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SPRING 2015
ISSUE 58

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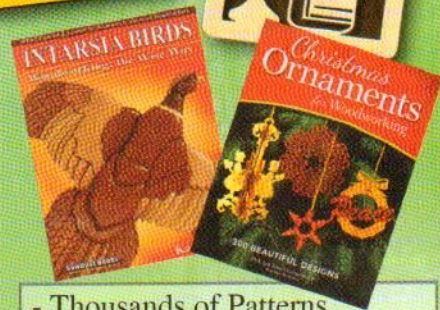
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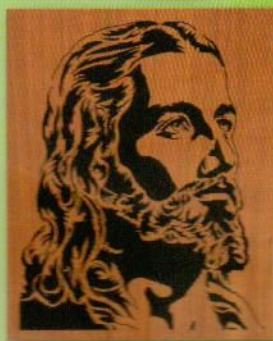
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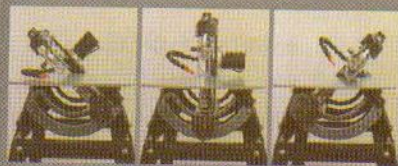


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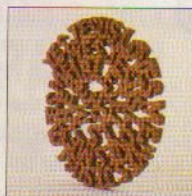


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• Open House E-news

Get the latest info delivered to your inbox by signing up for our show-related e-mail newsletter.

• Teachers and Classes

We're adding new teachers and classes almost daily! The schedule should be final by February.

• Tickets

We're hoping to have tickets available for sale online and via our customer service reps in January.

• Travel Info

Find hotels and campsites, or link to local tourism websites for info on restaurants, shopping, etc.

New Website Coming Soon

We're working on updates to our website, www.scrollsawer.com. We hope to have the new version launched early in 2015.

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Transform colorful hardwoods into a dramatic dragon



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Top this irresistible box with fabric paint "icing"



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Simple toy paddleboats are powered by a rubber band



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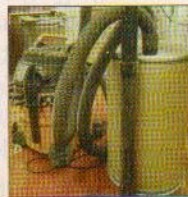
Use new methods to give this shelf the look of an old treasure



50 Blooming Petal Bowl

By Carole Rothman

Artful sanding gives a delicate shape to this classic stacked-ring bowl



60 Shop Hack: Cyclone Dust Separator

By Dave Van Ess

DIY separator collects dust before it clogs the filters of your shop vac



64 Open Sesame Magnetic Puzzle Box

By Levi Dojczman

Plywood layers disguise the intricacies of this perplexing project



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Spring Cleaning



No matter how organized I try to be, at some point things get away from me. Maybe I've been working on a project and have left heaps of tools, paint, and other debris in my workroom—or, worse yet, my son has left the remains of a project on the floor, table, and stairs. Something falls on me from a closet, I trip over things in the garage, or the kitchen just sort of explodes. That's when I realize: it's time to clean.

The projects in this issue won't help you clean, per se; they won't get the streaks off your windows or the dirt off your floors. However our bowls, shelf, hooks, and cutting boards will help you tidy your stuff, turn your scraps into useful projects, and make your collections of things look more attractive. And Dave Van Ess's design for a cyclonic dust separator (page 60) really will keep more dust out of the air and off the floor.

If these projects aren't quite what you had in mind, we offer two ways of making your own patterns for bowls and cutting boards using free software (see pages 38 and 58). We have also included three pages' worth of inspiration-only images: scroll saw projects we found on Pinterest, Etsy, and other websites. We're hoping you will combine the ideas to make projects for your home. For example, combine a cutting board (page 38) with a key hanger (page 37) to get an animal-shaped key hanger. Stack two cutting boards and cut out the center of one to make an animal-shaped platter; add another layer to make a bowl. Or cut a daffodil fretwork design (page 68) into a simple tablet holder (page 36) for a useful and attractive living room accessory.

Both of Carole Rothman's projects technically fit the theme by being useful, but I like them because they are just plain cool. Carole combined bowl making and intarsia shaping in her gorgeous Petal Bowl (page 50). Then, while she was playing around with an idea for another issue, she was inspired to make Cupcake Boxes (page 24). I asked several other artists to riff on Carole's idea, resulting in an entire tray of low-cal, high-fiber, gluten-free cupcakes!

The Magnetic Puzzle Box by Levi Dojczman (page 64) is another just-plain-cool project. It looks like a plywood square. It's fairly easy to pull the top off. But removing the top doesn't open the box, so that's when things get interesting. This is Levi's second project with us. He is a young scroller with a lot of creativity and skill, and we look forward to many more of his wiley puzzles.

Finally, speaking of young scrollers, we'd like to welcome Will Richards to our family of designers. Will is a 13-year-old scroller from Illinois who started scrolling when his grandfather gave him a saw four years ago. Will's sports puzzles (page 47) are simple but effective. I'm betting that you will enjoy cutting them and sharing them with other young people—or even coaxing those youngsters to the saw to try cutting the puzzles themselves.

Best wishes for a happy spring!

Mindy Kinsey
kinsey@FoxChapelPublishing.com

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

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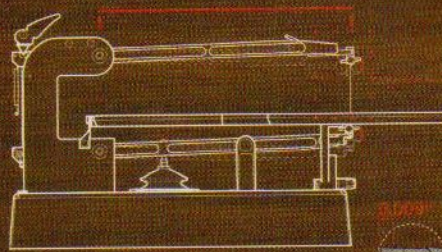
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Scroll Saw Newcomer

On Father's Day this year, my children gave a Craftsman 16" variable-speed scroll saw to me as a present. I have never owned or operated a scroll saw before, but I figured that they thought it was a good idea. I also think it was a good idea, but I need help on how to use the saw and learn what it can do. Are there any books and/or instructional material you can help me purchase and obtain to learn how to use this machine? Any help you could offer would be greatly appreciated.

Joseph Palmeri
LaGrangeville, N.Y.

Editor Mindy Kinsey responds:

Welcome to the wonderful world of scrolling! We know that with time and practice, you will enjoy your scroll saw as much as we do.

In every issue of *Scroll Saw Woodworking & Crafts*, we include an article titled "Scroll Saw Basics." It is a great introduction to your scroll saw and what it can do. We also include tons of projects that are beginner-friendly and offer a forum on our website where you can ask questions of us, project designers, and other scrollers across the country (www.scrollsawer.com/forum).

Visit www.FoxChapelPublishing.com to check out our books on scroll sawing. We recommend John Nelson's *Scroll Saw Workbook*, 3rd ed. It's a great resource for beginners. Happy scrolling!



Fox Hunt

Anthony Saulmon of Sea Level, N.C., and Christopher Horner of Hillsboro, Wisc., were randomly drawn from the participants who located the fox in our last issue (Holiday 2014, Issue 57). The fox was hiding between the wooden chains on the lead photo on page 6, in the Letters to the Editor department.

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 March 1, 2015, 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.

Removing Patterns

I have been scroll sawing for a number of years. I am having a problem with the wood I am using. After I have finished the project, the wood peels off as I am taking the tape and pattern off. I have just started using this plywood; it is 3/4" thick and finished on one side.

Pietro Vultaggio
Macomb, Mich.

Technical Editor Bob Duncan responds:

A couple of things can contribute to this problem. It's a fine line between having enough adhesive on the pattern to hold it in place without having too much, especially if you're using a strong adhesive (3M®, for example). Plus, the longer a pattern is attached to a blank, the stronger the adhesive bonds with the wood (and the pattern, for that matter).

I have a few suggestions. First, try soaking the pattern with mineral spirits, paint thinner, or an adhesive remover such as Goo Gone®. These chemicals dissolve the adhesive, and the pattern usually slides right off. Let the project dry thoroughly before applying a finish, though.

Or, try using a different method to attach the pattern. Many scrollers cover the blank with blue painter's tape (which is designed to hold well, but remove easily, even after it's been on the blank for a while). Do not use regular masking tape—it will make your problem worse. Cover the blank with the blue painter's tape, and then use spray adhesive to attach the pattern to the tape (rather than directly to the wood). The tape is easier to remove from the wood. Some scrollers cover the blank with clear shelf paper (such as Con-Tact® paper) and attach the patterns to the shelf paper, which is also easy to remove from the blank.

I use both methods. For delicate fretwork, I attach the pattern directly to the wood and use mineral spirits to dissolve the adhesive from the pattern. I use an old toothbrush dipped in mineral spirits to remove any stubborn adhesive. For larger projects, I cover the blank with blue painter's tape and attach the pattern to the tape.

Let's Hear From You

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.

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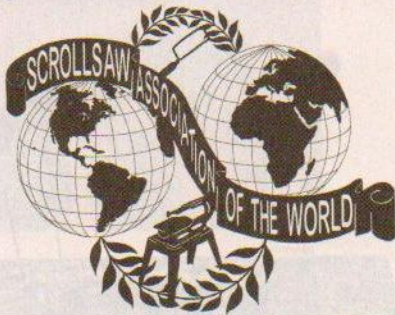
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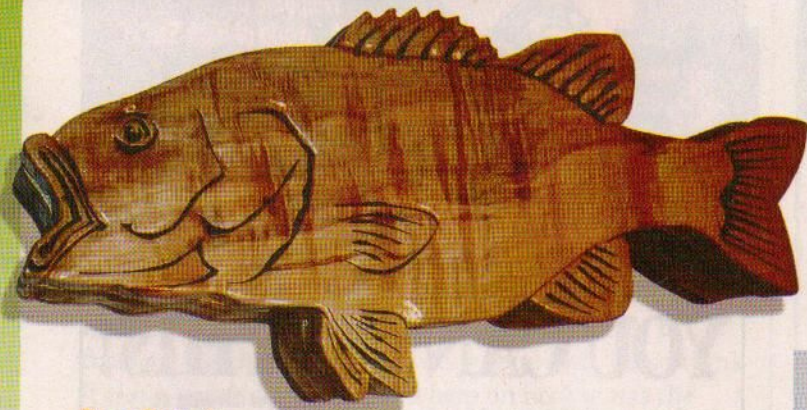
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Bass Box ▲

Andrea Petersen of Wrightstown, Wis., didn't start woodworking until the summer of 2012, but she is now an avid scroller. She used a pattern from *SSW* Spring 2013 (Issue 50) to create this bass box for a friend as a Christmas gift. She made the box from oak, mahogany, poplar, cedar, and curly maple.



Endless Staircase Jewelry Box ▲

Gary Lewis of Byron, Ga., designed and built this intricate jewelry box as a surprise for his wife. He made the top, with the endless staircase design, from birch, walnut, and red oak. Gary made the body of the box from red oak, walnut, spruce, and mahogany. Inside the top, the inlaid heart is blood wood with walnut lettering placed on a bed of birch plywood.



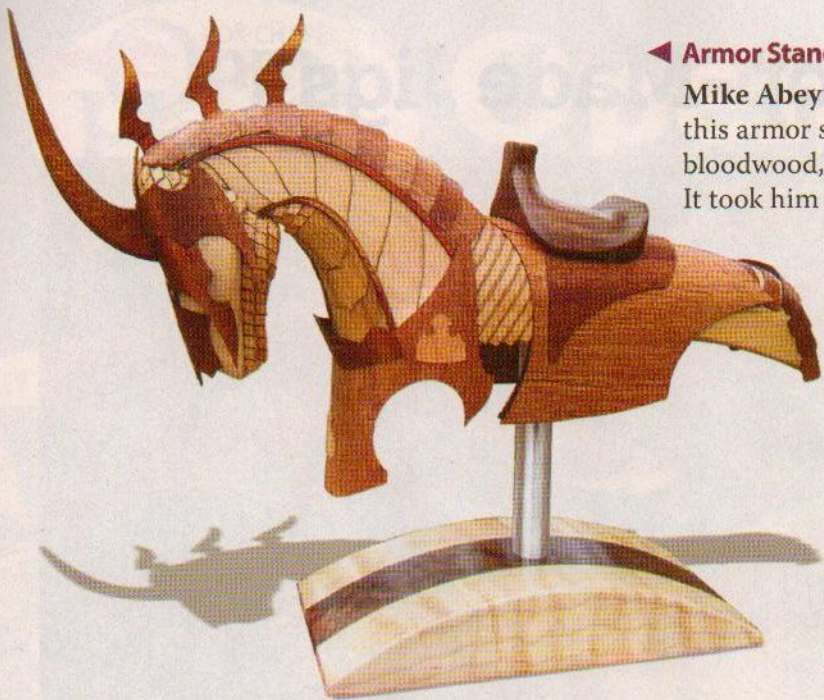
Aztec Calendar

Jesus Juarez of Rosman, N.C., cut and assembled this intricate replica of an Aztec calendar.

Boston Marathon Puzzle ►

Bob Crane of Wayne, N.J., made this puzzle as a tribute to the victims of the Boston Marathon bombings. It is a three-layer puzzle made of ¼"-thick five-ply poplar, and has a magnetic "Boston" sign and quilled paper hearts. The sneakers in the middle are modeled after survivor and Boston native Jacqueline Sager's shoes.





◀ Armor Stand

Mike Abeyta of Peoria, Ariz., scrolled this armor stand out of walnut, bloodwood, maple, basswood, and sapele. It took him 60 hours to make.



The Edgewater Clock ▶

Tim Hawkins of Reno, Nev., scrolled this clock from a pattern by the late Dirk Boelman. It stands 38" tall and is constructed from walnut, oak, and poplar. He has only been scrolling for a few years, but believes scrolling will be his hobby for life.

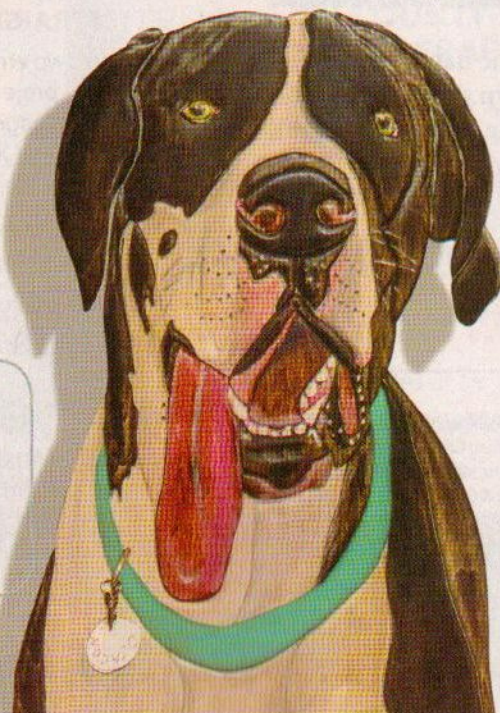


Snowflake Flowers ▲

Lew Riggins of Doty, Wash., cut these elegant designs out of maple wood leftovers from other projects. They are finished with mineral oil and spray lacquer.

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 glasmyre@foxchapelpublishing.com.



◀ Man's Best Friend

Jim Eckman made his first dog portrait after a friend gave him her late husband's scroll saw. He created a picture of her dog as a thank you and has been making dog portraits ever since. He has shipped commissioned pictures all over the United States and Europe. Jim calls his style "2.5-D."

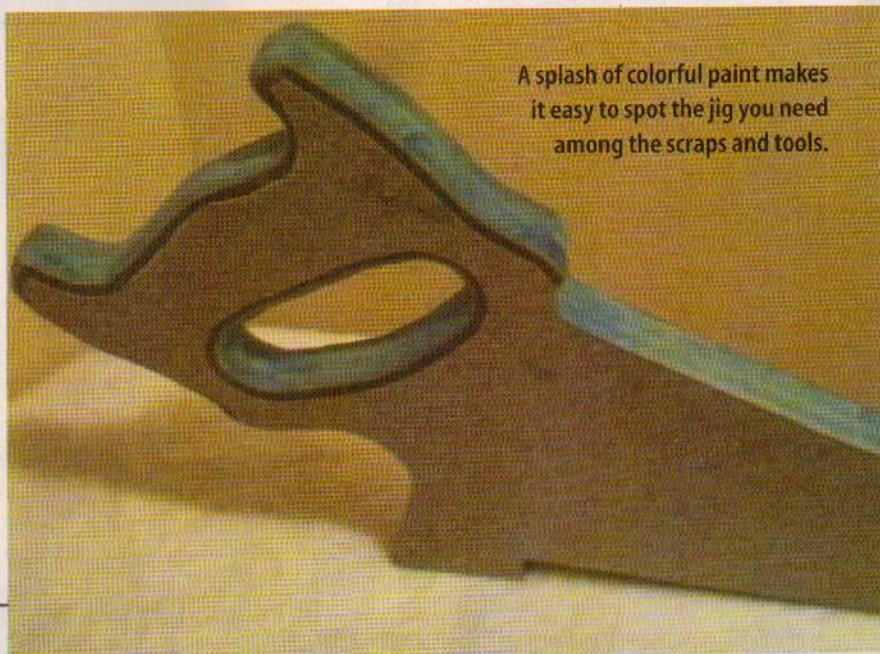
Organizing Shop-Made Jigs



I often find myself making jigs for various projects from scrap wood around my shop.

However, after I make a jig, I have a hard time finding it again among all the other scraps and jigs I have. I decided to mark each jig with dye, stain, or paint, so it stands out. Changing the color of each jig makes them much easier to find—which saves me precious time!

Bob Gleason
Via Email



A splash of colorful paint makes it easy to spot the jig you need among the scraps and tools.

Plan ahead to keep marker lines from marring your intarsia project.

Marker Mishaps

When I prepare a backer board for my intarsia projects, I darken the edges using a black marker. Sometimes, however, the marker slips and leaves a mark on the face of the wood. If the mark is on the backside, it is unsightly and very hard to sand down. My solution is to always hold the marker on the side the pieces will be glued to. This way, if it slips, the mark will never show.

Jerry Bair
Duncanville, Tex.



Stubborn Sander Sleeves

I was recently using my oscillating sander and found that the old sleeve was difficult to take off when I wanted to change it. I placed it on the floor, applied light pressure with my foot, and rolled it back and forth a few times; off it came! Try it the next time a sleeve is giving you trouble.

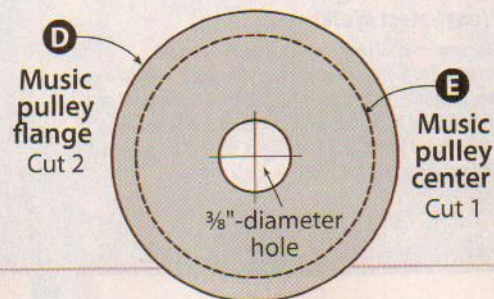
Benjamin Tyler
Vacaville, Calif.

SET IT STRAIGHT

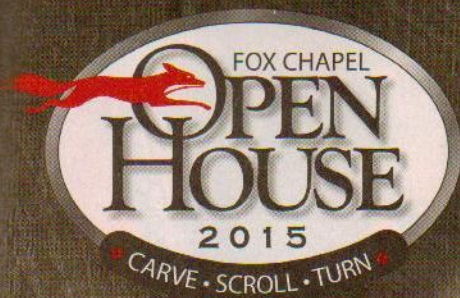
There are two errors in the "Stairway From Heaven Music Box" project in Holiday 2014 (Issue 57). In the Parts List on page 57, parts U (Stair back), V (Stair bottom), W and X (Risers), and Y (Tread) should all be 4" (102mm) wide, not 3" as written.

On the pattern for part D/E (Music pulley flange/pully center), the center hole should be 3/8" (10mm) as written, not 1/4" as drawn. The corrected pattern appears below.

We apologize for the errors.



TOP TIP in our Summer issue wins a \$25.00 Fox Chapel Publishing Gift Card. Send your tips or techniques to: Info Exchange, *Scroll Saw Woodworking & Crafts*, 1970 Broad Street, East Petersburg, Pa., 17520 or e-mail Editors@ScrollSawer.com.



Open House & WOODWORKING SHOW

May 8-9, 2015

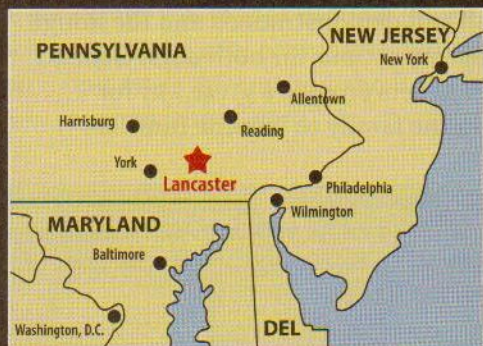


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- **INTARSIA TIPS & TRICKS**
with Judy Gale Roberts
- **HOW TO BUILD A BETTER BOWL**
with Carole Rothman
- **JIGSAW PUZZLE CRAFTING**
with Shawn Ferguson
- **DESIGNING FREESTANDING PUZZLES**
with Judy Peterson
- **SCROLL SAW MAINTENANCE**
with Ray Seymore of Seyco
- **PLUS:** Carving with Rick Jensen, Floyd Rhadigan, and Wayne Barton; Woodburning with Michele Parsons; Turning with Barry Gross. 40 different classes, free demos, shopping, and much more!

Demonstrations

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- **LANCASTER COUNTY WOODCARVERS** (*Hands-On Carving*)
- **SOUTH-CENTRAL PA WOODTURNERS** (*Hands-on Turning*)



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For photos & video of the 2014 show, plus updates on:

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- **EXHIBIT SPACE**
- **TICKETS**

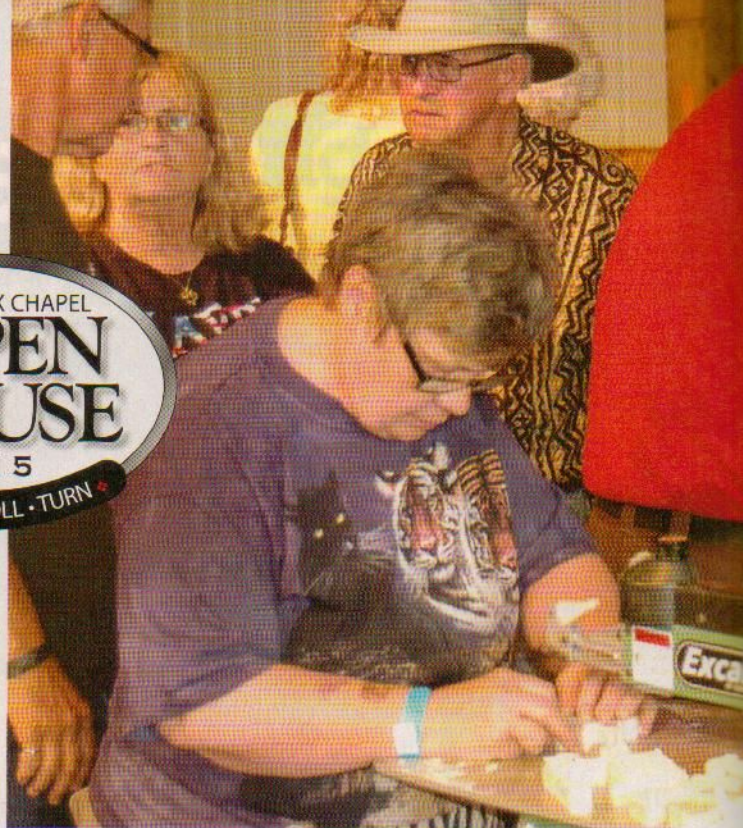
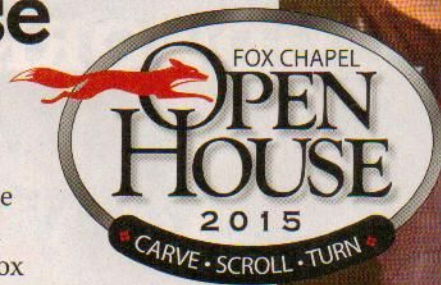
SCROLLSAW
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2015 Fox Chapel Open House

Get ready to make some sawdust at Fox Chapel's 2015 Open House, scheduled for May 8 and 9, 2015. The two-day show includes a vendor hall packed with artists, suppliers, and Fox Chapel books; opportunities to try scrolling, carving, turning, and woodburning; demonstrations of chainsaw and totem pole carving; and approximately 40 classes taught by experts in scrolling, carving, turning, burning, and general woodworking. It will all take place this spring at the Rough & Tumble Engineers' Historical Museum, just east of Lancaster, Penn., in the scenic Amish countryside.



Carole Rothman's bowl building class is a popular choice for scrollers.

Classes

The Class Pass ticket allows entrance to as many classes as you choose during the two-day show. Approximately 40 classes are scheduled, ranging from beginning carving to advanced turning techniques. The scroll saw teachers include Judy Gale Roberts, Carole Rothman, Judy Peterson, Shawn Ferguson, and Ray Seymore of Seyco; they will be teaching classes such as: *Getting Started with a Scroll Saw*, *Designing & Cutting Freestanding Puzzles*, *Designing Portrait Patterns*, *Getting Started in Intarsia*, *How to Build a Better Bowl*, *Intarsia Tips & Tricks*, *Making Wooden Jigsaw Puzzles for Children*, *Multidimensional Jigsaw Puzzles*, *Advanced Scrolling Techniques*, and *Scroll Saw Maintenance & Blade Selection*.

In addition, the schedule includes classes on finishing projects, choosing and preparing wood, carving, turning, and woodburning.

Tickets

Early Bird tickets will go on sale in January. Each Class Pass includes access to classes; admission to the vendor hall and demos; and entrance to the Rough and Tumble Museum. The price for a Two-Day Class Pass is \$50 before March 31, 2015, and \$70 beginning April 1. The price for a One-Day Class Pass is \$30 before March 31, 2015, and \$40 beginning April 1.

General Admission tickets are also available for just \$5. These tickets offer admission to the vendor hall and demonstrations and the Rough and Tumble attractions for both days. General Admission tickets provide a great way for everyone in the family to join the fun!

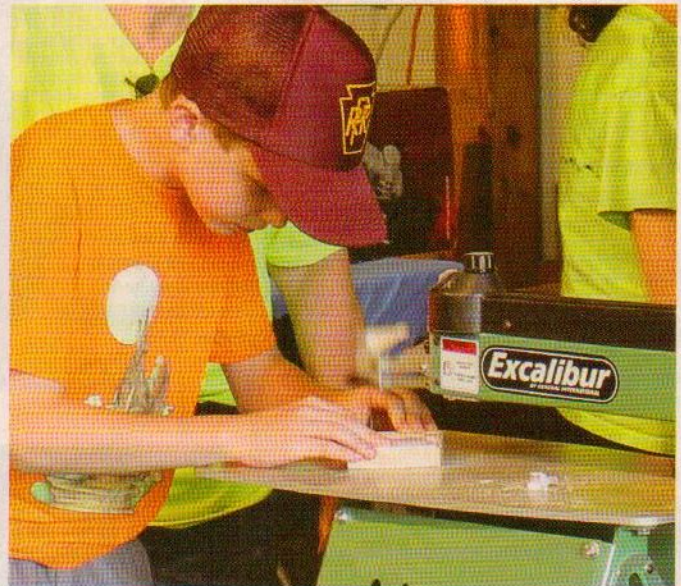
Important Notes: Class topics and instructors may change; please visit our website for the most up-to-date information. Seating may be limited. Some instructors may charge an additional materials fee.

Vendors

In addition to Fox Chapel's bookstore, a number of artists and suppliers will be on hand to make sure you have wood, patterns, and blades for your new projects. Check our website for the latest vendor list. Interesting in exhibiting? Applications are available now at www.wood-show.com.



Open House offers visitors plenty of hands-on opportunities in the demonstration area.



Location

Open House takes place at the Rough & Tumble Engineers' Historical Museum, a 33-acre outdoor museum that showcases a very cool collection of steam engines, trains, tractors, and old-fashioned devices of all sorts, including a steam-powered sawmill. It has ample free parking, food vendors, and modern restrooms. The grounds are generally handicapped accessible; the paths are hard-packed dirt, the classrooms are in tents on grass, and the vendors will be in a barn with a dirt floor. Admission to the museum is included in your Open House ticket, and we encourage you to look around. (Some attractions, such as the train, may charge an additional fee.) You'll find more information about the museum at www.roughandtumble.org.

Travel Info

There's a wide selection of hotels, campgrounds, and inns in the surrounding area, as well as restaurants, shopping, museums, and other attractions. Our show website includes links to many lodging choices, as well as to the local visitors bureaus. If you prefer, call the Pennsylvania Dutch Convention & Visitors Bureau at 1-800-PA-DUTCH.

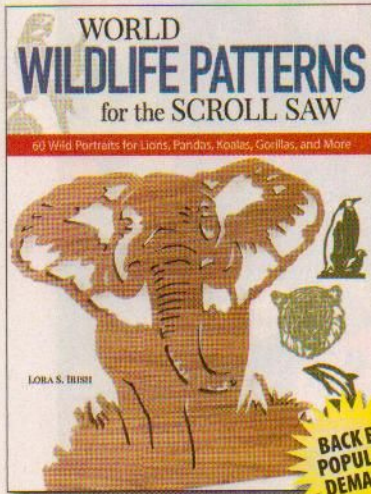
Find more information and buy tickets on the show website, www.wood-show.com, or by calling Fox customer service department at 1-800-457-9112.

You can find all manner of steam-driven machinery at the Rough and Tumble Museum.



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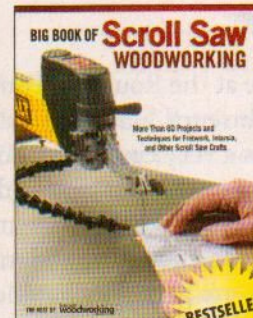
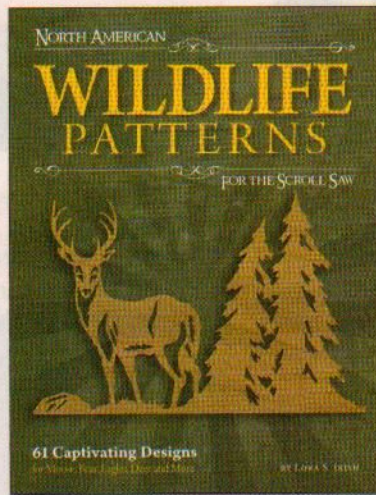
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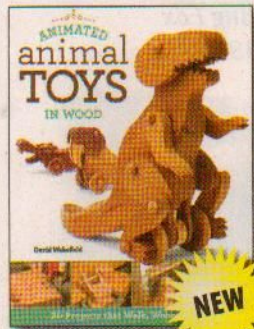
More Than 60 Projects and Techniques for Fretwork, Intarsia & Other Scroll Saw Crafts

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Animated Animal Toys in Wood

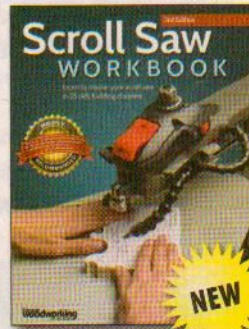
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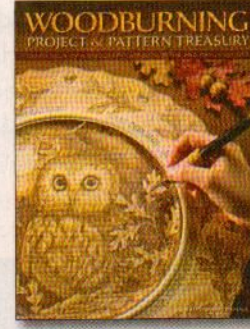
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By John Nelson

Use this ultimate beginner's scroll saw guide to hone your skills to perfection. New updated edition covers the latest innovations in scroll saw models and brands.

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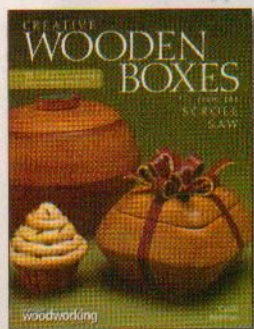


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Create Your Own Pyrography Art with 75 Mix-and-Match Designs

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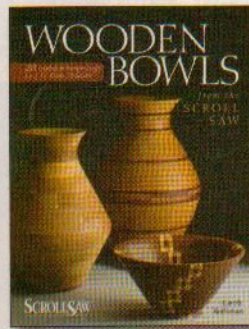
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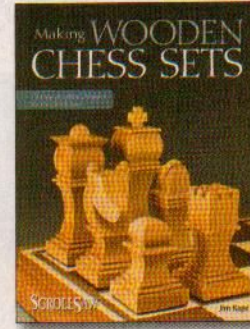
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Create amazing bowls, vases, candy dishes and jars with just a flat piece of wood and your scroll saw. You will not believe these bowls were made without a lathe!

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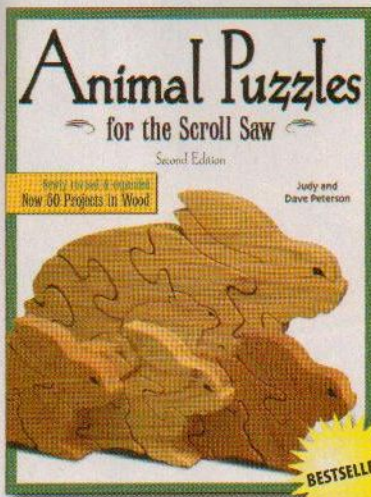
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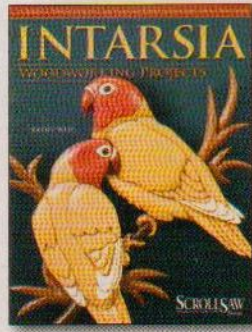
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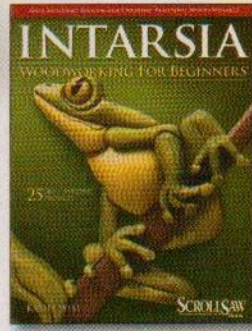
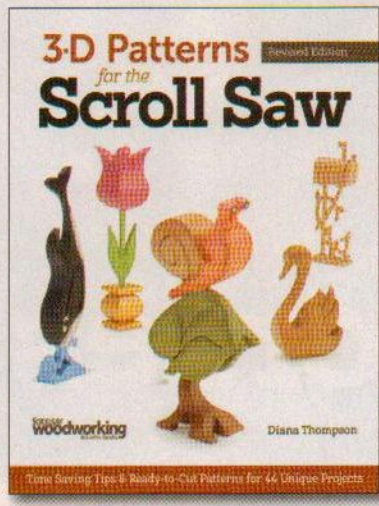
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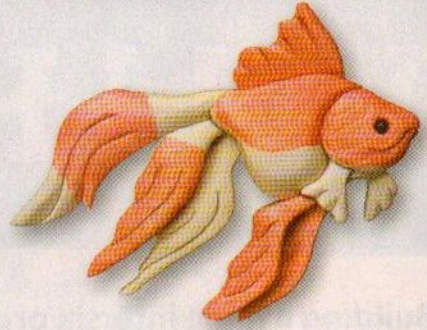
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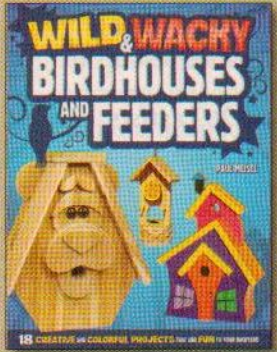
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Intarsia Woodworking for Beginners
 Skill-Building Lessons for Creating Beautiful Wood Mosaics: 25 Skill Building Projects
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 Learning intarsia is easier than you think! This book breaks down the important techniques into manageable and easy-to-understand steps.
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Build a Birdhouse This Weekend

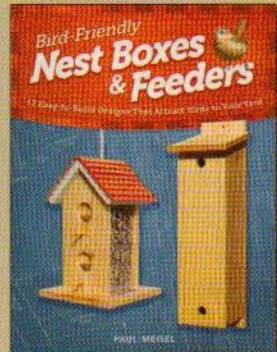


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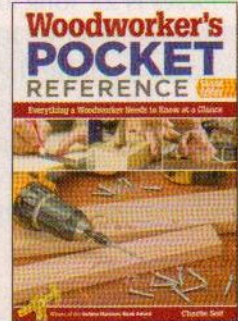


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 12 Easy-to-Build Designs that Attract Birds to Your Yard
 By Paul Meisel
 Each project is designed to help you create the most natural bird environment possible, with complete plans and full-color photographs.
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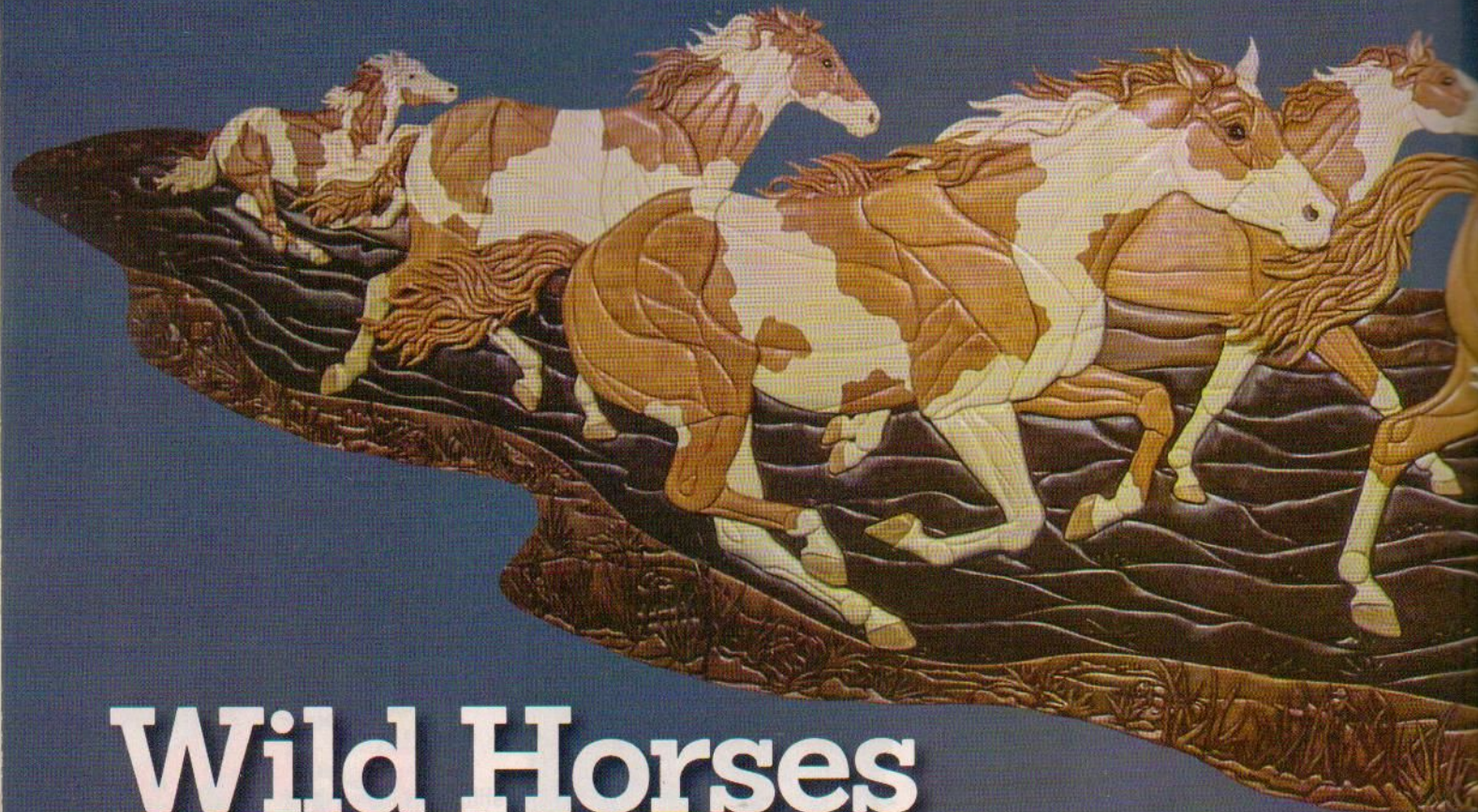
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Wild Horses

Building a huge intarsia project for one of the world's largest art exhibits

By Kathy Wise

Last fall, I took part in one of the world's largest art exhibitions, ArtPrize, in Grand Rapids, Mich. For this enormous public exhibition of more than 1,500 artworks, I created my largest intarsia project to date. Portraying a stampede, *Wild Horses* is 23' long and 6' tall. I spent about 1,400 hours over 10 months cutting, shaping, and assembling the 2,750 pieces. Horses have always inspired humans, and this piece captures the free spirit of the noble horse. If *Wild Horses* inspires you, you can make a running horse with the pattern I've included.

