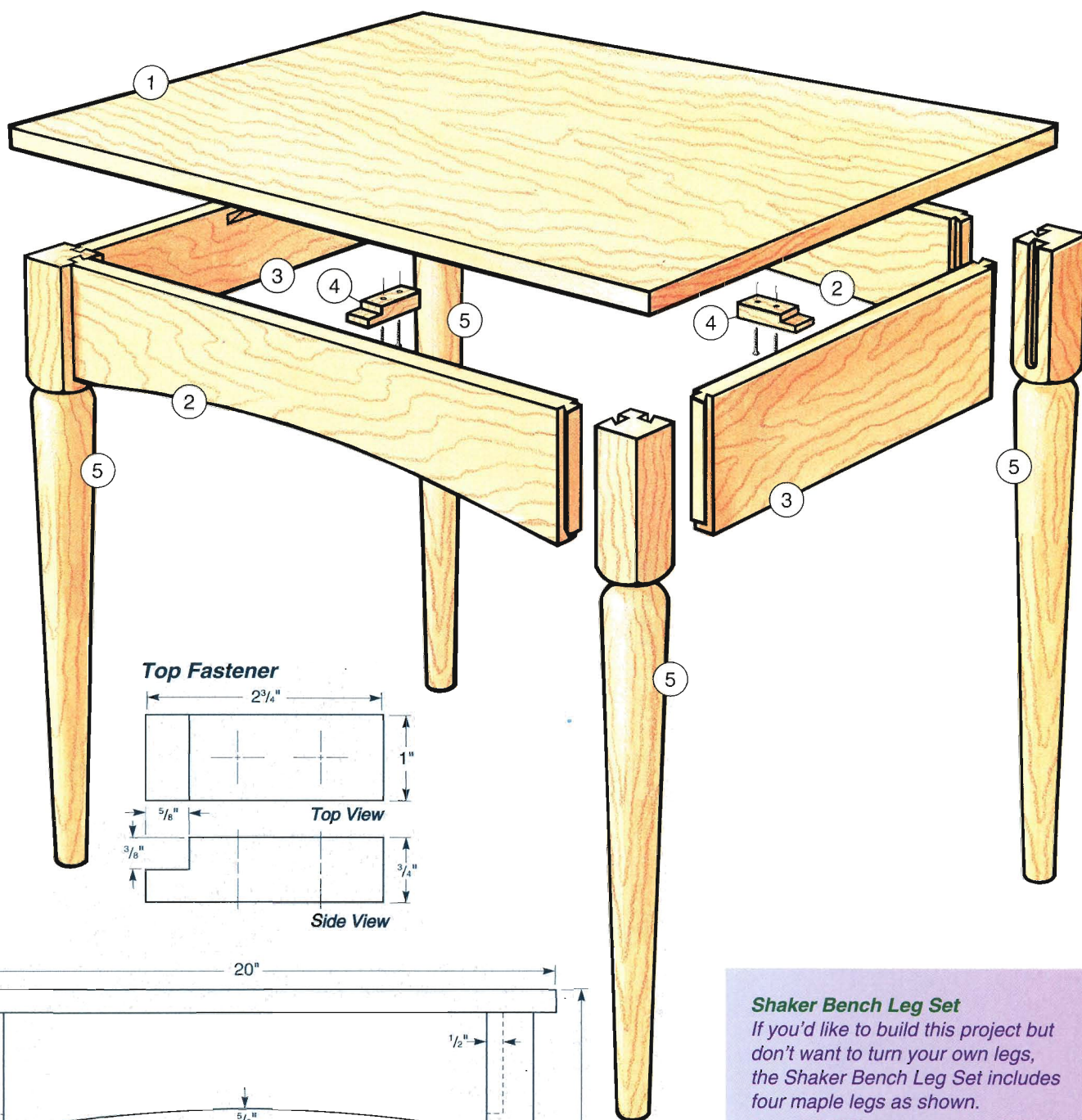
Figure 1: Use a piece of 1/4" hardboard, two pieces of scrap wood and a sharp pencil to layout the arc for the front and back aprons.

Move the fence back to expose a little more of the bit, make another pass on each side and test the fit again. Once you have a snug fit that slides without resistance go ahead and cut the tenons on your aprons (See Sliding Dovetail details at left). Use a Japanese saw to form a 1/2" shoulder at the bottom of each tenon and dry fit the aprons and legs together.

If everything fits, sand to 180 grit, and glue and clamp these pieces together, making sure to measure your diagonals to keep the top square. When the glue dries chuck a slot cutting bit in your router and cut a short slot on the inside center of each apron to accept the table top fasteners.

Attach the Top and Finish Up

Lay the top on the floor upside down, line up the aprons and extend the pilot holes for the fasteners. I recommend starting with General Finishes' sanding sealer, followed by a light 320 grit sanding. Top coat your bench with the same company's high performance water based polyurethane. I like the light look of this finish, especially on maple, as well as the durability it offers. Now, with this experience behind you, I think you're ready to take on the vanity table and mirror starting on page 16. Good Luck!



Shaker Bench Leg Set

If you'd like to build this project but don't want to turn your own legs, the Shaker Bench Leg Set includes four maple legs as shown.

Item #16130 (use order form)...\$59.80

MATERIAL LIST

	T x W x L
1 Top (1)	3/4" x 16" x 20"
2 Front & Back Aprons (2)	3/4" x 3 3/4" x 16 1/2"
3 Side Aprons (2)	3/4" x 3 3/4" x 13"
4 Top Fasteners (4)	3/4" x 1" x 3"
5 Turned Shaker Legs (4)	17 1/4" long

The Shaker Vanity Mirror

This Shaker-inspired project looks tricky, but if you start with the bench on page 13, you'll be well prepared. Count on our pinup shop drawings to carry you through any rough spots.

By Rick White





Now I know why woodworkers who decide to pay a short visit to the Shaker style have been known to get stuck there for a couple of years. After wrapping up work on the simple Shaker bench on page 13, I couldn't wait to get going on this companion project. There's just something about the Shaker's approach that's really appealing, especially, I think, to amateur woodworkers. Maybe it's the clean lines or the simplicity of design. Perhaps it's the sense of history that you feel when experimenting with this style.

Of course the Shakers weren't particularly known for their vanity, and I hope no one thinks I meant any disrespect by building this project in their style.

Start With the Table

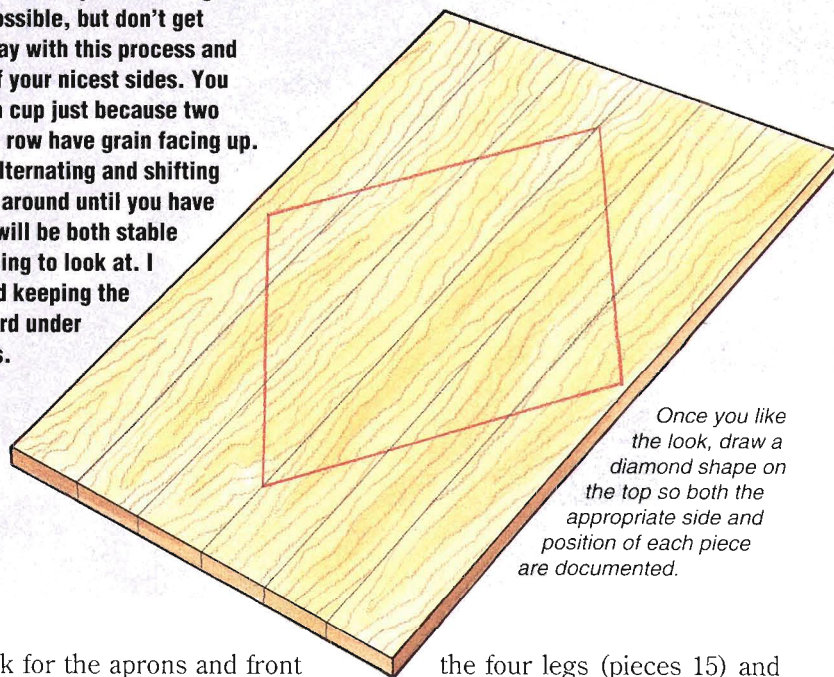
If you just completed the bench (and I strongly recommend that you start there), you're going to be surprised at how easily this project moves along. As I noted in that article, I don't own a lathe, but the ready-made turned legs that I used for the bench are also available in table height (*See Hardware Kit on page 18*). Again, to ensure a good grain match, be sure you have your legs on hand prior to starting. The showiest part of the table is the top (piece 1) and that's where the best maple from my pile ended up. I knew from the clear finish I used on my bench that this surface would have to look good and so I spent a little extra time matching the boards. Once you're happy with the look, glue the top up and move on to

Start at the Top

Your best pieces should find their way to the top of this project. Watch the end grains carefully, alternating as much as possible, but don't get carried away with this process and bury one of your nicest sides. You won't get a cup just because two pieces in a row have grain facing up. Continue alternating and shifting your stock around until you have a top that will be both stable and appealing to look at. I recommend keeping the widest board under four inches.



To prevent cupping, alternate the end grain on the top pieces as much as is reasonable.



Once you like the look, draw a diamond shape on the top so both the appropriate side and position of each piece are documented.

pulling stock for the aprons and front divider (pieces 2 through 6), the drawer support sides and rails (pieces 7 through 10), and the table top fasteners (pieces 11). While you're at it, select material for the table drawers (pieces 12 through 14). After the top, the most important pieces are the front and side aprons, the divider and the drawer fronts. The inner supports and the back apron can be cut from the worst looking pieces left in your table stock pile. Using the material list, cut all these pieces to overall size, leaving the drawer sides, fronts and backs a hair wide for now.

The best place to start your machining is with the steps you already completed on the bench. Refer to the box on page 14 (*How to Cut Sliding Dovetails*) and start cutting the mortises in

the four legs (pieces 15) and forming the tenons on the aprons. There are two important differences with the table. First, the back apron (piece 3) is flush with the back of the legs, so the mortises here are cut closer to the edge, as shown on the **Pinup Shop Drawings** between pages 12 and 13. Second, the bottom front apron (piece 4) has square tenons and so the bottom mortises on the front legs are chopped square (*See Figure 1*). I did it this way because I didn't want an empty dovetail mortise to show every time a drawer is removed. As with the bench, the front bottom apron is arced. I used the same procedure to create this arc as I did earlier, however the high point of the arc is 7/16" instead of 5/8".

While you're chopping mortises, go ahead and cut the two on the front aprons for the divider (piece 6), as shown on the **Pinup Shop Drawings**. Wrap up this stage by forming the tenons for the divider and the bottom front apron.

Now it's time to put the drawer support assemblies together. Each has three pieces (a side and two rails). Follow the details on the **Pinup Shop Drawings** to cut these pieces to size and preassemble them.

Planning Ahead: The Shaker Bench & Vanity Mirror Projects

Completing the bench, table and mirrors requires a fairly well equipped shop. You'll need your tablesaw, router table, drill press and bandsaw. I used my Leigh dovetail jig for the drawers, but these could be cut by hand. Plan on spending about 50 hours in the shop to build and finish your project.

