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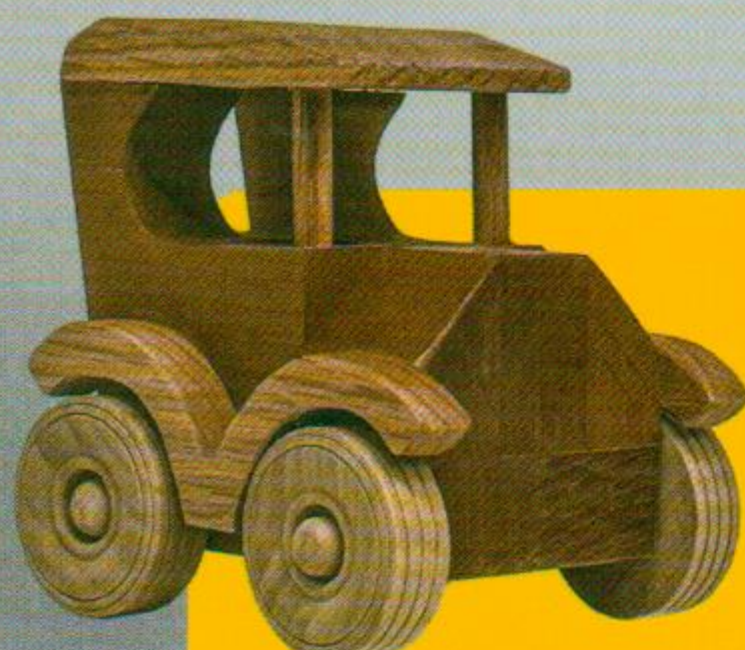
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*Seashell Ornaments
Page 18*

SUMMER 2023 ■ ISSUE 91



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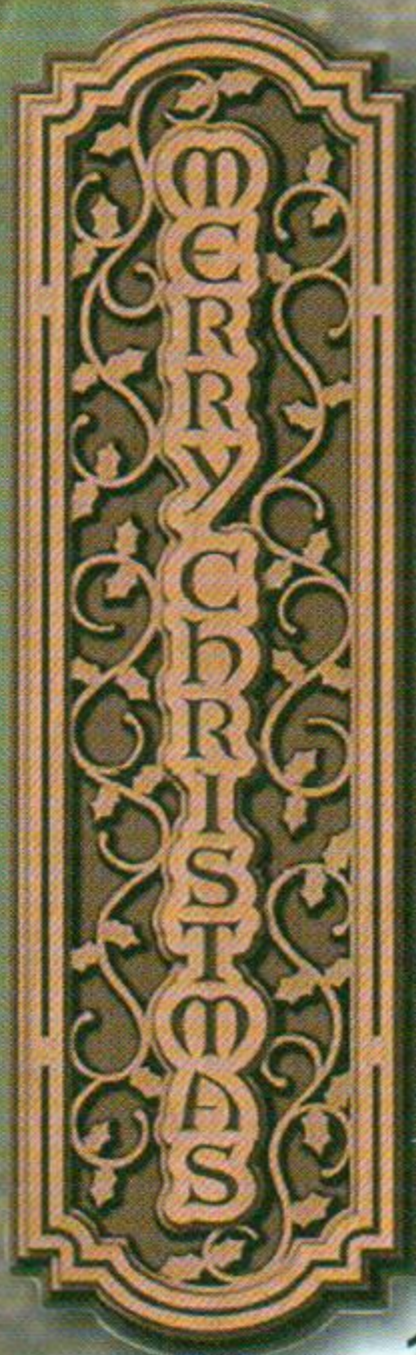


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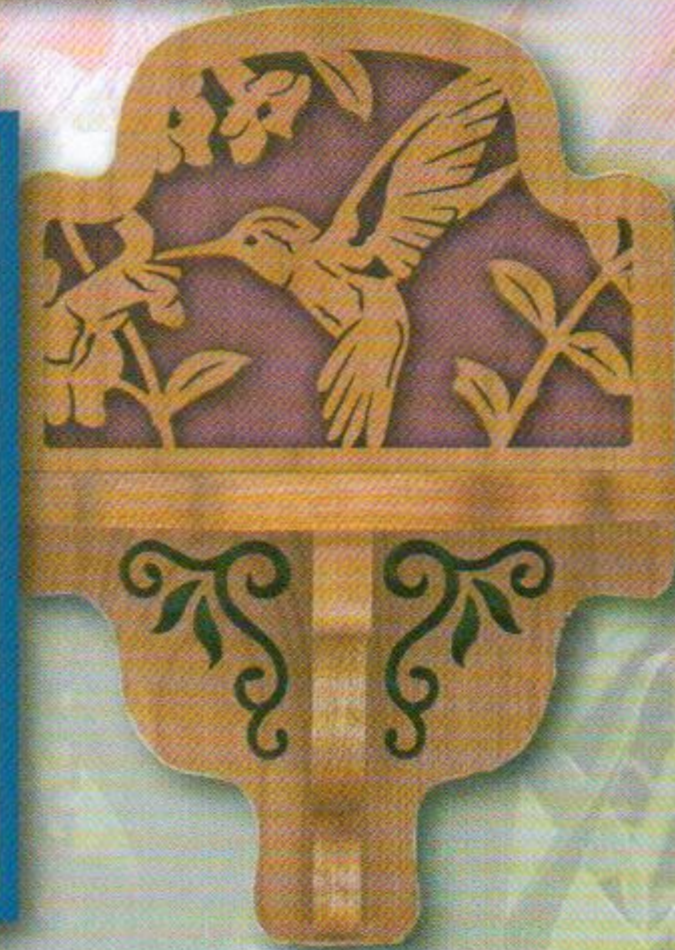


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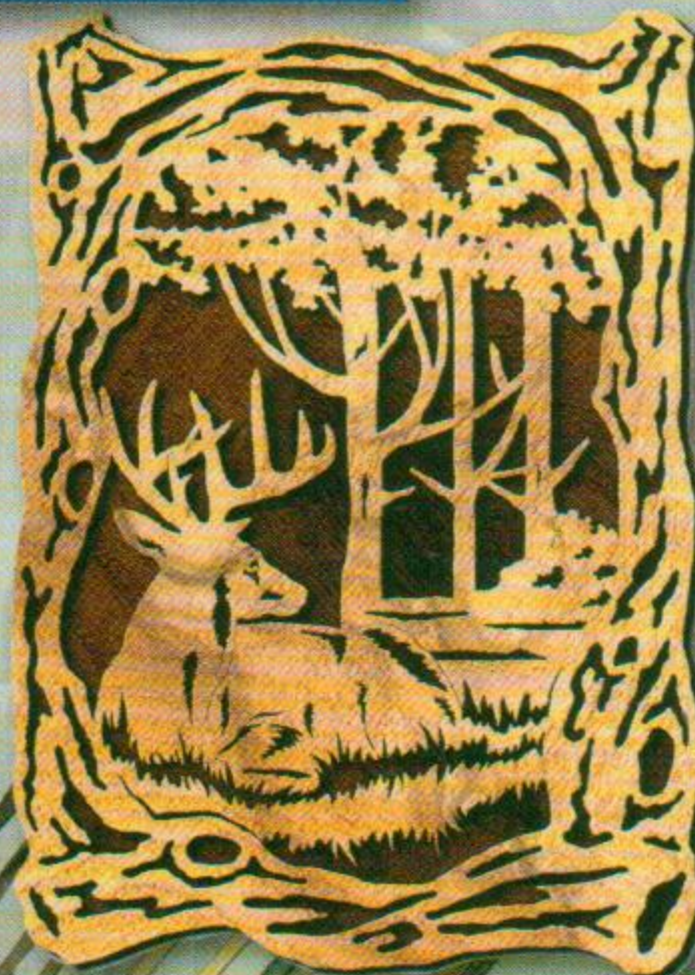
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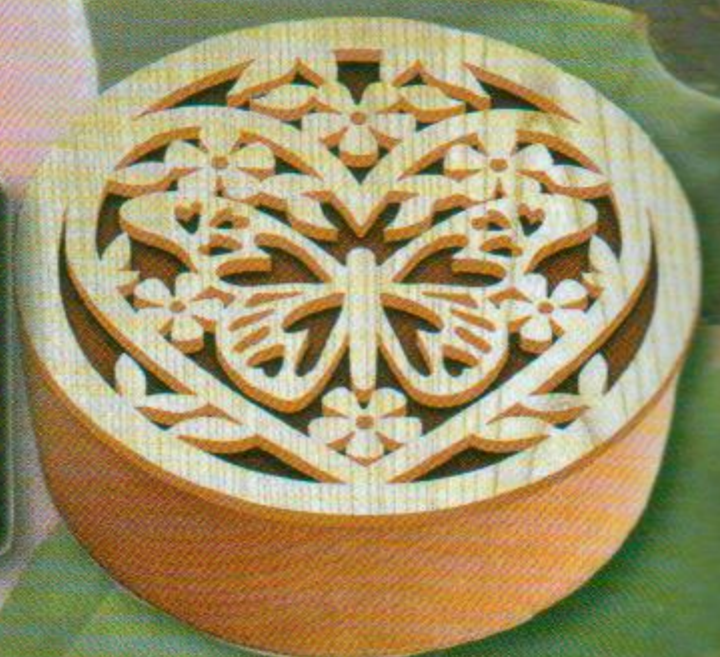
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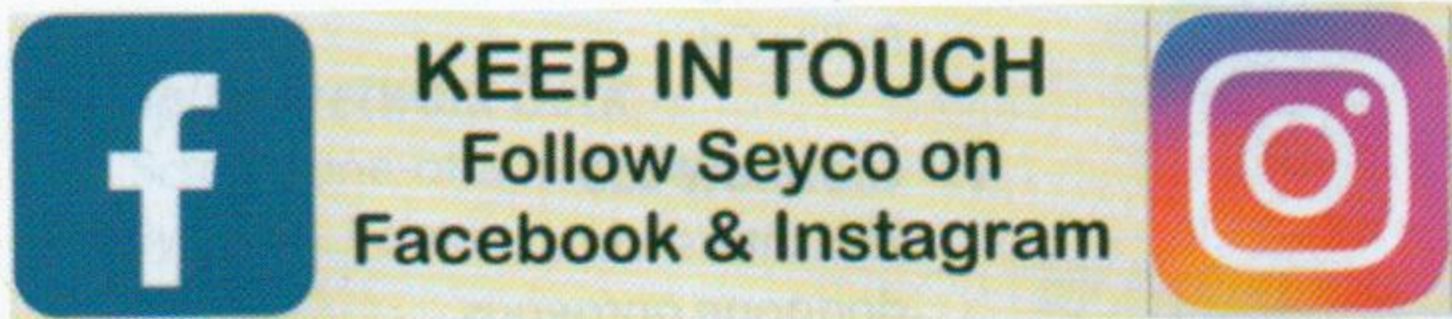
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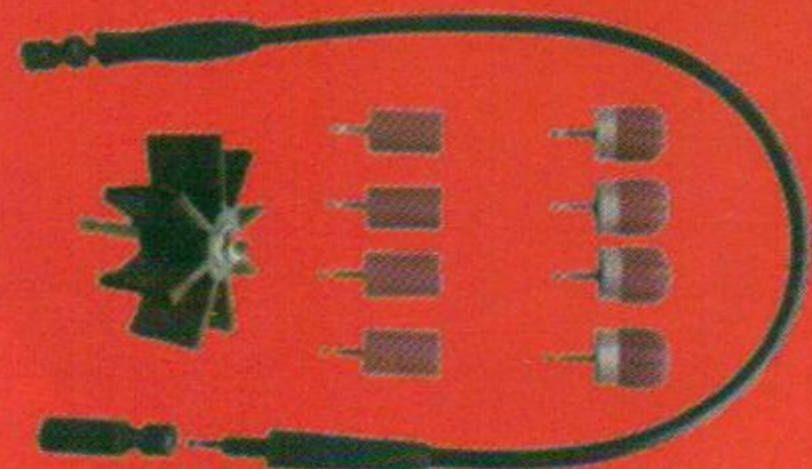
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Find these free extras at

[SCROLLSAWER.COM](https://www.scrollsawer.com)

Free Project – Scroll the perfect gift for gardeners with Charles Hand's fretwork ode to pollinators.

Extra Pattern – Once you've scrolled John A. Nelson's clock (page 50), visit our website for an alternative fretwork clock pattern.

Bonus Videos – Check out our videos on the Scroll Sanders (page 12) and Magnetic Cannon (page 33) in action!



Search for Scroll Saw Woodworking & Crafts on Facebook, Pinterest, TikTok, and Instagram

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Woodworking on the Cheap

One of our tasks this issue was to create an ebonizing stain using items that most people have in their kitchen: vinegar and steel wool. The mixture worked, and we found ourselves oohing and ahing over the change our wood samples underwent—all it took was a little chemical reaction and \$8 of supplies. It turns out that with a little know-how, you can make something impressive using nearly whatever materials you have on hand. They do not have to be expensive, fancy, or special. The “special” comes later, once you’ve used your attention and skill to transform them.

You can start by trying your own ebonizing mixture on parts of Judy Gale Roberts’ chocolate lab intarsia (page 41). Don’t have the requisite thermally treated poplar? Use anything your scrap bin offers, and tint it to give that pup two eyes and a nose. While you’re sorting through offcuts, why not use them to make Rita Cels’ Old-Timey Tops (page 21)? All you need are a few small pieces otherwise destined for the burn pile.

If dumpster-diving is more your forte, Fiona Kingdon’s Windswept Tree Puzzle (page 60) may be your dream project; since you texture the surface with a rotary tool, a warped board with blemishes works just as well as a flat one. Have a friend with an old barn, or access to windfallen timber? Turn it into a rustic frame for Deborah Lawrence’s Home Sweet Home Sign (page 55), or make the live edge a fixture of the piece, like Emily Lewis did in her playful animal segmentation on page 66.

When you’re done with that, get inspired by Wesley Jefferies, an 11-year-old woodworker who makes scrollsawn boats from driftwood near his Prince Edward Island home (page 9). Then, hear about a guy who sculpts high-end surfboards from recycled wine casks and decommissioned boats in California (page 72).

The beauty of woodworking is that you don’t need rare, pricey materials to make something meaningful—just imagination and a willingness to get your hands dirty.

Happy scrolling!

Kaylee Schofield, Editor
schofield@foxchapelpublishing.com

Learn how to create dynamic darkening effects from our epic experiment on page 13.



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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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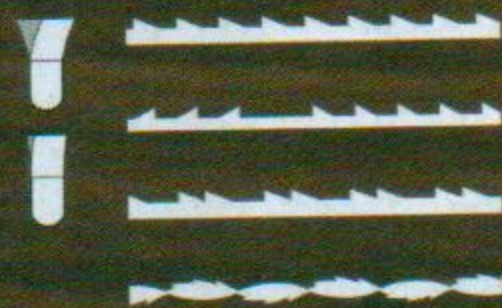
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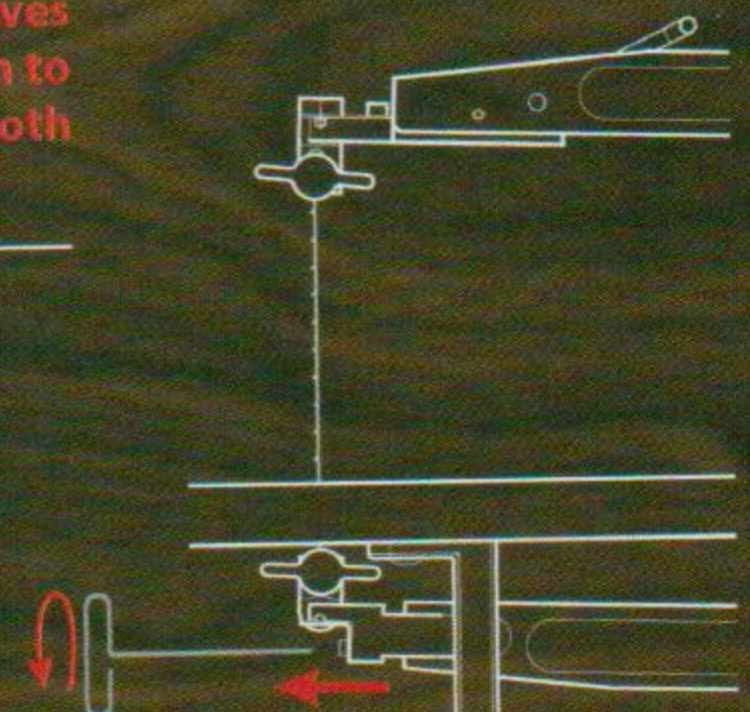
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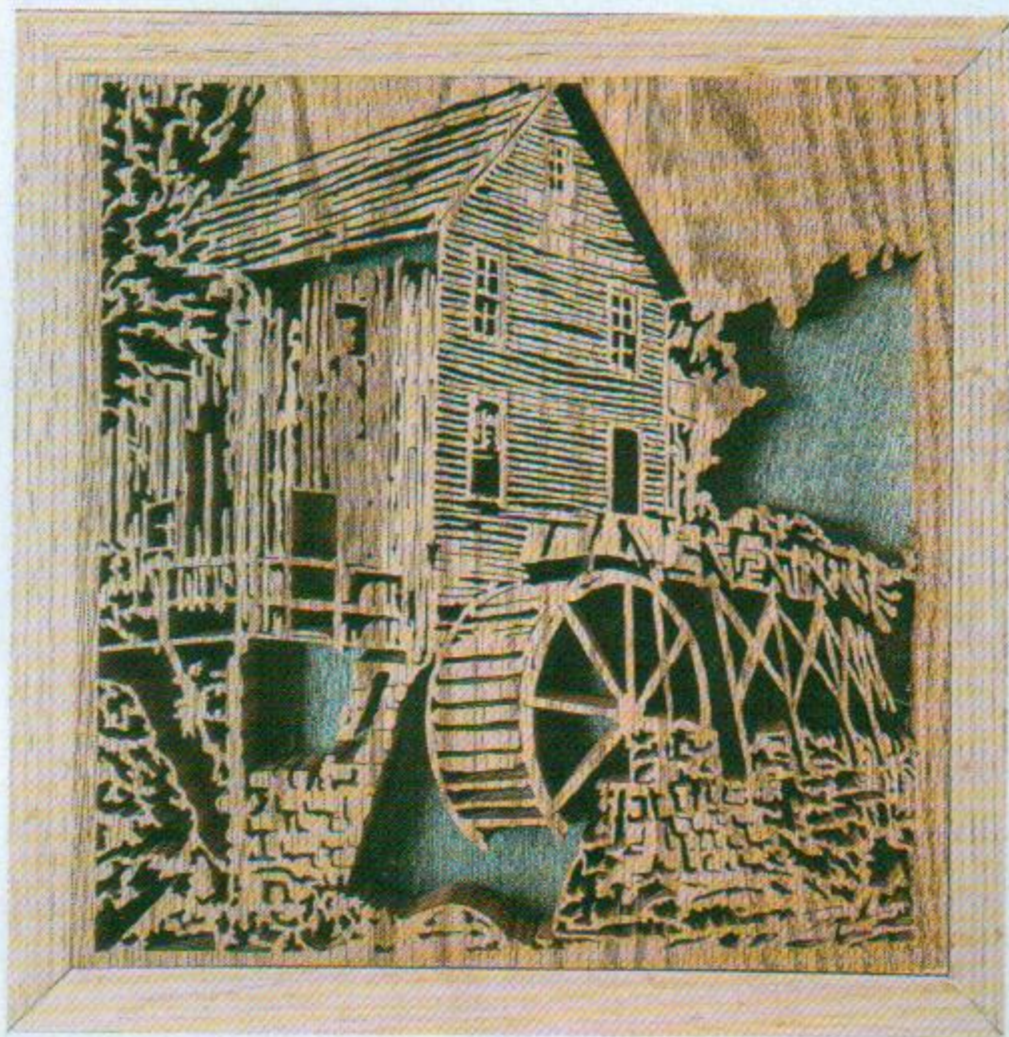


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Not So Run-of-the-Mill

I decided to make this Wooden Teddy Bear pattern out of white oak. My wife suggested it should be a darker color, so I gave it a natural walnut oil finish. We have an old mill in a park nearby and I've always wanted to scroll something like it.

*Ron Starkey
Ravenswood, W. Va.*



Scrolling a Winner

I was asked to make an intarsia piece for our local Kent County Exhibition this year. I decided to make Brad and Hazel Eklund's "Grizzly Bear Intarsia" from issue #81 since bears are my favorite animal. It won first place.

*Charlene Doucette
South Branch, N.B.*



Scrappy Little Ornament

As soon as I saw Janette Square's "Classic Woodie Intarsia" from issue #77, I knew I wanted to make a Christmas tree ornament out of my scrap wood pieces. I shrank the plans down to 70% and stack cut the project. This enabled me to safely cut the parts in one pass and fit them together without sanding. I also used acetate sheeting for the windows to give the piece a more realistic look.

Richard Weik Middletown, Pa.



Something to Howl About

I've always been fascinated with wolves and find them to be not only beautiful but incredibly majestic. When I found the "Wolf Stare" pattern from Wayne and Jacob Fowler's *Woodworker's Pattern Book*, I knew I had to give it a shot, and I'm so glad I did.

*Dan Smith
Cripple Creek, Colo.*

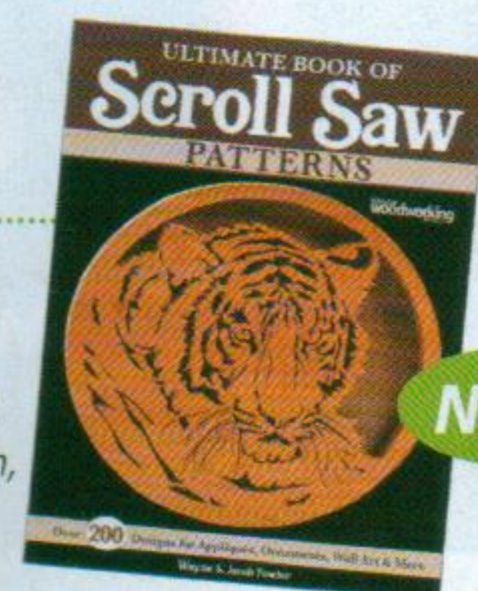
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NEW!



Fretwork Fan ▲

I purchased my first copy of *Scroll Saw Woodworking & Crafts* in April 2022. It's a wonderful publication and has been very inspirational. I found Wayne and Jacob Fowler's "Seabird Portrait" in issue #87. I had not done scrolling like this before, so I decided to give it a shot. I'm hooked now!

Richard Marsh Pell City, Ala.

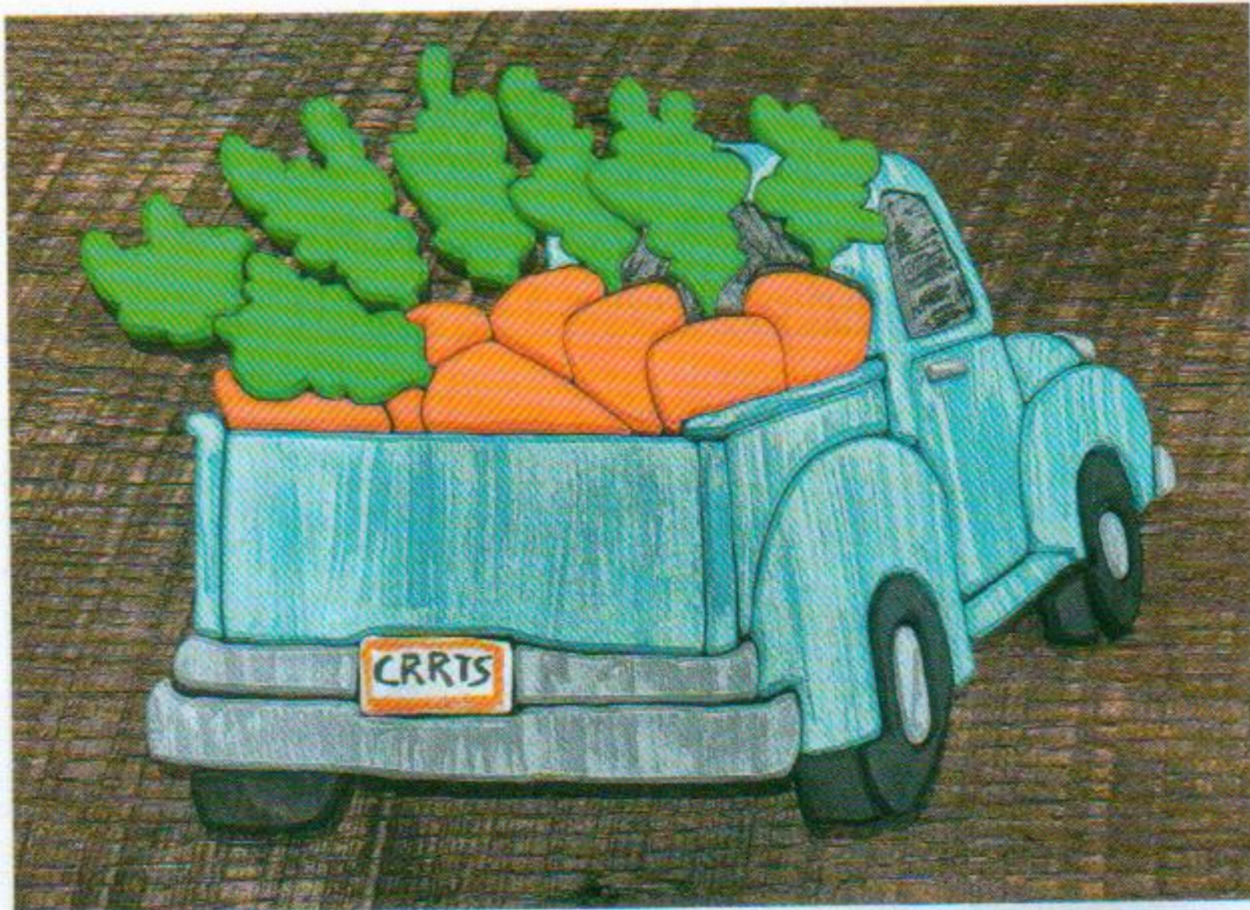


The Perfect Piece ◀

A few years ago, while browsing a local lumber yard, I found a wonderful board of mineral poplar that had an amazing rainbow of colors. I never had the heart to cut little pieces out of it for multiple intarsia projects, so I left it whole.

When I saw the pattern for Judy Gale Roberts' "Hoot Owl Intarsia" from issue #87, I knew this would be the perfect piece to showcase the browns, greens, and purples of the wood in a single design. This was a fun design, and the article gave some ideas for techniques that have helped me in later projects!

Chuck Miller Lancaster, Pa.



Practice Makes Perfect ▲

I scrolled Sara Barraclough's "Easter Bunny's Truck Segmentation" from issue #86 to explore segmented patterns. I enjoy cutting different patterns for practice, and it gives me a chance to use some of my favorite acrylic paints.

Whitney Adams Port Charlotte, Fla.

Hello, Spider ▶

I have been scrolling for about two years now and enjoy the craft when I am not on the road. I made the spider using Clayton Meyers' "Gothic Trivets" pattern (issue #88). It was fun and easy to do.

Simeon Payne
Battle Creek, Mich.



A Prized Trout ▶

I've subscribed to *Scroll Saw Woodworking & Crafts* for a long time and really enjoy reading the articles and making various projects, including Neal Moore's "Brown Trout Scrollsaic" from issue #22. I cut the trout from ambrosia maple and used the leftover pieces to make the frame. It's now displayed on a small metal stand at our friend's home.

Mary Wilbourn San Antonio, Texas



Dragons Galore ▼

I wanted to advance my skills with intarsia projects and thought that Bruce Worthington's "Intarsia Dragon: The Guardian" from issue #58 fit the bill perfectly. Once I finished, I soon moved on to crafting other intarsia pieces like Judy Gale Roberts' "Kindhearted Dragon" from issue #76.

Alan Jones
Morecambe, England



Sleigh Ride Memories ▲

I was looking for a winter scene for our home, and Charles Hand's "Sleigh Ride" from the winter issue (#89) was perfect. We have a lot of snowy winters and have occasionally gone for a horse-drawn sleigh ride with our family.

Patrick Shea Olds, Alberta

COMING FEATURES

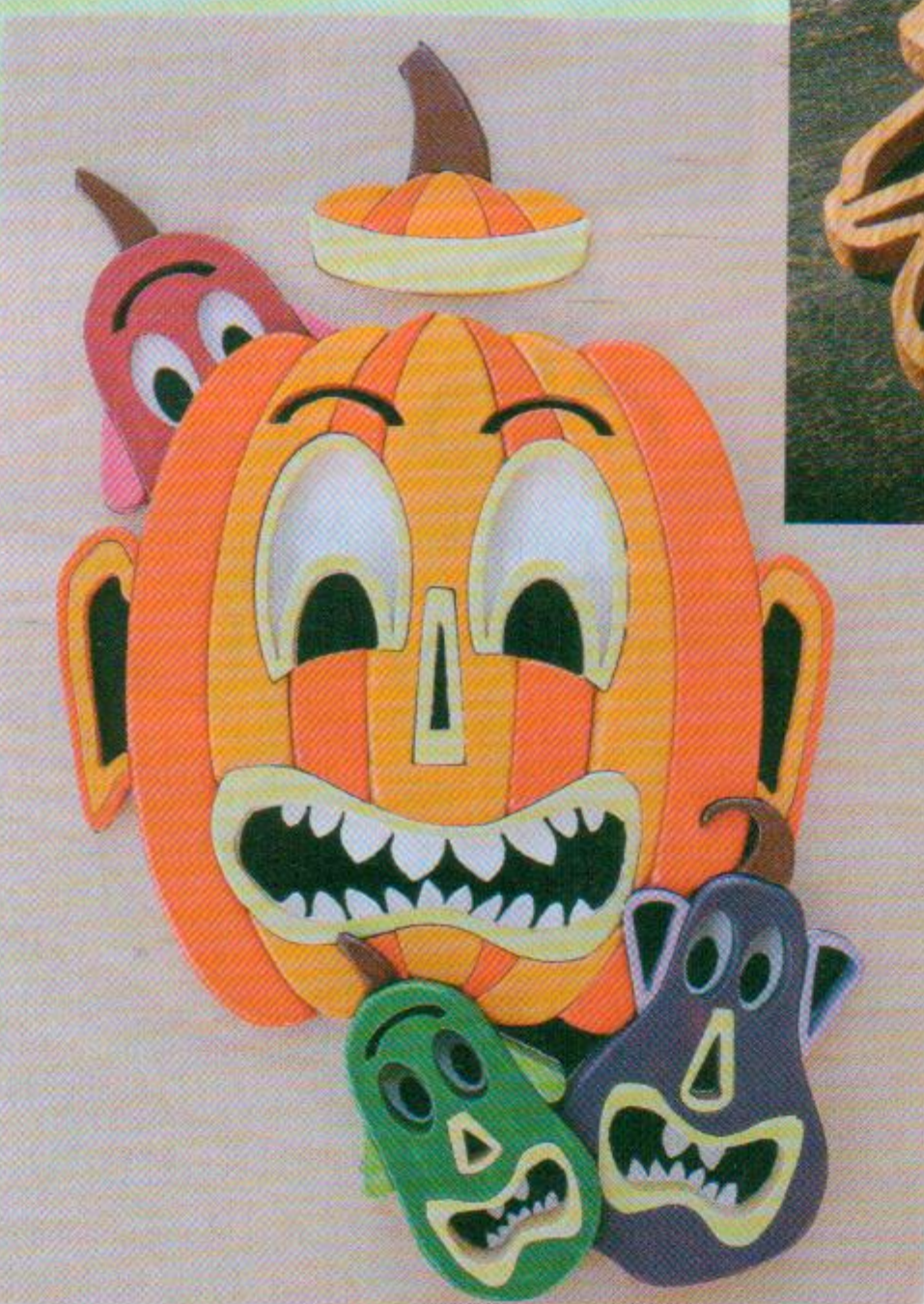
Look for these projects in an upcoming issue!



Find the Fox Hunt Winners on Page 71!

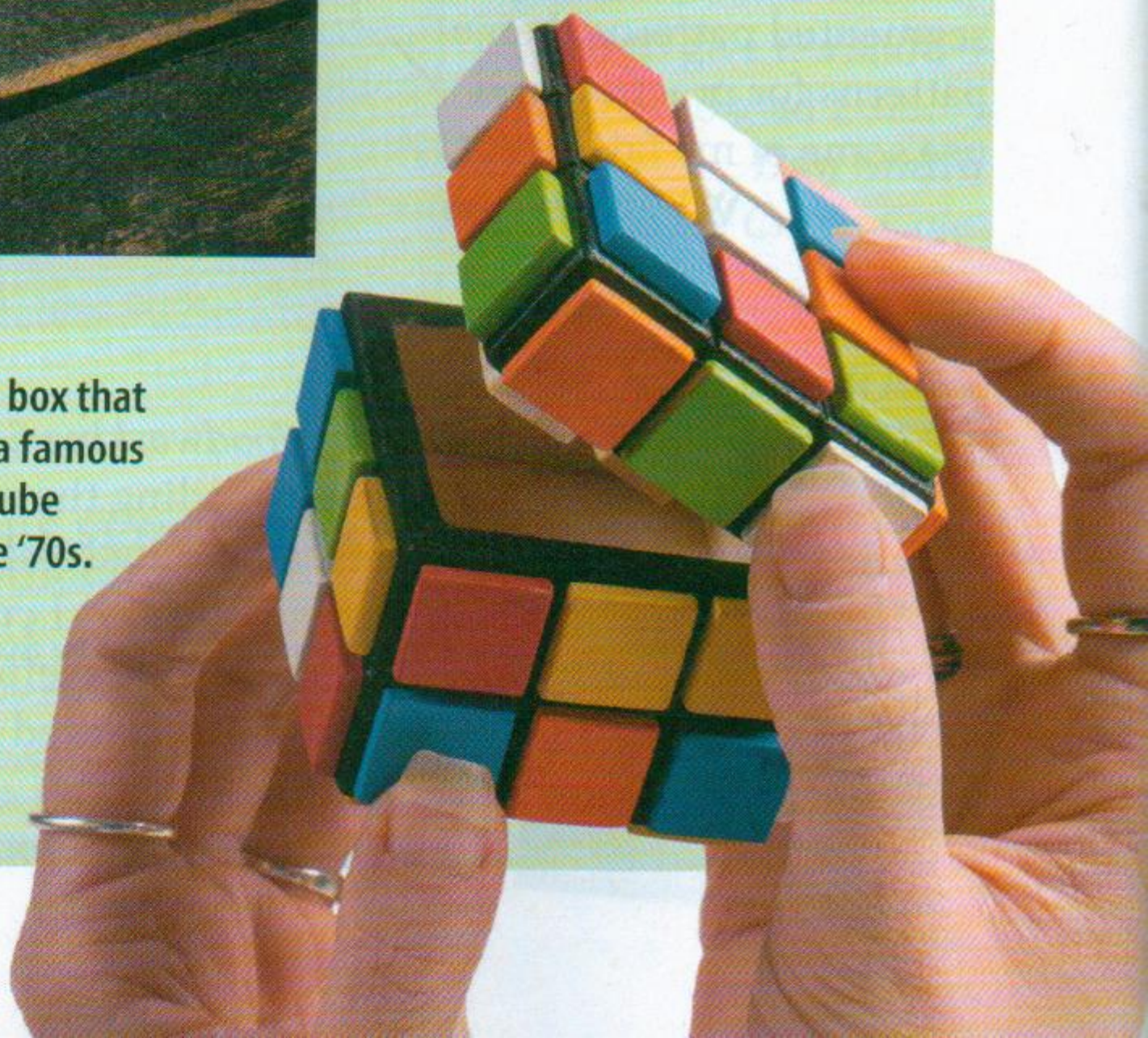


Scroll a variety of bold fretwork autumn leaves.



Craft a segmented family of colorful gourds.

Create a box that mimics a famous puzzle cube from the '70s.



Turning Trash Into Treasure

For young woodworker Wesley Jefferies, the driftwood boat business is booming

By Kelly Umenhofer

After moving to Prince Edward Island in 2021, 11-year-old Wesley Jefferies grew fascinated by the large pieces of driftwood that collected along the wharves in winter. While most people would have walked on by, he saw these logs as opportunities for new projects. "I started making sailboats out of driftwood, as I thought looking for the wood would be a great way to explore the island," he said.

Eager to turn his hobby into capital, Wesley completed the Young Millionaire Program (YMP), a summer entrepreneurship program for kids. Through the program, Wesley learned about manufacturing, business management, expenses and revenue, customer service, and shipping. With these newfound skills, Wesley opened his own business, Honey Bee Boats, in homage to his family-owned beehives.

But creating inventory involves more than just cutting pieces on the scroll saw. Wesley first has to dry his found loot for about a month. He then cuts the piece into smaller planks of varying thicknesses with his dad's chainsaw mill. Whenever he needs assistance with his sailboats, Wesley pays his parents for their help. "We figured that was a good way to show him that if you don't have the skills and have to outsource it, it costs money," Emily Jefferies, Wesley's mother, said.



Wesley works a piece of driftwood on his scroll saw.



Wesley uses a plexiglass template to trace his boat pattern before cutting it on the scroll saw or band saw, keeping in mind any knots that may affect the boat's balance. Once the plank is cut, Wesley does his first test. "I place them in a clear container to get a good read on if they will float well and are worth keeping," he said.

After they pass the first test, Wesley sands the pieces, drills the holes for the mast and keels, and seals the boat with three coats of marine-grade varnish. Once the boat has passed the second float test, Wesley makes the keel (a structural beam located on the bottom of the boat) out of solid brass and then adds a protective black coating to the brass for a more polished look. He then attaches the ripstop nylon sails to the boat. After a final float test, the vessel is ready to hit craft markets around the island and—finally—open water.

In addition to his boats, Wesley makes and sells beeswax candles from his family's beehives. Someday, he hopes to open a roadside stand full of assorted products he's made by hand. "I always enjoy seeing someone take home a boat that I worked hard on," he said.

To find more information on Wesley's sailboats, email him at wa.jefferies@gmail.com.



Wesley pilots his craft on open water by attaching the fishing line from his reel to the boat.

Serhan Sultanoglu *Ankara, Turkey*

As a child, Serhan Sultanoglu watched in awe as his grandfather created masterpieces on his scroll saw. After 21 years as an engineer, Serhan decided to follow in his footsteps. "My favorite thing is being able to draw almost anything from my mind and then turn it into a real object made completely out of wood," he said. Serhan sometimes uses up to 40 different types of wood in his pieces. To see more of Serhan's work, visit @chipilwood on Instagram.



Chelsea Rosenkrans *Roxbury, N.J.*

When Chelsea Rosenkrans is at her scroll saw, she tunes out the day and focuses solely on the blade. "Working with wood requires a level of patience that was foreign to me, by practicing, I feel like I'm simultaneously becoming a better craftsman and person," she said. Her latest piece, which she named "PB&J Vortex," incorporates two contrasting designs to create an illusory appearance. To see more of Chelsea's work, visit @evergreen.daydreams on Instagram.

Cassidy Satermo *Grande Prairie, Alberta*

After being introduced to the scroll saw in 2019, Cassidy Satermo took her signmaking skills to a new level by switching from painting her designs to scrolling them. Cassidy has recently been experimenting with adding other media, such as preserved moss, to her pieces. "I want to bring nature and scroll saw art together in a unique way," she said. Find more of Cassidy's work @forestrylane on Instagram.



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 Artists to Watch, *Scroll Saw Woodworking & Crafts*, 903 Square Street, Mount Joy, PA 17552, or email editors@scrollsawer.com.

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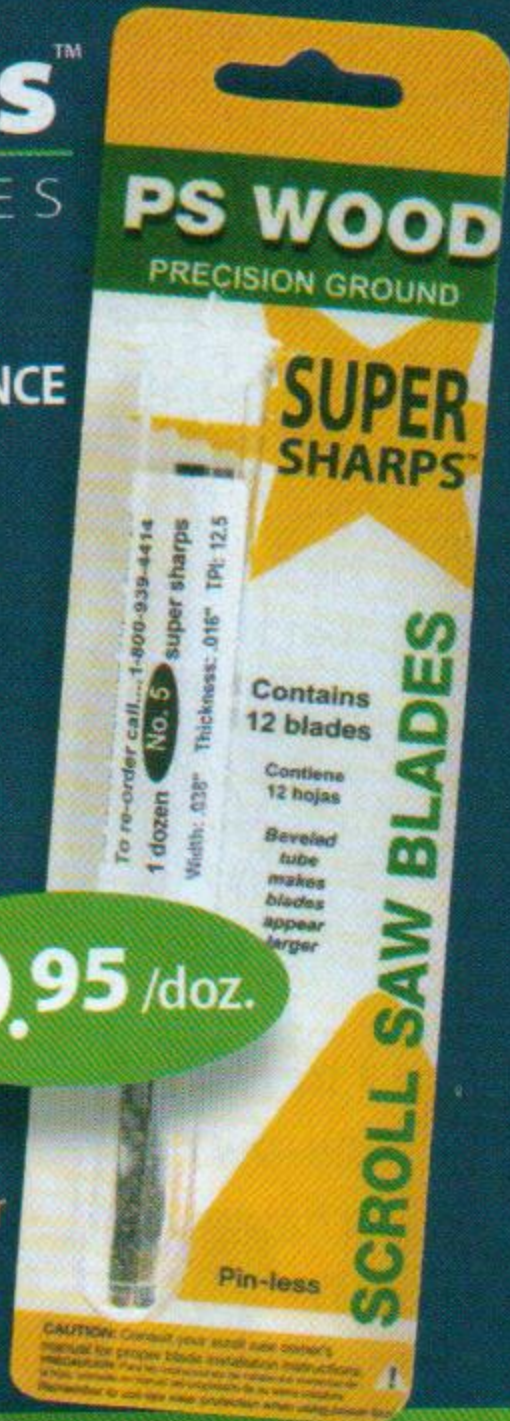
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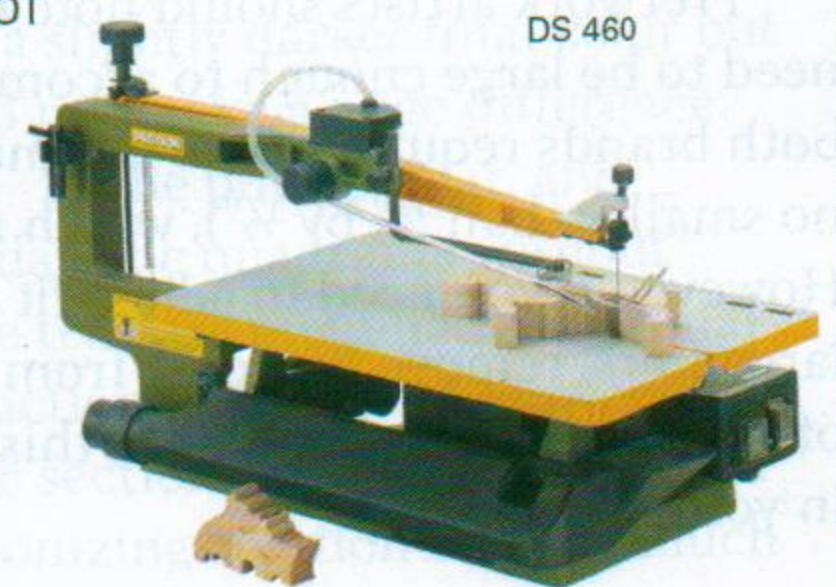
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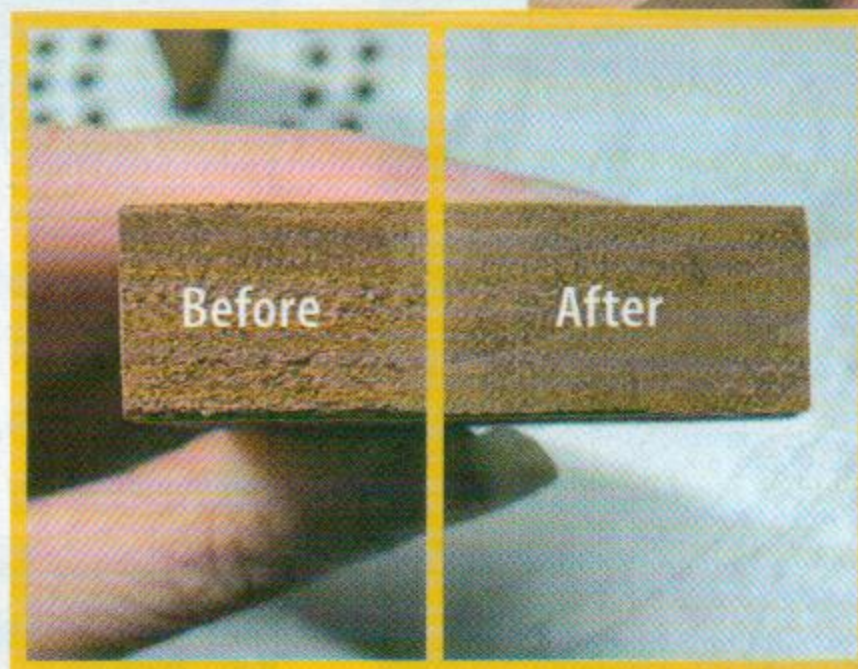
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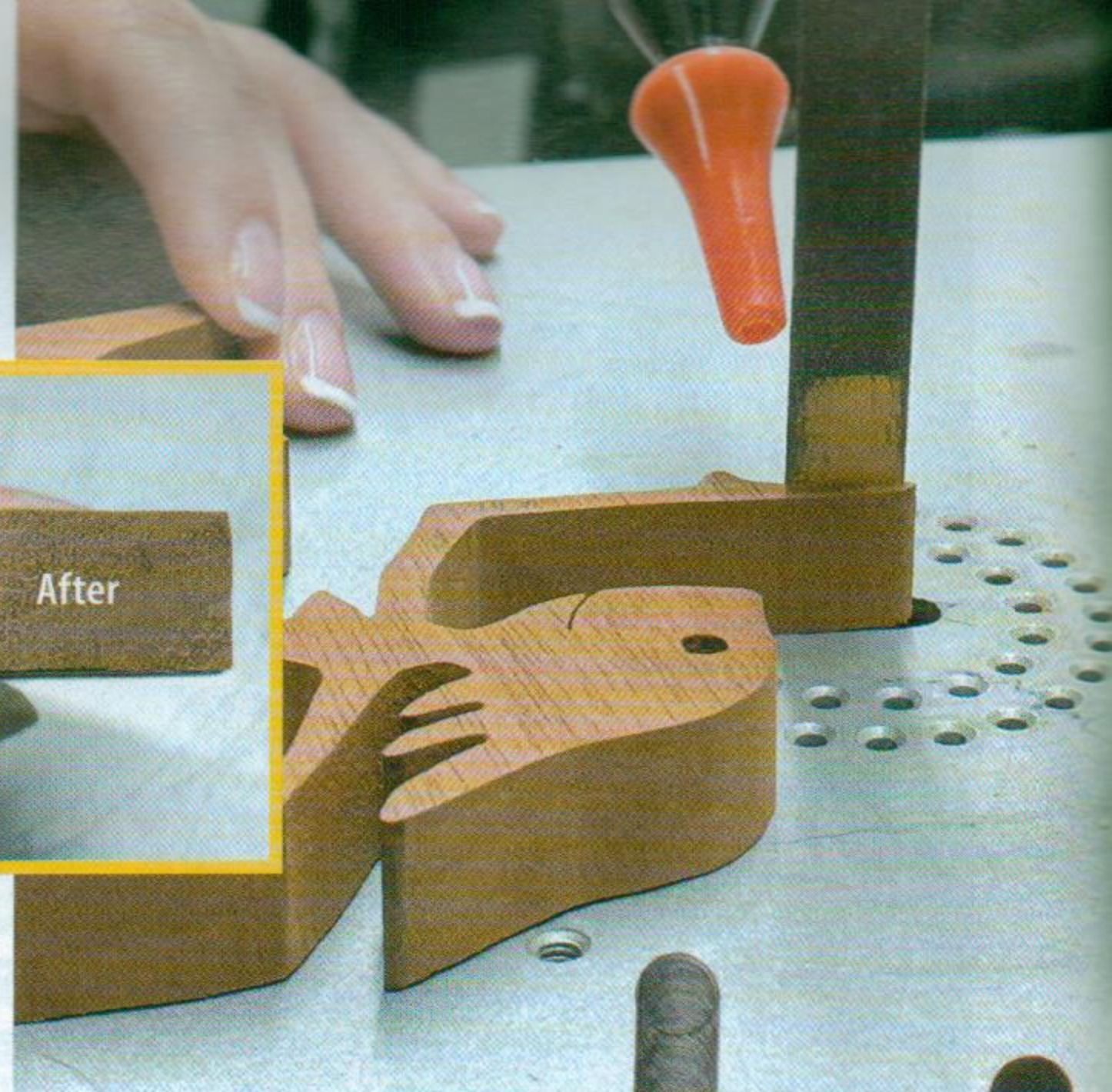
MSRP \$8.92 (4-pack; comes in plain end and pin end, with ¼" and ½" options)

Pégas®, Bearwood.com

MSRP \$9.45 (4-pack; comes in plain end, with ¼" and ½" options)



Scroll sanders can tackle rough edges and irregular frets.



Have you ever gotten to the end of a project, only to find that you bungled a few cuts? Your first instinct may be to go back over your work with the blade, shaving off small slivers of wood until that awkward bump or jagged line is gone. Sometimes, though, the blade can do more harm than good, introducing new flaws or removing more material than you wanted. That's where Scroll Sanders come in.

Offered by Pégas and Olson®, Scroll Sanders attach right to your saw just like a cutting blade. Available in two widths—¼" and ½"—and multiple grits, these accessories can smooth contours, remove fuzzies, and clean up pesky frets for a more polished final product. You can even get them in pin-end and plain-end options to fit a wider variety of saws. The main difference how they mount into the blade heads; the Pégas Sanders mount in the same direction as cutting blades, but the Olson Sanders mount perpendicularly—with the abrasive surface facing forward.

At first blush, the Scroll Sanders are simple to use, though installation takes marginally longer than for your classic blade. We tested both widths on a fret piece with bridges under ⅛" thick, and the Sanders gently smoothed problem areas without damaging the piece, even when run at medium and high speeds. If needed, they can (and do) tear through everything from plywood and pine to mahogany and oak; however, Scroll Sanders wear down over time and aren't meant to remove large quantities of wood. The Sanders have slight flex after being tensioned, which lets them hug contours on rounded cuts as well as straight.

Fretwork artists should note the size of the top and bottom tabs: frets will need to be large enough to accommodate a top or bottom feed (the ¼" Sanders for both brands require a hole no smaller than ¼" square; the ½" Sanders need one no smaller than ¼" by ½"), which means uber-fine frets are out of the question. However, if you need to adjust fit on an intarsia or toy part, clean up medium to large frets, remove fine dust from puzzle pieces, or tweak the size of an automaton mechanism, this product is a great trick to have in your back pocket.

Note: Visit the product website to make sure the blades fit your chosen saw before purchase.

Scan the QR to see a video on how to install a scroll sander.



Learn to Ebonize

Make this DIY stain in just five easy steps!

By Staff of Scroll Saw Woodworking & Crafts

Exotic hardwoods might not always fit your budget—and that's okay! In fact, mimicking the look of elegant ebony, wenge, cocobolo, or even thermally treated woods like Judy Gale Roberts uses on page 41, is easy to do. All you need is a simple stain made with two common household ingredients: steel wool and white vinegar. A chemical reaction between the stain and the wood's natural tannins results in a range of sleek hues, from dark brown to navy blue and even jet-black.

We had a lot of fun with this project, and we think you will, too. *Note: Always wear the appropriate protective gear when handling stains and finishes.*

Getting Started

In this experiment, we wanted to answer three main questions:

- *Would the ebonizing solution perform differently depending on the kind of vinegar used?*
- *Would a tea pretreatment boost the stain's appearance in a noticeable way?*
- *How would the solution look when applied to different wood types?*

To do this, we prepared two different ebonizing solutions—one with steel wool and regular white cooking vinegar (5% acidity) and one with steel wool and cleaning vinegar (6% acidity). We kept

them in identical conditions over a two-week period. Then, while we waited, we cut six identically sized wood blanks: cedar, walnut, poplar, pine, cherry, and oak. Each blank was pre-sanded to 320-grit and then separated into five equal sections with blue painter's tape.

- 1: *Raw wood*
- 2: *Cooking vinegar solution and no tea treatment*
- 3: *Cleaning vinegar solution and no tea treatment*
- 4: *Cooking vinegar solution and tea treatment*
- 5: *Cleaning vinegar solution and tea treatment*

We tested the solutions on six presanded woods: cedar, poplar, oak, cherry, pine, and walnut.

What We Found

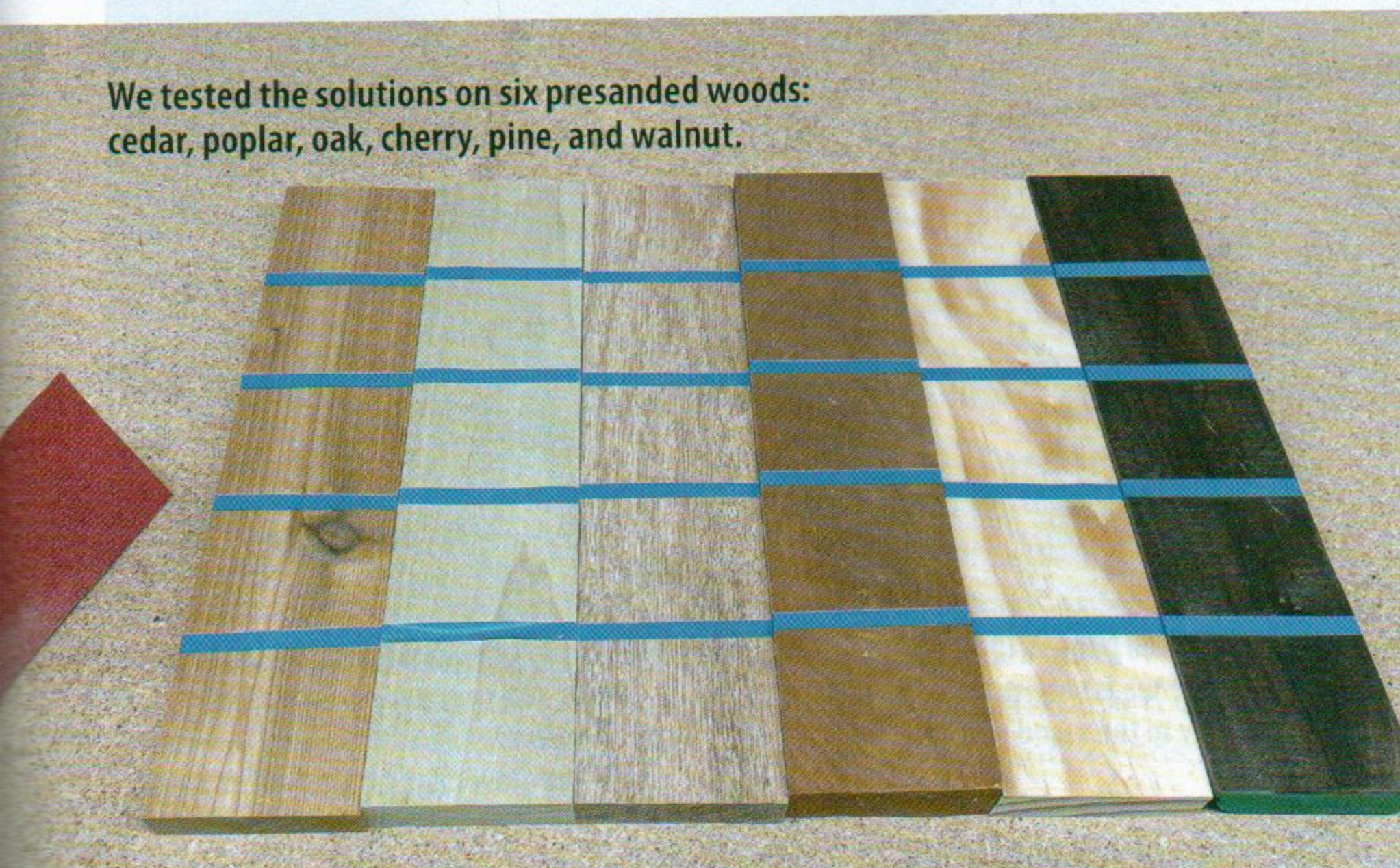
We were surprised at how the solutions changed over time. After two weeks, the higher-acidity vinegar had dissolved the steel wool almost entirely, and the liquid turned dark brown; in the jar with the cooking vinegar, however, the steel wool was only partially dissolved, and the liquid remained clear (see Step 3 on page 14).

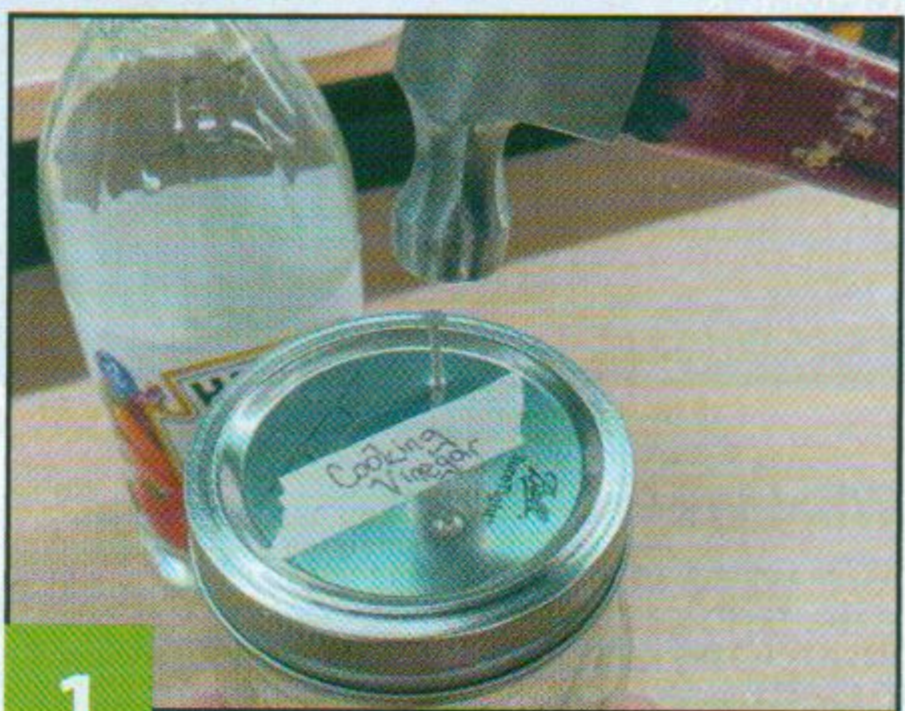
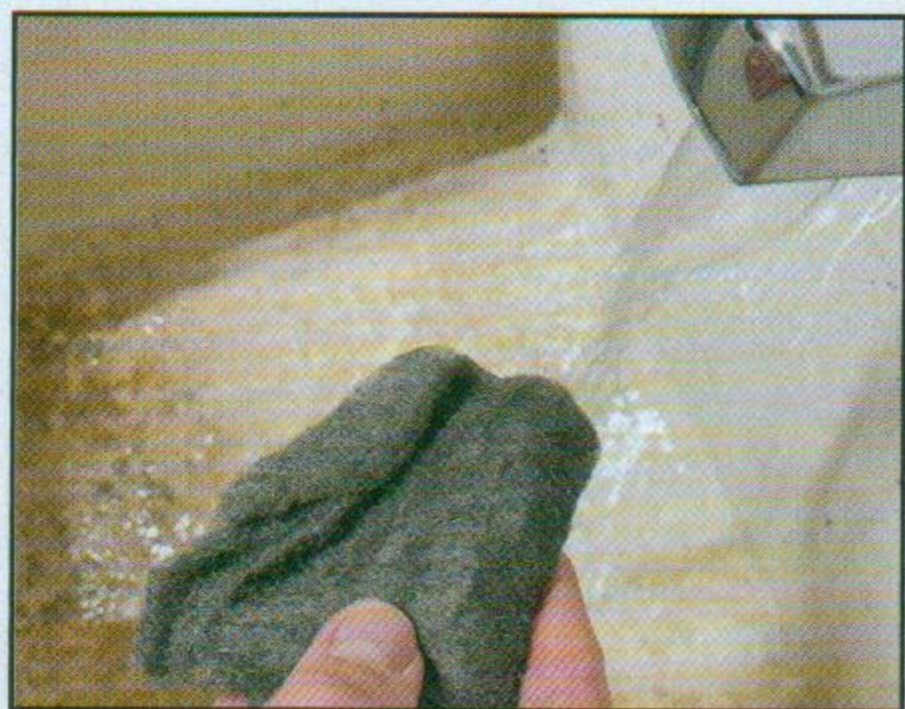
Despite this visual difference, the two solutions had virtually the same effect on the wood. While the higher-acidity vinegar did dissolve the steel wool more completely, the final solution did not have a noticeably greater effect on the wood samples than the slightly lower-acidity solution.

After a single coat of stain, the cherry, oak, and walnut became nearly jet-black, even without the tea treatment. In these three woods, the tea treatment resulted in a slightly darker final color but did not make a huge difference.

In the pine, poplar, and cedar, the quadrants without the tea treatment had a minimal reaction to the stain. However, in the sections treated with tea, the ebonizing solution became much more dramatic.

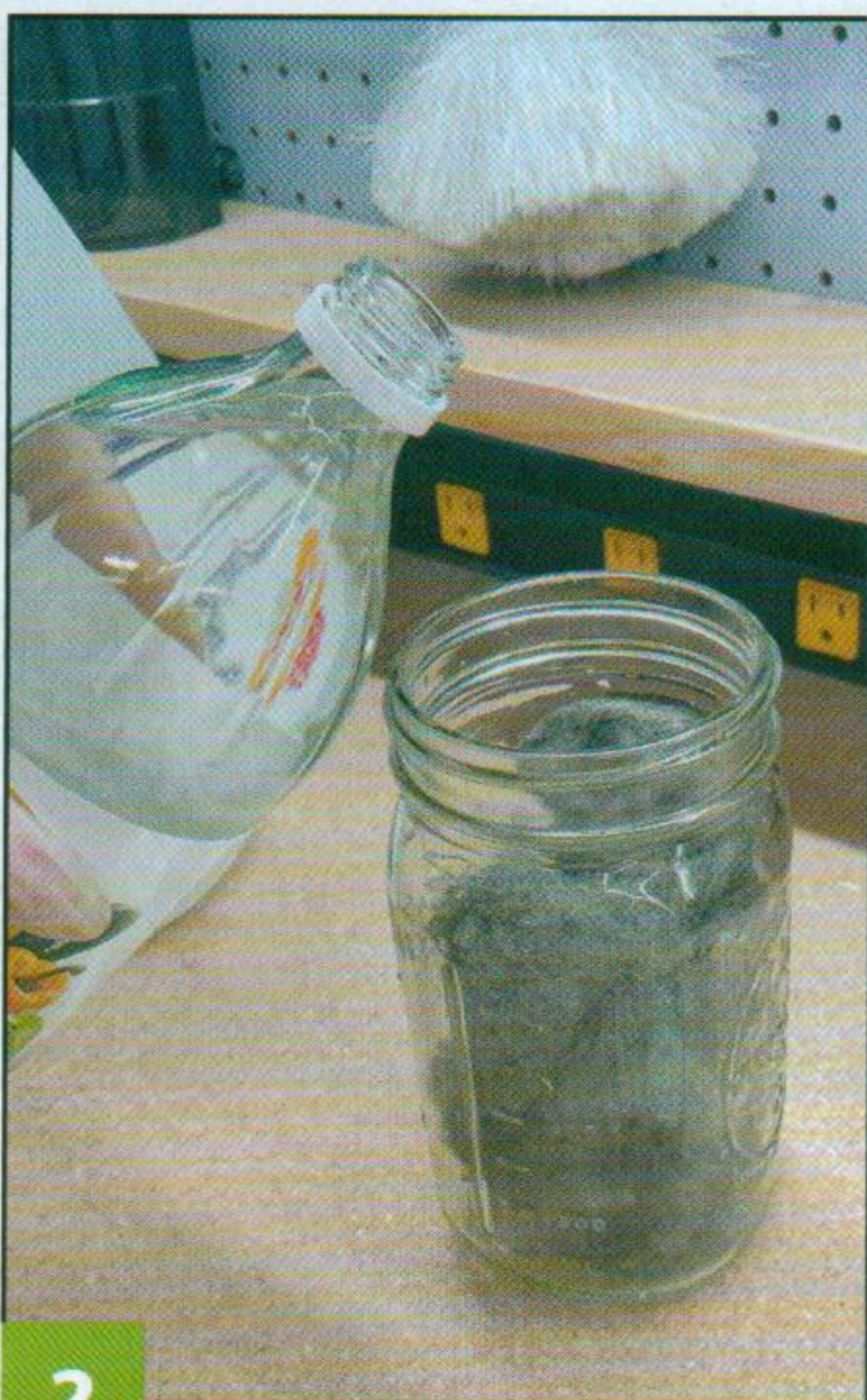
Follow the steps on page 14 to make your own ebonizing solution!





1

Prepare your materials. Wash a 000 steel wool pad with water and a small amount of dish soap to remove any oily residue. Make sure to rinse thoroughly, and pat the steel wool dry with paper towels. Then grab a clean quart jar and pierce a few holes in the metal top with a hammer and nail. This will allow for any off-gassing once the vinegar encounters the steel wool.



2

Combine the ingredients. Tear the steel wool up into small pieces and place it in the bottom of the jar. Then fill the jar with either 5% or 6% vinegar, covering the steel wool completely. Seal the jar, cover the holes, and then give the mixture a good shake.



3

Let sit. We placed both jars in a cool, well-ventilated environment for two weeks, shaking the mixture every other day.

Did You Know?

An ebonizing treatment is different from a storebought ebony stain. Ebonizing causes a chemical reaction to darken the wood, while a stain merely adds a topical colorant to the wood's surface.



4

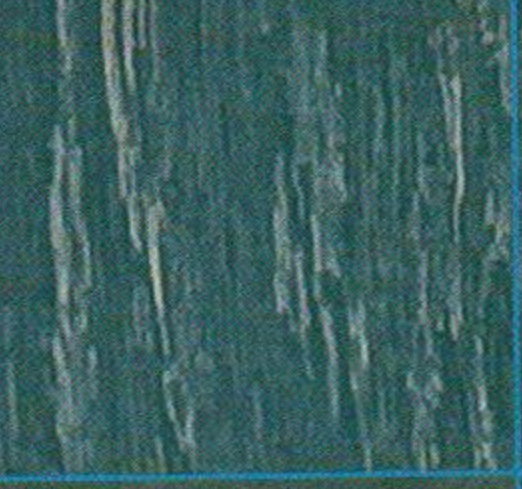

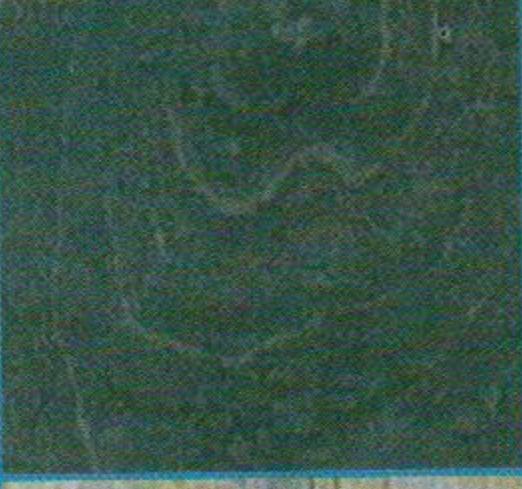









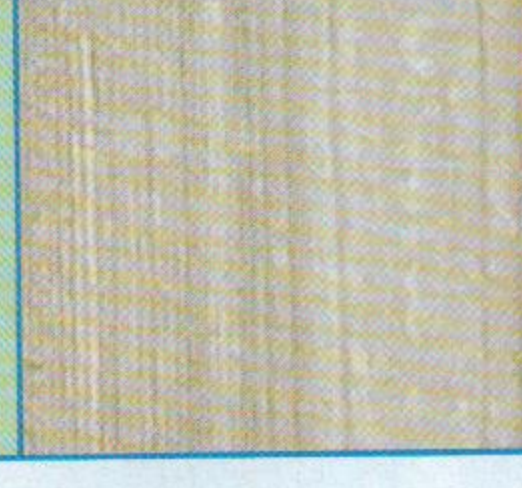


Make the tea treatment. We steeped four family-size black tea bags in 10oz. of boiling water, but you could use a different ratio; just make sure the tea is very strong. Let steep for 30 minutes, remove the bags, and let cool. Then apply to the wood with a disposable foam brush.



5

Apply the ebonizing stain. Note: If needed, filter out any particles from the steel wool prior to use. Make sure to wear protective gloves and an apron. The wood will continue to darken over the next few minutes.

Results

Wood Type	Untreated	Cooking Vinegar w/o Tea	Cleaning Vinegar w/o Tea	Cooking Vinegar w/Tea	Cleaning Vinegar w/Tea
Oak					
Cherry					
Pine					
Poplar					
Walnut					
Cedar					

TIP

BUDGET-FRIENDLY STAIN

It costs about \$8 to make a full quart of ebonizing stain.

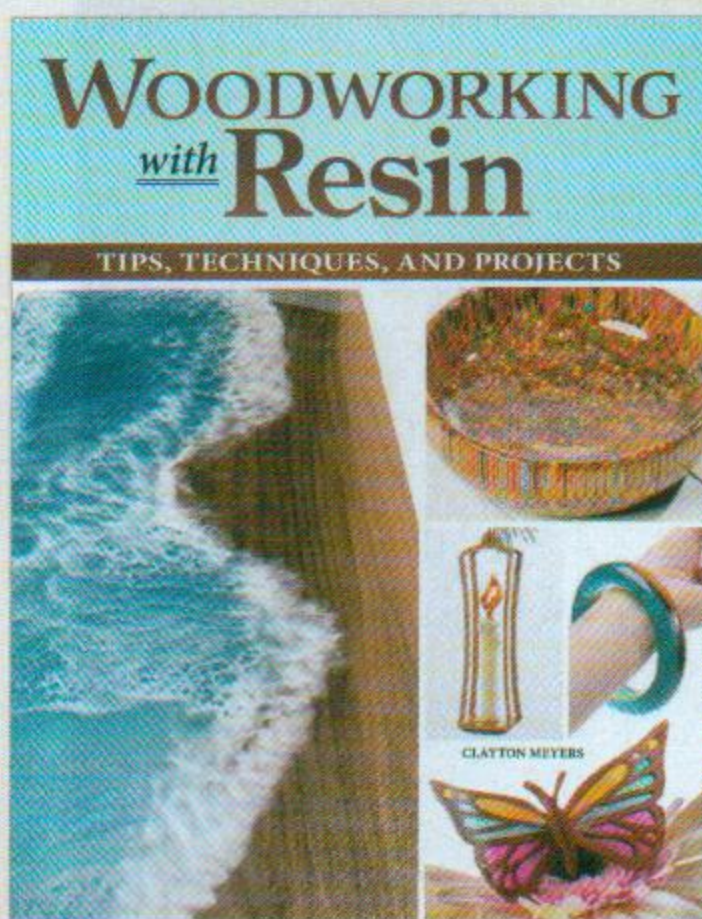
Conclusion

You can ebonize wood easily and cheaply using generic ingredients you probably have lying around the kitchen. Hardwoods such as walnut, oak, and cherry have a higher tannin content than softer woods, which means they'll darken dramatically, even without a tea treatment. However, if softwoods are all you have on hand, pretreating them with tea will lead to a darker stain effect. We suggest testing your DIY stain on a range of scraps to see which look you like best. Have at it!

