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SPRING 2018
ISSUE 70

WOODWORKING & CRAFTS

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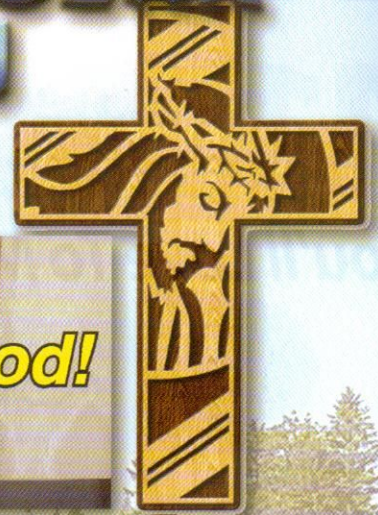
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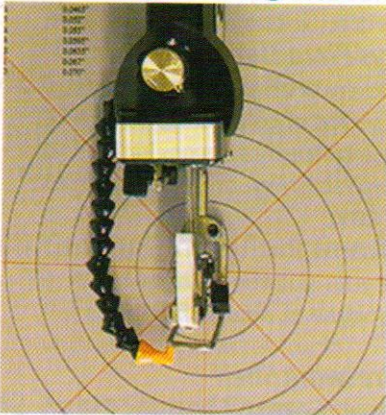
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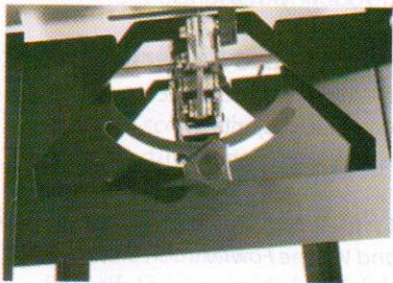
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Enjoy an overview of gorgeous maps made of wood.

• Full-size Patterns

Download and print full-size patterns for Gabriel Schama's Art Deco Shadow Box (pg. 21).

• Get Started Scrolling

From saw reviews to advice about wood, blades, and finishes, find all the info you need to Get Started Scrolling or help someone else learn the hobby.



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More Fretwork

Awhile back, I started getting unsigned messages requesting, "MORE FRETWORK!!!" They appeared in response to our newsletters and sales pitches, and were forwarded to me by the webmaster and marketing folks. It was like the universe was making editorial requests.

In each issue, we try to cover the whole gamut of projects you can do with a scroll saw—and some you wouldn't think to try, such as making a traditional Six-Board Blanket Chest. The secret is to get the boards cut to length before you bring them home. You can do the rest with your scroll saw and basic hand tools, creating a chest that will last for generations.

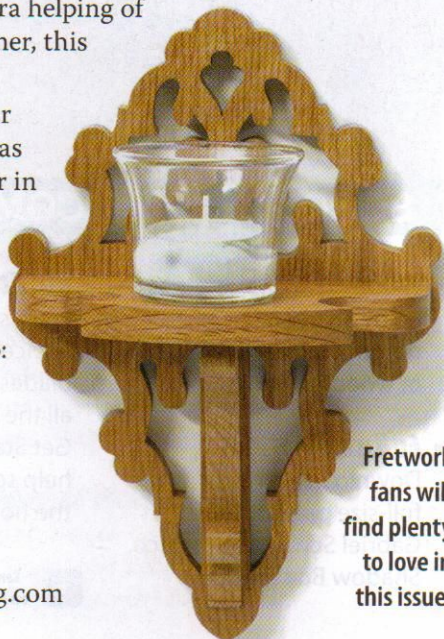
We try to have some simpler projects and some challenging projects. Cutting, shaping, and fitting the pieces of Janette Square and Bruce Worthington's Majestic Whitetail Intarsia will take patience, but the results are spectacular. At the other end of the spectrum are the Birthday Candle Holders. They will cost about \$5 and take an hour or two to make, and you'll use them every time a family member has a birthday. You'll save money on those fancy number candles, plus elevate the candles to avoid blowing germs on the cake. (Make a few extra sets; I bet they'll sell at craft fairs.)

We also like to highlight techniques, with the hope that you can use the information across a range of projects. For example, Al Baggetta reviews the steps for doing an inset decoration as part of his Heart-Shaped Boxes project. He shares patterns for the word "love" and a musical note, but you can follow the instructions to embellish any project with any design.

So, what about the fretwork? In this issue, we turned it up to 11. There's a simple shelf, perfect for sconces or small treasures; a heart-themed box just right for Valentine's Day treats; two animal portraits; and a layered piece designed by featured artist Gabriel Schama. And if you'll allow me to be very loose in my definitions, take a look at the clock on page 28—instead of gingerbread, it is a pizza decorated with an extra helping of fretwork toppings. Greg Warner, this one's for you.

We're always eager to hear what you think of each issue, as well as what you're looking for in future projects. You can join our forum (www.scrollsawer.com/forum), message us on social media ([facebook.com/sswmag](https://www.facebook.com/sswmag)), or send an e-mail to: editors@scrollsawer.com. Enjoy!

M Kinsey
Mindy Kinsey
Kinsey@FoxChapelPublishing.com



Fretwork fans will find plenty to love in this issue.

SCROLLSAW woodworking & CRAFTS

Printed in the USA

SPRING 2018

Volume 19, Number 1, Issue 70

www.ScrollSawer.com

Our Mission:

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

Publisher	Alan Giagnocavo
Vice President, Content	Christopher Reggio
CFO and General Manager	Dave Kefford
Editor	Mindy Kinsey
Technical Editor	Bob Duncan
Art Director	Jon Deck
Contributing Photographer	Mike Mihalo
Technical Illustrators	Jon Deck
.....	Carolyn Mosher

Customer Service for Subscribers

Visit www.ScrollSawer.com, call 888-840-8590, or write:
Scroll Saw Woodworking & Crafts, Subscriber Services,
903 Square Street, Mount Joy, PA 17552

Newsstand Distribution: Curtis Circulation Company
Circulation Consultant: National Publisher Services
Printed by Fry Communications

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Subscription rates in US dollars:

One year	\$24.95
Two years	\$49.90

Canada

One year	\$29.95
Two years	\$59.90

International

One year	\$34.95
Two years	\$69.90

Display Advertising/Classified Ads

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or e-mail sensenig@FoxChapelPublishing.com

Wholesale/Distribution

Scroll Saw Woodworking & Crafts is available to retailers for resale on advantageous terms. Contact Wendy Calta (ext. 114) for details.

Identification Statement: Scroll Saw Woodworking & Crafts, vol. 19, no. 1 (SPRING 2018) (ISSN#1532-5091) is published quarterly by Fox Chapel Publishing Co. Inc., 903 Square Street, Mount Joy, PA 17552. Periodicals Postage paid at Lancaster, PA and additional mailing offices. POSTMASTER: Send address changes to Scroll Saw Woodworking & Crafts, 903 Square Street, Mount Joy, PA 17552.

Publication Mail Agreement #40649125
Return Undeliverable Canadian Addresses to:
Station A, PO Box 54
Windsor, ON N9A 6J5
Shannon@FoxChapelPublishing.com

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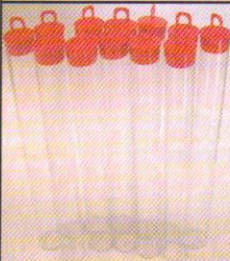
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Golden Lion

I live in a retirement condo that houses a pub called the Golden Lion Pub. Another fellow and I made Kathy Wise's "Lion," published in *Scroll Saw Woodworking & Crafts* Summer 2017 (Issue 67), to hang in the bar. We enlarged the pattern to 150% and rotated it 180° so that the lion looks at the people instead of the wall.

Ron Hyslop
Yarmouth Port, Mass.

SET IT STRAIGHT

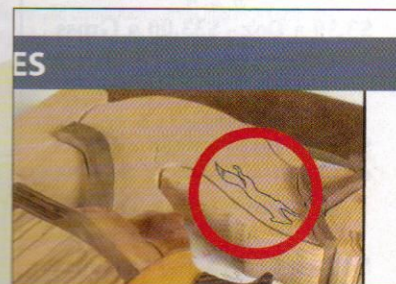
The "Star is Born Playset" pictured on page 50 of the Winter issue (#69) was made by Susan Burkhardt, not John and Cynthia Lewman as stated. Although the Lewmans designed the pattern, Susan customized and cut the version pictured. We apologize for the error.



Spring Gathering

I used ambrosia maple, aspen, birch, blue pine, butternut, aromatic cedar, sycamore, yellow cedar, and yellowheart wood, among many others, to complete the project from the article "Spring Gathering" by Janette Square and Bruce Worthington, published in *Scroll Saw Woodworking & Crafts* Spring 2017 (Issue 66). The wood is natural except for the bluebird.

Clinton Smith
White Bear Lake, Minn.



Fox Hunt

John Burton of Derby, Ind., and Doug Madden of Arlington, Texas, were randomly drawn from the participants who located the fox in our last issue (Winter 2017, Issue 69). The fox was hiding in the Step 3 photo on page 25.

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 February 22, 2018, to be eligible. *NOTE: The contest fox is an outline drawing that would face left if his feet were on the "ground" (other foxes appearing in SSW&C don't count).*

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

Water Lily Friend

I added a dragonfly to the "Water Lily Box" by Carole Rothman, published in *Scroll Saw Woodworking & Crafts* Summer 2017 (Issue 67). I made the lily from poplar and aspen, and the dragonfly from walnut and oak.

Jeff Verble
Antioch, Tenn.



Write To Us!

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

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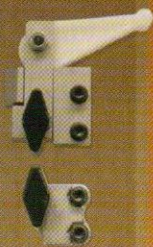
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1



2



3



1 Darrell Andrei

Moose Jaw, Sask., Canada

Darrell began scrolling as therapy after he suffered a workplace accident. He enjoys doing intarsia projects, as well as making shadow boxes for displaying sports jerseys, creating pet urns, and cutting projects for kids to paint.

2 Orv Barbee

Johnston, Iowa

Orv made this plaque for the administration building at the Iowa Veterans Cemetery. He used poplar, walnut, and maple, and finished it with acrylic paint.

3 David Eister

Maysville, N.C.

David used more than 700 pieces and 20 different types of wood to build this 3' by 6' (91.4cm by 1.8m) intarsia scene. He chose patterns by Judy Gale Roberts for many of the fish and referenced coloring books and stained-glass window patterns to complete the other creatures. David has enjoyed working with wood for nearly 70 years.

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4 Robert Riggs

Keller, Texas

Robert used recycled fence panels to create this 12" by 28" (30.5cm by 71.1cm) piece. He cut the project and his wife, Donna, painted it. See more of their work at www.facebook.com/Scrollriffic-Crosses-483543871739970/.

5 Donald Mundy

Bethel, Ohio

A scroller for just two years, Don created this intarsia portrait after seeing an inspiring photo. He said it was particularly challenging to translate the light in the horse's mane into wood.



5

6



6 Kenneth McElfresh

Ozark, Mo.

Kenneth used multiple saws, including a table saw and a band saw, to create these stacked geometric vases.

