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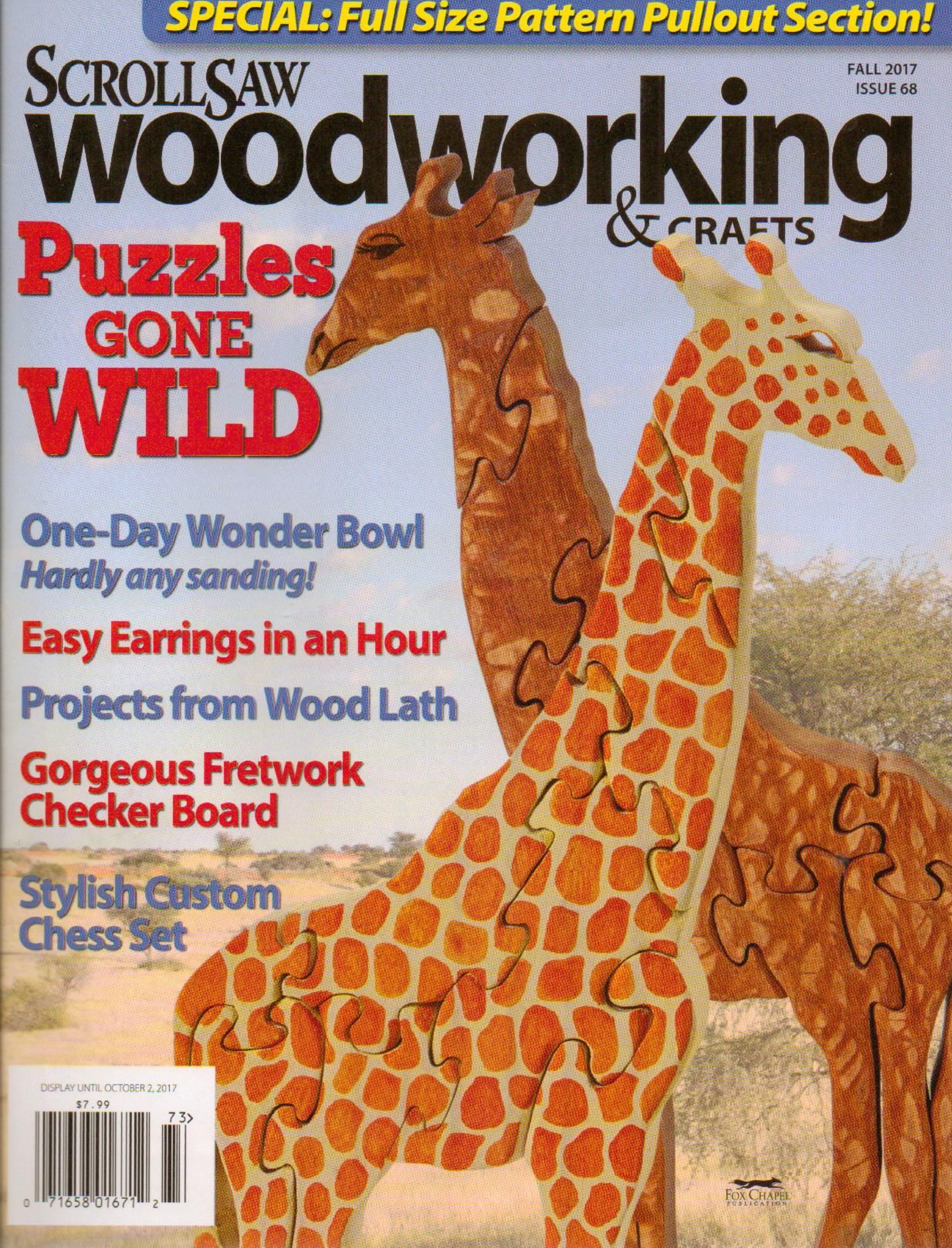
FALL 2017
ISSUE 68

SCROLLSAW woodworking & CRAFTS



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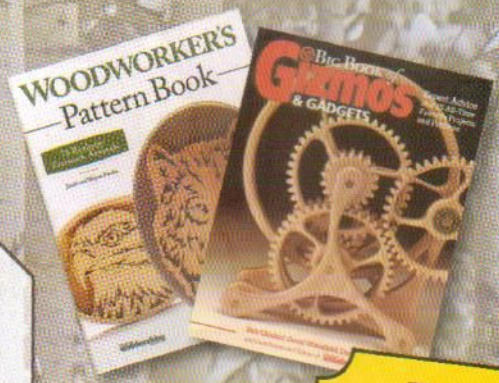

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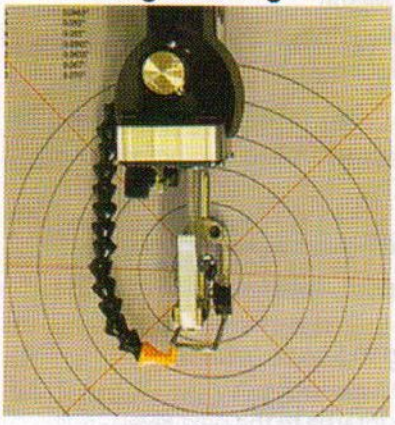

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FALL 2017 ■ ISSUE 68

SCROLL SAW woodworking & CRAFTS

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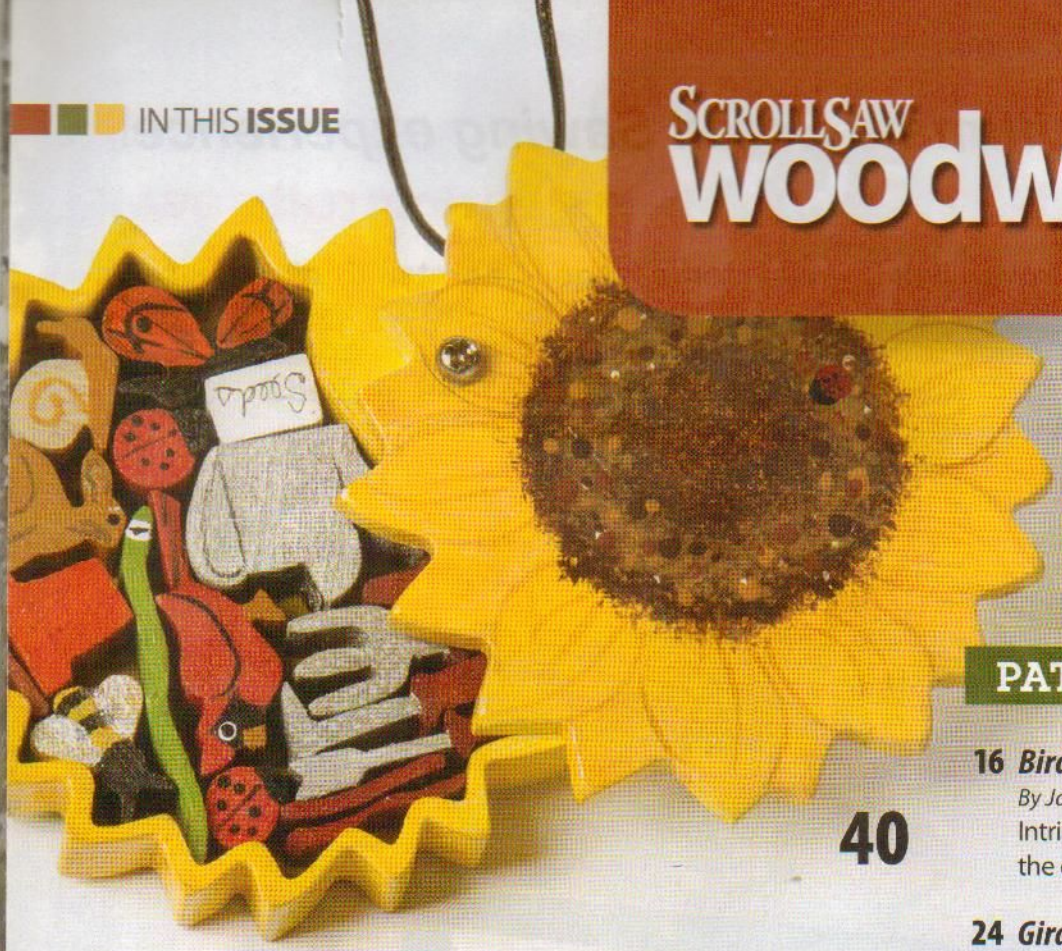

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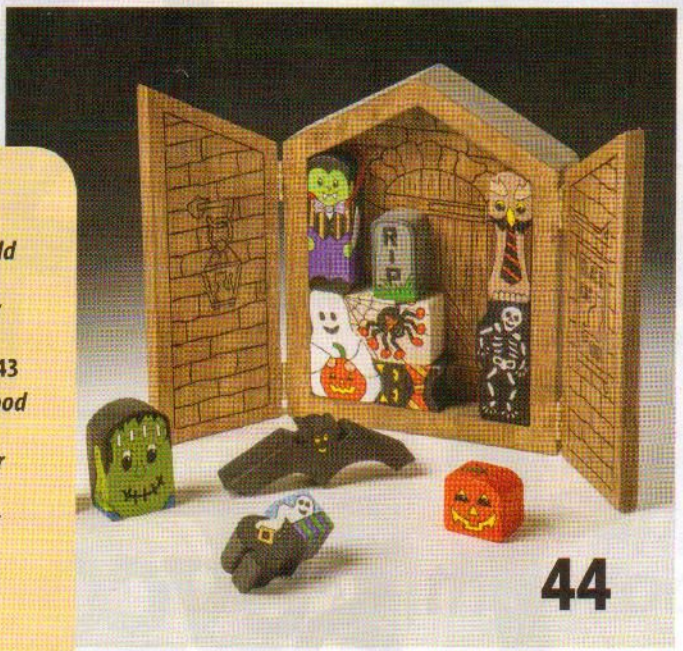

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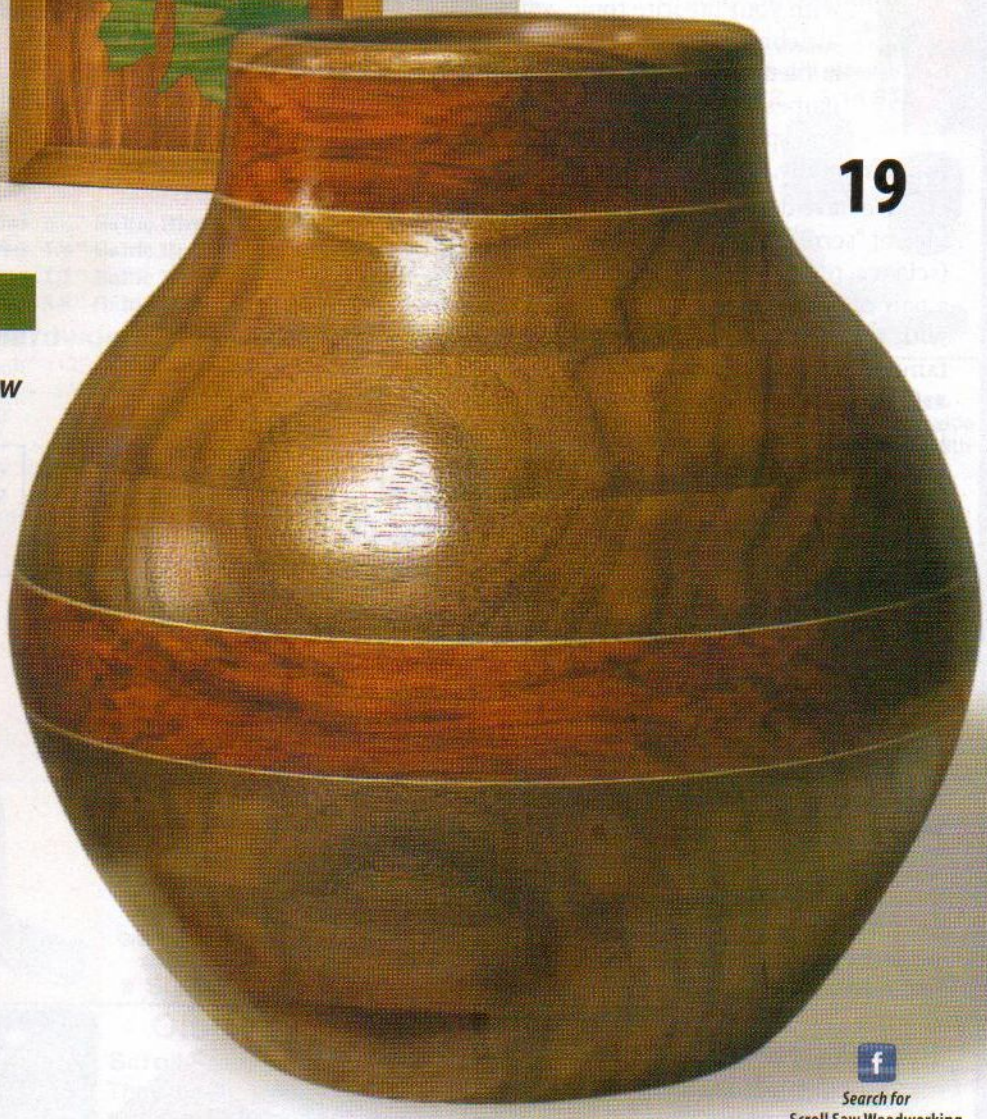

PROJECTS

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  See the Catapult Castle (pg. 60) in action.
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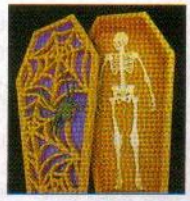
  Learn about the organization and find out how you can help
- ***Online Exclusive! Halloween Projects***
  Look for 4 all-new projects to be posted online on August 1, 2017.



Geeking Out

Sports. Gardening. Pets. Video games. Everyone geeks out about something. When you're a wee bit obsessed with your favorite topic, you know all the trivia and "celebrities," and you share your info regardless of your audience's interest, that's geeking out. We call it different names depending on the topic—food geeks are "foodies" and sports geeks are "super fans," for example—but fundamentally, we're all geeks. You, my friends, are scroll saw geeks.

We have designed a back-to-school section that riffs on the idea of "scroll saw geek," with a nod to the popularity of STEM (science, technology, engineering, math) education. We've included a pair of earrings decorated with the pi symbol (page 43), a bowl with a mathematically derived shape (page 56), a puzzle featuring a famous cat (page 54), a chess set (page 50), and an article about an artist inspired by comic book art (page 48). As a bonus, most of the projects are fairly easy to cut, so could work well for your fall crafts table.

Fear not, though—the projects work even if you aren't into math. You can cut any symbol into the earrings. The bowl article demonstrates techniques for avoiding those angled blade-entry holes and reducing sanding. The chess set (and matching checkers) are lovely fretwork projects with pieces that could be used as Christmas ornaments if you don't play the games. The artist interview demonstrates that anything can inspire a scrolling project. And the black cat puzzle could work for Halloween.

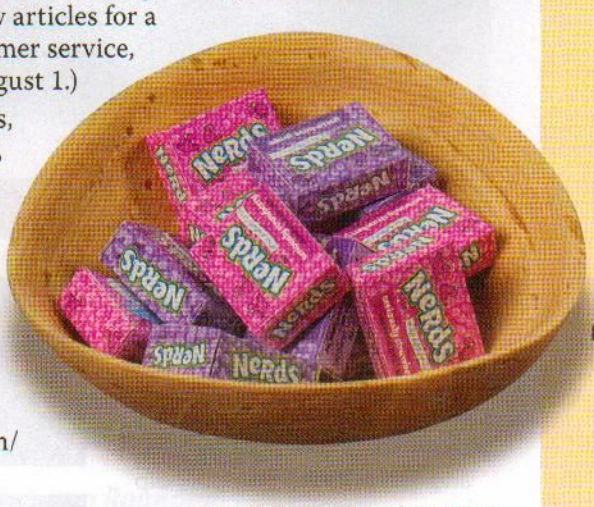
Speaking of Halloween, the issue contains some projects with definite autumnal themes—leaves, birds, sunflowers—but I'll admit we didn't go whole hog. Instead, we saved the hog for our website. Log onto our site, www.scrollsawer.com, on August 1 to download patterns for four new Halloween-themed projects by some of your favorite designers. We'll also post a collection of great back-issue projects you might have missed or forgotten. (You can order the printed version of the new articles for a small fee by calling customer service, 1-800-457-9112, after August 1.)

And for more projects, show notes, book reviews, and general news, be sure to sign up for our e-mail newsletter, *ShortCuts*. It comes out four times each year to give you updates and new ideas between printed issues. Sign up by visiting our website at scrollsawer.com/enews.

Happy Scrolling!

Mindy Kinsey

Kinsey@FoxChapelPublishing.com



Math fans will geek out over the Wonder Bowl's shape, but the project also teaches handy scrolling skills.

SCROLL SAW woodworking & CRAFTS
Printed in the USA

FALL 2017
Volume 18, Number 3, Issue 68

www.ScrollSawer.com

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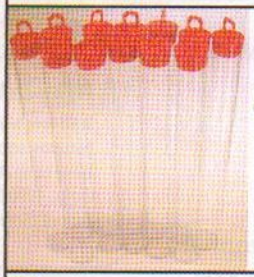

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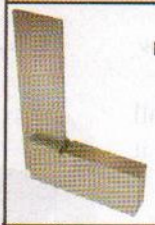

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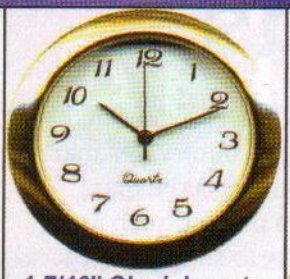

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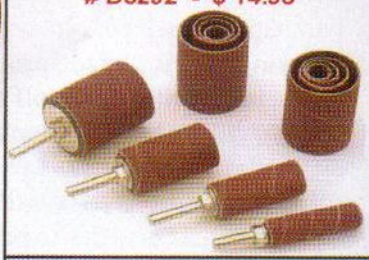

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Time for the Kids

The Kings Point wood shop in Delray Beach, Fla., participates each year in a community flea market. Showing off shop-made products is the main focus, but we also raffle off a project, such as a rocking horse, to raise money to support our local elementary schools. This year, instead of raffling off one large project, we will raffle off several smaller pieces in order to boost ticket sales. Some of these projects will be a variety of "Clockopelli" by Dave Van Ess that were featured in *Scroll Saw Woodworking & Crafts* Summer 2017 (Issue 67). I have modified the project beyond the basic black by using glitter, scrapbook paper, and pieces of slate to make each "Clockopelli" a unique piece of art.

Bill Miller
Delray Beach, Fla.

Write To Us!

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

Hamsa Box

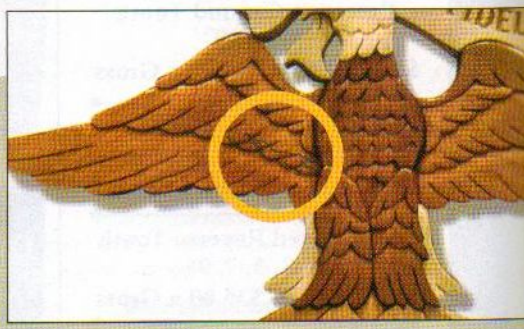
I just finished my attempt at the "Hamsa Box" by Carole Rothman featured in *Scroll Saw Woodworking & Crafts* Spring 2017 (issue 66). I normally scroll detailed fretwork projects, but it was fun to try something new. I made the box and scrolled details of the lid from cherry wood. I used curly maple, mahogany, and Spanish cedar for the veneers.

Paul Douglass
Benton City, Wash.

Excalibur Replacement Parts

Contrary to the statement made by Craig Hutchins of General International in the article "Sizzling Hot Scroll Saws" published in *Scroll Saw Woodworking & Crafts* Summer 2017 (Issue 67), Seyco has arranged to maintain parts for Excalibur saws. We have sold many tilting head Excaliburs and we take seriously our responsibility to our customers. We have not, and hopefully will not, be without replacement parts for versions of Excalibur that have been released within the past 10 years. Unfortunately, there are no parts being manufactured for older Excalibur saws.

Ray Seymore
Seyco



Fox Hunt

Wesley Wheelock of Neopit, Wisc., and Zed A. Stone of Salmon, Idaho, were randomly drawn from the participants who located the fox in our last issue (Spring 2016, Issue 66). The fox was hiding on the eagle's wing in USMC emblem on page 10.

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 August 5, 2017, to be eligible. *NOTE: The contest fox is an outline drawing that would face left if his feet were on the "ground" (other foxes appearing in SSW&C don't count).*

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

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1

1 Patrick Kim
Torrance, Calif.
Patrick Kim combines two hobbies in one by designing ornate scrolled stands for his handmade pens. The award-winning scroller took up woodworking—both scrolling and turning—after retiring about six years ago. "I started making candleholders, but they seemed so plain," he said. "Then I discovered that a scroll saw machine could make the decorations I wanted." Those decorations came in handy when he decided to make holders to display his turned pens. At first he made the holders by adapting patterns he found online, but about a year ago he began creating original designs. Patrick cuts the holders from Baltic birch plywood, curly maple, zebrawood, leopardwood, and walnut. He then sands and assembles the pieces before sealing the finished stands with water-based urethane. Patrick is a member of the Los Angeles Scroll Saw Association, the Orange County Scroll Saw Association, and the El Camino Woodturners Guild. Contact Patrick at pat0518@gmail.com.

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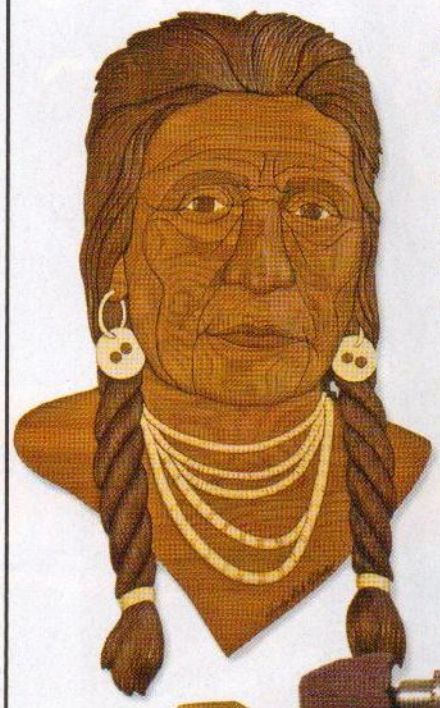

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Peter Stein, Assistant Fire Chief, Grand Island, NY

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2

3

4

5

2 Richard Riley
Burgaw, N.C.
Richard used a pattern by Judy Gale Roberts to make these angels from western red cedar, alder, and mahogany. Richard has been making intarsia projects for 10 years.

3 John Falkowski
Milton, Wash.
This piece of Osage orange wood sat for a long time before John decided to use it for a pattern by Thomas J. Mullane Jr. The original pattern did not fit onto the wood, so John reversed the image and moved the feather from the right side of the head to the left. He finished the project with four coats of lacquer spray.

4 Bill Broomell
Exton, Pa.
Bill used three pieces of driftwood before he found a saw blade that could cut the wood without breaking—a #3 crown-tooth blade. He made this shadow box from oak and plywood.

5 James Gress
Bowmansville, Pa.
James made a display for his presidential dollar coin set using a pattern from www.scrolleronline.com. James has been scrolling since he retired in 1979.

Share Your Latest Work!

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

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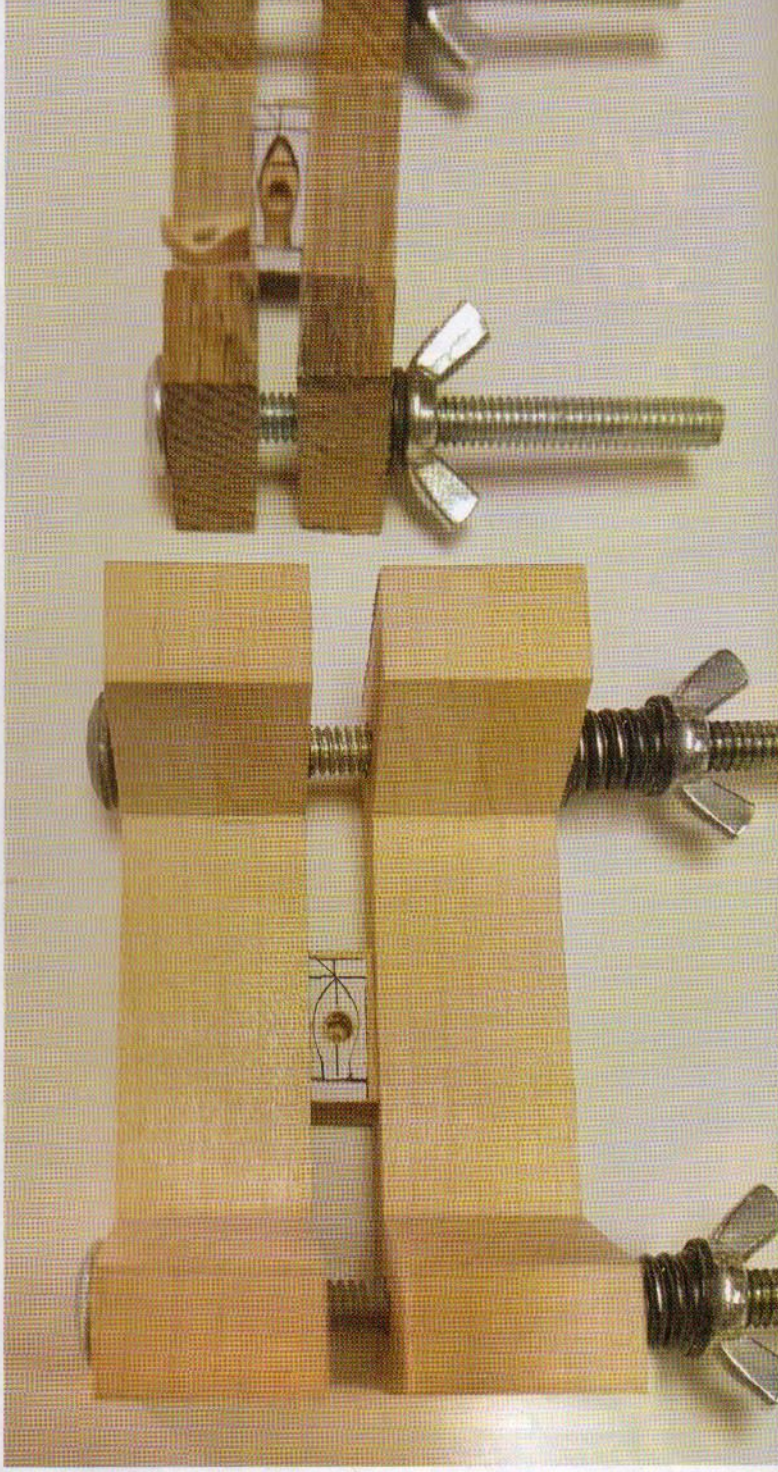


It can be difficult to keep small blanks flat on a table when cutting compound pieces. Diana Thompson, the author of several books on compound cutting, suggests using clamps to secure pieces of scrap wood on either side of a blank to give you more surface area on the saw table. There are also a variety of plans online to make a dedicated vise to hold blanks while compound cutting. Most of these plans use wing nuts and bolts to hold pieces of wood on either side of the compound blank. If you're cutting a variety of thicknesses, it can take some time to adjust the vise between blanks.

I modified my 3-D vise by adding expansion springs between the wing nuts and the screws. This allows you to quickly rotate or change blanks without fussing with wing nuts. Choose springs that are stiff enough to hold the blanks securely, but have enough give so that you can swap out the blanks. You can adjust the pressure on the blanks by tightening the wing nuts if needed.

Billy Allmon
Fort Worth, Texas

Paintbrush Holder

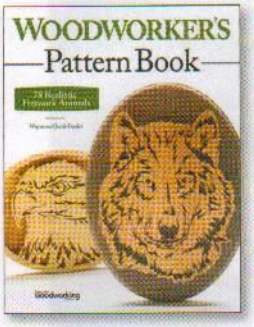
The plastic containers of room odor eliminators are very efficient for holding and separating various sizes of paintbrushes (mine holds up to 25 brushes). The lid offers holes in assorted sizes and shapes that make the brushes easier to pick out. I add either rice or beans to the bottom of the container to prevent it from falling over.

Carole-Anne McCaulley
Kelowna, B.C.

Submit and win!
Send your favorite tip to *Scroll Saw Woodworking & Crafts* 1970 Broad St., East Petersburg, Pa., 17520, or e-mail editors@scrollsawer.com. The Top Tip in each issue wins a $25 Fox Chapel Gift Card.

Fall Shopping Guide

Information and INSPIRATION for Woodworkers!



Woodworker's Pattern Book
75 Realistic Fretwork Animals
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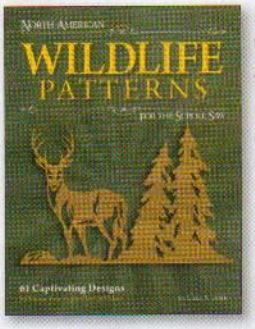

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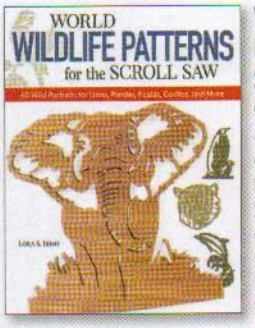

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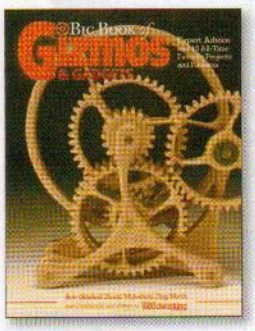

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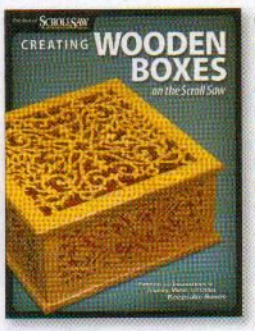

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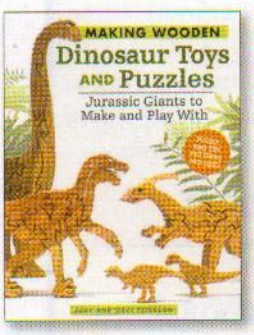

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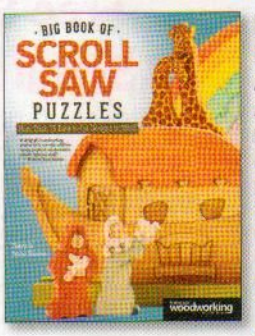

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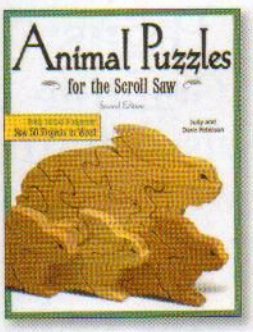

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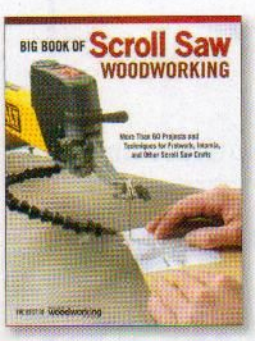

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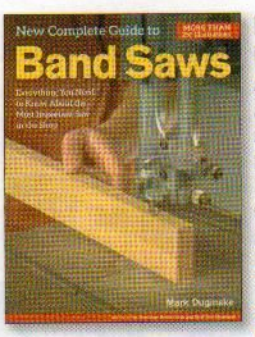

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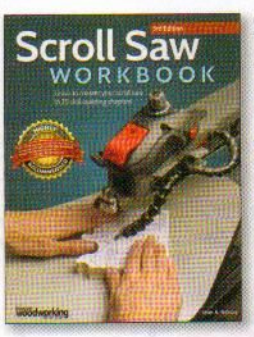

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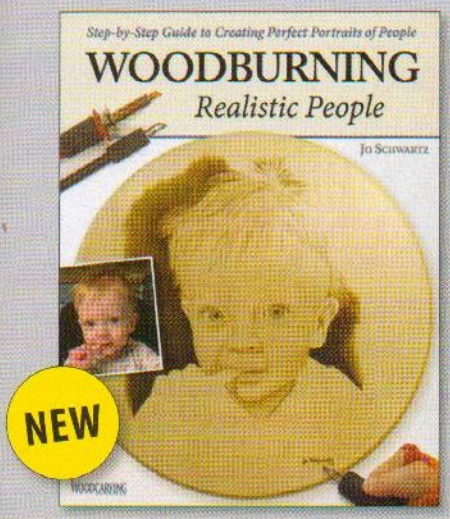

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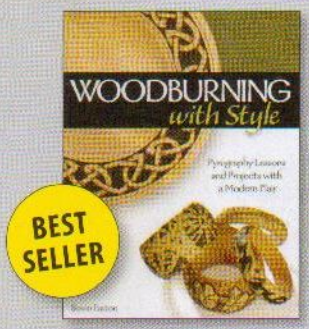

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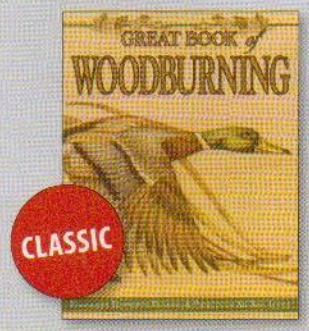

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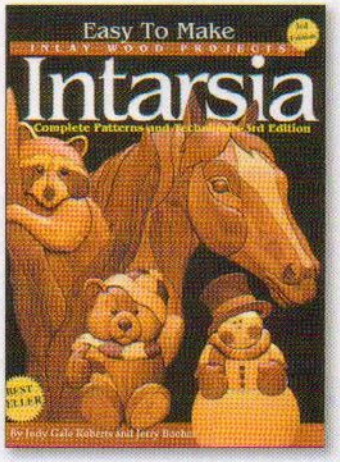

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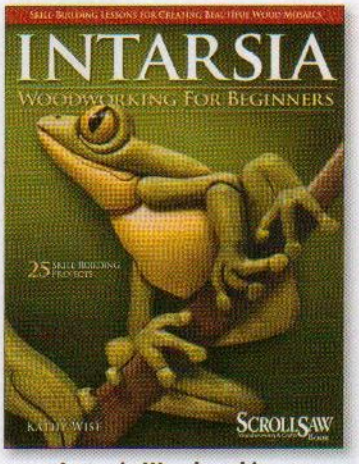

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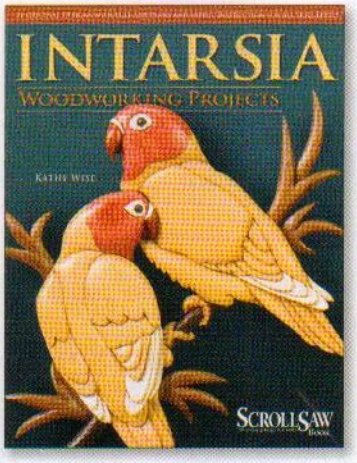

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Bird of Prey Portraits

Intricate fretwork designs capture the essence of these fierce creatures

Patterns by Jacob Fowler
Cut and finished by Wayne Fowler

We are lucky to live in a part of Ontario, Canada, where we can see birds of prey up close. In addition, our local renaissance faire hosts a prey recovery organization that showcases the birds they have raised and recovered. I made the patterns for the bald eagle and Harris's hawk from photos taken at the renaissance faire, and I made the osprey pattern from the photos I took on a trip to Florida.

Making the Portraits

Photocopy the patterns and attach them to the blanks. Drill blade entry holes. I cut these patterns with #2 reverse-tooth blades. I used #2/0 blades for the facial features and some feathers on the eagle and osprey.

Remove the patterns. If you used solvent to remove the patterns, let it dry. Sand the front and back of each piece on a disc or belt sander. Use a quarter sheet of 220-grit sandpaper to remove any remaining burrs and to lightly round the edges. Remove the sanding dust. If you plan to attach a bird to a base, mask off the glue joint areas. Then, apply an oil finish to the pieces and remove any excess. Use glue and dowels to attach the birds to the bases.

Additional patterns for the ***Birds of Prey*** are in the pattern pullout section

Harris's hawk pattern

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Materials & Tools

Materials:

Harris's hawk

- Grey elm, ½" (1.3cm) to ¾" (1.9cm) thick: fretwork, 6" x 8½" (15.2cm x 21.6cm)
- Backing board (optional), ⅛" (3mm) to ¼" (6mm) thick: 6" x 8½" (15.2cm x 21.6cm)
- Birch, ¾" (1.9cm) to 1" (2.5cm) thick: optional base, 2½" x 5½" (6.4cm x 14cm)

Bald eagle

- Walnut, ½" (1.3cm) to ¾" (1.9cm) thick: fretwork, 7" x 10½" (17.8cm x 26.7cm)
- Walnut, ¾" (1.9cm) to 1" (2.5cm) thick: optional base, 2½" x 5½" (6.4cm x 14cm)

Osprey

- Birch, ½" (1.3cm) to ¾" (1.9cm) thick: fretwork, 8" x 10½" (20.3cm x 26.7cm)
- Black locust, ¾" (1.9cm) to 1" (2.5cm) thick: optional base, 2½" x 5½" (6.4cm x 14cm)

- Adhesive: temporary bond spray, such as 3M 777
- Sandpaper: 220 grit
- Finish: oil

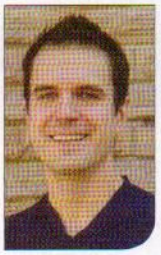
Tools:

- Scroll saw blades: #2 reverse-tooth, #2/0 reverse-tooth
- Sander: fixed disc or belt with fine or extra fine (120-grit or 220-grit) disc or belt

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

Wayne Fowler began scrolling 27 years ago after attending a Toronto woodworking show. He published his first article in 1998. Since then he has published almost 150 articles, most in partnership with his son and pattern designer, Jacob. Wayne's work has won awards at a local craft guild and several science fiction conventions.

Jacob Fowler designed his first scroll saw project when he was five years old. He now spends most of his time designing fantasy and animal patterns for his father, Wayne. Jacob and Wayne often take pictures of wildlife at local zoos and preserves and turn the images into fretwork patterns. Jacob has published over 200 of his 1,000 designs in partnership with his father.