- 20 board feet of 3/4" maple
- 8 board feet of 1/2" maple
- 8 pre-turned legs (*See kits on pages 15 and 18*)
- A 2'x 2' piece of 1/4" plywood for the drawer bottoms

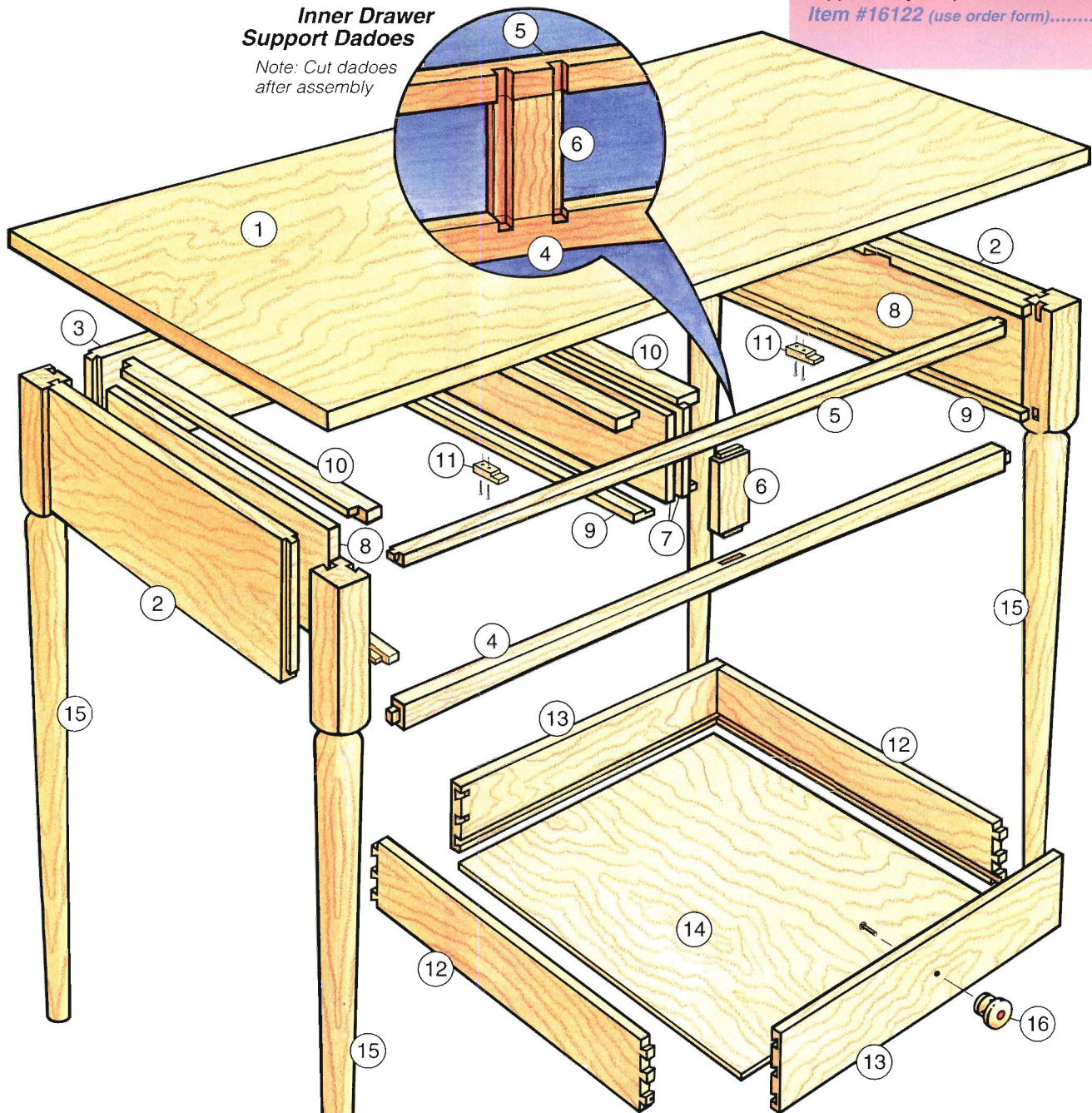
The Vanity Mirror Hardware Kit

A hardware kit is available for this project that includes friction supports, hinges, mirror supports, Nylo tape, knobs and maple legs.

Item #16122 (use order form).....\$134.95

Inner Drawer Support Dadoes

Note: Cut dados after assembly



MATERIAL LIST

	T x W x L		T x W x L
1 Top (1)	3/4" x 20 1/4" x 33 3/4"	9 Bottom Drawer Support Rails (4)	1/2" x 1 1/8" x 17 1/2"
2 Side Aprons (2)	3/4" x 5 1/4" x 17"	10 Top Drawer Support Rails (4)	3/4" x 1 1/8" x 17 1/2"
3 Back Apron (1)	3/4" x 5 1/4" x 29 3/4"	11 Top Fasteners (8)	3/4" x 1" x 3"
4 Bottom Front Apron (1)	3/4" x 1 1/2" x 29 3/4"	12 Drawer Sides (4)	1/2" x 3" x 14"
5 Top Front Apron (1)	3/4" x 3/4" x 29 3/4"	13 Drawer Fronts and Backs (4)	1/2" x 3" x 17 1/2"
6 Front Divider (1)	3/4" x 1 1/2" x 4"	14 Drawer Bottoms (2)	1/4" x 13" x 17 3/4"
7 Inner Drawer Support Sides (2)	1/2" x 3 1/2" x 18 1/4"	15 Shaker Legs (4)	28 1/4" pre-turned
8 Outer Drawer Support Sides (2)	1/2" x 3 1/2" x 16"	16 Knobs (2)	1 1/2" w/ brass centers

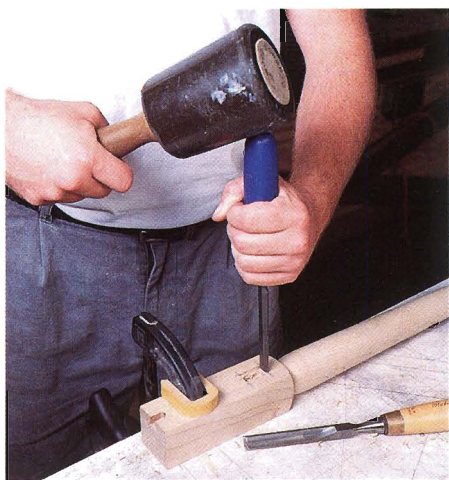


Figure 1: The only real difference between the bench and table mortises is the bottom front apron mortise, which is chopped square.

Assemble the Table

It's nice to have a friend on hand for this step. Start with a dry fit to make sure your sliding dovetails don't bind. After refining your joints, start your assembly by gluing and clamping the back apron to the two back legs. Next glue the front aprons and divider to the two front legs. Now glue and clamp the two side aprons in place, check your diagonals for squareness and take a break while the glue dries.

After you remove your clamps, lay the whole table on your workbench and, using a 1/2" straight bit, rout the stopped dadoes for the inner drawer support assemblies (pieces 7, 9 and 10), as shown in the detail at left and on the **pinup shop drawings**. I used a piece of hardboard as a straightedge for this process. Once it was the right length, it was a simple matter of flipping it for each successive cut. After cleaning up with your chisel, test the fit of the support assemblies in these



Figure 2: Once the drawer support assemblies are in place, chuck a slot cutting bit in your router to quickly cut the eight table top fastener openings around the top.

dadoes. You want to be sure the rails line up with the top and bottom of each drawer opening. When the fit is right, glue the assemblies in place and move on to the outer drawer support assemblies (pieces 8, 9 and 10). These are glued and screwed to the side aprons, but before you drill your holes, make certain that the rails line up perfectly with the drawer openings.

Before moving on to your drawers, chuck a slot cutting bit in your router and cut eight slots in the rails and aprons (four on each side) for the table top fasteners, as shown in **Figure 2**. Lay the top on your bench, bottom side up, and position the apron/leg assembly on it. When it's dead center side to side and flush with the back apron, place a fastener (see elevation drawing on page 15) in each slot and extend the pilot holes into the table top, making sure you don't drill right through. Screw the top into place and set your table aside for now.

Make Your Drawers

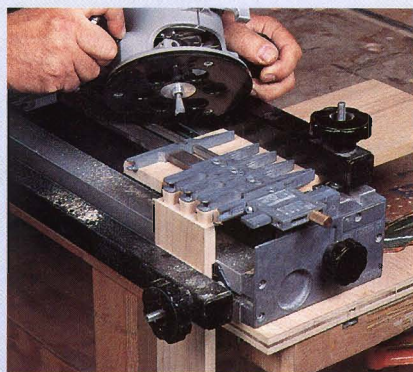
Since they're so similar, I assembled all four drawers at the same time. You already have your stock for the table drawers (pieces 12, 13 and 14); now cut the top drawers (pieces 17, 18 and 19) to size. As you can see from the sidebar at right, I used my Leigh dovetail jig to make my drawer joints. There are a number of jigs on the market that perform the same function (though I don't think any of them are quite as versatile as my Leigh), or you can cut your dovetails by hand (*See Today's Woodworker issue 19, page 6, for all the details*).

The key with the drawers is to keep the 1/4" deep grooves for the bottoms contained within a tail socket on the fronts and backs, as shown in the detail on page 20. You'll also notice that the bottoms of the two upper drawers sit an extra 1/2" high because of the box bottoms. The cuts to accommodate the box bottoms are made later, after these drawers are assembled.

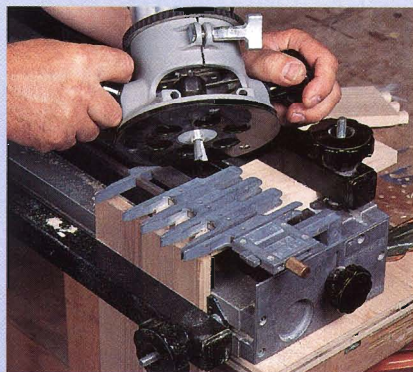
Dovetails by Leigh

The variable guide finger settings on the Leigh dovetail jig allow you to begin and end your layouts with half pins, a feature not commonly available on other dovetail jigs.

It's a little on the spendy side, but over the years, the Leigh dovetail jig has been one of the most frequently used fixtures in my shop.

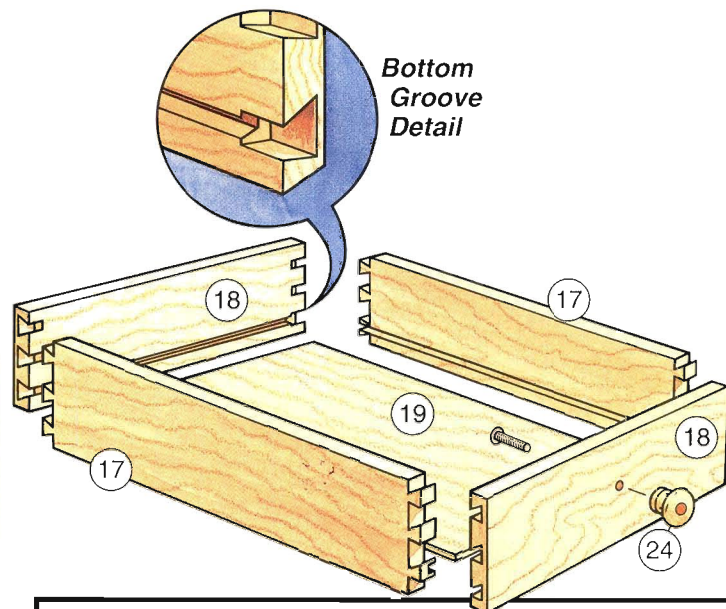
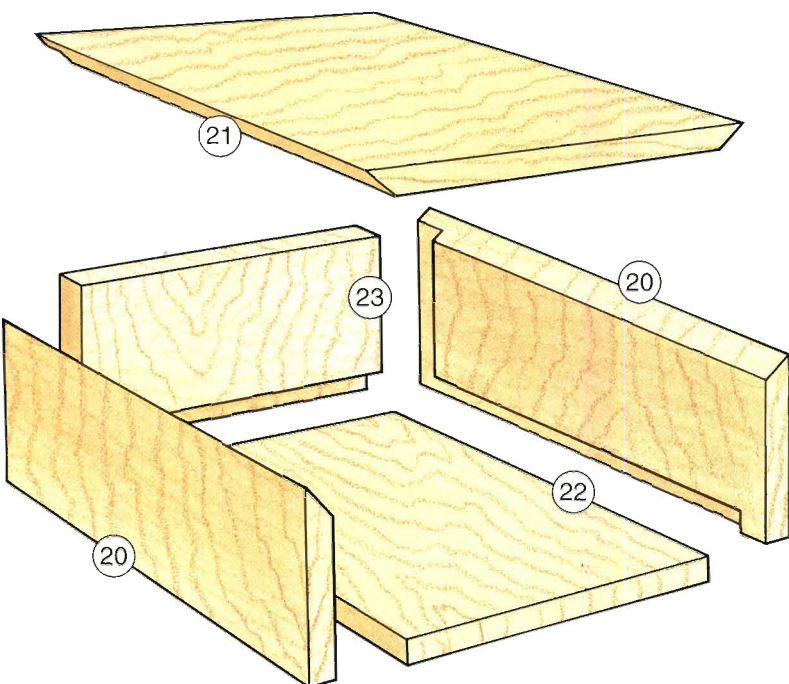


The tail sockets are cut first, with a backing board in place to prevent any blowout on the through dovetails.