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

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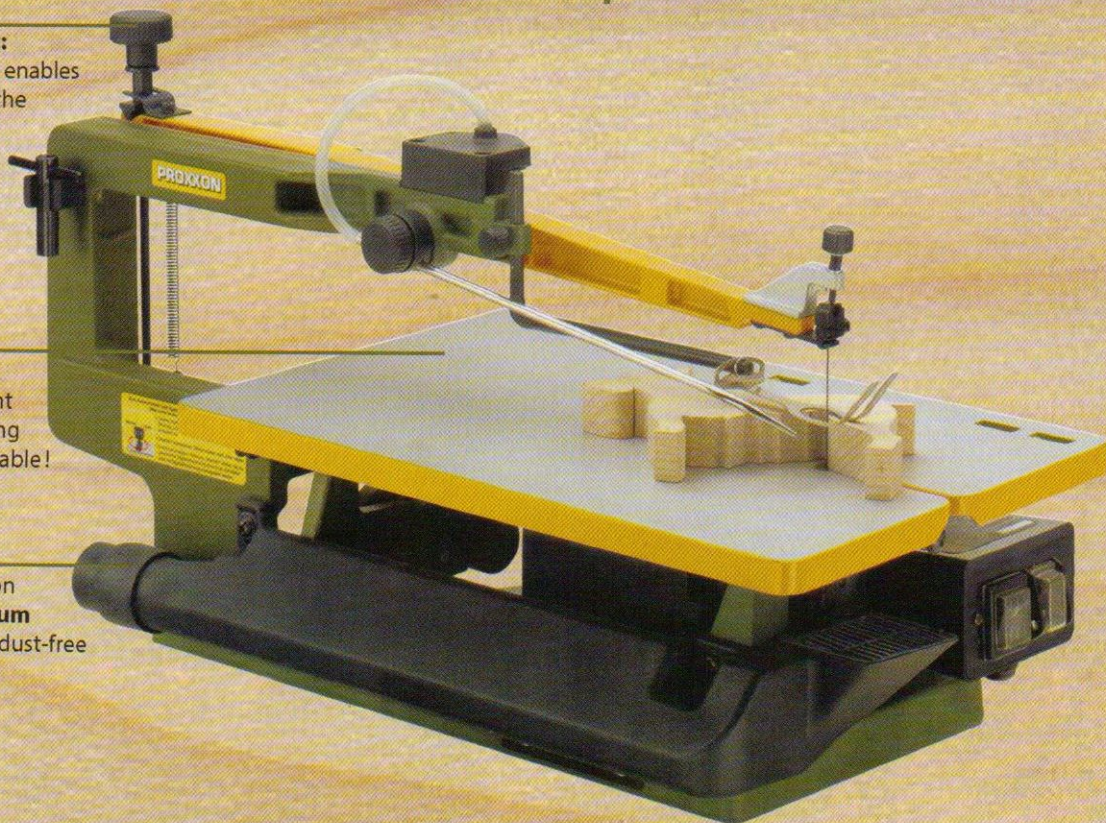
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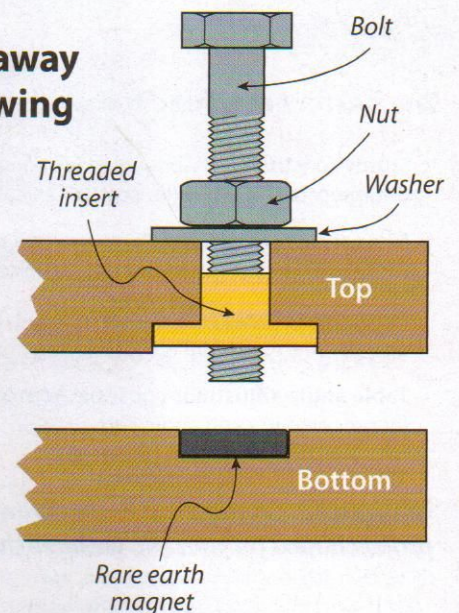
By Tony Giroux

I have an adjustable table on my drill press that I use to drill at angles when I'm making inlays, a stacked bowl, or some boxes. However, it's always a challenge to reset the table to horizontal after I rotate it. I designed this jig to allow me to drill at an angle without changing the drill press table.

Making the Jig

Cut the plywood or MDF to size. The boards must be flat and the ends must be parallel. Drill the holes as indicated in the templates on page 14. Glue rare earth magnets into the holes in the bottom board, and install threaded inserts into the under side of the top board. Make sure the boards sit flush against each other. Then, refer to the drawing and install the bolts, nuts, and washers from the top side of the top board. Do not tighten the nuts against the board. Finally, install the hinges across the ends opposite the other hardware.

Cutaway drawing

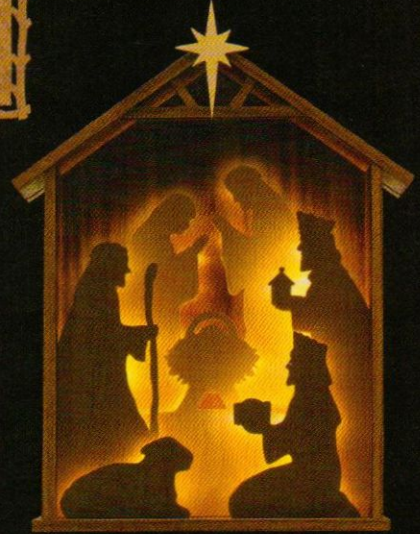


Continued on page 14

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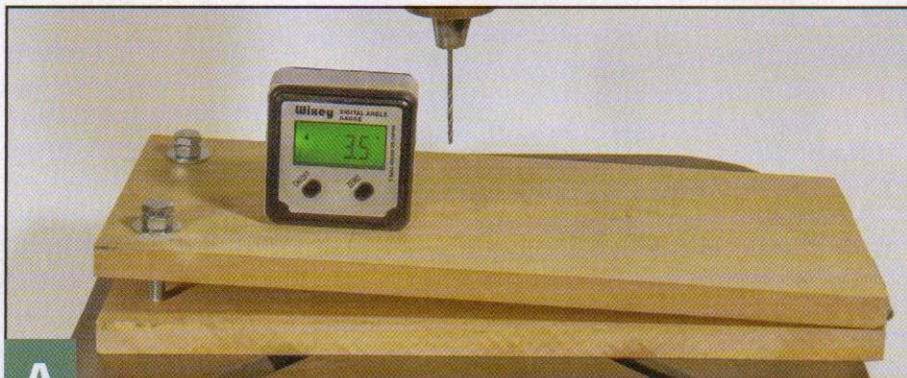
Coupon valid on website, phone and showroom orders using Promo Codes shown. One time use only. Coupon cannot be combined with other offers. Discount cannot be applied to gift cards, shipping or sales tax.

Using the Jig

There are a couple of ways to set the angle of the board. For both methods, start with a closed jig and a horizontal (flat) drill table.

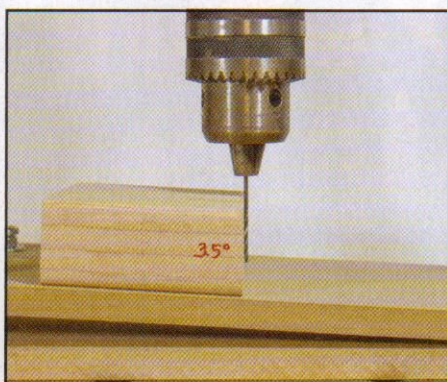
Note: To drill at higher angles, you may need longer bolts.

Drilling templates



A

Zero a digital angle guide on the closed jig on the drill press table. Slowly rotate the back bolt to tilt the jig until the angle guide reaches the desired setting. Screw the front bolt in until it just touches the magnet, and then finger-tighten the nuts down against the top board to lock the angle.



B

Use a scroll saw to cut the ends of several pieces of scrap at common angles; mark each block with its angle. Place the closed jig on the table and hold it in place with a fence or two pieces of double-sided tape. Place an angled block on the jig near the drill bit. Slowly rotate the back bolt to tilt the jig until the drill bit is parallel with the angled block. Screw the front bolt in until it just touches the magnet, and then finger-tighten the nuts down against the top board.

Materials:

- Plywood or MDF, 1/2" (1.3cm) thick: 2 each 5" x 12" (12.7cm x 30.5cm)
- Rare earth magnets, 1/8" (3mm) thick: 2 each 1/2" (1.3cm) dia.
- Cyanoacrylate (CA) glue
- Hex bolts with washers and nuts, 1/4"-20: 2 each 1 1/2" (3.8cm) long
- Threaded inserts, 1/4"-20: 2 each

Materials & Tools

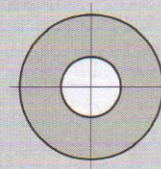
- Hinges with screws: 2 each 1" (2.5cm) long

Tools:

- Saw
- Drill press and bits: 3/4", 1/2" Forstner; 5/16" twist
- Hand drill and bit to fit hinge screws
- Screwdriver
- Hammer

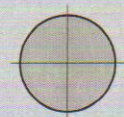
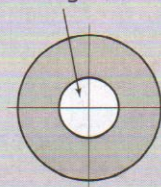


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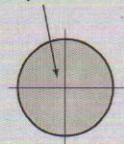
Top
1/2" thick MDF
Cut 1

3/4"-diameter,
1/8"-deep holes,
then drill 5/16"-diameter
through (2)



Bottom
1/2" thick MDF
Cut 1

1/2"-diameter,
1/8"-deep holes (2)





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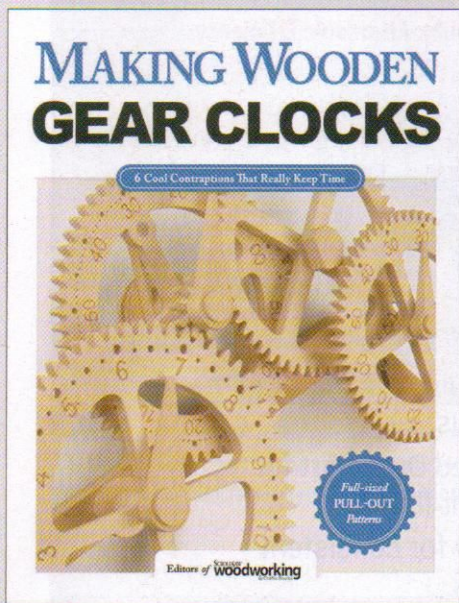
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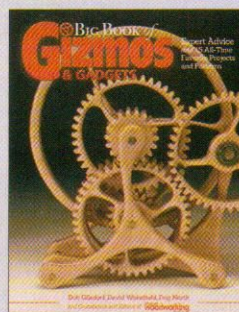


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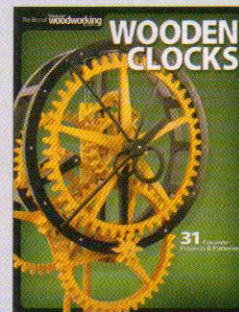
Make Something AMAZING this Weekend!



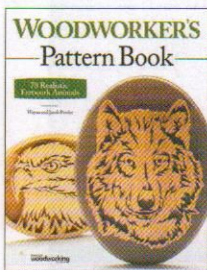
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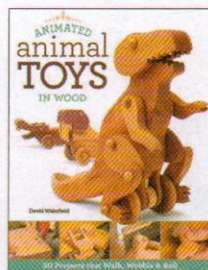
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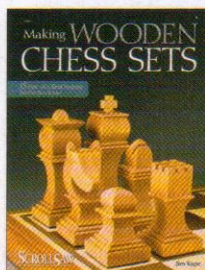
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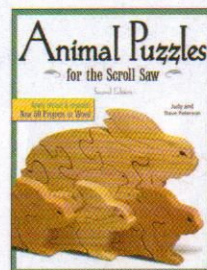
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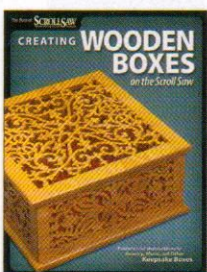
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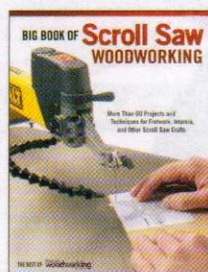
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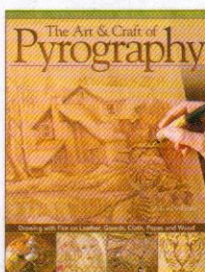
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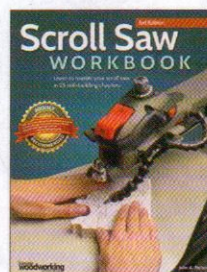
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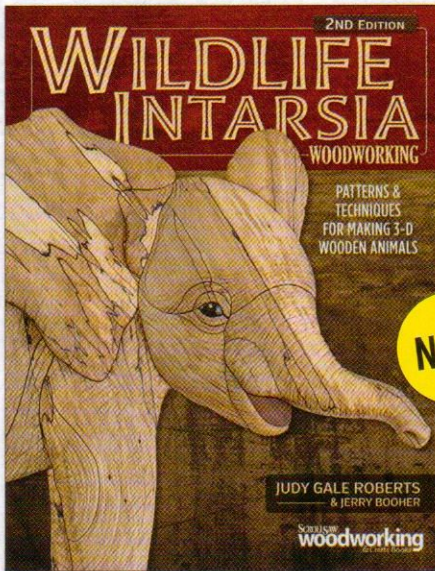
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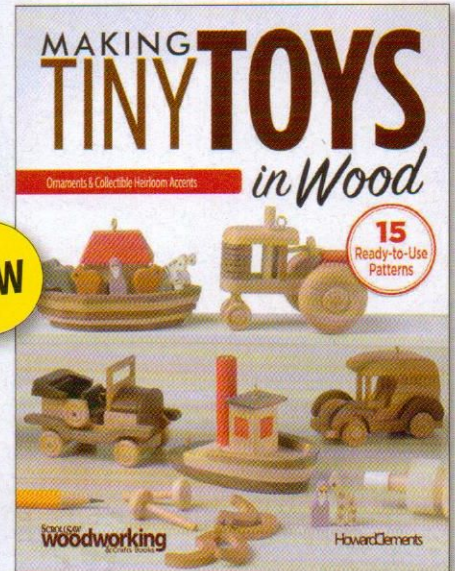
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By Howard Clements