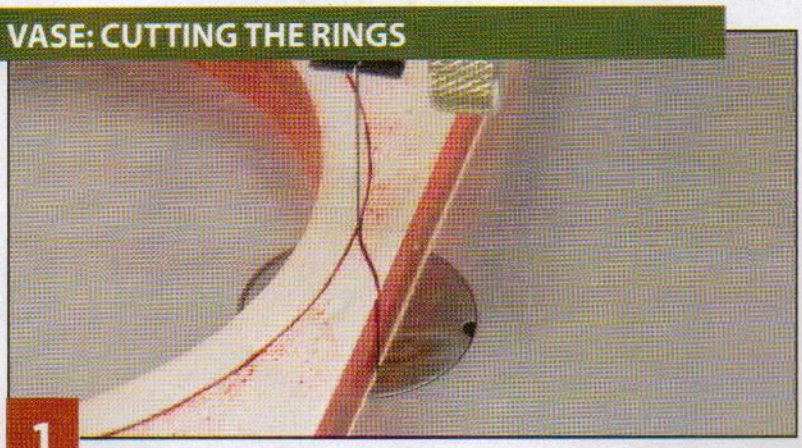
Creating a Vase with a Scroll Saw

This impressive project is worth the challenge

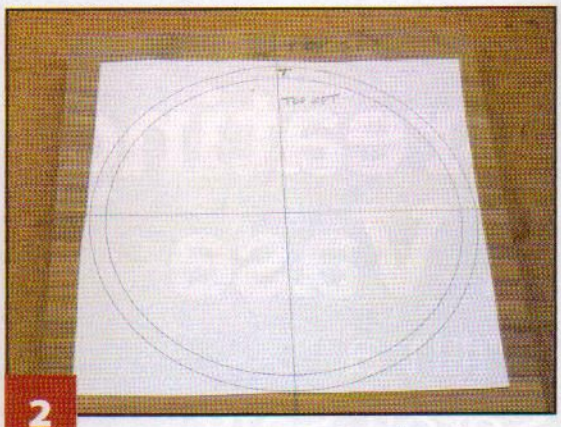
By Carole Rothman

While scrollers often make vases by simply inverting one set of rings over another, leaving the interiors unfinished, I had something more ambitious in mind for this project—a gently rounded shape, finished inside and out, and accented with veneered top and center rings. I glued and sanded the vase in several stages, which made it easier to access tight internal spaces and allowed me to use a drill press, instead of a flexible shaft, for most of the interior sanding. If you've mastered simple bowls and are looking for a challenge, this project will move you to the "next level" as you make a vase that any turner would display with pride.

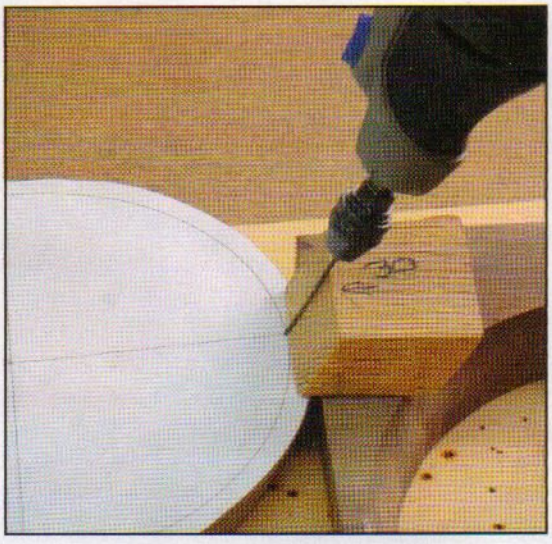
VASE: CUTTING THE RINGS

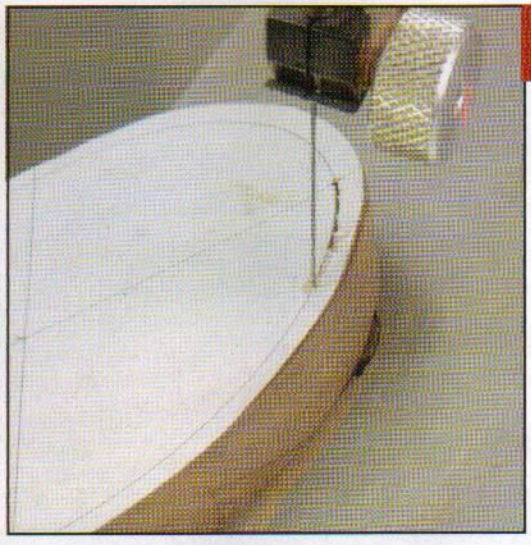


1 **Glue and clamp a piece of veneer to each side of the center ring blank.** Keep the grain of all pieces running in the same direction. Attach the center ring pattern with repositionable adhesive. Drill a blade-entry hole just inside the inner circle. With the saw table level, insert a blade and cut the center. Save the cutout piece for Step 11. Cut the outer circle to complete the center ring. Vacuum thoroughly to prevent migration of the red dust into the pores of the veneer.

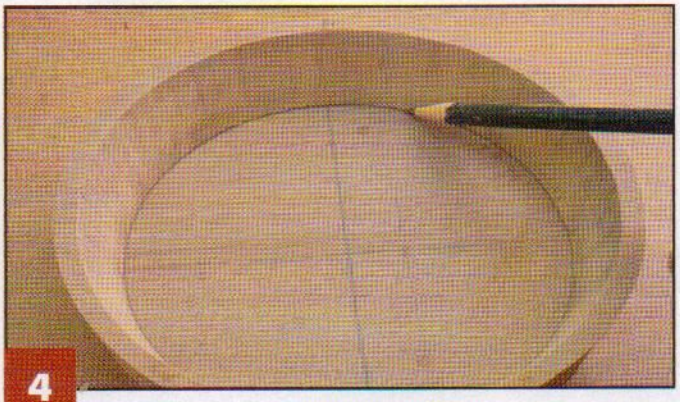


2 **Draw intersecting guidelines down the center of the upper and lower ring blanks.** Then, mark the top edges. Attach a copy of the upper and lower rings patterns to each blank with repositionable adhesive, using an awl to match the center of the pattern with the center of the guidelines. Mark the pattern so you can identify the ring sets and the locations of the top edges.

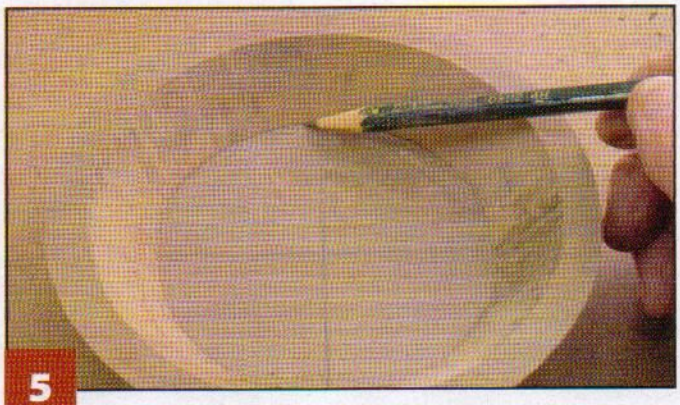




3 **Tilt the left side of the saw table down to 20°.** Starting with the blank for the lower ring set, cut clockwise around the outer ring. Tilt the left side of the saw table down to 30°. Drill a 30° blade-entry hole using a shop-made angle guide. Insert the blade and cut clockwise around the circle to complete the first ring. Remove the pattern and transfer all of the identifying marks to the ring and remainder of the blank.

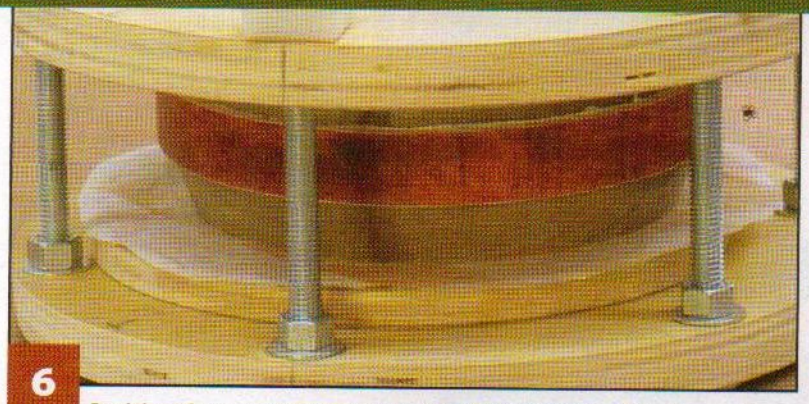


4 **Place the ring on the remainder of the blank with the tops aligned.** Then, trace the inside of the ring to make the cutting line for the second ring. Drill a blade-entry hole at a 40° angle on this line. Tilt the left side of the saw table down to 40°. Insert the blade and cut clockwise around the circle to complete the second ring. These two rings and the remaining piece form the bottom half of the vase.

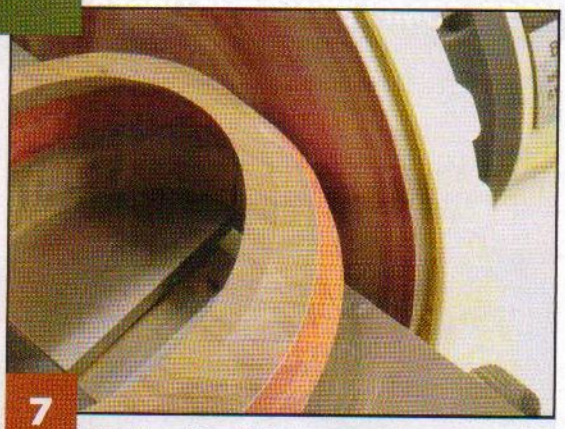


5 **Repeat Steps 3 and 4 with the second walnut blank.** This gives you the first two rings for the top half of the vase. Place the second ring on the remainder of the blank and trace the inside. Drill a blade-entry hole at a 40° angle, insert the blade, and cut clockwise around the circle to complete the third ring. The width of the ring on the smaller face should be about ⅝" (1.6cm).

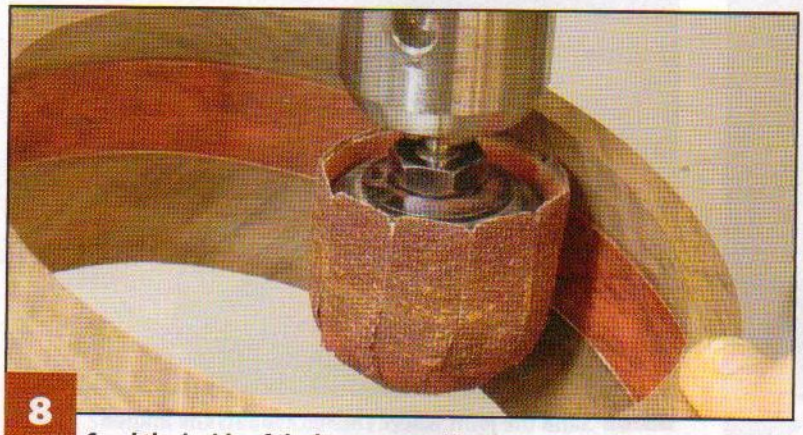
VASE: GLUING & SANDING THE COMPONENTS



6 **Position the center ring between the largest rings of the top and bottom sets.** Make sure the inner edges match. The center ring should protrude about ⅛" (3mm) on the outside. Glue and clamp the three rings together. (If you're concerned about slippage, you can glue each ring as a separate step.) Let the glue dry. These three glued rings are the beginning of the lower assembly.

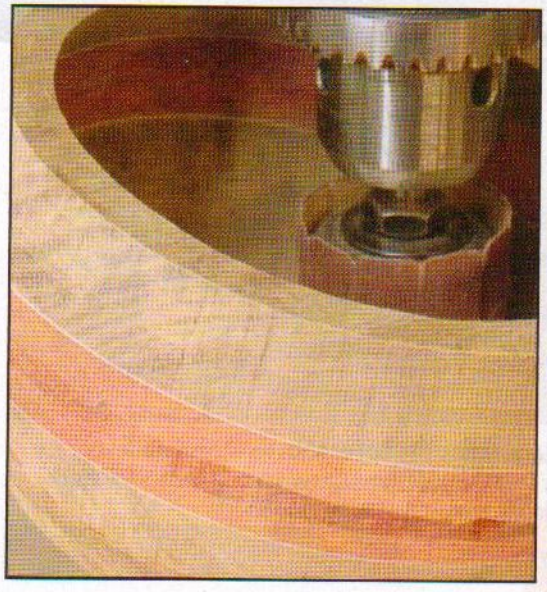


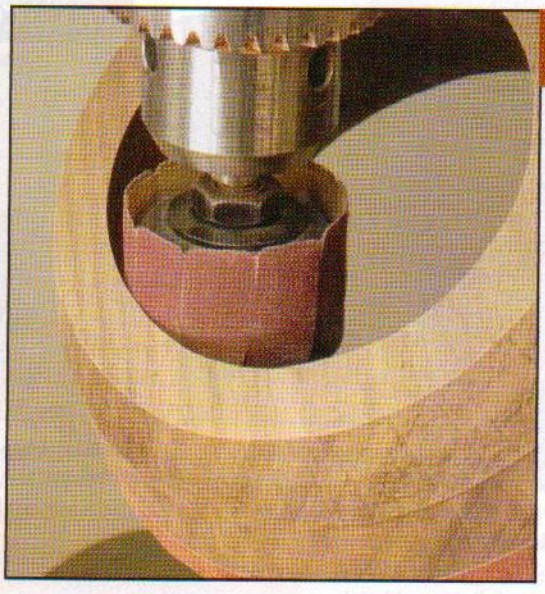
7 **Tilt the table of a belt or disc sander to 20°.** Sand each side of the center ring until it is flush with the adjacent walnut ring. This will make it easier to shape the outside of the vase in Step 17.



8 **Sand the inside of the lower assembly.** Use a round inflatable sander and an 80-grit sleeve to sand the inside of the assembly until the center ring and surrounding areas of the walnut rings are smooth. Then, switch to a 120-grit sleeve to remove any remaining glue residue and refine the shaping. Avoid sanding near the upper and lower gluing edges. These areas will be sanded when additional rings are added.

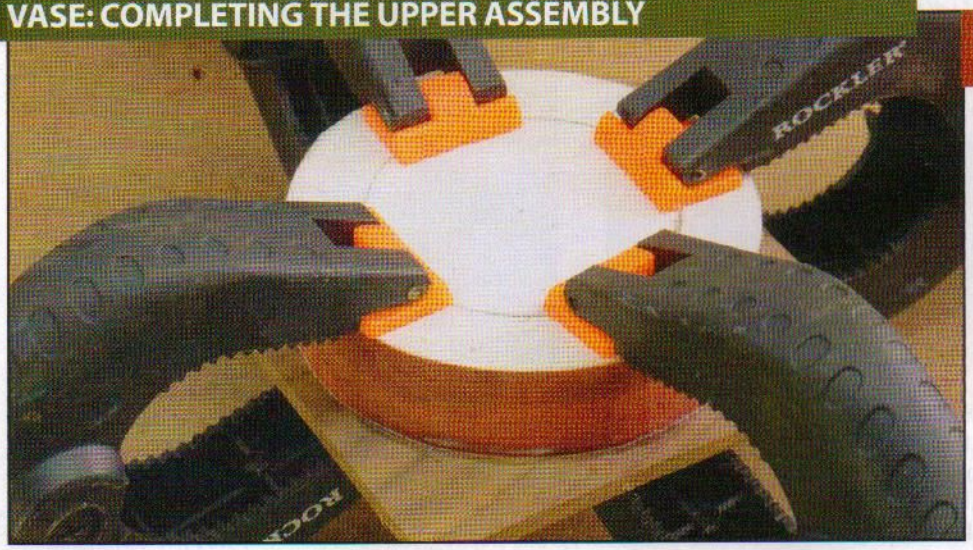
9 **Glue and clamp the second lower ring to the bottom of the lower assembly.** Let the glue dry. Next, glue and clamp the two remaining upper rings. This is the beginning of the upper assembly. Let the glue dry. Set aside the remaining piece from the lower ring set until Step 16.



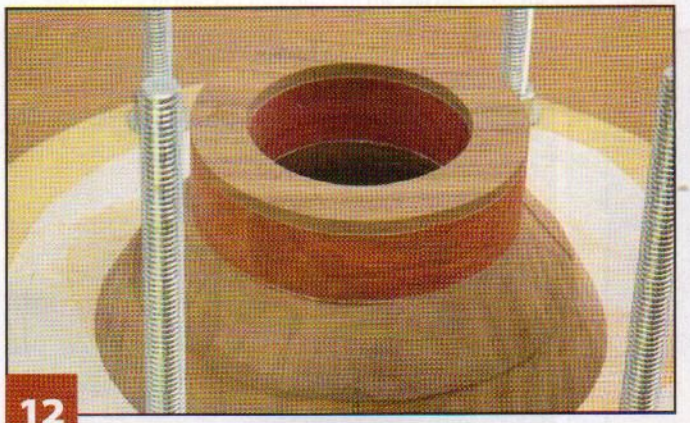


10 **Sand the inside of the lower assembly until the surface is smooth and free of glue residue.** Sand the inner edge of the second ring to a well-shaped circle. It's easier to do this with the bottom faceup. Set the assembly aside until Step 15.

VASE: COMPLETING THE UPPER ASSEMBLY

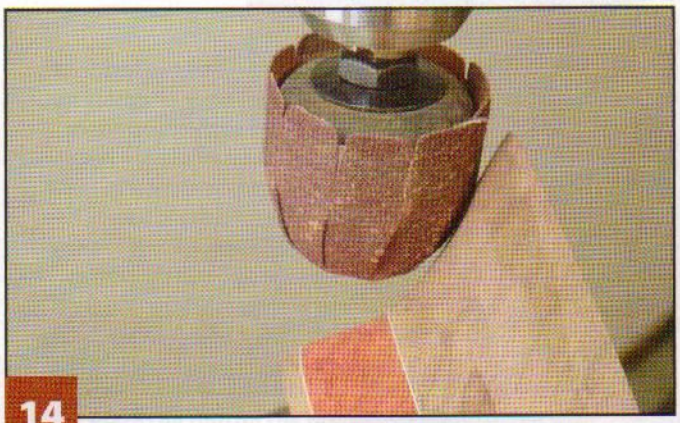


11 **Measure the diameter and ring width of the smaller face of the upper assembly.** The diameter should be about 3½" (8.9cm) and the ring width about ⅝" (1.6cm). Use a compass to draw a matching ring on the remainder of the lamination from Step 1. Cut around the outer circle with the saw table level. Glue and clamp the top accent ring blank to the underside with the grain directions aligned. Allow the glue to dry.



12 **Cut away the excess walnut.** Use the outer edge of the redheart ring as a guide. Drill a blade-entry hole inside the inner circle. Insert the saw blade and cut the circle. Sand the outside of the ring until the walnut is flush with the redheart. Sand the inside smooth. Glue and clamp the completed neck, walnut side up, to the upper assembly with the grain directions aligned. Allow the glue to dry.

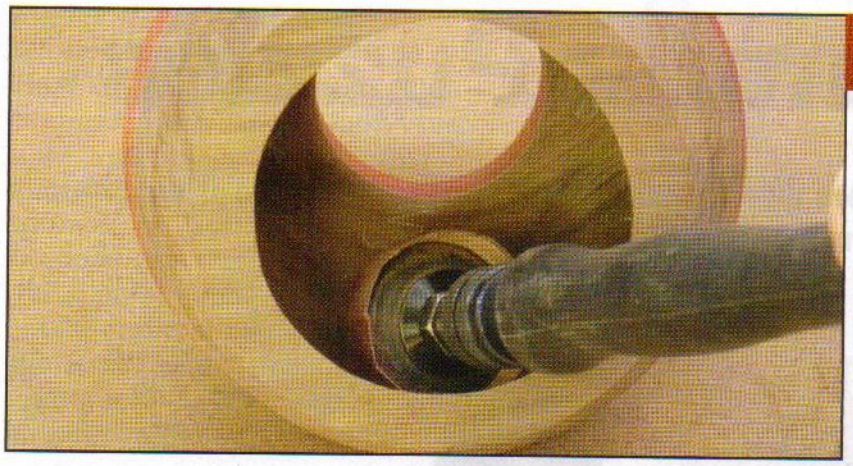
13 **Sand the joint where the neck meets the angled rings.** Use 1½" (38mm)- and a 2" (51mm)-diameter spindles to sand until the joint is smooth and continuous with no glue residue visible. Use the 2" (51mm) spindle to sand the inside smooth. Try not to remove more wood than necessary to allow more options for shaping in the next step.



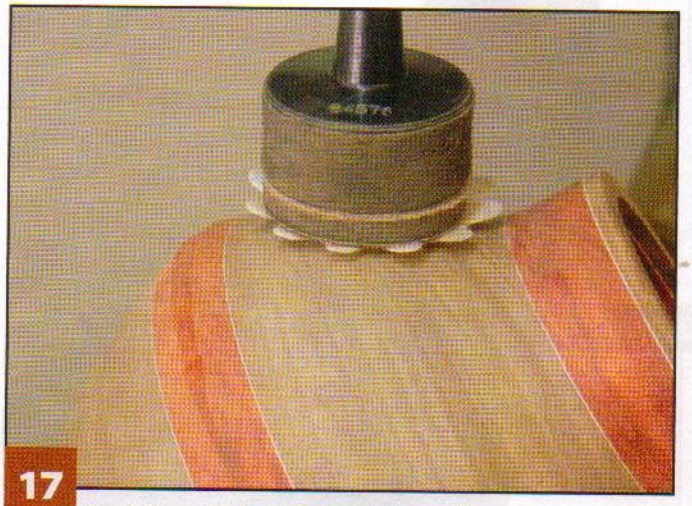
14 **Shape and smooth the inside of the upper assembly.** Use the round inflatable sander with 80- and 120-grit sleeves. Next, shape the outside of the neck and do a preliminary shaping of the outside of the walnut rings. Finally, enlarge the inner diameter of the neck so that the wall is about ¼" (6mm) thick. You will complete the shaping in Step 17, after you have fully assembled the vase.

VASE: COMPLETING THE VASE

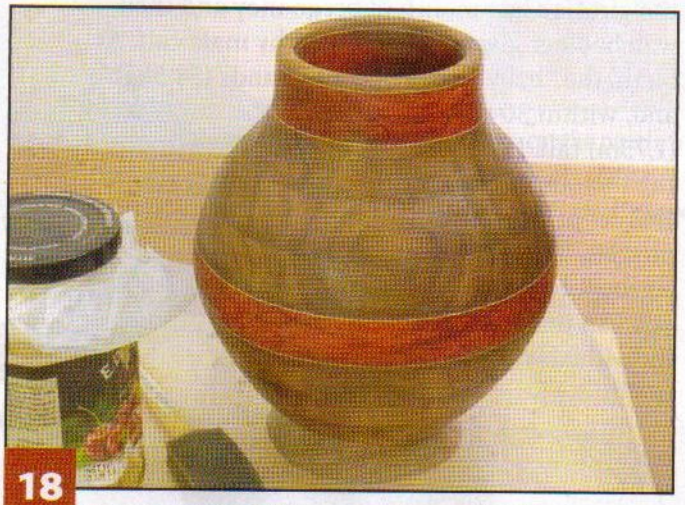
15 **Glue and clamp the upper and lower assemblies together.** Keep the grain directions aligned and match the inside edges as closely as possible. Let the glue dry.



16 **Sand the inside joints of the two assemblies.** Use 80- and 120-grit sleeves for the round inflatable sander on a flexible shaft. Apply a coat of shellac to the larger face of the bottom piece saved from Step 9 and to the inside of the vase. Do not get shellac on the gluing surfaces. Let the shellac dry. Sand the shellacked surfaces smooth with 320-grit sandpaper and remove all sanding residue. Glue on the bottom piece, keeping the grain directions aligned. To prevent squeeze-out on the top surface of the bottom piece, do not apply glue near the inner edge of the bottom ring. Clamp the vase in a press or between two boards and let the glue dry.



17 **Sand the outside of the vase.** Use a 2" (51mm)-diameter flexible pad sander on the outside of the vase and a round inflatable sander on the neck. Work through the grits up to 220.



18 **Seal the outside of the vase with a coat of shellac.** Smooth the shellac with a 320-grit finishing mop or sandpaper. Apply several coats of lacquer or a finish of your choice, buffing with 0000 steel wool between coats as needed.

Materials & Tools

Materials:

- Redheart, ¾" (1.9cm) thick: center ring 7½" (19.1cm) square
- Veneer, dyed white: 2 each 7½" (19.1cm) square
- Walnut, ¾" (1.9cm) thick: 2 each, top and bottom rings, 7½" (19.1cm) square
- Walnut, ⅛" (3mm) thick: top accent ring, 4" (10.2cm) square
- Wood glue, Weldbond preferred
- Repositionable adhesive
- Sandpaper
- Shellac
- Spray finish, such as lacquer
- Steel wool: 0000

Tools:

- Awl
- Scroll saw blades: #7 blade, Flying Dutchman ultra reverse preferred
- Shop-made angle drilling guides: 30°, 40°
- Drill with bit: #54 wire size or smaller (to fit scroll saw blade)
- Compass
- Bowl press or board and clamps
- Round inflatable sander with sleeves: assorted grit
- Flexible shaft
- Flexible pad sander, 2" (51mm)-dia., with discs: assorted grits
- Belt sander
- Spindle sander or sanding drums, 1½" (38mm), 2" (51mm) dia., with sleeves: assorted grits

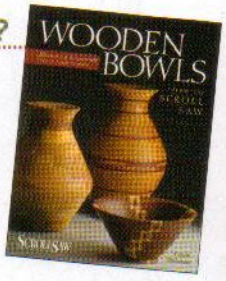
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Patterns for the ***Scroll Saw Vase*** are in the pattern pullout section.

WANT MORE BOWLS?

Wooden Bowls
by Carole Rothman

Item 4338. Available for $19.95 + S&H (parcel post) from Fox Chapel Publishing, 800-457-9112, www.FoxChapelPublishing.com, or your local retailer.



Carole Rothman of Pawling, N.Y., is a retired psychologist and college professor. She is also an award-winning cake decorator. Visit Carole online at www.scrollsawbowls.blogspot.com. You'll find her books Creative Wooden Boxes from the Scroll Saw *and* Wooden Bowls from the Scroll Saw *at www.foxchapelpublishing.com.*

Giraffe Family Puzzles

Cut these freestanding puzzles from spotted wood or paint on a pattern

By Judy and Dave Peterson

Millions of people will remember 2017 as the year of Giraffe Cam. Thanks to a live feed from Animal Adventure Park in upstate New York, the world waited out April the giraffe's last month of pregnancy and then watched her give birth to a healthy male calf. At birth, the "baby" weighed 129 pounds (58.5kg) and, within 30 minutes, stood 5' 9" (1.75m) tall. In celebration of the famous family, I present this set of freestanding puzzles. They are great as a group, but of course you can make individuals if you prefer.

Selecting the Wood

There are three types of wood called *lacewood*: Australian lacewood, which is the original and, unfortunately, somewhat hard to find; quarter-sawn sycamore; and South American lacewood. I cut these puzzles from Australian lacewood, which I think has the perfect color and pattern for giraffes. If you can't find it, use quarter-sawn sycamore. Avoid South American lacewood; it's very dense and a different color.

If you prefer, cut the puzzles from pine, maple, or even plywood and paint the pieces with a giraffe pattern.

Finishing the Puzzles

After cutting the pieces, sand any rough spots. For a finished look, I round the corners with a Sand-O-Flex abrasive wheel. Then, I apply General Finishes brand Danish oil original according to the manufacturer's instructions.

Materials & Tools

Materials:

- Australian lacewood or quarter-sawn sycamore, ¾" to 1" (1.9cm to 2.5cm) thick: father, 5" x 10½" (12.7cm x 26.7cm); mother, 4" x 7" (10.2cm x 17.8cm); standing calf, 1½" x 4½" (3.8cm x 11.4cm); bending calf, 4½" (11.4cm) square
- Spray adhesive
- Danish oil, such as General Finishes: original

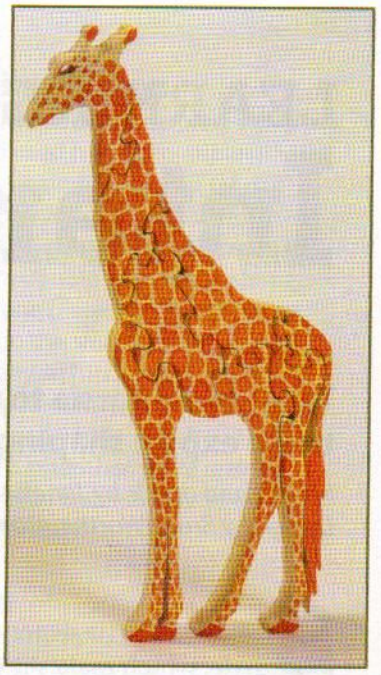
Tools:

- Scroll saw blades, such as Tru Line Blades: #7 premium
- Sander
- Drill press with Sand-O-Flex abrasive wheel

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

Additional patterns for the ***Giraffe Family Puzzle*** are in the pullout section.

Giraffe pattern



If you prefer, cut the puzzle from pine or maple and paint the giraffe's spots.

WANT MORE PUZZLES?

Animal Puzzles for the Scroll Saw

by Dave & Judy Peterson

Item 3911. Available for $17.95 + S&H (parcel post) from Fox Chapel Publishing, 800-457-9112, www.FoxChapelPublishing.com, or your local retailer.

A former teacher and librarian, Judy Peterson found her niche in life as a woodworker. A winner of many design awards, she sells her puzzles at art shows around the country. Her husband, Dave, runs the record-keeping side of the business. Together they have written several books, which are available at www.foxchapelpublishing.com.

LEARNING TO SHAPE
Intarsia

Take your intarsia to the next level with these expert shaping tips & tricks

Project and article by Janette Square
Design by Bruce Worthington

Shaping intarsia depends on your artistic style, which makes it very subjective. While some people might be satisfied by simply rounding every edge, I hope to encourage you to take your shaping a few steps further.

Think like a sculptor and envision your subject in three dimensions. Study photos of your subject matter from several angles to get a vision of the finished project. With a little extra time and patience, you can add a great deal of depth and dimension to your shaping projects.

TIP

CREATING A REALISTIC PORTRAIT

I look at reference photos of my subject so I choose wood with appropriate color and grain. I often use different types of wood in similar colors, which makes the piece more interesting than if I used just one variety. Knowing what the subject looks like "in real life" also helps me shape the pieces accurately and lets me decide if I should shape several together on a shim or do them individually for extra detail.

General Shaping Tips

Intarsia is an ancient art used to create the illusion of dimensionality in essentially flat artwork. Remembering that goal will help you consider your projects critically and refine your shaping techniques. Here are a few more tips that might help. Try different techniques to see what works best for you and the look you're trying to achieve.

- The thinner the piece, the farther away it will appear. Thicker pieces appear to be closer to the viewer.
- When you're sanding, remove wood gradually. You can always take more away, but you can't put it back.
- When you're sanding, consider the type of wood you're using. The grain can change dramatically depending on how you sand some wood species, especially lacewood and sycamore. As you expose the quarter-sawn surfaces of these varieties, the grain looks more pronounced. Use the grain to your advantage.
- Some projects benefit from shaping several pieces together as one, rather than shaping them all individually (see Sanding Shims).
- Add more dimenion by adding risers under strategic pieces (see Risers).
- Consider the surrounding pieces when you're shaping the individuals. Do you want the pieces to all blend together or stand out? Keep a copy of the pattern handy and place the pieces on it so you can see them together.

Sanding Shims

Sanding shims are scrap pieces of plywood used to hold multiple pieces at the same time while you sand them together to create a uniform overall shape. Attach the pieces to the shim with double-sided tape, shape them as one piece, and then remove them from the shim to refine them individually. In this project, you'll use a sanding shim in Steps 1–3 to shape the body as a whole, which will help to create a smoother, more realistic look than you'd achieve by shaping them separately.

Risers

Risers are scrap pieces of plywood in various thicknesses that are used to elevate one or more pieces to create additional dimension. Do not use risers where they will show, such as at the edge of the project. Each riser must be thin enough that it isn't visible above the adjoining pieces.

Basic Shaping Steps

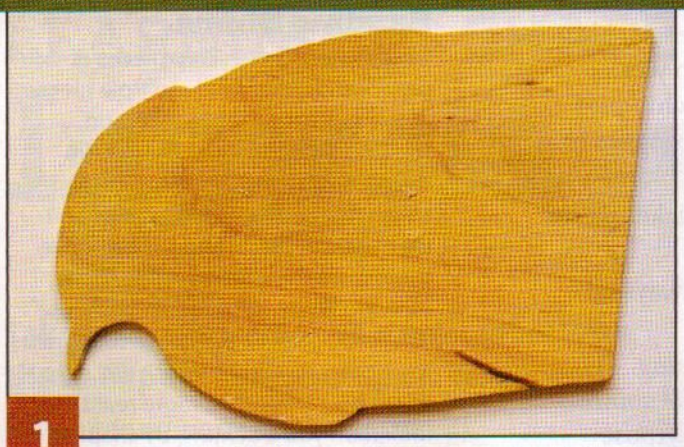
Although every intarsia project is different, I follow the same general steps to shape the pieces of each one.

1. **Determine general heights for the pieces.** Add risers to raise some pieces and sand or cut others to make them thinner. Mark the sides with pencil to remind yourself of the goal for each piece.
2. **Roughly shape the pieces.** I use 80- to 100-grit flex drum sanders and/or a flexible shaft rotary tool with aggressive power-carving bits to give the pieces their general shapes. Make sure they flow together. Consider using a sanding shim so you can hold two or more pieces together and shape them as one unit.
3. **Smooth the pieces.** Go over each piece to remove the deep scratches and fine-tune their shapes. I use a 220-grit flex drum sander. Again, considering using a sanding shim to shape multiple pieces at the same time.
4. **Refine the pieces and add the details.** Hand-sand tight areas, soften the edges, adjust the alignment with adjoining pieces, and remove any pencil lines and fuzzies. I use 220-grit sandpaper on a soft sanding sponge pad.
5. **Finish sanding the pieces.** Use 220-grit sandpaper and hand-sand with the grain to remove any visible scratches. Buff the pieces with a fine-grit sanding mop.

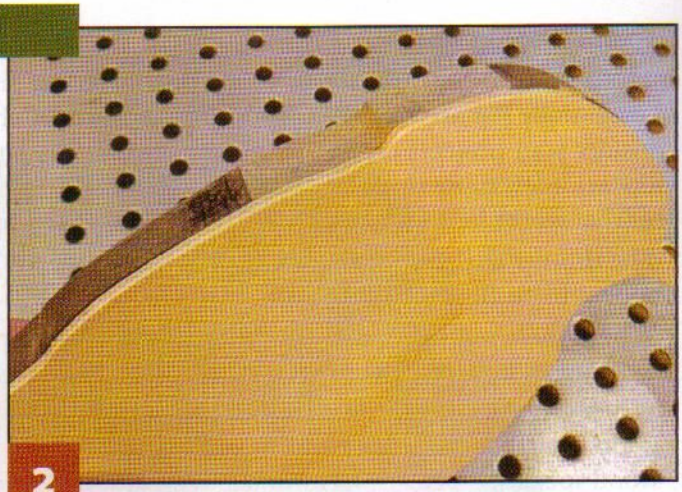
Making the Barn Swallow

We're going to practice several of the basic techniques by making a simple project. We'll start by cutting a sanding shim and shaping the body pieces as one unit. Then, we'll fine-tune each piece separately, add texture and details, and assemble the project. Although your finished project should always reflect your style and creativity, I hope you'll try some of these ideas and work toward taking your art to a new level, whatever that is for you. I welcome your questions or comments.

BARN SWALLOW: SHAPING THE BODY



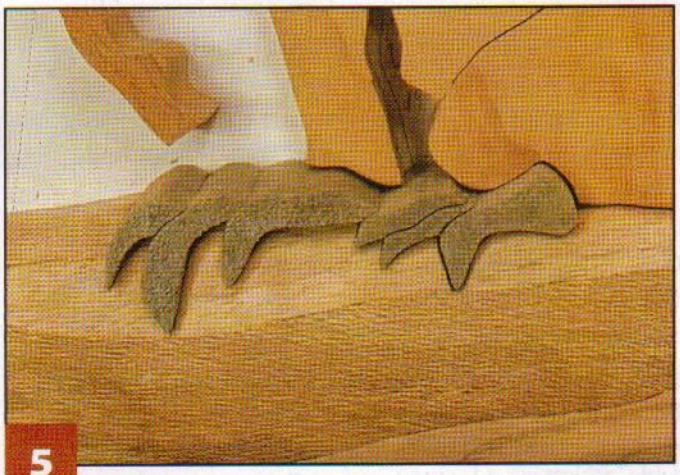
1 **Cut a sanding shim.** It should be the shape of the bird above the branch. Because the shape of the bird's body mostly flows together, you can shape it as one piece.



2 **Attach the body pieces to the shim.** Use double-sided tape.

3 **Roughly shape the bird.** At this point you may feel that you've completed the rough shaping of the body, but here's where we take it to the next level. Remove the pieces from the sanding shim so you can fine-tune them individually.

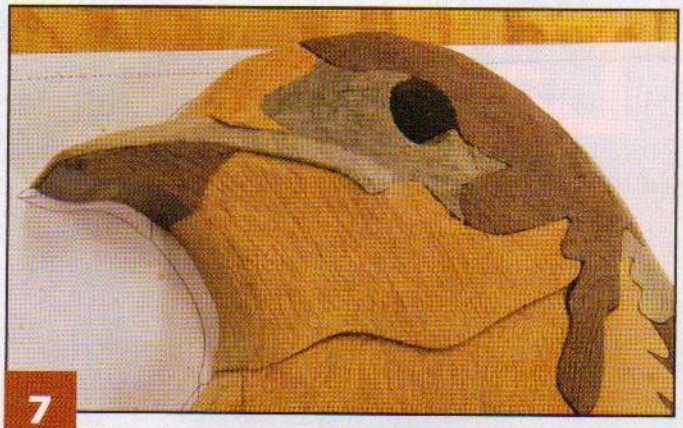
4 **Emphasize the dark back feather.** Thin the feather as you reach the end of the tail feathers. The goal is to make the pieces under the branch appear to be behind the branch and farther away. The feathers should appear to curve around and disappear to the right.



