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Lobster
Puzzle
Page 18



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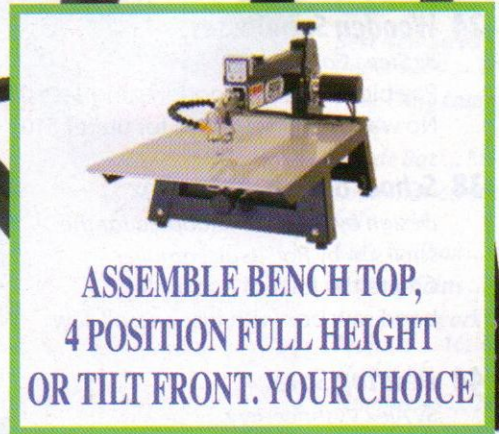
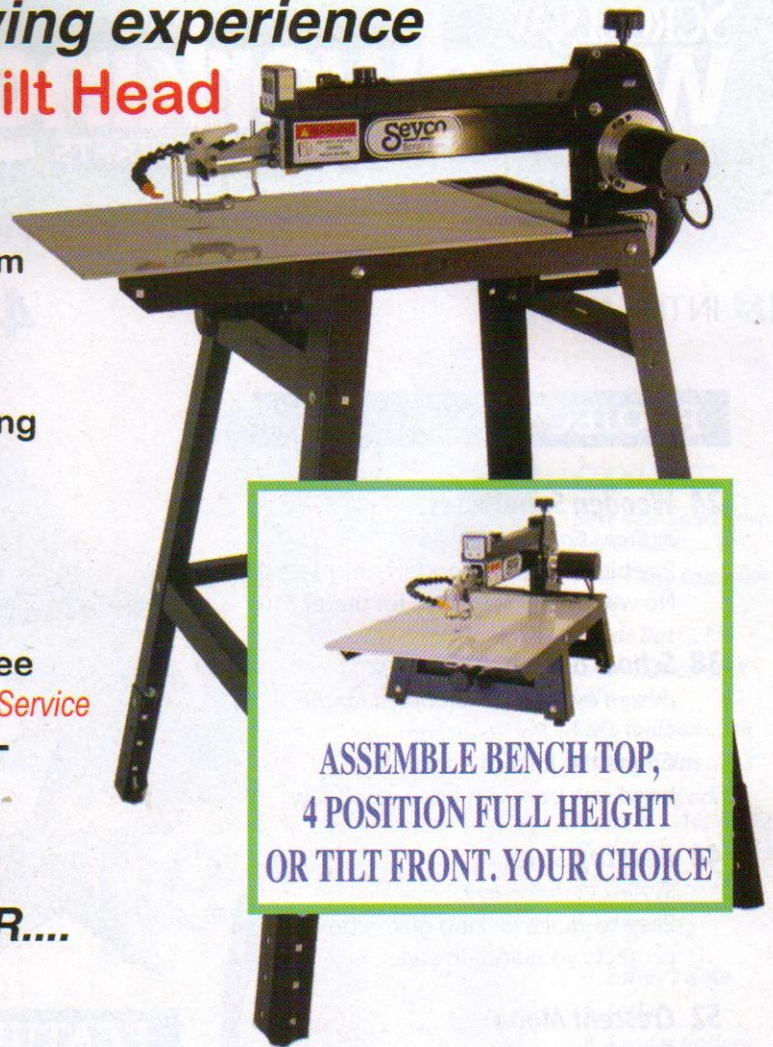
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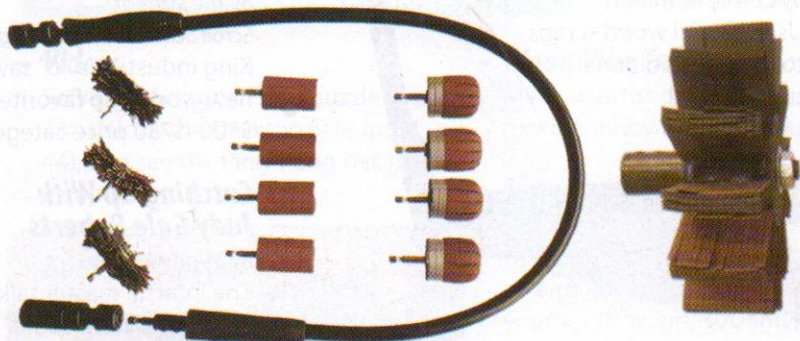


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• Videos

Solve the School of Fish puzzle (pg. 38), unlock the Desktop Safe (pg. 44), and see the Ping-Pong balls explode (pg. 54).

• Wood Vibe Tribe

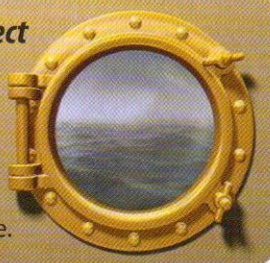
Meet an artist collective making innovative intarsia.

• Issue Extras

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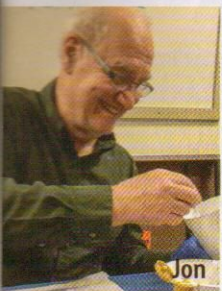
• Bonus Project

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Hands On



We spend a lot of time thinking, writing, and talking about scroll saws, but we don't have a lot of time to spend actually *using* scroll saws. So we were really excited when we realized that, for this issue, we had projects to cut, patterns to test, and two scroll saws to review, plus a new editorial assistant to educate in the ways of wood.

The saws we tested are Porter Cable's latest model and King's new 16" saw. They represent what you might call the entry and expert levels of scroll saws, respectively, so it was a neat opportunity to compare saw features and capabilities at different

price points. After we worked through our assigned pieces, we discussed our results, collated our opinions, and drafted our reviews. You'll find them on pages 20 and 48.

Our shop time didn't stop with the testing, though. We had our hands all over this issue; technical editor Bob Duncan was literally the hand model who assembled the "Desktop Safe" in that article's step photos. When I was confused by the "School of Fish Puzzle Box" instructions, I built two paper models. Then, when my changes meant the step photos didn't match the text, I found some wood and built a real fish, snapping pictures along the way. Our new editorial assistant, Kaylee Schofield, spent hours learning to scroll and also cheerfully modeled our "Wooden Sunglasses." And art director Jon Deck built the alternate projects for the "Classic Bike Silhouettes."

And the thing is, we found that in building boxes, we also built a team. We talked through ideas, planned projects, and helped each other find materials, hold pieces, and wrangle saw parts. We argued about saw features and solved problems. We couldn't have planned a better way to integrate Kaylee into our team, because woodworking brought us together—literally, in the workshop, and metaphorically, as we taught Kaylee to scroll and crafted our saw reviews.

It even works virtually, reports contributor Dave Van Ess. He says, "In a perfect world, those you love would be close to you and you could regularly share your passion for building and pass on your skills. However, job relocation, family dynamics, and unfortunate bumps in life sometimes make this impossible." He suggests you cut two of his "Child's 1st Toolbox" (or another age-appropriate project), send one to the long-distance kid in your life, and connect via video chat to assemble them. "It may not be as good as the real thing, but I guarantee that when your loved one does come to visit, they will want to spend 'tool time' with you."

Enjoy!

M Kinsey
Mindy Kinsey
Kinsey@FoxChapelPublishing.com

SCROLLSAW woodworking & CRAFTS

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To promote scrolling as an artform and an enjoyable pastime—for all ages and all skill levels.

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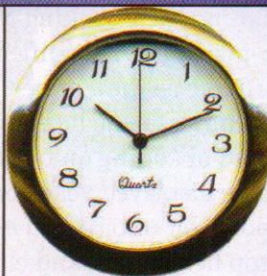
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Paddling Moose

Thanks to Ruth Chopp for designing the Kayaking Moose, which appeared in the 2014 Holiday E-magazine. I modified the original pattern to better fit our town's theme as the Canoe Capital of Canada. I turned the kayak and double-blade handle into a canoe with a single-blade paddle. Instead of adding an ornament hanger, I made my moose to sit flat and be displayed year 'round. The shaping of the bow and stern took a bit of trial and error. I did the rough shaping on a bench-top belt sander and cleanup with a Dremel tool.

Jay Leather
Atikokan, Ont.



Intarsia Cat

The Intarsia Cat Portrait (Spring 2007, Issue 26) was my first attempt at intarsia. It took a long time; I started around June 2016 and finished in July 2017. I would work at it a few days, and then quit for weeks. I entered it in the Black Walnut Festival in Spencer, W. Va., and it was admired by many people with many comments. I will try something else for next year, and it will be from your magazine. Thanks for all the different ideas.

Joseph Landis
Gandeeville, W. Va.

Write To Us!

We'd love to hear your thoughts on our projects, ideas for new patterns, scrolling experiences, and woodworking show stories. Write to us at: Letters to the Editor, *Scroll Saw Woodworking & Crafts*, 1970 Broad Street, East Petersburg, Pa., 17520 or e-mail Editors@ScrollSawer.com.

Safety Questions

Have you ever had an article on safety for hearing, eyes, lungs, and hands while operating a scroll saw? I think I am safe but would like to know other various ways to be safe.

Guy Ranstead
via e-mail

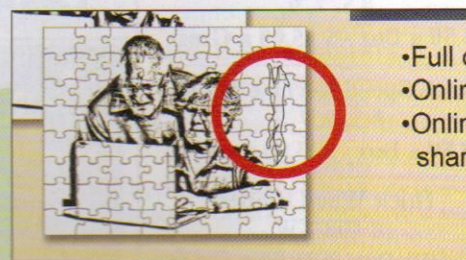
Editor's Response:

A scroll saw is one of the safest tools in the workshop, but it's still good to be careful. Protect your eyes from flying

chips by wearing glasses or safety goggles. Avoid getting tangled in the blade by wearing fitted clothing and tying back long hair. (We wear a shop apron to keep sawdust off our clothes.) You shouldn't need gloves unless you are scrolling acrylic, CDs, or metal. To avoid breathing sawdust, we strongly recommend wearing a dust mask and running both an air filter and a dust collector. For more details, please visit our website: scrollsawer.com/category/how-to/safety.

SET IT STRAIGHT

We accidentally published too many patterns for the "Stacked Floral Votive Holder" in the Spring issue (#70). Simply disregard the pattern labeled with the project title on the pullout section. We apologize for the error.



•Full o
•Onlin
•Onlin
share

Fox Hunt

Danny Ponthieux of St. Petersburg, Fla., and Donna Akins of Effort, Pa., were randomly drawn from the participants who located the fox in our last issue (Spring 2018, Issue 70). The fox was hiding in the Carving Technologies ad on page 55.

Find the fox in this issue, and tell us the page number and location. Two readers randomly selected from all correct replies will receive a \$25 Fox Chapel Publishing gift certificate. Entries must be received by June 1, 2018, to be eligible. *NOTE: The contest fox is an outline drawing that would face left if his feet were on the "ground" (other foxes appearing in SSW&C don't count).*

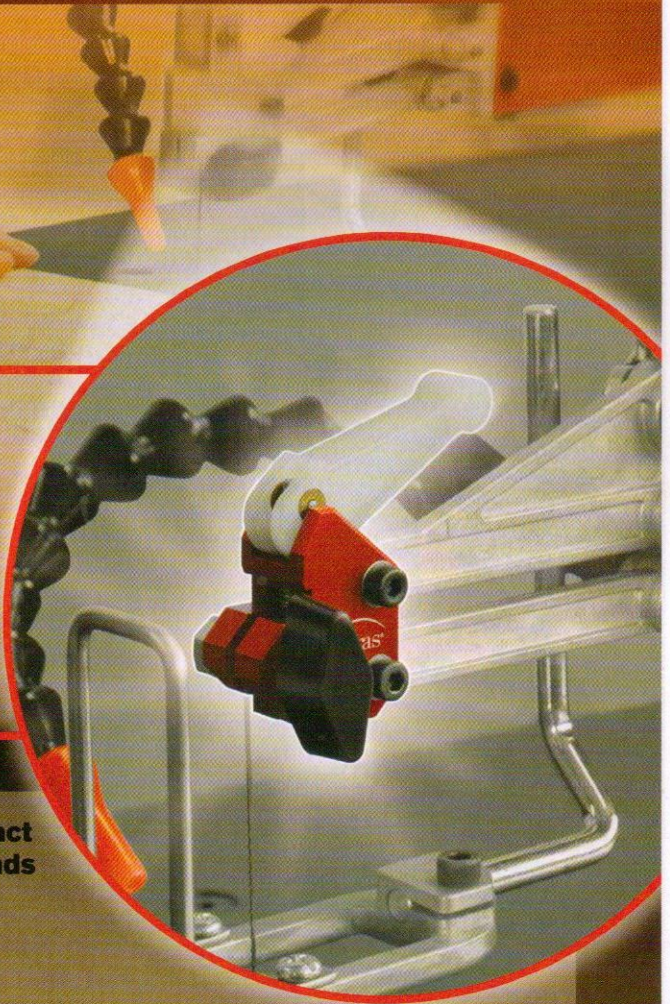
Send your entry to SSW&C, Attn: Find the Fox, 1970 Broad Street, East Petersburg, PA 17520, or enter online at www.ScrollSawer.com.

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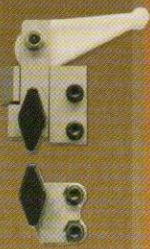
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Ron Jungels *Naperville, Ill.*
If you enjoy intarsia, says Ron, this African Adventure project by Judy Gale Roberts is "the one for you." It stands at 41½" by 30" (1.1m by 76.2cm) and incorporates a whopping 800 pieces, which Ron cut from Western red cedar.



Sara Lyn Chamberlain
Saint John, N. B.

Sara Lyn snapped a photo of a baby fox playing by the road and loved it so much that she made this puzzle. She cut it from one piece of ¾" (1.9cm) pine and it stands at 8" by 8½" (20.3cm by 21.6cm).



Clayton Meyers *Middlebury, Ind.*
Clayton dreams up his intricate scroll saw patterns and chess sets in the rolling hills of northern Indiana. He recommends using hardwoods such as walnut and cherry for the pieces and wooden tiles, as they hold up better during the cutting process. Find Clayton on Etsy at [ClaytonsPatterns](#).



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Jesse Davis *North Pole, Alaska*

When Jesse isn't designing his own scroll saw projects, he's photographing the aurora borealis. His preferred saw is the Excalibur EX-21. He made this 7½" (19.1cm) diameter Tribal Raven from ¾" (1.9cm) hardwood maple. Visit Jesse at www.scrollsawnart.com.



Karl Rettig *Delray Beach, Fla.*

Karl, 89 years old, began as a chip carver but switched to scrolling due to trouble with his wrists. He favors the Flying Dutchman #1 and #3 ultra reverse blades and donates his work to local woodshop raffles, which support a nearby school for children with intellectual and physical disabilities. He used a design from *Decorative Silhouettes of the Twenties for Designers and Craftsmen* (1975) for this piece.



Michelle Brown *Berwick, Pa.*

When she's not on call as a registered nurse, Michelle makes attractive intarsia and pyrography pieces. She created this piece by adapting Kenneth Campbell's "Dragon Chest" pattern (*SSW* Summer 2007, Issue 27). The dragon is cherry on a curly maple background, framed in walnut.

Share Your Latest Work!

Send a slide, professional print, or digital image (300 dpi minimum) with 100 words about you and your piece. Include your hometown, the name of the pattern maker, and a list of wood and materials used. Send to Reader Gallery, *Scroll Saw Woodworking & Crafts*, 1970 Broad Street, East Petersburg, PA 17520, or e-mail editors@scrollsawer.com.

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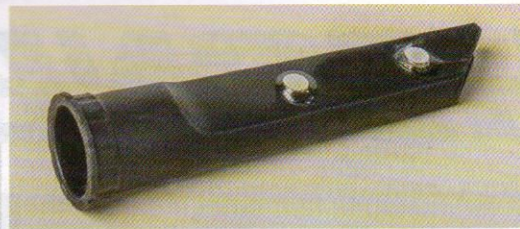
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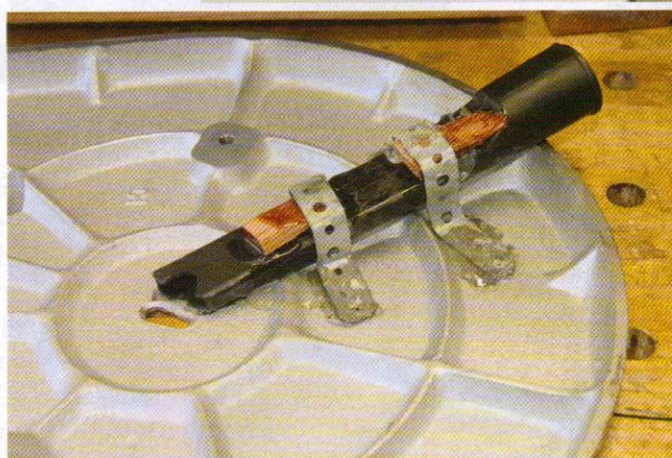
By Lee Hockman, Sugar Hill, Ga.

Instead of buying a dust collector for my scroll saw, I created my own from an old vacuum cleaner nozzle. Epoxy a few rare earth magnets to the nozzle. Then, you can position the nozzle wherever you want and remove it as necessary. I use a small rubber squeegee to push dust and wood bits into the hole to be sucked up.

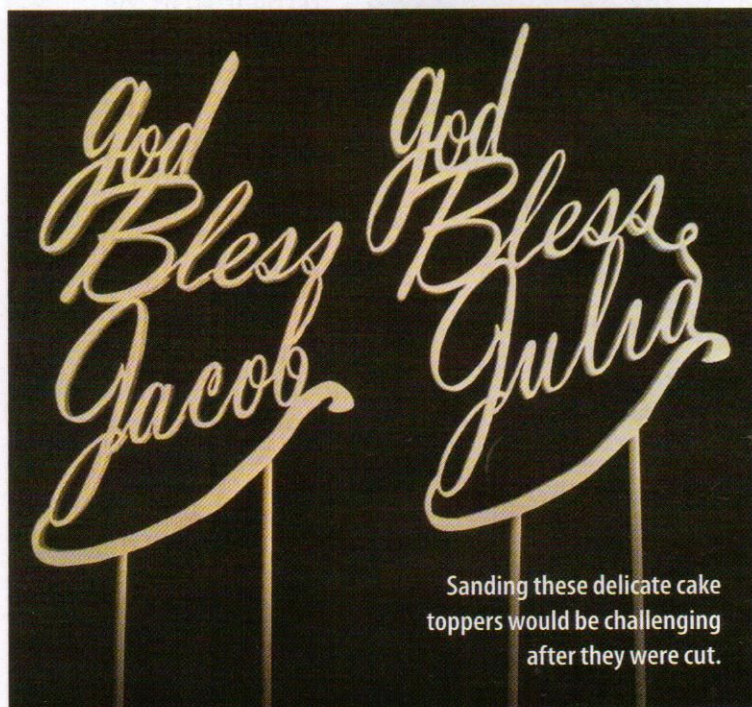
If you don't have any rare earth magnets, or the bottom of your saw is uneven so magnets wouldn't hold well, use pipe strap iron instead. Epoxy it to the saw and secure the nozzle with a few wooden wedges as needed.



A vacuum nozzle with rare earth magnets provides good dust collection.



An alternate method is to epoxy pipe straps to the saw table and secure the nozzle with wooden wedges.



Sanding these delicate cake toppers would be challenging after they were cut.

Sand Before Cutting

By Doug Poat, Long Island, N.Y.

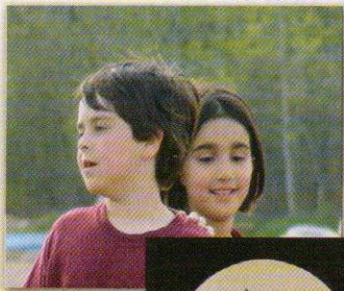
Pre-sand the wood before attaching your pattern. When you cut delicate fretwork, you can totally destroy your hard work if you sand after cutting.

I use a mouse sander with 220-grit sandpaper to sand every blank before applying the pattern. Even if the project isn't intricate, it's still easier to sand before cutting. While you have a few fuzzies on the cut edges to clean up, the majority of the sanding is done.

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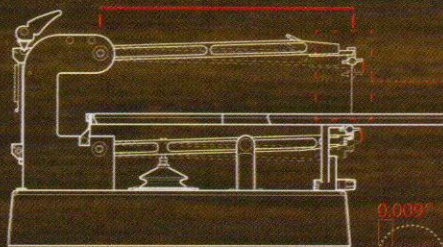
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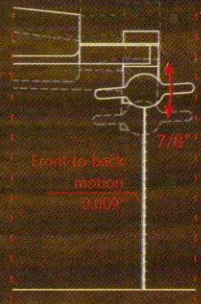
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HAWK BM-20

Turning circle $\approx 1/20^\circ$

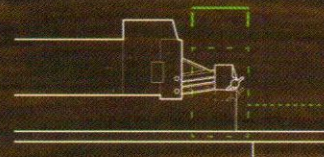


Front-to-back motion $\approx 7/8"$

With a #5 blade, a **HAWK** scroll saw has half the turning circle for double the accuracy.

Turning circle $\approx 1/10^\circ$

The competition



$\approx 0.045^\circ$



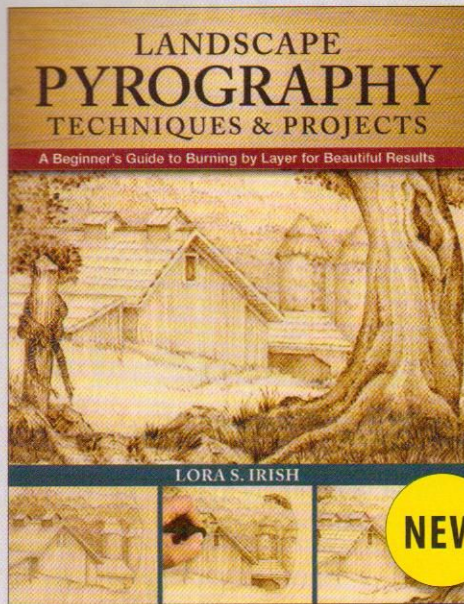
Front-to-back motion $\approx 3/4"$

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Summer Shopping Guide

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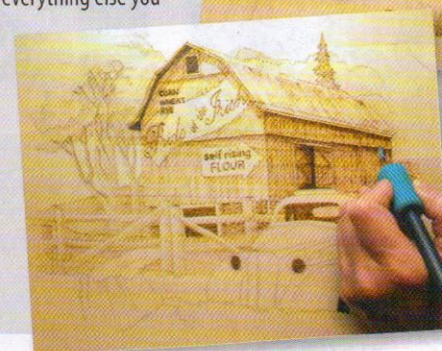
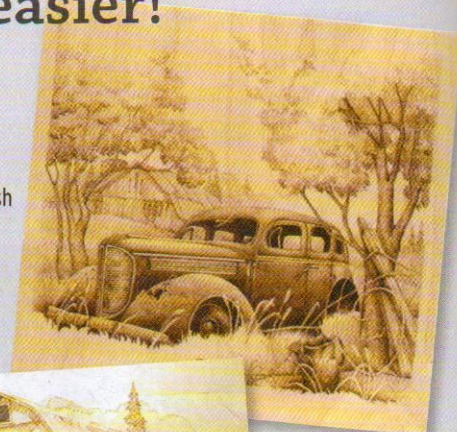


Landscape Pyrography Techniques & Projects

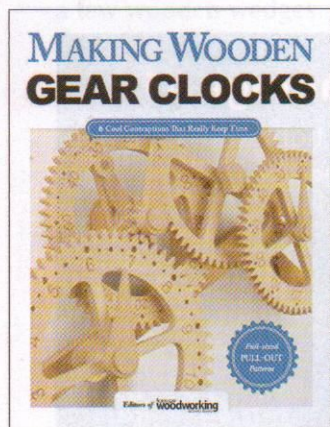
A Beginner's Guide to Burning by Layer for Beautiful Results
By Lora S. Irish

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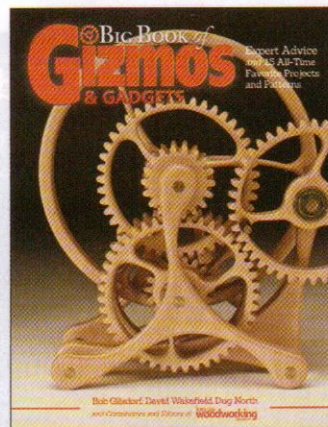
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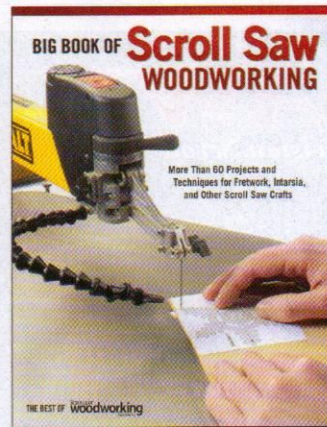
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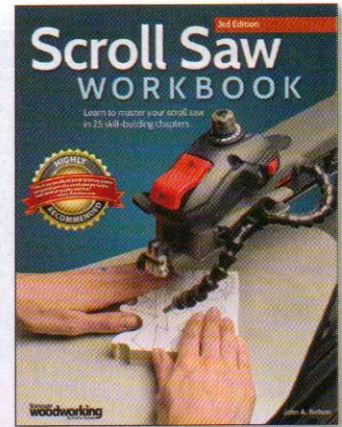


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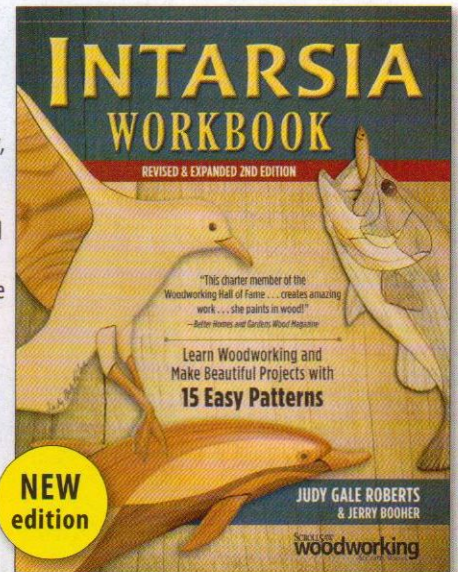
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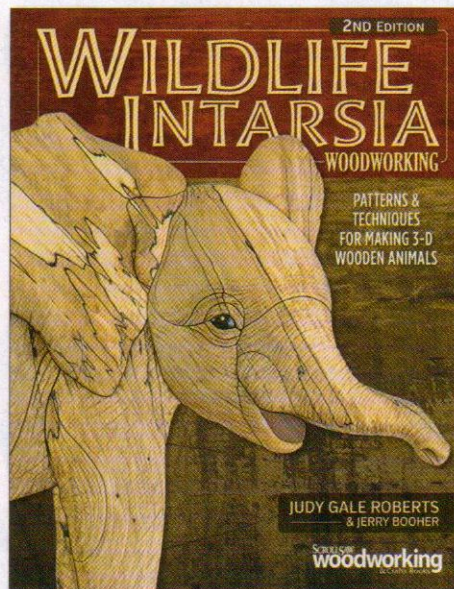
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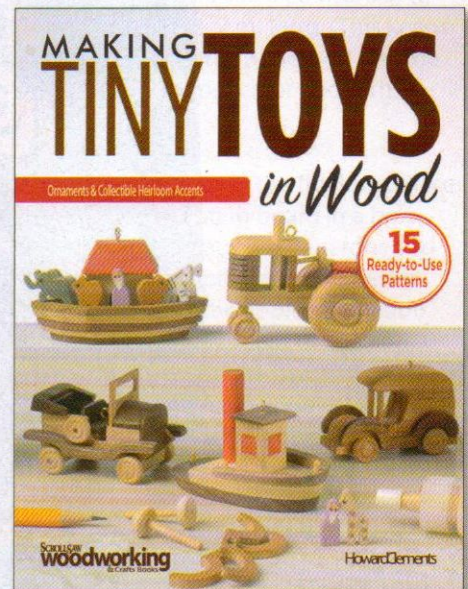
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Fretwork Butterfly Garden

Use your colorful scrap wood to create a custom garden scene

By Dan Wilckens



If you need a project to use up odds and ends of colorful hardwood, look no further! This garden scene is packed with vibrant butterflies and cheerful flowers cut from scraps. Mix and match wood, cut more or fewer flowers, and arrange the blossoms and butterflies to suit your own style. Use your imagination and make the project your own.

My friend Brian Emerson helped me design this project. It reminds me of my mother-in-law, Barbara, who loved butterflies and always said she would come back as one. She passed away several years ago, so whenever my wife and I see a butterfly we think of her.

Cutting the Pieces

Attach the patterns to the blanks and cut the frets and veining lines. Cut the outlines of the flowers and leaves. Stack a contrasting scrap of hardwood under each butterfly and then cut the perimeter to create a backing board that matches the butterfly exactly. Glue and clamp the backing boards to the butterflies.

Assembling the Scene

Glue and clamp the stems to the background. Remove any glue squeeze-out, and allow the glue to dry. Arrange the butterflies, flowers, and leaves on the stems until you find positions you like. When you're satisfied, glue and clamp them in place. Then, apply a clear spray finish according to the manufacturer's instructions. Put the assembled scene in a purchased or shop-made frame and add a hanger to the back.

Materials & Tools

Materials:

- Hardwood or plywood, $\frac{1}{8}$ " (3mm) thick: assorted scraps for butterflies, flowers, and leaves; vines, backing board 2 each 8" x 10" (20.3cm x 25.4cm)
- Frame: 8" x 10" (20.3cm x 25.4cm)
- Spray adhesive
- Sandpaper
- Wood glue
- Sawtooth hanger
- Finish: clear spray
- Flocking materials (optional): clear spray lacquer, box, flocking adhesive, flocking, trimmed paintbrush, flocking applicator

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Tools:

- Scroll saw blades: #3 reverse-tooth
- Drill with bits: assorted small
- Hobby knife (optional, flocked vines)
- Clamps

SPECIAL SOURCES:

A kit, with flocking in your choice of color, matching adhesive, flocking applicator, and brush, is available for \$27.50 plus S&H from Just Flock It, 815-986-1097, www.flockit.com.

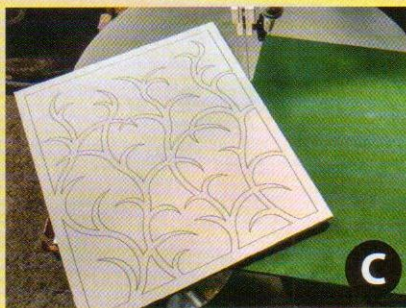
Adding Flocking

Create a vividly colored and textured garden scene by flocking the flower stems and backing board. Flocking is the process of gluing fibers to the base material to add color and texture. Instead of trying to flock the thin stems, I flocked the board before I cut the design. I used a piece of thin cardboard for the backing board.



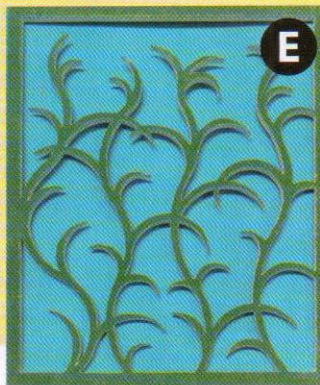
A. Seal the boards. Seal the stem blank with spray lacquer and allow it to dry thoroughly. Use masking tape to cover any areas you don't want to be flocked.

B. Prepare the tools. Cut the bristles of a paintbrush to 1" (2.5cm) long. (This keeps the bristles from coming out when you apply the adhesive.) Mix the flocking adhesive thoroughly. Fill a flocking applicator about three-quarters full with flocking.



C. Apply the flocking. Place the stem board in a box, and apply a generous and smooth coat of adhesive. Use the applicator to add a heavy coat of flocking. Rotate the box to make sure you have good coverage. Allow the adhesive to dry for 24 hours.

D. Remove the excess. Pour the flocking off the board into the box, and then put it back in the bag for next time. Gently blow off any excess flocking; I use the blower on my shop vacuum. Repeat the process for the background cardboard.



E. Cut the stems. Attach the pattern to an unflocked board. Stack that board with the flocked one and cut the fretwork. Separate the stack, and run a hobby knife along the cut edges to remove any fuzz. Paint the back and exposed sides of the fretwork if desired; I left mine the light color of the wood.



Dan Wilckens and his father, Ray, started scrolling 25 years ago as a hobby, and then began designing their own patterns and making them available for others to enjoy. Dan's

background is in tooling design and tool and die work. See more of his work at www.wilckenswoodworking.net.

Patterns for the **FRETWORK BUTTERFLY GARDEN** are in the pattern pullout section.

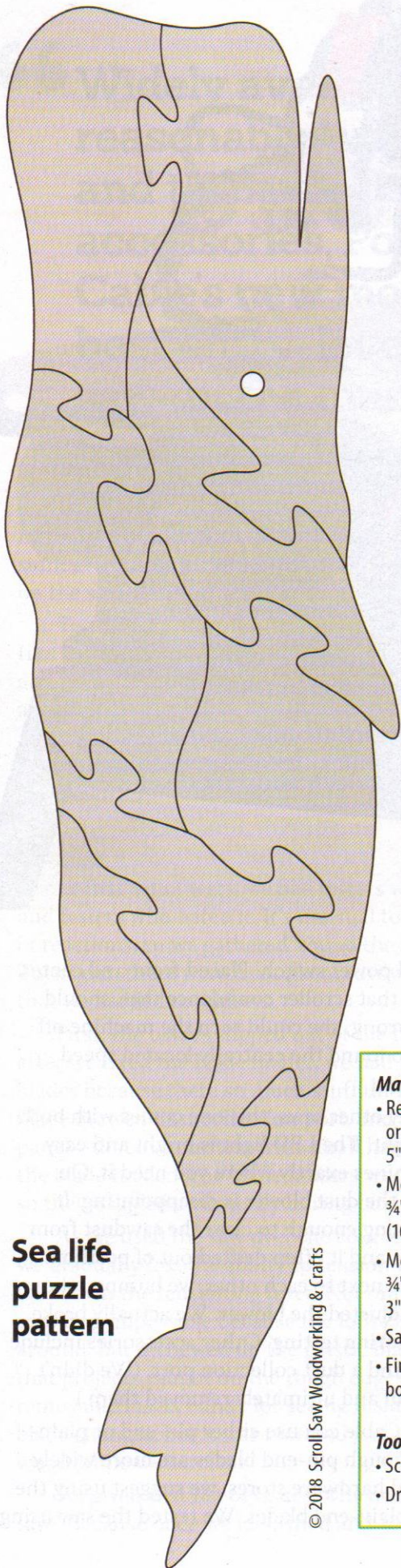
Coastal Critter Puzzles

From Shark Week to Lobster Fest, everyone loves a good fish story

By Brad and Hazel Eklund

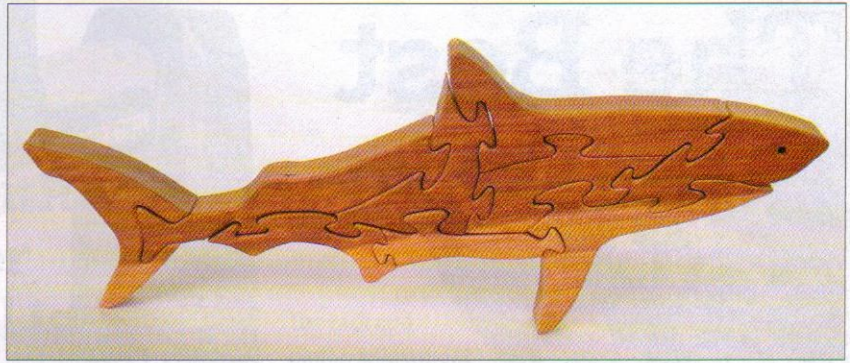


Nearly half the world's population lives within 100 miles of the coast, so it's no wonder people are fascinated by sea life (and seafood!). Our shark, whale, and lobster puzzles are fun and easy to cut, and should be popular with your family or craft table customers. You can make them from a variety of different hardwoods, although the lobster, of course, looks best in a red-colored wood.



Sea life puzzle pattern

© 2018 Scroll Saw Woodworking & Crafts



Materials & Tools

Materials:

- Red wood, such as red cedar, padauk, or redheart, 3/4" (1.9cm) thick: lobster, 5" x 9 1/2" (12.7cm x 24.1cm)
- Medium-tone wood, such as cherry, 3/4" (1.9cm) thick: shark, 4 1/4" x 10" (10.8cm x 25.4cm)
- Medium wood, such as white oak, 3/4" (1.9cm) thick: sperm whale, 3" x 10 1/2" (7.6cm x 26.7cm)
- Sandpaper
- Finish, such as boiled linseed oil

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Tools:

- Scroll saw blades: #5 or #7 reverse-tooth
- Drill with bits: assorted small

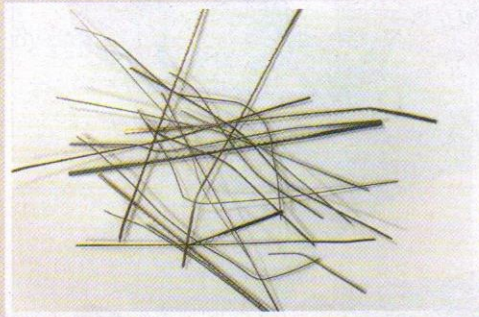
Additional patterns for the **COASTAL CRITTER PUZZLES** are in the pullout section.