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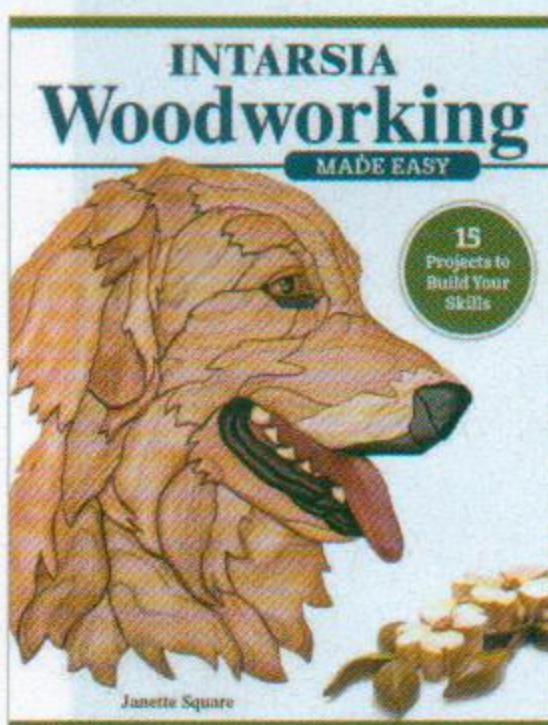
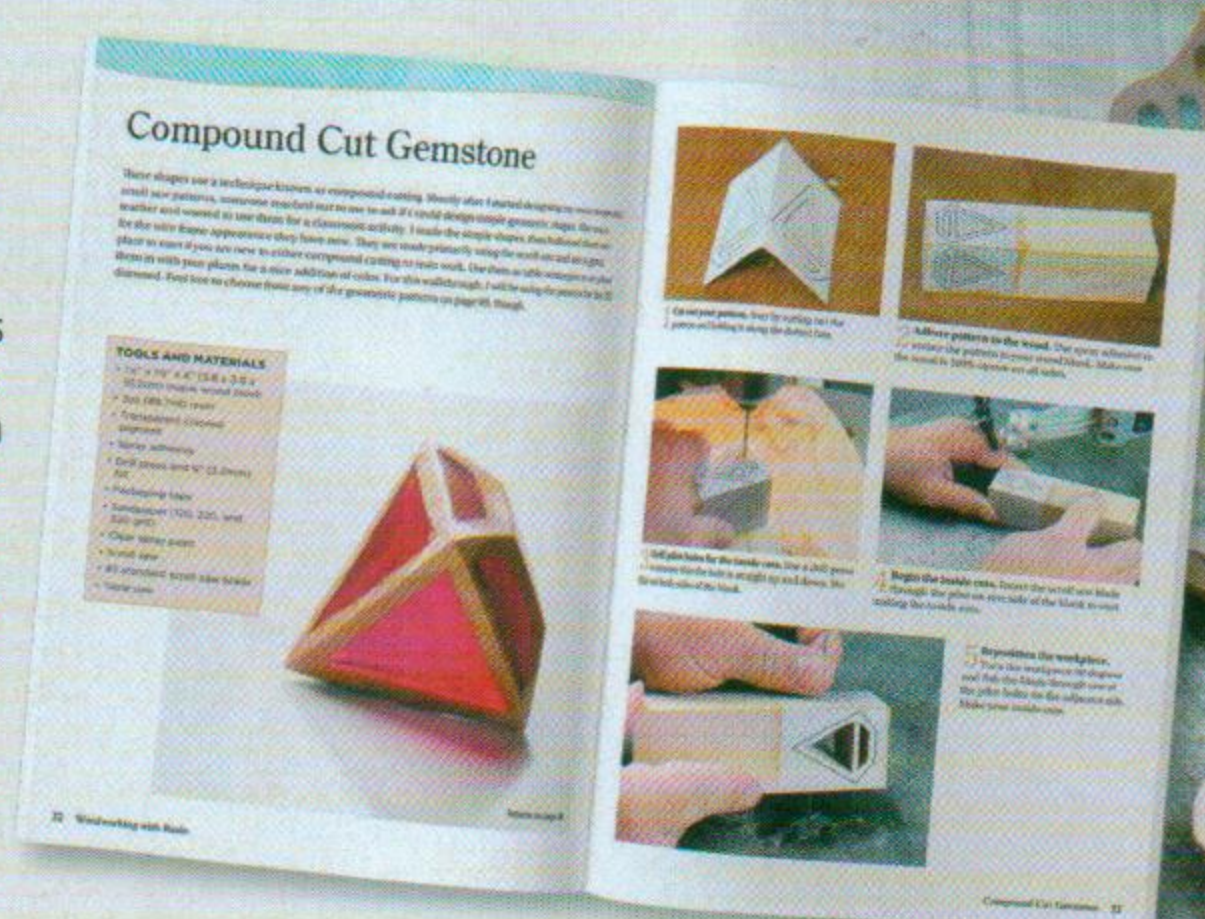


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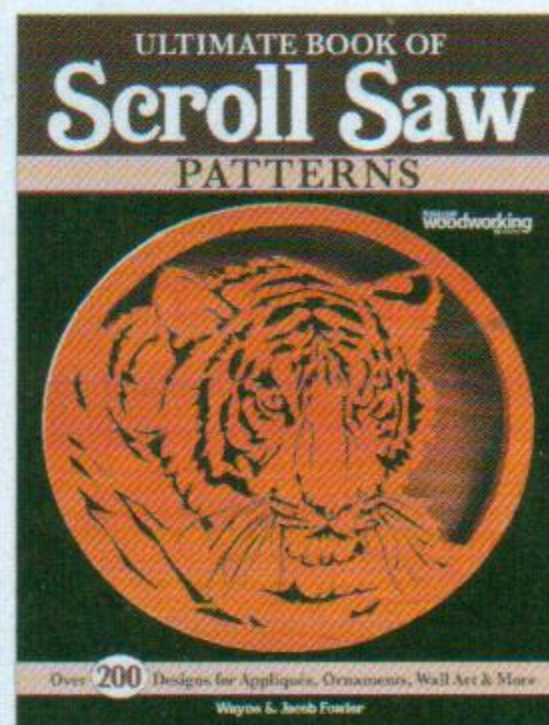
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By Janette Square

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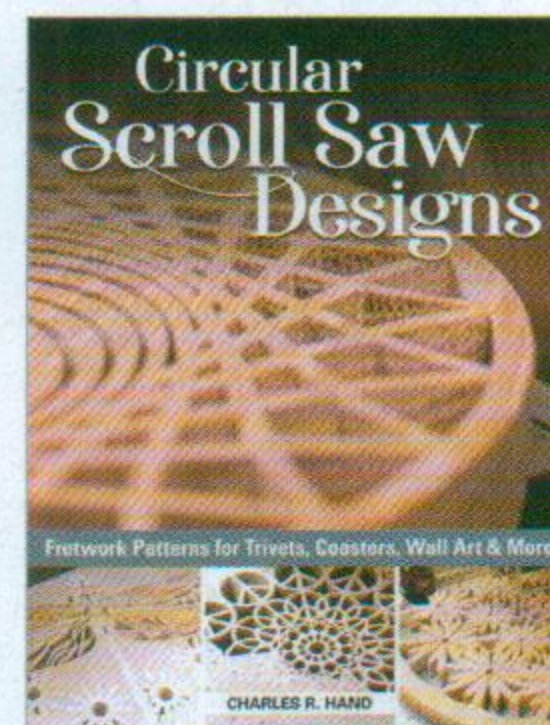


Ultimate Book of Scroll Saw Patterns

By Wayne and Jacob Fowler

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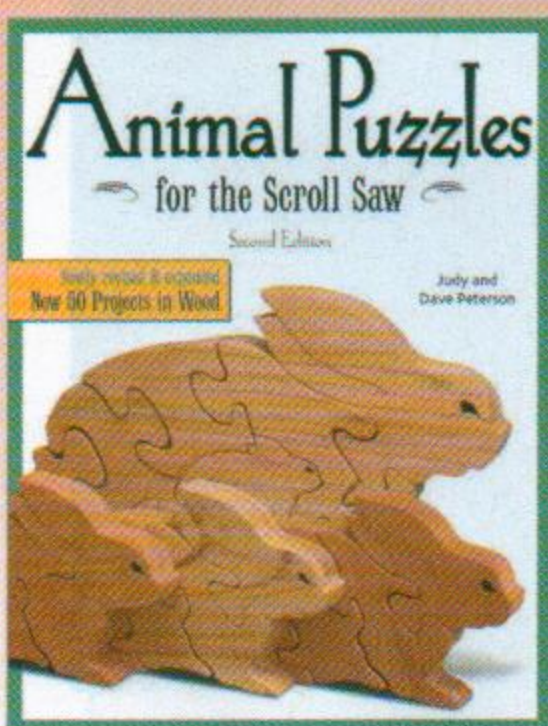
Circular Scroll Saw Designs

By Charles R. Hand

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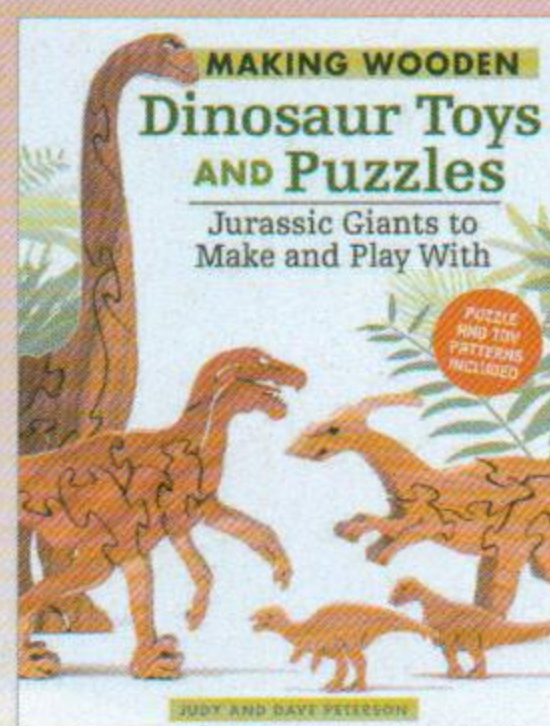


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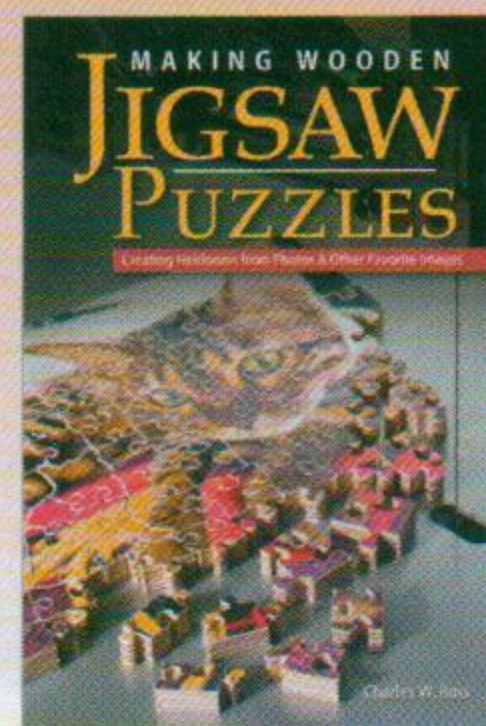


Making Wooden Dinosaur Toys and Puzzles

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- Has 38 original scroll saw patterns including the most popular dinosaurs: the Velociraptor, Stegosaurus, Triceratops and Tyrannosaurus Rex
- Features two dioramas: a Maiasaur Mama with her babies and a T-Rex on the attack
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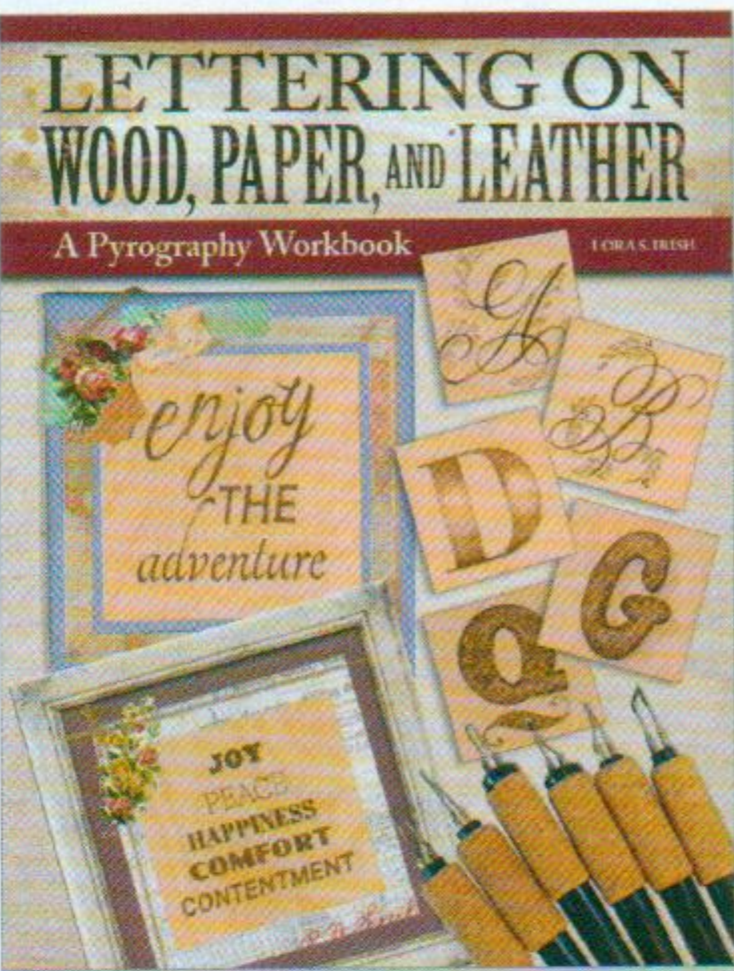
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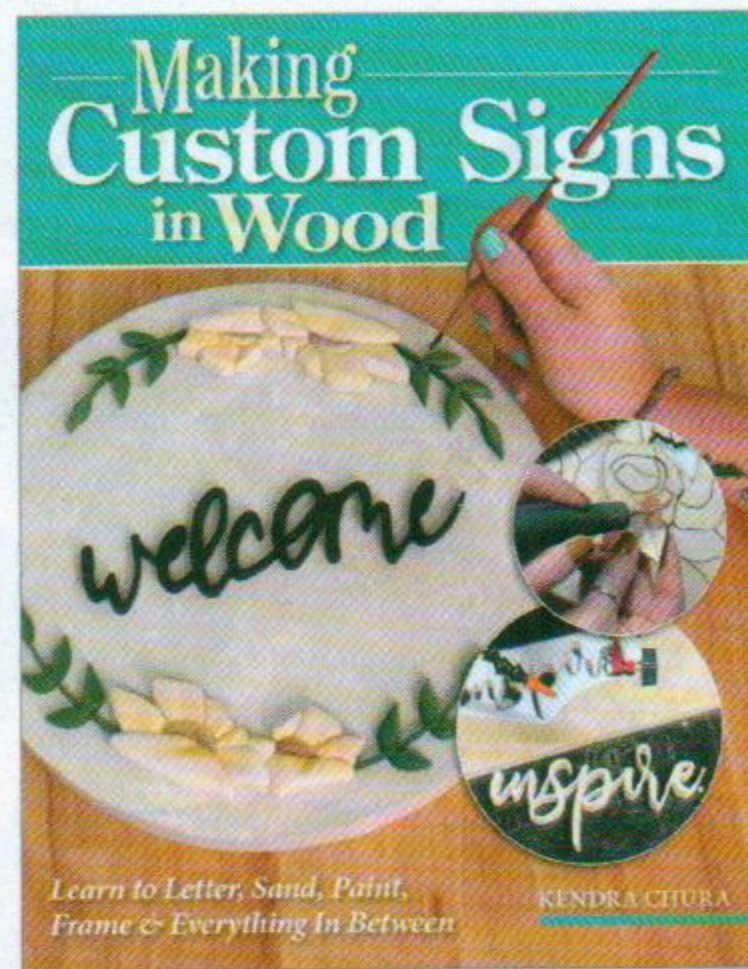


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- A complete guide for pyrographers who want to learn how to improve their lettering skills on a variety of mediums – wood, paper, and leather
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- Lora S. Irish is a best-selling author and renowned pyrography artist with more than 500,000 copies of her 30 published instructional guides sold worldwide

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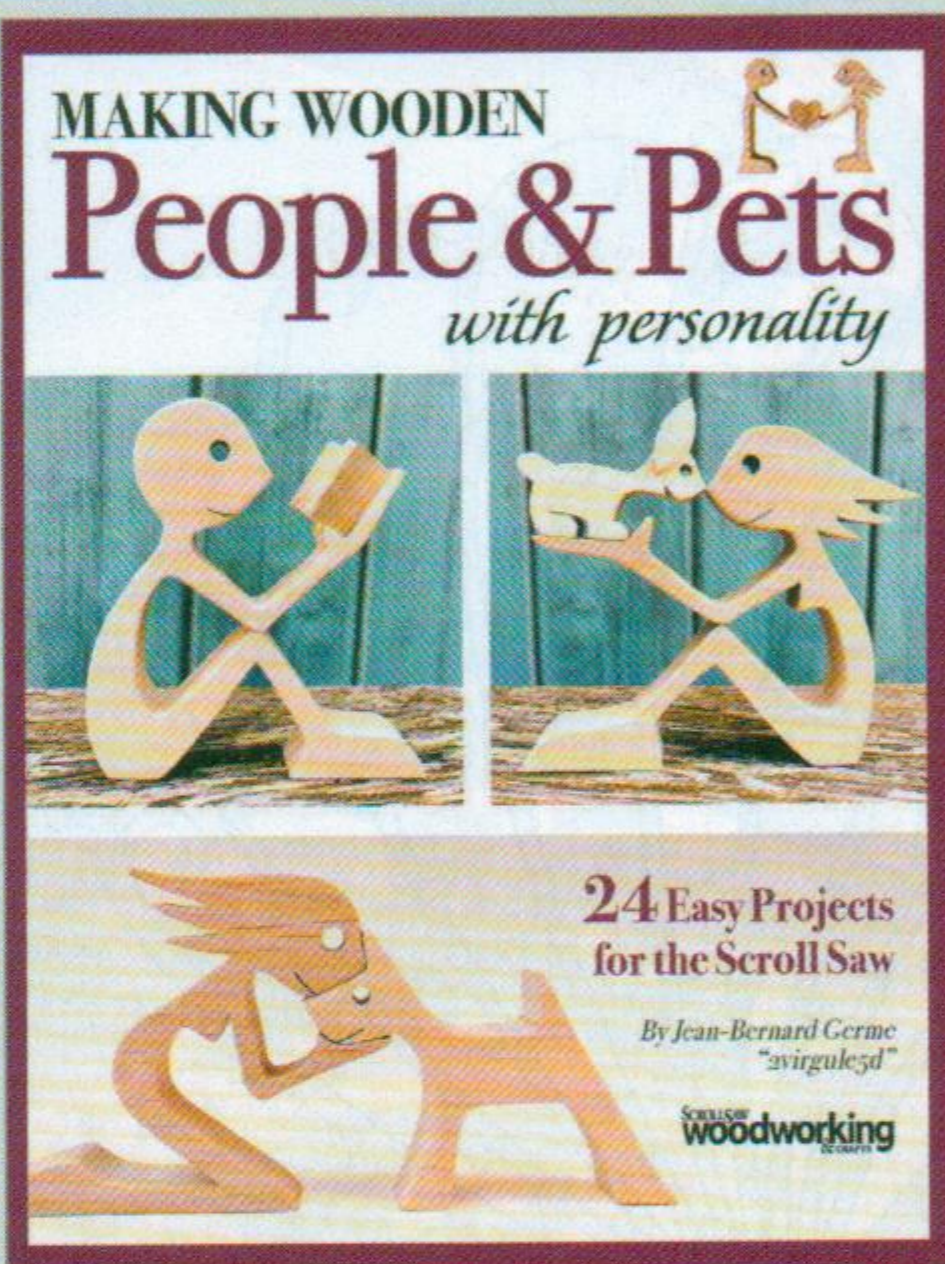
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By Kendra Chura

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- A complete DIY beginner's guide to making small wooden signs and personalized keepsakes
- Includes detailed overviews on tools, materials, safety, scroll saw basics, patterns, and troubleshooting problems
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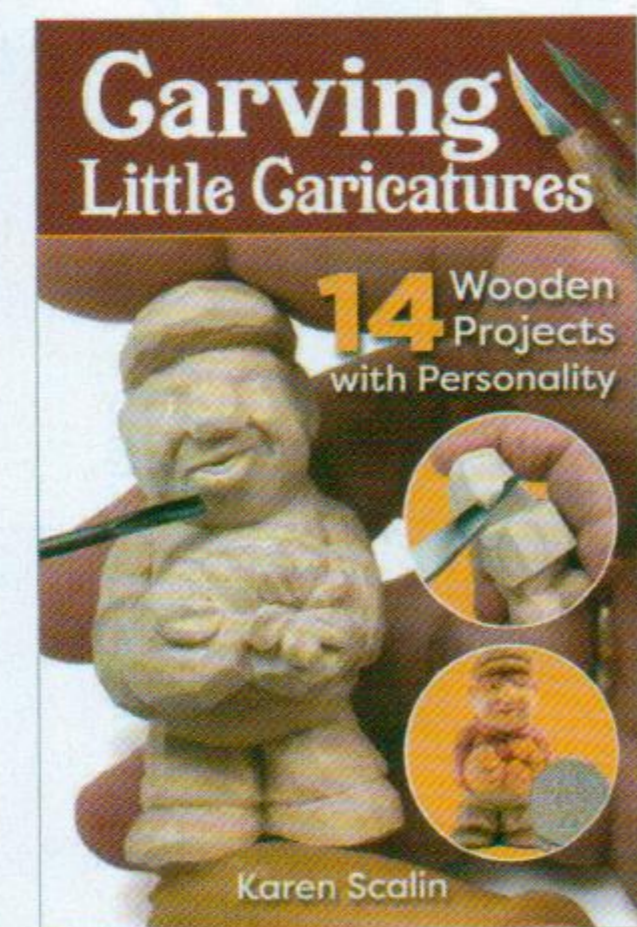


Making Wooden People & Pets With Personality

By Jean-Bernard Germe

- The perfect pattern booklet for both beginner to intermediate scroll sawyers alike to spark inspiration, further their skills, and use up their scraps
- Features 24 full-size scroll saw patterns that can be completed in just 30 minutes
- Patterns include a hiking couple, new parents, attentive service dogs, a runner, and several more heartfelt designs that focus on the hobbies, people, and pets we love the most

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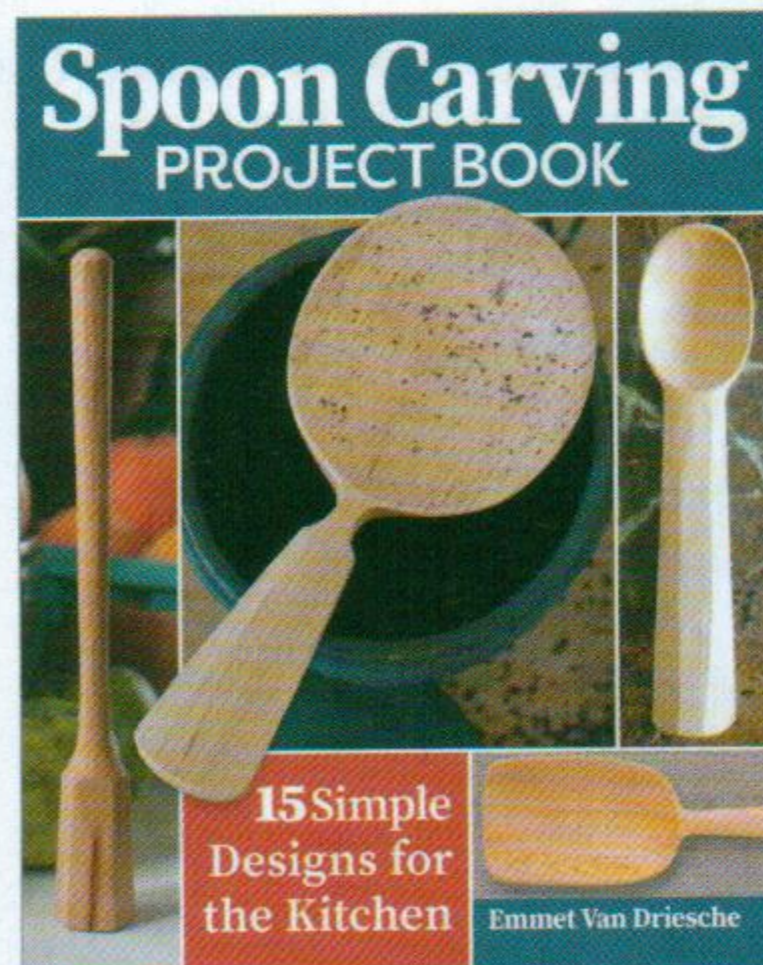


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By Karen Scalin

- A skill-building, beginner-friendly project guide for carvers of all levels to learn how to add movement and expressive personality details into small-scale caricature projects
- Includes 14 step-by-step projects and full-size patterns of various characters that slowly progress in difficulty as they become more dynamic and technical
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By Emmet Van Driesche

- A stunning guide to carving wooden spoons for beginner to intermediate carvers
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Seashell Ornaments

Celebrate Christmas in July with these beachy filigree designs

By Keith Fenton
Cut by Joe Pascucci

These summery ornaments are perfect for the beach lover in your life, and the curly filigree frets give them an extra flair. If you're not a fan of classic ornaments, enlarge the patterns by 20% to make sun catchers to hang in windows or mini-plaques to decorate a wall. The patterns have an optional hanging hoop that you can choose to keep or omit depending on how you plan to display the finished piece.

Getting Started

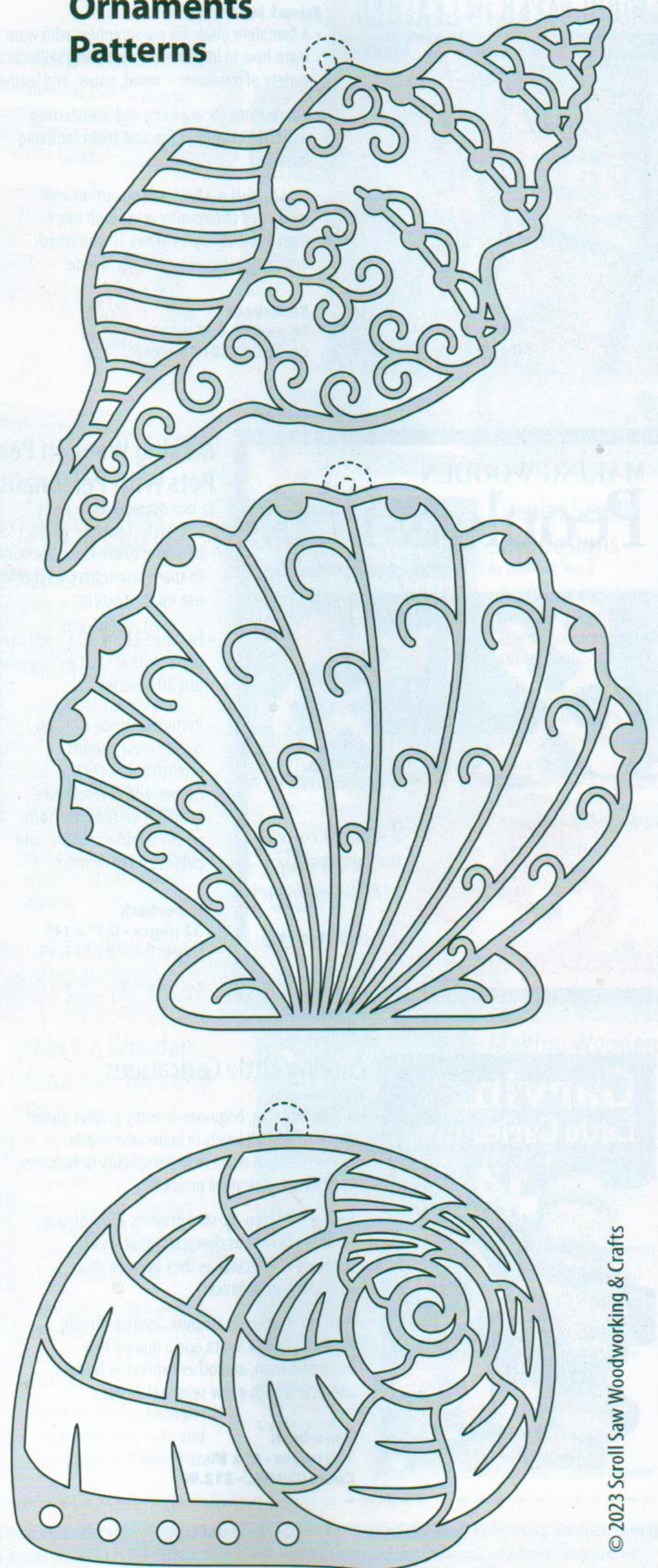
Photocopy the patterns and prepare the blanks. I pre-sanded them with an orbital sander, moving up progressively through the grits from 100 to 220. Remove dust with a clean cotton cloth. If you are stack-cutting thin layers of wood, stack the blanks now, wrapping the edges with clear packaging tape to ensure that they stay aligned while you cut.

Cover the top surface of the blanks with blue painter's tape, and then attach the patterns to the tape with spray adhesive. Drill the blade-entry holes for the frets, and then, if desired, drill the holes for the hangers. Once all the holes are drilled, flip the pieces over and sand the backs so they sit perfectly flat during cutting. Stack cutting can make the project easier since the blade cuts slower and you have more control over it.

Cutting and Sanding

Cut the designs, beginning with the interior frets. Then cut the perimeters. Gently remove the patterns, hand-sand the fronts and backs to remove any fuzzies and then soften the edges, moving up through the grits from 220 to 400. Be careful not to catch an edge on the delicate bridges. Use a sanding stick to remove any burrs and fuzzies that remain. Remove dust with a clean cotton cloth.

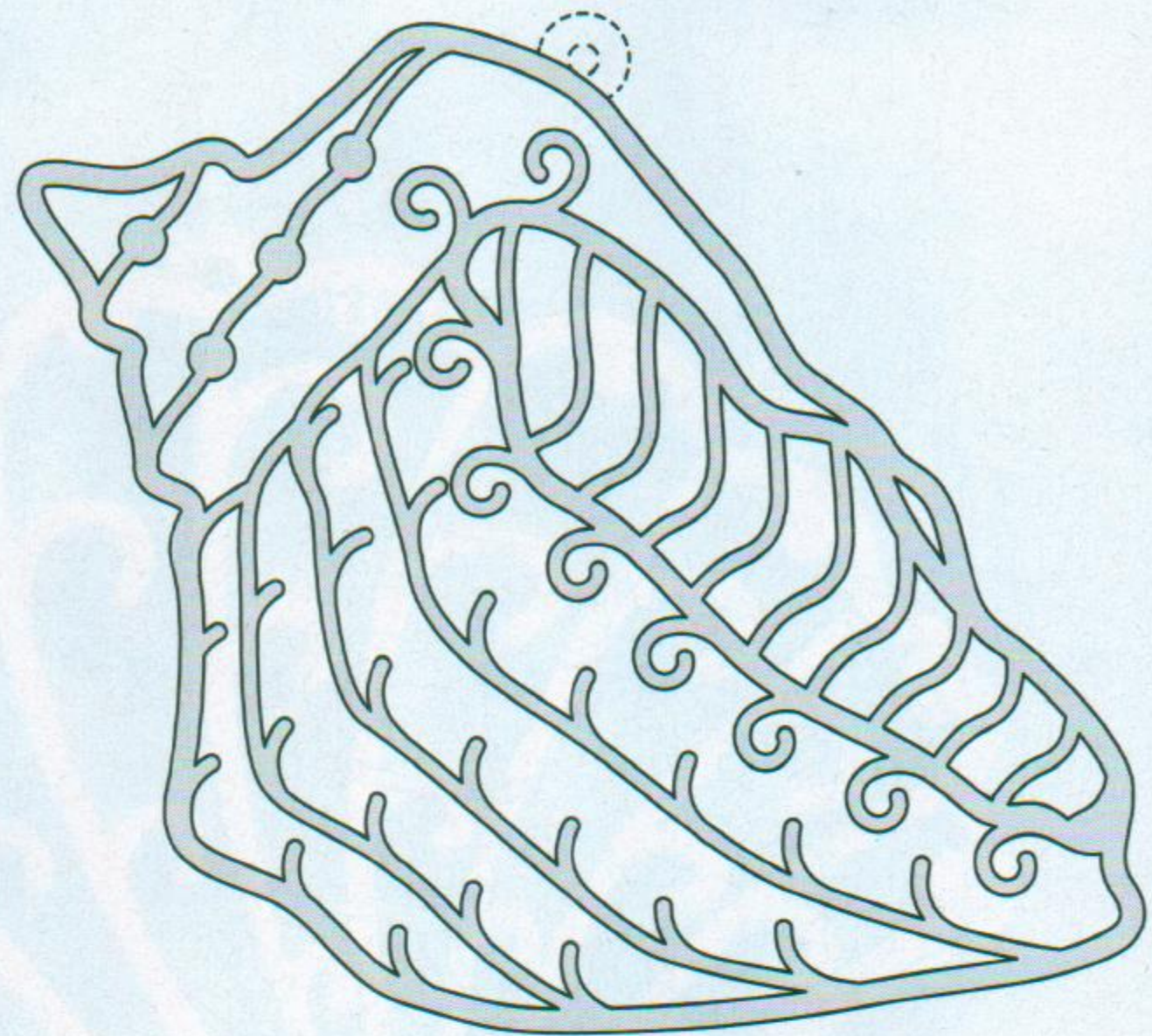
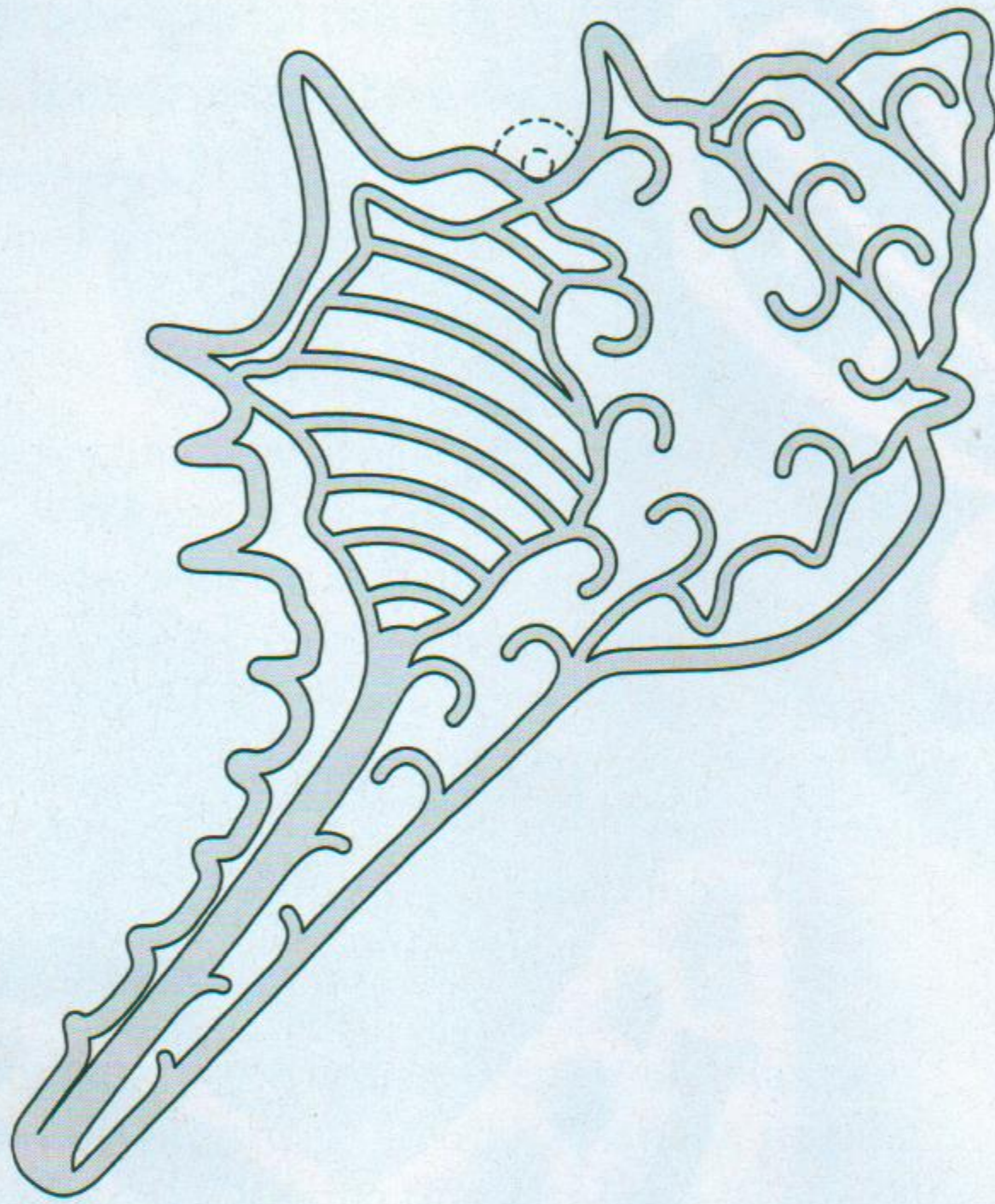
Seashell Ornaments Patterns



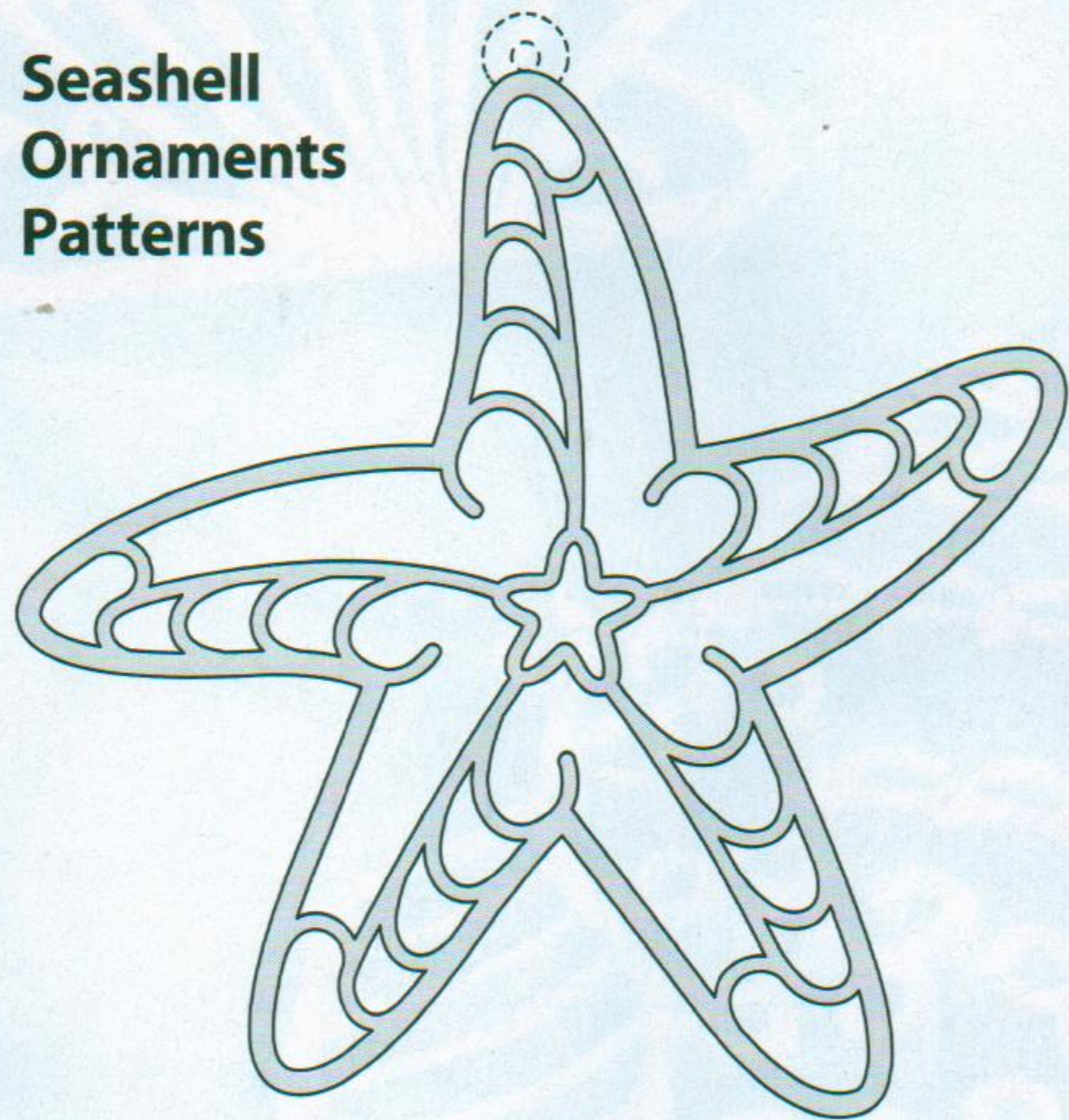


Finishing

Spray with several light coats of a semigloss lacquer of your choice, allowing ample drying time between coats. For a smoother finish, you can sand lightly by hand with 400-grit sandpaper and clean off the dust before applying the last coat. Allow the lacquer to dry. Tie a cord of your choice for hanging and enjoy!



Seashell Ornaments Patterns



Materials & Tools

Materials

- Wood, such as poplar, maple, or yellowheart, 1/8" to 1/4" (3mm to 6mm) thick: approx. 3 1/2" (8.9cm) square per ornament
- Spray adhesive: repositionable
- Tape: clear packaging (optional), blue painter's
- Clean cotton cloths
- Sandpaper: assorted grits to 400
- Clear finish, such as semigloss spray lacquer
- Small cord or hanger (for display)

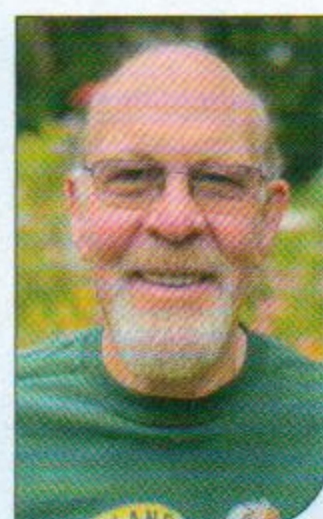
Tools

- Scroll saw with blades: #2/0 reverse-tooth
- Drill press with bits: assorted small
- Sander: orbital with grits up to 220
- Sanding sticks

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



Keith Fenton has been designing scroll saw patterns for several years alongside his partner, Sheila Landry. Together they have contributed patterns and articles to several woodworking and painting magazines and e-zines. You can visit their website at sheilalandrydesigns.com to see their entire selection of patterns (including free samples). If you have any questions about this project, you can reach Keith at sheilalandrydesigns@gmail.com.



Joe Pascucci started scrolling nearly 30 years ago. He also enjoys woodturning and other types of woodworking. Joe is a retired police sergeant and construction superintendent, and is the founding president of the Long Island Scroll Saw Association. When Joe's not in the woodshop, he can be found gardening, traveling, and spending time with his grandkids. To see more of Joe's work, visit the Members section of liwoodworkers.org.

Old-Timey Tops

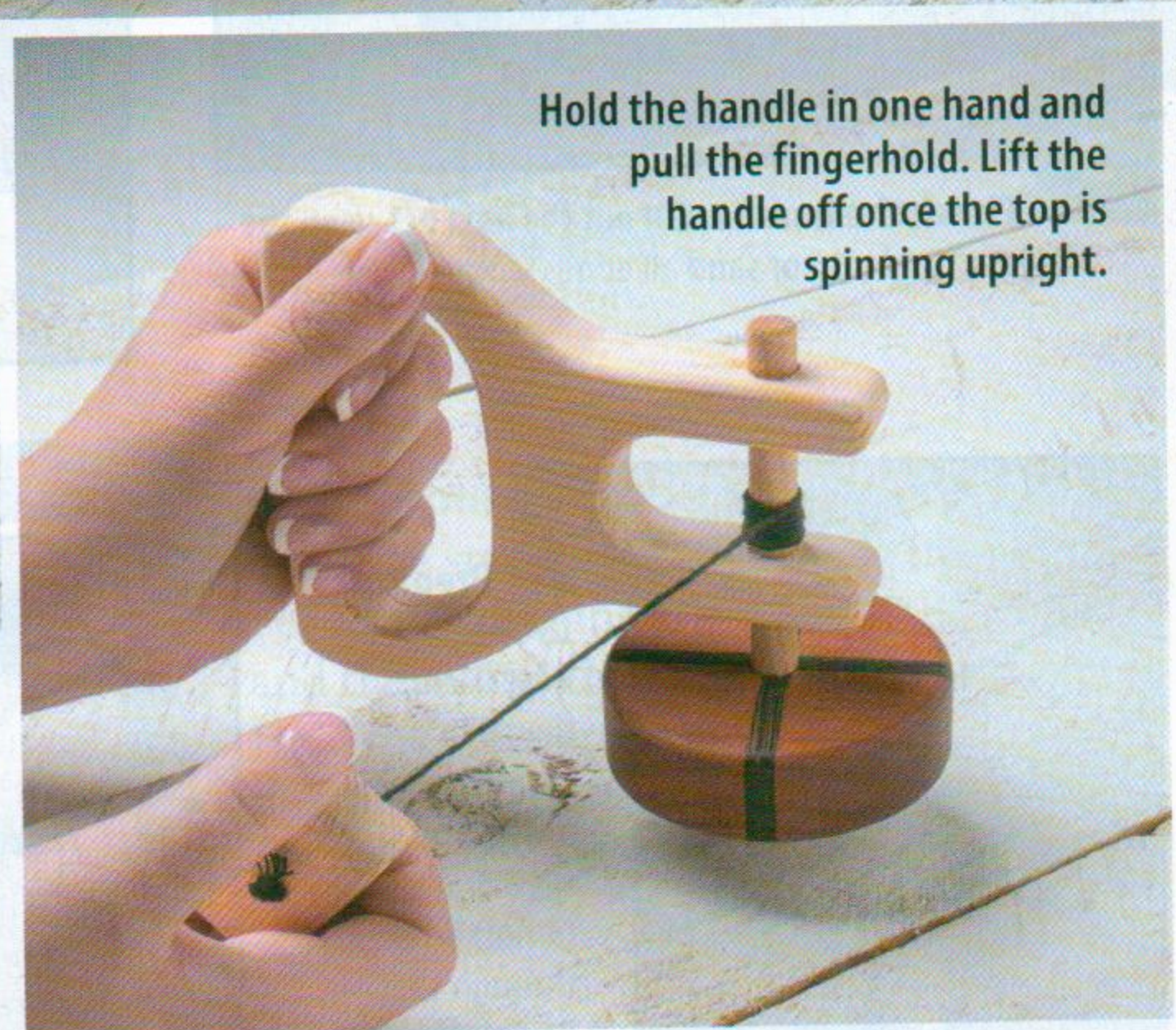


Making these lathe-free kids' toys couldn't be simpler!

By Rita Cels

In a world where toys are digitized, computerized, and plasticized, I value simple, wooden ones the most. When designing a top, I like to play with the density of the wood, design, and size. Each one behaves a little differently from the others. The handle and pull cord allow the user to spin the top faster than they could by manually spinning it. You can even set up a perimeter using thin pieces of wood to create an "arena" where the top cannot escape.

Whether you are spinning by yourself, or battling it out with a friend, these toys are sure to bring plenty of entertainment to your home.



Hold the handle in one hand and pull the fingerhold. Lift the handle off once the top is spinning upright.

Getting Started

Choose your wood varieties and cut the blanks to size. Then photocopy the handle and fingerhold templates. Trace them onto the pine blank or attach with repositionable spray adhesive. Read all instructions before you begin cutting.

CUTTING & ASSEMBLING



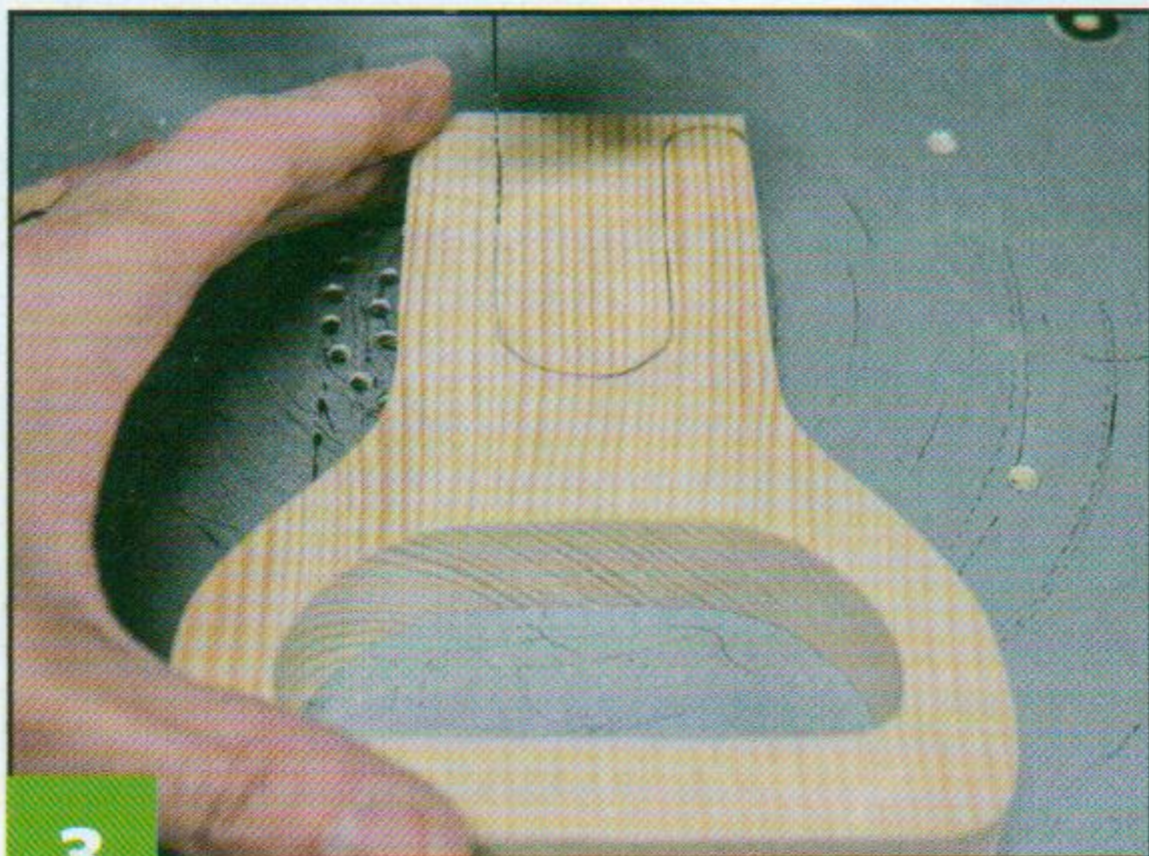
1

Start the handle. Using a scroll saw with a #5 blade, cut around the perimeter, leaving the section between the "fingers" in place. This gives the piece stability for when the holes are drilled.



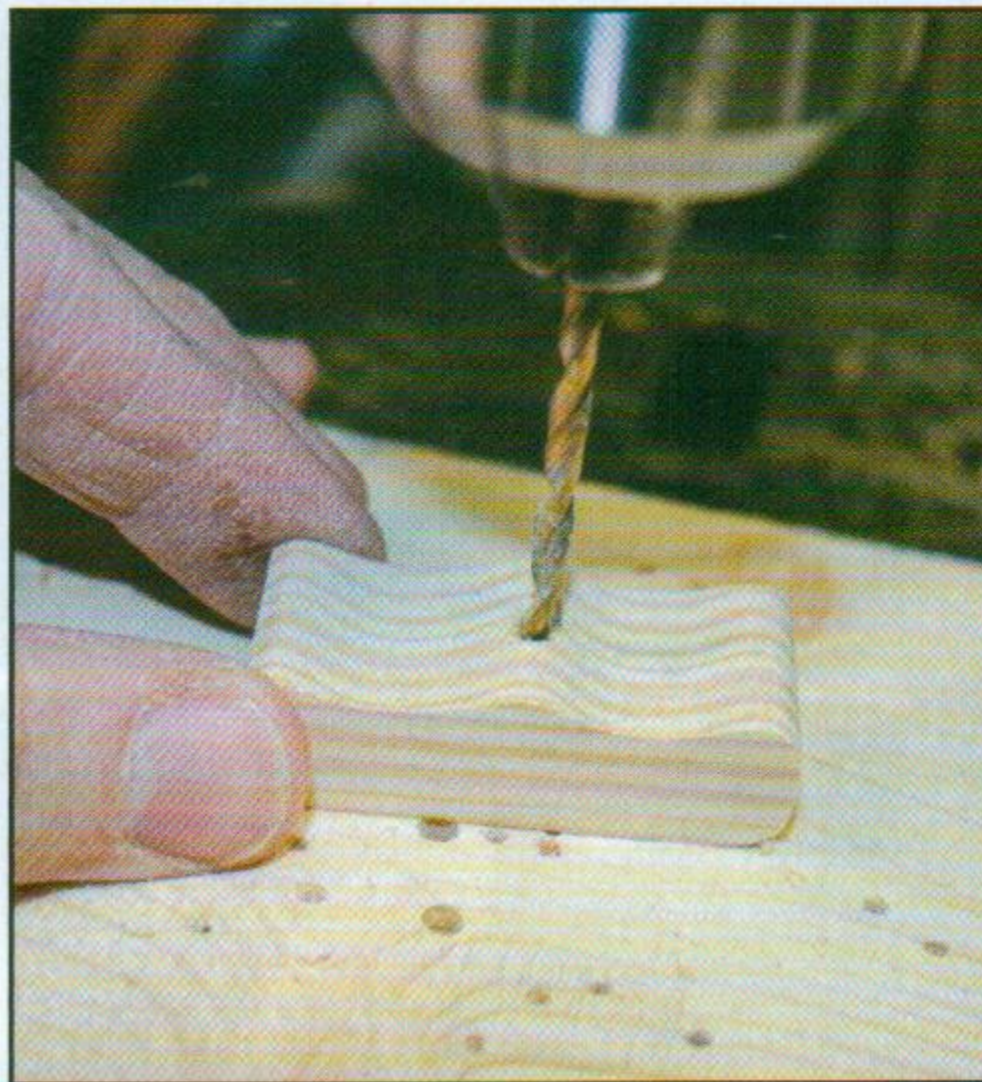
2

Drill the holes in the handle. Clamp the piece securely and, making sure the handle is square with the table, drill a $2\frac{7}{64}$ " (11mm) hole through both "fingers." I like to start with a smaller bit and work my way up to avoid breakage.



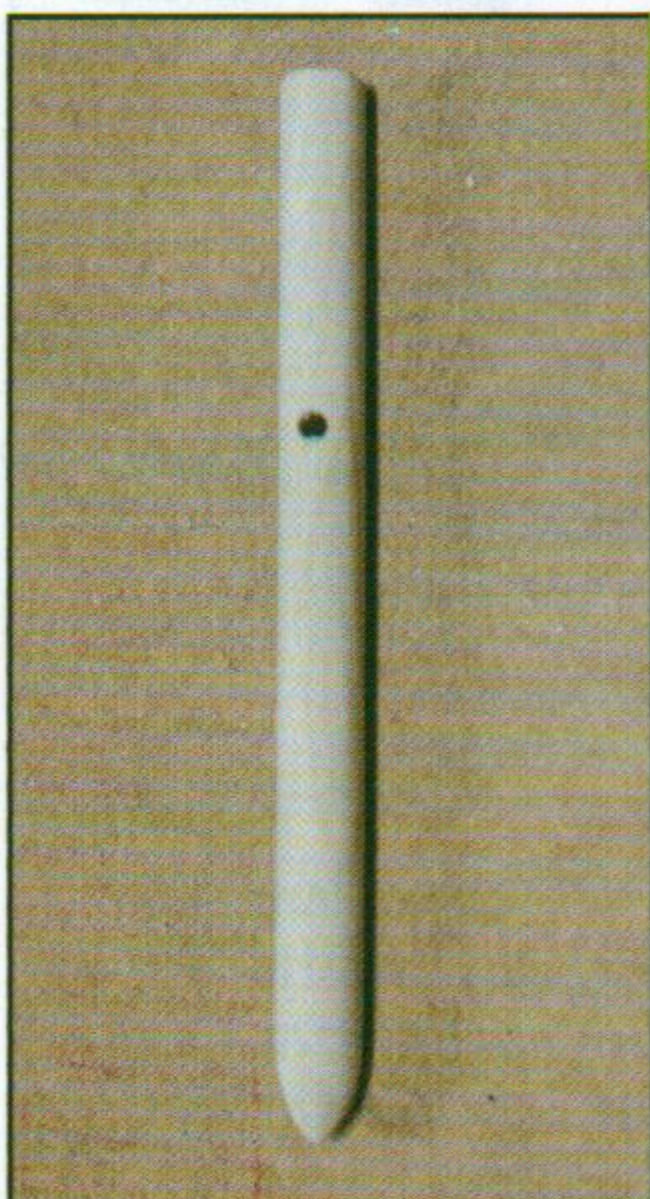
3

Finish the handle. Cut out the area between the "fingers," and rout or sand all edges smooth.



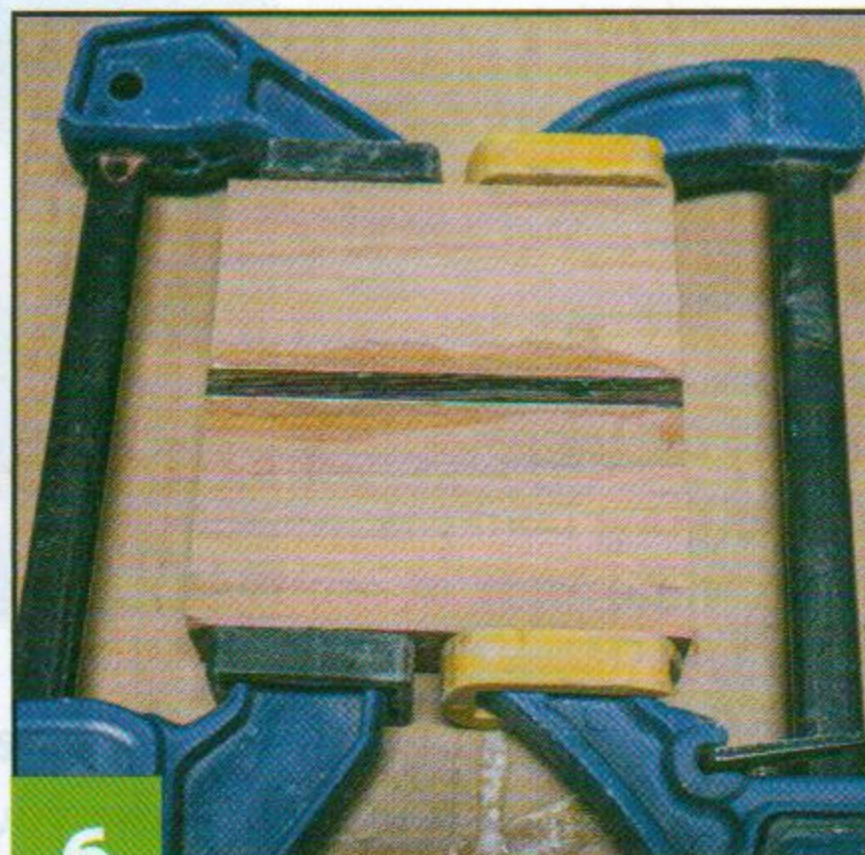
4

Prepare the pull cord. Attach the finger-hold template to a piece of the waste wood from the handle using a glue stick. *Note: Remove the template immediately after cutting for the glue to come off quickly and cleanly.* Cut around the perimeter. Drill a $\frac{1}{8}$ " (3mm) hole through the center. Knot one end of the cord material and feed it through the hole in the wood. Make another knot on the other end to prevent fraying.



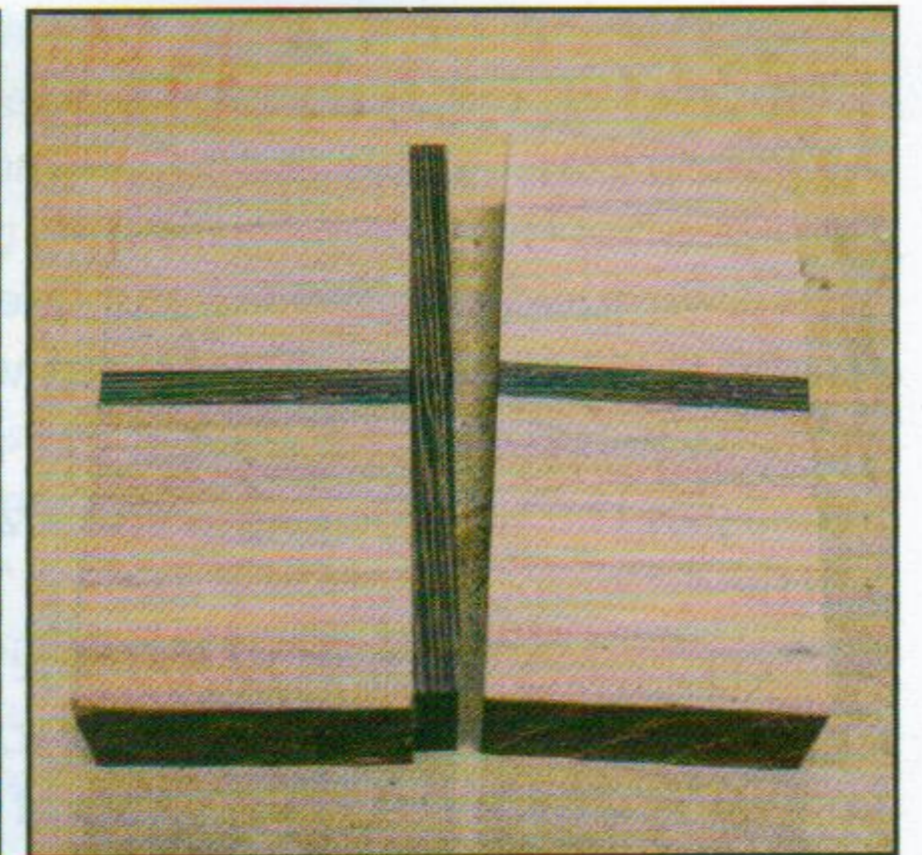
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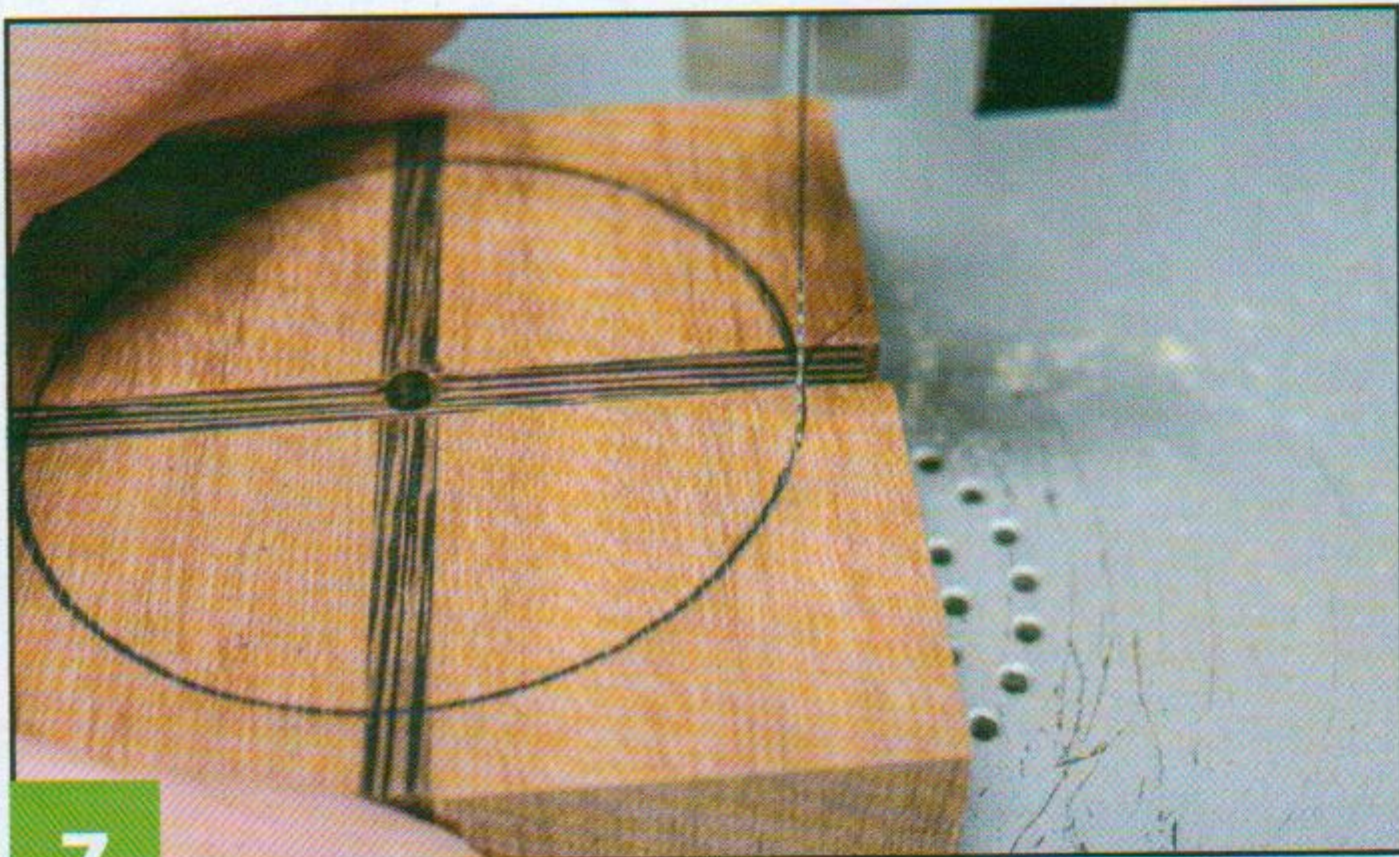
Prepare the stem. Cut a $\frac{3}{8}$ " (1cm) dowel to size, secure it in a vise, and then drill a $\frac{1}{8}$ " (3mm) hole through the dowel, $1\frac{1}{2}$ " (3.8cm) from the top. Sand the bottom of the dowel to a rounded point.



6

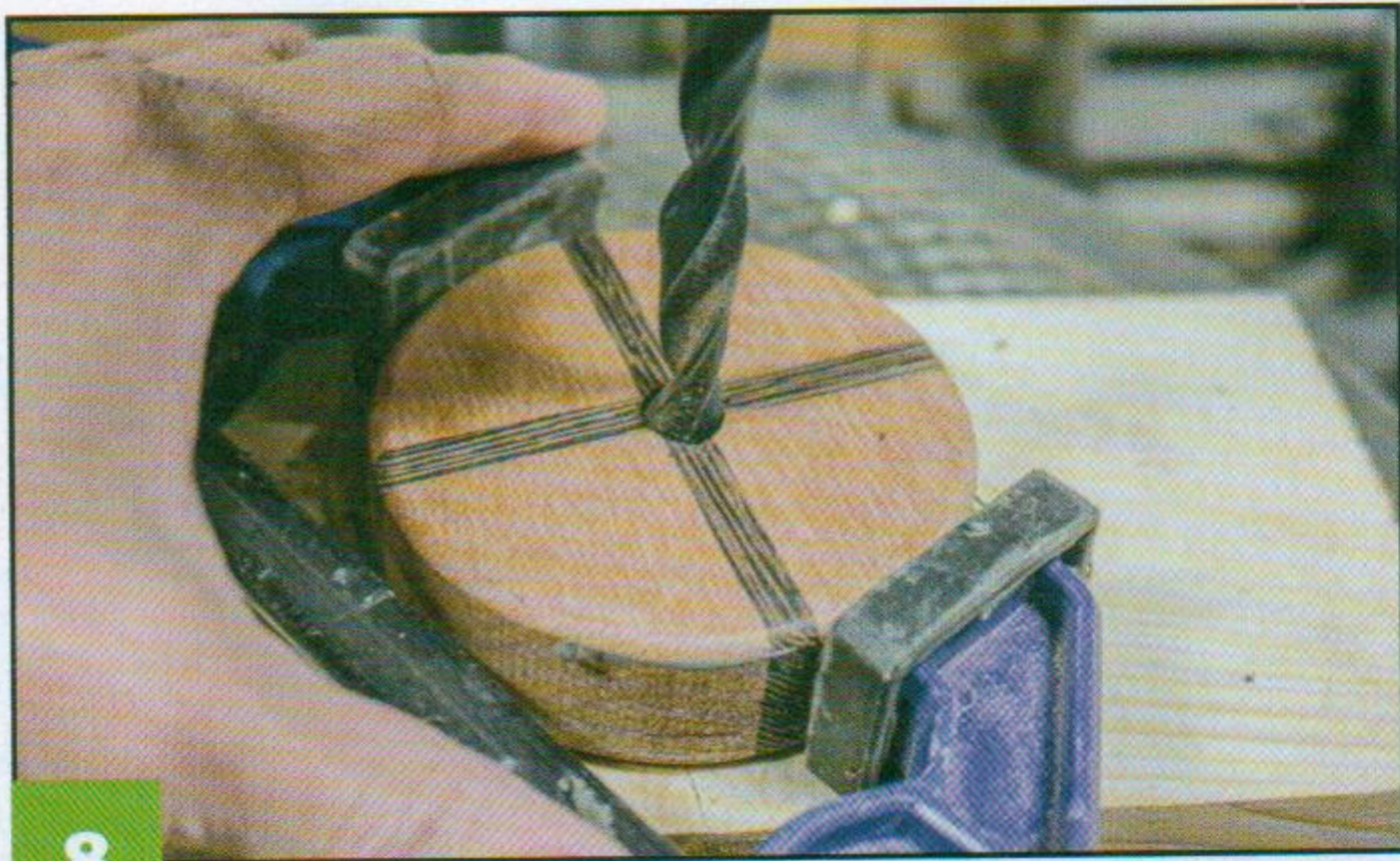
Prepare the top blank. Cut the block of tigerwood in half. Then cut two small pieces of wenge around $\frac{1}{8}$ " to $\frac{1}{4}$ " (3mm to 6mm) thick, and then glue one piece between the two halves and clamp until dry. Cut this sandwich in half again, cross-grain. Glue the other piece of wenge between the new halves and clamp until dry.





7

Cut the top. Mark the center where the two wenge pieces meet. With a compass, use this point to draw a 3" (7.6cm)-dia. circle. Using a #7 blade, cut around the circumference on the scroll saw. Sand or rout the edges to remove any sharp corners. Alternatively, you could use a hole saw of the same diameter to cut out the main top body.



8

Complete the top. Secure the top with clamps or a vise and drill a $\frac{3}{8}$ " (10mm) hole through the middle. Insert and glue the stem in the hole, leaving approximately $\frac{3}{4}$ " (1.9cm) visible out the bottom. Once dry, apply a child-safe finish of your choice; I like to use a blend of 4 parts mineral oil and 1 part beeswax.

Materials & Tools

Materials

- Wood, such as tigerwood, $\frac{3}{4}$ " (1.9cm) thick: top body, 3 $\frac{1}{2}$ " (8.9cm) square
- Wood, such as wenge, $\frac{3}{4}$ " (1.9cm) thick: top body, 1" x 3 $\frac{1}{2}$ " (2.5cm x 8.9cm)
- Wood, such as pine, $\frac{3}{4}$ " (1.9cm) thick: handle and finger-pull, 4 $\frac{1}{2}$ " x 5" (11.4cm x 12.7cm)
- Cotton or hemp cord: 15" (38.1cm) long
- Wood dowel, $\frac{3}{8}$ " (1cm)-dia.: top stem, 4 $\frac{1}{2}$ " (11.4cm) long

- Spray adhesive: repositionable
- Sanding sponges: medium, fine
- Wood glue
- Glue stick
- Finish: beeswax and mineral oil mixture

Tools

- Scroll saw with blades: #5, #7 reverse-tooth
- Drill press with bits: $\frac{1}{8}$ " (3mm), $\frac{1}{4}$ " (6mm), $\frac{3}{8}$ " (10mm), $\frac{27}{64}$ " (11mm)

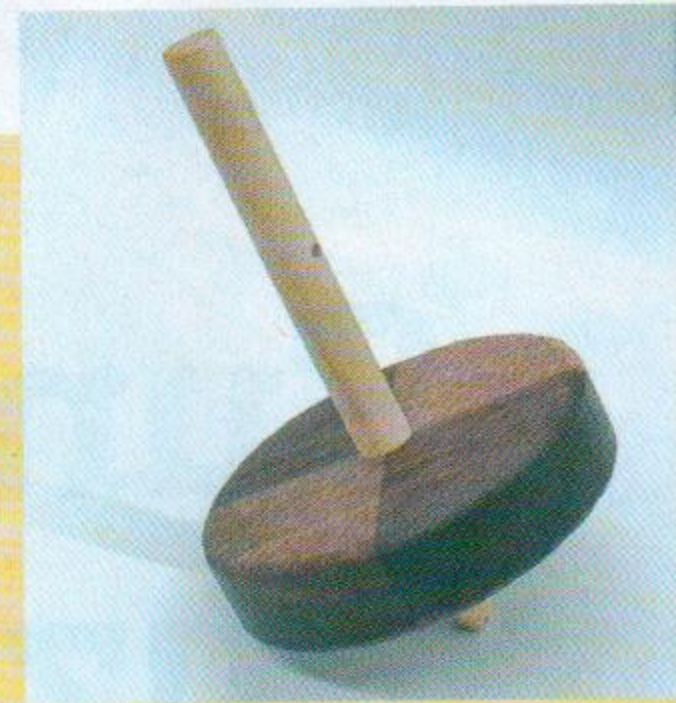
- Hole saw: 3" (76mm) (optional)
- Compass
- Vise
- Clamps
- Awl
- Sander
- Router with bit: roundover (optional)

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

Design Variants

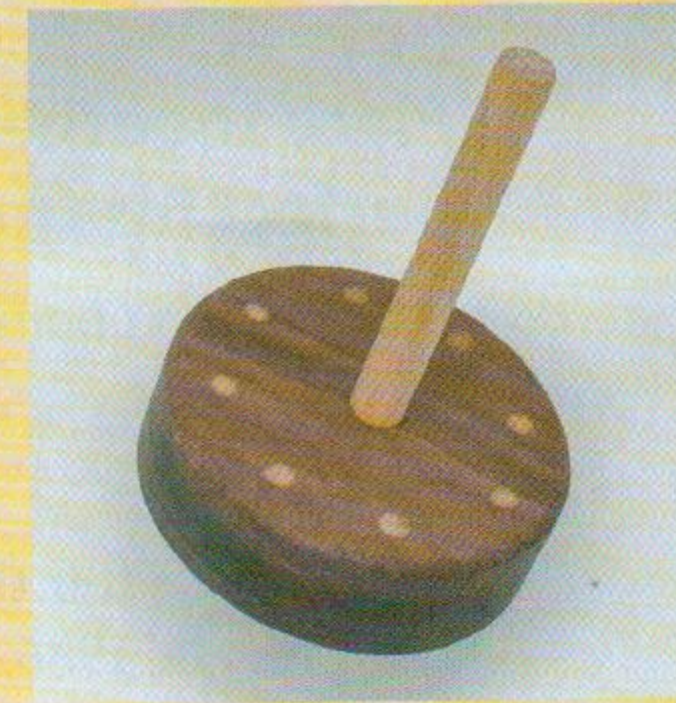
#1: Checkerboard

Glue two pieces of contrasting woods together, making sure to align the grain. Cut in half, and then flip one half over. Glue and clamp together, matching the middle points to create four squares.



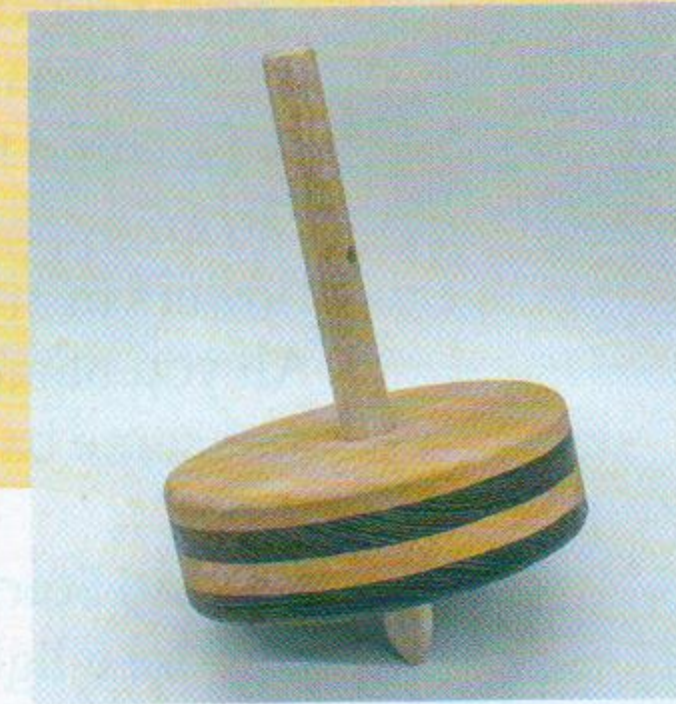
#2: Polka Dots

Cut the main circle out of walnut. Drill eight $\frac{1}{4}$ " (6mm) holes spaced evenly around the top. Cut eight $\frac{3}{4}$ " (1.9cm) dowels and glue them in the holes. Sand the top and bottom flush.



#3: Bumble Bee

Alternate and glue four $\frac{1}{4}$ " (6mm)-thick pieces of contrasting wood together. Clamp and let dry.



Patterns for the **OLD-TIMEY TOPS** are in the pullout section.

Instructions for Use

Load the stem into the holes in the handle. Feed the string into the hole of the stem, and then wind the cord around the stem. Hold the top upright on a hard surface and pull the cord. Lift the handle off the stem once the string is released.



Rita Cels is a retired teacher and self-taught scroller from Leduc, Alberta, Canada. Although much of Rita's time is spent making wooden children's toys, in her spare time, she loves designing special boxes using a variety of woods and techniques. Check out Rita Cels Creations on Instagram and Etsy for more.

Sunflower Puzzle

Piece together a bold bloom perfect for the season

By Sarah Lyn Chamberlain

After the Chernobyl meltdown of 1986, scientists flooded the site with sunflowers. While beautiful, the plants weren't for decoration: sunflowers are able to leach toxic metals from the water and soil around them. With this pattern, you can enjoy the beauty of these remarkable flowers by making a puzzle to keep or gift. All you need is a piece of secondhand pine and some basic stains!

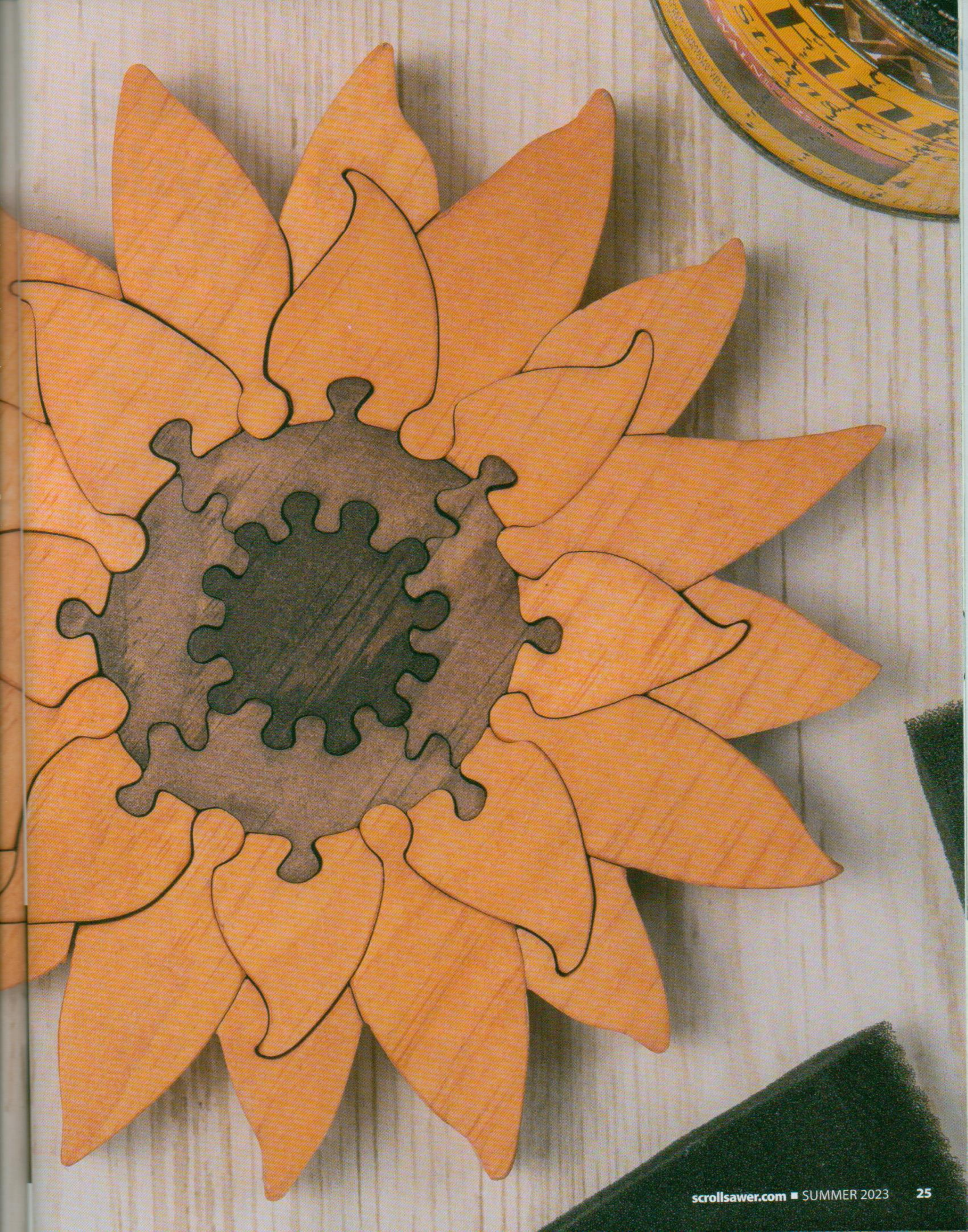
Getting Started

Choose a light wood; I prefer $\frac{3}{4}$ " (1.9cm)-thick pine. Prepare the blank by sanding progressively through the grits to 220. Cover the surface with blue painter's tape. Since this project is cut from a square piece of wood, it does not matter whether you orient the grain horizontally or vertically along the pattern. Photocopy the pattern and use spray adhesive to secure it to the surface of the tape.