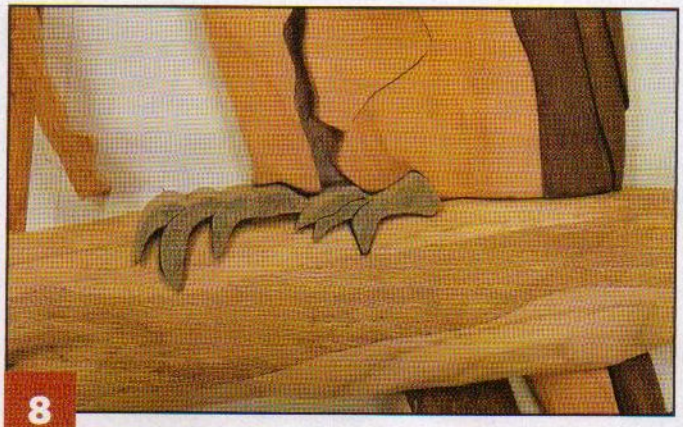
5 **Round and slightly thin the lower left part of the body.** This will give the feeling that this part of the body disappears behind the branch.

BARN SWALLOW: SHAPING THE HEAD & NECK

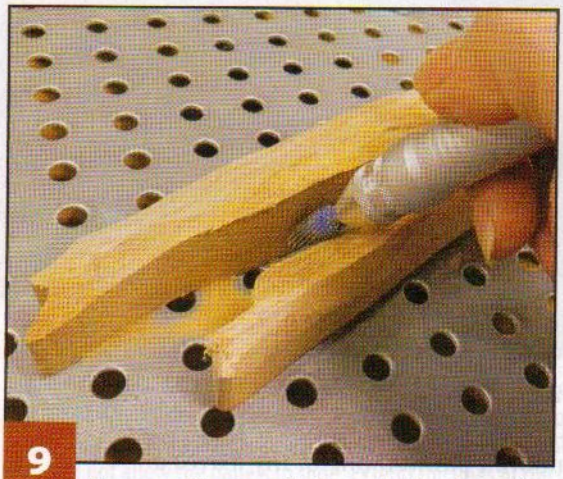
6 **Contour and round the head.** Go all the way to the bottom of the piece. Do not stop at the edge.



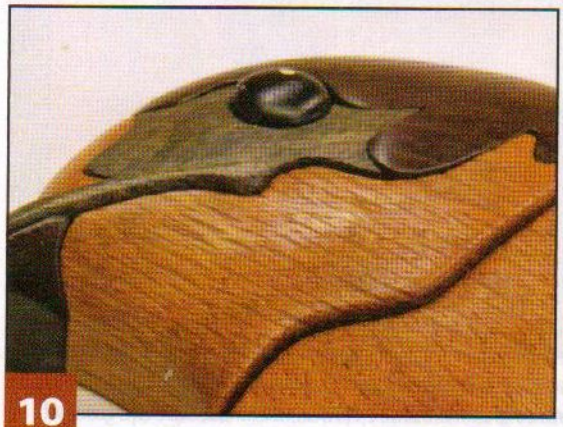
7 **Shape the area under the beak and around the neck.** Use a carving bit in a rotary tool. You want the chest to appear to puff out slightly and taper just under the head piece. The lower beak piece should blend into the head.



8 **Shape the feet.** They should be thicker than the branch and the bird's body. The feet are hanging on and you want them to appear closer to you and stand out.



9 **Shape and texture the branch.** Have fun with it. You cannot over shape it. Add texture if desired. Think about a real branch: it's not flat or even; it has dips and curves, and some areas are thicker than others. Just be sure to leave it thicker than the bird's body at the bottom.



10 **Round the eye so that it sits just higher than the head.** Inset the darker belly piece slightly. Finish-sand and buff the pieces (see page 27), and then make the backing board and glue them to it.

Materials & Tools

Materials:

(Sizes are approximate. Larger pieces give you better grain options.)

- Red figured wood, such as figured redwood, ⅞" (2.2cm) thick: 5" x 6" (12.7cm x 15.2cm)
- Medium figured wood, such as lacewood, ⅞" (2.2cm) thick: 3" x 6" (7.6cm x 15.2cm)
- Black wood, such as ebony, ½" to ¾" (1.3cm to 1.9cm) thick: 1" (2.5cm) square
- Dark gray wood, such as buckeye burl, ⅞" (2.2cm) thick: 3" x 4" (7.6cm x 10.2cm)
- Dark wood, such as katalox or wenge, ⅞" (2.2cm) thick: 3" x 6" (7.6cm x 15.2cm)
- Dark wood, such as katalox or wenge, ¾" (1.9cm) thick: tail feathers, 2" x 5" (5.1cm x 12.7cm)
- Gray wood, such as blue pine ¾" (1.9cm) thick: 1"x 4" (2.5cm x 10.2cm)
- Medium light wood, such as butternut, 1" (2.5cm) thick: branch, 2" x 13" (5.1cm x 33cm)
- Medium wood, such as sycamore, 1" (2.5cm) thick: branch, 2" x 14" (5.1cm x 35.6cm)
- Baltic birch plywood, ⅛" (3mm) thick: backing board, 13" (33cm) square; assorted scrap for sanding shim
- Hanger
- Tape: packaging, double-sided turner's
- Spray adhesive
- Wood glue
- Sandpaper: 220-grit
- Finish

Tools:

- Scroll saw blades: #7 reverse-tooth (main cutting), #2 reverse-tooth (backing board)
- Sanders: flex drum, oscillating spindle sander
- Rotary tool with assorted bits (optional)
- Mop sander for final buffing (optional)

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

Janette Square lives in Yachats, on the Oregon coast. For more of her work, visit her website at www.square-designs.com.

Pattern for the ***BARN SWALLOW INTARSIA*** is in the pattern pullout section.

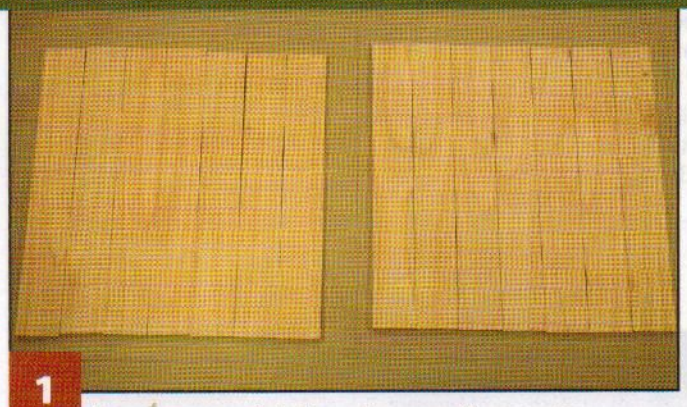
Leaves of Lath

Stack-cut lath to make two projects with one cut

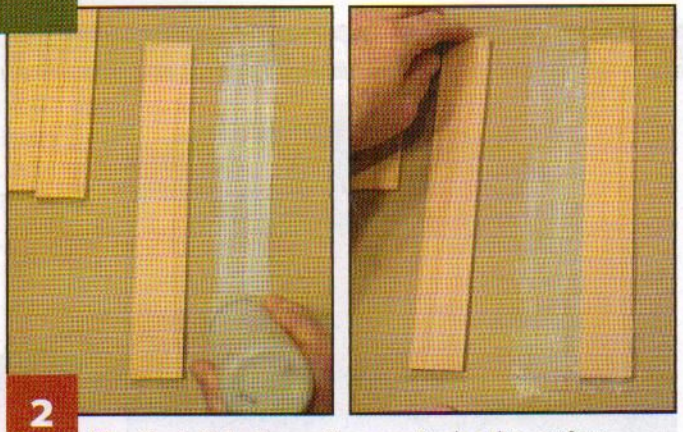
By John Nielsen

With one pattern, one continuous cut, and spray adhesive, you can complete this two-for-one project in a single afternoon. I painted one of my leaves a summer green and used washes of paint to give the second one an autumn gold color.

LATH ART: CUTTING THE LEAF



1 **Draw two sets of right angles on craft paper.** Use a framing square and make the bottom leg at least 10½" (26.7cm) long. Cut two sets of seven lath strips each. Place both sets on the craft paper. Avoid lath with irregular edges or large knots. Number each piece at the top or bottom; ¼" (6mm) will be trimmed from each edge after final assembly.

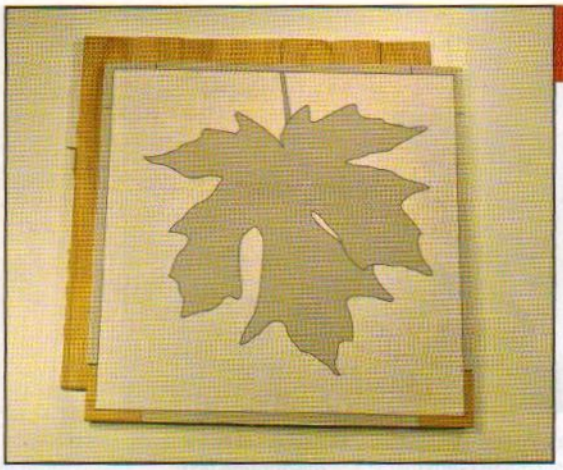


2 **Glue the lath to the craft paper.** Apply a thin, uniform layer of wood glue next to the vertical line. Make sure the glue will completely cover the lath. Align the bottom of the lath with the horizontal line and the long side of the lath with the vertical line. Press firmly. Repeat this process for each strip of lath. Let the glue dry overnight before cutting.

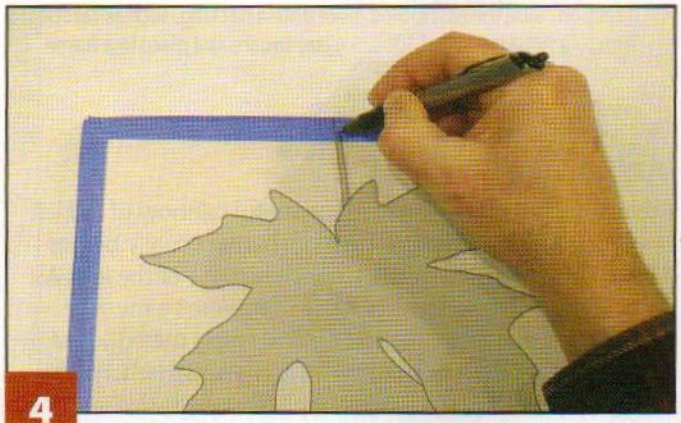
TIP

A FASTER BOND

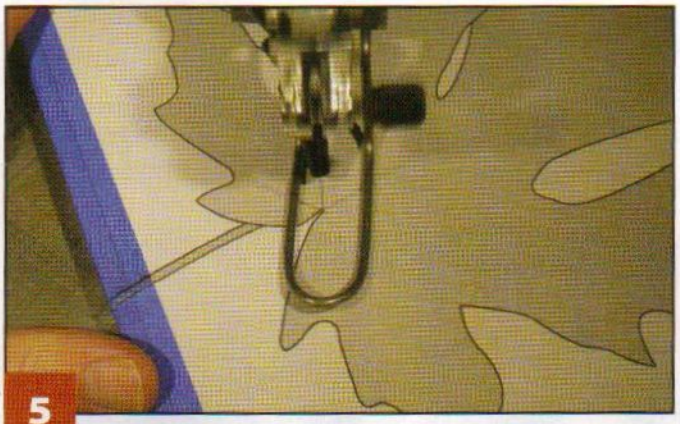
While wood glue gives a longer working time, spray adhesive will allow you to finish the project in one day. Following the manufacturer's instructions, spray a uniform coat of adhesive on the craft paper, extending the glue beyond the lath area. In a separate area, butt the lath pieces together, good side facedown, and spray the pieces past the edges. Press each piece onto the craft paper. Make sure the pieces are aligned on the bottom and fit tightly together. Allow the adhesive to set for three hours.



3 **Separate the two lath panels.** Trim the excess craft paper. Photocopy the pattern and trim two corners to aid in alignment. Attach the pattern to one panel.

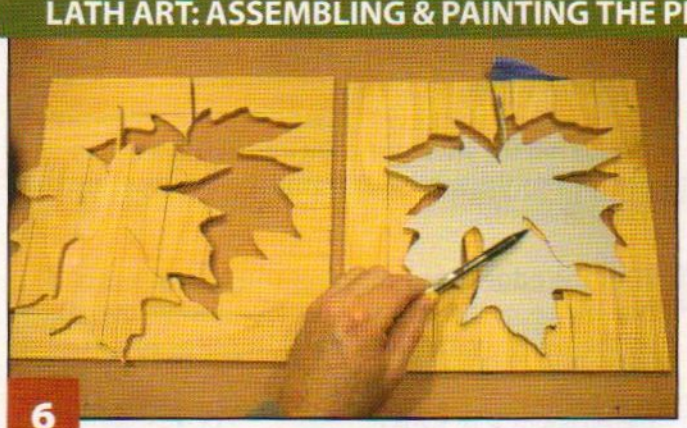


4 **Stack the two panels.** Make sure the grain direction of the two panels runs perpendicular to each other. Wrap blue painter's tape around the edges to secure the stack. The tape should lay flat and not allow the panels to slide. Extend the lines of the stem to the edge of the panel as shown.



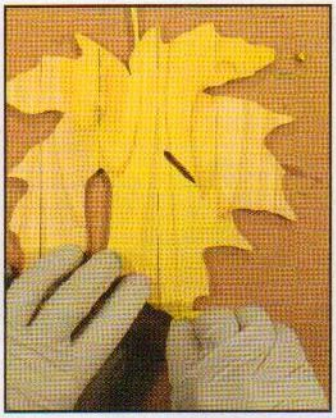
5 **Cut around the leaf in one continuous motion.** Use a #3 crown-tooth blade. Begin on the side of the stem. Maintain a steady forward motion; it is more important to make a clean, continuous cut than it is to follow exactly along the line.

LATH ART: ASSEMBLING & PAINTING THE PROJECT

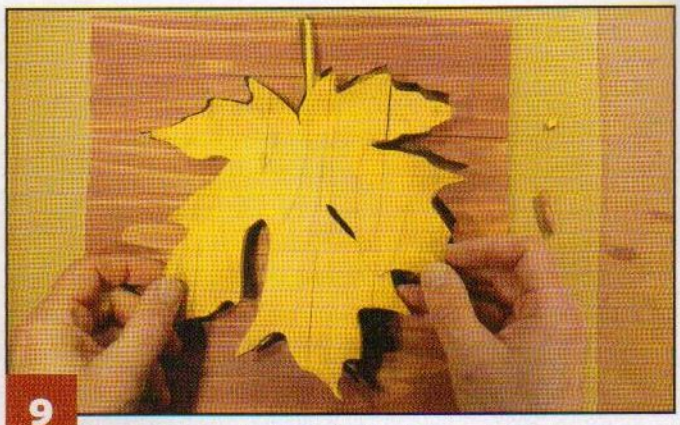


6 **Remove the painter's tape and lay the panels side by side.** Remove the pattern. Free the leaves from each panel by carefully pressing down at the leaf tips. Don't worry if some of the leaf tips separate from the paper backing. Set them aside for painting and reattachment. Swap the leaves and backgrounds as shown. Mark the grain orientation and then remove a small section of the background from each leaf.

7 **Thin 18 drops of antique maroon with 2 teaspoons (10ml) of water.** Stir thoroughly. Lightly moisten a section of paper towel and dip it in the wash. *Note: You need to keep the craft paper dry, so use small amounts of water and paint.* Quickly spread the wash over the background, working with the grain. Use a lightly moistened paper towel without the paint to even the paint coverage or lighten the coating. Do not overwork the paint. Remember to paint the background piece removed from the leaf.

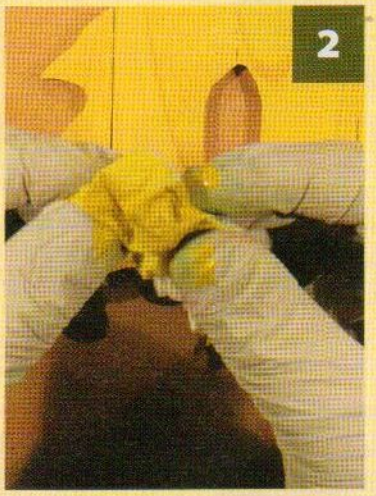


8 **Paint the leaves.** For the green leaf, thin 5 drops of Black Forest green with ½ teaspoon (3ml) water. For the autumn leaf, thin 6 drops of antique gold with 1 teaspoon (5ml) of water. Apply the paint using the technique explained in Step 7. See Nature's Edge sidebar for an alternate paint method for the autumn leaf.



9 **Gently press a leaf into the background.** Make sure the grain direction on the background runs perpendicular to the grain of the leaf. Insert any loose pieces, including the small background piece from inside the leaf, taking care to match the background grain direction. Glue the assembled piece onto a backing, such as cardboard. Trim to a finished size of 10" (25.4 cm) square and place in a frame.

MAKING A NATURAL EDGE



Nature's Edge

Come fall, leaves turn the most beautiful rainbow of red, orange, gold, and yellow. The color change usually begins at the leaf's edge and grows toward the base of the leaf. As the leaf ages, the patterns of color shift. Here's a method to capture some of fall's magic by darkening the edges of the leaf. Practice this technique on some scrap lath. For the botanically curious, this project replicates a life-size leaf of the Oregon or big leaf maple tree (*Acer macrophyllum*). While this leaf usually has a dull yellow-brown fall color, enhance it with red, orange, and burgundy.

1 **Mix 6 drops of antique gold with 3 drops of snow white.** Thin the mixture with 1 teaspoon (5 ml) of water. Apply the base wash evenly to the entire leaf. Dip a clean, freshly moistened paper towel into the base wash. Do not overload. Place 1 or 2 drops of undiluted antique gold on the paper towel.

2 **Gently rub the undiluted paint into the paper towel.** Fray the towel slightly (you want to apply the paint unevenly).

3 **Tint the edges.** Beginning from the outside end of the leaf tip, gently rub the paper towel toward the base of the leaf, lifting the towel after 1" to 1½" (2.5cm to 3.8cm) of travel. One or two strokes should be enough; subtle streaks are good. Use a clean, moist paper towel to immediately blend and smooth the edges as you go, always working from the edge to the base. Repeat for each leaf tip; work as quickly as you can.

4 **Repeat Steps 1 to 3 using espresso paint on the base wash.** Work the paint from the leaf tips again, but only cover about a ½" (1.3cm) from the edge. Use a clean, moist paper towel to blend as before. Do not overwork the paint.

Maple leaf lath pattern

Enlarge this art to 145%, or to desired size.

Materials & Tools

Materials:

- Lath, ¼" (6mm) thick: 14 each 1½" x 10½" (3.8cm x 26.7cm)
- Craft paper: 12" x 24" (30.5cm x 61cm)
- Wood glue or permanent spray adhesive
- Blue painter's tape, 1½" or 2" (3.8cm or 5.1cm) wide
- Spray adhesive: repositionable or removable (for pattern)
- Acrylic paint, such as DecoArt Americana: antique gold (DA09), Black Forest green (DA083), antique maroon (DA160), snow white (DA01), espresso (DA271)
- Paper towels

Tools:

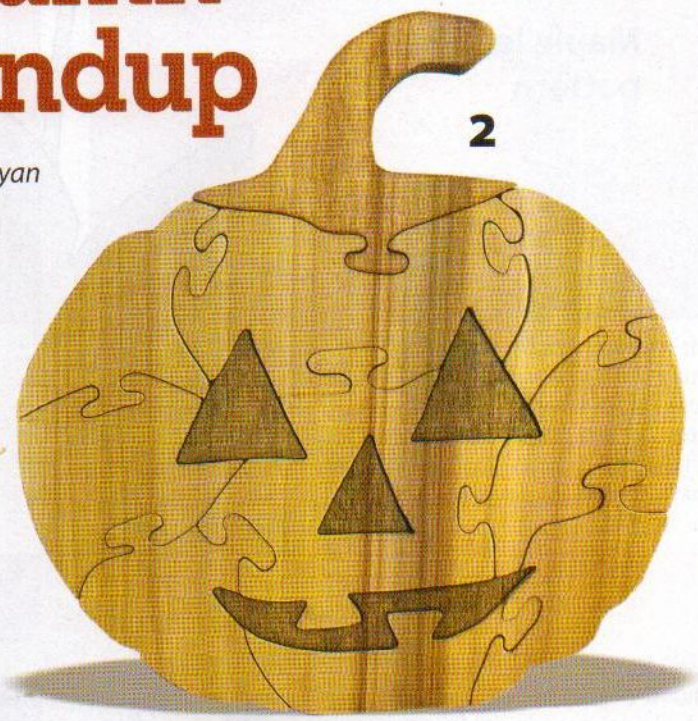
- Framing square
- Scroll saw blades, such as Olson: #3 crown-tooth
- Container for mixing paint

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

John Nielsen has been combining lath art and photography for many years. He lives in Olympia, Wash. Contact him at john@lathartonthescrollsaw.com.

Autumn Roundup

By Kathleen Ryan



1 Scarecrow Bird Feeder
Julie Kruger of J&J Crafts in St. Ansgar, Iowa, designed and scrolled this scarecrow bird feeder. Constructed from pine and plywood, it stands 16" (40.6cm) tall and features a window screen on the bottom of the feeder to keep the seed dry. *The pattern is available at www.jandjcrafts.com.*

2 Jack-O'-Lantern Puzzle
Celebrate Halloween with this handmade Jack-o'-Lantern Puzzle created by John and Missy Gonzales of GCRDesigns in Tulsa, Okla. The pair finished this child-safe, nontoxic 14-piece poplar puzzle with Danish oil and beeswax. It measures 7" by 7½" (17.8cm by 19.1cm). *See more of John and Missy's work at www.etsy.com/shop/GCRDesigns.*

3 Thank You Lord Plate
Patrick Kim of Torrance, Calif., cut the delicate scrollwork on this 9 3/4" by 9 3/4" (23.4cm by 23.4cm) Baltic birch plate. Patrick enjoys creating new designs using Photoshop. The plate was sanded, sealed, and finished with a water-based urethane. *Contact Patrick at pat0518@gmail.com.*

Note: These projects are intended as inspiration only. The patterns are not in this issue, nor are they necessarily available from the designers.

4 Leaf Cutting Board

Josh Strimbu of Woodriver Woodcrafts in Highlands Ranch, Colo., designed and cut this multicolored cutting board from a variety of reclaimed naturally colored hardwoods. The ¾" (1.9cm)-thick leaf measures 12" (30.5cm) square from tip to tip. Josh finished it with mineral oil. *See more of Josh's work at www.etsy.com/shop/WoodriverWoodcrafts.*

5 Candle Lantern

Razvan Buse of Canterbury, England, used a laser machine to cut this tea light candle lantern from hardboard. Artfully designed to cast spooky pumpkin patterns on the wall, the box measures 3⅛" by 3⅝" (7.9cm by 9.2cm). After cutting the pieces, Razvan glued them together and finished them with Minwax® Antique Pine WoodSheen® (a combination wiping stain and finish). *See more of Razvan's work at www.etsy.com/shop/BumyCraft.*

6 Back-to-School Apple

Susan Miller of New Braunfels, Texas, loves to be crafty. She designed and made this 12¼" (31.1cm)-tall, back-to-school apple as a tribute to teachers. After her husband, Shawn, cut it from ¾" (1.9cm)-thick medium-density fiberboard (MDF), Susan adorned the apple with decorative paper, tulle, ribbon, paint, and glitter. *Visit Susan at www.etsy.com/shop/SusansCraftyCorner.*

7 Saw-whet Owl

Brad and Hazel Eklund of Supply, N.C., designed and created this intarsia saw-whet owl. It measures 6" by 9" (15.2cm by 22.9cm) and consists of 33 pieces of wood cut from red cedar, spalted cypress, Peruvian walnut, ebiara, and yellowheart. The pair cut, sanded, and glued together the pieces before finishing it with clear lacquer. *Patterns are available at www.entwoodcrafts.com.*

Ring-Necked Pheasant

Use a woodburner to add lifelike details to this bird

By Kathy Wise

With careful wood selection and the strategic use of a woodburner, you can make this colorful pheasant. Though one of America's most popular game birds, the ring-necked pheasant actually hails from Asia. In 1881, at his wife's suggestion, Owen Nickerson Denny, an Oregon native and the U.S. consul general to Shanghai, shipped 60 from China to Washington State, and the birds thrived. Today these pheasants live in 40 states, and South Dakota claims it for its state bird.

The wing section has a ¼" (6mm)-thick riser for a more three-dimensional look. To better mimic the look of feathers, I used a highly figured piece of lacewood for some body sections. For more on lacewood see page 24. I will detail the techniques for adding blue colors to the black walnut and for using your woodburner to add the body and tail feather details.

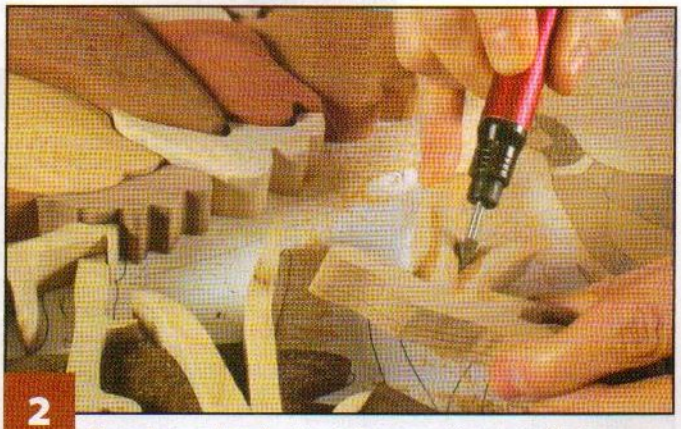
General Intarsia Techniques

Make six to eight copies of the pattern. Cut each pattern piece and arrange them into groups by color. Spray adhesive onto the backs of the pattern pieces; attach them to the shiny side of clear shelf paper, such as Con-Tact® brand; trim the patterns; and stick them onto the wood. Wood color suggestions are listed on the pattern, and wood selections are in the Materials list. Place your pieces of wood next to each other to help you decide upon the color combinations. Don't feel restricted to the colors and varieties of wood I used.

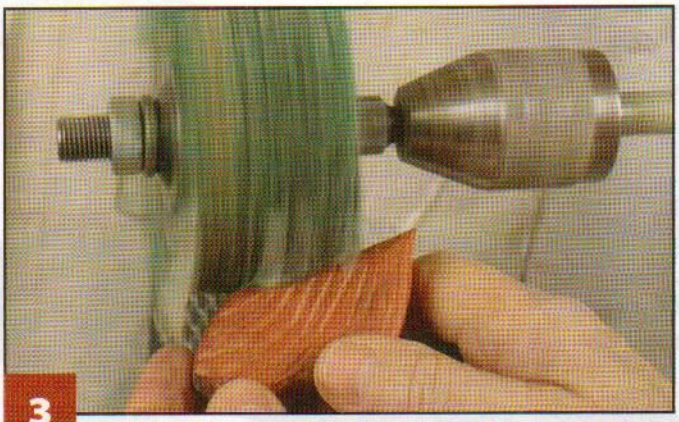
Cut the pieces using a #5 reverse-tooth blade. Mark the numbers on the bottoms of the pieces with a pencil. Cut the wing riser. Dry-assemble the pieces on a photocopy of the pattern attached to the tempered hardboard backing board.

PHEASANT: CUTTING & SHAPING THE PIECES

1 **Mark the areas to sand with a pencil.** Refer to the shaping guide. When sanding, always keep the line side up. Replace the piece to see how it looks next to the surrounding pieces. Use a 100-grit sleeve on an 8" (203mm)-diameter drum sander to remove material quickly. Use a 220-grit sleeve on a 2" (51mm)-diameter drum to remove any scratches and soften the edges. Use pliers to hold the smaller pieces and wear finger protection or gloves when sanding.



2 **Round the edges in the tight areas.** Use an oscillating spindle sander or a rotary tool. Put sharp 45° angles on the edges of the pieces to create a shadow to hide any gaps, especially between the different colored pieces where the fit might be a bit off. Use the same tool to carve any details.

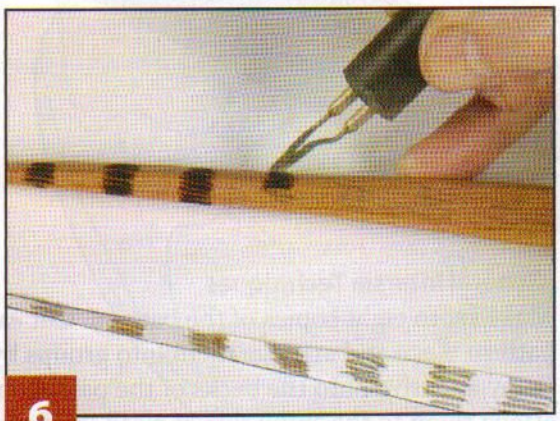


3 **Dry-assemble the pheasant on the backing board, and then set on the floor.** Take a step back to see if all levels and sanding looks good. Make any necessary adjustments. To tighten the fit between two pieces, hold them tightly together and carefully recut along the line between the two, or sand the points that touch with the oscillating spindle sander. Buff the pieces with a sanding mop to make it easier to apply a finish.

PHEASANT: ADDING COLOR & TEXTURE

4 **Add green and blue Mixol tint to natural Danish oil.** Apply it to scrap wood of the same species as the head pieces. Wipe off the excess, allow it to dry, and spray it with finish to see the final results. Refer to reference photos of real phesants as you adjust the color. When you're satisfied, apply the final color to the head pieces, coating all of the edges. Allow it to dry and seal it with a light coat of finish.

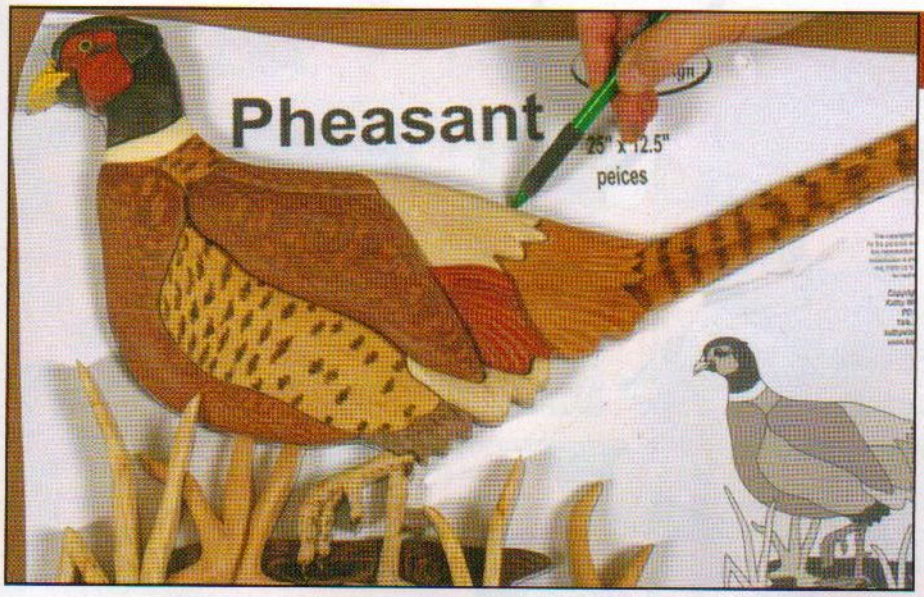
5 **Spray a light coat of adhesive on the back of the feather detail patterns.** Attach them to the appropriate pieces. You will burn right through the paper to add the feather details to the pieces. Keep sandpaper handy to clean the tips when the adhesive and paper build up on the tool. Practice on scrap to determine the proper temperature. Make a series of small strokes in the direction of the feathers. Buff the pieces with a sanding mop to remove the adhesive residue and any char. Burn again to darken areas as desired.



6 **Add more details to the tail feathers.** Burn a few lines for each group. Then, peel off the pattern and buff with a sanding mop to remove any residue. Burn the details around the sides of the tail where they may show. Buff again with the mop sander after you finish burning.

PHEASANT: ASSEMBLING THE PROJECT

7 **Dry-assemble the pieces on waxed paper on top of the pattern.** Starting with the head, secure the pieces together with cyanoacrylate (CA) glue. Assemble the body section. Then, glue the head to the body. Make sure the adjoining pieces are in place next to the pieces you are gluing so you don't shift the adjoining pieces as you glue. Place small dots of CA glue between each piece, but use the glue very sparingly at the edges to avoid any glue oozing out when you press the pieces together. Next, glue the ground and feet sections together. Then, fit the ground to the body, and make any adjustments for a good fit. Flat-sand the bottom of the pheasant on a portable drum sander, such as a Sand-Flee, for a flat gluing surface.



8

Place the glued pheasant onto the backing board with the pattern still in place. Trace the new outline of the pheasant onto the ground pattern. You'll usually find a difference in the pattern and your glued piece due to the kerf of the blade and any slight shifting when you glued the parts together. Cut and shape the ground pieces. Then, buff them with the sanding mop. Cut the backing board and sand the edges. For an easier and more durable background, cut a piece of premium birch or oak plywood on the dotted circle line. Apply dots of CA glue and wood glue to the back of the intarsia and apply accelerator to the backing board. Trim any overhanging backing board. Finish the project with clear satin spray varnish. Let dry overnight. Add clear gloss to the eye for a lifelike look.

TIP

DEALING WITH SMOKE

Use a small fan to blow the smoke away from you while you burn.

Materials & Tools

Materials:

- Medium wood, such as dark sycamore, ¾" (1.9cm) thick: body, 6" (15.2cm) square
- Medium-light wood, such as light sycamore, ¾" (1.9cm) thick: body, 5" x 8" (12.7cm x 20.3cm)
- Medium-light wood, such as beech, 1" (2.5cm) thick: grass, 6" x 8" (15.2cm x 20.3cm)
- Medium-light wood, such as spalted maple, ¾" (1.9cm) thick: feet, 5" (12.7cm) square
- Light wood, such as ash, 1" (2.5cm) thick: grass, 8" (20.3cm) square
- Yellow wood, such as yellowheart, ¾" (1.9cm) thick: eye, beak, 2" (5.1cm) square
- Medium-dark wood, such as lacewood, ¾" (1.9cm) thick: body, wing, 6" x 12" (15.2cm x 30.5cm)
- Medium-dark wood, such as tigerwood, ¾" (1.9cm) thick: tail, body, 5" x 18" (12.7cm x 45.7cm)
- Red wood, such as bloodwood, ¾" (1.9cm) thick: face, body, 4" x 5" (10.2cm x 12.7cm)
- White wood, such as holly, ¾" (1.9cm) thick: neck ring, 2" x 3" (5.1cm x 7.6cm)
- Dark wood, such as black walnut, ¾" (1.9cm) thick: neck, body, 5" (12.7cm) square
- Black wood, such as wenge, ½" (1.3cm) thick: ground, 5" x 22" (12.7cm x 55.9cm)
- Black wood, such as ebony or wood stained black, ½" (1.3cm) thick: eye, 2" x 3" (5.1cm x 7.6cm)
- Tempered hardboard, ⅛" (3mm) thick: 16" x 29" (40.6cm x 73.7cm)
- Clear shelf paper, such as Con-Tact® brand
- Spray adhesive
- Glue: wood, cyanoacrylate (CA)
- Sanding drums: assorted grits
- Chalk
- Tint or dye: blue/green, black (optional)
- Finish, such as Danish oil: natural
- Spray finish, such as satin varnish
- Finish, clear gloss
- Waxed paper
- Hanger

Tools:

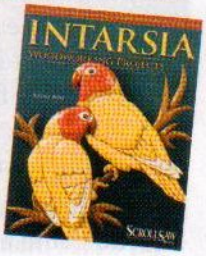
- Scroll saw blades: #5 reverse-tooth
- Pliers
- Sanders: pneumatic drum, portable drum, sanding mop, oscillating spindle
- Rotary tool with sanding drums and carving bits
- Woodburner with a micro skew tip

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

Pattern for the ***RING-NECKED PHEASANT*** is in the pattern pullout section.

WANT MORE PATTERNS?