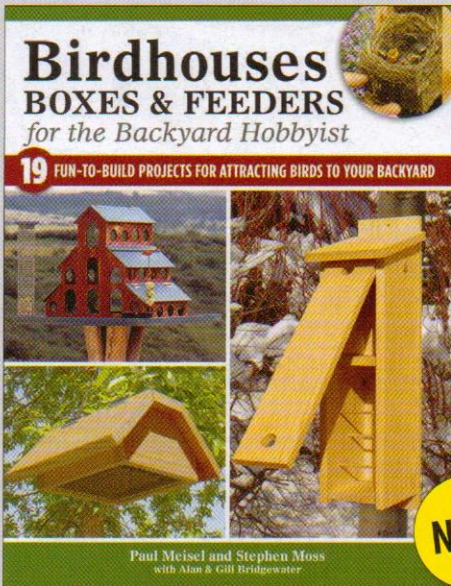
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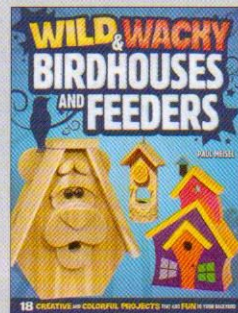
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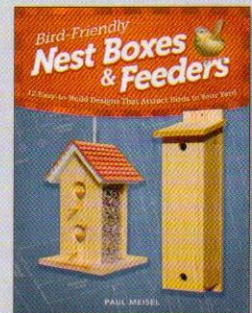
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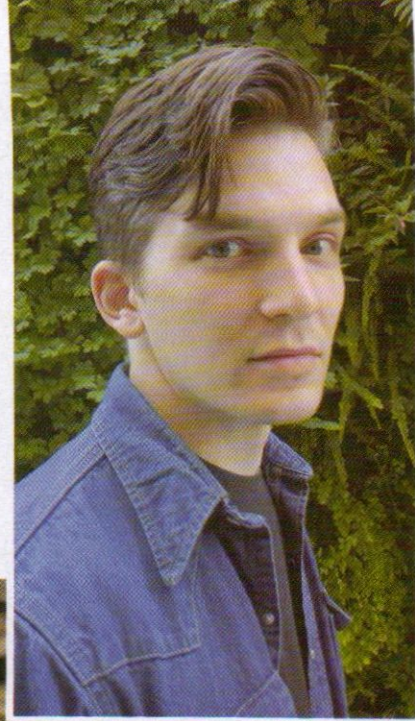
Depth- Defying ART

**Gabriel Schama uses
high-tech tools to create
intricate layered fretwork**

By Kathleen Ryan

*Byzantium,
17" (43.2cm) square.*

Art has always been a fundamental passion of mine,” said Gabriel Schama. “I’m constantly evolving as an artist—challenging myself to defy and redefine my own style by inventing new techniques as I go.” The 31-year-old California artist specializes in relief artwork cut with a laser and arranged in layers so deep one could easily get lost in them. Each intricate sculpture bends, twists, weaves, and intersects to create a staggering maze of shapes and forms.



“People engage with my work in a personal way, moving around to see it from all angles”

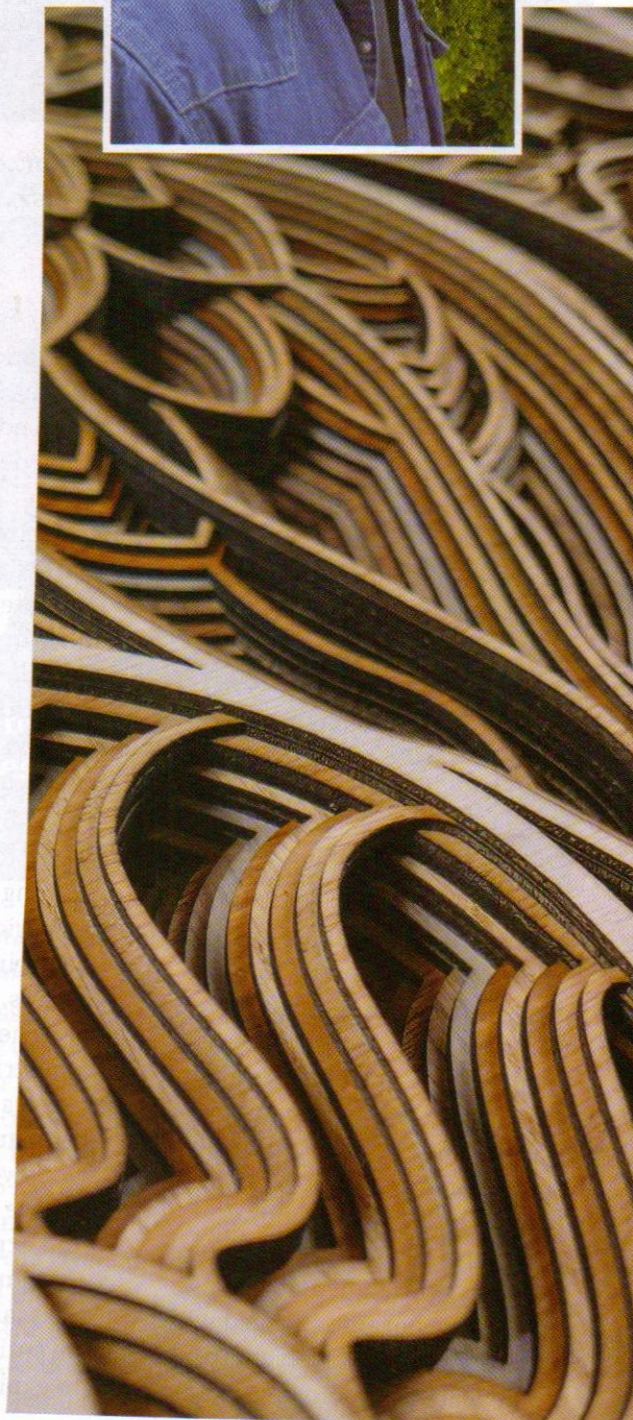
Gabriel’s interest in art began in childhood. “My father is an art historian, so I was exposed to endless museums growing up,” he said. He studied art and architecture at Columbia University in New York and later worked with a reclaimed-wood furniture designer and an architectural metal fabricator.

Gabriel created his early works by cutting paper with X-Acto knives. Now, his medium is wood and his tools are high tech. He begins each design with an idea and a computer program. “For a long time the designs flowed organically from the natural limitations of keeping a single layer of paper intact,” he said. “Once I began working in wood and designing in Adobe Illustrator, rather than directly drawing onto paper, the process of drafting digitally opened up a rich vein of new possibilities. The designs I create now would be almost impossible without Adobe Illustrator.”

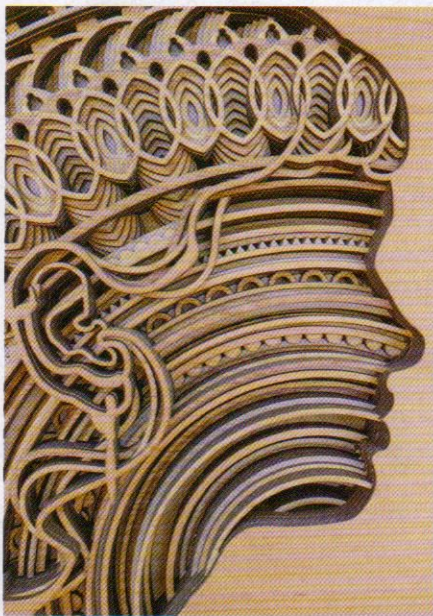
Inspiration for these designs evolved from Gabriel’s love of ancient architecture—particularly Byzantine, Arabian, and Greek examples. However, not all of his ideas play out well. “Sometimes I’ll run a design all the way to the end only to trash most of it. I’ve learned from experience that if I spend too long trying to make one particular layout work it ends up looking forced, so it’s better to be vicious with the delete key.”

Once he completes the digital design, Gabriel splits the vector illustrations into a dozen or so layers and sends them to his laser cutter (affectionately named Elsie). Then, he uses a panel saw to trim the 1/8" (3mm)-thick sheets of plywood to fit the cutting bed and lets the laser do the rest. “I prefer to use a laser cutter because many woodworking tools are narrowly and exclusively applicable to a single task, whereas laser cutters perfectly transcribe all of my designs and allow me to produce endless reprints while I’m working on other projects,” he said.

After the cutting, Gabriel sands each piece with a drum sander and deftly glues it in place using standard wood glue and a cloth rag paint roller. “There’s plenty I don’t know about



Left: *Cabron* (detail), 17" (43.2cm) square.



Clockwise, from top left: *Sarah*, 17" x 22" (43.2cm x 55.9cm); *Silhouette*, 21" (53.3cm) square; *No Thieves Go* (detail), 21" x 31" (53.3cm x 78.74cm). All of the pieces are made from multiple layers and varieties of laser-cut plywood.

woodworking, but boy do I know about glue!" he said with a laugh. "It's easiest to work from the top layer down, but the first layer is the most fragile, so I start by gluing the second layer to the third and the third layer to the fourth, and so on. The most important thing is to get the right amount of glue on the roller with each pass. But that amount fluctuates depending on how thin the plywood is at the layer that's being glued and how thick the glue has gotten as it dries in the glue tray."

Finished pieces range in size from 17" by 17" (43.2cm by 43.2cm) to 45" by 70" (1.1m by 1.8m) and can be up to 15 layers deep. "The depth in my work arose unintentionally from what was originally just meant to be a flat, graphical experiment in paper," Gabriel said. "As later experiments layered on more complexity, I realized that the emerging sculptural elements allowed for interplay with light and shadow, and people became engaged with my work in a more personal and complicated way, moving around

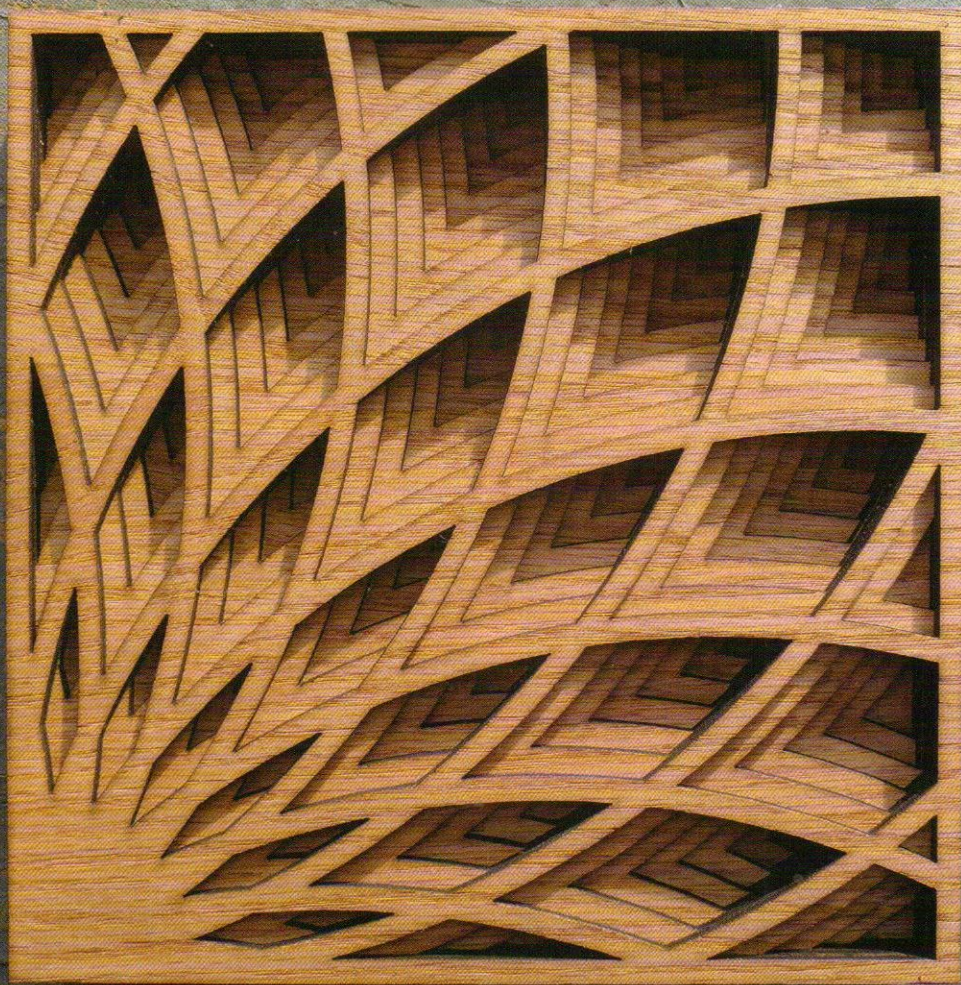
to fully see it from all angles."