Next the pins are cut with the exact same setup, guaranteeing accuracy every time.

Once you've picked the best pieces for your drawer fronts (make sure the table drawers match the front apron), cut the bottom grooves on all your pieces and complete your tails and pins, using whichever jig or method you prefer. Dry fit your components and test the fit of the table drawers in their openings. I cut my stock just a bit wide for those pieces earlier so I could trim them now, ensuring a perfect fit. Once everything fits just right, glue and clamp your drawers, measuring diagonals as you go to keep each one square.



MATERIAL LIST

	T x W x L
17 Drawer Sides (4)	1/2" x 3" x 9 1/2"
18 Drawer Front and Back (4)	1/2" x 3" x 8"
19 Drawer Bottoms (2)	1/4" x 7 1/2" x 9 1/4"
20 Box Sides (4)	1/2" x 10 1/4" x 3 1/2"
21 Box Tops (2)	1/2" x 10 1/4" x 9"
22 Box Bottoms (2)	1/2" x 8 1/2" x 9 1/2"
23 Box Backs (2)	1/2" x 8 1/2" x 3 1/4"
24 Knobs (2)	1 1/4" brass center
25 Middle Mirror Stiles (2)	3/4" x 1 1/2" x 24 3/4"

Make the Top Drawer Boxes

The two boxes on the top of the table are simple to make, but they do incorporate an interesting technique, first featured in issue 9 of *Today's Woodworker*. In the continuous grain box (See page 18, issue 9) the author set the table saw blade at 45° to make his miter cuts, but then limited the height of the blade to a whisper under the thickness of the wood. In this manner he was able to virtually bend the wood around the corners, keeping the grain continuous. Since my boxes are made with 1/2" stock, I decided to try a V-groove bit in the router table (See Figure 3) to create the same look.

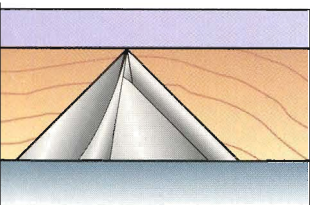


Figure 3: The tops and sides of the boxes are barely separated with a V-groove bit, so the grain matches perfectly around the corner.

Start the boxes by gluing up a 10 1/4" wide by 36" long panel from which you'll cut the sides and tops (pieces 20 and 21). You want the grain on the box sides and tops to run in the same direction as the table top. Now cut your bottoms and backs (pieces 22 and 23) to size. Cut your panel into two halves, layout the lines between the sides and tops for each box and, after establishing your bit height with a piece of 1/2" scrap, use your miter gauge to make your cuts. The trick

here is to eliminate the kerf. If you don't get close enough, however, the wood will splinter when you try to bend it around the corner. Once these pieces are cut to size, add the rabbets on the sides, the back and the top.

Cut off the Bottoms of The Drawers

As mentioned earlier, the two top drawers are cut after assembly to allow for the bottom of the boxes. Set your rip fence exactly 2 1/2" from the inside of the blade and trim the back and sides of each drawer. You'll have to place a stop block on the fence to limit the length of cut on the sides and then complete the waste removal with a Japanese saw, as shown on the **pinup shop drawings**. You'll find that it's necessary to use 3-4 brads to hold the drawer bottoms in place, since they're only captured by the drawer front grooves now.

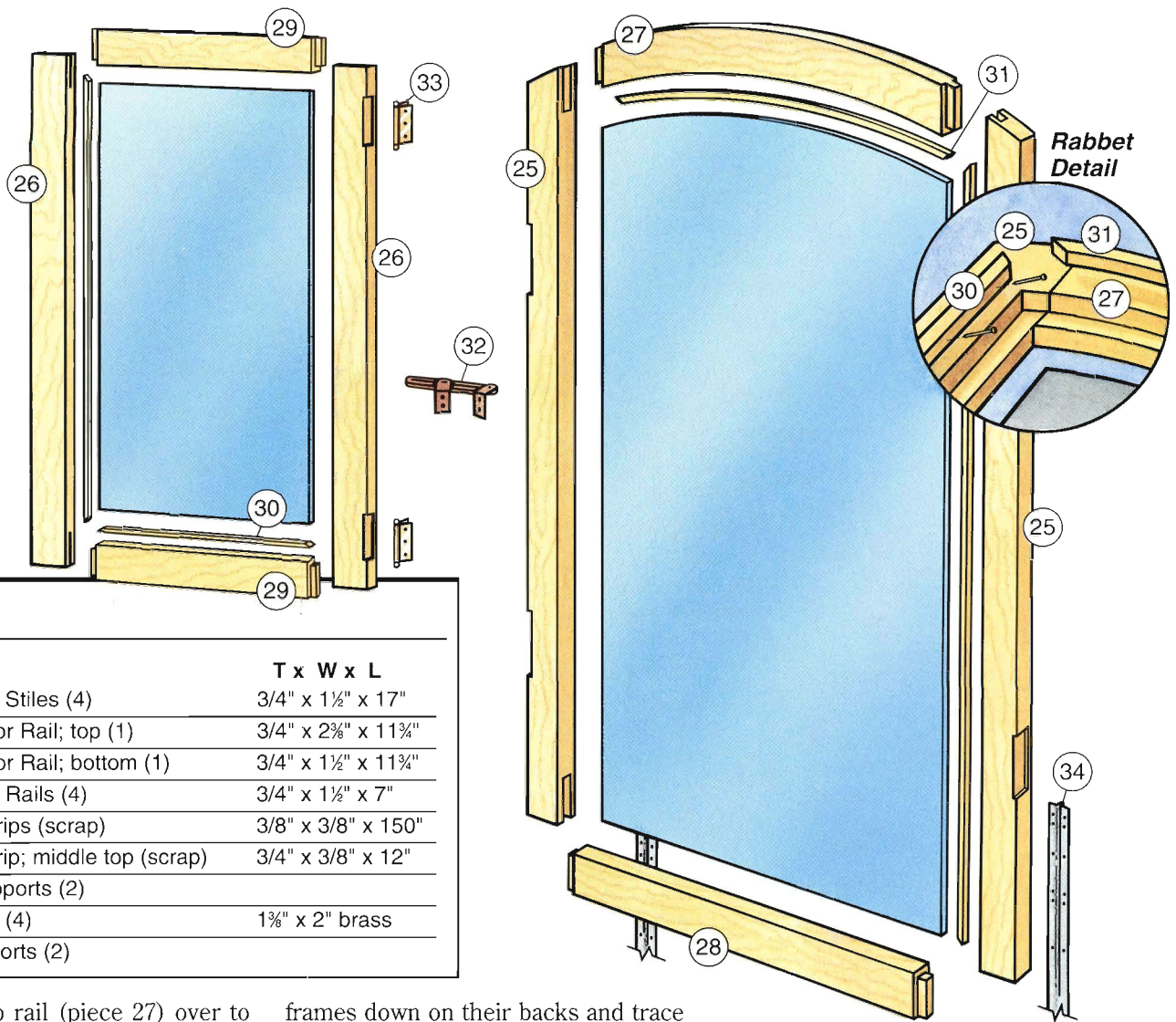
Once these cuts are completed, dry assemble the boxes and test fit your drawers. If the gap at the top is a little too large for your liking it's a simple matter to trim the bottom of the box sides and backs. Just remember that you'll have to resize the rabbets for the bottom at the same time. When you're satisfied with the fits, glue and band clamp the top boxes together.

Make the Mirrors

The last major subassembly is the mirrors. Get started by milling the stock for the stiles and rails (pieces 25 through 29) and the retainer strips (pieces 30 and 31). The top rail on the middle mirror (See **Full Size Pattern**) features an arc similar to those on the bench and table.

Cut your mortises on the router table first, centering a 3/8" straight bit on each stile and using a stop block to limit the length of the cuts. All of these mortises are the same length, as shown on the **pinup shop drawings**. When all the mortises are cut, use a chisel to clean up their ends and move to the table saw to cut the tenons.

Set your dado blade a touch under 3/16" high and, using your miter fence and a setup block, take a pass on each side of a piece of scrap the same thickness as your rails. Continue raising the blade height until you get a perfect fit in a mortise and then cut all your rail tenons. Remove the shoulders on each tenon (See **pinup shop drawings**) and take your mid-



T x W x L

26 Wing Mirror Stiles (4)	3/4" x 1 1/2" x 17"
27 Middle Mirror Rail; top (1)	3/4" x 2 5/8" x 11 3/4"
28 Middle Mirror Rail; bottom (1)	3/4" x 1 1/2" x 11 3/4"
29 Wing Mirror Rails (4)	3/4" x 1 1/2" x 7"
30 Retainer Strips (scrap)	3/8" x 3/8" x 150"
31 Retainer Strip; middle top (scrap)	3/4" x 3/8" x 12"
32 Friction Supports (2)	
33 Butt Hinges (4)	1 3/8" x 2" brass
34 Mirror Supports (2)	

dle mirror top rail (piece 27) over to the bandsaw to cut the arc on the bottom (but not the top).

Dry fit your stiles and rails, trimming tenon shoulders as necessary, and complete your glue ups, checking the diagonals as you clamp to ensure squareness. The top of the middle mirror rail is cut to shape after the glue dries.

Now chuck a 3/8" piloted rabbeting bit in your router to make a rabbet for the mirrors and their retaining strips. With each panel secured to the table, rout around the perimeter of the openings and then cleanup the corners with a small chisel. The retainer strip for the top of the middle mirror (piece 31) is initially cut from 3/4" thick stock and then shaped on the bandsaw.

I've noticed that some woodworkers square off the top of these mirror rabbets, but my glass supplier insists that as long as I supply him with a paper template, he has no problems cutting curved tops on mirrored glass. To make my template, I just lay the

frames down on their backs and trace around the back wall of the rabbets with a pencil. When I cut my templates out, I cut slightly inside the line so the mirror won't crack when the wood expands.

Final Assembly and Finishing

Now that you've built all your major subassemblies, it's time to start bringing the whole project together. Start by sanding all your pieces to 180 grit. Make sure you don't soften the edges too much (particularly on the box miters), as crisp lines are an important feature of this style. And be careful sanding on maple; it's really easy to burnish the wood if you go too fast and this will lead to a splotchy finish.

Use the **Pinup Shop Drawings** to layout and drill the holes for the knobs (pieces 16 and 24), the friction supports (pieces 32) and the mirror supports (pieces 34). While you're at it, layout and chop the small mortises for the butt hinges (pieces 33) and drill the pilot holes to attach the two boxes to the table top.