About ArtPrize

ArtPrize is the brainchild of Rick DeVos. In April 2009, Rick announced a bold new social experiment—he planned to give away the world's largest cash art prizes based solely on a public vote: \$250,000 for first place, \$100,000 for second place, and

\$50,000 for third place. The event would occur all over Grand Rapids' downtown area. Radically open by design, any artist in the world could compete, anyone with property in downtown Grand Rapids could turn their space into a venue, and any visitor could vote for their favorite artwork.

The experiment worked; 1,262 artists participated and 200,000 people attended that first year. In 2014, when I participated, the contest comprised 1,536 entries representing 51 countries and 42 U.S. states and territories. Nearly 400,000 votes were cast, and \$540,000 in prizes were awarded by both popular vote and international art experts. There were four art categories: 2-D, Time Based, Installation, and my category, 3-D.

I displayed *Wild Horses* at the Big Old Building (B.O.B.) in downtown Grand Rapids. It was a great location, if crowded; the narrow aisles of the B.O.B. were three deep with constantly moving visitors. Other artists displayed wood sculptures at the show, including carvings, wood turnings, and relief; in fact, the Public Vote Grand Prize Winner, *Intersections* by Anila Quayyum Agha of



Indianapolis, Ind., was a laser-cut wooden installation. However, no one else exhibited an intarsia sculpture on the scale of my piece.

Wild Horses was installed with a turquoise backdrop that enhanced the cherry and aspen wood. It was guarded by rope stanchions decorated with bronze prairie dogs that I sculpted especially for the show;



Bronze sculpted prairie dogs stand by the display's stanchions.

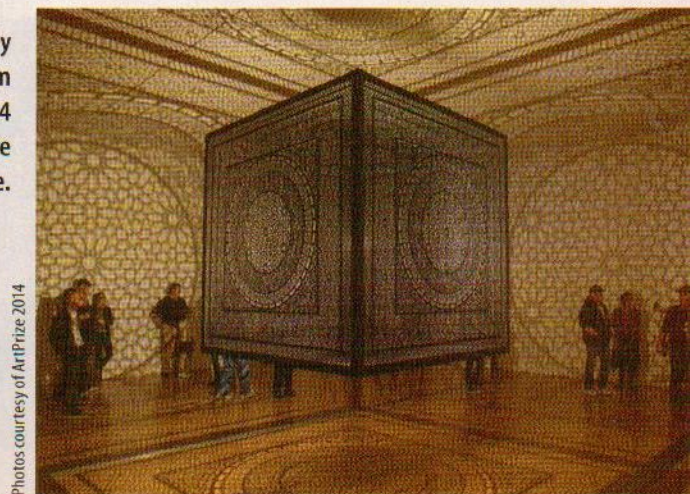
they were mounted on concrete prairie dog holes with hoof prints embedded in the surface. I played a video of the creative process and a motion-activated sound

effect of galloping horses. People's reactions were outstanding; in fact, my exhibit was voted one of the top 25 in the 3-D category. It was a wonderful experience for my first entry in ArtPrize!



ArtPrize, one of the world's largest art exhibitions, takes place in venues all over downtown Grand Rapids, Mich.

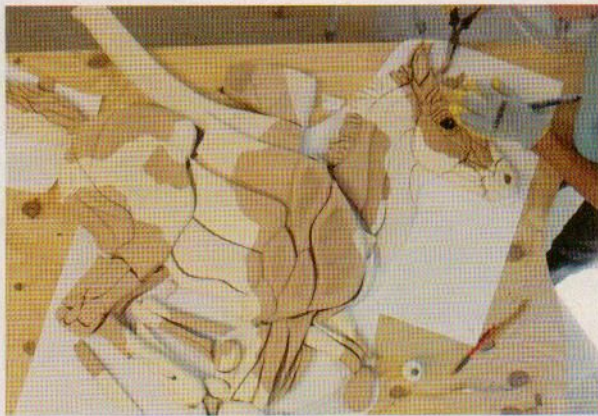
Intersections by Anila Quayyum Agha won the 2014 Public Vote Grand Prize.



Photos courtesy of ArtPrize 2014



Kathy made the backing board in sections that she can disassemble for transportation.



The artist assembled the intarsia pieces in sections.

Kathy glued the intarsia to the backing board with construction adhesive and reinforced some areas with nails.



The artist used a woodburner and carving tools to add the details.

Making My Entry

I made this colorful stampede of horses from 1" to 2"-thick cherry and aspen accented with spalted maple, wavy maple, ebony, holly, and wenge. Seventeen small carved and woodburned animals, including a tortoise, a rattlesnake, jackrabbits, lizards, wolves, quail, and a prairie dog, are hiding in the black walnut grass along the bottom. I designed the enormous piece in four sections with well-hidden joints so I could transport it to Grand Rapids.

One of the challenges in making a project this big is printing the pattern. After designing the pattern on the computer, I printed two copies of the pattern in sections: one for cutting and the other to use as an assembly board. Then, I cut all of the pieces.

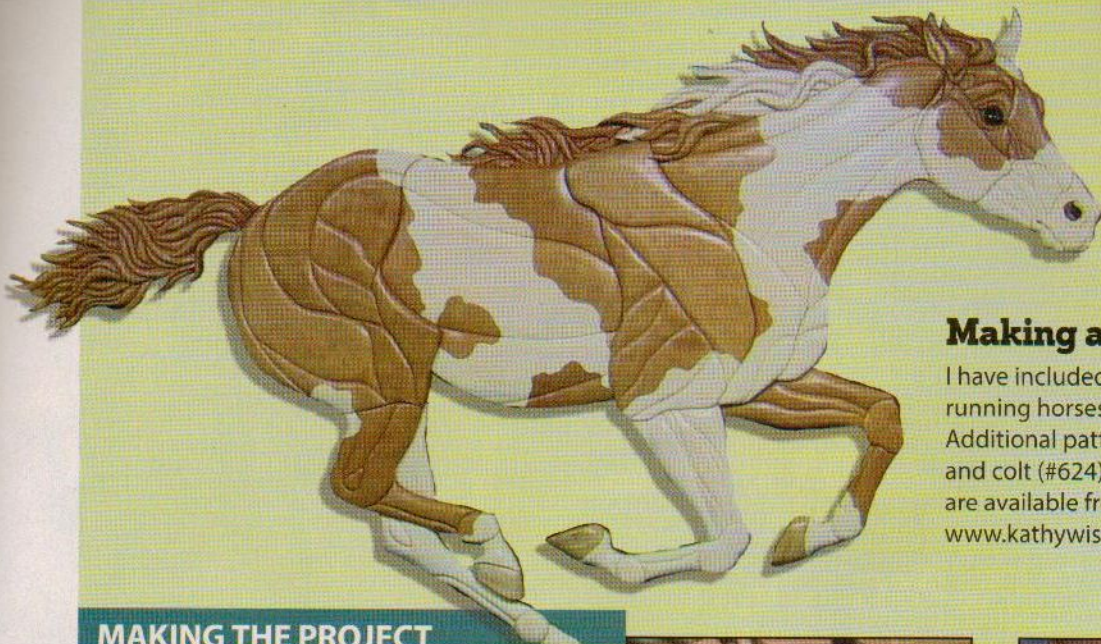
Next, I had to figure out how to make the backing board. To make the 7' by 7' sections I needed, I stacked 1/2" and 1/4"-thick plywood to form 3/4"-thick backing board sections. I joined the sections together with metal plates.

I shaped the pieces with an oscillating spindle sander and pneumatic drum sander. I fit the pieces together, glued them into sections, and glued the sections onto the backing board. I used construction adhesive, placing the horse pieces first and then fitting the background pieces around each horse. Due to the size of the design, I used a pin nailer to reinforce the glue joints. To finish the project, I used a woodburner and carving tools to add details and then coated it with varnish. Watch the video of my process at www.youtube.com/watch?v=P_177m2YbpE#t=72.



Nationally acclaimed intarsia artist Kathy Wise has written three books and more than 40 articles. For a free catalog of 500 patterns, contact Kathy Wise Designs Inc., P.O. Box 60, Yale, Mich. 48097; fax 810-387-9044; www.kathywise.com; kathywise@bignet.net.





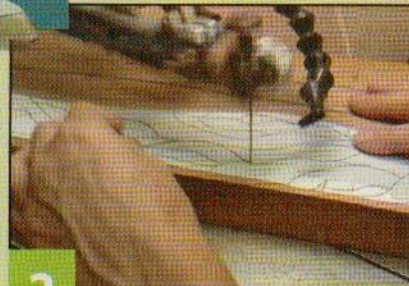
Making a Running Horse

I have included a pattern for one of the running horses from my larger project. Additional pattern sections—the mare and colt (#624) and the colt (#6180s)—are available from my website, www.kathywise.com.

MAKING THE PROJECT



1 Size the pattern as desired. Use spray adhesive to attach it to self-adhesive shelf paper, and then attach the shelf paper to the wood.



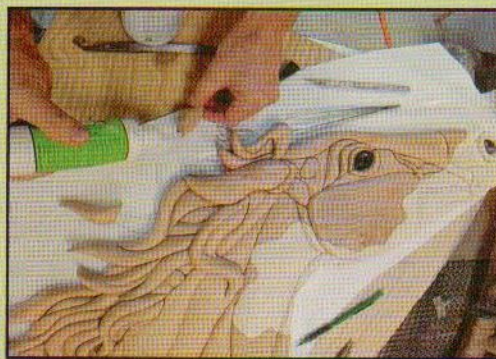
2 Cut out each piece with a scroll saw and place it on a pattern attached to a work board.



3 Refer to the shaping guide and use a pencil to mark sanding lines on the side and top of each piece.



4 Use a sanding drum to shape the pieces. Buff them on a sanding mop.



5 Glue the pieces together with cyanoacrylate (CA) glue, and then use wood glue to attach them to the backing board. Finish the project with several coats of satin gel varnish. When the finish is dry, attach a hanger to the back.

Pattern for the **RUNNING HORSE INTARSIA** is in the pattern pullout section.

Materials & Tools

Materials:

- Size wood to fit your pattern
- Dark wood, such as cherry
- White wood, such as aspen or poplar
- Black wood, such as ebony
- Light wood, such as maple
- Baltic birch plywood, ¼" (6mm thick): backing board
- Clear shelf paper, such as Con-Tact brand

- Spray adhesive
- Glue: cyanoacrylate (CA); wood
- Varnish: gel satin
- Hanger

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

Tools:

- Blades: #5 reverse tooth
- Sanders: oscillating spindle, pneumatic sanding drum, sanding mop



Transform colorful hardwoods into a dramatic dragon

*Design and text by Bruce Worthington
Step-by-step photos by Janette Square*

Dragons are one of my favorite fantasy creatures—they have tons of magical powers, can live in the sky, water, or earth, and come in many shapes and sizes. They're a lot of fun to draw and even more fun to scroll. This stunning creature is called *The Guardian*. Give this majestic beast a try and get lost in a fantasy world of your own.

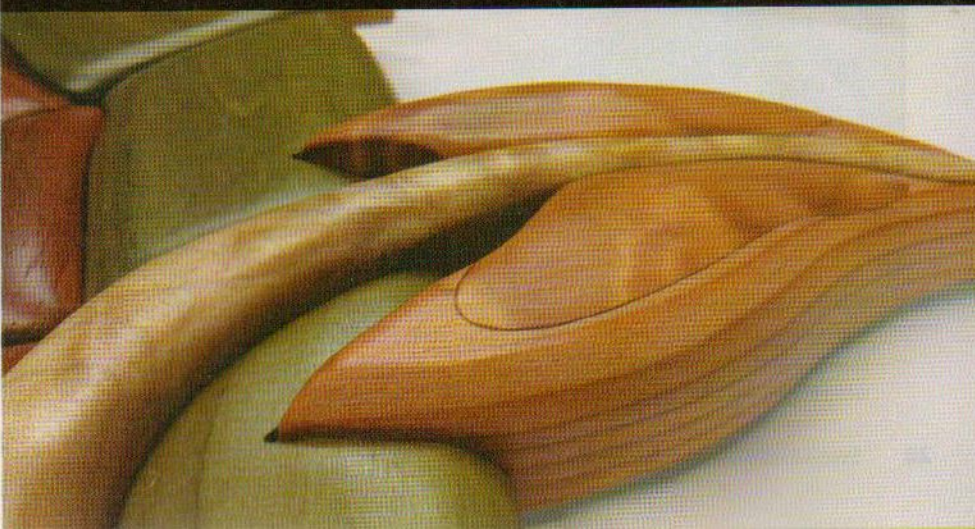
Getting Started

Select the wood, and attach the patterns to the blanks based on the color and grain direction. The varieties of wood we used are in the Materials list; we chose them for their color and grain. If you want a different color or grain, feel free to replace our suggestions with varieties of your choice.



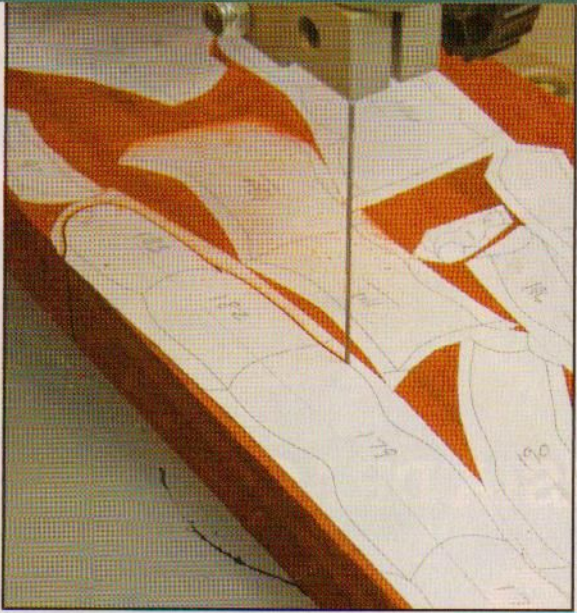
INTARSIA DRAGON:

The Guardian



and give each into three you start it
and how to shape and make two
and shape into the head and tail.

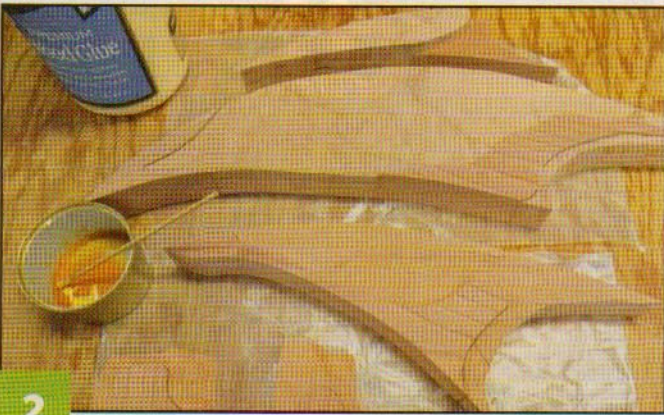
DRAGON: CUTTING THE PIECES



1

Cut the pieces.

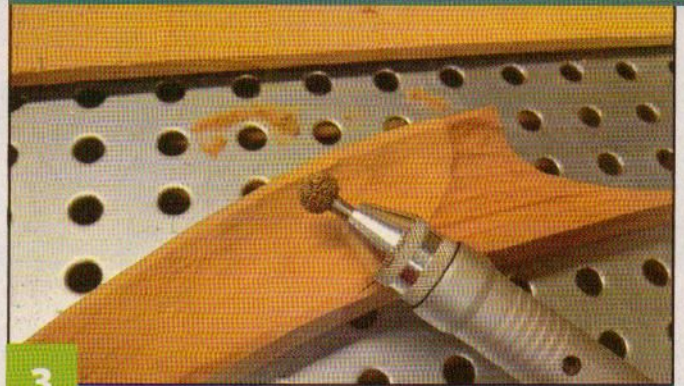
Cut down the center of the line so you remove the entire pattern line. This provides a tight fit. Be careful cutting the small pieces around the head. Dry-assemble the pieces on a copy of the pattern to check their fit and flow.



2

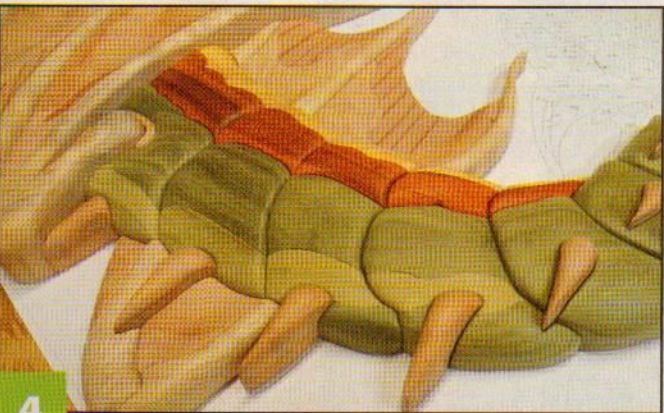
Glue the sections together that will be shaped as one unit. Match and glue the inner wing segments, the red and yellow tail and body pieces, and the body pieces with two shades of green. Just glue the pieces of each segment, not the entire length of body or tail. Let the glue dry thoroughly before you begin shaping.

DRAGON: SHAPING THE PIECES



3

Shape the wings. Carve out the insides of the wings with assorted carving bits, including a ball-shaped carbide point bit in a rotary tool.



4

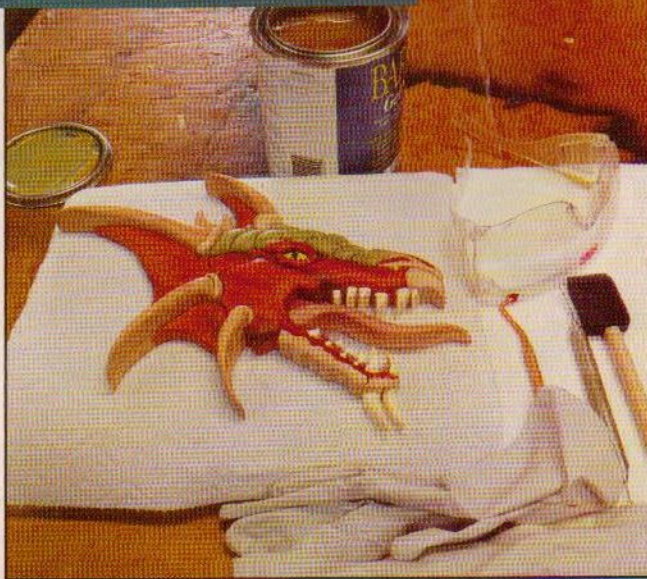
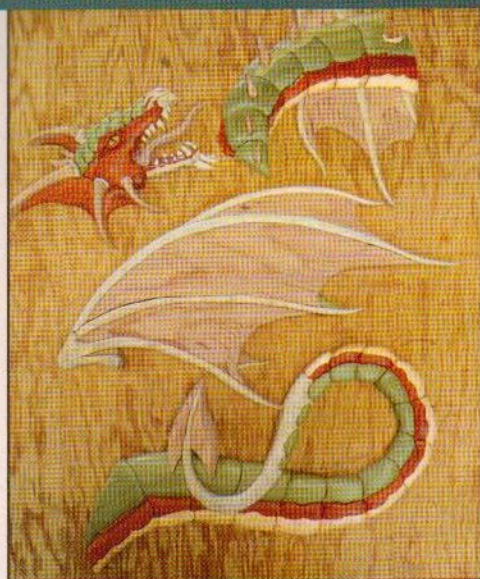
Shape the body. Refer to the photos to round and shape the body using a flex drum sander. The horns and spikes should be thicker than the body. The back wing should be $\frac{1}{2}$ " (13mm) thick. The front wing edge should be thicker than the body.



5

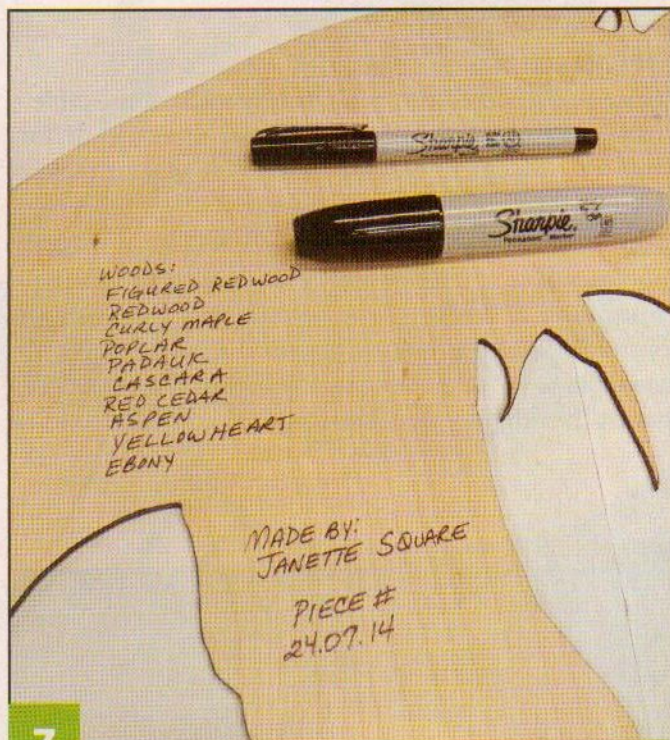
Shape the head. Shape most of the head pieces separately. Glue the lower jaw and nose sections and shape them as two pieces. Shape the teet last and glue each into place as you shape it.

DRAGON: ASSEMBLING & FINISHING THE PROJECT



6

Edge-glue several sections together. This increases the stability of the pieces as you glue them to the backing board. Apply finish to each section after the glue dries. Let the finish dry, and then glue the sections together. Trace the project onto the backing board and cut $\frac{1}{8}$ " (3mm) inside the traced line.



7

Finish the design. Glue and clamp the sections to the backing board. Allow the glue to dry and then attach a hanger to the back. Finally, sign the back and list the varieties of wood used.

Materials & Tools

Materials:

- Note: All hardwood is $\frac{3}{4}$ " (19mm) to 1" (25mm) thick
- Aspen: 2" x 3" (51mm x 76mm)
 - Cascara: 6" x 10" (152mm x 254mm)
 - Curly maple: 6" x 9" (152mm x 229mm)
 - Ebony: $\frac{1}{2}$ " x $\frac{1}{2}$ " (13mm x 13mm)
 - Padauk: 8" x 15" (203mm x 381mm)
 - Poplar (green): 6" x 25" (152mm x 635mm)
 - Redwood: 6" x 24" (152mm x 610mm)
 - Red cedar: 3" x 6" (76mm x 152mm)
 - Figured redwood: 6" x 25" (152mm x 635mm)
 - Yellowheart: 1" x 1" (25mm x 25mm)

- Baltic birch plywood, $\frac{1}{8}$ " (3mm) thick: backing board, 21" x 27" (533mm x 685mm)
- Packing tape
- Spray adhesive
- Wood glue
- Finish, such as wipe-on urethane
- Sandpaper

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

Tools:

- Blades: #5 or #7
- Sanders: belt, oscillating spindle, inflatable drum, mini-flex
- Rotary tool with bits: ball-shaped carbide point, assorted

Pattern for the **INTARSIA DRAGON: THE GUARDIAN** is in the pattern pullout section.



Bruce Worthington, of Brownstown, Mich., designs a variety of intarsia patterns. For more of his work, visit www.intarsia.net.



Janette Square lives in Eugene, Ore. For more of her work, visit her website at www.square-designs.com.

Chocolate Cupcake Box

Top this irresistible box with fabric paint "icing"

By Carole Rothman

Everybody loves cupcakes, and this high-fiber, low-calorie, gluten-free beauty looks good enough to eat! "Baking" this cupcake is easy and fun, and the suggested variations are just the beginning of a tray full of treats that everyone will enjoy.

Angled Cuts and Blade-Entry Holes

For the cupcake base/box, I tilted the left side of the table down at a 15° angle and cut in a clockwise direction. If, for some reason, you can only tilt the right side of your table down, cut in a counterclockwise direction.

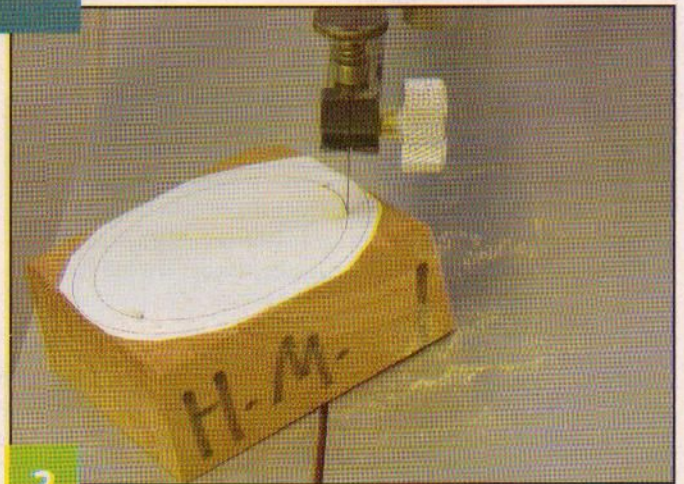
Before you can cut the base/box, you will need to drill a blade-entry hole at a 15° angle. While you can angle the drill press table or create a jig to hold the blank at an angle, I use a simple jig and a hand-held drill. To make the jig, tilt the saw table to 15° and cut a piece of scrap. Hold the drill bit against the angled end of the wood and drill the hole.



CUPCAKE: MAKING THE BOX



1 Drill the blade-entry hole for the box. Attach the box pattern to the blank with repositionable adhesive. Use an awl to mark a drilling point just inside the inner circle, and drill an angled blade-entry hole (see above) toward the center of the pattern.



2 Cut the inside of the box. Tilt the saw table 15° (see above). Insert the blade and cut around the circle. Sand the inside of the box smooth.



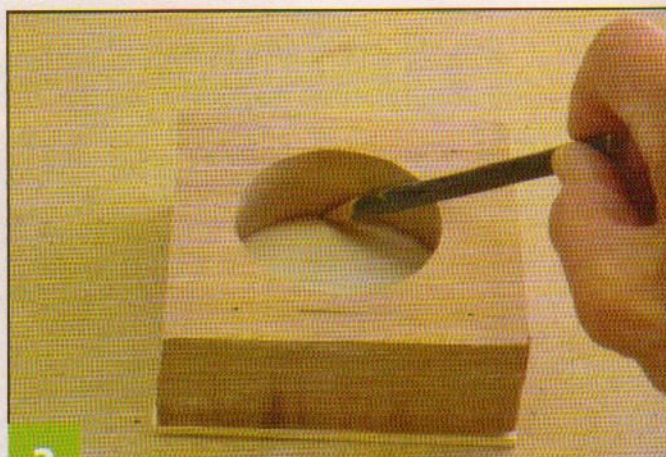
Cupcake Gallery

Inspired by Carole's creative cupcakes, we asked several other artists to make boxes. Use these ideas to create your own tray of "treats."

(Top to bottom, left to right) Carole Rothman made the **Hearts**, **Baseball**, and **Flower** boxes. Michele Parsons made the **Birthday Candle** cupcake of basswood and Bolivian rosewood with a poplar dowel candle. Judy Gale Roberts used intarsia techniques to shape the **Rose** and the **Melting Snowman**. John Nelson used colorful paper decoupage to create **Head First**. Judy Peterson's **Puzzle** cupcake consists of several layers joined by metal rods.

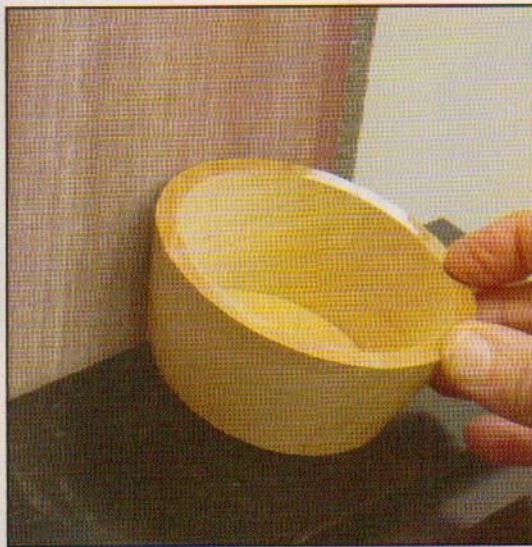
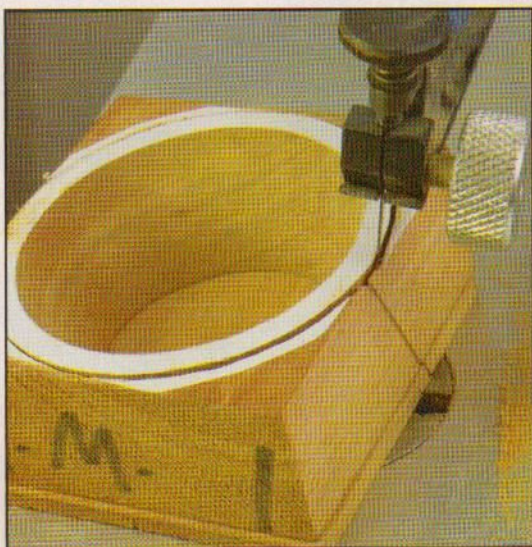
Drilled Box

You can make the base of the box from a single piece of 1½" by 4" by 4" (38mm by 102mm by 102mm) mahogany. Mark the center and drill a 1" (25mm) deep hole with a 2¾" (60mm) Forstner bit. Center the pattern on the drilled hole and attach it to the blank. Cut around the outer circle, sand it smooth, and check its roundness. Adjust the roundness by sanding. Follow the instructions in Step 5 to cut the ridges in the base. After applying the finish, attach a 2¾" (60mm)-diameter circle of velvet to the bottom of the recess to hide the drill mark. To make the lid liner, cut a 2¾" (60mm)-diameter circle from a piece of ½" (3mm) thick stock and follow Step 8 to glue it into place.



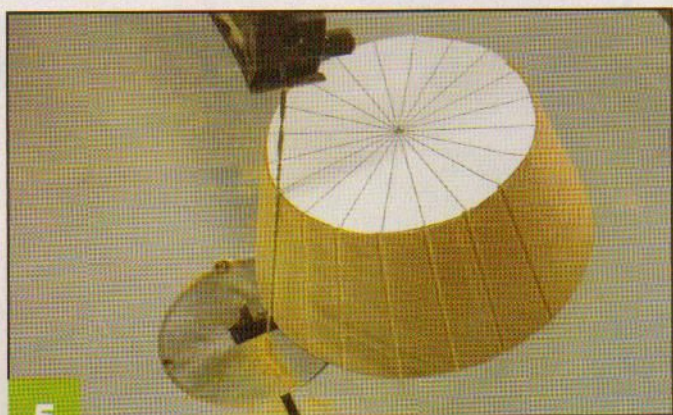
3

Cut the lid liner. Invert the box on the lid liner blank and trace the inside edge. Tilt the table 15° and cut around the circle.



4

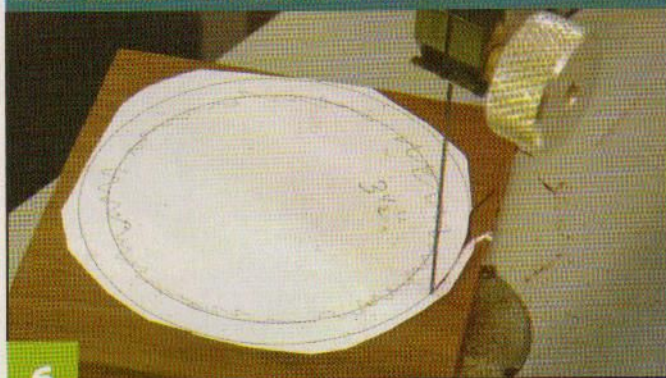
Attach the bottom and cut the outside of the box. Glue and clamp the box and bottom blanks together, keeping the grain aligned. Let the glue dry. Then, cut the perimeter of the box pattern, and sand the box smooth. Invert the box on the box pattern and check the roundness. Shape by sanding, if needed.



5

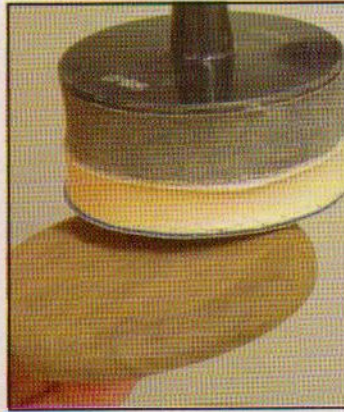
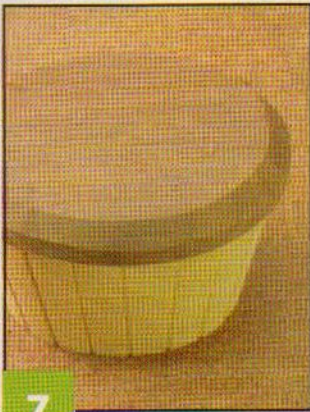
Cut the ridges. Invert the box, and attach the segmented pattern to the bottom. Insert a #7 spiral blade and tilt the saw table 15°. At each mark, push the wood gently into the blade, move it slightly away from you, and then pull the piece away from the blade. This creates the ridges.

CUPCAKE: MAKING THE LID

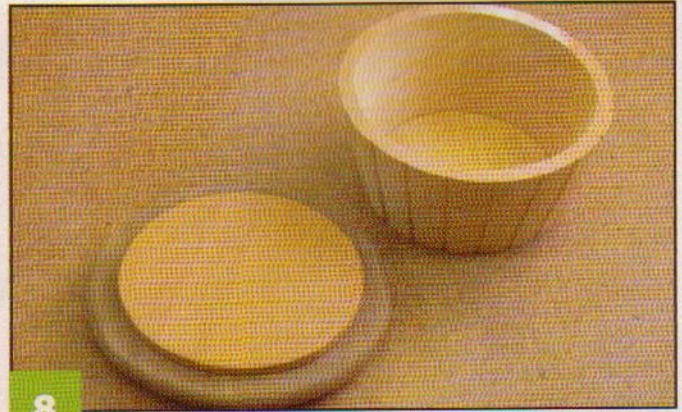


6

Cut the lid. Draw a 3½" (89mm)-diameter circle on the walnut lid blank. (The circle should be about ¼" (6mm) larger than the diameter of the top of the box.) Cut the circle with the saw table level.