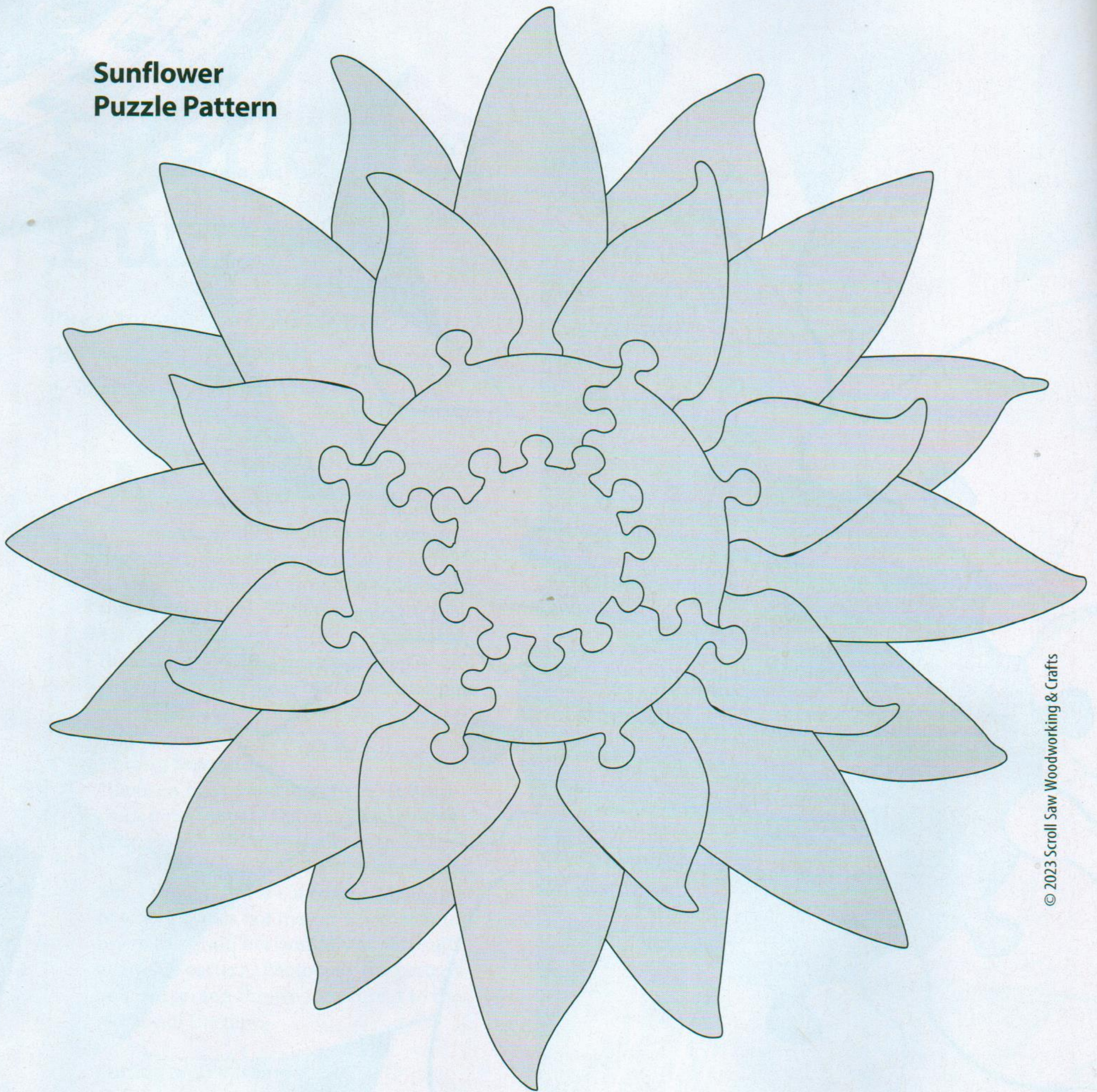
Cutting and Finishing

Cut the project on a scroll saw; go slowly and let the blade do the work. Once you've made all the cuts, remove the patterns. Then reassemble the puzzle. Smooth the front and back with an orbital sander, and then soften the edges by hand-sanding. Stain as desired; I used several shades of Minwax®, saving the darkest color for the center of the flower. Once dry, apply several coats of a clear gloss finish, sanding lightly between coats.





Sunflower Puzzle Pattern



© 2023 Scroll Saw Woodworking & Crafts

Materials & Tools

Materials

- Wood, such as pine, $\frac{3}{4}$ " (1.9cm) thick: approx. $7\frac{3}{4}$ " (19.7cm) square
- Spray adhesive
- Tape: blue painter's
- Sandpaper: assorted grits to 220
- Assorted water-based stains, such as Minwax®: dark walnut, golden oak, provincial
- Finish: clear spray, such as Rust-Oleum® 2X Gloss

Tools

- Scroll saw with blades: #5 or #7 reverse-tooth
- Sander: orbital
- Paintbrush

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



Sarah Lyn Chamberlain has loved woodworking since age five but did not start scrolling until she purchased her first scroll saw as an adult. She taught herself how to use it and hasn't stopped since. Sarah enjoys intricate projects, but her favorite thing to create is playful puzzle designs. For more of Sarah's work, visit her website, creativestuff.ca.

Swimming Single File

Need a last-minute Mother's Day gift? This portrait of an adult duck with her brood is just the ticket

By Wayne Fowler

Design by Jacob Fowler



Nature enthusiast or not, you can't deny that ducks are neat creatures. Highly social, they often travel in groups—like the family shown in this portrait. During their migratory period, they can even fly several hundred miles in a single pass!

When cutting this fretwork, be mindful of the small frets that mark the ducks' plumage and eyes.

Getting Started

Photocopy the pattern. The pattern works best when oriented horizontally along the grain; I recommend adding a backing board later for more stability. Cover

the wood with clear packaging tape, and then attach the pattern to the tape with spray adhesive. The clear tape lets you see the wood underneath so you can properly place the pattern; it also helps to lubricate the blade while you are cutting and allows for quicker pattern removal once you are done.

Drill the blade-entry holes in the waste areas where the interior cuts will go. You can use a larger drill bit for the open space around the ducks, which will make it easier to feed the blade through. Some of the smaller holes (such as those for the facial details) will require a 1/32" (1mm)-dia. drill bit, however.

Cutting

Cut the project on a scroll saw, starting with the outside of the frame and then moving to the interior cuts. The size of the blade you use for the interior cuts depends on the wood thickness and density, as well as the level of detail in the cut. For most of this piece, a #3 reverse-tooth blade will suffice, but for the smaller cuts around the feathers and faces, it may be better to use a #1 blade.

Cut the backing board. I find it simpler to use the completed fretwork as the template for the backing board. This will also help you to match the grain in the backing board to the fretwork piece. Position the finished piece over your backing material of choice, and then mark the outline with a pen or pencil on the material. Cut the backing board using the #3 blade.

Alternately, you could start the project by stacking the two wood pieces, with the pattern on top and cutting the outline of the two pieces together. Separate them, complete the fretwork piece, sand both pieces as directed below, and then glue them together.

Sanding and Finishing

The beaks are fragile, so it is important to sand the fretwork carefully. I usually hand-sand the back of the fretwork with fine sandpaper while resting it on another board. Then I sand the front of the backing board with a shop-made sanding block, moving up progressively through the grits from 220 to 400. Wipe off dust with a tack cloth and glue the two pieces together, using spring clamps for a strong bond. Sand the face of the fretwork and the combined edges of the piece and the backing board so they are flush; you could use a disc sander or the sanding block, although the latter will take more time. Use a quarter sheet of 400 to 500-grit sandpaper to remove stubborn burrs and refine any problem areas a final time.

Clean off dust with a clean, soft paintbrush, and then apply a finish of your choice; I used natural Danish oil. To add extra luster, I applied a coat of carnauba wax with a buffing wheel on a drill press once the oil dried. If you plan to hang the ducks on a wall, use a self-leveling hanger centered near the top of the backing board. Hang and enjoy!

Pattern for **SWIMMING SINGLE FILE** is in the pullout section.

Materials & Tools

Materials

- Wood, such as cherry, 1/4" (6mm) thick: fretwork, approx. 5 1/4" x 14" (13.3cm x 35.6cm)
- Wood, such as maple or ash, 1/8" (3mm) thick: backing board, approx. 5 1/4" x 14" (13.3cm x 35.6cm)
- Tape: clear packaging
- Spray adhesive
- Pen or pencil
- Tack cloth
- Wood glue
- Sandpaper: assorted grits to 500
- Natural oil finish, such as Danish oil

- Finishing wax, such as carnauba (optional)
- Hanger: self-leveling (optional)

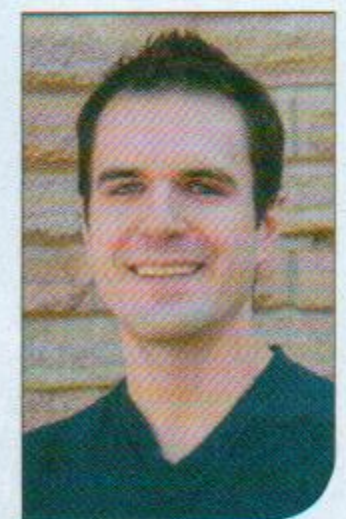
Tools

- Scroll saw with blades: #1, #3 reverse-tooth
- Drill with bits: assorted
- Buffing wheel (optional)
- Sander: disc (optional)
- Spring clamps
- Clean, soft paintbrush

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



Wayne Fowler has been scrolling for over 30 years, first puzzles and then fretwork. Jacob Fowler has been drawing scroll saw designs since he was five (he drew a whale bank for his father, who collects whales). He got serious in his teens and has drawn well over a thousand designs since then. Together, Jacob and Wayne have published over 160 magazine articles, as well as the Woodworker's Pattern Book, available at Fox Chapel Publishing. They live in wood-rich Ontario, Canada, just outside Toronto. Find more of their work on Etsy at [FantasiesSaw](https://www.etsy.com/shop/FantasiesSaw).



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Citrus Glass Charms

CLAYTON MEYERS



Top off your beverage with a zesty resin accent

By Clayton Meyers

A slice of lemon, lime, or orange is the perfect way to garnish your favorite drink and make it look as good as it tastes. These citrus coins will never go bad and can be used to garnish your glassware for a little extra flair. Leave them on the glasses while they're stored in the bar cart to add color to your serving space. They're also a fun way to keep track of which drink is yours at a get-together!

This project mixes beginner-level compound scrolling with resin work. By using the scroll saw, you can cut voids in the wood blank that the colored epoxy will fill. Then simply cut it again on the scroll saw to reveal the final shape.

Getting Started

Make sure your scroll saw blade is perpendicular (90°) to the saw table. After that, use a small combination square to ensure your wood blank is square.



WANT MORE FROM CLAYTON?

Woodworking with Resin

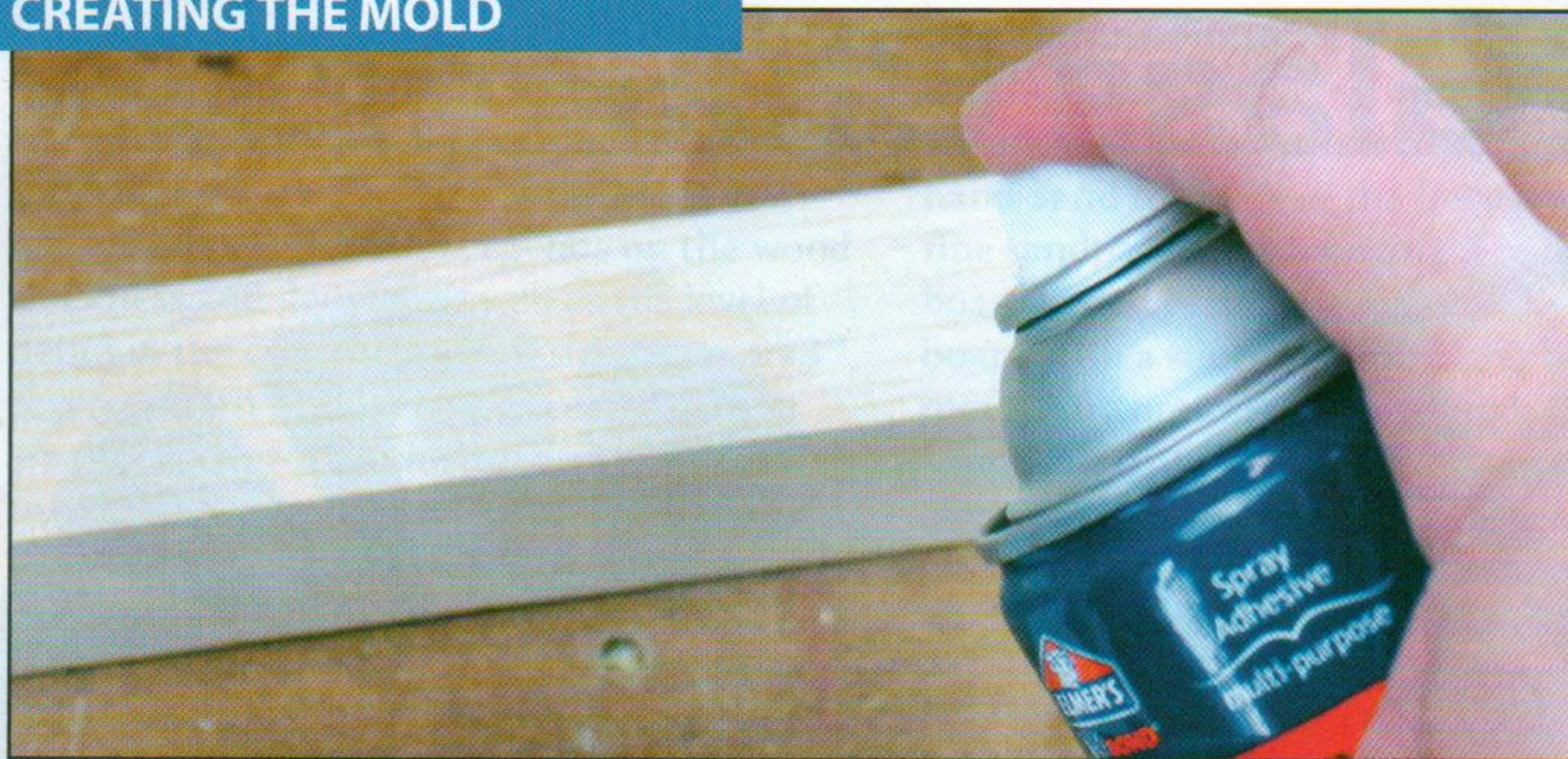
By Clayton Meyers

Item 02996. Available for \$14.99 + S&H (parcel post) from Fox Chapel Publishing, 800-457-9112, FoxChapelPublishing.com, or your local retailer.

NEW!

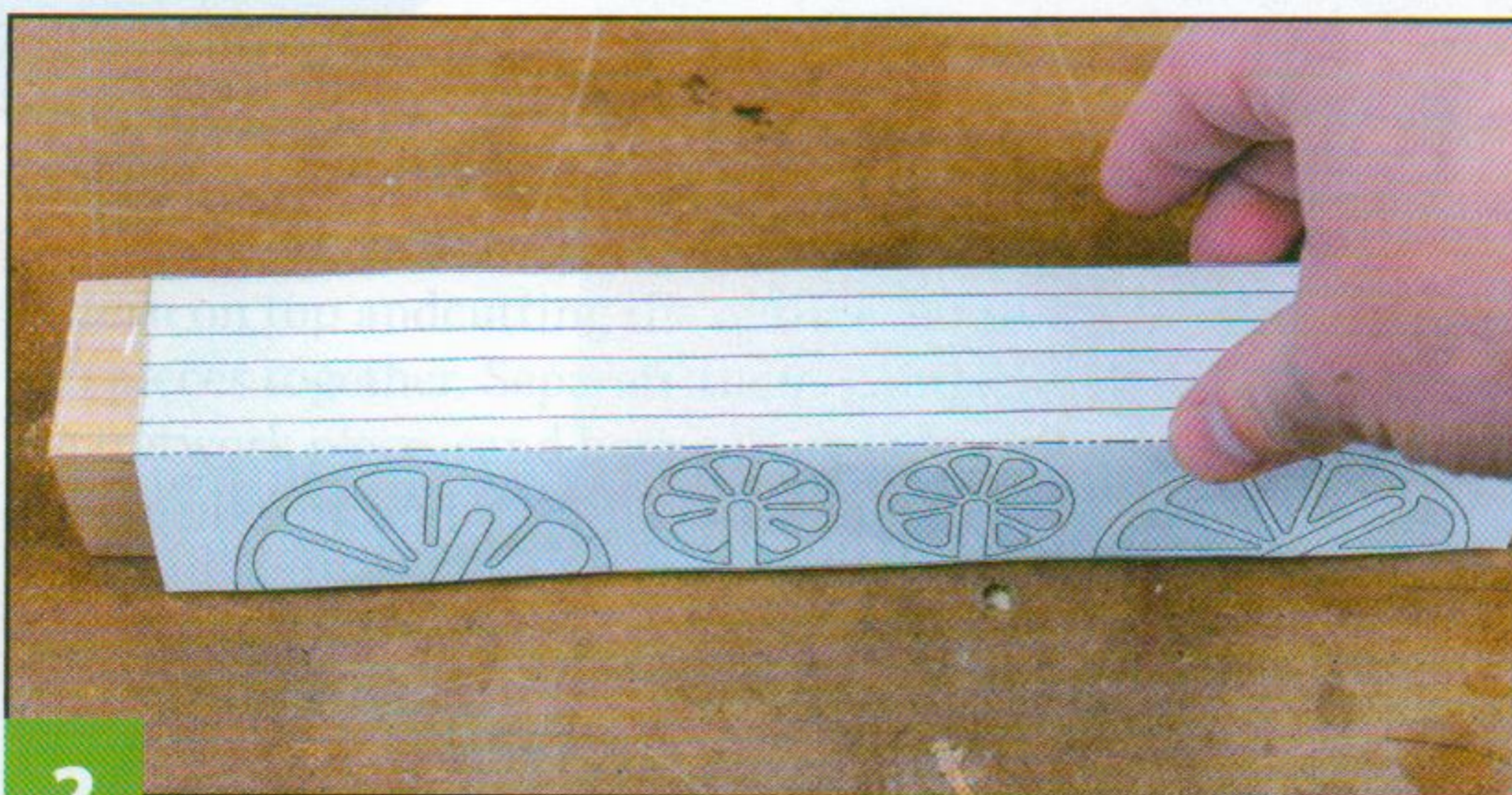


CREATING THE MOLD



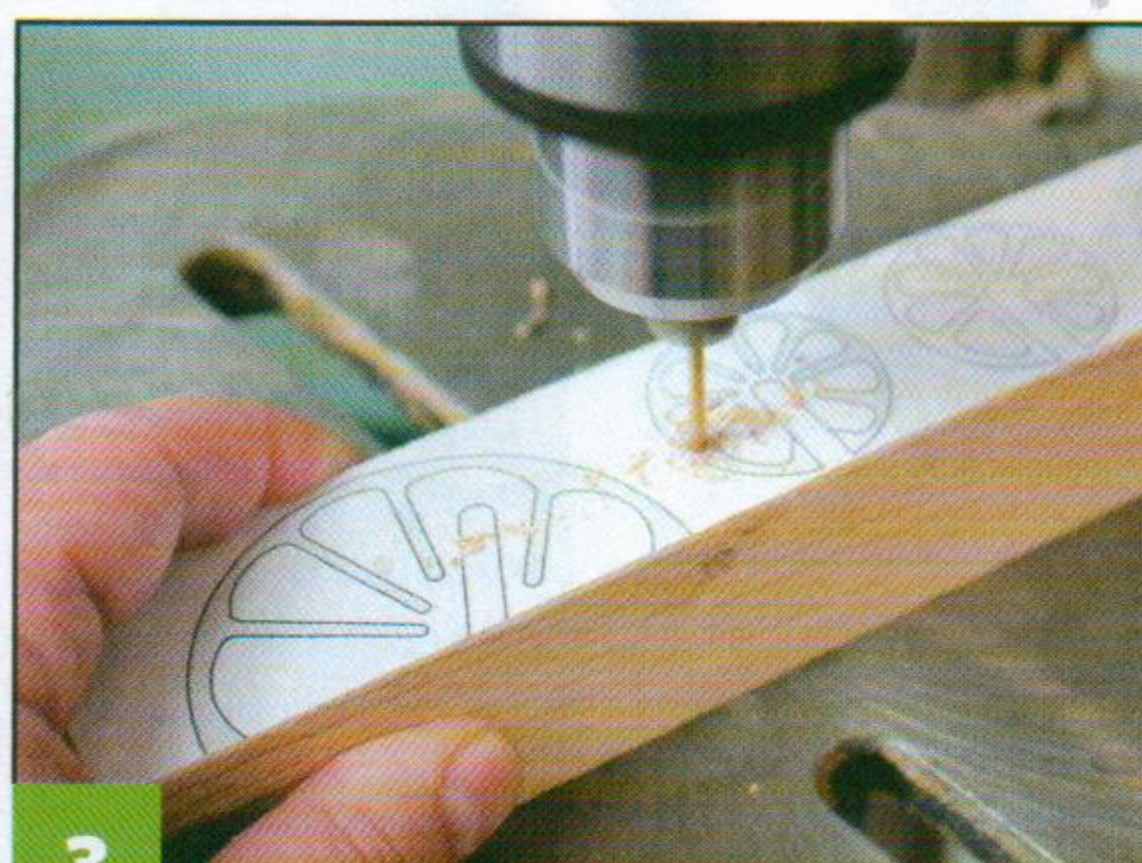
1

Apply spray adhesive to the wood. Place the workpiece on a large piece of scrap wood or cardboard and coat two sides of the wood blank with spray adhesive. Don't be stingy here. If you use too much, it's okay, but if you don't use enough, your pattern will fall off.



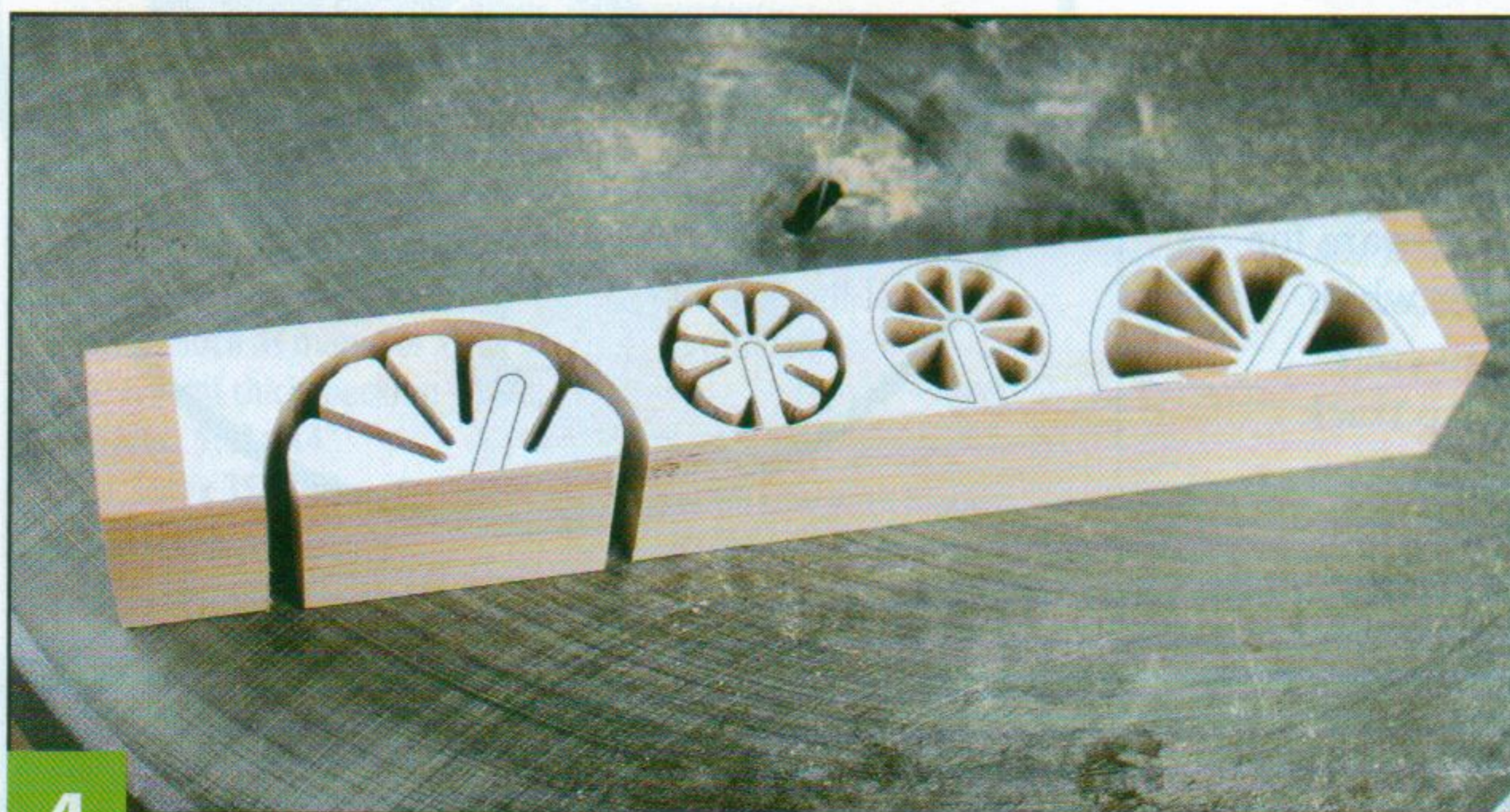
2

Fold and apply the pattern. Fold the pattern along the dotted line and apply it to the blank. Make sure the fold lines up with the corner of the wood, adjacent to the sides that are coated with spray adhesive. Press gently along the length of the pattern with a paper towel to flatten it and press out any extra glue. *Note: The patterns will be cut away when making the final cuts.*



3

Drill the pilot holes. Once the adhesive has dried, drill $\frac{1}{8}$ " (3mm)-dia. pilot holes in all shaded areas of the pattern. The shaded areas are where you'll pour the resin later.



4

Cut out the areas that will hold resin. Use a scroll saw with a #5 standard blade to remove the shaded areas on the pattern. For one of the larger orange slices, you will need to remove the slice from the blank first, and then cut out the shaded area. If desired, seal the wood grain inside the resin cuts with a clear acrylic or polyurethane spray paint or a small batch (1 oz or less) of epoxy to help eliminate any color bleeding through the grain.

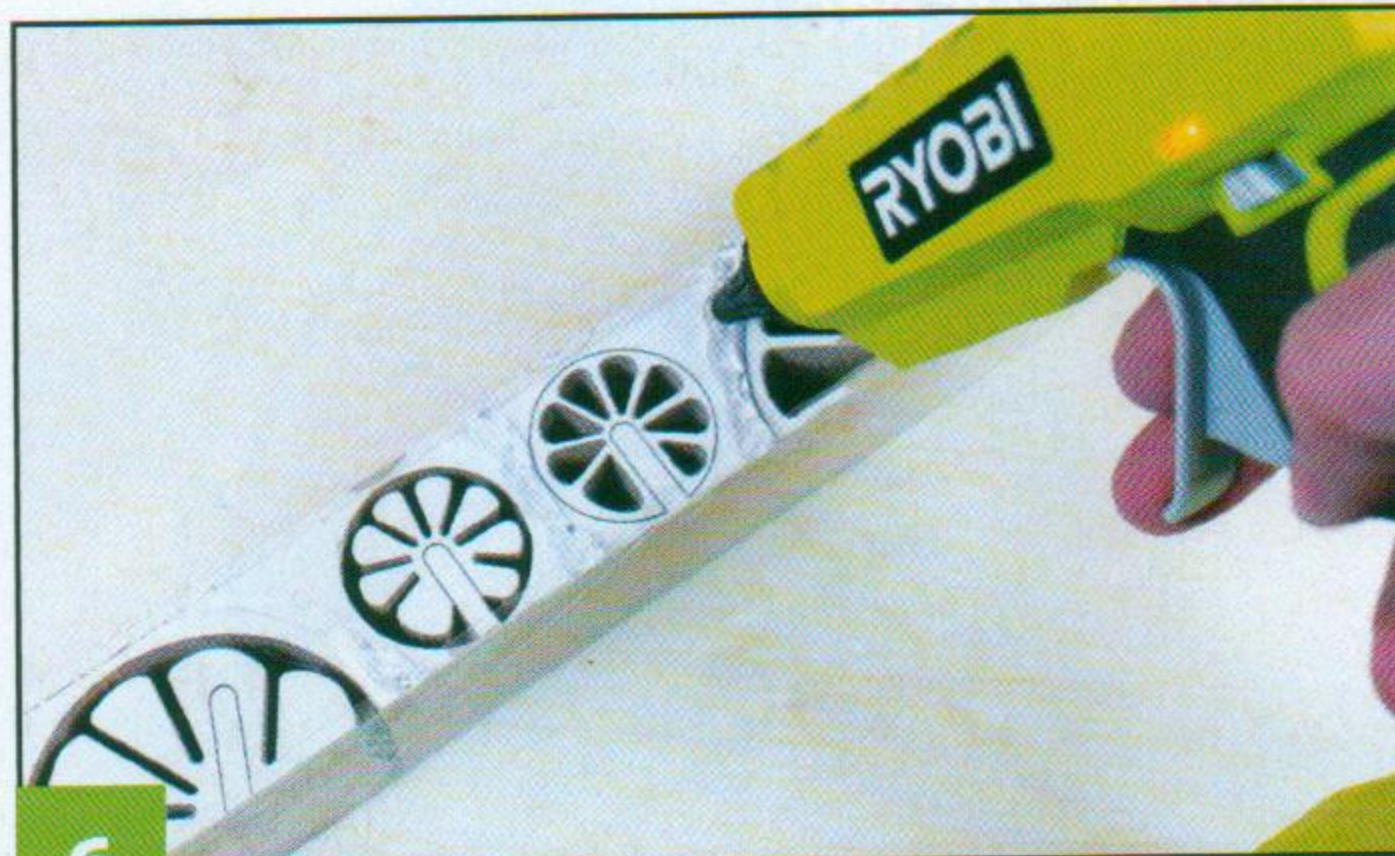
SAFETY NOTE

Always wear proper breathing and eye protection when pouring or sanding resin. Wear disposable gloves; the photos were staged without them to show proper hand and tool positioning.



5

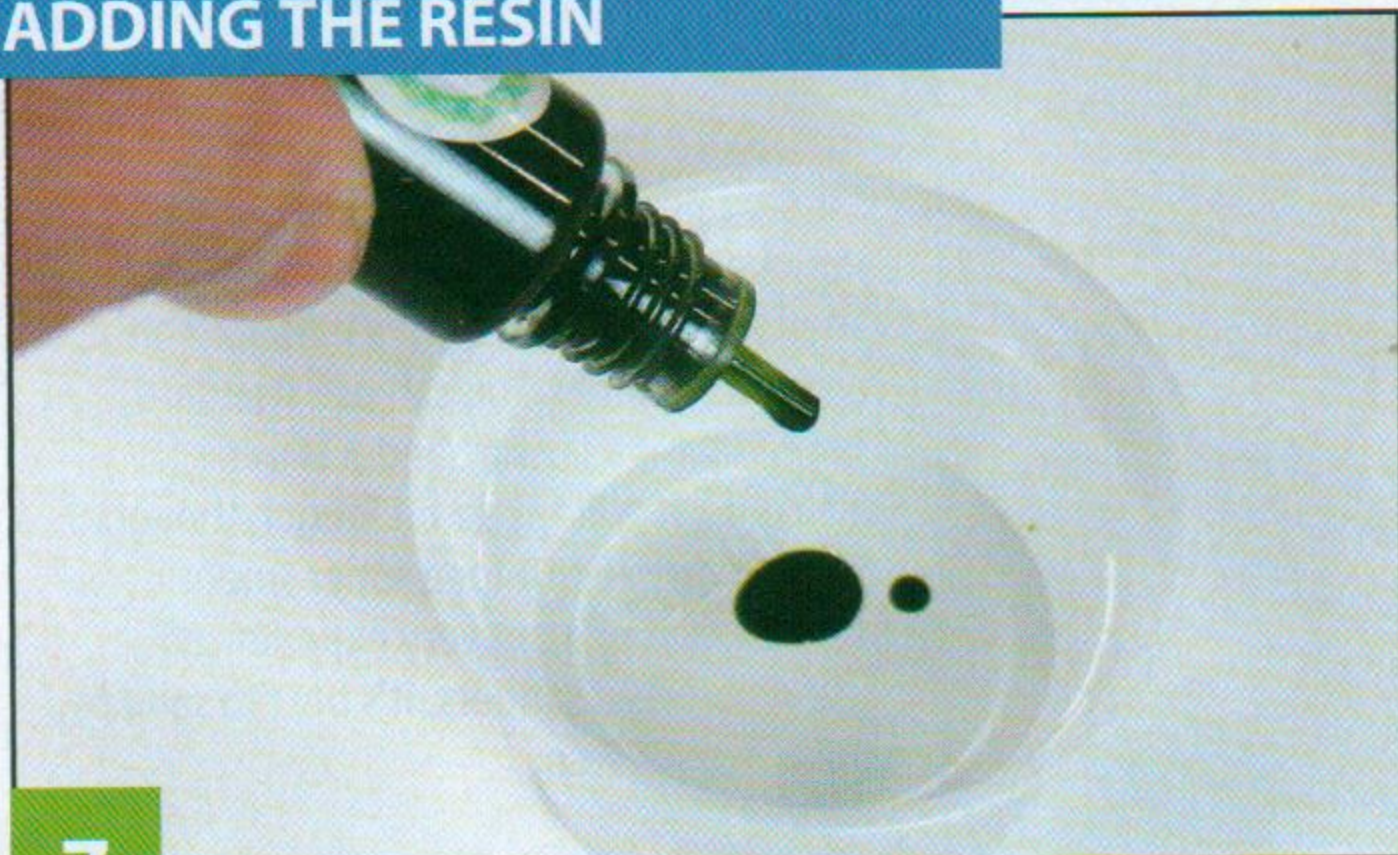
Tape the blank and create the mold. Use clear packaging tape to reattach the one loose orange slice. Also, use the packaging tape to seal off the bottom and sides of the blank. This will create the "mold" for where the resin will be poured.



6

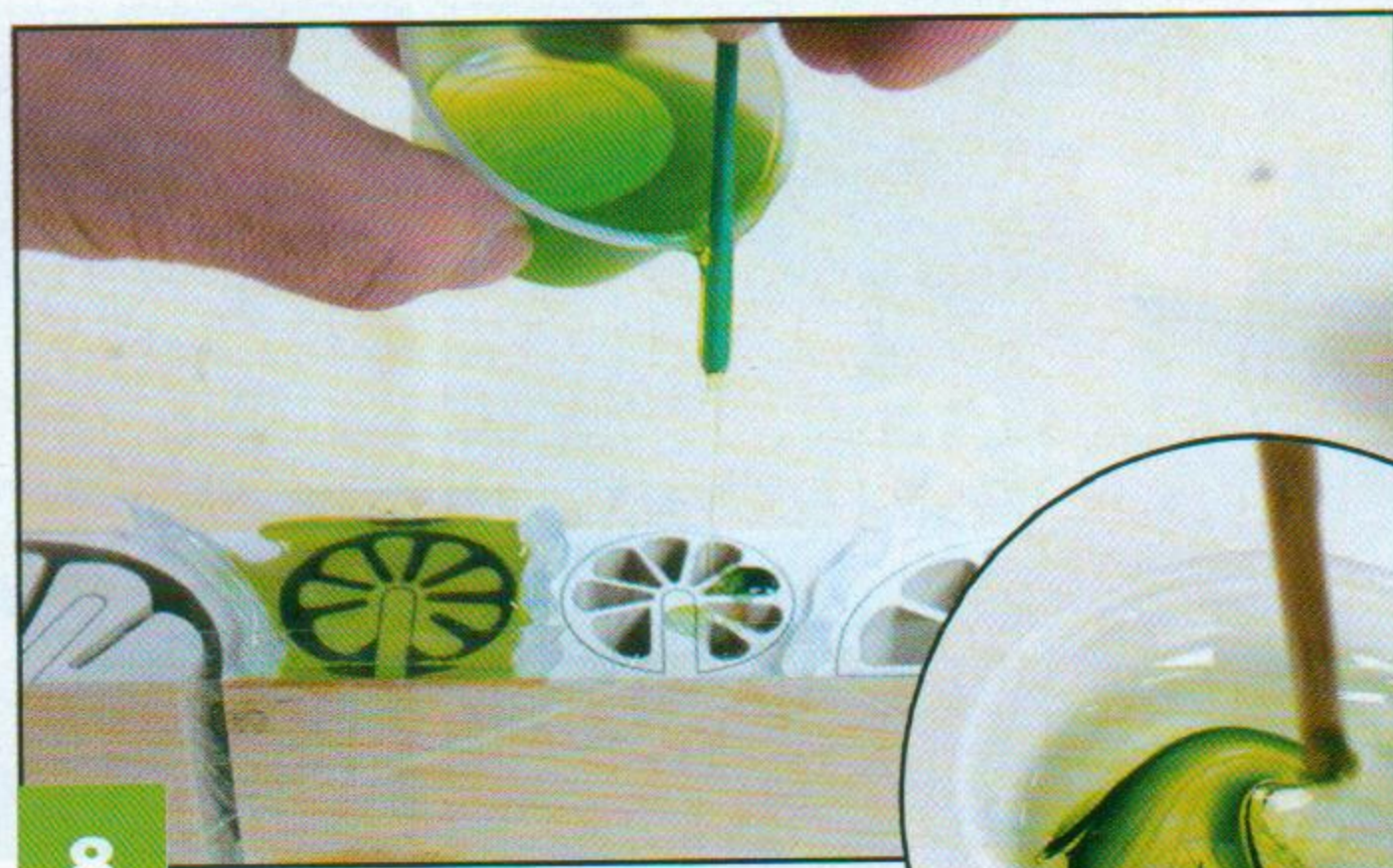
Create a hot glue "dam." Use a hot glue gun to create a dam around each slice. This will allow you to overfill the mold to account for the resin shrinking and soaking into the grain while it hardens. It will also help keep the different colors from spilling over between slices.

ADDING THE RESIN



7

Prepare the resin. Mix a batch of approximately 4 to 6oz of deep pour resin. *Note: For specific ratios, refer to the instructions on the container of resin.* Divide the mixed resin into four different cups, one for each of the shapes. Add transparent dye to each of the cups to achieve the desired color. I used two different shades of green and orange for these, though the differences are subtle.



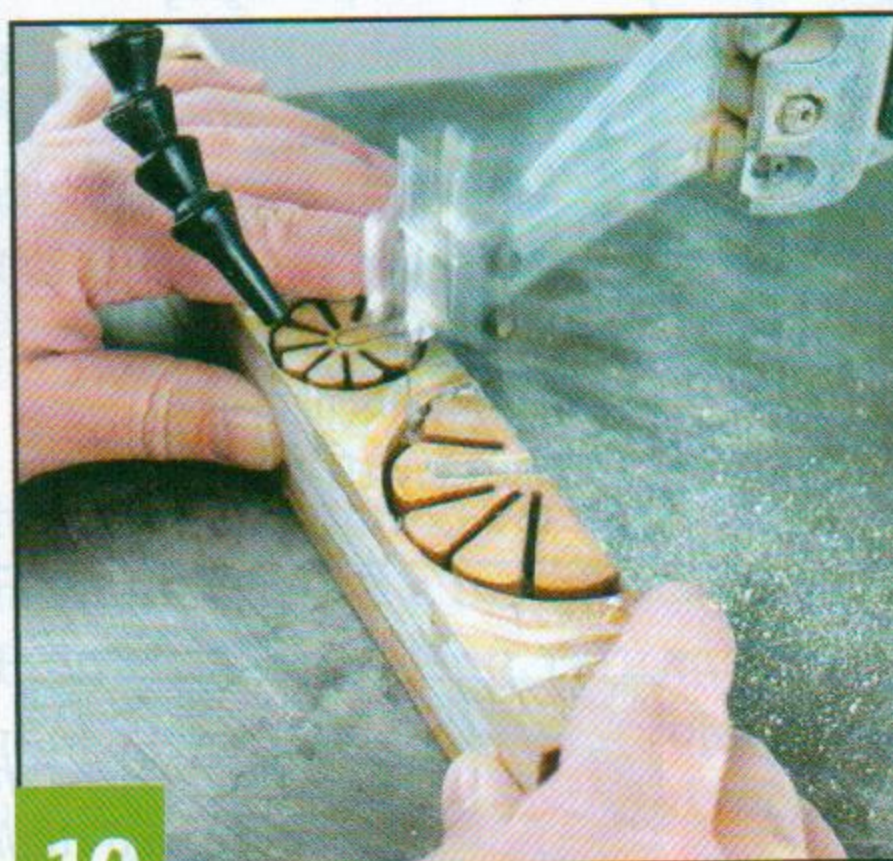
8

Pour the resin. Slowly pour the colored resin into each of the openings. It's easiest to pour the resin down the side of a thin stick. This lets you more easily control where the resin is going. Slightly overfill the cutouts until the resin contacts the hot glue.



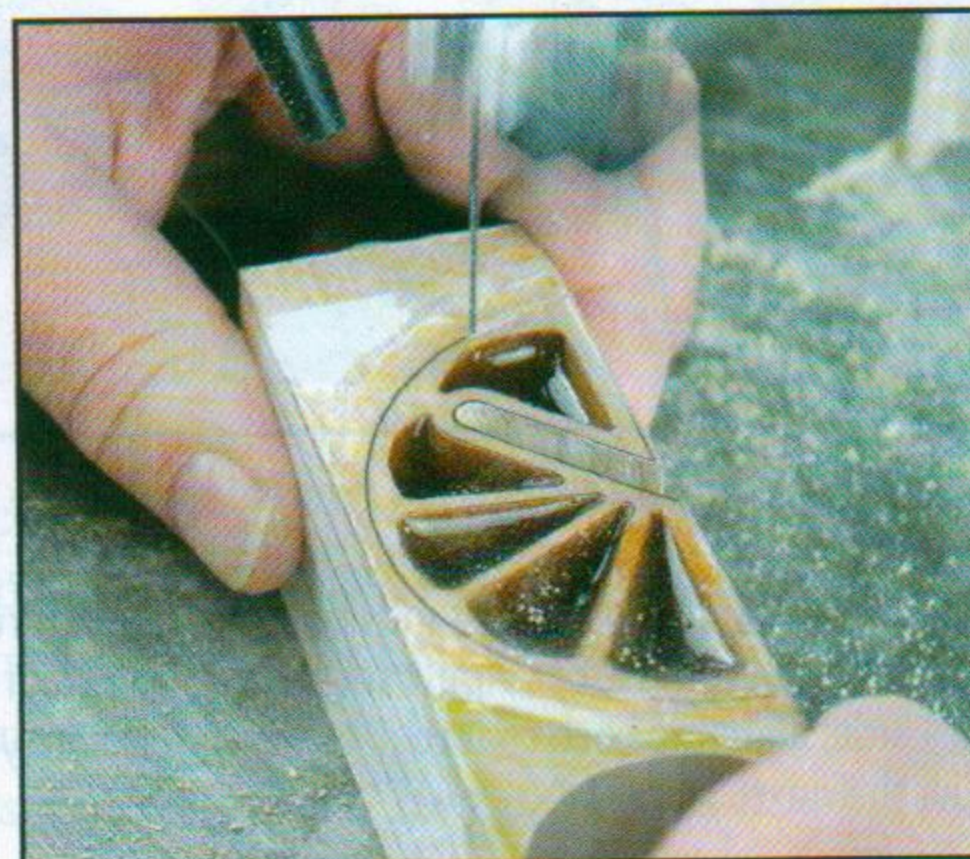
9

Let the resin harden. Allow 48 to 72 hours for the resin to fully harden (check manufacturer's instructions for specific cure times). Then remove the excess tape and scrape off the hot glue dams.

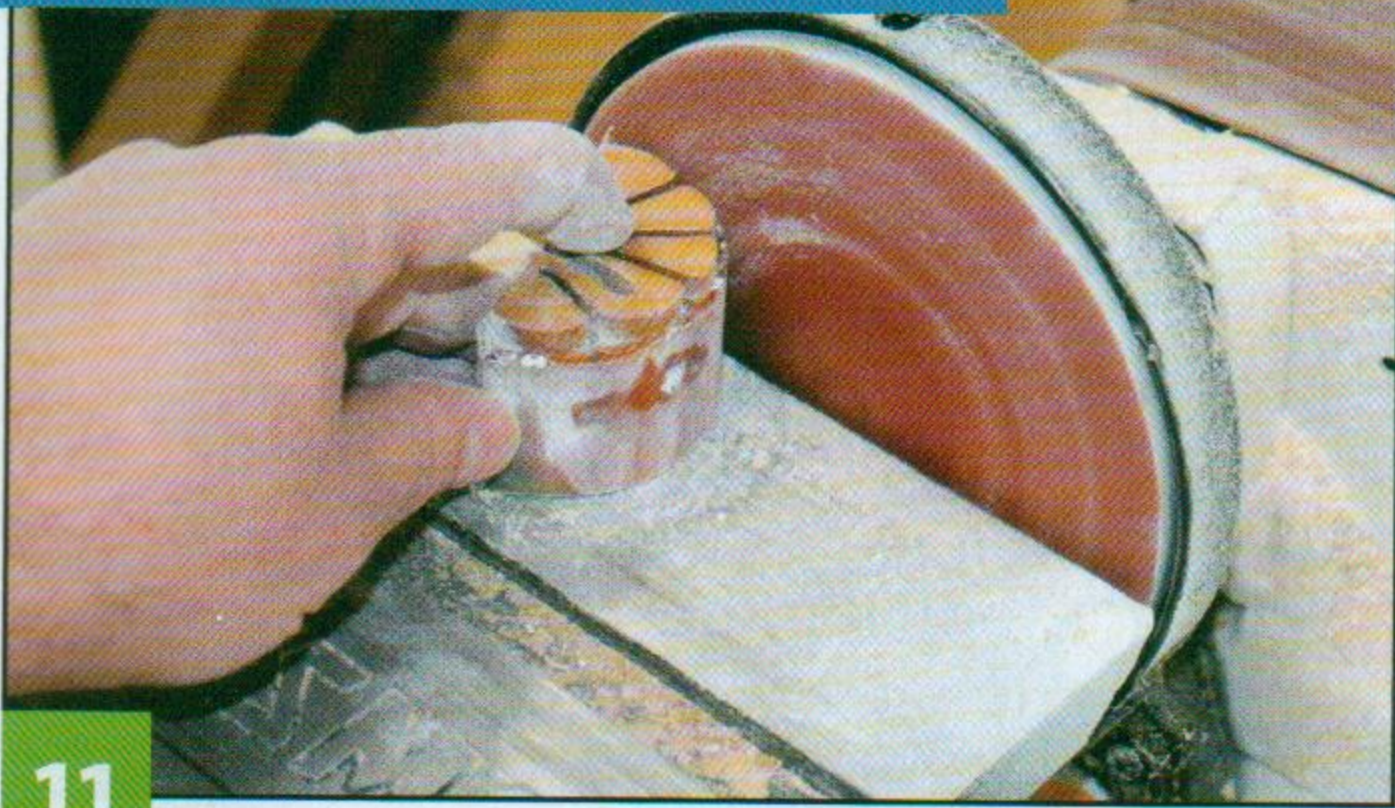


10

Cut out the shapes. Where a line does not exist to cut, cut along where the colored resin meets the wood.

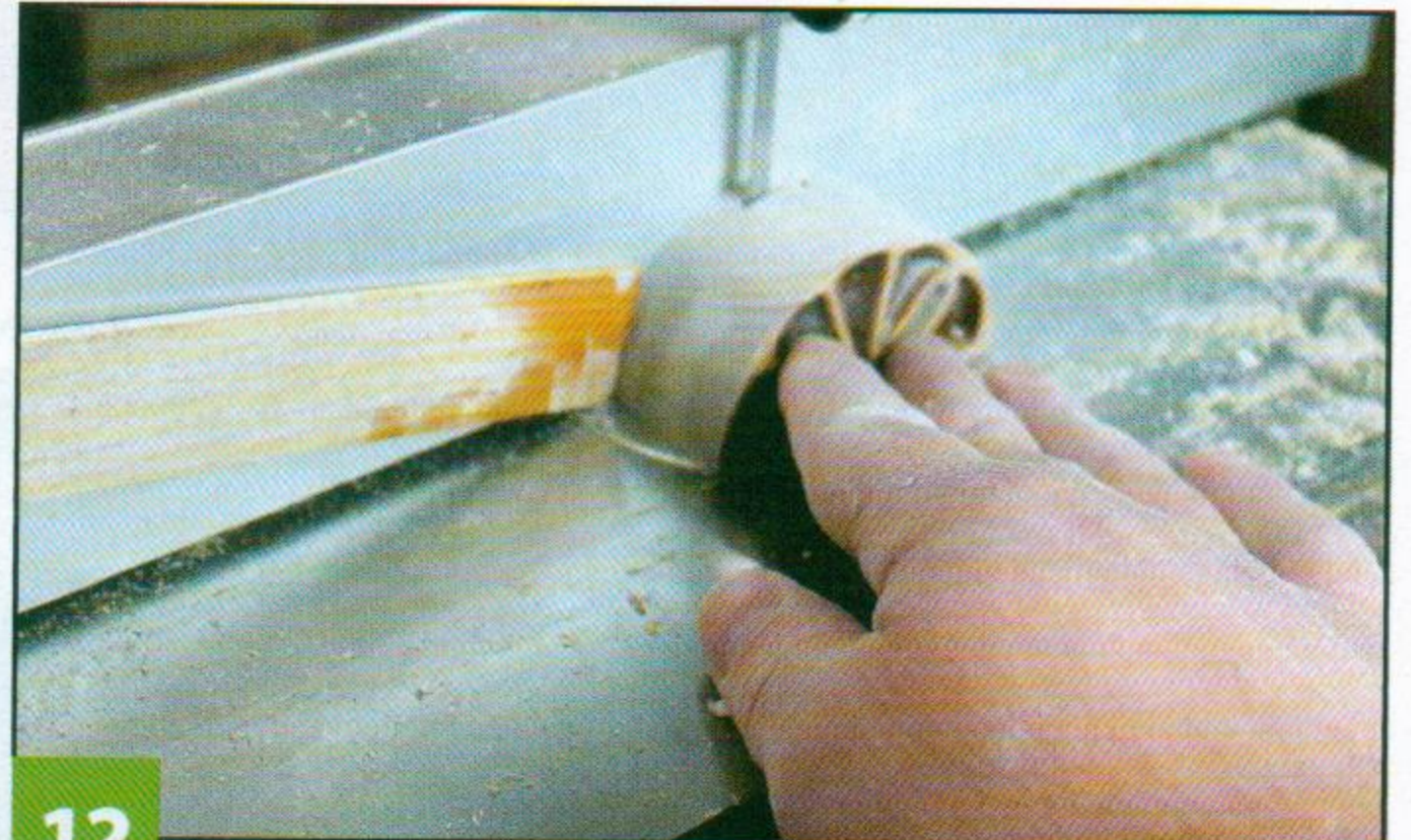


FINISHING THE PROJECT



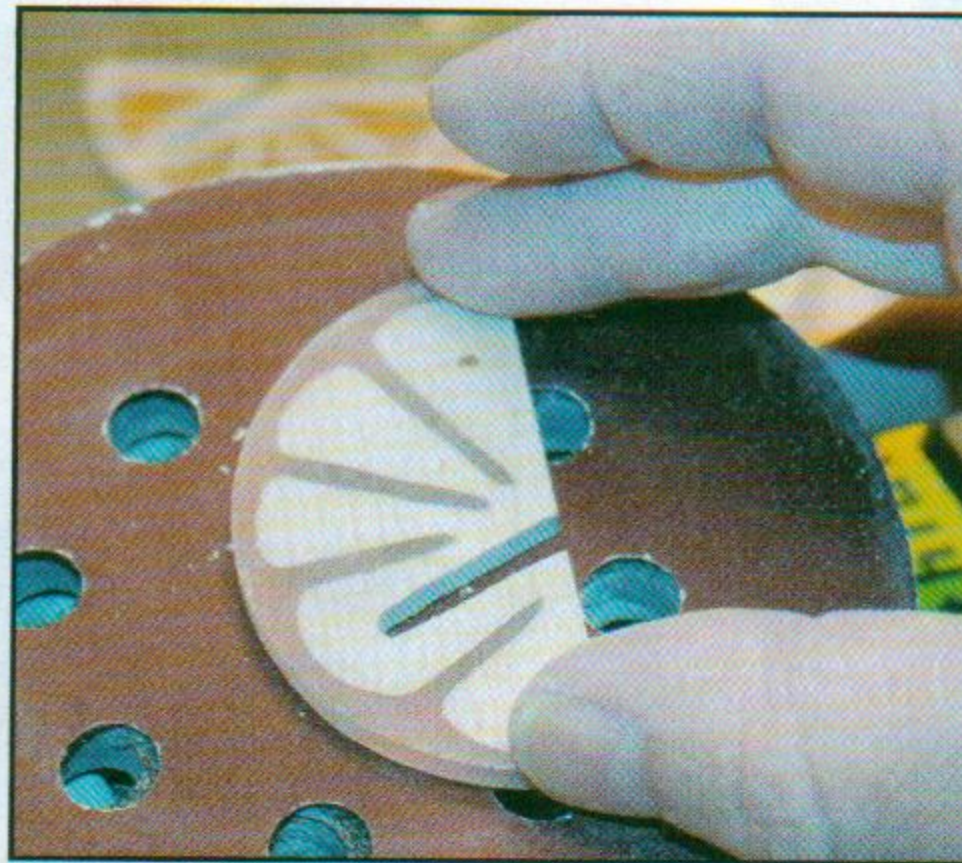
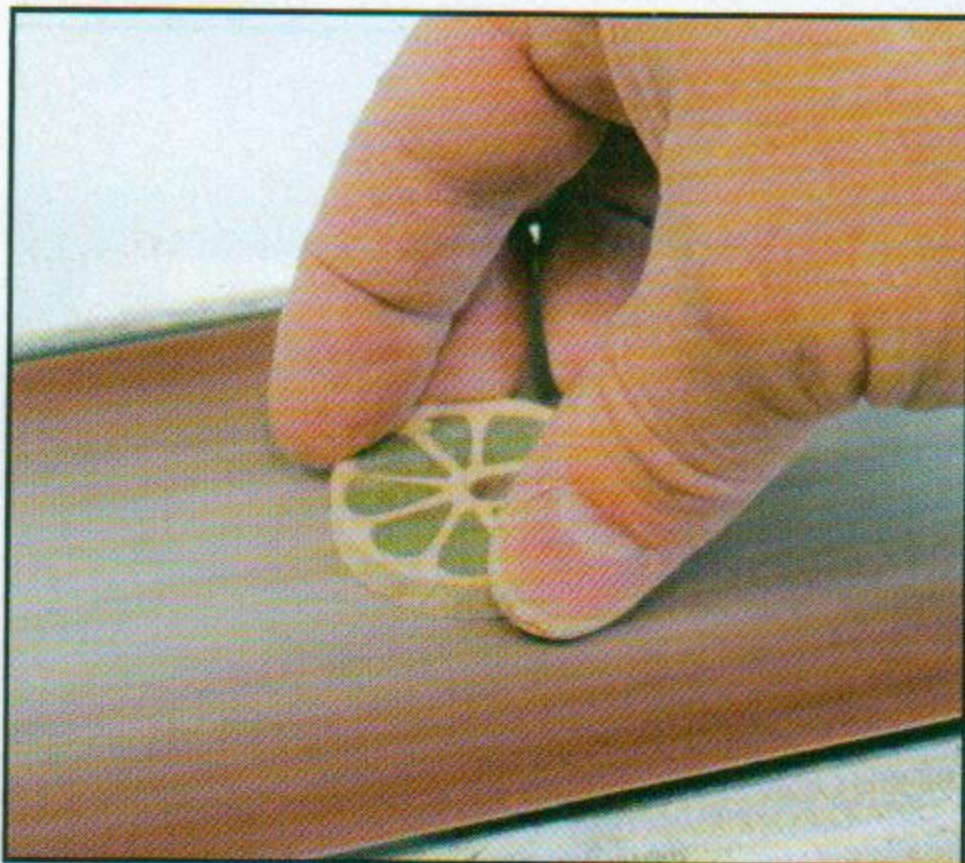
11

Sand the edges. Using a disc sander, sand each of the shapes down to the line (or resin) to achieve that perfect profile.



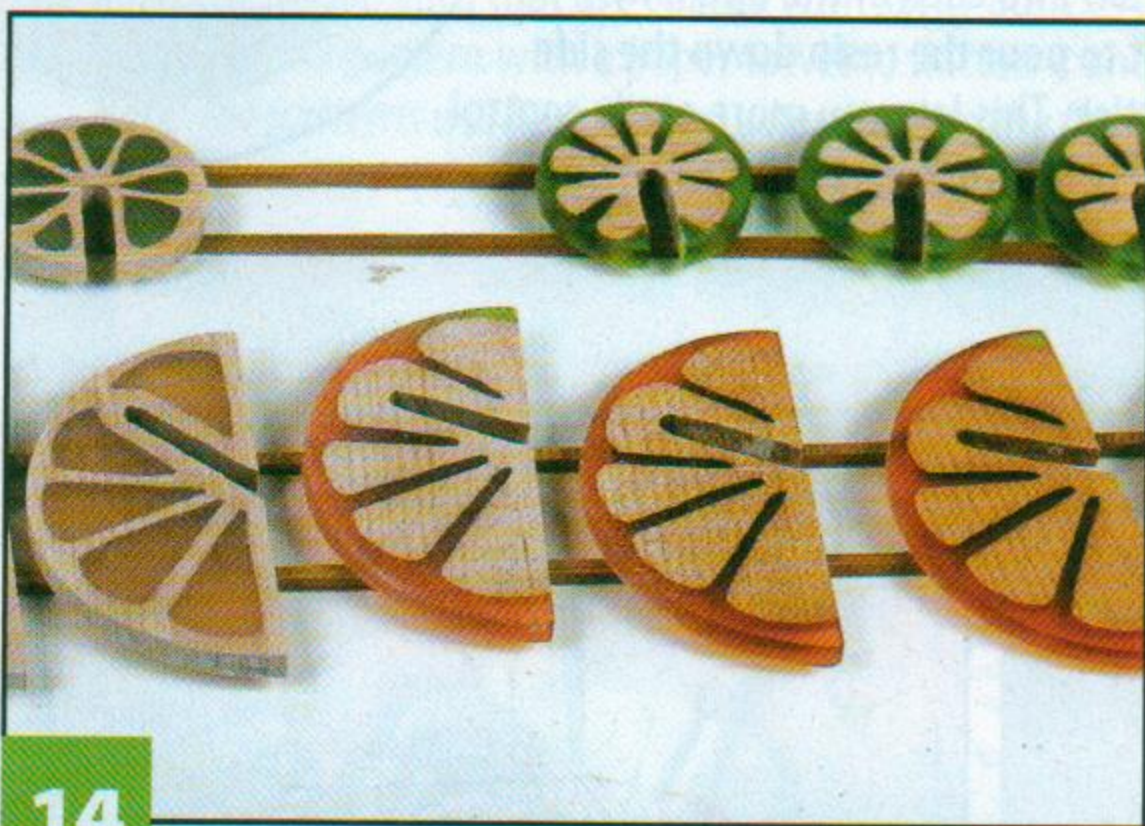
12

Slice the fruit. For this step, you can use either a scroll saw or band saw. A scroll saw can be used by taping the pieces back to the blank and cutting along the straight lines of the pattern. I used a band saw so I could set up a fence and quickly cut each of the slices.



13

Sand the workpieces. Start the sanding process by using a belt sander to remove any blade marks from each slice. Then, move to a finer grit sandpaper on an orbital sander. You can use standard sandpaper if a power sander is not available; it will take a bit longer, though. Sand up to 320 grit for a super smooth surface. If you're not very experienced using powered sanders, it's best to sand by hand for this step.



14

Apply the finish. For a durable shine, use a high-gloss acrylic spray paint to finish these off. Lay the slices out on small stands to prevent them from sticking to the table. Apply several coats to each side, allowing each coat to dry fully before applying the next.

Materials & Tools

Materials

- Wood, such as maple, 1½" (3.8cm) square: 10" (25.4cm) long
- Spray adhesive
- Tape: clear packaging
- Resin, such as Naked Fusion Deep Pour: 4 to 6 oz.
- Transparent resin dyes
- Sandpaper: assorted up to 320 (optional)
- Finish, such as clear acrylic spray paint: high gloss
- Paper towels

Tools

- Band saw (optional)
- Scroll saw with blades: #5
- Combination square
- Drill press with bits: ⅛" (3mm)-dia.
- Hot glue gun
- Sanders: belt, disc, orbital (optional)

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

Patterns for the **CITRUS GLASS CHARMS** are in the pullout section.



Clayton Meyers has been woodworking since age six. He began compound-cutting about 12 years ago. He enjoys trying new techniques to achieve unique and beautiful results. Clayton recently moved from Indiana to Michigan, where he works as a mechanical engineer in the medical industry. He uses woodworking as a form of stress relief and relaxation. Find more of his work on Etsy at ClaytonsPatterns.com.



Magnetic Cannon

TIP
EASY CLEANUP
Keep a magnet handy to pick up loose ball bearings.

Make a super easy, magnet-propelled toy using ball bearings and plywood!

By Dave Van Ess

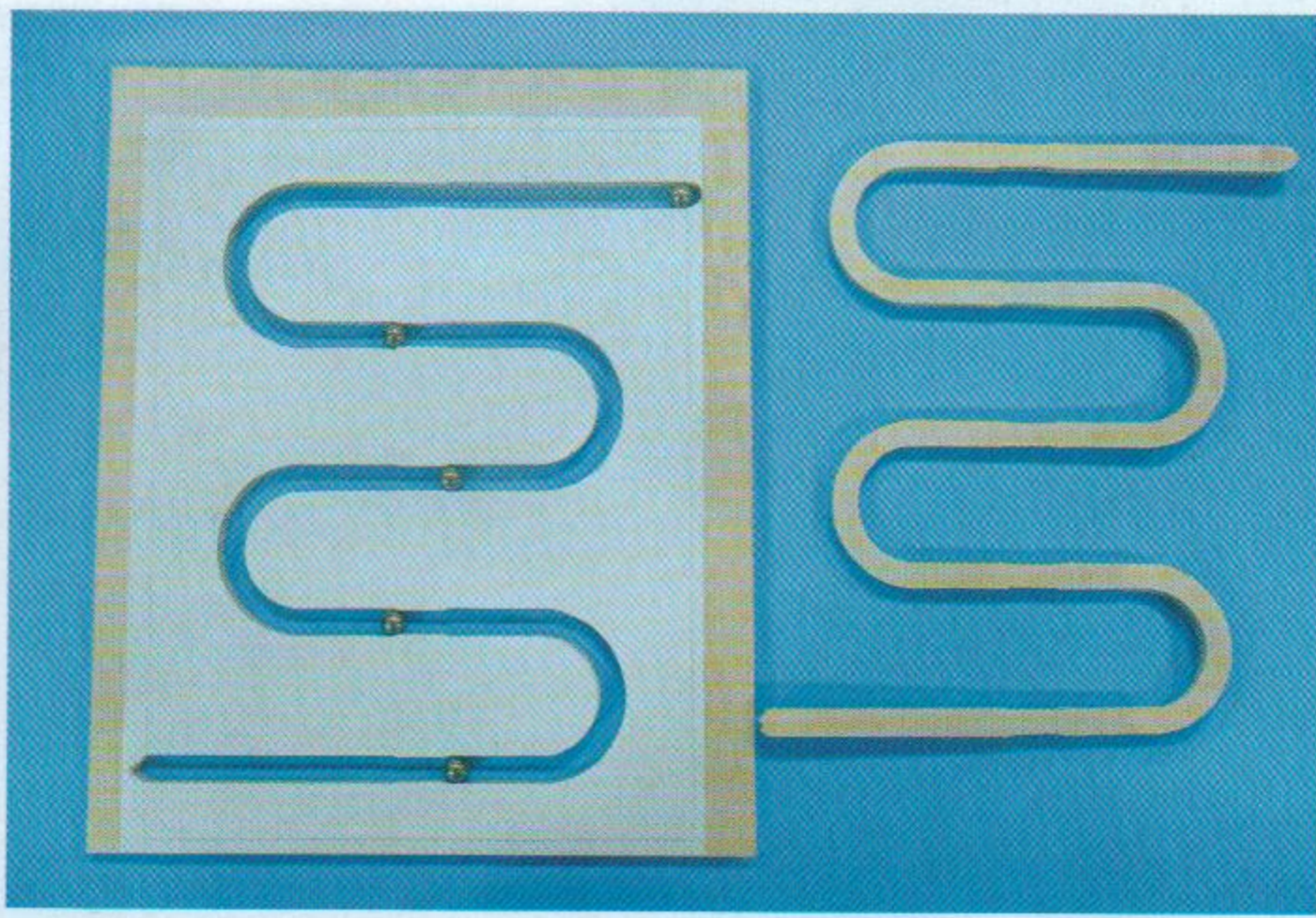
The magnetic cannon is a device that converts magnetic energy into motion, causing a metal ball to be propelled. You can easily make one using Baltic birch plywood, rare earth magnets, and steel ball bearings. This could make a nice science fair project, but mostly, it is just fun!

Note: Due to the size of the ball bearings and magnets, this project is not recommended for small children.

Getting Started

Attach the pattern to the top layer using repositionable spray adhesive.

Pattern for the **MAGNETIC CANNON** is in the pullout section.



Cutting and Gluing

Cut the channel in the top layer using a #3 MGT blade (or one of your choice). Remove the pattern, wipe off dust with a tack cloth, and then glue the top layer onto the bottom layer. Clamp or weight down and let dry. Then trim the perimeter of the rectangle to size. You now have a board with a long, serpentine channel, an input, an output, and places to seat the magnets.

Assembling and Finishing

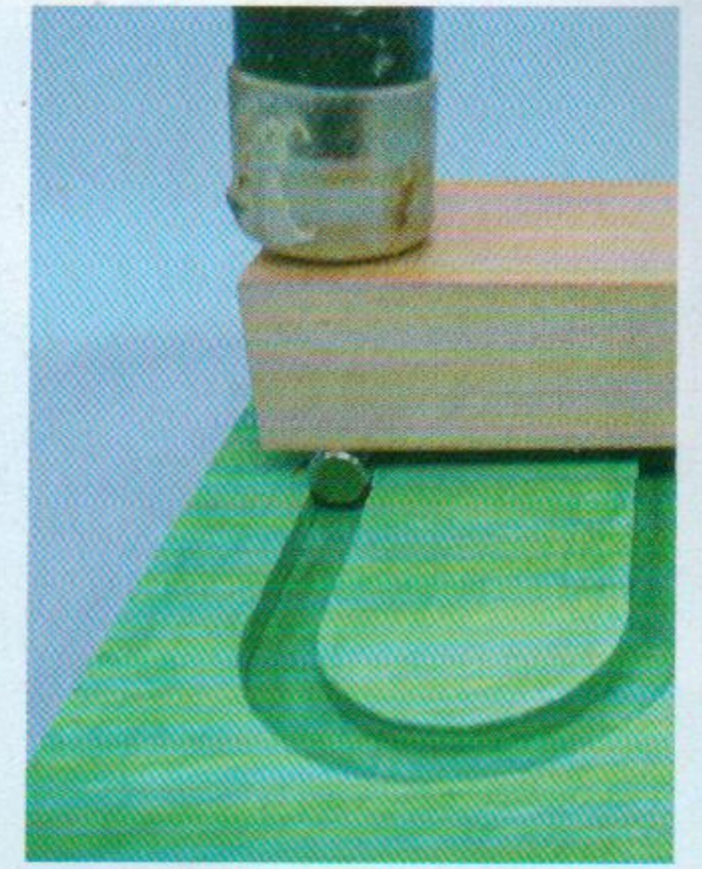
If desired, prepare the board for paint or stain. (If you are happy with the wood's natural color, then skip to seating the magnets.) Sand the entire board with 220-grit sandpaper, and then pre-raise the grain by lightly spraying the surface with water. Then sand the surface with 320-grit sandpaper to smooth out the

raised grain. Use a marker to draw an "in" arrow in the appropriate location.

Apply a colorant. I made my own stain using one part acrylic craft paint and two parts water; you can save the remainder in a Mason jar for future use.

Insert the magnets. For each of the five areas indicated on the photo below, apply a dot of glue to the channel and place a magnet in position. Lay a piece of wood over the magnet and pound the magnet into place. *Note: Never directly pound a magnet with a metal hammer.*

Apply a paste wax or oil finish to the board; this protects the piece and reduces friction in the channel. Then arrange the metal bearings next to the magnets as shown in the illustration, and play ball!



Materials & Tools

Materials

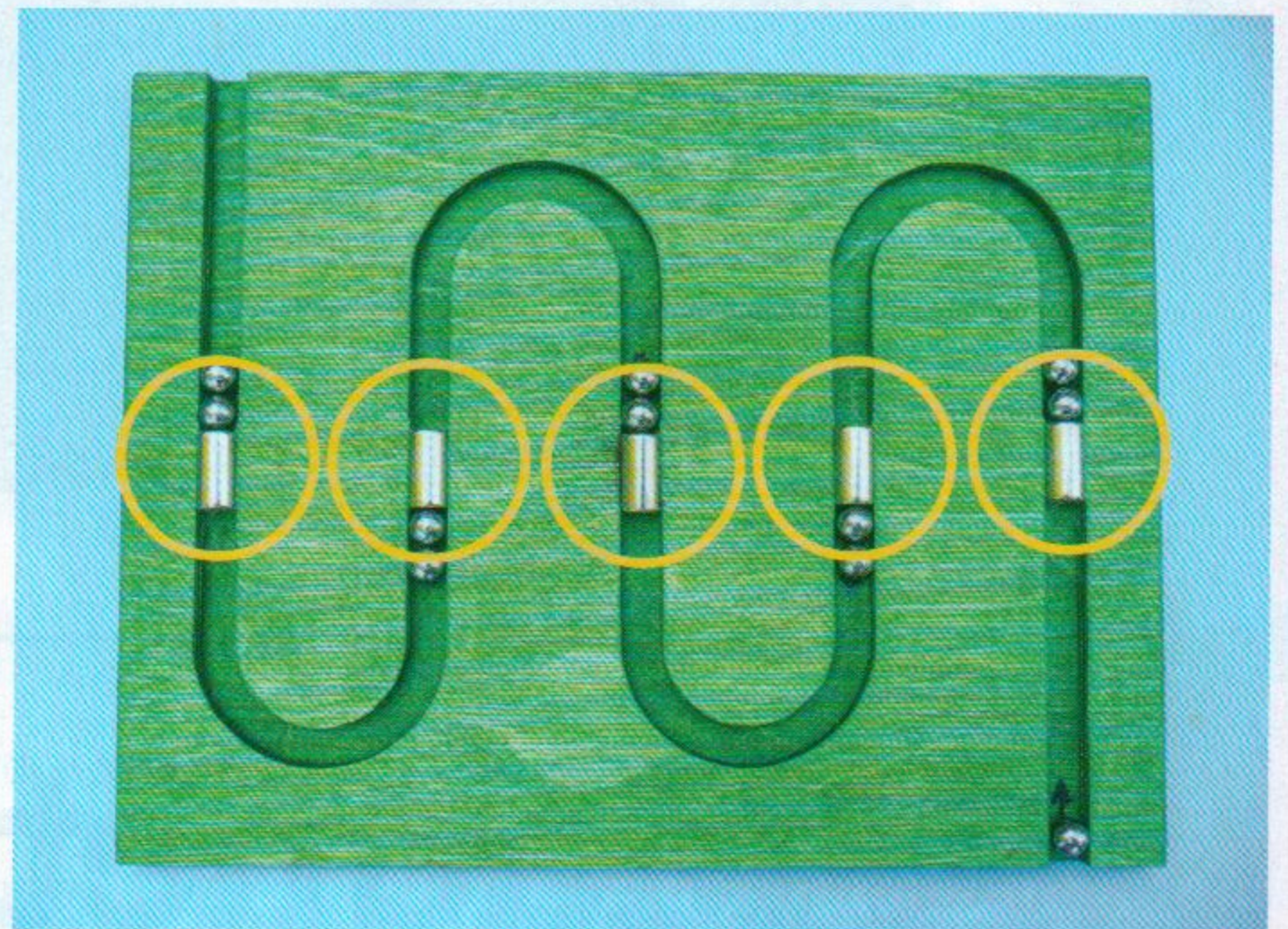
- Baltic birch plywood, 1/4" (6mm) thick: 2 each 8" x 10 1/2" (20.3cm x 26.7cm)
- Rare earth magnets: 5 each 3/8" x 1 3/16" (1cm x 2cm)
- Steel ball bearings: 3/8" (1cm)
- Spray adhesive: repositionable
- Glue: cyanoacrylate (CA)
- Sandpaper: 220-320 grit
- Acrylic paint or stain: water-based

- Finish: Danish oil or paste wax
- Tack cloth

Tools

- Scroll saw with blades: #3 MGT
- Clamps
- Hammer or mallet

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



How Does it Work?

Place a ball bearing in the channel opening at the bottom right, and then give it a little push toward the first magnet. The bearing moves faster as it approaches the magnet and transfers its energy to the outermost bearing on the other side. Since the outer bearing is farther away from the magnet, it takes less energy for it to break free, causing the second ball to travel faster. This creates a chain reaction that continues all the way to the other end of the course until the final ball bearing exits.



Dave Van Ess is a retired engineer living in Chandler, Ariz. He has been woodworking for 45 years and scrolling for 35. He is the past president of the Arizona Woodworkers (a greater Phoenix area woodworking club), and volunteers his time and resources to providing wood projects for kids. Email him at davevaness21@gmail.com.



Scan the QR code to view the cannon in action.

Flip-Flop Puzzle Box

Usher in the season with a strappy "sandal" that will hide all your goodies

By Rita Cels



Summer is my favorite season. I spend most of my time outdoors sitting on the back deck, taking leisurely strolls, and relaxing at the beach. I officially put my boots away and dust off my flip-flops.

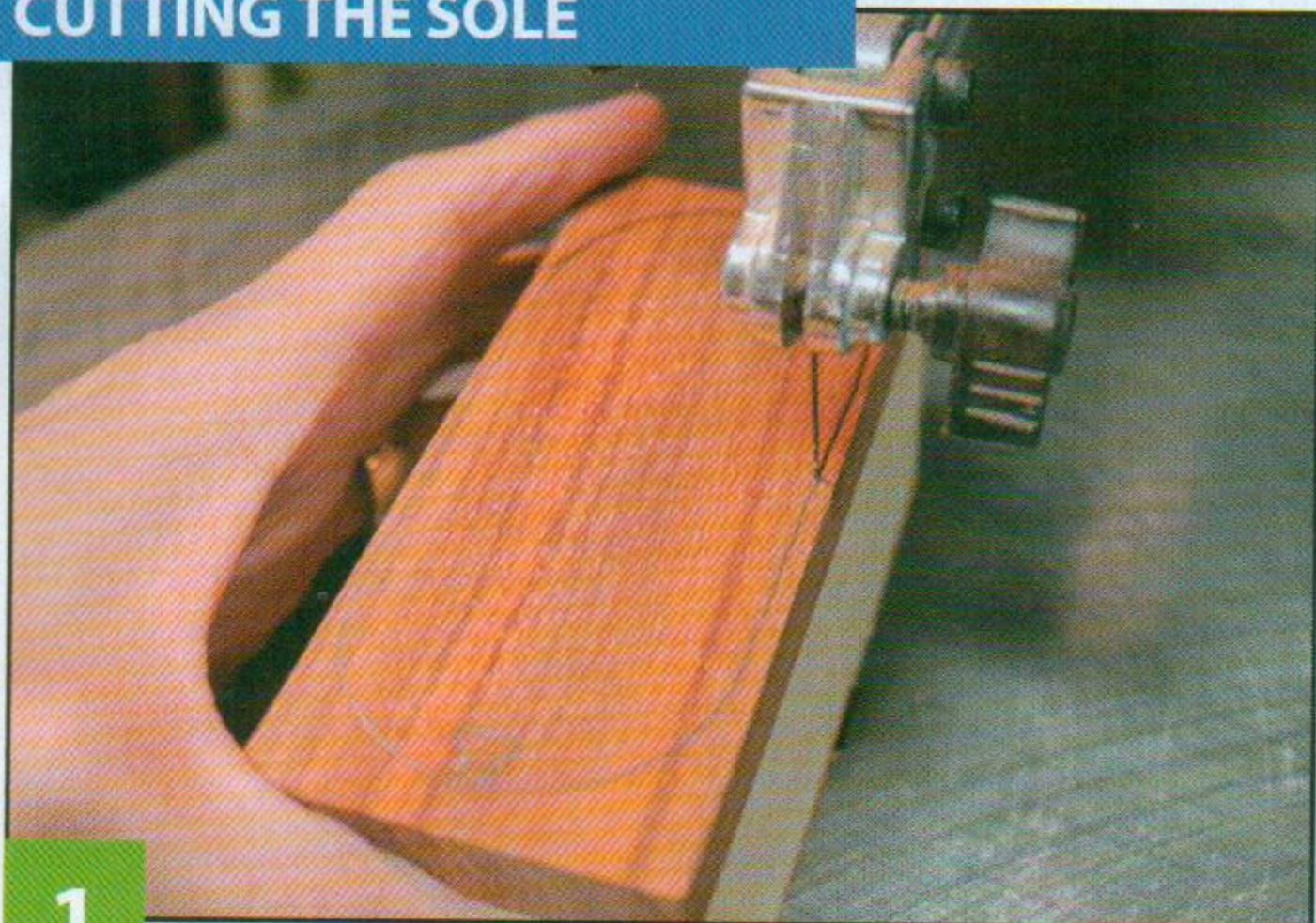
I designed this adorable box to honor the simplicity and freedom of the beloved summer sandal. I like to experiment with a variety of hardwoods to create unique looks, and I am amazed by the many colors and grains each wood offers. If hardwoods are not easily accessible, painting your flip-flop box is a fun alternative.