Intarsia Woodworking Projects
by Kathy Wise

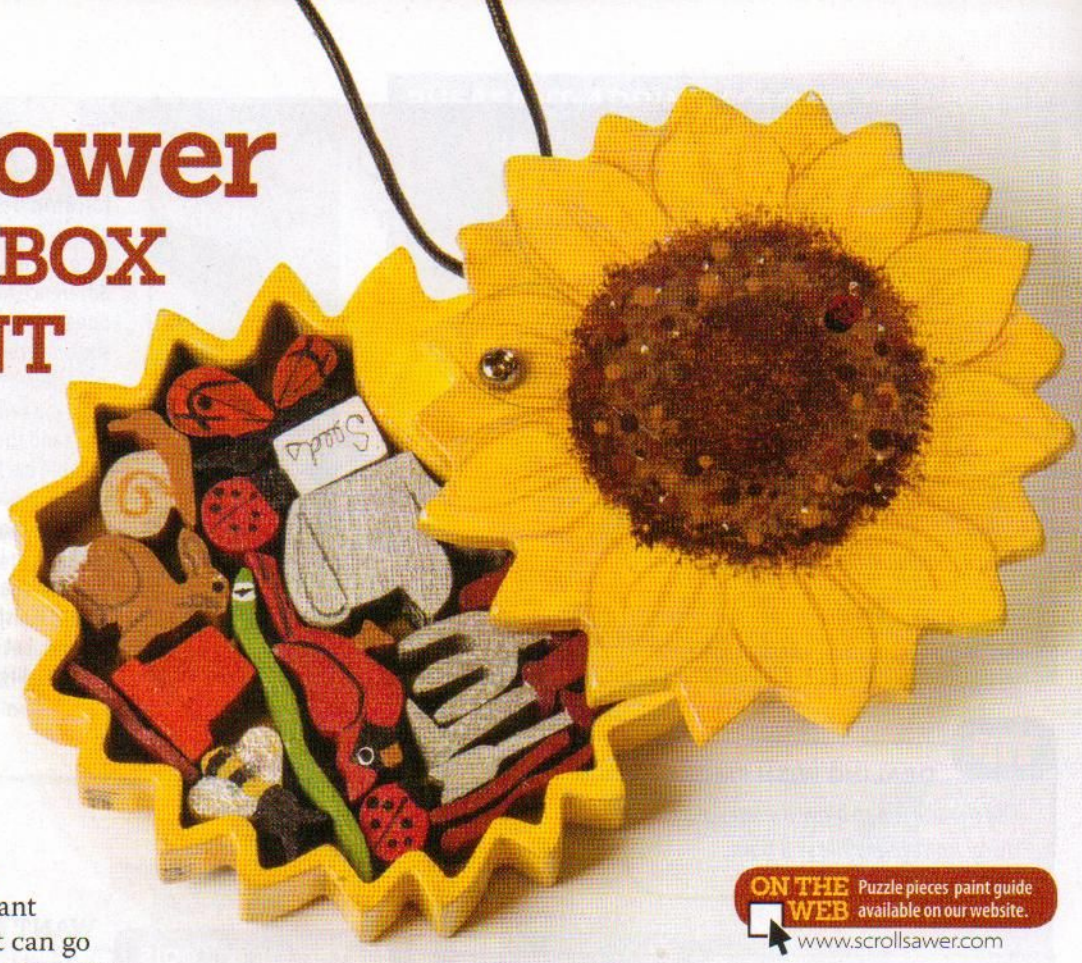


Item 3393. Available for $19.95 + S&H (parcel post) from Fox Chapel Publishing, 800-457-9112, www.FoxChapelPublishing.com, or your local retailer.

Kathy Wise is a nationally acclaimed intarsia artist. She has written consecutive articles for Scroll Saw Woodworking & Crafts *for the past 13 years, including 52 articles for regular issues and additional patterns for a variety of special issues. Kathy has also written three books. For a free catalog of 550 patterns, contact Kathy Wise Designs Inc., P.O. Box 60, Yale, Mich. 48097, fax 810-387-9044, www.kathywise.com, kathywise@bignet.net.*

Flying Pheasant
#735 at KWD
$10, 94 pcs
(20" by 17")

Sunflower PUZZLE BOX PENDANT



Portable puzzle contains mini garden-themed pieces

By Nancy Vincent

This sunflower is both a large, colorful pendant and a miniature puzzle that can go anywhere. The next time you're waiting at a restaurant or appointment, challenge your family to fit the pieces back into the sunflower box. Be sure to snap a photo before you dump them out!

I usually paint this project as shown, but you could also woodburn the sunflower design and cut the pieces from colorful hardwoods.

ON THE WEB Puzzle pieces paint guide available on our website.
www.scrollsawer.com

TIPS

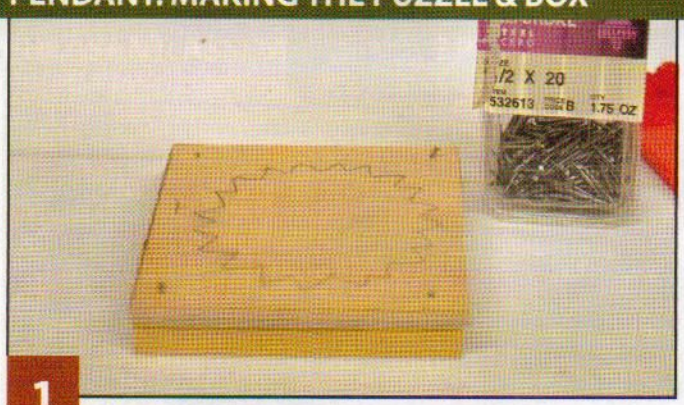
AN EXTRA PIECE

There is an extra ladybug on the pattern. Use it if there is extra space in your box. If you cut the pieces just inside the line, you will need the extra bug.

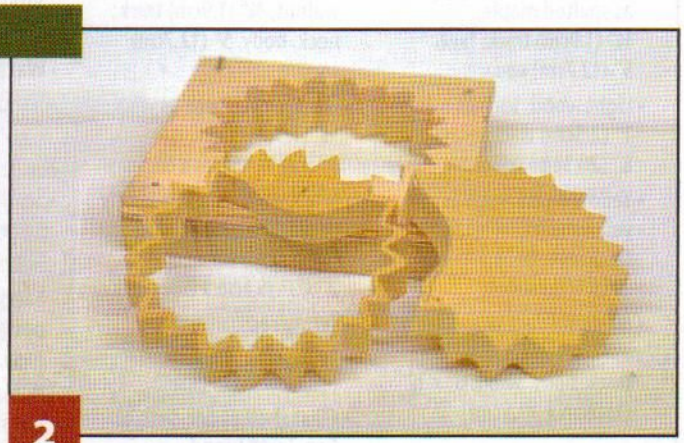
THE ANSWER KEY

Take a picture when you have the pieces inside the box. That picture is your answer key. Each box is unique, so your pieces may not fit in the same position as they appear in my box.

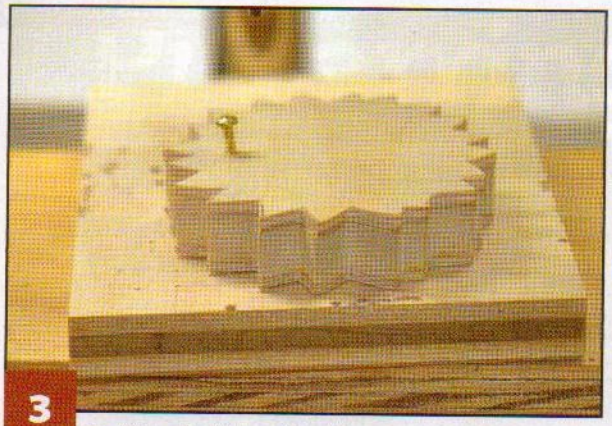
PENDANT: MAKING THE PUZZLE & BOX



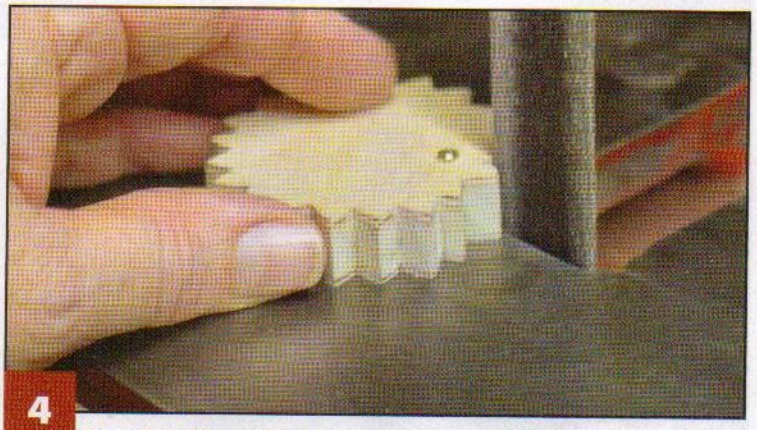
1 **Transfer the outline pattern to the lid.** Stack the three box layers together with the lid on the top, the back in the middle, and the sides on the bottom. I secure the stack with brads. Cut the outline with a #3 reverse-tooth blade.



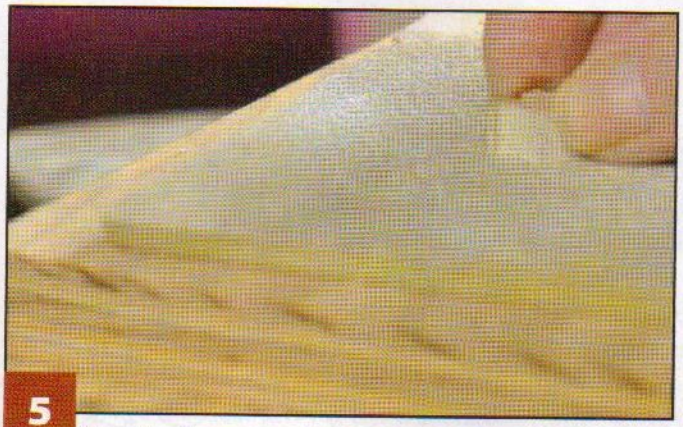
2 **Separate the stack.** Transfer the box sides pattern to the blank, drill a blade-entry hole, and cut the inside with the #3 reverse-tooth blade. Glue and clamp the box bottom to the box sides.



3 **Position the lid on the sides.** Drill the screw pilot hole through the top and into the sides. I use a #56 wire size bit for a #2 wood screw. Remove the lid and redrill the hole in the lid with a 3/32" (2.5mm)-diameter bit so the lid can spin on the screw. Screw the lid to the box.



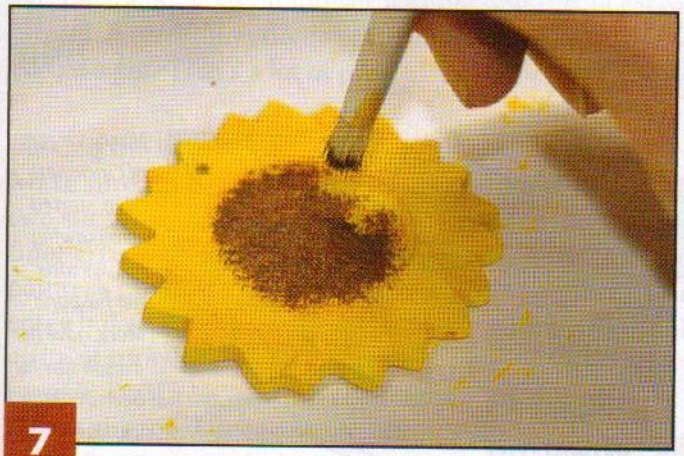
4 **Sand the sides of the box to remove any glue squeeze-out.** I use a 1" (25mm)-wide belt sander. Remove the lid from the box and lightly sand the lid and back of the box. Seal the box with oil-based wood primer. I insert wires into the screw holes to support the pieces while the finish dries. Sand the finish lightly and remove any dust.



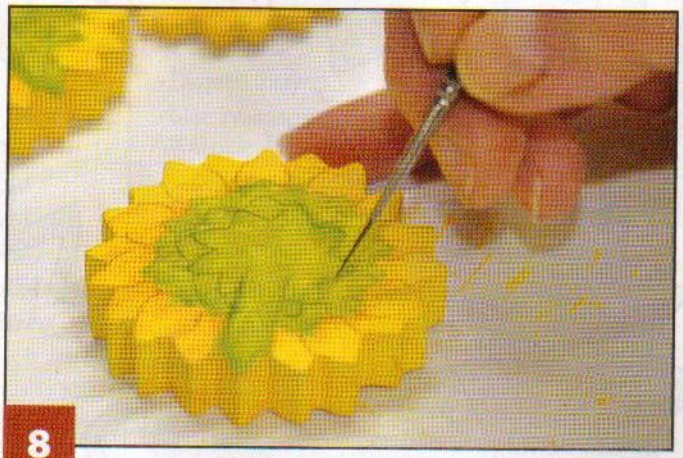
5 **Transfer the patterns for the puzzle pieces to the blank.** Cut the pieces with a #2 reverse-tooth blade. Sand the front and back of the pieces. Check the fit of the pieces inside the box. The pieces should be loose because once they are painted, the fit will be tighter.

PENDANT: PAINTING THE PIECES

6 **Base-coat the entire box with bright yellow.** Transfer the painting patterns to the front and back of the box. Shade the petals near the center with honey brown. Also shade the petals that are behind another petal. Highlight the petals with buttermilk.



7 **Use a scruffy brush or stippling brush to tap burnt umber into the center of the flower.** Using the same brush, tap in a circle of dark chocolate. Use a stylus to tap in dots of burnt umber, honey brown, buttermilk, black, and yellow.



8 **Base-coat the stem and back of the flower, but not the flower petals, with medium Hauser green on the back of the box.** Shade them with dark Hauser green. Shade the flower petals with honey brown and highlight them with buttermilk.

Materials & Tools

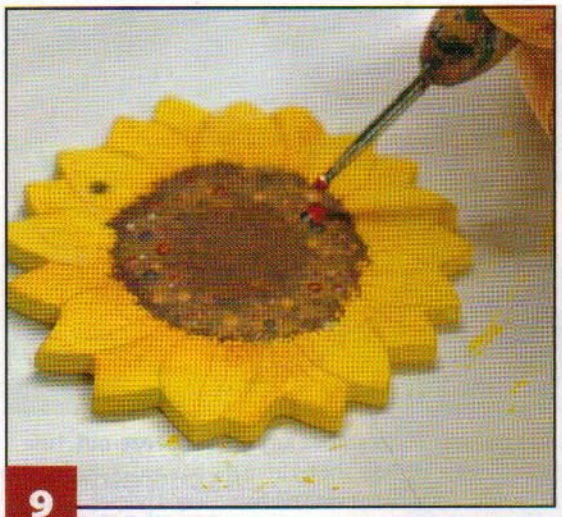
Materials:

- Plywood, ⅛" (3mm) thick: lid, 3" (7.6cm) square
- Plywood, 1/16" (2mm) to ⅛" (3mm) thick: back, 3" (7.6cm) square
- Wood of choice, ⅜" (1cm) thick: box center, 3" (7.6cm) square
- Wood of choice, ⅜" (1cm) thick: puzzle pieces, 2" x 4" (5.1cm x 10.2cm)
- Brass wood screw, #2: ⅜" (1cm) long
- Brass screw eye, ⅛" (3mm) inside dia. eye: ½" (1.3cm)
- Acrylic paint, such as DecoArt: bright yellow; such as Delta Ceramcoat burnt sienna, buttermilk, white pearl; such as DecoArt Americana deep burgundy, cadmium orange, burnt umber, dark chocolate, black, honey brown, medium Hauser green, such as Plaid Folkart: white, metallic silver anniversary; such as Michael's Craftsmart: holiday red
- Varnish, such as Delta Ceramcoat: water-based clear gloss

Tools:

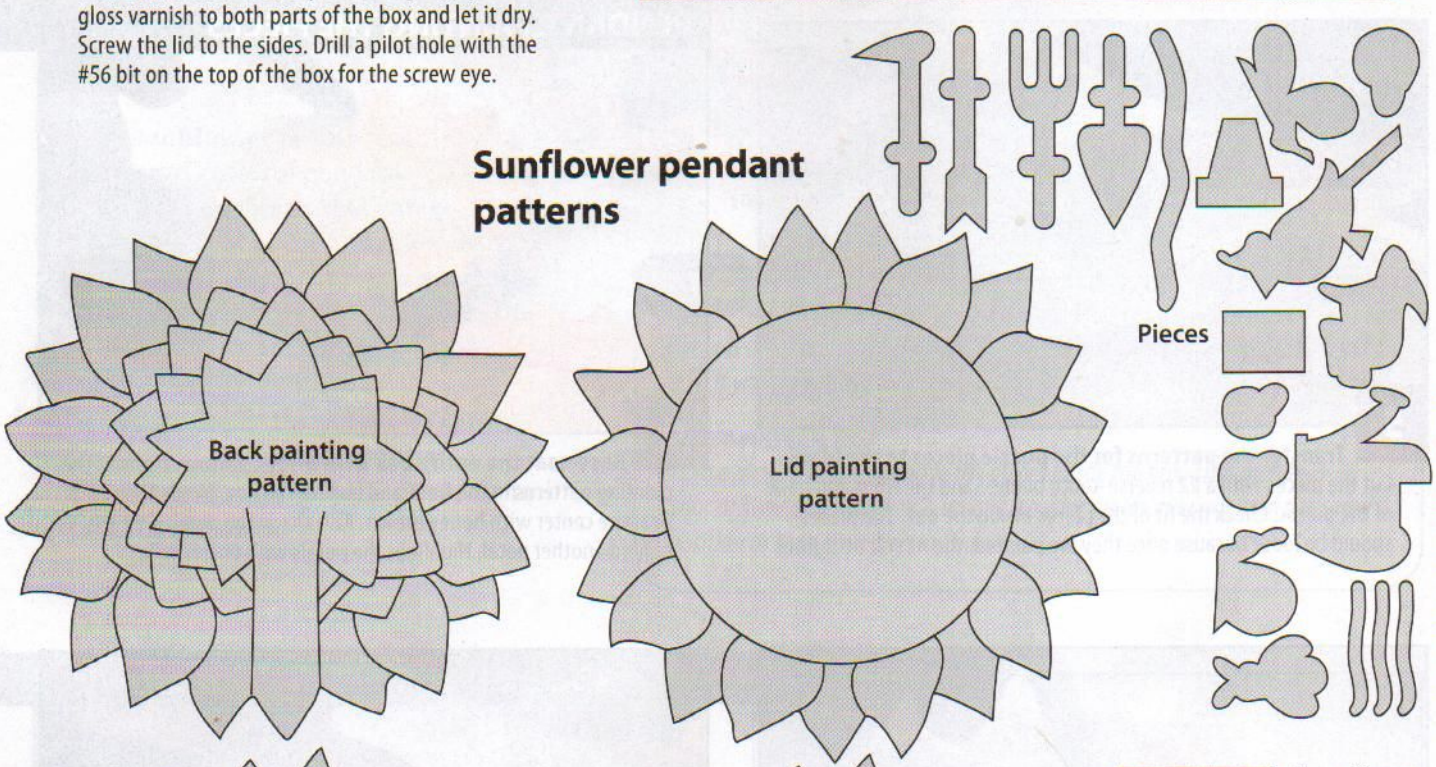
- Scroll saw blades: #2, #3 reverse-tooth
- Drill with bits: assorted small
- Paintbrushes: #4 or ½" (13mm) flat, old paintbrush or stippling brush, liner brush
- Stylus or toothpick

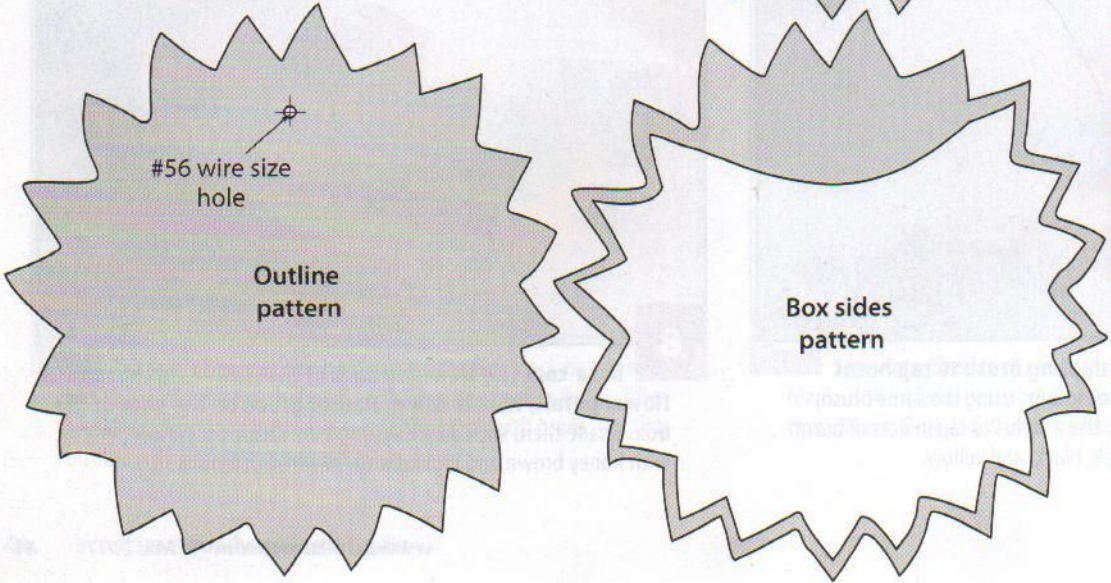
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.



9 **Use a stylus, small dowel, or the end of a paintbrush to make a black dot for the ladybug's head on the lid.** Overlap the black dot with a red dot for the body of the bug. Apply clear gloss varnish to both parts of the box and let it dry. Screw the lid to the sides. Drill a pilot hole with the #56 bit on the top of the box for the screw eye.

Sunflower pendant patterns



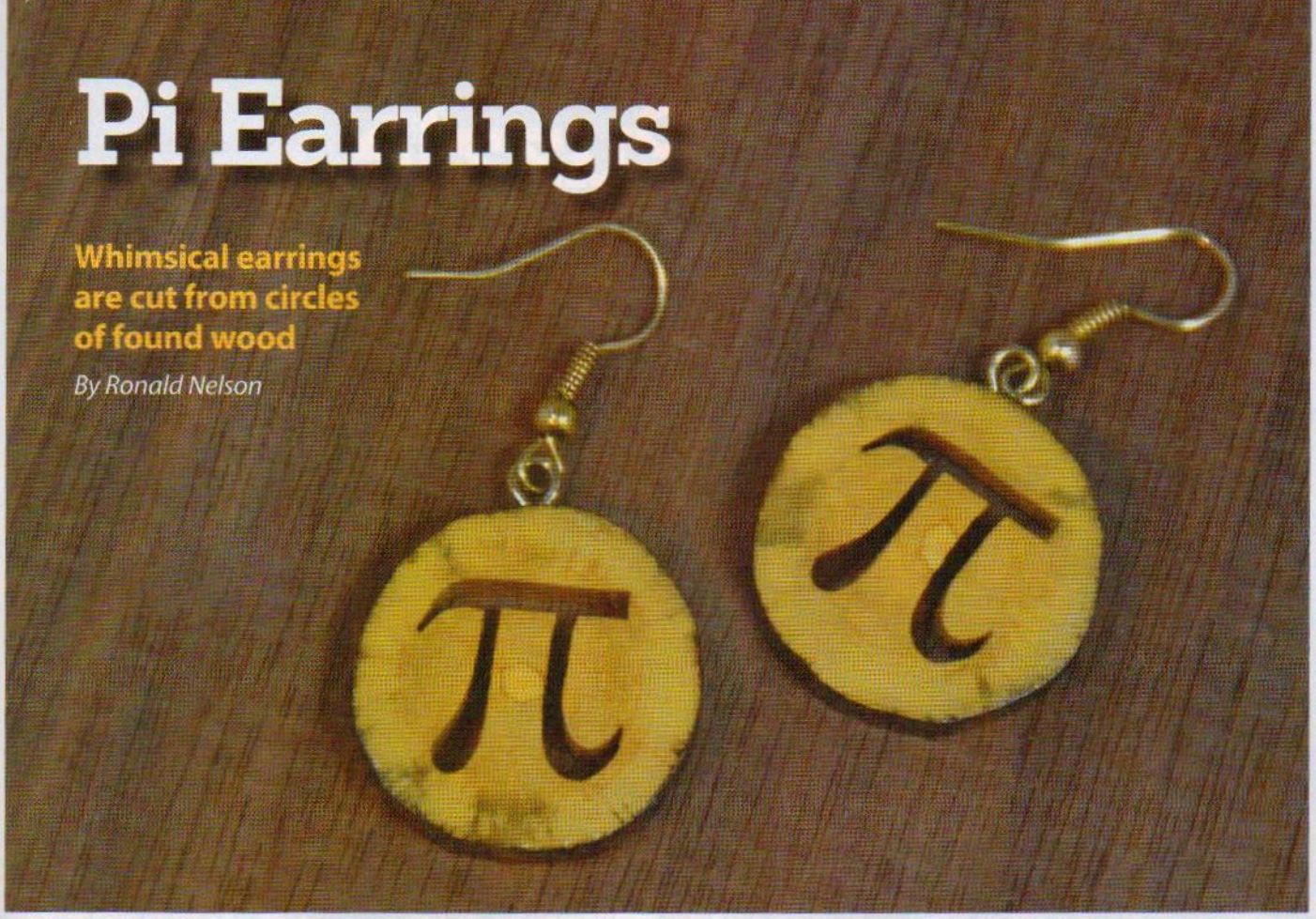


Nancy Vincent of Cincinnati, Ohio, started scroll sawing in 1989 after her husband, Mark, gave her a scroll saw for Christmas. She has been designing and cutting ever since. Nancy enjoys cutting small items and 3-D patterns. In her spare time, she's an office manager at a motorcycle dealership.

Pi Earrings

Whimsical earrings are cut from circles of found wood

By Ronald Nelson



Some folks might think you are irrational for making these pi earrings, but once you get 'round to making them, you're sure to get a vast number of requests. These easy-to-make earrings are an ideal gift for the math geek in the family or as a clever Pi Day (March 14) gift.

In addition to being a Greek letter, pi (π) represents the ratio of a circle's circumference to its diameter. This mathematical constant is considered an "irrational" number because it cannot be expressed as a fraction ($22/7$ is the closest approximation), and as a decimal it goes on forever without any sort of repeating pattern. Five trillion digits of pi have been calculated, with no end in sight. That's a lot of pi!

Making the Earrings

Make sure the tree branches are completely dry, and then cut two slices for each pair of earrings. Sand them with progressively finer grits of sandpaper up to 400 grit. Cover the blanks with painter's tape and center the patterns on the blanks. Drill blade-entry holes, and cut the pi shape with a #2/0 blade. Apply three coats of spray lacquer and allow it to cure. Drill a 1/32" (1mm)-diameter hole at the top. Use cyanoacrylate (CA) glue to secure a short eye pin in the hole and then add an earring hook to each pin.

Pi earring pattern

Materials & Tools

Materials:

- Maple branch, 3/4" (1.9cm) diameter: 2 each 3/16" (5mm) slices
- Earring hardware: 2 each eye pins; 2 each hooks
- Lacquer: spray
- Glue: cyanoacrylate (CA) glue
- Sandpaper: progressively finer grits from 250 to 400

Tools:

- Scroll saw blades: #2/0 reverse-tooth
- Drill with bit: 1/32" (1mm)

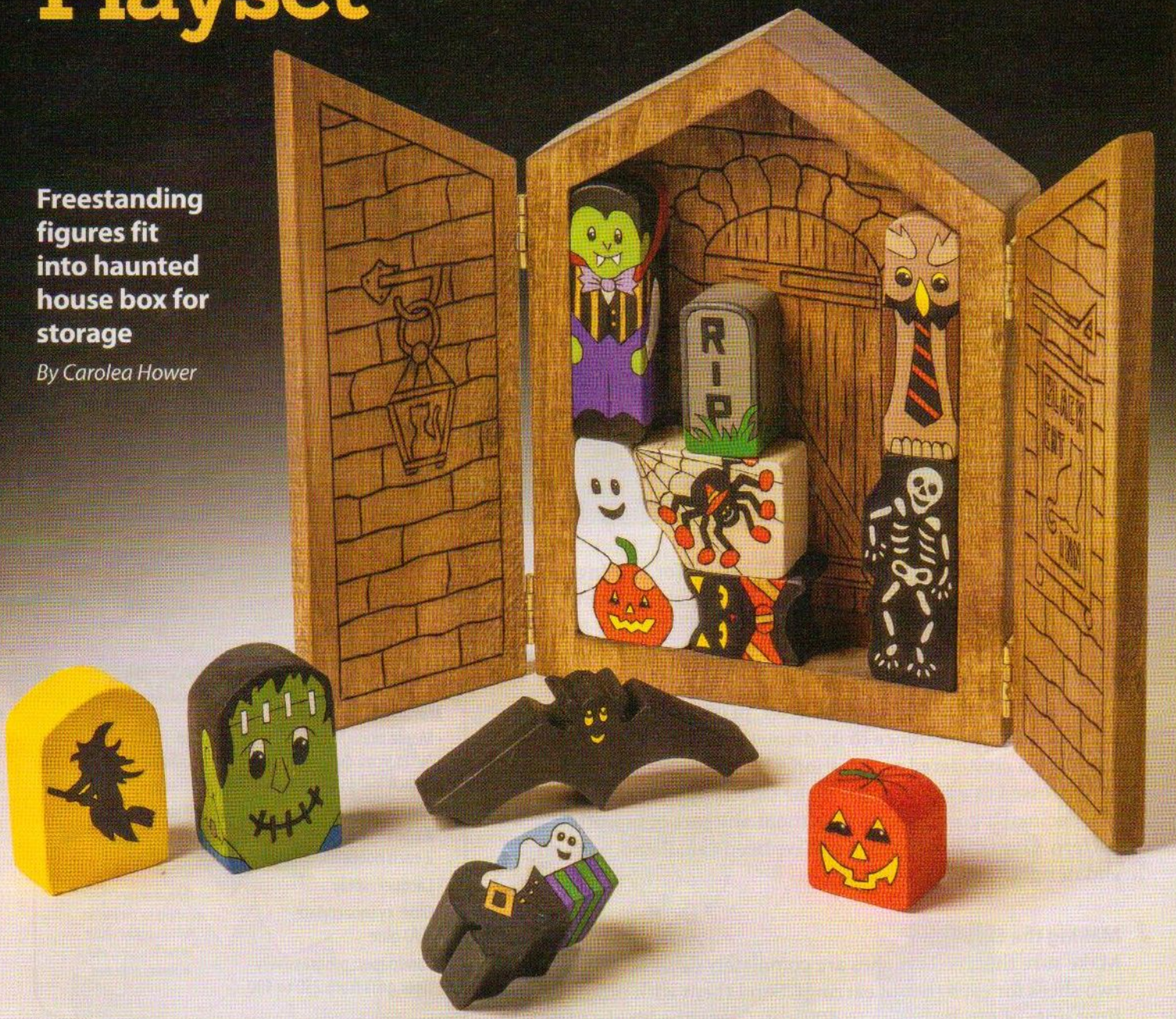
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Ronald Nelson is a scientist from South Africa who lives in Sweden. Many of the items he makes are inspired by science and nature. He makes a variety of diverse wooden items, some of which are available at www.etsy.com/shop/Induku. See more of his work at indukudesign.com.

Halloween Puzzle Playset

Freestanding figures fit into haunted house box for storage

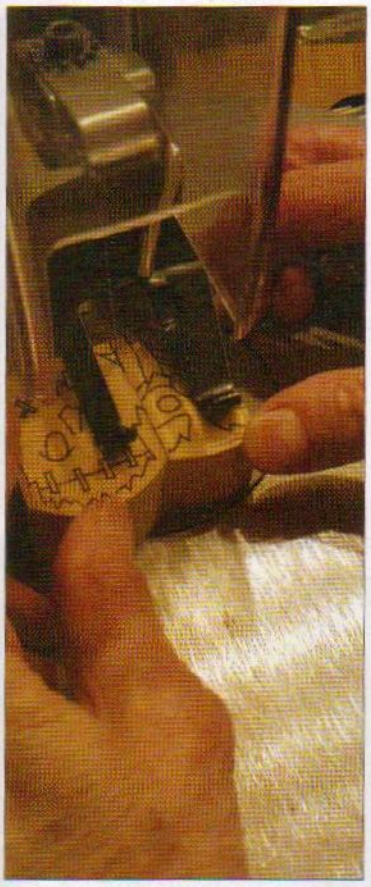
By Carolea Hower



Halloween was a major event in my one-room country school. We turned brown paper grocery bags into character masks depicting vampires, Frankenstein monsters, cats, owls, bats, and witches, and children wearing bedsheets became ghosts. With these school memories in mind, I designed this Halloween puzzle. For added fun and to prevent loss, I made this project so all 12 figures fit back into the haunted-house box.

Getting Started

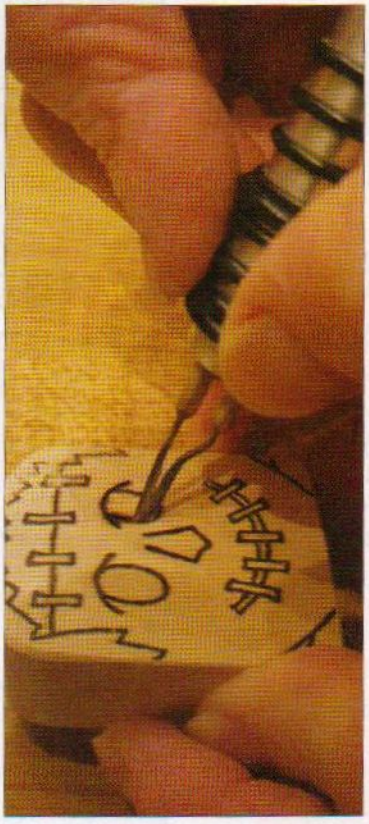
Cut the pieces to size. Transfer the pattern to the front side of the box body/puzzle pieces (B). I place a fresh laser copy of the pattern facedown on the blank and apply acetone to the back. The acetone dissolves some of the laser toner and transfers a mirror image of the pattern onto the blank. Wear gloves to protect your hands from the acetone and apply it in a well ventilated area.



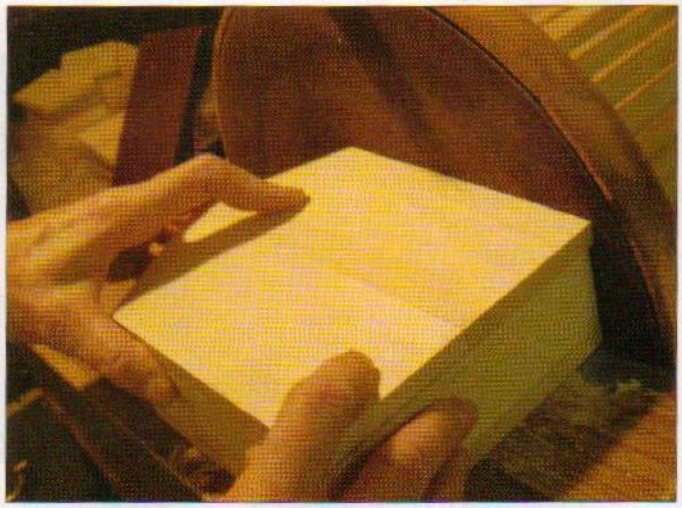
Making the Puzzle

Drill a blade-entry hole at the dot on piece B. Cut the perimeter of the puzzle pieces and remove them as one piece. Hand-sand the remaining box sides. Then, cut the puzzle pieces apart. Round all the corners and edges of the puzzle pieces with 120-grit sandpaper.

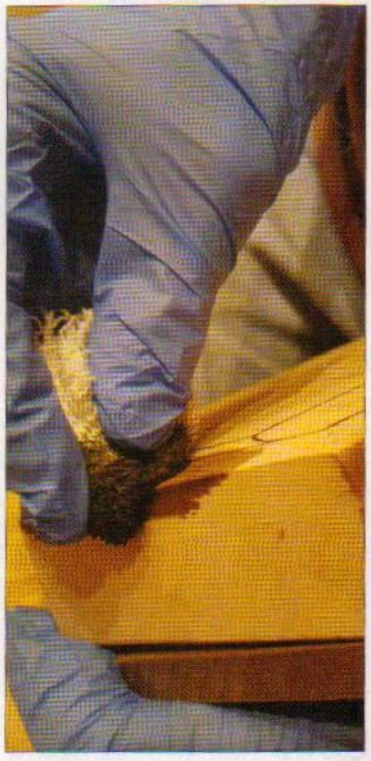
Use the individual patterns to transfer the designs to the corresponding puzzle pieces. Using the side patterns as guides, connect the front and back lines with a pencil, and draw the side details. Transfer the interior design to the front side of the box back (C). Transfer the outlines of the puzzle pieces (shown on pattern B) to the back of C to provide the solution.



Use a woodburner with a small skew tip to burn along the lines on piece C and all four sides of the puzzle pieces. *Note: Deeply burned lines help keep the paint color edges crisp when you paint.* Use ¾" (1.9cm)-long wire brads to attach the front of C to the back of B. Mark the vertical door line on the front of the doors (A). Cut and sand the door edges. Apply clear double-sided tape to the front side of B. Align the two box doors (A) on the tape and press down firmly.



Sand the outer edges of the taped-together puzzle box. I use a disc sander and a 120-grit sanding disc. Sand until all three puzzle layers are even on all five sides. Check that the sides and bottom are square with a 6" (15cm) square. Leave the doors taped to the middle. Sand off the sharp edges and corners of the box.



With the doors still taped, mark the door hinge placement ½" (1.3cm) in from each corner of A and B. Attach hinges with round head wood screws. Carefully pry open the doors with a thin knife blade and remove the tape.

Align the front and back of the door patterns with the hinged sides of the doors. Transfer the designs onto the blank and burn the lines.

Referring to the photo and the painting guide, paint the puzzle pieces. Thin the paints with water and an eyedropper to make them easier to apply. You can control the intensity of the colors based on how much water you add. Use Minwax special walnut wood stain on the puzzle box to create a contrast from the puzzle pieces. Remove the hinges to make it easier to apply the stain. Reassemble the puzzle box when the stain is dry.