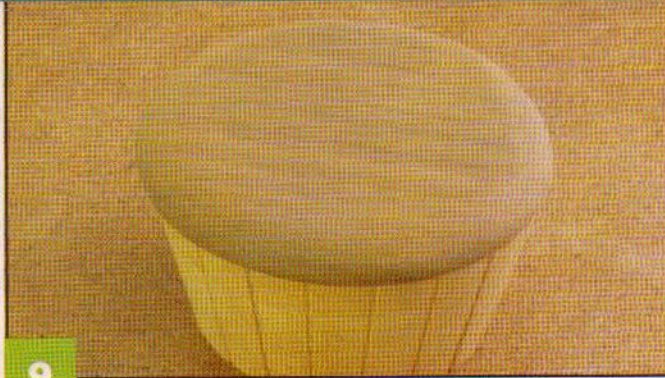


7 **Shape the lid.** Sand or cut a 45° bevel from the top of the lid to about halfway down the side. Sand and shape the top and bottom edges of the lid.



8 **Attach the lid liner.** Check the fit of the lid liner; it should fit easily into the opening of the box without too much play. Adjust by sanding if needed. Invert the lid and place the lid liner on top. Invert the box over the liner to establish its location, and mark it with light pencil marks. Glue and clamp the liner in place, using the marks as guides. Make sure the liner doesn't slip out of position.

CUPCAKE: FINISHING THE BOX



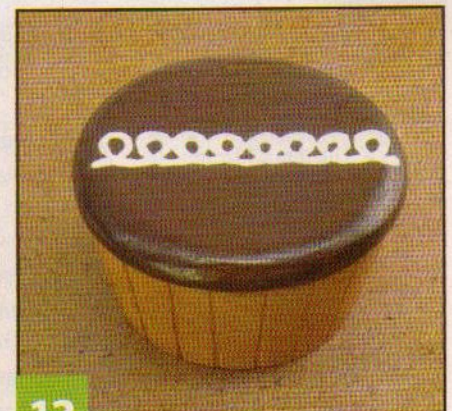
9 **Sand the box and lid.** Sand the box and lid with progressively finer grits of sandpaper up to 220 grit. Soften the upper and lower edges of the box. Seal all of the surfaces with shellac. Apply two additional coats of shellac to the top of the lid so you can correct any errors you make when piping the loops. When the shellac is dry, sand the pieces until smooth with 320-grit sandpaper or a sanding mop.



10 **Practice piping the loops.** Make several copies of the pattern and tape waxed paper over them. Tap a fabric-paint bottle on its point to remove air bubbles. Squeeze out a small amount of paint to fill the tip, and wipe the tip clean. Apply paint along the pattern lines, holding the bottle at a slight angle.

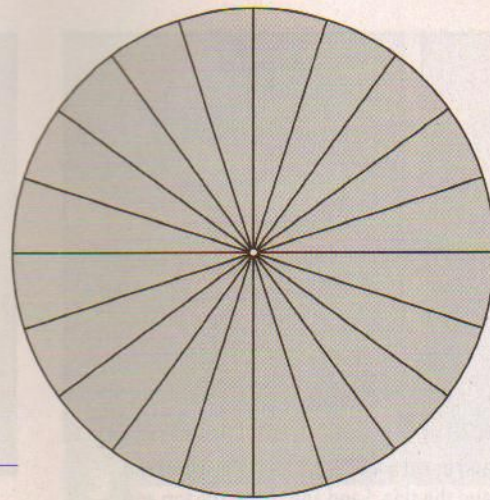
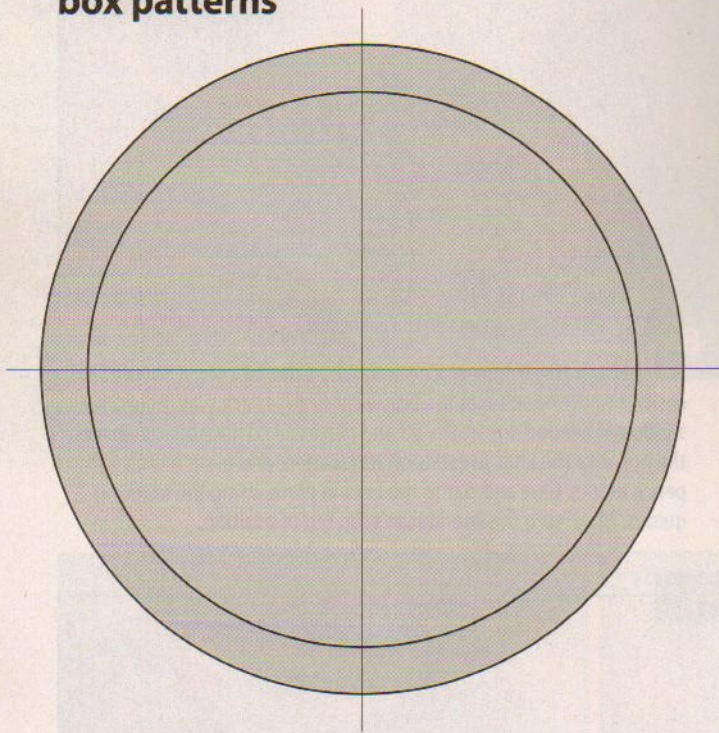


11 **Pipe the loops on the lid.** Draw a white pencil line across the lid, positioned so that the pattern will be centered when the bottoms of the loops touch the line. Using the pattern as a guide, draw 7 or 8 loops across the lid with the white pencil. Apply the fabric paint. Use a damp paintbrush to remove mishaps when wet, or scrape them off when dry. Let the paint dry thoroughly.

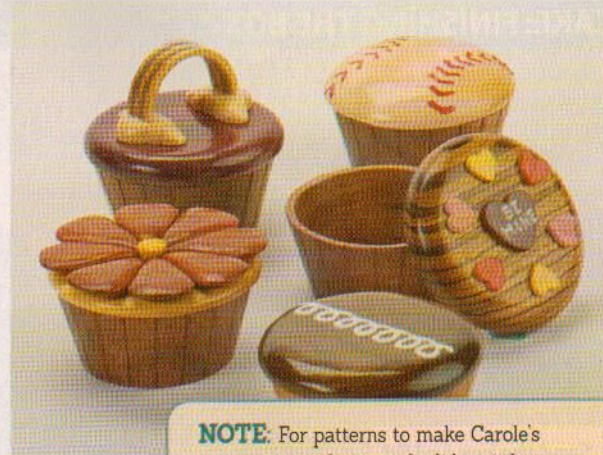
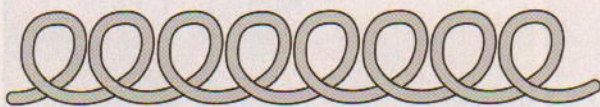


12 **Finish the box.** Apply several coats of clear spray lacquer to the lid and to the outside of the box. If desired, line the box bottom with a circle of velvet.

Cupcake box patterns



© 2015 Scroll Saw Woodworking & Crafts



NOTE: For patterns to make Carole's variations on the cupcake lid, visit her blog: scrollsawbowls.blogspot.com.

Materials & Tools

Materials:

- Mahogany, 1¼" (32mm) thick: box, 4" x 4" (102mm x 102mm)
- Mahogany (match tone of box), ¼" (6mm) thick: bottom, 4" x 4" (102mm x 102mm)
- Walnut, ½" (13mm) thick: lid, 4" x 4" (102mm x 102mm)
- Wood of choice, ⅛" (3mm) thick: lid liner, 4" x 4" (102mm x 102mm)
- Spray adhesive: repositionable
- Wood glue, such as Weldbond
- Steel wool: 0000
- Sandpaper
- Spray shellac
- Fabric paint: white

- Spray lacquer
- Velvet (optional): 2⅜" (60mm) dia.

Tools:

- Blades: #5 premium skip-tooth, such as FD Polar; #3 reverse-tooth; #7 spiral
- Awl
- Pencil: white
- Drill with bits: ⅛" (2mm) dia., 2⅜" (60mm) Forstner bit (optional)
- Press or clamps and boards (for gluing)
- Sanders: assorted types
- Paintbrush

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



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.foxchapelublishing.com.

Gallery Artists

Special thanks to our gallery artists for sharing their versions of wooden cupcake boxes. Contact them via their websites or e-mail addresses.

Michele Parsons, www.parsonswoodartistry.com

Judy Gale Roberts, intarsia.com

John Nelson, noslenaj35@gmail.com

Judy Peterson, www.fantaminals.com



Rubber Band Racing Boats

Simple toy paddleboats are powered by a rubber band

By Paul Meisel

Kids—and those who are kids at heart—will love winding the paddles on these boats and watching them motor across the water. Whether in the bathtub or at a local pond, swimming pool, or beach, all you have to do is wind the paddle to watch the boats go!

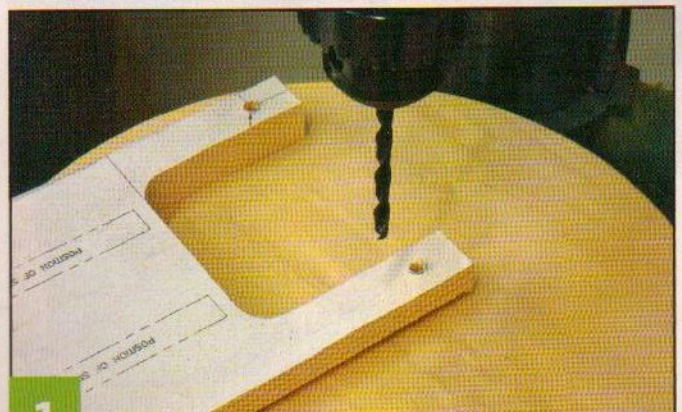
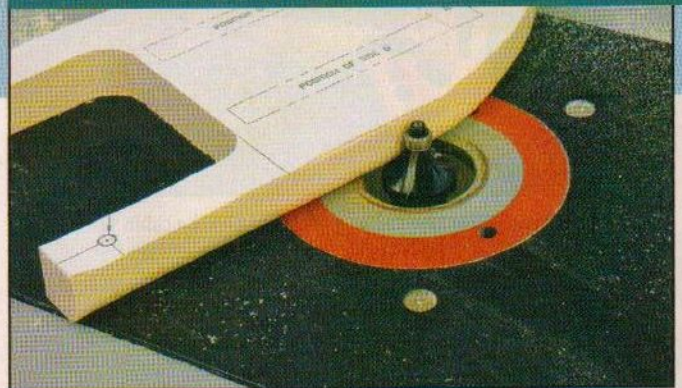
These designs all use cross-lapped paddles sized to deliver maximum cruising distance using the rubber band specified. The cabins are positioned to add a slight amount of weight to the front of the hull to keep the boat level as it speeds along.

Getting Started

The blanks for the cabins and the paddles are listed as $\frac{1}{2}$ " (13mm) thick, but you can substitute $\frac{7}{16}$ " (11mm)-thick pine, which I found more readily available.

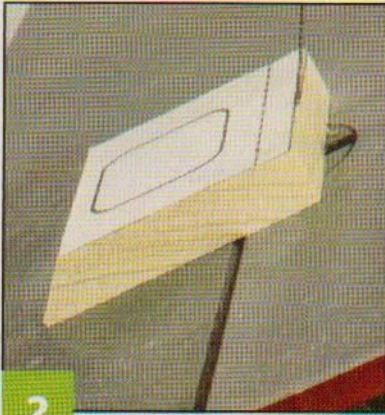
Cut the blanks to the rough sizes in the Materials list. Attach the patterns to the blanks with spray adhesive.

BOAT: MAKING THE TOY



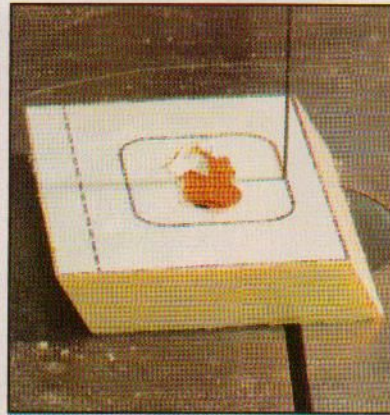
1

Make the hull. Cut the hull to shape. Use a $\frac{3}{8}$ " (10mm)-radius roundover bit to round the bottom edge of the hull. Drill $\frac{7}{32}$ " (5.5mm)-diameter by $\frac{3}{8}$ " (10mm)-deep holes for the axle pegs. Add a little glue, and tap the axle pegs into place with a hammer.



2

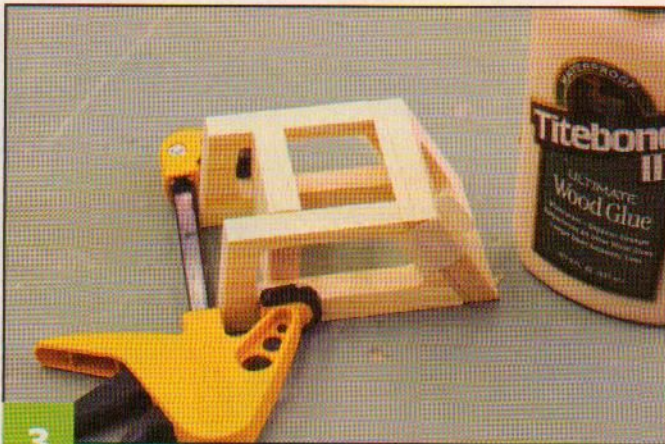
Cut the cabin. The cabin on the boat requires 30° bevels on the top and bottom of the front piece. I used a scroll saw to cut these bevels (tilt the table as shown), but you could use a disc sander to add them. After cutting or sanding the bevels, attach the patterns and cut the top and sides. Remove the patterns.



TIP

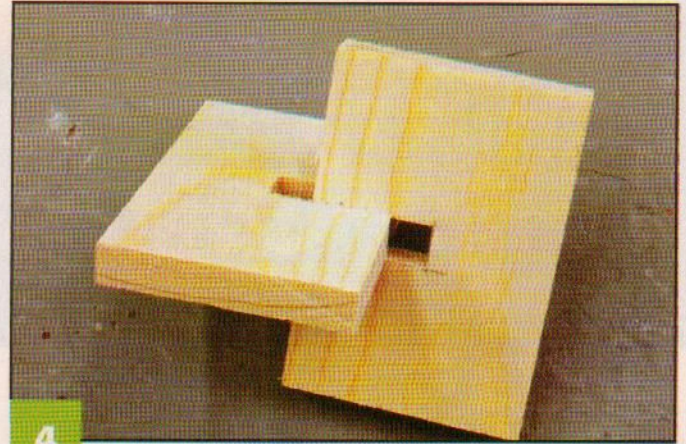
REMOVING PATTERNS

I like to use rubber cement thinner to remove the paper pattern after cutting. It soaks through the paper and dissolves the glue, immediately releasing the paper pattern. If there is any residual adhesive left on the wood, add more thinner and wipe with a rag. Be aware that rubber cement thinner dries quickly, so you must work fast. You can find rubber cement thinner, as well as the handy cone-shaped dispenser pictured, where art supplies are sold.



3

Glue together the cabin parts. To keep the cabin sides parallel, clamp a scrap wood spacer (cut to size) between the cabin sides. Apply water-resistant glue to the cabin front and hold it in place with masking tape until the glue dries.



4

Make the paddles. The paddles are connected using a cross-lap joint. Note the grain direction, and cut the two paddle blanks to size. Measure the thickness of the wood carefully, and lay out the cut lines for the lap joint with a square and a sharp pencil. The fit should be tight, but with enough tolerance so the glue won't squeeze out when you slide the parts together.

BOAT: ASSEMBLING & FINISHING THE TOY



5

Assemble the boat. Apply a coat of good sanding sealer (see Sidebar) on the inside of the cabin. Glue and clamp the cabin to the hull. Paint the cabin, if desired. Then, apply a coat of exterior polyurethane to the entire project.

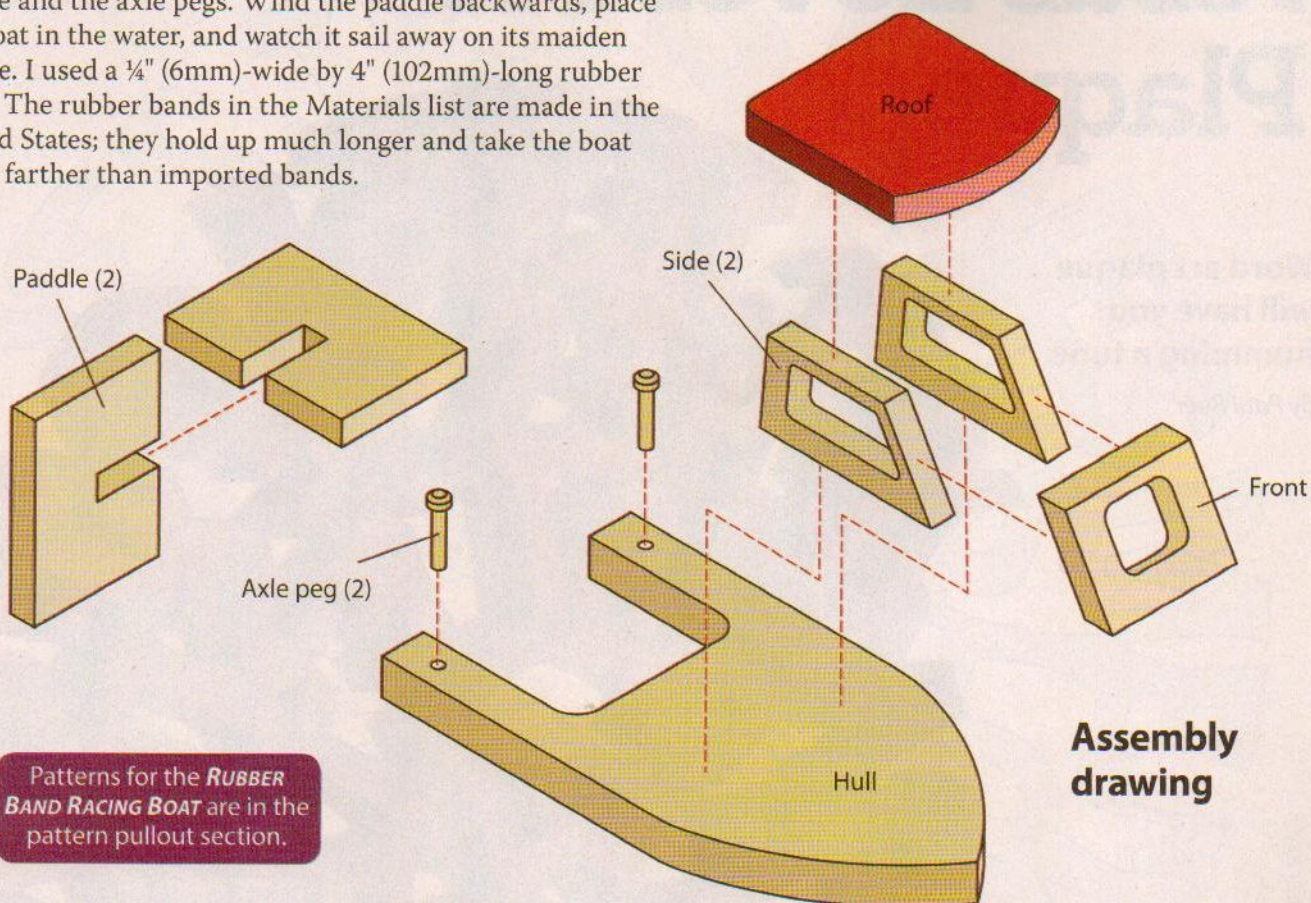
Traditional Sanding Sealer: A Well-Kept Secret

Sanding sealer is a specific type or class of wood sealer. Traditionally, it has been manufactured with a very high solids content, so when it is applied, the finish builds up quickly. It dries rapidly, so you can often sand it just a few hours after application. It also sands rapidly, so just one or two passes with 220-grit sandpaper create an extremely smooth surface that's ready for a topcoat of polyurethane.

You can find the traditional solvent-based sanding sealer at paint stores like Sherman Williams and Benjamin Moore. It is worth visiting one of these specialty stores; the sanding sealer at a hardware store or home center will most likely be a thin, water-based product that lacks the heavy solids content. Read the label carefully before you buy.

Using the Boat

To take your boat for a spin, slip the rubber band around the paddle and the axle pegs. Wind the paddle backwards, place the boat in the water, and watch it sail away on its maiden voyage. I used a ¼" (6mm)-wide by 4" (102mm)-long rubber band. The rubber bands in the Materials list are made in the United States; they hold up much longer and take the boat much farther than imported bands.



Patterns for the **RUBBER BAND RACING BOAT** are in the pattern pullout section.

Assembly drawing

Materials & Tools

Materials:

- Pine board, ¾" (19mm) thick: hull, 5¼" x 10" (133mm x 254mm)
- Pine board, 7/16" (11mm) thick: cabin and paddles, 3½" x 24" (89mm x 610mm) (#1464)*
- Rubber bands: ¼" x 4" (6mm x 102mm) (#7337)*
- Axle pegs: 7/32" x 1½" (5.5mm x 29mm) (#AP1)*
- Sanding sealer
- Polyurethane
- Enamel paint
- Temporary bond adhesive spray (#1447)*

- Rubber cement thinner
- Water-resistant glue

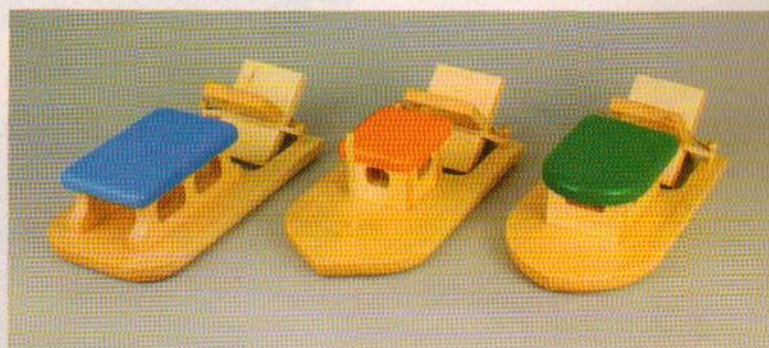
Tools:

- Blades: 12.5 TPI reverse-tooth blade (#446-R)*
- Drill press with 7/32" (5.5mm) twist bit
- Try square
- Hammer
- Router with 3/8" (10mm) roundover bit

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

SPECIAL SOURCES:

Parts marked with an asterisk above are available from Meisel Hardware Specialties. To order parts or to request a catalog, contact Meisel Hardware Specialties, P.O. Box 70, Mound, MN 55364-0070; 800-441-9870; www.meiselwoodhobby.com.

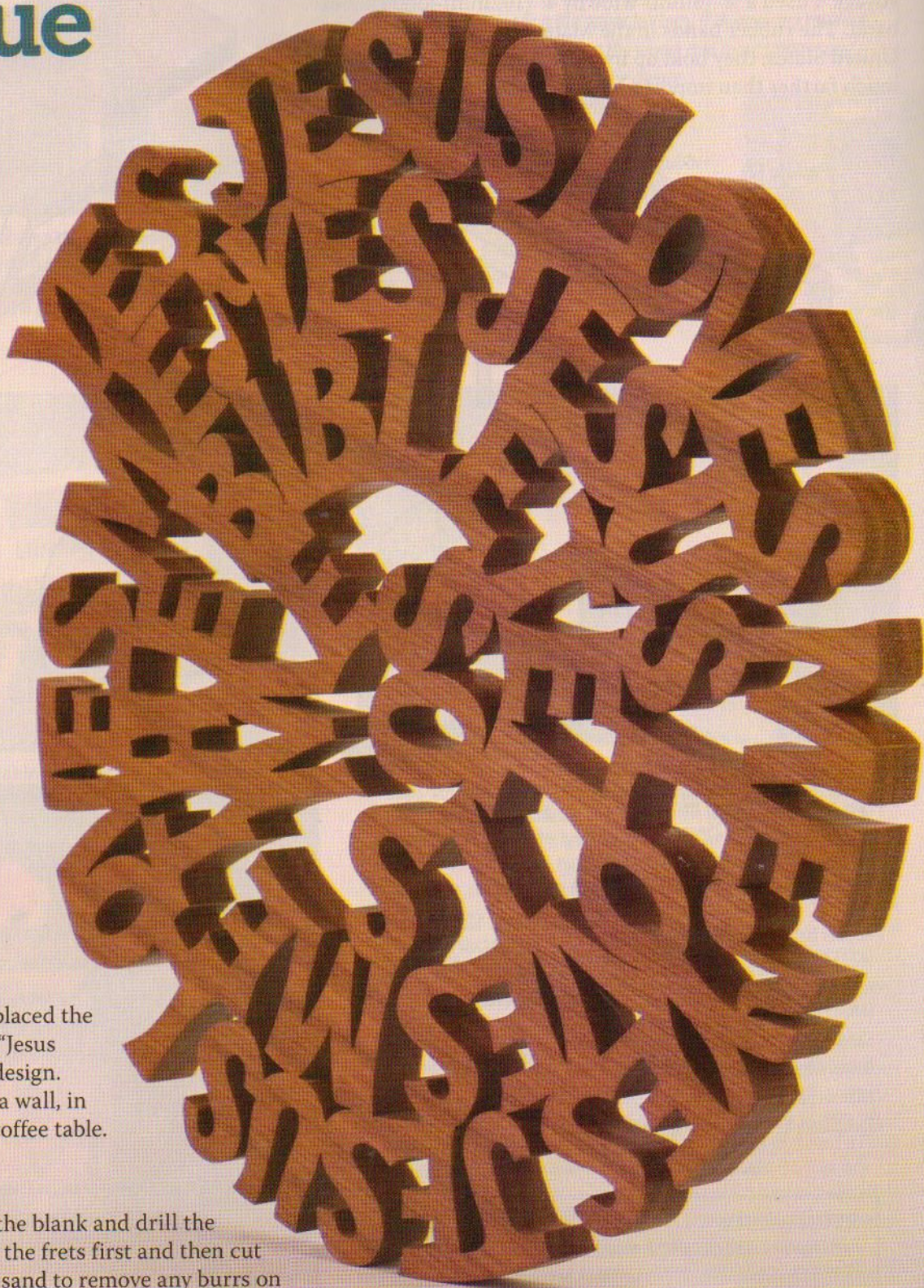


Paul Meisel of Mound, Minn., has designed more than 3,000 woodworking plans. For more ideas of what to build, to order parts, or to request a catalog, contact Meisel Hardware Specialties (see Special Sources, at left).

Jesus Loves Me Plaque

**Word art plaque
will have you
humming a tune**

By Paul Boer

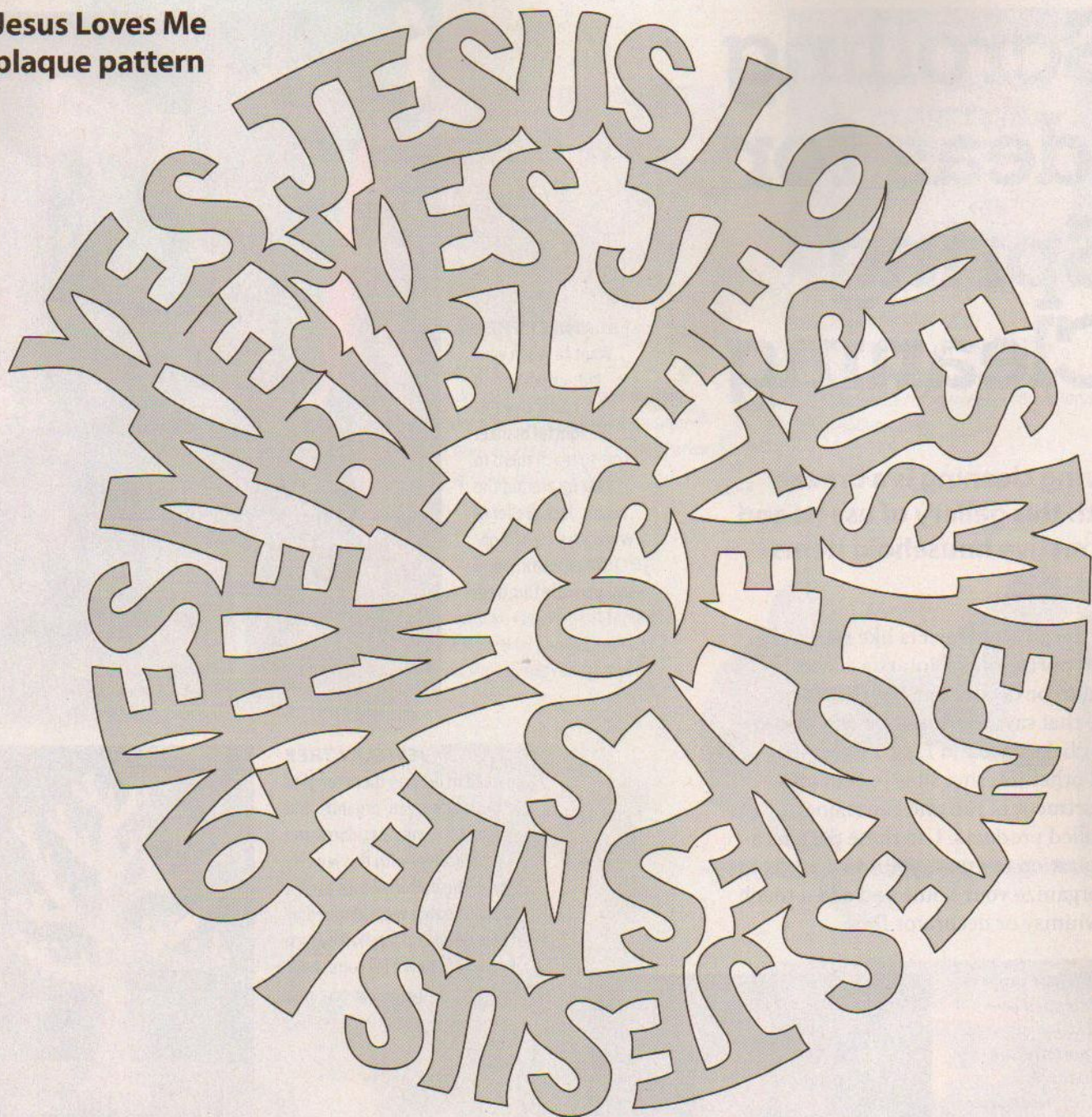


In this project, I've placed the chorus of the song "Jesus Loves Me" in a spiral design. Display the plaque on a wall, in your kitchen, or on a coffee table.

Making the Plaque

Attach the pattern to the blank and drill the blade-entry holes. Cut the frets first and then cut the perimeter. Lightly sand to remove any burrs on the back of the plaque. Apply several coats of Danish oil or clear spray finish.

Jesus Loves Me plaque pattern



© 2015 Scroll Saw Woodworking & Crafts

Materials & Tools

Materials:

- Walnut $\frac{3}{8}$ " (10mm) thick: $7\frac{1}{2}$ " x $7\frac{1}{2}$ " (191mm x 191mm)
- Spray adhesive or Scroll Saw Stick 'N Release Tape
- Sandpaper: 220 grit
- Finish: Danish oil or clear spray

Tools:

- Scroll saw blades: #1 skip-tooth
- Drill with $\frac{1}{16}$ " (2mm)-dia. bit

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



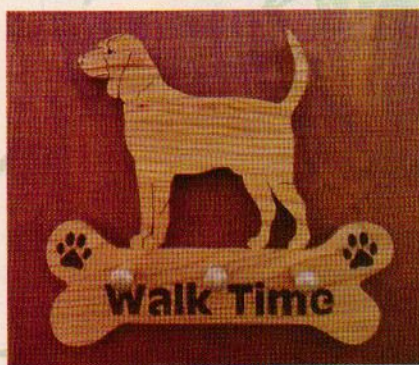
Paul Boer has been designing his own patterns since 1992 when he bought a Hawk scroll saw. He lives in Pella, Iowa, and can be contacted by e-mail at paulanddori@gmail.com.

Scrolling Ideas for Spring Cleaning

Spring cleaning is a breeze with this gallery of useful and attractive household items

Scroll saw projects like fretwork portraits and intarsia scenes tend to be decorative, but there's no rule that says they can't be useful, too. We clicked around Etsy, Pinterest, and other internet sites to find an assortment of fun and functional scrolled products. Use these designs as inspiration to create your own projects to organize your home and add a touch of whimsy or decorator flair.

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



LEASH RACK

When your dog gives you the puppy eyes, you know it's time for a walk! Grab the leash from this convenient rack by William Fort of www.etsy.com/shop/DukesScrollSaw and you're out the door.

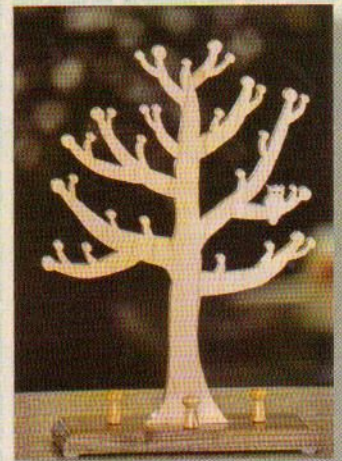
BLANKET TREE

Want to teach your kids organization early? Use this delightful blanket tree to teach them to tidy up around the house. Jack Waller of www.etsy.com/shop/RagamuffinWood Design made this tree.



JEWELRY TREE

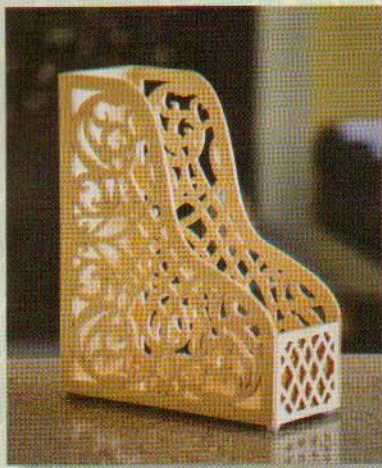
Instead of leaving them tangled on your bureau, organize and display your necklaces and bracelets with this jewelry tree. The bottom knobs are for rings. The tree was designed by Steve Good and scrolled by Rich Brown of www.etsy.com/shop/BrowniesWoodcrafts.



MAIL CADDY

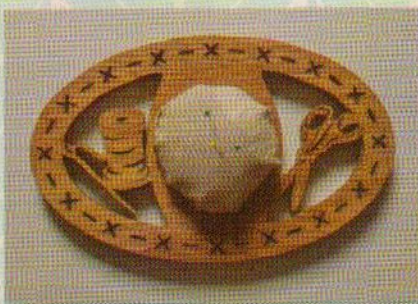
Keep mail organized—or at least all in one place—with this mail caddy. Designate the hooks for keys, scarves, or purses for more easy organization. Leldon Maxcy scrolled this mail caddy; visit him at www.etsy.com/shop/LeldonsScrollsawing or www.yellahammerwoodworks.us.





MAGAZINE HOLDER

Find a place for your favorite magazines with this classy magazine holder, designed by Steve Good and scrolled by Rich Brown of www.etsy.com/shop/BrowniesWoodcrafts.



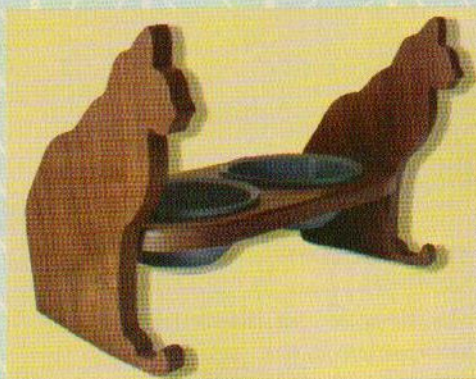
PINCUSHION

This fretwork pincushion is for the cluttered crafter in your life. The pattern was designed by Keith Fenton and scrolled by Charles Parker of www.etsy.com/shop/StitchNsaw.



SOCK HANGER

Keep track of the socks missing their significant other with this clever hanger by Justin Selzler of www.etsy.com/shop/JBEKwoodworking.



CAT FEEDER

Make your cat feel like a queen with an elevated cat feeder designed by Sheila Landry of www.sheilalandrydesigns.com.



MUG RACK

Clean and update your kitchen with this stylish mug rack by Jack Waller of www.etsy.com/shop/RagamuffinWoodDesign.



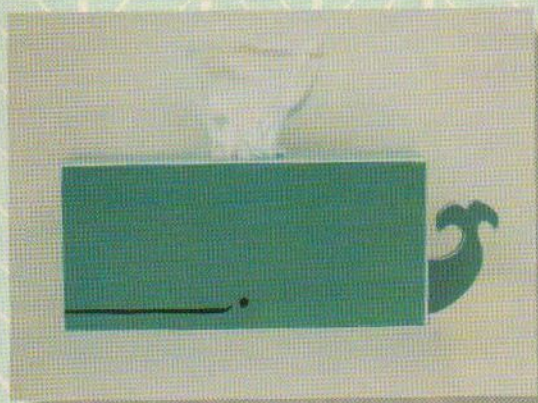
GROCERY BAG CARRIER

Make shopping trips fun and easy with this grocery bag carrier. The carrier was designed by Steve Good and scrolled by Scott and Deb Ward of www.etsy.com/shop/PAWCO.



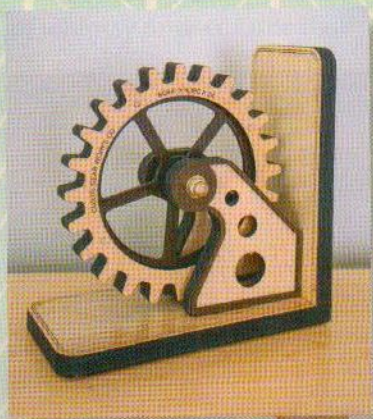
TABLET STAND

Look, Mom—no hands! Enjoy reading, playing games, or shopping on your tablet with this hands-free tablet stand by Sue Mey of www.scrollsawartist.com.