Work this complex can take as many as 50 hours to complete, but that is no problem for Gabriel. "I would describe myself as a patient person," he said. "I throw things away often enough, but I think I enjoy what I do too much to feel frustrated about it. I'm passionate about my work, plus I'm generally picky about what projects I take on, so all that has been a huge boon. I still end up working 70 hours some weeks, but only because I want to."

Gabriel believes he has only begun to tap the potential of this exciting art form. "CNC (computer numerical control) machinery is still in its infancy. Laser cutters, in particular, have only become affordable outside of the industrial market within the past five years and are incredibly safe compared to almost every other woodworking tool I know," he said. "I have no doubt that more talented and experienced woodworkers than myself could find many uses for a laser cutter. All it takes is an inventive mind and a willingness to explore."



See more of Gabriel Schama's work at www.GabrielSchama.com.



ART DECO Shadow Box

Create intriguing depth and shadows by cutting and layering seven fretwork designs

By Gabriel Schama

This design may remind you of a rising or setting sun, flowers, snowflakes, or New York City's Chrysler Building. Create it by cutting layers of fretwork and gluing them together to form one piece.

Making the Project

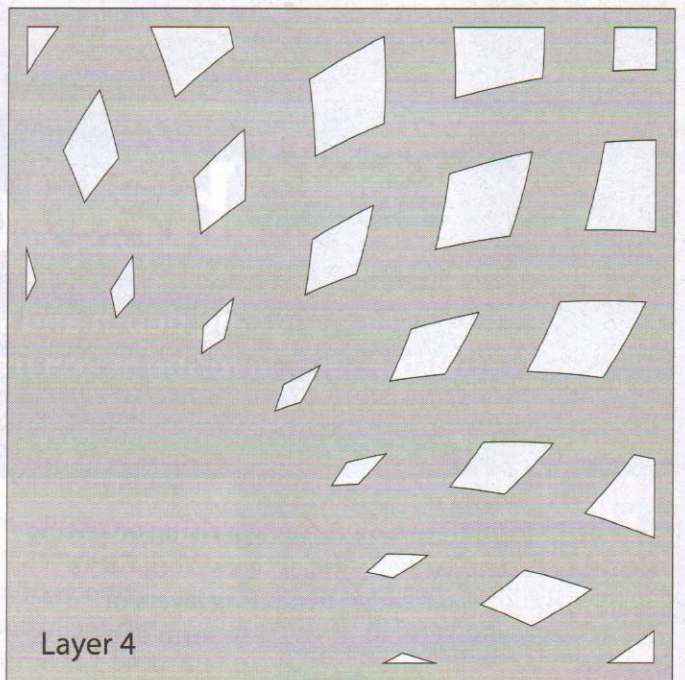
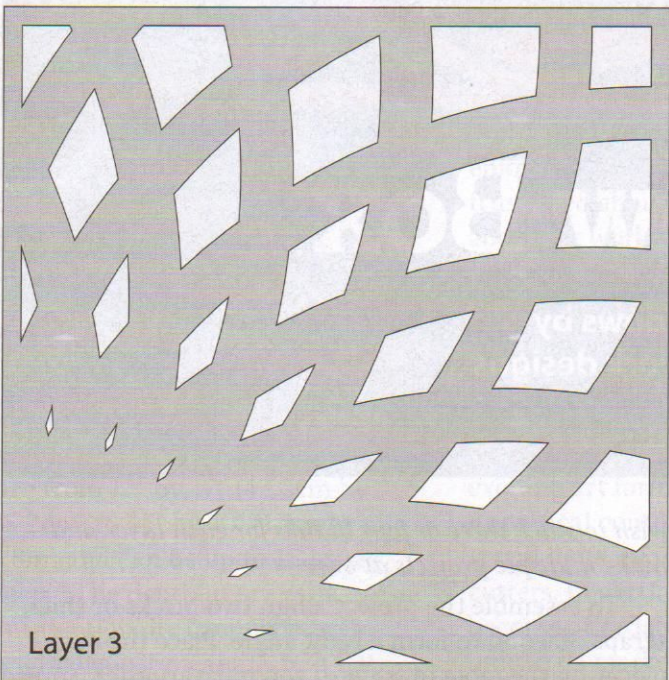
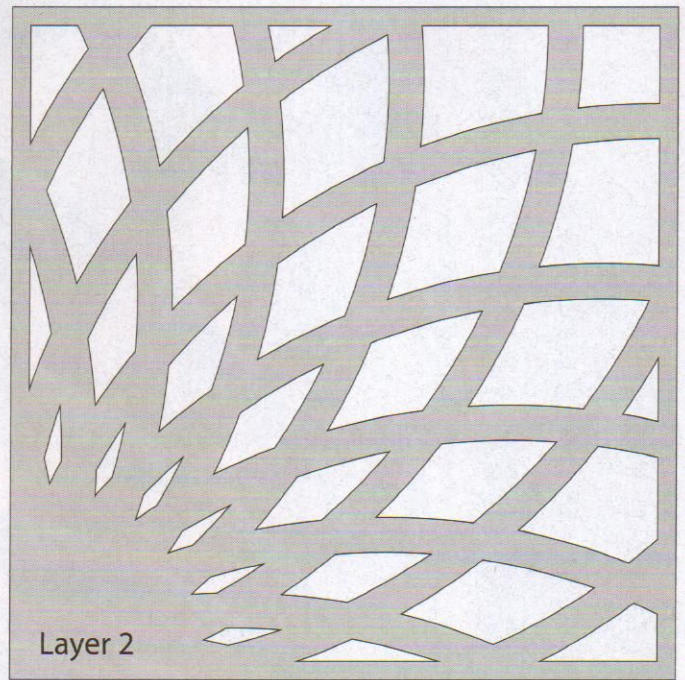
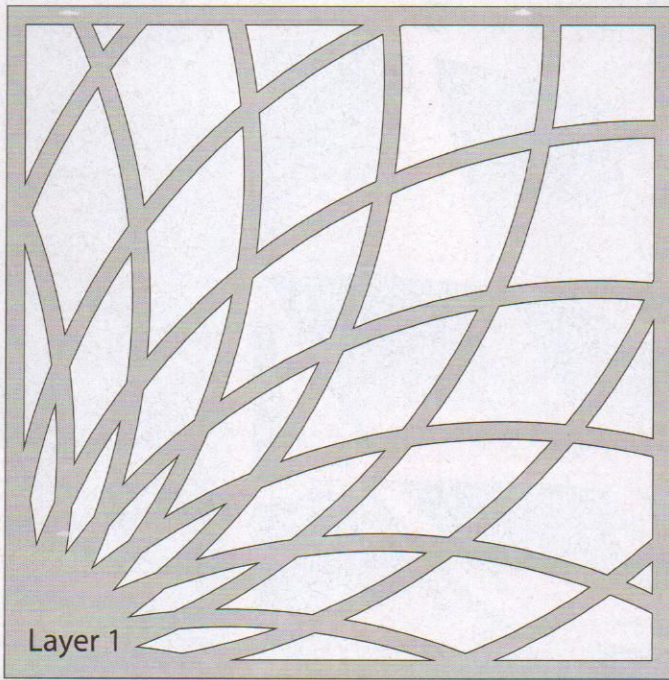
Stack the blanks (see page 70) and cut them to size. If necessary, cut outside the lines and sand up to them to create perfect squares. Separate the pieces, cover seven of them with blue painter's tape, and attach the patterns with spray adhesive. Drill the blade-entry holes and cut the frets in each piece. Carefully remove the patterns and tape, and sand away any fuzzies.

Note: Because it's easier to cut thicker wood, you may

wish to stack three or four blanks for each layer and make multiple projects at once.

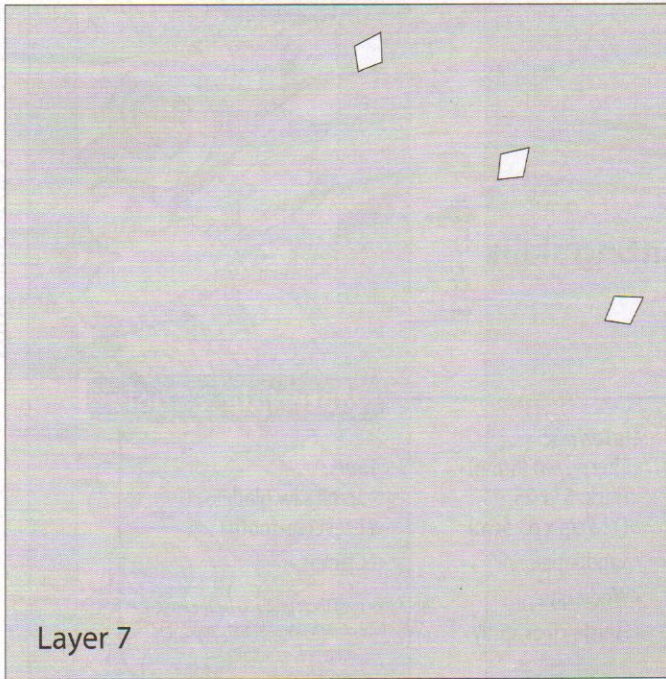
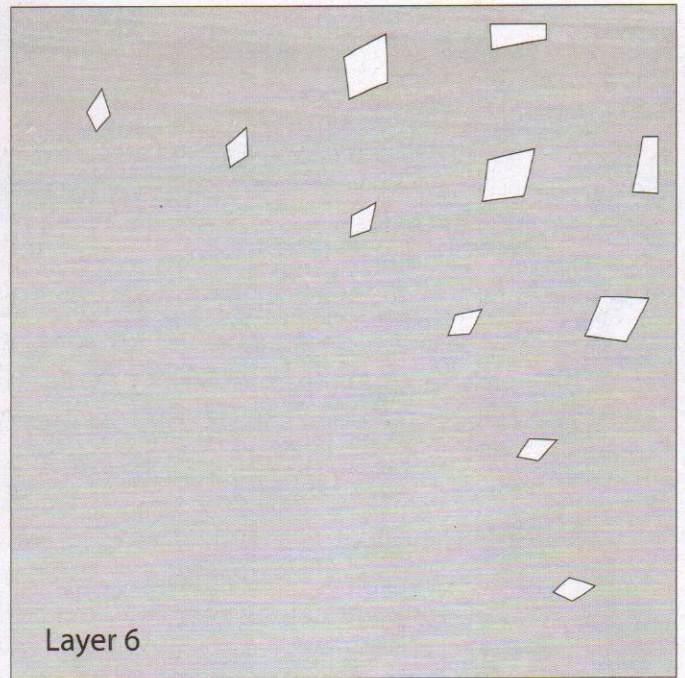
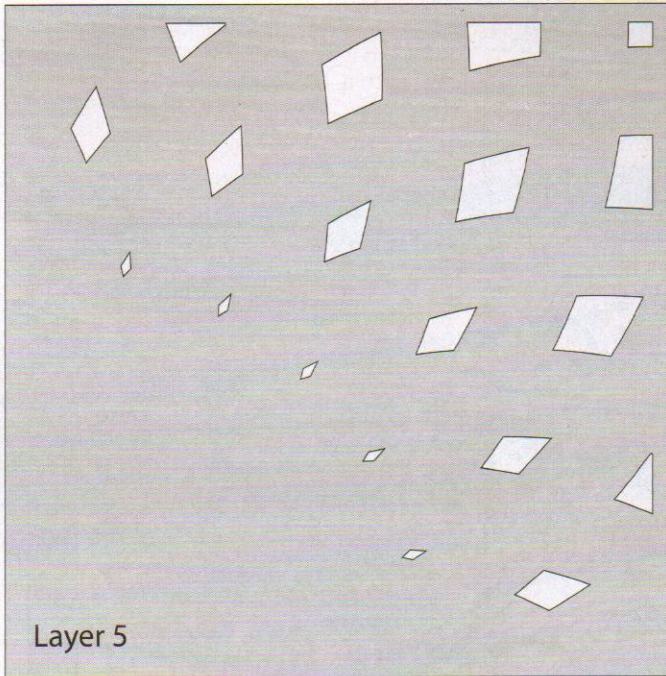
To assemble the project, align two bricks or thick scraps of wood to form a right angle. Place the cut pieces on the table in front of you in layer order. Spread some wood glue in a disposable paint tray and rub the paint roller in it to form a thin, even layer. Roll glue onto the back of Layer 7 and place it on Layer 8. Remove any glue squeeze-out, and use the angle guide to adjust the layers until they're perfectly square. Roll glue onto the back of Layer 6 and add it to the stack, squaring the edges and removing any glue squeeze-out as you go. Glue the remaining layers. Clamp or weight and let dry, and then spray with lacquer.