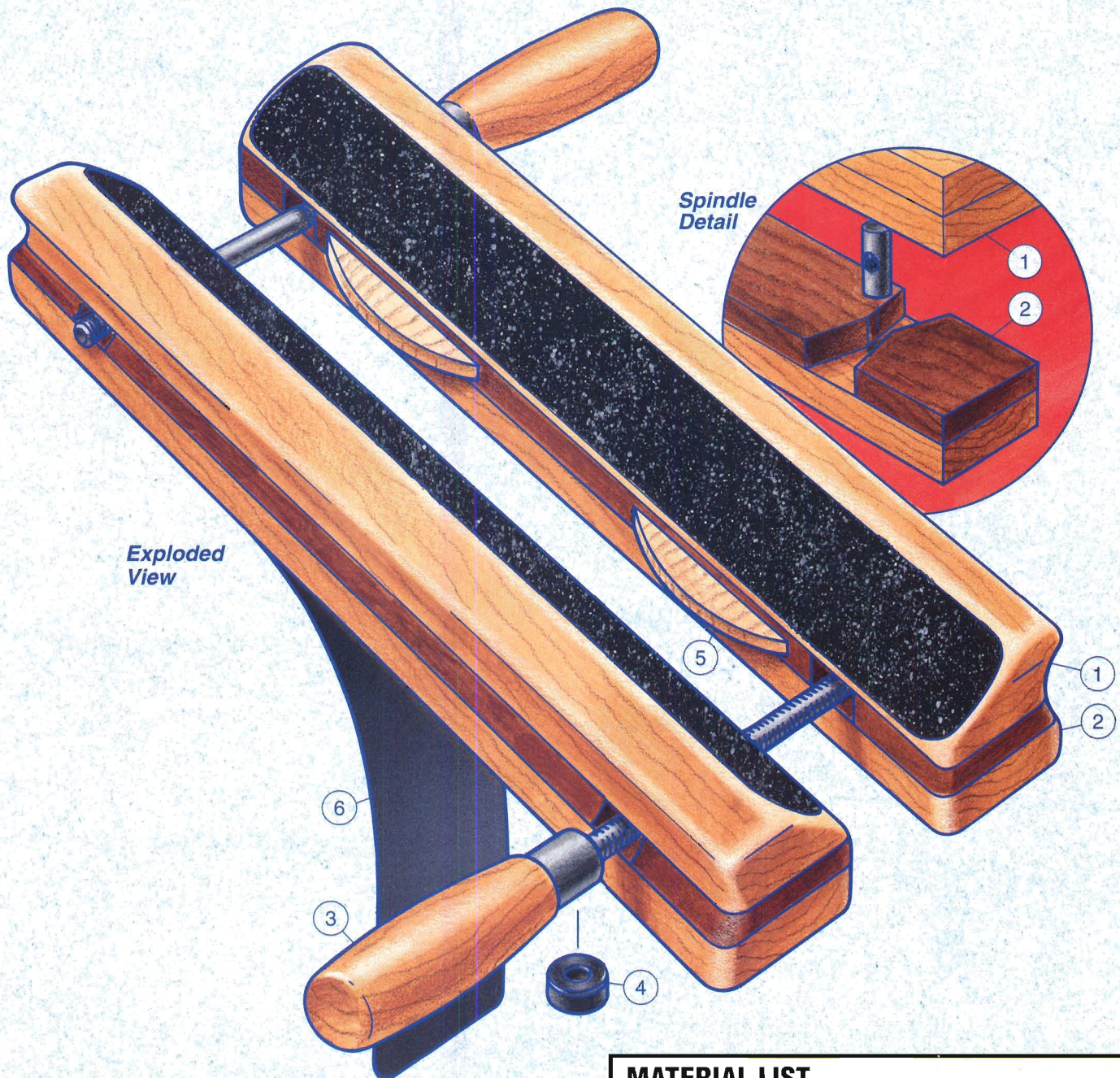
Assemble everything (except the retaining strips), to test your fits and, when everything is perfect, disassemble and get set up for finishing.

As with the bench, I started my finishing with a coat of General Finishes' sanding sealer, followed by a light 320 grit sanding. Then I wrapped up with a couple of coats of the same company's water-based polyurethane, lightly sanding between coats. When your finish is good and dry, place your mirrors in their openings and tack in the retainer strips. Complete the mirror assembly by installing the butt hinges and friction supports along the sides. Now screw the boxes to the table, attach the top to the base, insert your drawers and attach the mirrors with their supports (pieces 34).

That completes your project. As you can see from the photo, the light finish and choice of maple really complement the Shaker styling, and set the stage for a comfortable little nook in the master bedroom.

An Adjustable V-Block Jig

By Dick Dorn



Exploded View

Spindle Detail

V-Block Jig Hardware Kit
A hardware kit is available for this project that includes the handscrew kit and no-skid tape.

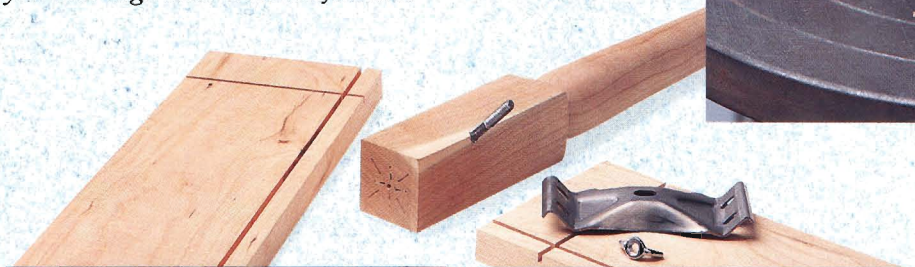
Item #16213\$15.95
(Use the order form between pages 12 and 13.)

3/4" ring magnets are available from Power Magnets, USA for 25¢ each. Call (800) 669-5691.

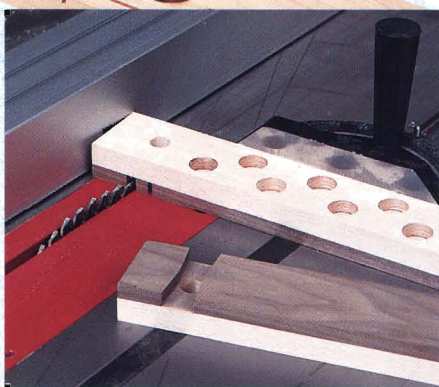
MATERIAL LIST

	T x W x L
1 Jaw Tops (2)	1 1/4" x 2" x 14" (5/8" maple)
2 Jaw Bottoms (2)	1" x 2" x 14" (5/8" maple + 3/8" walnut)
3 Handscrew Kit (1)	6" (with maple handles)
4 Ring Magnets (18)	3/8" x 3/4" diameter
5 Biscuits (2)	1/4" x 2 1/2" x 1" (maple)
6 No-skid Tape	2" x 5' (roll stock)

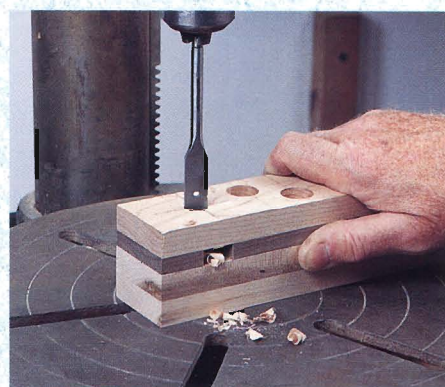
I designed my adjustable V-block jig with the idea in mind that this would be the last one I'd ever have to build. In practice it's very similar to using a hand screw clamp but I think you'll find this jig to be considerably more versatile. Ring magnets are embedded in the bottom to hold your work steadily in place and the jaws open up to accept just about any size material you'll need to drill. By widening one end more than the other the jig will accept tapered legs and by using the jig as a clamp you can edge drill with confidence.



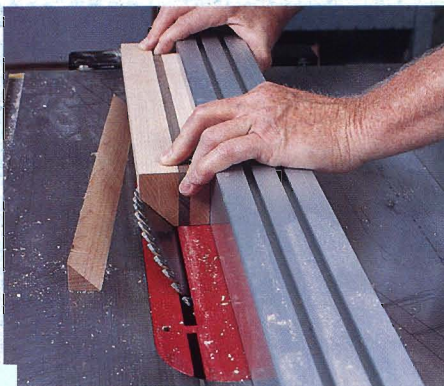
Step 1: Glue up two pieces of 5/8" maple for the jaw tops and a piece of 5/8" maple and 3/8" walnut for the bottoms. Use the full size pattern to lay out holes for the magnets and spindle nuts, and a Forstner bit to complete the drilling.



Step 2: Set the miter fence to about 5° when defining the walls of the spindle tracks (See full size pattern). This shape will keep the track a little wider at the edges than in the middle and help to prevent binding during use.



Step 3: Glue the top laminates to the bottom laminates and extend the spindle nut holes into the tops. Now take a couple of passes with the plate joiner to cut the slots for the biscuits and wrap up this step by epoxying in the magnets.



Step 4: Transfer the end view of each jaw to your workpiece and cut the 45° angles on the tops with the magnets riding along the rip fence. Switch to a router with a 1/2" roundover bit to soften the top edges and ends of each jaw.

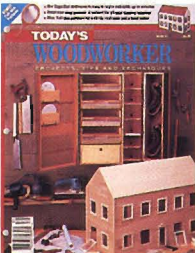
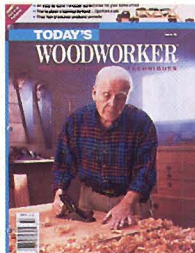
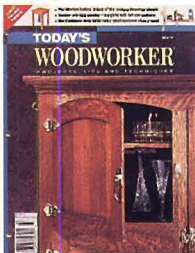
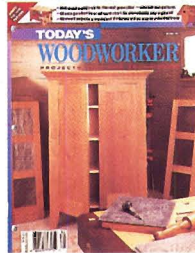
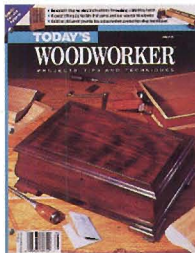
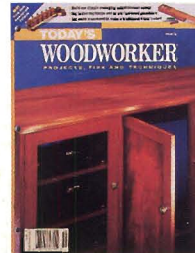


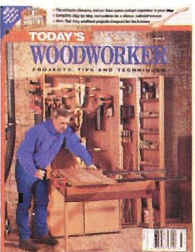
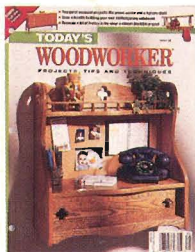
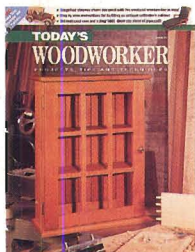
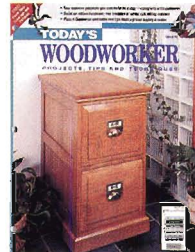
Step 5: Clamp an auxiliary fence to the table saw top and use some scrap wood to establish the angle for the cove cut. To determine the exact fence angle, try raising the blade and sighting down the end of the blocks.



Step 6: Glue the biscuits in place and insert the two nuts. Apply the no-skid tape and trim the excess. Sand thoroughly and apply a few coats of finish over everything, including the tape. Wrap up by inserting the spindles and the two handles.

FREE binder when you order six back issues or more!

31	32	33	34	35	36
					
The sanding supply cabinet, a self-storing dollhouse, a hand mirror and a coat rack. Item 97247\$4.95	A modular computer desk, the 18 wheeler for kids, a cherry end table and CD holder. Item 97255\$4.95	A Classic oak icebox, deck table, adjustable band saw fence and a woodworker's whirligig. Item 97263\$4.95	A kid's workbench, a bookcase, an authentic jelly cupboard and a Victorian birdhouse. Item 97271\$4.95	A Stickley hut, a toy tanker truck, heirloom jewelry box, and a tilt table for the drill press. Item 97289\$4.95	An entertainment center, a pencil box, Log hauling semi truck, and a baker's shelf. Item 97297\$4.95

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Look for more back issues, Craftplans and hardware kits on the order form between pages 12 and 13.

Two new Craftplans® for the kids

Teddy Bear Rocking Chair

Kids love this playful original from the pages of Today's Woodworker, and you can build it in one weekend with hand held power tools and our full size patterns.