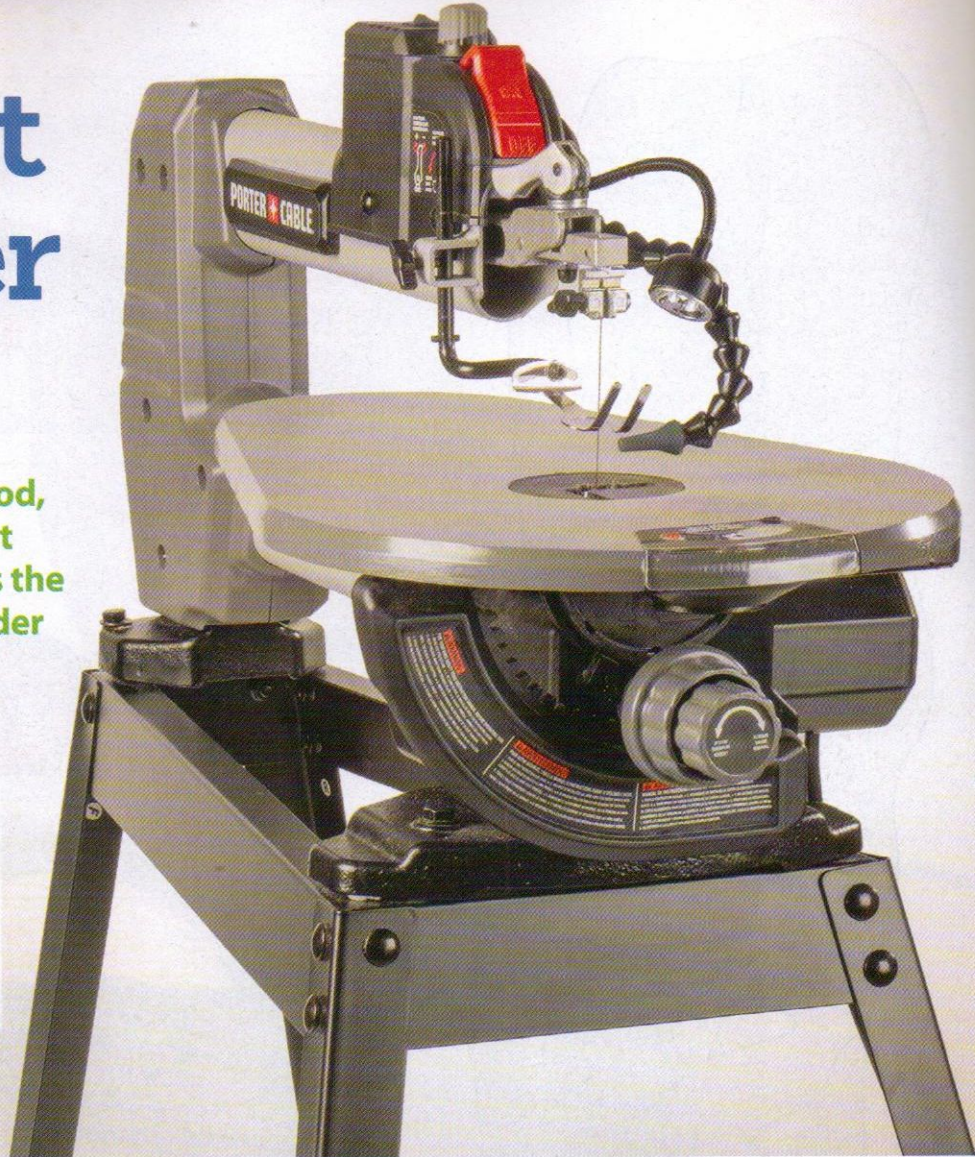
Brad and Hazel Eklund have been creating scroll saw art for the last seven years. They have always been fascinated by the beauty and intricacies of wildlife and nature in general. Brad has a degree in horticulture, while Hazel has a degree in wildlife. They live and work next to a nature preserve in coastal North Carolina.

The Best Beginner Saw

We broke blades, burned wood, and said a few bad words. But we still think this scroll saw is the best on the market in the under \$200 category



By Jon Deck, Bob Duncan, Mindy Kinsey, and Kaylee Schofield



Widely available, reasonably priced, and tricked out with a stand and accessories, Porter Cable's model PCB375S is the best entry-level scroll saw on the market.

According to the popular scroll saw blogger Steve Good, "The Porter Cable scroll saw is a nice machine to get started in the hobby. It has all the features you need to be productive, even doing fine fretwork. It has up-front controls, toolless blade change, a light, and a dust blower. As an entry level machine it does come with some compromises. Blade changing is not as comfortable as with some saws, but it gets easier with practice. If the saw fits your budget, I can recommend this machine for a hobbyist."

Saw Features

To test the saw, four staff members cut an assortment of projects ranging from thin fretwork to thick compound cuts. The first thing our beginning scroller noticed about this saw was its large and

brightly colored power switch. Placed front and center, the switch gave that scroller confidence that, should something go wrong, she could turn the machine off quickly. She also found the centrally located speed control convenient.

Unlike many other saws, this one comes with both a stand and a light. The LED light is bright and easy to adjust so it shines exactly where you need it. On the other hand, the dust blower is disappointing. It doesn't blow strong enough to clear the sawdust from the pattern lines and it often drifted out of position. Because they are next to each other, we bumped the light when we adjusted the blower. We actually broke the blower tip during testing. Other accessories include a blade drawer and a dust collection port. (We didn't find either useful and ultimately removed them.)

The Porter Cable can use either pin-end or plain-end blades. Although pin-end blades are more widely available at local hardware stores, we suggest using the more versatile plain-end blades. We tested the saw using

“Widely available, reasonably priced, and tricked out with accessories, Porter Cable’s new model is the best entry-level scroll saw on the market.”

—Bob Duncan

high-quality plain-end blades. They are held in place by a standard thumb screw system and tensioned with a lever on the saw arm. More on the tensioning in a minute.

To make angled cuts, the left side of the saw table tilts 45° using a rack and pinion system with a knob. The angle gauge is in the tabletop. We found the system to be accurate to within 3° when tested with a digital gauge. An adjustable stop makes it easy to return the table to square. If you move the stop aside, you can tilt the right side of the saw down 15°.

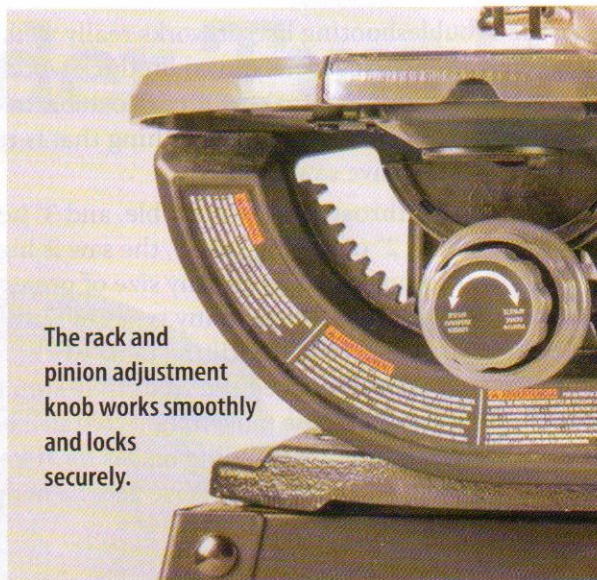
In Action

In our first set of tests, we had testers who loved this saw and testers who hated it. It’s unusual to have such a range of reactions, so we gathered ’round the saw to figure it out. Turns out, there were a couple of easily solved problems that we needed to address.

First, the blades slipped out of the holders. Then, even after we fixed the blade holder, we had trouble changing blades because there so much stuff under the table—a blade drawer, dust collection port, and a solid plastic panel—that even testers with small hands couldn’t reach the blade holder. The blade holders were also oddly loose so they wiggled awkwardly during blade changes.

As we used the saw over the course of two weeks, we gradually lost the ability to tension the blade or even fold down the tensioning lever. Not only did that make scrolling impossible because the loose blade flopped around, but it chewed up the plastic blade insert so that projects caught on the rough edges. We found the removable insert handy for seeing inside the saw during blade changes, but it was recessed just enough to snag the wood while we scrolled.

So, given that list of issues, why do we recommend this saw? Because once we identified and solved our problems



The rack and pinion adjustment knob works smoothly and locks securely.



The topside angle readout is a handy feature, although not entirely accurate.



The adjustable stop returns the saw table to 0° with fairly good accuracy.

(see our Troubleshooting list), it works really well. It cuts smoothly and accurately, even on thick wood. It has very little vibration, making it comfortable to use for long sessions of scrolling—something that is rare among less expensive saws.

With its 18" throat, 12½"-wide table, and 3" head clearance (about 2" of sawing space), the saw is big enough to accommodate almost any size of project and allow you to experiment with many types of scrolling as you explore the hobby. The tilting table works smoothly, and we appreciated the adjustable stop that makes it easy to return the table to horizontal. The head is fixed, which makes feeding blades for fretwork projects a little awkward, but once we got the hang of

blade changes they were quick and easy. We taught a complete novice how to scroll using this saw, and she both enjoyed the process and was eager for more projects.

Porter Cable's model PCB375S will let anyone get started scrolling and try a wide variety of projects without breaking the bank. You may have to fiddle with it a little, but on the whole it works well, has all the features you need to explore the hobby, and is a good value. We recommend it as the best entry-level saw on the market.

The Porter Cable PCB375S is available at Lowe's stores for \$199. To find a store, visit www.lowes.com or call 1-877-GO-LOWES.

Troubleshooting

- **Blade slipping:** We took apart the holder and discovered that the end of the top blade screw was cupped, so only a few thin pieces of metal were making contact with the blade. To fix it, place fine-grit sandpaper on a flat surface. Remove the thumbscrew from the blade holder and hold it upright as you rub it back and forth on the sandpaper to remove any oil from the screw and flatten the surface.

- **Clamping blades tightly:** To better tighten the thumbscrews on his DeWalt machine, reader George A. Ulrick, Jr., of Beatrice, Neb., traced the thumbscrew onto a piece of oak and cut the shape to create a custom wrench. We did the same thing for the Porter Cable and found it helped us fasten the thumbscrews tightly.

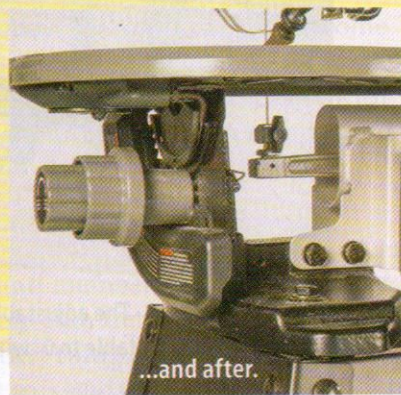
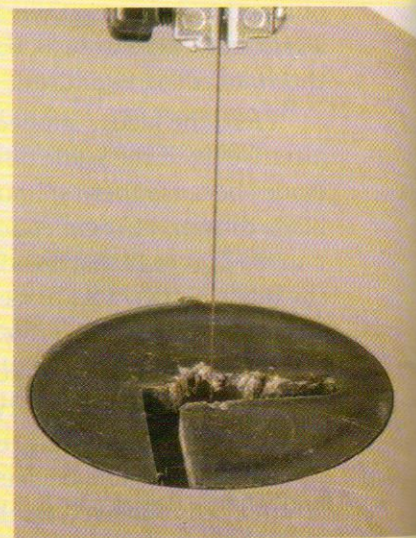
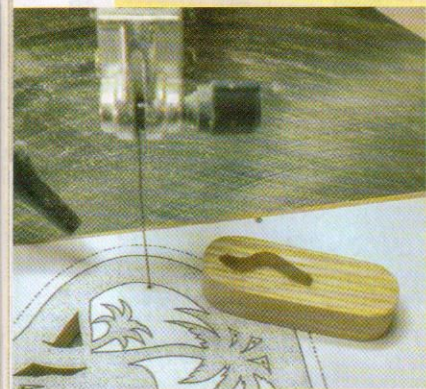
- **Access to bottom blade holder:** Remove the panel from the left side, and remove the blade drawer and dust collection outlet from the right side.

- **Loose blade holders:** Fixing the tensioner helps (see below). If you're still having trouble, replace the roll pin with a machine screw and nut. Use washers around the holder to stabilize it.

- **Tensioner malfunction:** After fiddling with the mechanism, we realized that each time you change and re-tension the blade, you use up a little of the tensioning space between the blade holder assembly and the saw arm; when the space is gone, the tension lever no longer works. To reset it, unscrew the tensioner the whole way. Install a blade with the ends flush with the bottom of the lower blade clamp and the top of the upper blade clamp, and tension the blade. You will need to do this periodically as you scroll.

- **Blade insert:** If your insert sits too low, add a shim to the bottom so it's level with the table or trace it onto a piece of wood and cut a new, thicker one. If the blade chews up the insert, either buy or cut a new one.

- **Dust blower strength:** If the blower doesn't clear the dust and it bothers you to blow the dust away yourself, supplement it with an inexpensive aquarium pump. You can position the aquarium hose as needed or slip it into the existing blower tube. Many scroll saw supply stores carry flexible extension tubes for dust blowers.



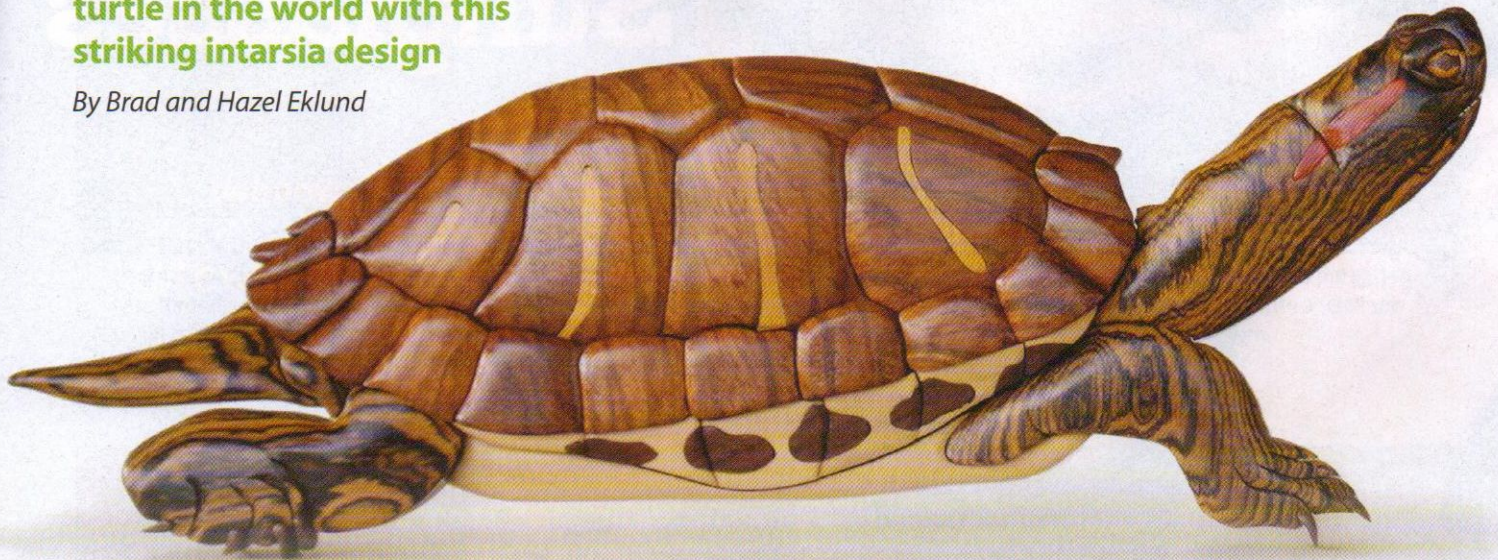
Bottom access before...

...and after.

Red-Eared Slider Turtle

Honor the most common pet turtle in the world with this striking intarsia design

By Brad and Hazel Eklund



The red-eared slider may sound like a wrestling move, but it's just a humble turtle—a common pet found around the world. This relatively small turtle is easily identified by the red streak on each side of its head.

To make this turtle intarsia a success, choose and orient the grain of the wood carefully. The figured grain of the bocote I used on the turtle's exposed skin gives the impression of scaly reptile skin, and the Brazilian cherry I used for the shell has a craggy feel.

TIP

EASY NAILS

Instead of cutting the toenails from a separate dark piece of wood and trying to round them, leave them attached to the feet. Round them with a sander and darken them with a woodburner.



Pattern for the **RED-EARED SLIDER TURTLE** is in the pattern pullout section.

Materials:

- Yellow wood, such as yellowheart, $\frac{3}{4}$ " (1.9cm) thick: shell stripes, $1\frac{1}{2}$ " x $2\frac{1}{2}$ " (3.8cm x 6.4cm)
- Medium wood, such as bocote, $\frac{3}{4}$ " (1.9cm) thick: exposed turtle skin, 4" x $6\frac{1}{2}$ " (10.2cm x 16.5cm)
- Dark wood, such as walnut, $\frac{3}{4}$ " (1.9cm) thick: spots on bridge (the area between the top and bottom shell), $1\frac{1}{2}$ " x $2\frac{1}{2}$ " (3.8cm x 6.4cm)
- Light wood, such as maple, $\frac{3}{4}$ " (1.9cm) thick: bridge 2" x $5\frac{1}{2}$ " (5.1cm x 14cm)
- Red wood, such as padauk, $\frac{3}{4}$ " (1.9cm) thick: red stripe on head, 1" (2.5cm) square
- Black wood, such as wenge, $\frac{3}{4}$ " (1.9cm) thick: nails (optional), 1" x $1\frac{1}{2}$ " (2.5cm x 3.8cm)
- Medium-dark wood, such as Brazilian cherry, $\frac{3}{4}$ " (1.9cm) thick: shell, $3\frac{1}{2}$ " x $7\frac{1}{2}$ " (8.9cm x 19.1cm)
- Backing material, such as Baltic birch plywood, $\frac{1}{8}$ " (3mm) thick: $4\frac{1}{2}$ " x 12" (11.4cm x 30.5cm)
- Wood glue: high quality
- Waxed paper (for gluing)

Materials & Tools

- Spray adhesive
- Tape: blue painter's
- Finish: clear satin
- Picture hanger
- Tools:**
 - Scroll saw blades: #5 or #7 reverse-tooth
 - Drill with bit: $\frac{1}{8}$ " (3mm) dia.
 - Rotary tool with various bits
 - Sanders: mop, disc, and drum
 - Small clamps
 - Woodburner (optional)

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.



Brad and Hazel Eklund have been creating

scroll saw art for the last seven years. They have always been fascinated by the beauty and intricacies of wildlife and nature in general. Brad has a degree in horticulture, while Hazel has a degree in wildlife. They live and work next to a nature preserve in coastal North Carolina.

Wooden Sunglasses

Pay big bucks for wooden sunglasses? No way! Make your own for under \$10

By Steve Carmichael

The first time I saw a pair of wooden sunglasses, I knew I had to make some. After lots of experimentation, I made several pairs that I can actually wear.

I began my research by examining the wooden sunglasses at stores. They are made from both solid and laminated wood, although laminated wood seems to be the most prevalent for strength. Some companies even cut sunglasses out of laminated skateboards. I tried many methods, but the one that worked best for me is using a simple bent lamination technique to create wayfarer-style sunglasses.

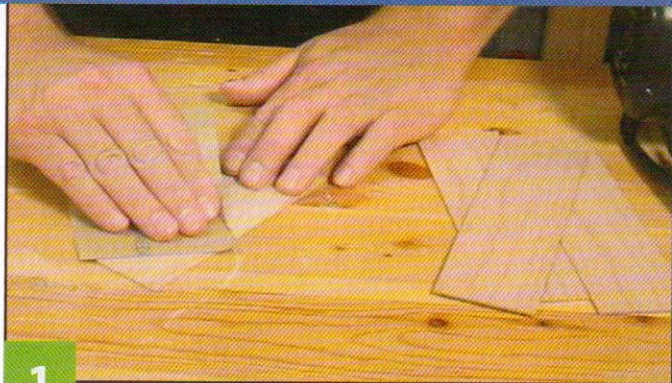
Getting Started

Acquire lenses and hinges prior to beginning this project so you can make the frames suit them. You can repurpose them from old sunglasses or purchase them from sunglasses parts suppliers (see Special Sources on page 27). Measure the thickness of the lenses; mine were $\frac{3}{32}$ " (2.5mm) thick.

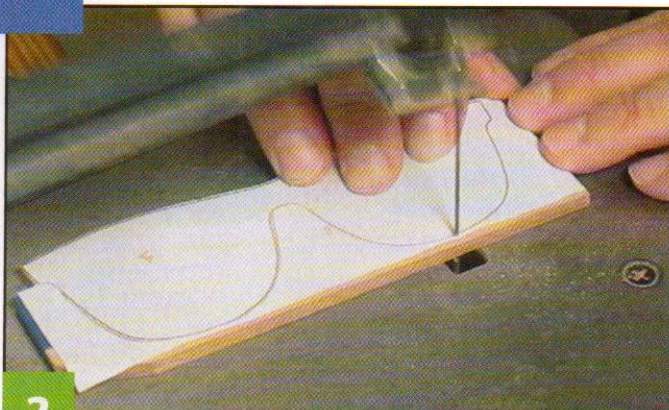


The frame and temple pieces of glasses are curved to fit your head. Use an old pair of glasses as a template and trace the arcs onto the forms to shape your wooden pieces (see Steps 5 and 9).

SUNGLASSES: CUTTING THE FRAMES



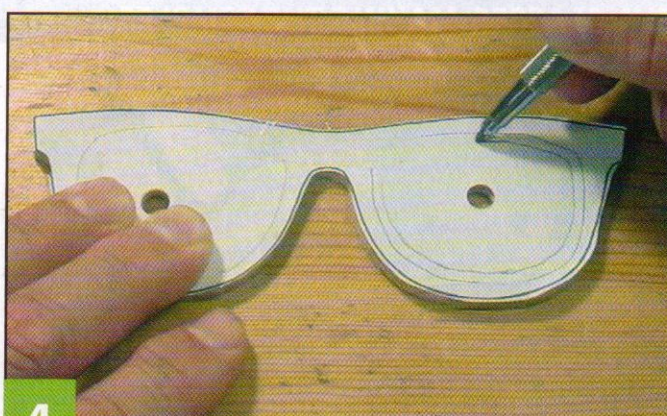
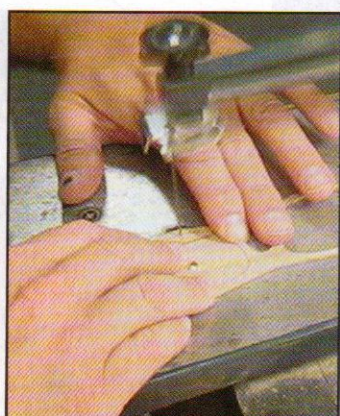
1 Resaw the wood for the frames. Make the pieces the same thickness as the lenses. Cut the pieces to size and sand them smooth. I use three pieces for the frames and two to three pieces for the temples, depending on how thick you want the temples to be.



2 Stack the three frame pieces together and secure with tape. (See page 70 for stacking instructions.) Attach the pattern to the top and cut the perimeter of the pattern with a scroll saw. Separate the stack but don't remove the pattern.

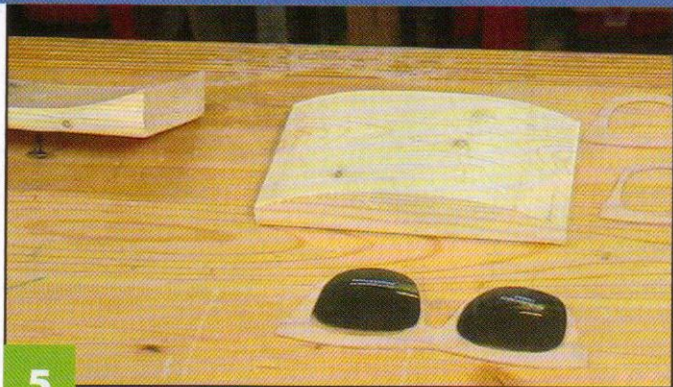


3 Trace the lenses onto the middle layer. Drill blade-entry holes and cut the lens openings. The lenses should fit inside the openings with a little wiggle room around them.

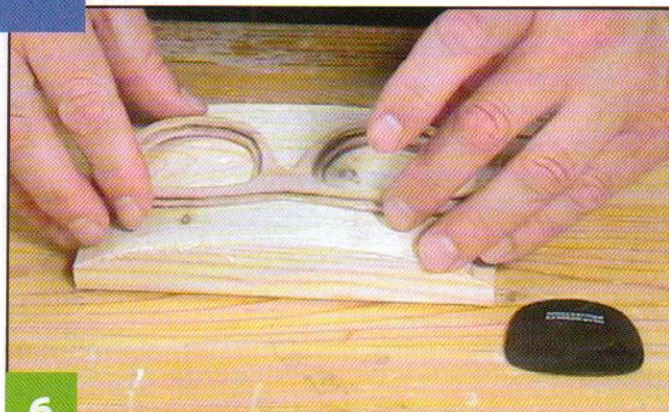


4 Secure the two remaining frame blanks together. Trace the lenses onto the pattern, and then draw another line about $\frac{1}{8}$ " (3mm) inside that line. The openings in the front and back frame pieces need to be smaller to hold the lenses in place. Cut the openings and sand them smooth.

SUNGLASSES: GLUING UP THE FRAMES



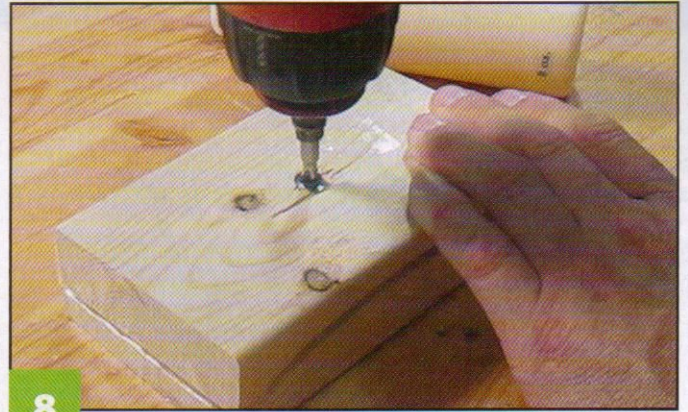
5 Trace the arc from an old pair of sunglasses onto a piece of 2x4. Cut the 2x4 along this line. Drive a long screw through the 2x4 below where you expect the nosepieces to be, and then remove the screw. Cover the inside of the form with packaging tape so the form will not stick to the frames.



6 Spread a thin layer of wood glue on the bottom frame piece and place it on the form. Avoid using too much glue. Align the middle piece with the bottom piece. Set the lenses in place.

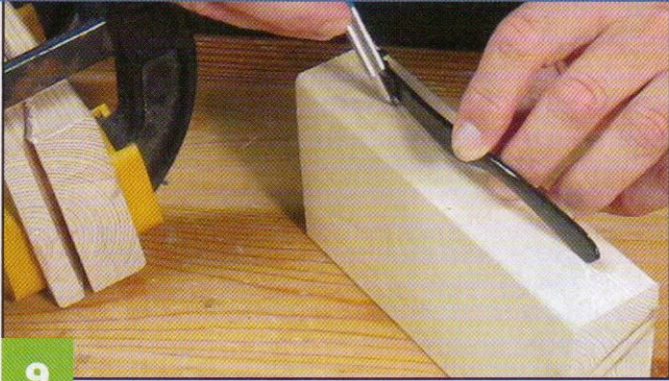


7 Apply a thin layer of glue to the bottom of the top piece and place it in position. Position the stack on the form so the screw hole is in the middle of the frame below the nosepiece.

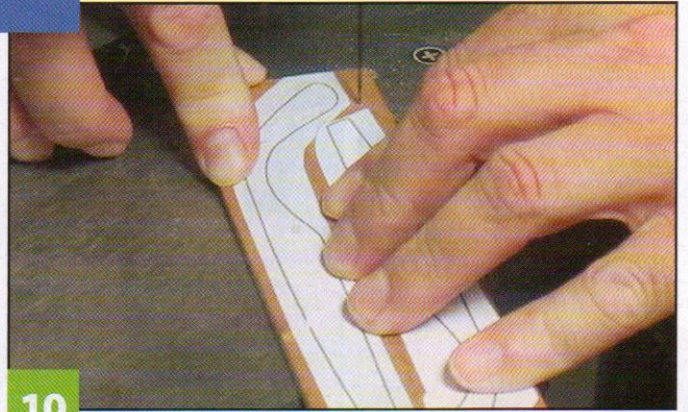


8 Carefully position the top of the form on the stack. Make sure the screw is lined up with the screw hole in the bottom of the form. Screw it down slowly to bend the frames into shape, making sure the frame pieces do not slip out of place. This step requires patience. Secure the form with clamps.

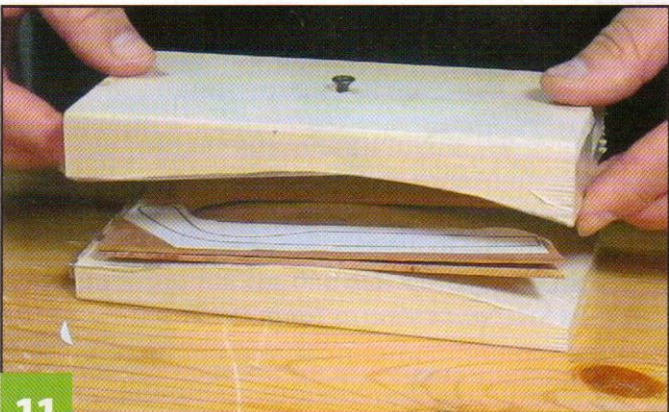
SUNGLASSES: MAKING THE TEMPLES



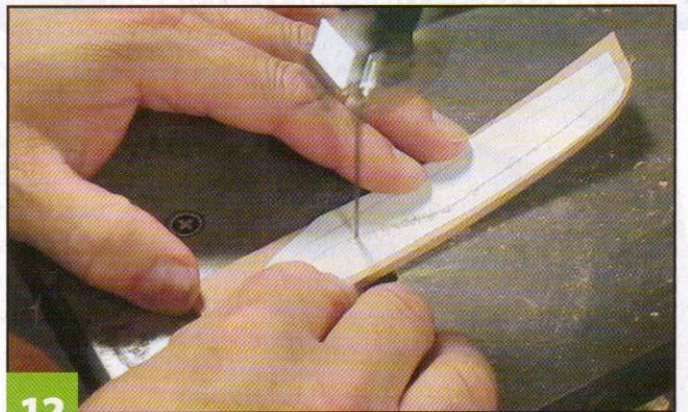
9 Make a second form for the left and right temples. Use a 2x4 and the techniques explained in Step 5.



10 Stack and secure the blanks for the temples. Attach the patterns to the top. Cut around the temple pieces, but leave excess around them at this time. Separate the stacks.

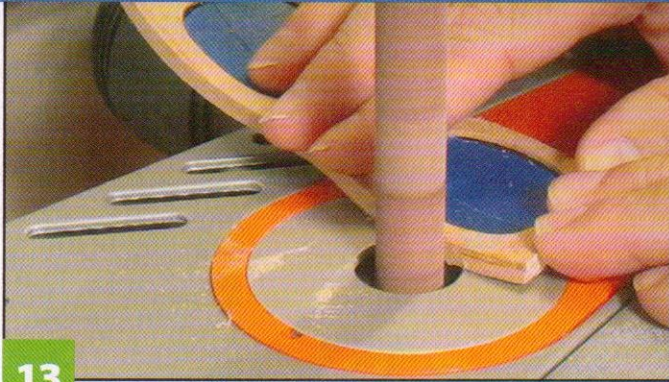


11 Glue the two pairs of temple pieces together. Clamp them in the form, leaving space between them for the screw. Make sure one pair is flipped over, because the left and right temples bend in opposite directions. Make sure the pieces do not slip out of place as you tighten the screw. Add clamps to secure the form. Allow the glue to dry.

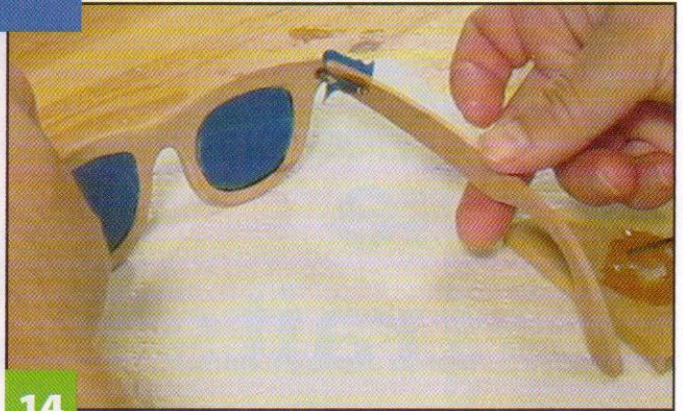


12 Remove the pieces from the forms. Peel off any glue from the lenses. Cut the temples to their final shape; I put a reversed version of the pattern on the underside of one of the temples so you can cut them with the ends bending upward.

SUNGLASSES: ASSEMBLING THE GLASSES

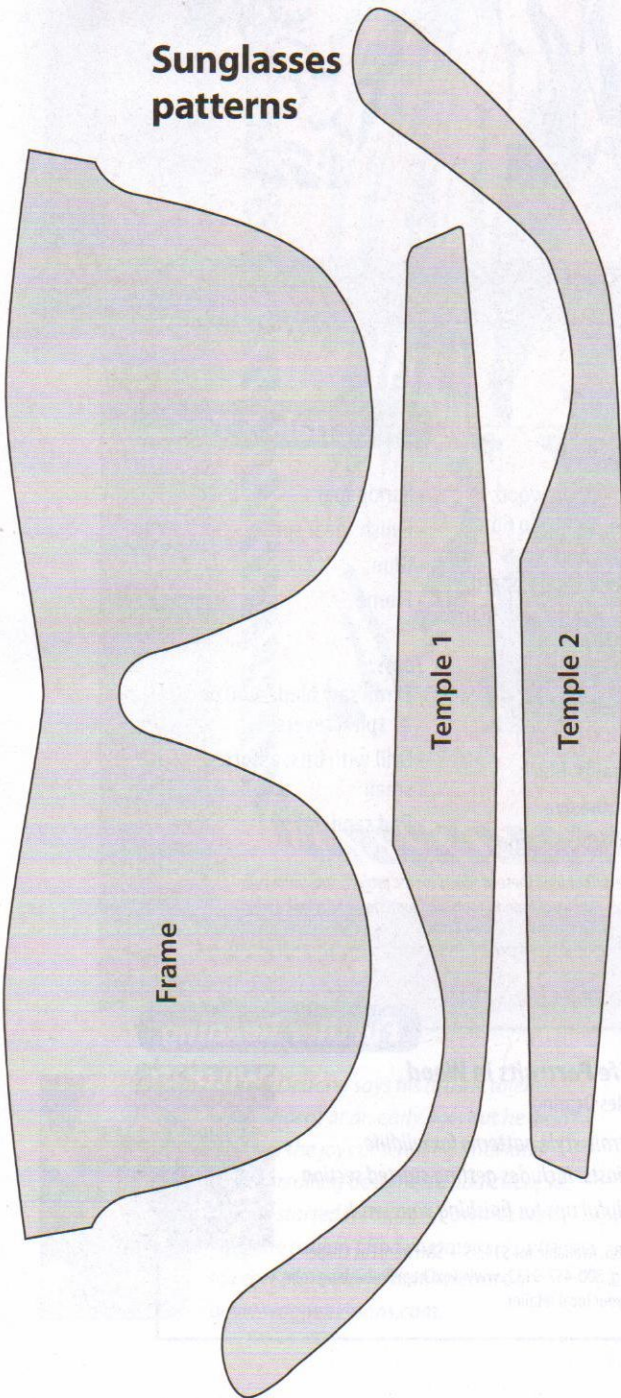


13 Cover the lenses with blue painter's tape. Sand and shape the frames and temples. Use a rotary tool with a sanding drum.



14 Use hinges to attach the temples to the front frames. I use epoxy to attach spring hinges cut from metal reading glasses, or you can use any eyeglass hinges. Make sure the temples are in the correct position and the sunglasses lay flat on the table during glue up. Do not glue the hinges shut. Apply mineral oil or a beeswax finish; some other finishes can irritate the skin.

Sunglasses patterns



© 2018 Scroll Saw Woodworking & Crafts

Materials & Tools

Materials:

- Hardwood, $\frac{3}{32}$ " (2.5mm) thick*: 5 each, 2 $\frac{1}{2}$ " x 6" (6.4cm x 15.2cm)
- Construction 2x4: gluing forms, assorted scraps
- Sunglasses hardware: lenses, hinges
- Wood glue
- Tape: packaging, blue painter's
- Epoxy
- Sandpaper
- Finish, such as mineral oil or beeswax
- Wood screw, long: 2 each
- Sunglasses, old (sample)

Tools:

- Band saw or table saw
- Scroll saw blades: #3 reverse-tooth
- Drill with bits: assorted
- Rotary tool with a sanding drum
- Screwdriver
- Clamps

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

SPECIAL SOURCES:

The author buys sunglasses at "dollar" stores to disassemble for parts. Professional-grade hinges are available from qtana.com/eyeglass-parts-eyeglass-hinges-c-2119_1630.html; lenses are available from fuselenses.com.

*Thickness of wood should match thickness of lenses



Steve Carmichael has been woodworking since childhood and he resides in Atlanta, Ga., with his wife and three children. Look up his YouTube channel "The Carmichael Workshop" and visit his website at www.TheCarmichaelWorkshop.com for this and more fun projects.

Handsome Horse Portraits

Evoked the majesty of wild mustangs with just a few frets

By Charlie Dearing

Humans have partnered with horses for more than 5,000 years. We have admired their beauty while harnessing their strength—think of knights on battle steeds, cowboys roaming the range, pony express riders racing across the country, and matched teams pulling carriages, wagons, and plows. Cut a tribute to man's most useful animal friend with this impressive stallion or touching mare and foal portrait.

Cutting the Portraits

Stack and secure at least two boards (see page 70 for instructions). Attach the pattern to the stack and cover it with clear packaging tape to lubricate the blade, if desired. Drill blade-entry holes and cut the frets. I use spiral blades. Save the large cutout pieces as you cut.

After you finish cutting, remove the pattern and packaging tape, using mineral spirits or another adhesive remover as needed. When the wood is dry, replace the large cutout pieces, and carefully sand it with a pad sander. The cutout pieces help support the delicate fretwork.

Finishing the Portraits

Remove any sander dust with compressed air or a tack cloth. Apply a clear spray finish, or add color as desired. Paint the backing board black or use black felt, and glue the backing to the portrait. Frame as desired.