TISSUE HOLDER

Still fighting a winter cold? Feel better with this adorable whale tissue holder by Sparkly Pony of www.sparklypony.com.



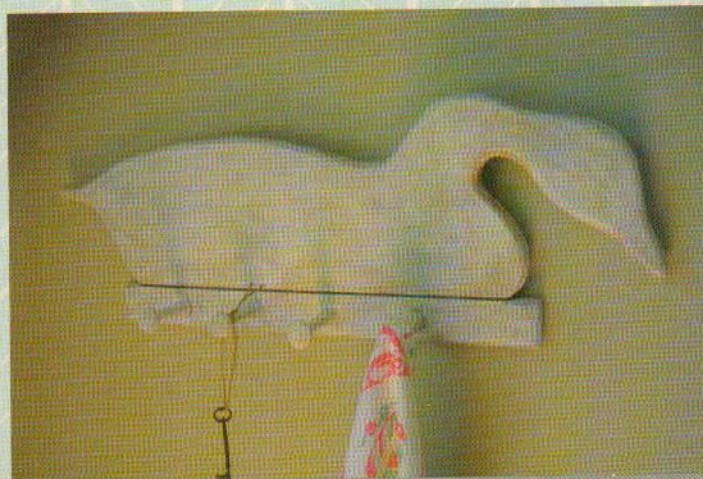
BOOKENDS

Display your favorite books with these adorable bookends designed by Cindy and Curt Austin of www.etsy.com/shop/graphicspaceswood.



RECIPE BOX

Get your recipes organized once and for all with a covered recipe basket. Debra Harnish of www.etsy.com/shop/BasketsByDebi and www.basketsbydebi.com scrolled this box, which doubles as a holder while you cook.



PEG RACK

Perfect for a hallway or a kid's room, this peg rack will keep jackets, scarves, and hats organized. Corinne Hodgson of www.etsy.com/shop/Untried sells the rack.

Key Hanger



Never lose your keys again with this handy hanger

By Sue Mey
Cut by Leldon Maxcy

Ever had to rush out the door to an appointment or meeting, only to find that your keys aren't where they're supposed to be? The search takes forever and inevitably makes you late. Avoid that agony by making this useful hanger and placing it near the door. Simply hang your keys on your way in, and you'll always be ready to leave.

Making the Key Hanger

Apply blue painter's tape to the blank, and attach the pattern with spray adhesive. Drill blade-entry holes. Cut the frets first, and then the perimeter of the design. Remove the pattern, sand the key hanger, and apply a finish; I use clear spray lacquer and Danish oil. Let the hanger dry, and install four gold cup hooks.

Materials & Tools

Materials:

- Cherry, $\frac{3}{4}$ " (19mm) thick: 7" x 11" (178mm x 279mm)
- Painter's tape
- Spray adhesive
- Sandpaper
- Finish: clear spray lacquer; Danish oil
- Cup hooks: 4 each gold

Tools:

- Blades: #2, #5
- Drill with assorted small bits

Pattern for the **KEY HANGER** is in the pattern pullout section.

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



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

Design Your Own Cutting Board



Use these easy techniques to make an original pattern

By Jeff and Dayle Sullivan Taylor

Cutting boards are always a big hit with friends and family because they're useful and attractive. Now you can design your own with my easy methods for creating a pattern. I've included two methods in this article; the first uses tracing paper and the second uses photo-editing software.

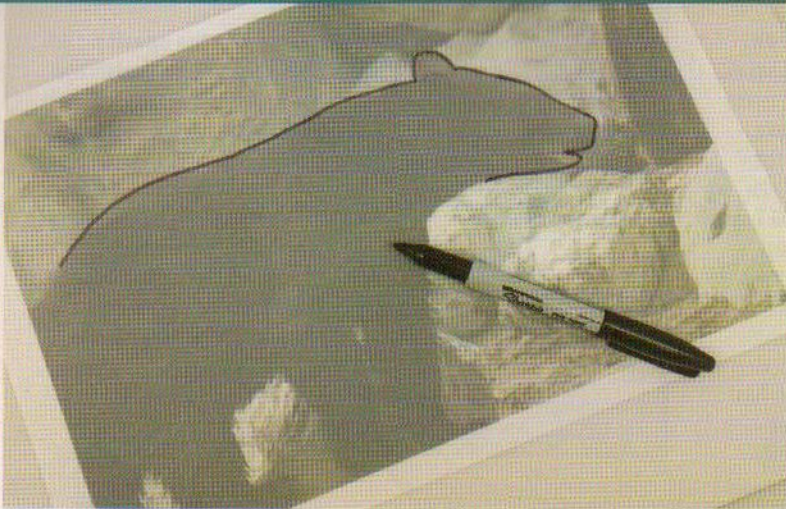
I used GIMP for the second method; it is similar to Photoshop, but free. You can download the program at www.gimp.org. My instructions are specific to Photoshop and GIMP, but you should be able to use the same steps for most programs. *Note: I've added Photoshop instructions in parentheses when they differ from GIMP.*

Designing a Cutting Board

As you design your cutting board, decide whether you want it to be decorative or functional. If you want a functional cutting board, do not include thin details, as thin cuts affect the structural integrity of the board and create areas for bacteria to grow.

Try to keep the design fairly solid with a large surface area. I generally make my designs fit on a standard 8.5" by 11" (216mm by 279mm) page with the smallest margins possible. It is fairly easy to find lumber that fits these measurements.

METHOD 1: TRACING



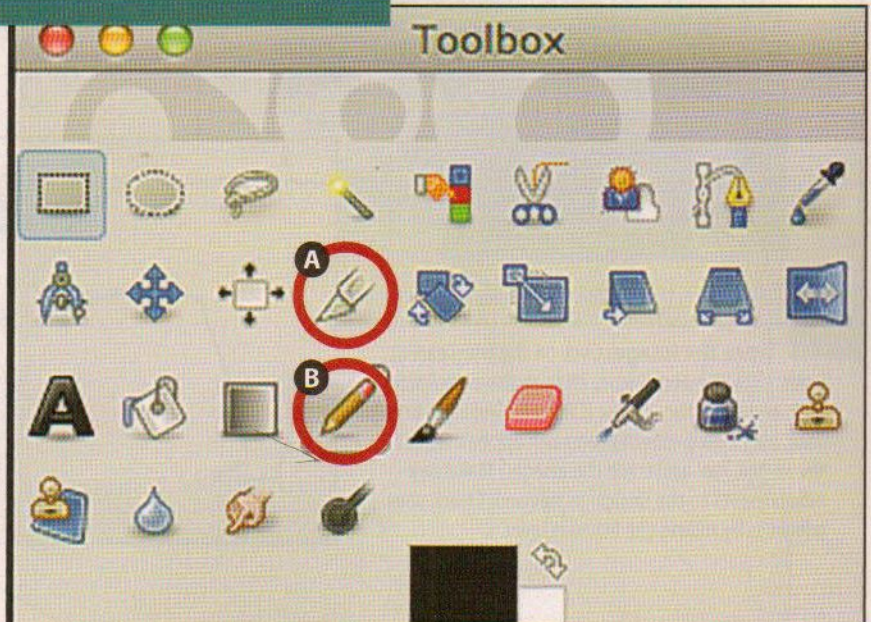
Select the photo you want to use. Make an enlarged black and white copy of the photo. Try to center the subject and make it big enough to cover the whole paper.

Use a pencil to trace the desired design onto tracing paper. Focus on tracing the outline, leaving out tiny details. Adjust the design as needed so the subject will create a large, workable area.

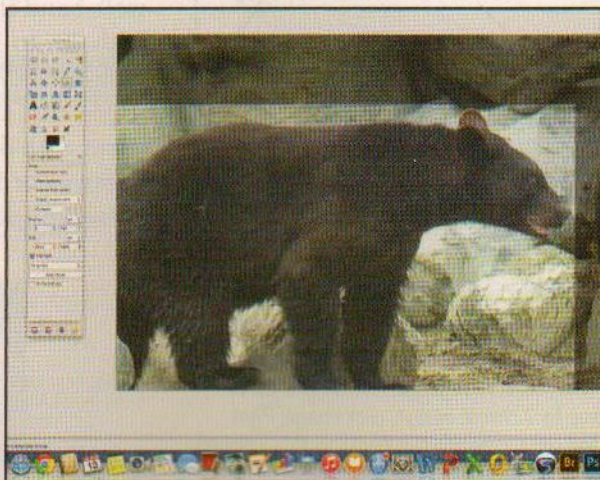
Make a black and white copy of your new design, and get ready to start scrolling!

METHOD 2: GIMP/PHOTOSHOP

The GIMP toolbox (at right) can be located at Windows, Toolbox. The main tools you'll need for this method are the Crop tool (A) and the Pencil tool (B).

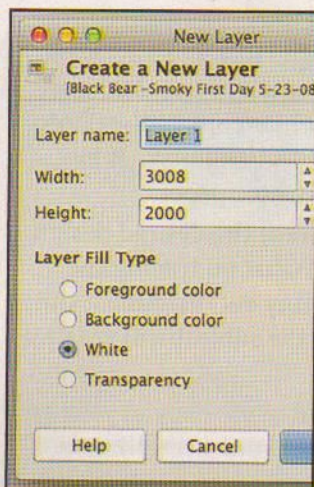


The Photoshop toolbox (at left) appears at the top left corner of the image window. The tools are the same: the Crop tool (A) and the Pencil tool (B). *Note: If you don't see the Pencil tool, find it in the drop-down menu under the Brush tool.*

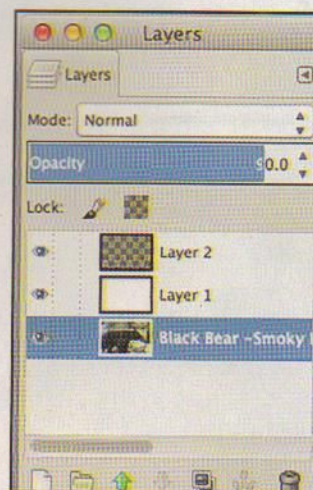


1 Crop the image.

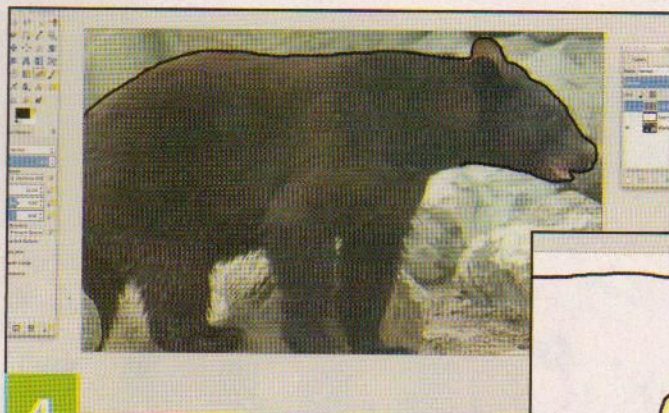
Open an image; this will be the background image and should remain as the bottom layer. Crop the image to include only the part you want to base your design on: drag the Crop Tool, which looks like an X-ACTO knife (cropping angles), to surround the image, and then hit enter.



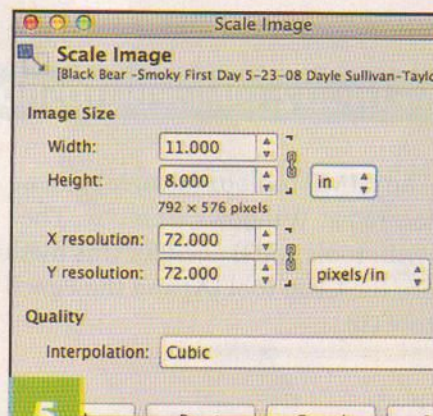
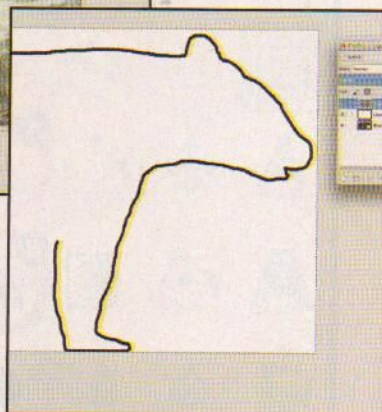
2 Create two new layers by clicking Layer, New Layer. When you make the first new layer, make the Layer Fill Type White. (Make the first layer, click Edit, and then Fill; change the Contents to Color and choose white.) Set the Fill Type of the second layer to Transparent. To view the layers, click Windows, Dockable Dialogs, and Layers (Window, Layers). Turn the white layer off while drawing by clicking the eye icon next to the layer. Turn this layer back on to check the progress of the design drawing.



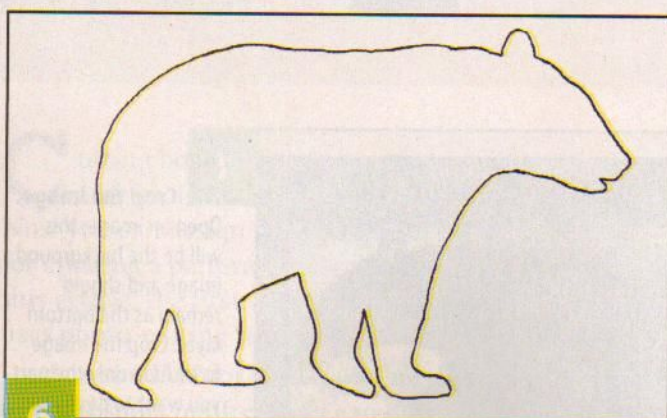
3 Adjust the opacity. Click on Layer 0 (the original image) and adjust the opacity, which is located directly above the layers (in the upper right corner of the layer menu), to somewhere between 85% and 90%. This helps you see what you are drawing when the image has a lot of dark areas in it. *Note: You may have to unlock the layer by clicking on the padlock.*



4 Trace the image. Click on the transparent layer. Click the pencil icon, change the pencil size to 1, and trace the image. (Click and hold the Brush Tool, and a drop-down menu will appear. Select the Pencil Tool and trace the image.) Make any adjustments to the design as needed. Check your progress by hiding the bottom layer.



5 Size the image. To create more surface area, go to Image, Scale Image (Image, Image Size), and then deselect Constrain Proportions, which is the chain icon between the Width and Height fields. Try playing around with the height and width fields. Undo changes by going to Edit, Undo.



6 Save the pattern. Save the editable file by clicking File, Save As. Then, save the image as a JPG by clicking File, Export, All Export Images drop-down, JPEG (File, Save; change the Format to JPG). To make an 8.5" by 11" (216mm by 279mm) design, click Image, Print Size (Image, Image Size) and simply change the Width to 11" (279mm) and the Height to 8.5" (216mm). Now print your new design!

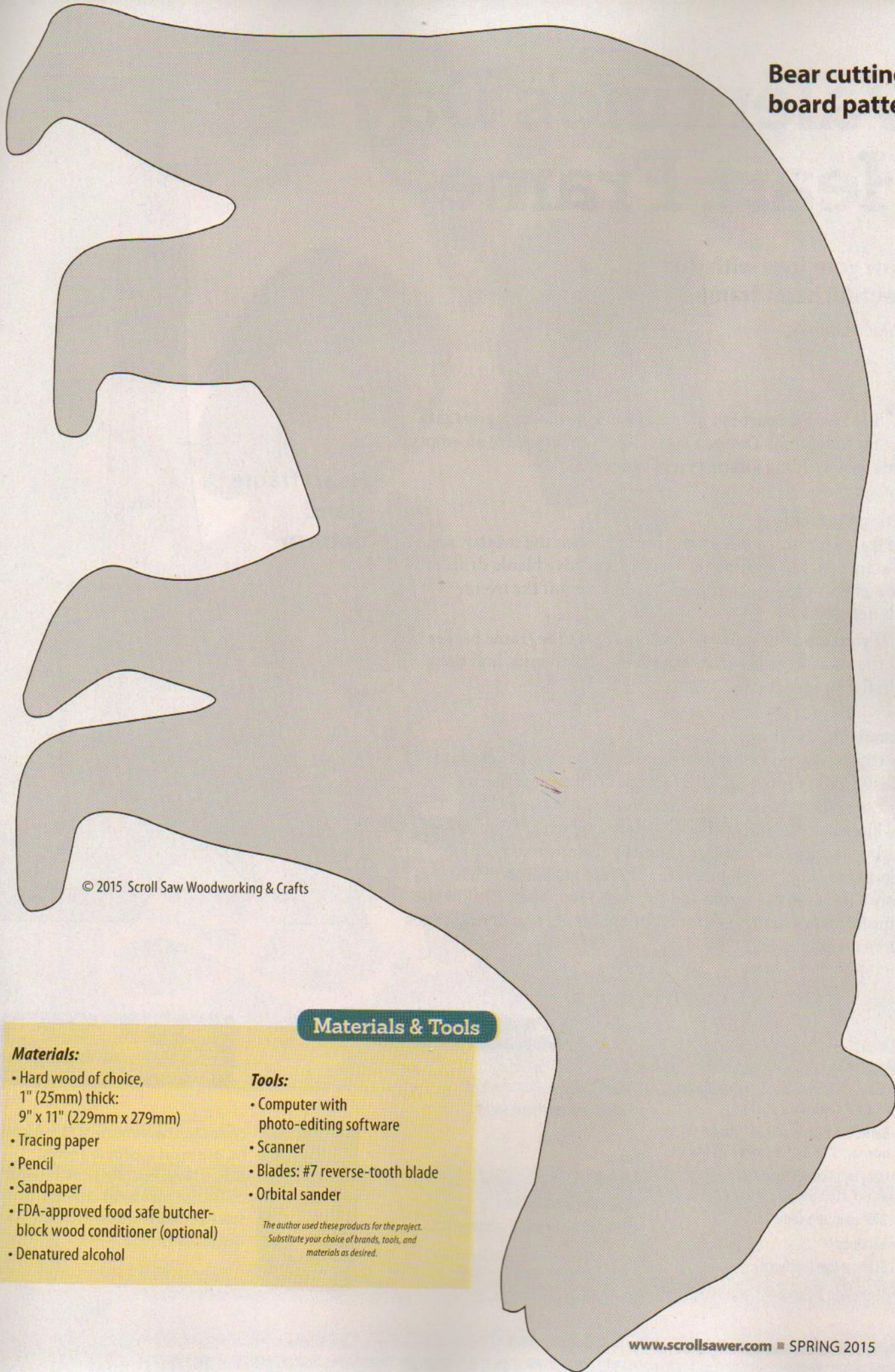
Cutting the Board

Choose a hard, dense wood with tight grains for cutting boards; hard maple, cherry, and walnut work well. Sand the top and bottom of the blank, starting with 80- to 120-grit sandpaper and progressing to 220- to 320-grit. Transfer the design and cut. Sand the edges, top, and bottom until smooth. Wipe the board clean with denatured alcohol. Use natural oil and beeswax or butcher-block wood conditioner to help preserve and protect the wood.



Dayle lives with her husband Jeff in Tewksbury, Mass. They have been married for 22 years. They have a small shop on www.etsy.com (Jo-Be-Mac Studios) and can be followed on Facebook, Twitter, and Pinterest. Contact them at jobemacstudios@verizon.net.

Bear cutting board pattern



© 2015 Scroll Saw Woodworking & Crafts

Materials & Tools

Materials:

- Hard wood of choice, 1" (25mm) thick; 9" x 11" (229mm x 279mm)
- Tracing paper
- Pencil
- Sandpaper
- FDA-approved food safe butcher-block wood conditioner (optional)
- Denatured alcohol

Tools:

- Computer with photo-editing software
- Scanner
- Blades: #7 reverse-tooth blade
- Orbital sander

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

Valentine's Day Heart Frame

Show your love with this beautiful heart frame

By Gloria Chandler

Filled with a heart-felt photo, this frame makes a great gift for Valentine's Day or a special anniversary. Give an empty frame as a wedding gift to a lucky couple.

Cutting the Frame

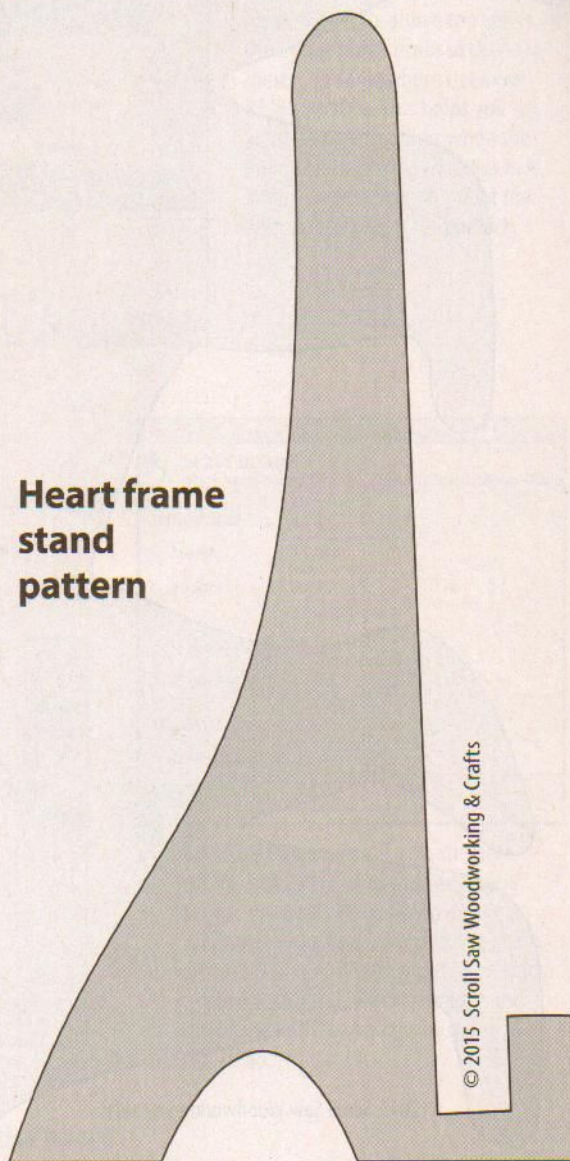
The frame has three pieces: the frame backer, the overlay, and the stand. Attach each pattern to its respective blank, drill blade-entry holes, and cut. Sand any fuzzies off the overlay with needle files.

If you decide to stain the project, dry-fit the frame backer and the stand together first. Make any adjustments, and then stain the two pieces.

Assembling the Frame

Lay the overlay on top of the frame backer as shown. Be sure to leave room for the lip of the stand. With the overlay in position, place blue painter's tape along the bottom of the "L" and alongside the tail of the "e." Apply glue to the back of the overlay, and use the painters' tape as a reference to position it correctly. Apply even pressure until the glue dries. Then, apply a finish to the frame and the stand separately. Follow the manufacturer's guidelines for additional coats and drying times before assembling.

Heart frame stand pattern



Materials & Tools

Materials:

- Oak, $\frac{3}{8}$ " (10mm) thick: frame backer, 8" x 10" (203mm x 254mm)
- Baltic birch plywood, $\frac{1}{8}$ " (3mm) thick: overlay, 8" x 10" (203mm x 254mm)
- Oak, $\frac{3}{4}$ " (19mm) thick: stand, 4" x 6" (102mm x 152mm)
- Blue painter's tape
- Sandpaper
- Stain or dye (optional)

- Wood glue
- Finish: polyurethane spray

Tools:

- Blades: #4 reverse-tooth
- Drill with assorted bits
- Needle files or small sanding sticks

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

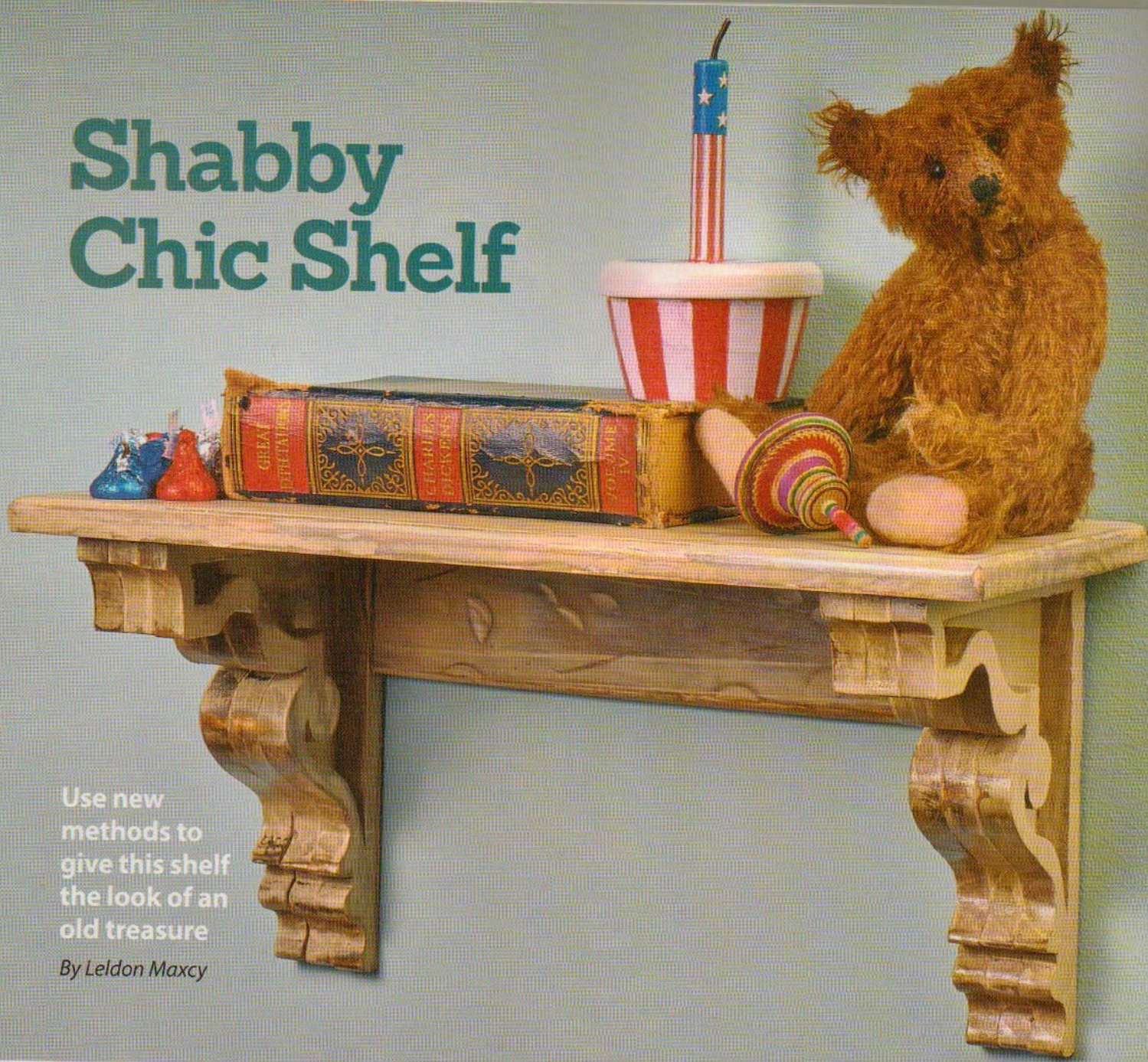
Additional patterns for the VALENTINE'S DAY HEART FRAME are in the pullout section.



Gloria Chandler is a native of Philadelphia, Pa., and enjoys scrolling as a hobby. Gloria's "Amazing Grace" fretwork earned an Editor's Choice award in the 2009 Scroll Saw Woodworking & Crafts Best Project Design Contest.



Shabby Chic Shelf



Use new methods to give this shelf the look of an old treasure

By Leldon Maxcy

Shabby chic style seems to be all the rage these days—items that look old and worn are popping up in stores everywhere. Rather than buying these popular items, make your own! Try your hand at this technique with this shelf. Or, if you prefer a more classic look, use a nice piece of wood and skip the distressing process.

Selecting the Wood

I used pine construction lumber from a home improvement center for my shelf. I planed most of the stock to $\frac{1}{2}$ " (13mm) thick, but you could easily use thicker wood for the same effect. Adjust the dimensions of the shelf and back support to accommodate the thicker wood. I planed the back support to $\frac{3}{8}$ " (10mm) thick.

Cutting the Pieces

Stack the blanks as desired. Make several copies of the pattern and attach them to the blanks or stacks. Align the square edges of the bracket pieces with the ends of the blanks to reduce the time spent cutting straight lines. Drill the blade-entry holes and cut the frets. Then, cut the perimeters of the pieces.

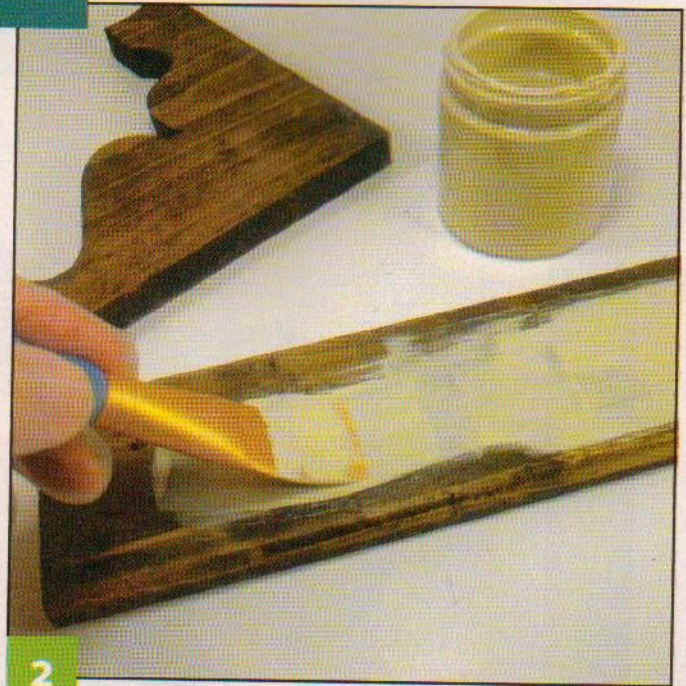
I cut the shelf and back support with a table saw, but you could mark the dimensions on the blanks using a ruler and square. Cut outside the lines with a scroll saw and sand up to the lines.

Remove the patterns, and sand the pieces smooth. Remove the dust with compressed air or a vacuum with a soft brush.

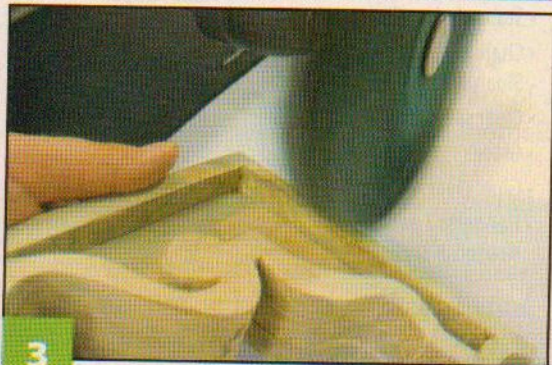
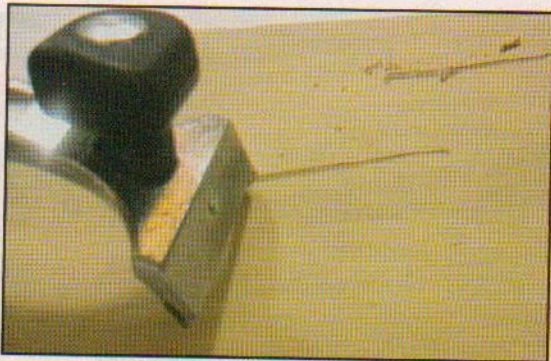
SHELF: FINISHING THE PROJECT



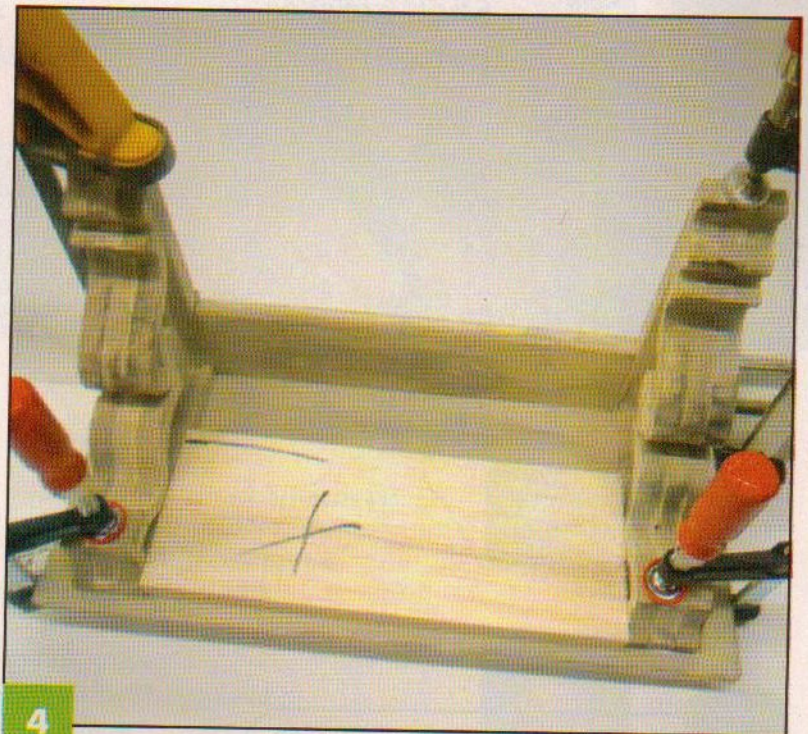
1 **Stain the pieces.** Use an inexpensive brush to apply dark walnut stain to all of the pieces. Apply the stain only to the sides and outer surfaces of the bracket pieces; do not stain the gluing surfaces. Allow the stain to dry overnight.



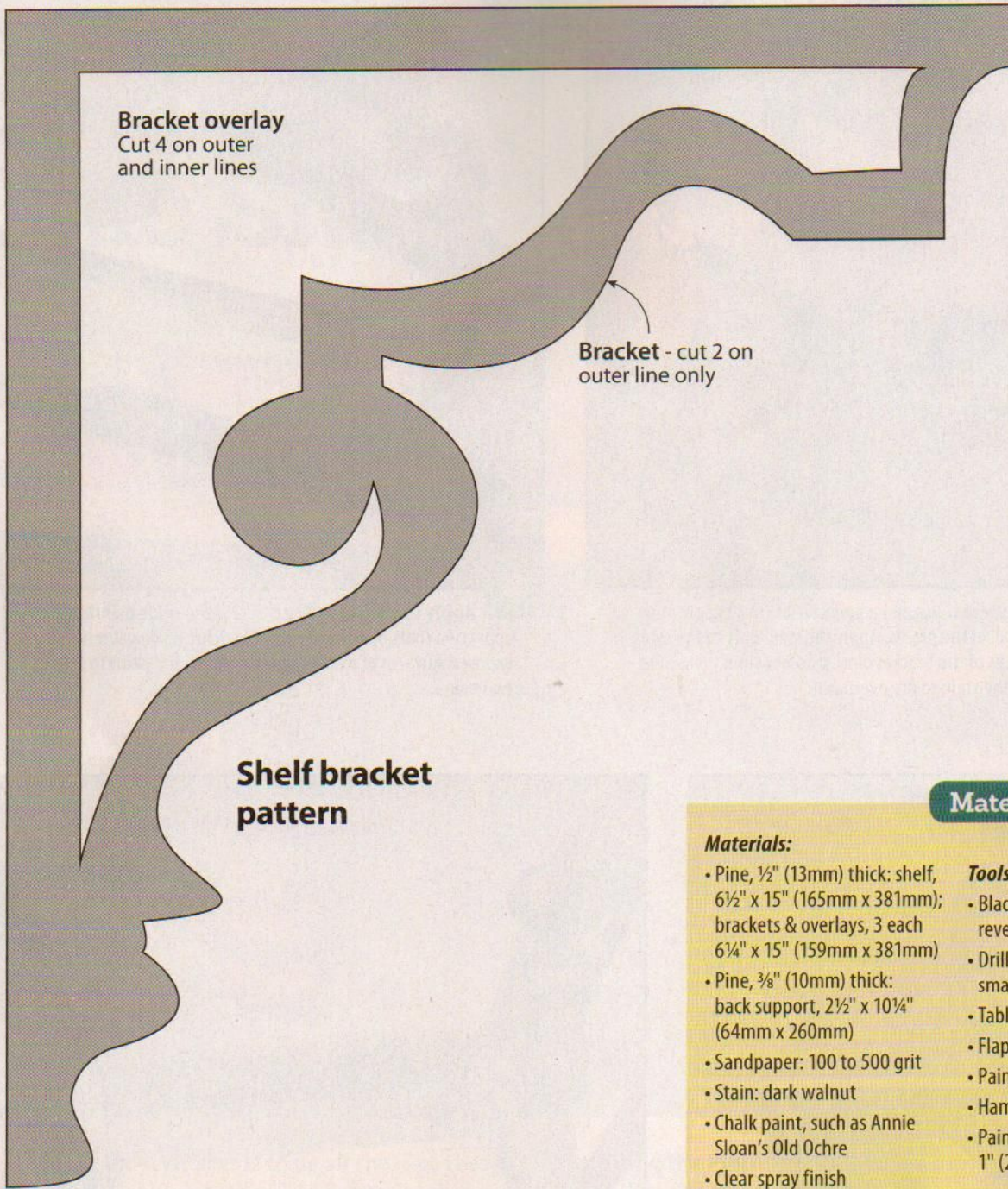
2 **Apply chalk paint.** Use a 1" (25mm)-wide paintbrush to apply two coats of Annie Sloan's Old Ochre chalk paint to the exposed surfaces of all of the pieces. Allow the paint to dry for two hours.