Getting Started

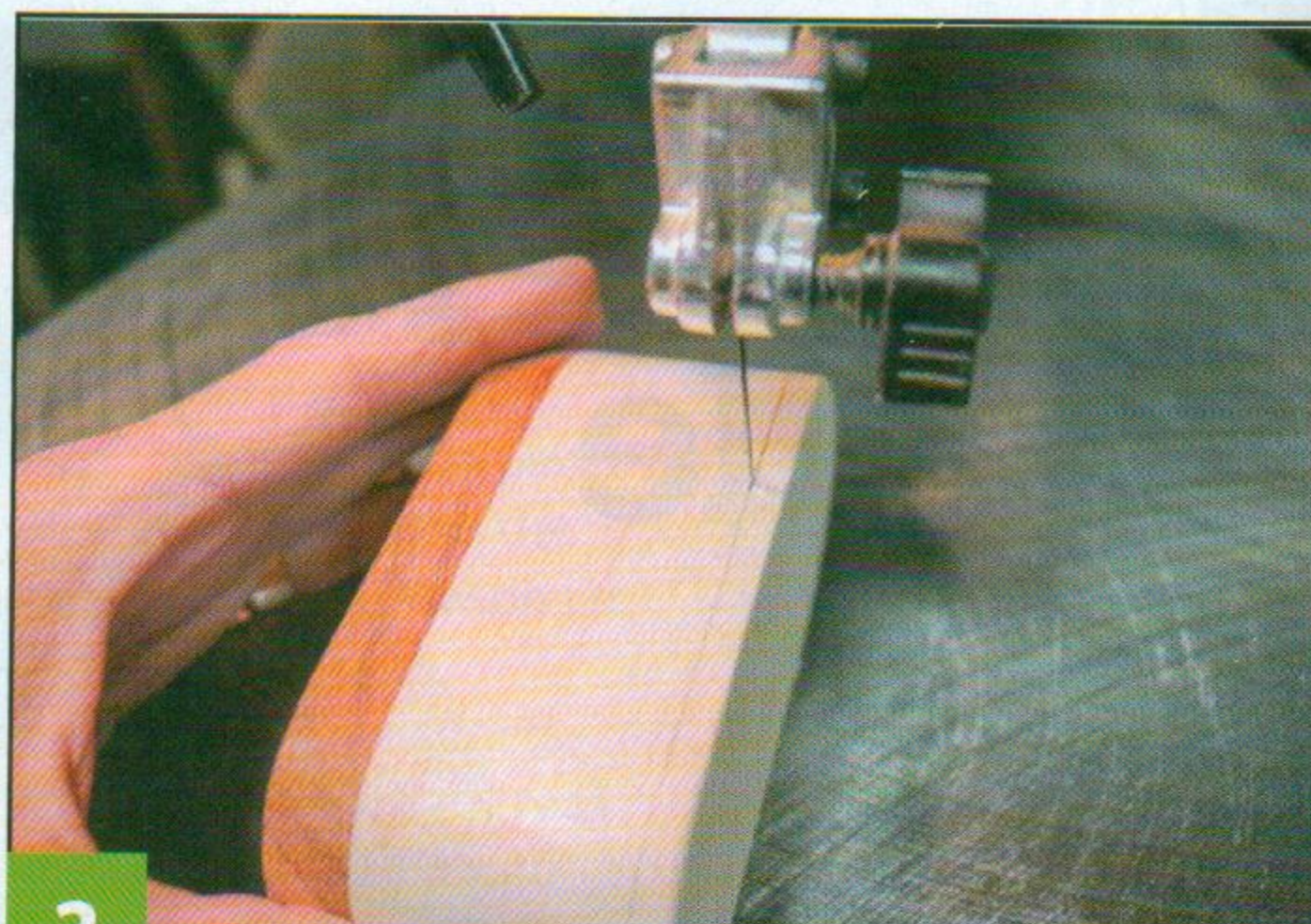
Prepare the blanks. Glue a $\frac{1}{4}$ " (6mm)-thick piece of padauk to a $1\frac{1}{2}$ " (3.8cm)-thick piece of birch. This will act as the sole. Clamp and let dry. Trace the shape and mark the key on top or use repositionable spray adhesive to attach the pattern. Make sure the grain runs the length of the shoe.



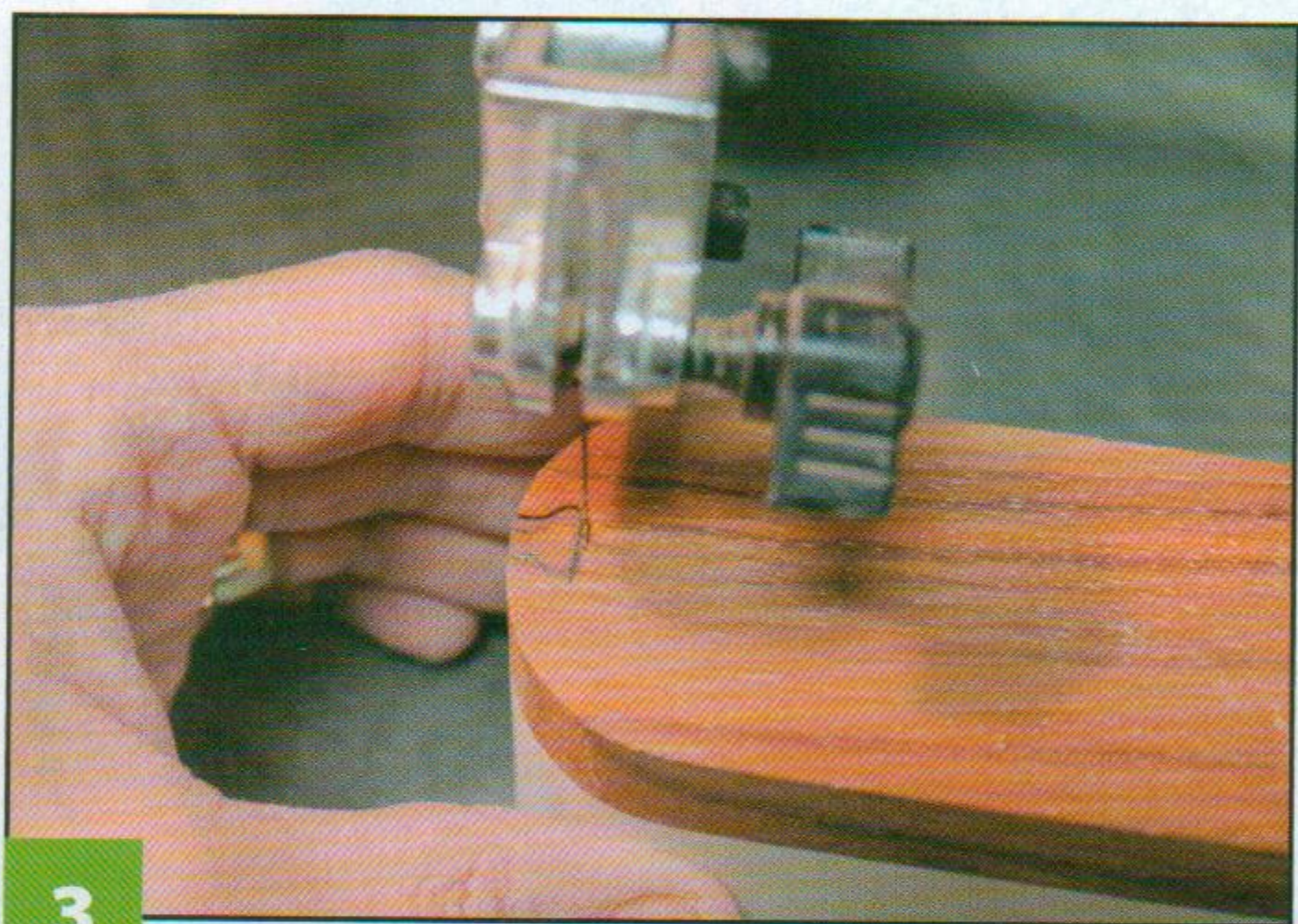
CUTTING THE SOLE



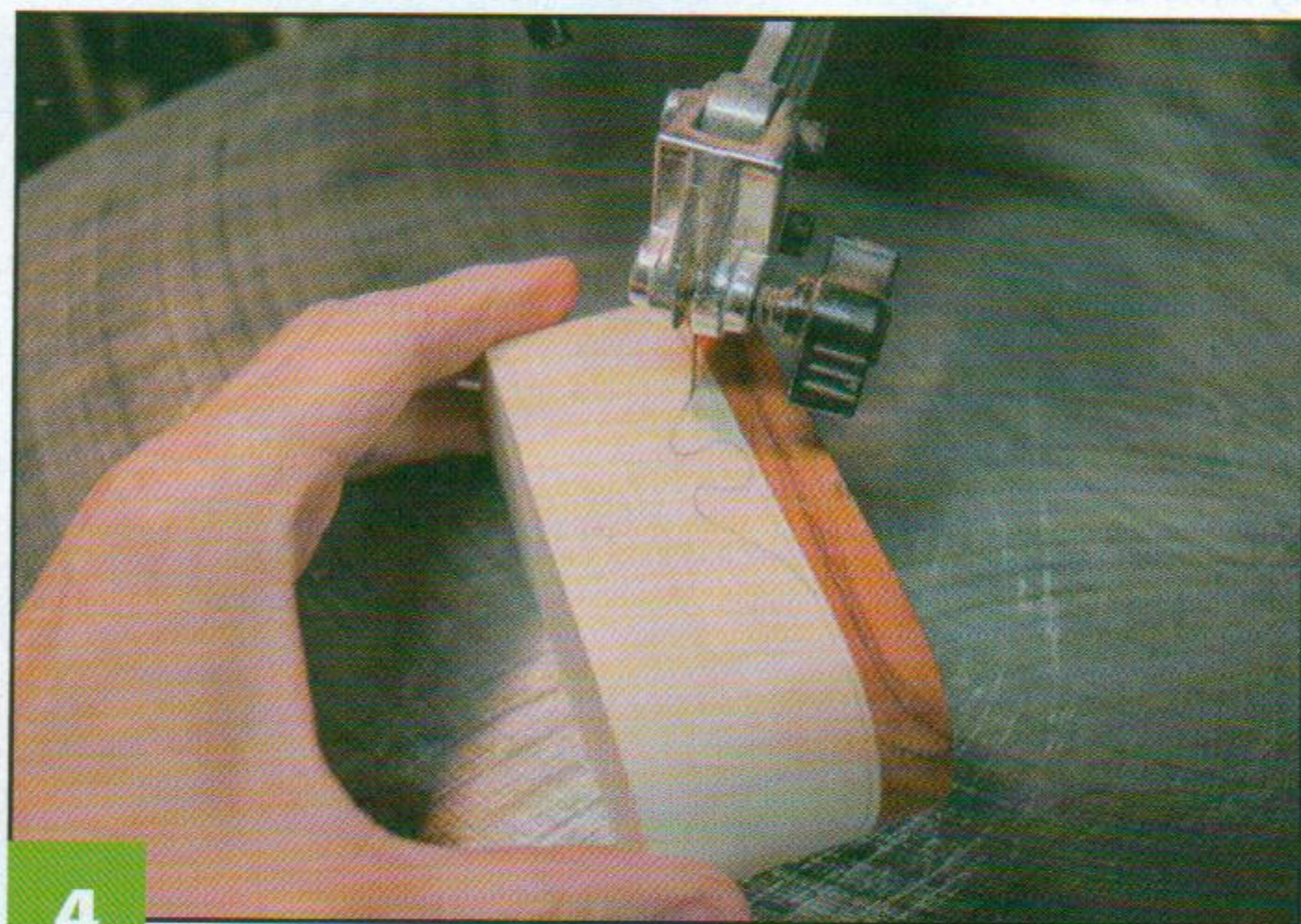
1 Cut the main shape on a scroll saw. Use a #9 reverse-tooth blade.



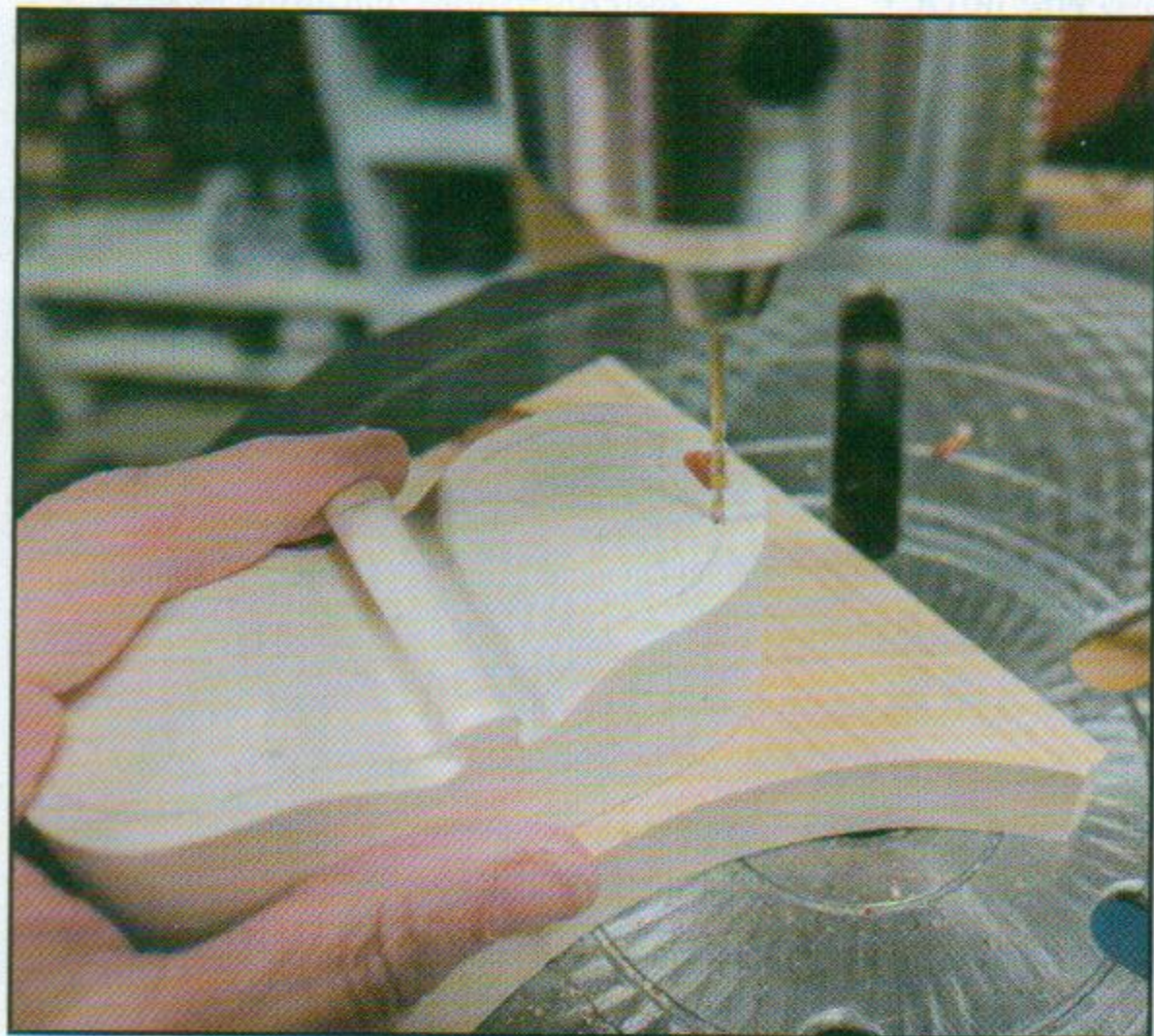
2 Cut the bottom of the box. Make sure your blade is square with the table. Mark a line $\frac{1}{8}$ " (3mm) up from the bottom, and then cut along this line with a #7 reverse-tooth blade. Set the cut section aside.



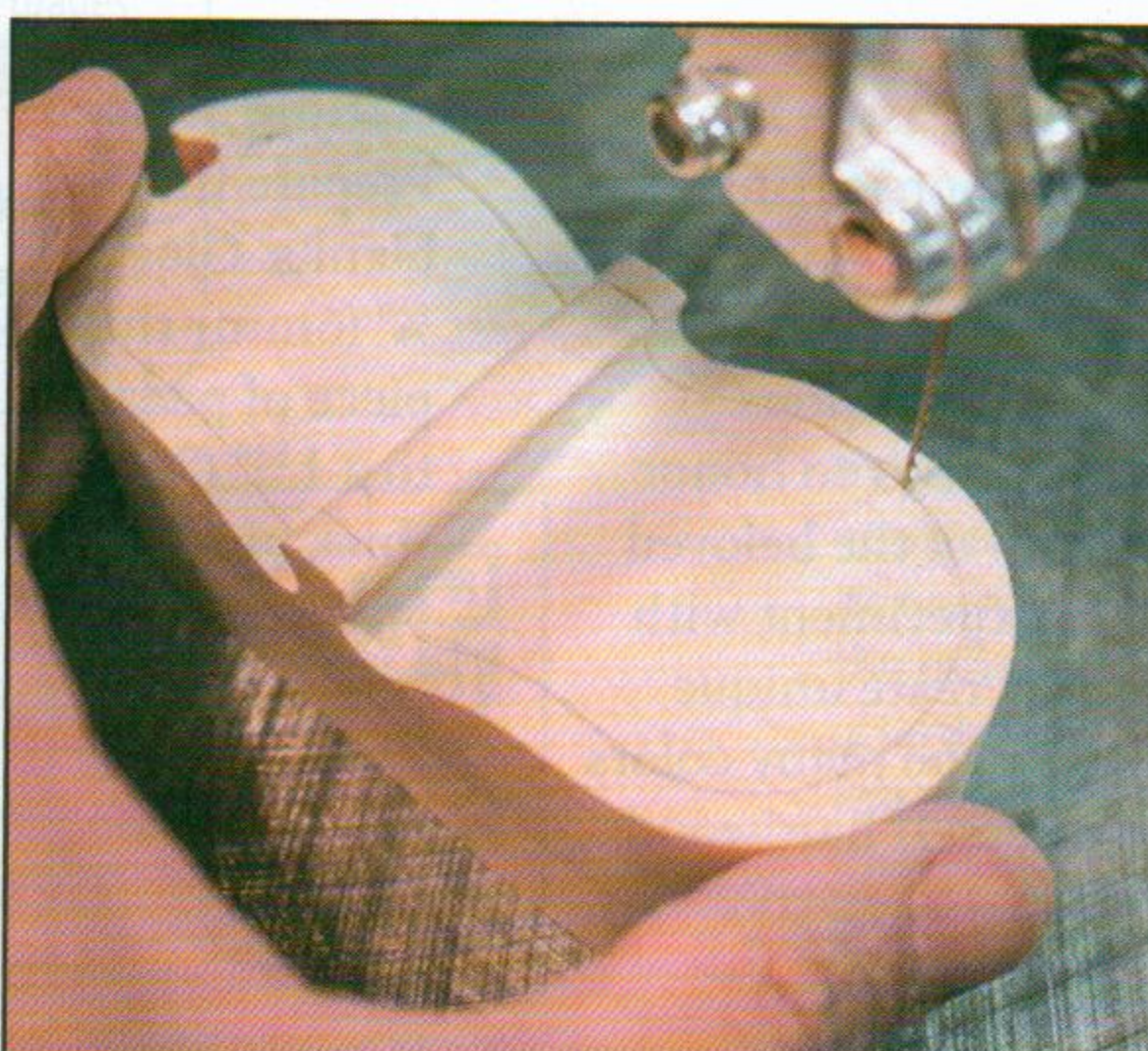
3 Cut the key. Using a #5 blade, carefully cut along the line. Go slowly and let the blade do the work. Set the key aside.

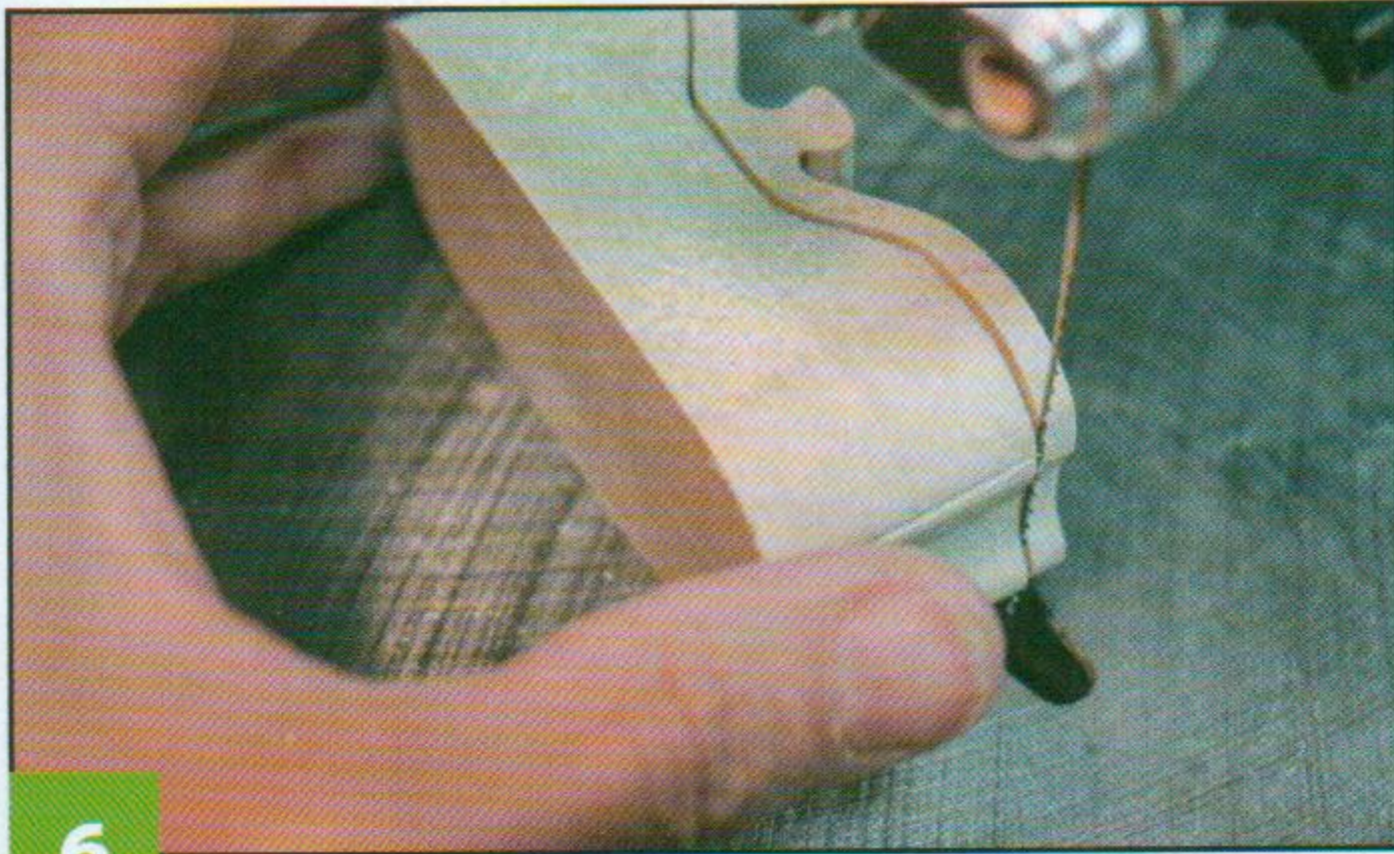


4 Cut the box lid. Using the side view pattern as a guide, draw a line along the top of the blank. Cut carefully along the line with a #7 reverse-tooth blade. Be careful not to rush or pull the blade. Slide the lid off and set aside.



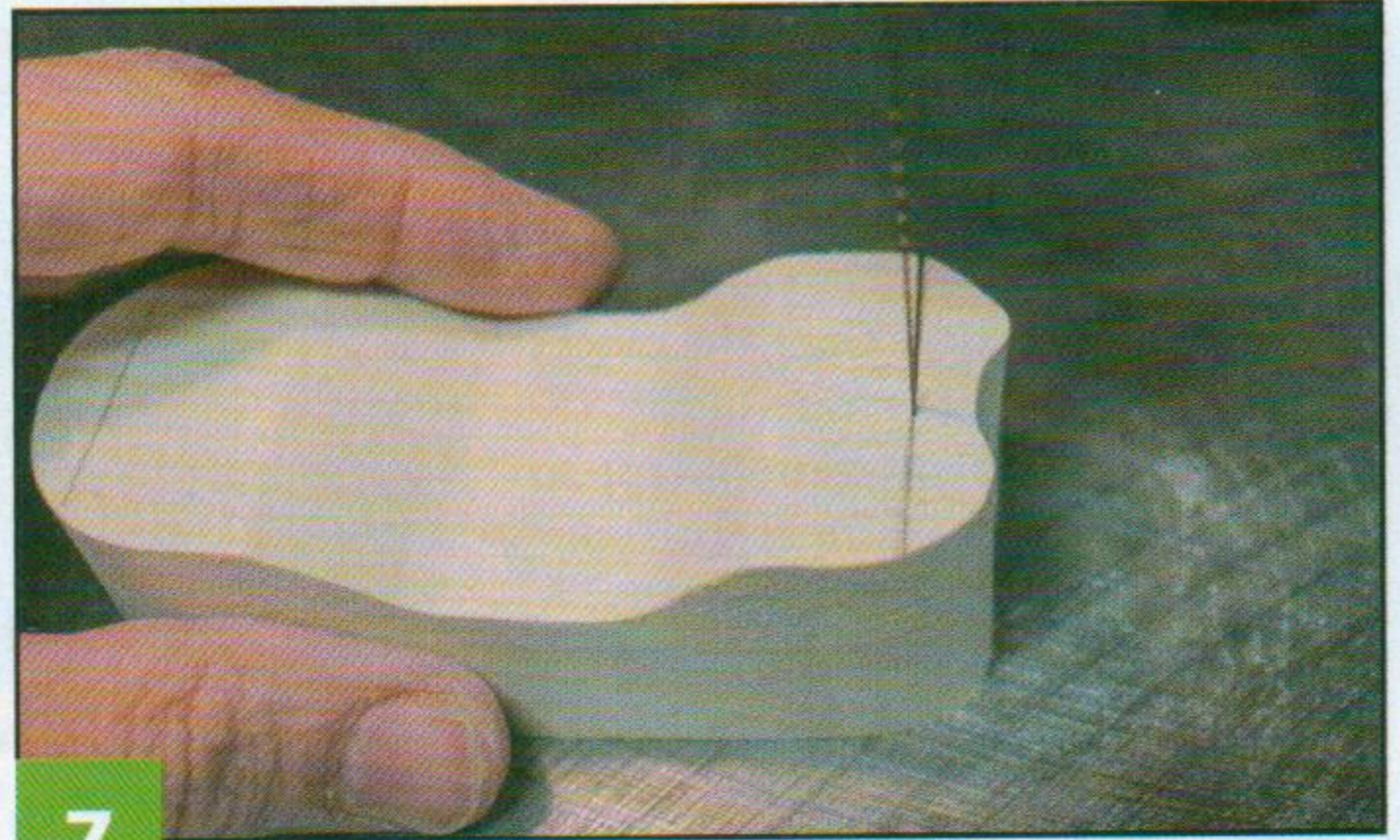
5 Cut the chamber. Mark the perimeter of the inside chamber. Use a $\frac{1}{16}$ " (2mm)-dia. bit to drill a blade-entry hole on the line near the keyhole. Then, using a #5 reverse-tooth blade, make the interior cut. Set the chamber aside.





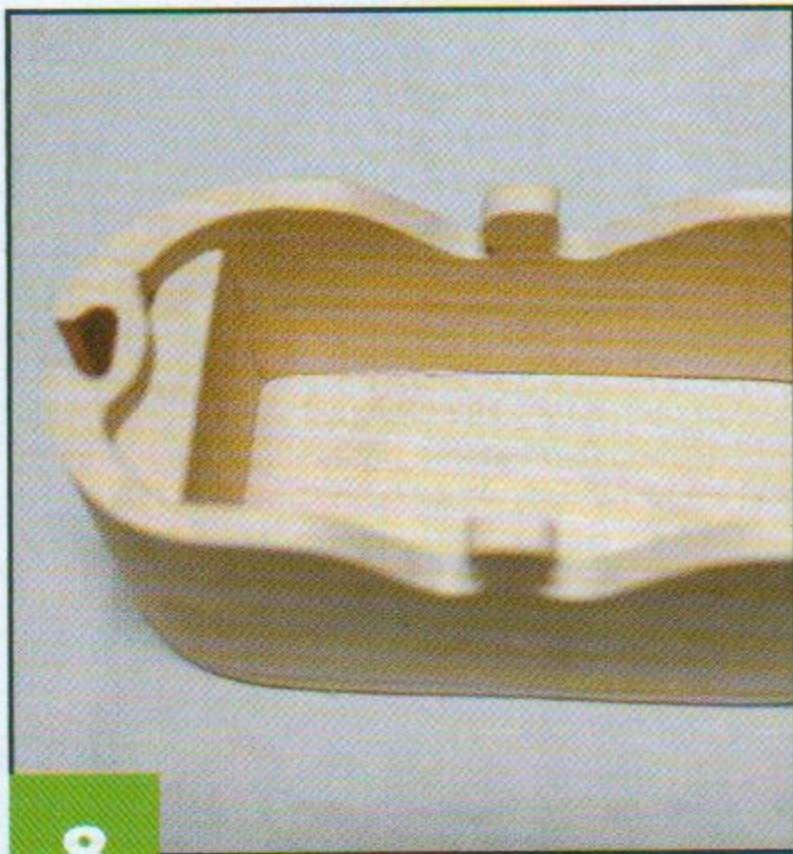
6

Cut the chamber lid. Draw a line about $\frac{1}{8}$ " (3mm) from the top of the solid piece cut in Step 5, following the general contour of the piece. Using a #5 blade, cut along the line. Set the lid aside.



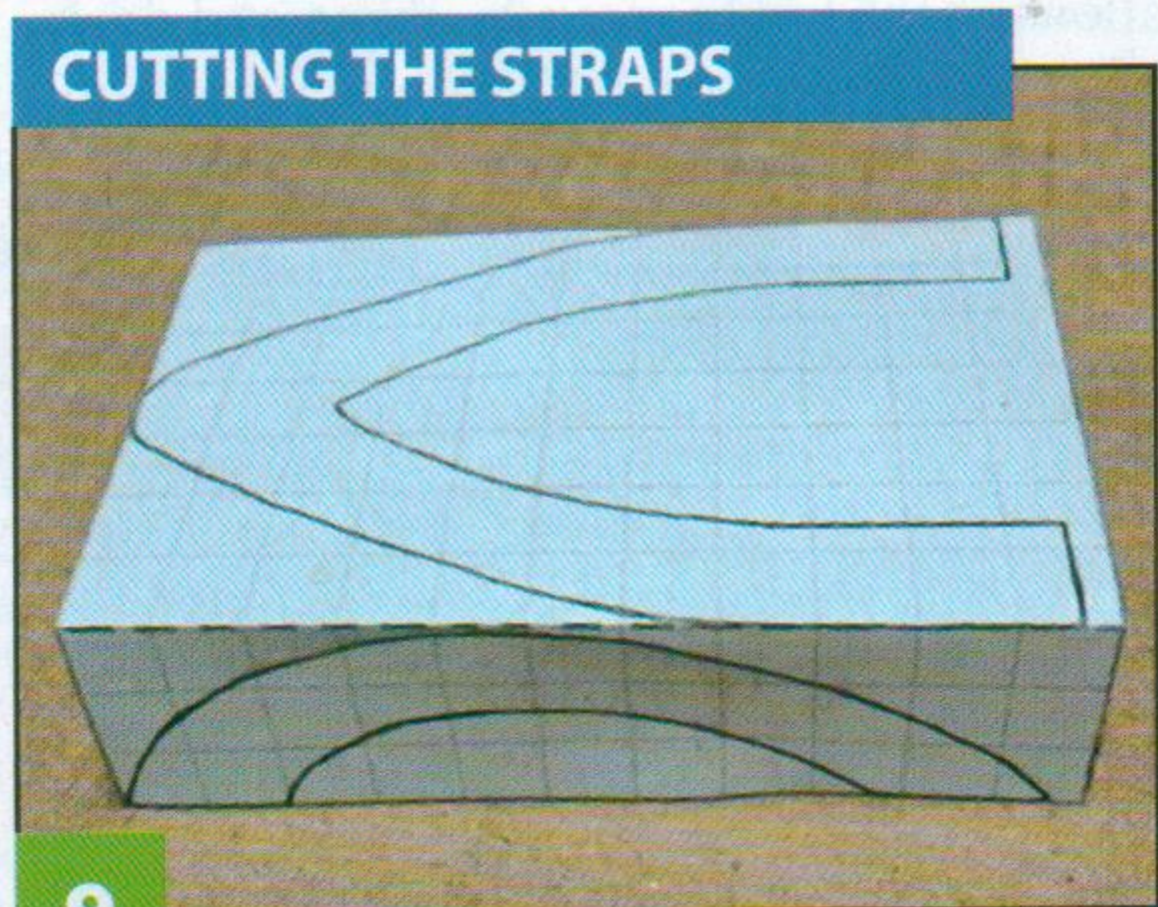
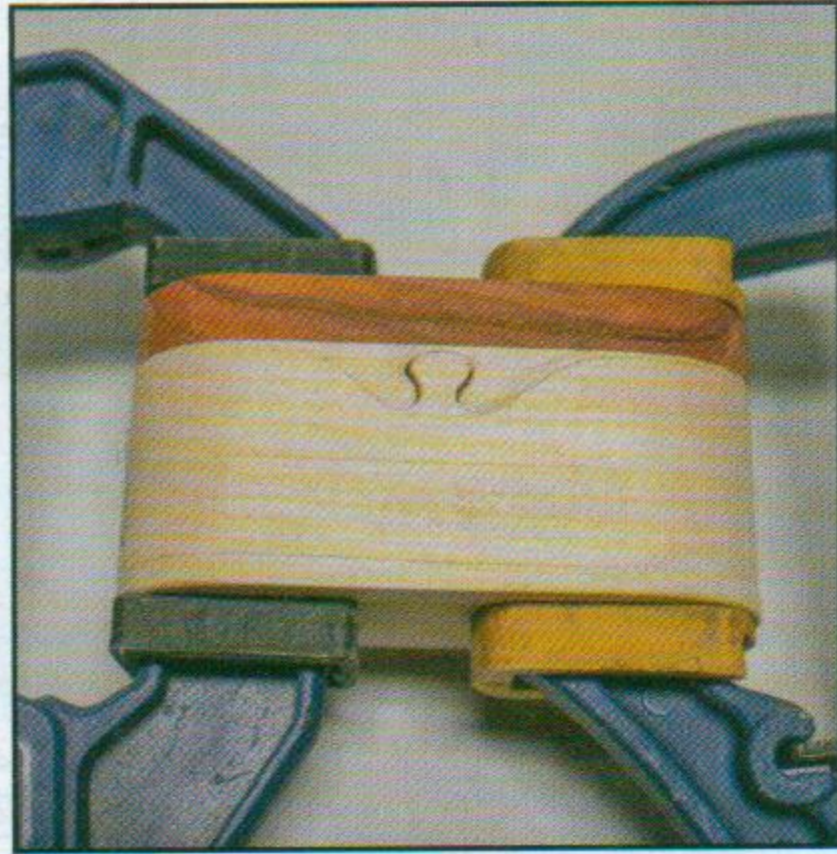
7

Cut the support pieces. Using the waste from the center of the chamber, cut a small section off each end. These will act as supports for the chamber lid.



8

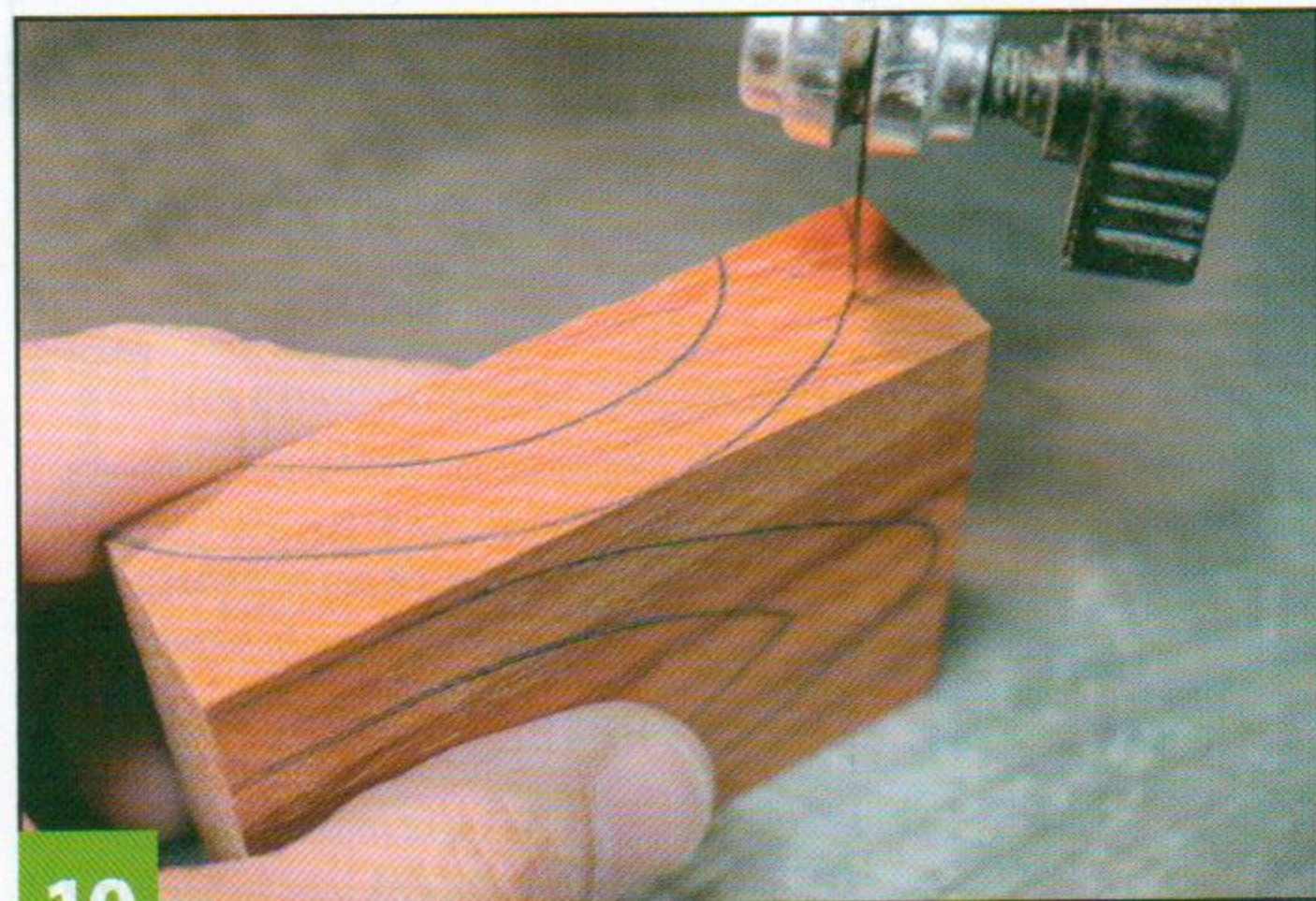
Glue the pieces. Secure the hollow chamber to the bottom piece you cut in Step 2. Let dry. Then add a dab of glue in each corner of the box, insert the support pieces, and then wipe away any squeeze-out. Replace the chamber lid, slide the top lid into place, and then insert the key. Clamp until dry. Sand all rough edges progressively up to 400-grit.



CUTTING THE STRAPS

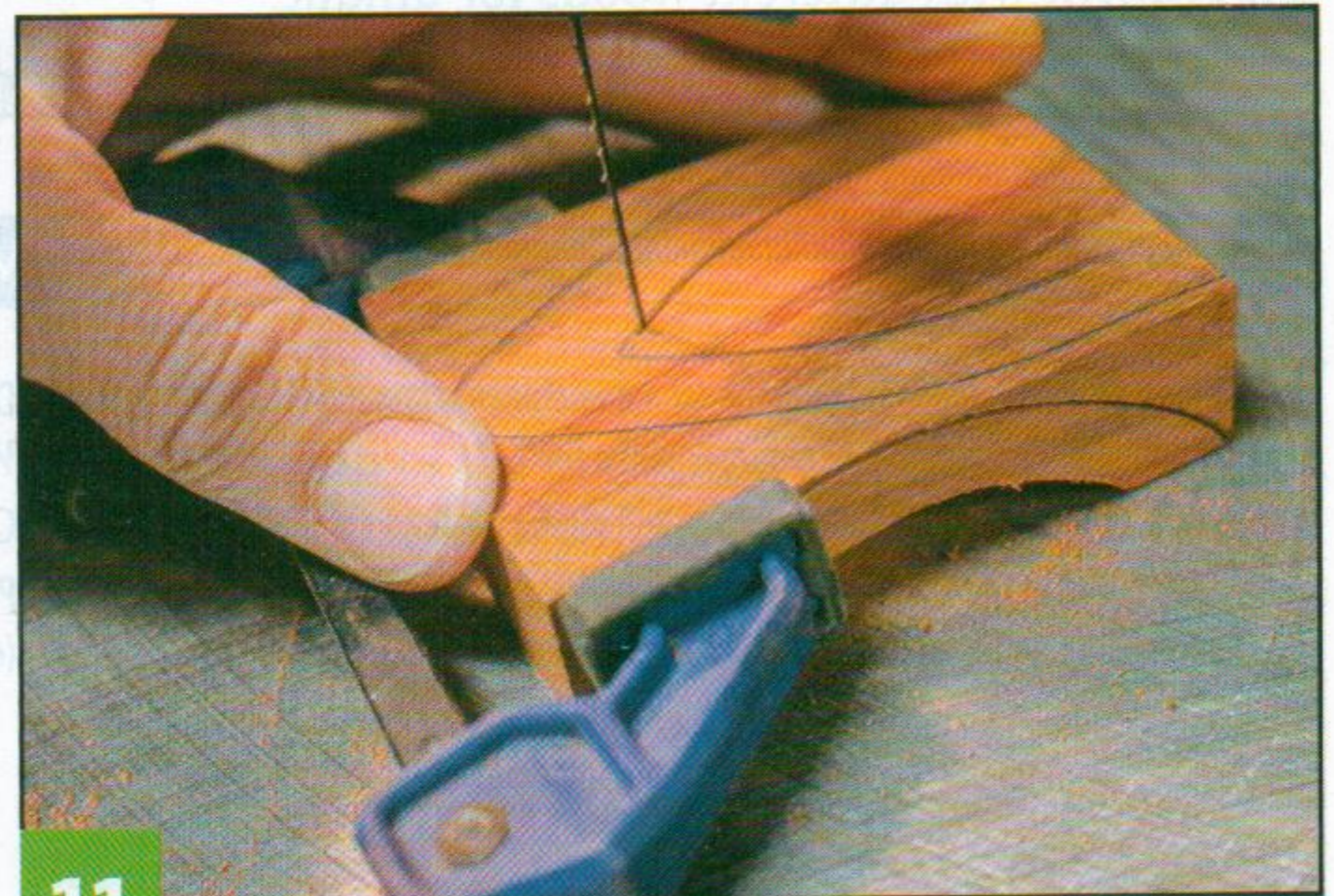
9

Prep the blank for the straps. Trace or attach the strap patterns to a $\frac{3}{4}$ " (1.9cm)-thick piece of padauk.



10

Cut the side view. Turn the blank on its side and, using a #7 reverse-tooth blade, cut the side view of the strap when viewed. Clamp the waste pieces in place with the rest of the blank. This will provide stability for the next cut.

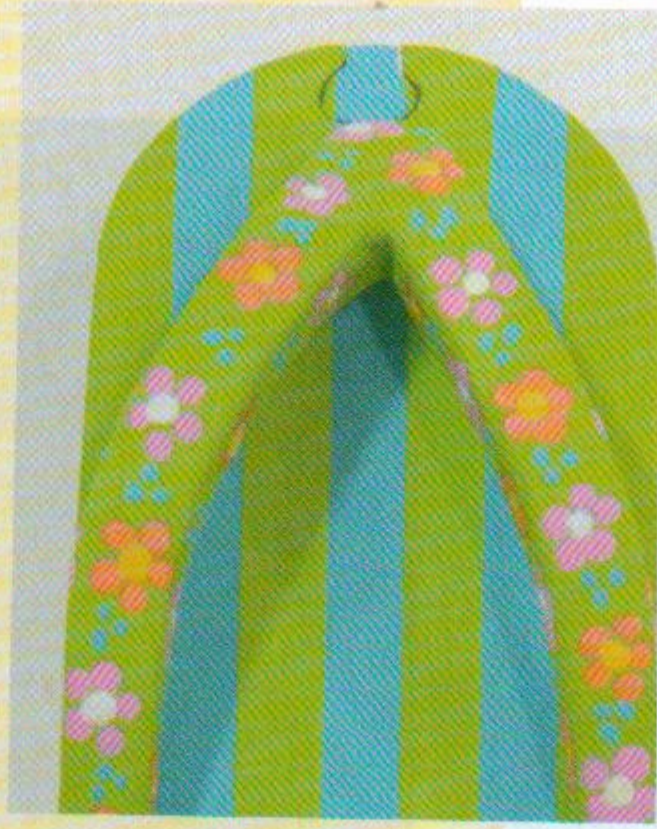


11

Cut the top view. With the pieces still clamped, cut along the inside and outside lines of the top view. Discard all waste pieces. Sand the edges with 400-grit sandpaper.

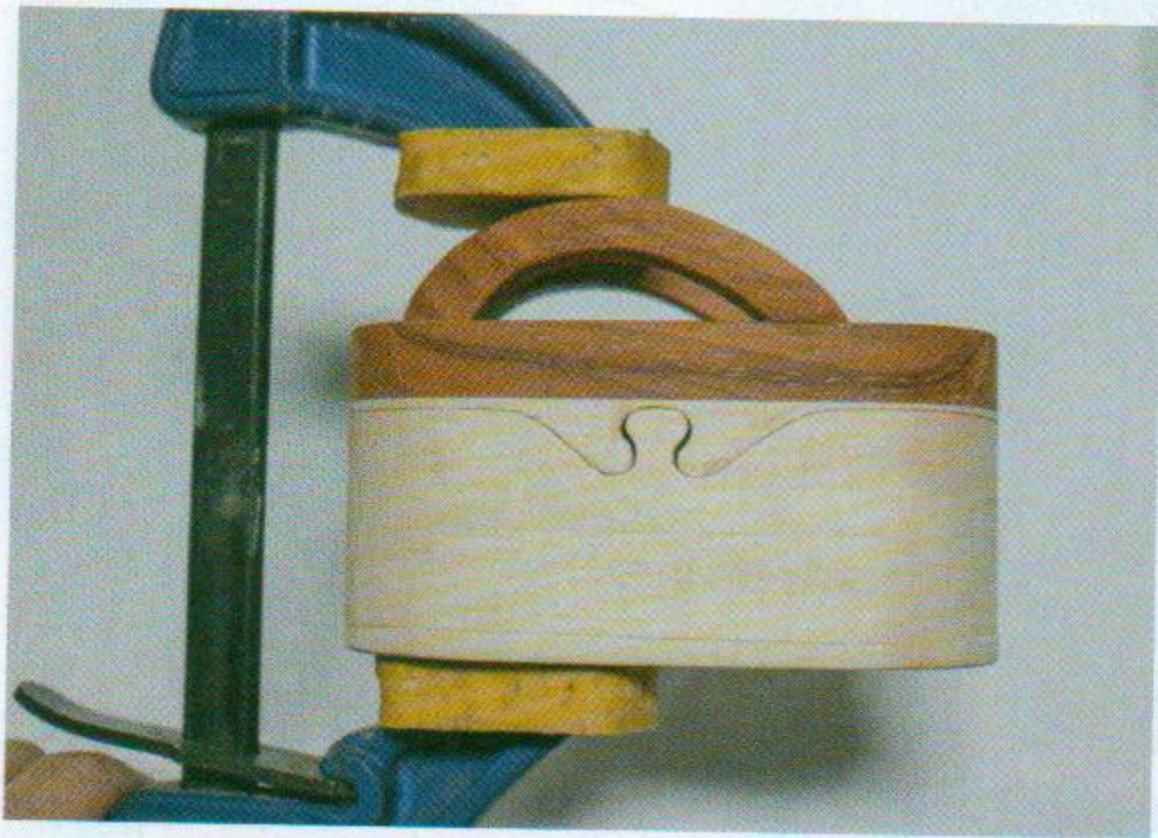
Adding Paint

It is important that you paint the sole and straps separately to ensure full coverage of every angle, leaving the areas that will be glued untouched. Once the pieces are dry, glue them together. I used narrow blue painter's tape to create crisp, clear stripes. Use your imagination and have fun with it. The possibilities are endless!

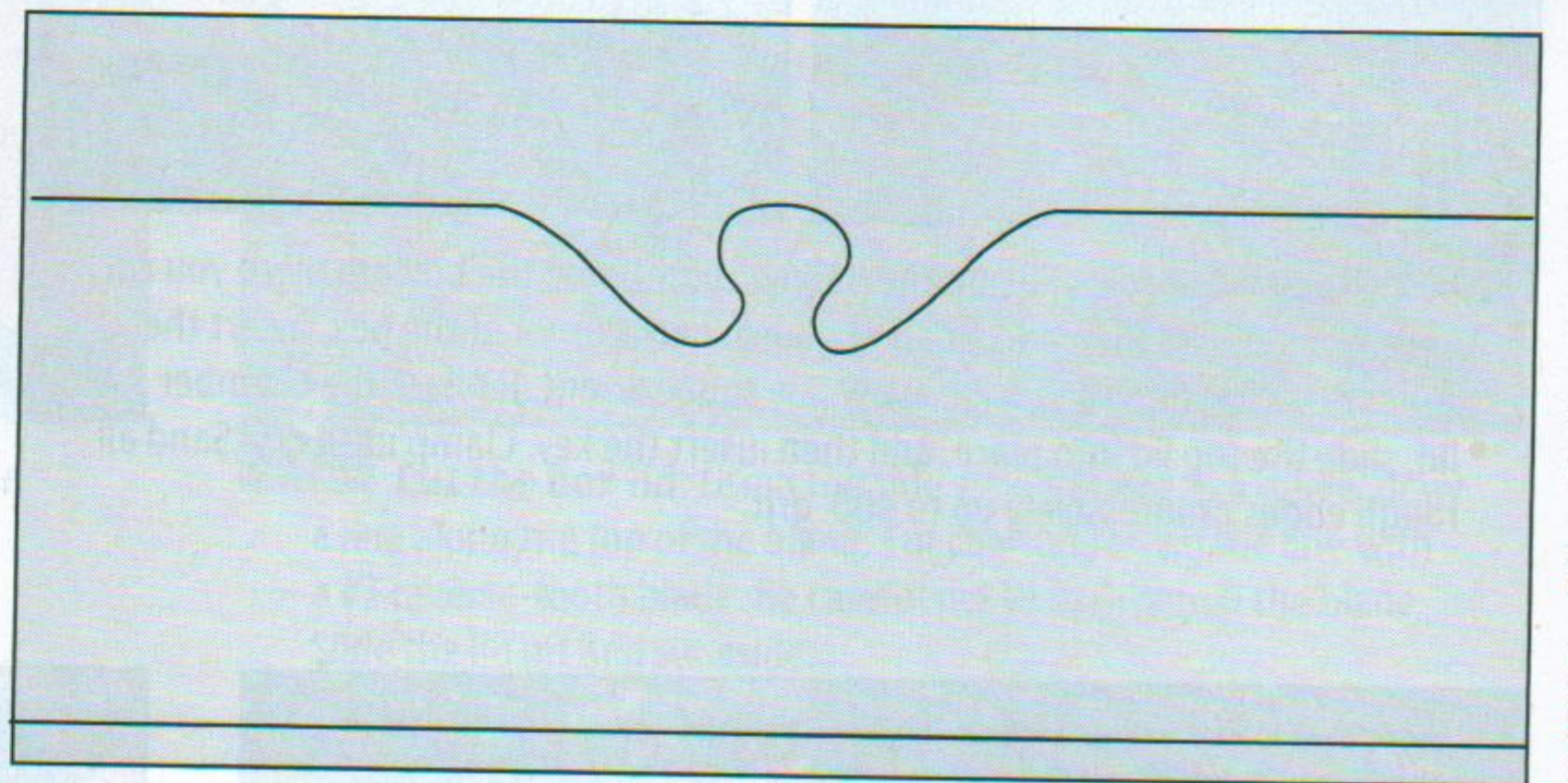
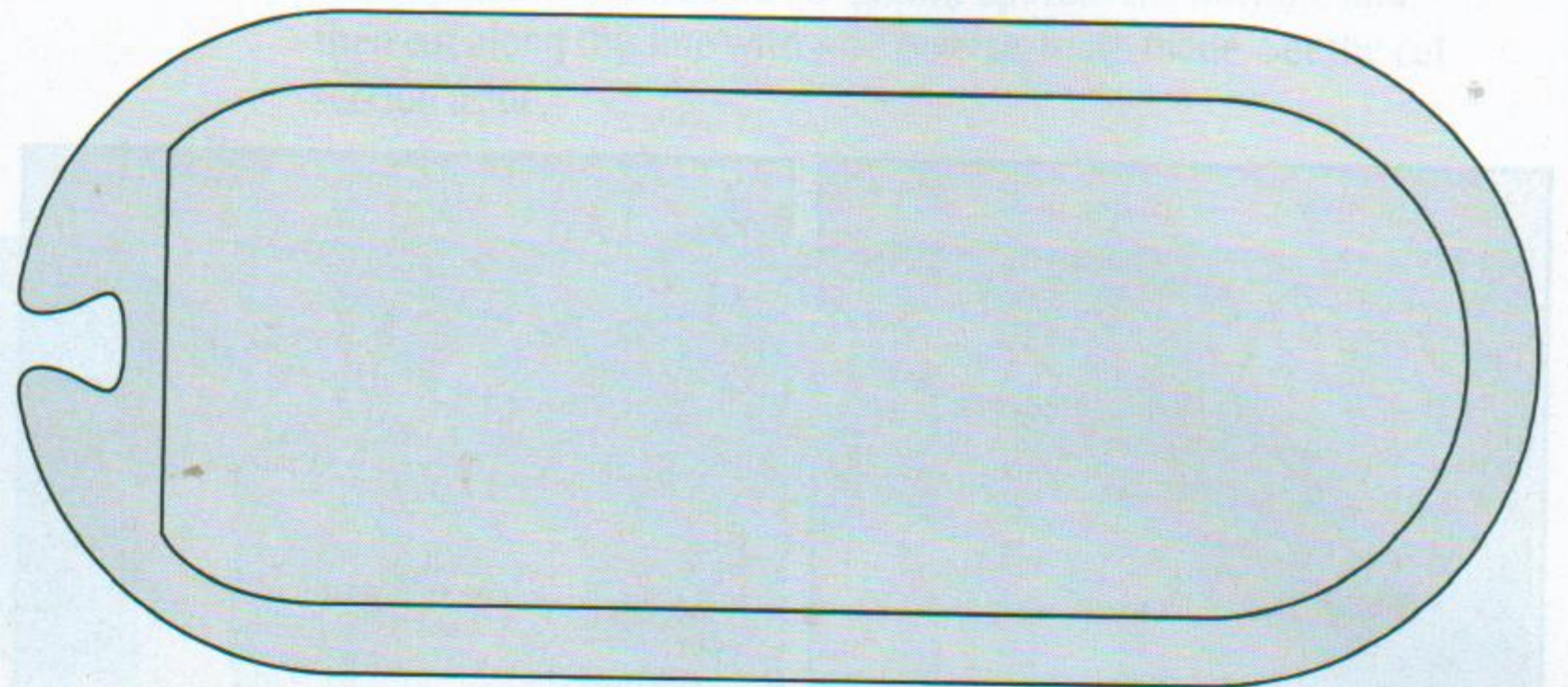
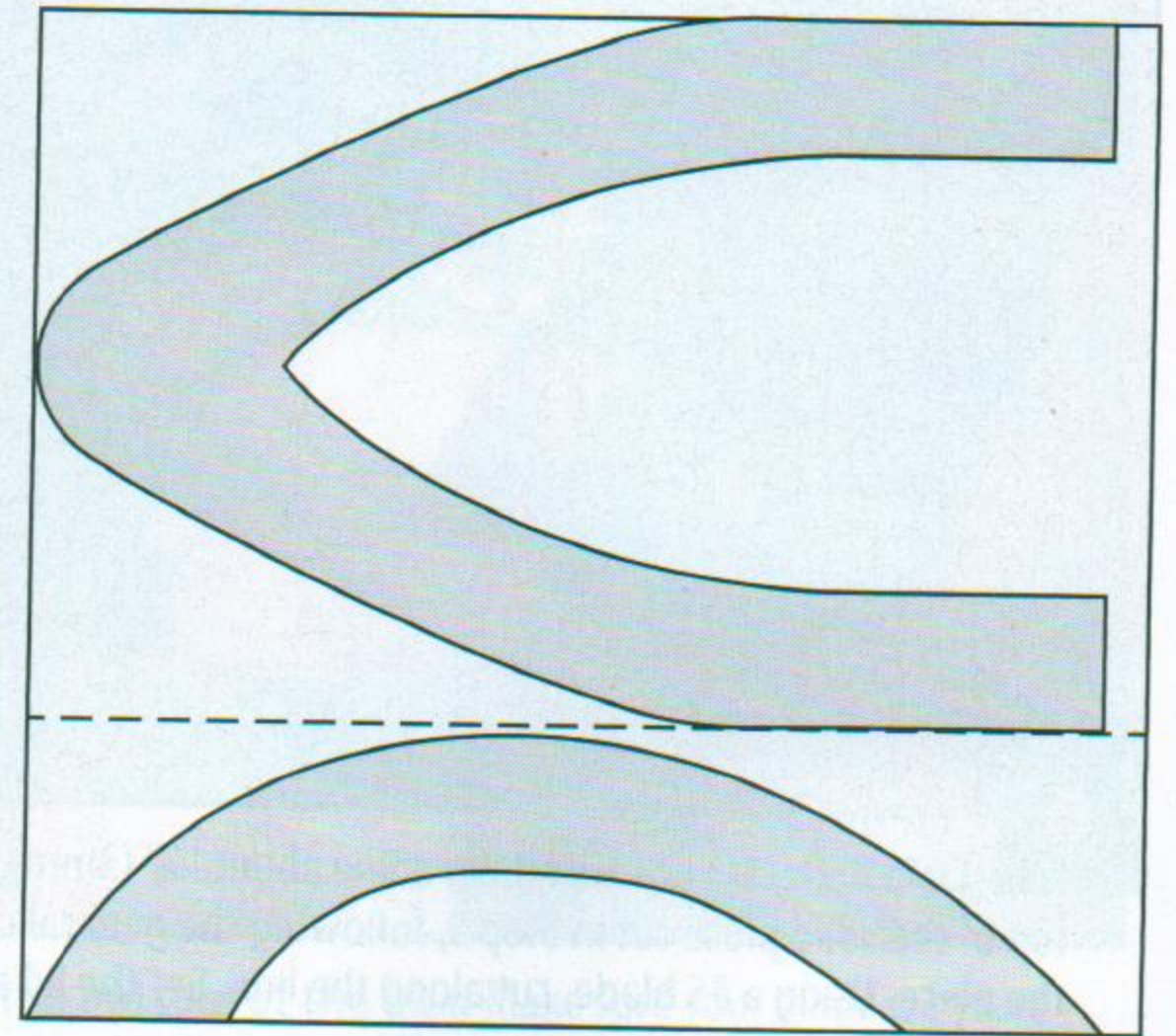


Assembling and Finishing

Assemble the box. Add the strap to the top of the flip-flop. It should be as close to the front of the sandal as possible, while still allowing the key to move freely up and down. Glue the strap piece in place, and then clamp until dry. Remove any squeeze-out.



Finish the box. I applied natural Danish oil to the inside and outside. Alternatively, flock the inside for a luxurious feel. Experiment with different woods for unique looks or paint the flip-flop with acrylic paints for a colorful, fun alternative.



Materials & Tools

Materials

- Wood, such as birch, 1½" (3.8cm) thick: box body, 2" x 4½" (5.1cm x 11.4cm)
- Wood, such as padauk, ¼" (6mm) thick: flip-flop sole, 2" x 4½" (5.1cm x 11.4cm)
- Wood, such as padauk, ¾" (1.9cm) thick: straps, 1¾" x 2¾" (4.4cm x 7cm)
- Spray adhesive: repositionable
- Wood glue
- Tack cloth
- Sandpaper: assorted grits to 400
- Finish, such as Danish oil: natural
- Colored flocking (optional)
- Acrylic paints: assorted (optional)

Tools

- Scroll saw with blades: #5, #7, #9 reverse-tooth

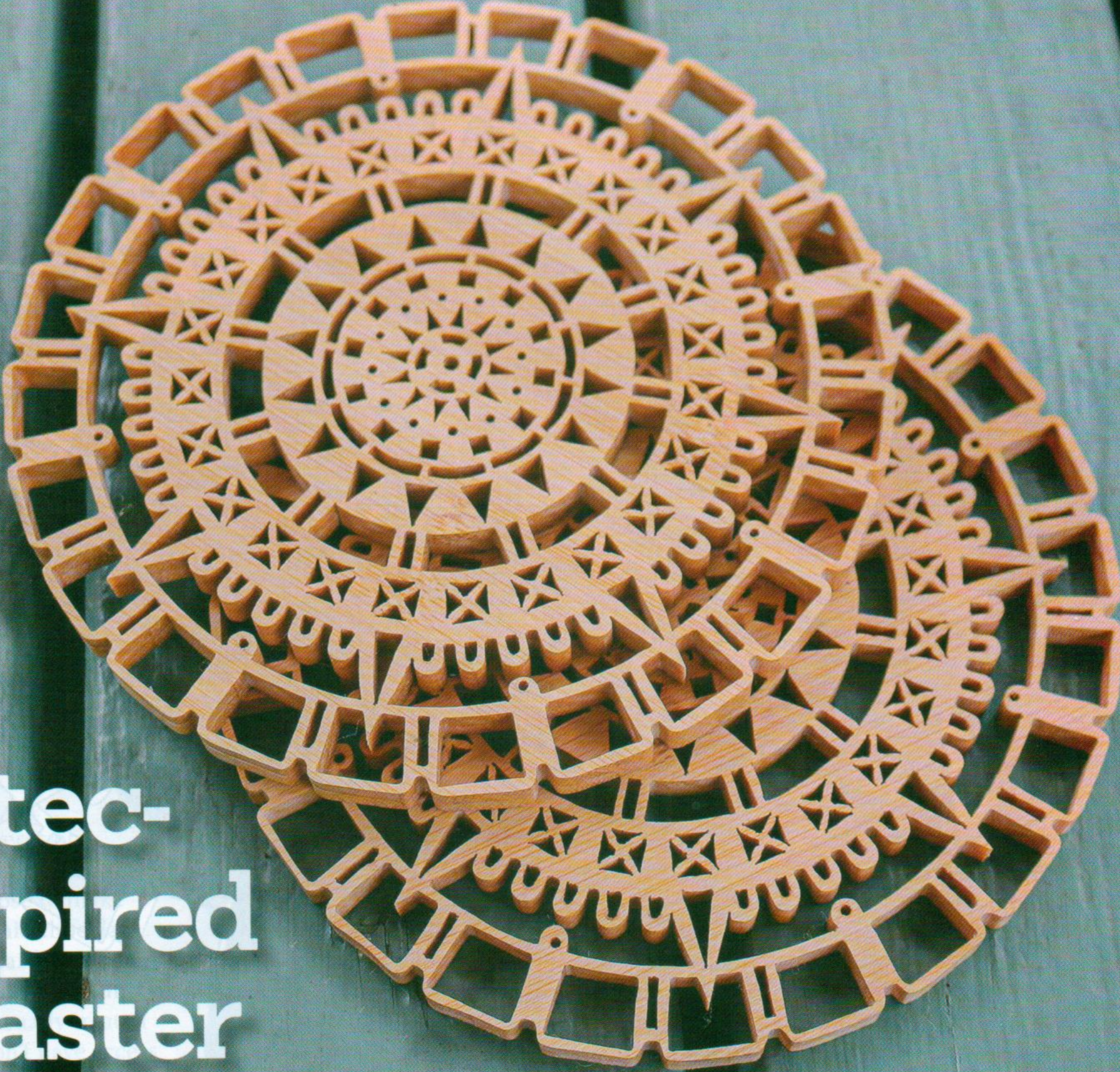
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

- Drill press with bits: ⅛" (1.6mm)-dia.
- Clamps
- Paintbrushes: assorted (optional)

Flip-Flop Puzzle Box Patterns



Rita Cels is a retired teacher and self-taught scroller from Leduc, Alberta, Canada. Although much of Rita's time is spent making wooden children's toys, in her spare time, she loves designing special boxes using a variety of wood types and techniques. Find more of her work @ritacelscreations on Instagram and Etsy.



Aztec-Inspired Coaster

This wooden drink rest adds a Mesoamerican flair to any patio or wet bar

By Charles Hand

This coaster, packed with Aztec-inspired imagery, was a blast to design. While searching for suitable wood, I walked into a local kitchen store, where I found various sizes of bamboo cutting boards just perfect for the job. Because the design is so delicate, I recommend stack cutting. If you choose not to use it as a coaster, enlarge the design for a trivet or dramatic wall piece.

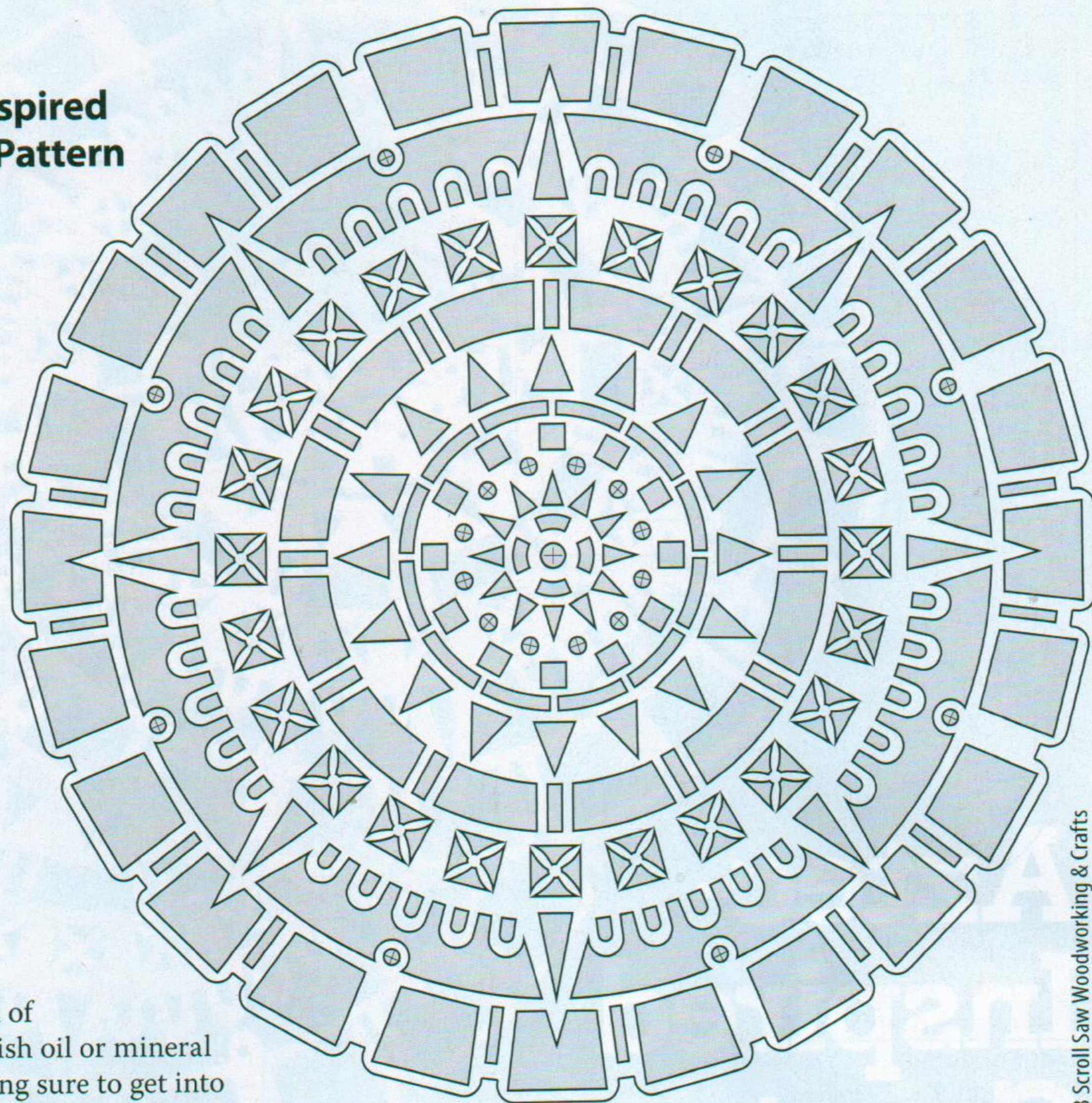
Prepping and Cutting

Sand the front and back of the blank thoroughly with a palm sander. Blow off the dust or remove it with a

tack cloth. Attach removable EasyLiner® laminate shelf liner to the top of the blank and apply spray adhesive to the back of the pattern. Let the adhesive set for one to two minutes, and then press the pattern down onto the paper, eliminating air bubbles. If you choose to stack cut, apply FrogTape® or blue painter's tape around the perimeter of the stack, holding the wood flat and secure. Drill the blade-entry holes and cut the frets.

Remove the tape from the perimeter and peel off the shelf liner. Hand-sand the surface and sides carefully, using needle files to clean up tight areas.

Aztec-Inspired Coaster Pattern



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Finishing

Remove sawdust with a can of compressed air. Apply Danish oil or mineral oil with a paintbrush, making sure to get into all the crevices. Alternatively, you could dip the piece into an oil-filled basin. Repeat the process two or three times until you achieve the desired effect. Wipe off the excess, let dry, and use.

Materials & Tools

Materials

- Wood, such as bamboo, $\frac{5}{16}$ " (8mm) thick: approx. $5\frac{1}{2}$ " (14cm) square (if stack cutting, use approx. 6" [15.2 cm] square to allow room for tape)
- Sandpaper: 180-220 grit
- Tack cloth
- Soft cloth (for finish)
- Tape: FrogTape® or blue painter's (if stack cutting)
- Spray adhesive, such as Elmer's® or 3M Super 77
- Self-adhesive shelf liner, such as Duck brand EasyLiner® removable covering
- Finish, such as Danish oil or mineral oil

Tools

- Scroll saw with blades: #2, #5 reverse-tooth
- Drill press or hand drill with bits: $\frac{3}{64}$ " (1mm)-dia. or #56 wire size, $\frac{1}{16}$ " (2mm) and $\frac{1}{8}$ " (3mm)-dia.
- Palm sander (optional)
- Needle files
- Can of compressed air
- Paintbrush: small
- Plastic dipping basin for oil (optional)

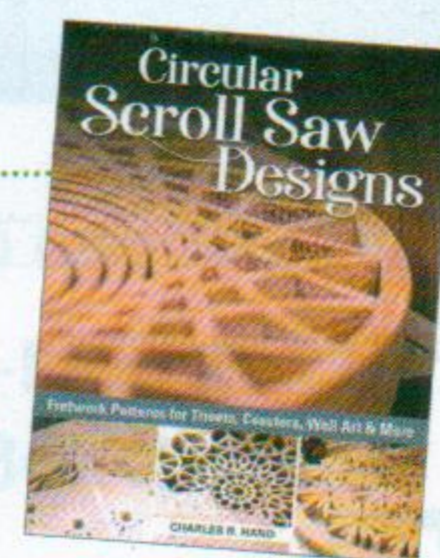
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

WANT MORE TRIVETS & COASTERS?

Circular Scroll Saw Designs

By Charles R. Hand

Item 01500. Available for \$17.99 plus S&H (parcel post) from Fox Chapel Publishing, FoxChapelPublishing.com, 800-457-9112, or your local retailer.



Charles Hand is retired from a career in electrical/mechanical design, graphic arts, and senior project management. He enjoys intarsia, fretwork, segmentation, inlay, and just about everything there is to cut with a scroll saw. Charles has won best of show and several other awards for his work and designs at local craft and woodworking shows. For more information and a tutorial on Charles' pattern application method and framing techniques, or for more of his patterns, visit scrollsawart4u.weebly.com.

Chocolate Lab

This intarsia bust is doggone gorgeous

By Judy Gale Roberts

There's no denying that the sweet-faced, goofy, lovable Labrador retriever is one of America's most popular dog breeds. I chose to make a bust of the iconic chocolate lab out of dark hardwoods such as African walnut, Peruvian walnut, and thermally treated poplar. If you don't have access to these woods, you could color bland woods using stains or a homemade ebonizing treatment (see an illustrated guide on page 13). You could also apply the steps and techniques I've laid out to make a yellow lab, if desired, using lighter hardwoods such as yellow poplar, pine, or Alaskan yellow cedar.

This is an intermediate-level project because of the multiple raising shims used. They are the key to adding dimension to the piece. Do not be discouraged—there are many lessons you can learn with this project. Have fun completing it, and then gift it to the dog lover in your life.



Getting Started

Prepare the patterns. The most accurate way to cut the parts for any intarsia project is to make multiple copies of the pattern and glue the pattern pieces to the different shades of wood. Make at least six copies of this pattern, keeping one as a master copy for reference. Cut up each piece of the pattern that represents a different wood color or grain direction. *Note: When I cut the patterns into pieces, I leave between 1/8" (3mm) and 1/4" (6mm) beyond the pattern line.* This gives you a "lead-in" line to get your blade on track before you start cutting the actual piece.

Attach the patterns. For pattern application, I recommend a sticker-maker machine used in the scrapbooking industry (Xyron® 9" Creative Station; see the product review in issue 88). You run the patterns through the machine, and it applies adhesive to the back side of the pattern. You could also use a repositionable glue stick.

Cut the eyes out on a scroll saw and drill a 1/32" (1mm)-dia. hole for the eye highlights.

Tips for Success

Control and consistency are the cornerstones of accurate sawing, and control comes from cutting at a comfortable speed. To find the optimum speed, you'll need to experiment a bit. I usually run about 85% of the speed range on my variable-speed saw. When new to scrolling, practice keeping the blade in the center of

the line. With more experience, your goal should be to leave half of the pattern line. A foot switch and a magnifier with a light are helpful if you're sawing for accuracy.

Before you start cutting, take a few minutes to come up with an overall plan. You don't want to end up with a small part that's difficult to hold. It is important to check your cuts often with a square. Change blades often, do not push too hard, and let the blade do the cutting. Leave the pattern on the wood until all of the parts are cut. If the parts do not fit, trim them on the scroll saw with a fresh blade as needed. Transfer the number onto the back of each part after cutting. This will keep you organized and help prevent sanding off the wrong side, which will cause issues with assembly.

Cutting

Cut all the parts on the scroll saw. Use a #3 or #5 to cut the main sections. After the main sections are cut, check fit before separating the individual pieces. If you need to trim, it's easier if the pieces are still connected. Then use a #2/0 to a #1 blade to separate the individual parts. Whenever possible, cut the pieces so that the last cut will "drop" off the larger piece of wood.

Before removing the pattern paper, check fit on the parts. Sometimes you can see a heavy pattern line, indicating a trim may be needed. Trim with a sharp blade. Remove the paper and transfer the number onto the back of each part. This will help during sanding.