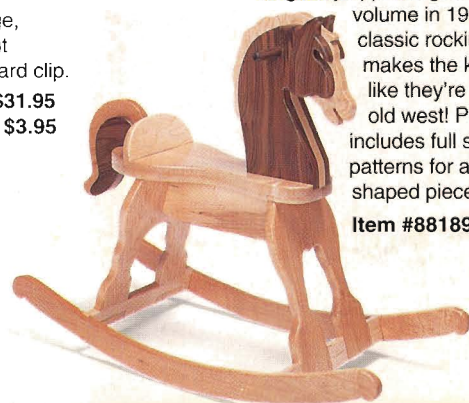
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Originally appearing in our first volume in 1989, this classic rocking horse makes the kids feel like they're in the old west! Plan includes full size patterns for all the shaped pieces.

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Gentlemen, please start your toys!

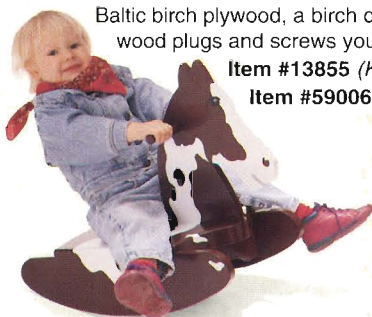
Don't wait until the snow flies to check your list. Get started now with one of these surefire kid-pleasing kits!

Scout's Painted Pony

This hardware and wood kit includes 2 pieces of Baltic birch plywood, a birch dowel, and all the wood plugs and screws you need.

Item #13855 (Kit) \$54.95

Item #59006 (Issue 40) . . \$4.95



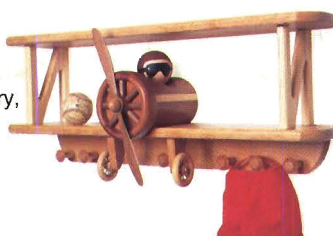
Biplane Coatrack and Shelf

Hardware kit includes maple ball, dowel, wheels and axles, smokestacks (coatrack pins), screws and plugs. Wood and hardware kit includes above plus all the cherry, walnut and ash stock needed to complete the project.

Item #64790 (Hardware Kit) \$12.95

Item #65078 (Wood and Hardware Kit) . . \$79.95

Item #58792 (Issue 38) \$4.95



An Easel For Two

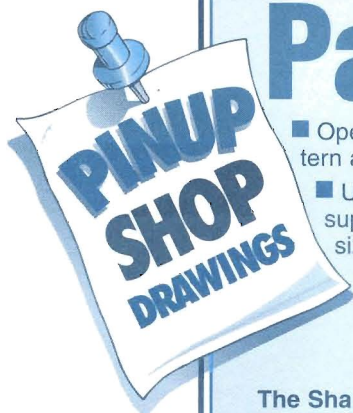
Hardware kit includes roto hinges, cap nuts, Kortron® panels, a piano hinge, dowels, threaded inserts, joint connector bolts, and a clipboard clip.

Item #88296 (Kit) \$31.95

Item #38455 (Issue 5) \$3.95



Full-Size Patterns



- Open staples carefully, remove pattern and fold staples back in place.
- Use graphite paper (available at art supply stores) or cut and trace full size patterns onto your stock.
- Cut out the elevation drawings and pin them to your shop wall.

V x L

2" x 14" (5/8" maple)

2" x 14" (5/8" maple + 3/8" walnut)

h maple handles)

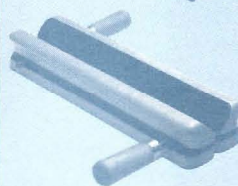
3/4" diameter

2 1/2" x 1" (maple)

(roll stock)

The Shaker Vanity Mirror

Our Pinup Shop Drawings provide you with detailed elevations and a complete material list. You also get the full size pattern of the middle mirror top rail.



Adjustable V-Block Jig

Our Pinup Shop Drawings provide you with full size elevations and a complete material list.



A Stickley Fern Table

Full size patterns for the jigs to cut the compound miters on the apron edges, and patterns for the decorative mortise locations and feet.

**TODAY'S
WOODWORKER®**

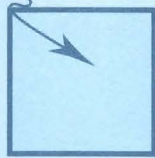
Today's Woodworker, Box 261, Medina, MN 55340-0261.

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Spline kerf.

*Decorative
mortises.*



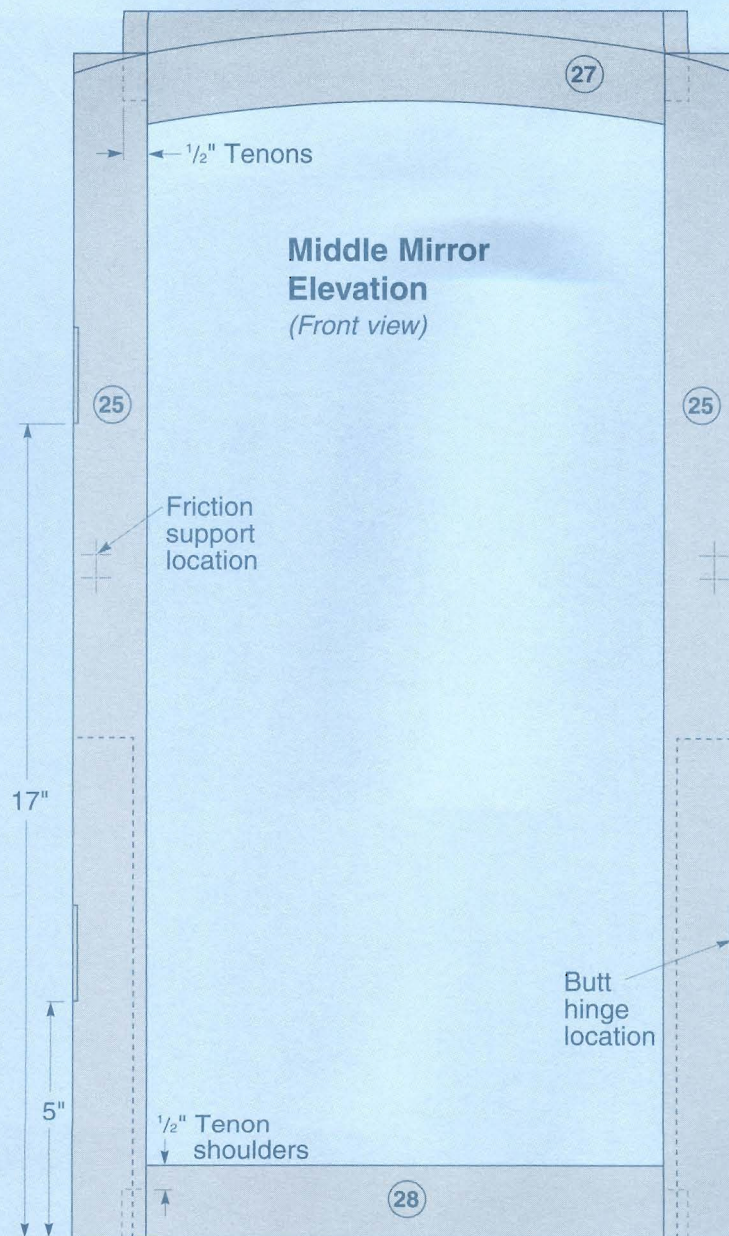
Stickley Fern Table

slides (2)	1/2" x 3" x 10"
End Rails (4)	1/2" x 1 1/8" x 17 1/2"
End Rails	3/4" x 1 1/8" x 17 1/2"
	3/4" x 1" x 3"
	1/2" x 3" x 14"
Ends (4)	1/2" x 3" x 17 1/2"
	1/4" x 13" x 17 1/4"
	28 1/4" pre-turned
	1 1/2" w/ brass centers
	1/2" x 3" x 9 1/2"
Ends (4)	1/2" x 3" x 8"

26 Wing Mirror Rails (4)	3/4" x 1 1/2" x 11"
27 Middle Mirror Rail; top (1)	3/4" x 2 3/8" x 11 1/4"
28 Middle Mirror Rail; bottom (1)	3/4" x 1 1/2" x 11 1/4"
29 Wing Mirror Rails (4)	3/4" x 1 1/2" x 7"
30 Retainer Strips (scrap)	3/8" x 3/8" x 150"
31 Retainer Strip; middle top (scrap)	3/4" x 3/8" x 12"
32 Friction Supports (2)	
33 Butt Hinges (4)	1 1/2" x 2" brass
34 Mirror Supports (2)	
35 Mirrors (2)	
36 Mirror (1)	

*Remove waste after
laying out mortises.*

Apron



T x W x L

	3/4" x 20 1/4" x 33 3/4"
	3/4" x 5 1/4" x 17"
	3/4" x 5 1/4" x 29 3/4"
	3/4" x 1 1/2" x 29 3/4"
	3/4" x 3/4" x 29 3/4"
	3/4" x 1 1/2" x 4"
Sides (2)	1/2" x 3 1/2" x 18 1/4"

19 Drawer Bottoms (2)

20 Box Sides (4)

21 Box Tops (2)

22 Box Bottoms (2)

23 Box Backs (2)

24 Knobs (2)

25 Middle Mirror Stiles (2)

1/4" x 7 1/2" x 9 1/4"

1/2" x 10 1/4" x 3 1/2"

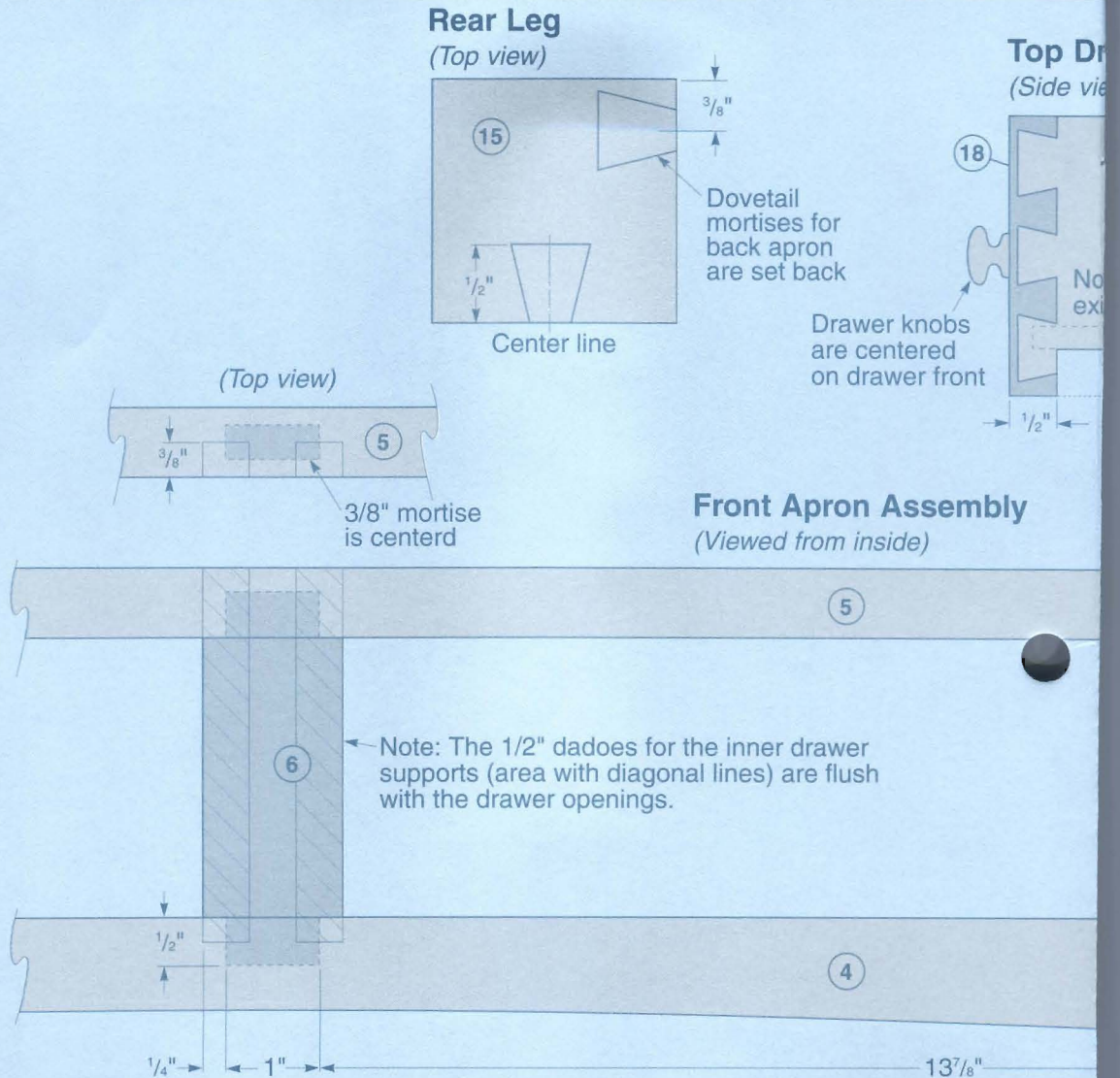
1/2" x 10 1/4" x 9"