3 **Distress the pieces.** Use any tool you want to make the piece look old. I used a paint scraper, a hammer, and a flap sander as distressing tools. Focus on the places where wear and tear would naturally occur, such as the top and sides. Do as much or as little distressing as you like. Remove any dust.



4 **Assemble the shelf.** Use clear-drying wood glue, and then clamp the bracket pieces together. Then, use the glue to attach the brackets to the back support. Attach the shelf to the top of the brackets and back support. Make sure the top shelf overhangs the brackets evenly. Seal the piece with three coats of acrylic spray finish to protect the chalk paint. Sand between coats with 500-grit sandpaper. Attach two saw-tooth hangers to the back of the shelf.



Bracket overlay
Cut 4 on outer
and inner lines

**Bracket - cut 2 on
outer line only**

**Shelf bracket
pattern**

Materials & Tools

Materials:

- Pine, 1/2" (13mm) thick: shelf, 6 1/2" x 15" (165mm x 381mm); brackets & overlays, 3 each
- Pine, 3/8" (10mm) thick: back support, 2 1/2" x 10 1/4" (64mm x 260mm)
- Sandpaper: 100 to 500 grit
- Stain: dark walnut
- Chalk paint, such as Annie Sloan's Old Ochre
- Clear spray finish
- Gloves
- Glue: clear drying wood
- Hangers: 2 each sawtooth style

Tools:

- Blades: #2, #5, #7 reverse-tooth
- Drill with assorted small bits
- Table saw
- Flap sander
- Paint scraper
- Hammer
- Paintbrushes: 2 each 1" (25mm) wide

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

TIP

KEEPING THE BRACKETS SQUARE

Cut a piece of scrap wood to the same length as the support piece and position it between the brackets near the tip. The scrap helps you hold the brackets in the correct position as you attach the shelf and back support.



Leldon Maxcy resides in Cullman, Ala. He has been scroll sawing since 1997. You can check out more of Leldon's projects on his website, www.leldonscrollsawing.com.

Sports Mania Puzzles

Get pumped for your favorite sports season with these puzzles

By Will Richards



Whether it's the crack of a bat, the swish of a net, or the perfect arc of a football, my baseball, basketball, and football puzzles are the perfect addition to your woodworking collection. Scroll these puzzles with your kids, or give them as gifts to celebrate your favorite sports season. These puzzles are fun, quick projects that will fuel your sports fandom all year long.

Making the Sports Puzzles

Transfer the pattern to the blank. Cut the pieces with a #5 reverse-tooth blade, and reassemble them as you go. Sand the pieces with sandpaper, and then finish them with clear Danish oil.

Materials & Tools

Materials:

- Cherry, $\frac{3}{4}$ " (19mm) thick: basketball and football, 6" x 10" (152mm x 254mm)
- Maple, $\frac{3}{4}$ " (19mm) thick: baseball, 6" x 6" (152mm x 152mm)
- Spray adhesive
- Packing tape
- Finish, such as clear Danish oil
- Sandpaper

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

Tools:

- Blades: #5 reverse-tooth

Patterns for the **SPORTS MANIA PUZZLES** are in the pullout section.



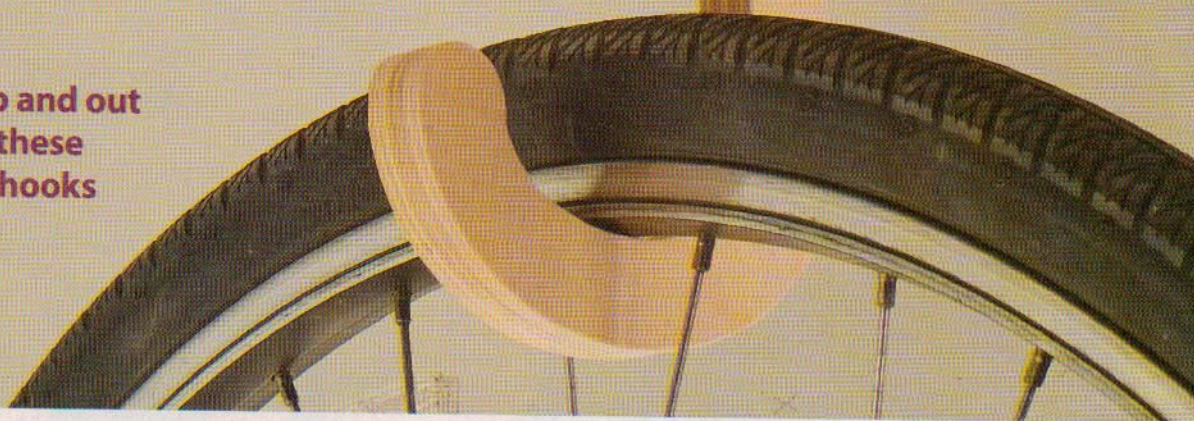
Will Richards has been scrolling since his grandfather gave his first scroll saw to him. When Will is not

woodworking, he enjoys chess, playing percussion and piano in his school band, and track.

Shop-Made Bike Hooks

Get your bike up and out of the way with these strong, durable hooks

By Dave Van Ess



Like many people, we hang bicycles from hooks on the ceiling or wall to keep our garage tidy. For a long time we used commercial hooks, which must be attached to a supporting structure (stud, beam, etc). I got fed up with this limitation and decided to do some research and design my own bike hooks.

I designed these hooks so you can attach them to a stud or position them anywhere on a wall or ceiling using toggle bolts (see Sidebar). These hooks are inexpensive, easy to make, and can be built in a couple of hours. You can also adapt these hooks to hold gardening equipment, hoses, and many other tools.

Cutting the Hooks

These hooks must be made from plywood. Regular wood, particleboard, MDF, or OSB will break under weight and will not work. Baltic birch plywood makes very attractive hooks, but any $\frac{3}{4}$ " (19mm)-thick plywood will do.

Cut the blanks to the size in the Materials list, and attach the pattern to the blank. To make longer

hooks, cut a blank $6\frac{1}{16}$ " (154mm) wide and as long as you want the hook to be. Cut the pattern in half, align the patterns with the top and bottom of the blank, and connect the lines.

Cut along the pattern lines with a #7 reverse-tooth blade. Lightly sand all of the pieces, and round the corners slightly. Drill the holes marked on the base.



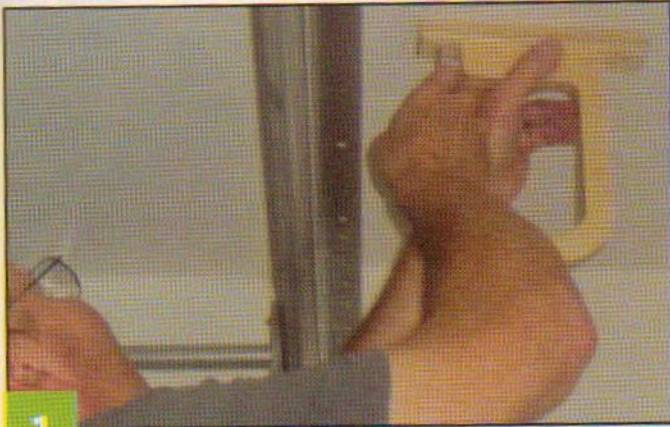
Assembling the Hooks

Apply wood glue to the bottom of the hook and center it on the base. Drive five #6 by $1\frac{1}{2}$ " (38mm)-long flat-head wood screws through the pilot holes in the base

and into the bottom of the hook. Apply a finish, such as paste wax, to seal the wood and prevent road dirt and grease from staining the hooks.

Mounting the Hooks on the Ceiling

Installing a hook on the ceiling is simple. Regardless of the length of the hook, a working load of 120 lbs. (54.5kg) will be evenly distributed between the two mounting bolts in the ceiling.



1

Mark the hole location. Hold the hook and base assembly in place, and use a Phillips screwdriver to mark the location of the mounting holes. Remove the hook assembly and push in with the screwdriver. If you hit wood, use a lag screw to install the hook assembly, and you are done! If you hit open air, move on to the next step.

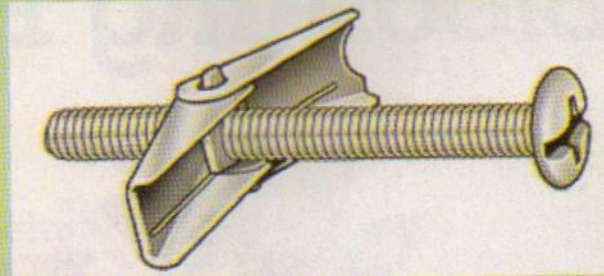


2

Install the toggle bolts. Drill $\frac{3}{4}$ " (19mm)-diameter holes centered on the holes you poked with the screwdriver. Thread the bolt for the toggle bolt through the hole in the hook base, and thread the toggle onto the bolt with the hinge facing the base. Hold the wings of the toggle against the bolt as you feed it through the hole, and allow the wings to spread inside the wall. Tighten the bolt to secure the hook to the ceiling.

Installing the Hooks on a Wall

If you decide to hang your hooks from a wall, know that a hook hanging on the wall exerts a different kind of load on the toggle bolts than the hook hanging from the ceiling. To compensate, increase the length of the base and add more toggle bolts. The installation process is the same as for the ceiling hook.



Toggle Bolts

Toggle bolts are hollow-wall fasteners that support a great deal of weight. According to Powers Fasteners, a $\frac{1}{4}$ " (6mm)-diameter toggle bolt attached to $\frac{1}{2}$ " (13mm)-thick drywall (wallboard) can support a working load of 60 lbs. (27kg). I use two hooks to support the bikes, and I use two toggle bolts to secure each hook (for a total of four toggle bolts). This configuration supports a working load of 240 lbs. (109kg). Further, each bolt has a maximum load of about 235 lbs. (106.5kg) per bolt, which will support occasional higher loads, such as when a teenager decides to use the hooks to do pull-ups.

Pattern for the **SHOP-MADE BIKE HOOKS** is in the pattern pullout section.

Materials & Tools

Materials:

- Plywood, $\frac{3}{4}$ " (19mm) thick: pair of hooks with bases, $6\frac{3}{4}$ " x $8\frac{1}{4}$ " (171mm x 209mm)
- Sandpaper
- Wood glue
- Flat-head wood screws: 10 each #6 by $1\frac{1}{2}$ " (38mm) long
- Paste wax

Tools:

- Blades: #7 reverse-tooth
- Drill with bits: $\frac{3}{32}$ " (2.5mm), $\frac{1}{4}$ " (6mm), $\frac{3}{4}$ " (19mm)
- Screwdriver: Phillips

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 and has been woodworking for more than 30 years. He has introduced more than 200 Cub Scout leaders to the joys of scroll sawing.

Blooming Petal Bowl



Artful sanding gives a delicate shape to this classic stacked-ring bowl

By Carole Rothman

An opening flower is a lovely shape for a bowl. I made this scrolled version from several sets of straight and curved rings, and carved it with sanders to form graceful flaring petals. While this is not my easiest project, the detailed instructions place it well within the reach of anyone with a little bowl-making experience. What makes it exciting is the process of transforming an odd-looking set of rings into an unusual and delicate work of art. While sanding the interior is challenging, working in sections ensures accessibility and results in a bowl that is beautiful both inside and out.

Getting Started

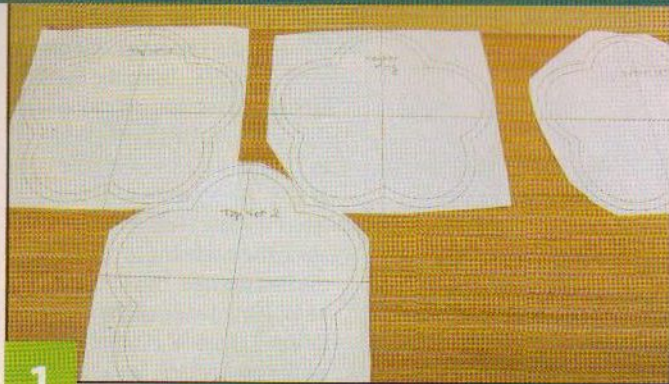
To cut the bowl rings, we will tilt the saw table to a variety of angles. I always tilt the left side of the table down and cut in a clockwise direction. If, for some

reason, you can only tilt the right side of your table down, cut in a counterclockwise direction.

To drill angled blade-entry holes, you will need a simple jig and handheld drill. To make the jig, set the saw table to the desired angle and cut a piece of scrap. Hold a drill bit against the angled end of the wood and drill the holes as needed. Drill all of the angled holes toward the center of the blank.

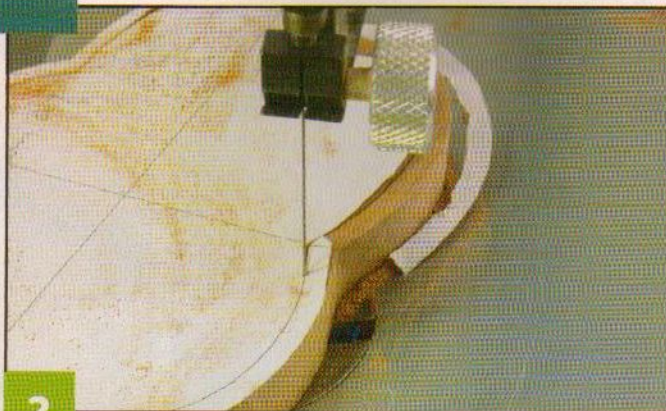
When a project involves multiple blanks, the best way to create the illusion that it has been carved from a single block is to use blanks cut sequentially from the same board. Select one long edge of the board as the top. Place the patterns with the petal marked "top" at that edge and with the horizontal guideline running along the grain. If you are using several pieces of wood, or one wider piece, try to match the grain as closely as possible as you lay out the patterns.

PETAL BOWL: CUTTING THE RINGS



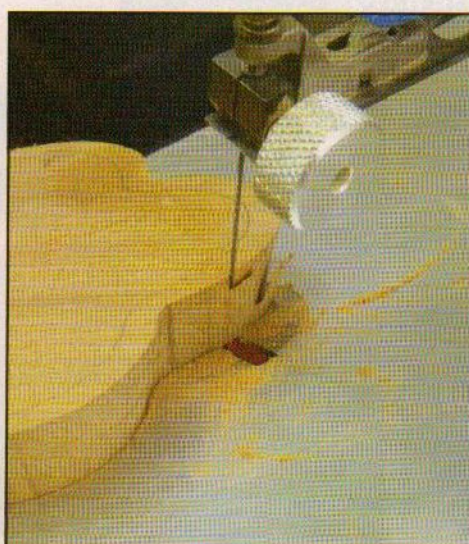
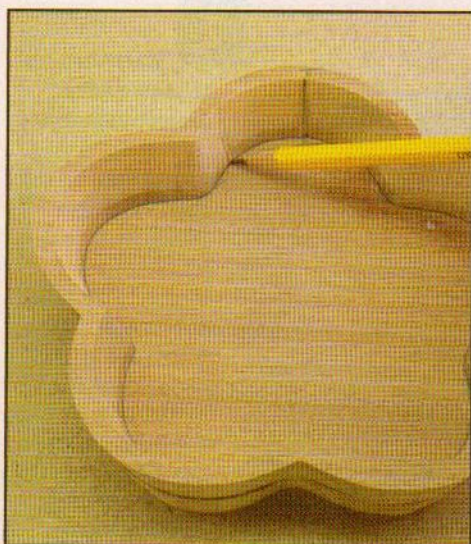
1

Attach the patterns to the blanks. Make four copies of the pattern. Mark them as follows: Bottom Rings, Center Ring, First Top Ring, and Flared Top Ring. Using the horizontal guidelines and "top marks" of the patterns for alignment, place the patterns, in sequence, on the wood. Attach them with temporary-bond adhesive. If you have not already done so, cut the wood into individual blanks.



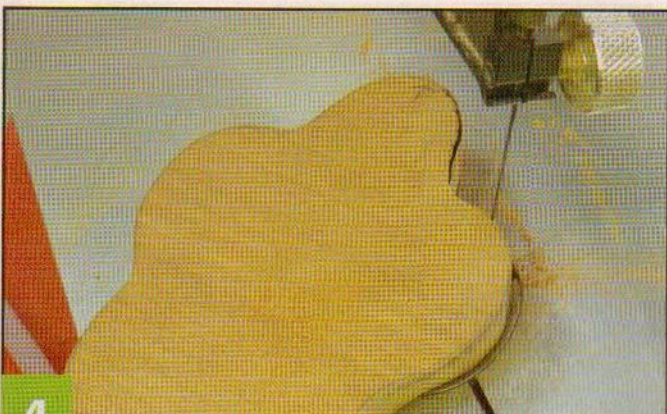
2

Cut the first bottom ring. Tilt the saw table 20° and cut around the outer line on the bottom rings blank. Drill a blade-entry hole at a 20° angle on the inner line of the pattern. Insert a saw blade through the hole and cut the inside of the first ring. Remove the pattern, and mark the tops of both the ring and the center remainder of the blank.



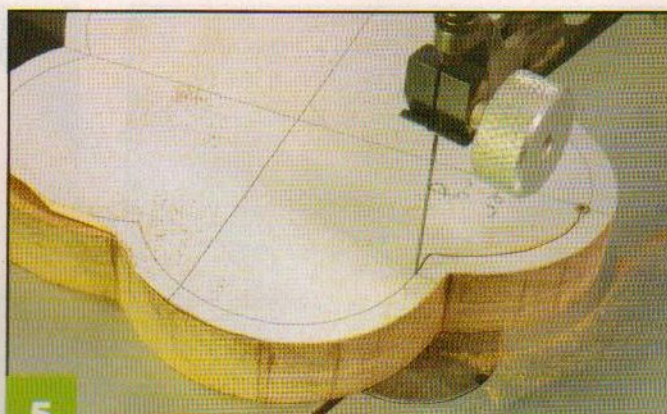
3

Cut the second bottom ring. Place the first ring on the remainder of the blank, tops aligned, and trace the inner edge to form the inner cutting line for the second ring. Tilt the saw table to 25°, left side down. Re-cut the perimeter of the blank using the upper edge as a guide. Do not cut into the upper edge. Drill a 25° entry hole on the inner line. Insert the saw blade and cut along the inner line to complete the second ring. Mark the top of the ring and the blank.



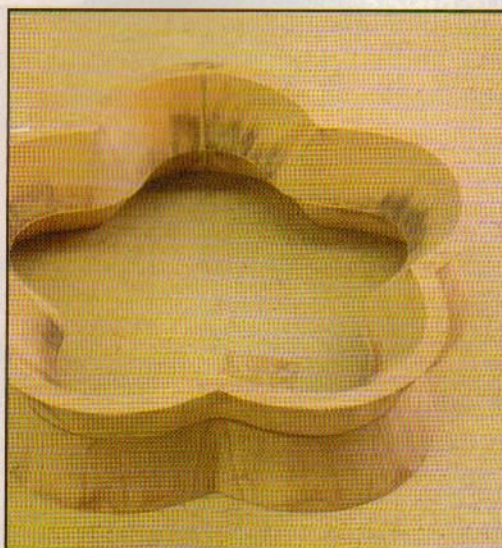
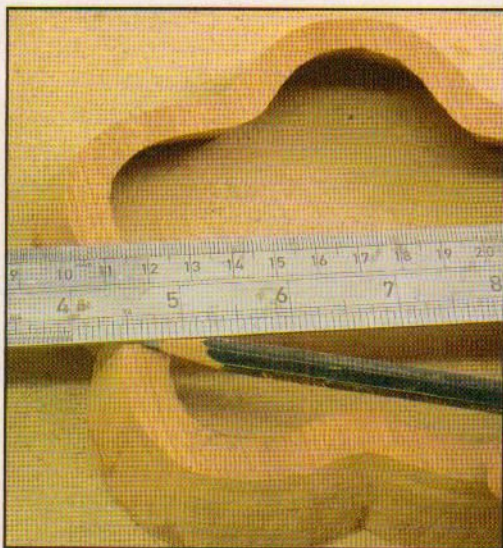
4

Cut the base. Place the second ring on the remainder of the wood with the top marks aligned. Trace the outside of the ring to form the cutting line for the base. Tilt the saw table to 35° and cut the base.



5

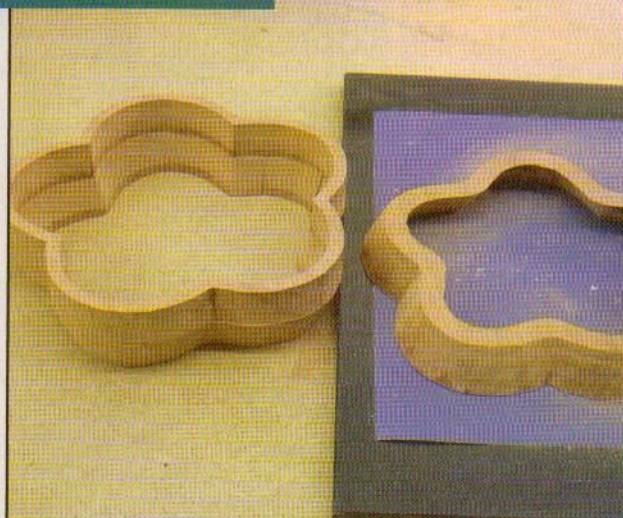
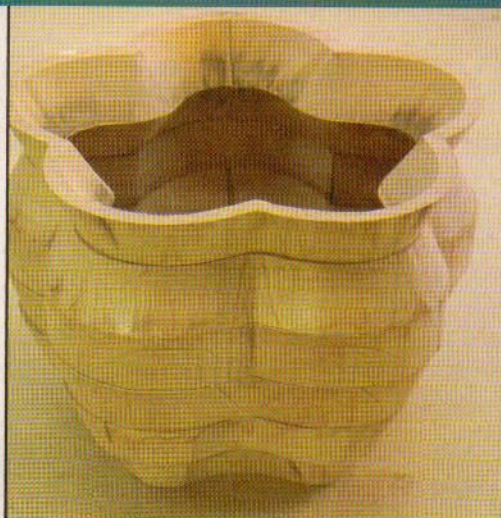
Cut the center ring. Level the saw table, and cut around the outer line of the pattern. Drill a small blade-entry hole on the inner line, as indicated on the pattern. Insert the saw blade and cut around the inner line to complete the ring. Set aside the center piece to use for another project (See page 57).



6

Cut the top rings. Tilt the saw table to 25°. Using the blank for the first top ring, cut along the outer line. Tilt the saw table to 35°. Drill a blade-entry hole at a 35° angle on the inner line. Insert the saw blade and cut along the inside line to complete the first top ring. This ring will be ¼" (6mm) wide on the larger face and about ½" (13mm) wide on the smaller face. Mark the top. Set aside the center piece to use for another project. Repeat the process to cut a second top ring; flip it over to form the flared ring.

PETAL BOWL: ASSEMBLING THE RINGS



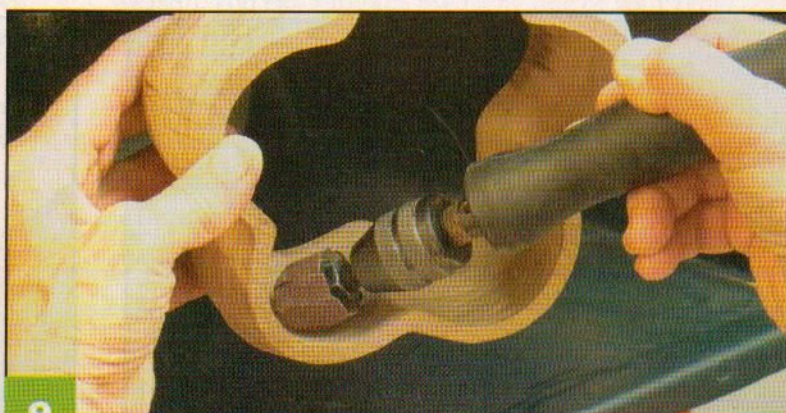
7

Stack the rings to preview the project. Transfer the "top" marks to the sides of the rings and base, and remove them from the gluing surfaces. Stack the base and rings to get an overview of the project and to check for spaces between the rings. Sand as needed until the rings lie perfectly flat against each other.



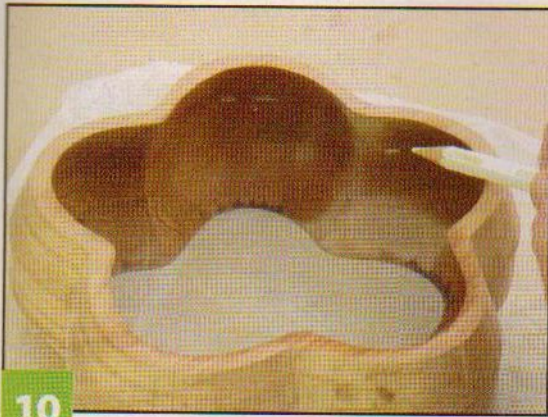
8

Glue the center assembly. Glue and clamp the straight center ring to the largest bottom ring and the first top ring, aligning the tops, and allow it to dry.



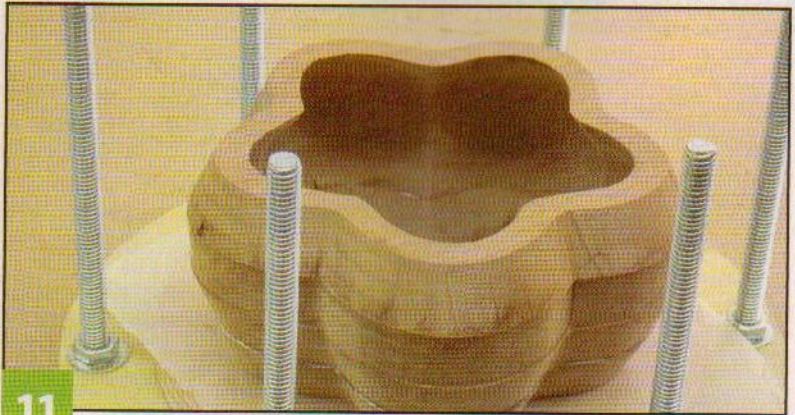
9

Sand the center assembly. Sand the inside of the assembly using a flexible shaft tool with small and large round sanders equipped with coarse and medium-grit sleeves. Use the small sander to access tighter areas and the large sander to smooth and round the inner surface. The goal is to sand a curve into the middle ring and to smooth the glue lines on its upper and lower edges. Be careful not to damage the top and bottom gluing surfaces of the assembly.



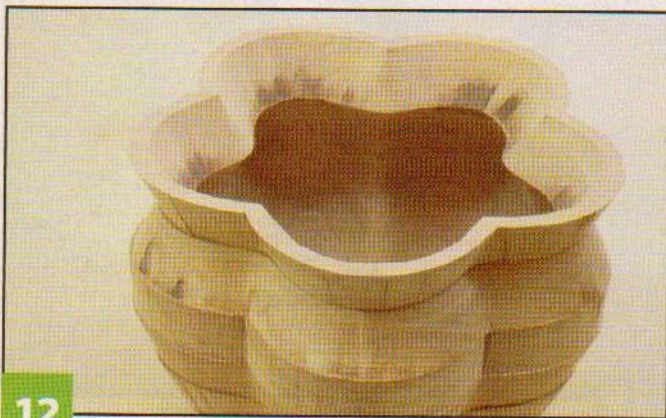
10

Eliminate any glue spots. Apply mineral spirits to the inside of the assembly. Mark any glue spots that appear with a white pencil and sand them away when the mineral spirits have dried.



11

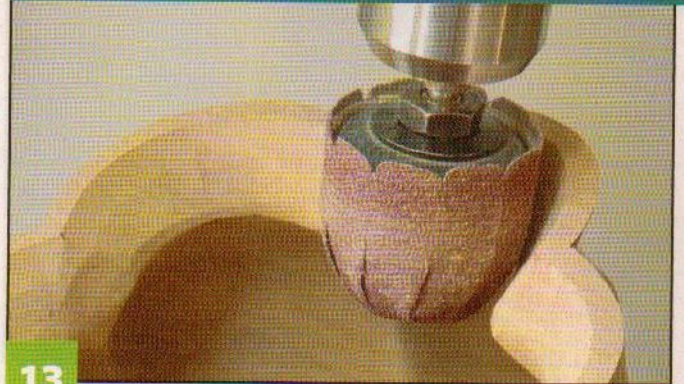
Add the second bottom ring. Glue and clamp the second bottom ring to the assembly, keeping the tops aligned. Allow it to dry. Then, using the round inflatable sanders, sand the inside until the lower three rings form a smooth continuous curve. Use the small round sander to shape the inside of the bottom edge. Be careful not to damage the gluing surface. Apply mineral spirits and sand away any glue spots.



12

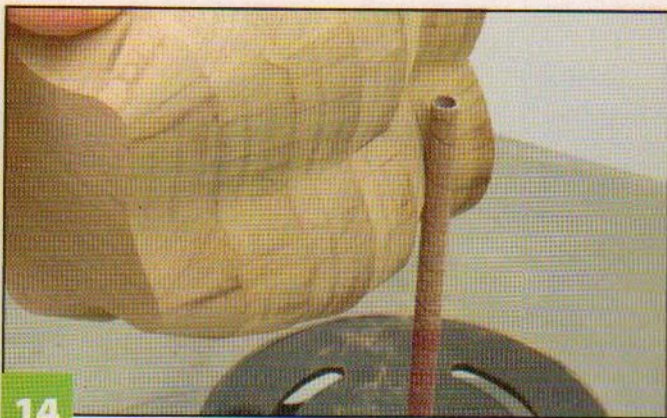
Attach the remaining rings. Glue and clamp the base to the assembly, keeping the tops aligned. Allow it to dry for five minutes, remove the clamps, and clean up any glue squeeze-out. Then, glue on the flared top ring, keeping the tops aligned. Reclamp the assembly and let the glue dry.

PETAL BOWL: SHAPING THE PROJECT



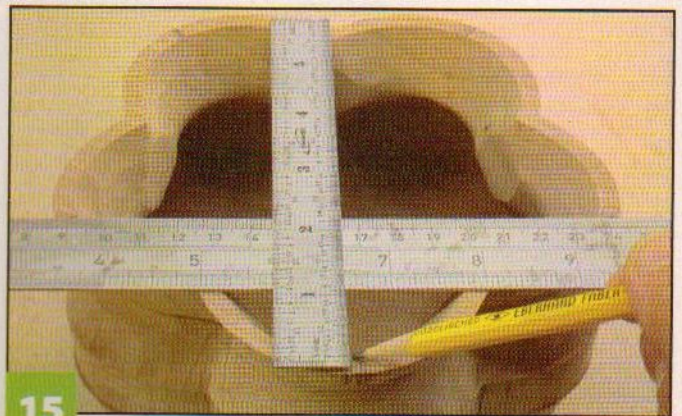
13

Sand the inside of the flared ring. Use the large round sander and the coarse sleeve to sand the inside of the flared ring to remove burn and blade marks, to soften the joint between the two top rings, and to sand down the pointed pieces of wood between the petals until they are about 1/4" (6mm) thick.



14

Sand the joint between the top rings. Use a 1/4" (6mm)-diameter spindle or drum sander to sand the accessible parts of the outside of the joint between the top rings. If you are using a spindle sander, rotate and lift the bowl for maximum access. Sand until the glued edges of the top rings form a continuous curve. The curve will be enlarged and the inaccessible area will be removed when you shape the petals in later steps.



15

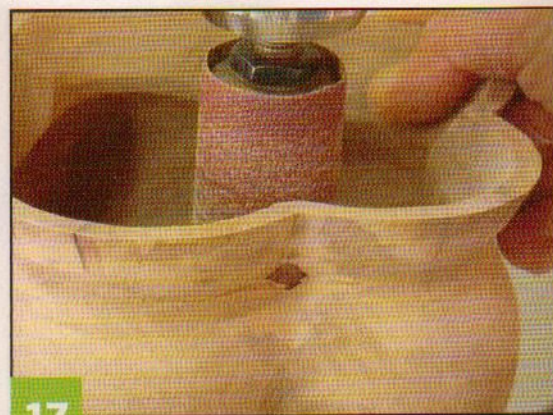
Mark the center of each petal. The top of each petal is about 3" (76mm) at its widest. Use two rulers and the opposite point to mark the center of each petal. Starting at that mark, draw a short vertical line down the outside of the petal. This line will help keep you oriented as you shape each petal in later steps.

PETAL BOWL: SHAPING THE PROJECT



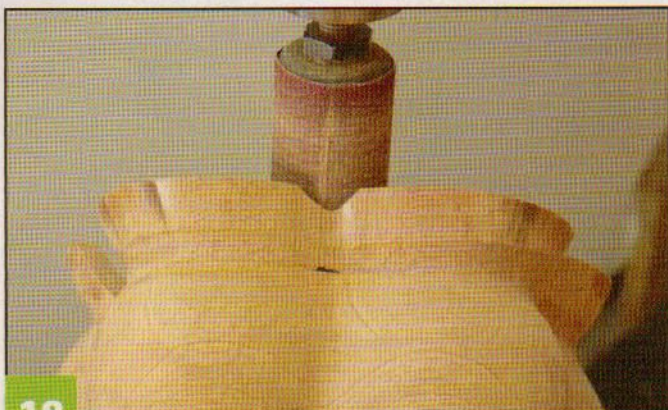
16

Sand the outside of the bowl. Use a 2" (51mm)-diameter pad sander and an 80-grit disc with scalloped edges to remove ridges and burn and blade marks from the outside of the bowl. Work from the bottom of the bowl up to the center ring, and from the first top ring down to the center ring. Do not sand the flared ring or the areas where the top two rings meet. Repeat with a 120-grit scalloped disc to remove any scratch marks and refine the shape.



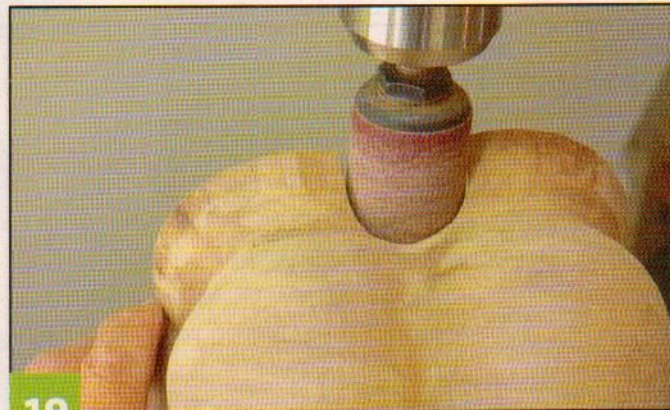
17

Sand through the center of the space between the petals. Use a 1" (25mm)-diameter spindle sander to sand along the inside points between the petals until a hole appears. Each hole should be centered between a pair of petals.



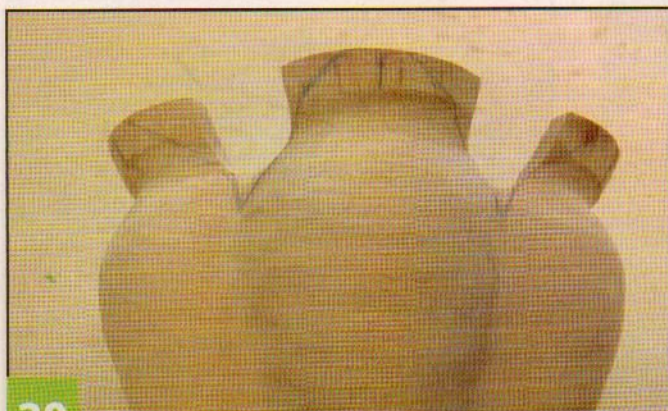
18

Start shaping the top edge. Continue sanding between the petals, angling the bowl back and forth until you create a curve at the top of the space between each pair of petals.



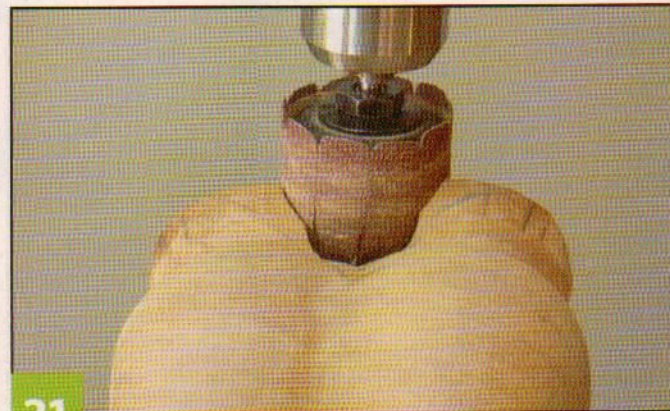
19

Increase the spaces between the petals. Start at the curve sanded into the top edge and use the 1" (25mm) spindle to deepen the space between each pair of petals. Sand to just below the glue line for the flared top ring.