Shadow box patterns



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Shadow box patterns



NOTE: Layer 8 is a 7³/₄" x 7³/₄" backer board

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Materials & Tools

Materials:

- Plywood, 1/8" (3mm) thick:
8 each 7³/₄" (19.7cm) square
- Spray adhesive
- Tape: blue painter's; packaging
- Sandpaper
- Wood glue
- Finish, such as lacquer spray

Tools:

- Blades: #2/0
- Drill with bits: 1/16" (2mm)
- Paint roller: low nap type
- Disposable paint tray
- Bricks or scrap 2x4s
- Clamps or weights

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

ON THE WEB Download full-size project patterns from our website.
www.scrollsawer.com



Chocolates courtesy Frederic Loraschi Chocolate, Harrisburg, Pa., fredericloraschichocolate.com.

Fretwork Heart Box

Challenging design showcases your cutting skills

By Sue Mey
Cut by Rolf Beuttenmuller

For a gift they'll love both now and later, cut this keepsake box and fill it with your Valentine's favorite treats. The box is sized for storing pencils or trinkets, but you could also upsize the pattern to make a larger box for a bottle of wine or other big gifts.

Making the Box

Cut the design, and then cut the perimeter of each piece. Carefully sand the pieces. Glue and clamp all four sides to the base. Center the lid liner on the lid and glue it in place. Glue the handle to the top. Apply a clear spray finish.

Materials & Tools

Materials:

- Cherry, 1/4" (6mm)-thick: 5" x 25" (12.7cm x 63.5cm)
- Sandpaper
- Wood glue
- Finish: clear spray

Tools:

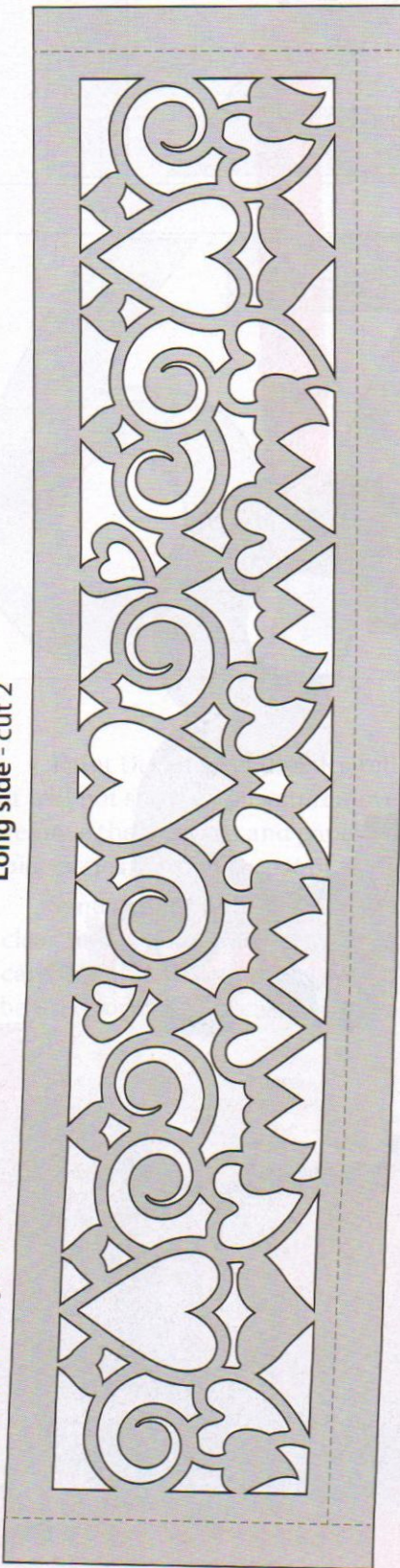
- Scroll saw blades: #1 reverse-tooth
- Clamps

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



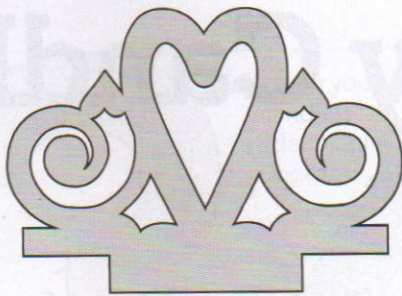
Sue Mey lives in Pretoria, South Africa. To see more of her work, including a wide variety of patterns and pattern-making tutorials available for purchase, visit www.scrollsawartist.com. She can be contacted at suem@storage.co.za. Her pattern book, *Lighted Scroll Saw Projects*, is available from www.schifferbooks.com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

Long side - cut 2

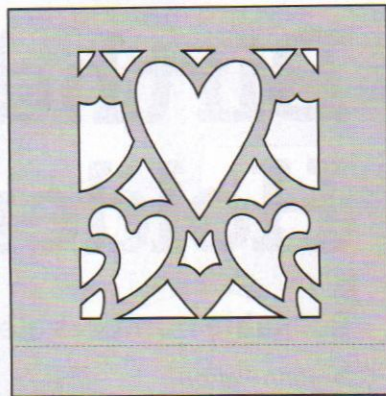


Heart box patterns

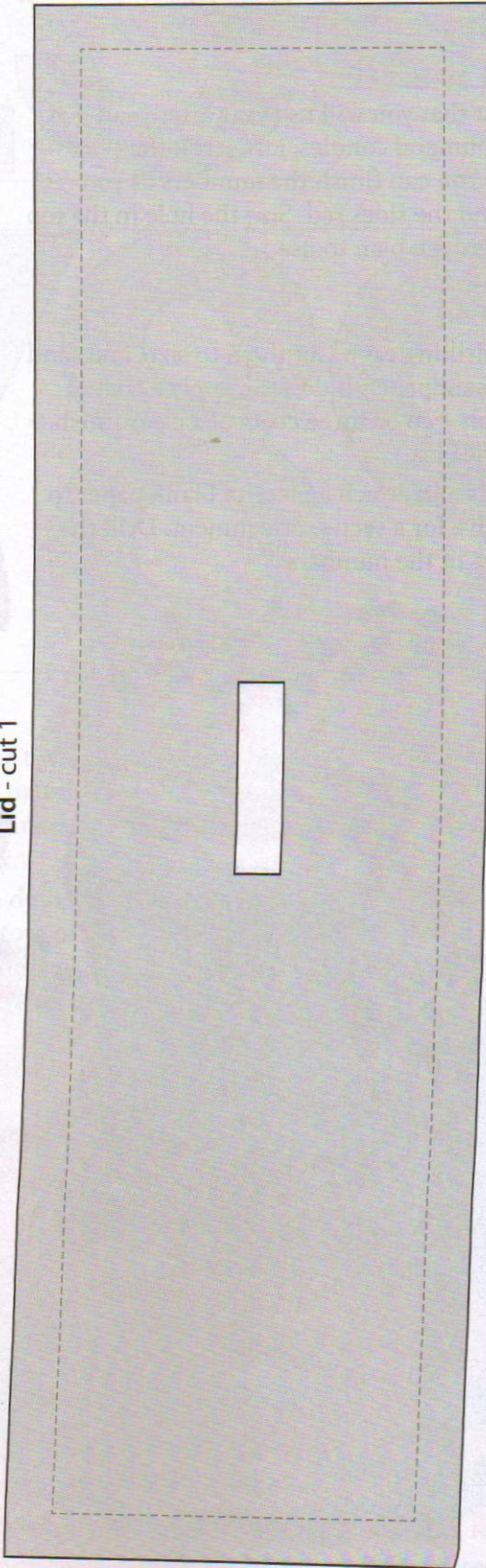
Lid handle - cut 1



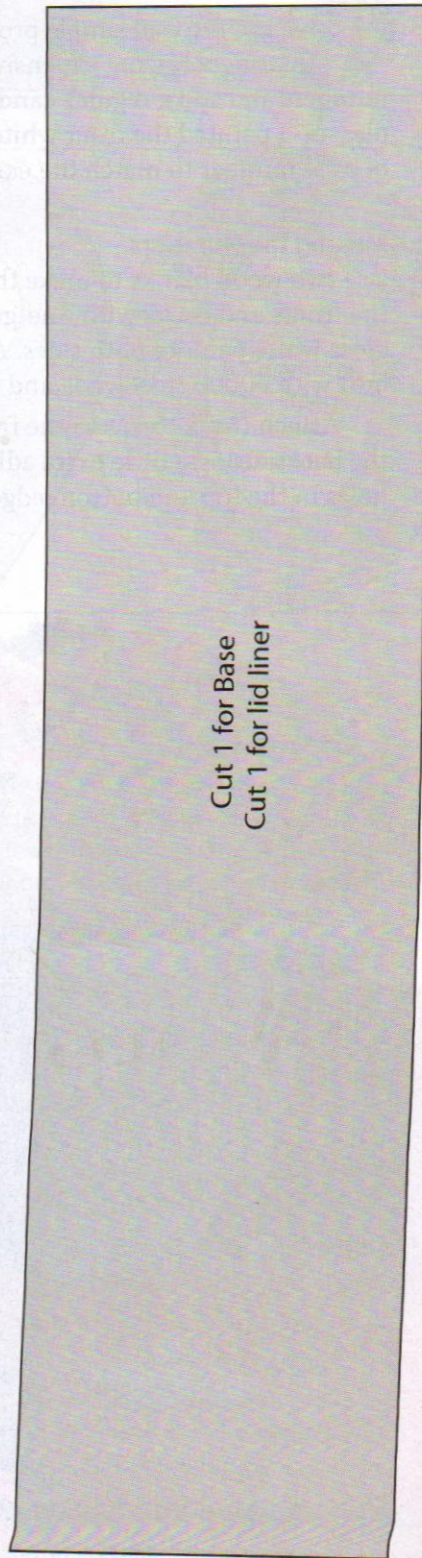
Short side - cut 2



Lid - cut 1



Cut 1 for Base
Cut 1 for lid liner



Birthday Candle Holders

Reusable numbers elevate candles for germ-free blowing

By John Nelson

This is a fun and simple project that you will use year after year. Instead of buying expensive numeral candles, just scroll the numbers and add a regular candle! You can finish the numbers as you please—I painted the front white and the sides red. Size the hole in the top of each number to match the candles you plan to use.

Making the Numbers

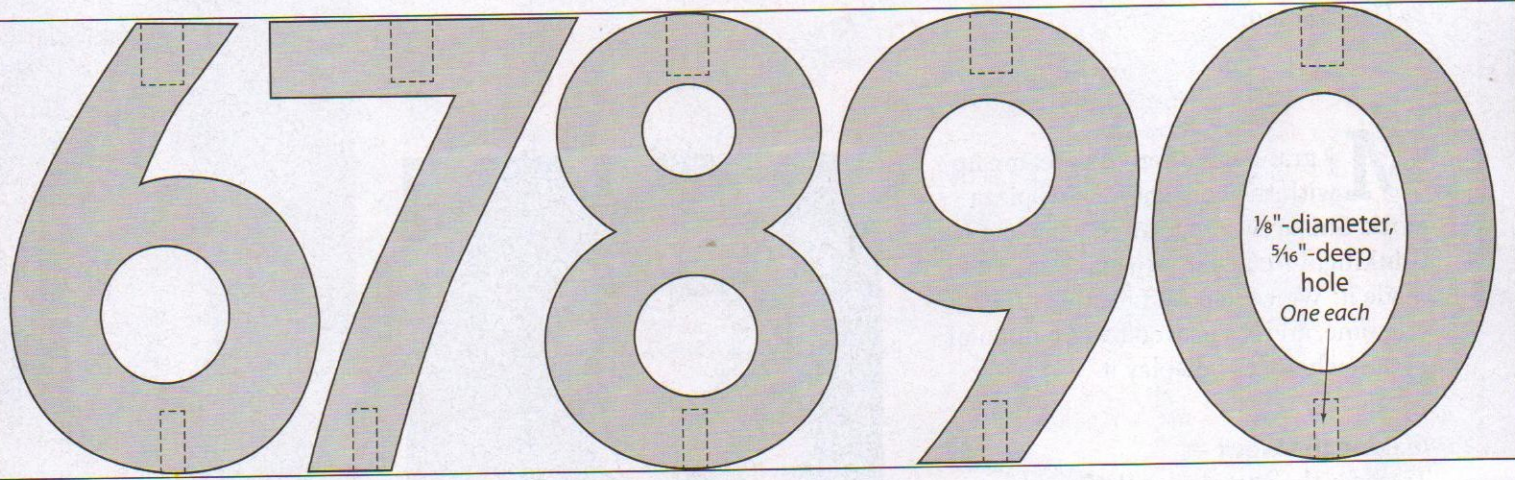
Use two wood blanks to make the drilling easy. Cut them to size, and sand the fronts and backs with fine-grit sandpaper. If desired, apply a coat of gloss white paint to both sides. Apply two or three coats of a clear finish, buff with #0000 steel wool, and wipe clean.