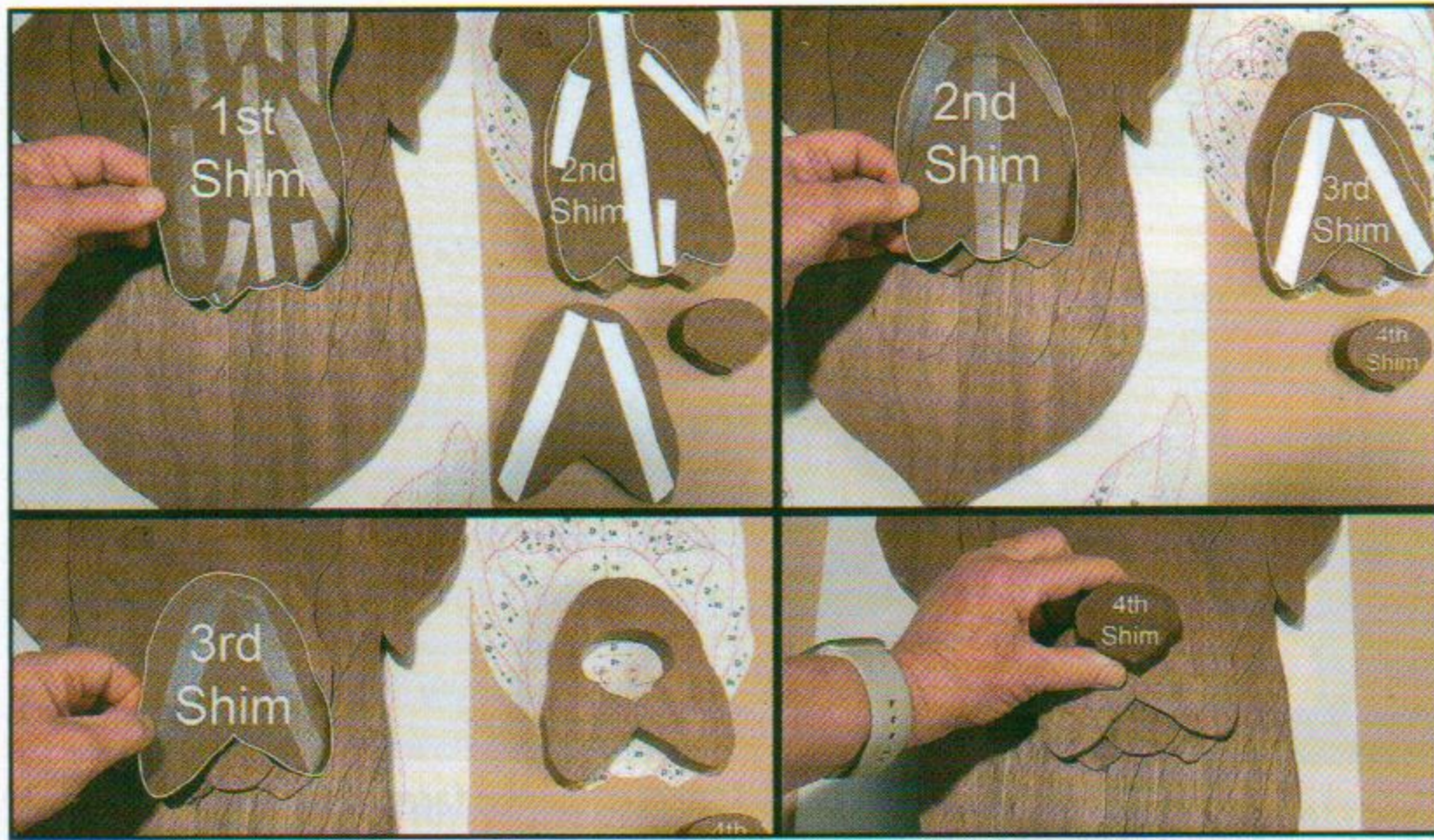
PREPARING THE SHIMS



1 Cut the sanding shims. Sanding shims are used to sand pieces of a section together as a unit. This technique makes it much easier to create a consistent contour and blend parts of the project. It is important to remember these parts are temporarily raised, and you will discard their shims after roughing in the project. Cut pieces of flat-tempered hardboard, close the size of the sections you will sand; I made sanding shims for the ears, face, and neck sections. Then make the raising shims. Raising shims are used to elevate various parts of the project to give the piece more dimension. Cut the raising shims from the flat-tempered hardboard, slightly smaller than their corresponding parts, as they will be placed underneath. For both kinds of shims, use a copy of the pattern for reference.



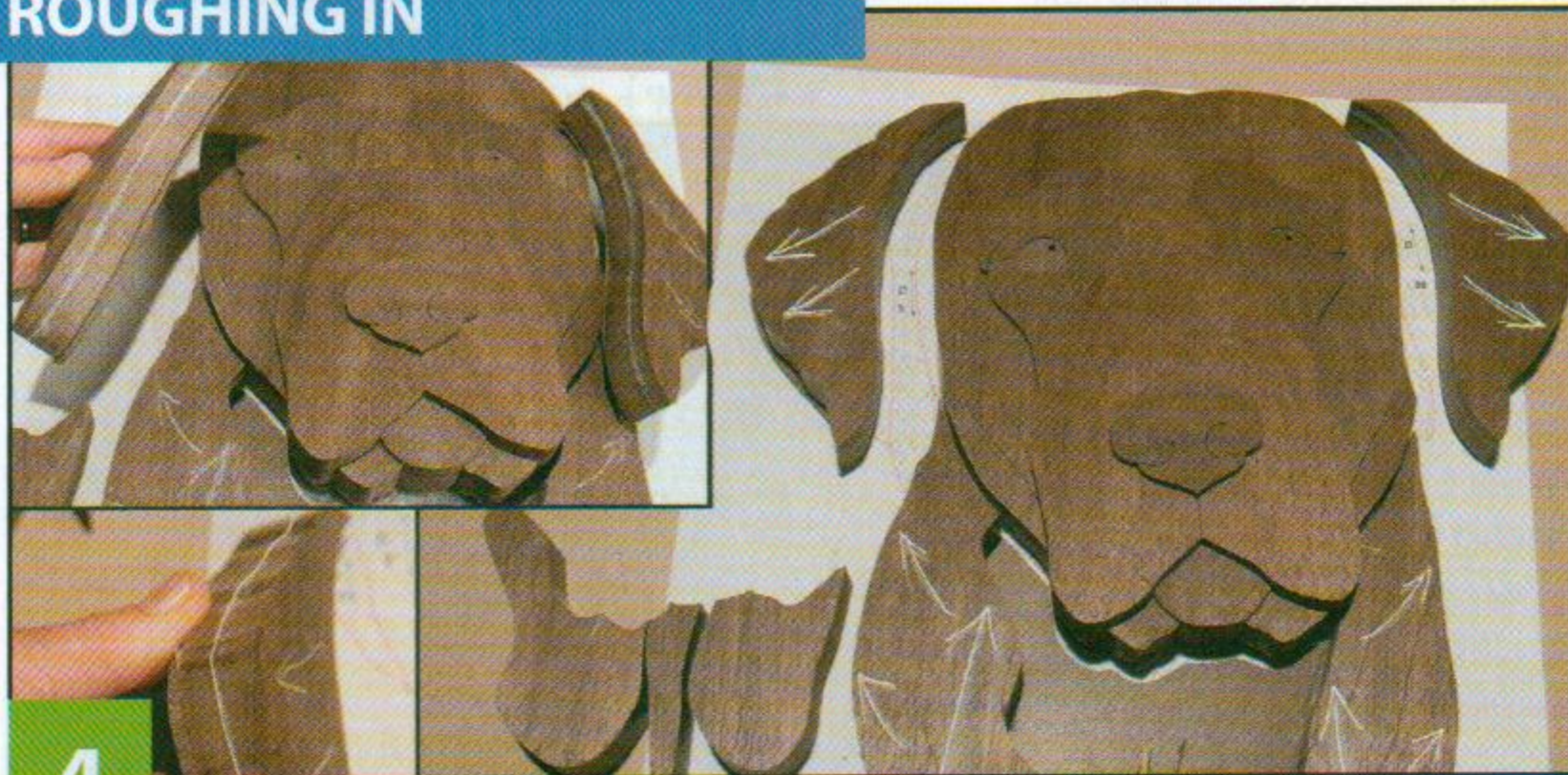
2 Tape up the sanding shims. *Note: Remove as much dust as possible before applying the tape.* I use light-duty double-sided carpet tape, cut into strips with an X-ACTO® knife. Apply tape to the back of the part, and then put the sanding shim on top. Do this for the ears and neck; I left out parts 41-43 in order to sand these parts individually. Mark the placement of those parts on the shim to help align the rest of the parts. Peel the paper off the neck sanding shim, and then place them using the lines drawn for parts 41-43.



3

Secure the shims. Place a copy of the pattern down first, and then put the ears and neck sections in place. Remove the paper from the tape on the face sanding shim, and then place the part between the ear and neck sections. These will help line up the rest of the parts. Put the first shim on top of the face parts; everything exposed will be placed on top of the sanding shim. Peel the paper off the tape, and then put the first raising shim in place. Put the second raising shim on top of the remaining parts, and then place the exposed parts (eye areas and lower two jowl pieces) on top of the first shim. Place the third shim on top of the remaining parts, and then place the exposed parts (15, 33, and 27) on top. Peel the paper off the third shim, put it in place, and then add the nose shim.

ROUGHING IN



4

Prepare to sand. Start with the ears, making sure the parts are stable on the shims.

To make the face stand out more, sand the ears down to about two-thirds of their original thicknesses. Mark a line on the side of the pieces as a guide. Sand down to the line, and then taper the ears down toward the outer edge. Taper the neck where it joins the face, and then slightly round toward the sides of the neck. Remove the parts under the chin.

A Note on Roughing In

I transition between a soft flex drum and an inflatable sander, which makes it easier to achieve soft contours while doing basic shaping. I have one drum with an 80-grit and a 120-grit sleeve. Remove most of the material with the 80-grit, and then smooth it out with the 120-grit. Switch to a 180-grit and then a 220-grit sleeve. Rough contour the entire project first, and then come back and fine-tune the parts. Remember, the thinnest parts will be perceived as the farthest away from the viewer. I like to start with the background pieces and work my way to the foreground (thickest parts). The more wood you remove from the background sections, the more dimensional your project will be. After each part is sanded, mark the thickness with a pencil on all adjoining parts.



5

Add dimension. Put all the sections back in place and mark the thicknesses on the sides of all adjoining parts. By lowering (sanding off the top) and raising sections, you will give this project lots of dimension. Sand the dewlap next.



6

Taper the parts down toward the face. I like to mark my limit for sanding on the sides of the pieces by marking a thickness line and writing a big 'NO' as a reminder. I sanded part 42 first, tapering it down toward the face. Put it back in place, and then mark the thickness along adjoining parts.

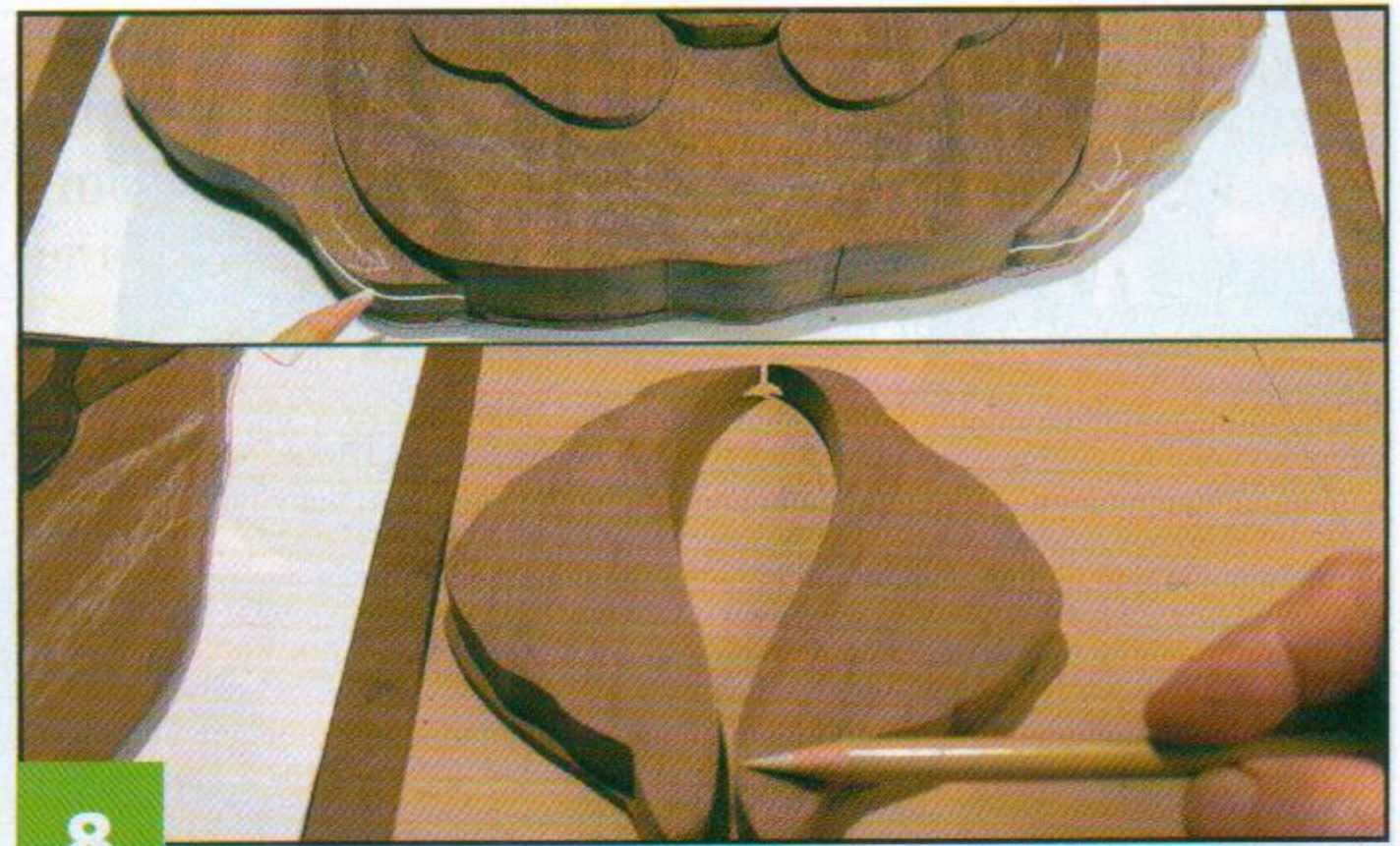
Did You Know?

The sagging skin found under the Labrador Retriever's neck is called a dewlap.



7

Define the neck. Taper parts 43 and 41 down toward the nose, and then sand the side of part 43 down toward part 25 (side of the face). It's a continuation of the dewlap fold. Slightly round along the lower edge of these parts and sand concave (hollowed) areas in their centers.



8

Shape the ears. Before starting the face, put both ear sections side by side. They should be close to the same thickness. Taper the top ear down to about $\frac{1}{8}$ " (3mm) where it joins the top of the head. This will allow more room to round the top of the face.



9

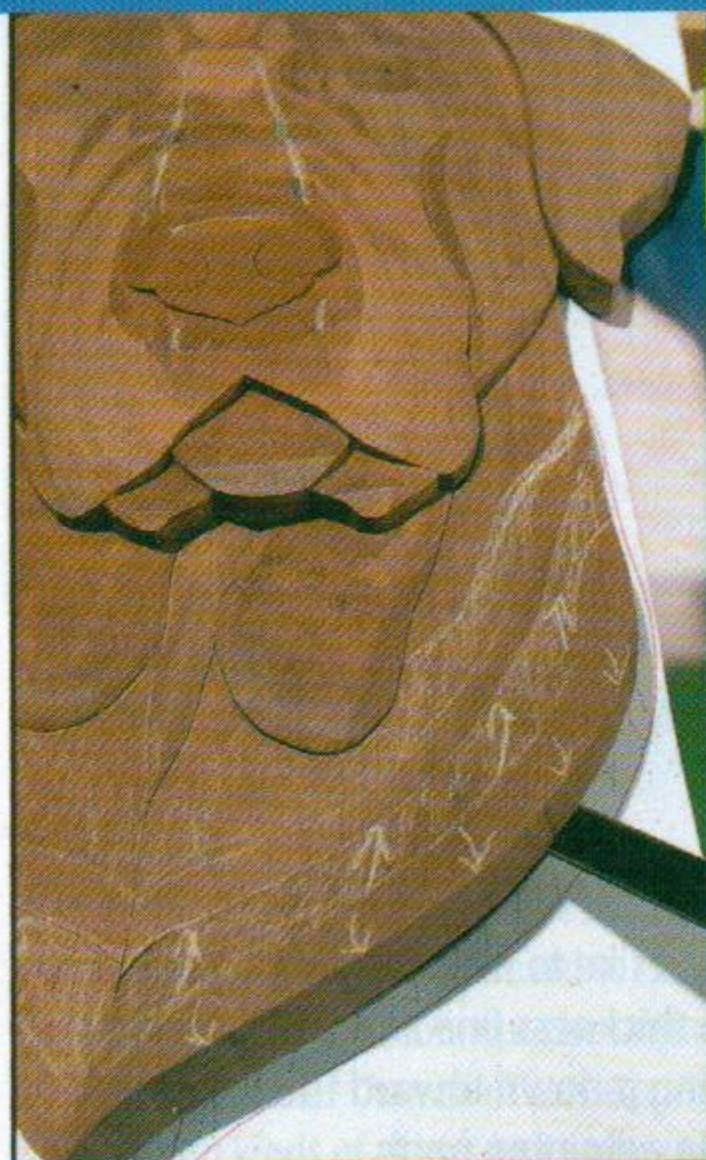
Shape the sides of the face. Sand the sides of the face first, tapering them down to the thickness of the ears. Round the top of the head from the eye area down to the thickness of the ears. You do not need to blend all the parts; just get the sides and the top of the face sanded to the same angles. A flex drum sander works great to target interior parts. Blend the top of the forehead down into the nose. I marked lines for the bridge of the nose. You will taper the sides of the nose down toward the face later.



10

Define the mouth area. This is close enough for roughing in the upper half of the face, as you will sand many of these parts individually later. Sand the lower mouth area and taper the part under the nose down toward the chin. Watch for the pencil lines that indicate the thicknesses of the dewlap parts.

SHAPING THE NECK



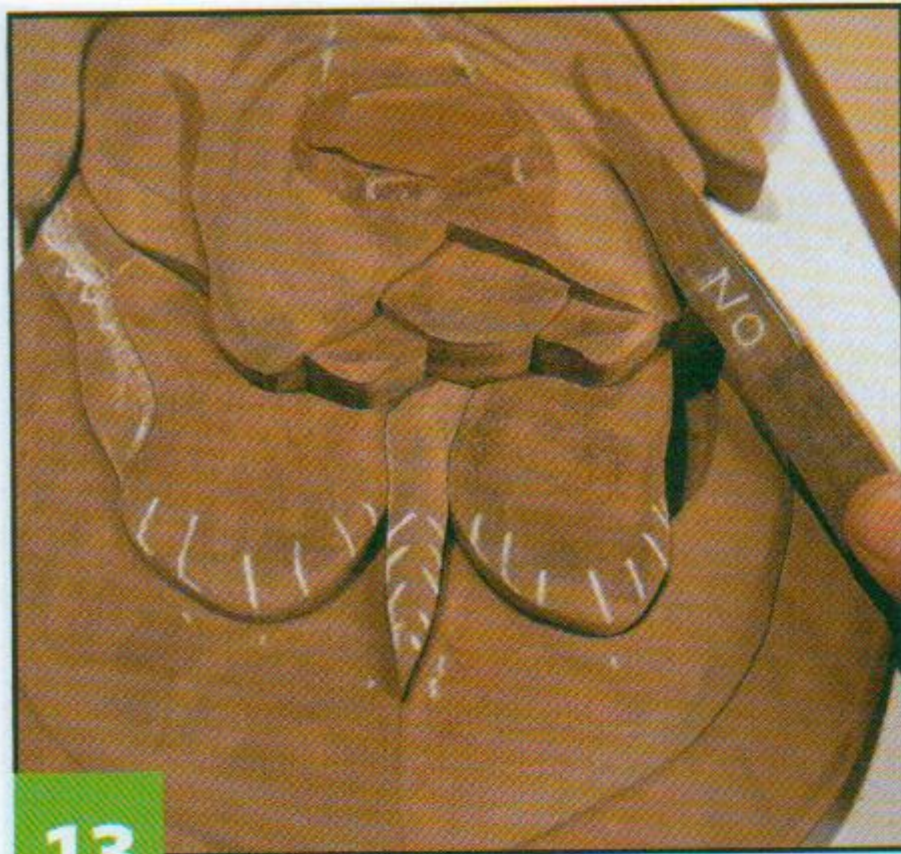
11

Rough in the neck. Carefully remove the first two sections (46 and 40) from the sanding shim, leaving the face and ears in place. Slide a flat tool under the part and loosen one edge; I prefer piece of spring steel with a tapered edge. Loosen it enough to lift the part up and away. Try not to pry it against the adjoining parts as the wood could chip. Once removed, sand $\frac{1}{8}$ " (3mm) off the top of parts 46 and 40. I marked a line along the side of each piece, so I'd sand off the same amount. Then sand a slight angle along the bottom edge.



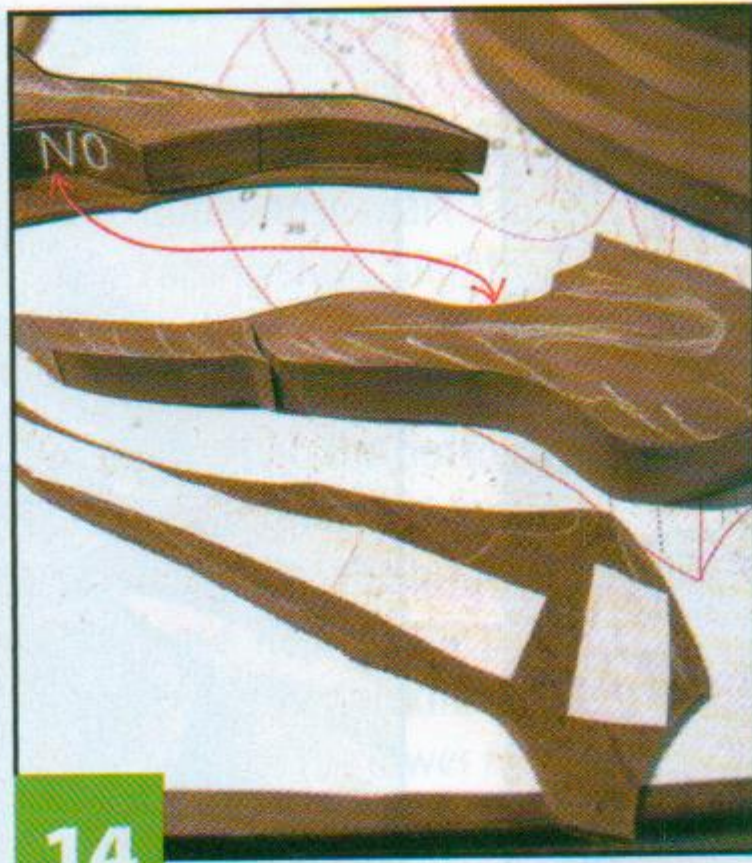
12

Shape the second row of neck. Mark the thickness along parts 45 and 39, and then sand them down using the same method as in Step 11. Aim for a more concave shape instead of rounding or sanding a flat angle and taper them down toward the dewlap. Sanding with the edge of the soft flex drum sander helps here. Put the parts back in place, and then mark their thicknesses along the edge of the adjoining parts.



13 Sand the third row of the neck.

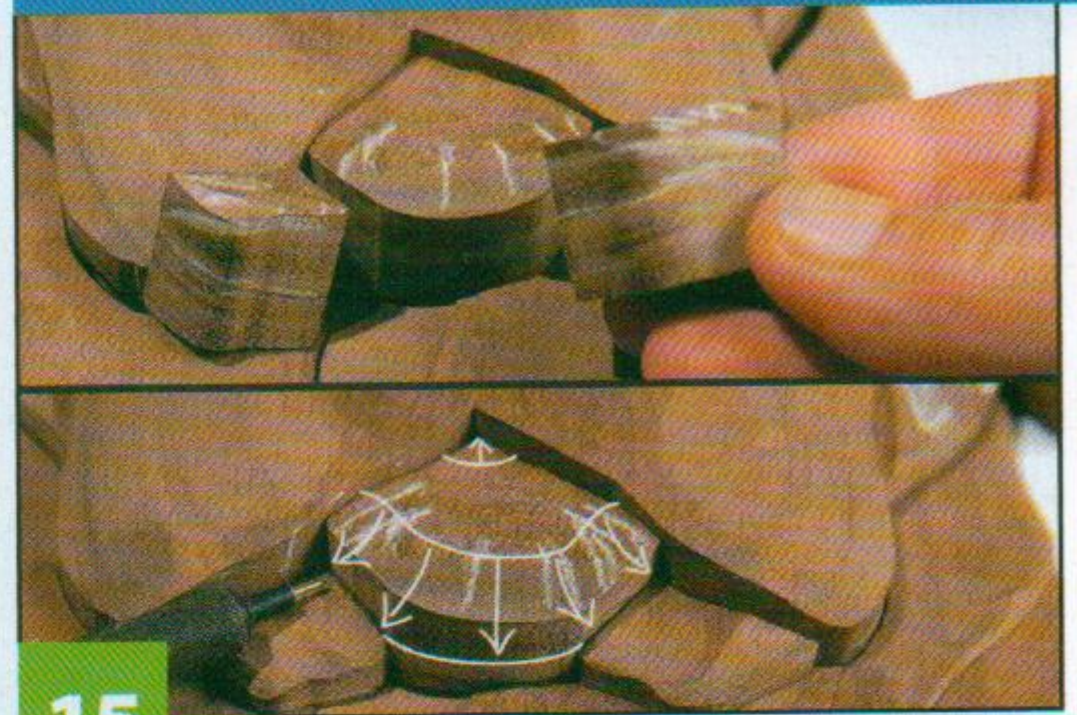
Sand parts 38 and 44 and taper them down toward the dewlap. Then round the lower edges so they look like a roll of skin. Part 38 contains the area that covers the raising shims. To avoid sanding blindly, I hold these parts so I can see the area marked 'NO.' Sand the outer edges of the dewlap down to match the thickness of the neck.



14 Shape the edge of the neck.

Tape parts 25 and 43 to a temporary shim, and then sand them together. Round the lower edge to the pencil line, and then sand a slight dip in the center of each piece. Roll the outside edges down toward the neck.

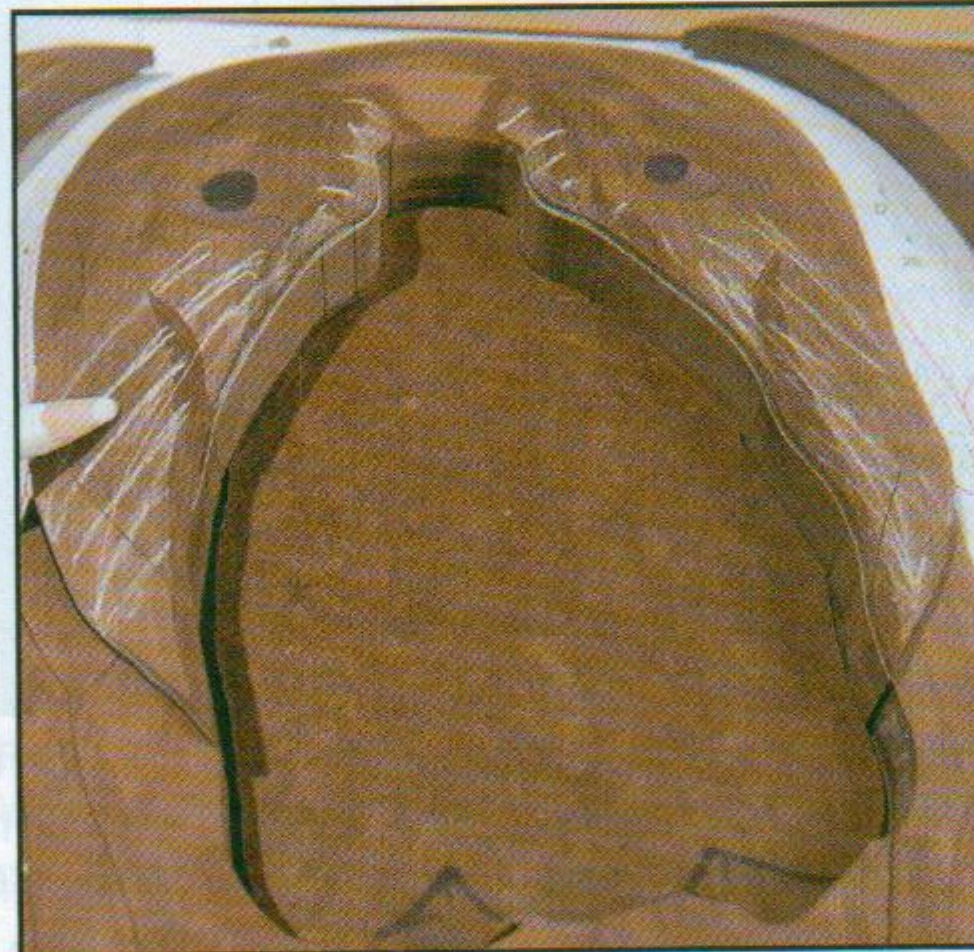
SHAPING DETAILING TO THE FACIAL FEATURES



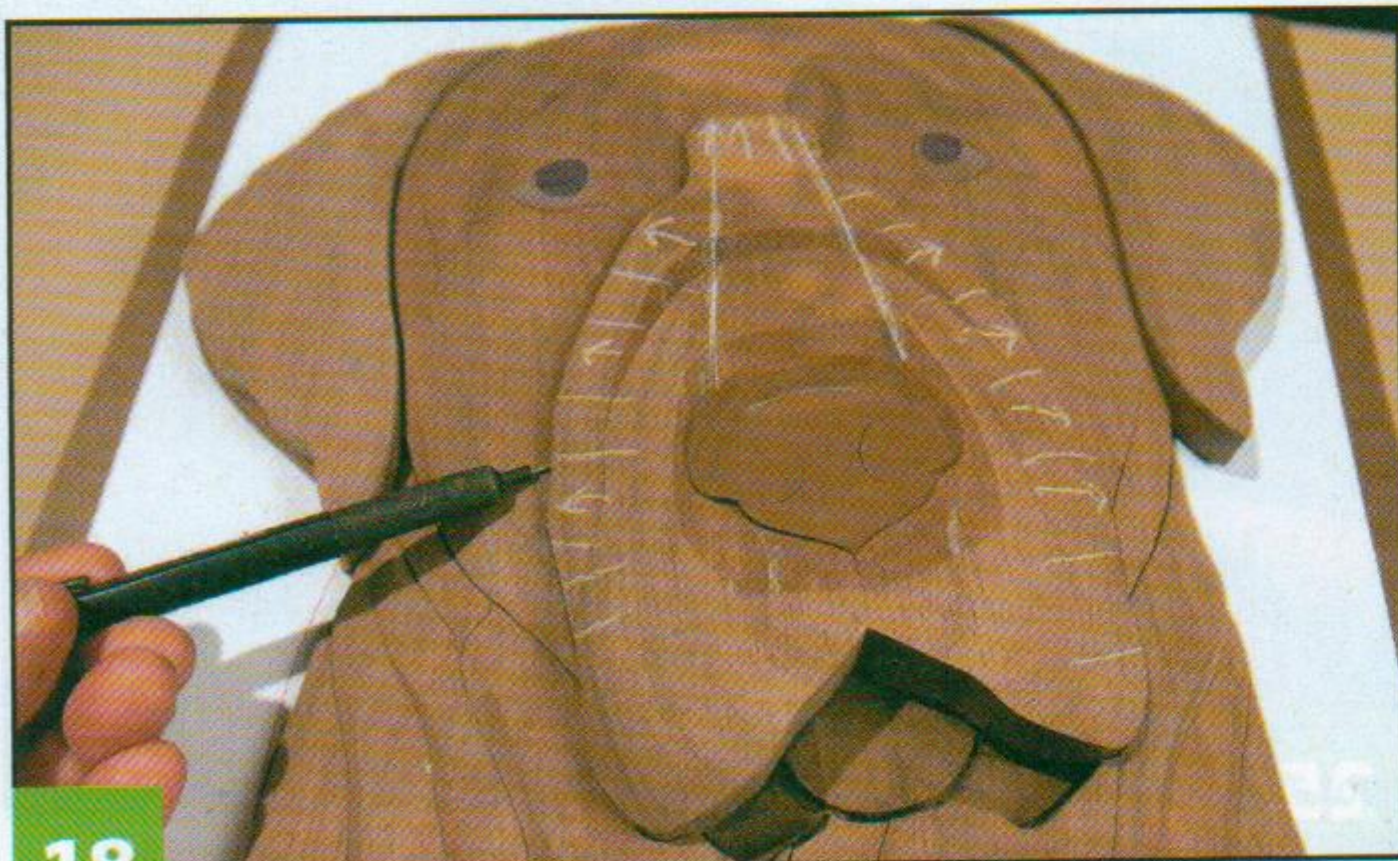
15 Shape the chin. Gently remove the lower mouth parts (26 and 28) from their shims. Sand to about $\frac{1}{4}$ " (6mm) off the surface, and then round their outer edges. These parts make up folds in the skin, so hollow out some areas and round others. Put the parts back in place and mark along the edge of the chin. Sand the outer edge of the chin down to the same thickness as the sides of the chin. It should be like a continuation of the same fold of skin.



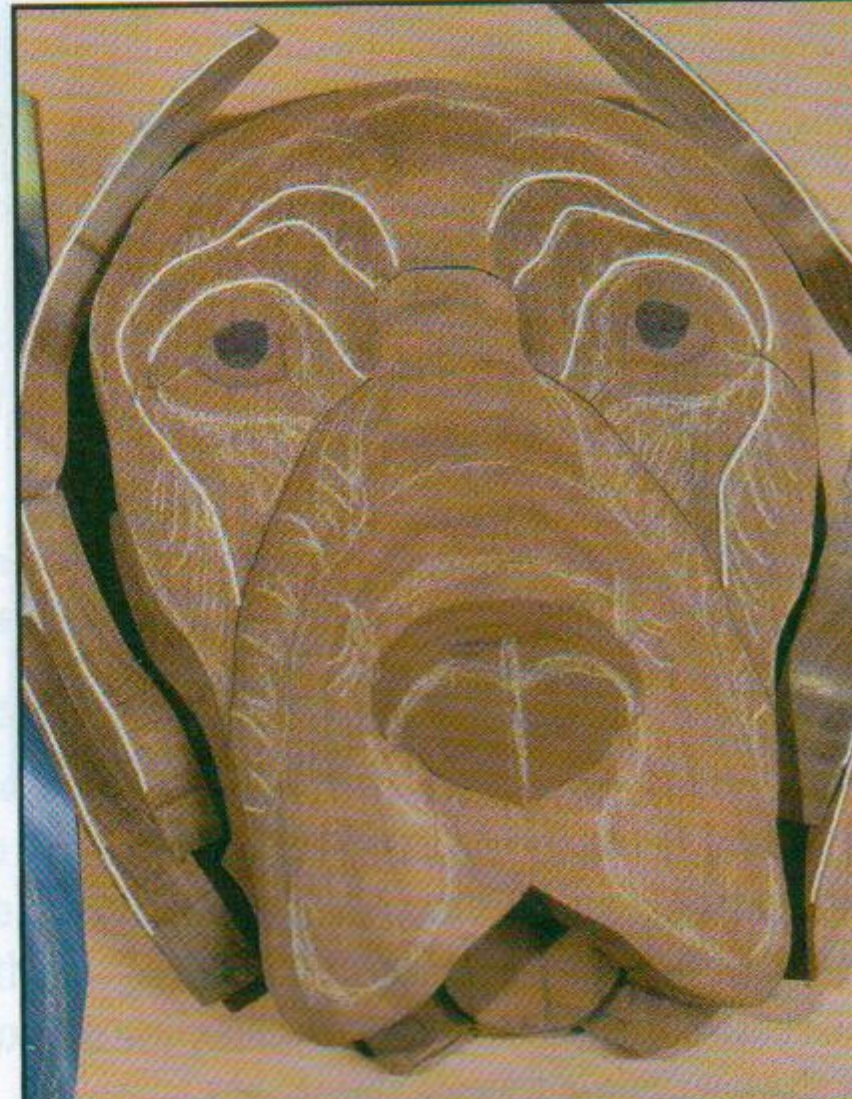
16 Remove the face from the shim. Carefully slide your flat tool between the first and second raising shims. Loosen the face shim with the parts intact. Lift the face up and away, rather than prying it free.



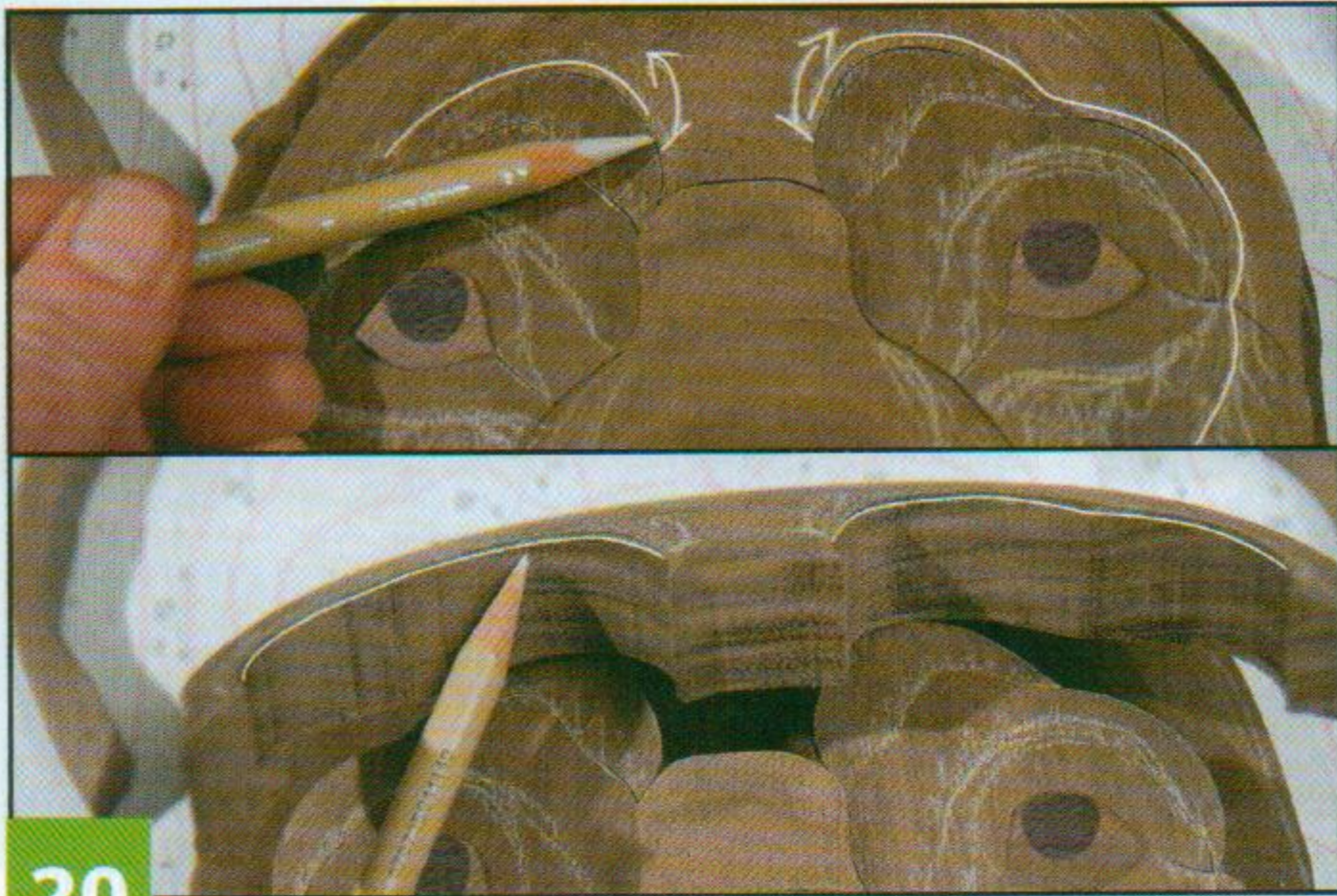
17 Lower the sides of the face. The thinner the face, the more dimension the nose will have. Mark a line along the sides of the inner face, about $\frac{1}{16}$ " (2mm) from the top surface. Sand down to the line, and then taper down to the outside of the face. Put the nose shim (with parts still attached) back in place, and then mark the thickness of the face along the sides of the nose and mouth area. Sand the sides of the nose down toward the face, staying above the lines. Then sand the bridge of the nose.



18 Accentuate the features. Remove a piece and mark along the edge $\frac{1}{16}$ " (2mm) from the top. Sand down to the line and replace the piece, repeating the process for the rest. Sanding off a bit from the top will make other areas stand proud.



19 Detach the outer pieces from the sanding shim. Once removed, mark a line about $\frac{1}{16}$ " (2mm) down from the top along the inside edge of parts 24, 23, 4, 6, 36, and 37. Sand down to the line, starting with parts 24 and 37, and then blend the sanded area to the entire surface. Do the same for parts 23, 4, 6, and 36.



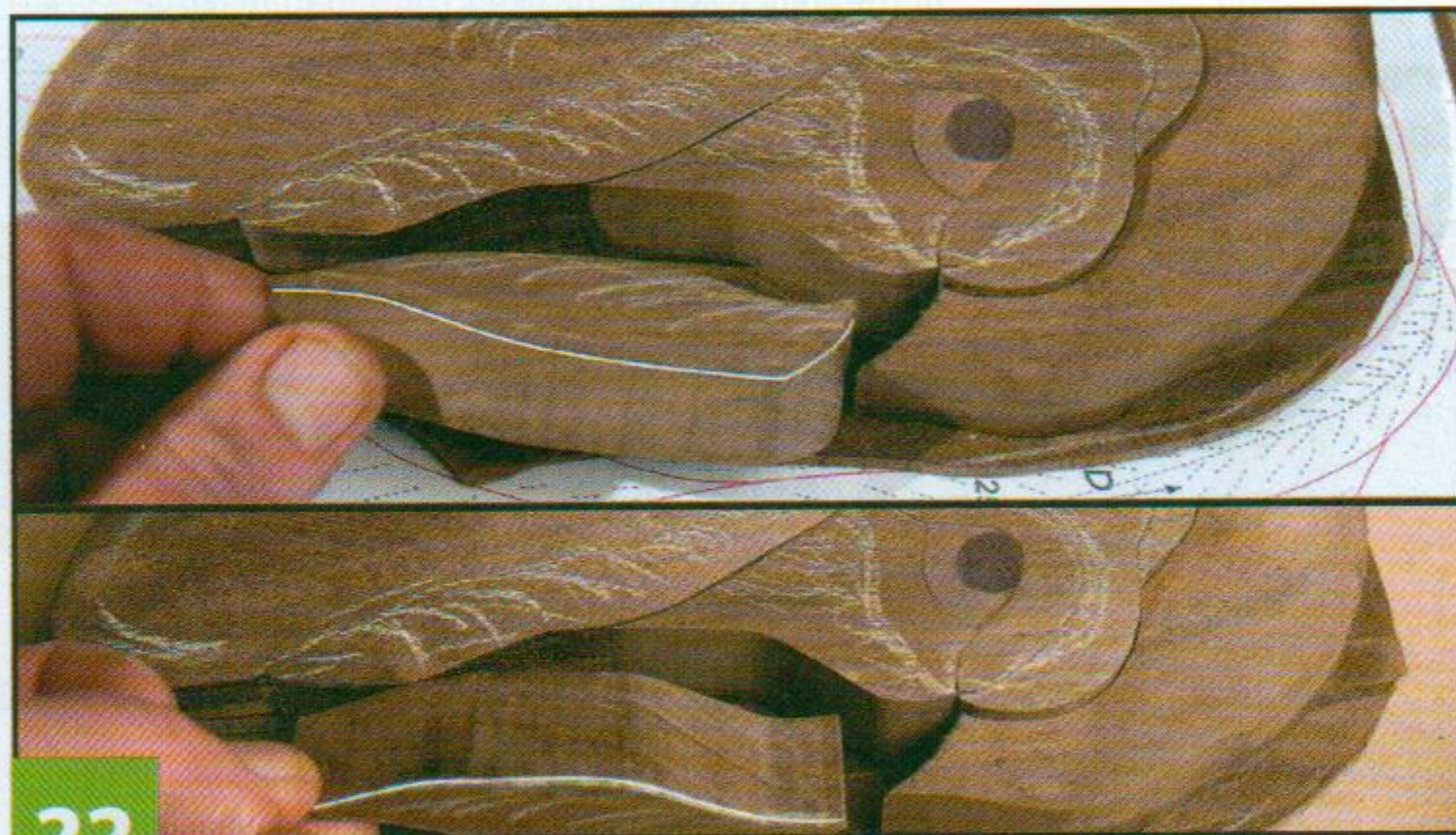
20

Define the top of the bridge of the nose. Mark the edges to sand, and then carefully remove the part from the shim. Then mark along the part's inside edge about $\frac{1}{16}$ " (2mm) down from the top. Sand down to the line and then blend it into the surface.



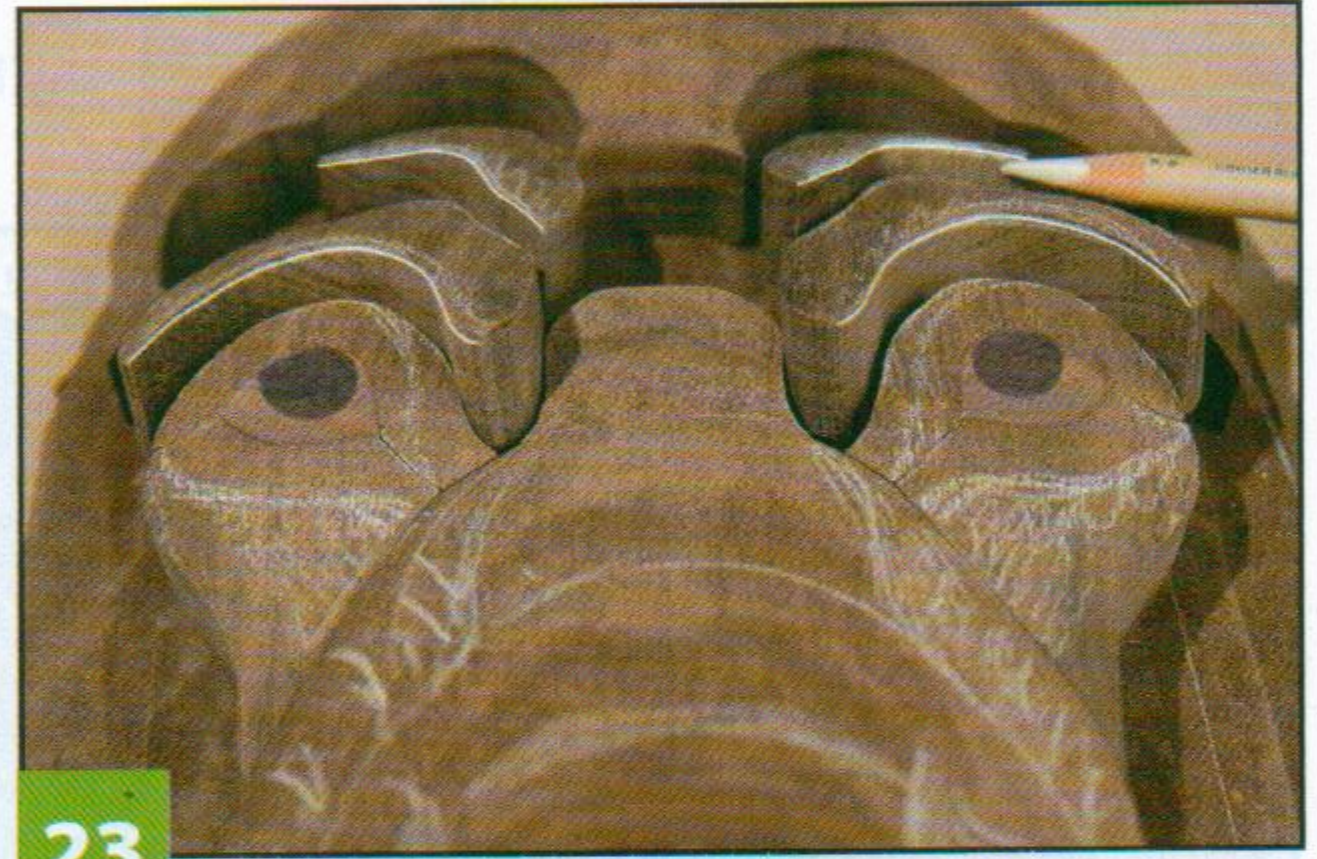
21

Define the brow. Replace the part and mark where it joins the eye area. Expose more of the brow by sanding more off the sides.



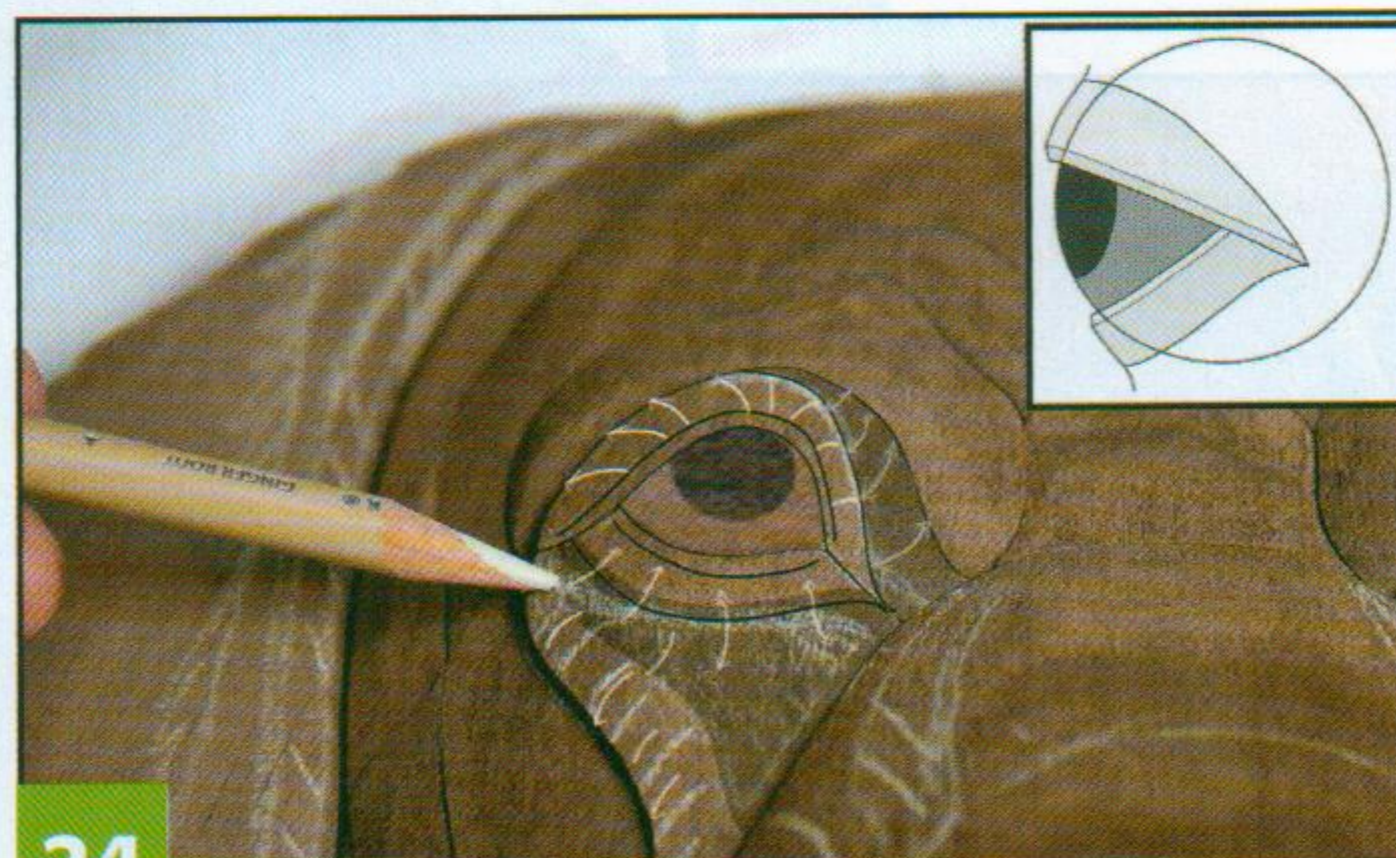
22

Blend the sides of the face. Sand parts 22 and 35 down to the pencil lines, and then blend the sanded area to the entire surface. Mark a line along the inside edge, sand down to that line, and then blend it into the surface. The cheekbones are fairly prominent, so sand off a little more than $\frac{1}{16}$ " (2mm).



23

Refine the brow. Mark a line along the inner edge of parts 16, 17, 14, and 13. Sand down to the line and gradually blend. Mark parts 16 and 14 and sand their surfaces. Then mark the thickness along the edge of parts 17 and 13. Sand to the line and blend.



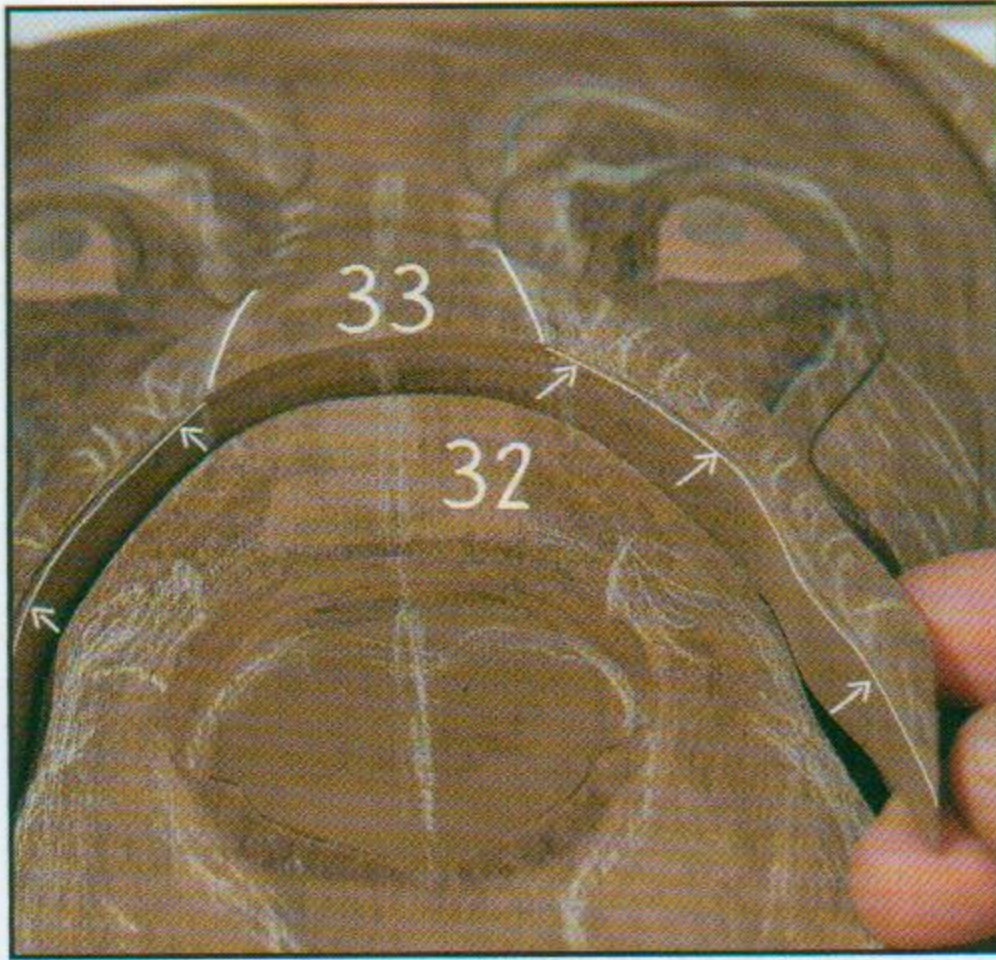
24

Add detail to the eyelids. I included an illustration of the side view of an eye. The lids cover the eyeball, so with this in mind, I dished out the area under the eye to form the lower lid. Use a 1" (25mm)-dia. inflatable sander (which I use for detailing) to slightly hollow the area below the eye. Then blend the area down toward the cheek.



25

Shape the upper eyelid. Sand the lower part of the eye before the upper eyelid. Mark the height difference along the edge of the upper lid. For the upper lid, use the edge of the sander to carve the along the inside edge, and then to round the top of the lid.



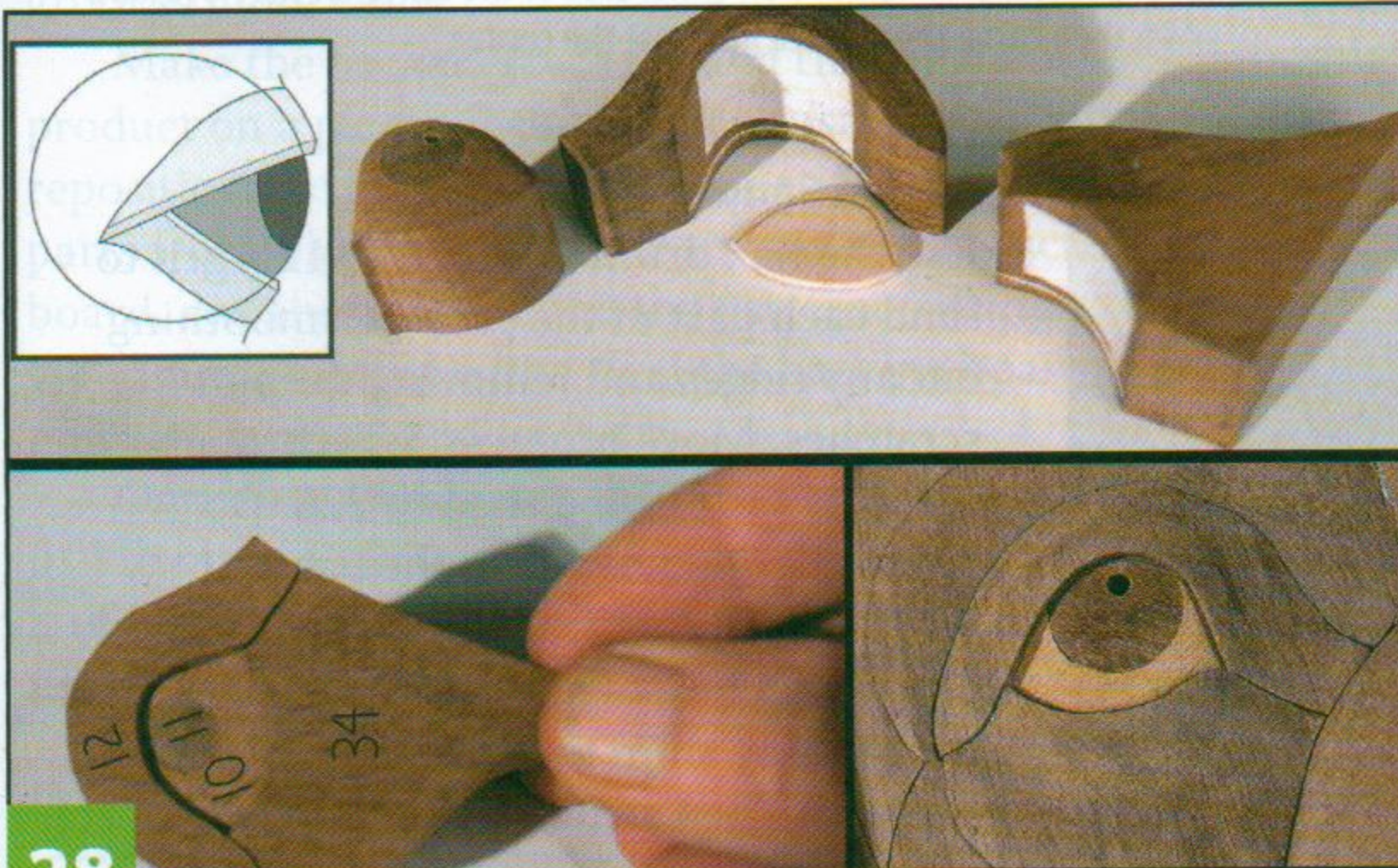
26

Thin the nose. Take the upper nose (part 33) off the raising shim. Slightly lower the sides of the nose, and mark a line about $\frac{1}{8}$ " (3mm) along the bottom edge that gradually meets the surface at the bridge of the nose. Replace the piece and mark the thickness along the sides of the lower nose, part 32.



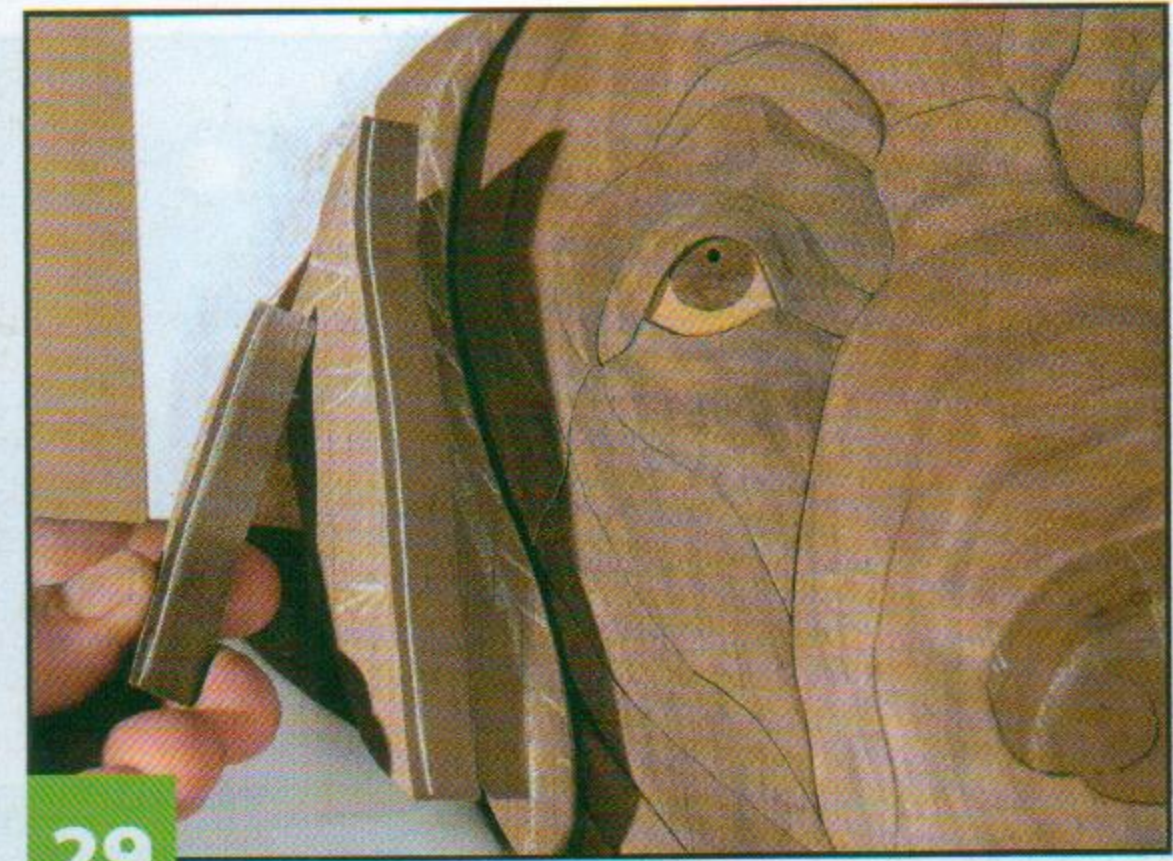
27

Check your reference material. Mark the surface of the wood, and then use the 1" (25mm)-dia. inflatable sander to carve shallow dips in the areas shown in the photo above. Sand the sides of the muzzle to make the nose stand out more.



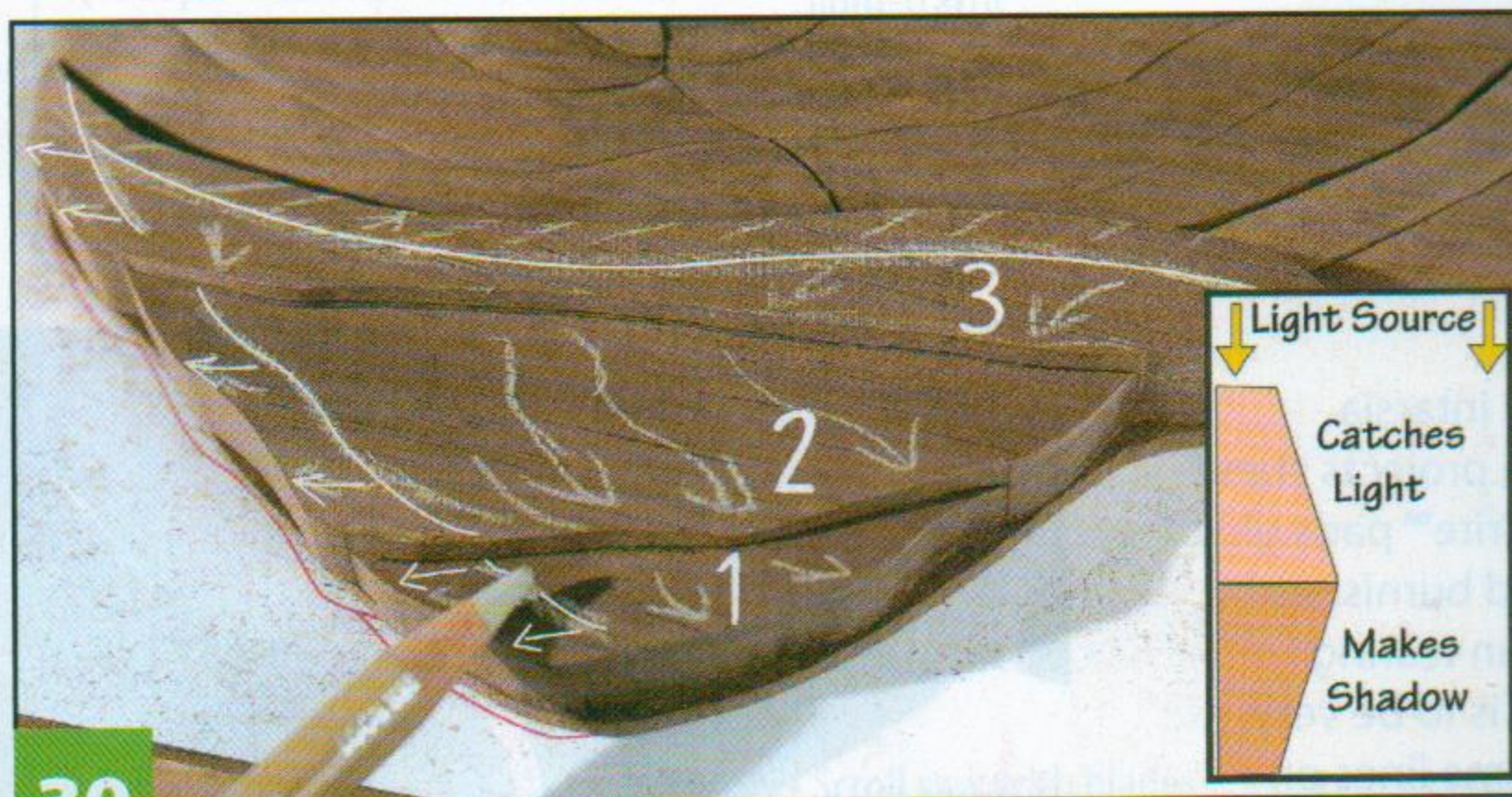
28

Sand the eyes. Cut a $\frac{1}{16}$ " (2mm)-thick shim that follows the same contour as the eye. Put double-sided tape on the edge of the upper and lower lids, put the shim under the eye, peel the paper off the tape, and then press the parts together. Sand the surface of the eye flush with the lids. When you remove the tape, the eye will drop down, making the eyelids $\frac{1}{16}$ " (2mm) higher than the eye.



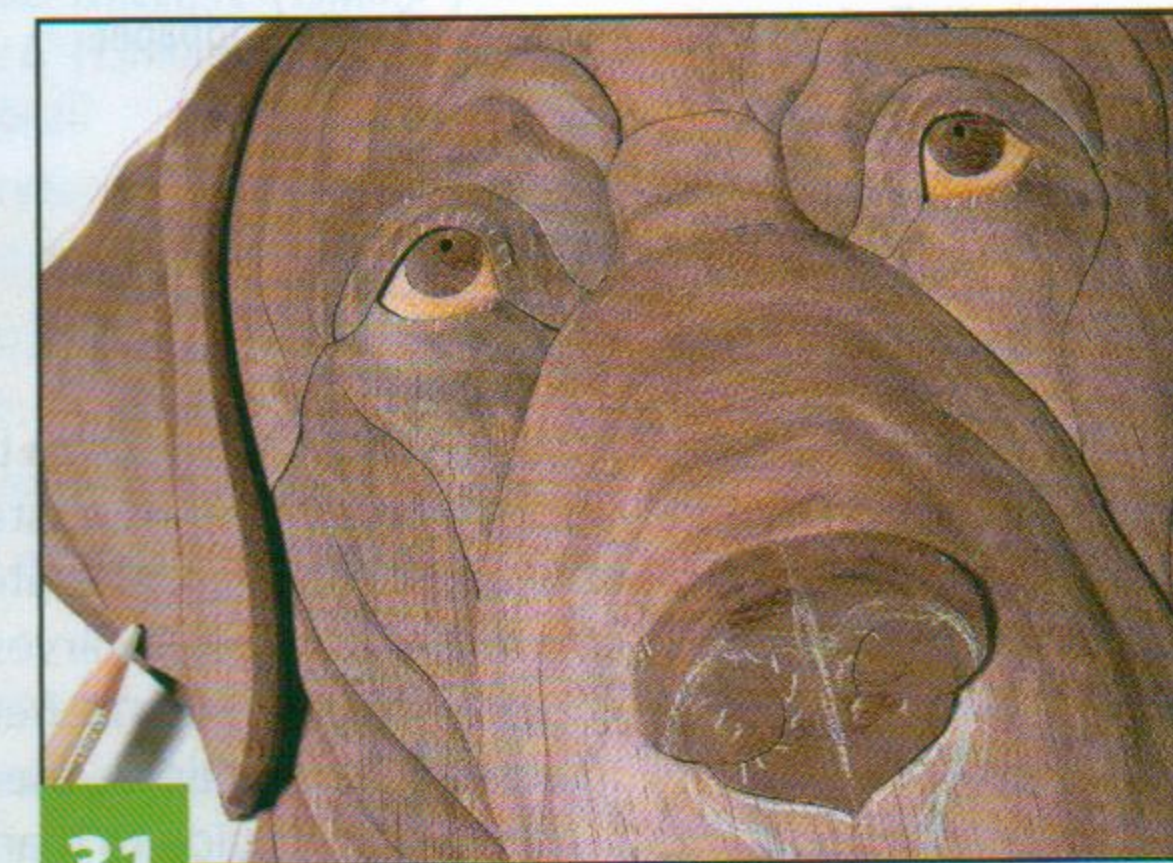
29

Thin the ears. Carefully remove the parts from their sanding shims. Mark a line along the inside edge, $\frac{1}{8}$ " (3mm) from the surface. Sand an angle from the surface down to the line. Do this on all three parts that make up each ear.



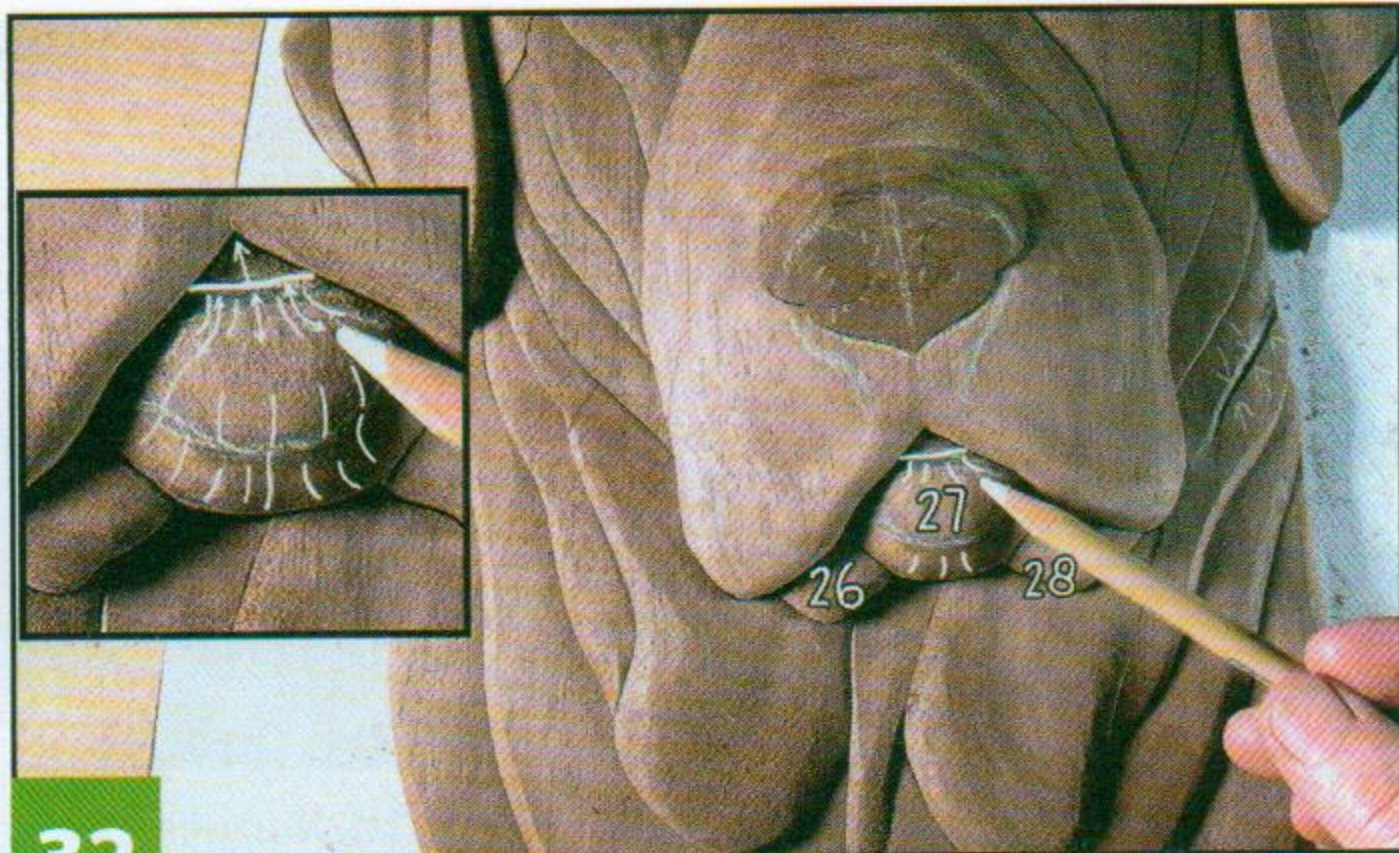
30

Contour the surface of the ears. Sand an angle along the top surface of part 1, and then round the edge. Sand part 2, rounding the edge down to the thickness of part 1. Then sand the angle along the surface. For part 3, sand a sharper angle down toward the face, and then down toward the middle of the ear. Sand the angle along the top surface. Remember that the ear is on top of the face; do not sand below the thickness of the face.



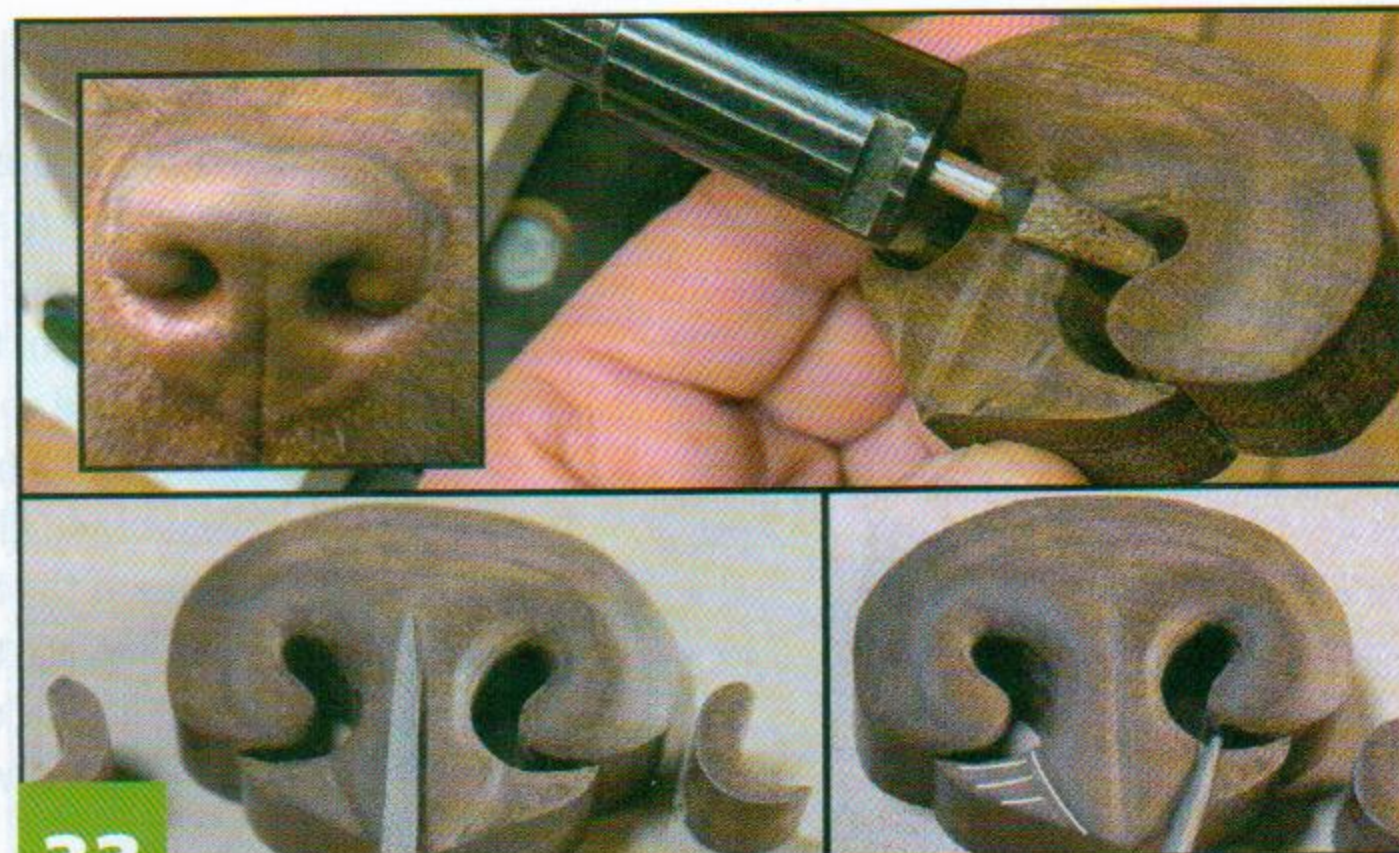
31

Refine the shape of the ears. Use an 80-grit sleeve on the flex drum sander to shape both ears to the same angle (they will mirror each other). Then move to a 120-grit sleeve to sand each part of the project. Add dips and rounded areas, sanding with the grain when possible.