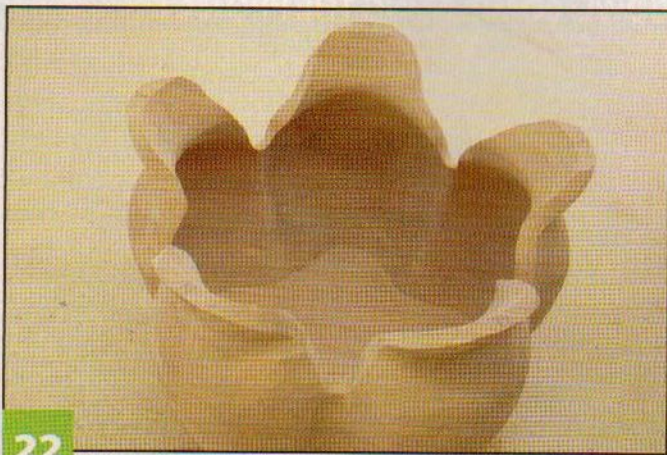
20

Draw a shaping guide for the upper edge. Darken the lines drawn in Step 15. Use a pencil to draw a rough guide for the top shaping of each petal. The lowest point between the petals should be at the next glue line. Be conservative with the shaping at this point because you will remove more wood later.



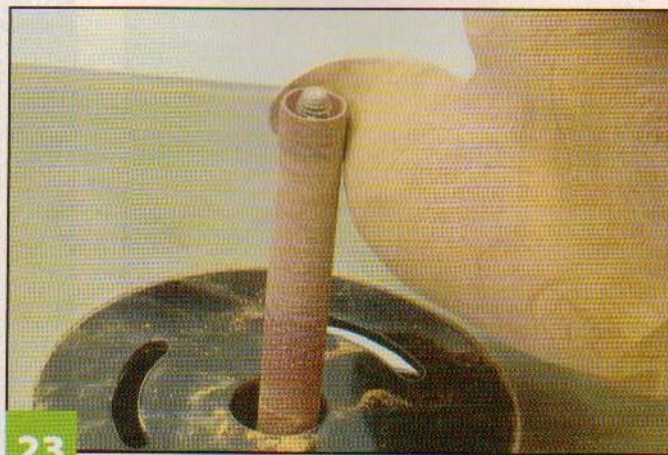
21

Refine the shape. Working from the top edge down, and staying centered between the petals, use the large round sander with the coarse sleeve to roughly define the shape of each petal and to remove excess wood from the areas between the petals. Switch to the small round sander and the coarse sleeve when the large sander becomes too large to use.



22

Continue shaping the petals. Use a $\frac{1}{4}$ " (6mm) spindle or drum sander to extend the space between the petals to the top of the straight ring and to shape the sides of the petals.



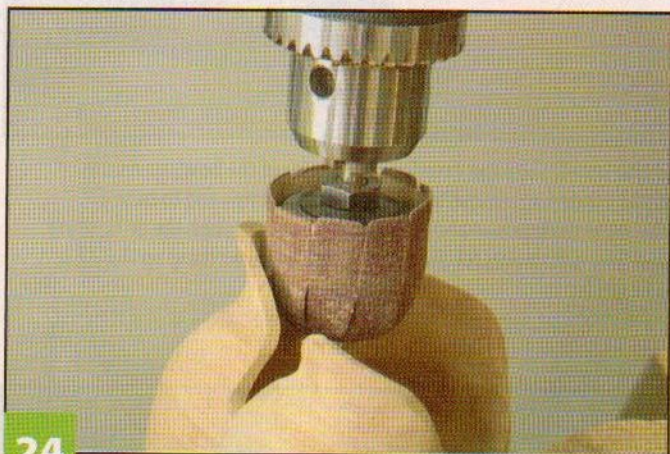
23

Shape the undersides of the petals. Use a $\frac{1}{4}$ " (6mm) to $\frac{1}{2}$ " (13mm)-diameter spindle or drum sander to begin shaping the underside of each petal. Switch to the small round sander with a coarse sleeve to smooth the curves.

TIP

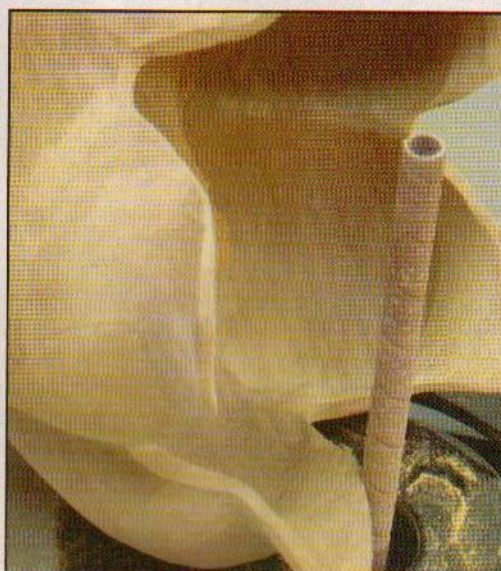
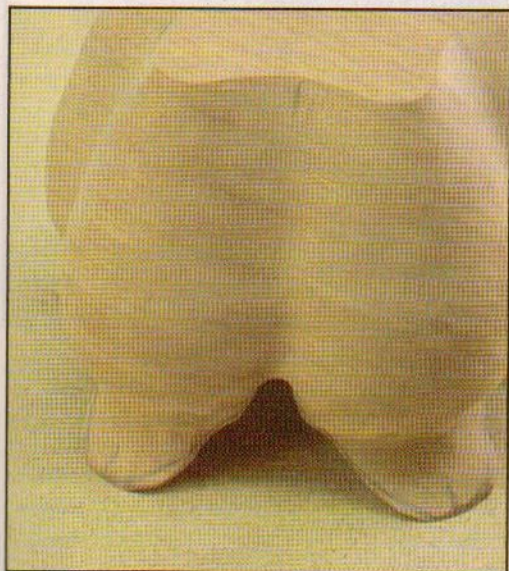
PROTECTING THE SANDING SLEEVE

The openings in the bottom part of the sleeves of the large round sander tend to catch on edges and tear. To prevent this, use the upper section of the sleeve near the edges, or switch to the small round sander whose sleeves are less likely to catch and tear.



24

Shape the inside of each petal. Use the large round sander with the coarse sleeve to thin the inside of each petal from the bottom to the tip and to thin the top edge of the incurving area between the petals. Check wood thickness frequently to avoid sanding away too much. After the final sanding in Step 28, the walls should be about $\frac{1}{8}$ " (3mm) thick.



25

Finish contouring the petals. Re-draw the midpoint of each petal. Use a pencil to draw the final contour of each petal. With the large round sander, thin any thick edges that become visible as you shape the sides of the petal. Use the small round sander and the $\frac{1}{4}$ " (6mm) spindle to access the smaller areas and complete the shaping. Finish with the large round sander to remove excess wood from the inside of the petals so that all edges are the same thickness.

PETAL BOWL: COMPLETING THE PROJECT



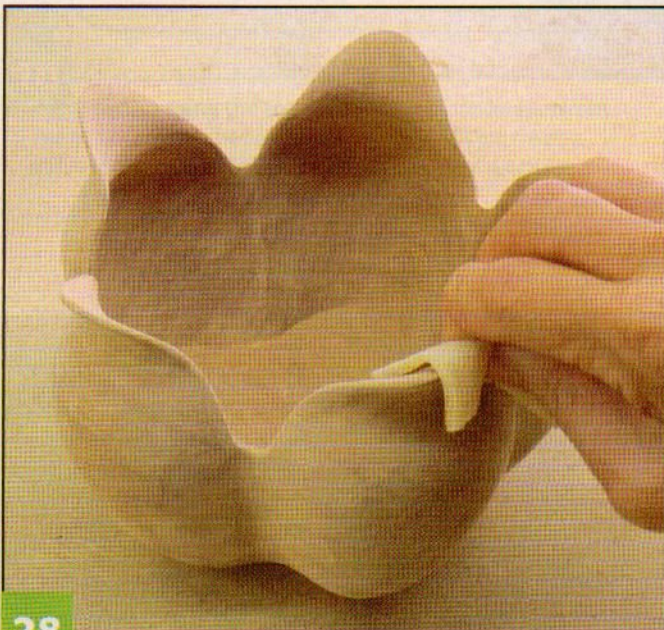
26

Contour the bottom of the bowl. Use the large round sander to accentuate the spaces between petals on the bottom edge of the bowl.



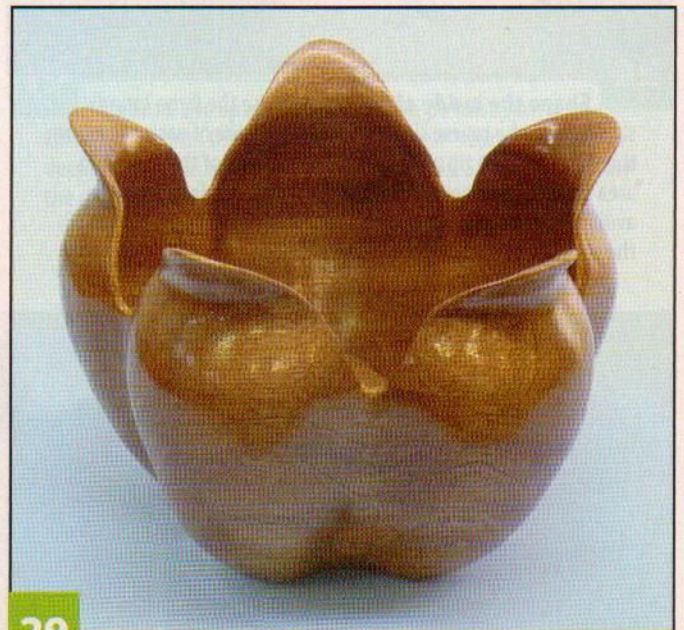
27

Sand the bowl. Sand the exterior and interior of the bowl, using the round and pad sanders to remove irregularities and bumps and to sand all edges to the same thickness—about $\frac{1}{8}$ " (3mm). Sand through the grits, using medium and fine-grit sleeves for the round sanders and working up to 220-grit with the pad sander.



28

Finish sanding the bowl. Hand-sand the edges with 220-grit sandpaper until they are smooth and even. Feel the surface of the bowl carefully and sand away any small ridges or bumps. If irregularities are too large to remove by hand, use the pad or round sanders to remove them and then finish the sanding by hand. Then, use a pad sander with a soft foam pad to sand the outside of the bowl to 320-grit. The soft pad prevents distortion of the established shape.

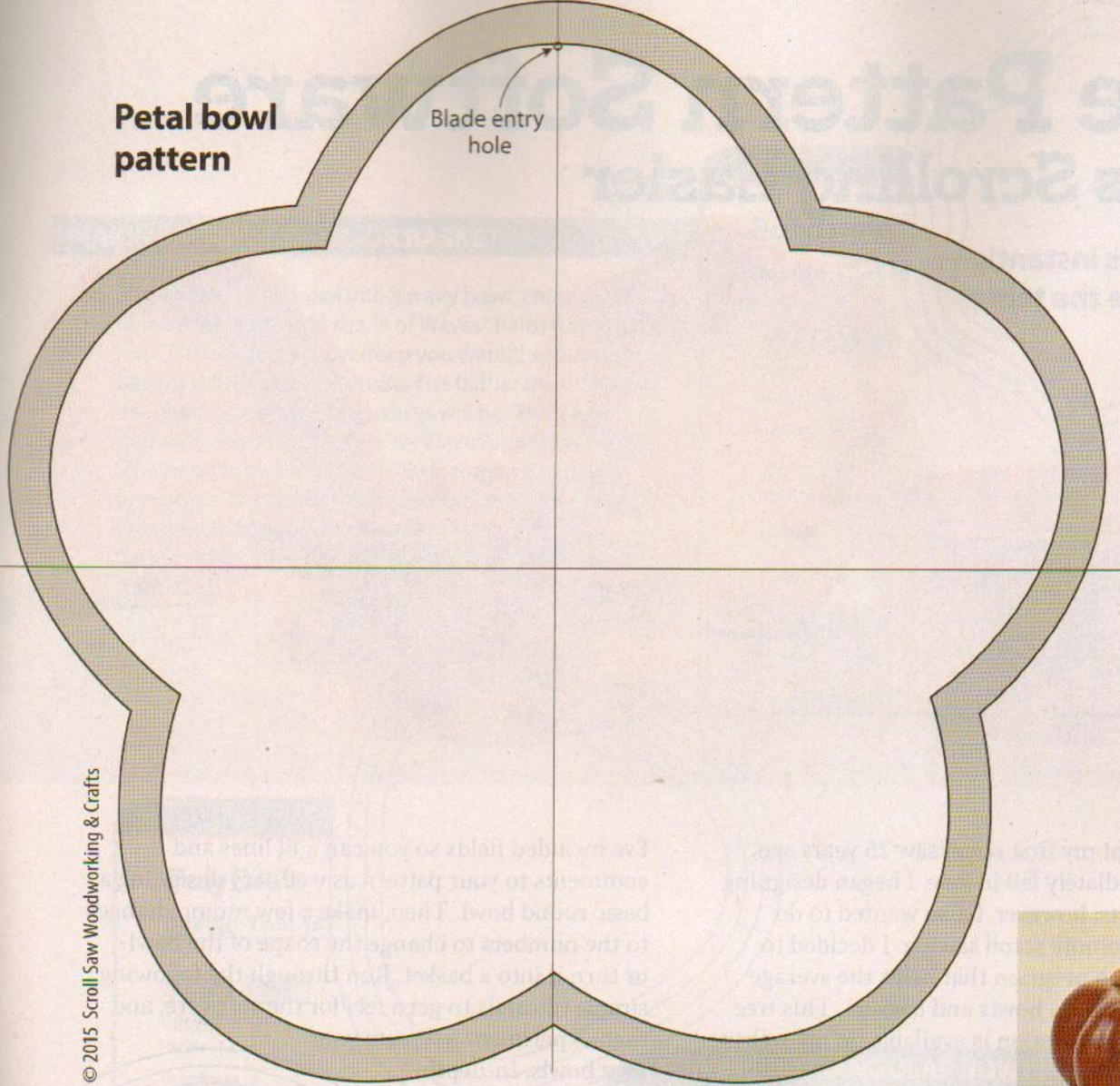


29

Finish the bowl. Apply mineral spirits to the outside of the bowl to check for glue spots; sand away any that appear. Seal the bowl with spray shellac, and sand it smooth with 320-grit sandpaper. Remove any sanding dust with a tack cloth, and then apply several coats of clear spray lacquer.

Petal bowl pattern

Blade entry hole



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Materials & Tools

Materials:

- Mahogany, $\frac{3}{4}$ " (19mm) thick: 4 each 7" x 7" (179mm x 179mm), preferably cut from a single long board
- Pencil: white graphite
- Sleeves for large round inflatable sander: assorted
- Sleeves for small round inflatable sander: assorted
- Scalloped discs for pad sander: assorted grits
- Sandpaper
- Steel wool: 0000
- Wood glue, such as Weldbond

- Repositionable adhesive
- Mineral spirits
- Spray shellac
- Spray lacquer

Tools:

- Blades: #9 reverse-tooth
- Bowl press or assorted clamps and clamping board
- Awl
- Drill with bit: #54 wire size or $\frac{1}{16}$ " (2mm) dia.
- Flexible shaft tool

- Shop-made angle guides (see Getting Started, pg.50): 20°, 25°, 35°
- Sanders: large round inflatable, small round inflatable, 2" (51mm)-dia. regular flexible pad sander, 2" (51mm)-dia. soft flexible pad sander
- Spindle sander or sanding drums: $\frac{1}{4}$ " (6mm), $\frac{1}{2}$ " (13mm), 1" (25mm) dia.

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

NOTE: To see a project you can make from the wood leftover from this bowl, visit Carole's blog: scrollsawbowls.blogspot.com.



Carole Rothman of Pawling, N.Y., is a retired psychologist and college professor. She is also an award-winning cake decorator. You'll find her books Creative Wooden Boxes from the Scroll Saw

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

Free Pattern Software Makes Scrolling Easier

**Design bowls instantly—
and calculate the table
angle, too!**

By Dave Van Ess



When I got my first scroll saw 25 years ago, I immediately fell in love. I began designing bowls and baskets; however, I also wanted to do something to promote scroll sawing. I decided to create PolyDraw, a program that helps the average scroller design custom bowls and baskets. This free and easy-to-use application is available on my website, Scrollmania.com.

To use PolyDraw, simply enter numbers into different fields and click “Draw” to get a pattern that downloads immediately to your computer.

I’ve included fields so you can add lines and comments to your pattern as well. Try designing a basic round bowl. Then, make a few minor changes to the numbers to change the shape of the bowl or turn it into a basket. Run through the following simple tutorials to get a feel for the software, and then experiment to create your own bowls. In-depth tutorials are available on the website.

MAKING A ROUND BOWL

To make a basic round bowl with three rings and a base (four pieces total), first determine the desired outer diameter; the radius is half of the diameter. The sample bowl is 7" (178mm) wide, which makes its radius 3½" (89mm). Insert the starting radius in both the X and Y columns. I like to make bowls with fairly thin walls—¼" (6mm) works well for me. Subtract the desired wall thickness from the starting radius and enter the result in the second X and Y columns. Repeat for the remaining two rings as shown above. Click “Draw” to produce the pattern. *Note: If the X and Y radius numbers are the same, you will make a bowl. If the numbers are different, you will create an oval.*

PolyDraw
Design Tool

Load Save

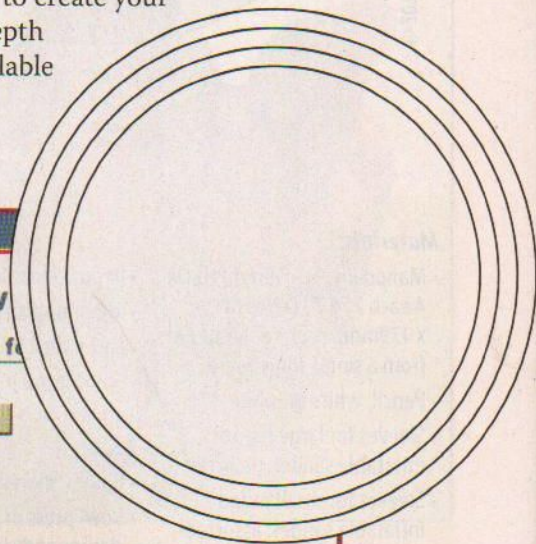
Draw

Scale 1.000

of Polys 4

X Radius	Y Radius	Poly Order	# of Waves	+/-Wave Amplitude	X Offset
3.5000	3.5000	2.000	0	0.0000	0.0000
3.2500	3.2500	2.000	0	0.0000	0.0000
3.0000	3.0000	2.000	0	0.0000	0.0000
2.7500	2.7500	2.000	0	0.0000	0.0000

of Comments 0



MAKING A WAVY BOWL OR BASKET

To turn the round bowl into a wavy bowl, enter a number of waves into the "# of Waves" fields (my bowl has 7). Then, decide how deep you want the waves to be; this is the wave amplitude. The higher the number, the more pronounced the waves will be. To recreate my bowl, enter $\frac{3}{16}$ " into the "+/- Wave Amplitude" field (PolyDraw converts it to 0.18750 for you). Click "Draw" to produce the pattern. Stack the cut rings directly on top of each other to create a wavy bowl. To make a basket, rotate each ring half a wave apart as you stack them.

PolyDraw
Design Tool for

Load Save
Draw
Scale 1.000
of Polys 4

X Radius	Y Radius	Poly Order	# of Waves	+/-Wave Amplitude	X Offset
3.5000	3.5000	2.000	7	0.1875	0.0000
3.2500	3.2500	2.000	7	0.1875	0.0000
3.0000	3.0000	2.000	7	0.1875	0.0000
2.7500	2.7500	2.000	7	0.1875	0.0000

of Comments 0

PolyDraw
Design Tool for

Load Save
Draw
Scale 1.000
of Polys 4

X Radius	Y Radius	Poly Order	# of Waves	+/-Wave Amplitude	X Offset
3.5000	3.5000	2.000	3	0.2750	0.0000
3.2500	3.2500	2.000	3	0.2750	0.0000
3.0000	3.0000	2.000	3	0.2750	0.0000
2.7500	2.7500	2.000	3	0.2750	0.0000

of Comments 0

MAKING A TRIANGULAR BOWL

To make a triangular bowl, enter the numbers for a round bowl as before, but add three waves. Be sure to add wave amplitude, as well; through trial and error, I found that a wave amplitude of 0.275" produces bowl sides that look faceted. Click "Draw" to create the pattern. Stack the rings directly on top of each other to create a triangular bowl. Stack the rings half a wave apart to create a six-sided basket. *Note: To make a square bowl, simply change the number of waves to 4.*

Table Angle: There's an App For That!

When scrolling bowls or baskets, you often have to experiment with table angle to make the rings stack smoothly. To prevent this trial-and-error, I created an app called AngleCalc that calculates the table tilt angle based on the thickness of the blank and the width of the rings. For my bowls, I used $\frac{13}{16}$ " (20mm)-thick stock. So, for a thickness of $\frac{13}{16}$ " (20mm) and a width of $\frac{1}{4}$ " (6mm), the angle is 17°. If your wood is $\frac{5}{8}$ " (16mm) thick, the angle becomes 22°. Measure the thickness of the wood yourself before calculating the angle. Check out the app at www.Scrollmania.com/AngleCalc.html.



Dave Van Ess of Chandler, Ariz., is a retired engineer and has been woodworking for more than 30 years. He has introduced more than 200 Cub Scout leaders to the joys of scroll sawing.



SHOP HACK: Cyclone Dust Separator

DIY separator collects dust before it clogs the filters of your shop vac

By Dave Van Ess

I recently upgraded my shop vacuum with a better filter, only to find that the better the filter, the quicker it clogs. To eliminate clogging, I designed a dust separator that removes most of the dust before it reaches the vacuum. This design can be built inexpensively in a weekend with the tools and skills of the average scroller and materials from a home-improvement center.

I find that commercial cyclone dust lids, intended to collect dust before it reaches the vacuum, suffer from two design flaws. First, the performance of the cyclone depends on the fullness of the bin. Second, the cyclone constantly kicks up the dust collected at the bottom. It's like someone violently sweeping with a broom and putting the dust back in the air—there's a lot of motion without a lot of accomplishment.

I built my separator based on J. Phil Thien's baffle design. The baffle creates a separate cyclonic chamber in the top of the unit. The debris swirls around and moves out to the edge, where it hits the side, slows down, and falls through the slot to the bin

below. The turbulence below this baffle is greatly reduced, and debris that falls through tends to stay down. This baffle barrier allows you to fill the bin to within 3" (76mm) of the baffle with no reduced performance.

Choosing a Barrel

I used a fiber barrel with metal top and bottom hoop supports. The barrel you choose should have a removable metal lid with a locking steel band. Barrels like this can be found in a variety of places; Craigslist is a good place to start. I purchased a barrel for \$15 from a local container company.

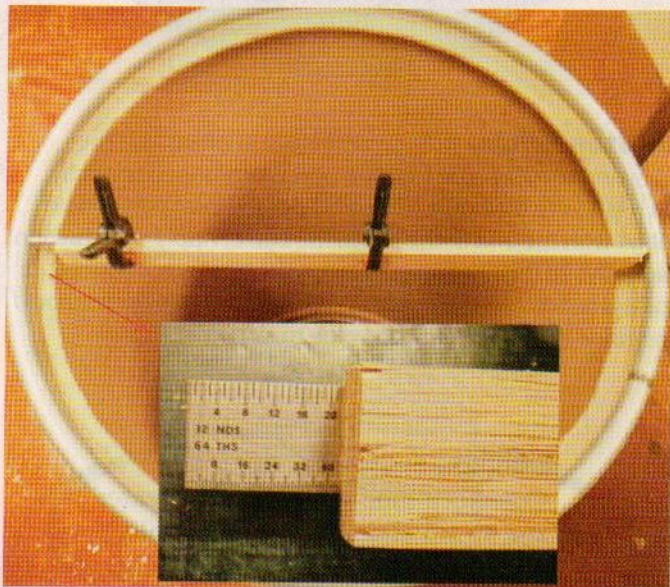
For this design, the barrel is turned upside down; you will empty it from the bottom. I cut the fiber end of the barrel and mounted the top assembly permanently on the barrel. The baffle is permanently mounted to the inside of the barrel just below the inlet elbow. This design does not require standoffs to keep the baffle in place and reduces turbulence in the airflow. It simplifies the construction and reduces cost.

MAKING THE SEPARATOR

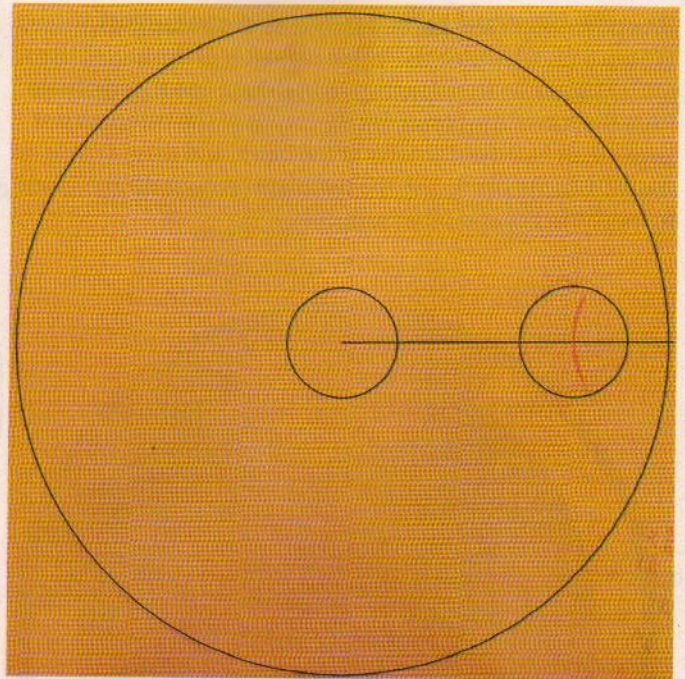
Step 1: Cut the fiber end of the barrel. With the barrel turned upside down, draw a circle $\frac{1}{2}$ " (13mm) in from the metal edge on the top of the barrel. Cut this circle. The fiber material is thick, so use a keyhole saw, a hacksaw blade, or a hand-held saber saw with a fine-tooth blade.

Step 2: Cut the hose union in half. To make the inlet and exhaust ports, cut a $2\frac{1}{2}$ " (64mm)-diameter hose union in half to make two ports. Use a handsaw.

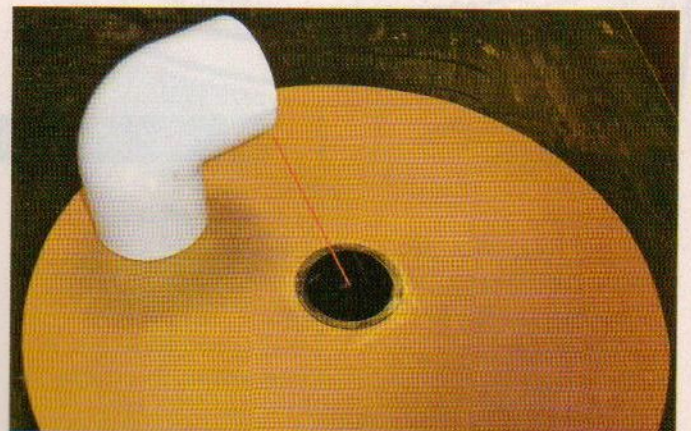
Step 3: Assemble the inlet port. Sand the exterior of a 2" (51mm) PVC elbow. Start with 60-grit sandpaper and work up through the grits to 400. Use PVC pipe cement to attach one of the ports to the elbow to complete the inlet port.



▲ Step 4: Determine the diameter of the lid. I use $\frac{1}{2}$ " (13mm)-thick MDF for the lid. Because barrel sizes vary, use spring clamps to hold a thin metal ruler to a 14" (356mm)-long straight piece of wood. Position the end of the wood against the metal band on one side of the barrel. Carefully extend the ruler out past the end of the wood until it touches the edge of the metal band on the other side of the barrel. Add the distance the ruler sticks out past the stick to the 14" (356mm) base dimension and add about $\frac{1}{32}$ " (1mm) to the dimension. For example, my ruler showed $2\frac{1}{32}$ " (18mm) past the end of the stick, so I rounded my final dimensions to $14\frac{1}{16}$ " (373mm). It is better to cut the circle oversized and sand it to fit.

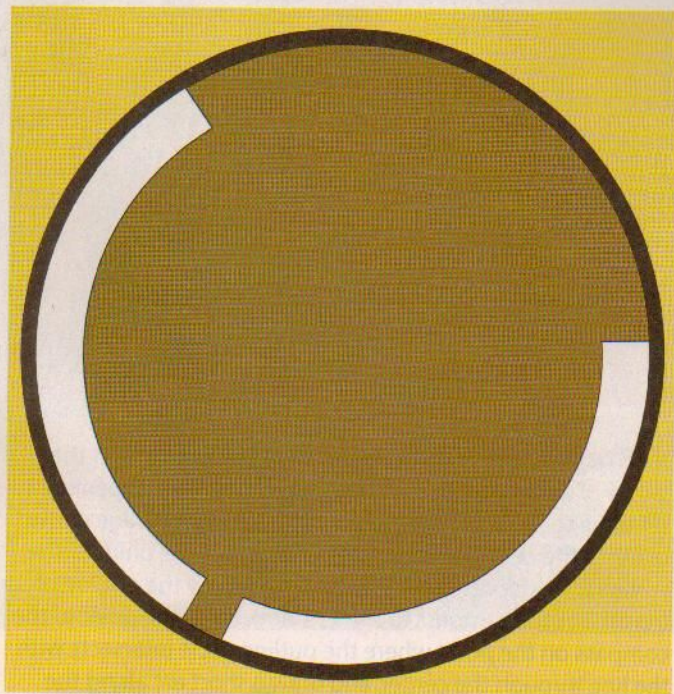


▲ Step 5: Mark the hole locations on the lid. Set the radius of a compass to half the diameter of the lid opening; I set mine to $7\frac{11}{32}$ " (187mm). Draw a line from the edge of the blank to the center of the circle location. Set the point of the compass on the center of the blank and draw the outline of the lid. Set the compass to $2\frac{1}{8}$ " (54mm). Place the point of the compass on the point where the outline circle intersects with the line through the center, and draw a short arc along the line (marked in red in the photo). Measure the diameter of the ports. Set the compass radius to just under half the diameter of the inlets. Draw one circle around the center of the lid. Set the point of the compass on the mark along the line and draw the second circle.



▲ Step 6: Assemble the top. Cut the perimeter of the lid. Drill blade-entry holes and cut the holes for the inlets. Seal the MDF with lacquer, shellac, or spray paint to keep it from absorbing moisture and swelling. Glue the two ports in place with construction adhesive. Point the elbow on the inlet in the direction of the cyclonic flow (as shown in the photo).

Step 7: Mark the baffle blank. Use the method explained in Step 4 to determine the inside diameter of the barrel. Use a 6¼" (159mm)-long strip of wood to draw a line that distance from the top of the barrel. Set the radius of the compass just larger than half the diameter of the barrel and draw a circle on the MDF baffle blank. Use the template on page 63 as a guide to mark the slot and other supports.



▲ Step 8: Attach the baffle to the barrel. Cut the baffle with the scroll saw. Use a file to round the corners of the tab and slots. Apply a coat of finish to seal the MDF. Dry-fit the baffle in the barrel and adjust the fit if needed. Mark the attachment points 6¼" (159mm) down from the top, and apply glue on the contact points. Reposition the baffle in the barrel. Drill pilot holes and screw through the barrel into the baffle.

Materials & Tools

Materials:

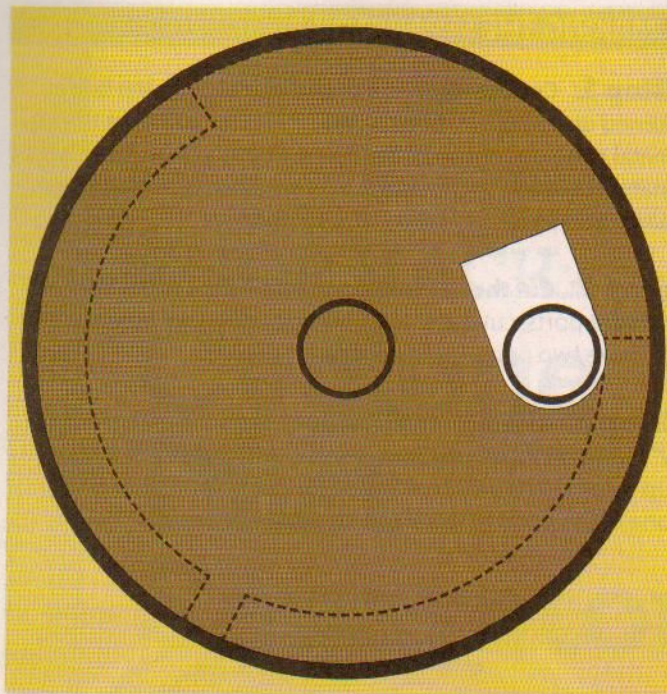
- Fiber barrel
- MDF, ½" (13mm) thick: 24" x 48" (610mm x 1219mm)
- PVC elbow, Schedule 40: 2" (51mm) dia.
- Vacuum hose union: 2½" (64mm) dia.
- Sandpaper: assorted grits between 60 and 400
- Finish: shellac or lacquer
- Wood glue
- Drywall screws: 1½" (41mm) long

- Construction adhesive
- PVC pipe cement

Tools:

- Saws: keyhole, hacksaw, or saber with fine-tooth blade; hand saw
- Blades: #5 reverse-tooth
- Drill with ⅛" (3mm) dia. bit
- Ruler, thin metal
- Spring clamps
- Compass
- File

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



▲ Step 9: Glue the top assembly in place. Use the drawing to make sure the inlet port is positioned correctly in relation to the baffle. The middle of the inlet port should align with the end of the slot in the baffle. Apply construction adhesive to the fiber lip at the top of the collector barrel and press the top assembly into place. *Note: The elbow inlet should be inside the barrel.* Allow the glue to dry.

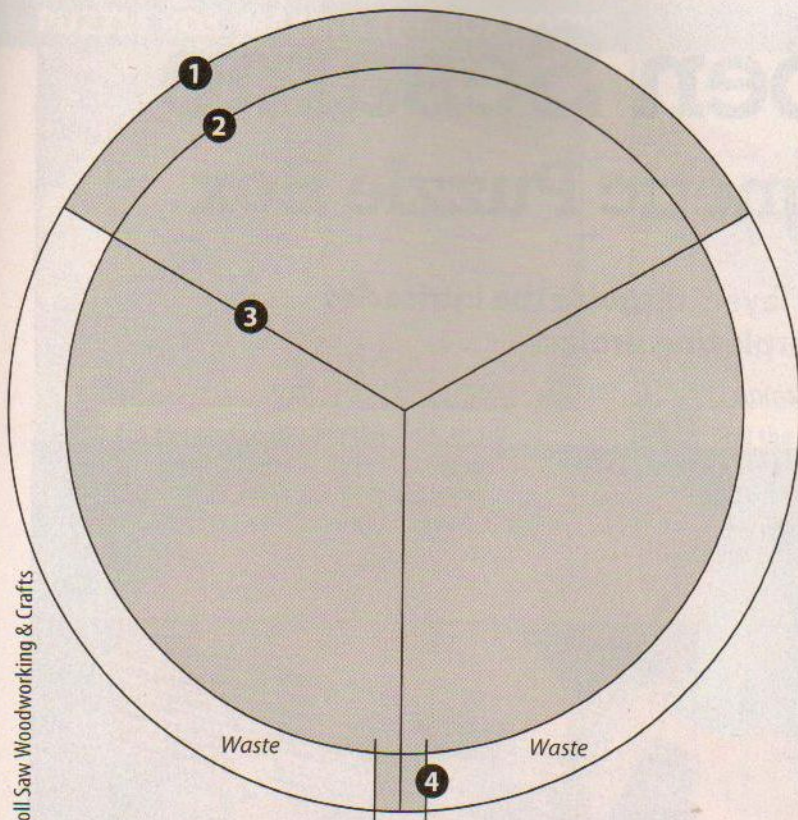
Using the Separator

Connect a shop vacuum to the center port, and attach another hose to the inlet port. I tend to leave the shop vacuum next to a convenient plug and just slide the separator around. Bolt casters to the bottom lid if you worry about scratching the floor.

The metal on the bottom makes the dust collector very stable, and the 20-gallon capacity ensures it won't need to be emptied often. To empty, position a garbage bag around the bottom of the barrel and carefully open the lid to dump out the sawdust.



Dave Van Ess of Chandler, Ariz., is a retired engineer and has been woodworking for more than 30 years. He has introduced more than 200 Cub Scout leaders to the joys of scroll sawing.



Dust separator baffle template

Step 1: Draw a circle with the desired radius—for this project, $7\frac{3}{4}$ " (197mm).

Step 2: Draw another circle whose radius is smaller by $1\frac{1}{8}$ " (29mm)—for this project, $6\frac{5}{8}$ " (168mm).