Attach the patterns to the fronts and attach a piece of blank paper to the backs, using a little extra adhesive for a secure attachment. Drill the holes in the top and bottom edges. Cut the numbers.



Candleholder patterns

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Paint the edges red, if desired. Don't worry if the color bleeds; it will not show when you remove the pattern. Let the paint dry, remove the patterns and paper with mineral spirits, and wipe the pieces clean. Apply a coat of paste wax.

Sand a point onto one end of each dowel. Apply two coats of a clear finish. Glue a dowel into the bottom of each number, taking care that it is straight. Sign and date this set, as these numbers may be used for happy occasions for many years to come.

Materials & Tools

Materials:

- Plywood, 1/2" (1.3cm) thick:
2 each 2 3/4" x 8" (7cm x 20.3cm)
- Spray adhesive
- Finish: clear gloss
- Dowel, 1/8" (3mm) dia.: 10 each 1 1/2" (3.8cm) long
- Paint: gloss white, red
- Mineral spirits
- Steel wool: #0000

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

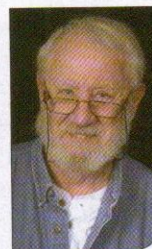
- Sandpaper: fine
- Paste wax

Tools:

- Scroll saw blades:
#3 reverse-tooth
- Drill with bits:
5/16" (8mm), 1/8" (3mm)
- Paintbrushes

Making a Cake Topper

Carole Rothman scrolled this keepsake cake topper for a family birthday. She created the pattern in WordArt and cut the words from maple. She mounted them on a piece of purpleheart and decorated it with fabric paint. Carole attached skewers to secure the message to the cake.



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

It's Always Pizza Time!

Use small scraps of colorful wood to make toppings for this clever clock

By Dan Wilckens

My granddaughter Nikki came up with the concept for this pizza clock. She drew a picture of what she was thinking; I turned it into a pattern and made it. We were both pleased with the outcome, and it's proved to be a popular design wherever I display it.

Making the Clock

Transfer the patterns to the wood blanks. I provided a half-circle pattern for the bottom crust, but some woodworkers find it easier to use a beam compass to draw a 10" (25.4cm)-diameter circle on the blank. Cut the circle and use a belt sander to true it up. Then, cut the motor block, which gives you a place to attach a hanger and provides a space for the clock movement.

Draw a hole for the clock mechanism in the center of the circle.

Most of the toppings can be cut from small scraps, but you'll need larger pieces for the cheese. Try to make sure the grain runs the length of the cheese pieces, and number them to keep them in order. For a different look, cut scallops on the edges of the pepperoni. Use a hobby knife or needle picks to remove any fuzzies.

Assembling the Clock

Dry-assemble the crust and cheese pieces. Glue and clamp the cheese pieces to the slices in this order: bottom pieces, top cheese pieces, middle cheese pieces. Then, glue and clamp the outer crust in place. Sand the edges flush. Dry-assemble the slices on the bottom crust to get the proper spacing and then glue them in place one at a time.





Glue and clamp the pepperonis at the 12, 3, 6, and 9 o'clock positions. Glue and clamp the sausage pieces at the 1, 2, 4, 5, 7, 8, 10, and 11 o'clock positions. Position and glue the mushrooms, peppers, and black olives. Glue and clamp the motor spacer to the back. Apply a clear spray finish, allow it to dry, and install the clock movement. Then, attach a saw-tooth hanger to the top of the motor spacer.

Materials & Tools

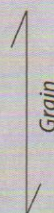
Materials:

- Medium-density fiberboard (MDF), $\frac{1}{4}$ " (6mm) thick: bottom crust/base, $10\frac{1}{2}$ " (26.7cm) square
- Spalted maple, $\frac{1}{4}$ " (6mm) thick: slices, crust, 8" x 20" (20.3cm x 50.8cm)
- Spalted maple, $\frac{3}{4}$ " (1.9cm) thick: motor spacer, $4\frac{1}{2}$ " (11.4cm) square
- Canarywood, $\frac{1}{4}$ " (6mm) thick: cheese, 8" x 20" (20.3cm x 50.8cm)
- Purpleheart, $\frac{1}{8}$ " (3mm) thick: black olives, assorted scraps
- Padauk, $\frac{1}{8}$ " (3mm) thick: pepperoni, assorted scraps
- Mahogany, $\frac{1}{8}$ " (3mm) thick: mushrooms, assorted scraps
- Shedua or walnut, $\frac{1}{8}$ " (3mm) thick: sausage, assorted scraps
- Green poplar, $\frac{1}{8}$ " (3mm) thick: green peppers, assorted scraps
- Spray adhesive
- Sandpaper
- Wood glue
- Finish: clear spray
- Clock movement: standard long-stem quartz with hands
- Saw-tooth hanger

Tools:

- Scroll saw blades: #1, #3 reverse-tooth
- Drill with bit: assorted small
- Beam compass (optional)
- Sander: belt, handheld
- Clamps
- Hobby knife or needle pick

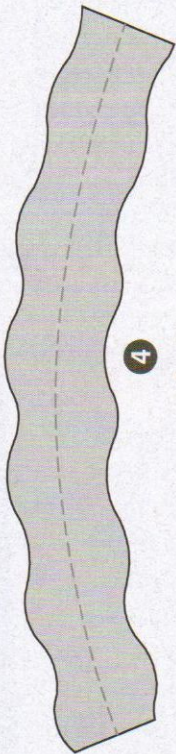
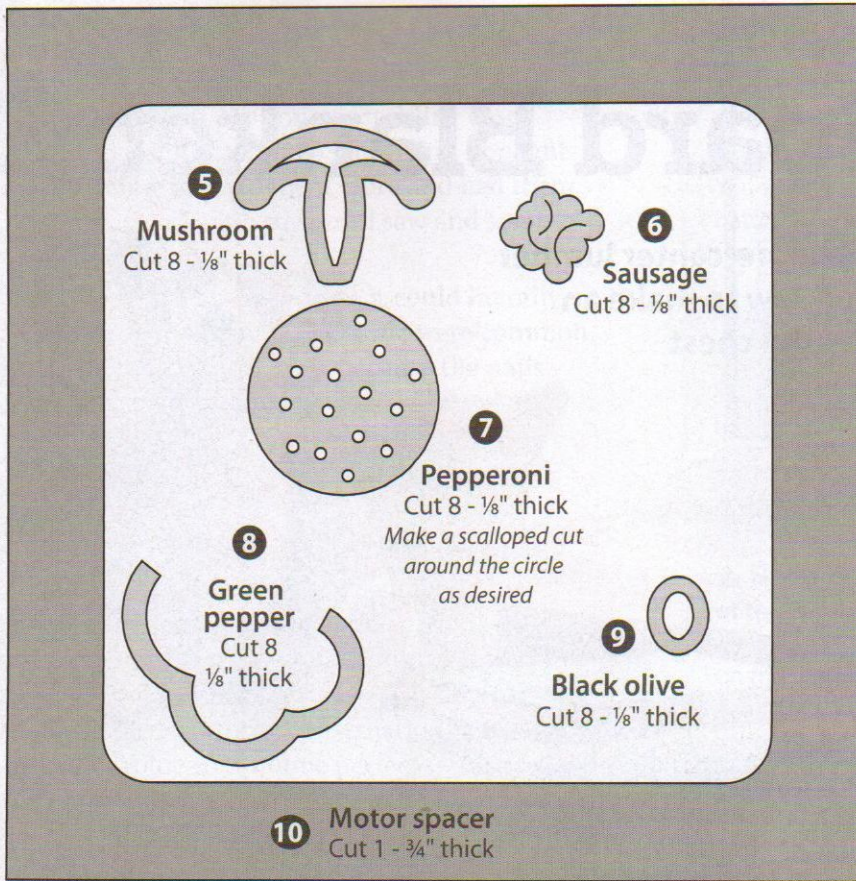
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.



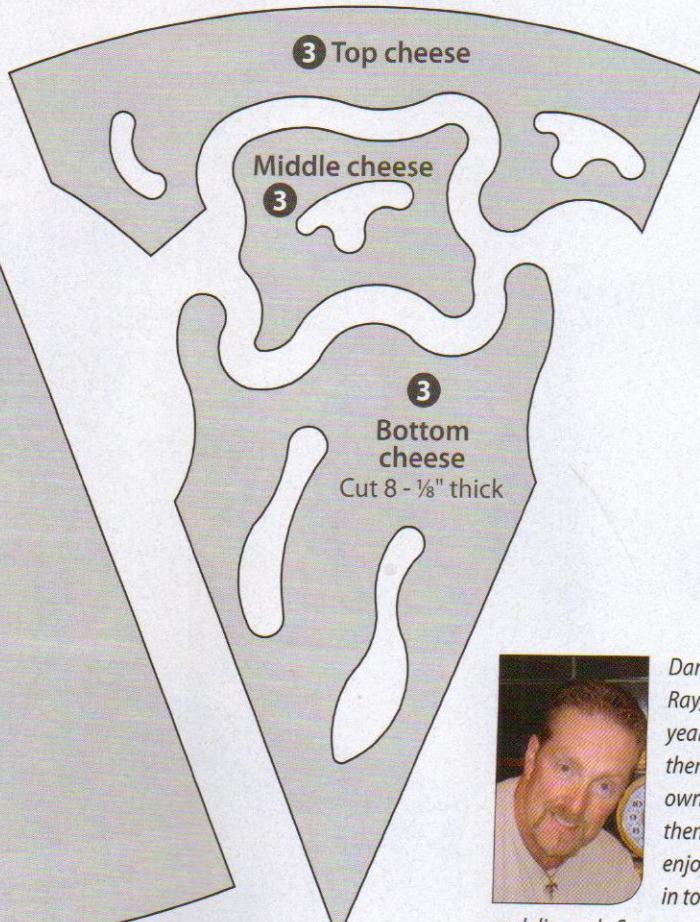
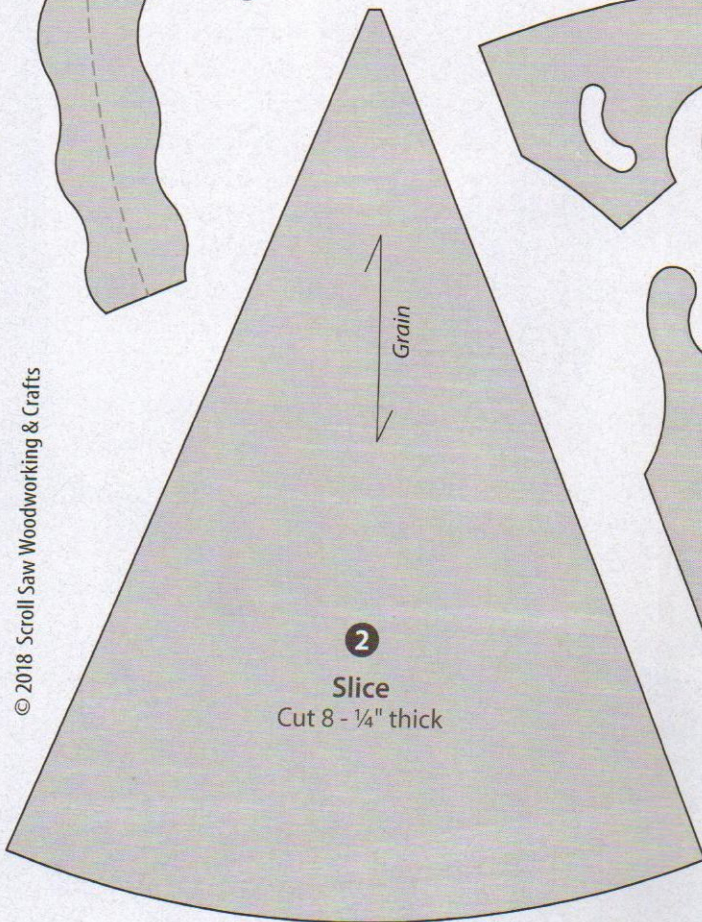
1

Pizza - Half pattern
Cut 1 - $\frac{1}{4}$ " thick

Pizza clock patterns



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

and die work. See more of his work at www.wilckenswoodworking.net.