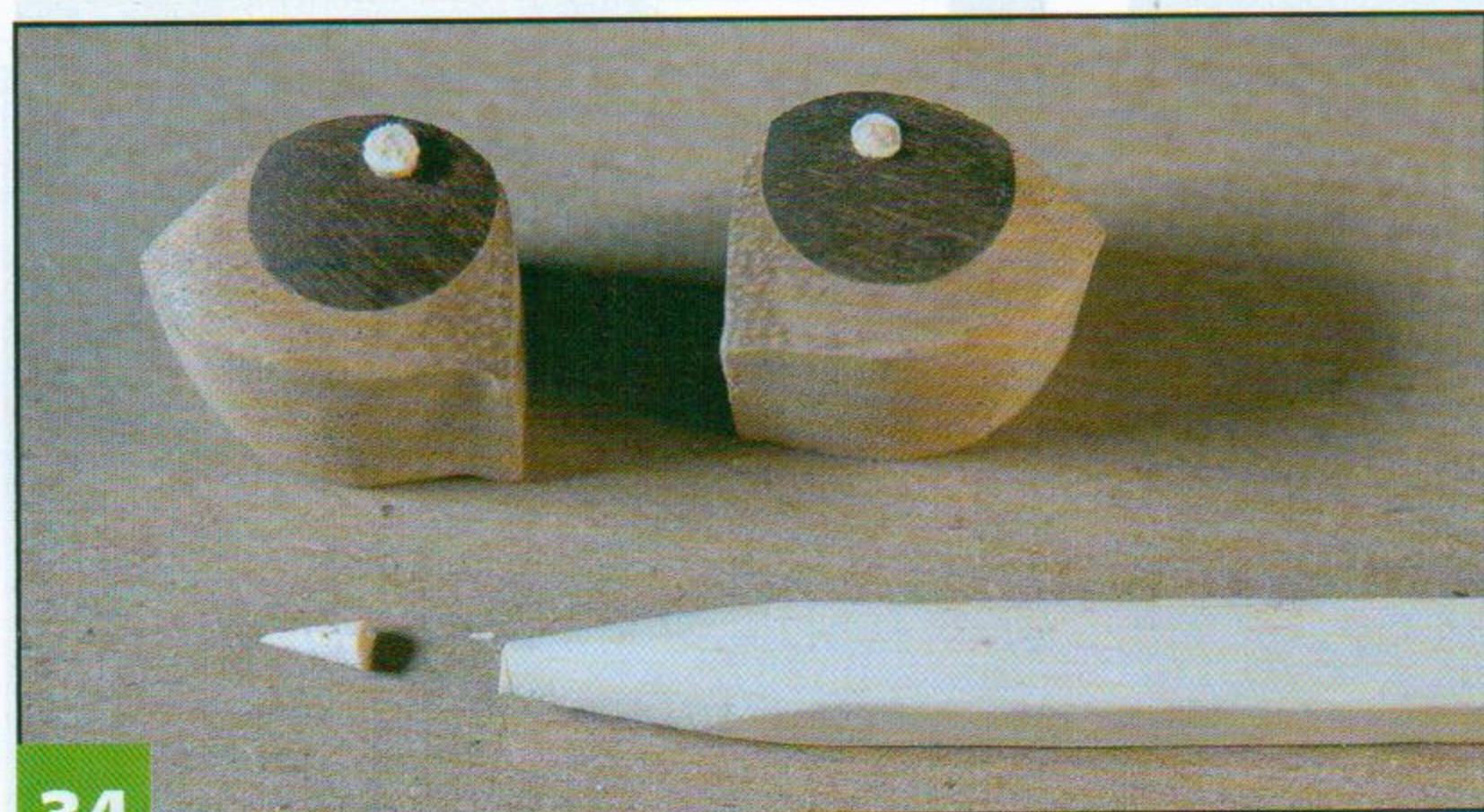
32

Add more detail to the chin. Sand a slight angle to make a lip. Then sand a slight dip under the lip. For a more realistic look, try to keep the chin parts (26, 27, and 28) blended. If desired, you can use double-sided tape to hold the chin parts together while sanding their surfaces.



33

Carve the nose. Use a small carving bit in a rotary tool to make the rounded area around the nostrils. I created the philtrum (the line coming up from the mouth) with a sanding file. Use the file to make a groove on either side of the center of the nose, and then carve the surface just past the center.



34

Add eye highlights. The highlights for the eyes really bring the piece to life. To make them, you can use any white wood, though I prefer holly because it stays nice and white. Cut a piece of white wood to the size of a pencil, and then sharpen both ends with a pencil sharpener. This makes a perfect cone shape that can be used for any size highlight. I use the X-ACTO® knife to carefully put a little dot of glue in the drilled hole. Then press the highlight in place and let the glue dry. Sand the highlight flush with the eye using 220-grit sandpaper.

A Final Sand

Use the flex drum sander and 120-grit to sand each part of the project, smoothing out any ridges and removing deep scratches. Move progressively through the grits to 180, and then to 220. Do not over-round between the parts or it will look unnatural. If you have any deep scratches, tape the piece back to the sanding shim to keep a consistent contour. Then switch to hand-sanding each piece with 220-grit sandpaper. Check for cross-grain scratches and any noticeable pencil marks. Use an air compressor or can of compressed air to blow off the dust. As you do this, check to make sure everything is smooth. Once done, add the fur texture using a Wonder Wheel (see sidebar below).

Adding Texture

You can use the Wonder Wheel to add texture to all intarsia projects. It's a great tool that will make your intarsia projects stand out. The Wonder Wheel is soft; it's like 100 Scotch-Brite™ pads glued together, but with a more abrasive grit. It carves and burnishes the wood, which leaves a smoother finish rather than tearing through the grain. It takes a little practice—the key is to be very light-handed. Use the pattern as a guide to mark some lines on the wood. I applied more pressure to the neck parts and gradually applied less pressure as I got close to the nose. I started with the rougher coat along the bottom edge to get some practice in, and as I gained confidence with the wheel, I moved on to the face pieces.

Note: You could achieve a similar result with a rotary tool and a small tapered cylinder or inverted cone bit.



Finishing and Assembling

Apply finish. I used a 1" (2.5cm) disposable foam brush to apply three coats of polyurethane gel, allowing the first coat to dry overnight. Apply the second and third coats six to eight hours apart.

The first coat should go on heavy; let the wood soak up what it needs in order to fill the grain. Coat the sides and surface of each part, being careful not to get too much on the backs. The second and third coats are applied only to exposed surfaces. On most projects, I use paper towels folded into quarters. Wipe the gel off with the paper towel; as it gets saturated, use a second towel to buff it completely dry. Since this project coat has so much texture, I used terry cloth to wipe the wood between coats, as I found it got into the grooves more easily.

Make the backer. Trace around the finished product on a piece of white paper dusted lightly with repositionable spray adhesive, just enough to keep the parts from sliding. Attach the tracing to the backing board, and then cut around the pattern, cutting about 1/16" (2mm) inside the line. Seal the backing board with polyurethane gel and let it dry.

Once dry, reassemble the project on the backer. I like to place a white sheet of paper under the project; it makes it easier to see if any part of the backer is exposed before gluing.

Glue the lower neck pieces (parts 46 and 40) and the outer edges of the ears (parts 1 and 9) to the backer. Anchoring these pieces will make it easier to keep the rest together while gluing the project in place, so let the glue set up before moving on. I like having time to adjust the placement of the parts, so I use tacky glue, such as Aleene's®. It is very flexible and sets up in 10 to 15 minutes. Keep in mind that a little glue goes a long way. Use just a few dots across the back of each part.

Glue all the pieces that are not raised, and then glue down all the pieces that are raised. Each shim will need to be glued down along with the parts that sit on top of it. I put the glue on the backer and then set the shim in place. Glue the eye area and the two little chin pieces (26 and 28) down. Then glue the next raising shim in place. Glue the chin (27) and the upper nose parts (15 and 33). Finish with the nose.

Once dry, find the balance point and mark it on the back. Pre-drill a hole, and then use a 1/2" (13mm) pan head screw to attach a D-ring hanger to the back. Display and enjoy!

Patterns for the **CHOCOLATE LAB** are in the pullout section.

Materials & Tools

Materials

- Medium wood, such as African walnut, 3/4" (1.9cm) thick: eyes, 2" x 3" (5.1cm x 7.6cm)
- Dark wood, such as Peruvian walnut, 3/4" (1.9cm) thick: face and body, 7" x 32" (17.8cm x 81.3cm); such as thermally treated poplar or sapele, 3/4" (1.9cm) thick: nose and pupils, 2" x 4" (5.1cm x 10.2cm)
- White wood, such as holly, 1/4" (6mm) thick: eye highlights, 8" (20.3cm) long
- Tempered hardboard, 1/8" (3mm) thick: raising shims, 5 1/2" x 10 1/2" (14cm x 26.7cm)
- Tempered hardboard, 1/8" (3mm) thick: sanding shims, 11" x 14" (27.9cm x 35.6cm)
- Tempered hardboard, 1/4" (6mm) thick: raising shims, 5" (12.7cm) square
- Tempered hardboard, 1/8" (3mm) thick: backer, 11" x 14" (27.9cm x 35.6cm)
- Spray adhesive, glue stick, or a Xyron® Create-a-Sticker™
- Pencil
- Glue: Aleene's Tacky Glue®
- Carpet tape: double-sided light-traffic
- Sandpaper: assorted grits up to 220
- Sanding sleeves: 80 to 220-grit
- Finish, such as Old Masters® polyurethane gel
- Paper towels
- Terry cloth
- Screw: 1/2" (13mm)
- Hanger: D-ring
- White paper

Tools

- Scroll saw with blades: #2/0 or #1, #3 or #5 reverse-tooth
- Drill with bits: 1/32" (1mm)-dia.

- Sanders: 2 3/4" (70mm) flex drum; 1" (25mm) and 1 3/4" (44mm)-dia. inflatable
- Flat tool, such as spring steel with a tapered edge
- Wonder Wheel, 1/2" (13mm) wide; 6" (15mm)-dia. (optional)
- Rotary tool with bits: small
- Pencil sharpener
- Knife: X-ACTO®
- Brush: 1" (25mm) foam
- Air compressor
- Steel wool: 4/0 (optional)
- File
- Sanding file
- Square (optional)

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



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 intarsia.com. Judy's numerous intarsia books are available at foxchapelpublishing.com.

Spiral Fretwork Clock

Scroll a one-of-a-kind time keeper

By John A. Nelson
Cut by Rolf Beuttenmuller

Want to add an Art Deco flair to any room? Look no further than this fretwork clock. Spiraling details give it the look of an optical illusion, but don't worry—this piece isn't as challenging as it seems. All you need are two contrasting hardwoods, or two identical blanks dyed differently, to create an elegant (and practical) showstopper with relatively few cuts.

Prepping and Cutting

Purchase the clock insert, and confirm the size of the hole before drilling and cutting the wood blanks. Sand the front and back of the three blanks with an orbital sander, moving progressively through the grits to 320. Remove the dust with a tack cloth. Then stack the Layer 1 and 2 blanks and secure the edges with blue painter's tape; I pin-nailed all four corners for extra reinforcement. Apply removable shelf paper to the top of the stack, and then attach the pattern to the shelf paper with repositionable spray adhesive, eliminating any air bubbles. Drill all blade-entry holes and sand the back flat. You can drill the hole for the clock insert or cut it on a scroll saw; I drilled mine with a Forstner bit. Then apply the backer pattern to the maple and drill the entry hole.

Cut the pieces on a scroll saw using a #2 blade, starting with the interior frets. Once you are finished cutting, remove the patterns and tape from the stack. I cut a hole in the backer so that I could easily push out the clock to change its batteries. Lightly go over the front, back, and edges of both blanks with 320-grit sandpaper.

Assembling and Finishing

Center Layer 1 and 2, and then glue and carefully clamp them together. Once dry, center and glue on the backer, pressing it down with a weighted object, such as a book; let dry. Spray the entire project with a clear finish. Insert the clock hardware, add a hanger to the back, and display.

Patterns for the **SPIRAL FRETWORK CLOCK** are in the pullout section.

ON THE WEB Bonus fretwork clock pattern available online.

scrollsawer.com

Materials & Tools

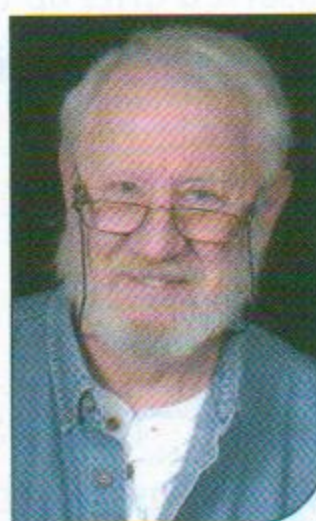
Materials

- Wood, such as walnut, $\frac{3}{8}$ " (1cm) thick: Layer 1, approx. $10\frac{1}{2}$ " (26.7cm) square
- Wood, such as spalted tamarind, $\frac{3}{8}$ " (1cm) thick: Layer 2, approx. $10\frac{1}{2}$ " (26.7cm) square
- Wood, such as hard maple, $\frac{1}{4}$ " (6mm) thick: backer, 3" (7.6cm)-dia.
- Self-adhesive shelf liner, such as Con-Tact®
- Tape: blue painter's tape
- Glue: wood
- Sandpaper: 320-grit
- Clock insert: $2\frac{7}{8}$ " (7.3cm)-dia.
- Finish, such as Minwax®: clear satin spray
- Hanger: brass
- Spray adhesive: repositionable
- Tack cloth

Tools

- Scroll saw with blades: #2 reverse-tooth
- Drill with bits: $\frac{1}{8}$ " (3mm)-dia., $2\frac{3}{8}$ " (6cm) Forstner
- Spring clamps
- Orbital sander

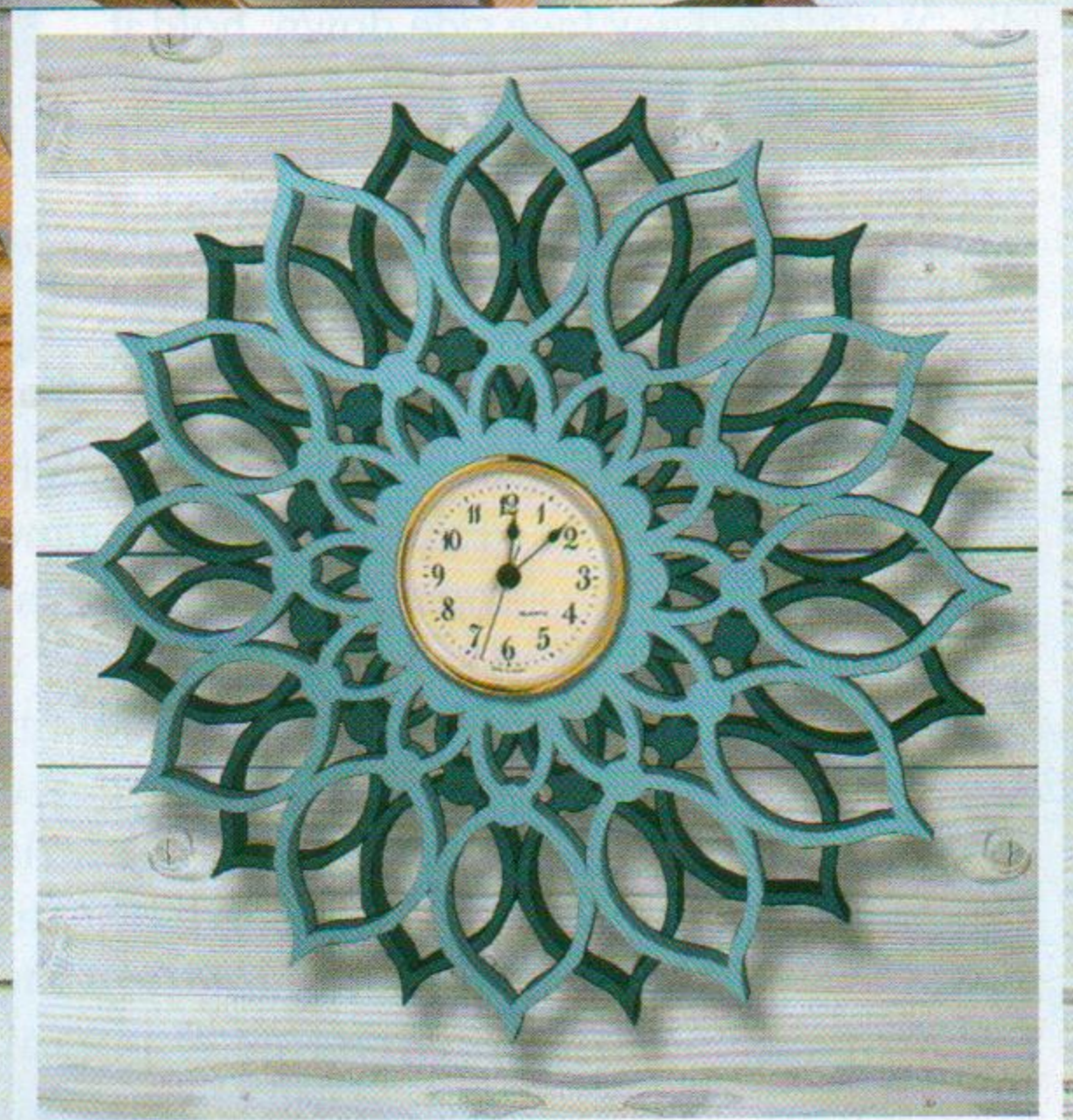
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.



John A. Nelson is the author of Fox Chapel's popular Scroll Saw Workbook, available at foxchapelpublishing.com.



Rolf Beuttenmuller started scrolling in 2004 after his wife, June, bought him a scroll saw for his birthday. He joined a local club and enjoys new and challenging projects. His motto is, "I don't know that I can't, therefore I can." Rolf recently retired from Brookhaven National Lab after 34 years of designing and building special devices for high energy and photon science research. He lives in Bellport, N.Y.



As an alternative to hardwoods, use paint to match your décor.

Flower Shelf-Sitter

These “fresh-cut” daisies are the perfect gift for the gardener in your life

By Robert Carpentier

My mother was a particular fan of daisies. As much as she loved them, taking care of them became too large a task at her age. So, one spring, I surprised her with wooden daisies, explaining that these required zero care. She absolutely loved them. Soon after, I became overwhelmed with requests from her neighbors and friends, too!

Getting Started

Photocopy the patterns and cover the blanks with blue painter's tape. Attach the patterns to the surface of the tape; I used a glue stick, but you could use repositionable spray adhesive, if preferred. Drill the holes for the base, and the $\frac{1}{4}$ " (6mm)-deep Forstner bit holes in the center of the flower.

Cutting and Shaping

Cut the pattern pieces on a scroll saw with a #3 or #5 blade. To make the daisy face forward, place the petal piece top side down. Make a mark near the base of one petal. This mark is the drilling point for the stem. Tilt the table of the drill press to 35°. With the daisy face side down, hold it carefully in place as shown in the photo. Drill a hole about $\frac{1}{4}$ " (6mm) deep at the mark. Then cut a $\frac{3}{16}$ " (5mm)-dia. dowel to the desired length and test the fit. If

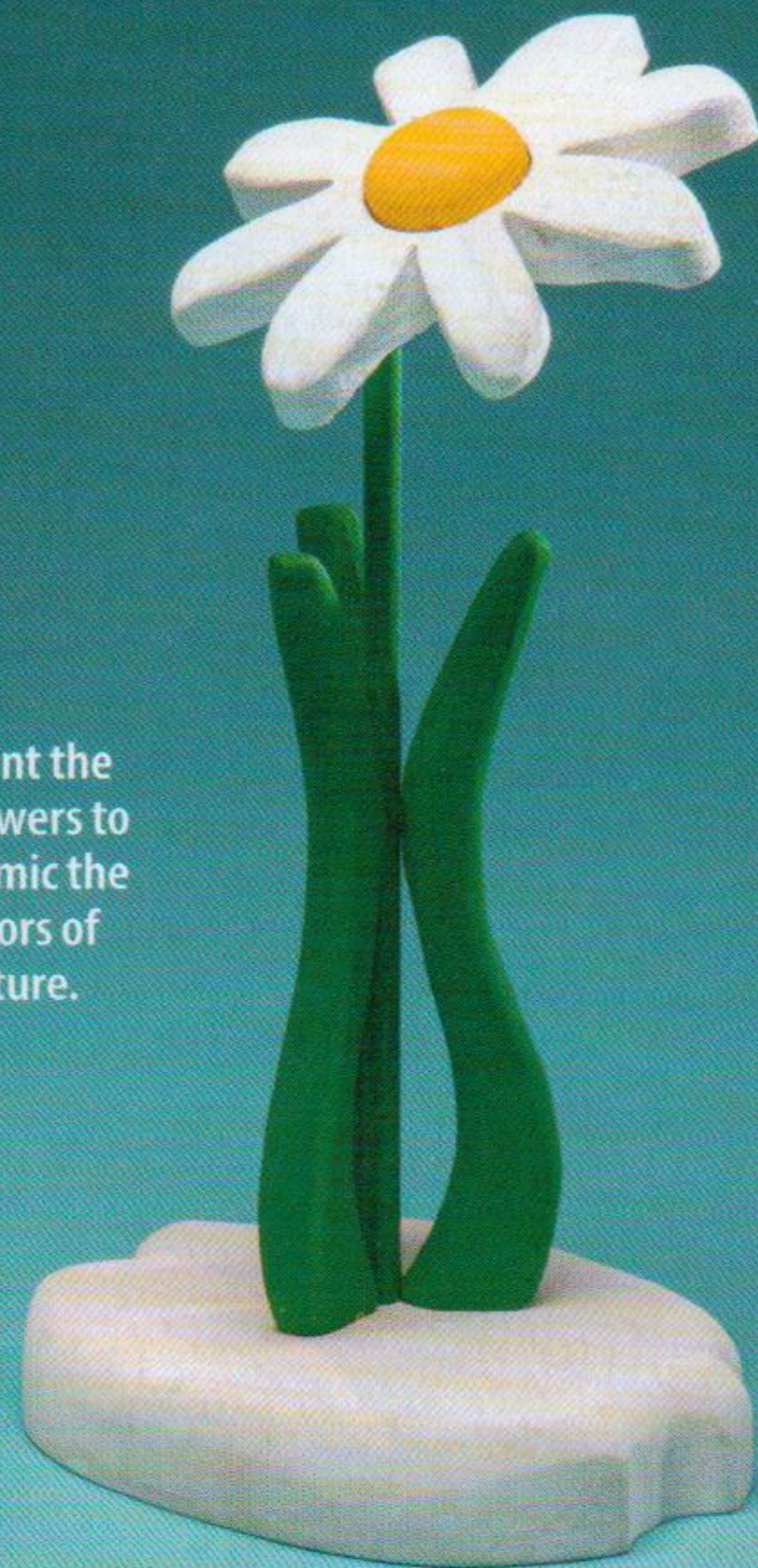


too snug, sand the dowel in small increments until a tight fit is achieved. To give the petals a more realistic look, I tapered the tips with a drum sander. Then I switched to a round inflatable sander to reduce the thickness at the center of the upper face of the flower head. Use a can of compressed air to inflate the ball sander, and then attach it to the drill press. Use the drum sander to round off the dowel tips. Then switch to a 240-grit sanding mop to give each piece a final sanding.

Shape the petal tips with a drum sander.



Paint the flowers to mimic the colors of nature.



Beveled Cuts

I made a top and bottom base for this display, both cut with a 20° bevel. Some scroll saws can cut a bevel by tilting the table, and others by tilting the arm. In both cases, you are to cut clockwise, which means the workpiece will be to the left of the blade. It is important to note that if one face of the wood for the base is more attractive than the other, the less attractive face should be upward as the pieces are cut, since they will be inverted when put into position.

Finishing

For a colorful look, I used Unicorn SPiT® concentrated gel stains. Paint the individual pieces, avoiding the areas that will be glued. If the Unicorn SPiT raises the grain, rub the surface with very fine sandpaper or synthetic steel wool before applying a final finish. Glue and assemble the project. Once dry, finish as desired.

For a more natural look, you can cut the piece from hardwoods and apply a clear finish.

Materials & Tools

Materials

- Wood, such as pine, 1/2" (1.3cm) thick: large daisy, 3 1/4" (8.2cm) square
- Wood, such as pine, 1/2" (1.3cm) thick: small daisy, 1 7/8" (4.7cm) square
- Wood, such as pine, 3/8" (10mm) thick: leaf, 1" x 4 1/4" (2.5cm x 10.8cm)
- Wood, such as pine, 3/4" (1.9cm) thick: single base, 3 1/2" x 4 1/4" (8.9cm x 10.8cm)
- Wood, such as pine, 1/2" (1.3cm) thick: tiered base, A, 2 1/4" x 3 1/2" (5.7cm x 8.9cm)
- Wood, such as pine, 1/2" (1.3cm) thick: tiered base, B, 3 1/2" x 5 3/4" (8.9cm x 14.6cm)
- Wooden dowel, 3/16" (5mm)-dia.: stem, cut to size
- Wooden dowel, 7/8" (22mm)-dia.: large flower center, 2" (5.1cm) long
- Wooden dowel, 1/2" (13mm)-dia.: small flower center, 2" (5.1cm) long
- Glue: cyanoacrylate (CA)
- Tape: blue painter's
- Adhesive: glue stick or repositionable spray
- Sandpaper: assorted grits
- Water-based paints or stains, such as Unicorn SPiT®: white, yellow, and green
- Spray finish, such as Varathane oil-based polyurethane
- Can of compressed air (for inflatable ball sander)

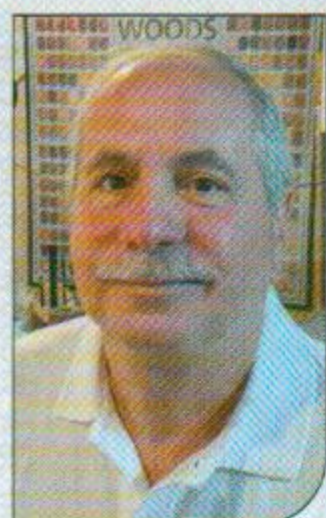
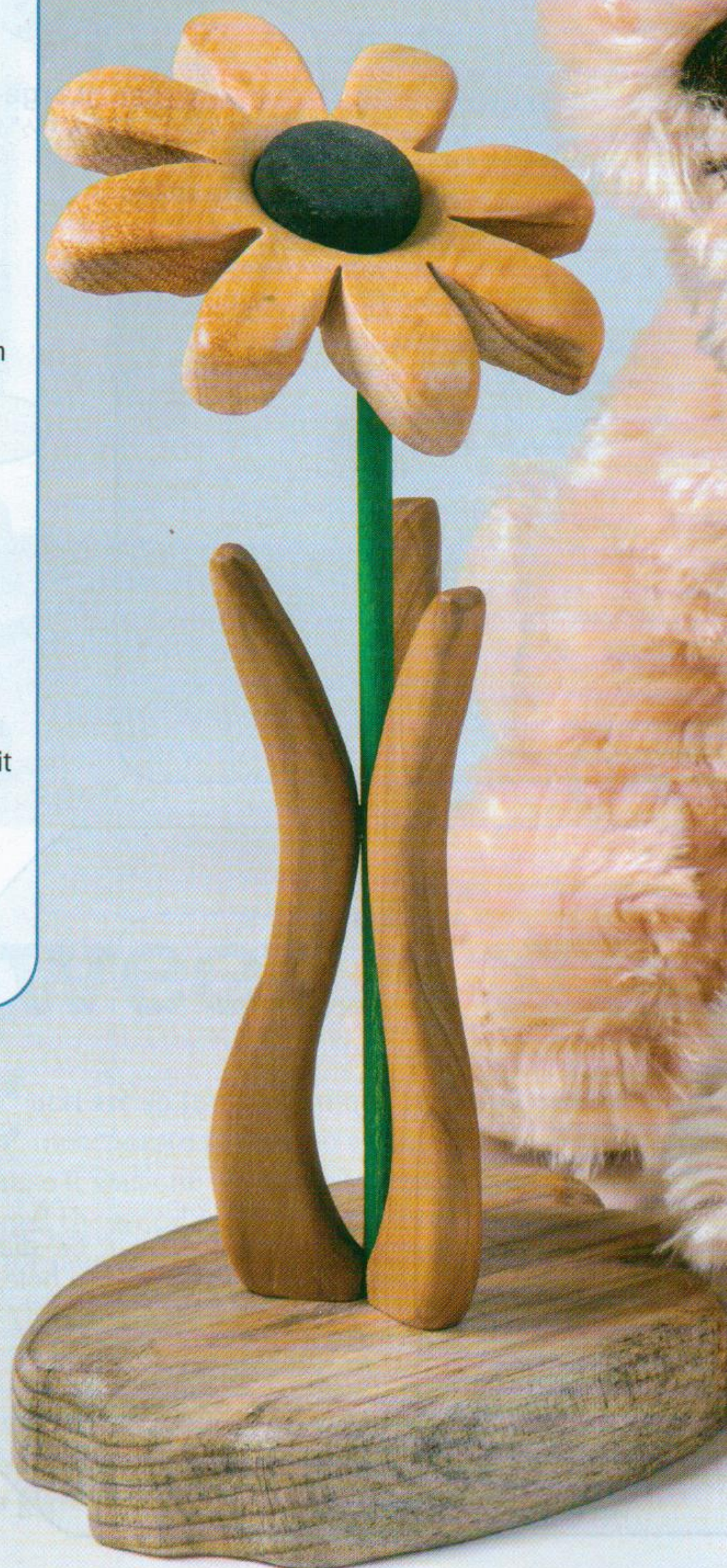
Tools

- Scroll saw with blades: #3 and #5
- Rotary tool
- Sanding mop with 240-grit
- Sanders: drum, round inflatable with 120-grit
- Drill press with bits: 3/16" (5mm)-dia., and Forstner 1/2", and 7/8" (1.3 and 2.2cm)
- Angle gauge

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



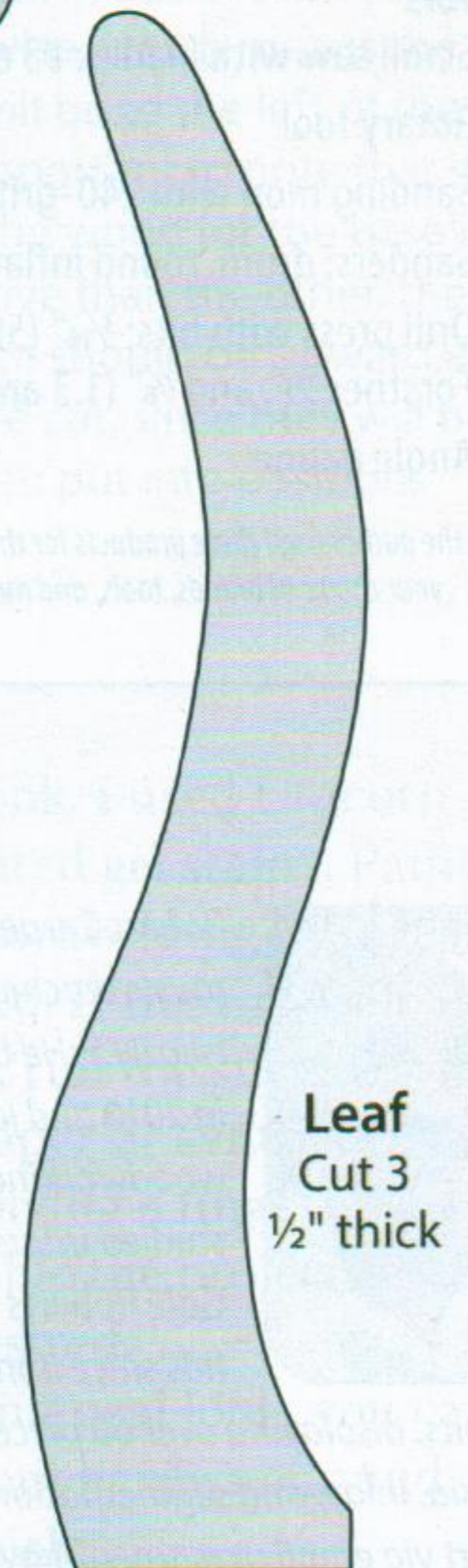
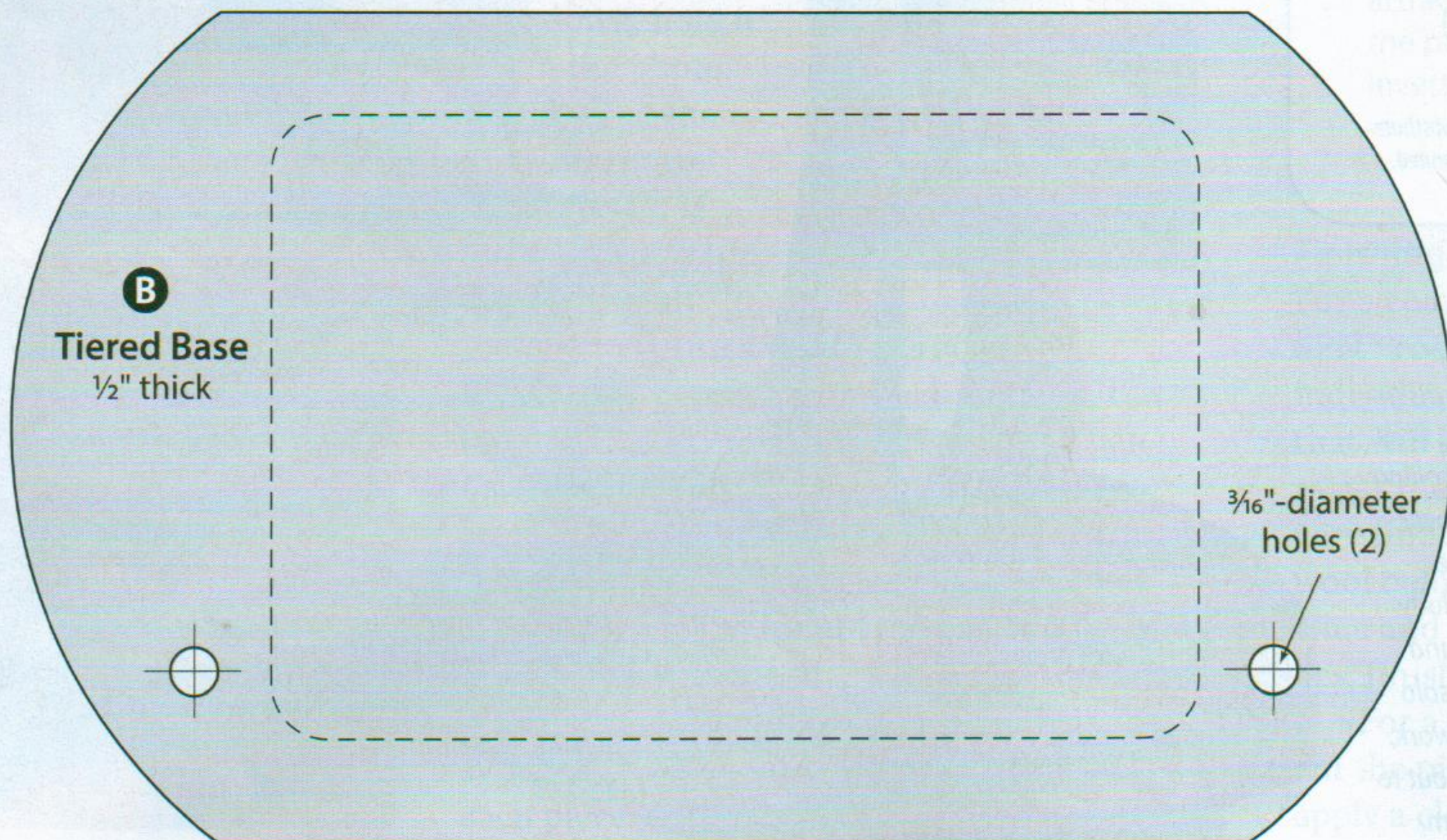
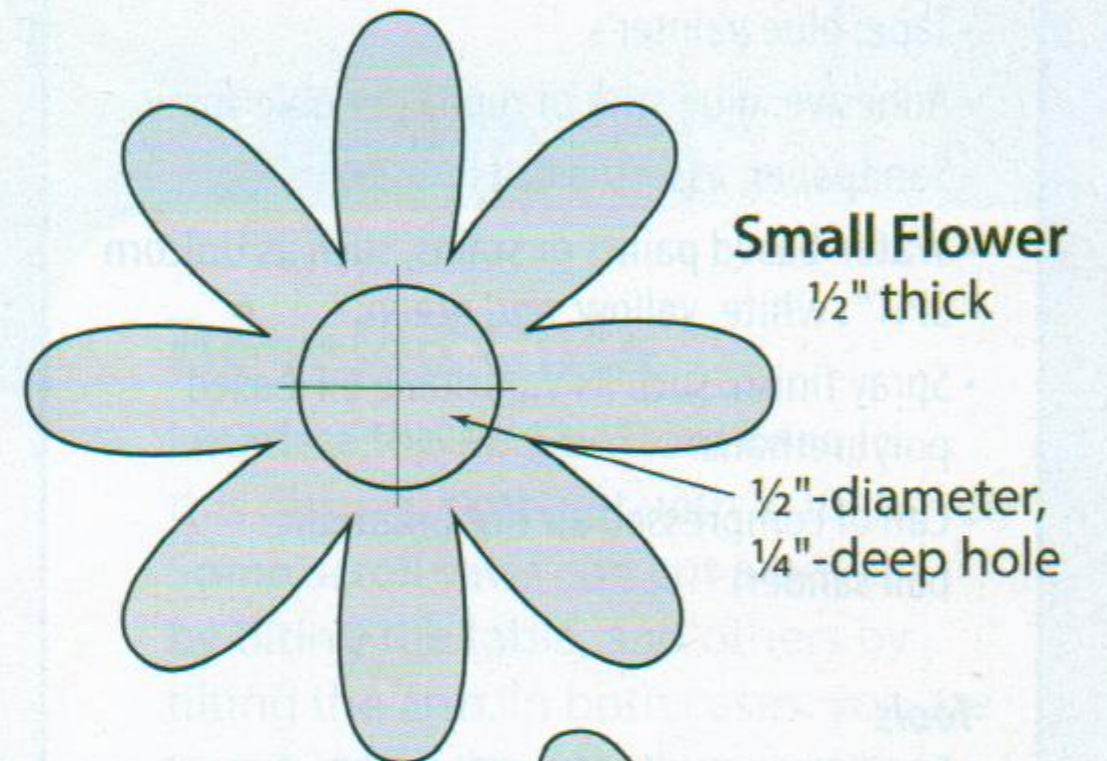
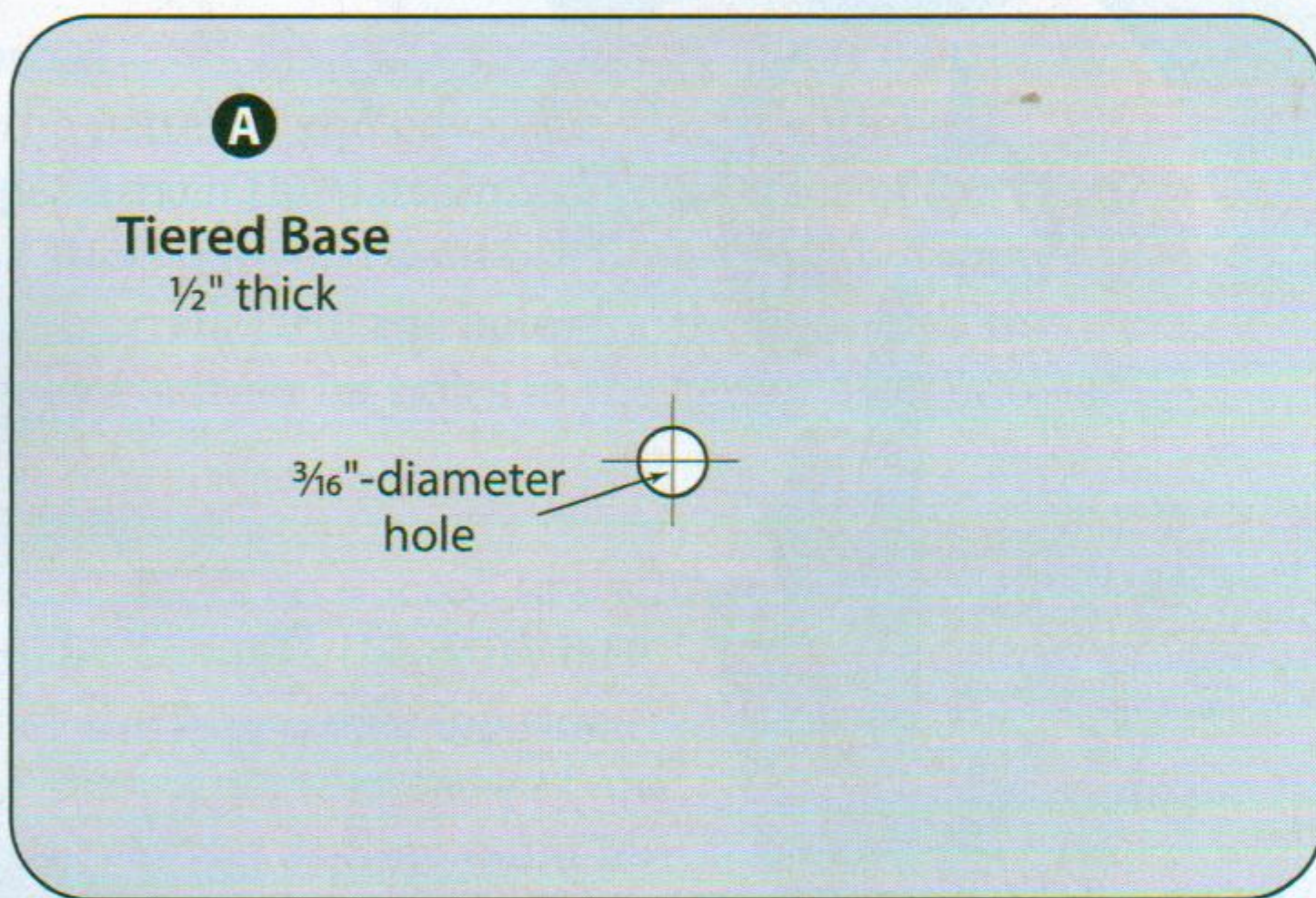
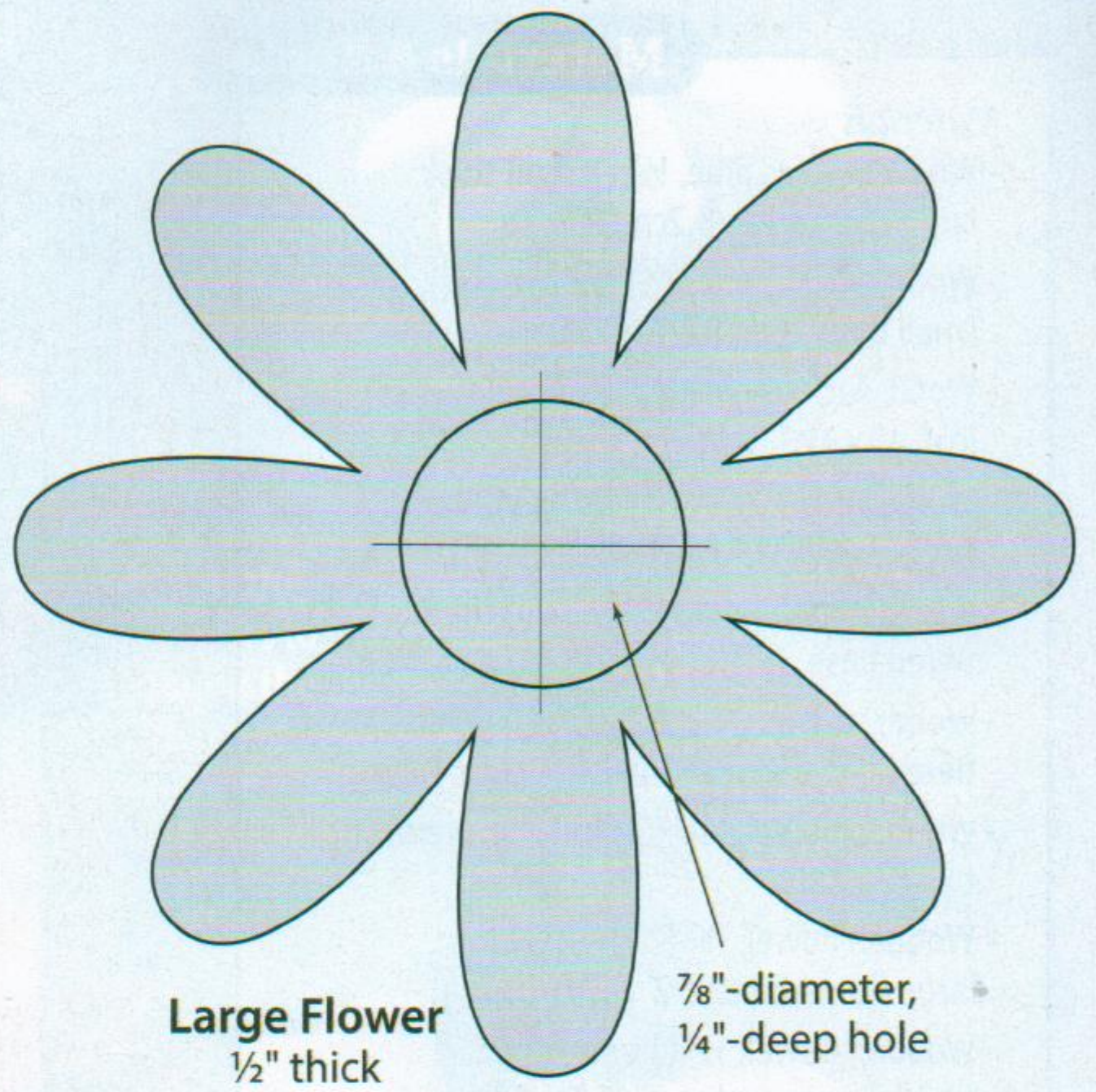
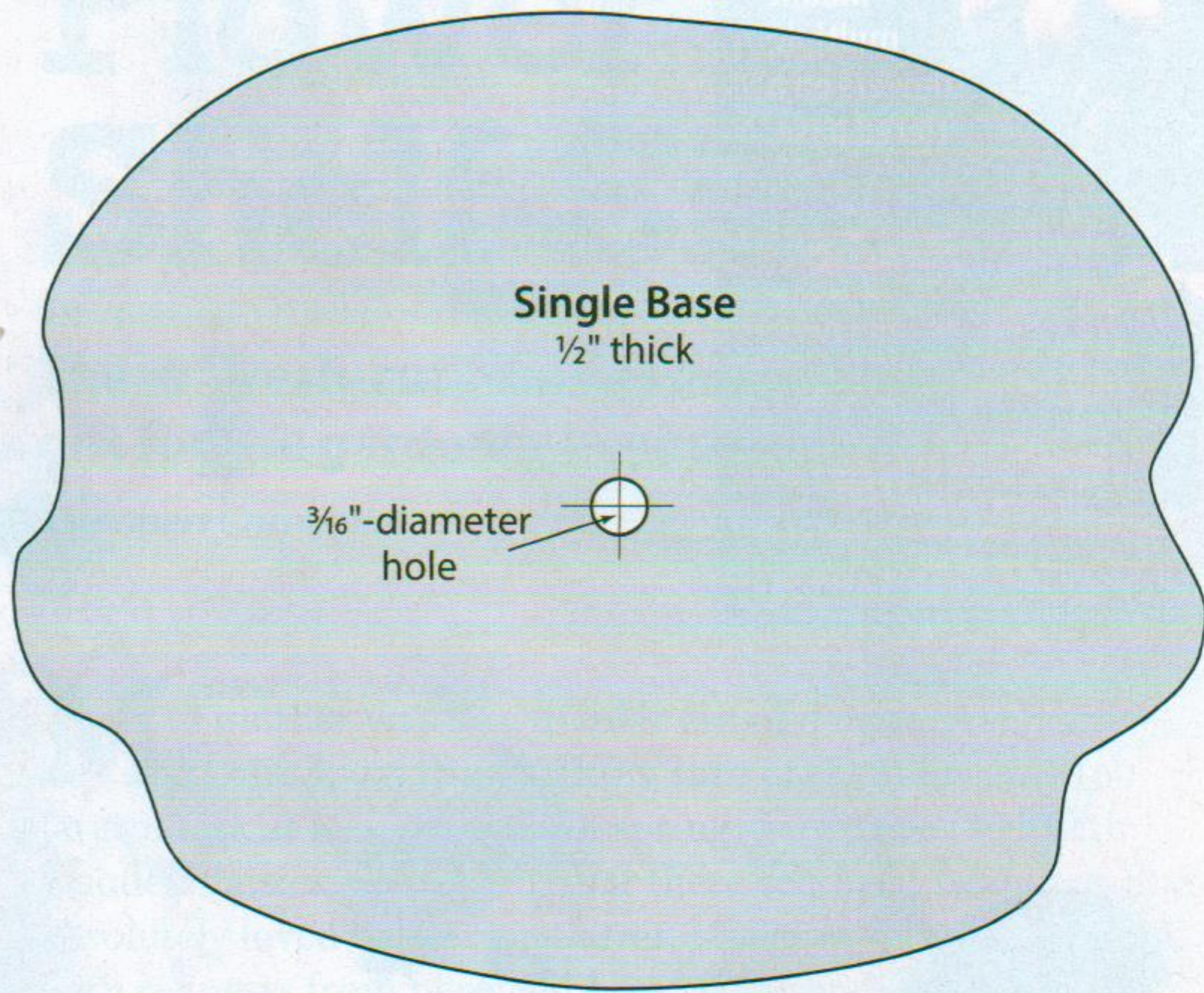
Mount multiple flowers on a tiered base.



Robert Carpentier is a retired music teacher living in West Islip, N.Y. He began scrolling in 2010 and joined a local woodworking club. He studied intarsia with Judy Gale Roberts in 2012 and has since done many solo

exhibits, displaying over 60 pieces in fretwork, intarsia, inlay, and segmentation. Reach out to Robert via email at rcarpen51@yahoo.com.

Flower Shelf-Sitter Patterns





Home Sweet Home Sign

**Hone your
segmentation
skills on a simple,
seasonal accent**

By Deborah Lawrence

Cacti are so fun and unique in their beauty, I just had to incorporate them into a piece. This is a special design because it was one of my first hand-drawn patterns after I joined the wood art world. I wanted to create something fun for people that did not live by the ocean (all of my work is coastal-themed), and would not necessarily use the beachy aesthetic in their décor. I have learned over the years that it does not matter where you live—people surround themselves with what brings them joy. If “what brings you joy” does not include cacti, I’ve included an alternate pattern for a glass of iced tea to pair with the lettering.

Making the Backer

Using a table saw and $\frac{3}{4}$ " (1.9cm)-thick pine, cut three 4" by 20" (10.2cm by 50.8cm) pieces. Glue the strips together with wood glue, and then clamp them together to create an overall piece that measures approximately 12" by 20" (30.5cm by 50.8cm). Sand with 220-grit sandpaper, wipe clean with a tack cloth, and then paint with white chalk paint. After it dries, use 220-grit sandpaper to slightly distress the surface and set aside.

If you do not have a table saw, simply cut a piece of plywood or MDF to size on the scroll saw and paint and sand it using the method previously described.

Cutting the Lettering and Graphics

Photocopy the patterns for the lettering and graphic. Cover your plywood with blue painter's tape, apply spray adhesive to the back of the patterns, and then attach them to the surface of the tape, pressing down carefully to remove air bubbles. Drill small pilot holes on the areas you will remove.

Cut the pieces on a scroll saw, starting with the inside cuts. I used a #5 reverse-tooth blade. Then make the outside cuts. Remove the patterns and sand all pieces, front and back, using a palm sander for the larger pieces and hand sanding the smaller pieces. Round over all sharp edges by hand to give the pieces some dimension; I spent a little extra time shaping the cactus flowers. Wipe off sawdust with a tack cloth and apply primer to any pieces you wish to paint (I set my lettering aside to stain). Once dry, paint the cactus pieces in coats; I used two to three. Stain the lettering using your desired color. Let dry overnight.

Dry-assemble the pieces on the backer. Once you are happy with the placement, secure the pieces in place with wood glue or cyanoacrylate (CA) glue, one by one.

Adding the Frame

Using the scroll saw or table saw, cut the $\frac{3}{4}$ " by 1" (1.9cm by 2.5cm) strips for your frame. Measure two strips at 21 $\frac{1}{2}$ " (54.6cm) (for the top and bottom frame components) and two strips at 12" (30.5cm) (for the left and right frame components). Sand with 220-grit sandpaper and apply a stain that matches the lettering. Attach the frame to the backer using wood glue and a brad nailer. Spray the entire construction with a clear finish of your choice, and add a hanger, if desired. *Note: If this sign will hang outdoors, choose an exterior varnish or similar.*

TIP

GLUE CONTROL

To reduce squeeze-out during assembly, blot the glue with a paper towel or rag before attaching each piece.

Materials & Tools

Materials

- Pine, $\frac{3}{4}$ " (1.9cm) thick: backer, 3 each 4" x 20" (10.2cm x 50.8cm)
- Plywood or MDF, $\frac{3}{4}$ " (1.9cm) thick: backer, 12" x 20" (30.5cm x 50.8cm) (optional, as alternative to pine)
- Baltic birch plywood, $\frac{1}{2}$ " (1.3cm) thick: lettering and graphic, approx. 12" x 20" (30.5cm x 50.8cm)
- Pine, $\frac{3}{4}$ " (1.9cm) thick: side frame pieces, 2 each 1" x 12" (2.5cm x 30.5cm); top and bottom frame pieces, 2 each 1" x 21 $\frac{1}{2}$ " (2.5cm x 54.6cm)
- Tape: blue painter's
- Spray adhesive
- Tack cloth
- Glue: wood, such as Titebond®; cyanoacrylate (CA)
- Chalk paint, such as Rust-Oleum®: linen white (for backer)
- Chalk paint, such as Waverly®: celery, moss; such as FolkArt®: salmon coral

- Primer, such as Rust-Oleum: 2X white
- Stain, such as Varathane®: briarsmoke
- Finish: clear (optional)
- Finishing nails, 18GA: 1 $\frac{1}{4}$ " (32mm) (for brad nailer)
- Hanger

Tools

- Table saw (optional)
- Scroll saw with blades: #5 reverse-tooth
- Drill with bit: small
- Palm sander with 220-grit sandpaper
- Brad nailer
- Clamps

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

Patterns for the **HOME SWEET HOME SIGN** are in the pullout section.



Deborah Lawrence attended graphic design school in her 20s after coming from a long line of artists. She often spent time at her dad's drafting table or, on occasion, hanging out at his graphic design studio in downtown Philadelphia. After 20 years in dentistry, she returned to graphic design and her work has evolved into creating coastal-inspired, handcrafted wood signs. Find more of Deborah's work on Instagram @coastalvintagedesign or sunshinesweetpeas.com.

CLASSIC Toy Car

Rev up your saw and make the car that ushered in the roaring twenties

By Brad Anderson

Making toys for children has always made me happy. I gravitate toward making designs inspired by iconic vehicles—and what's more iconic than the Model T? This project is small enough to be made from offcuts and can be enjoyed by all ages. Get creative and paint your finished piece or use contrasting hardwoods to showcase the car's different components.

Getting Started

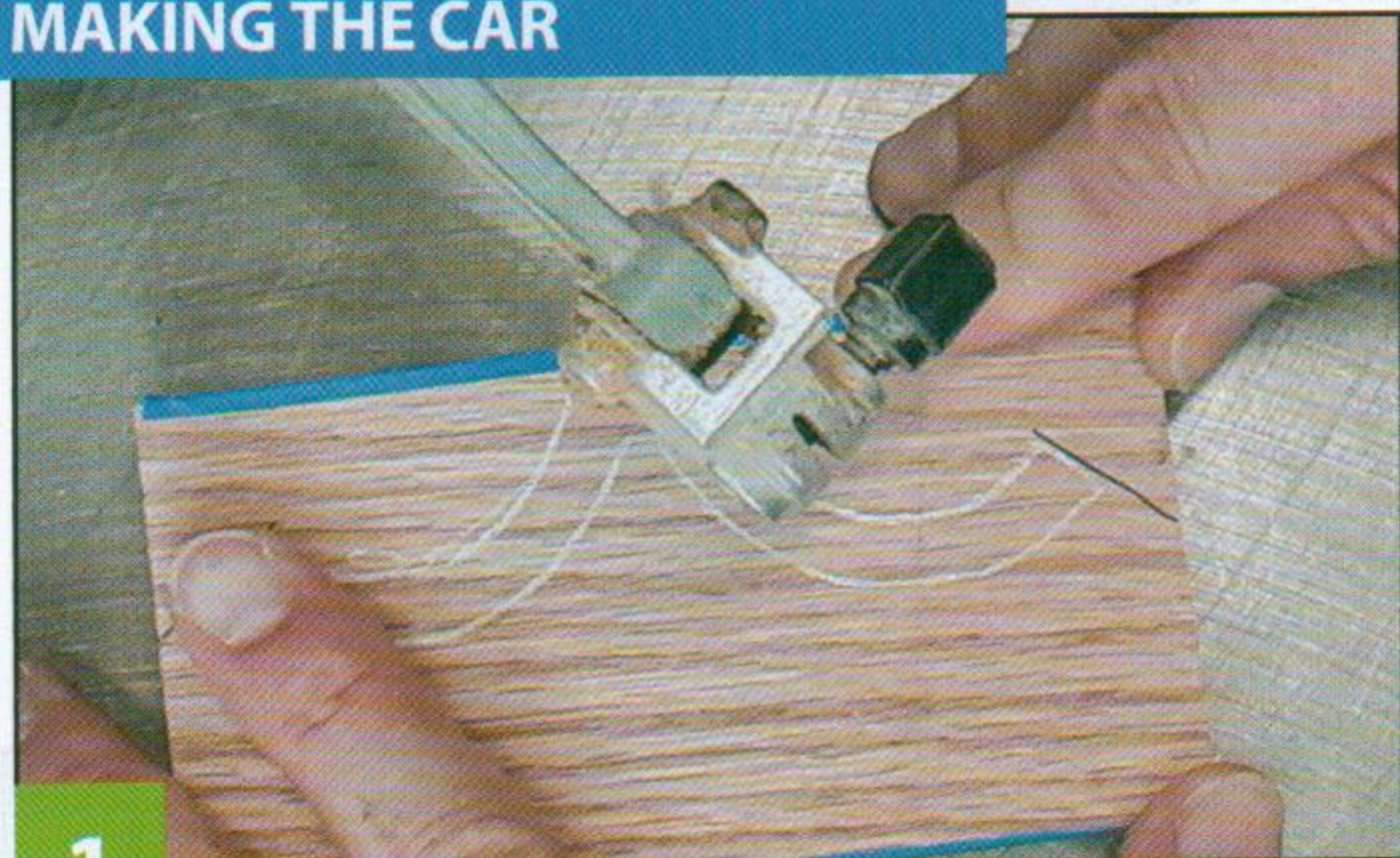
Choose your wood; I prefer domestic hardwoods, such as cherry and oak. You can use up pieces you have on hand of correct thicknesses, plane thicker blanks to size, or

purchase blanks in the necessary sizes.

Transfer the patterns to their respective blanks; I print them on card stock and trace the shapes directly on the wood, but you could also attach them with repositionable spray adhesive. Mark the locations for the holes on the top of the sides.

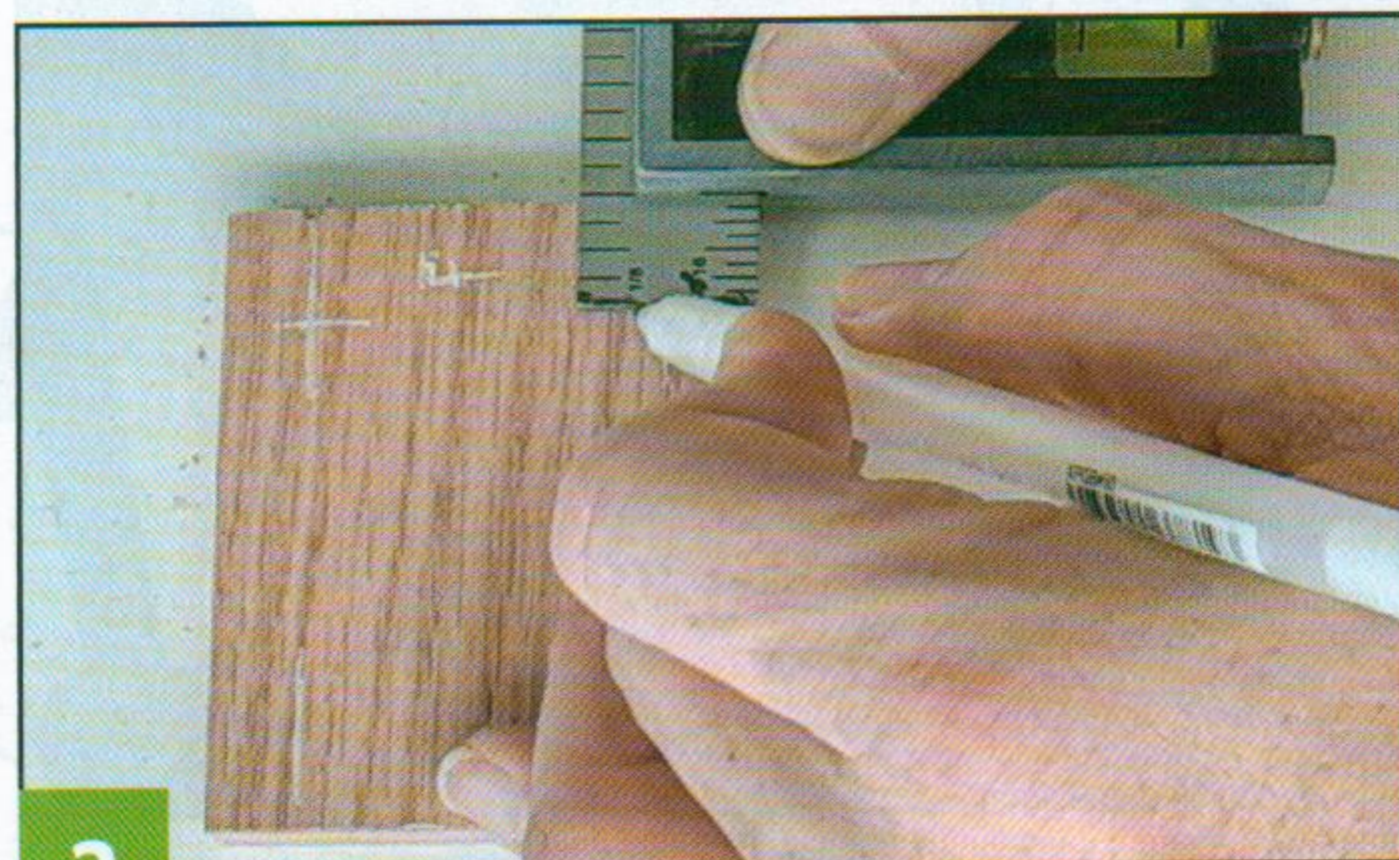


MAKING THE CAR



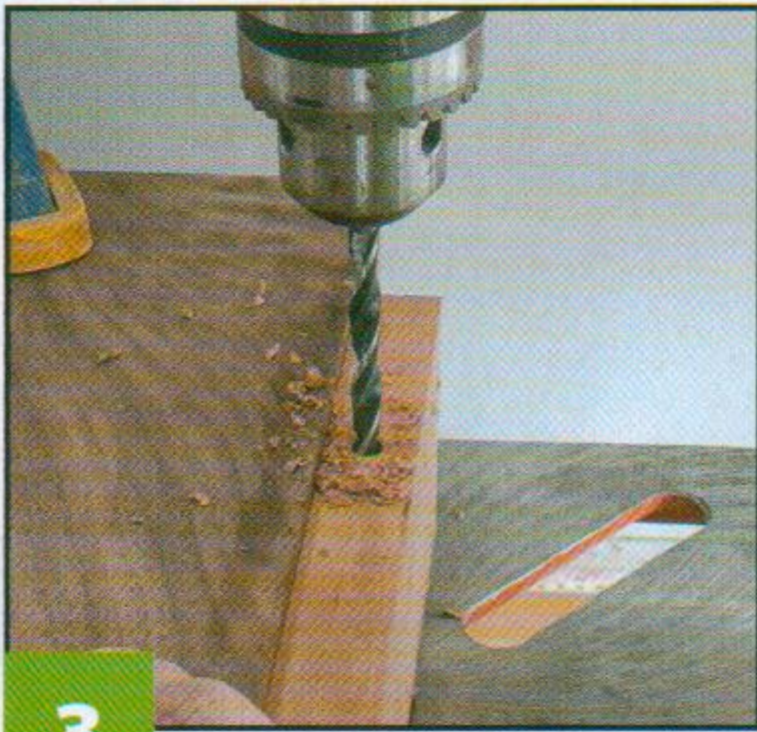
1

Cut the pieces. For the engine, I glued up three smaller pieces of scrap wood to form a larger piece, but you can cut it on a scroll saw using a single piece of wood.



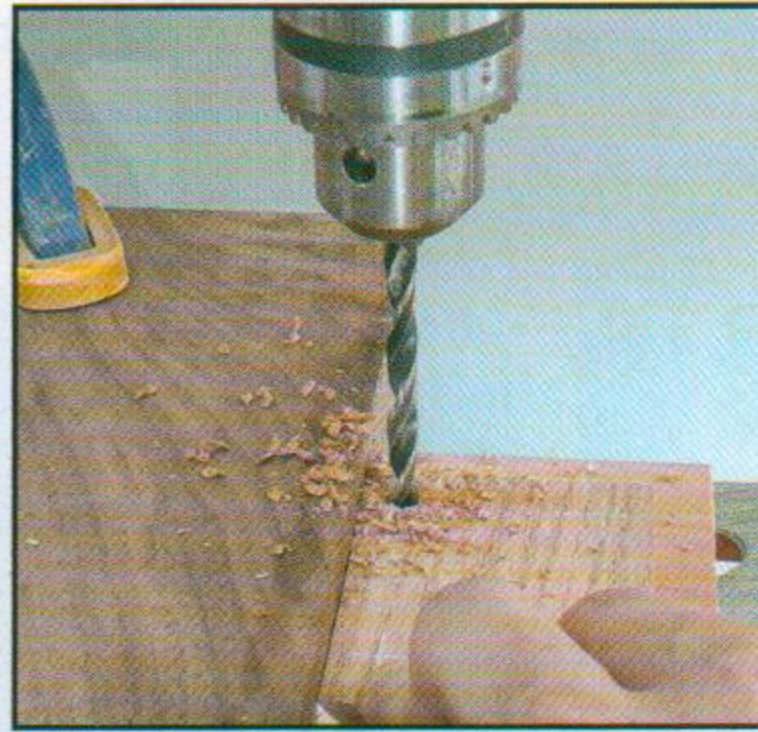
2

Mark the roof. Using a pencil, mark the front of the roof and all four hole locations for the dowels. *Note: The front holes are in a slightly different location than the back holes.*



3

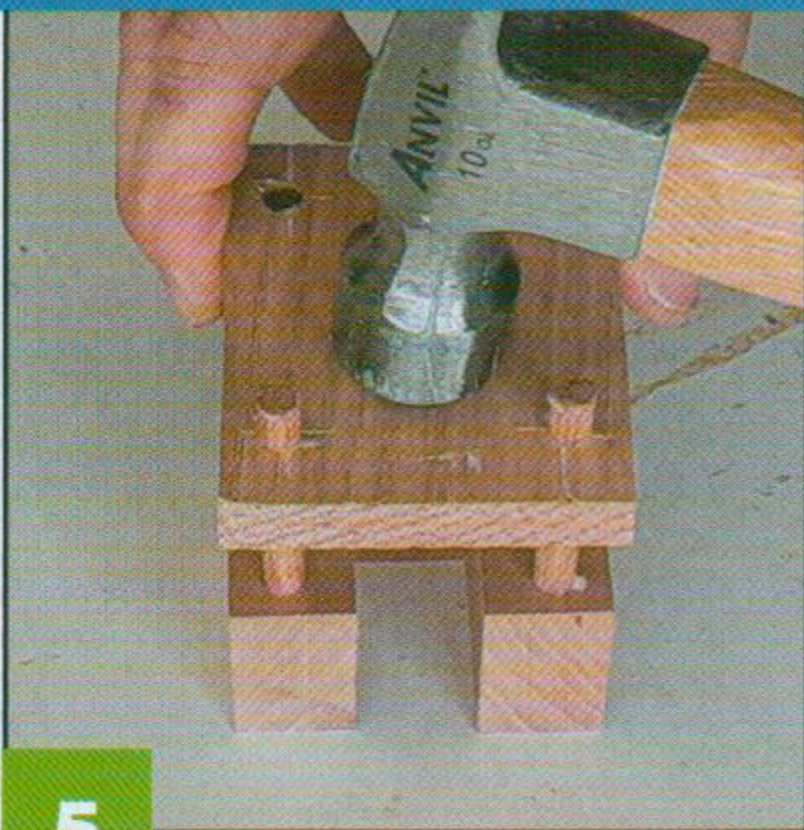
Drill the holes in the car sides and roof. Set up a guide block to ensure the holes are drilled at the same offset from the edge. Drill $\frac{1}{4}$ " (6mm) and $\frac{3}{16}$ " (5mm) through-holes at the marked locations on the roof. Drill the $\frac{1}{4}$ " (6mm) holes in the front of the car sides $1\frac{1}{2}$ " (3.8cm) deep, using a brad point drill bit. Then change the setup to the correct offset for the chassis. Drill $\frac{7}{32}$ " (5.6mm) holes in the chassis for the axle pegs.



4

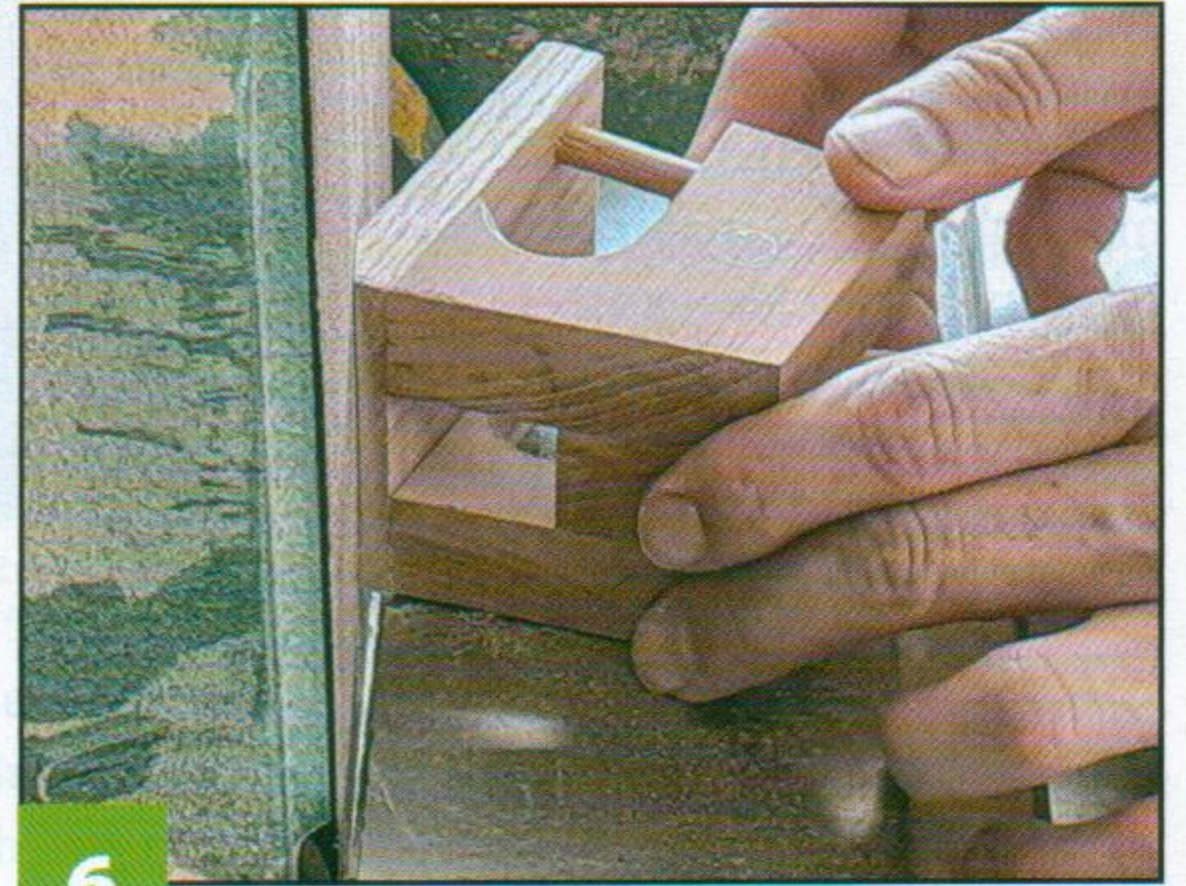
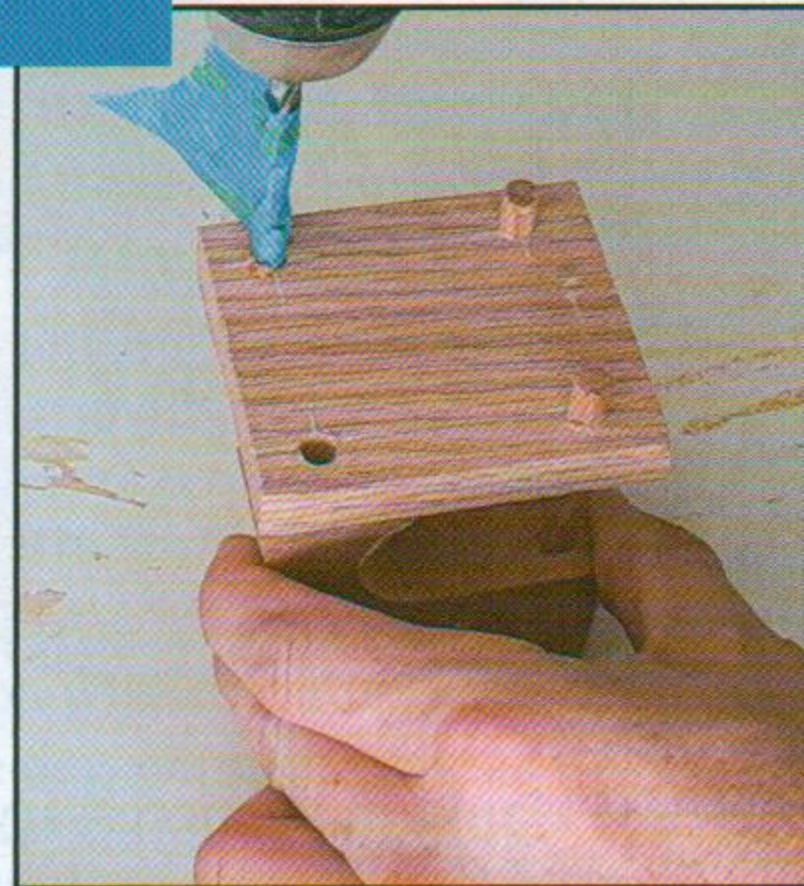
Assemble the car body. Glue the sides and middle together. Make sure the backs and bottoms are flush with each other. Clamp the assembly and let dry.

ASSEMBLING & FINISHING



5

Attach the roof. Put the roof on, and then push it down until the back sits flush with the sides. Insert the $\frac{3}{16}$ " (5mm) and $\frac{1}{4}$ " (6mm)-dia. dowels into their respective holes, hammer them in place, and then secure with wood glue, wiping off squeeze-out.