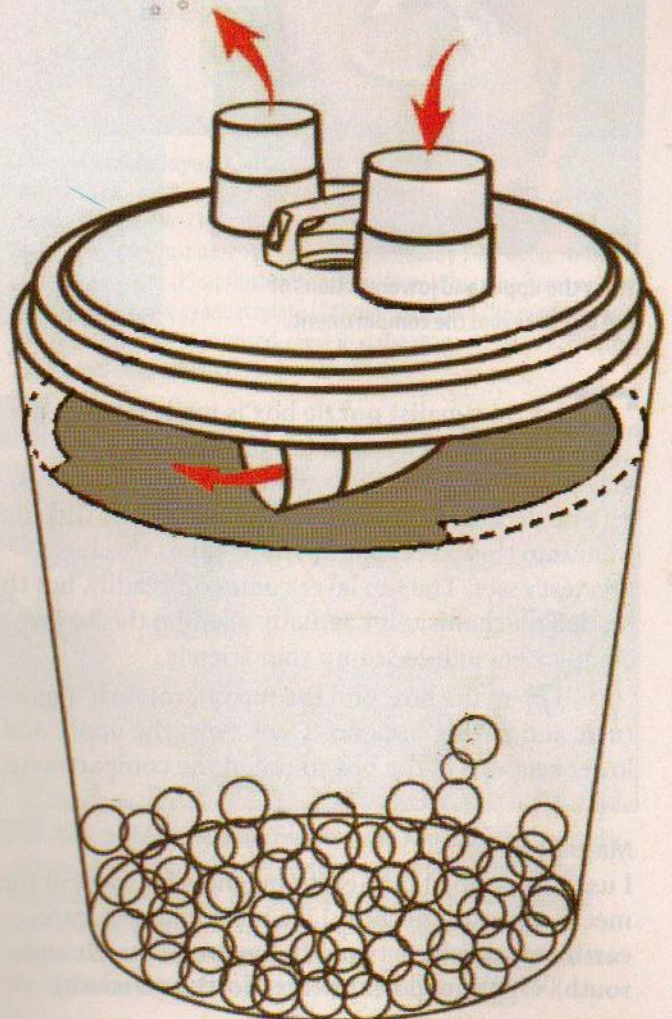
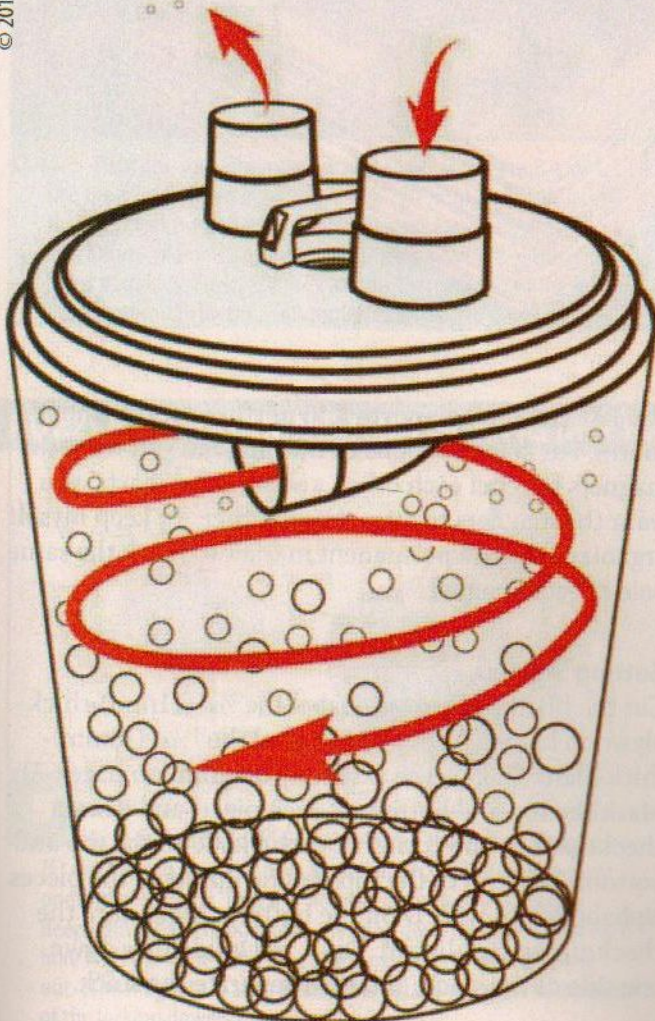
Step 3: Divide the circles into three equal pieces.

Step 4: Draw lines $\frac{1}{2}$ " (13mm) in on each side of one dividing line.

Step 5: Cut out and discard the waste.

Step 6: Attach to barrel $6\frac{1}{4}$ " (159mm) from the top.

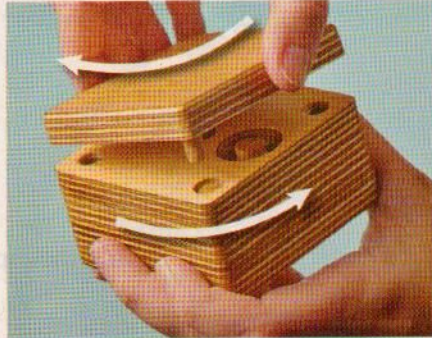
Below, left: Without a baffle, heavy particles fall to the bottom of the separator, but light dust flows out almost as fast as it flows in. Below, right: With a baffle, the dust is trapped in the bottom and stays in the barrel.



Open Sesame Magnetic Puzzle Box



Pull the top off.



Rotate the top a quarter turn
and push it back on.



Twist the upper and lower sections of
the box to reveal the compartment.

**Plywood layers disguise the intricacies
of this perplexing project**

By Levi Dojczman



This minimalist puzzle box is made from four pieces of plywood, a few dowels, and some magnets. The lack of ornamentation, seams, curves, or artistic details makes it seem like hardly any thought went into this piece, but its simplicity is this box's greatest asset. The top layer comes off readily, but the hidden mechanism for actually opening the box is complex enough to stump your friends.

To open the box, pull the top off, rotate it a quarter turn, and push it back on. Then, twist the upper and lower sections of the box to reveal the compartment.

Magnet Basics

I use disc-shaped rare-earth magnets for most of the mechanisms in this box. Like most magnets, rare-earth magnets have two different poles (north and south). Opposite poles attract (north and south),

and like poles repel (north and north, or south and south). For some sections of this project, you want the magnets to repel each other, and for other parts, you want the magnets to attract each other. To keep myself organized, I use a permanent marker to mark the same pole of each magnet.

Getting Started

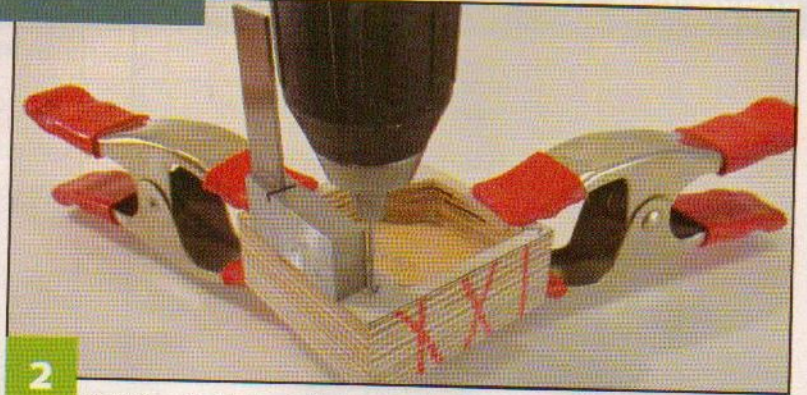
Cut the blanks to size and label the $\frac{7}{16}$ " (11mm)-thick plywood blanks A, B, and D. Label the $\frac{1}{2}$ " (18mm)-thick blank C. (See the assembly diagram on page 67.) Mark the top and bottom of each piece, and draw a checkmark in one corner of each blank on the top and bottom. With all of the tops facing up, stack the pieces alphabetically, with D on the bottom. Make sure the checkmarks are aligned. Draw red guidelines down one side of the stack, and then separate the stack.

PUZZLE BOX: MAKING THE BOX BODY



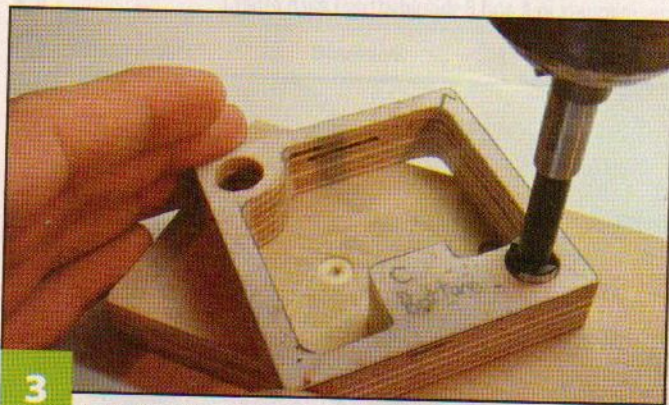
1

Cut the center opening (layer C). Attach pattern 1 to the bottom of blank C, making sure the checkmark on the pattern is aligned with the checkmark on the blank. Drill a blade-entry hole and cut the cavity.



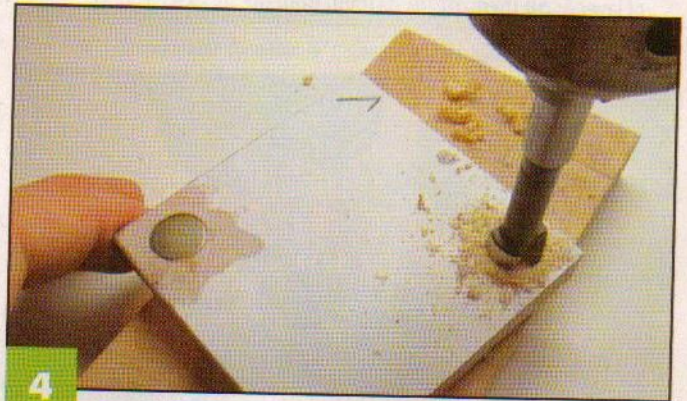
2

Drill the pilot holes in layers C and B. Place the top of layer C against the bottom of layer B with the checkmarks and the red guidelines aligned. Clamp the pieces together and place the stack on the bench with the bottom of layer C facing up. Drill $\frac{1}{16}$ " (2mm)-diameter pilot holes through both pieces. If you do not use a drill press, use a square to align the drill bit. Unclamp the stack.



3

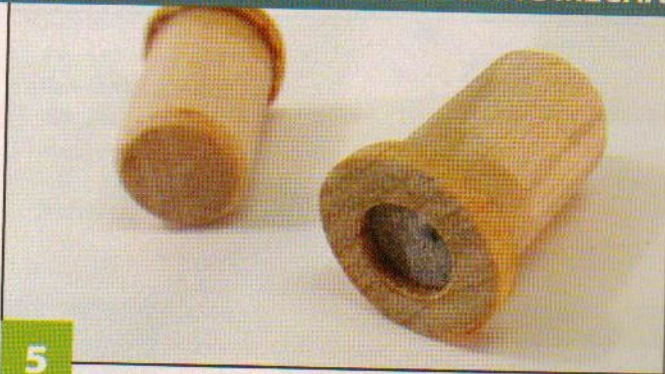
Drill the locking mechanism holes in layers B and C. Use the pilot holes as guides to drill $\frac{3}{8}$ " (10mm)-diameter holes through layer B. With the bottom of layer C facing up, drill two $\frac{1}{2}$ " (13mm)-diameter by $\frac{1}{2}$ " (13mm)-deep holes using the pilot holes as guides. Then, drill $\frac{3}{8}$ " (10mm)-diameter holes the rest of the way through layer C. This produces a stepped hole.



4

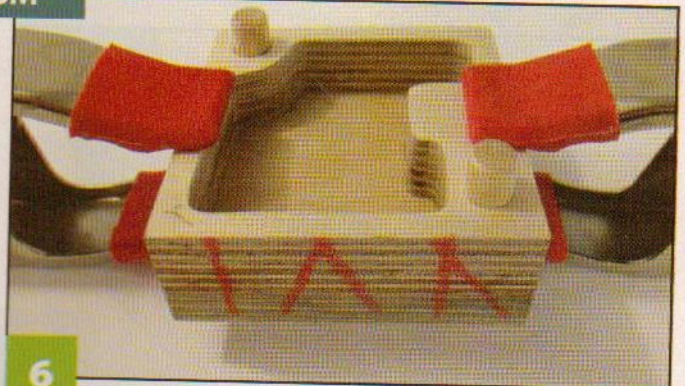
Assemble layer D. Attach pattern 2 to the top of layer D, aligning the checkmark on the pattern with the checkmark on the blank. Drill two $\frac{3}{8}$ " (10mm)-diameter holes where indicated. The holes should be just over $\frac{3}{32}$ " (2.5mm; technically $\frac{1}{10}$ ") deep, so the bottom magnets (E) sit flush with the surface. When the holes are the correct depth, use cyanoacrylate (CA) glue to attach the magnets with the same polar faces exposed. (Test that the magnets repel each other before you insert them.)

PUZZLE BOX: MAKING THE LOCKING MECHANISM



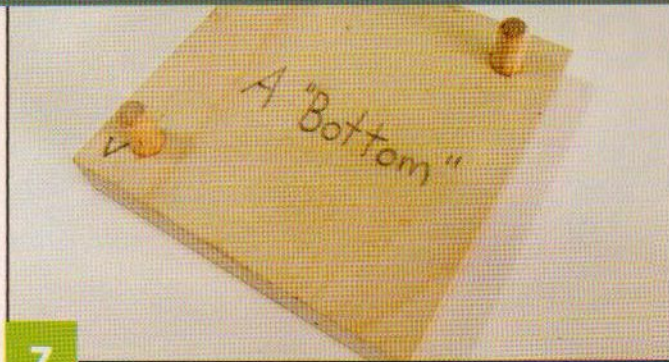
5

Assemble the locking dowels. Cut the locking dowel pins (F) and locking dowel flanges (G) to length, and glue a flange to one end of each pin. Drill a $\frac{1}{4}$ " (6mm)-diameter by $\frac{1}{8}$ " (3mm)-deep hole in each flange. Glue a locking dowel magnet (H) in each hole with the same polar face as the magnets in layer D facing out. (The magnets in layer D should repel the magnets in the ends of the locking dowels.)



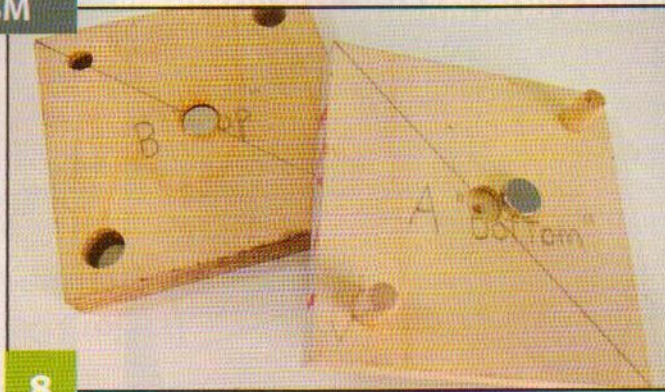
6

Assemble the locking mechanism. Apply wax to the dowels and buff it smooth. Insert the dowels, magnet side down, in the stepped holes in layer C. Dry-assemble the mechanism by placing layer C on top of layer D. When you push the dowels down, the magnets should make them pop back up. Be sure the red guidelines are aligned as you glue and clamp layer C to the top of layer D.



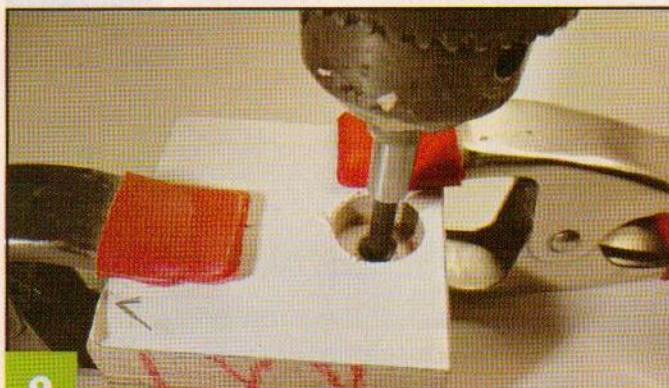
7

Prepare layer A. Attach pattern 3 to the bottom of layer B, making sure the checkmarks are aligned. Place the top of layer B against the bottom of layer A and, with the checkmarks and red guidelines aligned, clamp the stack. Drill two $\frac{1}{4}$ " (6mm)-diameter by $\frac{3}{4}$ " (19mm)-deep holes where indicated on the pattern. Separate the stack. Glue two $\frac{1}{4}$ " (6mm)-diameter dowels in the holes in the bottom of layer A; cut them off $\frac{7}{16}$ " (11mm) from the surface.



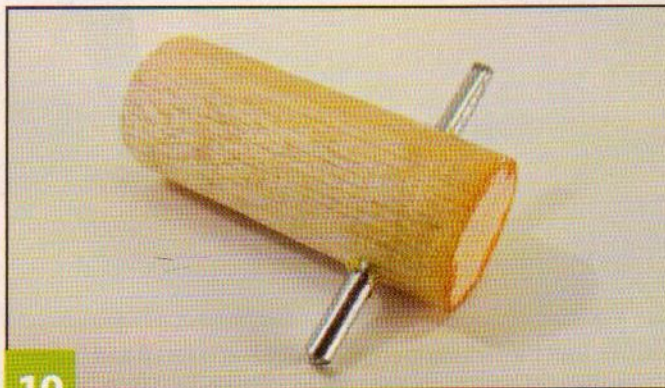
8

Add the magnets to layers A and B. Draw diagonal lines from corner to corner on the bottom of layer A and the top of layer B. Drill $\frac{3}{8}$ " (10mm)-diameter by $\frac{3}{32}$ " (2.5mm; technically $\frac{1}{10}$ ")-deep holes where the diagonal lines cross. Glue one lid magnet (J) in the hole in the bottom of layer A. Glue a second lid magnet (J) with a different polar face in the hole in the top of layer B. (The magnets in A and B should attract each other.)



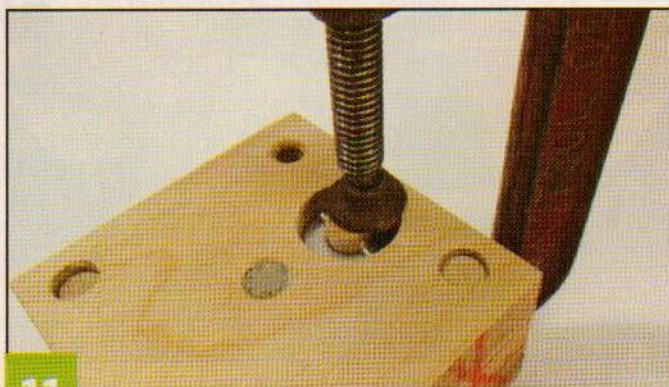
9

Finish layer B. Attach pattern 4 to the top of layer B, aligning the checkmarks. Place the bottom of layer B on the top of layer C, align the red guidelines, and clamp the pieces together. Drill a $\frac{7}{8}$ " (22mm)-diameter by $\frac{3}{8}$ " (10mm)-deep hole where indicated. Then, use a $\frac{3}{8}$ " (10mm) drill bit to deepen the hole to 1" (25mm) below the surface (an extra $\frac{5}{8}$ ", or 16mm, from the bottom of the original hole).



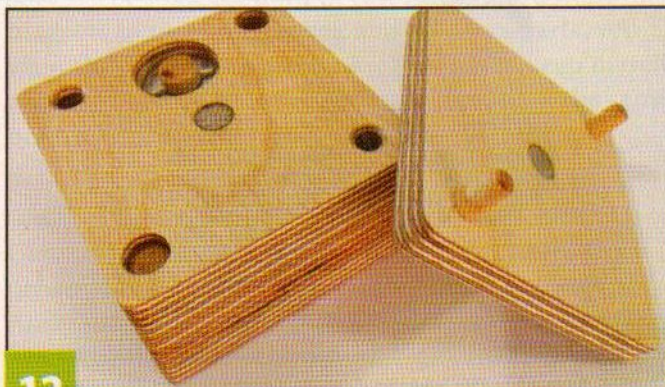
10

Make the turning mechanism. Cut the turning dowel (K) to size and drill a $\frac{1}{16}$ " (2mm)-diameter hole $\frac{3}{16}$ " (5mm) from one end. Glue the turning pin (L) in the hole, and cut the nail ends off $\frac{3}{16}$ " (5mm) from the dowel on both sides.



11

Assemble the turning mechanism. Insert the turning pin through the turning washer (M), and push the dowel/washer assembly through the stepped hole in layer B. Apply glue to the bottom of the dowel, and insert the dowel into the appropriate hole in layer C. Do not get any glue between layers B and C; layer B must be able to turn.



12

Finish the box. Place the top in position. Sand all of the parts with progressively finer grits of sandpaper up to 220 grit. Use a router with a roundover bit or use sandpaper to round all of the corners. Sand away any remaining scratches, and then apply linseed oil finish. Allow the finish to dry.

Cutting List

	Part Name	Presentation	Quantity	Material	Dimensions
A	Layer A	Pattern	1	Baltic birch plywood	7/16" x 3" x 3" (11mm x 76mm x 76mm)
B	Layer B	Pattern	1	Baltic birch plywood	7/16" x 3" x 3" (11mm x 76mm x 76mm)
C	Layer C	Pattern	1	Baltic birch plywood	1 1/16" x 3" x 3" (18mm x 76mm x 76mm)
D	Layer D	Pattern	1	Baltic birch plywood	7/16" x 3" x 3" (11mm x 76mm x 76mm)
E	Bottom magnets	Dimensions	2	Rare earth magnets	3/8" (10mm) dia. x 1/16" (2.5mm) thick
F	Locking dowel pins	Dimensions	2	Dowel	3/8" (10mm) dia. x 3/8" (16mm) long
G	Locking dowel flanges	Dimensions	2	Dowel	1/2" (13mm) dia. x 1/8" (3mm) thick
H	Locking dowel magnets	Dimensions	2	Rare earth magnets	1/4" (6mm) dia. x 1/8" (3mm) thick
I	Lid pins	Dimensions	2	Dowel	1/4" (6mm) dia. x 3/4" (19mm) long
J	Lid magnets	Dimensions	2	Rare earth magnets	3/8" (10mm) dia. x 1/16" (2.5mm) thick
K	Turning dowel	Dimensions	1	Dowel	3/8" (10mm) dia. x 7/8" (22mm) long
L	Turning pin	Dimensions	1	Finishing nail	3d
M	Turning washer	Dimensions	1	Metal washer	3/8" (10mm) inside diameter, 7/8" (22mm) outside diameter

Materials & Tools

Materials:

- Baltic birch plywood, 1 1/16" (18mm) thick: 3" x 3" (76mm x 76mm)
- Baltic birch plywood, 7/16" (11mm) thick: 3" x 10" (76mm x 254mm)
- Dowel, 1/2" (13mm) dia.: 1" (25mm) long
- Dowel, 3/8" (10mm) dia.: 6" (153mm) long
- Dowel, 1/4" (6mm) dia.: 2" (51mm) long
- Finishing nail: 3d
- Rare earth magnets, 3/8" (10mm) dia.: 4 each 1/16" (2.5mm) thick
- Rare earth magnets, 1/4" (6mm) dia.: 2 each 1/8" (3mm) thick
- Metal washer, 3/8" (10mm) inside dia. and 7/8" (22mm) outside dia.

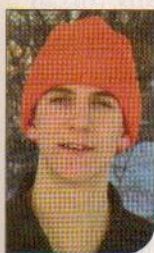
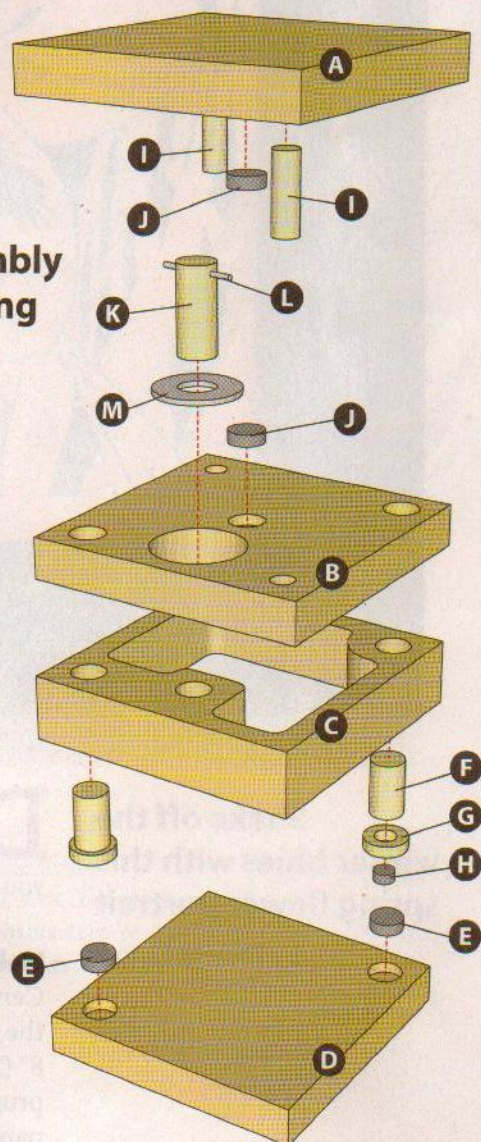
- Glue: wood; cyanoacrylate (CA) glue
- Sandpaper
- Finish, such as linseed oil

Tools:

- Blades, such as Olson: #7 reverse-tooth
- Drill or drill press with bits: 1/16" (2mm) twist; 1/4" (6mm); 3/8" (10mm); 1/2" (13mm); 7/8" (22mm) Forstner
- Square (optional)
- Router with roundover bit
- Clamps

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

Assembly drawing



Levi Dojczman lives in Pembroke, Ont., Canada, with his family. He started woodworking at a young age and hasn't stopped, though he now prefers to design his own projects.

Patterns for the **OPEN SESAME PUZZLE BOX** are in the pattern pullout section.

Daffodil

Fretwork Portrait



Shake off the winter blues with this spring flower portrait

By Theresa Ekdorn

Daffodils are always a welcome sight after a long winter. Along with crocuses, they are the first flowers to bloom in spring. Hang this in your home or office to remind you of new beginnings all year long.

Making the Daffodil

Center the pattern on the blank. Drill a blade-entry hole for each fret. Cut the frets. Once you have cut the entire design, trim the blank to an 8" by 8" (203mm by 203mm) square. Sand away any fuzzies, and then spray the project with clear finish. Once dry, place the fretwork in a frame with black paper behind it.

Daffodil portrait pattern



© 2015 Scroll Saw Woodworking & Crafts

Materials & Tools

Materials:

- Plywood 1/8" (3mm) thick: 8 1/2" x 8 1/2" (216mm x 216mm)
- Paper, black: 8" x 8" (203mm by 203mm)
- Spray glue
- Finish: clear spray
- Sandpaper
- Frame

Tools:

- Blades: #1 spiral
- Drill with small drill bit

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



Theresa Ekdorn lives in Roscommon, Mich. Contact her at tekdom@hotmail.com or www.woodngoods.artfire.com.

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



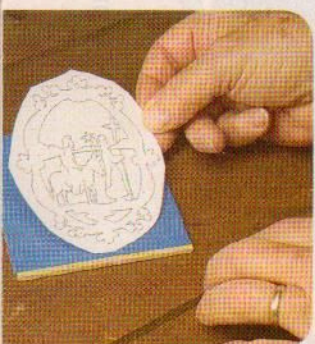
Squaring Your Table

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

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

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

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



Attaching Patterns

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

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

Stack Cutting

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

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

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

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



Blade Tension

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

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

Blade-Entry Holes

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



Removing Patterns

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

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Fun at the Fair

Don Bohn, a 78-year-old scroller from Mount Pleasant, Wis., is a big fan of county and state fairs. In fact, he met his wife at the Racine County Fair in 1956. “Mary Ann and I were in 4-H back then, showing our steers side by side,” Don recalled. The couple has attended statewide fairs nearly every year since.

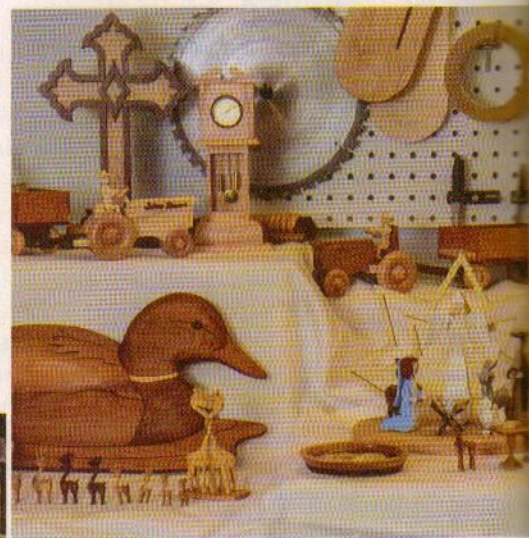
Don discovered scroll sawing in the 1990s and was immediately hooked. “I had a jig saw, but the scroll saw presented more opportunities to make complex and varied projects,” he said. Once he got the hang of it, he took his completed projects to the fair. Over the years, Don has won many ribbons for his craft, which includes everything from toys and animals to wall décor and intarsia. He has also earned numerous Outstanding Exhibit awards, three consecutive Grand Champion awards, and seven Exhibitor of the Year awards.

Don encourages all scrollers and woodworkers to exhibit their work. “I think fairs are a great place to show your work. You’ll always find a wide range of local participants with a variety of projects and skills, and you’ll get to meet new people with the same interests in wood. The result is friendly competition and lots of new friends.”

Don Bohn can be reached at dmbohn15@att.net.



Donald Bohn shows some of his prestigious county fair awards.



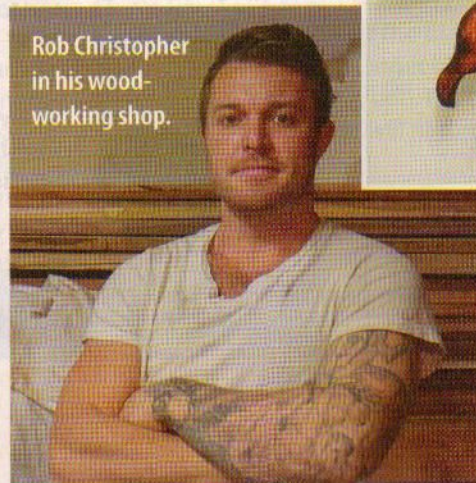
Don makes a variety of items from toys and miniatures to wall décor and intarsia.

Rescuing and Transforming Wood

“I believe building materials deserve a second chance,” said 33-year-old Rob Christopher, the founder of Emotive Reclaim, a Chicago-based art and custom woodworking business. Growing up, Rob watched his father rescue old furniture from trash heaps and turn it into something beautiful and functional for their home. Eventually, Rob followed in his father’s footsteps with such finesse that his friends convinced him to start his own business based exclusively on salvaged wood. “Suddenly it all became clear. I knew I had found my passion.”

To keep his hungry business well fed, Rob digs through dumpsters outside buildings marked for demolition. “A majority of Chicago’s homes were built 80-plus years ago, so a lot of that material is old-growth Douglas fir—the kind of stuff you just can’t buy anymore.” Rob works out of a tenant-shared warehouse where the buzz of a scroll saw is a familiar sound. “My first scroll saw was a garage-sale find that nearly rattled itself off of my workbench,” he said with a laugh. “But even then I was impressed with the detail I could achieve compared to the handheld jig saw I had been working with. Scroll saws add a whole different level of control and detail to my woodworking.”

Learn more about Rob Christopher’s work at www.emotivereclaim.com.



Rob Christopher in his wood-working shop.



Rob made this wall art from reclaimed walnut, birch, oak, mahogany, pine, and douglas fir.

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*"I totally endorse
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*It is the best tool
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with my scroll saw.*

*Guinevere makes
me feel like
all projects
are possible."*

Mike Seale
Sugarland, Texas

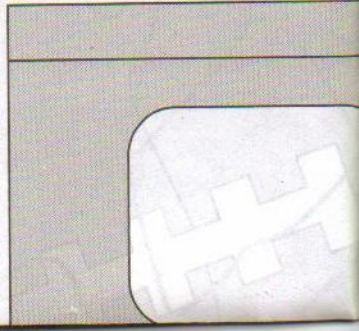
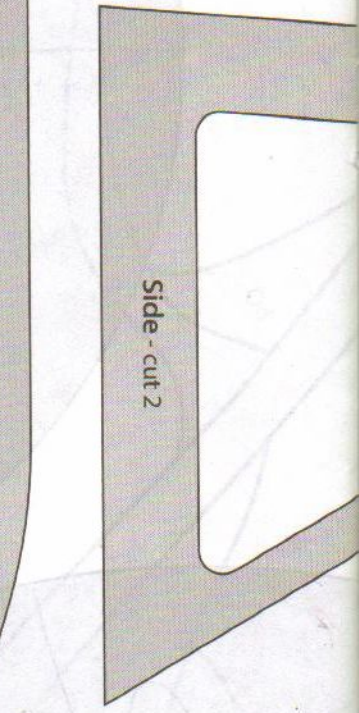
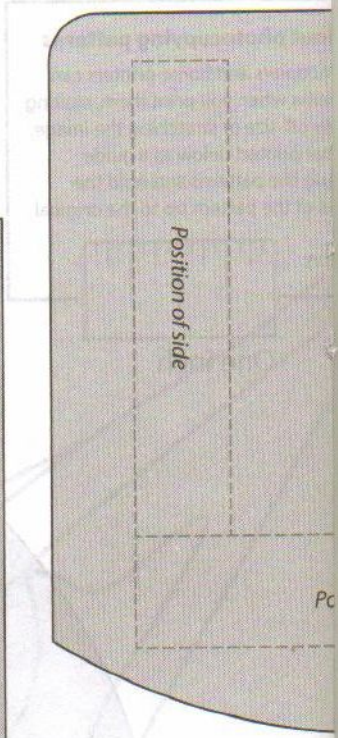
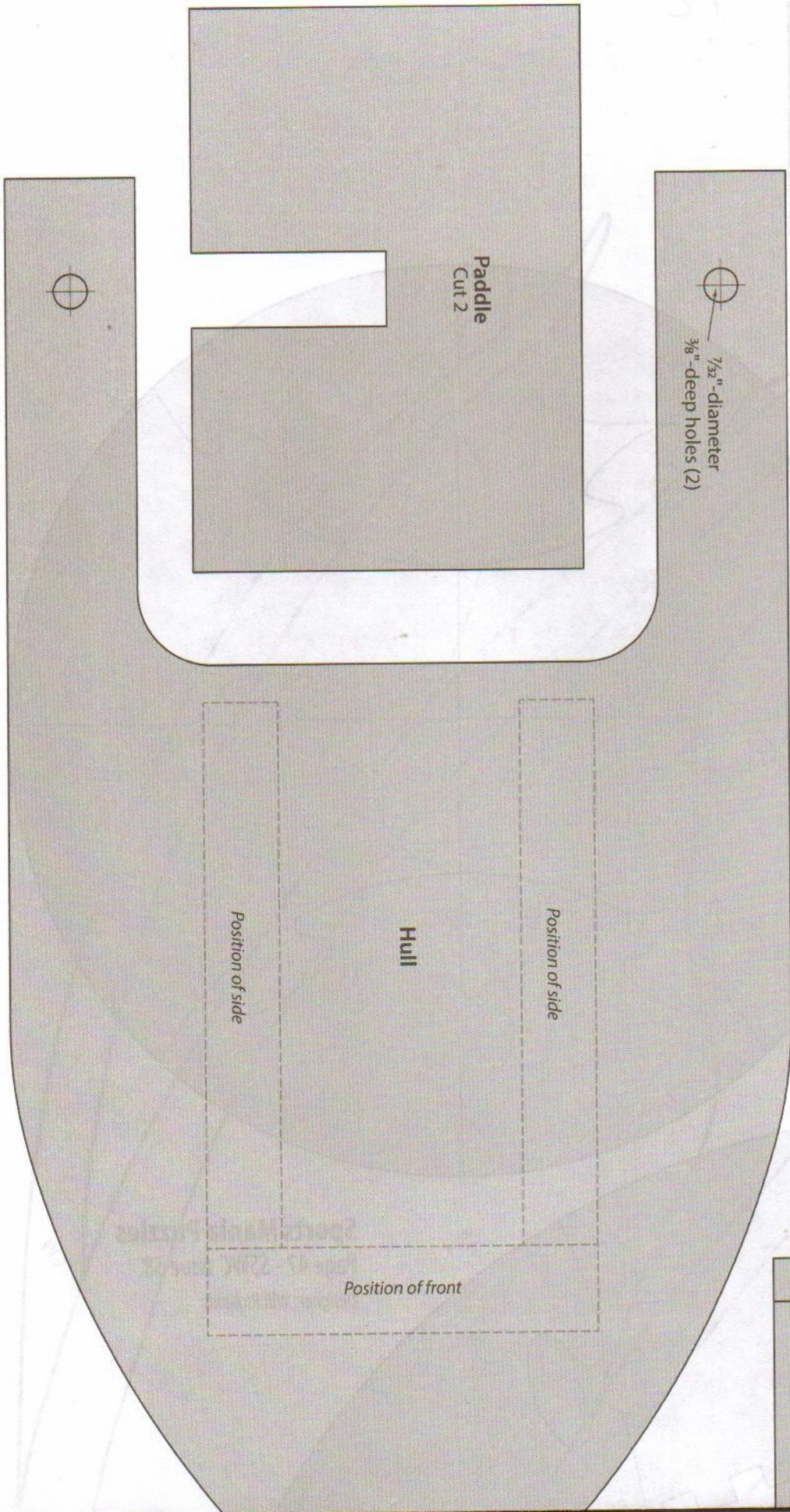