Materials & Tools

Materials:

- Baltic birch plywood, 1/8" to 1/4" (3mm to 6mm) thick; per portrait, optional backing board, 2 each 10" x 14" (25.4cm x 35.6cm)
- Black felt: backing (optional), 10" x 14" (25.4cm x 35.6cm)
- Spray paint: black
- Spray adhesive
- Tape: clear packaging

- Sandpaper
- Finish: clear spray
- Glue
- Frame

Tools:

- Scroll saw blades: #0 or #1 spiral reverse
- Drill with bits: assorted small
- Pad sander

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Further Reading

Wildlife Portraits in Wood

By Charles Dearing

30 portrait-style patterns for wildlife enthusiasts. Includes getting started section and helpful tips for finishing your work.

Item #3386. Available for \$14.95 + S&H from Fox Chapel Publishing, 800-457-9112, www.FoxChapelPublishing.com, or check your local retailer.

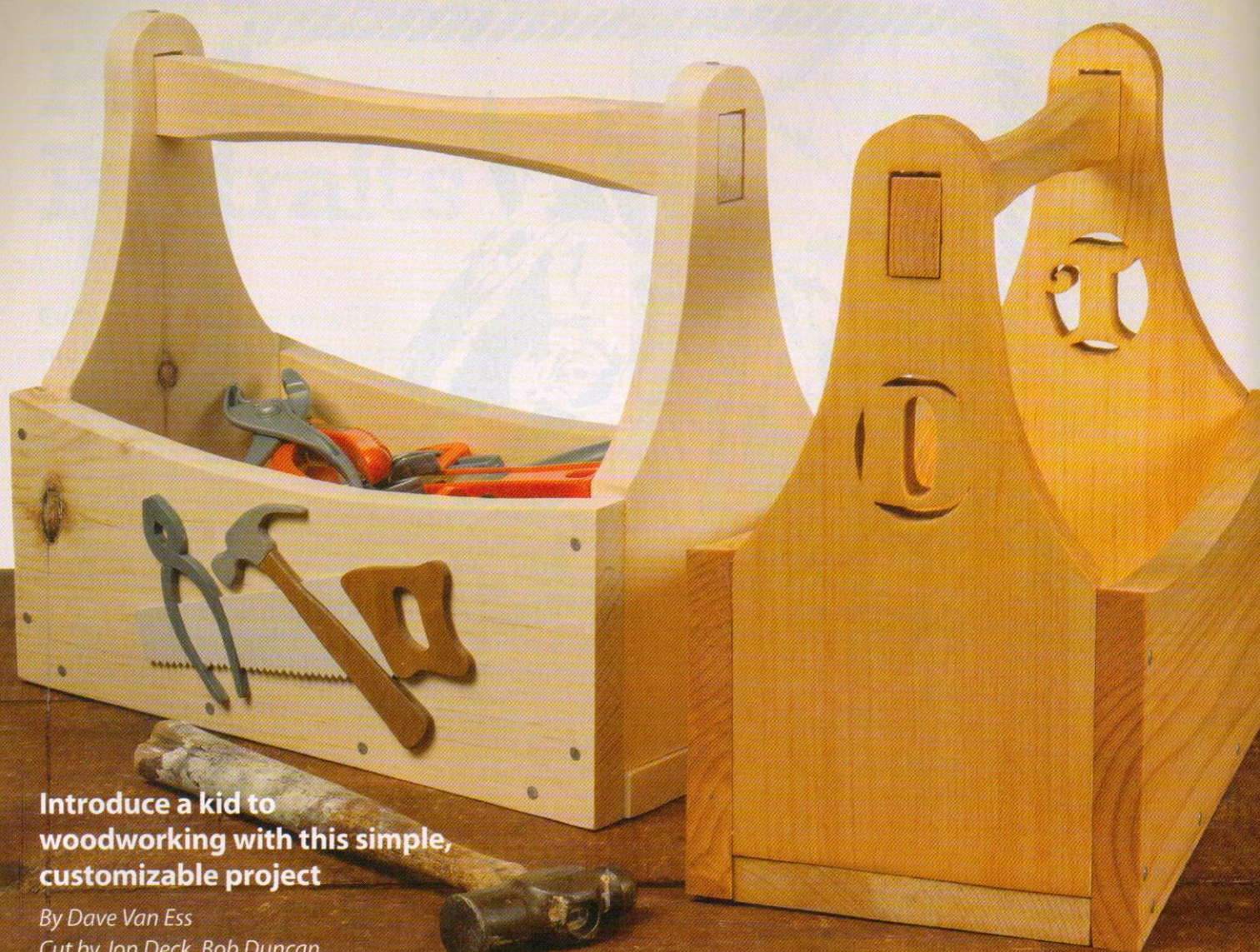




Charlie Dearing says his artistic talents were evident at an early age, but he didn't discover the joys of scrolling until later in life. Scrolling became an addiction, so Charlie started creating his own designs when he couldn't find commercial patterns to meet his needs. Visit his website at www.woodenvisions.com.

Patterns for the **HANDSOME HORSE PORTRAITS** are in the pattern pullout section.

A Child's 1st Toolbox



Introduce a kid to woodworking with this simple, customizable project

By Dave Van Ess

Cut by Jon Deck, Bob Duncan,

Mindy Kinsey, and Kaylee Schofield

If a child can hold a hammer, they can make this toolbox. Using construction lumber makes it easy to cut.

This is an ideal first woodworking project for a preschooler. You can cut and drill the pieces; the child can line up the parts and glue and nail them in place with a little help. The pieces (and a small hammer) will fit into a flat-rate postage box, so you can do the project long-distance if necessary.

With help, older kids can cut the pieces and use a drill press to make the holes. They will need less help assembling, and you can encourage them to be creative with the decorations.

Cutting the Pieces

Cut 1x6 lumber to size for the various parts. Attach the patterns to the sides and ends, and cut the curves. Decide if you're going to use a piece of pine or a dowel for the handle, and then drill or cut the holes in the ends as appropriate. If you make the handle from pine, tilt the saw table to a 45° angle and cut the bevels marked on the pattern. Drill the pilot holes for the nails in the sides and bottom. Cut a custom name or monogram, or cut silhouettes to decorate the ends and sides. Sand as needed.

ON THE WEB Download scroll-friendly fonts from our website.
www.scrollsawer.com

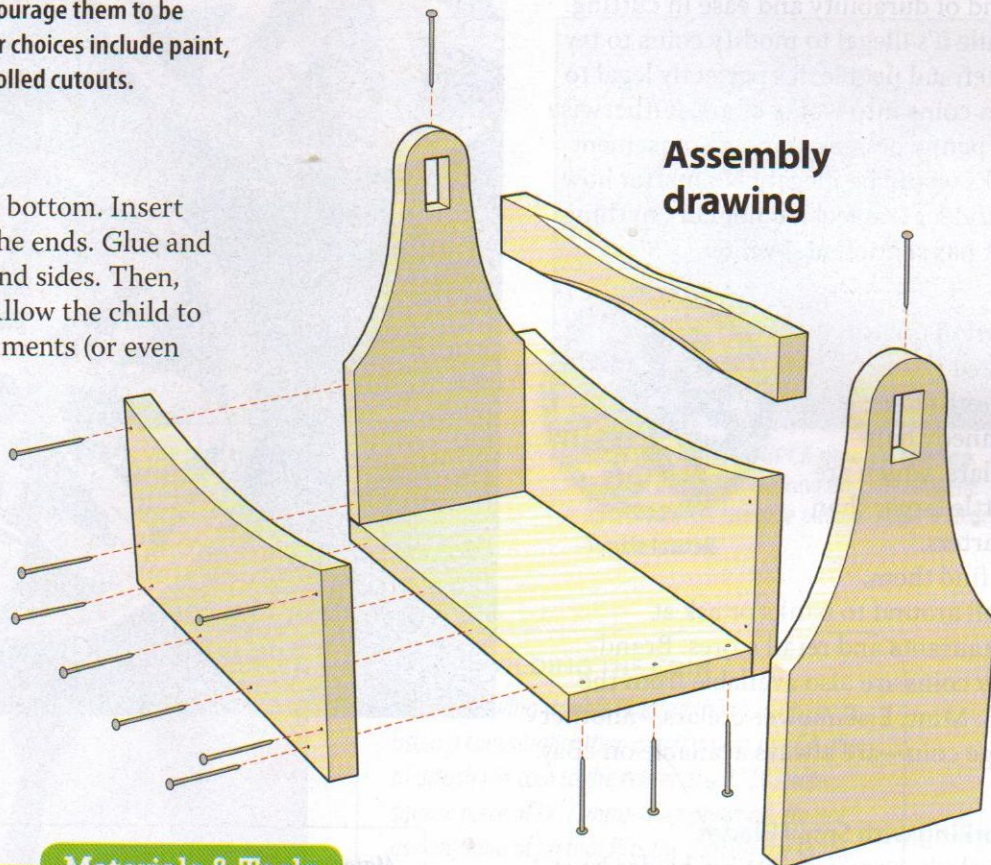


This toolbox is easy enough that a kid can make and decorate it with minimal help. Encourage them to be creative with their decorations; our choices include paint, woodburning, stain, plain, and scrolled cutouts.

Assembling the Toolbox

Glue and nail the sides to the bottom. Insert the handle into the holes in the ends. Glue and nail the ends to the bottom and sides. Then, nail the handle to the ends. Allow the child to decorate any of the embellishments (or even the actual box) with markers, paint, or stickers. Glue and clamp any embellishments to the sides. No finish is required.

Patterns for **A CHILD'S 1ST TOOLBOX** are in the pattern pullout section.



Materials & Tools

Materials:

- Construction pine 1x6: 6' (1.83m)
- Construction pine 1x2: 16" (40.6cm) OR dowel, 3/4" (1.9cm) dia. x 16" (40.6cm) long
- Nails: 24 each 5d or 1 3/4" (4.4cm) long
- Sandpaper
- Wood glue

Tools:

- Scroll saw blades: #5 reverse-tooth
- Drill with bits: 1/16" (2mm)-dia. twist; 3/4" (1.9cm) spade (optional)
- Hammer

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.



Dave Van Ess is a retired engineer living in Chandler, Arizona. He has been woodworking for 40 years and scrolling for 30 years. He is the president of Arizona Woodworkers (a greater Phoenix area woodworking club) and volunteers one day a week teaching woodworking to four-year-olds at a local day care.

Cutting Coins

Transform a common coin into a work of art

By Randy Gloden

Fretwork designs cut from metal will always generate a conversation. You can cut most thin, soft metals with a scroll saw, so I find coins to be a good blend of durability and ease in cutting. While it's illegal to modify coins to try to defraud people, it's perfectly legal to turn coins into works of art. (Otherwise the penny presses at most amusement parks would be illegal.) No matter how confident you feel, do not cut anything that has sentimental value.

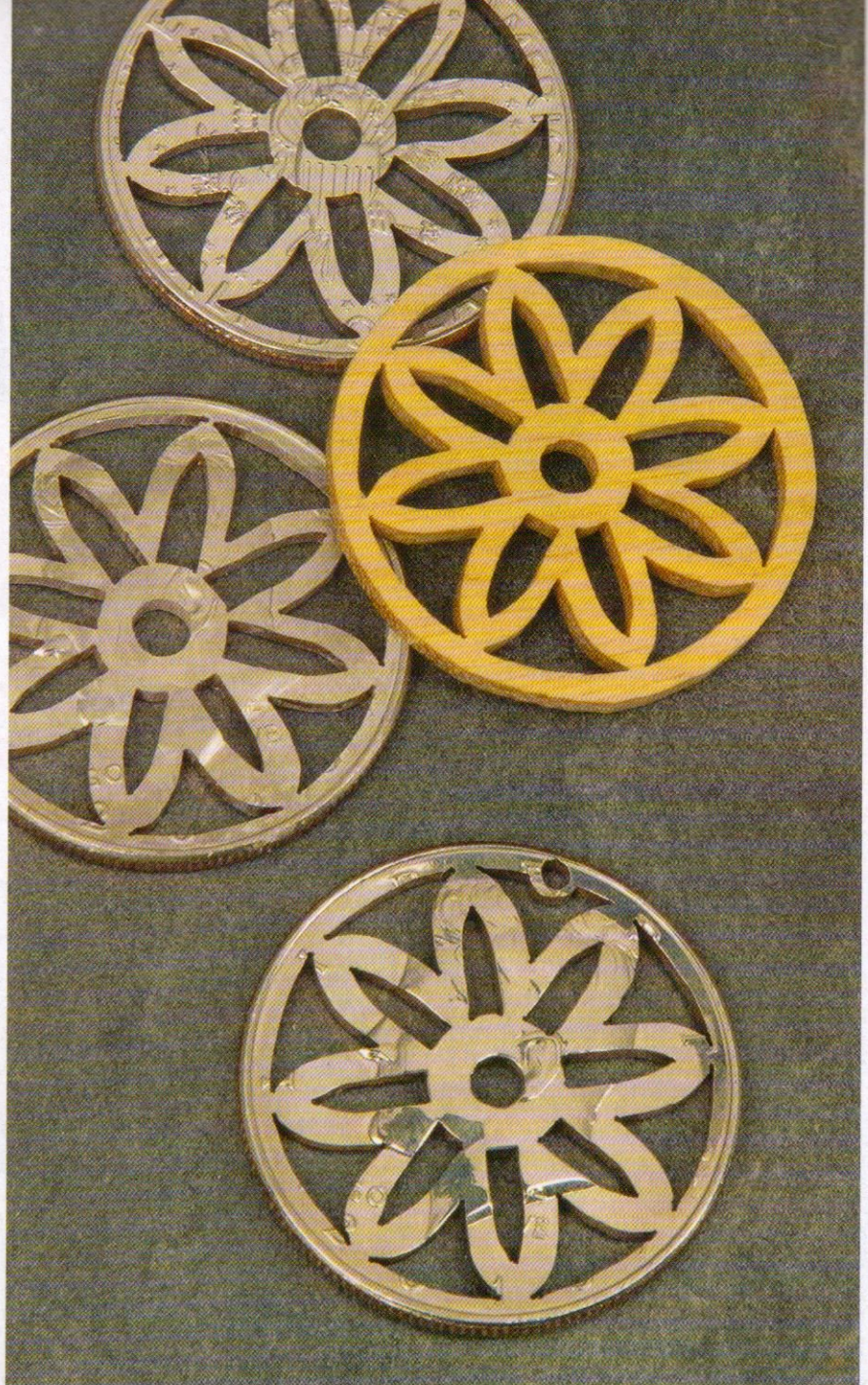
Finding Coins

I sized this pattern to fit Kennedy half-dollars, which are a little larger than quarters.

To find them, I call around to banks or ask at restaurants and retail stores. Brand-new coins are also available from the U.S. Mint. Eisenhower dollars—another large coin—are always available on eBay.



Actual size



Working with Small Blades

Jeweler's, or metal-cutting, blades have smaller teeth that are set closer together than standard $\frac{3}{8}$ blades. Olson, Flying Dutchman, and Pegas carry them. When working with them, you might need to adjust your saw. For my Hegner, I had to purchase the special blade clamp for small blades. For the new Jet scroll saw, you might need to adjust the setscrews on the top blade holder. If your saw struggles to hold the fine blades, contact the manufacturer for assistance.

Materials:

- Coin: Kennedy half-dollar preferred, but pattern can be reduced/enlarged for other coins
- Glue: impact-resistant (flexible) cyanoacrylate (CA) glue
- 3-in-One oil
- Acetone in a small jar
- Dish soap
- Polyethylene disposable gloves
- Sandpaper (optional)
- Polishing compound (I use Mag & Aluminum polish)

Tools:

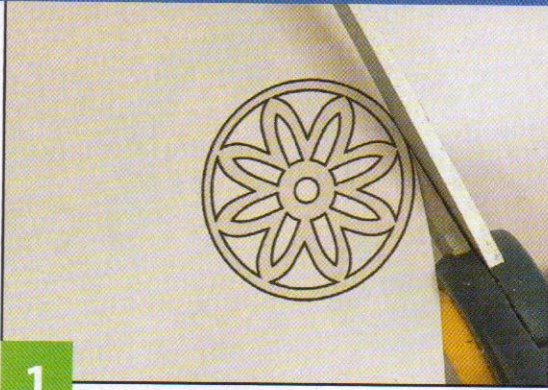
- Scissors
- Toothbrush

Materials & Tools

- Spring punch or sharp center punch
- Drill with bits: $\frac{1}{16}$ " (2mm) dia. or smaller
- Scroll saw blades: #2/0 jeweler's
- Rotary tool with buffing wheel

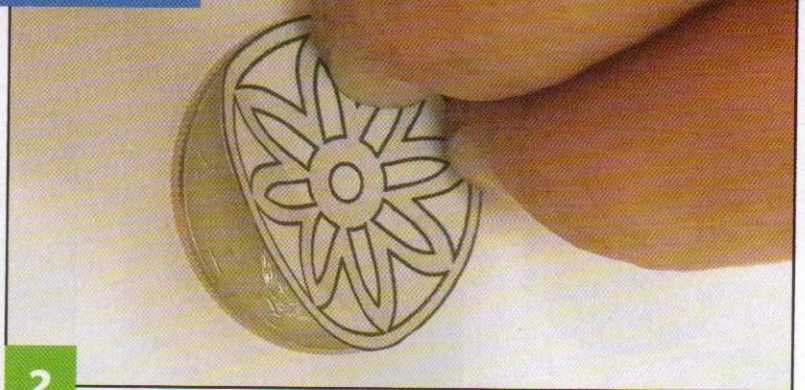
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

COIN: PREPARING TO CUT



1

Scrub the coin with dish soap and water to remove the oil and grime. Cut the pattern carefully around the perimeter. Be precise, because you will use this outside edge to center the pattern on the coin.



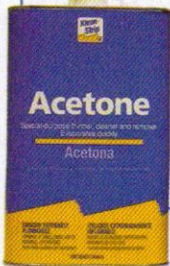
2

Center the pattern on the coin with no glue. Wear polyethylene disposable gloves. The placement needs to be nearly perfect, so take your time positioning it correctly. Hold the pattern in place with one hand while you pull up one edge of the pattern and add a drop of impact-resistant (flexible) cyanoacrylate (CA) glue under the lifted edge. Press down until the glue sets.

TIP

REMOVING THE PATTERN

If you are not happy with the position of the pattern, soak the coin in acetone to free the pattern. Carefully remove the pattern from the acetone and allow it to dry. Unlike water, the acetone will not ruin the pattern.



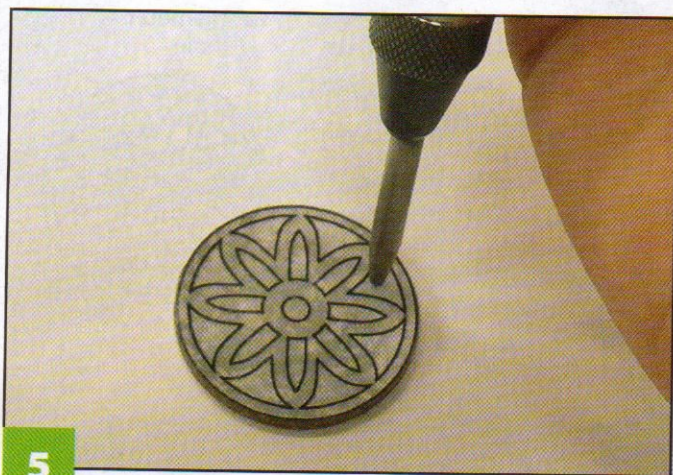
3

Lift the rest of the pattern. Apply several drops of CA glue and spread a thick layer over the rest of the coin. Press the pattern down into the glue. Allow the glue to dry for an hour.



4

Place a drop of CA glue on the top of the pattern. Wearing the polyethylene gloves, spread the glue out and allow it to dry for 10 minutes.



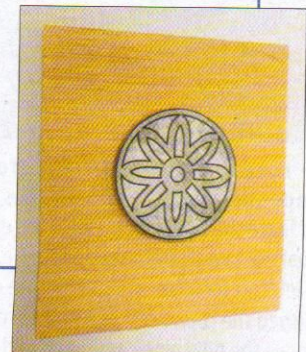
5

Create divots for the blade-entry holes. Use a spring punch or sharp center punch to create divots in waste areas. Take your time and make sure these divots are well away from the bridges between the frets. These divots keep the drill bit from wandering.

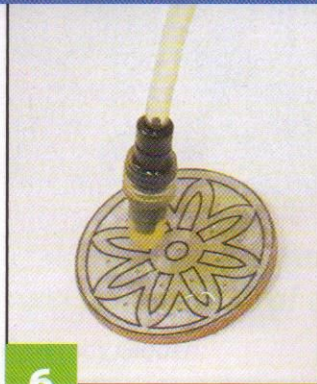
TIP

HOLDING THE COIN

If you're having trouble holding the coin, or you're using a coin smaller than a half dollar, use CA glue to attach the coin to the center of a 2" (5.1cm)-square piece of 1/8" (3mm)-thick plywood. Do not use any kind of jig that lifts the coin off the table. That will leave the bottom of the coin unsupported and cumbersome to manipulate. My approach keeps the coin low so that you can easily turn it with your fingertips.

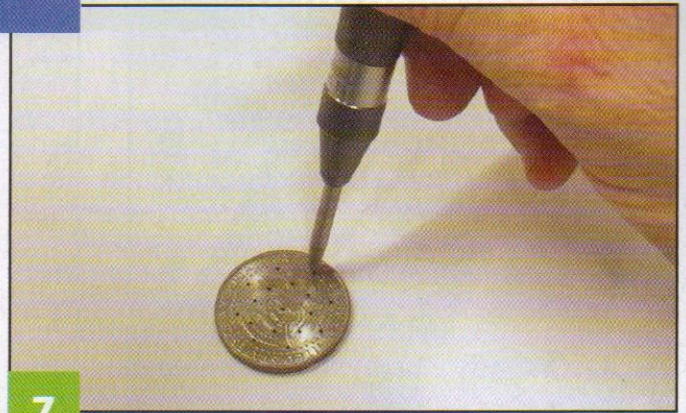


COIN: CUTTING THE COIN



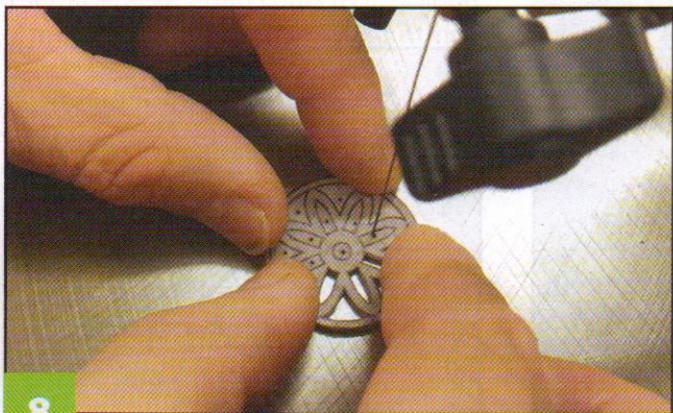
6

Place a drop of 3-in-One oil in each divot or cover the coin completely in oil. (You need to lubricate the drill bit or you will burn it out.) Drill $\frac{1}{16}$ " (2mm) or smaller blade-entry holes using the divots. After drilling, use a paper towel to remove the oil from the coin.



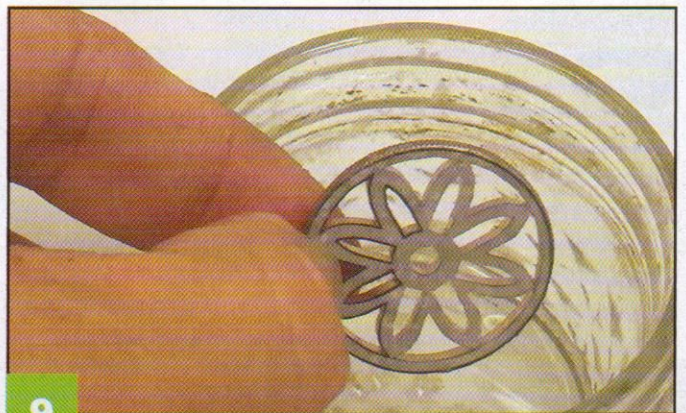
7

Remove any burrs left by the drilling. Place the coin on a soft cloth with the pattern side down. If the coin is attached to plywood, use sandpaper to remove the burrs. If the coin is by itself, use a spring punch on each blade-entry hole.



8

Cut the coin slowly. Make the turns slowly. Do not try to spin the blade in the sharp corners; cut into the corners from each side. You will break plenty of blades, but with practice, you will break fewer. If the blower doesn't blow the metal shavings from the pattern line, use an old toothbrush to clear the line.



9

Soak the coin in acetone to remove the pattern and the plywood. I let the coins soak for a few hours. Remove the coin, and then clean and dry it with a paper towel.



10

Load a buffing wheel for a rotary tool with polishing compound. Use it to buff both sides of the coin. For patterns that leave the original outside edge exposed, I polish that edge to reveal the beauty of the copper there. If the coin starts to warm up, let it sit for a few minutes before continuing. Once you have polished the coin, use a toothbrush, dish soap, and hot water to remove the polishing compound and clean the coin.



Besides cutting coins, Randy Gloden enjoys many facets of scroll sawing and is always experimenting, trying to find something different. He has created

projects ranging from chocolate inlays to dovetail boxes. You can always find him in the forum at www.scrollsawer.com with the username Hotshot.

Coin pattern

$\frac{1}{16}$ "-diameter hole



A WORD ON SAWS

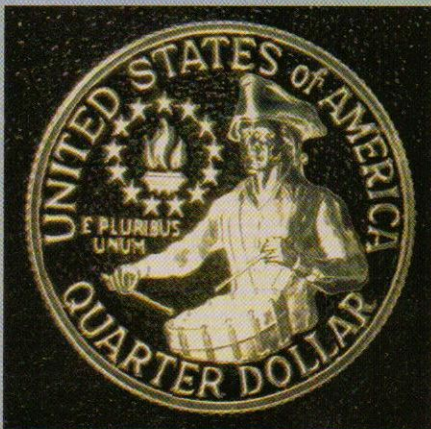
If you use a saw where the blade pulls the top arm down, such as a Hawk or Hegner, run it at a slower speed. The mechanism creates stress on the blades as the speed increases, which breaks jeweler's blades faster.

CUTTING COINS

— two ways —

(Right) Randy Gloden uses coins as raw material and transforms them into intricate custom images.

(Below) Colin Kleis of Cut Coin Store (cutcoinstore.com) in Murrieta, Calif., uses delicate cuts with a jeweler's saw to preserve and highlight the original image of each coin.



SUPER SIMPLE Tea Light Holders



Sleek design is easy to make and displays candles safely

*By Sue Mey
Cut by Dennis Knappen*

Whether you're planning a picnic, a dinner party, or a romantic evening in, these candle holders are perfect for adding a twinkle to your table. Cut single holders to scatter around a room or deck, or combine designs to make a whole row of holders for a centerpiece or mantle display. These are great for showing off your scrolling—or, leave off the overlay and highlight a single piece of pretty wood from your stash. You'll find lots of uses for this design.

Note: To prevent fire and serious injury, always burn candles within sight on a level, heat-resistant surface.

Cutting the Pieces

For best results, the base and feet should have square edges. If you don't have a table saw, cut these pieces oversized and sand them to their final shape.

Stack and secure the overlays (see page 70 for instructions). If your base and feet are dark wood, choose a light wood for the overlays, and vice versa if you use light wood for the base and feet. Cut the fretwork, separate the stack, remove the patterns, and sand the pieces smooth.

Assembling the Candleholders

Glue and clamp the overlay to the base. Sand off any overhangs. Drill a hole for the tea light, approximately as deep as the candle is tall. Sand away any fuzzies from the drill bit. Next, glue and clamp the feet to the base. Make sure the grain runs side to side and matches the grain direction of the base. Do not glue the end grain of the feet to the base. Apply a clear finish; choose an outdoor finish if you plan to use them outside.

Materials & Tools

Materials:

- Wood, 1" to 1½" (2.5cm to 3.8cm) thick: feet, 4 each 1¾" (3.5cm) square; base, 4" (10.2cm) square
- Wood, ⅛" (3mm) thick: overlay, 4" (10.2cm) square
- Wood glue
- Sandpaper
- Finish: clear

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Tools:

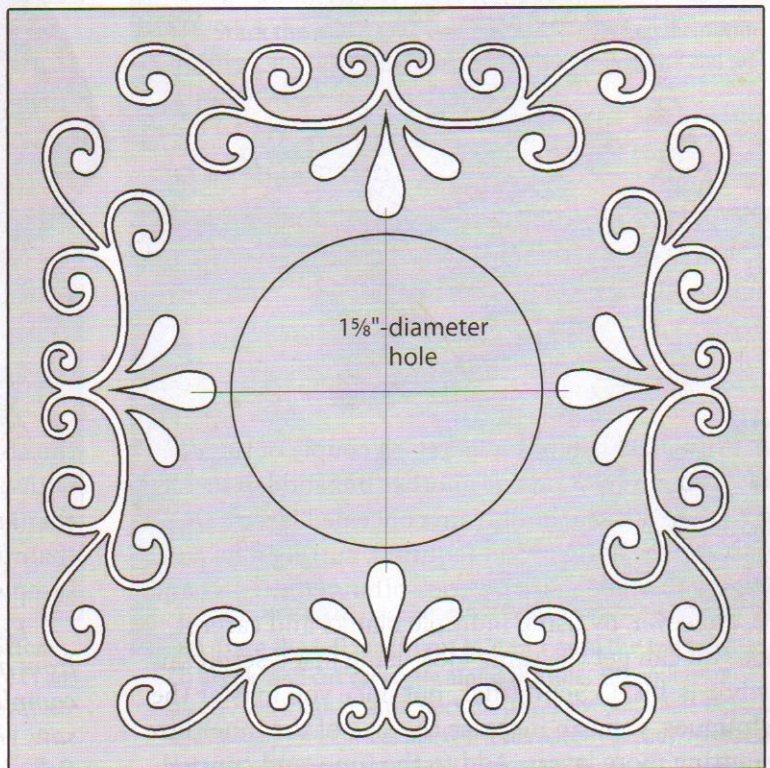
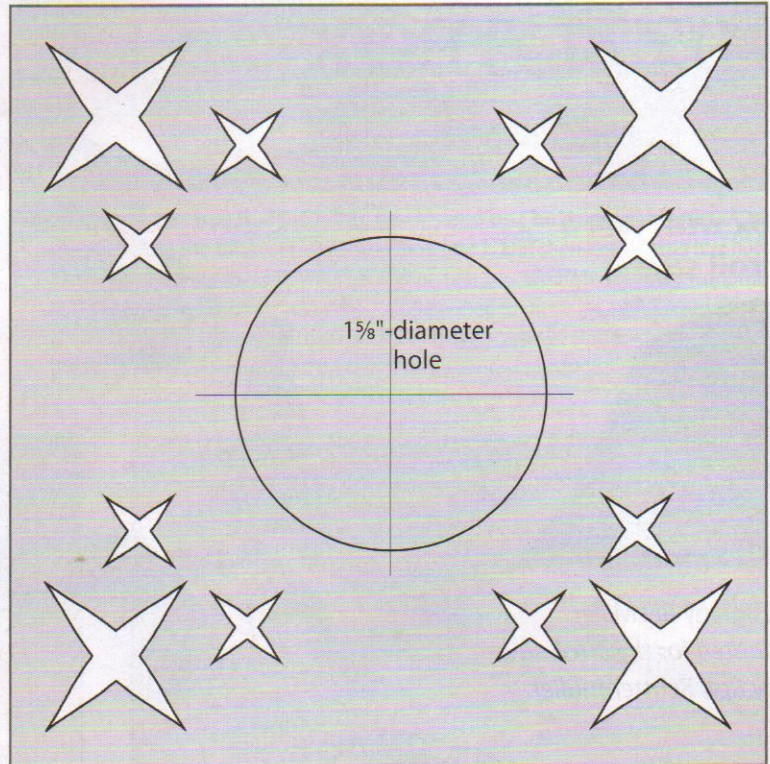
- Scroll saw blades: #3 reverse-tooth
- Drill with bits: assorted small; 1½" to 2" (41.3mm to 50.8mm)-dia. spade or Forstner
- Clamps



Sue Mey lives in Pretoria, South Africa. To see more of her work, including a wide variety of patterns and pattern-making tutorials available for purchase, visit www.scrollsawartist.com. She can be contacted at suem@storage.co.za. Her pattern book, *Lighted Scroll Saw Projects*, is available from

www.schifferbooks.com and other outlets.

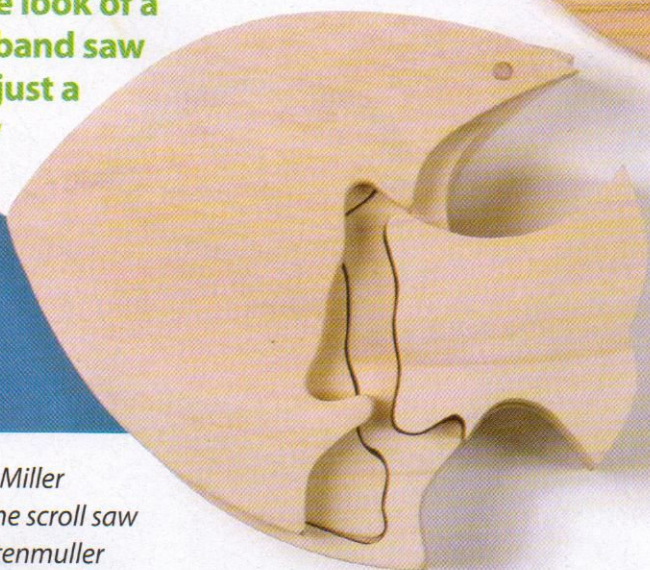
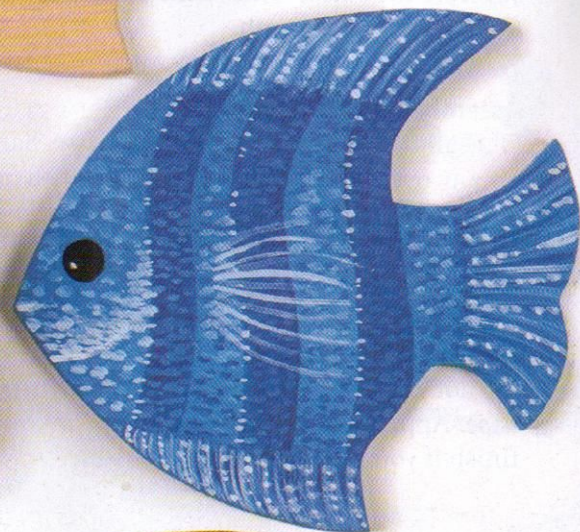
Tea light holder patterns



School of Fish PUZZLE BOX

Create the look of a complex band saw box with just a scroll saw

Design by Bill Miller
Adapted for the scroll saw
by Rolf Beuttenmuller



This angel fish has a secret—a couple of them, actually. Not only is another box hidden inside, but the box itself is built from concealed layers. Due to the thickness of the wood required, cutting a nested box from a single piece of stock often requires a band saw. However, by using multiple blanks and careful cuts, you can get the same look using just a scroll saw. My box is 1 3/8" (3.5cm) thick, but once you master the techniques, you can increase the size of the inner box by cutting more layers. Add to the fun—and conceal

the construction method—by decorating the box with painted, woodburned, or carved accents. Special thanks to Bob Hershey (carving), Kristen Scanlan (painting), and Jo Schwartz (pyrography) for their sample designs.

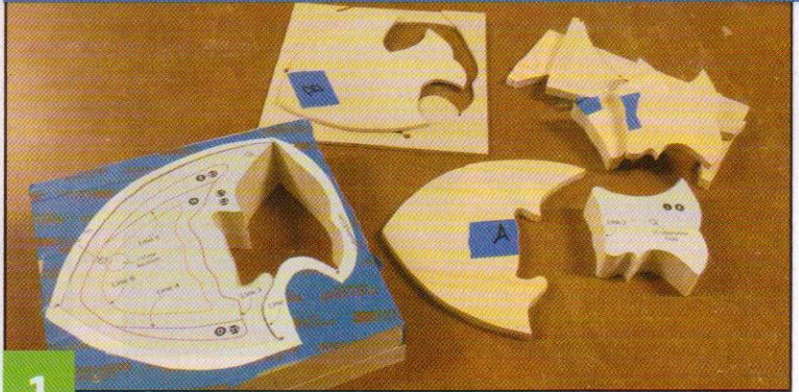
Editor's Note: It's possible to make this entire box from a single piece of thick wood. For Bill Miller's complete instructions, which require the use of a band saw, visit www.ScrollSawer.com/2018/03/02/creating-fish-shaped-puzzle-box/.

PUZZLE FISH: CUTTING THE PIECES

Getting Started

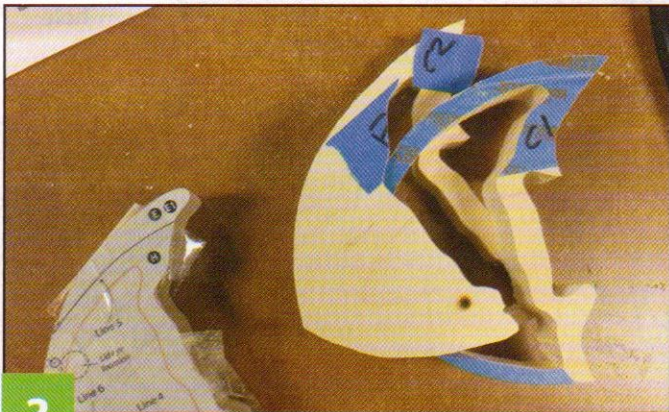
For this project, we will stack together different parts, separate the stacks, and cut other pieces. To make things easier to stack, this project uses a few standard dimensions, because it's easier to stack like-sized blanks together. For instructions on stacking wood, see page 70.