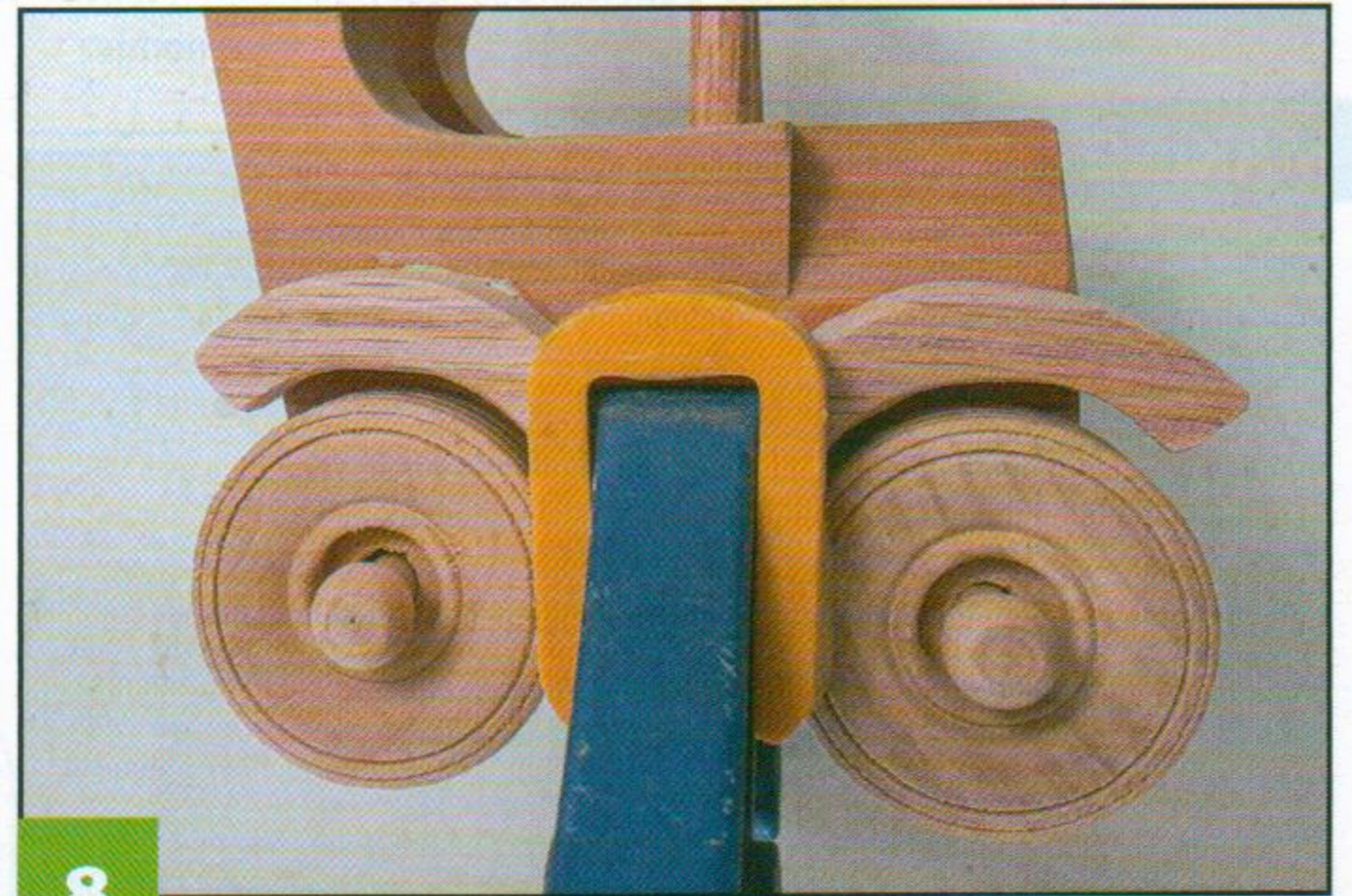
6

Shape the roof. Mark the side profile on the roof. Use the belt sander with 100-grit sandpaper to profile it. Sand all other parts smooth and flush.



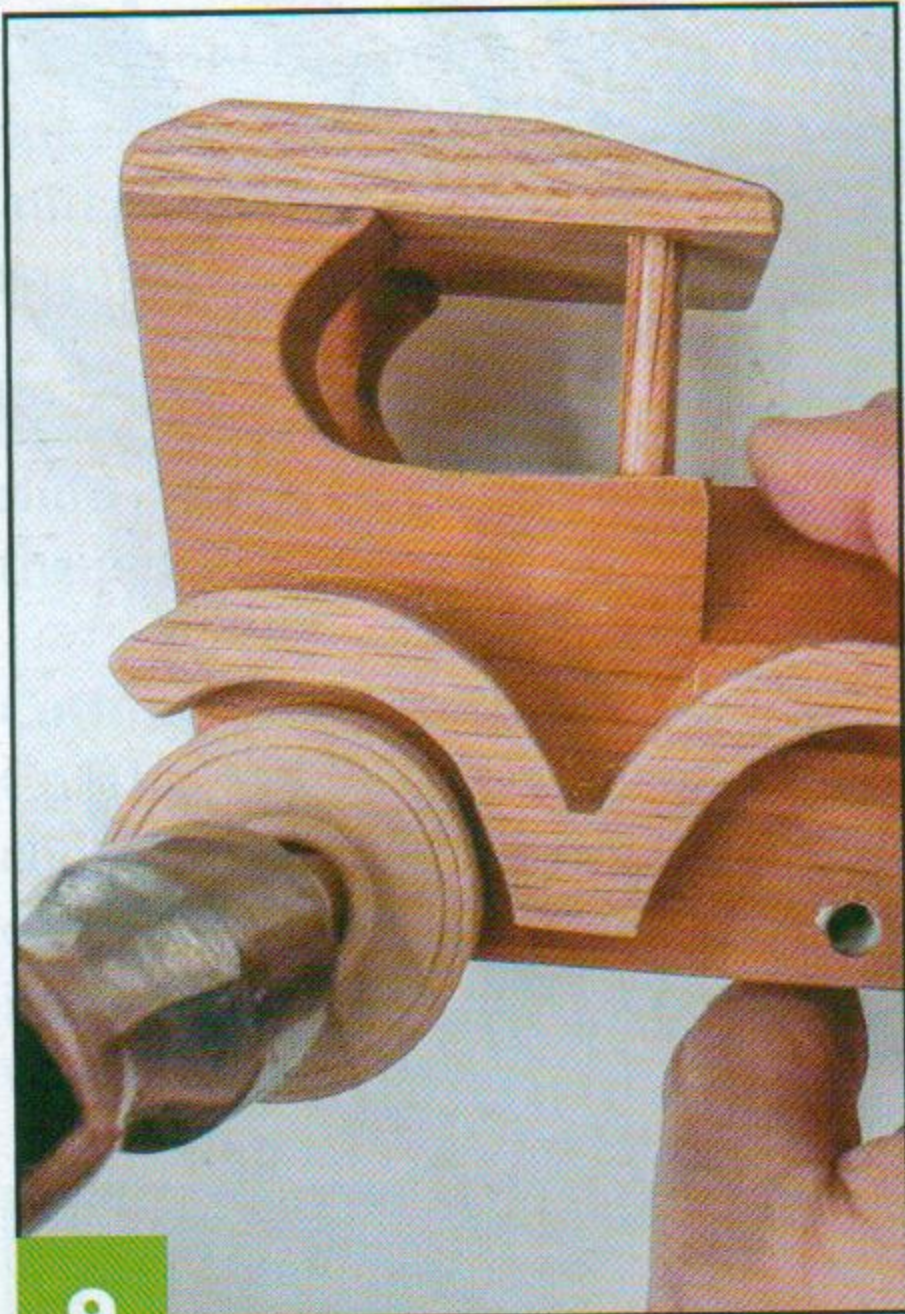
7

Assemble the car. Glue the side assembly and the engine to the chassis. Clamp the three pieces together, wipe off squeeze-out, and let dry. Hand-sand the assembly and fenders smooth, moving progressively through the grits from 100 to 150.



8

Attach the fenders. Test-fit the wheels to see where the fenders should sit. I left about $\frac{1}{8}$ " (3mm) margin between the fender and wheel so that the wheel could rotate freely. Glue and clamp the fender onto the car, removing squeeze-out. Let dry.



9

Add finishing touches. Sand the entire project to 150-grit. Finish with a nontoxic finish, such as shellac, or leave the project natural. Attach the wheels with axle pegs and seat them with a hammer.

Patterns for the **CLASSIC TOY CAR** are in the pullout section.

Materials

- Wood, such as cherry, 3/4" (1.9cm) thick: chassis, back and sides, 3" x 10" (7.6cm x 25.4cm)
- Wood, such as cherry, 1" (2.5cm) thick: engine, 1 1/2" x 2 1/2" (3.8cm x 6.3cm)
- Wood, such as oak, 1/2" (1.3cm) thick: roof and fender, 3" x 7" (7.6cm x 17.7cm)
- Wooden dowels, 3/16" (5mm)-dia.: back assembly, 2 each 1 1/4" (3.2cm) long; 1/4" (6mm)-dia.: front assembly, 2 each 2" (5.1cm) long
- Wooden axle pegs, 7/32" (5.6mm)-dia.: 4 each 1 1/8" (2.9cm) long
- Wheels: treaded, 1/2" (1.3cm) thick: 4 each 1 1/2" (3.8cm)-dia.
- White colored pencil (optional)
- Nontoxic finish, such as shellac: clear
- Spray adhesive: repositionable (optional)
- Wood glue
- Tape: blue painter's (optional)
- Sandpaper: assorted grits to 150

- Clean cloth

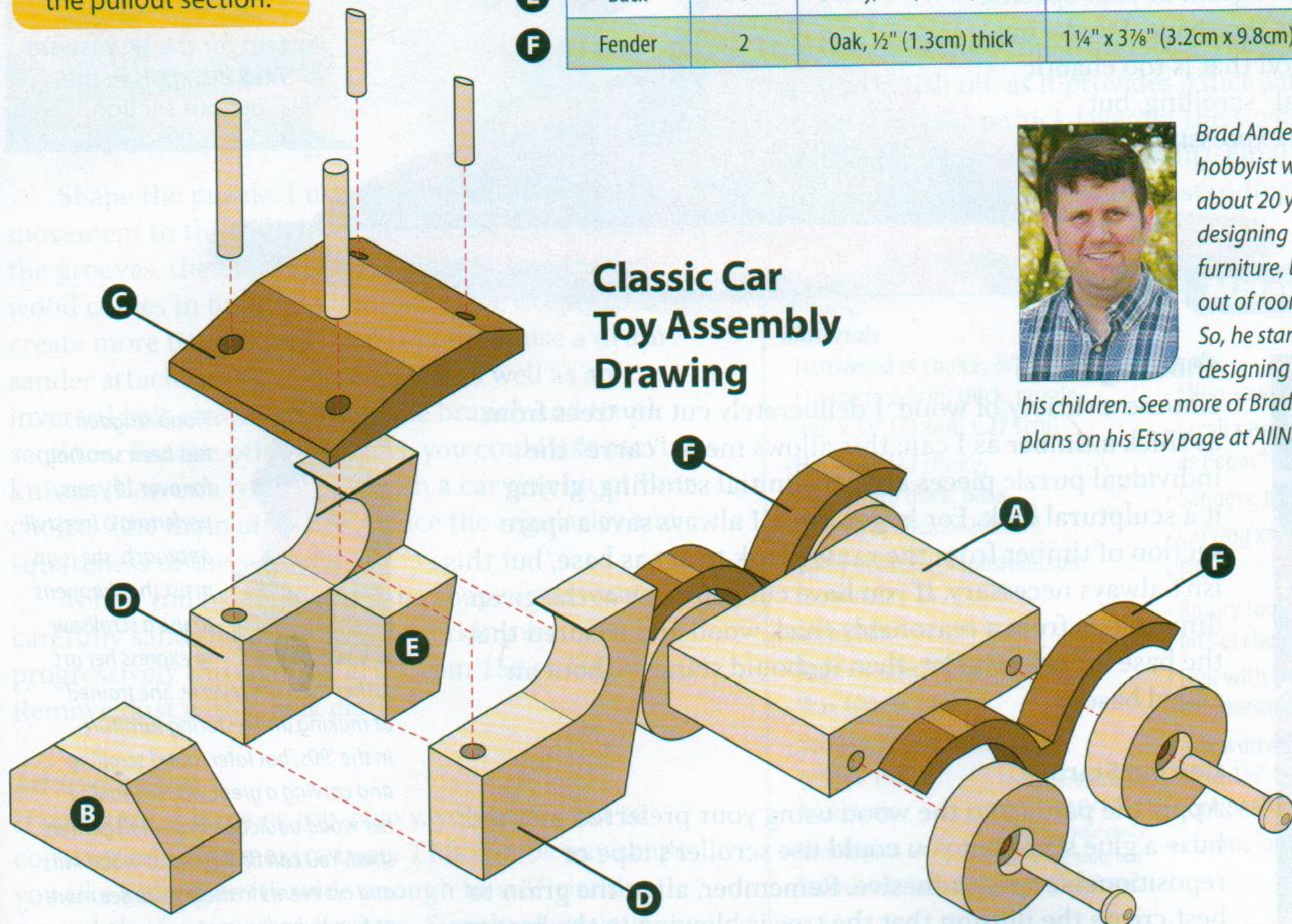
Tools

- Scroll saw with blades: #5 skip-tooth
- Saw: table (optional)
- Awl
- Drill with bits: 1/4" (6mm); 7/32" (5.6mm) brad point
- Clamps
- Sander: belt
- Hammer
- Ruler

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

Parts List

Part	Quantity	Materials	Finished Dimensions	Presentation
A Chassis	1	Cherry, 3/4" (1.9cm) thick	2 1/4" x 3" (5.7cm x 7.6cm)	Pattern
B Engine	1	Cherry, 1" (2.5cm) thick	1 1/4" x 2 1/4" (23.2cm x 3.2cm)	Pattern
C Roof	1	Oak, 1/2" (1.3cm) thick	2 1/4" x 2 3/4" (5.7cm x 7cm)	Pattern
D Car Side	2	Cherry, 3/4" (1.9cm) thick	2 1/4" x 2 1/2" (5.7cm x 6.4cm)	Pattern
E Back	1	Cherry, 3/4" (1.9cm) thick	1" x 1 1/4" (2.5cm x 3.2cm)	Pattern
F Fender	2	Oak, 1/2" (1.3cm) thick	1 1/4" x 3 7/8" (3.2cm x 9.8cm)	Pattern



Classic Car Toy Assembly Drawing



Brad Anderson has been a hobbyist woodworker for about 20 years. He started designing and building furniture, but quickly ran out of room for all of it. So, he started making and designing wooden toys for his children. See more of Brad's work and other plans on his Etsy page at AllNaturalToyPlans.

Windswept Tree Puzzle

Create movement by contouring with sanders and a rotary tool

By Fiona Kingdon

Inspired by the wind-sculpted trees in the wilder areas of my homeland, I have been making these puzzle sculptures for years, and no two are the same. Here, I have included a pattern that acts as a base for your own creative flair. You will need to judge how the grain of your specific timber best fits the shape. I make my trees from wood that is too chaotic for my “normal” scrolling, but works well for expressing movement in the wind.



Pattern for the **WINDSWEPT TREE PUZZLE** is in the pullout section.



Choosing Wood

Choose a variety of wood. I deliberately cut my trees from as thick a timber as I can; this allows me to “carve” the individual puzzle pieces after the initial scrolling, giving it a sculptural look. For larger trees, I always save a spare section of timber from the same plank to act as base, but this isn’t always necessary. If you have cut your tree at the given dimensions from a reasonably thick wood and ensured that the base is perfectly flat, then it should stand without an added base.

Getting Started

Apply the pattern to the wood using your preferred method; I use a glue stick, but you could use scroller’s tape or repositionable spray adhesive. Remember, align the grain to best create the illusion that the tree is blowing in the breeze.



Fiona Kingdon has been scrolling for over 10 years, preferring a freestyle approach; she is an artist that happens to use a scrollsaw to express her art

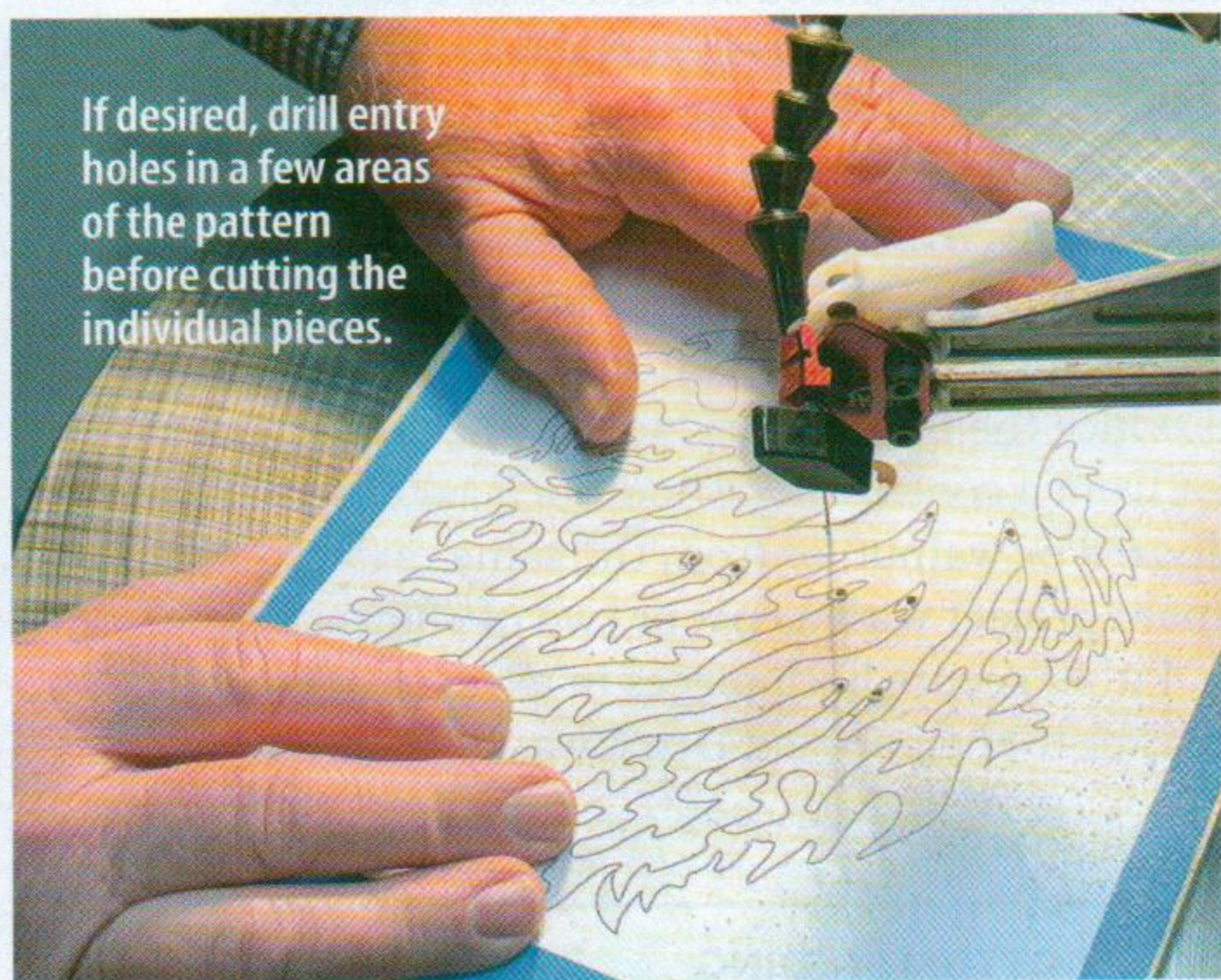
rather than the reverse. She trained at making and restoring furniture in the ‘90s, but later found scrolling and carving a great way to indulge her wood addiction in a small garden shed. You can find Fiona at wood fairs and art events in the U.K., or see more at fionakingdon.com.

Before cutting the pieces, make a single, decisive cut across the base of the tree using a scroll saw or a miter saw. This ensures that the tree will stand freely or make a neat join if an additional base is needed.

Check that the scroll saw table is square to your blade; this ensures that the pieces will comfortably slide in and out of position from the front and back of the puzzle.

Cutting and Shaping

Cut the pattern on the scroll saw with your blade of choice. I recommend as small a blade as possible; otherwise, the finished puzzle may be too loose to hold itself upright. Take your time and let the blade do the work. Remove the patterns once all pieces are cut.



If desired, drill entry holes in a few areas of the pattern before cutting the individual pieces.

Shape the puzzle. I use various methods to add movement to the individual pieces; the more random the grooves, the better. This is where using thicker wood comes in handy, as you can carve deeply to create more texture and shadow. I often use a drum sander attachment on a drill press, as well as an inverted belt sander, to shape the branch and trunk sections. For the other sections, you could use carving knives, files, or a rotary tool with a carving bit of your choice. The main aim is to reduce the regularity and squareness of the sections.

When you have achieved the shapes you want, carefully sand the entire piece, working up progressively through the grits from 150 to 500. Remove dust with a tack cloth.

Adding a Base

If your tree is large or top-heavy, you may want to consider adding an extra base. This can be any shape you like as long as it's wide enough to sufficiently extend the footprint of the tree. Simply place your

TIPS

NOBODY'S PERFECT

This is a great project for that quirky, slightly rough-looking board you've been saving. There's no need to plane it perfectly, just be sure the back side can sit flat against the saw table.

TRUE COLORS

Considering a particular board from your scrap bin? Give it a wipe with mineral spirits in order to see the full potential of the grain.



cut trunk and branch section on the base stock, draw the shape, and then cut it on the scroll saw. You can shape the front and back as you did with the tree for an organic, rocky feel; just make sure that the area in direct contact with the trunk remains flat. Once you are happy with the look, glue and clamp the base to the tree. Then, if desired, countersink a screw through the base, extending up into the bole of the tree. Wipe off any glue squeeze-out and add a filler to the countersunk screw hole.

Finishing

Apply your desired finish and leave the piece to dry. I prefer Danish oil, as it provides a nice satiny finish and doesn't leave a thick layer on the surface of the pieces (which can interfere with fit). Finally, assemble your tree flat on a surface before standing it upright.

Materials & Tools

Materials

- Hardwood of choice, ¾" to 1" (1.9cm to 2.5cm) thick: puzzle, 8½" x 11" (21.6cm x 27.9cm)
- Hardwood of choice, ⅜" (5mm) thick: base, 3½" x 8" (8.9cm x 20.3cm)
- Spray adhesive: repositionable (optional)
- Glue stick
- Tape: scroller's (optional)
- Wax filler (optional)
- Sandpaper: assorted grits to 500
- Tack cloth
- Wood glue
- Danish oil: natural

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

Tools

- Miter saw (optional)
- Scroll saw with blades, such as Pegas® super skip #2
- Sanders: belt, drum
- Carving knife
- Files
- Rotary tool with carving bits of choice
- Drill with bit: ⅛" (3mm) countersink (optional)
- Screwdriver with screws: 1" to 1½" (25mm to 38mm) (optional)
- Clamps (optional)

Kingfisher Fretwork

Practice cutting feathers, bark texture, and other natural elements in this dynamic portrait

By Charlie Dearing

Cut by Joe Pascucci

With its bright plumage, large head, cartoonishly long beak, and small legs, the kingfisher might seem like a cuddly toy to some—but don't be fooled. These creatures are clever little hunters. Depending on locale, they might catch fish, insects, or even other birds, first inspecting their prey from a high perch, and then diving to grab it in a flash. I've chosen the common kingfisher that most people recognize, but the skills you practice in this project will prepare you to cut any number of kingfisher and bird portraits on your saw.

Getting Started

Apply the pattern to the surface of the wood. I prefer to tape down one side of the pattern (so it doesn't move around) and then trace it on with carbon paper and a pencil, but you can use repositionable spray adhesive, if desired. If you choose the former method, you'll need to sand away any remaining lines later. If you choose to stack cut, create the stack now, attaching the pieces with wire brads in the waste areas, or by binding the sides with clear packaging tape.

Drill the blade-entry holes; because many of the pieces I cut have lots of frets, I use a scroller's drill from Seyco™, as it doesn't have the same throat depth limitations as a traditional drill press. Then lightly sand the back of the piece with an orbital sander to remove the "blowouts" created by the holes; this will allow you to maneuver your workpiece smoothly along the scroll saw table.

Cutting

Scroll the piece, starting with the interior cuts. The order in which you cut these frets is your call, but I typically start with the face of the subject. I start here because the face is the most important part; if I mess this up, I can start over without sinking too much time into the project. Once the frets are cut, cut the perimeter.

Sanding and Finishing

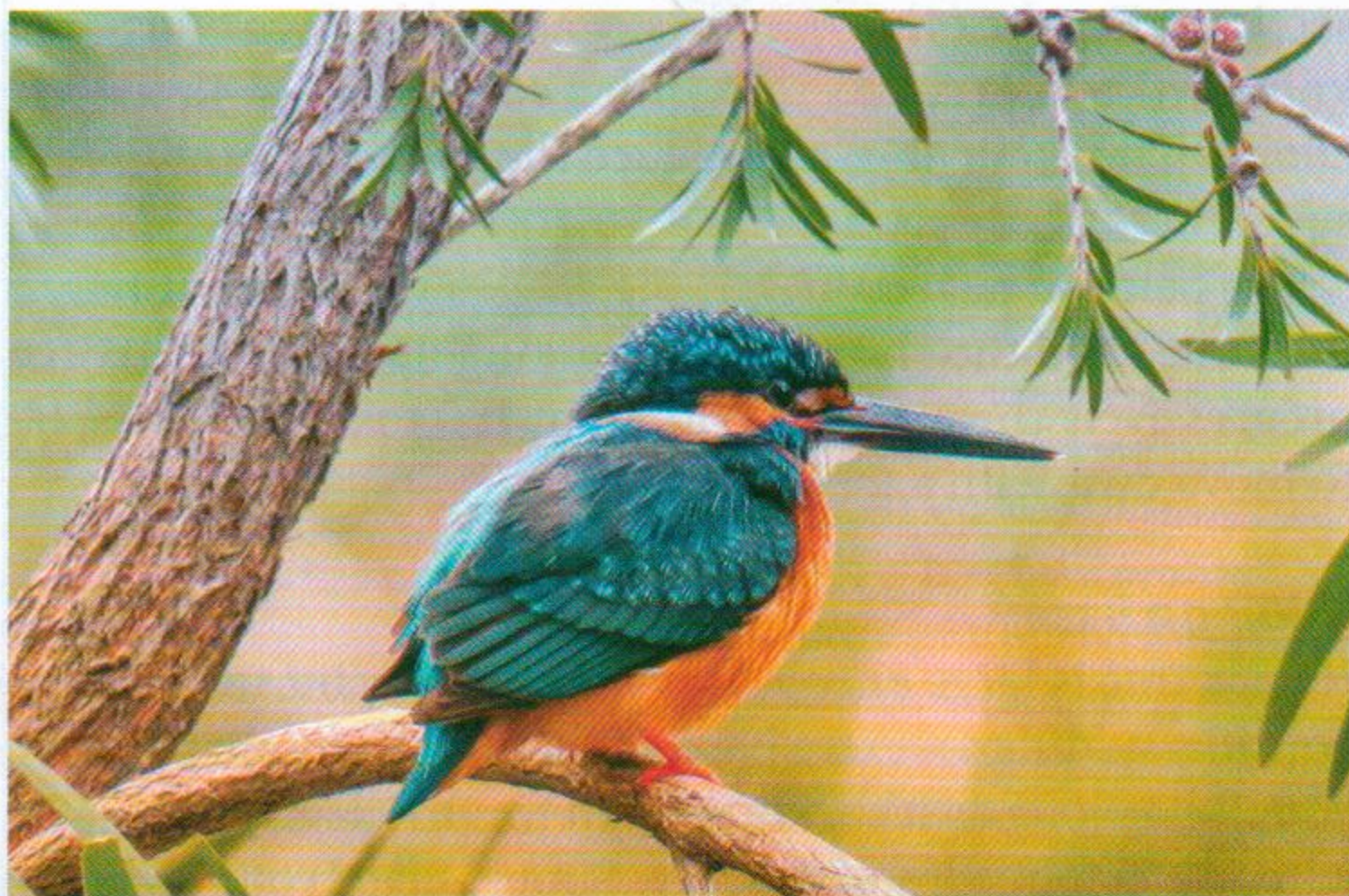
If you applied the pattern with spray adhesive, carefully remove it now. Hand-sand the surface with 180 and then 220-grit sandpaper; I often place the large waste areas back into place for added stability while sanding. Advanced scrollers could use an orbital sander here, but beginners should sand by hand depending on their comfort level to avoid breaking any delicate areas. Use needle files to clean out the fuzzies from the smaller frets.

Finish as desired; I applied a few light coats of semigloss spray lacquer, hand-sanding between coats. Once the finish is dry, add the backer; this can be cut from a contrasting wood, such as tempered hardboard or walnut, or from the same material as the main project with a coat or two of contrasting stain. Either secure both pieces in a frame or glue the backer to the portrait. Display as desired.

TIP

BOTTOM FEEDING

After drilling the blade-entry holes, I often flip the piece over and widen each one with an awl, moving in circular motions. Since I feed the blade in through the bottom, this helps to limit the time it takes to find each hole by feel.





Pattern for the **KINGFISHER FRETWORK** is in the pullout section.

Materials & Tools

Materials

- Maple plywood, 1/8" (3mm) thick: 8 1/2" x 12" (21.6cm x 30.5cm)
- Backing material, 1/16" (2mm) thick: sized for pattern
- Carbon transfer paper (optional)
- Pencil (optional)
- Spray adhesive: repositionable
- Sandpaper: assorted grits to 220
- Tape: clear packaging
- Finish, such as semigloss spray lacquer
- Glue: wood
- Oil-based stain (optional)

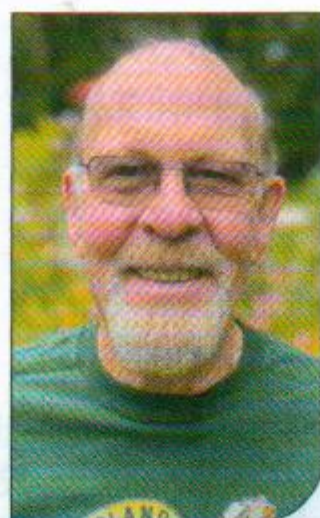
Tools

- Scroll saw with blades: #3 and #5 spiral
- Drill press or scroller's drill with bit: 1/16" (2mm)-dia.
- Sander: orbital
- Brad nailer with wire brads (optional)
- Needle files
- Awl (optional)

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



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



Joe Pascucci started scrolling nearly 30 years ago. He also enjoys woodturning and other types of woodworking. Joe is a retired police sergeant and construction superintendent, and is the founding president of the Long Island Scroll Saw Association. When Joe's not in the woodshop, he can be found gardening, traveling, and spending time with his grandkids. To see more of Joe's work, visit the Members section of liwoodworkers.org.

Summer Sun Puzzle

Beachcombing, sunbathing, scuba diving—this project has everything you need to enter vacation mode

By Jaeheon Yun

Sometimes, even the thought of the beach is enough to create a sense of relaxation. This puzzle is meant to do just that—make you feel like you're on vacation, no matter where you are. Leave it natural or give kids the chance to color it with their own artistic flair. You could even use it as an educational tool. Either way, it's a recipe for fun!

Getting Started

Make two photocopies of the pattern. Prepare the blanks. The two plywood blanks will be stack-cut for the frame and backer, and the beechwood blank will be used for the puzzle. Stack the plywood blanks, cover them with blue painter's tape, and then secure the sides of the stack with clear packaging tape. Then attach the pattern with spray adhesive and cut the perimeter on a scroll saw. Separate the stack. On the first plywood blank, drill an entry hole with a $\frac{1}{8}$ " (3mm)-dia. bit just inside the interior cutting line for the frame. Cut the circular interior for that layer, and then remove the pattern.

Cover the beechwood blank with blue painter's tape. Attach the pattern with spray adhesive, making sure to orient the grain horizontally. Drill the holes for the eyes and the internal cuts for the surfboard, referring to the pattern for bit sizing. For visual interest on the natural version, I alternated between a $\frac{1}{32}$ " (1mm) and a $\frac{1}{16}$ " (2mm)-dia. bit to lightly drill the holes for the eyes. I cut the entry holes for the kerf details using the $\frac{1}{32}$ " (1mm)-dia. bit.

Note: If desired, you could paint on the eyes later instead of drilling them.

Cutting and Finishing

Cut the puzzle. Start with a perimeter piece and work inward. Cut each piece, taking extra care with the kerf details (such as the scuba diver's fins, the whale's mouth, and the seagull's wing).

Once all the pieces are cut, remove the patterns. Sand the surfaces with an orbital sander, and then



Leave the puzzle unpainted to show off the grain.

hand-sand each piece, moving progressively through the grits to 500. Then soften the sharp edges slightly by hand sanding. Complete the tray. Glue and clamp the frame on top of the backer and let dry. Sand the edges flush with the orbital sander and wipe off excess dust with a tack cloth. Apply finish, such as natural Danish oil, to the entire puzzle. *Note: Dispose of oil-soaked rags following the manufacturer's instructions, as they can spontaneously combust.* Assemble the project once dry.

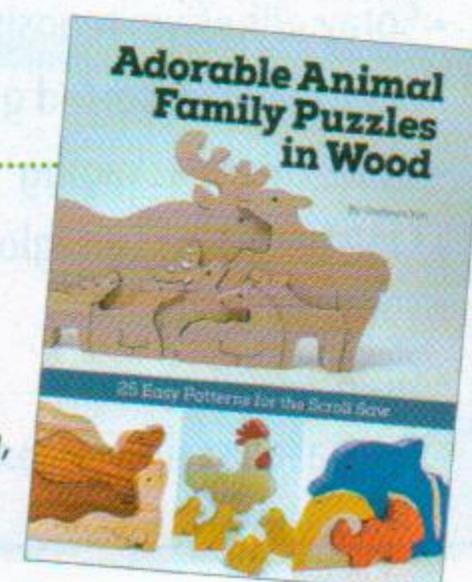
For a more colorful look, you could paint each piece with assorted acrylic paints, letting them dry thoroughly before assembling. If you chose not to drill the eyes, add a dab of paint in each eye area and let dry. Then use the end of a toothpick to add a black dot to the center.

WANT MORE PUZZLES?

Adorable Animal Family Puzzles in Wood

By Jaeheon Yun

Item 02057. Available for \$12.99 plus S&H (parcel post) from Fox Chapel Publishing, FoxChapelPublishing.com, 800-457-9112, or your local retailer.





Pattern for the **SUMMER SUN PUZZLE** is in the pullout section.

Materials

- Wood, such as oak or beech, 3/4" (1.9cm) thick: puzzle, approx. 8 1/4" (21cm) square
- Wood, such as plywood, 1/4" (6mm) thick: tray pieces, 2 each, approx. 9 7/8" (25cm) square
- Tape: blue painter's, clear packaging
- Spray adhesive
- Sandpaper: assorted grits to 500
- Wood glue
- Finish, such as natural Danish oil
- Toothpick
- Paper towels
- Acrylic paints: assorted (optional)
- Tack cloth

Tools

- Scroll saw with blades: #5 or #7 reverse-tooth

Materials & Tools

- Drill with bits: 1/32" (1mm), 1/16" (2mm), 1/8" (3mm)-dia.
- Sander: orbital
- Paintbrushes: assorted
- Clamps

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



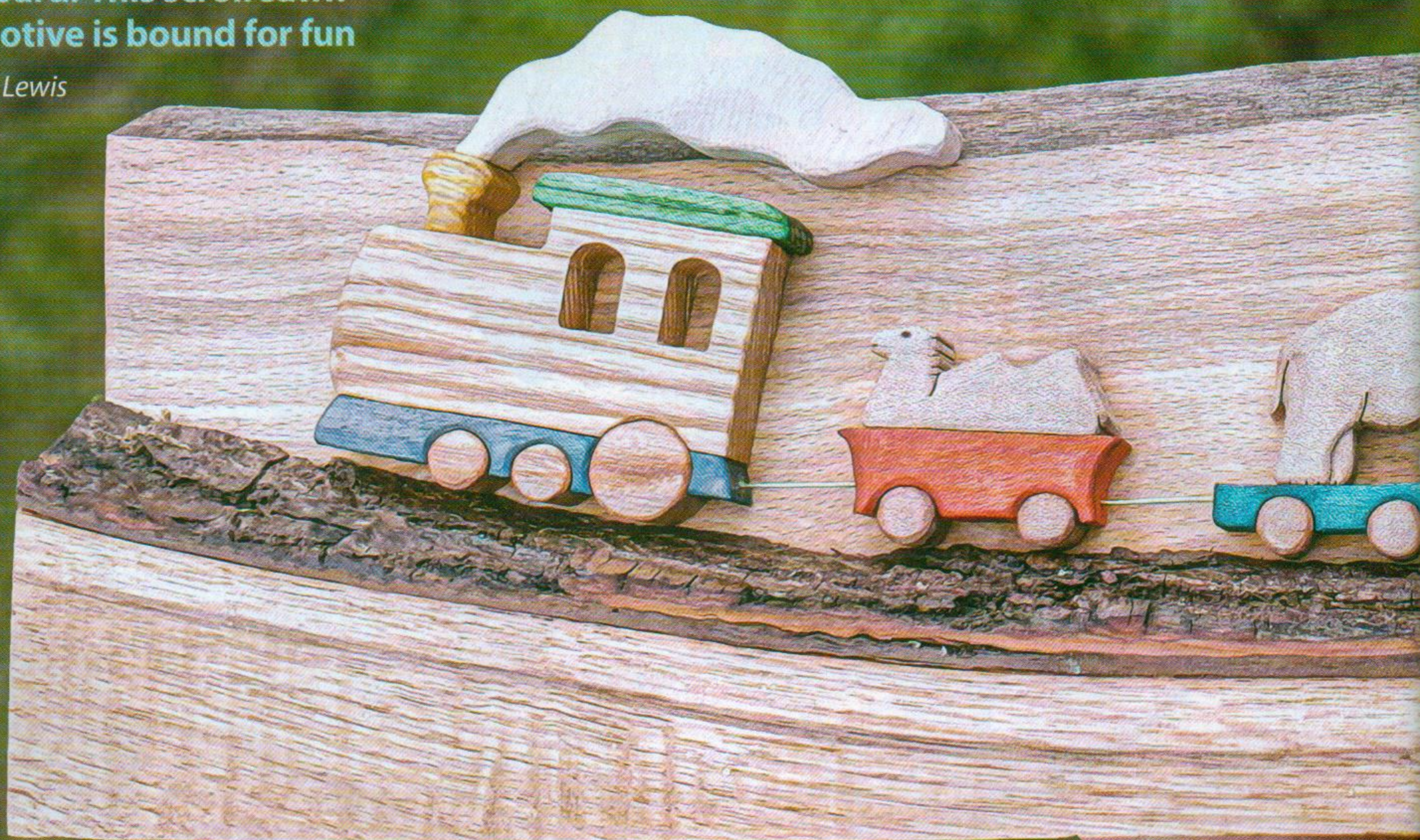
Jaeheon Yun is a puzzle designer based in South Korea. He graduated from Seowon University with a degree in

Industrial Design in 2004; then, just before his first child was born in 2011, he bought a scroll saw and began making toys. Find more of his work on Etsy at [Namunolie](#).

Animal Cracker Train

All aboard! This scroll sawn locomotive is bound for fun

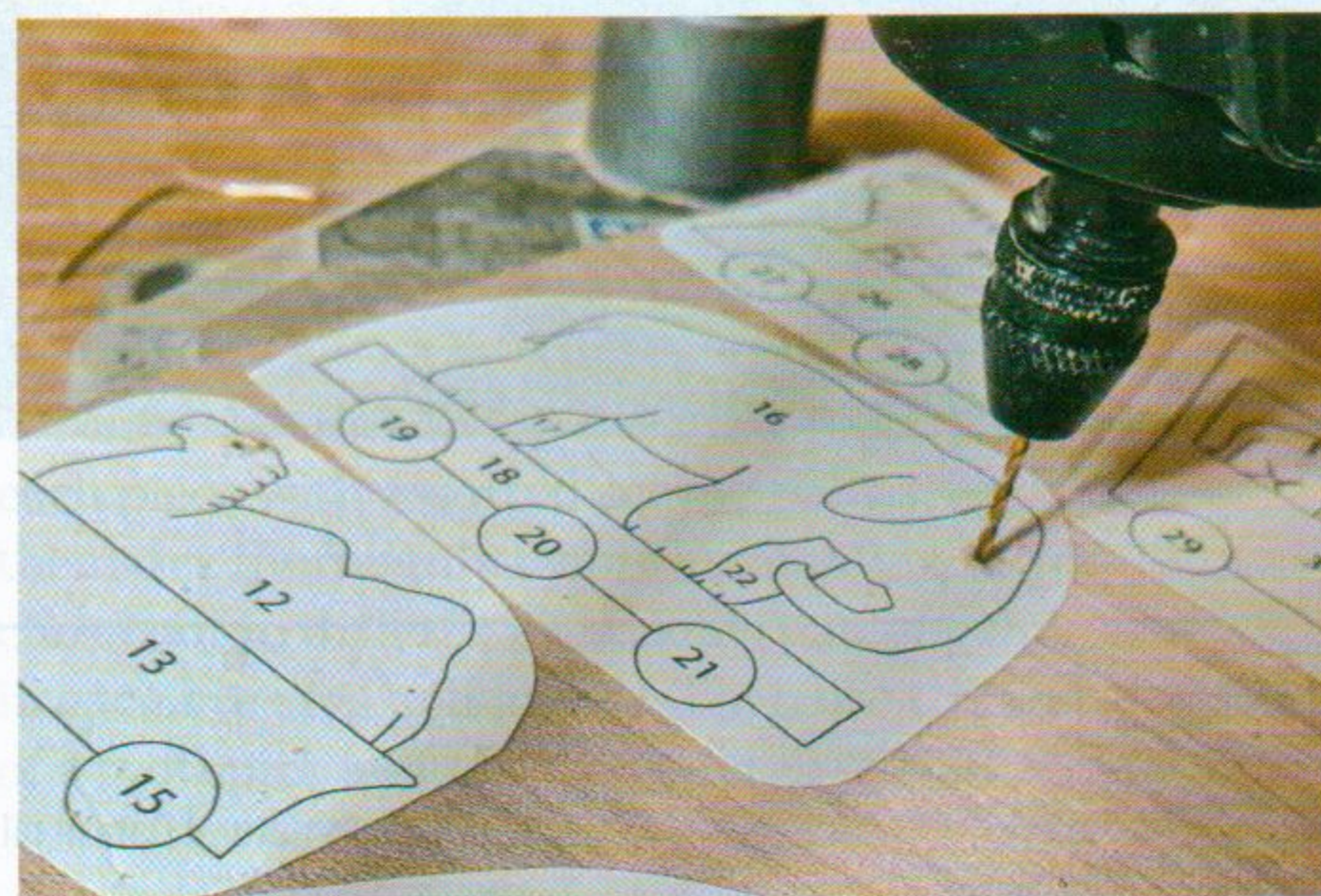
By Emily Lewis



I love using my scroll saw to make artwork that appeals to children of all ages. In this scene, I combined bright stains with locally sourced wood to bring a beloved childhood treat—animal crackers—to life. I used a live edge strip of chestnut for the train tracks, a narrow piece of beech for the backing board, and scraps of sycamore and ash for the animals and train cars. Feel free to claim artistic license and use the varieties you like; you can paint the train cars in bright colors or leave them natural for a different look. Rearrange the orientation of the animals and train cars as you see fit. Get creative and enjoy the process!

Getting Started

Photocopy the patterns, and then attach the pattern pieces to the wood. I find a simple glue stick effective for attaching patterns to wood, as it holds well during cutting and leaves little residue when the paper pattern is removed. Then prepare your train track and backing board; I used a jigsaw to cut them to size, but you could use a table saw, if desired.



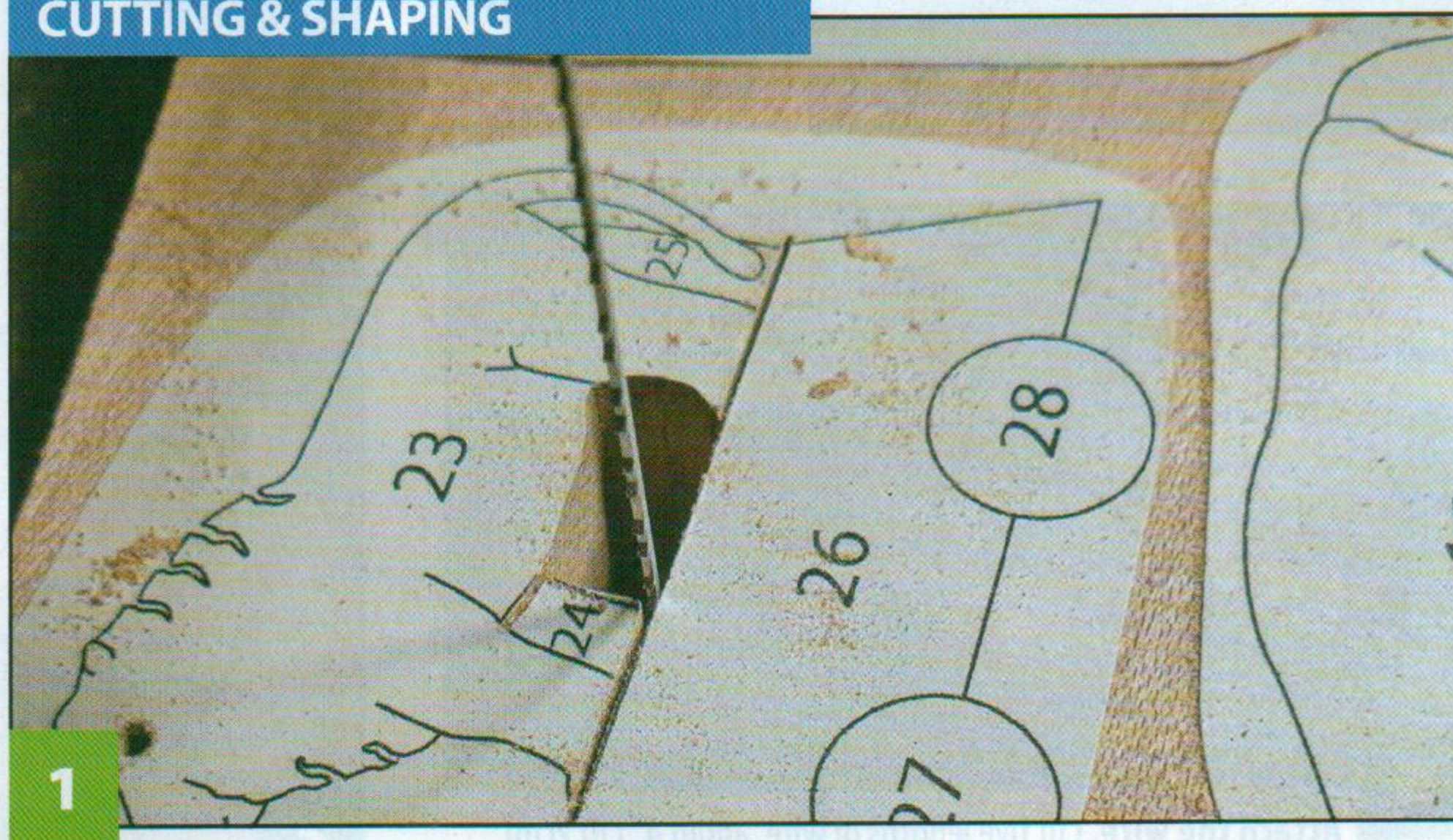
Drill the holes; I used a $\frac{1}{16}$ " (2mm)-dia. bit to make blade-entry holes for the areas marked on the pattern (the windows in the locomotive and fourth car). These are to be completely removed. Then use the same bit to drill the animals' eyes. Do this before cutting the individual pieces, as the uncut blank is much safer to stabilize for drilling.



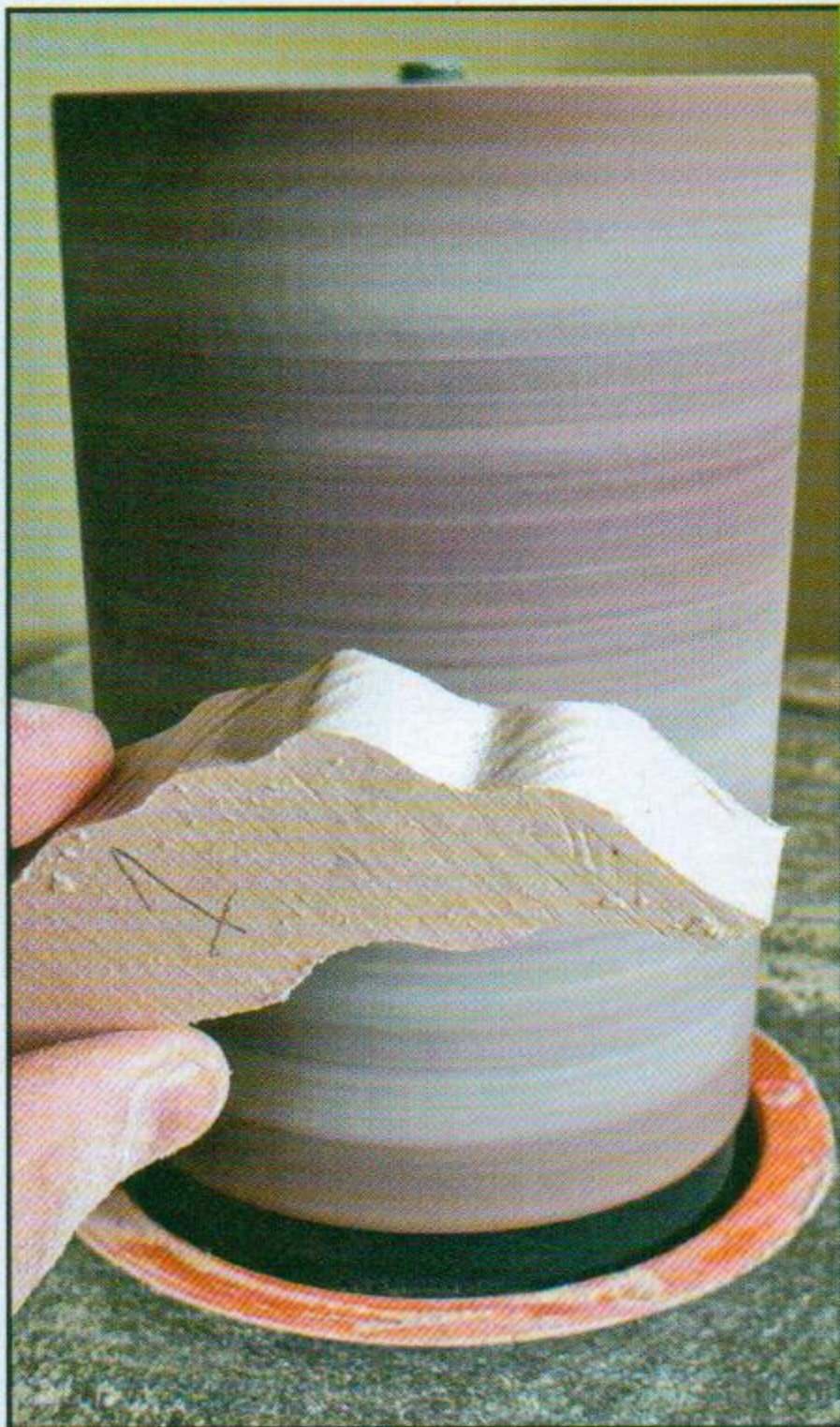
Work Smarter, Not Harder

Label the back of each cut piece before removing the pattern. This will help you keep track of the pieces—although I recommend mixing and matching, as desired. Any particularly sticky areas from the glue stick can be addressed with mineral spirits. Simply dampen a rag and rub the spot lightly until smooth.

CUTTING & SHAPING



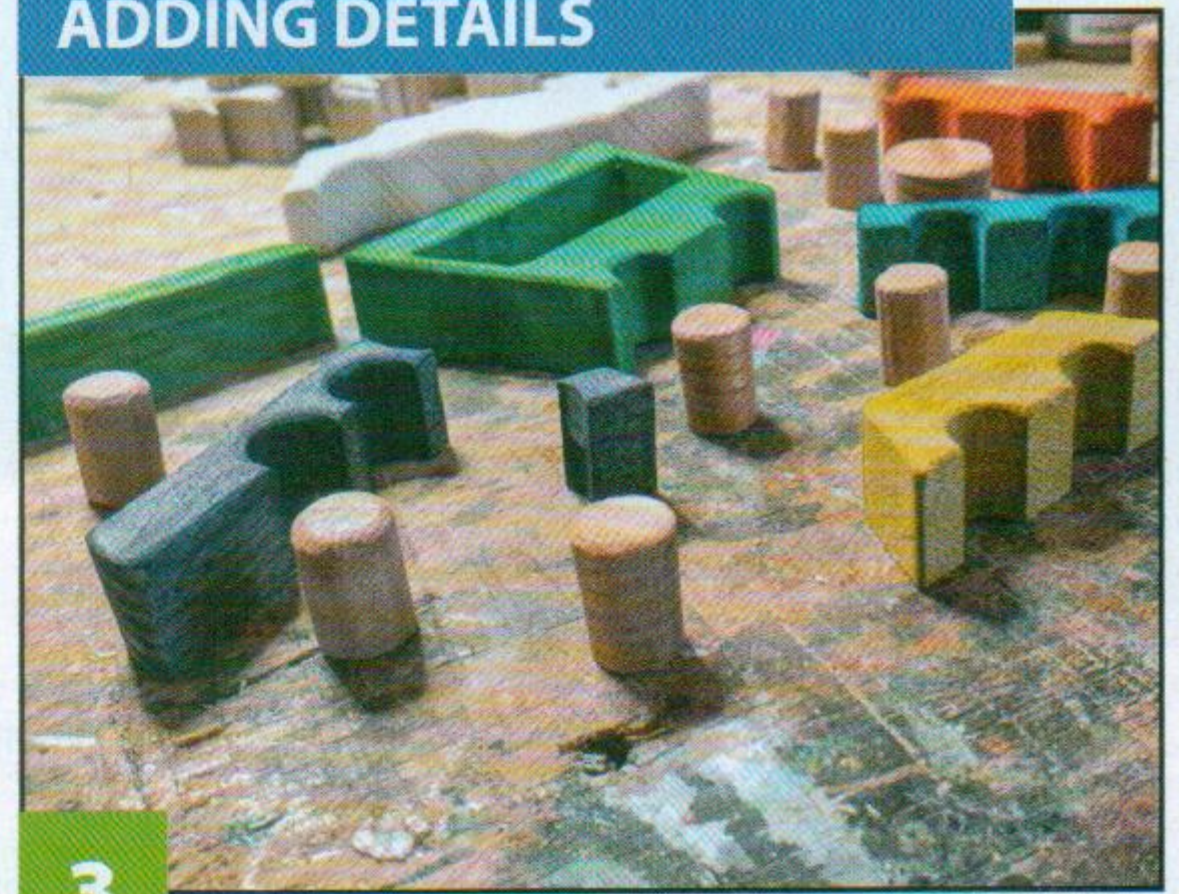
Cut the pieces on a scroll saw. Tackle each train car individually, starting with the interior cuts. Plan each cut before you make it, as some lines will be easier to follow and connect than others. Limit the number of sharp turns by considering your direction of approach and, where needed, use the excess wood outside the pattern to readjust. After you've cut the exterior of each piece, go back and add the kerf details, such as the lion's mane, the elephant's toes, and the camel's mouth.



2

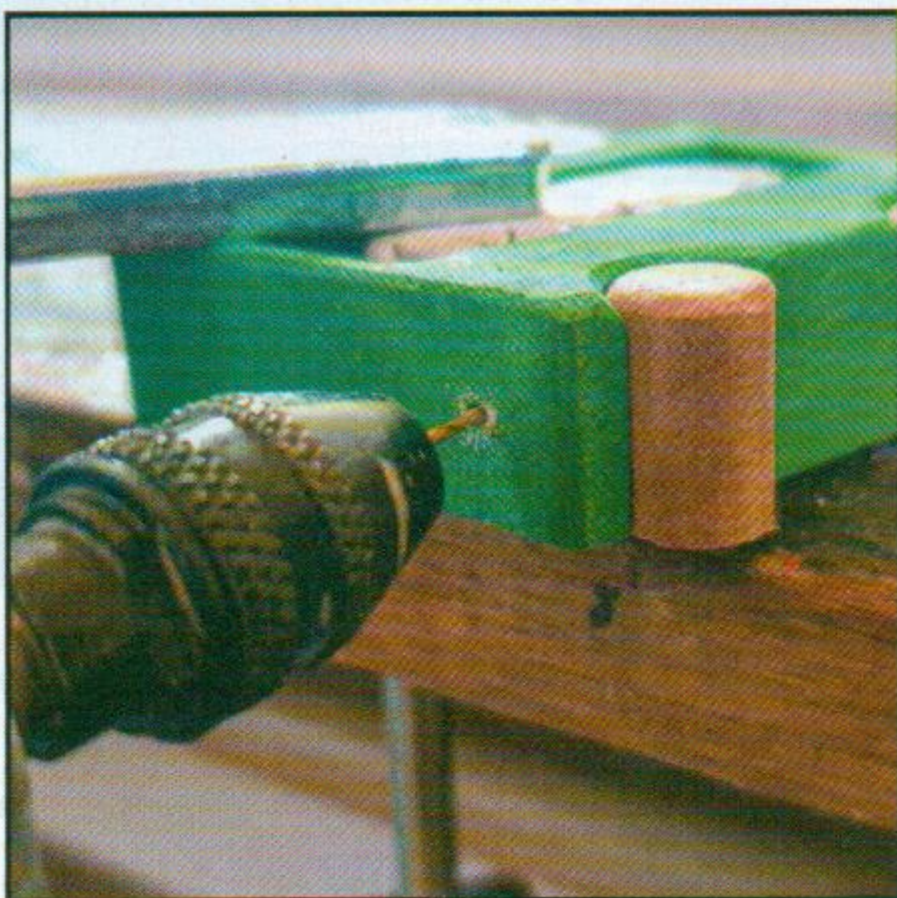
Shape the pieces. Use a spindle sander to rough shape each piece. Then use a rotary tool with a 120-grit drum to lightly sand the edge of each piece and remove fuzzies. For added interest, use the tool to reduce the depth of some features to make others stand proud. For example, taper the bottom of the smokestack into the chimney so it looks like it's billowing out, lower the legs on the elephant's left side so the right legs appear closer to the viewer, and taper the bottom of the camel's body so it appears to be sitting inside the train car. Spend time adjusting the depth of the pieces as you see fit to create dimension. Once satisfied, go over each element again with the rotary tool but with a finer grit (240 or above) for a smooth surface.

ADDING DETAILS



3

Apply color. I used Chestnut Product Spirit Stain® for a soft, muted look, but you can use thinned acrylics, if desired. I chose to leave some areas uncolored to show off the natural grain of the ash and sycamore. Let dry. Then assemble the train cars, securing the pieces with glue. I used cyanoacrylate (CA) glue, but you can use tacky glue, such as Aleene's®, as it is very flexible and sets up in 10 to 15 minutes. You will have time to adjust parts before the glue sets. Wipe away any squeeze-out, if necessary.



4

Drill the holes for the connecting wire. Clamp each assembled train car to your worktable and use the 1/16" (2mm)-dia. bit to drill a 1/2" (1.3cm)-deep hole on either end. *Note: The locomotive and caboose only require one hole.*



5

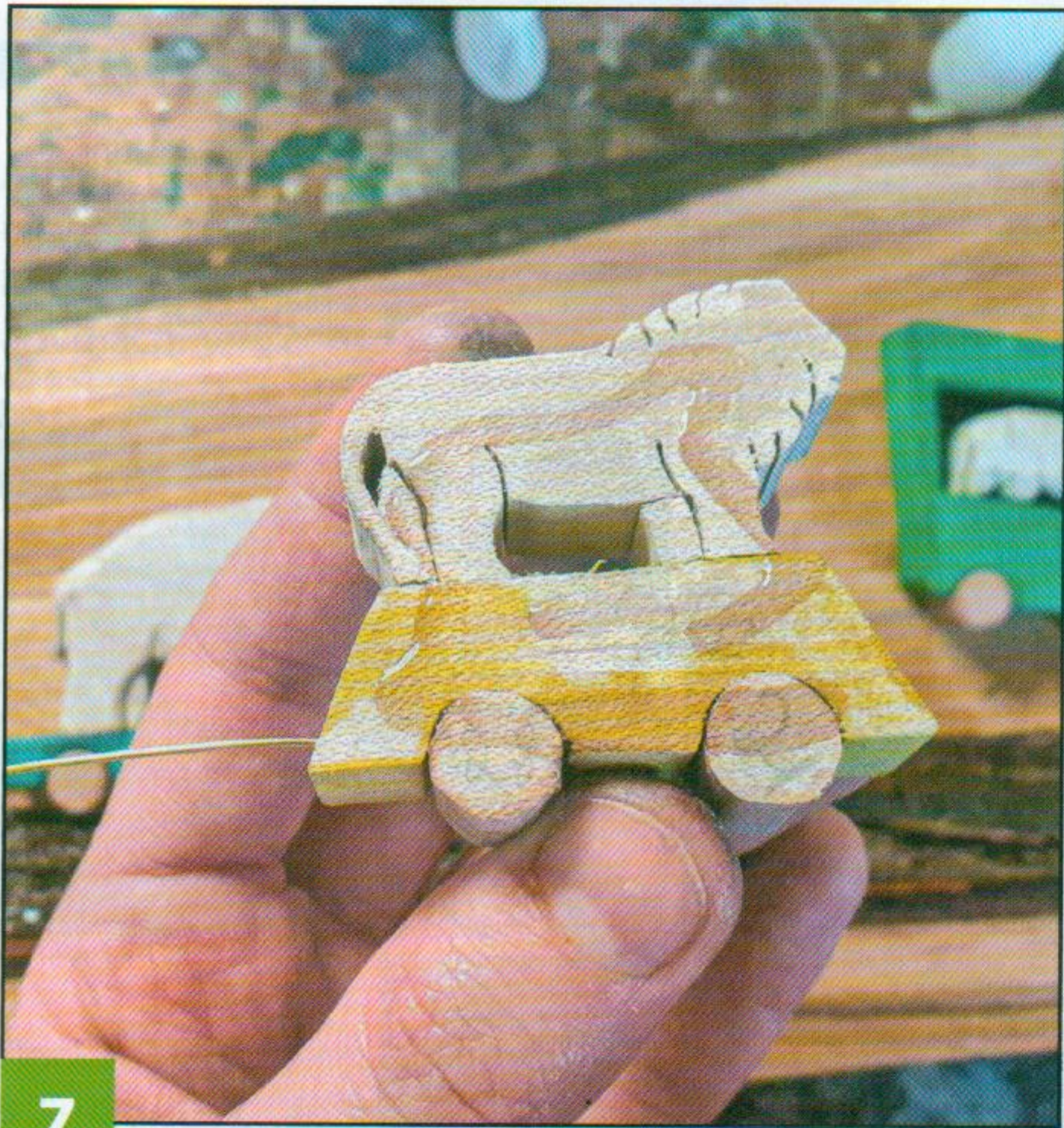
Attach the wire. Cut five lengths of wire, about 4" (10.2cm) long. Adjust the length, if desired. Dip the tip of the wire into a small drop of CA glue, and then gently push it into the rear hole of each train car until set. Do not glue the other end of each wire yet, as this should only be done once you are ready to glue the train into its final position.

ASSEMBLING & FINISHING



6

Prepare your landscape. Lightly sand the backing board and the piece selected for the train track with an orbital sander. Remove dust with a clean cloth. Then glue the pieces together; I used cyanoacrylate (CA) glue.



7

Assemble the train. Position the train cars on the track as you would like them to be glued, dry-fitting the wire into the front hole of each and adjusting the length to your liking. Then, beginning with the locomotive, apply tacky glue to the back of the piece and return it to the track. Apply tacky glue to back of the first train car and squeeze a small drop of CA glue into its front hole. Place the train car on the track and slide the locomotive's wire into the hole. You will have time to adjust the placement before the tacky glue sets. Repeat this process for the rest of the train cars.



8

Apply finish. Using an oil or wax-based finish will help to bring out the grain and seal the project. I used Osmo Polyx®-Oil Satin Interior for a slight shine. Follow the instructions on the container to ensure successful results. Once dry, display on a sturdy shelf or attach sawtooth hangers to the back for hanging.

TIP

NEW ZOO CREW

Mix the animals up for a different spin; the giraffe could easily swap with the elephants or the lion with the monkey!

Patterns for the **ANIMAL CRACKER TRAIN** are in the pullout section.

Materials & Tools

Materials

- Wood, such as sycamore or ash, 1/2" (1.3cm) thick: train cars and animals, approx. 4 1/4" x 16" (10.2cm x 40.6cm)
- Wood with live edge, such as chestnut, 3" (7.6cm) thick: train track, approx. 6" x 19 3/4" (15.2cm x 50.2cm)
- Wood with live edge, such as beech, 2" (5.1cm) thick: backing board, approx. 6" x 19 3/4" (15.2cm x 50.2cm)
- Glue: repositionable stick, cyanoacrylate (CA) or Aleene's Tacky Glue®

- Sandpaper: assorted grits
- Clean cloths
- Thin craft wire, 1/32" (1mm)-dia.: approx. 30" (76.2cm) long
- Wood stains: assorted, such as blue, green, red, yellow
- Finishing oil or wax, such as Osmo Polyx®-Oil Interior Satin
- Hangers: sawtooth (optional)

Tools

- Scroll saw with blades: #5 MGT
- Jigsaw
- Clamps

- Sanders: spindle, orbital
- Rotary tool with sanding drums: 120 to 240-grit
- Drill with bit: 1/16" (2mm)-dia.
- Paintbrushes: assorted
- Foam brush or cloth (for applying finish)

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

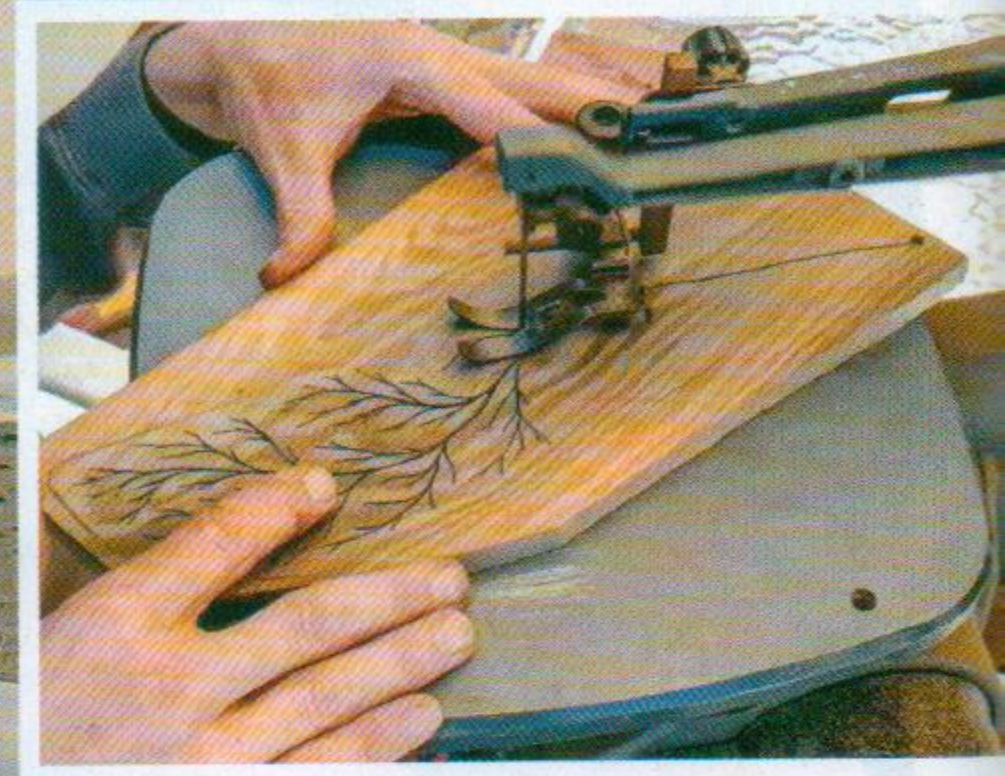


Emily Lewis is a Scottish artist using native hardwoods as her medium. Her trusty scroll saw has played a huge role in the development of her young business,

Ingrained Moments Woodcraft. Emily particularly enjoys developing original and one-off patterns using organic shapes, and regularly creates commissioned artworks of animals, people, and landscapes. See more of her work on at ingrainedmoments.co.uk, on Facebook at *Ingrained Moments Woodcraft*, and Instagram @*ingrainedmoments_woodcraft*.

“The scroll saw found a place in my workspace, lending itself to tasks other tools couldn't do.”

Scrolled designs filled with resin create spectacular features.



(Continued from page 72)

Supplies, co-founded with his friend David Dennis. “I have never looked back,” he said.

Before building a surfboard, Martijn determines what size, shape, and purpose the board will have based on the reclaimed pieces he has on hand. Martijn's surfboard designs are often inspired by nautical elements such as kelp forests and marine animals.

Once he chooses the types of woods for the top and bottom decks of the board, he cuts the frames for the board's interior structure with a laser cutter. Martijn had previously used a treadle scroll saw but has switched to a modern scroll saw and laser cutter for quicker and more efficient cuts. After assembling and sealing the interior structure with epoxy resin, Martijn cuts the top and bottom decks to about $\frac{3}{16}$ " (5mm) thick and bonds them to the frame structure in a special clamping table. This allows the air to stay trapped inside the board. Then he trims the surfboard's outline and creates the board rails out of cork to provide the surfer with a smoother and easier ride.

Once the board is sanded, Martijn finishes the boards with epoxy resin. Since his rule is to never pay for wood, Martijn uses resin to highlight the reclaimed wood's natural flaws and colors and preserve their histories. He also adds it to the design voids to catch and reflect the sunlight. “The results can be stunning, and it's very enjoyable to add some bright colors to woodwork,” he said.

At a hundred handcrafted surfboards and counting, Martijn continues to create artistic and

sustainable surfboards that remain a favorite among surfers and upcycling enthusiasts alike. “Building boards full-time has been very rewarding, and I continue to be very passionate about it,” he said.

To see more of Martijn's surfboards, visit ventanasurfboards.com.



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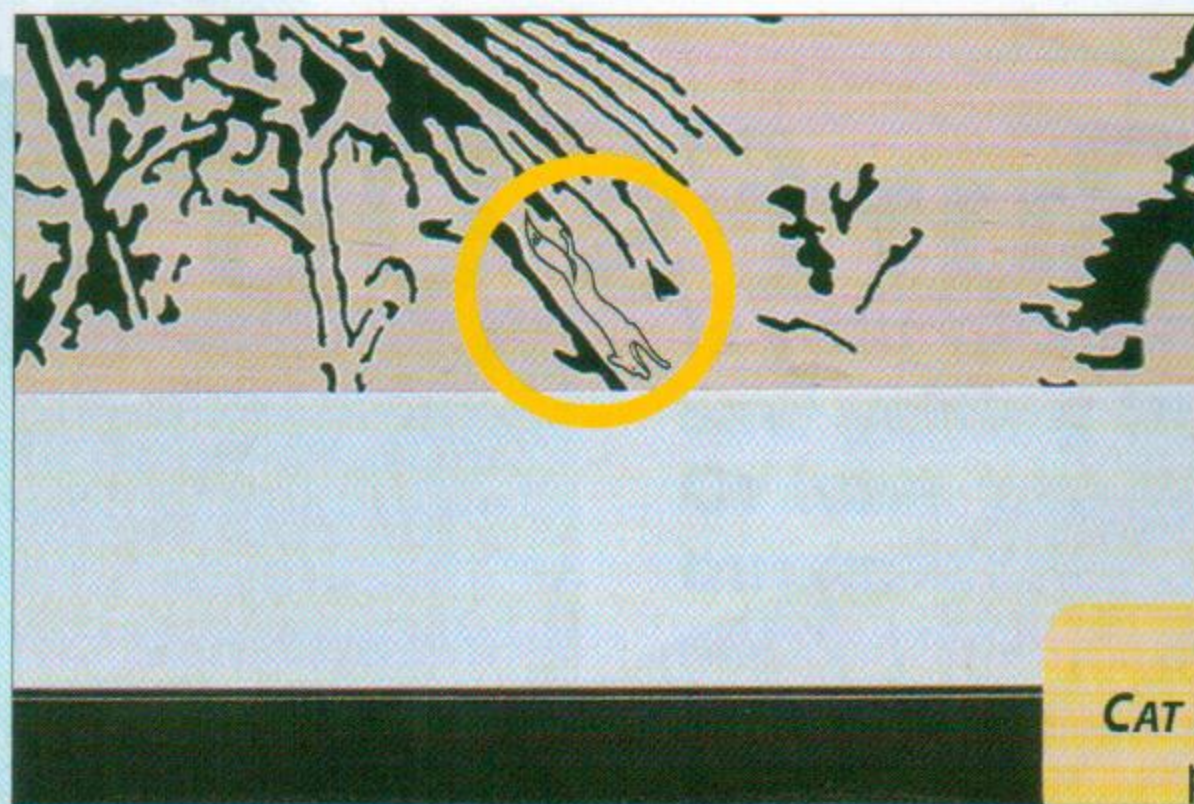
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FOX HUNT

David Russell of Painesville, Ohio, and Marie-Claire Lefevre of Namur, Belgium, were randomly drawn from the participants who located the fox in our last issue (Spring 2023, Issue #90). The fox was nestled in the whiskers of The Cat Next Door, in Charles Hand's article on page 35.

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 May 24, 2023, to be eligible. *Note: The contest fox is an outline drawing that would face left if its feet were on the "ground" (other foxes appearing in SSW&C don't count).*

Send your entry to SSW&C, Attn: Find the Fox, 903 Square Street, Mount Joy, PA 17552 or enter online at scrollsawer.com.

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Surf's Up



Why Hollow?

Hollow surfboards have an airplane-wing structure that allows a rider to move more quickly due to the air trapped inside.

Surfer and woodworker Martijn Stiphout transforms debris into extraordinary surfboards

By Kelly Umenhofer

Photo by Sebastian Stiphout



Martijn cuts out one of his designs on a treadle scroll saw.

It's a sunny afternoon in California, and Martijn Stiphout has just hauled in a new assortment of reclaimed wood. Old barns, wine casks, hot tubs—Martijn welcomes them all in his quest to make the perfect custom surfboard. This latest batch includes pieces from the *Western Flyer*, the boat that carried Pulitzer Prize-winning novelist John Steinbeck to California in the 1940s. “The original timbers almost tell a story themselves, having such unique patterns and wear and tear, and incredible staining from salt water, oil, diesel, and iron nails,” Martijn said.

Growing up in the Netherlands, Martijn was introduced to woodworking at four years old when his father taught him how to use a fretsaw (known as *figuurzaag* in Dutch). Soon after, “the scroll saw found a place in my workspace, lending itself to tasks other tools couldn't do,” he said.

Martijn moved to California in 1993 and earned a degree in marine biology. After nearly a decade of seeing the impact of marine debris on the oceans, Martijn decided to make wooden surfboards out of sustainable materials, and eventually opened up a surfboard shop: Ventana Surfboards &

(Continued on page 70)

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"The first time I installed a good blade in my scroll saw, it was like I had upgraded my entire machine. I was hooked."