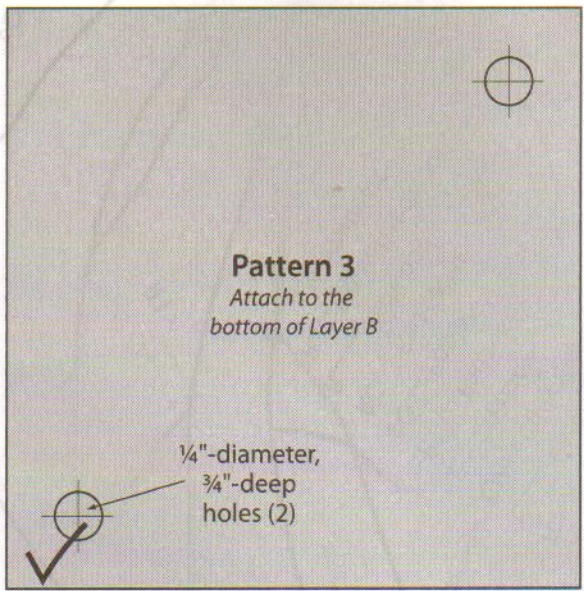
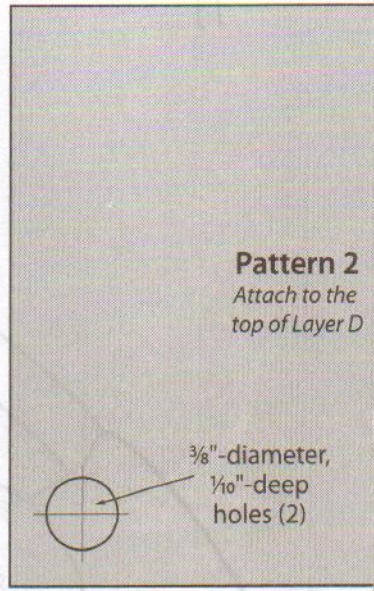
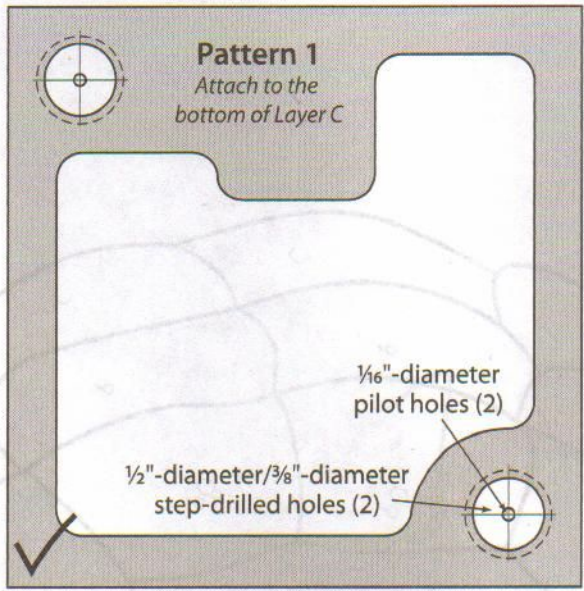
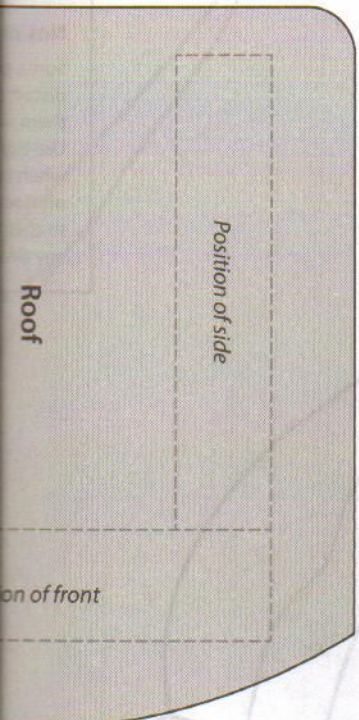
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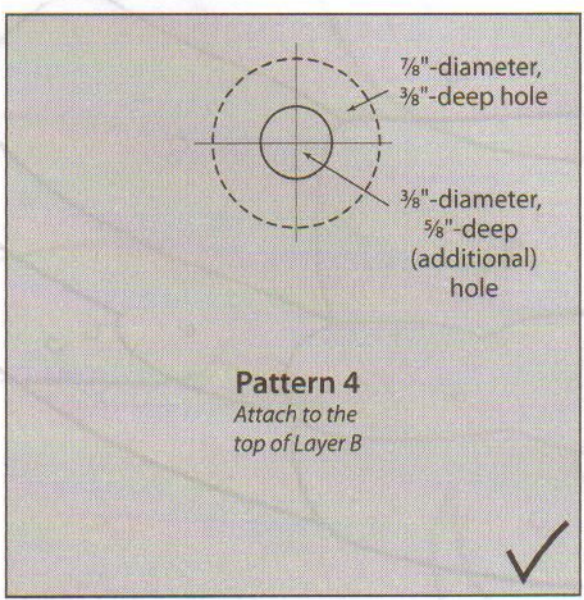
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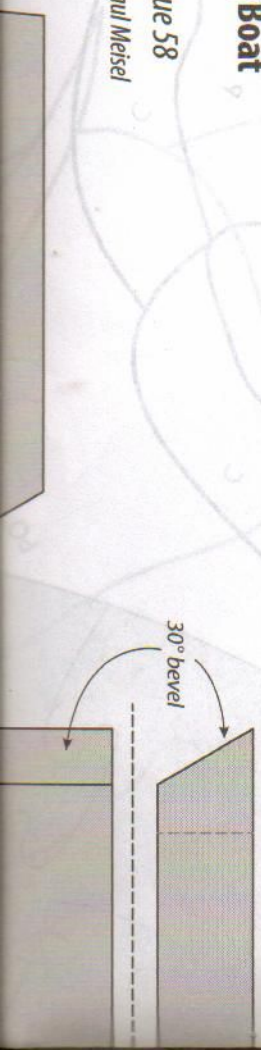




Open Sesame Magnetic Puzzle Box
Page 64
SSWC Issue 58
Designer: Levi Dojczman



Rubber Band Racing Boat
Page 29
SSWC Issue 58
Designer: Paul Miesel



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All patterns on this pullout section: © 2015 Scroll Saw Woodworking & Crafts

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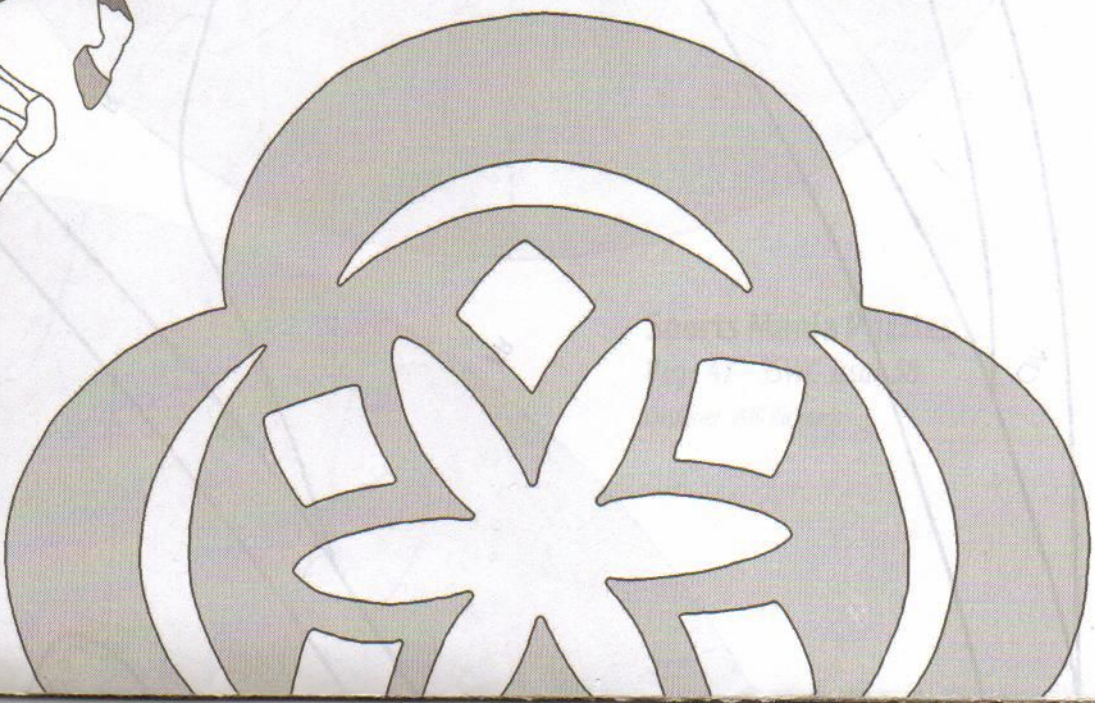
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Some photocopiers and home printers can distort patterns when you print them, making them slightly off-size or stretching the image. Use the 1" bar printed below as a guide when copying the patterns and hold the photocopies of the pattern up to the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



One inch



5



Sports Mania Puzzles

Page 47 - SSWC Issue 58

Designer: Will Richards

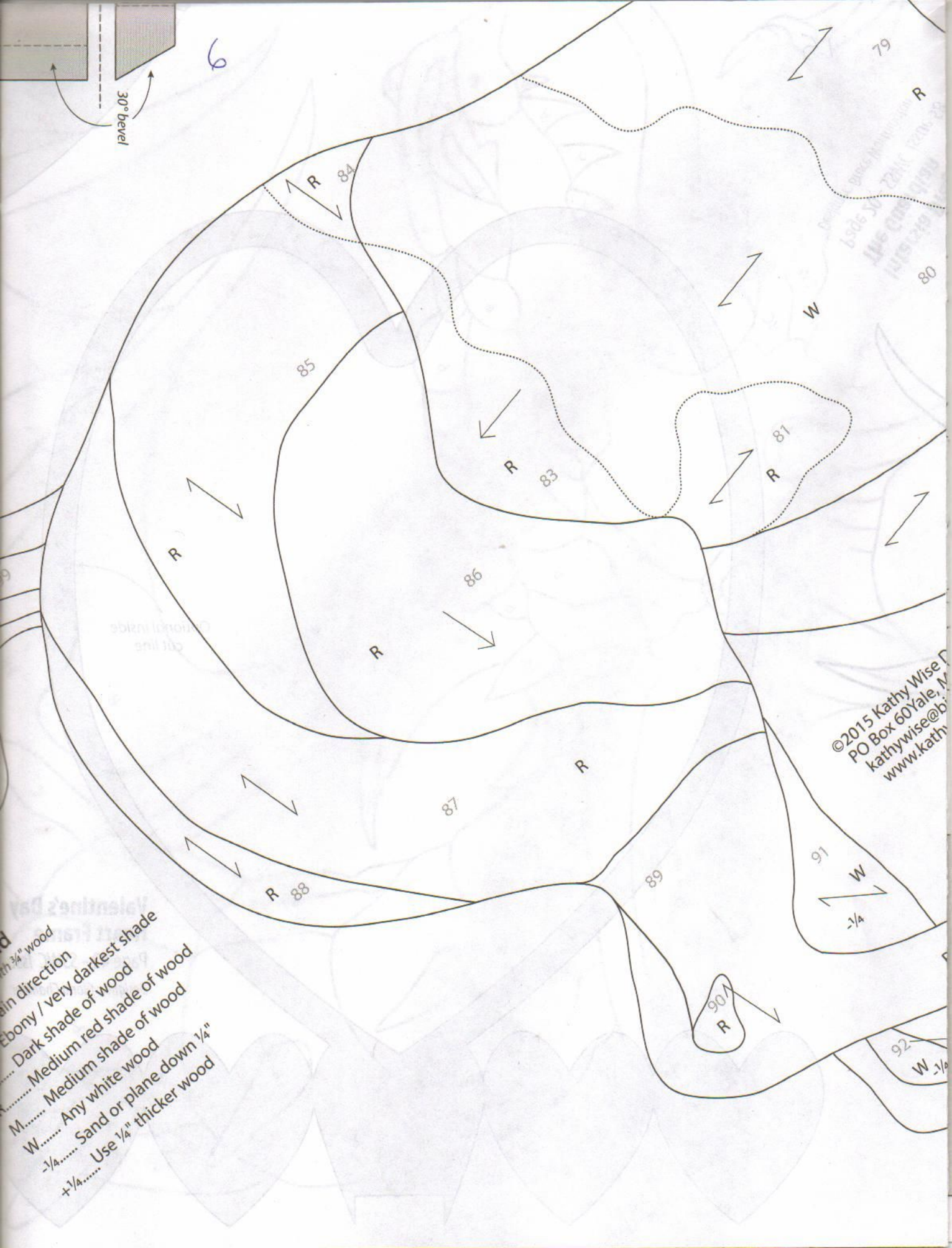


Legend

Start

B...

D



6

30° bevel

79

R

80

W

85

R 84

R 83

R 81

86

R

R

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 kathywise@b
 www.kathy

R

87

91

W

-1/4

R 88

89

R 90

92

W -1/4

- R..... with 3/4" wood
- grain direction
- Ebony / very darkest shade
- Dark shade of wood
- M..... Medium red shade of wood
- Medium shade of wood
- W..... Any white wood
- 1/4..... Sand or plane down 1/4"
- +1/4..... Use 1/4" thicker wood

7

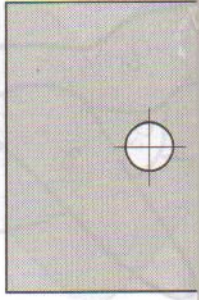
Running Horse

Page 16

SSWC Issue 58

Designer: Kathy Wise

designs
48097
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ywise.com



Key Hanger
Page 37 - SSWC Issue 58
Designer: Sue Mey

**Shop-Made
Bike Hooks**
Page 48 - SSWC Issue 58
Designer: Dave Van Ess

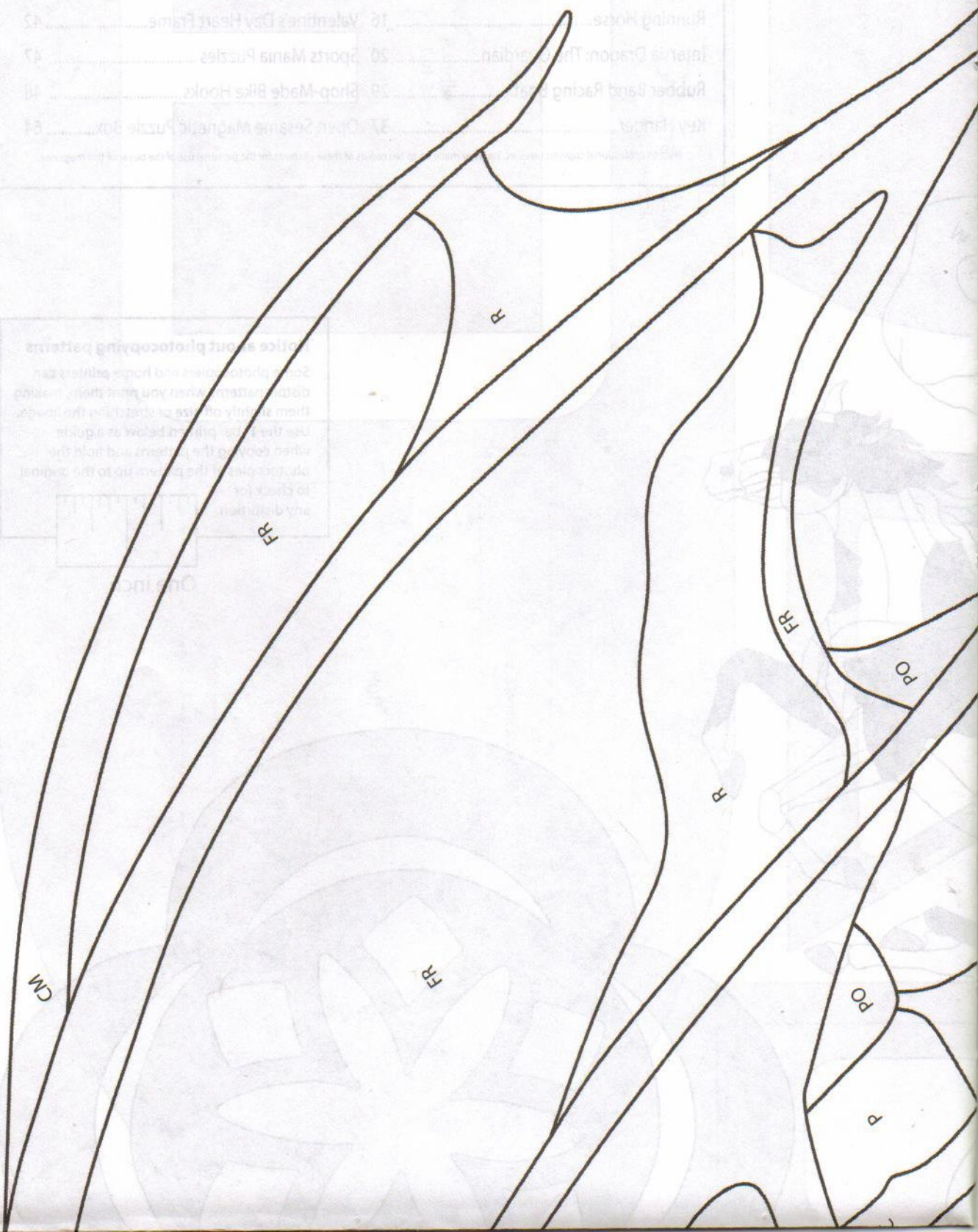
1/4"-diameter
holes (2)

1/8"-diameter
holes (5)

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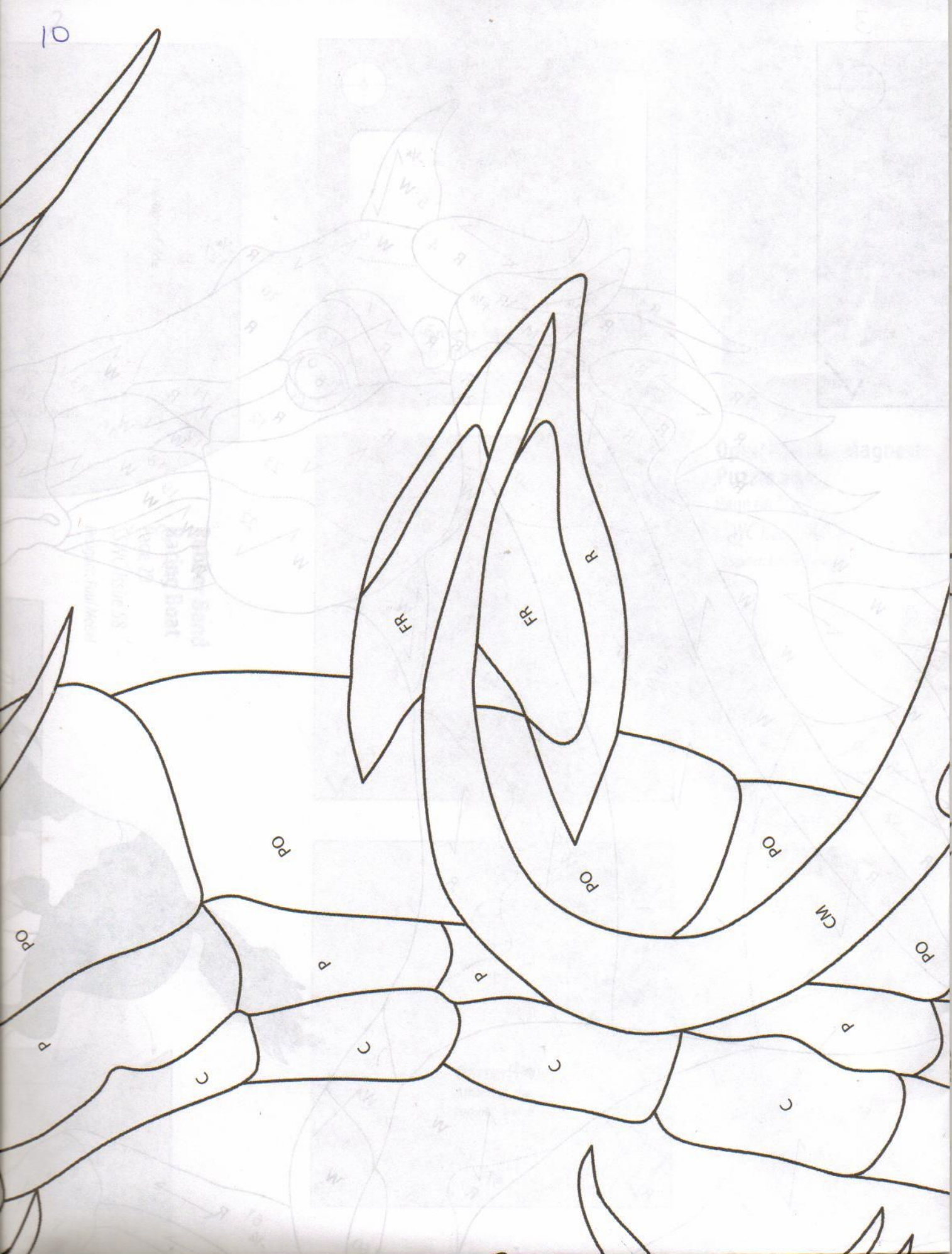
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42	Running Horses
43	Valentine's Day Heart Frame
47	Sports Mania Puzzles
48	Rubber Band Racing
51	Key Finder
53	Open Sesame Magnetic Puzzle Box



pieces about photographing patterns
 Set your camera and tripod on a level
 surface. When you find the focus,
 lock it. Then, move the camera up or
 down to get the shot you want. Use
 the camera's LCD screen to check
 the focus. The camera's LCD screen
 is a great tool for checking focus.

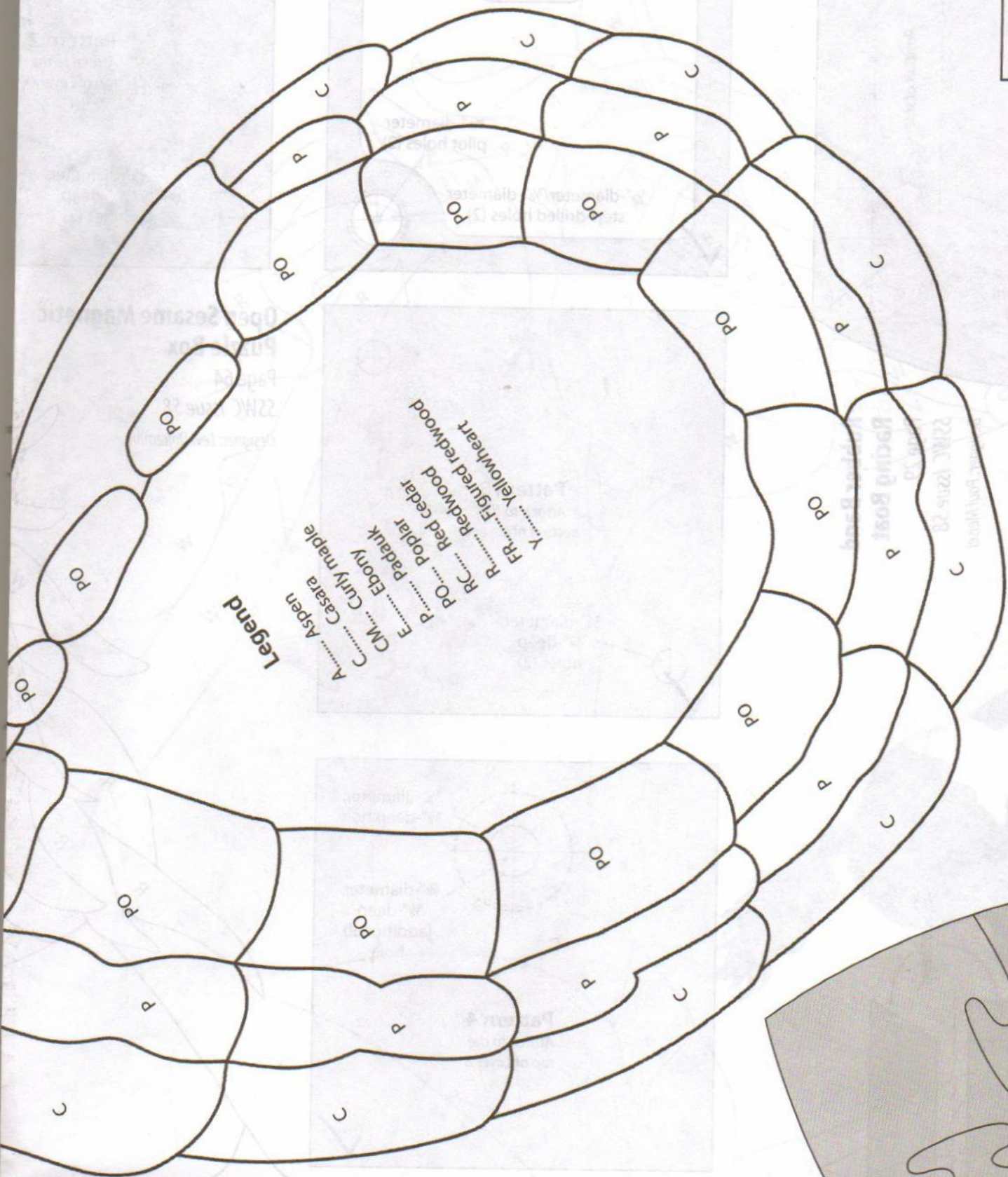




Notice

Some pieces may distort when cut. Use the pieces when cutting when cutting. Use the pieces when cutting. Use the pieces when cutting. Use the pieces when cutting.

11



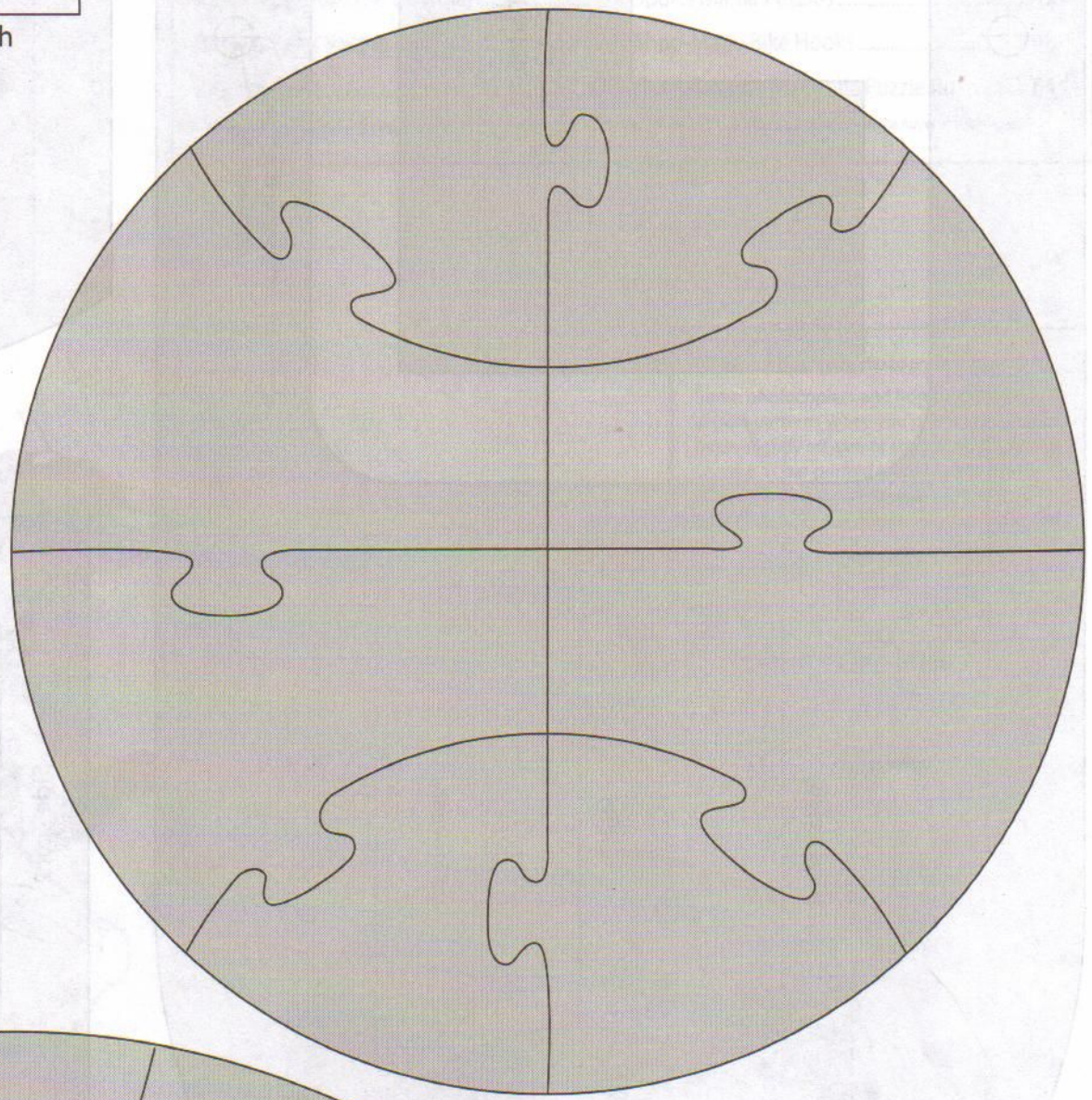
12

Print photocopying patterns

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One inch



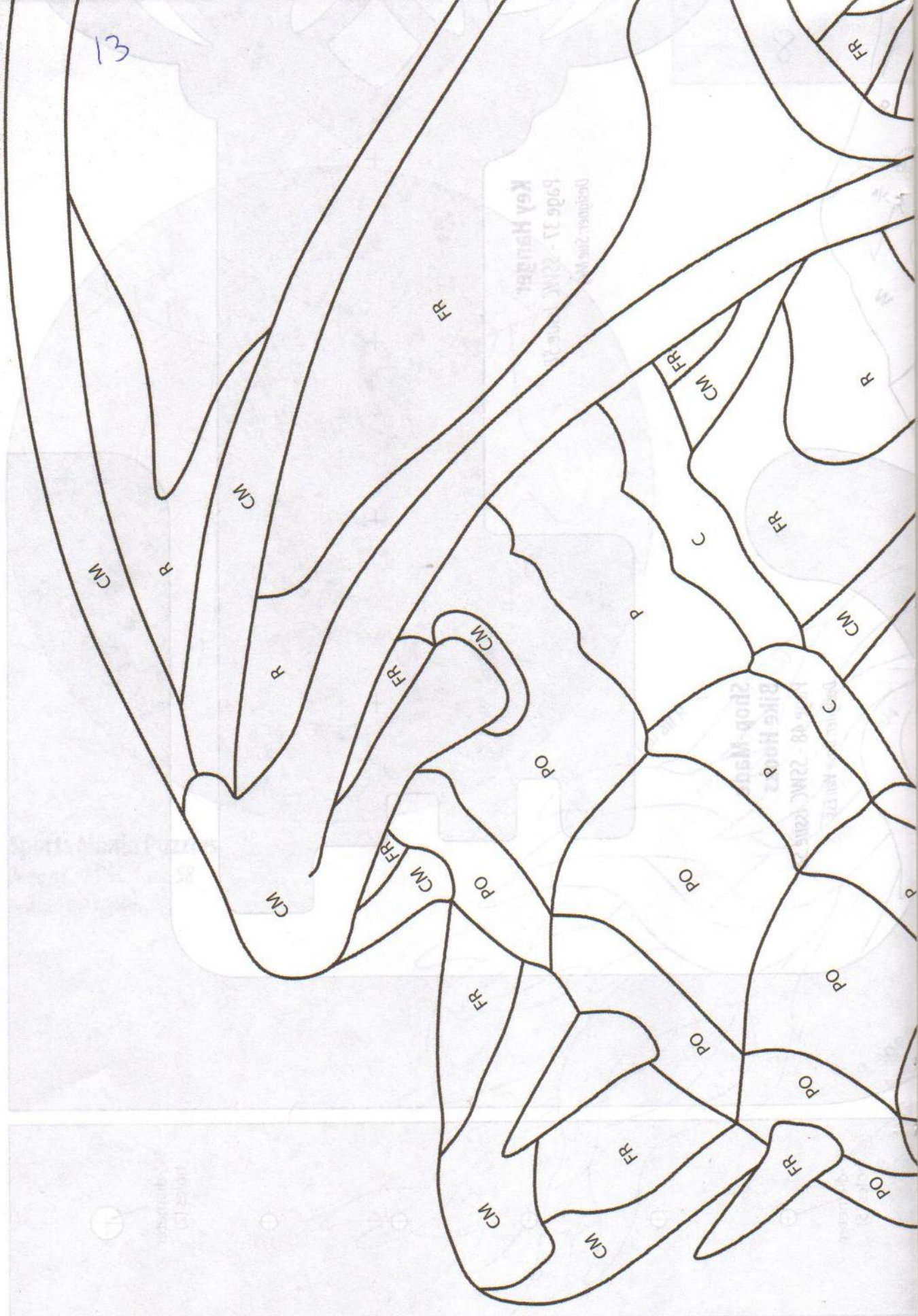
Sports Mania Puzzles

Page 47 - SSWC Issue 58

Designer: Will Richards



13





R

CM

P

P

PO

FR

PO

FR

PO

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FR

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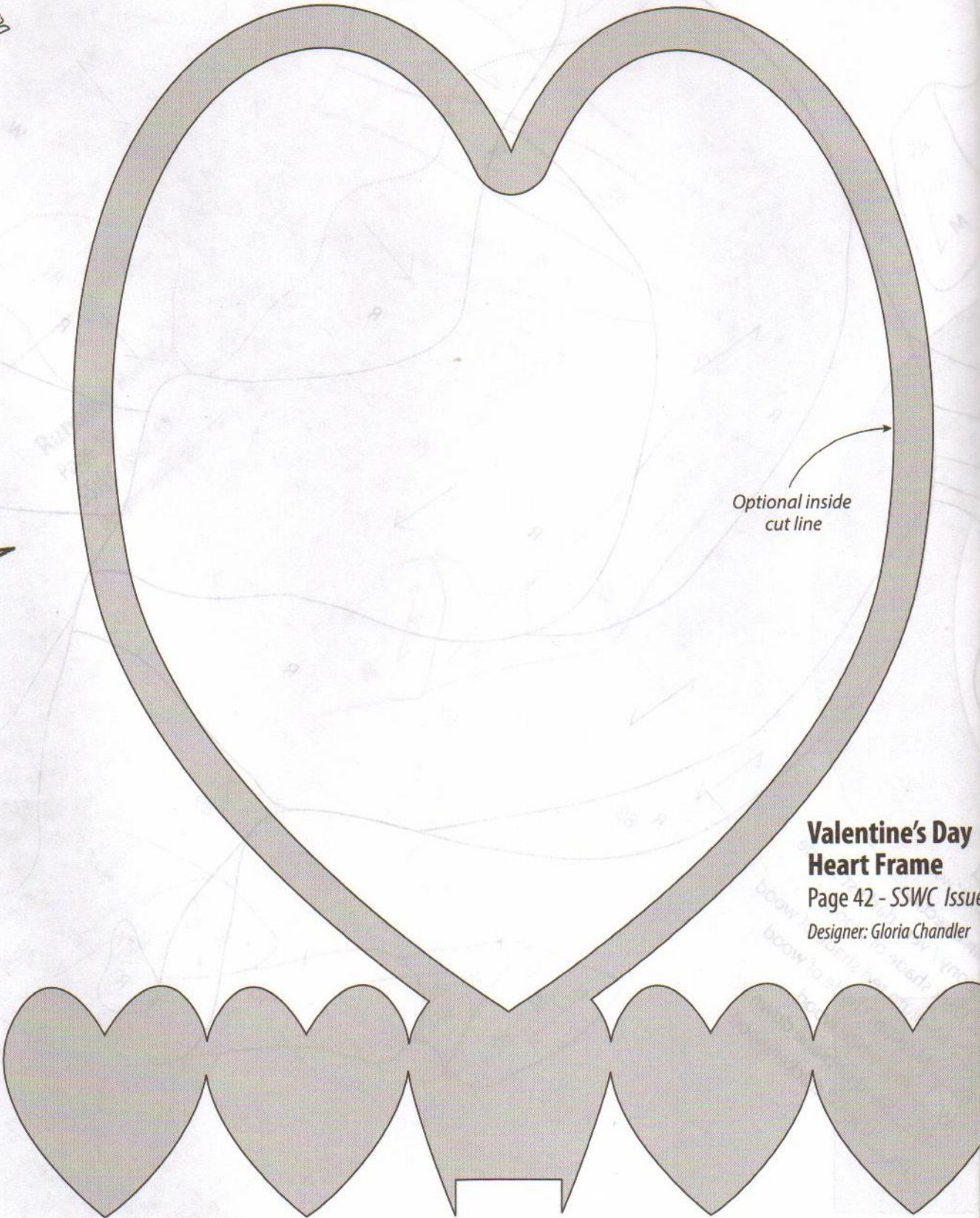
PO

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PO

upon:



Optional inside
cut line

**Valentine's Day
Heart Frame**

Page 42 - SSWC Issue

Designer: Gloria Chandler