1/2" x 8 1/2" x 9 1/2"

1/2" x 8 1/2" x 3 1/4"

1 1/4" brass center

3/4" x 1 1/2" x 24 3/4"



Shaker Vanity Mirror

25

**Middle
Mirror
Stile**

1/2" tenon shoulders

*Remove this waste
prior to assembly.*

Jig A
(Full size)

First cut for apron

Position against fence

*Place top of
apron here.*

B



*Place bottom
of apron here.*



Feet

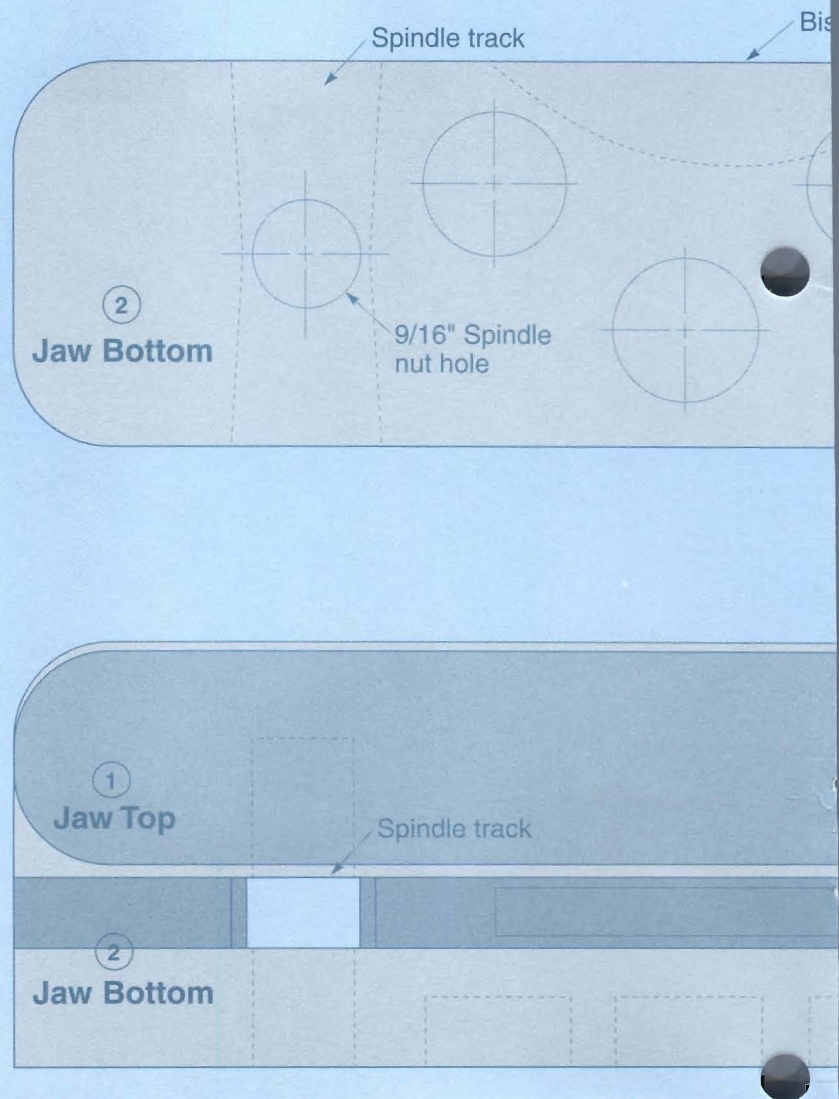
4

*Remove waste
after cutting dadoses.*

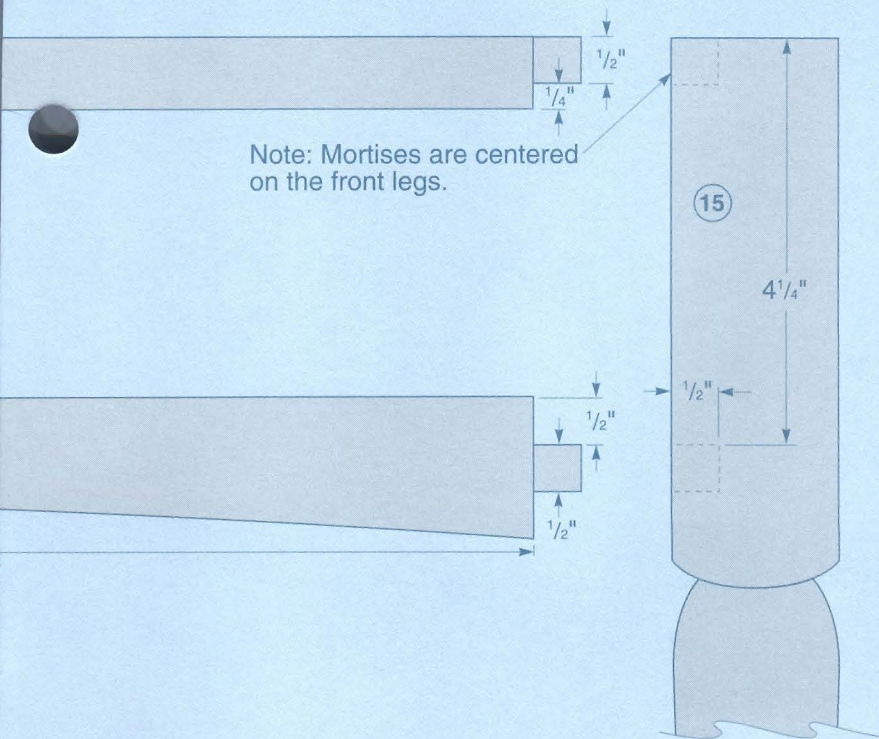
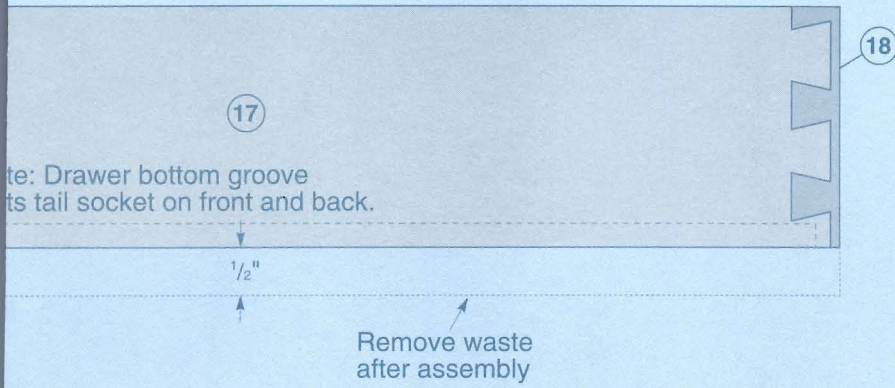
Pinup Shop Drawings

Adjustable V-Block Jig

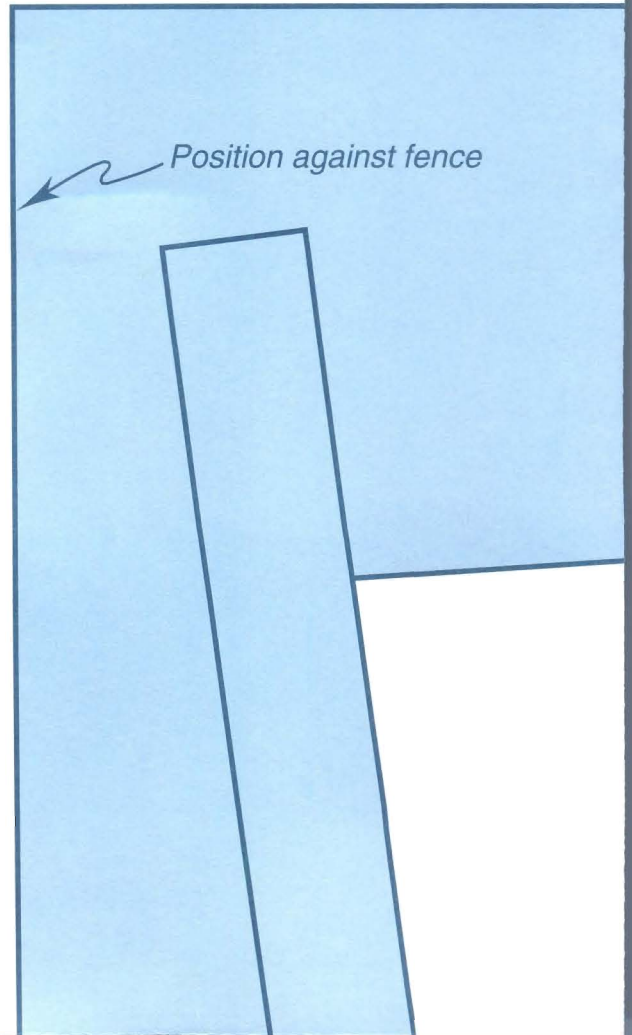
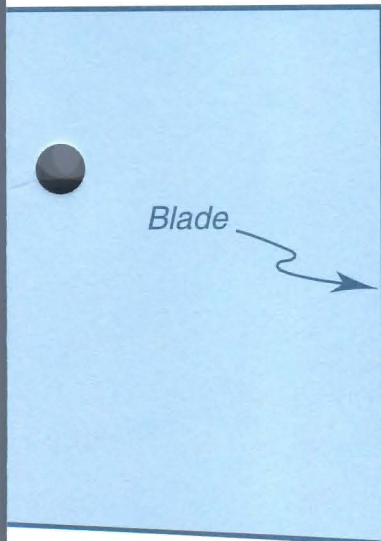
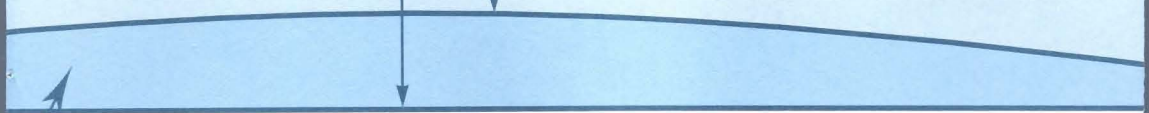
V-Block Jig Elevations (Full Size)