Painting Guide

Owl
Eyebrow feathers, feet: butter pecan (2)
Face, chest: Bambi brown (1)
Wings, back, head: dark brown (1)
Beak, eyes: opaque yellow (1)
Pupils, shirt, tie: black (1)
Eye highlights: white (1)
Tie stripes: orange (3)

Bat
Body, wings: black (1)
Eyes, mouth: opaque yellow (1)
Pupils: black (1)

Frankenstein
Face: leaf green (1)
Head bandages, eyes,
eye highlights: white (1)
Hair, mouth bandages, eyes: black (1)
Neck pins: metallic pewter gray (2)
Shirt: copen blue (1)

Pumpkin
Pumpkin: orange (3)
Eyes, nose, mouth: opaque yellow (1)
Pupils: black (1)
Eye highlight: white (1)

Skeleton
Background: black (1)
Skeleton: white (1)

Cat
Cat body, pupils: black (1)
Eyes, ears: opaque yellow (1)
Nose: Santa red (5)
Tie: orange (3)
Tie stripes: metallic splendid gold (4)

Spider
Background: goose feather (3)
Body: black (1)
Shoes, hat: orange (3)
Hat band, eyes: metallic splendid gold (4)
Mouth: white (1)

Witch shoe, ghost
Shoe, ghost eyes, mouth: black (1)
Shoe buckle, buttons:
metallic splendid gold (4)
Sock: purple passion (1), Kelly green (1)
Ghost body, eye highlights: white (1)
Background: blue heaven (1)

Tombstone
Tombstone: dark gray (3)
Tombstone outline: dark gray (3) with
black added (1)
RIP letters: black (1)
Grass: Kelly green (1)

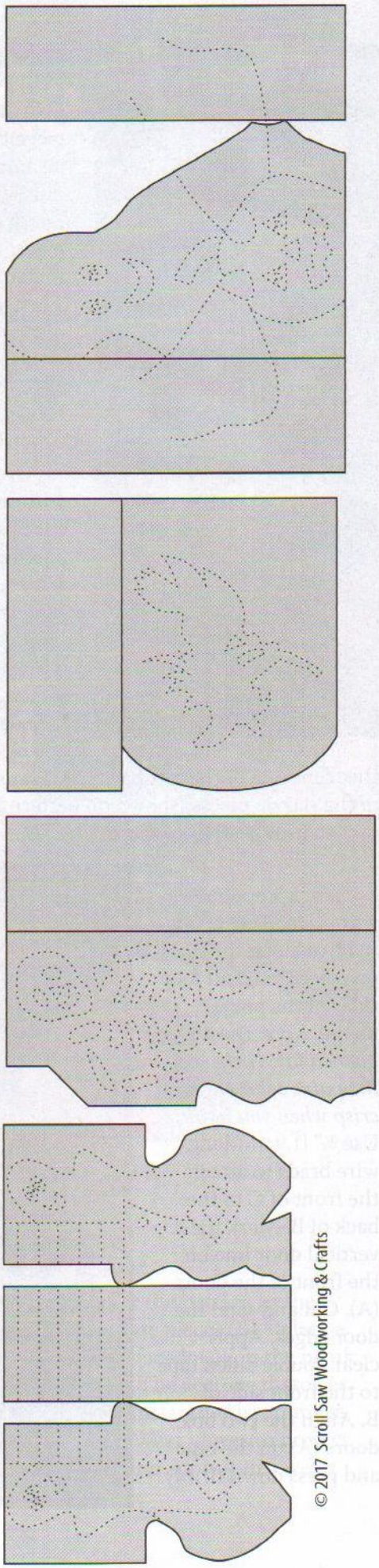
Vampire
Pants: passion purple (1)
Bow tie: purple lilac (2)
Shirt, fangs, eyes, eye highlights: white (1)
Face, hands: fresh foliage (2)
Vest, hair, shoes, cape, pupils: black (1)
Vest stripes, buttons, shirt buttons:
metallic splendid gold (4)
Cape lining: Santa red (5)

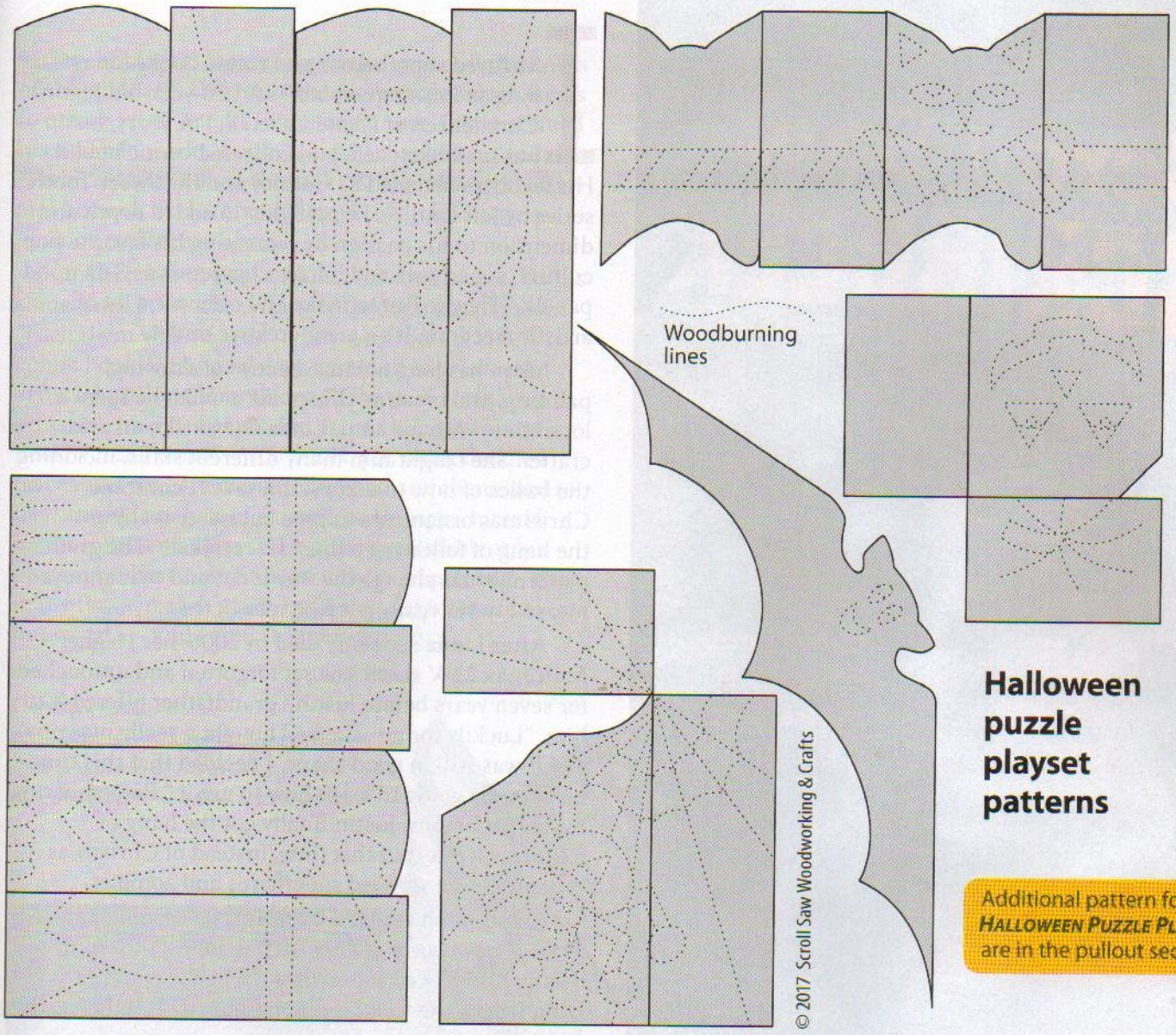
Witch
Background: opaque yellow (1)
Witch: black (1)

Ghost
Body, eye highlights: white (1)
Eyes, mouth, pumpkin eye pupils: black (1)
Pumpkin: orange (3)
Pumpkin eyes, nose, mouth:
opaque yellow (1)
Pumpkin stem: Kelly green (1)

Box front doors
Letters, ghost eyes, mouth, pumpkin
pupils, cat: black (1)
Pumpkins: orange (3)
Pumpkin mouth, eyes, nose, moon:
opaque yellow (1)
Night sky: light black (5), lighten
with white (1)
Bottom rocks, edge of top rock:
dark gray (2)
Bottom rocks' shadows: black (1)
Top rock: Bridgeport gray (1)
Top rock shadow: dark gray (2)
Background behind Happy Halloween:
country twill (2)

1 Delta Ceramcoat
2 Plaid FolkArt
3 Plaid Apple Barrel
4 DecoArt
5 DecoArt Americana





Halloween puzzle playset patterns

Additional pattern for the ***HALLOWEEN PUZZLE PLAYSET*** are in the pullout section.

Materials & Tools

Materials:

- Basswood, ⅜" (1cm) thick: A, C; 2 each 6" x 7" (15.2cm x 17.8cm)
- Basswood, ¾" (1.9cm) thick: B; 6" x 7" (15.2cm x 17.8cm)
- Acetone (optional)
- Gloves (optional)
- Wire brads: ¾" (1.9cm) long
- Hinges: 4 each ¾" (1.9cm) square
- Phillips round head wood screws: 16 each #1 x ⅜" (1cm) long
- Wood stain, such as Minwax: special walnut
- Sandpaper: 120 grit
- Tape: clear double-sided
- Acrylic paints: assorted, see Painting Guide

Tools:

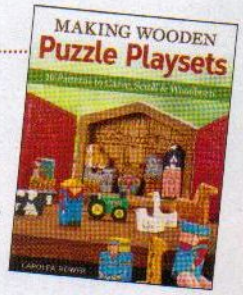
- Scroll saw blades: #7 reverse-tooth
- Measuring and marking tools: ruler, 6" (15cm) square, pencil
- Woodburner with tip: small skew
- Disc sander with 120-grit sanding disc
- Drill with bit: #68 wire size
- Hammer
- Screwdriver: Phillips
- Paintbrushes: #03 pointer, ¼" (6mm) shader, ½" (13mm) shader
- Knife
- Eyedropper

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

WANT MORE PLAYSETS?

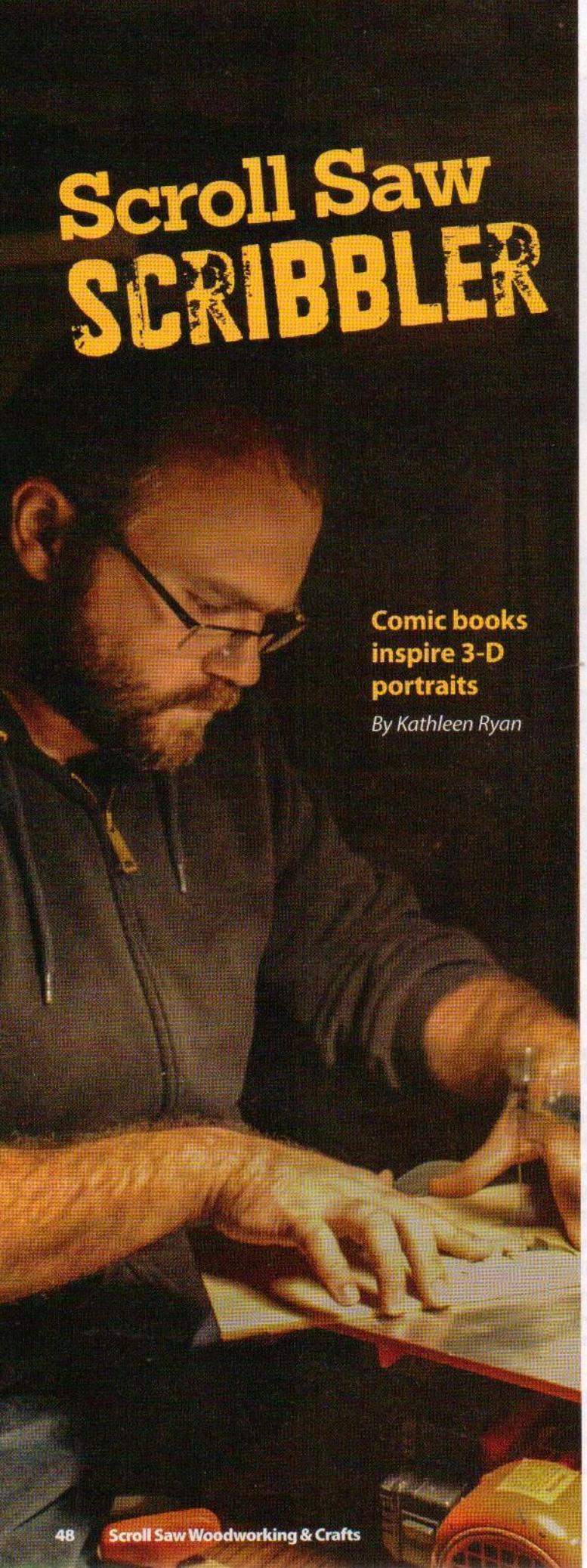
Making Wooden Puzzle Playsets
by Carolea Hower

Item 8664; code SSW67. Available for $16.99 +S&H from Fox Chapel Publishing, 800-457-9112, www.FoxChapelPublishing.com, or your local retailer.



Carolea Hower is a retired physical therapist who lives on a farm with her husband, Ken. You can reach her via e-mail at caroleahower@gmail.com

Scroll Saw SCRIBBLER



Comic books inspire 3-D portraits

By Kathleen Ryan

I've loved superheroes and comic books for as long as I can remember," said 30-year-old Justin Christensen of Island Lake, Ill. For years, Justin has read, sketched, and collected comic books. His favorites include DC Comics and the Sweet Tooth series by Jeff Lemire. In 2013, Justin added depth and dimension to his passion by recreating his favorite pop culture, superhero, and horror characters as 3-D wood panels. "They're fun to make and offer me a lot of artistic freedom. It's a great creative outlet."

Justin has long nurtured a love of drawing, painting, and creating things. As a child, he spent a lot of time with his aunt, Linda Dybzinski, an avid crafter. She taught him many different skills, including the basics of how to use a scroll saw. "I cut some Christmas ornaments in pine but never really got the hang of following a line," he recalled. "The grain pattern would change the way it cut and that annoyed me, so I never really got into it back then."

After Linda suddenly died in 2006, her Hegner Multimax 22-V scroll saw sat forgotten and untouched for seven years before Justin's grandfather offered it to him. "Luckily for me, she had bought a really nice one and it was still in good shape. I decided that this time I was really going to learn how to use it." Remembering his aunt's lessons, Justin finally got the hang of following a line, but this time, instead of Christmas ornaments, he scrolled superheros and zombies.

Justin soon realized the scroll saw could open a whole new world of creative possibilities for him. Seeing his beloved superheros or creepy zombies lying flat on the wood did not quite cut it, so he began adding dimension to his characters. "I began doing simple silhouettes and with each project I pushed a little more. Then, I began playing around with positive and negative spaces and really liked the effect it had on my work."

Now, instead of being frustrated by the grain in the wood, Justin uses it to his advantage. "The most difficult part was figuring out how to make small details, like grain direction, fit with the design both aesthetically and structurally. But once you learn different grain types, you figure out how to adapt with each type. I find it very satisfying to see that all of the different species of wood can be cut in such a way to make something completely different."

Each of Justin's plaques averages 13" by 18" (33cm by 45.7cm) in size. He begins with an original hand drawing, most of which are inspired by comic book images. He turns the sketches into patterns, transfers them to the wood, and artfully cuts them with a

variety of blades, depending on the type and thickness of the wood. He then puts the pieces together in layers to create a 3-D image. In the beginning, Justin stained his finished works, but he quickly changed his mind. "I realized that I liked the look of natural wood better, and because of that I use a bunch of different types of wood to create a piece."

Justin hates to part with his finished pieces, but he sometimes offers them for sale through social media. "I sell them when I need to buy new tools or more comic books!" His goal is to continue to grow as an artist by pushing boundaries. "I'd like to work with other talented designers and artists to make a comic book where I would scroll out larger, more detailed pieces and have them photographed and then sized to fit within the panels of a comic book page," he said. Justin is driven by the sense of accomplishment his pieces give him and the need to keep improving. "I see many flaws in each piece, but I also see where I have improved . . . and I find that very gratifying."

Contact Justin at scrollsawscribbler@gmail.com and see more of his work at www.facebook.com/scrollsawscribbler/.

Justin based the design of *Zombie* on the art of Charles Holbert.

Below: The Tell 'Em Steve-Dave podcast inspired Justin's *Four Color Demons*.

Justin took inspiration from the comic *Swamp Thing* when he designed his *Swamp Thing*.

FRETWORK CHECKERS & Chess Set

Functional design allows you to show off your woodworking (and game-playing) skills

By Dan Wilckens

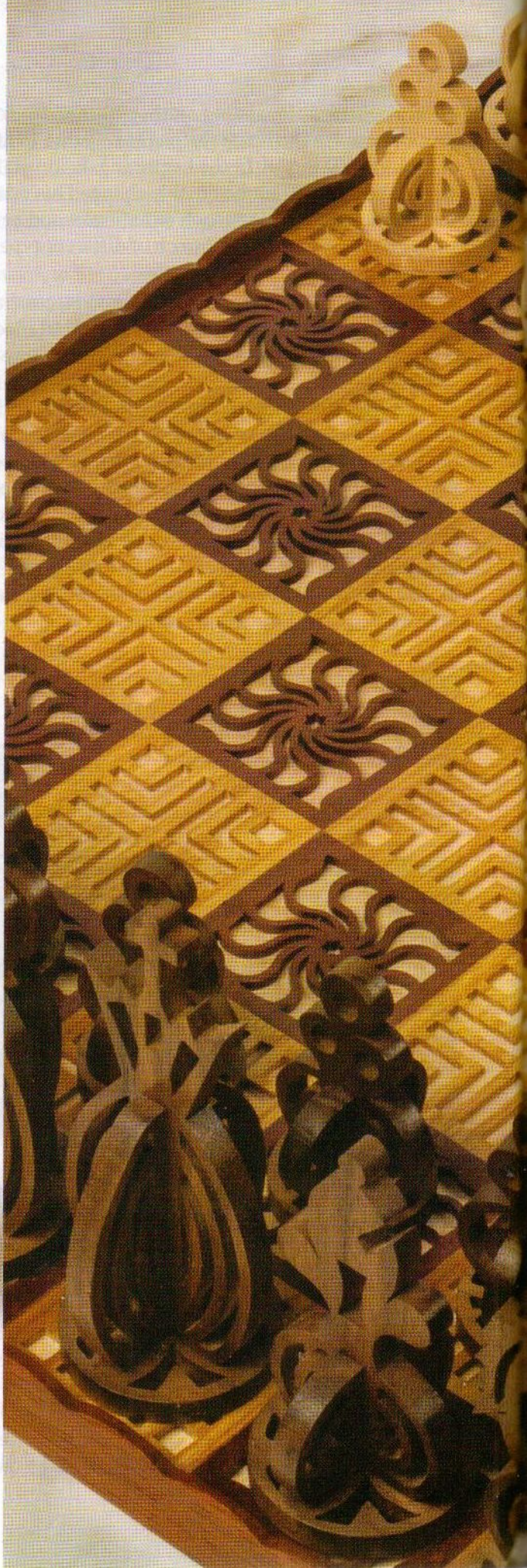
Chess reminds me of scroll sawing. Good players (and scroll sawyers) show patience and keep an eye on the long game. Each turn, or cut, moves you closer to your goal. No wonder this chess set makes the perfect project for a scroll sawyer.

This project may look intimidating, but because you are cutting individual pieces, you have built-in stopping points. Plus, you can stack-cut many of the parts to reduce your cutting time, and the chess pieces fit in nicely as a break between larger projects.

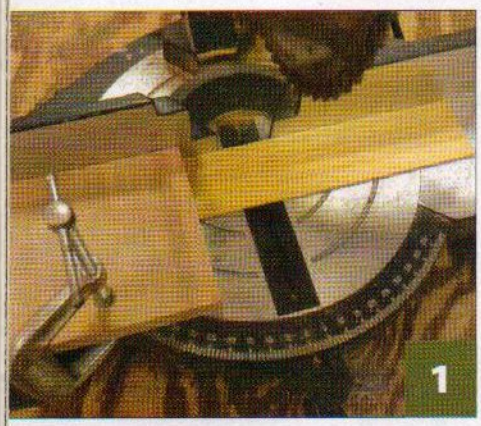
Getting Started

Choose two varieties of wood that complement each other, but are distinctly different in color; I chose walnut and hard maple. Cut a series of blanks large enough to fit multiple pieces on each blank; it's easier to cut smaller pieces free from a large blank than to cut small pieces. Make sure the sides of these blanks are straight and square to ease the assembly later. I cut the blanks with a table saw.

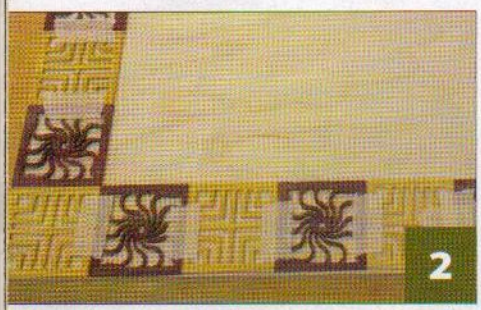
Don't play chess? I've also included patterns for checkers.



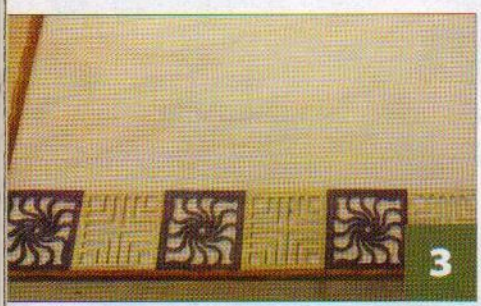
MAKING THE CHESSBOARD



1 Start by cutting the squares from ⅛" (3mm)-thick wood in contrasting colors. I chose purpleheart and canarywood. Be sure all 64 pieces are square (the length and width are the same). Rip a series of 2" (5.1cm)-wide strips. Then, set up a miter saw to cut the pieces the exact same length as the width. Cut a few extra squares in case of an accident. Lightly sand both surfaces. Stack the pieces together. Drill the blade-entry holes and cut the frets. Sand and de-fuzz the squares.



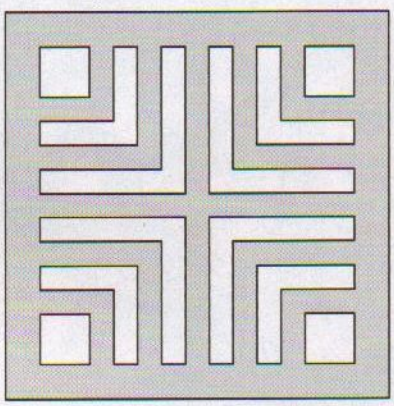
2 Tape eight squares together to determine the dimensions of the base. Even though my squares were really close in size, my overall dimension with the eight squares was over 16" (40.6cm). Cut the base slightly oversized, and then carefully trim it to fit the row of squares exactly. Prepare and cut the trim. Apply glue to the edges of the base and place the trim in position. Clamp or use a pneumatic stapler to secure the trim. Fill the staple holes and seams with glue and sand the sections to hide the joints and holes.



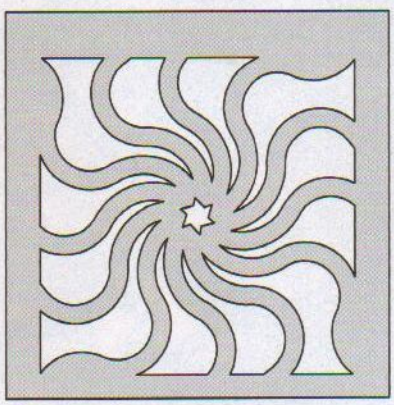
3 Place all of the squares on the board to check the fit. Make any necessary adjustments. Then, put a bead of glue around the edges and in the middle of the bottom of one piece. Pat out the glue with your finger to get good coverage without a lot of squeeze-out. Place the square in position. Repeat for the rest of the squares. Place a bead of glue in any visible seams and sand to fill it. Cut and attach the trim splicers.

Additional patterns for the *Fretwork Checkers & Chess Set* are in the pullout section.

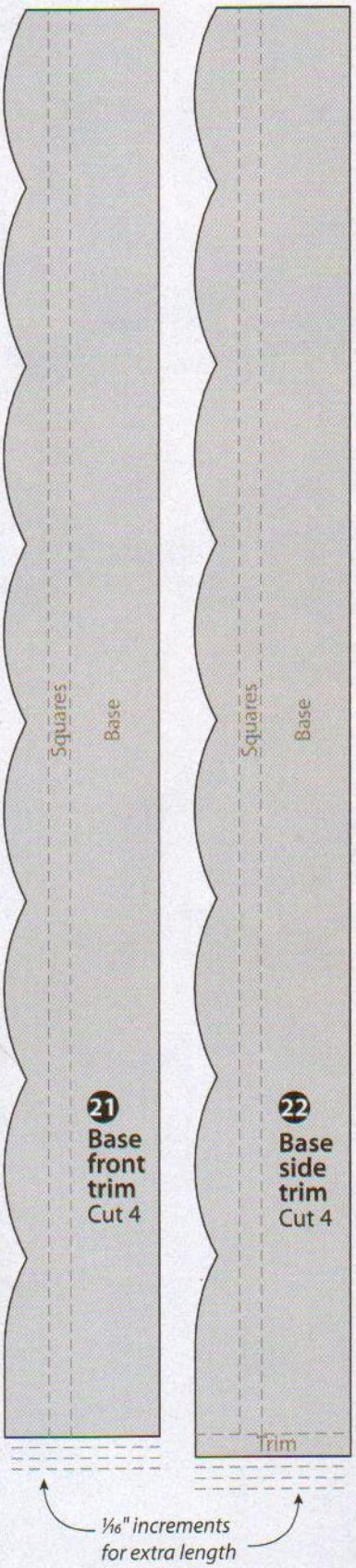
Chessboard patterns



❶ **"A" Square** - Cut 32 or 64



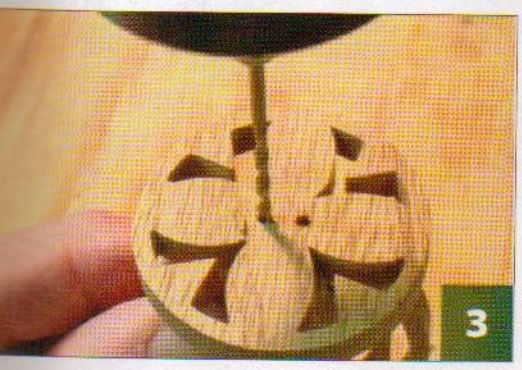
❷ **"B" Square** - Cut 32 or 64



MAKING THE CHESS PIECES

1 Create a stack of the light and dark wood, with the dark wood on top. Cover the top with painter's tape for easy pattern removal. Attach the patterns to the tape using spray adhesive. Align the bottom edges of the uprights and spacers with the straight edges of the blanks. Drill blade-entry holes and cut the pieces and 1/16 (2mm)-diameter pilot holes for the toothpick dowels through the bases. Cut outside the lines on the bases and sand them round; I use a belt sander. Sand the pieces smooth and remove any fuzz with a hobby knife and dental picks.

2 Add the uprights to the bases. With a straightedge on the bottom of the pieces aligned with the straight edges of the blank, I apply glue and just set them in place. Check each with a small square and allow the glue to dry. Check the fit of the braces and adjust as needed. Then, prop up the end of the piece on scrap to hold it level as you glue the braces in place.



3 Align the drill bit with the pilot holes through the bases. Drill two holes through the bottom into the upright and braces. Cut the pointed ends off a round toothpick and glue it into the holes for additional support. Apply a finish of your choice; I use Minwax gloss spray lacquer.

Materials & Tools

Materials:

- Walnut, ¼" (6mm) thick: chess or checker pieces, 5" x 30" (12.7cm x 76.2cm)
- Maple, ¼" (6mm) thick: chess or checker pieces, 5" x 30" (12.7cm x 76.2cm)
- Plywood, ½" (1.3cm) thick: base, 17" (43.2cm) square
- Dark wood, such as purpleheart, ⅛" (3mm) thick: dark squares, 4½" x 35" (11.4cm x 88.9cm)
- Light wood, such as canarywood, ⅛" (3mm) thick: light squares, 4½" x 35" (11.4cm x 88.9cm)
- Redheart, ⅛" (3mm) thick: trim, 5" x 16½" (12.7cm x 41.9cm)
- Maple, ⅛" (3mm) thick: trim splicers, 2" x 4" (5.1cm x 10.2cm)
- Toothpicks
- Painter's tape
- Spray adhesive
- Wood glue
- Sandpaper
- Finish, such as Minwax: gloss spray lacquer

Tools:

- Scroll saw blades: #3 reverse-tooth
- Drill press with assorted small bits
- Saws: scroll, table, miter
- Sander: belt
- Hobby knife or dental picks
- Clamps
- Square
- Straightedge

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

SPECIAL SOURCES:
For an alternate base pattern with storage drawers, see Dan's website: www.wilckenswoodworking.net

Dan Wilckens and his father, Ray, started scrolling 25 years ago as a hobby, and then began designing their own patterns and making them available for others to enjoy. Dan's background is in tooling design and tool and die work. See more of his work at www.wilckenswoodworking.net.

Schrödinger's Cat Box

Scrolling meets a popular meme in these clever puzzles

By Ronald Nelson

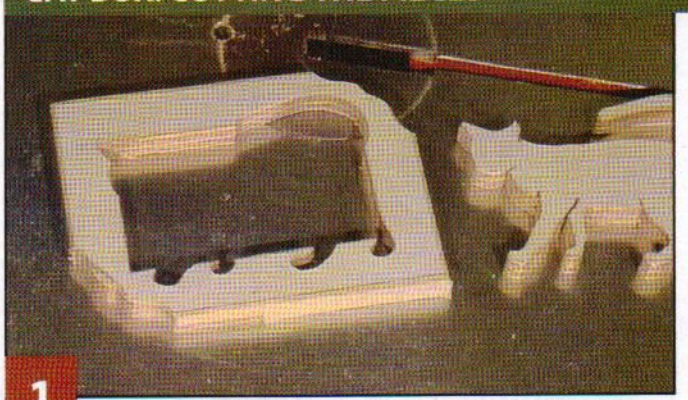
According to pop culture, Schrödinger's cat exists in a zombielike state of both life and death inside a box. Illustrate the meme, if not the actual principle, by making sets of cats and asking your family and friends which one is in the box.

Wondering the real story of the famous cat? It is a thought experiment created in 1935 by the physicist Erwin Schrödinger to criticize a principle of quantum physics known as superposition. The theory states that an object exists in all possible states until it is observed. While that might be true at the atomic level, Schrödinger proved it didn't work in the visible world. He said that if a cat and a poison-delivery mechanism were locked in a box, the cat was either dead or alive, but could not be both at the same time. The interpretation has been warped over the years, resulting in the zombie cat theory.

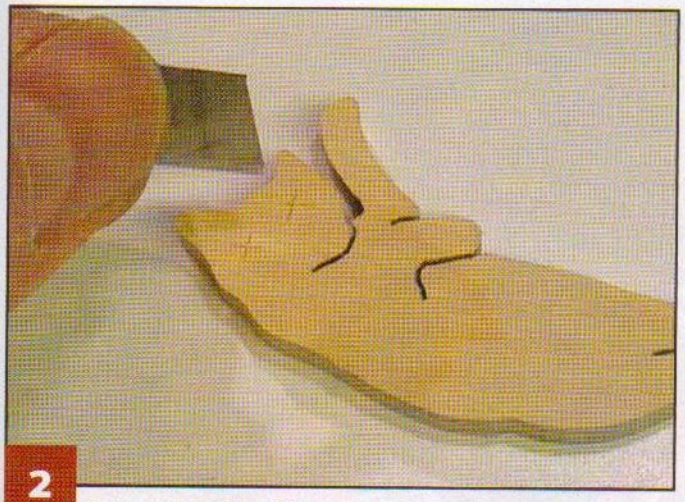
Getting Started

Cut the blanks to size. Cover one side of the ¼" (6mm)-thick blank with painter's tape and attach the pattern to the tape.

CAT BOX: CUTTING THE PIECES

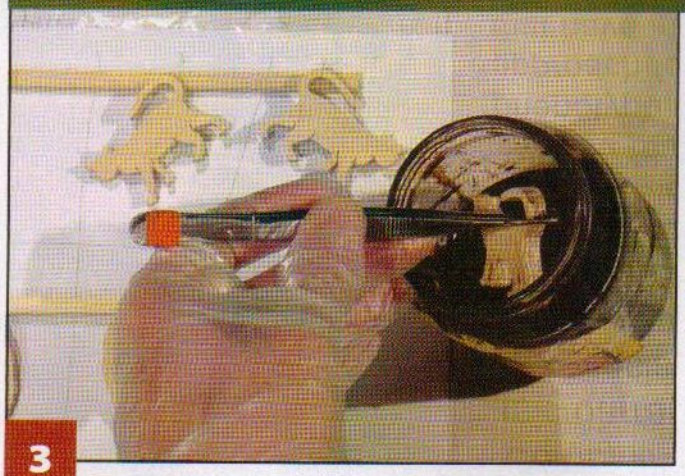


1 **Drill a blade-entry hole and cut the cat.** Use a #5 reverse-tooth blade. Remove the excess waste from inside the box, leaving only the frame. Then, cut the two corner tabs. These will keep the lid in place when closed. Remove the pattern and sand everything with progressively finer grits of sandpaper up to 400 grit.

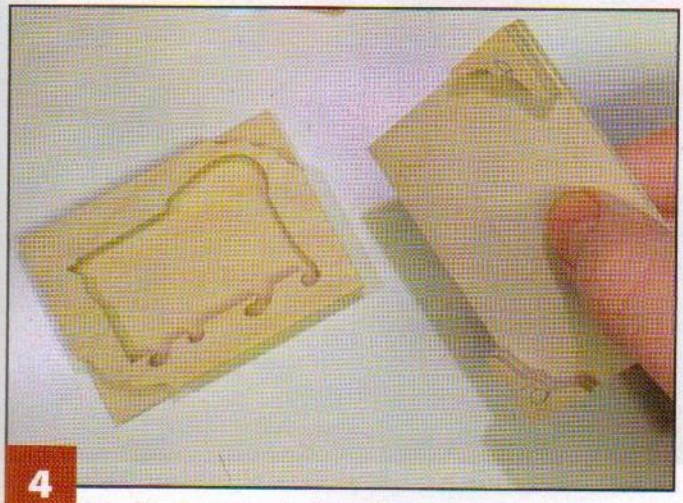


2 **Cut crosses where the eyes on the dead cat should be.** Use a utility knife. The cuts do not need to be deep.

CAT BOX: FINISHING & ASSEMBLING THE BOX

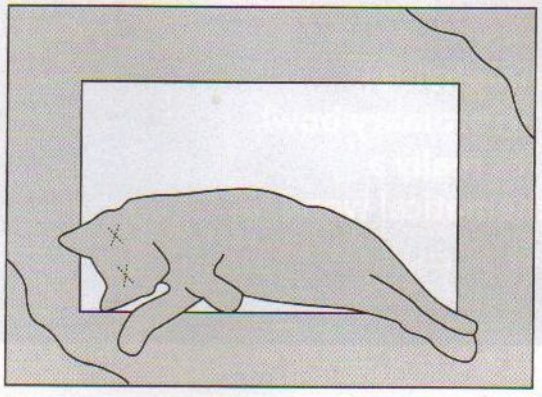


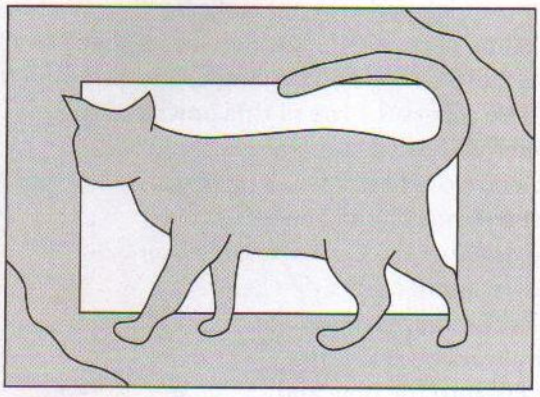
3 **Dip each cat in a dark stain.** I use antique walnut or mahogany. Set them aside to dry.



4 **Glue the frame to the back.** Glue the corner tabs to the front. Allow the glue to dry and then sand all of the sides with progressively finer sandpaper up to 400 grit. Use a cloth to apply paste wax to the cats and the boxes making sure all the nooks and crannies are covered. Let it sit for 15 minutes and wipe off the excess with a clean cloth. Buff to a satin shine.

Shrödinger's cat box patterns





Materials & Tools

Materials:

- Baltic birch plywood, ⅛" (3mm) thick: top & bottom, 2 each 2" x 2¾" (5.1cm x 7cm)
- Baltic birch plywood, ¼" (6mm) thick: cat layer, 2" x 2¾" (5.1cm x 7cm)
- Painter's tape
- Wood glue
- Paste wax
- Sandpaper: progressively finer grits from 250 to 400
- Water-based wood stain: antique walnut or mahogany

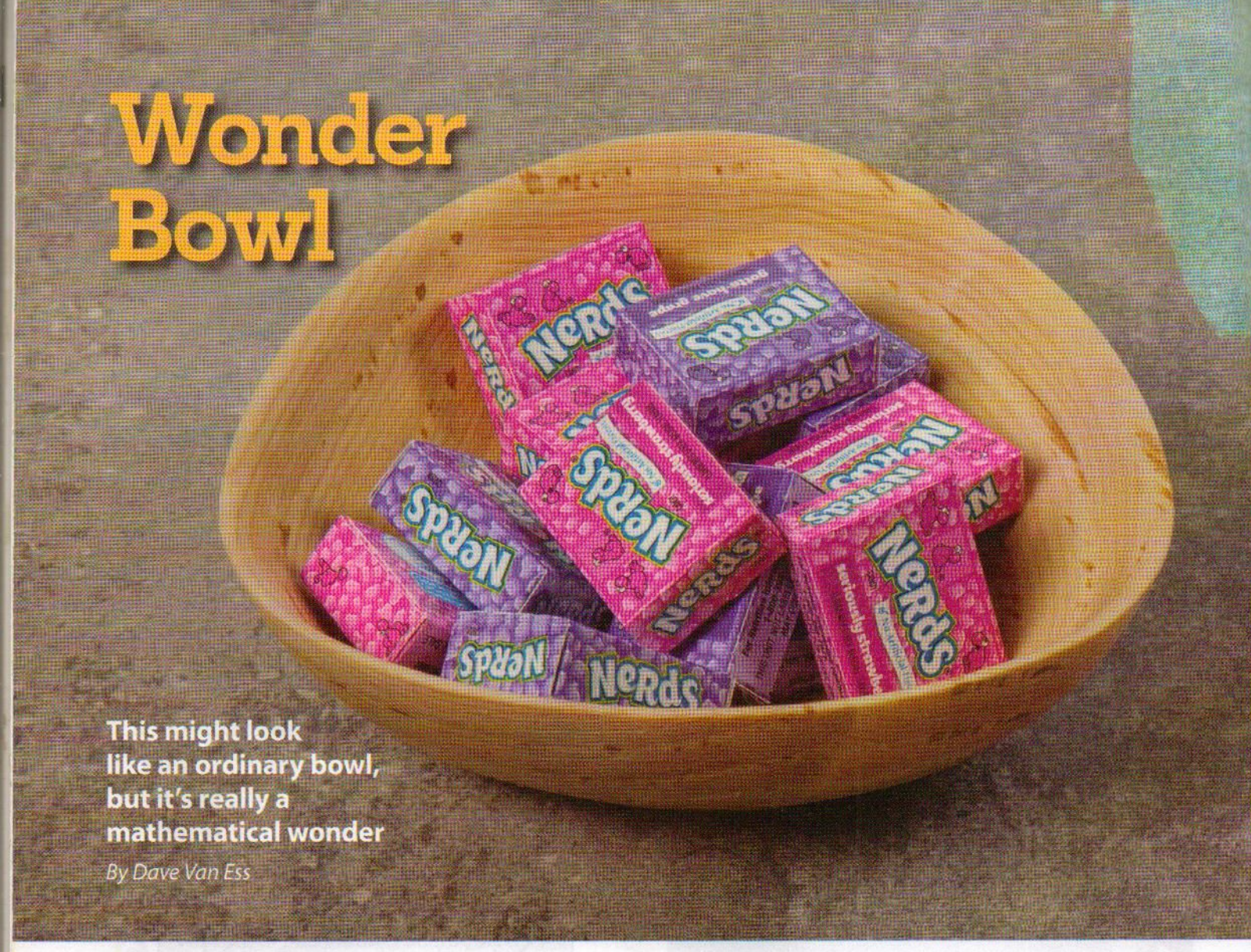
Tools:

- Scroll saw blades: #5 reverse-tooth
- Utility knife

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

Ronald Nelson is a scientist from South Africa who lives in Sweden. Many of the items he makes are inspired by science and nature. He makes a variety of diverse wooden items, some of which are available at www.etsy.com/shop/Induku. See more of his work at indukudesign.com.