Six-Board Blanket Chest

Cut and detail home-center lumber with your scroll saw to make an expensive-looking chest

By Dave Van Ess

Cut by Jon Deck



MAKING THE PARTS

This chest is inexpensive and easy to construct. Mine cost just \$35 for lumber, \$18 for hinges, and \$3 for paint. I bought standard-size boards at the home improvement store and had them cut to size; I did the rest of the work with my scroll saw and some basic hand tools.

The design is called a six-board chest because it could literally be assembled from six boards back when wide boards were common. They were simply nailed together without glue, because the nails allowed for the seasonal movement of wood without splitting or cracking the boards.

A Chest for a Lifetime

This chest makes a perfect gift at the birth of a child. Through the years, it can be used to store blankets, toys, and keepsakes. You can even add handles to the sides so the grown child can take it along when they leave home. I glue a piece of paper to the bottom to document the owners when it is eventually passed to another generation. Thanks to its simple but sturdy construction, this chest should last at least 300 years. Yours may not be perfect (mine isn't) but the flaws in projects made with love come to define them. Someday, some mother may show her child the bottom of the chest where great-great-grandpa cut himself and left a finger smudge.

Selecting the Wood

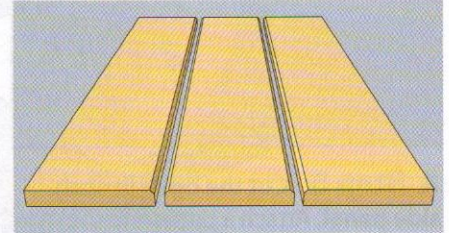
If you plan to paint the chest, you can use common lumber. I go through the racks carefully to find pieces that are not warped, bent, or twisted and have tight knots. The common lumber to build the chest will cost around \$35.

If you want to use a clear finish instead of paint and don't mind paying extra, use select lumber. It will be knot-free and perfect, but it will cost around \$135.

Take advantage of the store's panel saw and have all of the pieces cut to measure. (See the Cutting Guides on page 35.)

Step 1: Cut the boards to length.

Refer to the Cutting Guides on page 35. Mark the boards to identify the pieces. You will cut the side supports, cleats, battens, and bottom pieces later to fit the assembled chest.



Step 2: Bevel the gluing edges of the top, front, back, and sides.

Mark lines $\frac{1}{8}$ " (3mm) in from the corner on the top and gluing edge. Using the lines as guides, make a 45° bevel with a hand plane or sanding block. Bevel both edges of the center boards and one edge of each outer board.

Step 3: Glue up the panels.

Arrange the matched set of top pieces face down, making sure the bevels meet. Apply glue to the edges, press them together, and rub them back and forth (this causes the pieces to pull together). Then, clamp the pieces securely to set. Repeat this for the front, back, and both side panels.



Step 4: Assemble the side panels.

Measure the width of each side panel, and cut the upper and lower supports from a 1x2. Place and mark the upper support flush with the top of the panel and the lower one $1\frac{3}{4}$ " (37.5cm) from the top edge. Use six $1\frac{1}{4}$ " (3.2cm)-long finishing nails to attach each support to the inside of the panel. Do not glue the supports. Repeat for the opposite side.

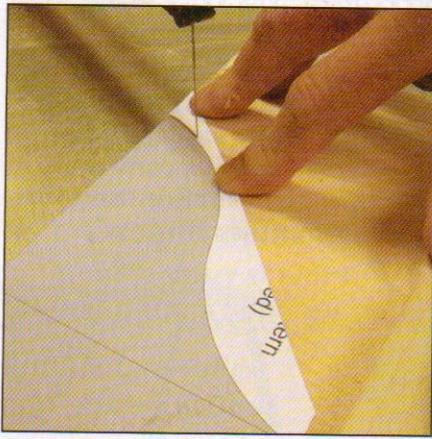
TIPS & TERMS

Wood Movement: Don't use glue between the supports and the side panels, nor the front/back panels and the sides. The nails will allow for some seasonal wood movement; however, using glue across the grain may cause the sides to crack.

Knot Stain: In cut lumber, sap and resin can ooze out of the knots to interfere with any finish that can be dissolved with turpentine; the solvent is made from pine sap and resin. The resulting marks are sometimes called knot stain. Avoid it by sealing the wood before you paint it.

Ogee: An S-shaped line. Also, a pointed arch with a reversed curve near the top on each side.

Batten: A flat piece of wood or metal used to hold something in place.



▲ Step 5: Cut the ogee in each side panel. Attach a pattern to the inside of each side assembly, matching it to the bottom edge and the glue line. Scroll the ogees to form the legs of the chest.

Step 6: Drill pilot holes in the panels. On the top, front, and back panels, draw a light pencil line $\frac{3}{8}$ " (1cm) in from each end. Drill three small pilot holes in each board along the lines (a total of 18 holes for each panel).

ASSEMBLING THE CHEST



▲ Step 7: Join the front and side panels. Be sure the beveled sides are facing out and the supports are inside the box. Carefully align the front and one side panel so they meet at the edges and top. Maintaining a precise alignment, nail the front panel onto the side panel with 2" (5.1cm)-long finishing nails. Do not use glue. Repeat for the opposite side.

Step 8: Attach the back panel. Turn the box assembly and repeat Step 7 to nail the back to the side panels.



▲ Step 9: Attach the bottom cleats. Measure the front and back between the lower side supports inside the chest. Cut two cleats from a 1x2. Making sure they meet the side supports, nail the cleats to the front and back with $1\frac{1}{4}$ " (3.2cm)-long finishing nails.

Step 10: Make the bottom of the chest. Cut the bottom boards to size. Glue and rub the two pieces together; let dry. Drop them into place. There is no need to nail the bottom to the cleats; gravity will hold it in place.



▲ Step 11: Assemble the top. Attach the batten ogee pattern to the middle of a 34" (86.4cm)-long piece of 1x2. Cut with the scroll saw to produce two oversized battens with ogees on the front. Mark and cut the battens to fit the top. Nail the top to the battens with 2" (5.1cm)-long finishing nails.

FINISHING THE CHEST

Step 12: Sand the chest. Start with 80-grit sandpaper. Move to 100 grit to remove any pencil marks or other marks. Finish sanding with 120-grit sandpaper.

Step 13: Seal the chest. Sap and resin from pine knots can cause stains in the finish. To prevent stains, seal the wood with dewaxed shellac, such as Zinsser, which is available at home centers. It can be brushed, wiped, or sprayed on, and it dries extremely fast. Seal the whole project with two coats.

Step 14: Paint the project. Scuff the surfaces to be painted with 120-grit sandpaper. Apply two coats of milk paint. Let it fully dry, and then apply a coat of paste wax.

TIP

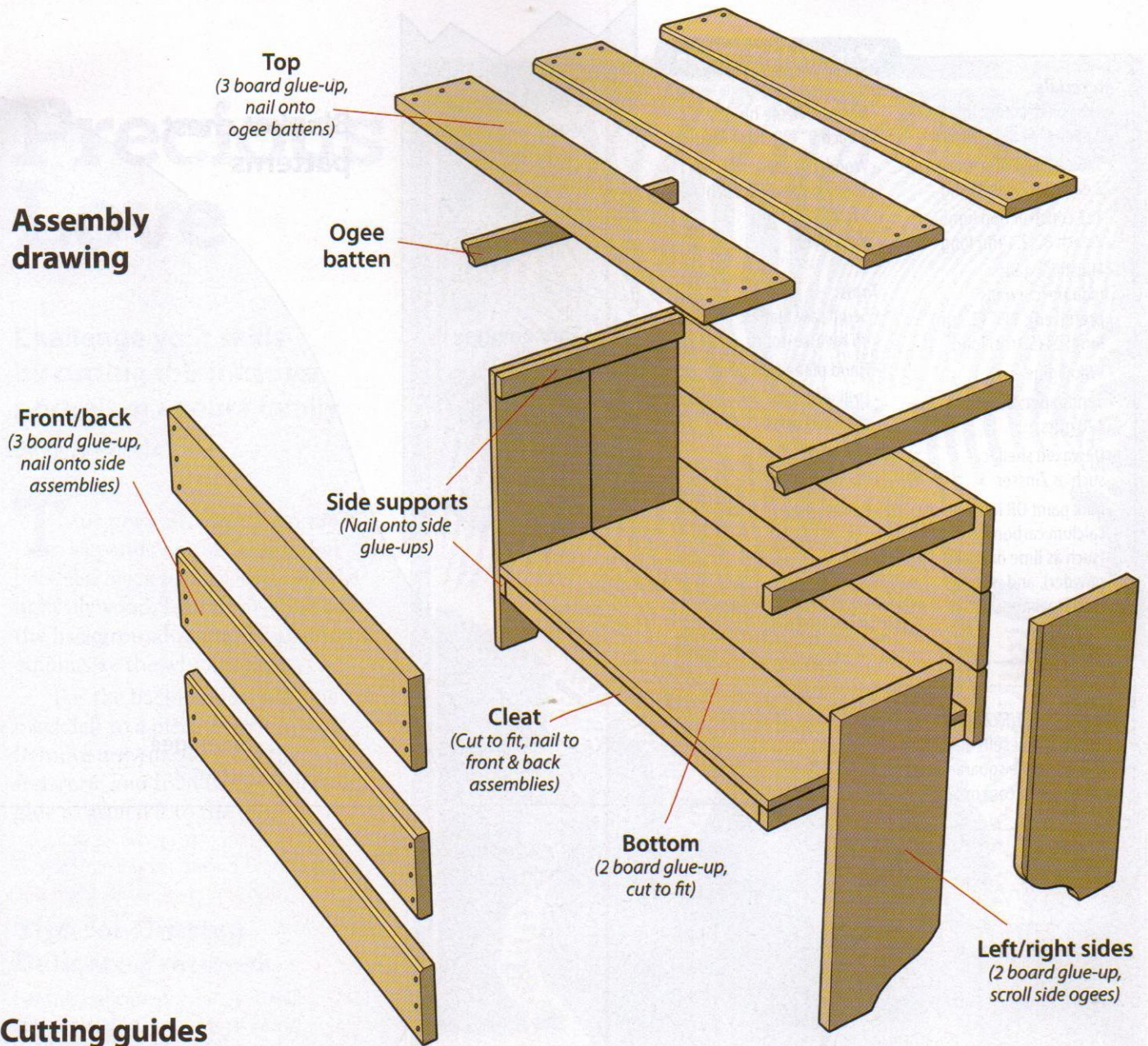
HOMEMADE MILK PAINT

Milk paint is the traditional finish for this kind of chest; however, it is a bit expensive at \$15 per pint. I make a similar finish that is equal parts, by volume, of flat latex interior wall paint, calcium carbonate (such as lime or chalk powder), and water. I mixed $\frac{2}{3}$ cup of each for this project.



▲ Step 15: Attach the hardware. Mark $6\frac{1}{2}$ " (16.5cm) in from the sides on the top. Align and attach two 8" (20.3cm)-long decorative tee hinges on the marks. These hinges are used for gates and may not come with screws; I used #14 by $\frac{3}{4}$ " (1.9cm)-long flat-head wood screws. Then, place the top on the chest and screw the hinges to the back to complete the chest.

Assembly drawing



Cutting guides

1 x 8s

Left side - 21¼"	Right side - 21¼"	Bottom - to fit
------------------	-------------------	-----------------

Left side	Right side	Bottom
-----------	------------	--------

This layout guarantees that the side and bottom assemblies are the exact same width.