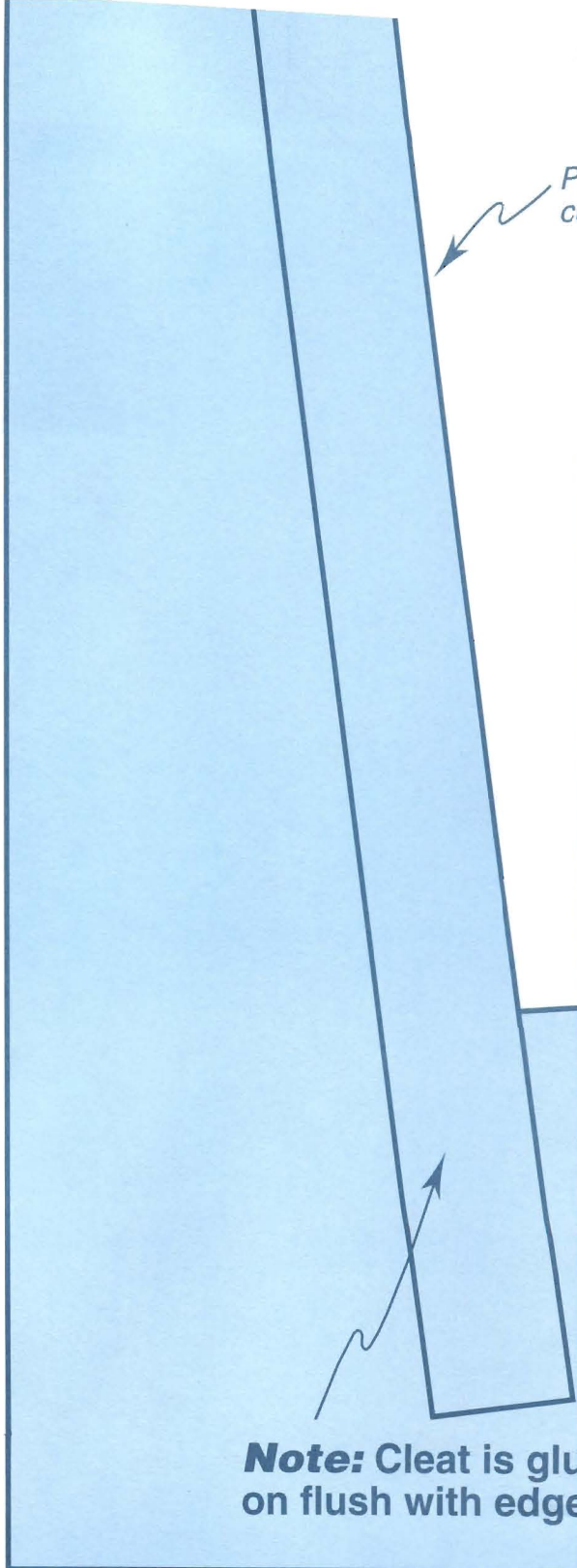
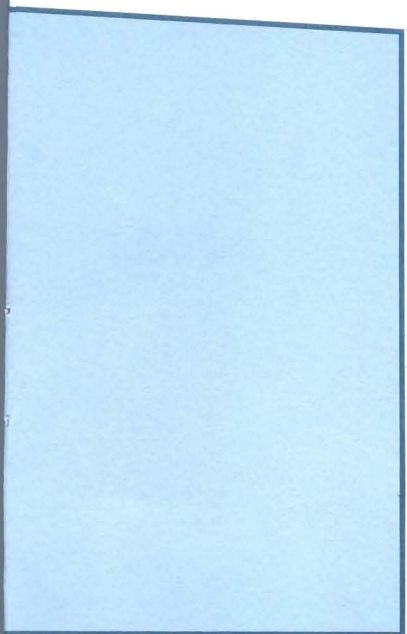
Drawer
(w)



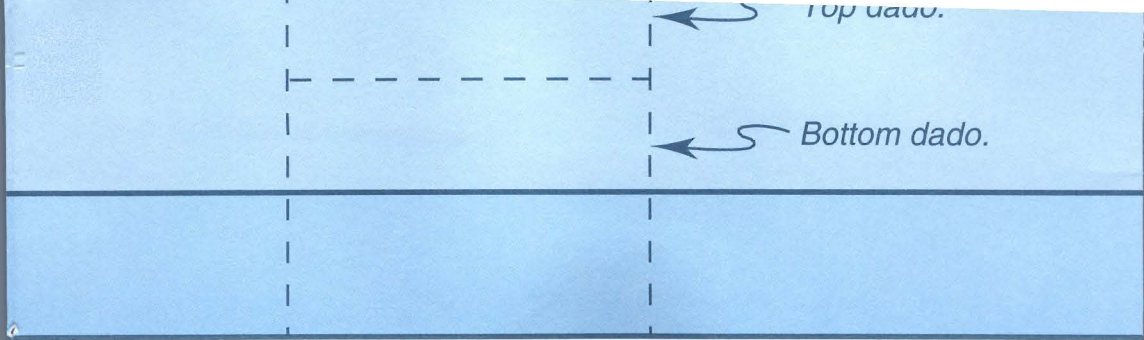
Middle Mirror Rail (top)

 $2\frac{3}{8}"$ $1\frac{1}{2}"$ 

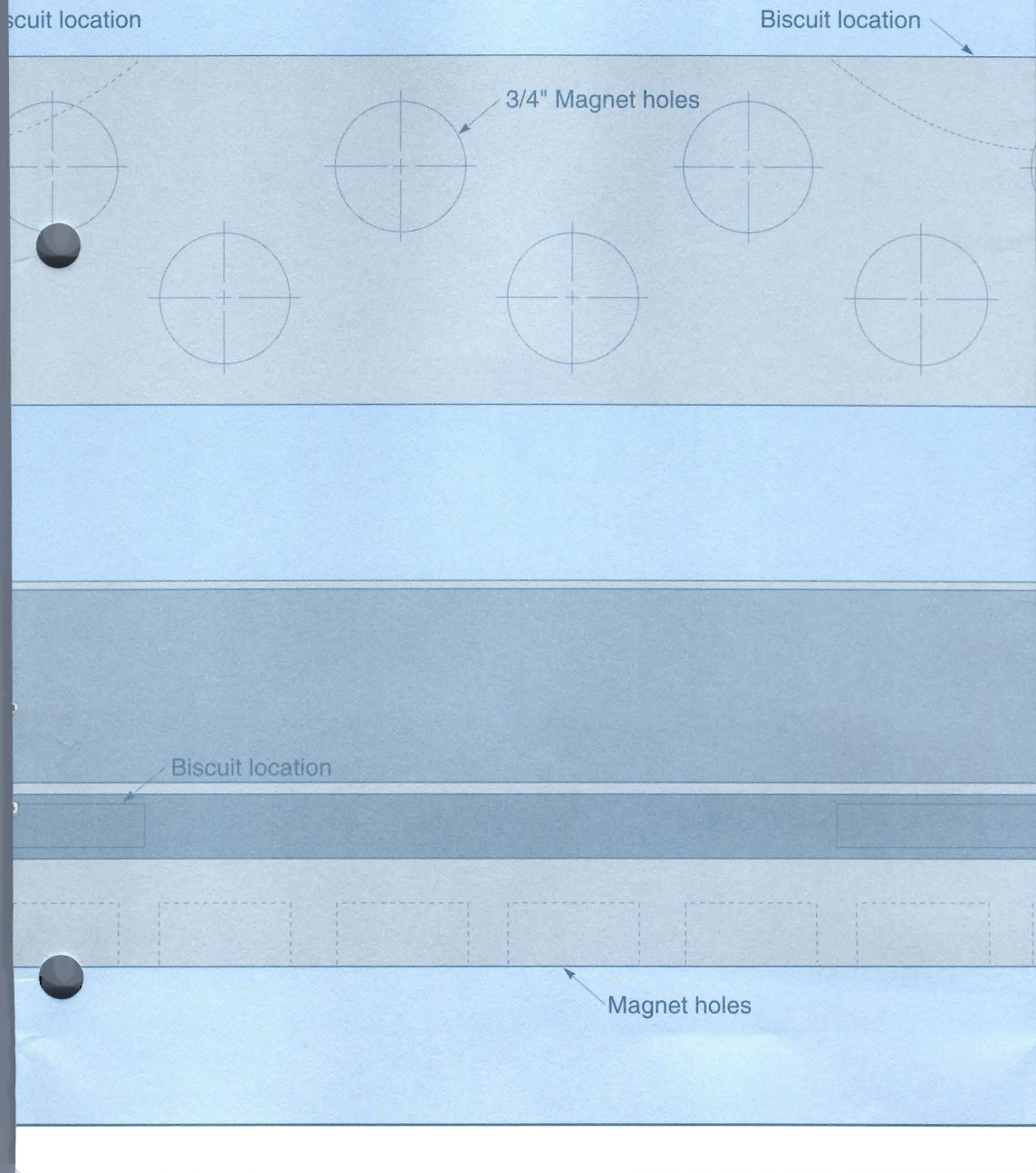
blade is set at 45°.