Cut the blanks to the sizes listed in the chart. *Note: Some parts end up being cut from the same blank. Sand the blanks smooth. Do not attach patterns until instructed to. As you cut the pieces, use blue painter's tape to label them with their part numbers.*



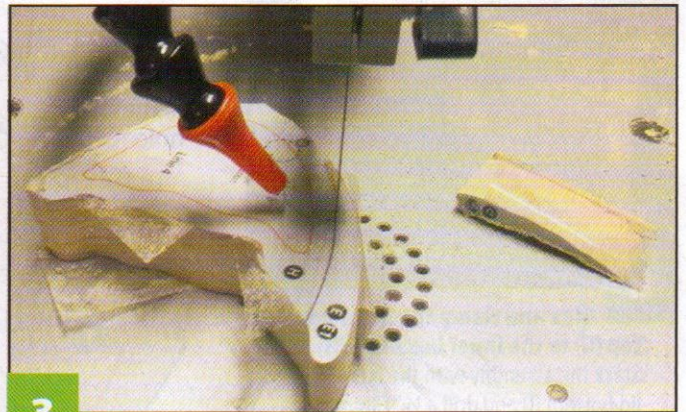
1

Stack the box body (C1, C2), lid (A), and box bottom (B) blanks. Attach the pattern to the thickest blank. Cut along line 1, and then remove the box bottom (the only complete fish you will cut). Cut on line 2 to separate the body from the tail. Remove the lid layer; set aside the body-shaped piece (A) and discard the tail-shaped piece. Set aside the thick tail piece (K); discard the thinner tail piece. Keep the body pieces enclosed in the stack so it's easier to add more layers.



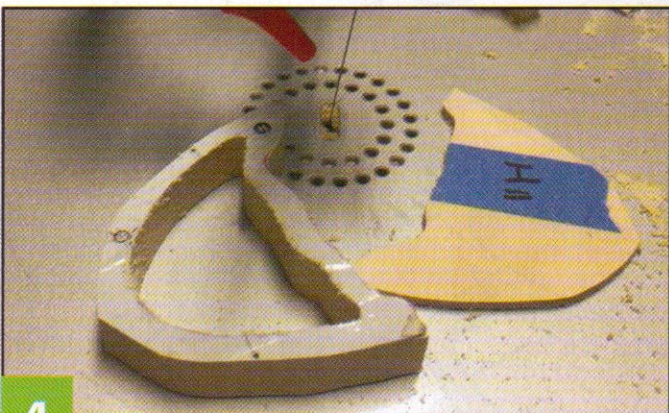
2

Attach the blanks for the inner lid (F) to the bottom of the stack. Drill a blade-entry hole and cut along line 3. Separate the stack. Set aside the two largest pieces (C1, C2) and one piece F. Discard the smaller 1/4" (6mm)-thick piece (it is too thin, so we will cut another one in Step 4).



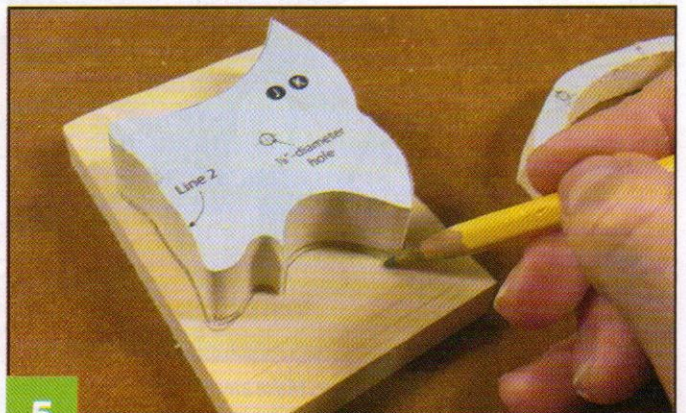
3

Stack the remaining two pieces (C1, F). Wrap them with clear tape, and cut along lines 4 and 5. Separate the stack and set aside pieces D1, D2, E1, E2, and G.



4

Stack the blanks for the inner box body (H) and bottom (I) with blank H on top. Peel the remaining pattern off piece C1 and attach it to blank H. Cut the perimeter only of the stack. Remove piece I, and then cut the inside of piece H.



5

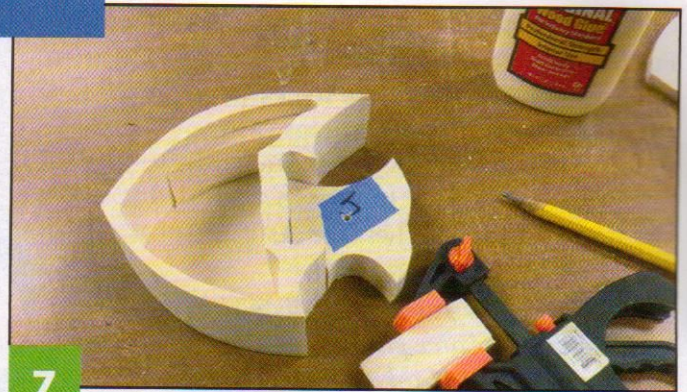
Trace the tail top (K) cut in Step 1 onto the tail bottom (J) blank, and cut carefully along the line. The outlines of pieces J and K must match. Stack the pieces and drill a hole through J and halfway through K as marked. If you haven't already, remove all patterns and label the pieces for easy assembly.

PUZZLE FISH: ASSEMBLING THE BOX



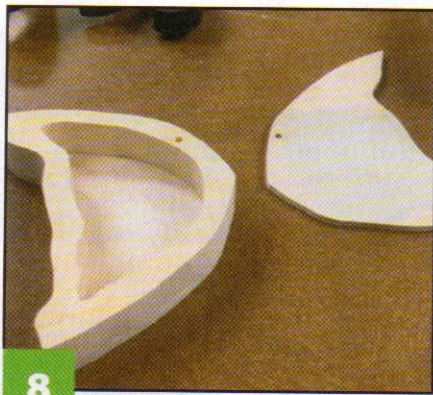
6

Glue the box body pieces (C1, C2) together. Allow them to dry, and sand the inside flush. Slide the tail pieces (J, K) into the box body, place the assembly on the box bottom (B). Glue and clamp the body pieces and tail J to the bottom. Sand the perimeter flush.



7

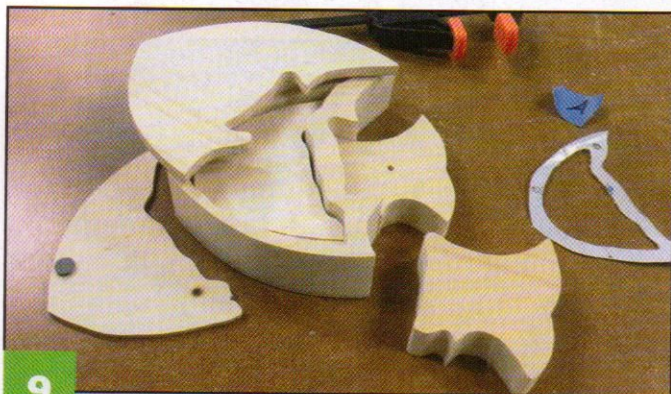
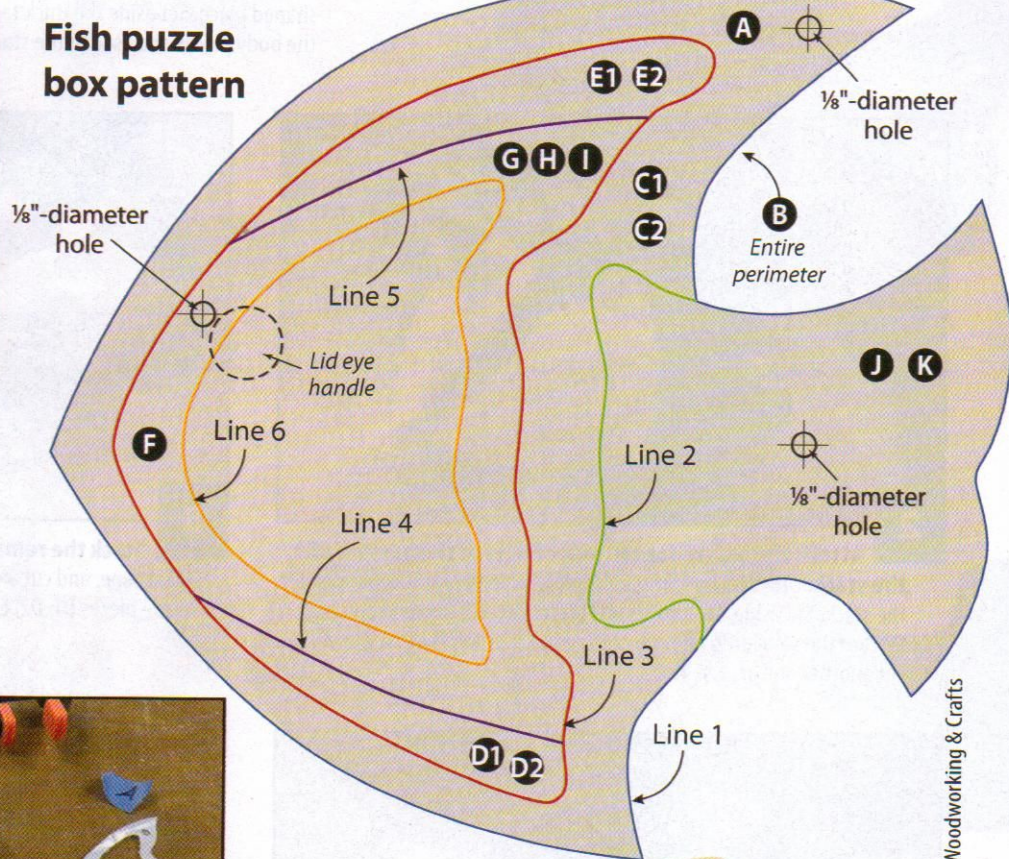
Glue and clamp the risers (D2, E2) under the inner lid supports (D1, E1). Sand the perimeter of each assembly flush. Test the fit of these pieces, but do not glue them in place yet.



8

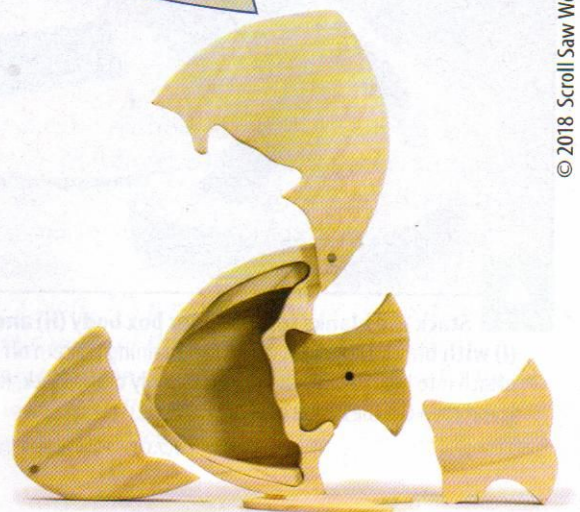
Glue and clamp the inner box top (G) to the inner box body (H). Stack the assembly with the inner lid bottom (I) and drill a $\frac{1}{8}$ " (3mm)-diameter eyehole for the inner box pin through the stack. Cut a piece of dowel to fit, glue it into piece I, and press-fit it into the box body so it pivots.

Fish puzzle box pattern



9

Test the fit of the inner box. Make any adjustments, and then glue and clamp the inner lid supports (D, E) in place. Place the box lid (A) in position and drill the pivot pin hole. Cut a piece of dowel to size and glue it in the hole in the lid. Cut a piece of dowel to length and glue it into the hole in the tail top (K). Glue the handle pin to the inner box lid (F) and then carve or drill a shallow matching recess in the under side of the lid so the lid sits flat. Finish the box as desired.



Materials & Tools

Materials:

- Poplar, 1/8" (3mm) thick: 5 1/2" x 18" (14cm x 45.7cm)
- Poplar, 1/4" (6mm) thick: 5 1/2" x 11" (14cm x 27.9cm)
- Poplar, 1/2" (1.3cm) thick: 5 1/2" x 6" (14cm x 15.2cm)
- Poplar, 3/4" (1.9cm) thick: 5 1/2" (14cm) square
- Dowel, 1/8" (3mm) dia.: pivot pins, 3 each 3/4" (1.9cm) long
- Dowel, 3/8" (1cm) dia.: inner lid handle pin, 1/16" (2mm) long
- Wood glue
- Spray adhesive

- Finish: satin wipe-on polyurethane, spray lacquer, paint, or stain

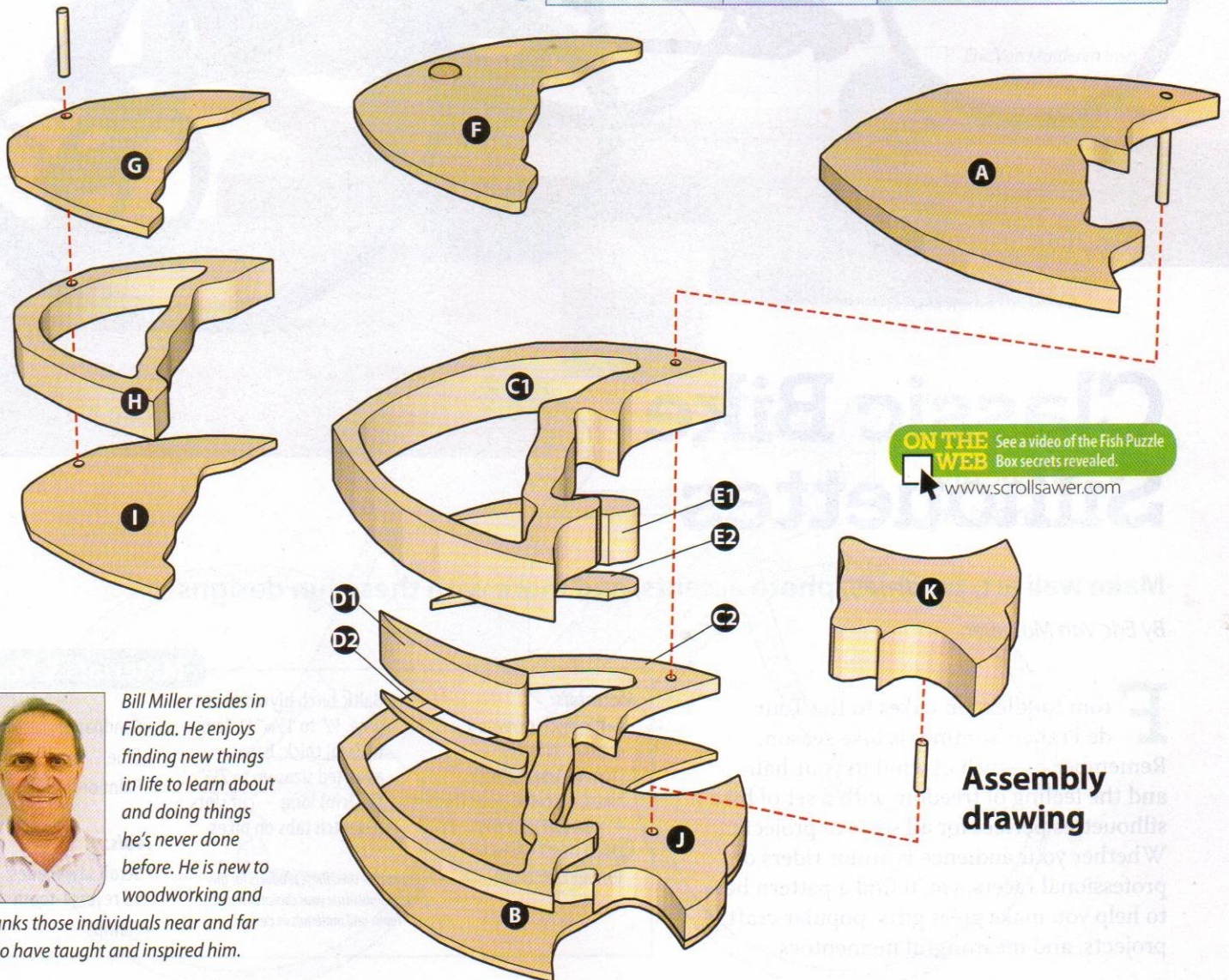
Tools:

- Scroll saw blades: #3 reverse-tooth
- Drill with bits: 1/8" (3mm), assorted small
- Clamps
- Sander: drum or spindle long
- Finishing tools (optional): carving tools, pyrography machine, paintbrushes

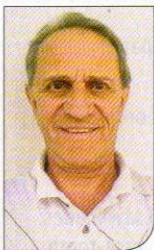
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Parts List

| | Description | Thickness | Dimensions |
|-----------|-------------------------|-------------------|----------------------------------|
| A | Box Lid | 1/4" (6mm) | 5 1/2" (14cm) square |
| B | Box Bottom | 1/8" (3mm) | 5 1/2" (14cm) square |
| C1 | Box Body 1 | 3/4" (1.9cm) | 5 1/2" (14cm) square |
| C2 | Box Body 2 | 1/4" (6mm) | 5 1/2" (14cm) square |
| D1 | Inner Lid Support | 3/4" (1.9cm) | (cut from C1) |
| D2 | Inner Lid Support Riser | 1/8" (3mm) | (cut from F) |
| E1 | Inner Lid Support | 3/4" (1.9cm) | (cut from C1) |
| E2 | Inner Lid Support Riser | 1/8" (3mm) | (cut from F) |
| F | Inner Lid | 2 each 1/8" (3mm) | 5 1/2" (14cm) square |
| G | Inner Box Top | 1/8" (3mm) | (cut from F) |
| H | Inner Box Body | 1/2" (1.3cm) | 3 1/2" x 4 1/2" (8.9cm x 11.4cm) |
| I | Inner Box Bottom | 1/8" (3mm) | 3 1/2" x 4 1/2" (8.9cm x 11.4cm) |
| J | Tail Bottom | 1/2" (1.3cm) | 2 1/2" x 3" (6.4cm x 7.6cm) |
| K | Tail Top | 3/4" (1.9cm) | (cut from C1) |



ON THE WEB See a video of the Fish Puzzle Box secrets revealed.
www.scrollsawer.com



Bill Miller resides in Florida. He enjoys finding new things in life to learn about and doing things he's never done before. He is new to woodworking and

thanks those individuals near and far who have taught and inspired him.



Classic Bike Silhouettes

Make wall art, trophies, photo accents, and more with these fun designs

By Eric Van Malderen

From toddlers on trikes to the Tour de France, summer is bike season. Remember the rush of wind in your hair and the feeling of freedom with a set of bike silhouettes perfect for all sorts of projects. Whether your audience is junior riders or professional racers, you'll find a pattern here to help you make great gifts, popular craft projects, and meaningful mementoes.

Materials & Tools

Materials:

- Baltic birch plywood or pine, $\frac{3}{8}$ " to $\frac{1}{2}$ " (1cm to 1.3cm) thick: bikes, assorted sizes from 4" x 7" to 7 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " (10.2cm x 17.8cm to 19.1cm x 21.6cm)

- Baltic birch plywood or pine, $\frac{1}{2}$ " to 1 $\frac{3}{16}$ " (1.3cm to 3cm) thick: bases, assorted sizes up to 7 $\frac{1}{2}$ " (19.1cm) long—cut slots to match tabs on bikes

- Sandpaper
- Glue
- Paint or finish

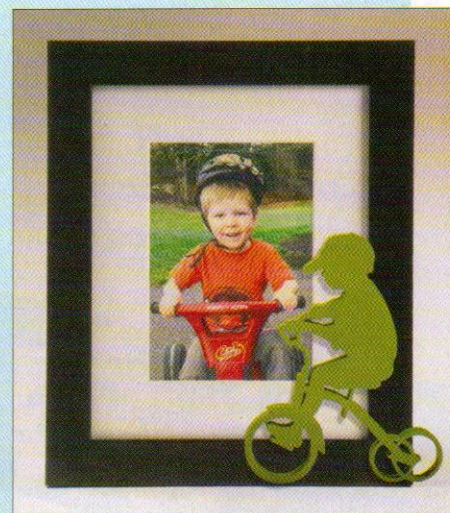
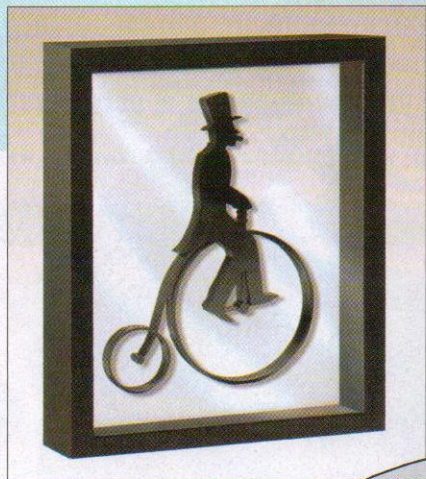
Tools:

- Scroll saw blades: #5 reverse-tooth
- Clamps

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Project Ideas

- Create a custom trophy by attaching a bike to a base and adding a plaque
- Decorate a rack to hold helmets or motorcycle safety equipment
- Make wall art by cutting the images from thin wood, painting them black (or bright!), and framing them
- Glue a cutout to a frame and show off a photo of a youngster's first ride
- Stack paper between pieces of plywood to cut accents for cards and scrapbooks; use the wood pieces on the book cover.



Additional patterns for the **CLASSIC BIKE SILHOUETTES** are in the pullout section.



Eric Van Malderen lives in Dendermonde, Belgium, with his lovely wife, Rita, and awesome daughters, Mieke and Sarah. Eric works at the Belgium railways in Brussels as a G.I.S. designer. He received his Hegner scroll saw in 2002 as a 40th birthday present from his wife.

Bike silhouette pattern



Desktop Safe

Easy-to-make locking gizmo box
protects your stuff in style

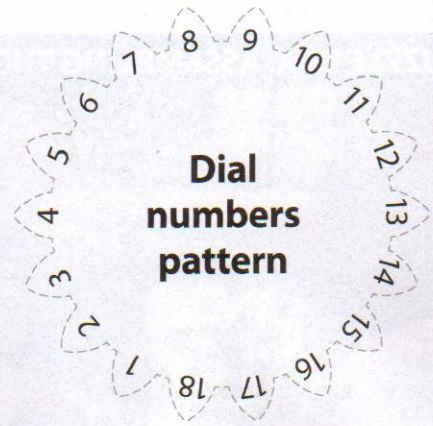
By Alex Vyshnevskyy
Cut by Rolf Beuttenmuller



This impressive-looking puzzle box is a great place to stash your keys and spare change, can protect your desktop candy dish from the office bandits, or makes a clever gift box for your favorite friend or family member. While the finger joints require some finesse to cut, the actual mechanism is easy to create. Mark the dials with numbers or letters and choose your own memorable combination, like a special date or message.

Getting Started

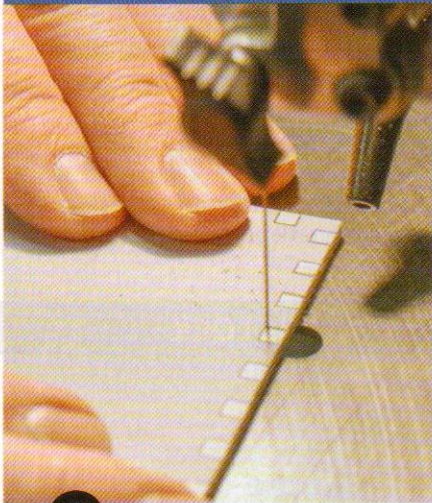
Attach the patterns to the wood. Adjust the sizes of the holes in the dials and discs to match the diameter of your axle pegs if necessary. Drill the holes marked on the patterns as well as the blade-entry holes for the slots and frets. Cut all of the pieces except the inner gears. (See "Cutting Finger Joints" for help with that portion.) Sand away any rough spots. Cut the shafts of the axle pegs to $\frac{5}{8}$ " (1.6cm) long. *Note: You can use purchased pegs or, like our test cutter, Rolf Beuttenmuller, turn custom pegs to match the wood of the box.*



Cutting Finger Joints

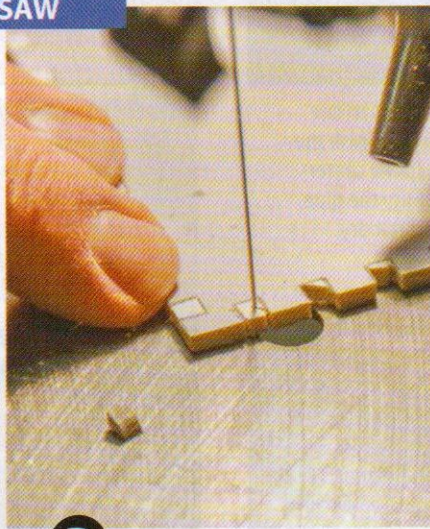
There are two main ways to cut finger joints: with a scroll saw or with a table saw.

CUTTING JOINTS WITH A SCROLL SAW



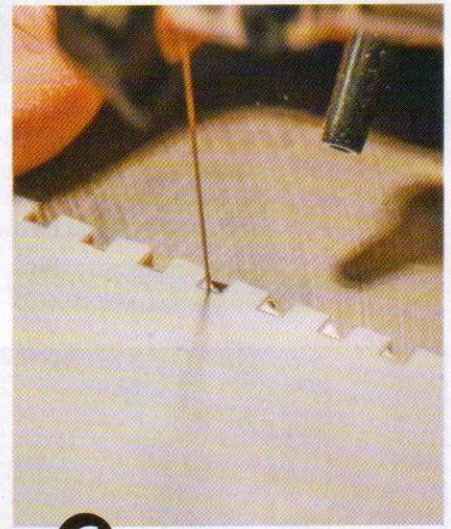
A

Cut along all of the straight lines. **DO NOT** try to rotate to cut the 90° corner. This will round the corner and keep the joints from fitting tightly.



B

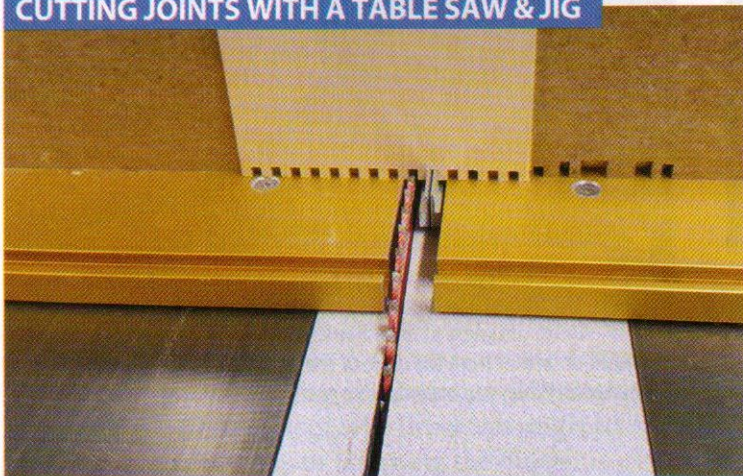
Start at one corner and cut at an angle to the opposite inside corner. Complete an entire side before making the final cuts.



C

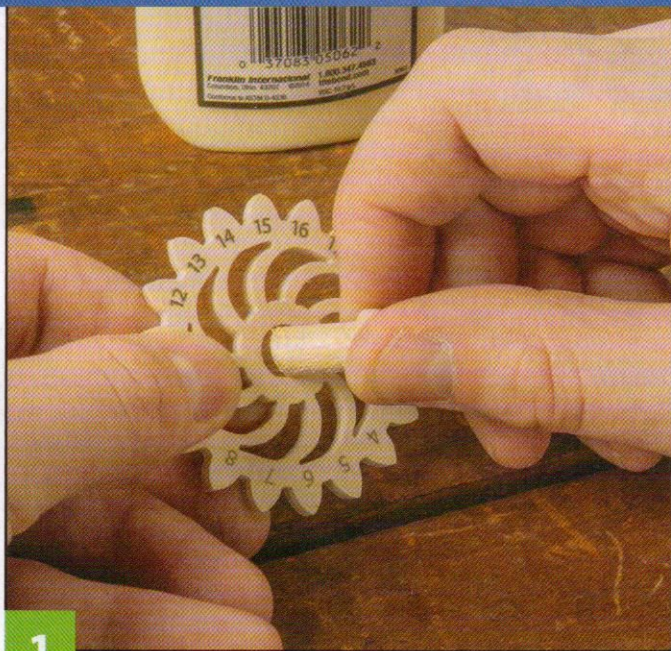
Make the final cut along the third line to clear the finger joint. Making repeated cuts along an entire side of fingers will keep your cuts more accurate than cutting them one at a time.

CUTTING JOINTS WITH A TABLE SAW & JIG



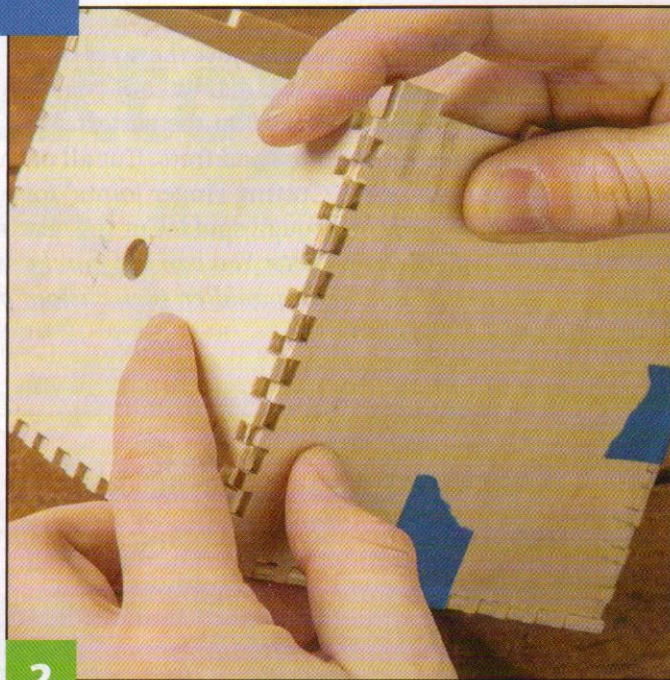
Set the blade to cut the exact depth of the fingers (usually the thickness of the material). While you can mark and cut each joint individually, I use an indexing box joint jig from Inkra. You can also find plans online for all kinds of shop-made indexing jigs. (We've posted one on our website: <http://scrollsawer.com/2018/03/06/building-adjustable-box-joint-jig/>). Make a pass to cut the finger. Depending on the kerf of your blade, you might need to make a second cut to clear the finger joint. Move to the next finger joint and repeat the process.

PUZZLE BOX: ASSEMBLING THE BOX



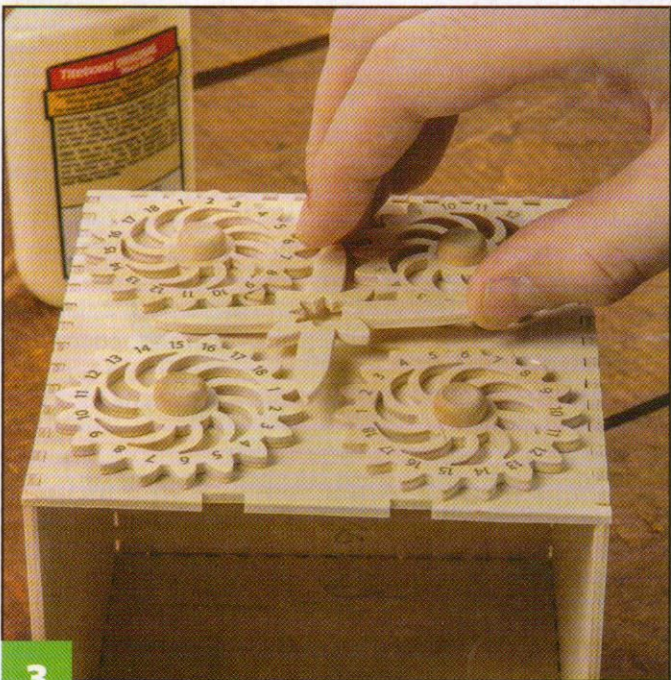
1

Prepare the dials. Number, letter, or add symbols to one side of each dial with a permanent pen or woodburner. Finish the dials and pegs as desired. Add a drop of wood glue to the center hole in each dial. Insert an axle peg, spin it to distribute the glue, make sure the axle head is flat against the dial, and let it dry.



2

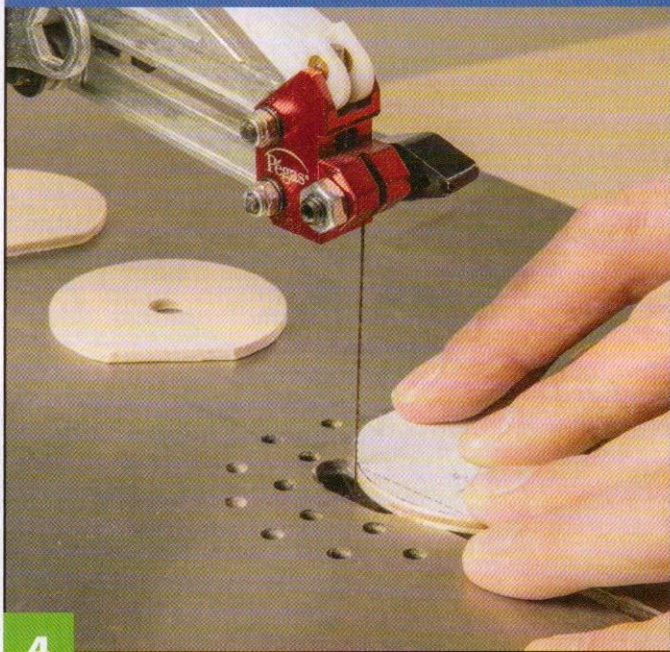
Dry-assemble the drawer (inner box). The finger joints should fit tightly. Use a small file to remove small amounts of wood anyplace the fingers bind. When all of the pieces fit properly, take the drawer apart, add a drop of wood glue to each finger joint, and reassemble the drawer. Use blue painter's tape to hold the pieces in position until the glue dries. Glue an axle peg or decorative knob to the front.



3

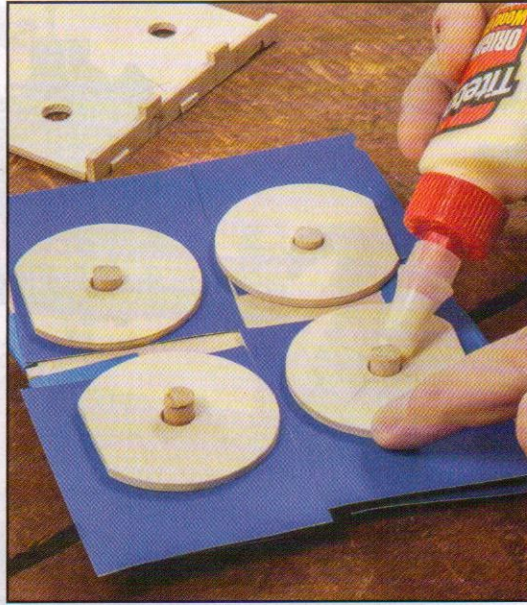
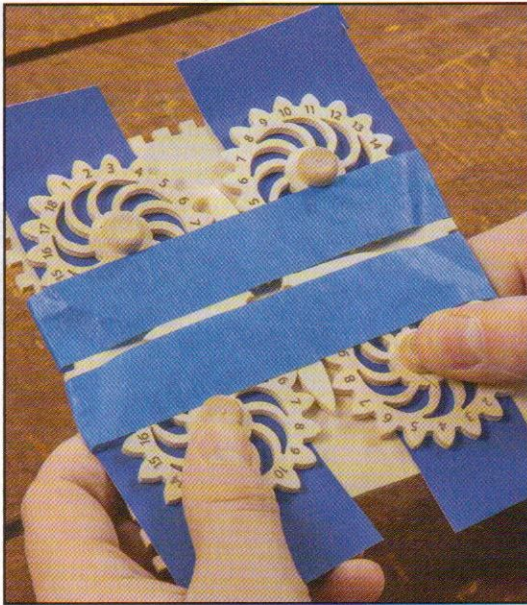
Dry-assemble the outer box. Adjust the finger joints with the small file, and then glue the sides and bottom together. Do not glue the lid, but put it in position to hold the other parts while the glue dries. Test the fit of the top and front supports, but do not glue them in place. *Note: Finish the box lid and indicator as desired before proceeding.* Dry-fit the dials to the box lid; do not glue. Place the indicator, glue and clamp it, and remove the dials.

PUZZLE BOX: MAKING THE LOCK



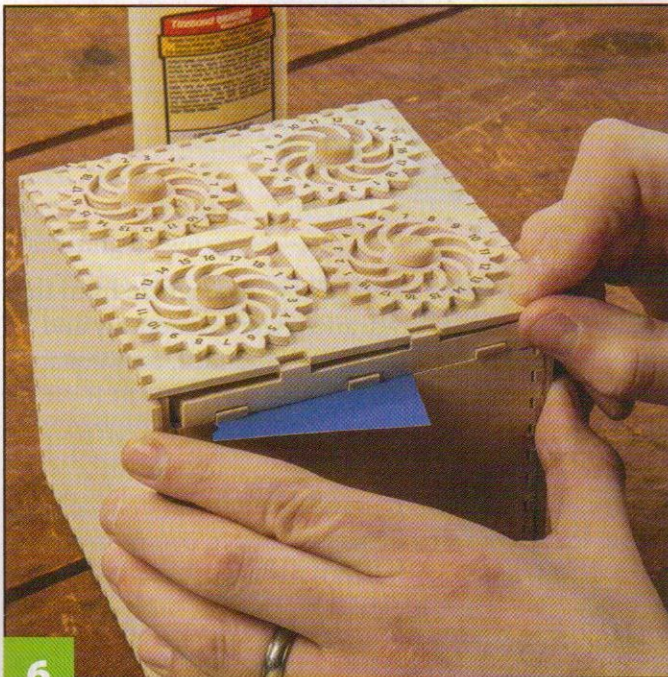
4

Cut the discs. Measure the exact thickness of the drawer walls. The dotted line on the gear pattern represents the standard $\frac{5}{32}$ " (4mm) thickness of most Baltic birch plywood. Move the line closer or farther from the edge of the circle to accommodate your material. When you have the line positioned correctly, cut the discs.