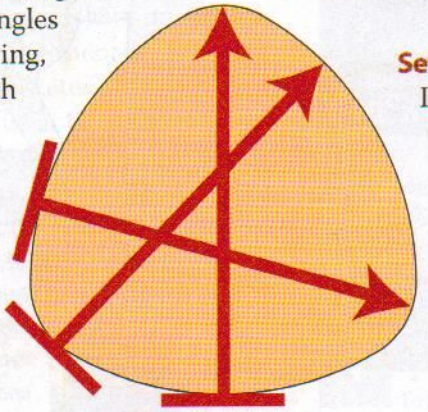
Wonder Bowl



This might look like an ordinary bowl, but it's really a mathematical wonder

By Dave Van Ess

This quick and easy-to-make bowl comes with some nerdy history. It derives its shape from what is called a Reuleaux triangle. You can measure anywhere across the top of this bowl and the diameter will be the same, even though it is not a circle. These special triangles are used in mechanical engineering, by the designers of Gothic church windows, and for guitar picks. They are sometimes used as sewer covers because they won't fall into the hole and can't roll down a hill. Pass this fact onto recipients when giving these bowls as gifts, and they will tell everyone. If you make the bowl to sell, you will find its unique geometry can push a prospective customer to buy.



The Reuleaux triangle has the same diameter when measured perpendicularly anywhere along its perimeter.

Its shape is only one of the bowl's unique properties, however. I have figured out ways to eliminate blade-entry holes, to reduce sanding, and to set the cutting angles without complex calculations. You can easily cut and assemble this bowl in an afternoon.

Setting the Cutting Angles

I hate sanding. I have found that if I take the time to cut the rings at the correct angles, it reduces the time I have to spend sanding.

For this bowl to stack well and assemble neatly, the cuts need to produce rings that are 3/16", 5/16", 7/16", and 9/16" wide on the bottom. (The cutaway view on page 58 will help you understand why.) *Note: Due to the slight variations that occur when converting between Imperial and metric, use Imperial measurements.*

One way to get the proper angles is to use the AngleCalc app at www.Scrollmania.com. It allows you to input the thickness of the wood and the ring width needed (see pattern), and it will calculate the cutting angles. Then, you can use a protractor, digital angle gauge, or the angle guide on your saw (if you trust its calibration) to mark the wood and cut the rings.

I prefer to create an angle block. This wooden block creates a visual guide you'll use to set the angle of the saw blade. See the instructions at right to make an angle block for this bowl.

Making the Bowl

Remember that our goal is to reduce sanding. Try to cut as accurately as possible so there's not a lot of excess wood to remove later.

Step 1: Attach the pattern to the blank. Be sure to align the grain correctly.

Step 2: Examine the pattern. See the dotted cut and glue lines? Instead of drilling blade-entry holes (which need to be sanded out), I cut though the rings along those lines, which also align with the grain of the wood. If you make a cut with the grain and then glue the cut back together, the grain disguises the cut marks.

Step 3: Set the angle for the outermost cut using the AngleCalc app or by making an angle block (see Setting the Cutting Angles, above). Make the cut. Set the second angle. Follow the cut and glue line to cut through the ring; then, cut and remove the ring. Repeat the process for the remaining rings.

Step 4: Remove the patterns. Carefully dab a little glue into the cut through each ring and hold it together until the glue grabs. Allow the glue to dry thoroughly.

Step 5: Attach a piece of 120-grit sandpaper to a flat surface. Flatten the top and bottom of each ring.

Step 6: Stack the rings and glue them together. Secure the assembly with clamps or a bowl press until the glue dries.

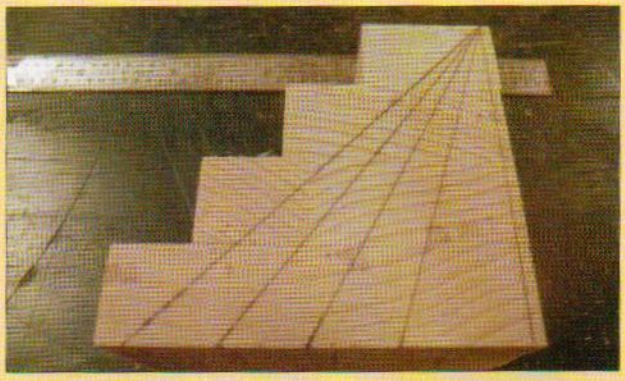
Step 7: Sand the inside of the bowl smooth. Glue and clamp the bottom in place, and let the glue dry.

Step 8: Sand the outside of the bowl smooth. Round the edges of the top and bottom.

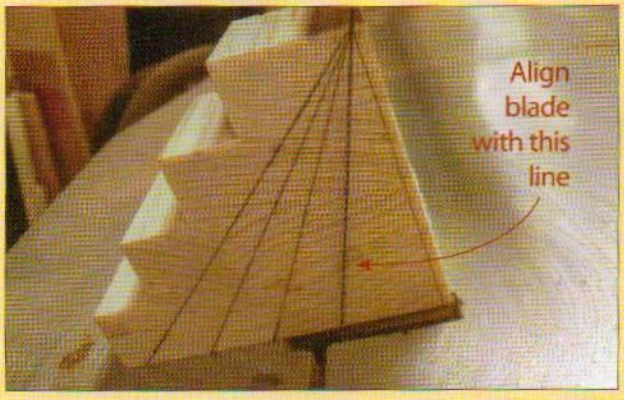
Step 9: For an ornamental bowl, apply shellac or lacquer. If you prefer a food-safe finish, apply mineral oil and beeswax butcher block finish.

MAKING AN ANGLE BLOCK

1 Cut and stack the wood. Cut four pieces of scrap wood the same thickness as the bowl blank. Stack and glue the pieces. If your saw's depth of cut is less than 2", secure the top piece of scrap with double-sided tape.

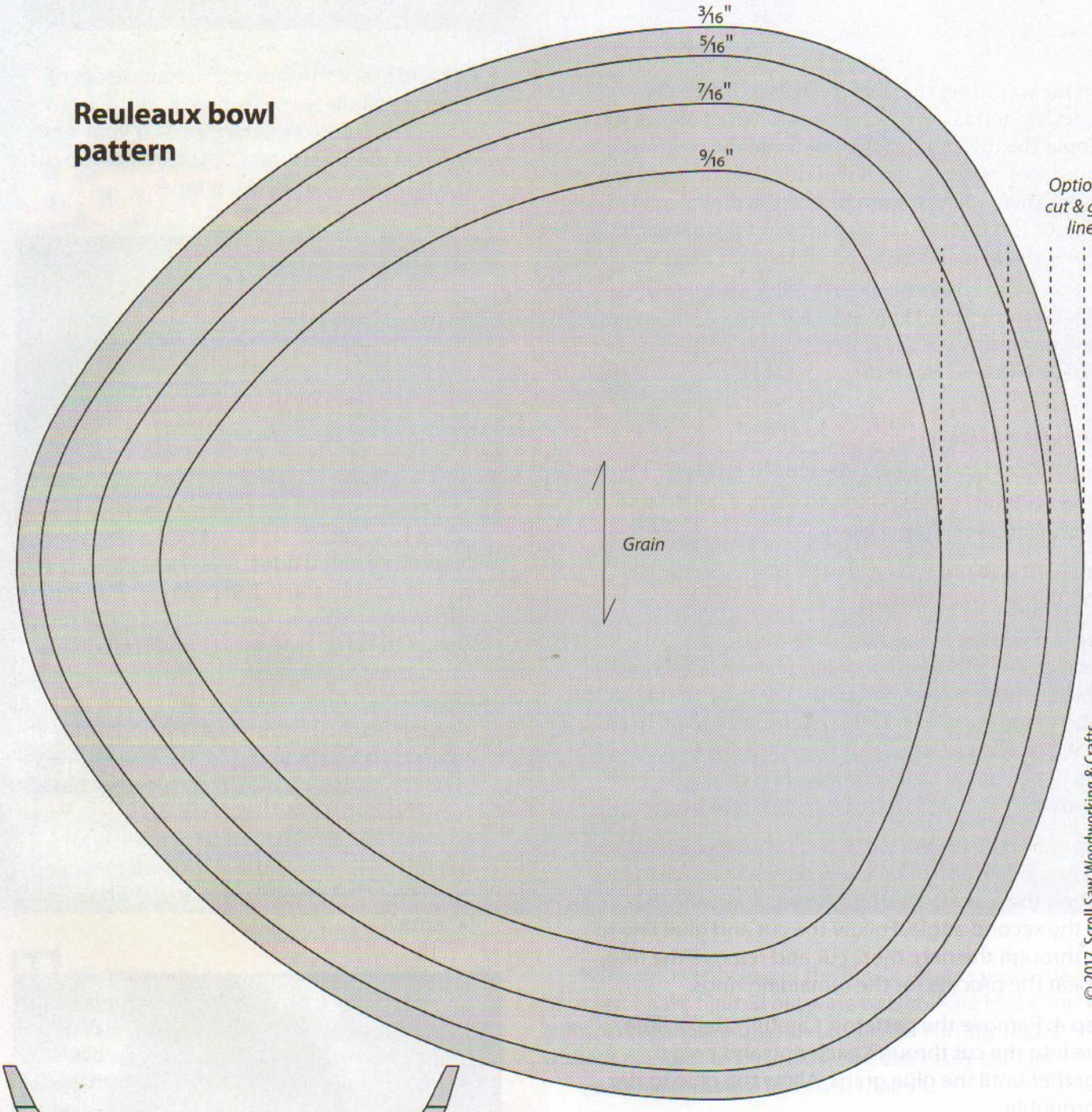


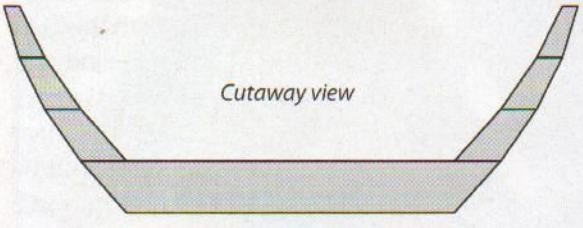
2 Draw the angled lines. Draw a vertical line on one side of the stack. The bottom of the first ring needs to be 3/16" wide (trust me, the math works). Because the stack is four thicknesses of the bowl blanks high, measure ¾" (because 4 x 3/16" = ¾") from the vertical line and make a mark along the bottom of the wood. Draw an angled line from the top of the vertical line to the mark. Measure and mark the other bevels: 4 x 5/16" = 1¼"; 4 x 7/16" = 1¾"; and 4 x 9/16" = 2¼". Draw the angled lines. With careful measurement, this method gives you the correct bevel angle with less than ¼° error.



3 Use the guide. Place the angle guide on the saw table. Tilt the table or saw arm until the blade matches the first angled line on the blank. You might need to remove the top piece of scrap to allow the guide to fit under your saw arm (the guide will still work). Remove the guide and cut the bowl blank. Use the guide to set the remaining angles.

Reuleaux bowl pattern





Materials & Tools

Materials:

- Pine or poplar, ⅝" to ¾" (1.6cm to 1.9cm) thick: 7¼" (18.4cm) square
- Scrap wood the same thickness as the bowl blank: 4 each
- Protractor (optional)
- Glue
- Sandpaper
- Finish: shellac, lacquer, or mineral oil and beeswax butcher block

Tools:

- Scroll saw blades: #5 reverse-tooth
- Clamps
- Bowl press (optional)

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

Dave Van Ess of Chandler, Ariz., is a retired engineer who has been woodworking for nearly 40 years. He has introduced more than 200 Cub Scout leaders to the joys of scroll sawing.

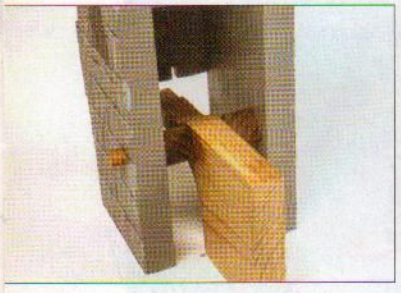
Catapult Castle

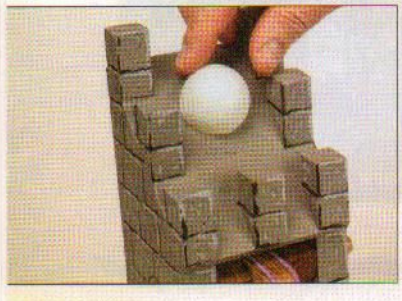
Defend your kingdom by slinging a boulder (ball) at invaders

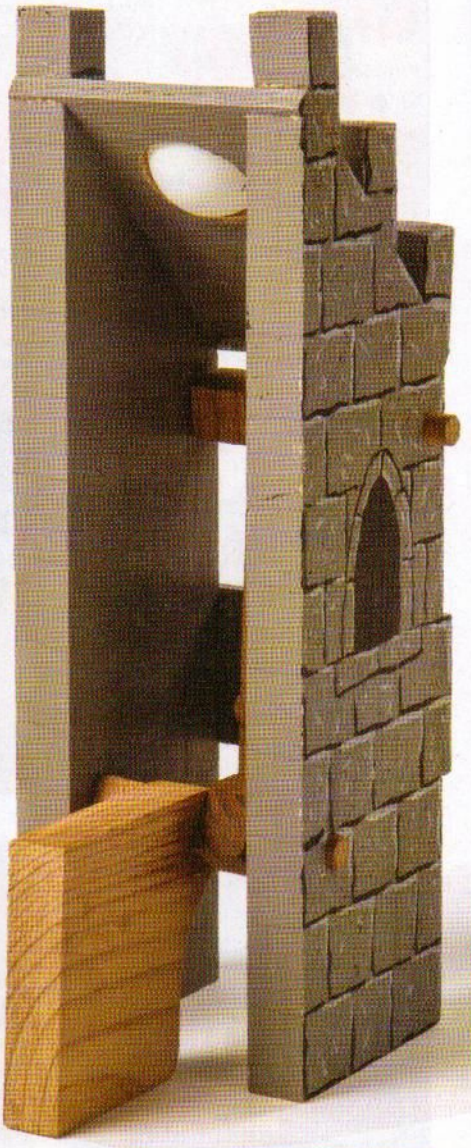
By Bob Gilsdorf

Lay siege to the castle by breaking down the portcullis, but keep a wary eye for the king and his men, who can catapult the boulder (aka, Ping-Pong™ ball) back at you! Defend yourself with a homemade shield and sword, or catch the ball and fire it back into the castle.

The castle is powered by a simple, rubber band-powered mechanism that's easy to build but relatively durable. Kids will enjoy helping to build and paint this toy.







ON THE WEB See a video of the catapult in action on our website.
www.scrollsawer.com

To load the toy, position the trigger, push the striker until it clicks into the notch, and add the ball. Fire it by rolling a ball into the bottom opening and hitting the trigger.

In Days of Old

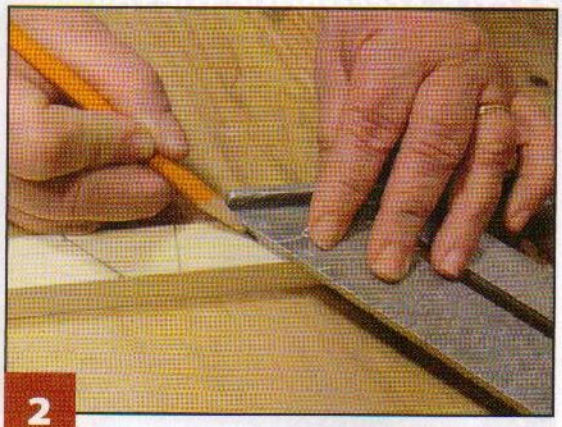
In days of old,
when woodworkers were bold,
no electricity in their castle,
hand-powered tools
were all they had, it really was a hassle.

They cut and drilled
with their own strength,
and built with hands so callous.
Oh, it was a stirring sight
These craftsmen in the palace.

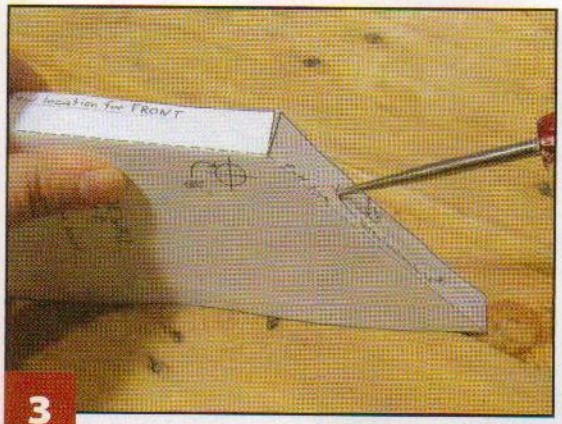
(Inspired by Jimmy Buffet's song "Gypsies in the Palace")

CASTLE: CUTTING THE PIECES

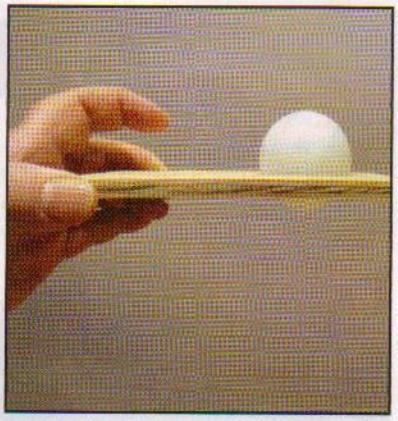
1 **Cut the blanks to the rough sizes in the Materials List.** Use a table saw or miter saw to cut 45° angles for the side walls (D). Attach the patterns with spray adhesive or a glue stick. Fold the pattern for the striker (G) along the dotted line before attaching it to the blank. The patterns for the top (C) and side walls only mark holes and do not need to be glued securely. Cut all of the pieces except the battlements and spacers.



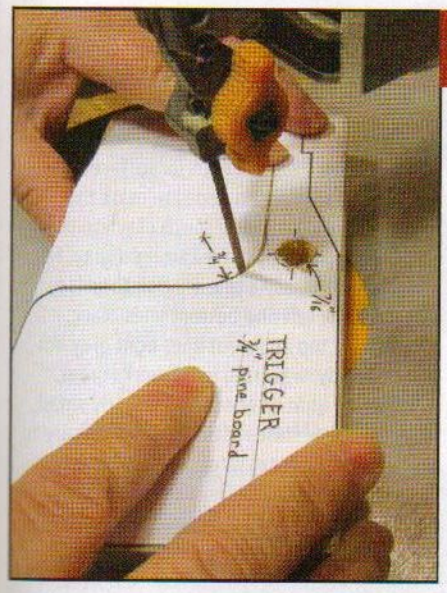
2 **Measure and mark the spacers (A) and merlons (B).** The battlements are the things on the top of the castle. Use a length of ¾" (1.9cm)-square pine. You can ignore the width of the scroll saw blade when marking them. Cut these spacers and battlements to size. Drill any required holes.



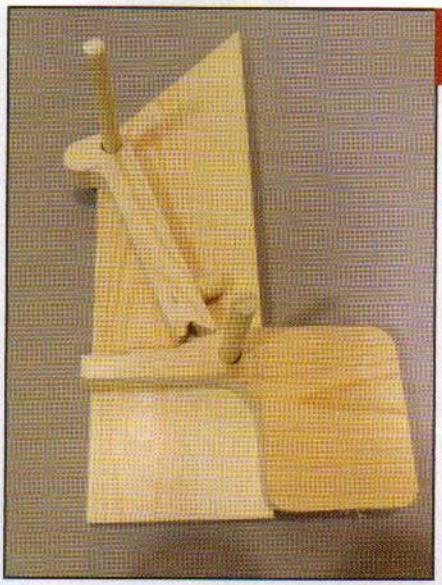
3 **Use an awl to mark the holes.** For the screw locations, give the awl a hardy push to make the indentations at least ⅛" (3mm) deep on the front and angled top of the two side walls (D). These indentations will help you feel when the screw is in the correct position.



4 **Drill or cut out the large hole in the top (C).** The diameter of a Ping-Pong™ ball can vary in size from 1¼" to 1½" (3.2cm to 3.8cm), so make a few test holes in scrap wood first to find the proper hole size. The ball should sit about one-third of the way into the hole. It's possible to use a large bit or cut the hole with a scroll saw, but I prefer a hole saw.

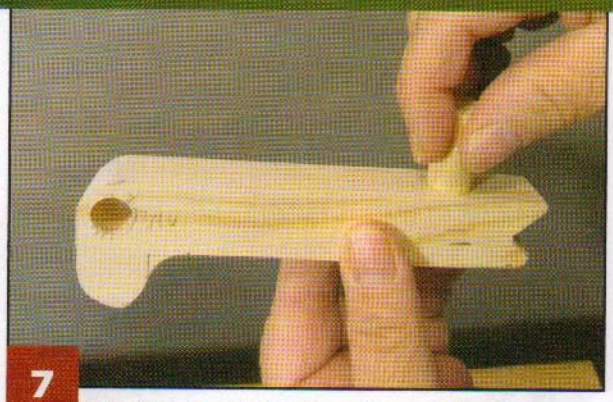


5 **Drill the remaining holes before cutting the parts.** Countersink the screw holes on the top (C) and front (E). Then, cut the pieces. Sand off the patterns or remove them using an appropriate solvent.

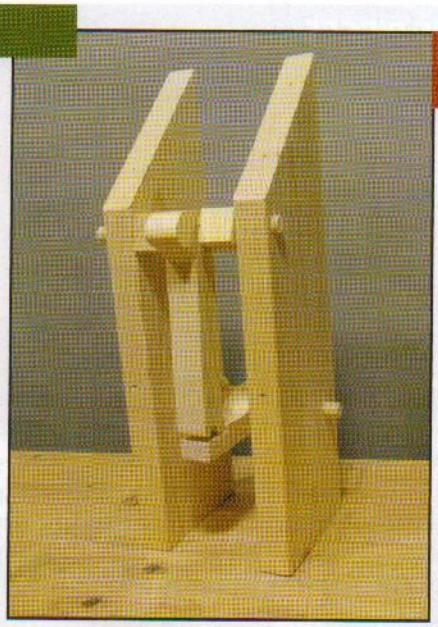


6 **Place the left side wall (D) on its side.** Insert the two pivots (H). Position the trigger (F) and striker (G) as shown. Make sure the striker swings upward without hitting any portion of the trigger after being released. Sand away any spots on the trigger that interfere with the striker.

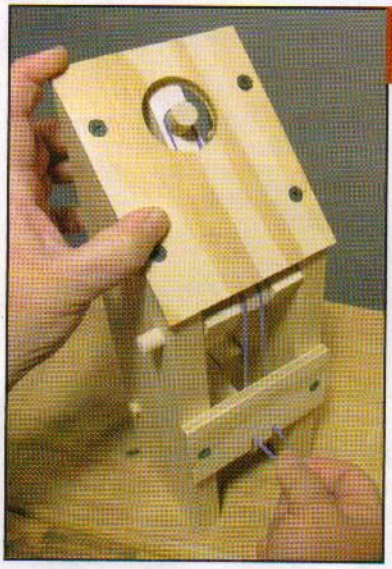
CASTLE: ASSEMBLING THE TOY



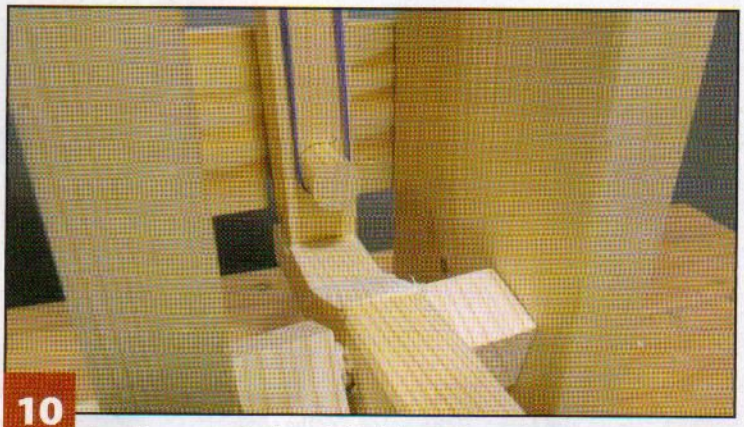
7 **Trim the end of the trigger if needed so it does not extend over the front edge of the side wall.** Trim the bottom edge of the striker if needed so it does not extend over the front edge of the side wall. Sand all of the pieces. Be careful not to sand the small lip on the trigger that engages the striker. Glue the striker pin (I) in place.



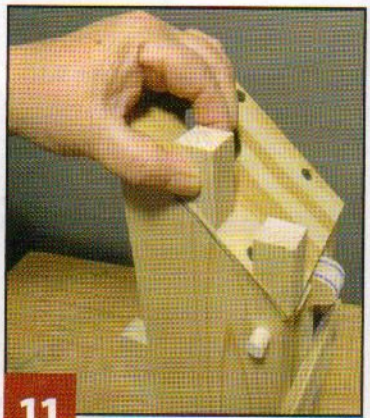
8 **Insert the pivots (H) in the left side wall (D).** Add the spacers (A), trigger (F), and striker (G) as shown in the exploded drawing. Then, put the right side wall (D) in place. The pivots will protrude about ¼" (6mm) on each side. Attach the front (E) and top (C) with drywall screws. The two cutouts on the front face downward. The striker pin (I) should be close to the center of the large hole in the top.



9 **Attach the rubber band.** The rubber band loops over the striker pin (I), passes over the top of the striker (G), behind the front (E), and then loops over the two cutouts on the bottom of the front.



10 **Arm the catapult.** From behind the castle, push the striker (G) down until it latches into the trigger (F). Insert a Ping-Pong ball into the hole in the top (C). With the castle facing away from you, lift the back of the trigger. There should be a loud "thwack" sound as the Ping-Pong ball flies across the shop.



11 **Attach the merlons (B).** You can use any type of glue, but I chose hot glue for speed and ease.

12 **Stain the pivots (H), spacers (A), trigger (F), and striker (G) a dark brown color reminiscent of old castle timbers.** Paint all exterior surfaces a neutral gray. Use a pencil to mark the stone pattern. Add a touch of white to the neutral gray to make a light gray. For each stone, use a fine-tip paintbrush to paint the left and bottom lines black, and the top and right lines light gray. An unsteady, wavering hand works great. Use the light gray with some fairly small, random gestures to add surface texture to the stones. Finally, touch a toothbrush to the black paint and run your fingers across the bristles to spray small dots across the stones to add texture to the stones.

(Continued on page 64)

(Continued from page 62)

Parts List

	Item	Qty.	Materials	Dimensions	Presentation
A	Spacer	4	Pine, ¾" (1.9cm) thick	¾" (1.9cm) square	Pattern
B	Merlons	7	Pine, ¾" (1.9cm) thick	¾" x 1½" (1.9cm x 3.8cm)	Pattern
C	Top	1	Plywood, ¼" (6mm) thick	4" x 5" (10.2cm x 12.7cm)	Pattern
D	Side wall	2	Pine, ¾" (1.9cm) thick	3½" x 11½" (8.9cm x 29.2cm)	Pattern
E	Front	1	Plywood, ¼" (6mm) thick	2" x 4" (5.1cm x 10.2cm)	Pattern
F	Trigger	1	Pine, ¾" (1.9cm) thick	3⅜" x 6" (8.6cm x 15.2cm)	Pattern
G	Striker	1	Pine, ¾" (1.9cm) thick	1½" x 5" (3.8cm x 12.7cm)	Pattern
H	Pivots	2	Dowel, ⅜" (1cm) dia.	4½" (11.4cm) long	Dimensions
I	Striker pin	1	Dowel, ½" (1.3cm) dia.	1" (2.5cm) long	Dimensions

Materials & Tools

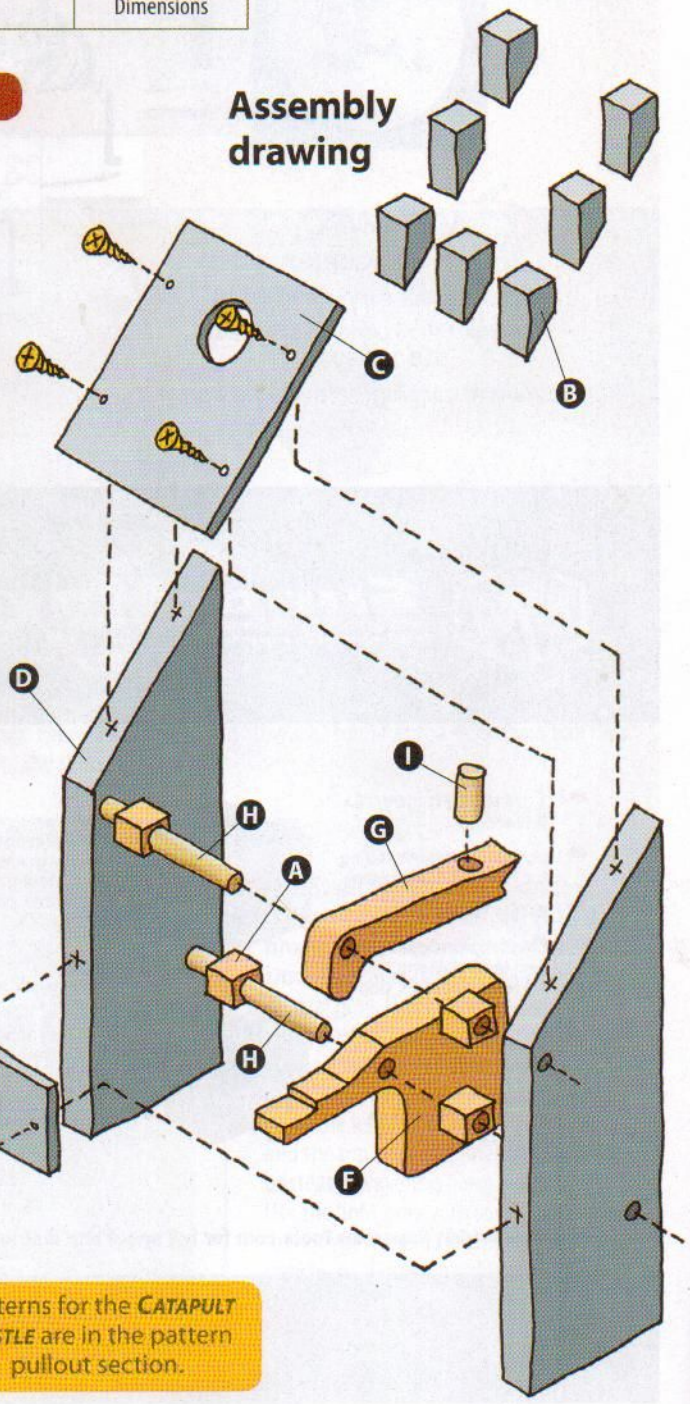
Materials:

- Pine, ¾" (1.9cm) thick: 3½" x 42" (8.9cm x 1.1m)
- Pine, ¼" (6mm) thick: 4" x 8" (10.2cm x 20.3cm)
- Dowel, ⅜" (1cm) dia.: 9" (22.9cm) long
- Dowel, ½" (1.3cm) dia.: 1" (2.5cm) long
- Drywall screws, #8 coarse-thread: 6 each 1" (2.5cm) long
- Rubber band, #64: ¼" (6mm) x 3½" (8.9cm) long
- Ping-Pong ball
- Hardwood ball 2" (5cm) dia.
- Glue: wood, hot
- Sandpaper
- Spray adhesive or glue stick
- Stain: brown
- Acrylic paint: neutral gray, white, black

Tools:

- Drill with bits: 5/32" (4mm), ⅜" (10mm), 7/16" (11mm), ½" (13mm), 1½" (38mm), countersink bit
- Screwdriver: Phillips
- Saws: table or miter, scroll
- Measuring and marking tools: tape measure, 45° triangle, square, compass, awl, pencil, scissors
- Paintbrushes: Broad; fine tip
- Toothbrush

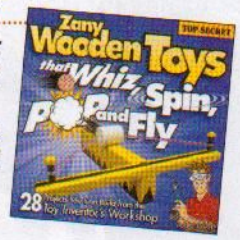
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

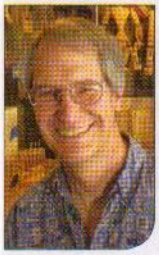


WANT MORE TOYS?

Zany Wooden Toys That Whiz, Spin, Pop, and Fly
by Bob Gilsdorf

Item 3942; code SSW67. Available for $19.95 + S&H from Fox Chapel Publishing, 800-457-9112, www.FoxChapelPublishing.com, or your local retailer.





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

Patterns for the ***CATAPULT CASTLE*** are in the pattern pullout section.

Vintage FIRE TRUCK

Heirloom toy is designed for years of play

By Paul Meisel

Children love trucks. This sturdy fire truck, with its removable ladders and shoelace hose, will be perfect for hours of pretend. I based its vintage look on a 1930s model, which is the image of a fire truck in my head. It is classic enough to fit into any play scenario.

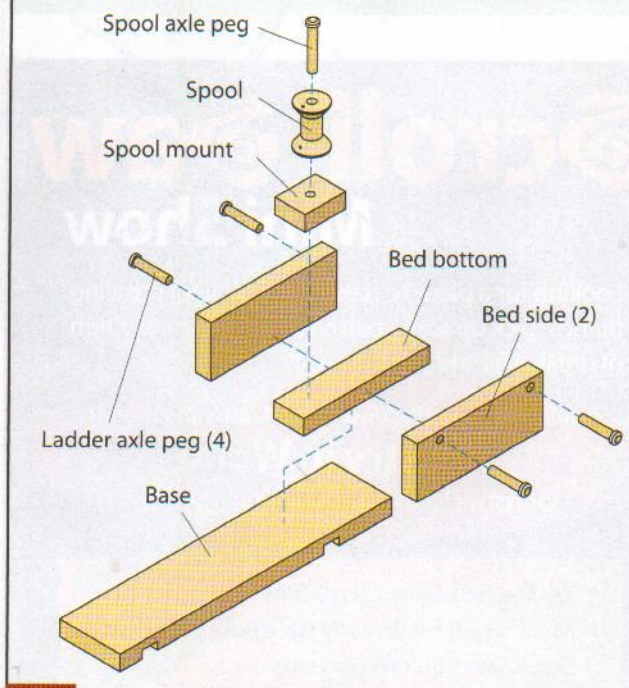
Getting Started

I listed the overall dimensions of the lumber needed for the project in the Materials List. Resaw the ⅜" (1cm)-thick stock for the hood side and the ½" (1.3cm)-thick stock for the grill and ladder sides from the ¾" (1.9cm)-thick lumber. Cut the pieces to the rough sizes listed and attach the patterns to the blanks; the patterns show where to drill the holes. *Note: Although you can assemble the project with just glue and clamps, a brad nailer speeds up the process.*

Cutting the Parts

Cut the bed bottom, cab bottom, and hood bottom to size using the Parts List. Attach the patterns to the other pieces, drill the holes, and cut along the pattern lines. *Note: For the bed sides, you need one right-hand piece and one left-hand piece.* For the base, use a router or table saw to cut ¾" (1.9cm)-wide by ⅜" (1cm)-deep dadoes. For the cab front and hood side, use a router with a ¼" (6mm)-radius roundover bit to round the marked edges. Use a router with a ⅜" (1cm)-radius roundover bit to round the edges of the hood top. For the spool, drill the marked holes. Then, enlarge the center hole using a ⅜"-diameter twist bit. *Note: Because of tight tolerances for the holes in this project, we did not convert the Imperial to metric sizes for drill bits. For best results, use Imperial-sized drill bits.*

FIRE TRUCK: ASSEMBLING THE TOY



1 **Attach the bed sides to the bed bottom with the holes positioned as shown.** Attach the spool mount to the bed bottom in the position marked on the pattern. The drawing of the bed side is a view from the right-hand side as you look at the fire truck from the front. Attach the bed assembly to the base ¾" (1.9cm) from the back as shown on the pattern. Attach the axle pegs used to hold the ladder to the bed sides. Do not attach the spool to the spool mount until after you apply the finish.