Steve Good — Author of "The Scroll Saw Workshop"

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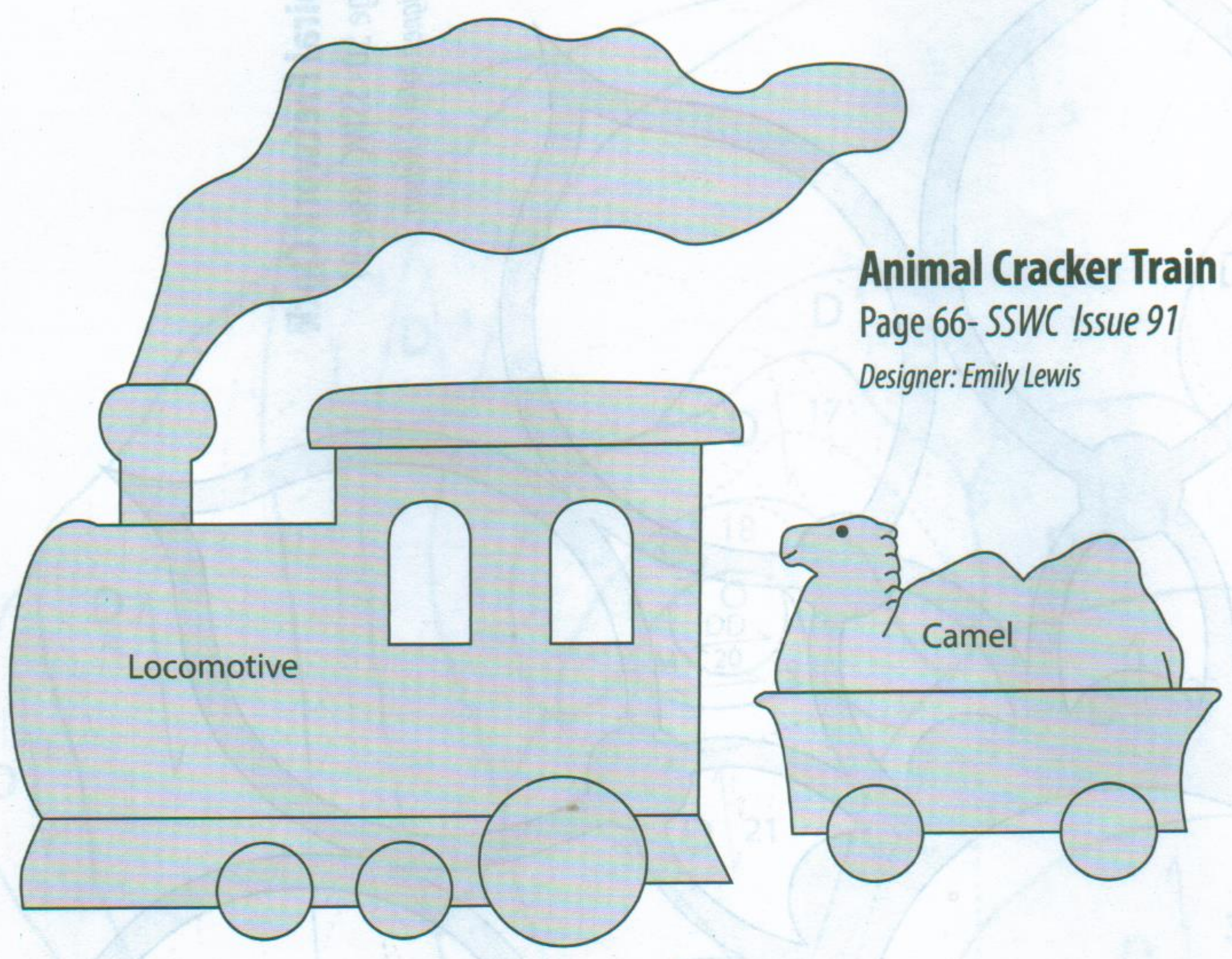
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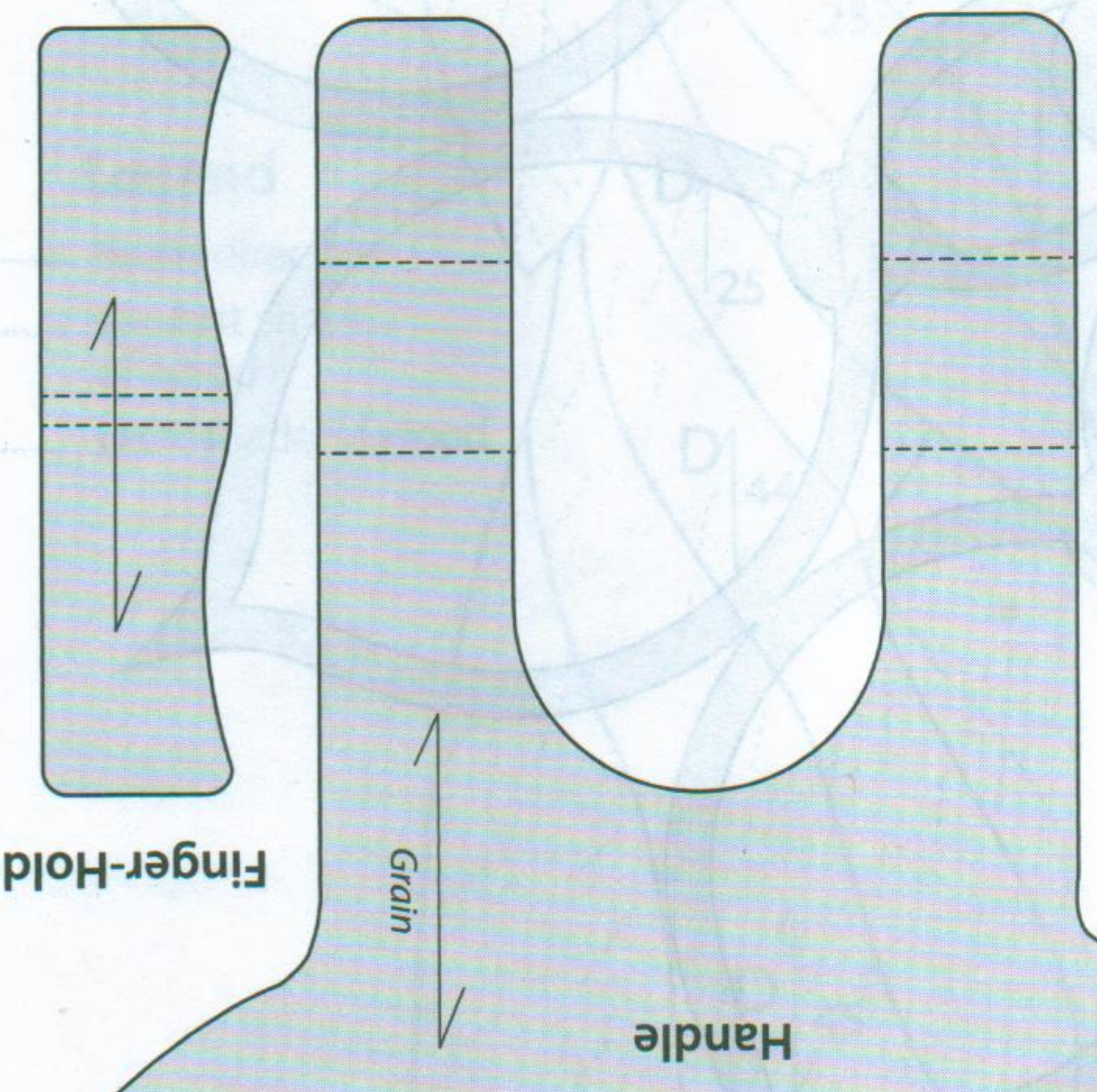
1B



Animal Cracker Train

Page 66- SSWC Issue 91

Designer: Emily Lewis



Designer: Rita Cels

Notice about ph

Some photocopiers

2A

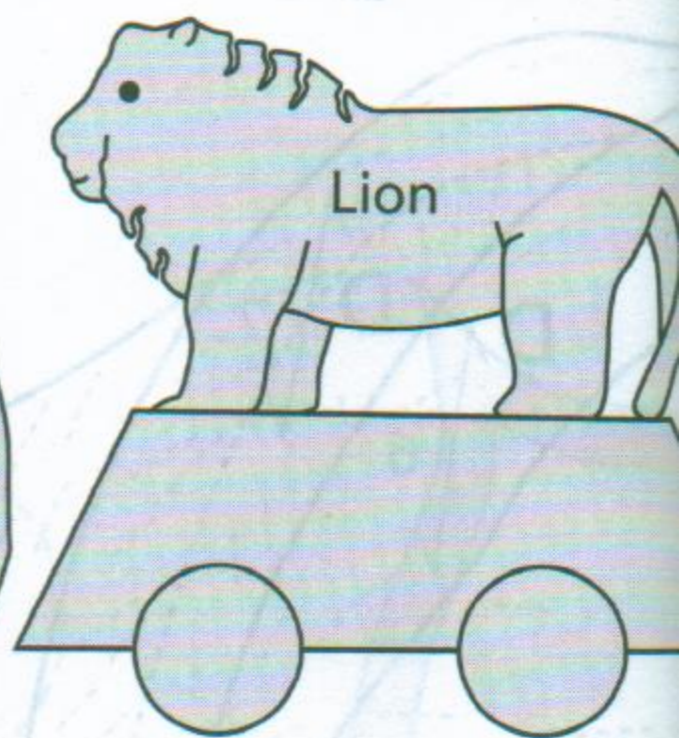
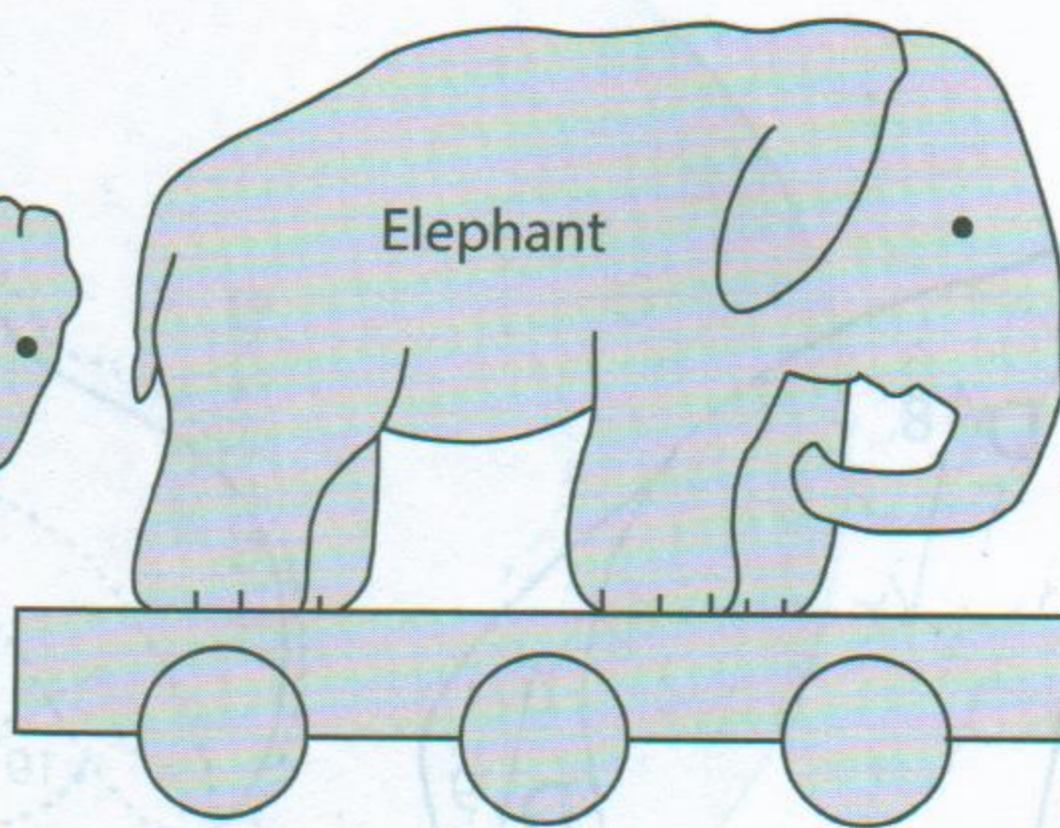
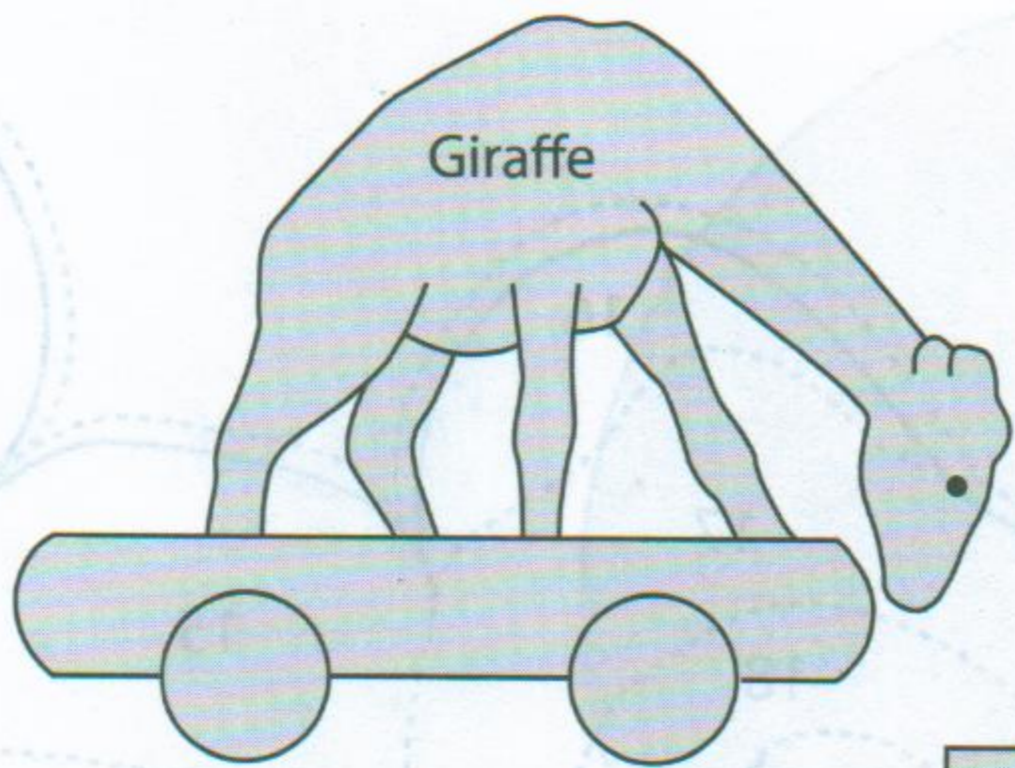
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Summer Sun
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Designer: Jaeheon Y.



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3A



Puzzle

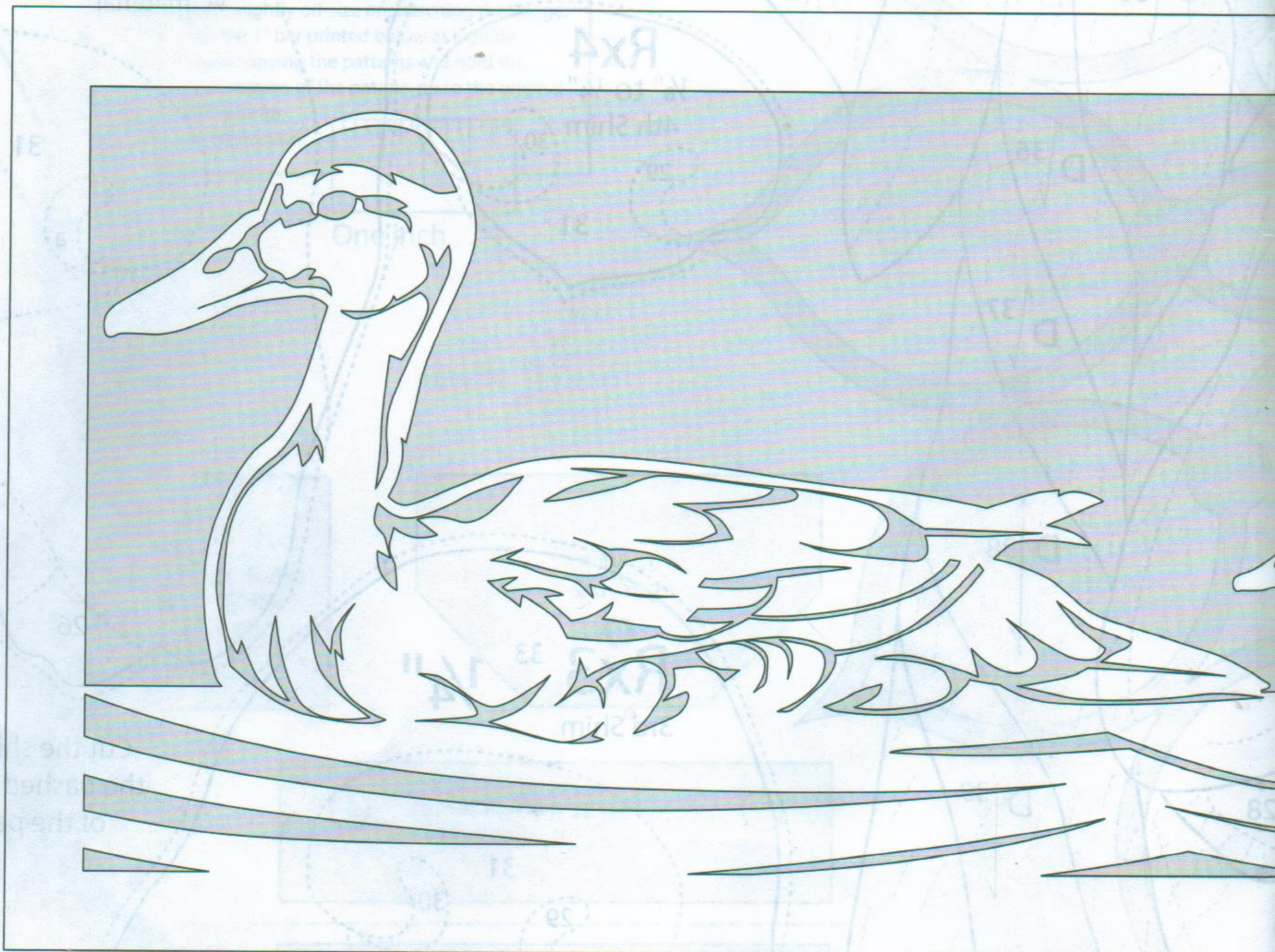
Issue 91

in

Animal Cracker Train

Page 66- SSWC Issue 91

Designer: Emily Lewis



4A

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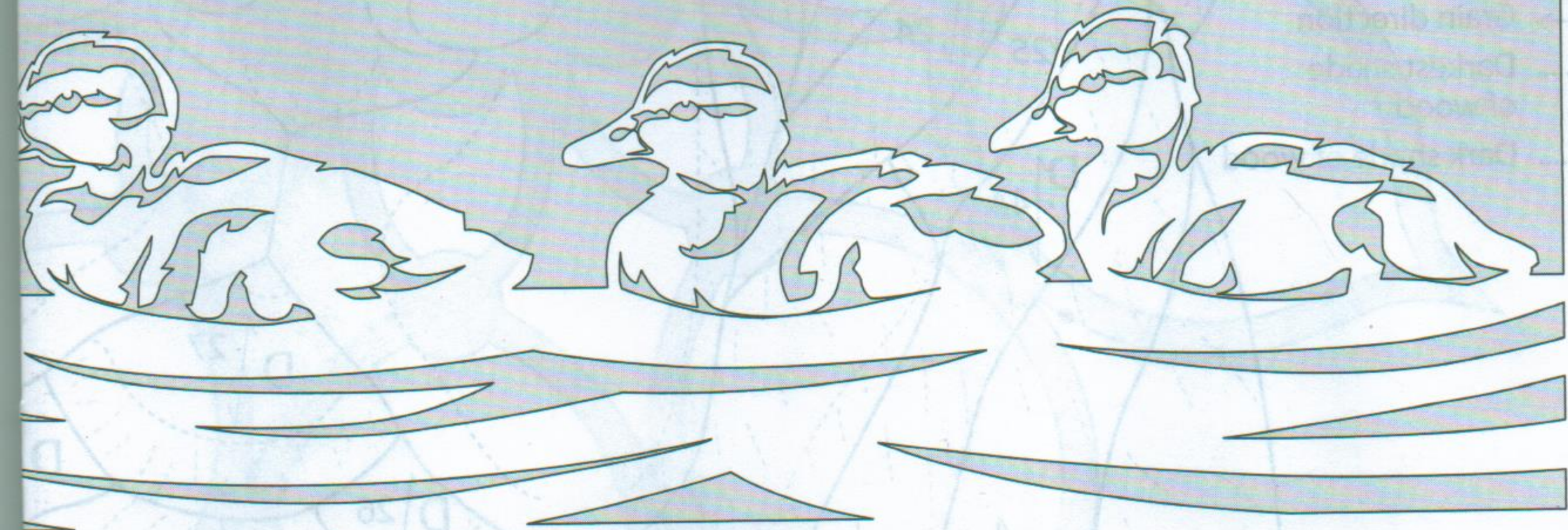
Tiger



Swimming Single File

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Designer: Jacob Fowler

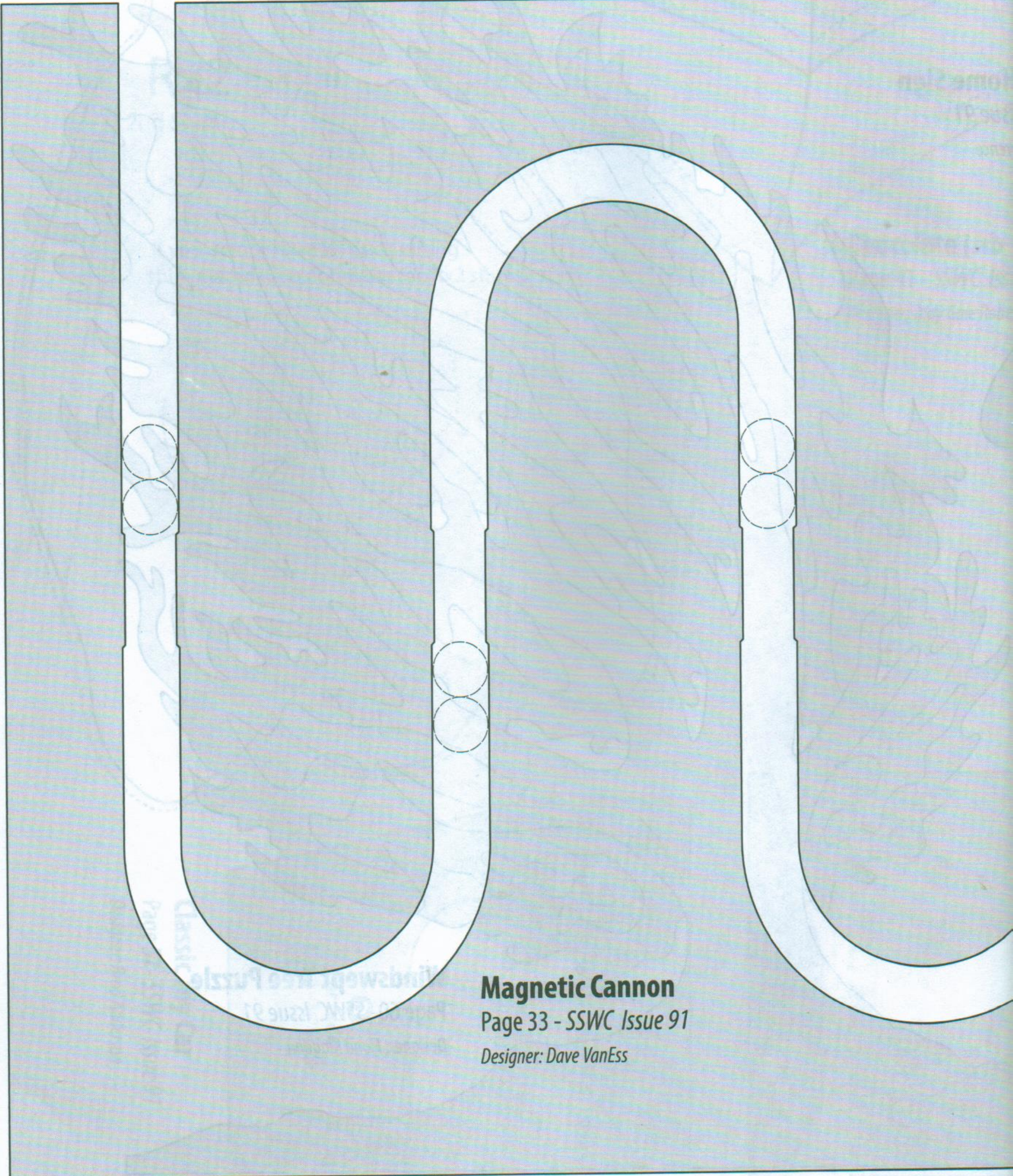


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Old-Timely Tops

Page 21 - SSWC Issue 91

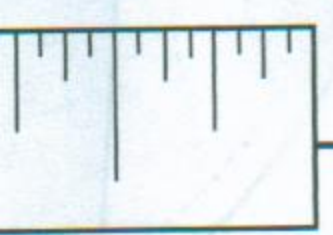
5A



Magnetic Cannon
Page 33 - SSWC Issue 91
Designer: Dave VanEss

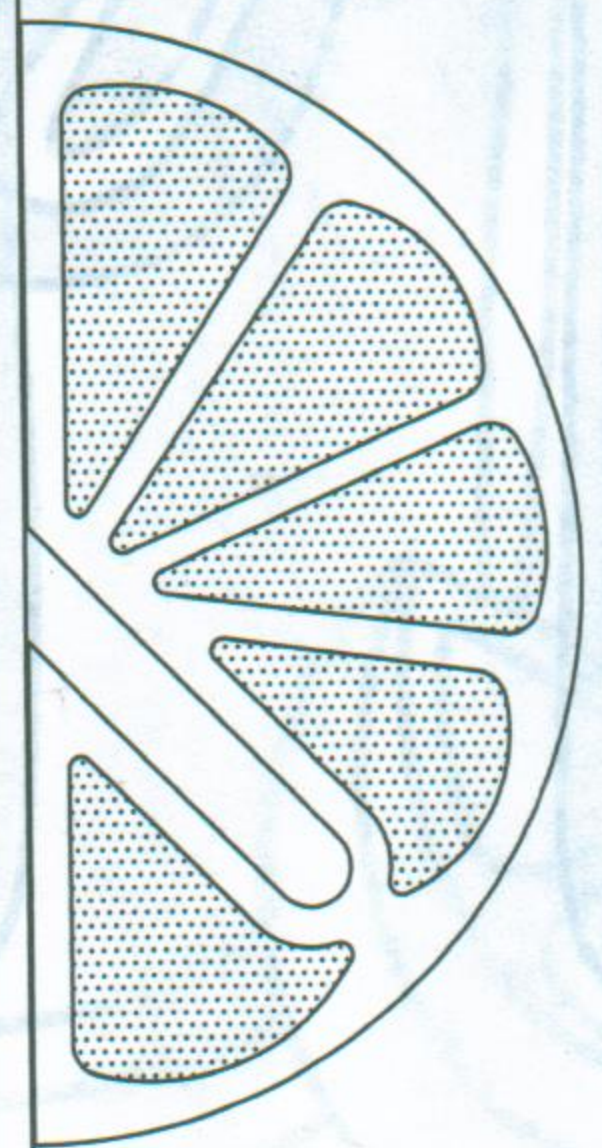
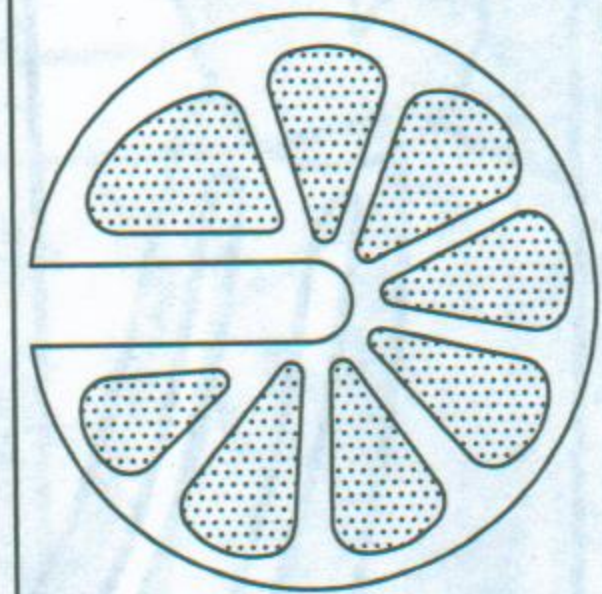
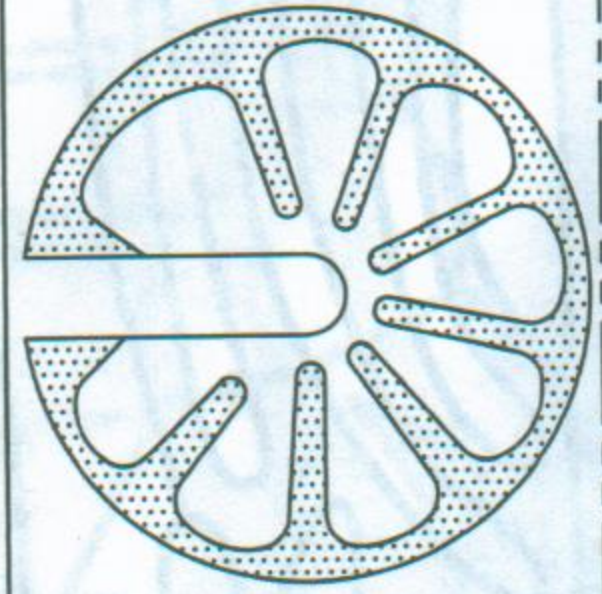
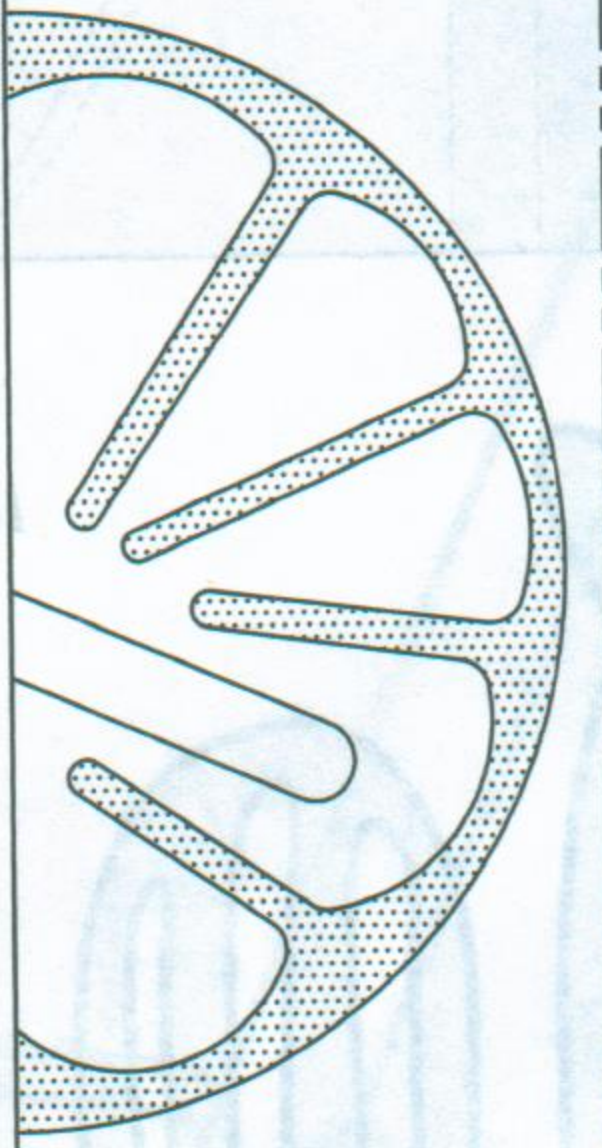
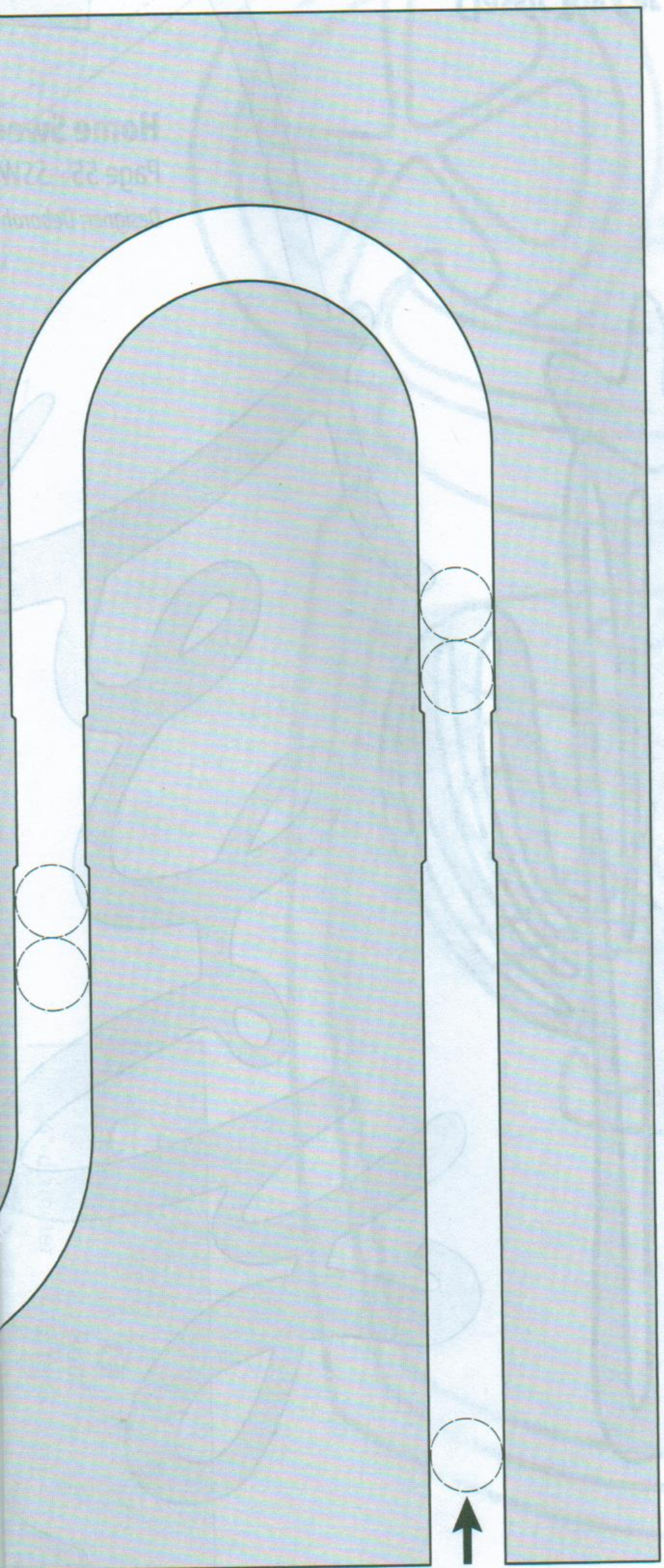
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6A



1/2 inch

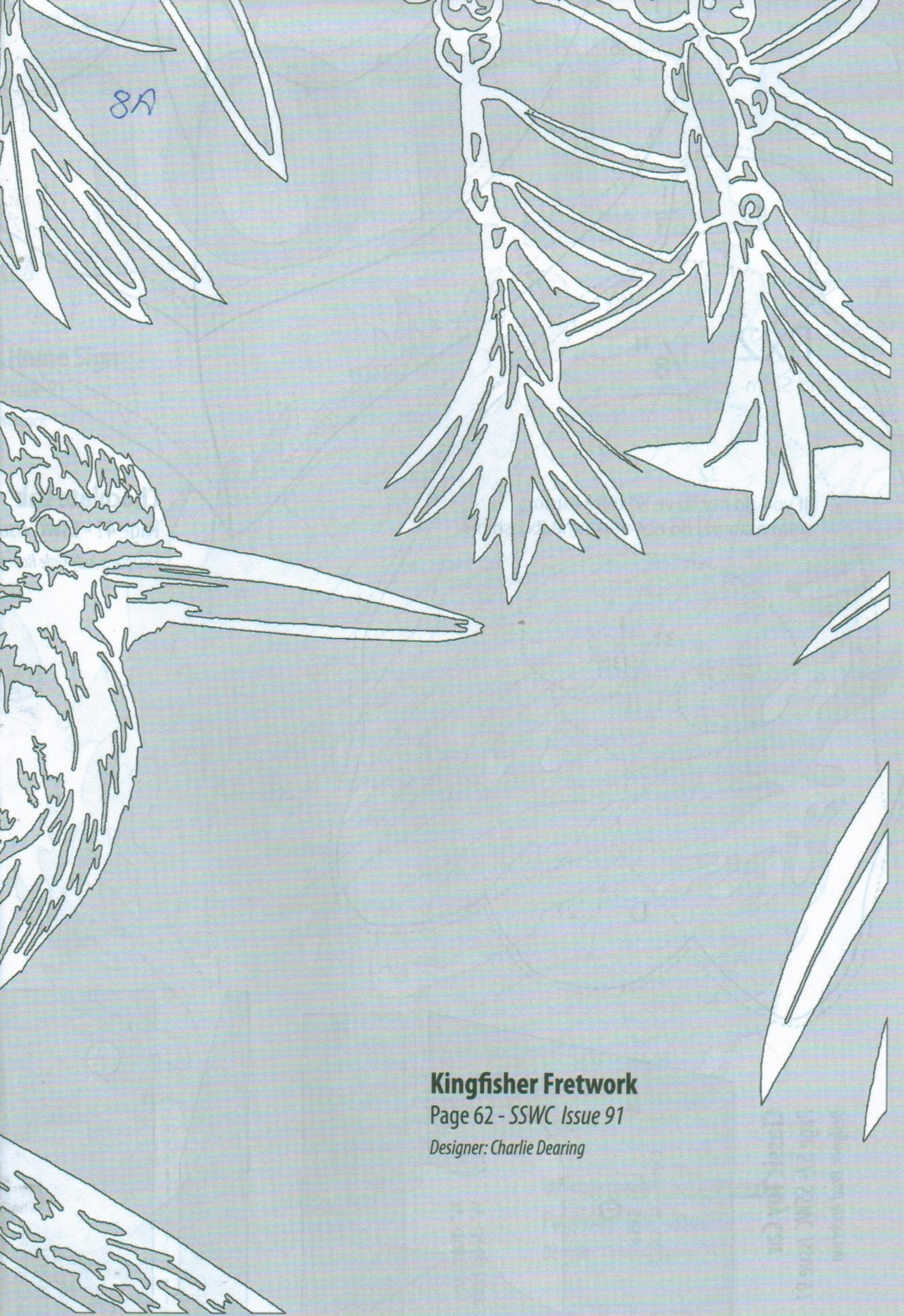
Citrus Glass Charms
Page 29 - SSWC Issue 91
Designer: Clayton Meyers



7A



8A



Kingfisher Fretwork

Page 62 - SSWC Issue 91

Designer: Charlie Dearing

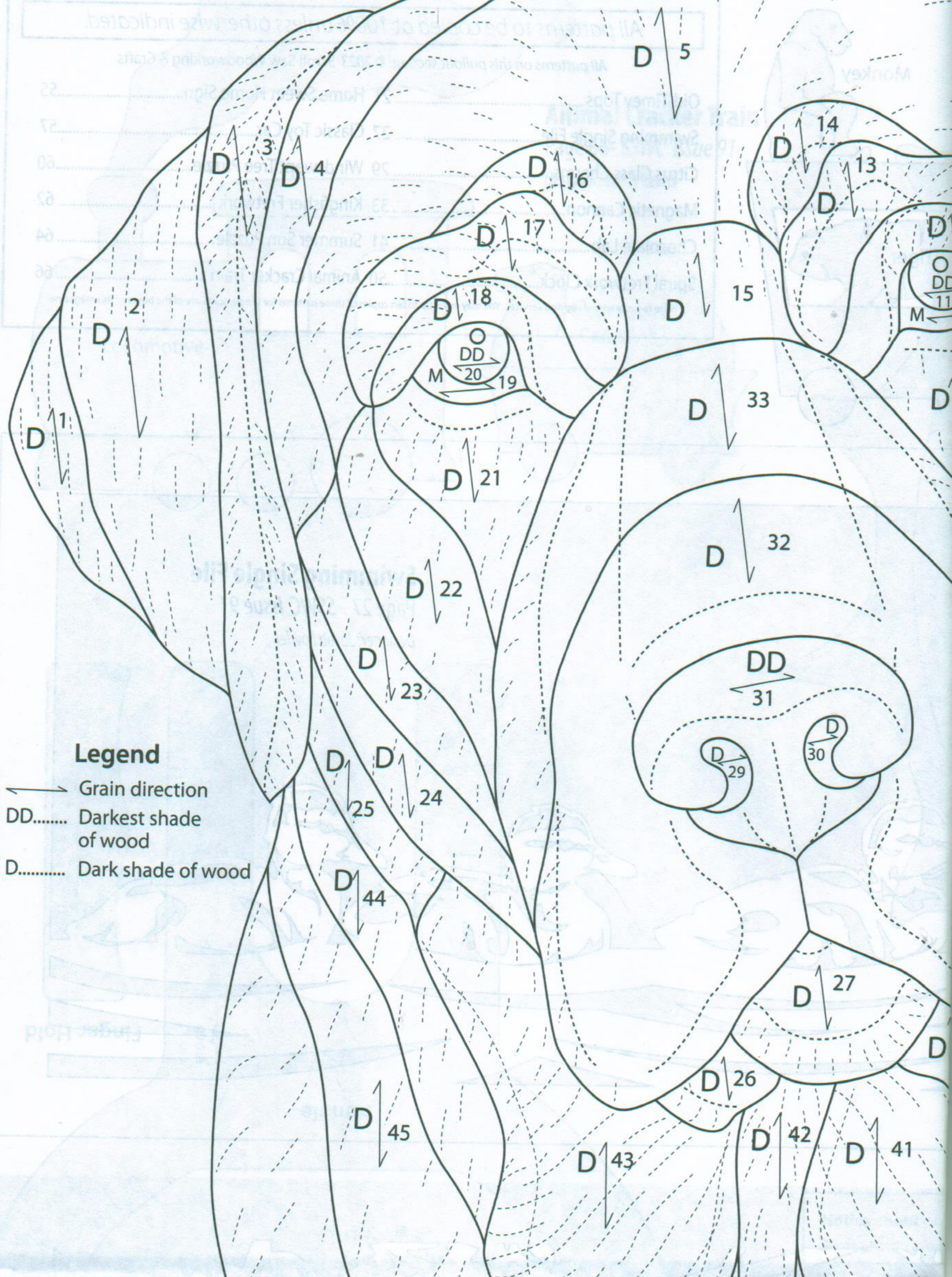
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Woodworking

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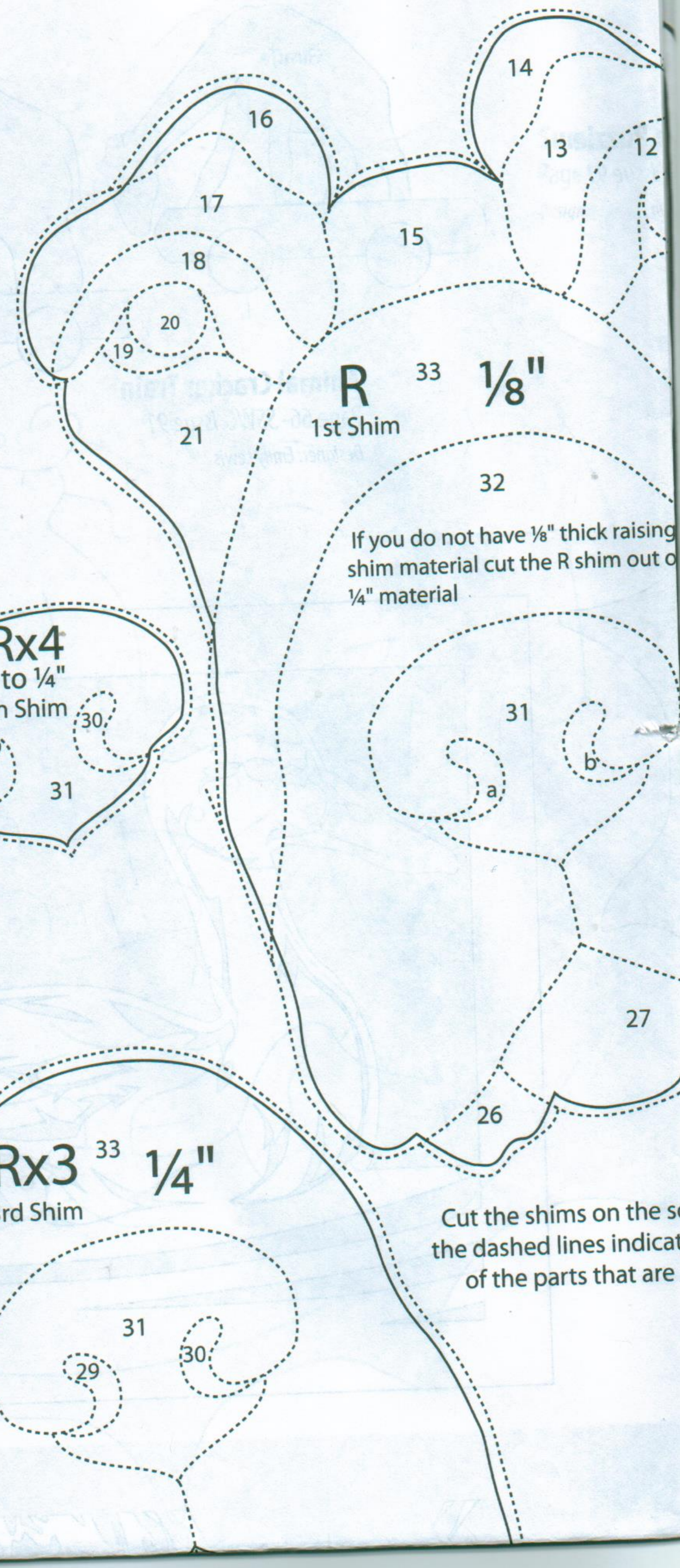


Legend

- ← Grain direction
- DD..... Darkest shade of wood
- D..... Dark shade of wood

1A

2B



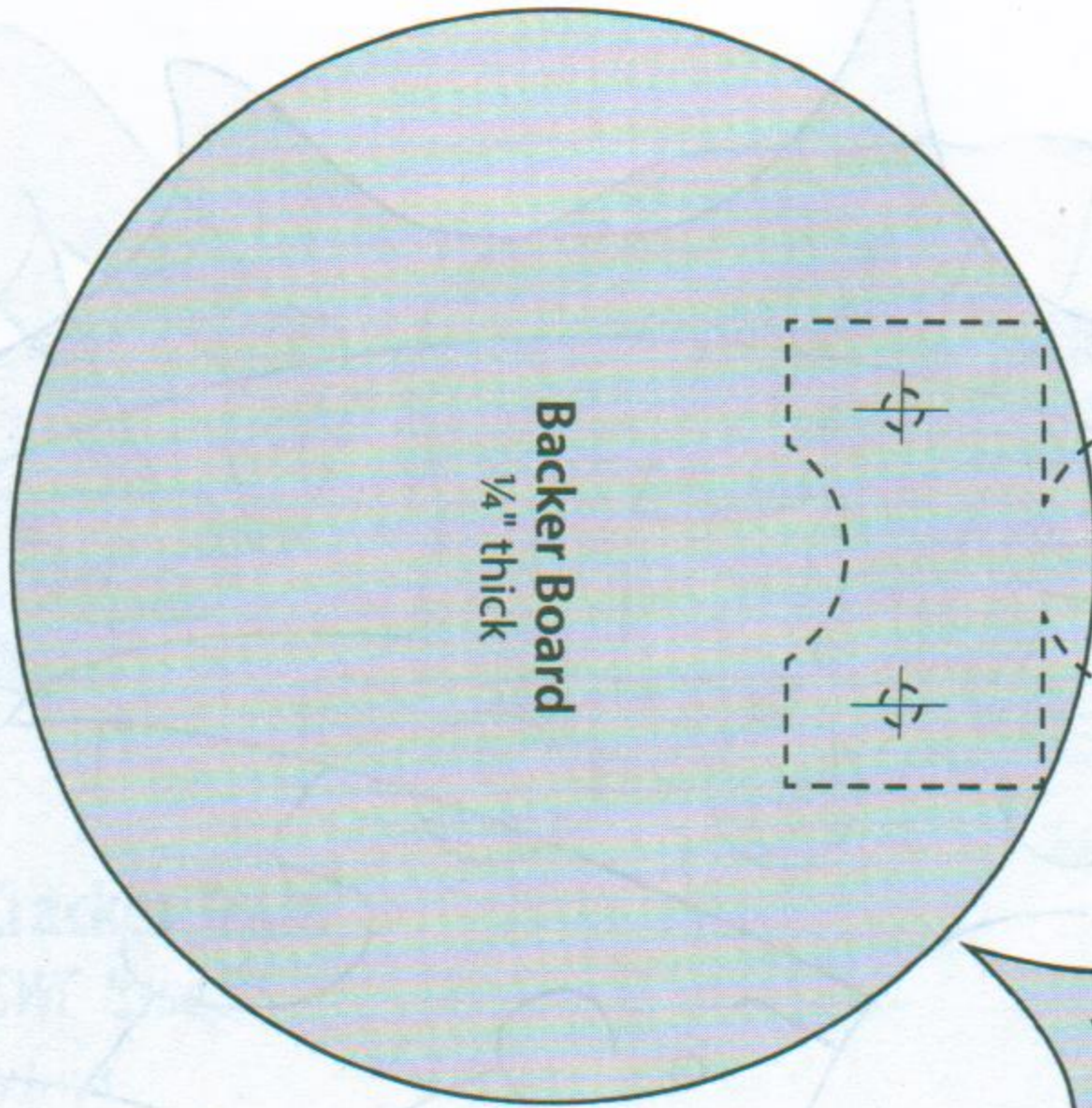
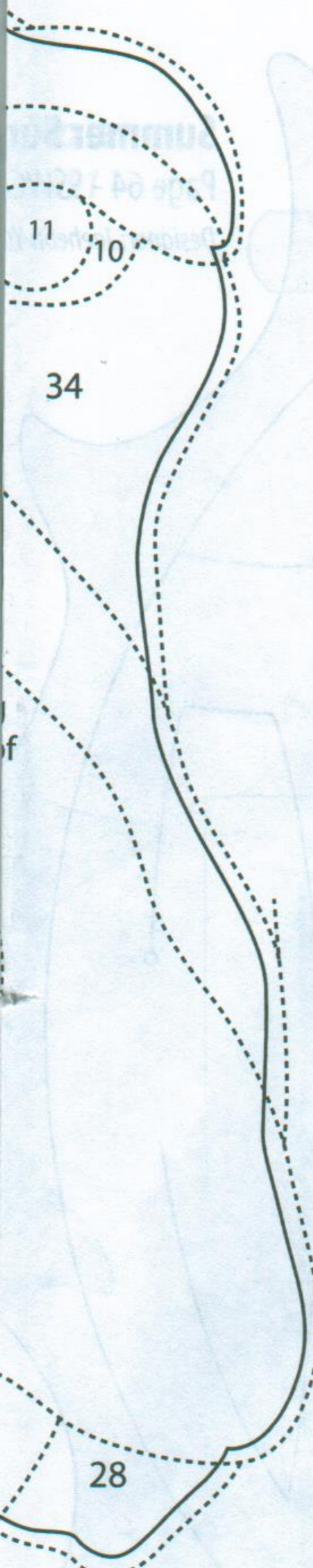
R 33 $\frac{1}{8}$ "
1st Shim

If you do not have $\frac{1}{8}$ " thick raising shim material cut the R shim out of $\frac{1}{4}$ " material

Rx4
 $\frac{1}{8}$ " to $\frac{1}{4}$ "
4th Shim

Rx3 33 $\frac{1}{4}$ "
3rd Shim

Cut the shims on the so the dashed lines indicate of the parts that are r

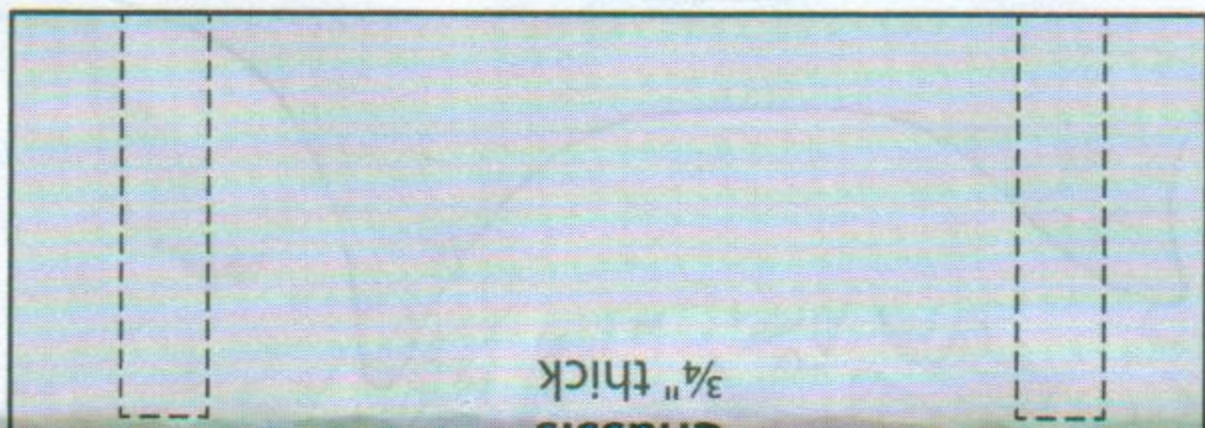
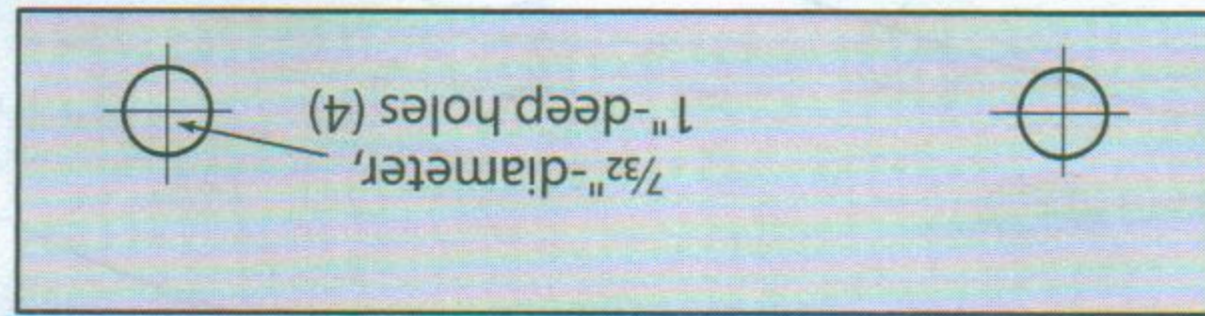
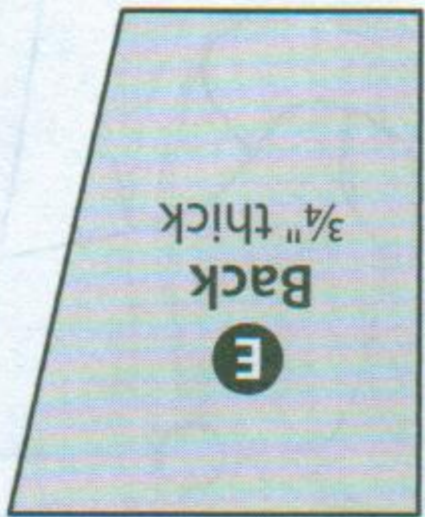


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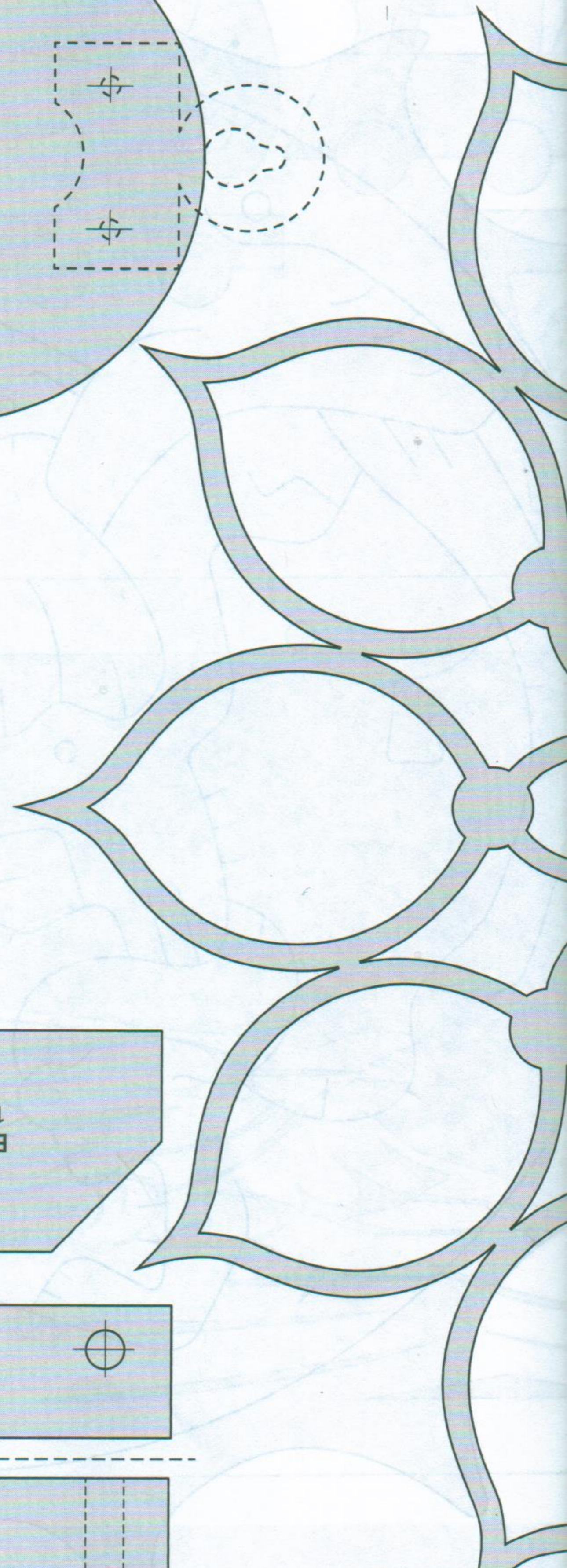
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One inch



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4B

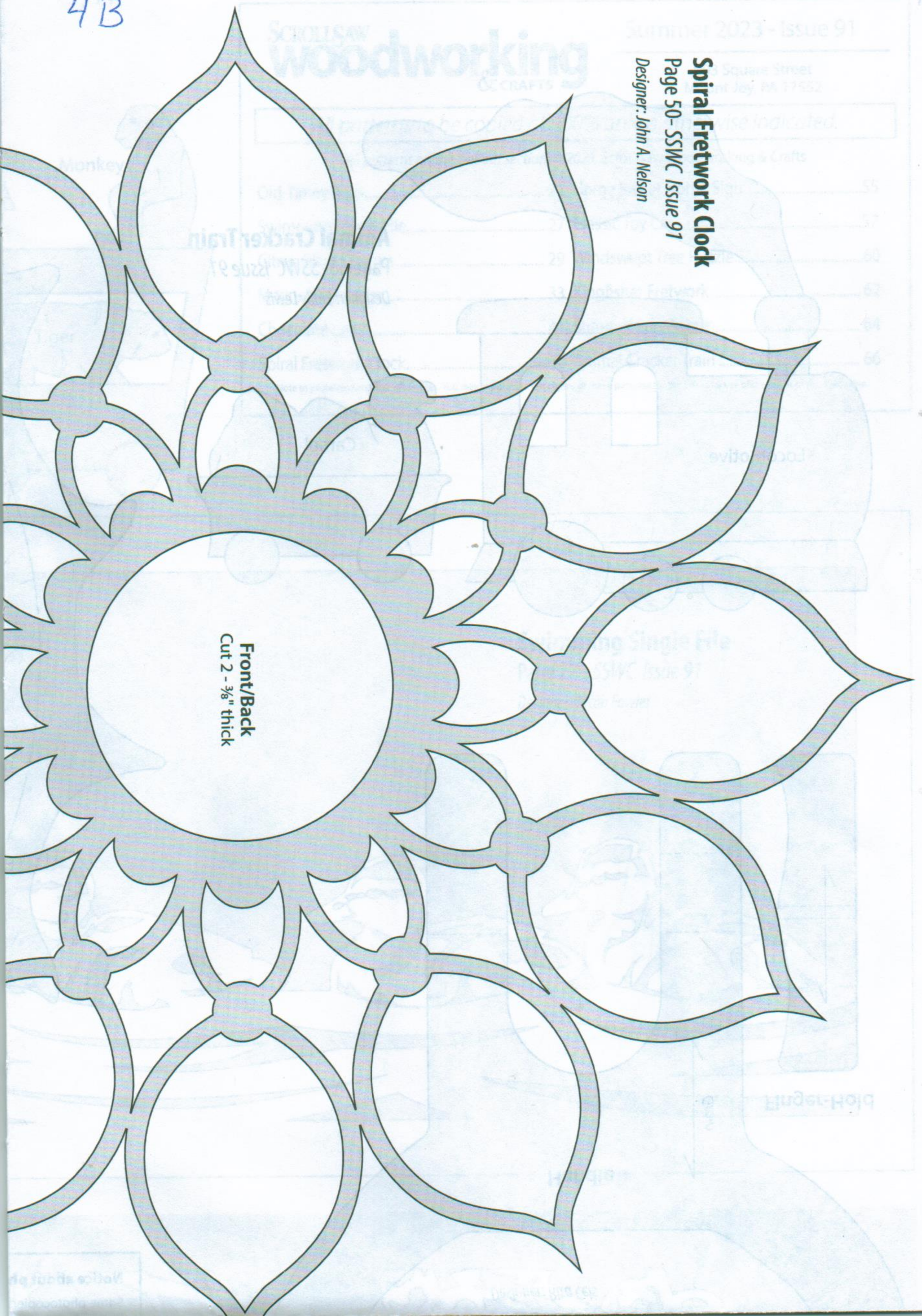
A1

Spiral Fretwork Clock

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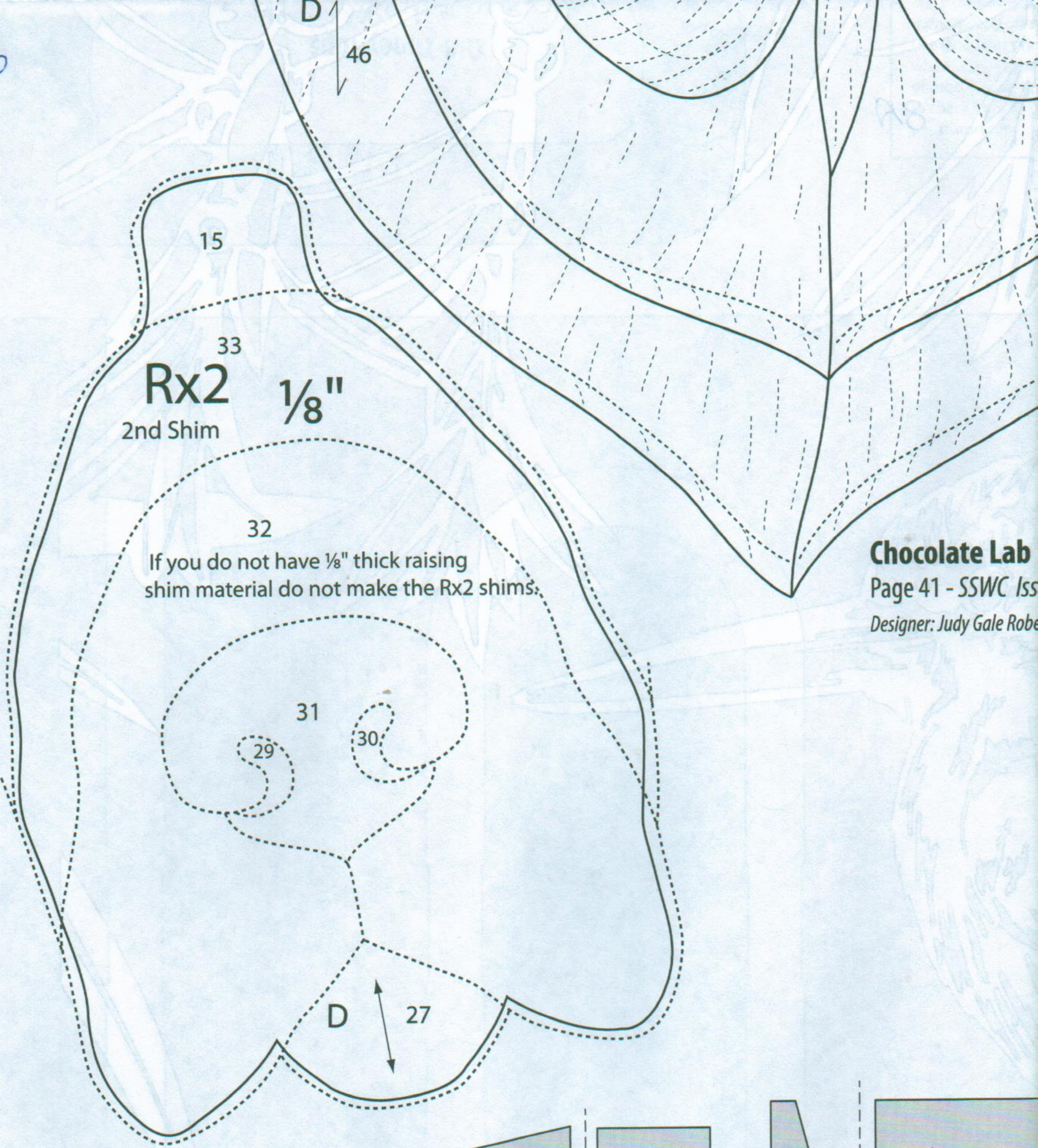
Designer: John A. Nelson

Front/Back
Cut 2 - $\frac{3}{8}$ " thick



5B

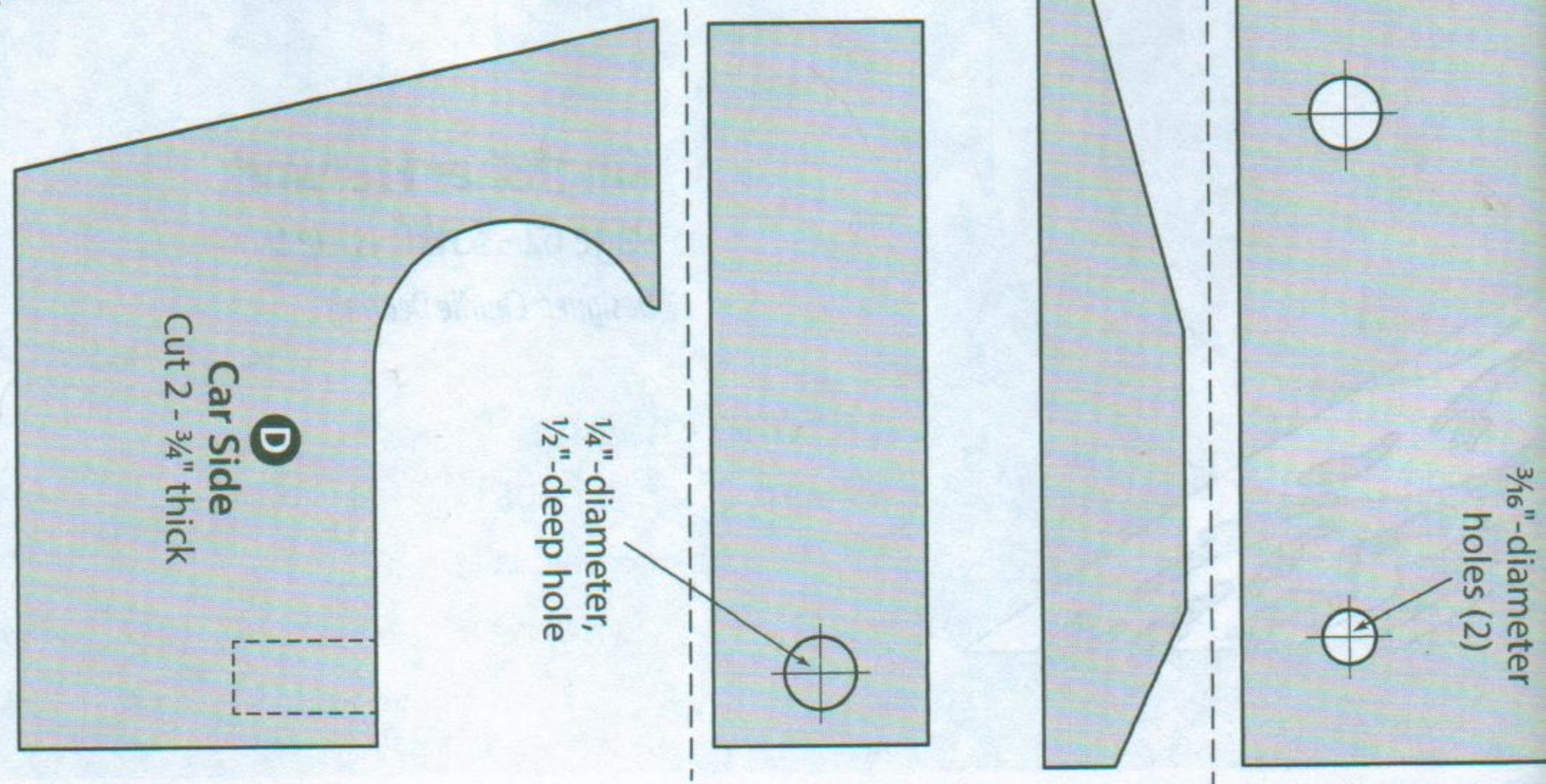
28



Rx2
2nd Shim $\frac{1}{8}$ "

If you do not have $\frac{1}{8}$ " thick raising shim material do not make the Rx2 shims.

Chocolate Lab
Page 41 - SSWC Iss
Designer: Judy Gale Robe



Classic Toy Car
Page 57 - SSWC Issue 91
Designer: Brad Anderson


6B




e 91

s

1/4"-diameter holes (2)

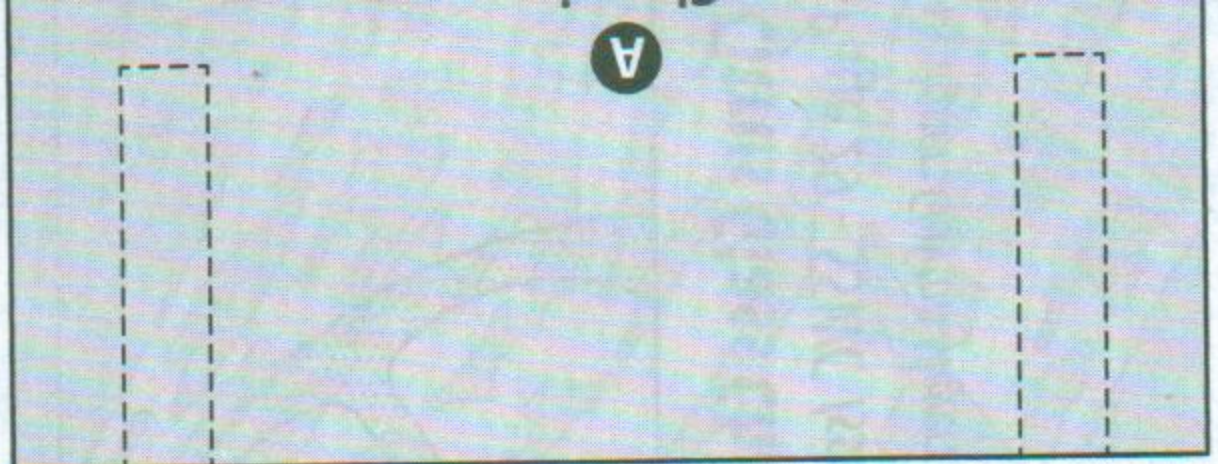


Roof 1/2" thick



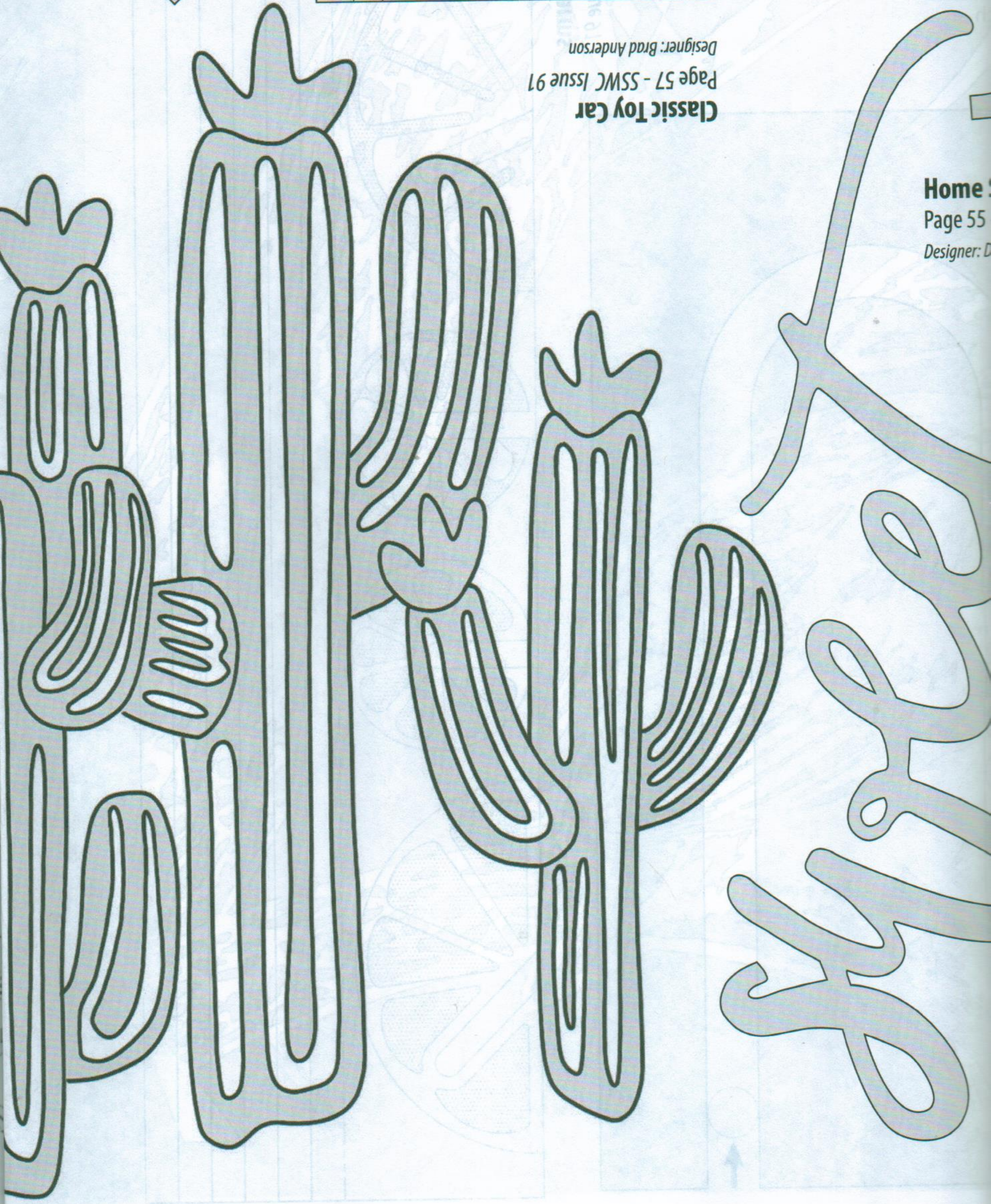
7B

Fender
Cut 2
1/2" thick
E



Classic Toy Car
Page 57 - SSWC Issue 91
Designer: Brad Anderson

Home
Page 55
Designer: D

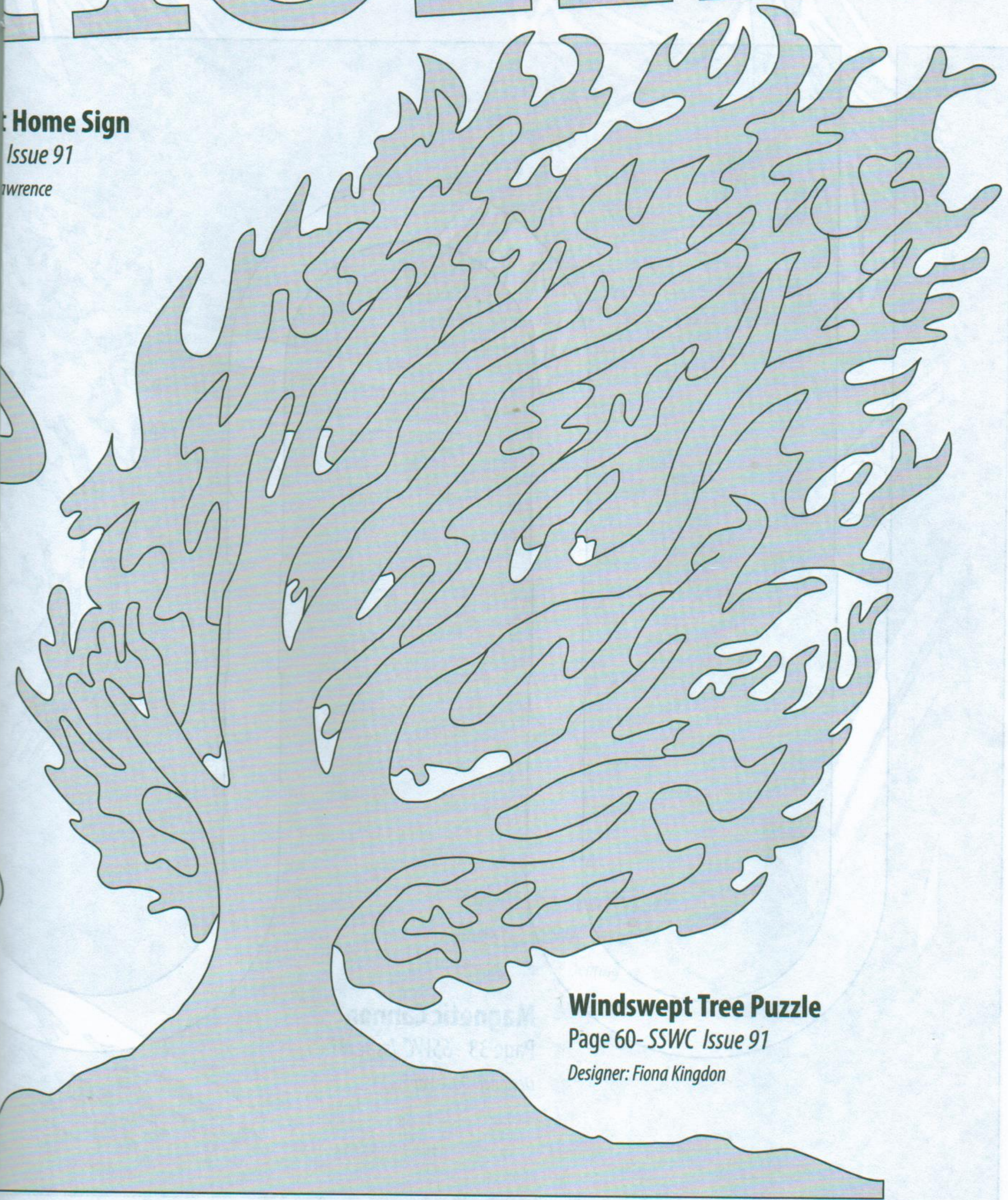


noir

Home Sign

Issue 91

Lawrence



Windswept Tree Puzzle

Page 60-SSWC Issue 91

Designer: Fiona Kingdon

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ised.

34

11