5

Fit the dials. Place strips of thick paper across the lid to act as spacers. Position the dials on the lid, aligning the preferred combination with the indicator points. Tape the dials in place. Turn the lid over and put strips of thick paper across the lid. Place a disc on each peg with the straight-cut edges parallel with the sides of the lid. Replace the pegs, add a drop of thick glue to each one, and let dry. Glue the front support to the top support and let dry.



6

Assemble the box. Place the drawer in the box. Remove the paper and tape from the lid, and be sure the dials spin. Glue the top support to the box back, adding a shim (thick paper or a dime) under the front edge. Turn the box lid over, fit the pegs through the holes in the top support, and align the notches and finger joints. Glue the lid in place.

Finishing the Box

You can choose whether or not to apply finish to the box. A hardwood box looks great with a coat of clear finish, while a plywood box can be painted fun colors. Whatever you choose, apply the finish sparingly to avoid clogging the gears or jamming the drawer.

ON THE WEB See a video of the Desktop Safe lock in action.
www.scrollsawer.com

Materials & Tools

Materials:

- Hardwood or Baltic birch plywood, $\frac{3}{32}$ " (4mm) thick: 24" x 26" (61cm x 66.1cm)
- Axle pegs, $\frac{1}{32}$ " (9mm) dia.: 6 each 2" (5.1cm) long
- Sandpaper
- Blue painter's tape
- Wood glue
- Thick paper: 1 piece
- Finish (optional): clear

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Tools:

- Scroll saw blades: #2/0 reverse-tooth
- Table saw and indexing box joint jig (optional)
- File: small flat

Patterns for the **DESKTOP SAFE** are in the pattern pullout section.



Alex Vyshnevskyy lives in Ukraine, and is the founder of Prototype Mechanic (protomech.org), a startup company, and co-founder of Prototype Development (prototypedev.net), a software company. He works at the Franko Lviv National University in low temperature research.

It's Good to Be **KING**

King Industrial's 16" saw is our new workshop favorite in the \$500–\$750 price category

“I give this tool five stars.”

—Scott Phillips of
“The American Woodshop”

By Jon Deck, Bob Duncan,
Mindy Kinsey, and Kaylee Schofield



Looking for a new tabletop saw? King Industrial's new 16" model is ideal when you want great performance but don't have a lot of space. This solidly built saw is easy and intuitive to use, and has all the features and capabilities of bigger machines while fitting perfectly into a small shop.

To test the saw, four staff members cut an assortment of projects using high-quality blades. From thin fretwork to thick compound cuts, and soft pine to thick, hard hickory, the saw cut everything, beautifully. Even the newest scroller turned out professional-looking projects. It is our new favorite saw.

Scott Phillips, the host of public television's "The American Woodshop," agrees, calling the saw "one of my favorite tools to work on. Over 40 years of scrolling experience makes me give this tool five stars. It's a smooth-running and easy-to-use saw. My wife, Suzy, uses the saw a lot and she loves it, too."

Saw Features

The saw takes plain-end blades, held in place by thumb screws and adjusted by a quick tensioning lever. The knob at the back of the saw controls the arm height. The idea is that you set the arm height once and leave it alone, using the tensioning lever to tighten and

release the blade. It's a system you'll recognize from the Excalibur and Seyco saws, and it works smoothly and easily. After just a few minutes of practice, we were able to change and tension blades in seconds.

To make angled cuts the arm tilts, which we find much more intuitive than a tilting table. The tilt is controlled by a rack and pinion system and includes a spring-loaded pin that helps you lock in common angles (such as 45°) and easily restore the blade to vertical. The arm moved smoothly and, when checked with a digital gauge, appeared to set the angle accurately. The arm itself stays up when lifted, which makes feeding the blade from the top or bottom especially easy.

The variable speed control and power switch are located on top of the arm. The dust cover on the power switch is a little stiff out of the box, but should soften with use. The blower works fine. Like most scrollers, we removed the hold-down arm before we started cutting.

The table is 12" wide by 18 ½" deep and should easily accommodate all but the largest fretwork portraits or clocks. That said, we would have liked to see more table space in front of the blade to better balance large projects. And, speaking of the table, it is pierced to facilitate dust collection; more on that in a minute.

“The King Industrial scroll saw is a pleasure to use. It cuts smoothly, quickly, and effortlessly. ...We could—and did—use this saw all day.”

—Mindy Kinsey

This saw comes with small feet to make it easy to level on a benchtop, but we did not use them. It does not have a light. A stand is available separately.

In Action

This saw is a pleasure to use. It cuts smoothly, quickly, and effortlessly. The blade held its tension firmly, was easy to control, and if we drifted off course it was easy to bring the blade back to the line. As long as it's clamped or bolted down, the saw has minimal vibration and runs smooth as silk. (A stand helps, too, if you have space for one.) This saw is so quiet that, until the board chattered, we didn't realize a coworker was using it. We could—and did—use this saw all day.

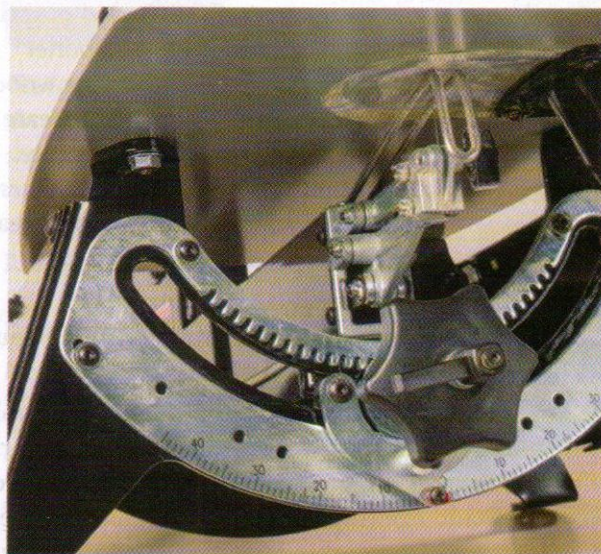
The only thing we didn't love about this saw is its dust collection system, which consists of a plastic port sized for a standard shop vacuum or dust collection nozzle and a plastic sleeve attached under the holes in the table. The system doesn't work very well and gets in the way of some saw functions. The holes clog. The vacuum sucks the wood tightly to the table. The plastic sleeve catches bits of wood, makes it harder to change blades, and makes top feeding the blade nearly impossible. The nozzle port keeps the saw arm from tilting all the way to the right, and we had to fumble past it to reach the bottom blade holder. We suggest removing the dust collection system; almost any shop fix (see page 12 for a new one) will do a better job.

We love this saw, but you don't have to take our word for it—head out to your nearest Woodcraft store and take the King saw for a test drive. Put it through its paces with your favorite blades, types of wood, and scrolling patterns. We think you'll agree: it's good to be King!

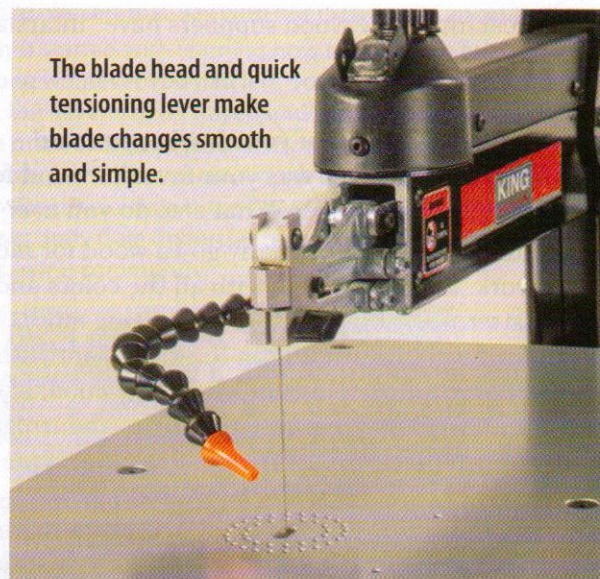
In the United States, King Industrial's 16" saw is available for \$599.99 and a 30" saw is \$899.99, both from Woodcraft at 800-225-1153, www.woodcraft.com (search "King Industrial"). The 16" stand is \$129.99. In Canada, the same saw is called the Excelsior and is available in three sizes: 16" for \$749.99, 21" for \$999.99, and 30" for \$1239.99. Visit www.KingCanada.com to find a local dealer.



The saw arm tilts up to 45°, making angled cuts easy and intuitive.



The saw arm is controlled by a knob connected to a rack and pinion system, so the tilt is easy and accurate.



The blade head and quick tensioning lever make blade changes smooth and simple.

CATCHING UP WITH Judy Gale Roberts



The intarsia master talks tools, wood, and new books

By Mindy Kinsey

Judy Gale Roberts is the mother of American intarsia. An artist since her childhood, Judy and her father created large, dimensional “wood murals” during the 1970s, and then she and Jerry Booher scaled down the idea and introduced varying wood colors and grain patterns during the ’80s to create modern intarsia. Fox Chapel Publishing recently published revised editions of Judy’s *Wildlife Intarsia Woodworking* and *Intarsia Workbook*. It was a great reason to sit down for a chat with Judy.

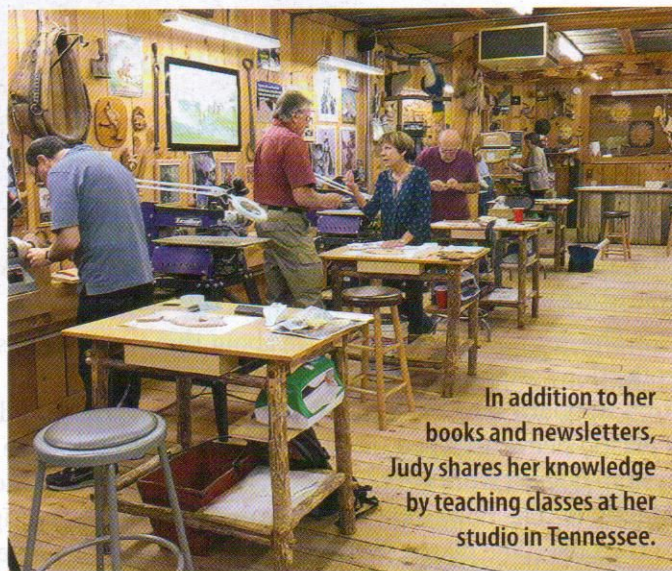
Q: How has the intarsia world changed since you published your first book with Fox in 1994?

A: You could say that the first how-to intarsia book, *Easy to Make Inlay Wood Projects*, cemented intarsia into the woodworking world. Intarsia gave the scroll saw a new and exciting purpose, and it has inspired people to try woodworking for the first time. This, in turn, opened the door for intarsia-related tools, like the Flex Drum Sander, and increased scroll saw sales. Years ago if you searched “intarsia wood” on the internet, it may have come up with some close matches but no real hits. Now wood suppliers have “intarsia wood” in their menus.

Q: In the first editions of your books, you said that Western red cedar was your favorite wood for intarsia. Is that still true? What else do you use?

A: Western red cedar is still my go-to wood for most of my work. It’s hard to beat with all the colors and grain patterns. However, I have been using more varieties of wood lately; it’s fun to experiment with different grains and colors. I like spalted wood, like maple and hackberry, because the colors and irregular grain patterns add an extra element to intarsia pieces. (See page 52 for Judy’s “Crescent Moon” pattern, which features spalted wood.) Colored wood is great, too; however, almost all red-colored wood (red heart,

padauk, bloodwood) changes to brown rather quickly. I use basswood for people, because it keeps a flesh tone color for a long time.



In addition to her books and newsletters, Judy shares her knowledge by teaching classes at her studio in Tennessee.

Q: What are your favorite tools these days? Have any new ones come out that you especially like?

A: I have a variety of saws in the classroom. The newest is the Seyco saw, which is a very smooth-running saw. I like the large-sized table and how easy it is to change the blades. I still like my inflatable sanders, from the large 8" diameter to the 1" diameter. The small sander is great for all those little details. Flex Drum Sanders have their place, too; using the edge of the sander I can carve out areas and sand one side without touching the other.

Q: What about saw blades?

A: Ahh, scroll saw blades, we all gotta have them. We have a new OnLine brand blade, the Platinum Plus, that I like very much. It cuts the hardwoods with a nice smooth cut. Every third tooth is reversed, which helps

it move through the piece of wood. I also like our Gold and the Platinum blades. You need to have a variety. One style of blade will not work for all wood.

Q: The new books contain about a dozen designs each, but you have created so many more. How many patterns do you have available now?

A: I have around 450 individual patterns. I could have more, but I make each project to ensure the best quality pattern. After making one, many times I eliminate parts or simplify the lines to make fitting the parts together easier. I am always thinking about the person who buys my pattern; I want them to have the best intarsia experience possible.



Q: How do you keep in touch with intarsia fans?

A: When we first started in 1988, we relied on the mail. The first "Intarsia Times" newsletter was four pages that we folded and mailed; it had 15 patterns available. I still publish the "Intarsia Times," although it is more of a catalog now. I think people enjoy having the newsletter in their hands

to look at rather than relying on the internet. However the internet has made it much easier to keep up with everyone—Facebook, e-mails, and my website, intarsia.com, make sharing ideas much easier.

Contact Judy Gale Roberts at www.intarsia.com or call 1-800-316-9010 (M-F 8:30am to 5pm EST).



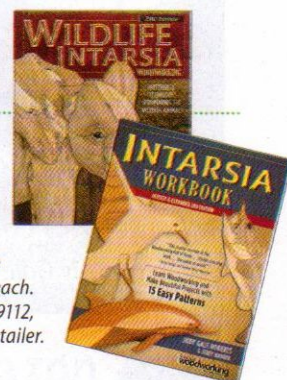
The Cowboy is one of Judy's advanced patterns. It shows the wood variety, careful choice of grain, and careful shaping she is known for.

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Taking a Class with Judy Gale Roberts

By Misty Humes Valestin

Misty Valestin is the new president of the Scrollsaw Association of the World (SAW). She recently participated in one of Judy's beginner intarsia classes and shared her experience with us.

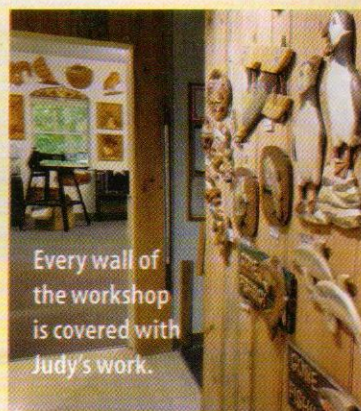
On the first day of class, it was a little intimidating to walk into Judy's studio and see her amazing work. As I walked back to the classroom and workshop area, I was hoping and praying that I could do this. I ... was nervous. But it didn't take long for Judy to make me feel right at home. It was Judy's 17th summer teaching her intarsia school, so she has learned what works and what doesn't.

This class started with Judy teaching us some basics. Then, we went to our stations, which each had an Excalibur scroll saw, a flex drum sander, and a Wonder Wheel. She provides all of the supplies you need. We picked out our wood, put our pattern on the wood, and cut it out.

On Day 2, we began to shape and make our trigger fish come to life. We had a special visit from Ray Seymore and his wife, along with Steve Good. They brought their new scroll saw for us to watch a demonstration. Spectacular.

Ray and Steve are such nice people. But even with all of that going on, Judy kept us on a tight schedule. She had every minute of each class well thought-out, and we followed her schedule. We left that day with our fish really coming to life.

Day 3 started with learning how to finish our fish and fine-tune whatever you had left. Some people left just after lunch, but several of us stayed and soaked up all we could from a great artist and teacher. How often do you get that kind of time with an expert? I don't think I could put a price tag on the precious time Judy gives to each one of her students. Judy Gale Roberts is a gem and a true asset to the scroll sawing community.



Every wall of the workshop is covered with Judy's work.



Crescent Moon

This student favorite is the perfect first intarsia project

By Judy Gale Roberts

If you have always wanted to try intarsia but never found the right project, now is the time. This project, one of my students' favorites, lets you experiment with shaping and you will end up with a beautiful project.

The relatively large pieces make it easy to cut, so you can really spend time sanding and shaping to get the flow and form just right. Even a beginner will end up with a beautiful project.



Selecting the Wood

I used spalted hackberry for most of this piece. This wood had a variety shades ranging from white to light to medium light. I used walnut for the dark part of the eye, and holly for the eye highlight. I did not use any raising shims for this piece. If you choose to use $\frac{3}{4}$ " (1.9cm)-thick wood for the moon, use a $\frac{1}{8}$ " (3mm)- to $\frac{1}{4}$ " (6mm)-thick raising shim for the cheek (part 11).

Adding the Eye Detail

To make the eye highlight, sharpen a small piece of aspen or holly in a pencil sharpener to create a tapered dowel. Drill the hole for the highlight, cut a piece of the tapered dowel longer than needed (the cone shape accommodates a variety of hole sizes), glue it into

the hole, and allow the glue to dry. Then, sand the highlight dowel flush with the rest of the eye.

Carving the Craters

To make the craters, chuck a round grinding ball in a drill press and carefully press the wood against the ball. The depth and size of the craters depends on how long you press the wood against the ball. Practice on a piece of scrap first; if you press too hard, the grinding ball will burn the wood.

Attaching the Star

Cut, sand, and finish the star. Then, drill small holes through the tip of the moon and the top of the star. Use a piece of monofilament fishing line to attach the star to the moon.

Materials & Tools

Materials:

- White wood, such as spalted hackberry, 1" (2.5cm) thick: 8" x 22" (20.3cm x 55.9cm)
- Light wood, such as slightly darker spalted hackberry, 1" (2.5cm) thick: scraps
- Medium light wood, such as darker spalted hackberry, 1" (2.5cm) thick: scraps
- Dark wood, such as walnut, 1" (2.5cm) thick: $\frac{1}{2}$ " x 1" (1.3cm x 2.5cm)
- White wood, such as holly, $\frac{1}{4}$ " (6mm) square: 4" (10.2cm)
- Tempered hardboard, $\frac{1}{8}$ " (3mm) thick: backing board, 10 $\frac{1}{2}$ " x 13" (26.7cm x 33cm)
- Wood glue
- Monofilament fishing line
- Finish, such as Old Masters gel polyurethane

Tools:

- Scroll saw blades, such as Platinum, Titanium, or Tough Little Blades: #5 reverse-tooth (general cutting), #2/0 reverse-tooth (to cut larger pieces into detail section)
- Sanders: Flex drum or similar
- Drill with bits: ball-shaped grinding bit, assorted small
- Pencil sharpener

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Patterns for the **CRESCENT MOON** are in the pattern pullout section.



Judy Gale Roberts, born in Houston, Texas, has long been recognized as the leading authority on intarsia. Judy was one of the first ten people to be inducted into the Woodworking Hall of Fame. For more of her work or information on classes held at her home studio in Seymour, Tenn., contact Judy at 800-316-9010, or visit www.intarsia.com. Judy's numerous intarsia books are available at www.foxchapelpublishing.com.

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DRILLNADO

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Ping-Pong[®] Ball Explosion

Simple mechanism creates an eruption of table tennis balls

By Bob Gilsdorf

What started as an afternoon of table tennis became the catalyst for this toy creation. After a few ferocious and dizzying games of run-around table tennis (obviously, we're not serious players), I was idly bouncing a ball on the paddle. That's when it happened. Something deep inside my brain impulsively yelled, "Smash it!" So, I hit the ball as hard as possible and excitedly watched it sail up, up, up, and away through the air. There was no chance of a second hit, so my thoughts drifted to building a mechanism that could hit table tennis balls straight up with more accuracy. The result was this contraption. It

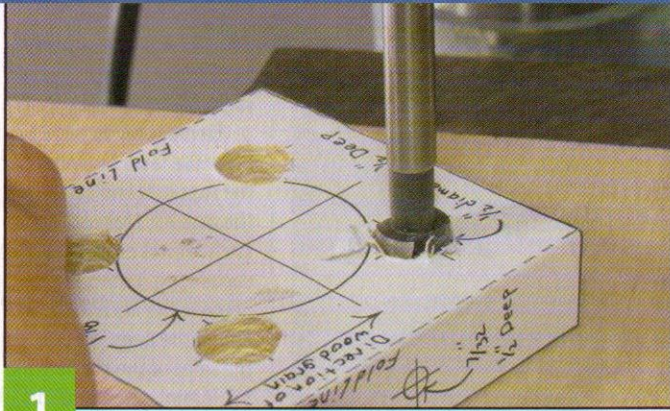
blasts a table tennis ball high into the sky. While testing it out, for reasons unknown, something deep inside my brain mischievously yelled, "Put in lots of balls." That's when I experienced the fun of Ping-Pong[®] Ball Explosion.

Getting Started

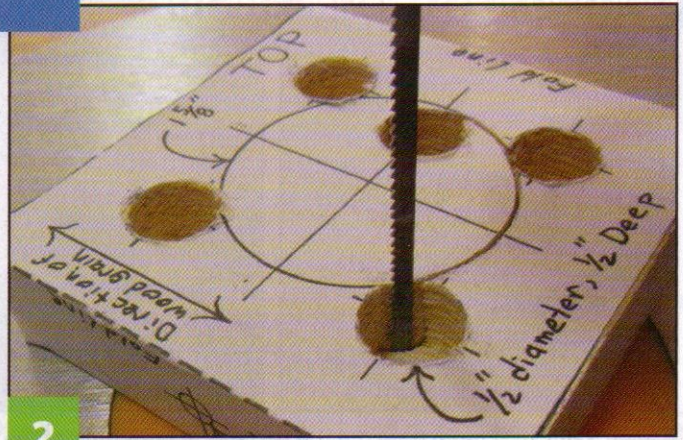
Refer to the Parts List and cut the pieces to size. Attach the patterns or mark the hole locations for the base (A), supports (B), top (H), latch (D), and target (F). The pattern for the top is actually placed on the bottom of the blank. Note the grain direction for the top and latch. *Note: Because of the tolerances for this project, use only fractional drill bits.*



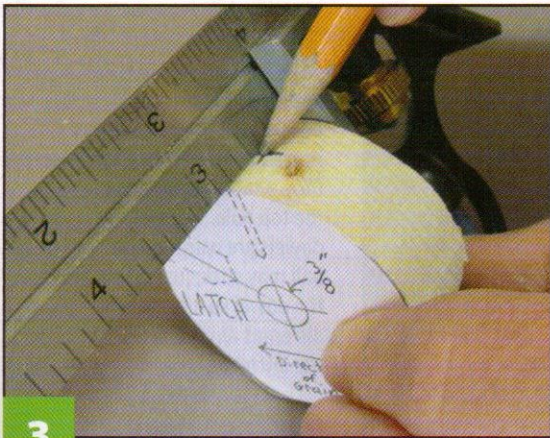
EXPLOSION: CUTTING THE PIECES



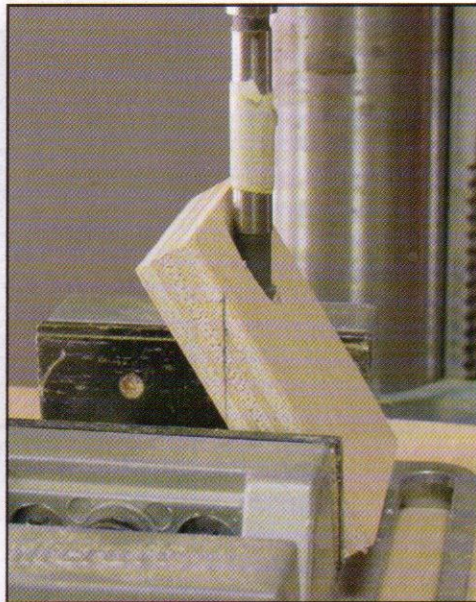
1 **Drill the stopped holes in the top and supports.** I use a Forstner bit to get a flat-bottomed hole. Drill a blade-entry hole in the top as well.



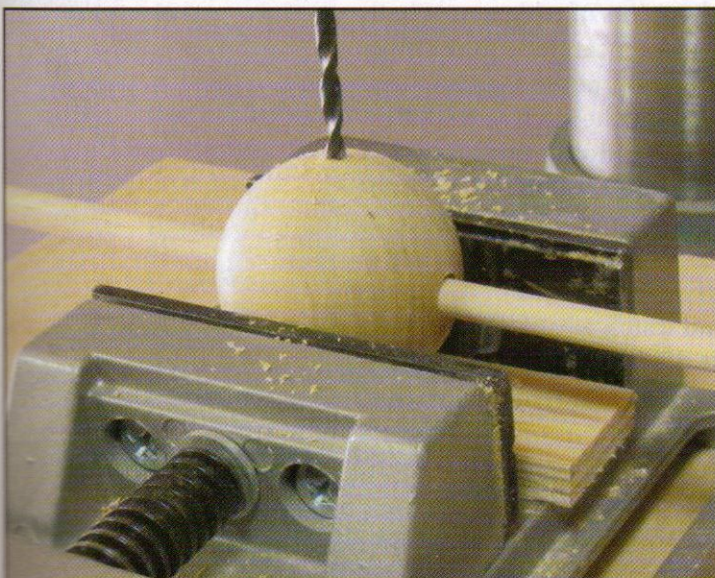
2 **Cut the hole in the top.** When cutting the top, the scroll saw blade will just touch or slightly enter the stopped holes.



3 **Cut the latch.** Use a scroll saw. Mark the holes centered on the side of the latch. These holes should be $\frac{3}{8}$ " (1cm) from either flat surface. Drill the marked holes. Countersink the holes in the bottom so the screws won't scratch any surfaces.



4 **Clamp the target at a 60° angle.** Use a Forstner bit to drill until the bit just starts to exit the wood. If you don't have a Forstner bit in the proper size, drill the steepest hole you can. It will work fine and still look good.



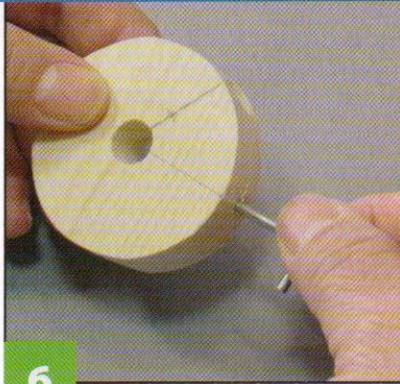
5 **Drill a large hole through the end grain of the wooden ball (1).** You can usually find the exact center by looking for the concentric circles left by the lathe that made the ball. Countersink and sand the holes on both sides to make the rubber bands last longer. Insert a long dowel into the hole. Make sure the dowel is roughly horizontal when you clamp the ball in the vise. Drill the remaining hole straight down at the highest point of the sphere.

TIP

CLAMP THE BALL

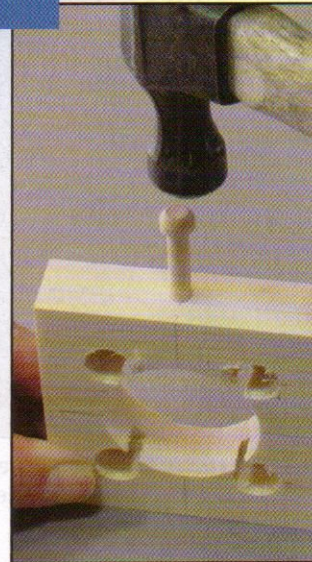
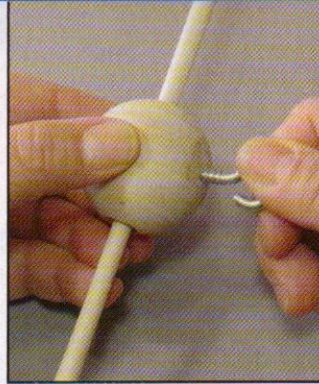
Don't hold the ball with your fingers while drilling. The ball is smooth and difficult to hold. The bit will grab the wood and get the ball spinning, while your fingers painfully learn how much heat is generated by friction. This happens much faster than your brain can tell your fingers to let go.

EXPLOSION: ASSEMBLING THE TOY



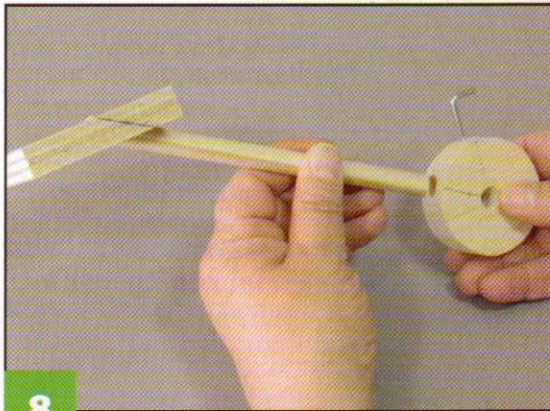
6

Sand $\frac{1}{16}$ " (2mm) from the flat surfaces of both sides of the latch. This piece needs to move easily between the two supports. Attach the L screw (K) and screw eye (J) to the latch and ball, respectively. The eye screw goes into the wooden ball with the eye parallel with the rubber band hole, as shown.



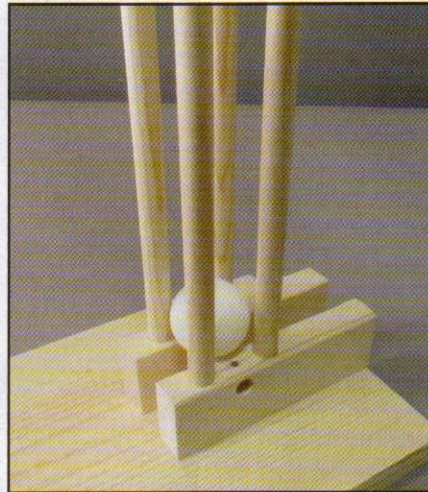
7

Attach the supports to the base with drywall screws (L). Refer to the diagram on page 57. Place the latch between the supports and insert the axle (C). Make sure the latch rotates easily—sand each face if it doesn't. Remove the latch for now. Pound the pegs (M) into the sides of the top, leaving $\frac{1}{4}$ " (6mm) extending for the rubber band. Make sure the pegs do not protrude into the large hole.



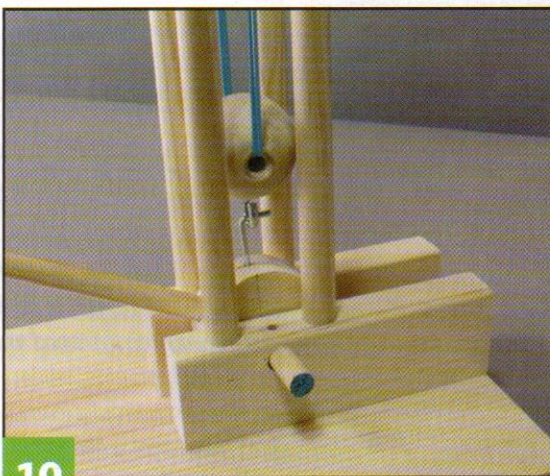
8

Glue the arm (E) into the target and latch. Rotate the L screw so it faces away from the arm.



9

Insert the side dowels (G) into the holes in the supports and top. Drop a table tennis ball into the top hole. If any of the dowels are warped, the ball may stick; just rotate the dowel so it bulges in a different direction. Reinstall the latch and axle.

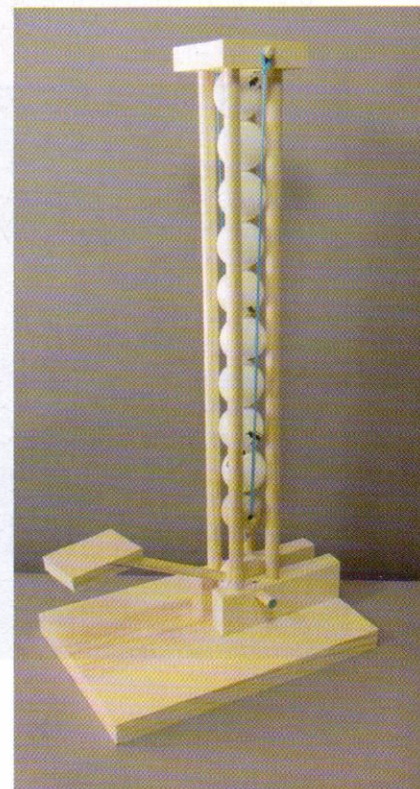


10

Use a piece of wire to pull the rubber band through the hole in the ball. Attach the rubber band to the pegs by doubling it back on itself. This will prevent the rubber band from coming off of the pegs.

Testing the Toy

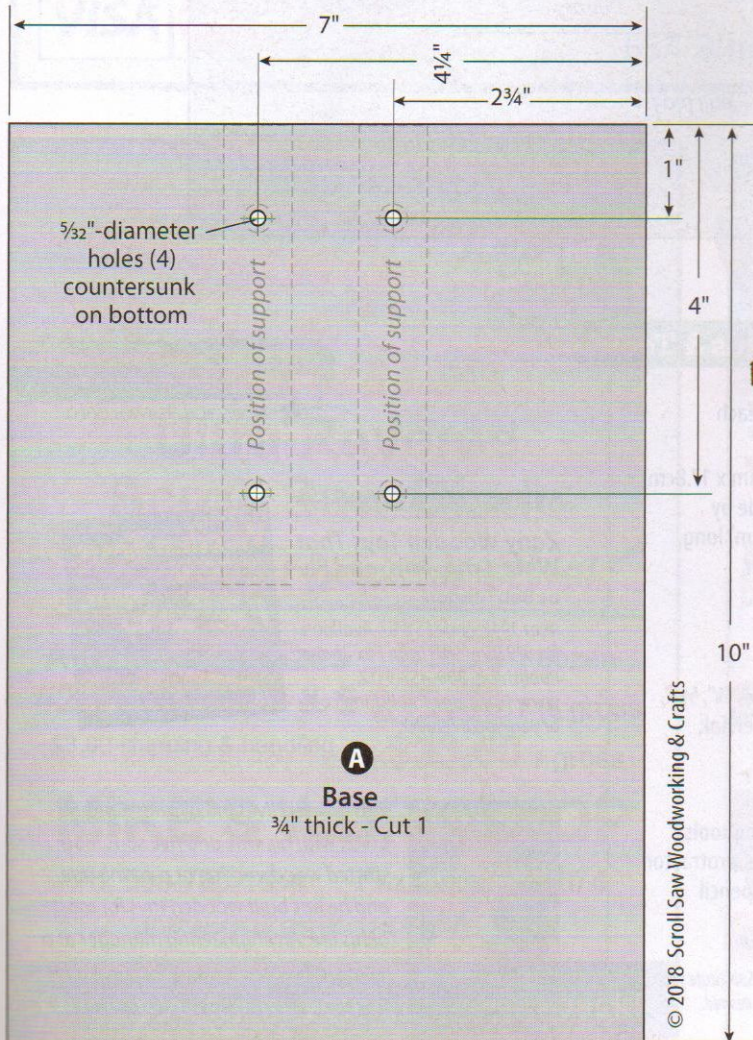
I don't recommend dry-firing this toy, so have lots of table tennis balls ready. Find a location with nothing overhead. Pull the wooden ball down and lift the latch so that the L screw goes into the eye screw as shown in Step 10. This will hold the ball in place while you drop in 10 table tennis balls. Stand back and touch the target with a bean bag or stick and watch what happens. If the side dowels were loose in their holes, you may find that the toy just self-destructed. No worries; just glue them in place before you try again. Sand, sculpt, and paint the final toy, and then start inventing some new games.