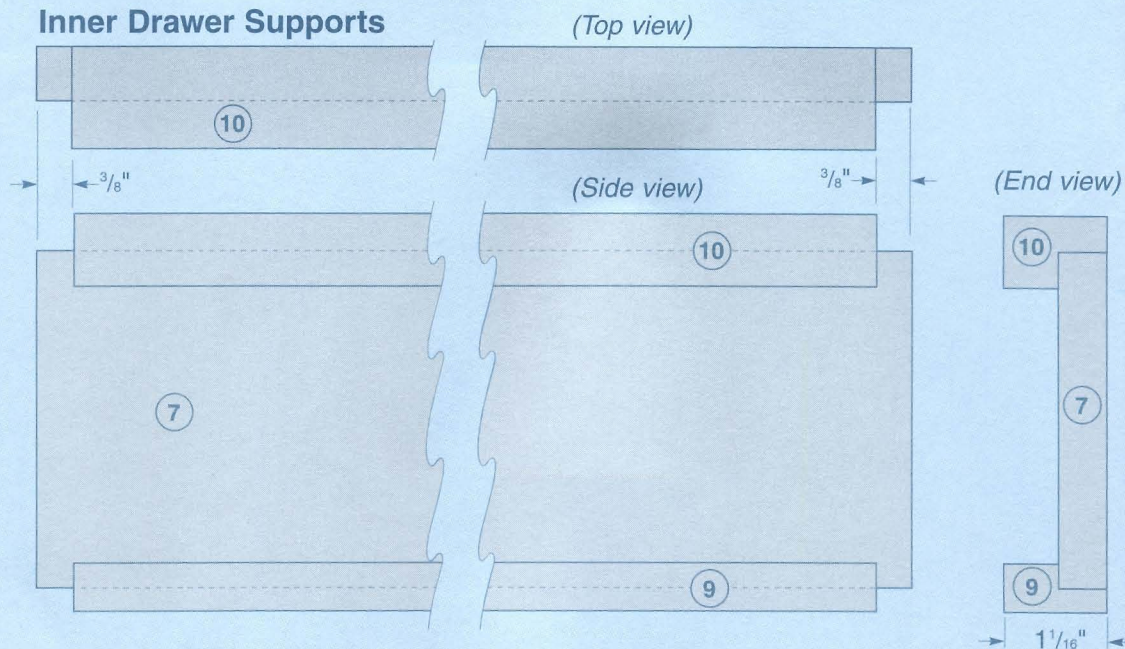
Note: Cleat is glued on flush with edge



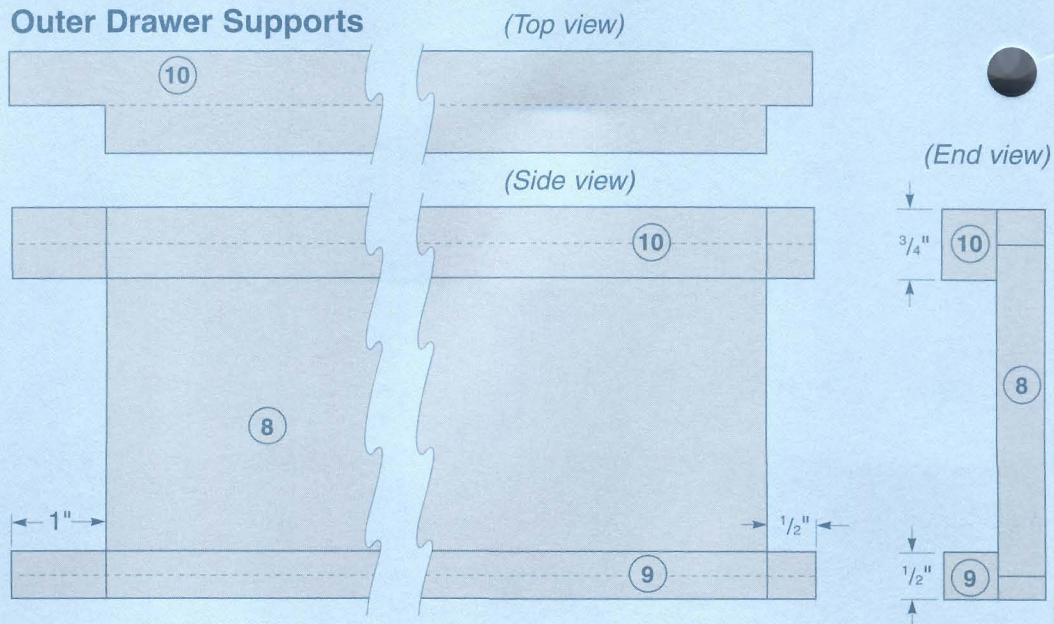
Issue 41



Inner Drawer Supports



Outer Drawer Supports

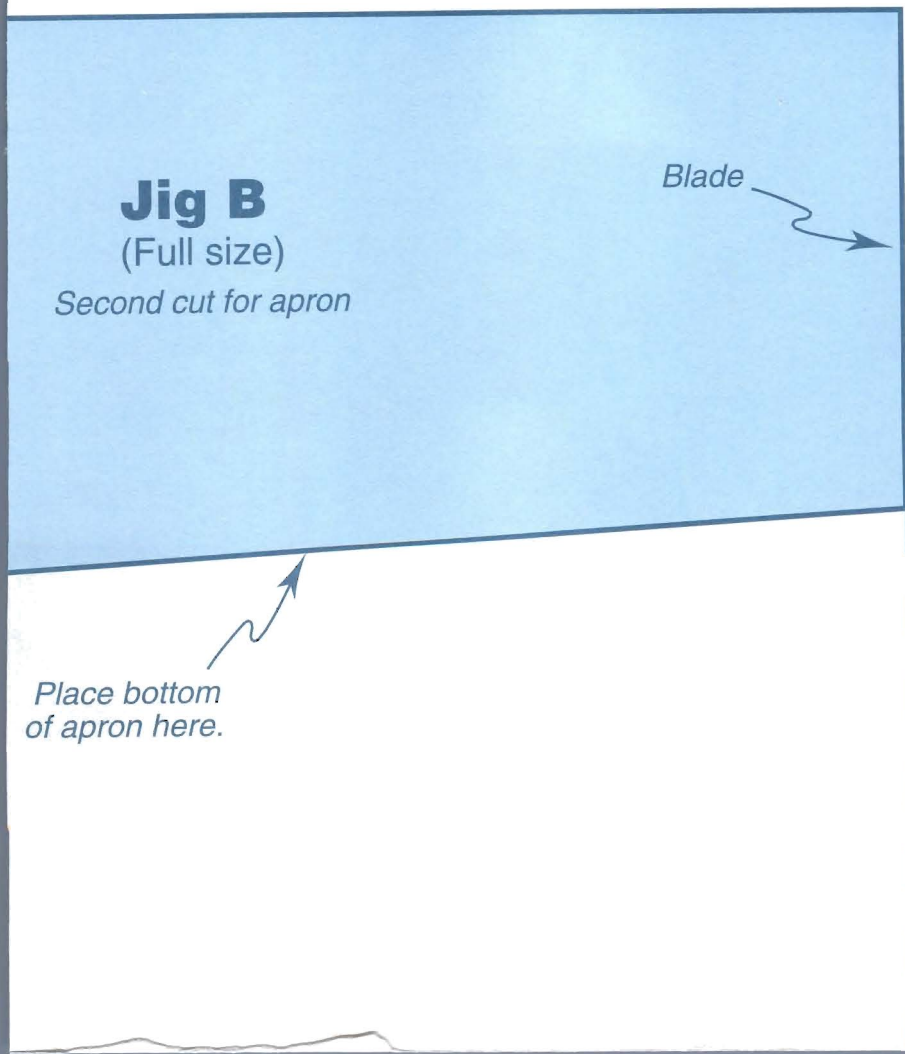
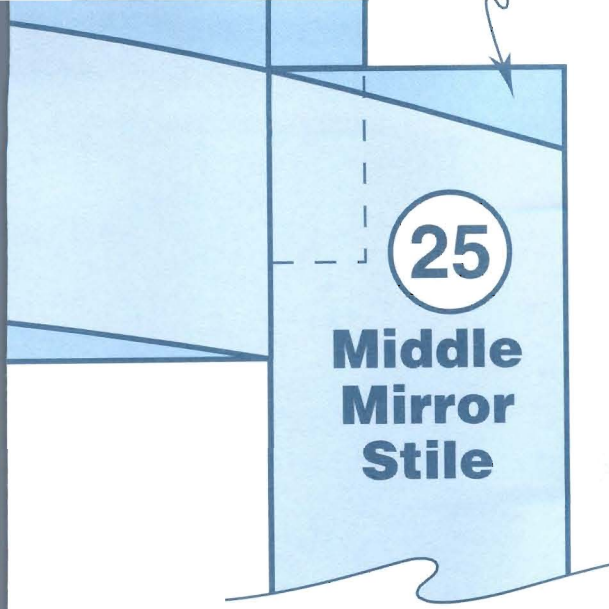


Remove this waste after assembly.

Material List

- 1 Top (1)
- 2 Side Aprons (2)
- 3 Back Apron (1)
- 4 Bottom Front Apron (1)
- 5 Top Front Apron (1)
- 6 Front Divider (1)
- 7 Inner Drawer Support (2)

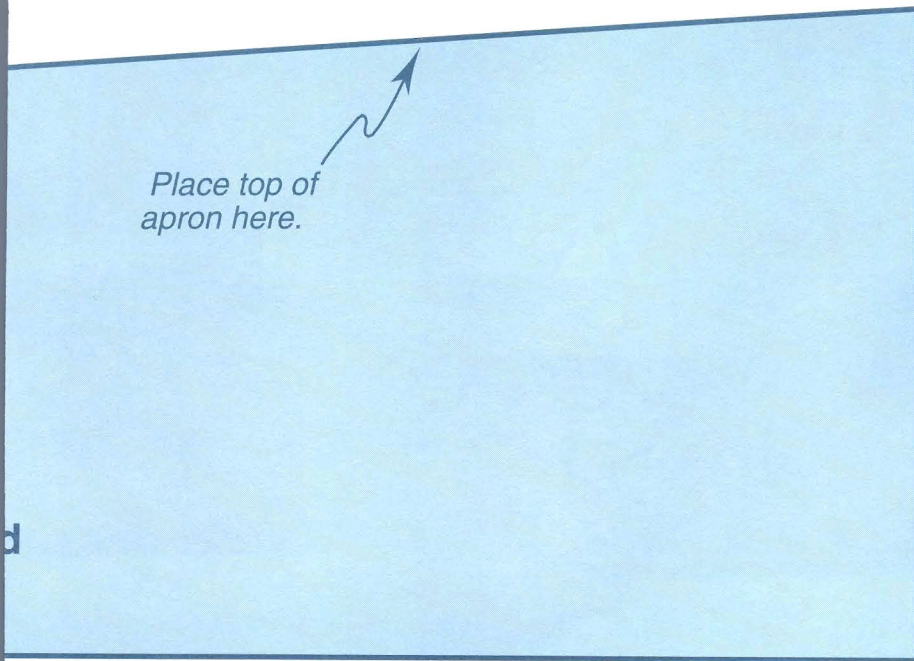
- 8 Outer Drawer Support
- 9 Bottom Drawer Support
- 10 Top Drawer Support
- 11 Top Fasteners (8)
- 12 Drawer Sides (4)
- 13 Drawer Fronts and Backs
- 14 Drawer Bottoms (2)
- 15 Shaker Legs (4)
- 16 Knobs (2)
- 17 Drawer Sides (4)
- 18 Drawer Front and Back

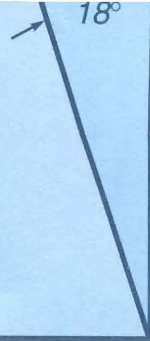
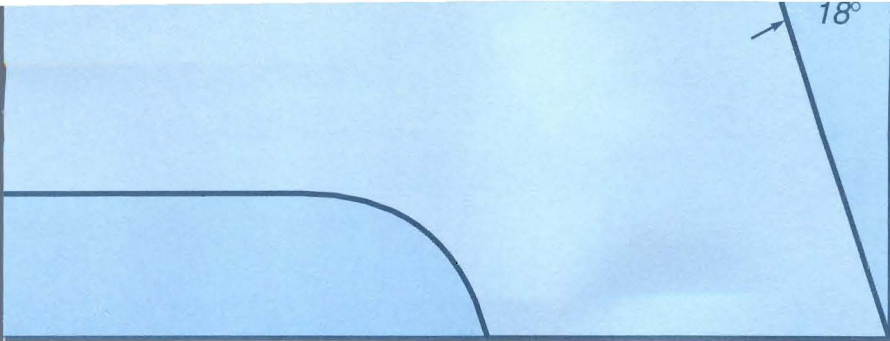


ce previously
edge here.

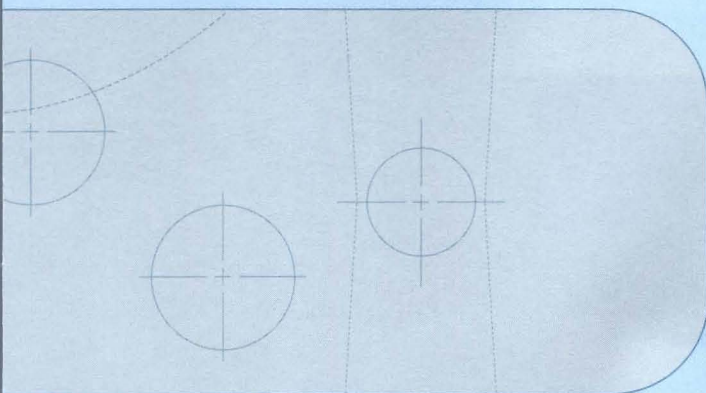
Blade is set at 45° .

Place top of
apron here.

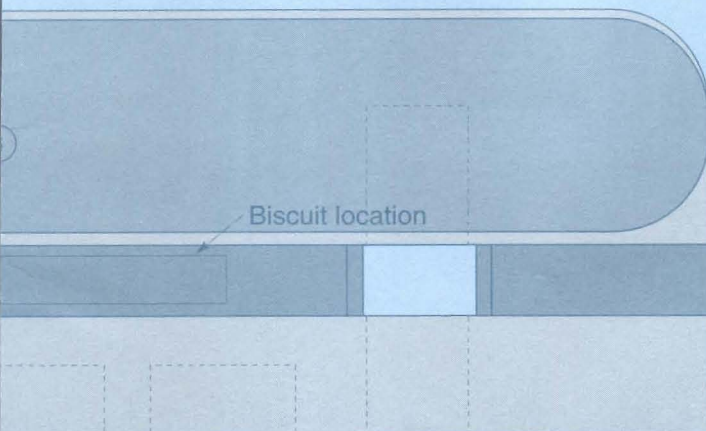




Bottom View (Full Size)



Front View (Full Size)



Material List

	T x V
1 Jaw Tops (2)	1 1/4" x
2 Jaw Bottoms (2)	1" x 2
3 Handscrew Kit (1)	6" (wi
4 Ring Magnets (18)	3/8" x
5 Biscuits (2)	1/4" x
6 No-skid Tape	2" x 5

End View (Full Si