(Continued on page 68)

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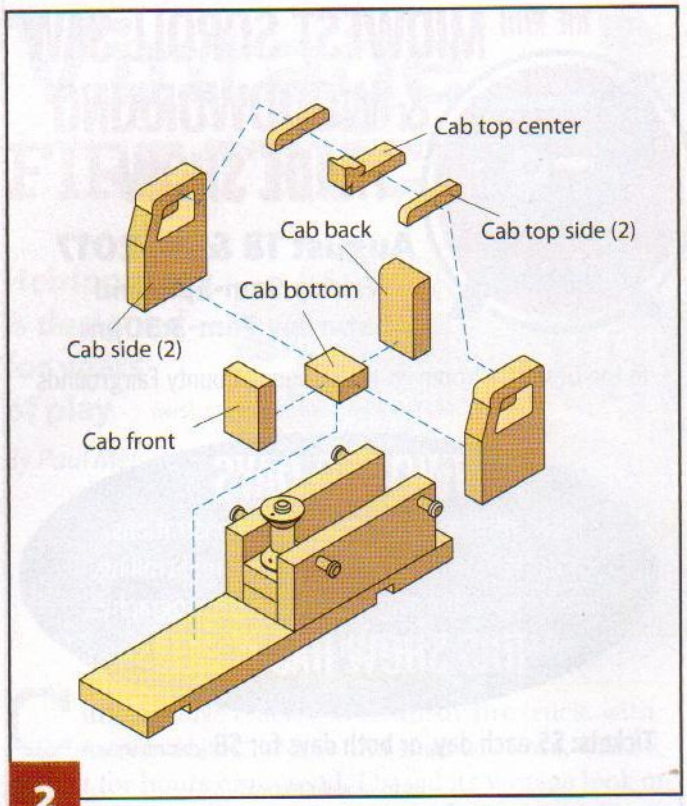
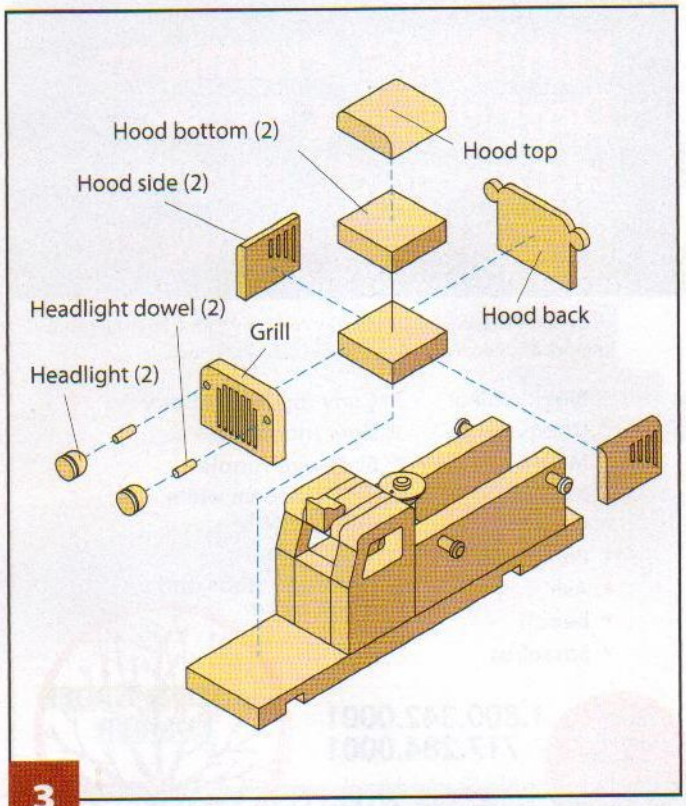
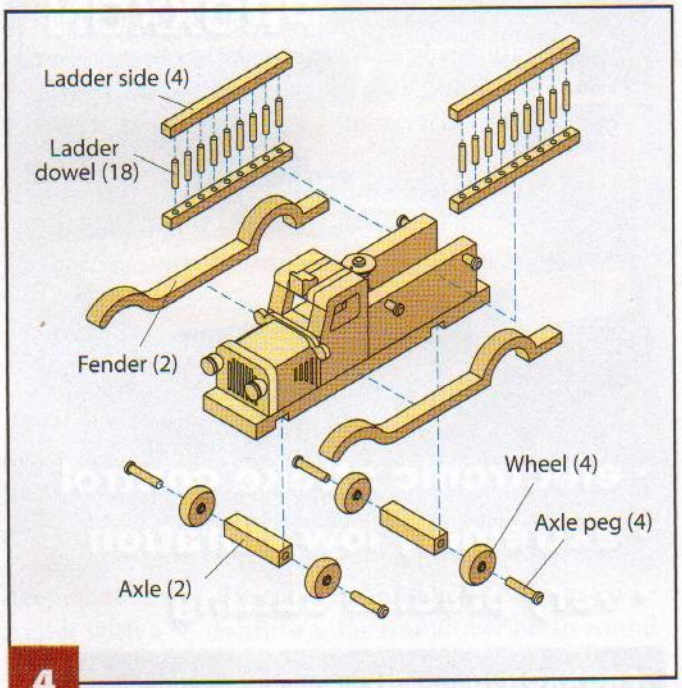


2 **Attach the cab top sides to the cab top center.** Attach the cab top assembly, cab front, cab bottom, and cab back pieces to the cab side pieces. Attach the completed cab assembly to the base.



3 **Attach the hood top to the hood bottom pieces.** Attach the grill, hood back and hood sides to the hood assembly. Attach the headlights to the grill with the headlight dowels. Attach this assembly to the base and bed assembly.

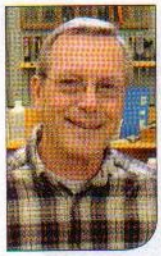


4 **Attach the axles to the base centered in the dadoes.** Attach the wheels to the axles using the axle pegs. Slip a 1/16" (2mm)-thick spacer behind the wheel and then tap the axle peg down until the wheel just touches the spacer. Remove and discard the spacer. Attach the fenders to the base. Attach the ladder dowels to the ladder sides and hang completed ladders on the ladder axle pegs.

Finishing the Fire Truck

Apply clear polyurethane finish to all of the wood pieces. After the finish dries, cut one aglet (the hard tip on the end of a shoelace) from each lace and tie the two laces together. Glue one aglet of the combined lace in the bottom hole in the spool, wind the lace around the spool, and insert other aglet in the top hole in the spool.

SPECIAL SOURCES:
A special hardware parts kit (part #5018) which contains all items marked with an asterisk above are available from Meisel Hardware Specialties. To order the hardware parts kit or to request a catalog, visit www.meiselwoodhobby.com, or call 800-441-9870.



Paul Meisel and his team at Meisel Hardware Specialties have designed over 3,500 projects and plans for the home hobbyist woodworker. We have brought you over 30 projects from Paul's collection in past issues of Scroll Saw Woodworking & Crafts.

Parts List

Item	Qty.	Materials	Dimensions	Presentation
Spool mount	1	Pine, ¾" (1.9cm) thick	1½" x 2" (3.8cm x 5.1cm)	Pattern
Bed side	2	Pine, ¾" (1.9cm) thick	2½" x 6¼" (6.4cm x 15.9cm)	Pattern
Bed bottom	1	Pine, ¾" (1.9cm) thick	1½" x 6¼" (3.8cm x 15.9cm)	Dimensions
Base	1	Pine, ¾" (1.9cm) thick	3" x 13½" (7.6cm x 31.8cm)	Pattern
Cab top center	1	Pine, ¾" (1.9cm) thick	1⅛" x 2⅝" (2.9cm x 6.7cm)	Pattern
Cab top side	2	Pine, ⅜" (1cm) thick	½" x 2⅜" (1.3cm x 6cm)	Pattern
Cab front	1	Pine, ¾" (1.9cm) thick	1½" x 2⅜" (3.8cm x 6cm)	Pattern
Cab back	1	Pine, ¾" (1.9cm) thick	1½" x 2¾" (3.8cm x 7cm)	Pattern
Cab bottom	1	Pine, ¾" (1.9cm) thick	1¼" x 1½" (3.2cm x 3.8cm)	Dimensions
Cab side	2	Pine, ¾" (1.9cm) thick	2¾" x 4" (7cm x 10.2cm)	Pattern
Headlight dowel	2	Dowel, ¼" (6mm) dia.	¾" (1.9cm) long	Dimensions
Grill	1	Pine, ½" (1.3cm) thick	2¼" x 3" (5.7cm x 7.6cm)	Pattern
Hood side	2	Pine, ⅜" (1cm) thick	1⅞" x 2¼" (4.8cm x 5.7cm)	Pattern
Hood top	1	Pine, ¾" (1.9cm) thick	2¼" (5.7cm) square	Pattern
Hood bottom	2	Pine, ¾" (1.9cm) thick	2¼" (5.7cm) square	Dimensions
Hood back	1	Plywood, ¼" (6mm) thick	2⅜" x 4⅛" (6cm x 10.5cm)	Pattern
Ladder dowel	18	Dowel, ¼" (6mm) dia.	1¼" (3.2cm) long	Dimensions
Ladder side	4	Pine, ½" (1.3cm) square	7" (17.8cm) long	Pattern
Axle	2	Pine, ¾" (1.9cm) square	3⅛" (7.9cm) long	Pattern
Fender	2	Pine, ¾" (1.9cm) thick	1⅝" x 13¼" (4.1cm x 33.7cm)	Pattern
Headlight	2	Headlight, ¾" (1.9cm) dia.	⅝" (1.6cm) long	Purchased
Ladder & axle pegs	8	Axle peg, 11/32" (9mm) dia.	1⅝" (4.1cm) long	Purchased
Wheels	4	Wooden wheel, ¾" (1.9cm) thick	2" (5.1cm) dia.	Purchased
Spool axle peg	1	Axle peg, 11/32" (9mm) dia.	2⅜" (6cm) long	Purchased
Spool	1	Wooden spool, 1 15/16" (4.9cm) dia.	1⅜" (3.5cm) long	Purchased

Materials & Tools

Materials:

- Pine, ¾" (1.9cm) thick: 5¼" x 60" (13.3cm x 1.52m)
- Hardwood or plywood, ¼" (6mm) thick: 2⅜" x 4⅛" (6cm x 10.5cm)
- Ladder & axle pegs, 11/32" (9mm) dia.: 8 each, 1⅝" (4.1cm) long (#AP4)*
- Spool axle peg, 11/32" (9mm) dia.: 1 each 2⅜" (6cm) long (#AP5)*
- Wood wheels, ¾" (1.9cm) thick: 4 each 2" (5.1cm) dia. (#W203)*
- Headlights, ¾" (1.9cm) dia.: 2 each ⅝" (1.6cm) long (8160)*
- Spool, 1 15/16" (4.9cm) dia.: 1⅜" (3.5cm) long (#8583)*
- Round shoelaces: pair, 54" (1.37m) long (#1287)*
- Birch dowel, ¼" (6mm) dia.: 3 each x 9½" (24.1cm) long (#8459)*
- Wood glue
- Sandpaper
- Polyurethane varnish

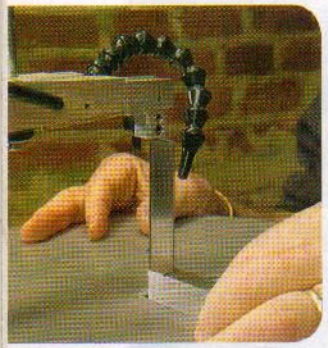
Tools:

- Clamps
- Scroll saw blades: #5 reverse-tooth
- Drill press with bits: 5/16", 11/32", ⅜", and 25/64" dia.
- Paintbrushes

Patterns for the ***VINTAGE FIRE TRUCK*** are in the pattern pullout section.

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

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



Squaring Your Table

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

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

The cutting-through method is also popular. Saw through a piece of scrap wood at least ¾" (19mm) thick and check the angle of the cut using a square. Adjust the table until you get a perfectly square cut.

You can also use the kerf-test method. Take a 1¾" (44mm)-thick piece of scrap wood and cut about 1/16" (2mm) into it. Stop the saw, back the blade out, and spin the wood around to the back of the blade. If the blade slips easily into the kerf, the table is square. If it doesn't slide into the kerf, adjust the table and perform the test again until the blade slips in easily.

Attaching Patterns

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

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

Stack Cutting

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

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

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

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

Blade Tension

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

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

Blade-Entry Holes

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

Removing Patterns

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

IN OUR **NEXT ISSUE**

Gifts and gift boxes galore!

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Holiday decorations for your home.

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Cutting Cars with Muscle

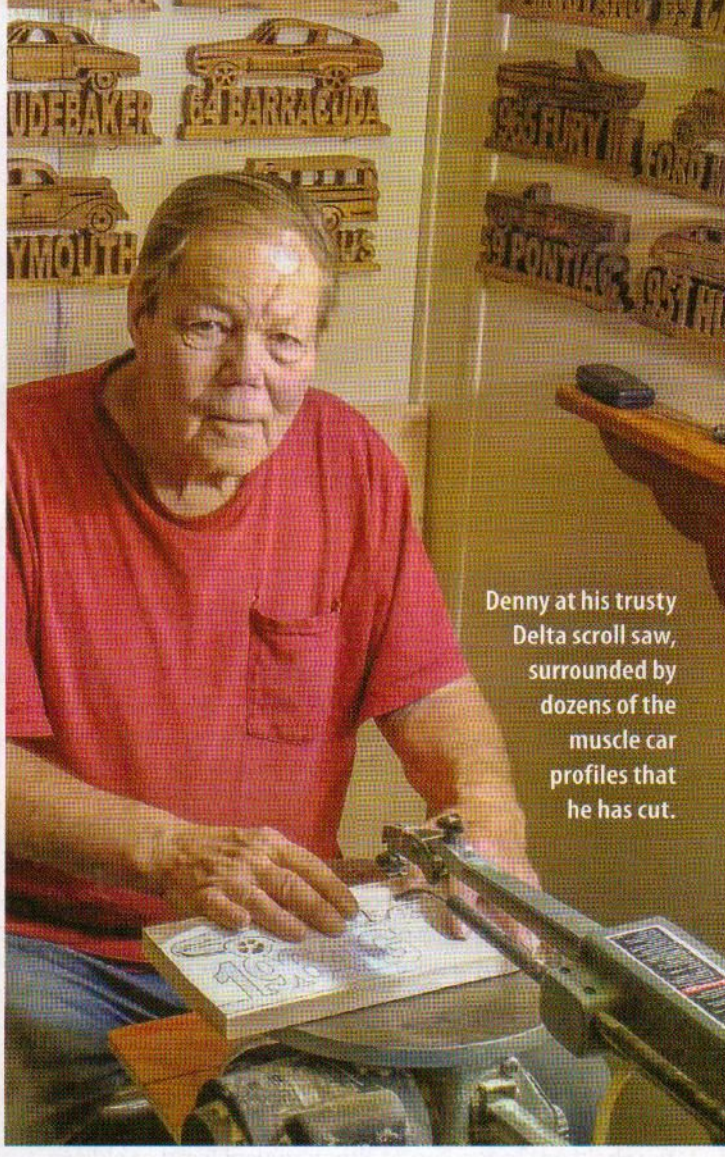
Denny Frey loves muscle cars. "My fantasy car is a 1963 Stingray. I have always dreamed of owning one, but that just never happened," said the 72-year-old. It did happen for two of his close friends, though; the twin brothers each owned a restored muscle car. "I wanted to give them a gift that you couldn't go out and buy anyplace, so I decided to make them plaques of their cars—a 1957 Chevy Bel Air convertible and a 1957 Chevy two-door hardtop." The friends loved their gifts so much that they encouraged Denny to make more and put them up for sale on eBay. Listening to their advice, he listed a few for sale in November 2016. "I really didn't think they'd sell, but that was 400 plaques ago!" he said with a laugh.

Denny sketches the design for each car from photographs of the actual vehicles. Then, he cuts the pine plaques on what he calls "a very old but dependable" Delta scroll saw and finishes them with stain and a coat of polyurethane. "I really enjoy the art of scroll sawing because it's a lot like music ... it gives me an out from the rest of the world."

Describing his work, Denny said, "Because every one that I make is handmade, there are no two exactly alike. Also, due to the stain and the lumber, some plaques will be darker or lighter, depending upon how the stain reacts with the wood being used."

Denny sells his plaques through his eBay and Etsy shops for around $40 each. He said, "I'm not getting rich but I sure enjoy what I do, and it makes a lot of people happy."

For more information, contact dennyfrey@gmail.com or visit www.etsy.com/shop/DennysWoodcraft.



Denny at his trusty Delta scroll saw, surrounded by dozens of the muscle car profiles that he has cut.

Denny has scrolled and sold more than 400 automobile plaques.

HEGNER

HEGNER Multimax 18-V with HLX7 Deluxe Accessory Package.

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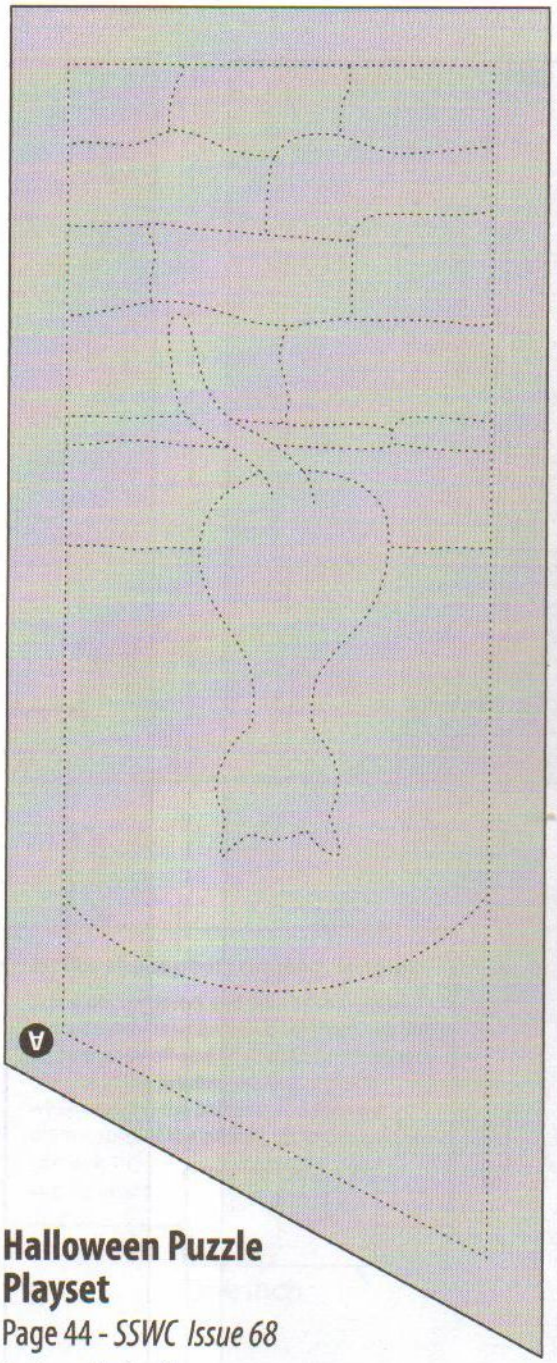
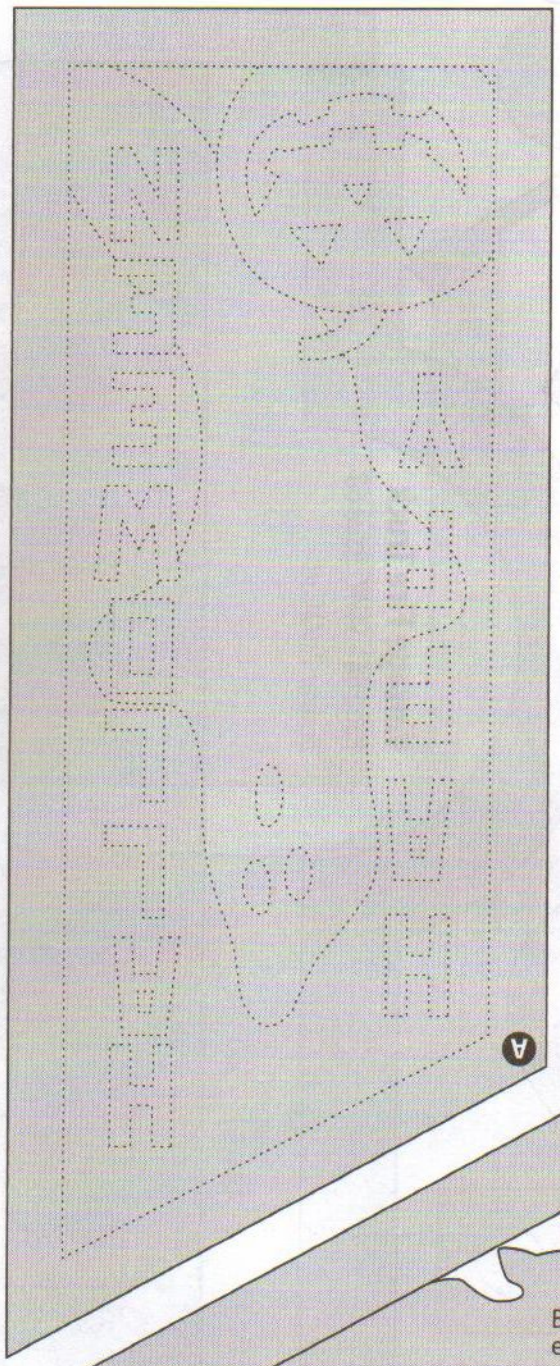
1A

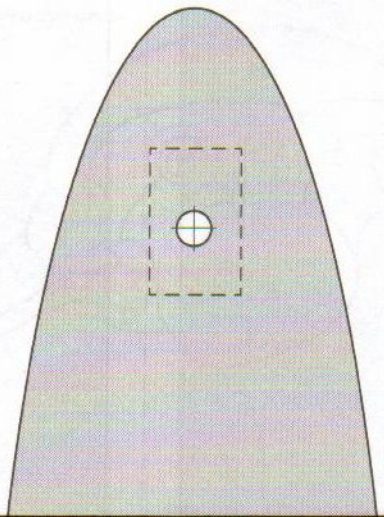


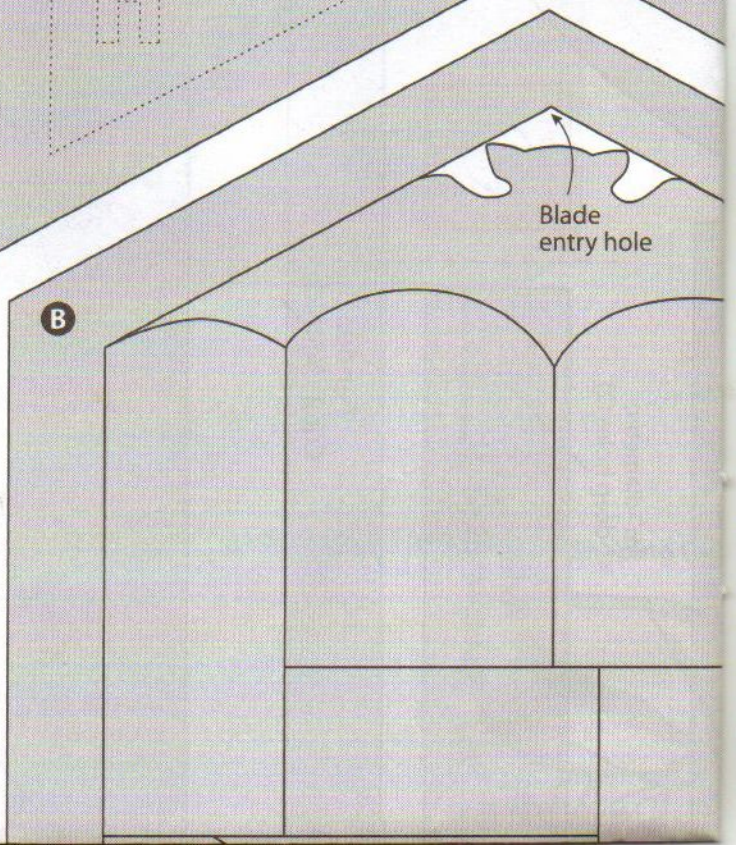


Halloween Puzzle Playset

Page 44 - *SSWC Issue 68*

Designer: Carolea Hower





2A

Woodburning lines

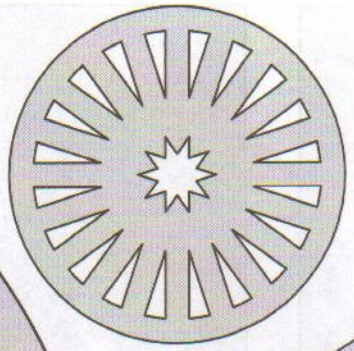
C

3A

Fretwork Checkers & Chess Set

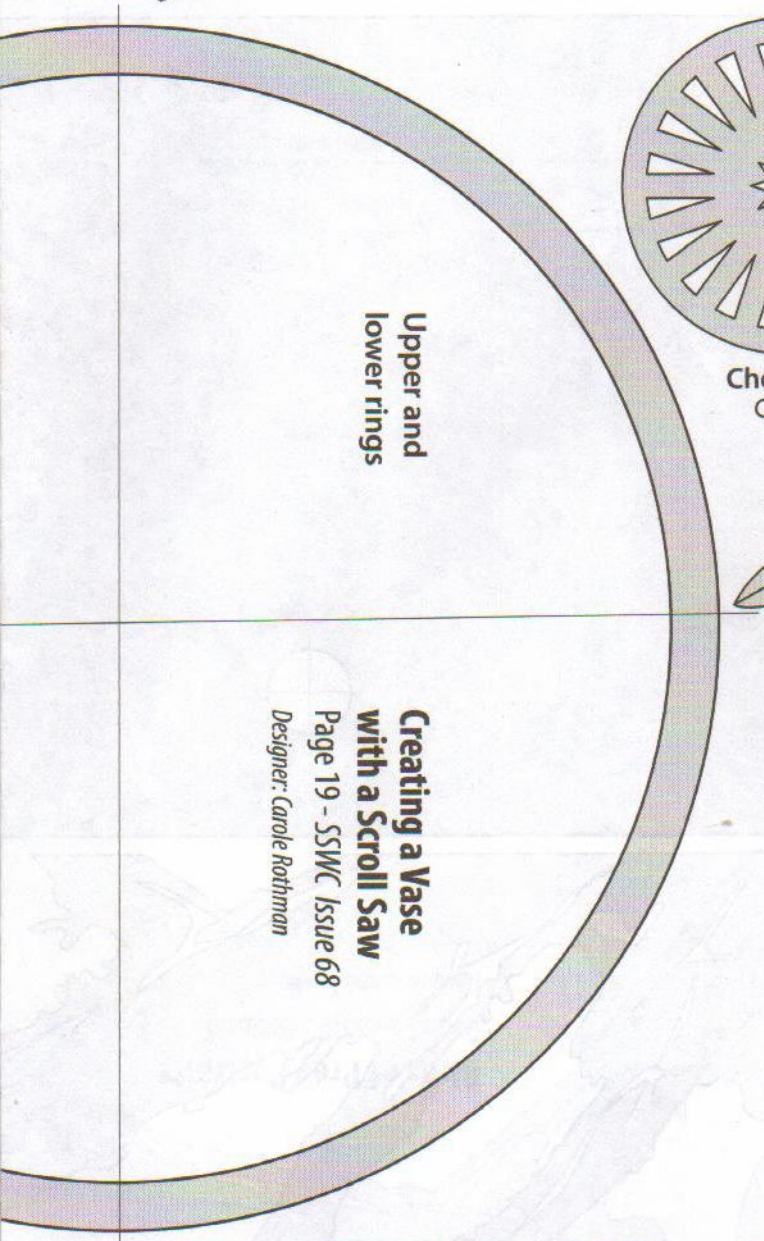
Page 50 - *SSWC Issue 68*

Designer: Dan Wilckens



Checker A
Cut 12

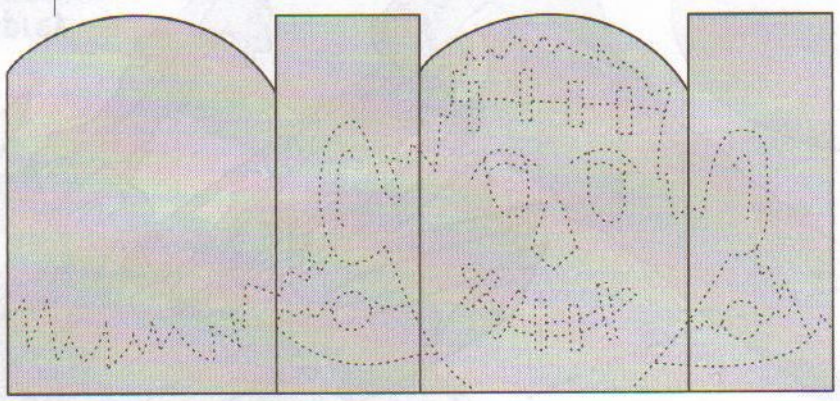
Chec
Cut

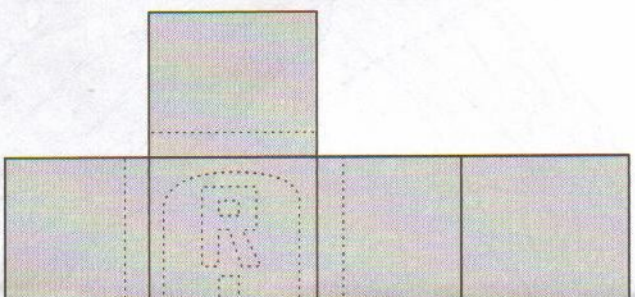


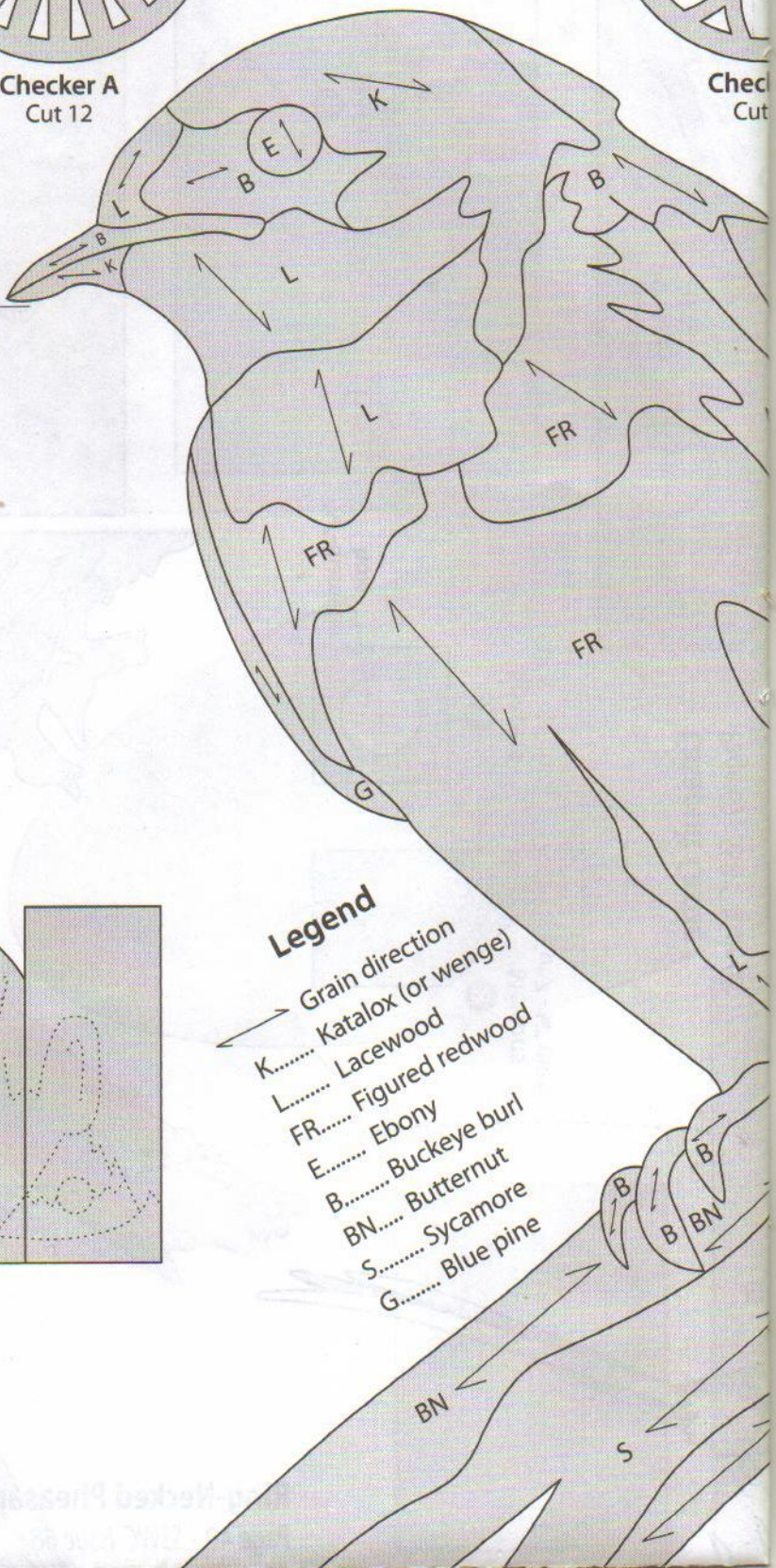
Creating a Vase with a Scroll Saw

Page 19 - *SSWC Issue 68*

Designer: Carole Rothman







Legend

Grain direction
K..... Katalox (or wenge)
L..... Lacewood
FR..... Figured redwood
E..... Ebony
B..... Buckeye burl
BN..... Butternut
S..... Sycamore
G..... Blue pine

4A

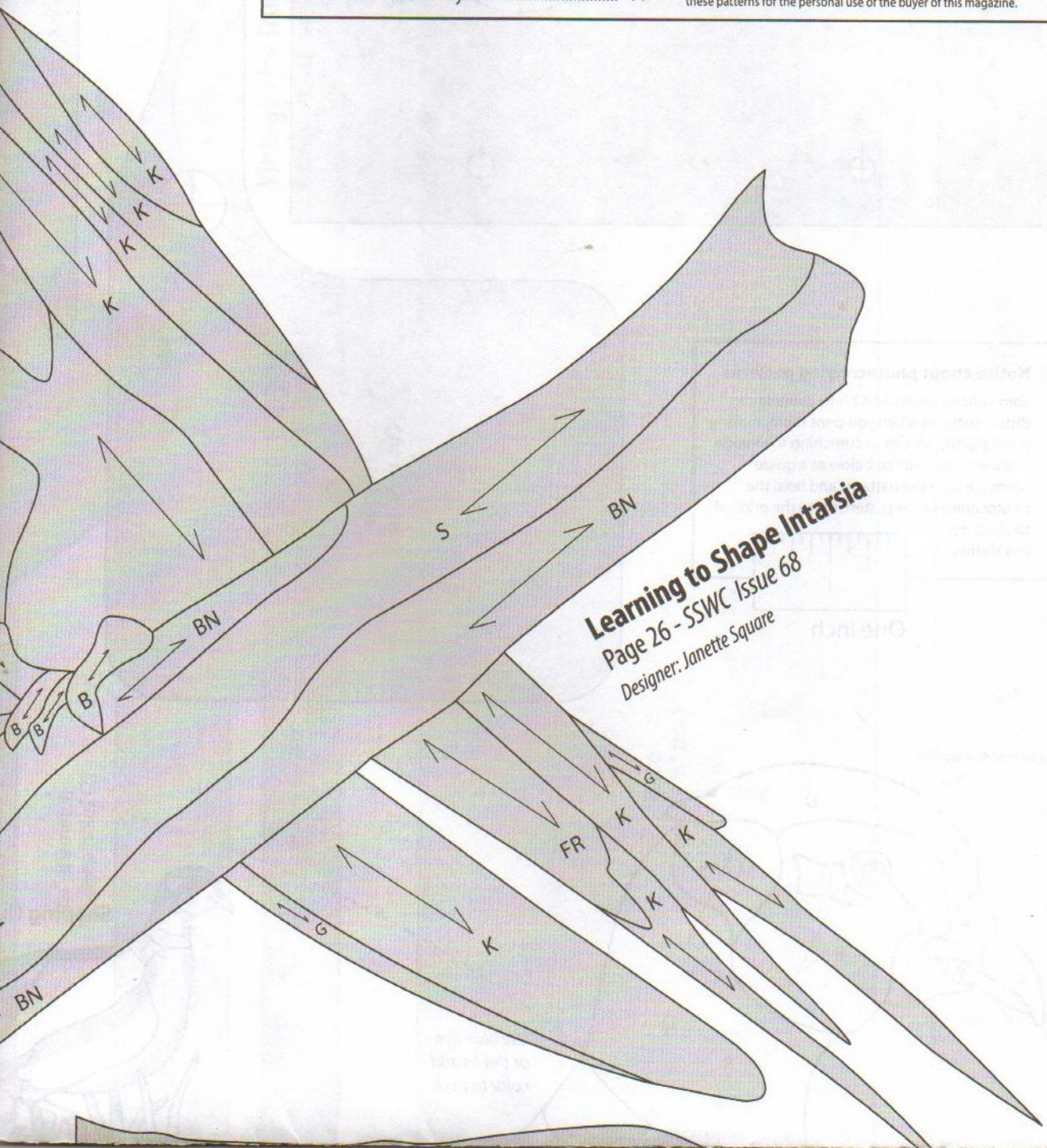
SCROLL SAW woodworking & CRAFTS

Fall 2017 - Issue 68

1970 Broad Street
East Petersburg, PA 17520

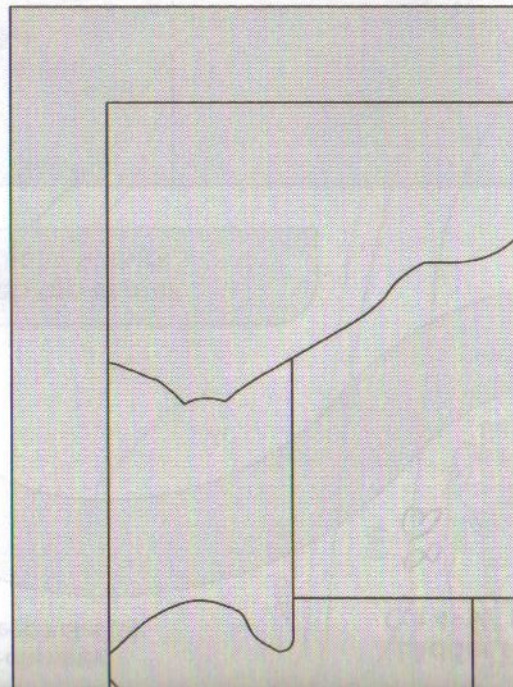
All patterns to be copied at 100% unless otherwise indicated.

ker B
12



Learning to Shape Intarsia
Page 26 - SSWC Issue 68
Designer: Janette Square

3⁄16"-diameter
holes (2)
Osprey base



6A

Bald eagle

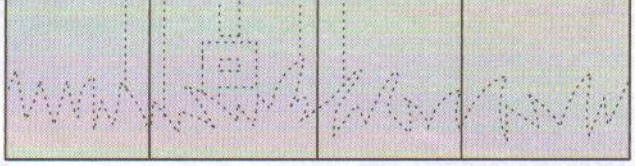
Birds of Prey Portraits
Page 16 - *SSWC Issue 68*
Designer: Jacob Fowler

Notice about photocopying patt

Some photocopiers and home printers
distort patterns when you print them, r
them slightly off-size or stretching the i
Use the 1" bar printed below as a guide
when copying the patterns and hold th
photocopies of the pattern up to the or
to check for
any distortion.