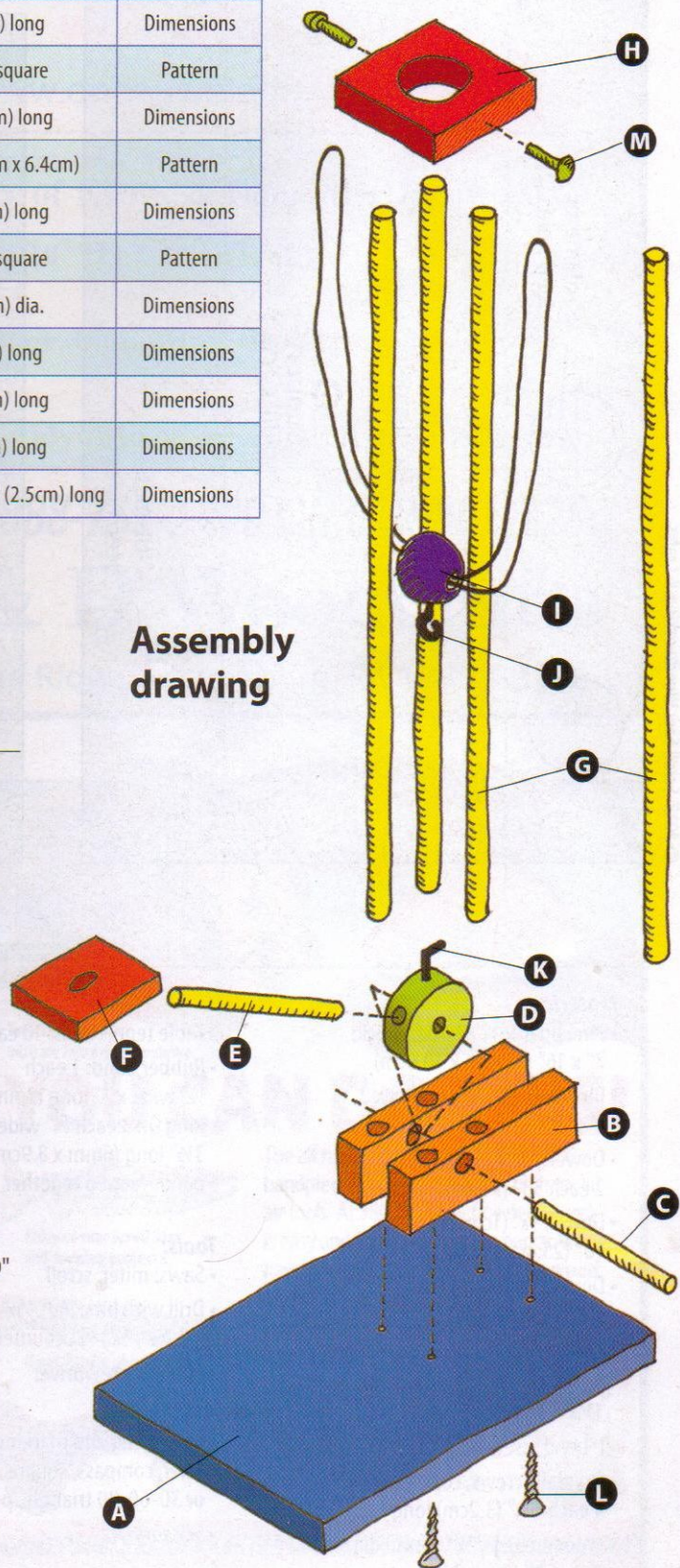
Parts List

| Part | Qty. | Materials | Dimensions | Presentation |
|-------------------------|------|-----------------------------------|-----------------------------------|--------------|
| A Base | 1 | Pine, 3/4" (1.9cm) thick | 7" x 10" (17.8cm x 25.4cm) | Drawing |
| B Supports | 2 | Pine, 3/4" (1.9cm) thick | 1 1/2" x 5" (3.8cm x 12.7cm) | Pattern |
| C Axle | 1 | Dowel, 3/8" (1cm) dia. | 4" (10.2cm) long | Dimensions |
| D Latch | 1 | Pine, 3/4" (1.9cm) thick | 2" (5.1cm) square | Pattern |
| E Arm | 1 | Dowel, 3/8" (1cm) dia. | 5 3/4" (14.6cm) long | Dimensions |
| F Target | 1 | Plywood, 1/2" (1.3cm) thick | 2" x 2 1/2" (5.1cm x 6.4cm) | Pattern |
| G Side dowels | 4 | Dowel, 1/2" (1.3cm) dia. | 18" (45.7cm) long | Dimensions |
| H Top | 1 | Pine, 3/4" (1.9cm) thick | 3" (7.6cm) square | Pattern |
| I Wooden ball | 1 | | 1 1/2" (3.8cm) dia. | Dimensions |
| J Screw eye | 1 | Screw eye, 7/32" (5.5mm)-dia. eye | 1 3/16" (3cm) long | Dimensions |
| K L screw | 1 | | 1 3/8" (3.5cm) long | Dimensions |
| L Drywall screws | 4 | | 1 1/4" (3.2cm) long | Dimensions |
| M Wooden pegs | 2 | | 1/4" (6mm) dia. x 1" (2.5cm) long | Dimensions |

Measured drawing

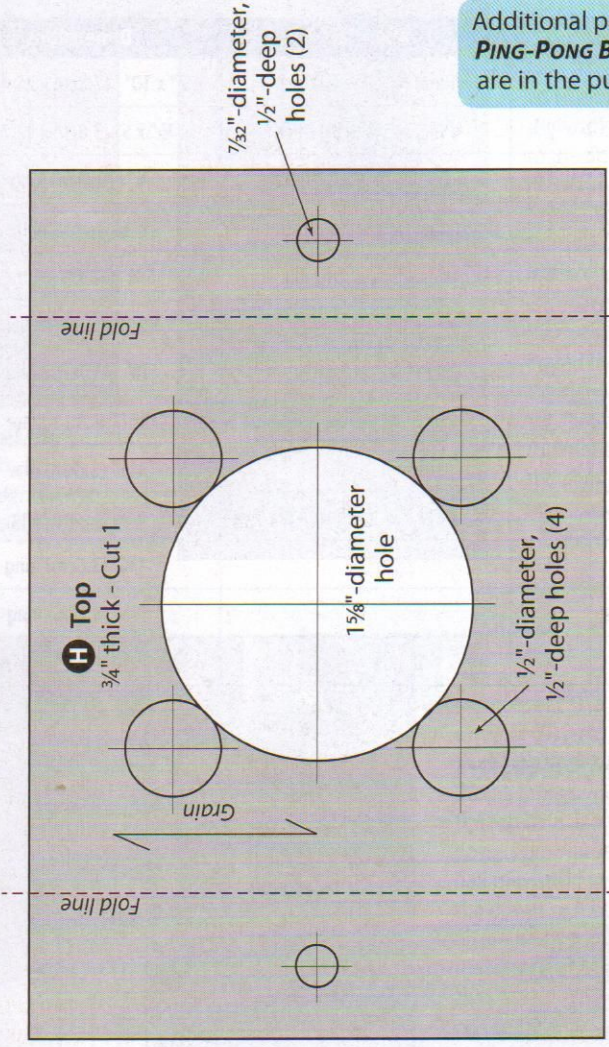
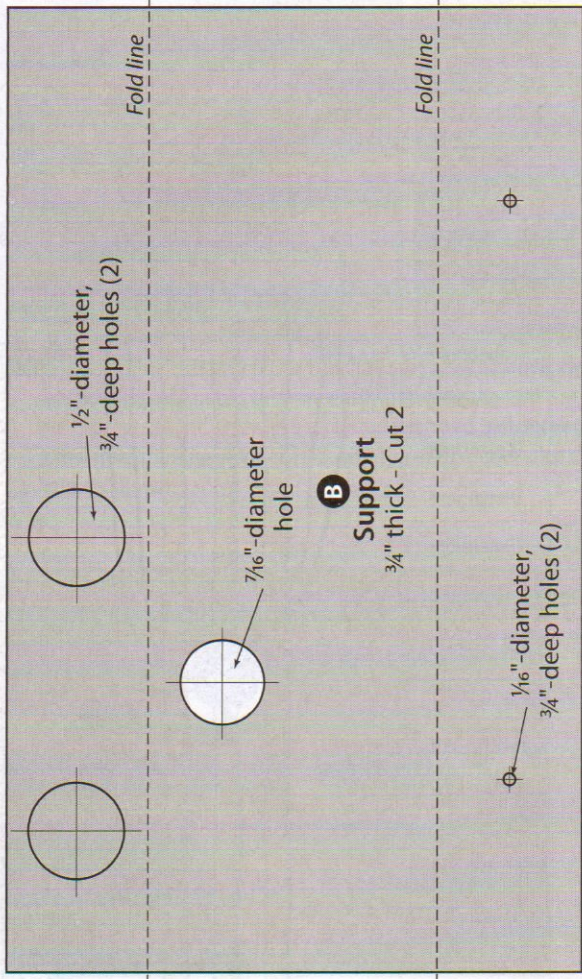


Assembly drawing



Ping-pong ball explosion patterns

Additional patterns for the **PING-PONG BALL EXPLOSION** are in the pullout section.



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Materials & Tools

Materials:

- Pine board, 3/4" (1.9cm) thick: 7" x 16" (17.8cm x 40.6cm)
- Plywood, 1/2" (1.3cm) thick: 2" x 3" (5.1cm x 7.6cm)
- Dowels, 1/2" (1.3cm) dia.: 2 each 36" (91.4cm) long
- Dowel, 3/8" (1cm) dia.: 10" (25.4cm) long
- Dowel, 1/4" (6mm) dia.: 10" (25.4cm) long
- Wooden ball: 1 1/2" (3.8cm) dia.
- Screw eye, 7/32" (5.5mm)-dia. eye: 1 3/16" (3cm) long
- L-bend screw hook: 1 3/8" (3.5cm) long
- Drywall screws, coarse thread: 4 each 1 1/4" (3.2cm) long
- Wooden pegs, 1/4" (6mm) dia.: 2 each 1" (2.5cm) long
- Sandpaper

- Table tennis balls: 10 each
- Rubber band: 1 each 1/8" wide x 7" long (3mm x 17.8cm) long OR 3 each 1/4" wide by 3 1/2" long (6mm x 8.9cm) long bands looped together

Tools:

- Saws: miter, scroll
- Drill with bits: 1/16", 3/32", 1/8", 5/32", 1/4", 7/16", 3/8", 1/2", countersink
- Phillips screwdriver
- Hammer
- Measuring and marking tools: ruler, compass, square, protractor or 30-60-90 triangle, pencil
- Scissors

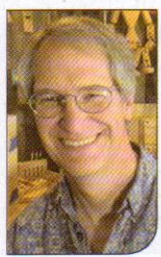
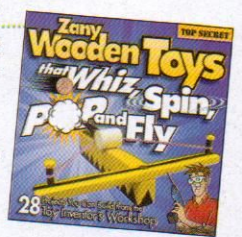
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

ON THE WEB See a video of the Ping-Pong Ball Explosion online. www.scrollsawer.com

WANT MORE TOYS?

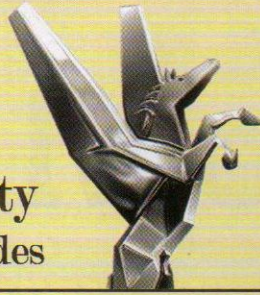
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Bob Gilsdorf lives in Colorado Springs, Colo., with his wife and five sons. Bob started woodworking at a young age, and he has built wooden toys for most of his life. An engineering manager at a semiconductor company, Bob continues to invent and make wooden toys.

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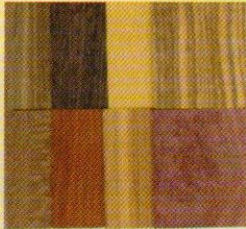


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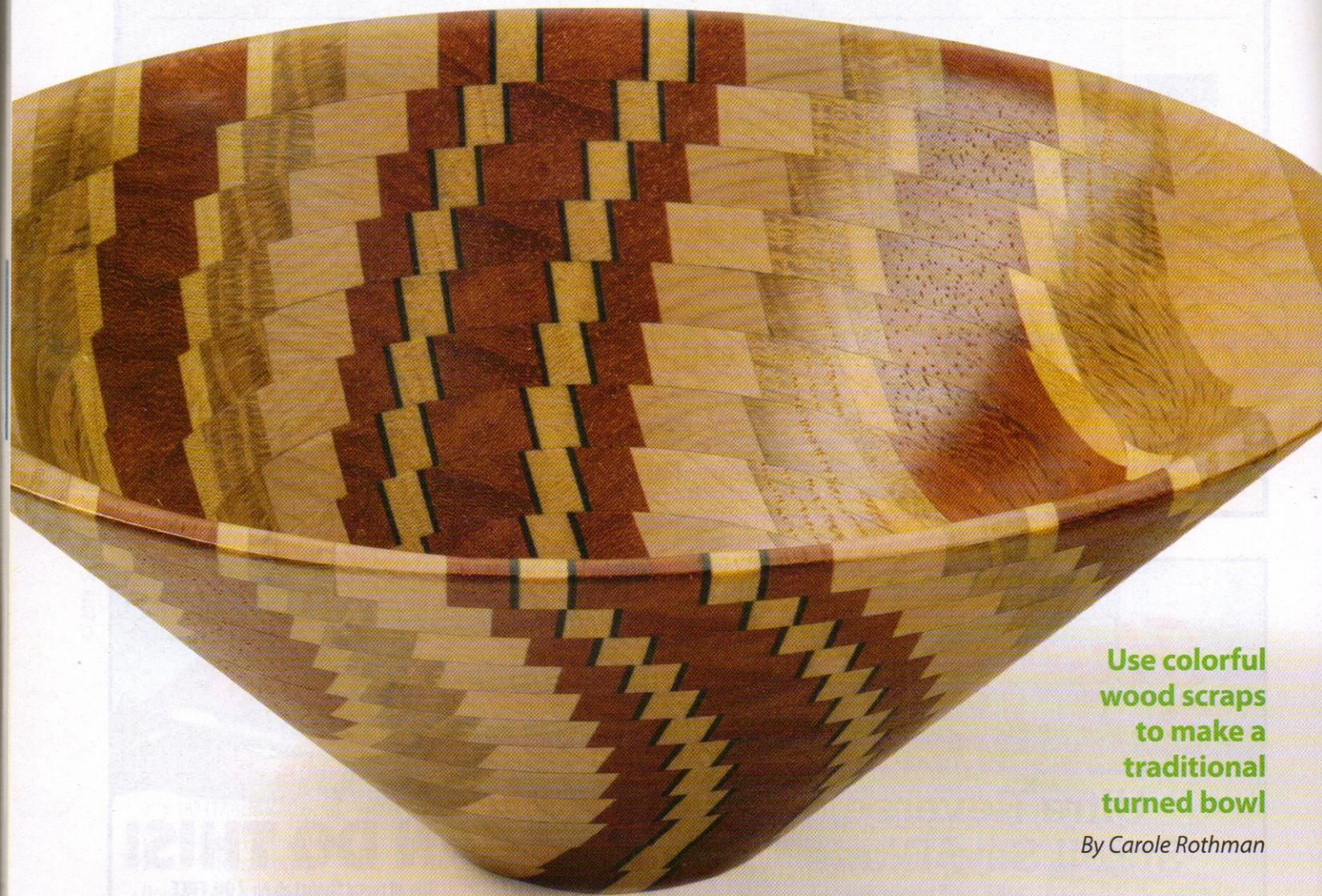


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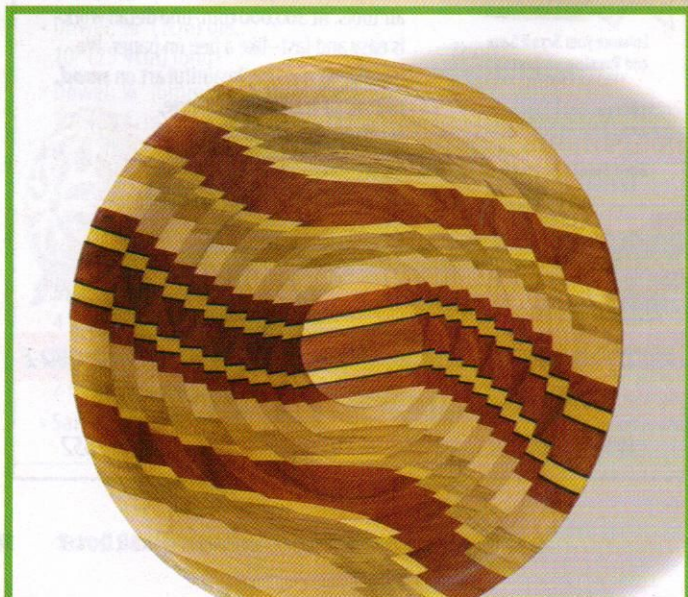
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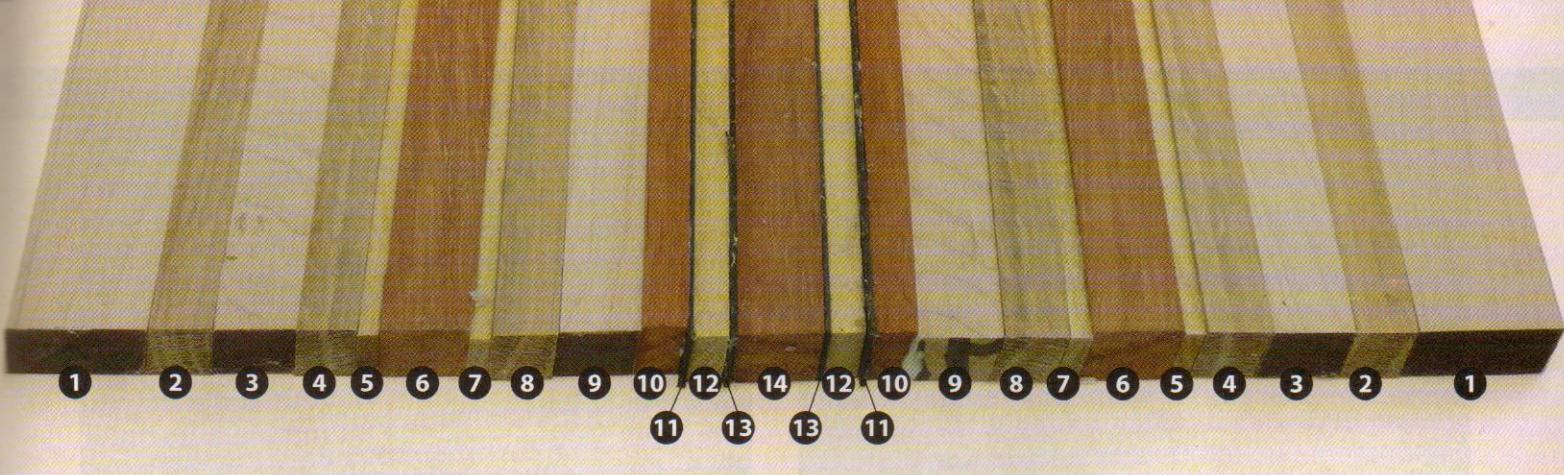


Use colorful wood scraps to make a traditional turned bowl

By Carole Rothman



Like most woodworkers, my shop is cluttered with colorful wood scraps I can't bear to throw away. While some shapes come in handy, thin, narrow strips never seem right for whatever project I'm starting. However, the day I discovered what woodturners call "dizzy bowls," I knew I'd found a home for my ever-increasing pile of strips. These segmented bowls are laminated in such a way that they create intricate and colorful designs.



Choosing the Wood

Everyone has different scraps in their pile, so every dizzy bowl looks different. Experiment with your scraps to find a pleasing combination. To create a bowl with a distinct center stripe like mine, you'll need an odd number of strips (I used 27 per blank) in sufficient quantity to create two identical blanks, each about 9½" (24.1cm) square. So you can see how the blank looked before I cut it, I've included a photo and listed my selections and their widths at right.

- | | |
|---------------------------|----------------------------|
| 1 Maple, 7/8" (2.2cm) | 8 Oak, 3/8" (1cm) |
| 2 Oak, 3/8" (1cm) | 9 Maple, 1/2" (1.3cm) |
| 3 Maple, 1/2" (1.3cm) | 10 Padauk, 1/4" (6mm) |
| 4 Oak, 3/8" (1cm) | 11 Black veneer, N/A |
| 5 Yellowheart, 1/8" (3mm) | 12 Yellowheart, 1/4" (6mm) |
| 6 Padauk, 1/2" (1.3cm) | 13 Black veneer, N/A |
| 7 Yellowheart, 1/8" (3mm) | 14 Padauk, 1/2" (1.3cm) |

Gluing Up a Dizzy Bowl Blank

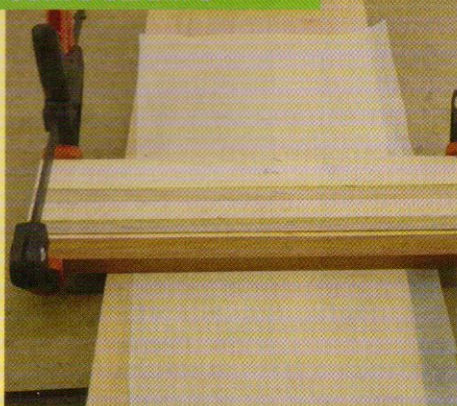
Most woodturners glue up one thick blank that they resaw to form two or more thin blanks. Because I started with thin strips, I substituted two identical thin blanks for the single resawn one.

You can cut the strips with either a scroll saw or table saw; just make sure the edges you plan to glue together are smooth and straight. The starting thickness of my strips was about 3/8" (1cm). When the glue-up was dry, I sanded each blank to 1/4" (6mm) thick and then cut it into a circle. Rotated and glued together, the circles form a single 1/2" (1.3cm)-thick blank from which I cut the bowl.

USING A JIG



USING CLAMPS



Two Ways to Glue

For this project, you need to glue thin strips of wood together and keep them relatively flat. Otherwise, you'll be losing a lot of wood to sanding. There are two ways to accomplish that: use a jig or use clamps.

Using a Simple Gluing Jig

Attach two strips of wood to a piece of MDF in an L shape. Make sure one piece is longer than your bowl strips. Place a nonstick surface, such as a silicon mat or waxed paper, on the jig. Apply glue to one edge of the first strip. With that strip flat on the mat, press the mating edge of the next strip firmly against it. Slide the strips together to spread the glue evenly, and then press the strips firmly against the side of the jig until the glue sets up. Add additional strips, one at a time, in the same manner. Glue the strips in sections for better control. Repeat for the second blank. Let the glue dry thoroughly.

Using Clamps

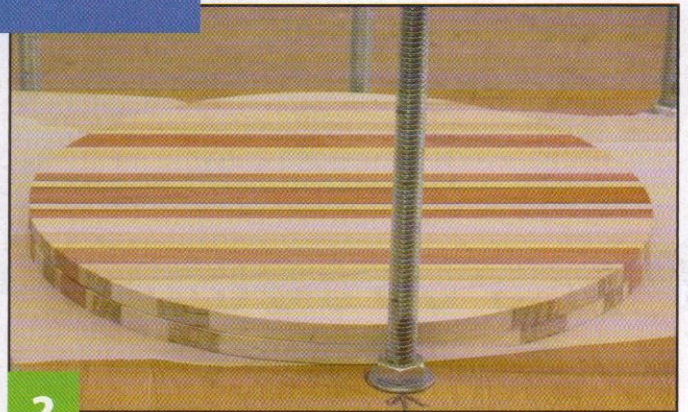
Choose a board narrower than your strips are long and line it with waxed paper. Arrange the strips on the board and glue them in sections, following the instructions above. Clamp the sides as shown. Make sure that the gluing surfaces meet fully and the glued-up strips don't cup. Then, glue the sections together.

DIZZY BOWL: CUTTING THE RINGS



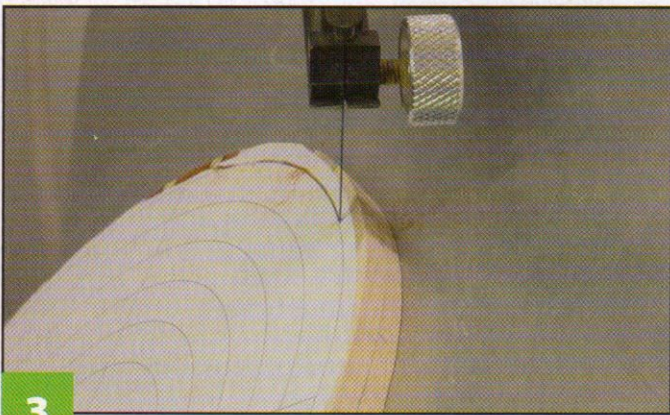
1

Glue the strips together (see **Two Ways to Glue** on page 61). Sand each blank to a uniform $\frac{1}{4}$ " (6mm) thickness. I use a drum sander. Using a compass and identical center points, draw an $8\frac{1}{2}$ " (21.6cm)-diameter circle on each blank. Cut each circle with the saw table level. Place the circles together, matching centers and stripes. Rotate the circles slightly to establish an attractive pattern and mark that position on the edges.



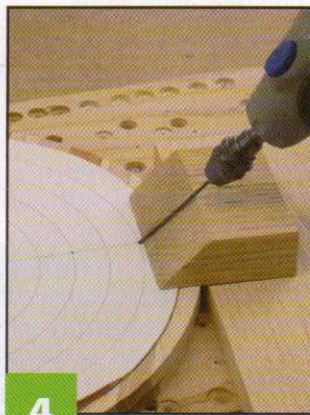
2

Glue the two circles together in the rotated position. Use the marks, and then clamp the two together and let the glue dry. Check the thickness. If the blank is more than $\frac{1}{2}$ " (1.3cm) thick, sand wood evenly from both faces to reduce it to $\frac{1}{2}$ " (1.3cm) thick.

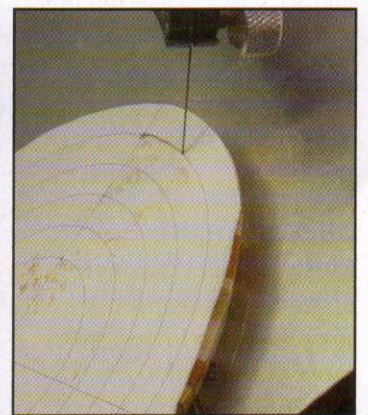


3

Mark the center of the blank. Attach the cutting pattern to the blank with repositionable adhesive, using an awl to make sure the centers are aligned. Tilt the left side of the saw table down to 45° and cut clockwise around the outside of the first ring. Support the blank as you cut to keep it from sliding down and distorting the cutting angle.

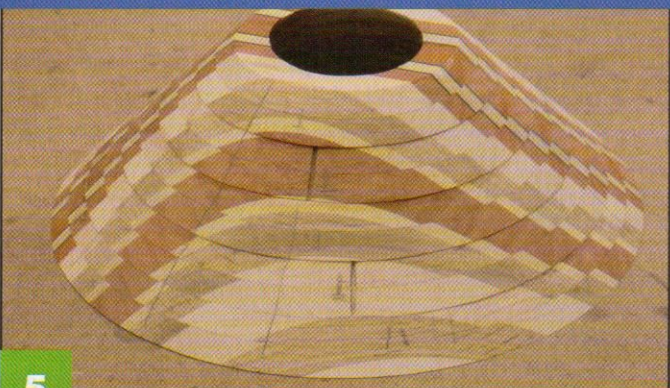


4



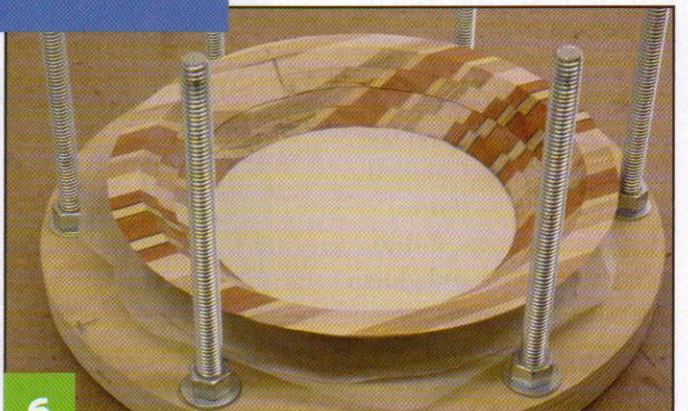
Drill blade-entry holes at a 45° angle where indicated on the pattern. Use a shop-made angle guide (see **Tip** on page 63), and angle the holes toward the center of the circle. Insert the blade and cut clockwise to complete the first ring. Mark the top of the ring. Cut and mark the remaining four rings in the same way.

DIZZY BOWL: GLUING THE RINGS



5

Stack the rings, rotating them to continue the pattern. Mark the alignment on the inner and outer faces. Check for spaces between rings and sand the problematic surfaces until the rings lie flat against each other.



6

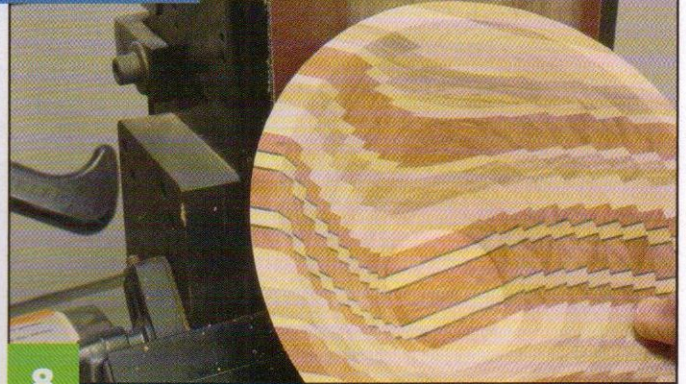
Glue the rings in stages. This keeps them from slipping out of alignment. Glue the top two rings together. Clamp them, let them dry about 10 minutes, and then add the next ring. Repeat until you have glued all of the rings. Do not glue on the base yet. Let the glue dry thoroughly.

DIZZY BOWL: SANDING & FINISHING THE PROJECT



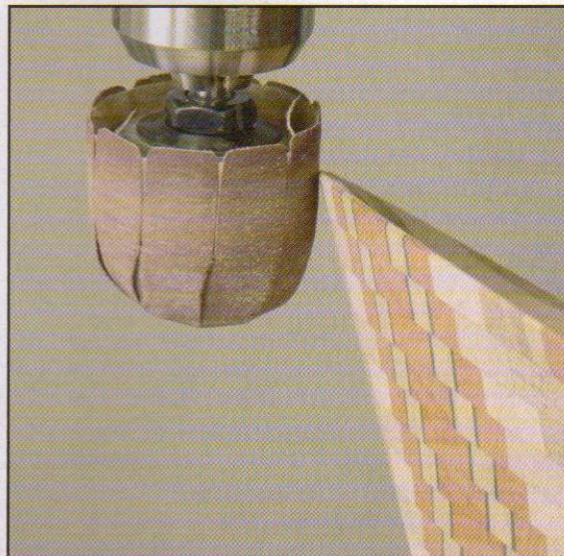
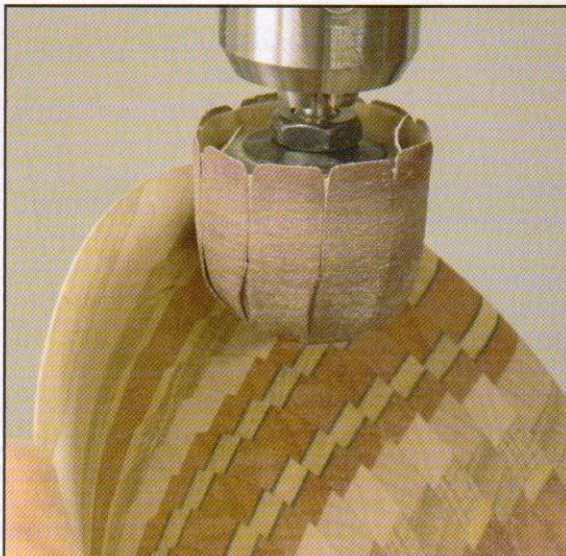
7

Sand the inside of the bowl. Use a round inflatable sander. Start with a coarse sleeve to remove the blade and burn marks, and any other irregularities. Then, progress to medium- and fine-grit sleeves. Make sure the bottom edge of the smallest ring is sanded into a smooth, regular circle.



8

Place the rings on the base. Rotate the base to select the most attractive orientation for the inside and outside of the bowl. Mark its position and glue the base to the lower rings, removing it briefly from the clamps to clean up any squeeze-out before it dries. When the glue has dried completely, tilt the table of a vertical belt sander to 45° and sand the bowl exterior smooth.



9

Sand the outside of the bowl. Use progressively finer sandpaper up to 220 grit. Remove any scratch marks left by the belt sander. Soften the inside and outside edges with the round inflatable sander, finishing by hand. Apply several coats of spray shellac or lacquer, rubbing between coats with 0000 steel wool.

Materials & Tools

Materials:

- Scrap wood: 3/8" (1cm) thick x 9 1/2" (24.1cm) long, in sufficient quantity to build two matching blanks (see page 61)
- Thick PVA wood glue, such as Weldbond or Quick&Thick
- Spray adhesive: repositionable
- Sandpaper
- Grit sleeves: round, for inflatable sander
- Spray shellac or lacquer
- Steel wool: 0000

Tools:

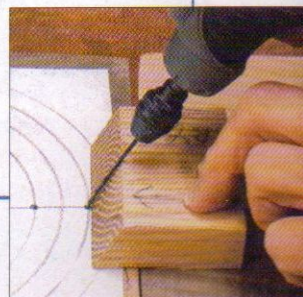
- Sanders: drum sander (recommended), belt with tilting table, round inflatable
- Clamps or shop-made gluing jig and silicon mat
- Scroll saw blades: #7 reverse-tooth
- Drill or rotary tool with #54 wire size bit
- Shop-made 45° angle drilling guide
- Press for gluing, or clamps and boards
- Compass
- Awl

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

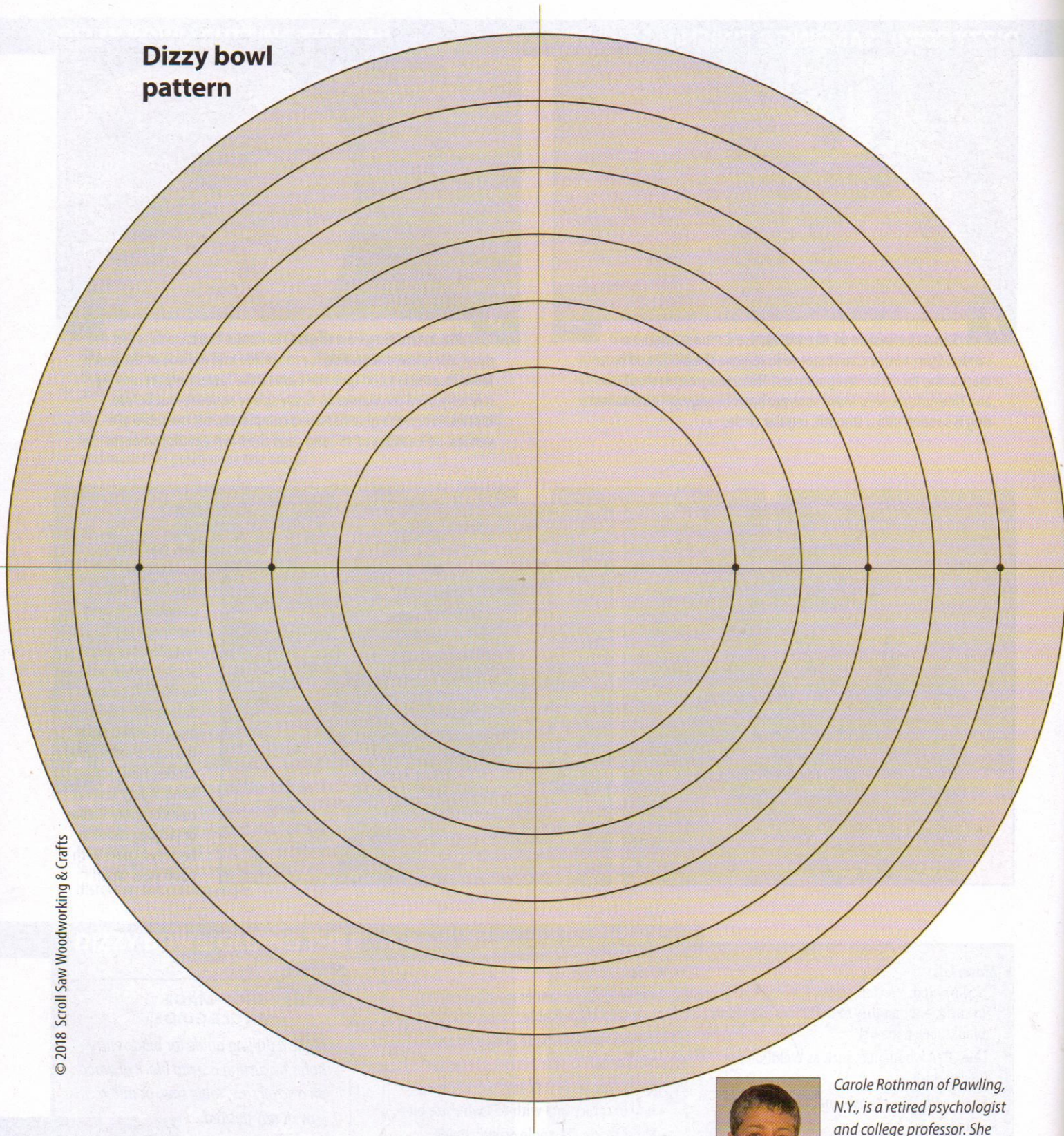
TIP

SHOP-MADE ANGLE GUIDE

Make a drilling guide for blade entry holes by cutting a scrap block of wood on a scroll saw, table saw, or miter saw at any desired angle for the project at hand. Carole's Dizzy Bowl requires a 45° angle.



Dizzy bowl pattern



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Carole Rothman of Pawling, N.Y., is a retired psychologist and college professor. She is also an award-winning cake decorator. Visit Carole online at www.scrollsawbowls.blogspot.com. You'll find her books,

Creative Wooden Boxes from the Scroll Saw and Wooden Bowls from the Scroll Saw, at www.foxchapelpublishing.com.

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CALENDAR OF EVENTS

2018 SCROLL SAW & WOODWORKING SHOWS

April 13-15, HOUSTON, TX: Woodworking Show of Texas. Sponsored by local woodworkers to showcase the latest tools and accessories, including scroll saws. Crown Plaza Northwest/Brookhollow, 12801 NW Freeway (Hwy 290N). Noon to 6pm Fri., 10am to 6pm Sat., 11am to 4pm Sun. Adm. \$12 (for 3 days); kids 14 and under free. Info: www.woodworkingshowoftexas.com.

May 18-19, CUYAHOGA FALLS, OH: The North Eastern Ohio Scroll Saw & Woodworking Expo. Hosted by The North Eastern Ohio Scrollers. Includes classes, vendors, raffle, banquet. Quirk Cultural Center, 1201 Grant Ave. 9am to 4:30pm both days. Info: neosclub.wixsite.com/home.

Aug 3-4, DUBUQUE, IA: 2018 Midwest Scroll Saw and Woodworking Trade Show. Hosted by the Veterans Freedom Center (Dubuque) and Karen Boelman of the Art Factory, Platteville, WI. Includes classes, vendors, contest, scroll saw corral, door prizes. Dubuque County Fairgrounds, 14569 Old Highway Rd. 9am to 5pm Fri., 9am to 3:30pm Sat. Adm. \$5 each day or both days for \$8; children under 16 free. Info: midwesttradeshow.com.

Oct 13-14, WILMINGTON OH: Artistry in Wood. Hosted by the Dayton Carvers. Carving, scrolling, and woodworking show with vendors, contest, seminars, door prizes. Roberts Centre, 123 Gano Rd. 10am to 6pm Sat., 10am to 5pm Sun. Adm. \$8 for one day; \$10 for two days; children under 12 and Scouts in uniform free. Info: daytoncarvers.com/artistryinwood.html.

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Delicate Floral Fretwork Box



Exuberant flowers bring a fresh feel to this traditionally styled box

By Sue Mey
Cut by John Nelson

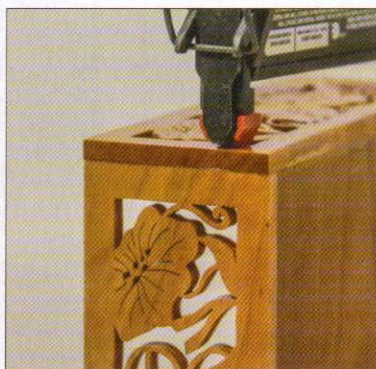
This arresting design shows off your cutting skills with an intricate floral fretwork. Cut it from that gorgeous piece of wood you've been saving for something special, or use something simple and try a decorative finish instead. Either option will make a beautiful box sure to be treasured by the lucky recipient.

Cutting the Pieces

Attach the patterns to the wood blanks. Drill blade-entry holes and cut the fretwork normally. The delicate veining cuts can get lost if you cut them with a standard flat blade (especially if you paint the design). Conversely, it can be hard to cut smooth curves with a spiral blade. I suggest using a combination of the two. Cut along the lines first with a flat blade to get the smooth curves. Then, cut the lines again with a spiral blade. The flat-blade cut guides the spiral blade, making it easier to follow the line, while the slightly larger spiral blade makes the cut more visible.

Assembling the Box

The sides of the box are assembled with butt joints, which look nice but can pop apart when seasonal changes in humidity cause the wood to expand or contract. Fortunately, the problem is easy to solve by reinforcing the joints.



Option A: Reinforce the joints with brads. After you glue and clamp the sides around the bottom, carefully use a brad nailer to drive brads into the joints. You could also drill pilot holes and drive small brads into the holes. Use putty in an appropriate color to fill the holes.



Option B: Support the joints with blocks. Cut ½" (1.3cm)-square by 2" (5.1cm)-tall wooden blocks. Glue and clamp them into the four corners of the box. While you sacrifice a bit of storage space, the box is sure to stay together.

Adding a Decorative Finish

By Lora S. Irish

Marbleizing

Not only is this an attractive finish for a variety of projects, but it's also a great way to disguise a project where you had trouble following the lines exactly. The mottled surface and variations in color divide your attention between the cuts and the colors, so you don't focus heavily on either and your eyes are not distracted by miscut lines.



Step 1: Place titanium white, burnt umber, and ultramarine blue acrylic or craft paint on a palette. Make a mixture that is predominately white, but pick up the other two colors in a sloppy, semi-mixed pattern; apply it to the lid. The goal is to create a mottled basecoat to be the background for the other colors.

Step 2: Put a variety of oil paints on a clean palette. I used yellow ochre, burnt umber, phthalo green, ultramarine blue, Payne's gray, and carbon black. Make a mixture of equal parts turpentine and boiled linseed oil (or a quick-drying oil media) and use it to thin the oil paints. Make the paint thin enough that if you brush it across newspaper, you can see the print, but still have definite color.

Step 3: Get a bucket of ice water. Allow the ice to melt, but make sure the water is as cold as possible. Place, or pour, the thinned oil paints on the top the water. Because oil and water don't mix, they will float. Put on latex gloves. Use a kitchen skewer to make one and only one swirl through the colors. The boiled linseed oil provides enough surface tension that the colors won't mix, so if you swirl white through blue, you'll end up with blue with a white strip instead of light blue.

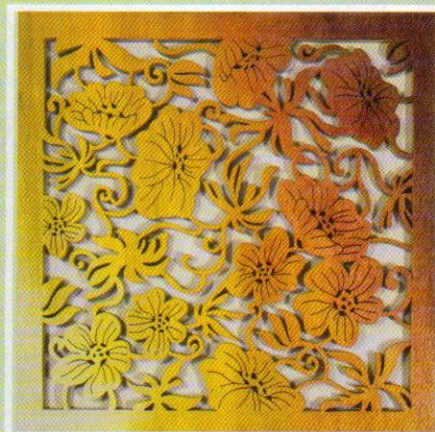
Step 4: Dip the lid straight into the water. Then, pull it straight up. Rest the lid on one corner and hold it at an angle until the thinned paint drips off. The dripping process adds the lines you see in marble. Allow the paint to dry thoroughly. Clean the bucket thoroughly.

Step 5 (optional): Adjust the colors and repeat the process. This allows you to add more of a color to adjust the look of your marble. When the paint is dry, I splatter the lid with a few of the colors left on my palette to give it a little more texture. Seal the lid with a finish of your choice after the paint dries.

DISPOSE OF OILY RAGS CAREFULLY Put any rags or paper towels used for the boiled linseed oil in a coffee can or metal bucket full of soapy water outside your house. These rags can spontaneously combust and start a fire.

Oil Blending or Rouging

This technique gives you perfectly blended color gradation, something I have never been able to accomplish with a brush. It's also a great way to add a dark stain or antiquing medium, because you can apply it carefully and prevent blotching. My graduation went from yellow, to orange, to red, and finally to brown.



Step 1: Mix equal parts boiled linseed oil and turpentine. Apply one or two coats to the raw wood. While the mixture dries slightly, put the four colors on your palette and put on latex gloves. When the oil mixture is no longer glossy, but while it is still fresh, move on to Step 2.

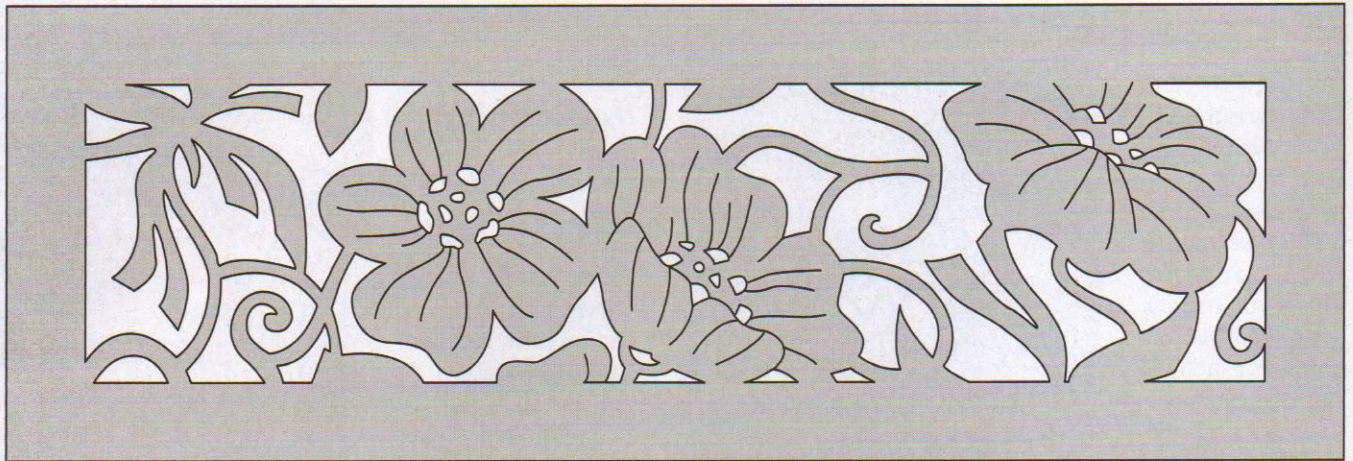
Step 2: Wrap an old sock tightly around your index finger. Pat your finger in the cadmium yellow, pat it onto the palette, and rub it into the first quarter of the box lid on the diagonal. Use little circular motions. This technique prevents brush strokes and applies the color to just the top of the lid, keeping it off the sides and out of the frets.

Step 3: Wrap a clean part of the sock around your index finger. Pat your finger in the cadmium orange, pat it onto the palette, and rub it into the next quarter of the lid. As you start to run out of color on your finger, work the paint back over the yellow so it blends into a yellow-orange color.

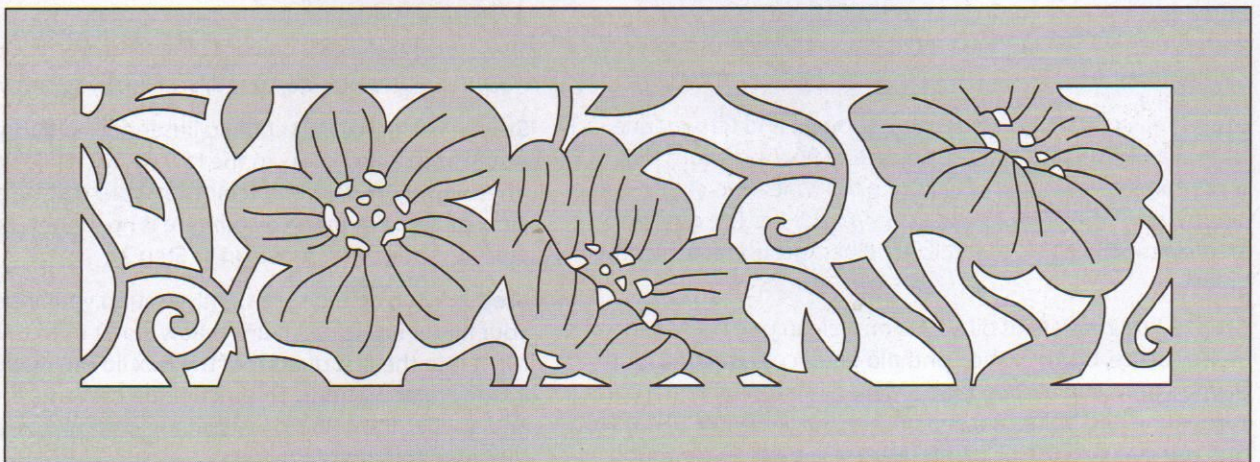
Step 4: Repeat the process using cadmium red medium. Then, repeat the process with burnt umber. For more intense color, allow the paint to dry overnight, apply a coat of gloss acrylic spray finish, and repeat the steps to add color (do not reapply the boiled linseed oil). Apply a sealer of your choice after the paint dries.



Lora S. Irish is an artist, author, and pattern designer. For more of her work, visit www.lsirish.com. Lora's new book on finishing, *Finishing Techniques for Wood Crafters*, will be available in July. Preorder it by calling Fox Chapel Publishing, 1-800-457-9112, and requesting item #9296.



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Materials & Tools

Materials:

- Cherry, ¼" (6mm) thick: lid liner, 6½" (16.5cm) square; short sides, 2 each 2½" x 6½" (6.4cm x 16.5cm); long sides, 2 each 2½" x 7" (6.4cm x 17.8cm); lid, 7" (17.8cm) square
- Cherry, ½" (1.3cm) square: gluing blocks, 4 each 2" (5.1cm) long (optional)
- Baltic birch plywood stained or cherry plywood, ¼" (6mm) thick: bottom, 6½" (16.5cm) square
- Sandpaper
- Spray adhesive
- Wood glue
- Danish oil (optional)
- Wood putty (optional)

Optional Finishing Materials (Marbleizing):

- Acrylic or craft paints: titanium white, burnt umber, ultramarine blue
- Oil paints: yellow ochre, burnt umber, phthalo green, ultramarine blue, Payne's gray, carbon black
- Turpentine
- Boiled linseed oil or quick-drying oil media
- Bucket of ice water
- Kitchen skewer
- Latex gloves

The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

(Oil Blending):

- Oil paints: cadmium yellow, cadmium orange, cadmium red medium, burnt umber
- Boiled linseed oil
- Turpentine
- Clean, old sock
- Latex gloves

Tools:

- Scroll saw blades: #1 reverse-tooth; #1 spiral reverse (optional)
- Clamps
- Brad or pin nailer (optional)

Additional pattern for the **FLORAL FRETWORK BOX** is in the pullout section.



Sue Mey lives in Pretoria, South Africa. To see more of her work, including a wide variety of patterns and pattern-making tutorials available for purchase, visit www.scrollsawartist.com. She can be contacted at

suem@storage.co.za. Her pattern book, *Lighted Scroll Saw Projects*, is available from www.schifferbooks.com and other outlets.

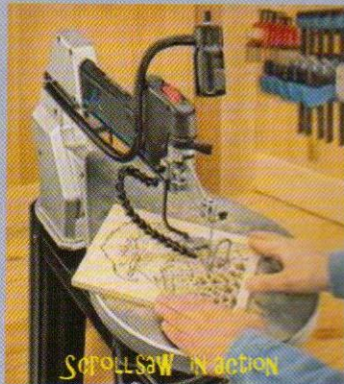


FretWork

Intarsia



Marquetry



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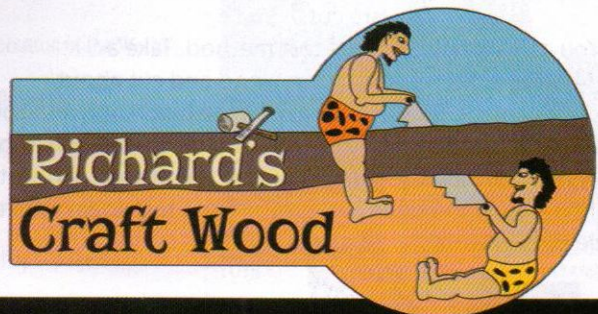
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To avoid repetitive instructions, this page is included in each issue to assist novice scrollers with basic scrolling techniques.

Squaring Your Table

Most scroll saws have an adjustable table that allows you to make cuts at different angles. There are times when you want the saw set at an angle, but most cutting is done with the blade perpendicular to the table. If the table is even slightly off-square, the cuts will be angled. This interferes with puzzle pieces, intarsia, segmentation, and many other types of scrolling projects.

The most common method for squaring a table uses a small metal square, or right angle tool. Set the square flat on the saw table against a blade that has been inserted and tensioned. Adjust the table to form a 90° angle to the blade.

The cutting-through method is also popular. Saw through a piece of scrap wood at least 3/4" (19mm) thick and check the angle of the cut using a square. Adjust the table until you get a perfectly square cut.

You can also use the kerf-test method. Take a 1 3/4" (44mm)-thick piece of scrap wood and cut about 1/16" (2mm) into it. Stop the saw, back the blade out, and spin the wood around to the back of the blade. If the blade slips easily into the kerf, the table is square. If it doesn't slide into the kerf, adjust the table and perform the test again until the blade slips in easily.

Attaching Patterns

Temporary-bond spray adhesive is the most common method used to attach patterns to stock. Photocopy the pattern. Spray the adhesive on the back of the copy of the pattern, wait a few seconds, and then press the pattern down onto the blank. Rubber cement or glue sticks work similarly.

You can also use graphite or carbon transfer paper. Place the pattern on the blank and slip a sheet of transfer paper

in between the pattern and the blank. Use a few pieces of painter's tape to hold the pattern and transfer paper in place. Trace around the pattern with a red pen (so you know where you have traced). Choose a light-colored transfer paper for darker woods. Carbon paper costs less than graphite paper, but must be sanded off before finishing.

Stack Cutting

Stack cutting lets you cut several pieces of a project—or even several projects—at one time. Essentially, you attach several blanks together and cut them as one unit.

One way to attach blanks is with tape. Line all the layers up and wrap a layer of tape around the outside edge. You can also wrap the whole stack in tape for extra stability. Use masking tape, painter's tape, or clear packaging tape.

Hot-melt glue is another option. Glue the blanks together with a dot of hot-melt glue on each side.

You can also join pieces by driving brads or small nails into as many waste areas as you can. Cut off any overhanging nails as close to the surface as you can, and then sand them flush to avoid scratching or catching on the table.

Blade Tension

Before inserting a blade, completely remove the tension. Clamp both ends of the blade into the blade holders and adjust the tension. Push on the blade with your finger. It should flex no more than 1/8" (3mm) forward, backward, or side to side.

A blade that does not have enough tension will wander. It will also flex from side to side, making for irregular or angled cuts. If you press too hard on a loose blade, it will usually snap. A blade that has too much tension is more susceptible to breaking and tends to pull out of the blade holders. In general, it is better to make the blade too tight rather than too loose.

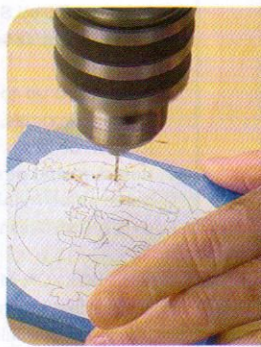
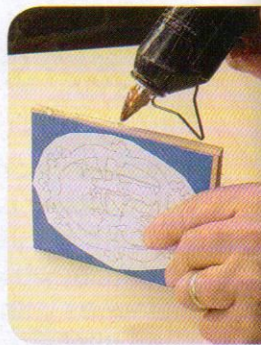
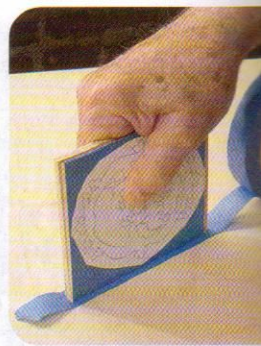
Blade-Entry Holes

Some patterns have blade-entry holes marked. If the pattern doesn't, place the holes near a line to be cut to prolong the blade life, but don't place the hole on a curving line or inside corner (if possible). Drill the hole perpendicular to the blank. Use a drill press if you have one; otherwise, use a hand drill and make the holes as vertical as possible. Drill through the blank into scrap wood to prevent tear-out on the back side of the blank.

If you have the space, use a larger bit—it will make it easier to thread the blades through. For thin veining cuts, use the smallest bit the blade will fit through.

Removing Patterns

Dampen a glued paper pattern with mineral spirits to aid in removal. Commercial adhesive removers work as well. A quick wipe of mineral spirits will remove most adhesives left behind on the wood.



**IN OUR
NEXT
ISSUE**



Make family game night a little less hectic with a dice tower.



This turtle is a box, but it's not a box turtle.



Finally get your elk with this fretwork trophy portrait.

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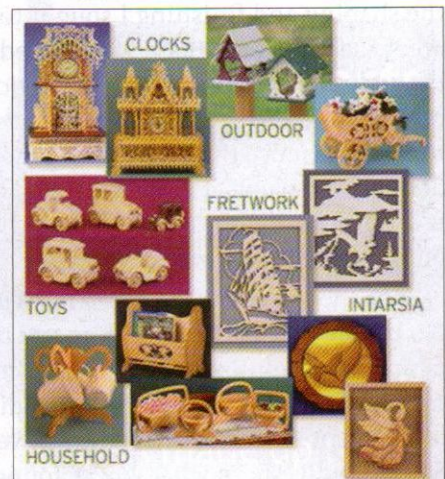
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Into the Wild Blue Yonder!



My P-40 fighter (left) was based on a pattern in a Fox Chapel book (below), but I shaped and painted my version to make it unique.

The P-40 Warhawk caught my eye the first time I saw it in the *Great Book of Wooden Toys*. I planned to build the plane, but the blocky look of the project didn't match my admiration for this famous aircraft. When I made the P-40 for my grandson Ben last Christmas, I followed the patterns exactly to cut the parts, but in the shaping and finishing I sought to satisfy my creative itch. I sanded all of the pieces to create rounded edges with a true aerodynamic feel. I found reference photos of authentic World War II paint patterns and chose a camouflage design. I purchased an airbrush (a tool I hadn't touched in more than 25 years), practiced on some scraps, and then detailed my plane. The result is still a toy, but the spirit of the warplane is in full play. I found it deeply satisfying to not just make this project, but to make it my own.

I challenge you to do the same with your next scrolling project. Go beyond the patterns and instructions, and seek to create a work of art. Be adventurous. Reshape key elements, open up the palette of natural grains and colors of wood, discover bold new finishes, dabble in different textures, or totally reinvent a project to match your vision. Scroll boldly, share what you've found, and join me in enjoying more creativity in the workshop.

Off we go...

Jon Deck has been the art director of Scroll Saw Woodworking & Crafts magazine for 16 years. Contact him at jon@foxchapelpublishing.com.

WANT INSPIRING TOY PROJECTS?

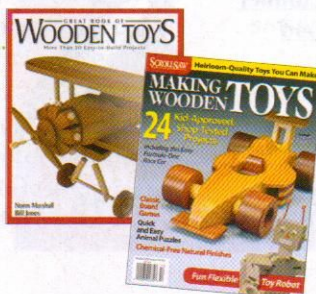
Great Book of Wooden Toys

by Norm Marshall and Bill Jones

Making Wooden Toys

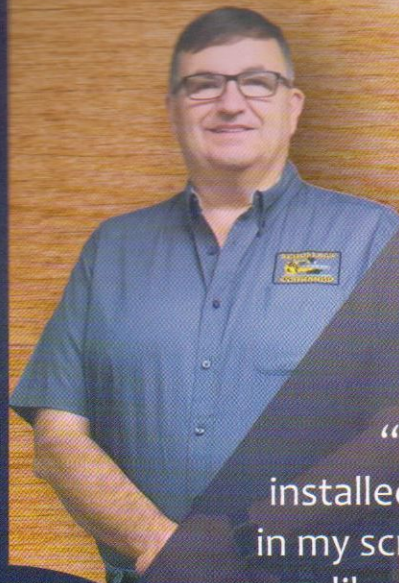
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These and dozens of wooden toy titles are available from Fox Chapel Publishing, www.FoxChapelPublishing.com, 800-457-9112, or your local retailer.



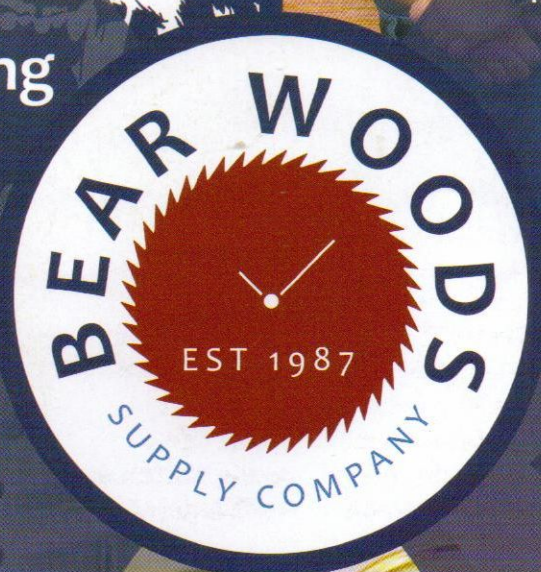


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- Steve Good



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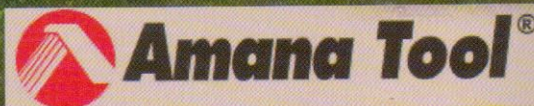
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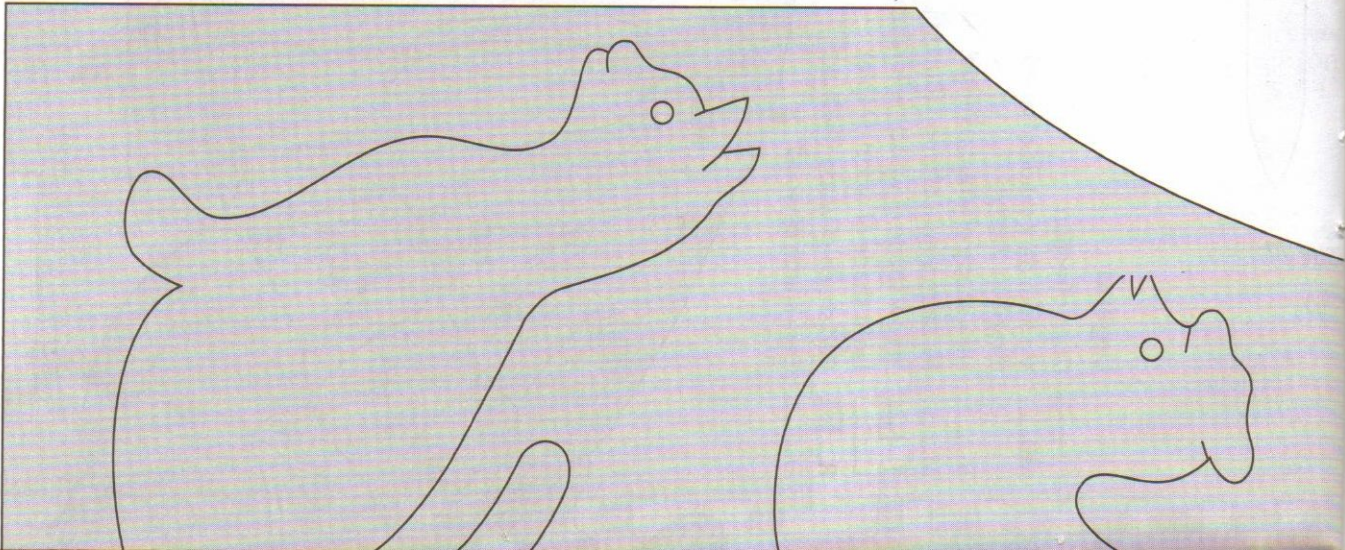
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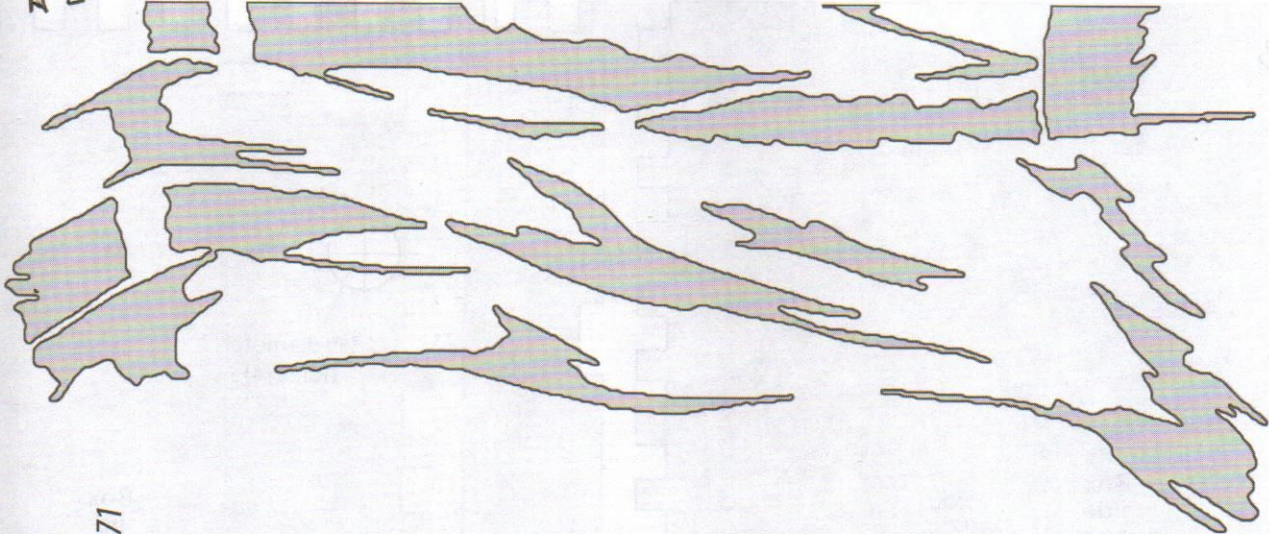
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A 2



Handsome Horse Portraits
 Page 28 - SSWC Issue 71
 Designer: Charles Dearing

Delicate Floral Fretwork Box
 Page 66 - SSWC Issue 71
 Designer: Sue Mey

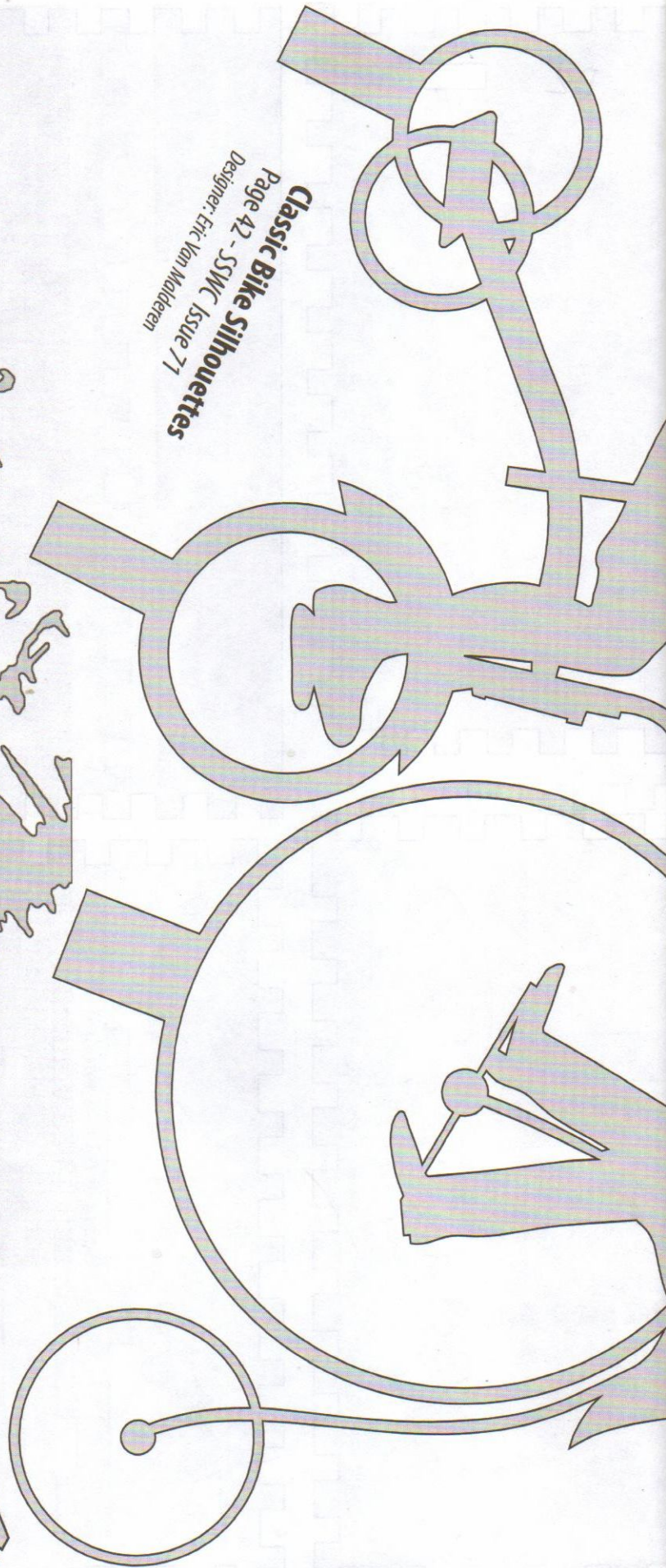


Workshop 24
 Page 4 - 22W

DM
 2015

A3

Classic Bike Silhouettes
Page 42 - SSWC Issue 71
Designer: Eric van Maderen



A4

All patterns to be copied at 100% unless otherwise indicated.

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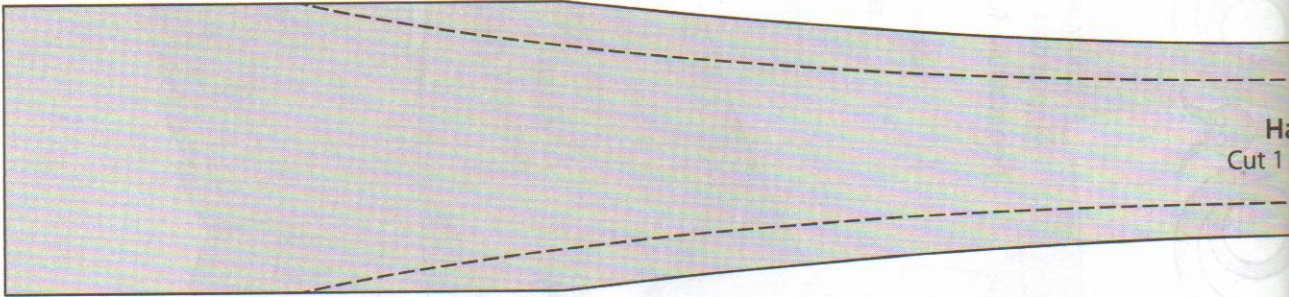
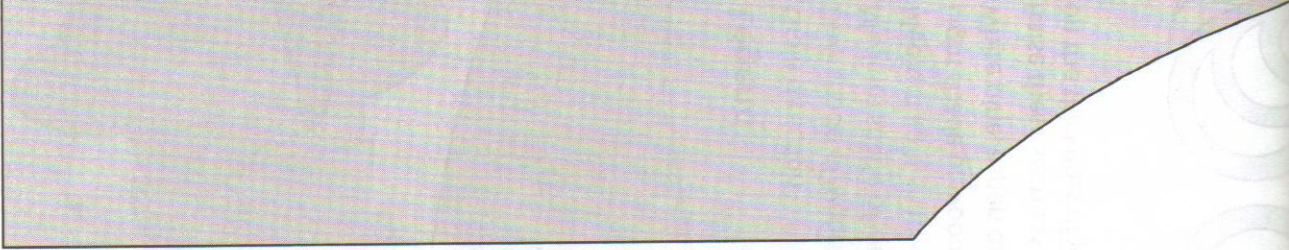
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|---------------------------------|----|-----------------------------------|----|
| Fretwork Butterfly Garden | 16 | Classic Bike Silhouettes | 42 |
| Coastal Critter Puzzles | 18 | Desktop Safe | 44 |
| Red-Eared Slider Turtle | 23 | Crescent Moon | 52 |
| Handsome Horse Portraits | 28 | Ping-Pong Ball Explosion..... | 54 |
| A Child's 1st Toolbox..... | 30 | Delicate Floral Fretwork Box..... | 66 |

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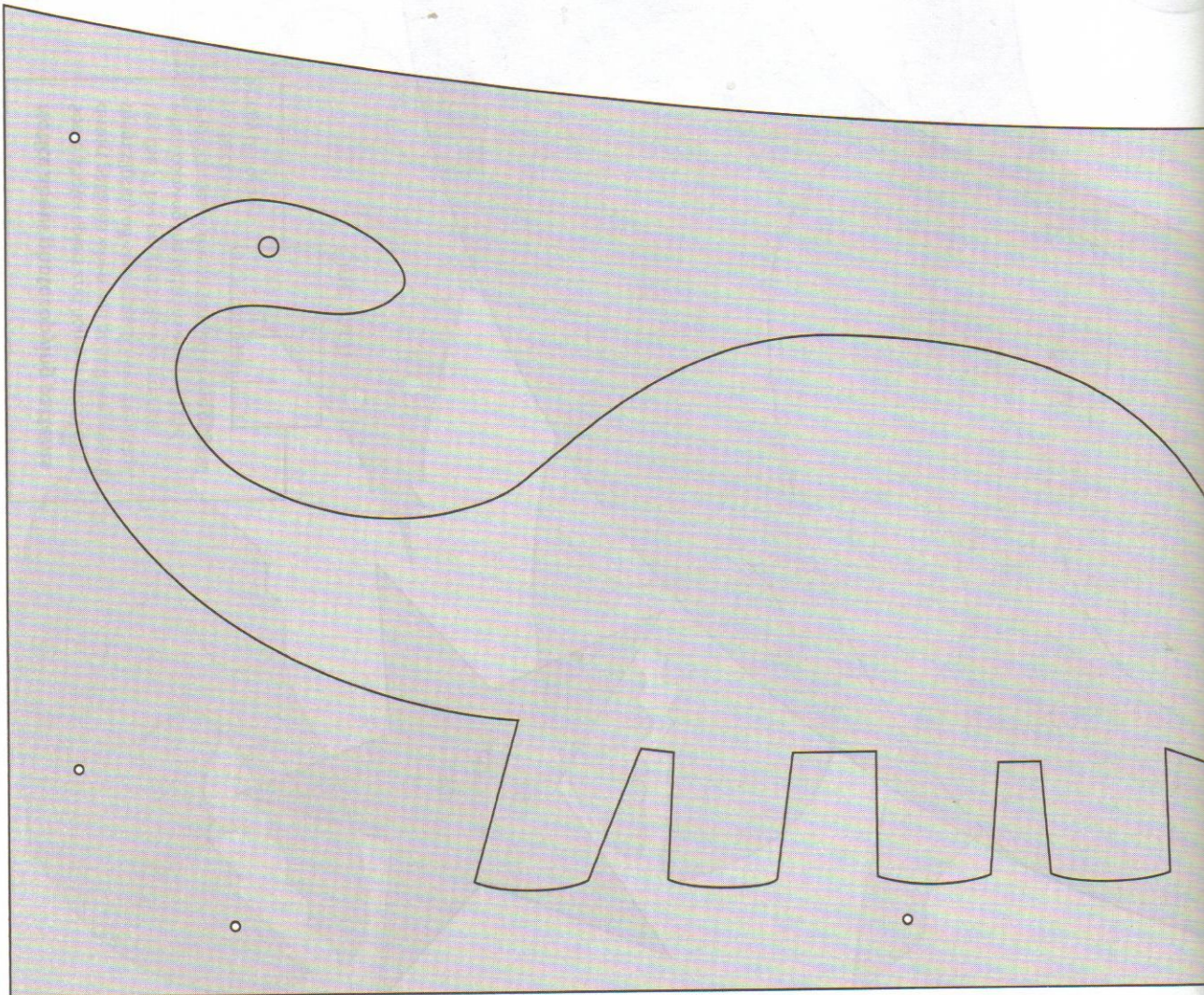


A5

End
Cut 2 - 3/4" thick



Ha
Cut 1



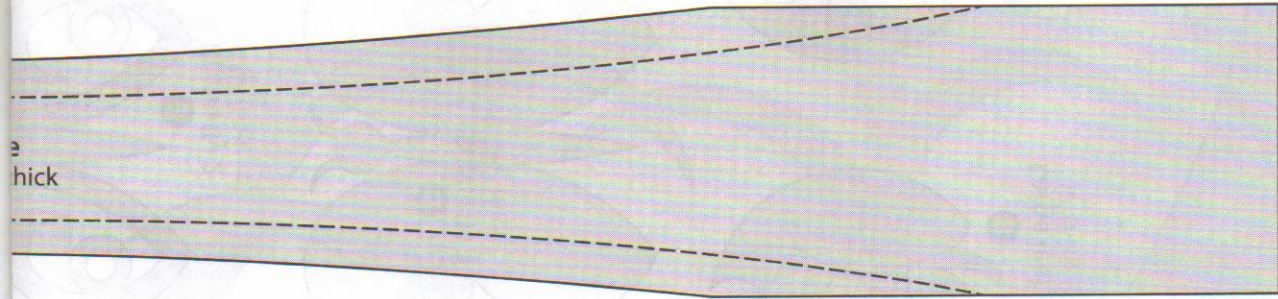
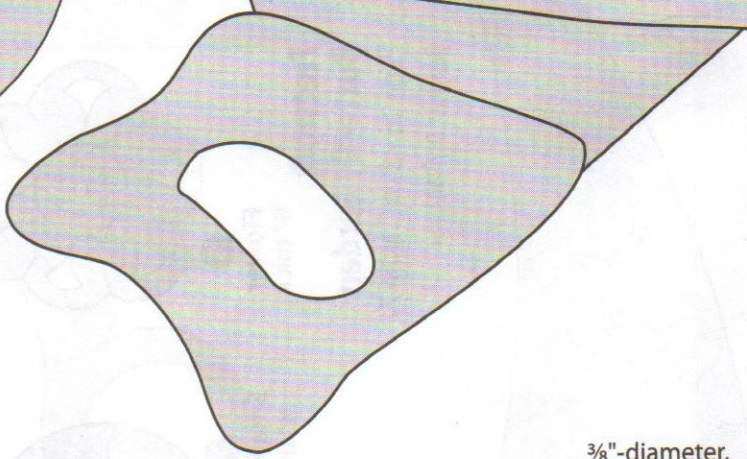
A6