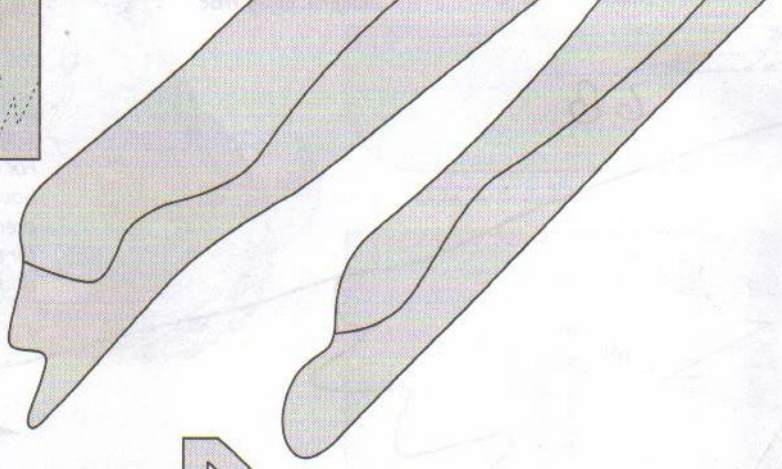
One inch

Fretwo
& Chess
Page 50 -
Designer: Da

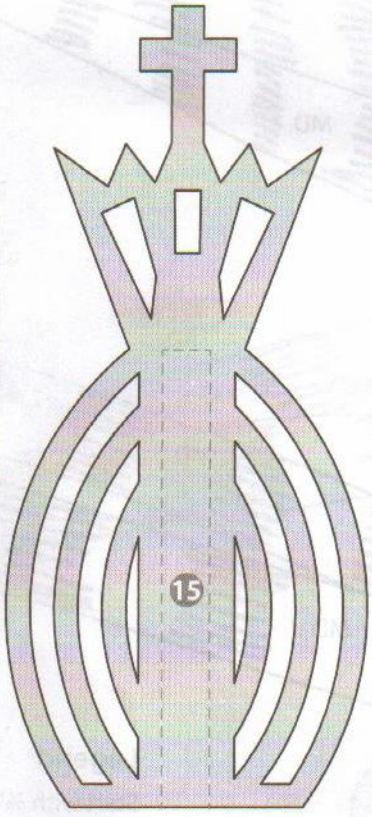


7A

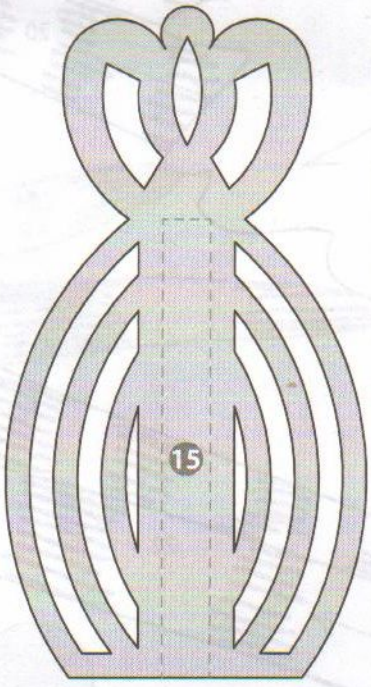
Woodburning lines



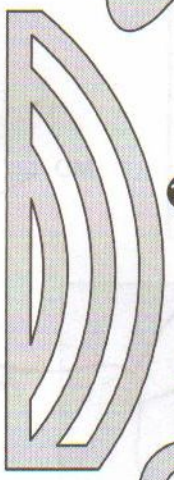
Designer: Judy Peterson



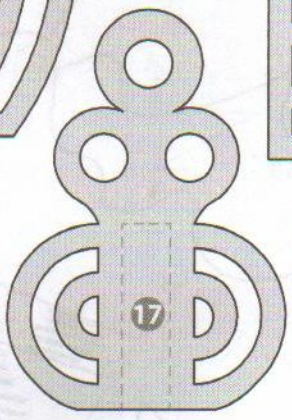
9 **King** - Cut 2



10 **Queen** - Cut 2

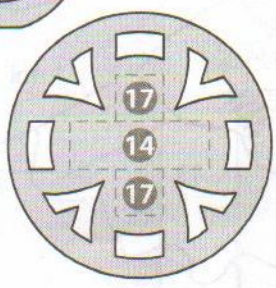


15 **King & queen brackets** Cut 8



14 **Pawn** - Cut 16

17 **Pawn bracket** Cut 32

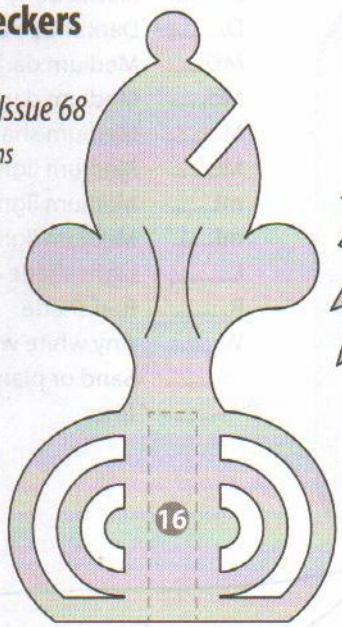


19 **Pawn base** - Cut 16

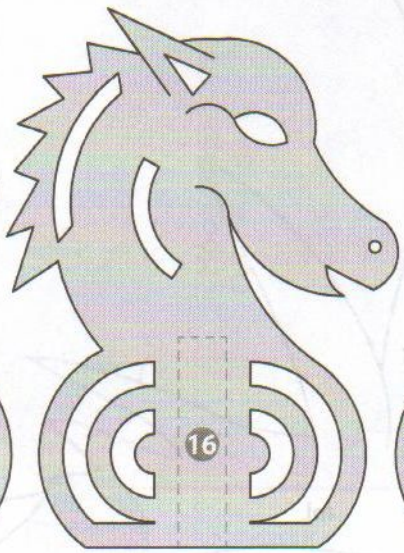
rk Checkers Set

SSWC Issue 68

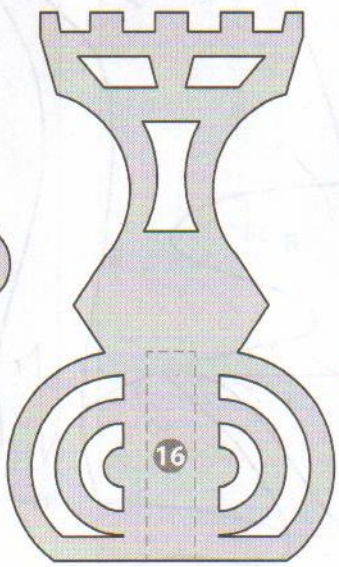
n Wilckens



11 **Bishop** - Cut 4

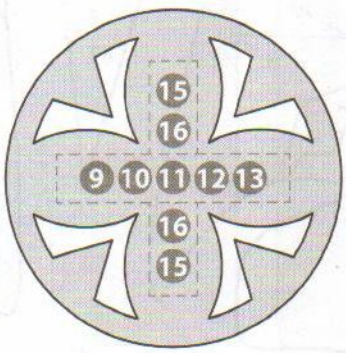


12 **Knight** - Cut 4

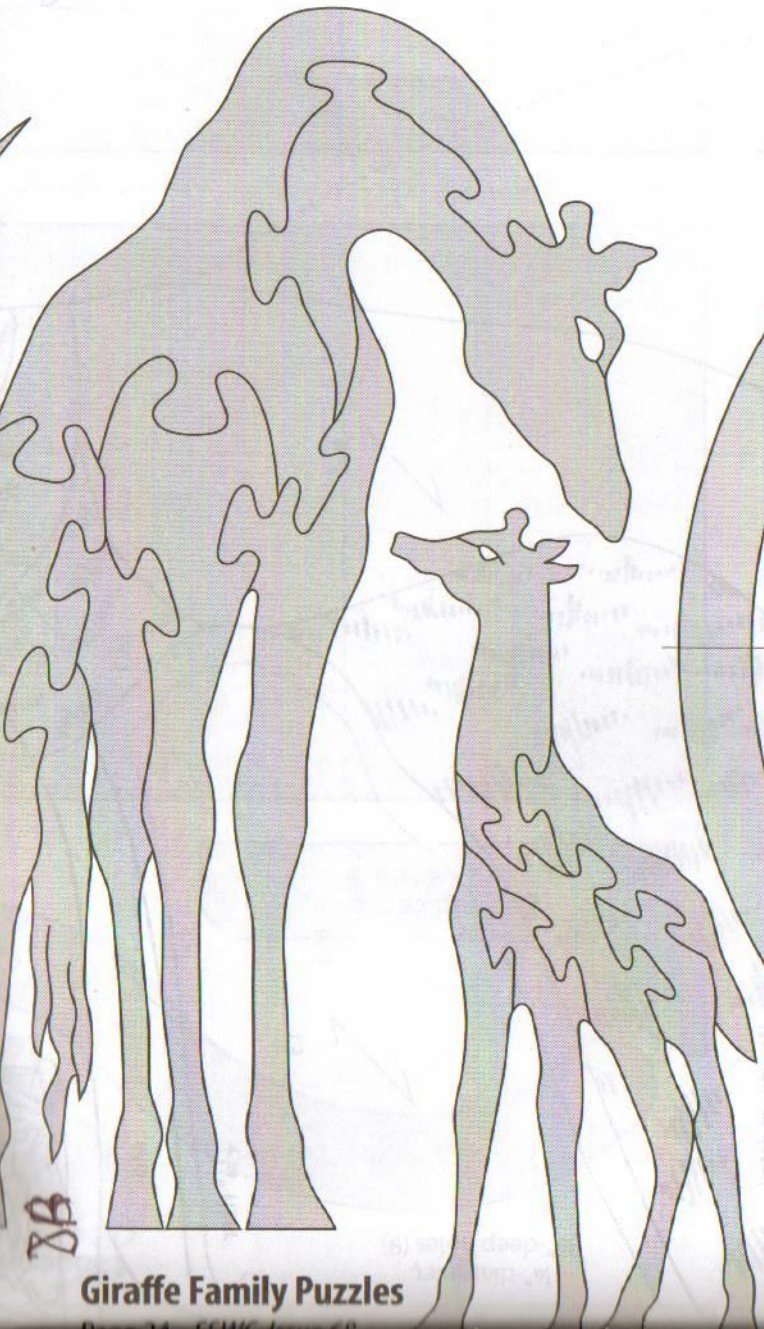


13 **Rook** - Cut 4

16 **Bishop, knight & rook brackets** Cut 24



18 **Base** - Cut 16



Giraffe Family Puzzles

Creating a Vase with a Scroll Saw

Page 19 - *SSWC Issue 68*

Designer: Carole Rothman

hole

Striker
Cut 1 - ¾" thick

F
Trigger
Cut 1 - ¾" thick

7/16"-diameter hole

5/32"-diameter holes (4)

1¼" to 1½"-diameter, hole, depending on the size of the ping pong ball

C
Top
Cut 1 - ¾" thick

Notice about photocopying patterns

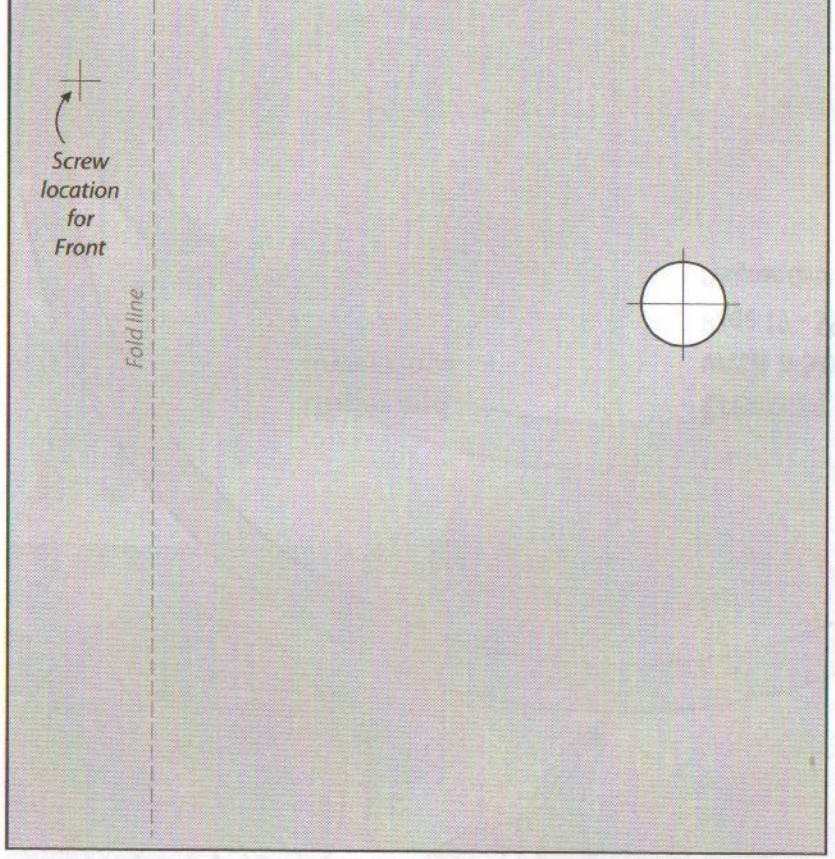
Some photocopiers and home printers can distort patterns when you print them, making them slightly off-size or stretching the image. Use the 1" bar printed below as a guide when copying the patterns and hold the photocopies of the pattern up to the original to check for any distortion.

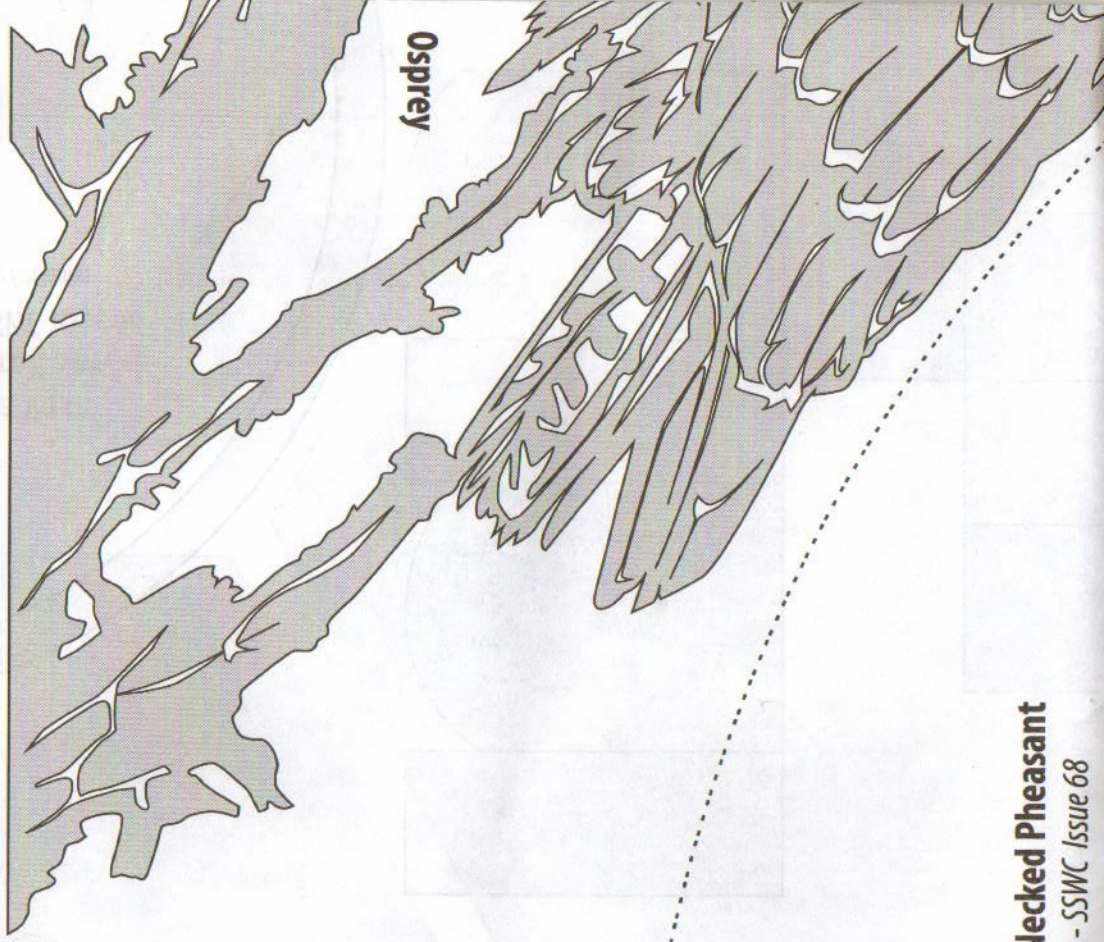
One inch

carved eye detail

Use blue dye or tint to add color to neck

Shaping Gu





Ring-Necked Pheasant
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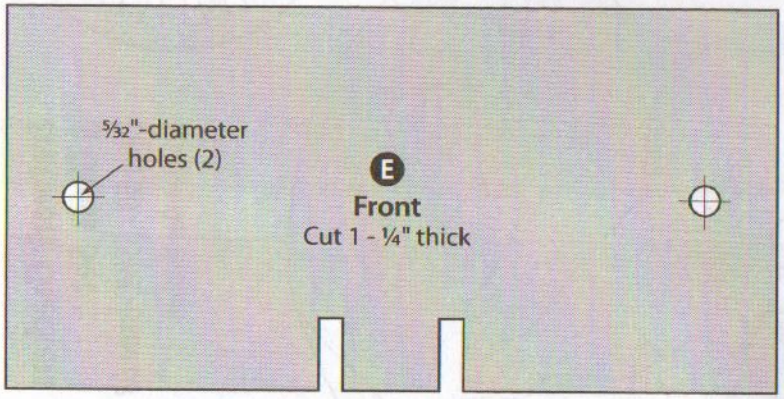
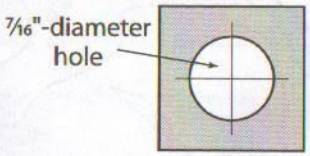
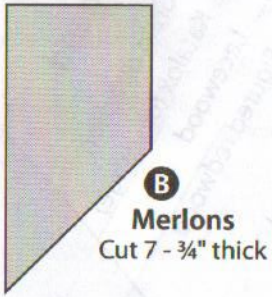
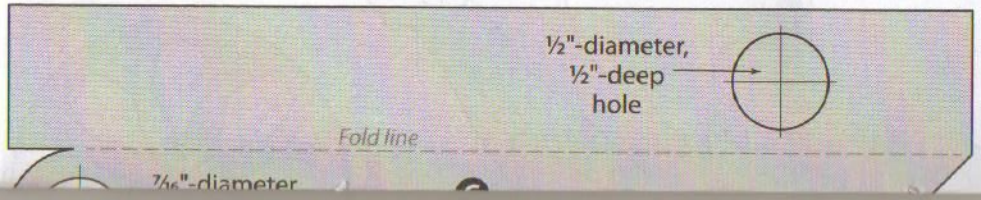
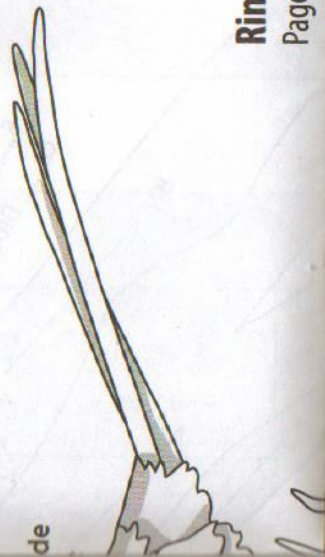








Catapult Castle
Page 60 - *SSWC Issue 68*



Spool mount
Cut 1 - ¾" thick

11/32"-diameter, ⅜"-deep hole

Bald eagle base

3/16"-diameter holes (2)

Birds of Prey Portraits
Page 16 - SSWC Issue 68
Designer: Jacob Fowler

Giraffe Family Puzzles
Page 24 - SSWC
Issue 68
Designer: Judy Peterson

Screw locations for Top (2)

Fold line

⅜"-diameter holes (2)

D
Side wall
Cut 2 - ¾" thick

11/32"-diameter,
7/8"-deep holes (2)

Axle
Cut 2 - ¾" thick

Fender
Cut 2 - ¾" thick

Vintage Fire Truck

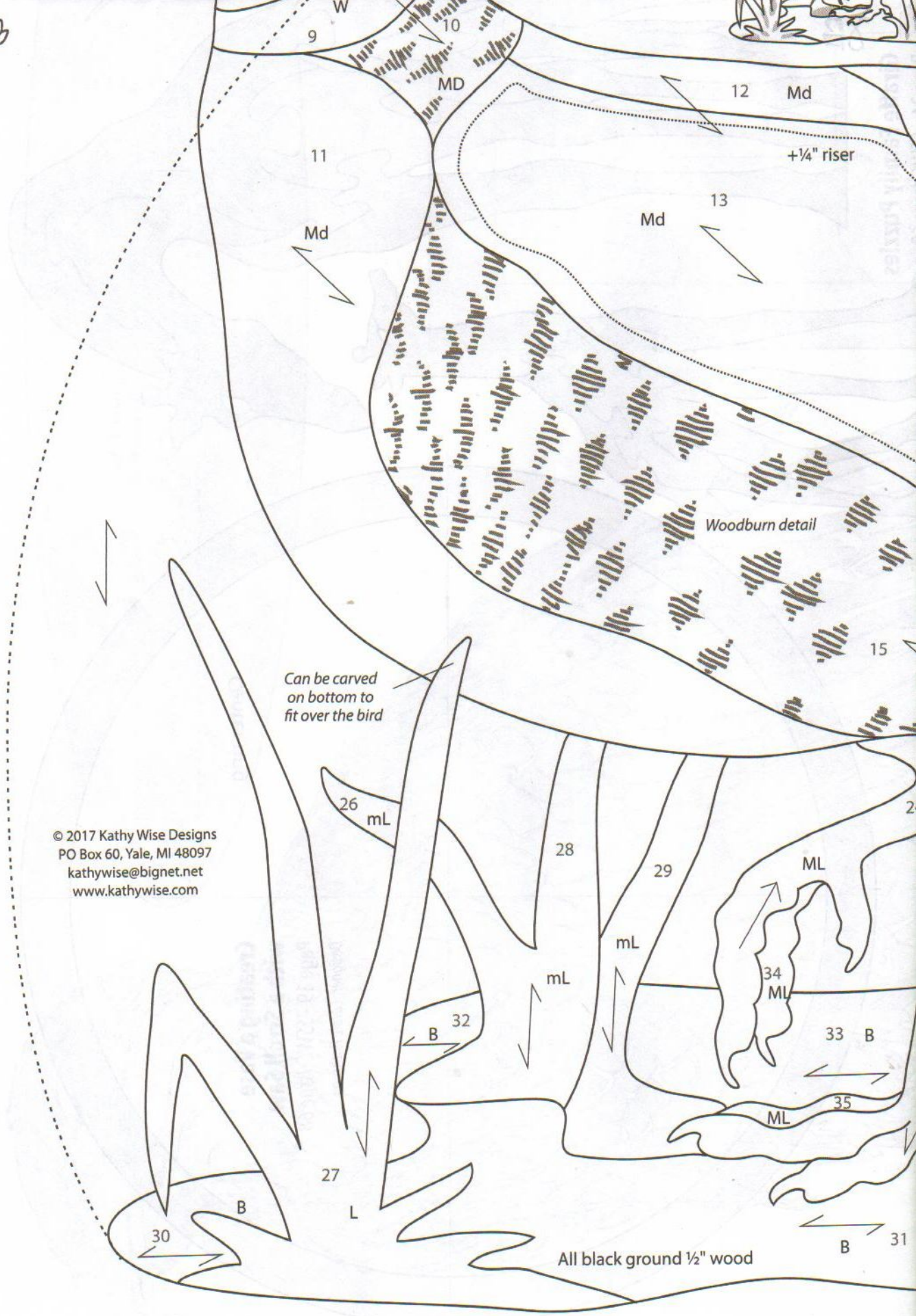
Page 66 - *SSWC Issue 68*

Designer: Paul Meisel

Base
Cut 1 - ¾" thick

¾"-wide,
⅜"-deep dados (2)

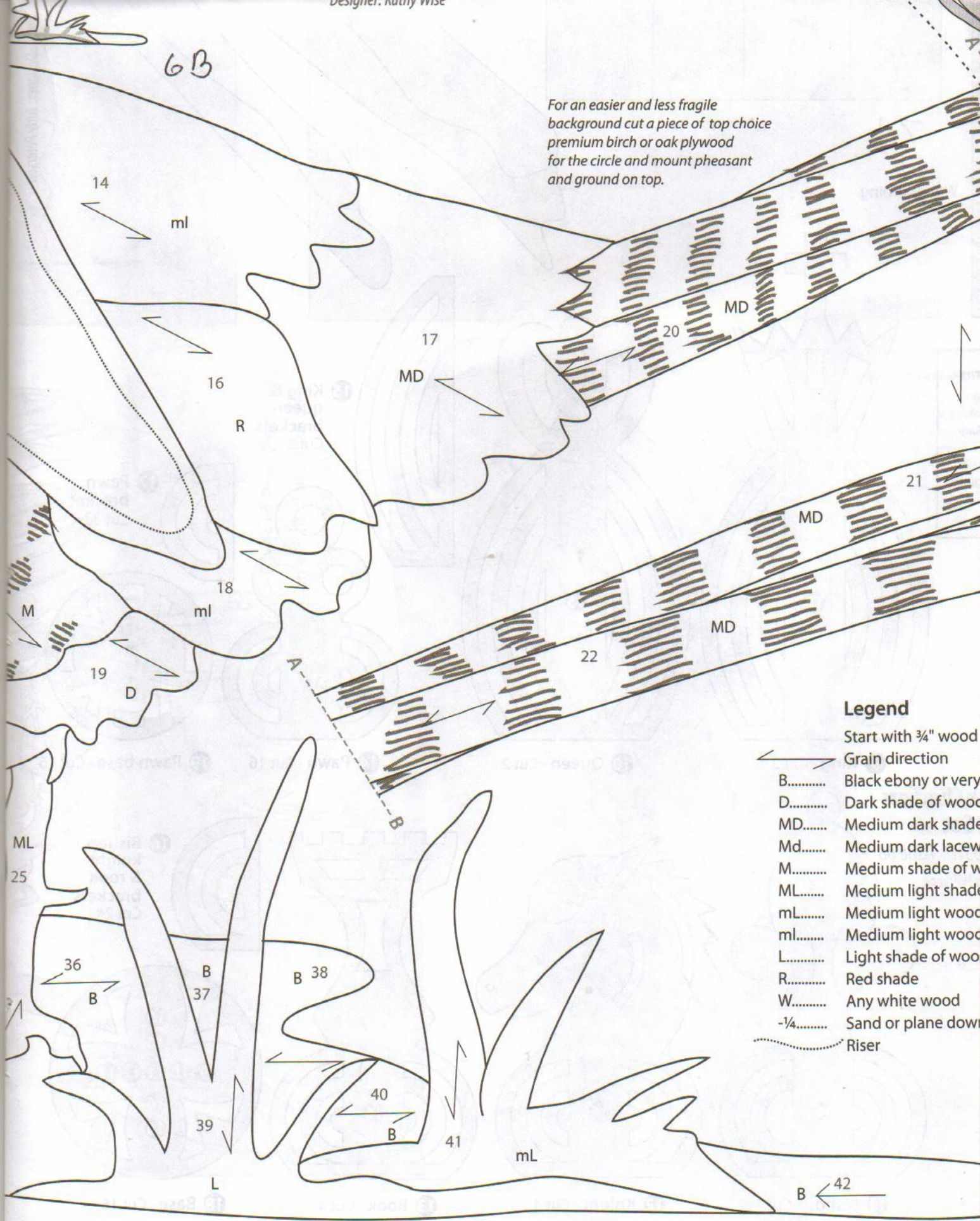
5B



Designer: Kathy Wise

6B

For an easier and less fragile background cut a piece of top choice premium birch or oak plywood for the circle and mount pheasant and ground on top.



Legend

Start with ¾" wood

Grain direction

B..... Black ebony or very

D..... Dark shade of wood

MD..... Medium dark shade

Md..... Medium dark lacew

M..... Medium shade of w

ML..... Medium light shade

mL..... Medium light wood

ml..... Medium light wood

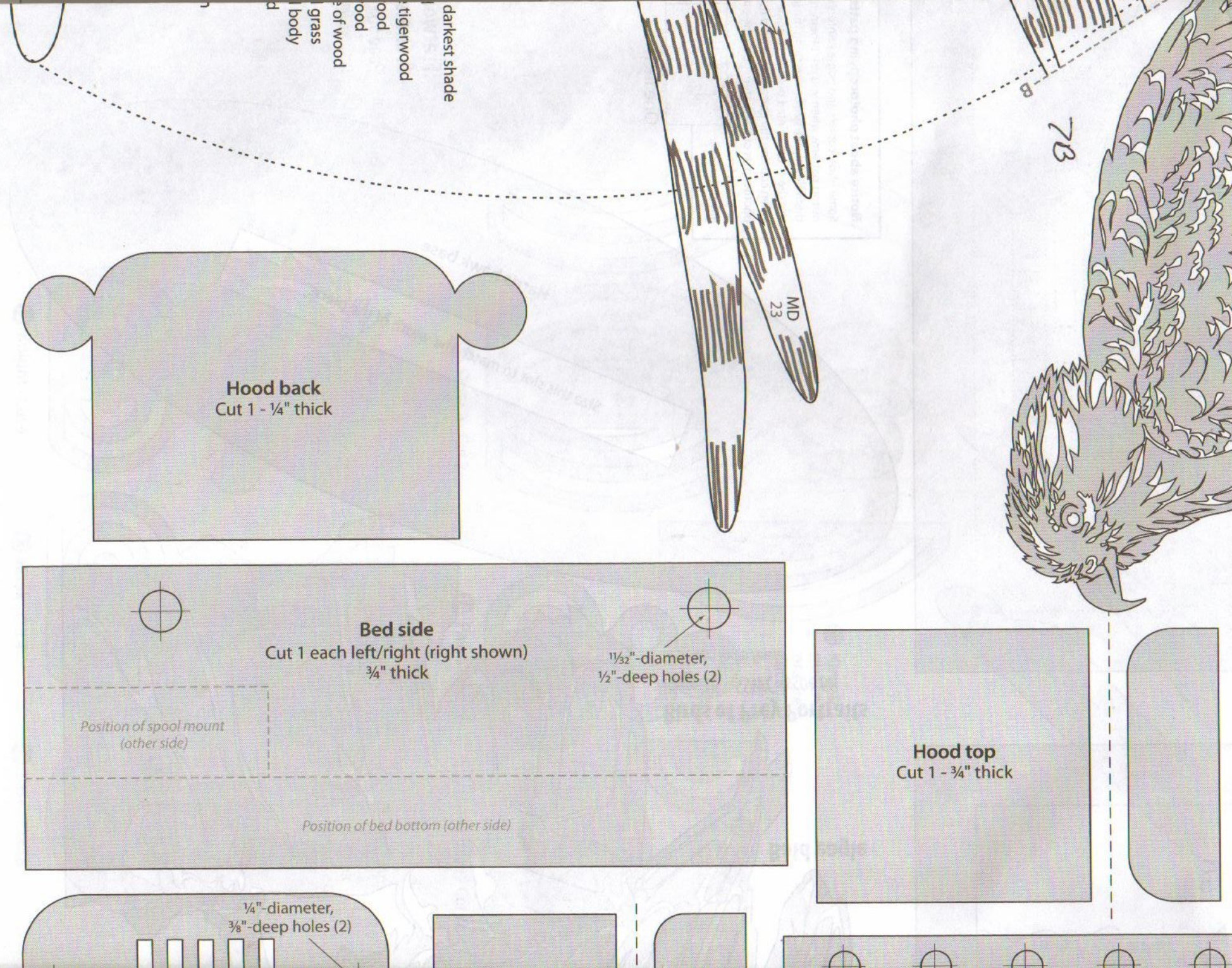
L..... Light shade of woo

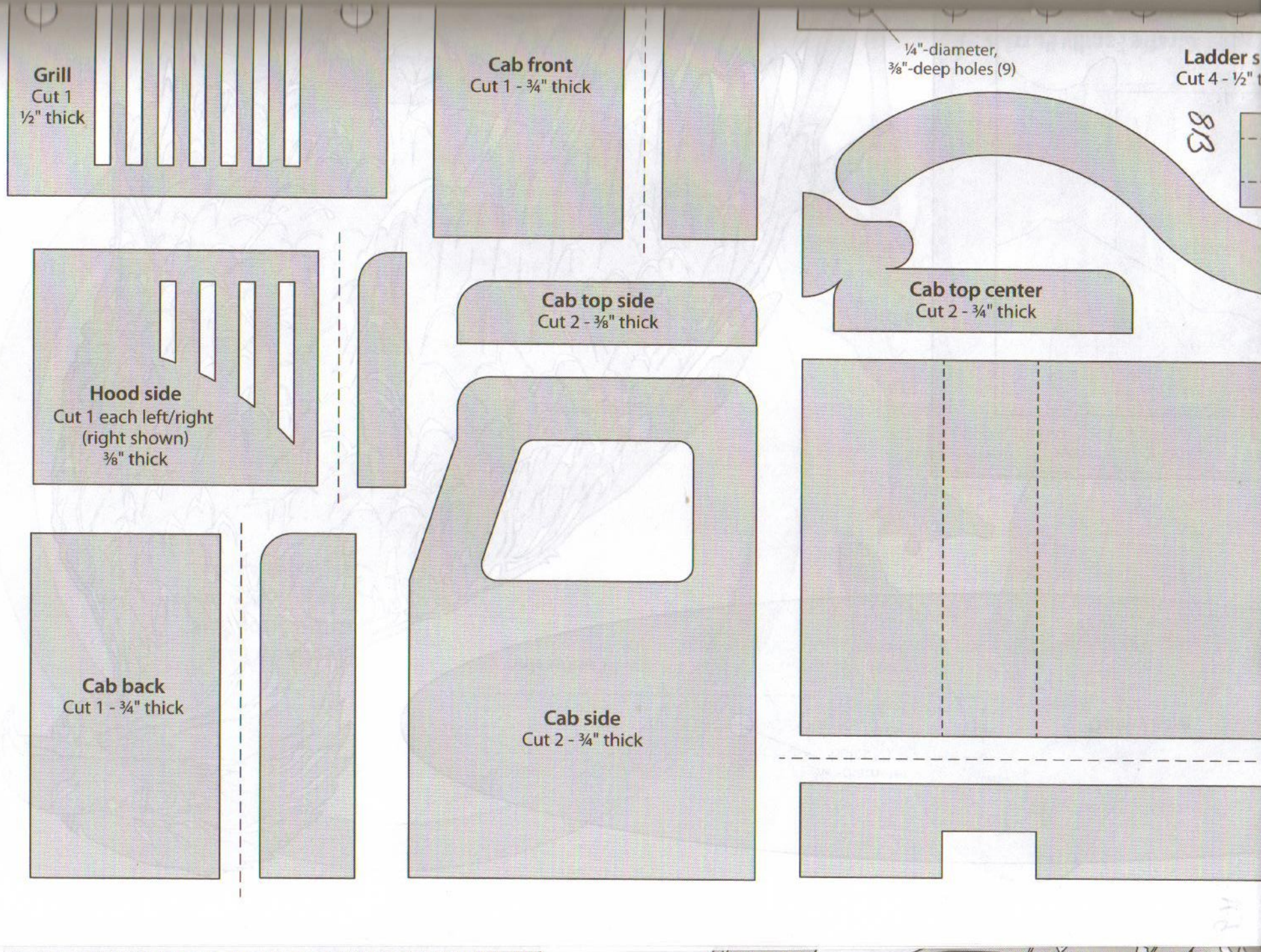
R..... Red shade

W..... Any white wood

-¼..... Sand or plane down

Riser


darkest shade
tigerwood
of wood
grass
body
MD
23
Hood back
Cut 1 - ¼" thick
Bed side
Cut 1 each left/right (right shown)
¾" thick
11/32"-diameter,
½"-deep holes (2)
Position of spool mount
(other side)
Position of bed bottom (other side)
Hood top
Cut 1 - ¾" thick
¼"-diameter,
⅜"-deep holes (2)


Grill
Cut 1
½" thick
Cab front
Cut 1 - ¾" thick
¼"-diameter,
⅜"-deep holes (9)
Ladder s
Cut 4 - ½" t
83
Cab top center
Cut 2 - ¾" thick
Cab top side
Cut 2 - ⅜" thick
Hood side
Cut 1 each left/right
(right shown)
⅜" thick
Cab back
Cut 1 - ¾" thick
Cab side
Cut 2 - ¾" thick