A Child's 1st Toolbox

Page 30 - SSWC Issue 71

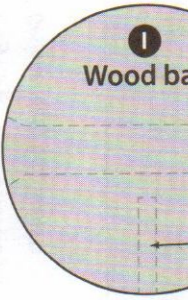
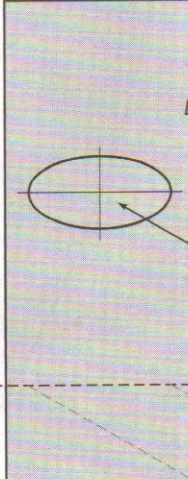
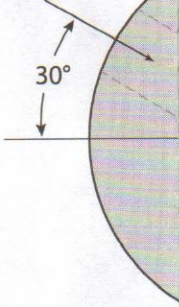
Designer: Dave Van Ess

Horse, Cat, and Rooster patterns courtesy of
Holiday Ornaments for the Scroll Saw
from the Berry Basket Collection



3/8"-diameter,
1/2"-deep hole,
centered

30°



1
Wood ba

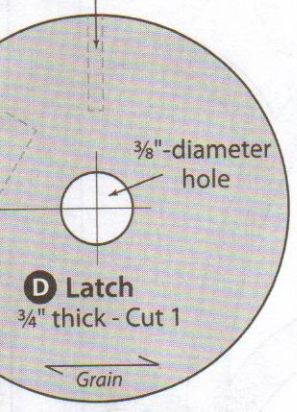
Ping-P

Page 54

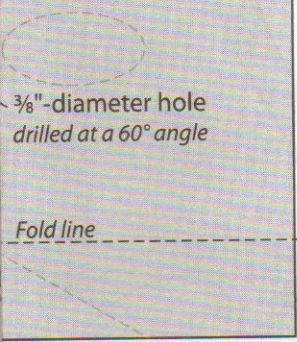
Designer:

A7

1/16"-diameter,
1/2"-deep hole,
centered



F Target
Bottom view

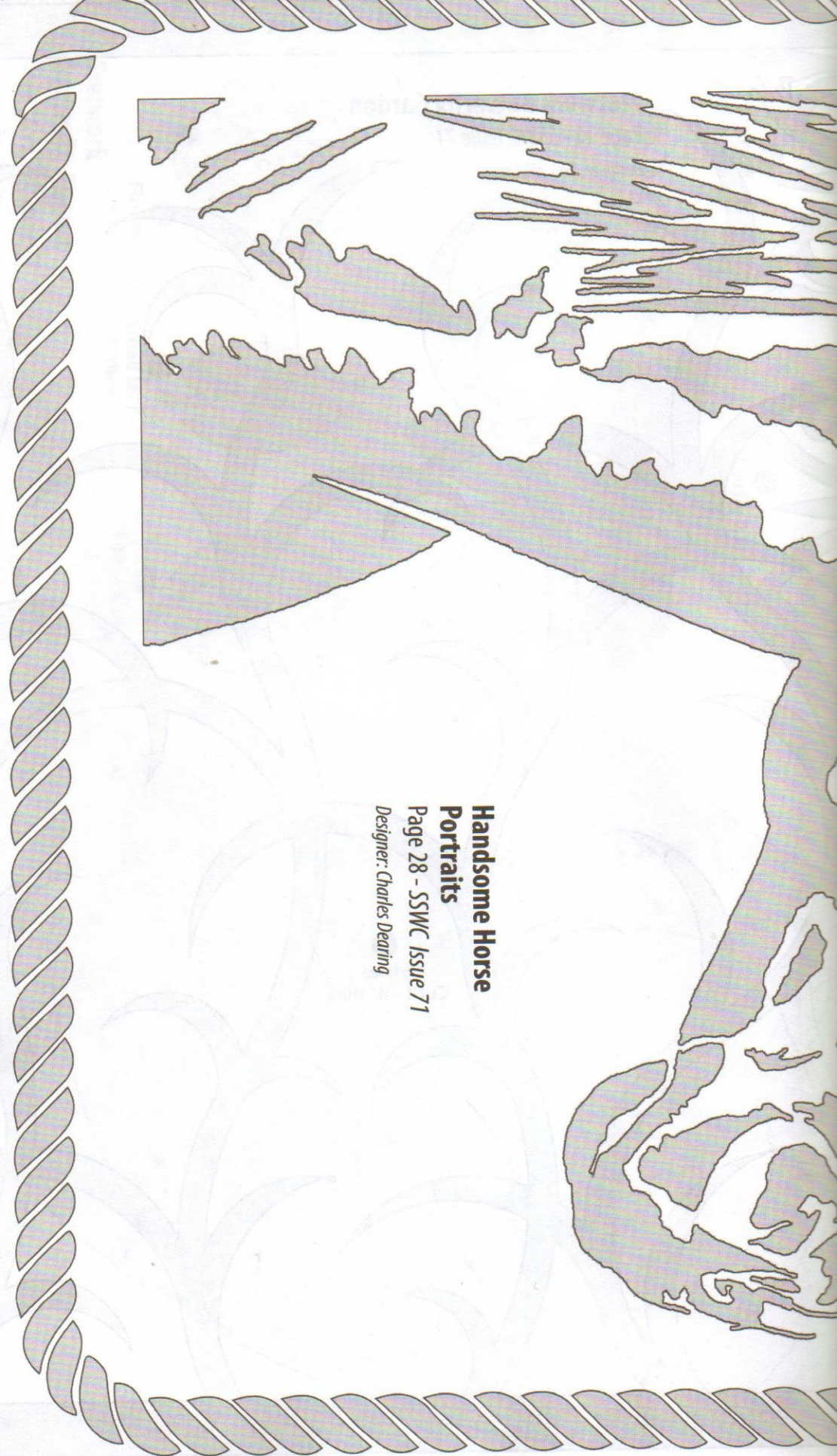


1/4"-diameter hole
countersunk both sides

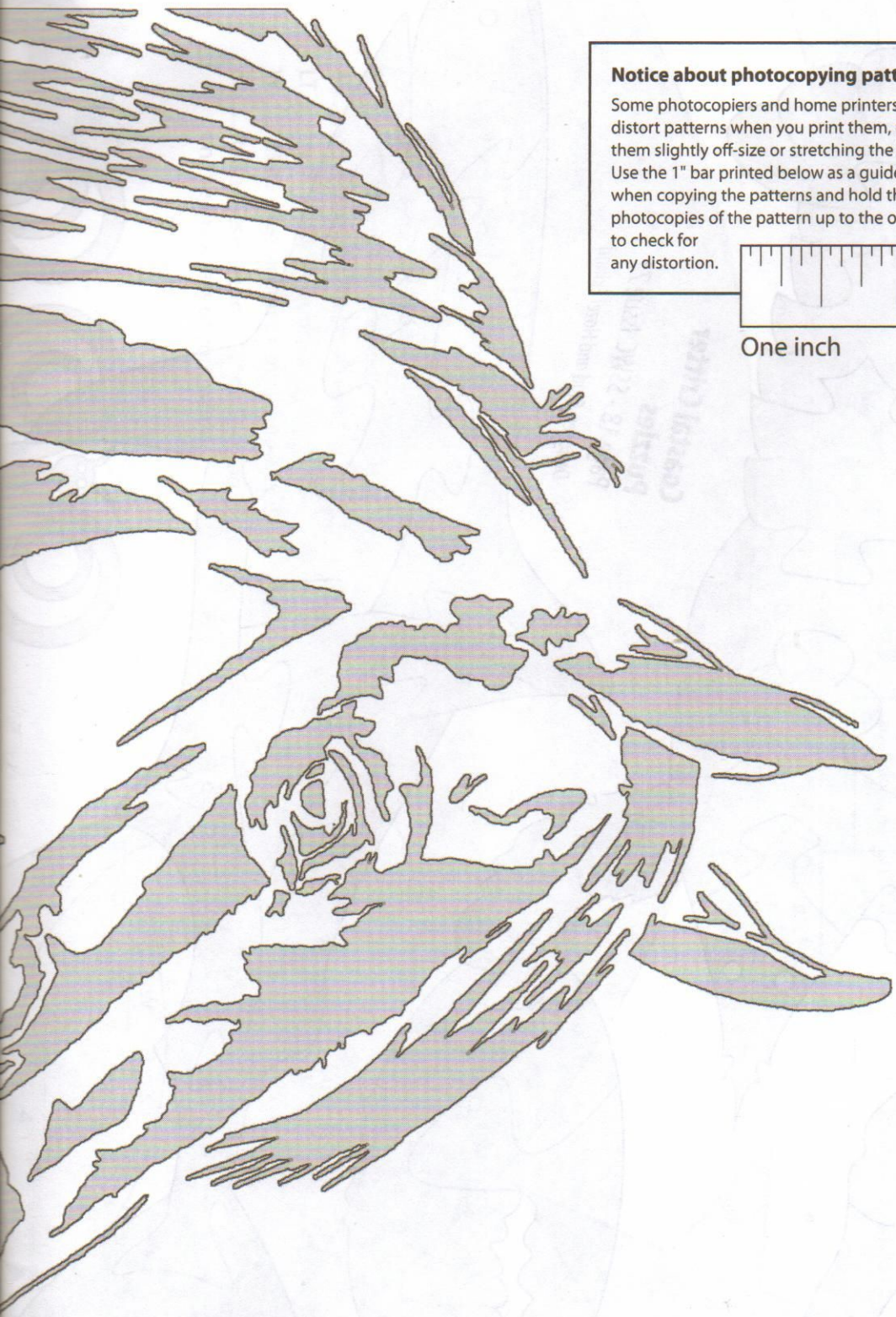


Pong Ball Explosion
- SSWC Issue 71
Bob Gilsdorf

Handsome Horse
Portraits
Page 28 - SSWC Issue 71
Designer: Charles Dearing



A8



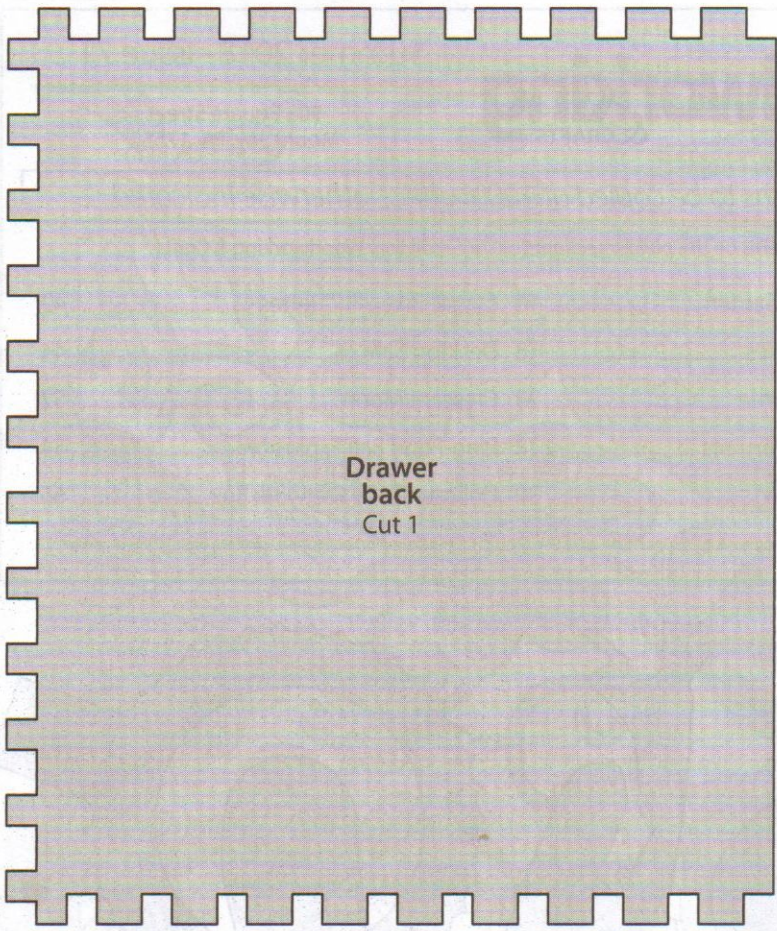
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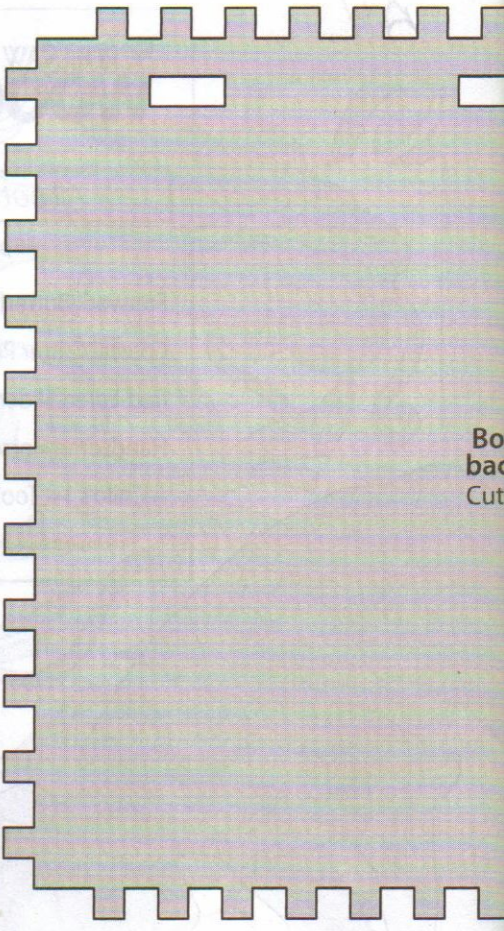


One inch

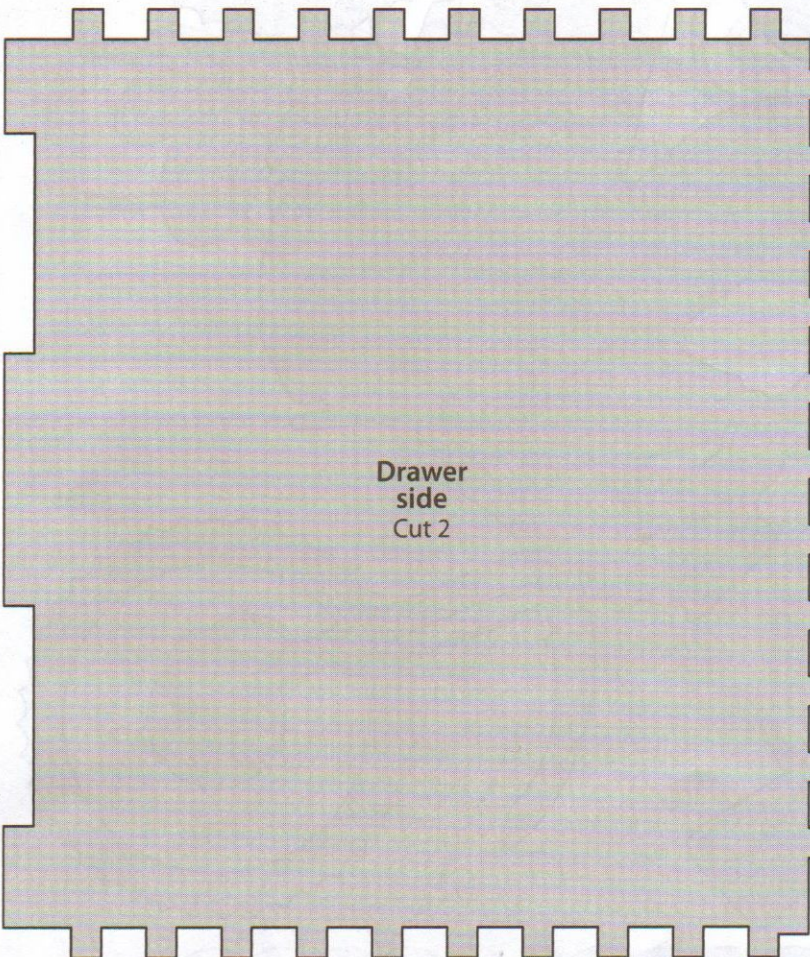
B1



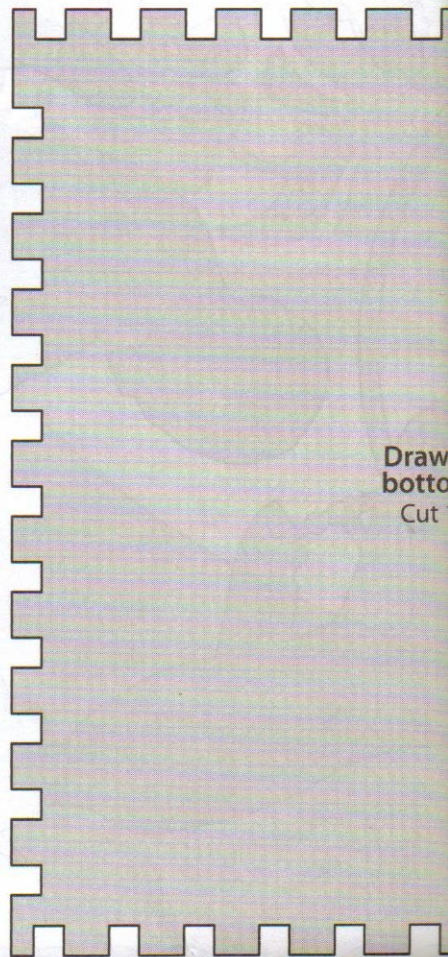
Drawer
back
Cut 1



Bo
ba
Cut



Drawer
side
Cut 2



Draw
botto
Cut

BZ



Box
bottom
Cut 1

Drawer
front
Cut 1

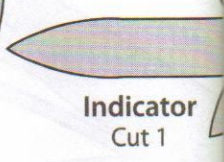
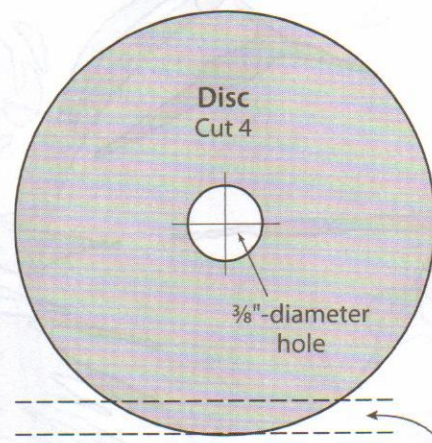
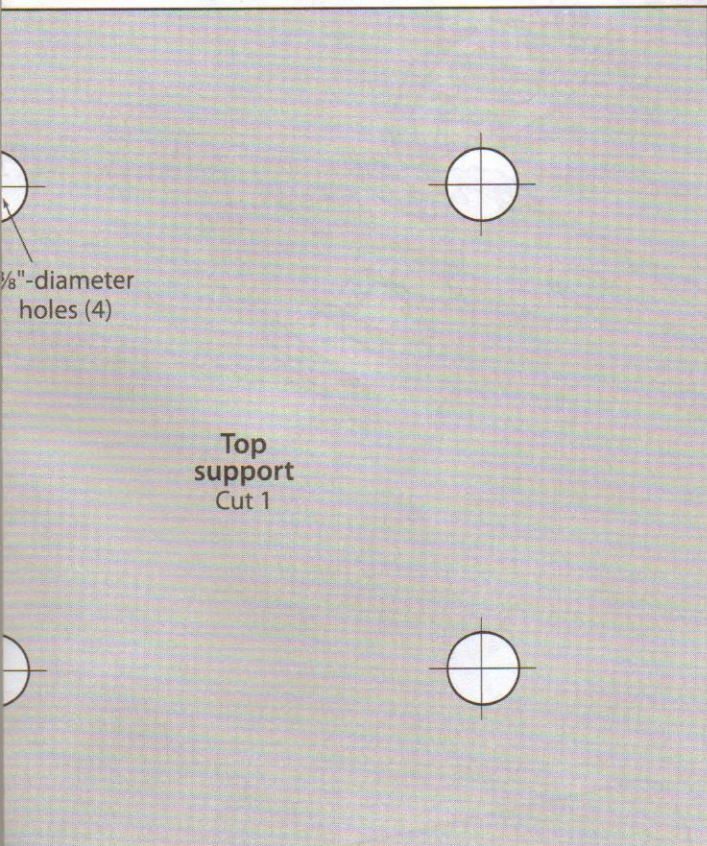
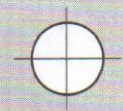
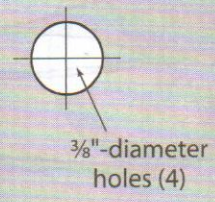


$\frac{3}{8}$ "-diameter
hole

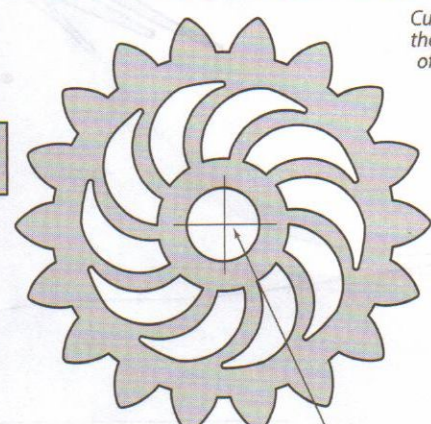
B3

Box side
Cut 2

Box lid
Cut 1



Cut to match the thickness of the wood




B4

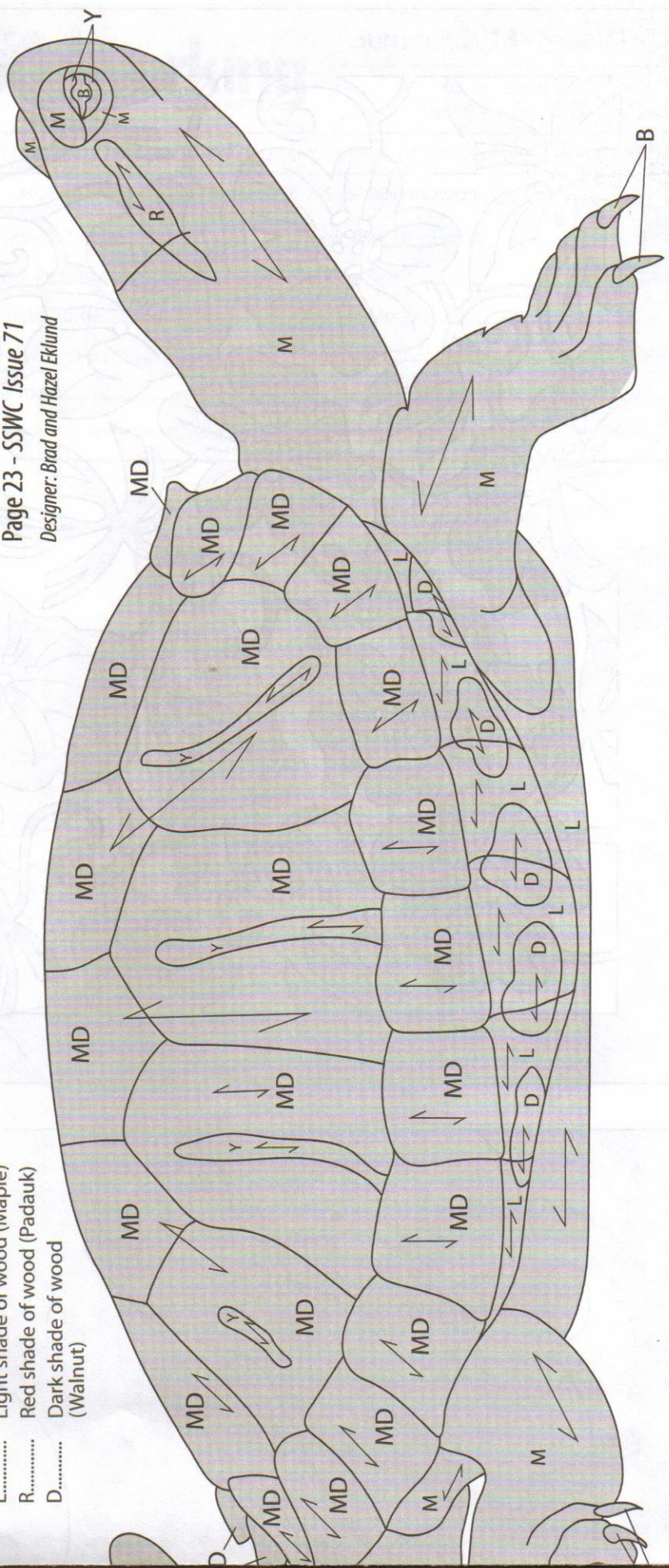
Red-Eared Slider Turtle

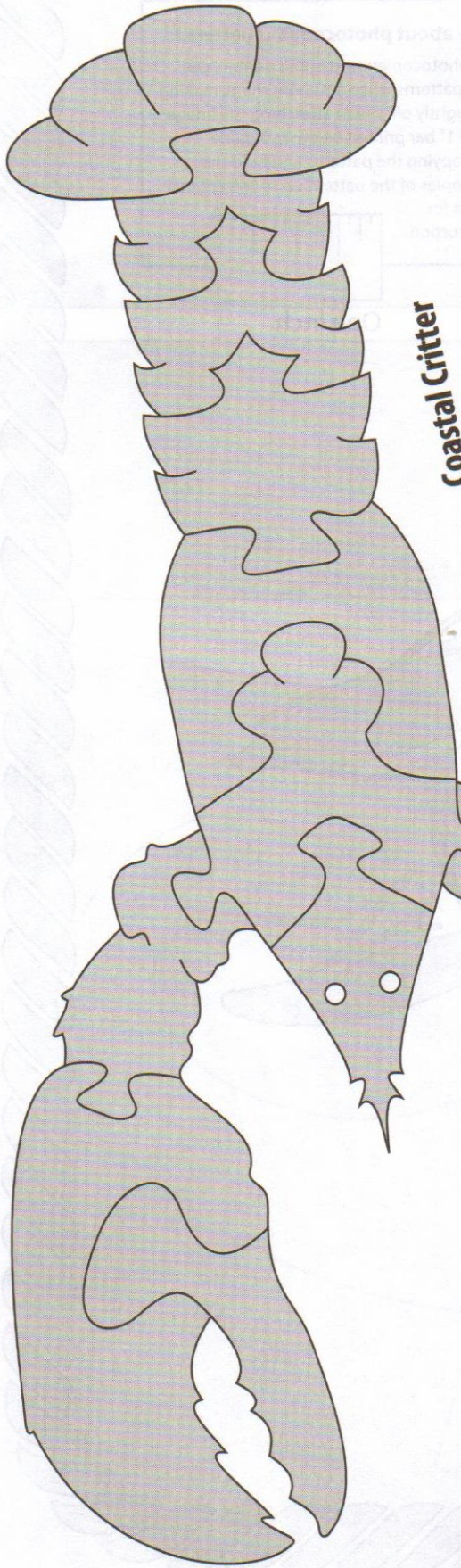
Page 23 - SSWC Issue 71

Designer: Brad and Hazel Eklund

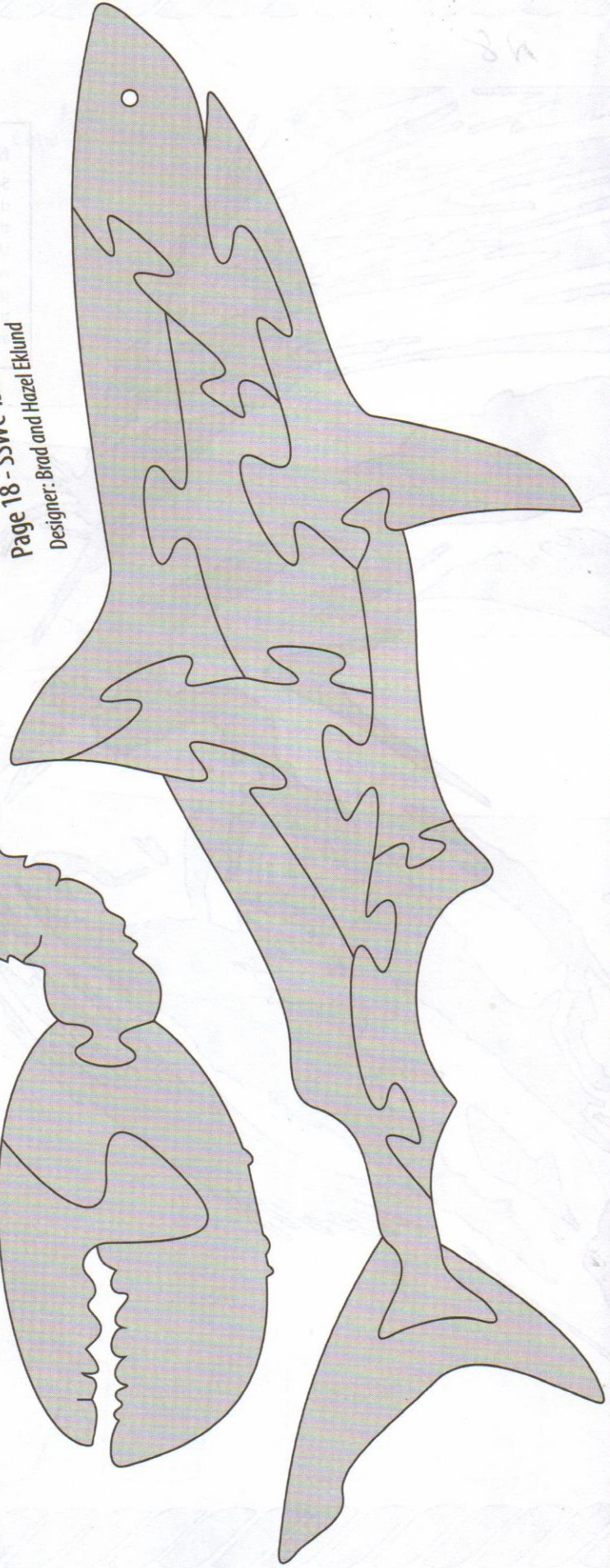
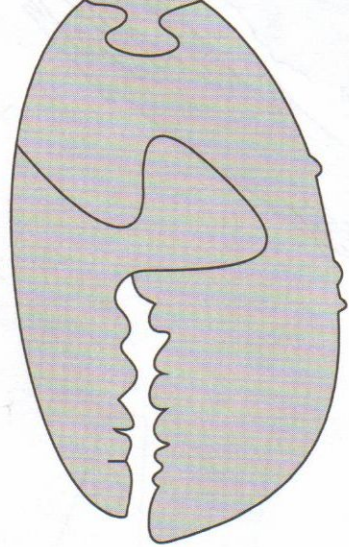
Legend

-  Grain direction
- MD..... Medium dark shade of wood (Brazilian cherry)
- B..... Dark shade of wood (Wenge)
- M..... Medium shade of wood (Bocote)
- Y..... Yellow shade of wood (Yellowheart)
- L..... Light shade of wood (Maple)
- R..... Red shade of wood (Padauk)
- D..... Dark shade of wood (Walnut)





**Coastal Critter
Puzzles**
Page 18 - SSWC Issue 71
Designer: Brad and Hazel Eklund

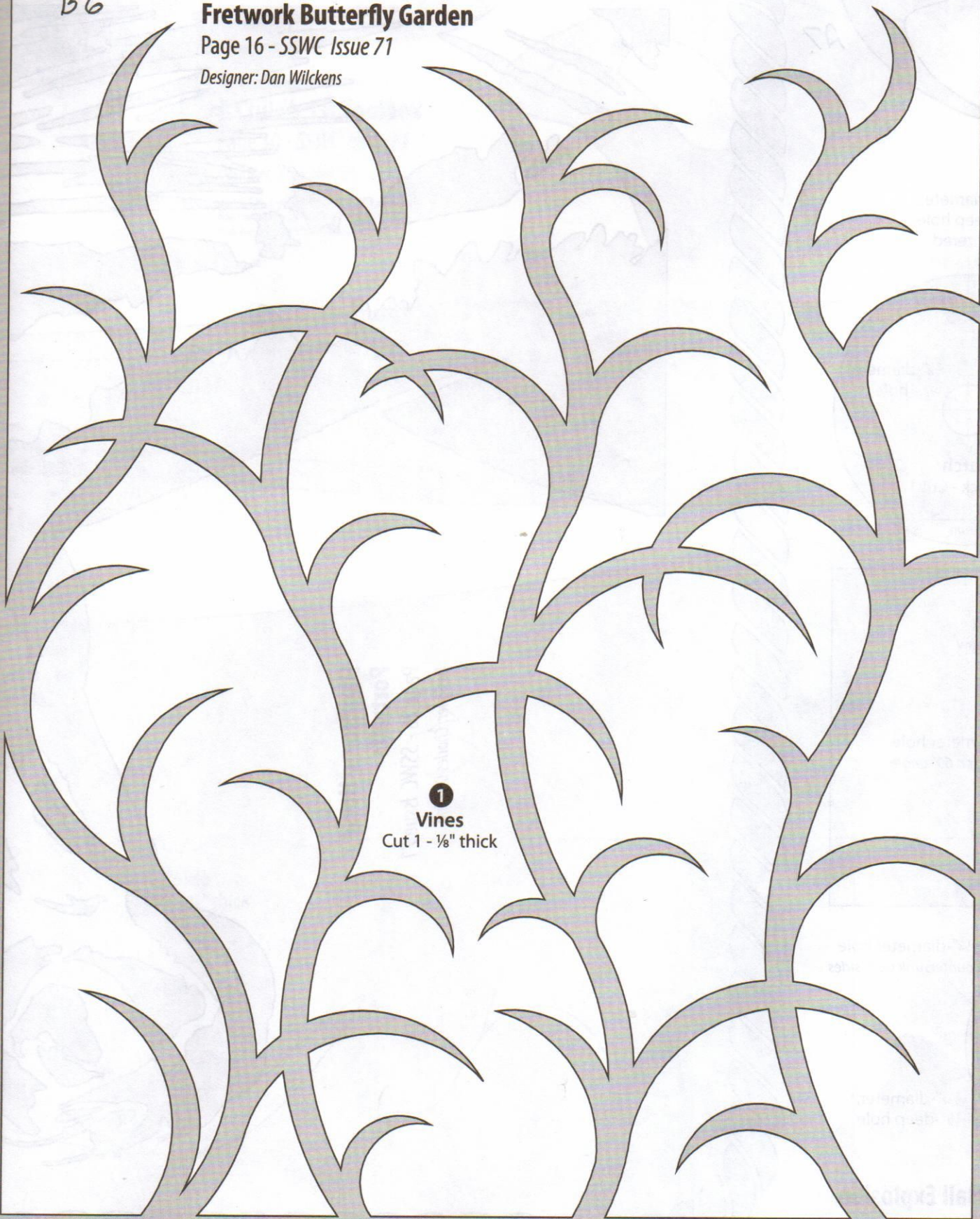


B6

Fretwork Butterfly Garden

Page 16 - SSWC Issue 71

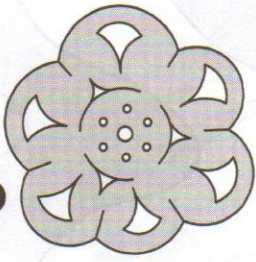
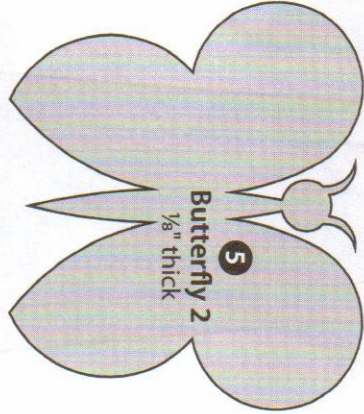
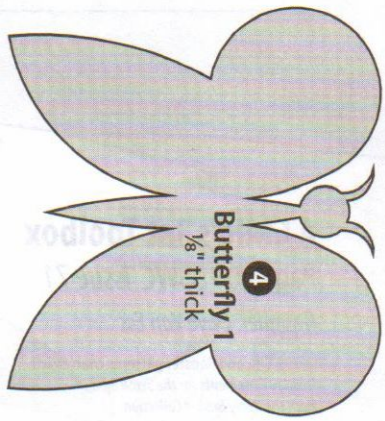
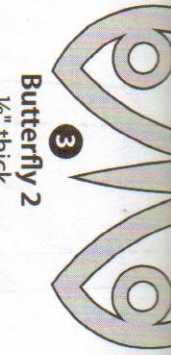
Designer: Dan Wilckens



1

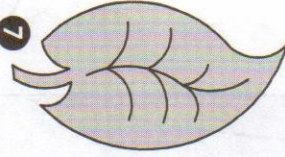
Vines

Cut 1 - 1/8" thick



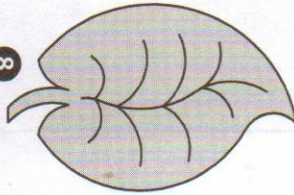
6

Flower
1/8" thick



7

Small leaf
1/8" thick



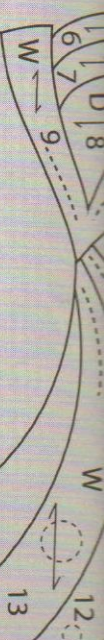
8

Large leaf
1/8" thick

Fretwork
Butterfly Garden
Page 16 - SSWC Issue 71
Designer: Dan Wilckens



B7



Crescent Moon
Page 52 - SSWC Issue 71
Designer: Judy Gale Roberts

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One inch

Legend

- ← Grain direction
- D..... Dark shade of wood
- M..... Medium shade of wood
- ML..... Medium light shade of wood
- LT..... Light shade of wood
- W..... White pine, aspen or any white wood
- R..... Raise these sections 1/4" depending on the thickness of your wood