1 x 6s

Front - 30"	Back - 30"	Top - 32"
-------------	------------	-----------

Front	Back	Top
-------	------	-----

Front	Back	Top
-------	------	-----

This layout guarantees that the front/back assemblies are the exact same width.



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

Materials & Tools

Materials:

- 1x8 construction lumber: 2 each 6' (1.82m) long
- 1x6 construction lumber: 3 each 8' (2.44m) long
- 1x2 construction lumber: 2 each 8' (2.44m) long
- Finishing nails (square-cut nails preferred): 1¼" (3.2cm) long; 2" (5.1cm) long
- Wood glue
- Sandpaper: 80, 100, 120 grits
- Dewaxed shellac, such as Zinsser
- Milk paint OR latex paint, calcium carbonate (such as lime or chalk powder), and water (see Tip, page 34)
- Paste wax
- Decorative tee hinges: 2 each 8" (20.3cm) long
- Woodscrews, #14 flat-head: 12 each ¾" (1.9cm) long (optional)

Tools:

- Scroll saw blades: #5 reverse-tooth
- Hand plane (optional)
- Drill with bits: assorted small
- Hammer
- Clamps
- Paintbrushes

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

SPECIAL SOURCES:

Tremont Nail sells authentic 19th-century-style square-cut nails (www.tremontnail.com or 508-339-4500).



Blanket chest patterns

Batten ogee
Cut 1

Side ogee
Cut 2

Precious Love

Challenge your skills by cutting this intricate portrait of a zebra family

By Kerry Hallam

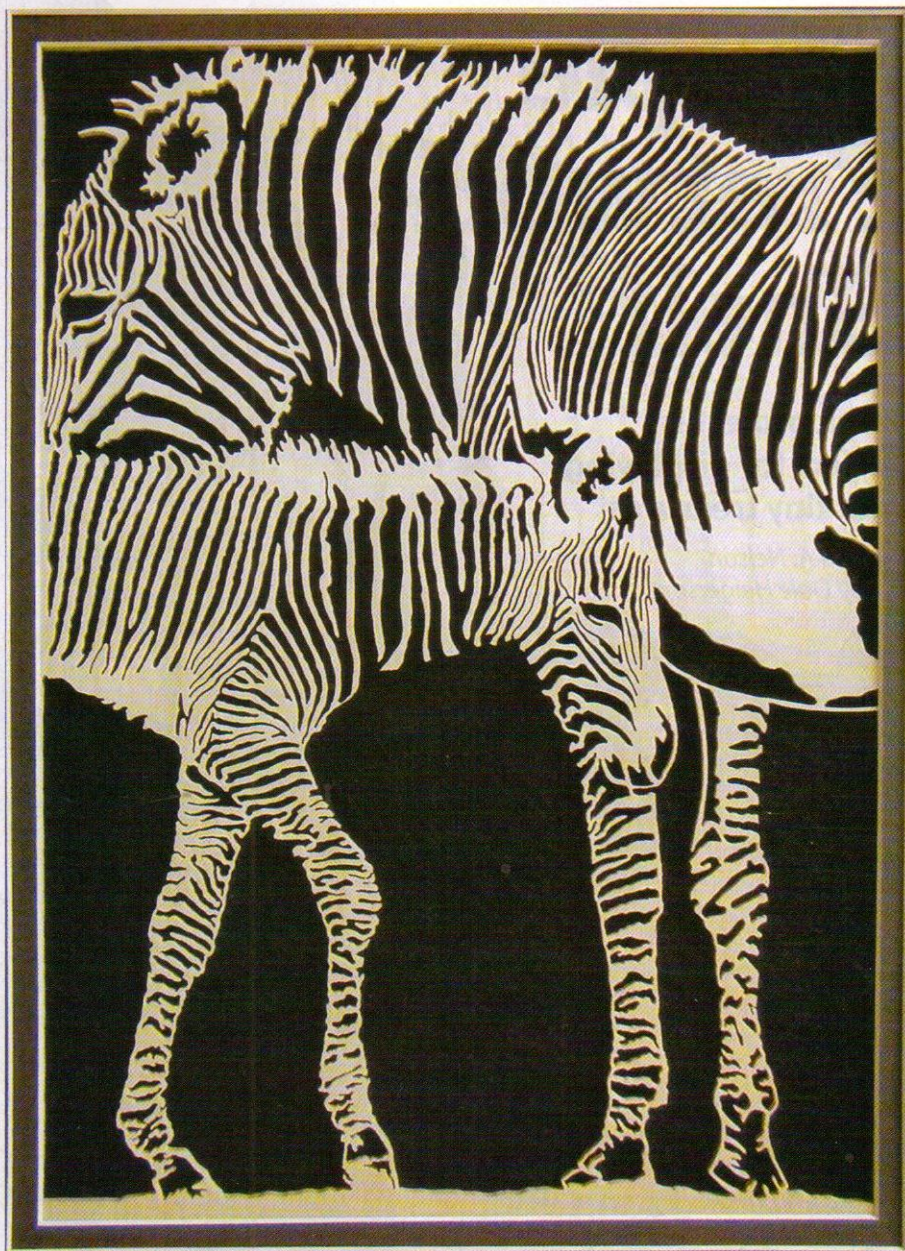
This portrait, more than most, depends on the interaction between black background and the light plywood. I cut away most of the background to really isolate and emphasize the white stripes.

For the backing board, I glue black felt to a piece of mat board. Remove any fuzzies from the fretwork, and then use tiny dots of glue to attach it to the felt.

Tips for Cutting Delicate Fretwork

For this delicate portrait, you will cut away large amounts of wood, leaving thin bridges of wood between large, open frets.

- **Cut it from plywood.** The layered construction of plywood makes the thin bridges stronger than is possible with solid wood.
- **Take your time while cutting.** Do not force the blade. The bridges are thin enough in some places that a slight overcut will sever them.
- **Save the larger sections you cut.** Tape them back in place to support the fretwork while you cut other areas.
- **Stack-cut the portrait.** A stack of plywood naturally supports the individual pieces. Plus, stack cutting speeds up your production time.



Materials & Tools

Materials:

- Baltic birch plywood, 1/8" (3mm) thick: 11" x 17" (27.9cm x 43.2cm)
- Sandpaper
- Mat board: 11" x 17" (27.9cm x 43.2cm)
- Felt: 11" x 17" (27.9cm x 43.2cm) black
- Wood glue
- Frame: 11" x 17" (27.9cm x 43.2cm)

Tools:

- Scroll saw blades: #3 spiral reverse

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

The pattern for **PRECIOUS LOVE** is in the pattern pullout section.



Kerry Hallam of Sumter, S.C., has earned awards in three Scroll Saw Woodworking & Crafts Best Project Design Contests. For more of Kerry's work, visit www.kerrysbladeart.blogspot.com.

Simple Fretwork Shelf

Quick project is
perfect for displaying
your tiny treasures

By John A. Nelson
Cut by Dale Helgerson



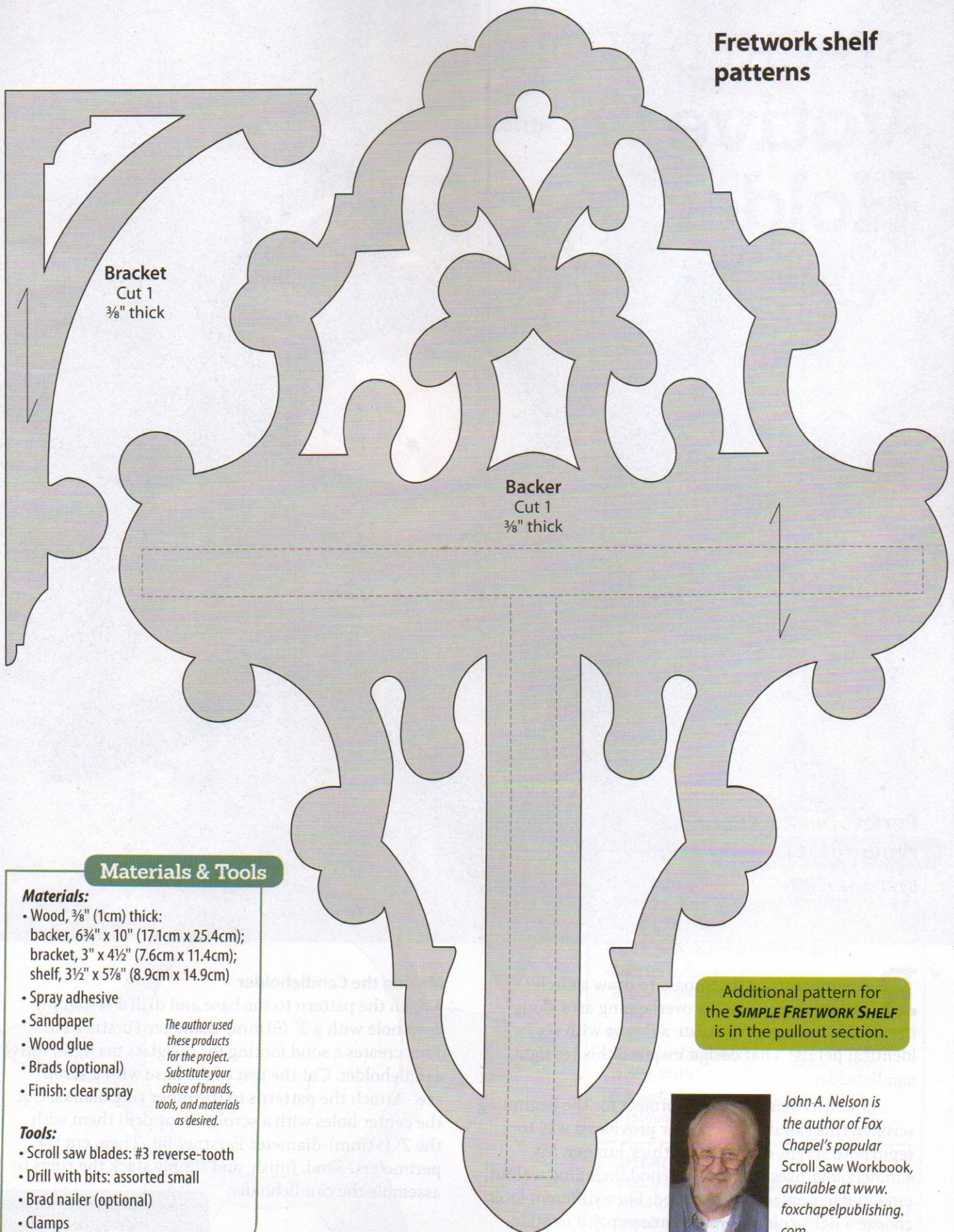
This attractive leaf-based design gives functional elegance to a room and makes a great place to display those precious keepsakes.

While I made it from oak, you can make it from any wood. However, I don't suggest using plywood. Although it is durable, plywood has layers that will be visible on the edges of the shelf and brace. I suggest using an attractive hardwood instead.

Making the Shelf

Attach the patterns to the blanks and cut the pieces. Make sure the grain of the shelf runs from side to side and the grain for the brace and back runs from top to bottom. Drill the blade-entry holes and cut the frets. Then, cut the perimeter. Remove the patterns and sand the pieces smooth. Glue and clamp the brace and shelf in place; reinforce the joints with brads if desired. Allow the glue to dry, and then apply clear spray finish.

Fretwork shelf patterns



Materials & Tools

Materials:

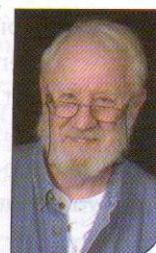
- Wood, $\frac{3}{8}$ " (1cm) thick:
backer, $6\frac{3}{4}$ " x 10" (17.1cm x 25.4cm);
bracket, 3" x $4\frac{1}{2}$ " (7.6cm x 11.4cm);
shelf, $3\frac{1}{2}$ " x $5\frac{7}{8}$ " (8.9cm x 14.9cm)
- Spray adhesive
- Sandpaper
- Wood glue
- Brads (optional)
- Finish: clear spray

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

Tools:

- Scroll saw blades: #3 reverse-tooth
- Drill with bits: assorted small
- Brad nailer (optional)
- Clamps

Additional pattern for the **SIMPLE FRETWORK SHELF** is in the pullout section.



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

STACKED FLORAL Votive Holder



**Perfect beginner project
repurposes leftover wood**

By Michael E. Riffel

Remember using a compass to draw a circle? Did you ever draw six overlapping arcs along the circle's perimeter to create a flower with six identical petals? That design inspired this tea light candleholder.

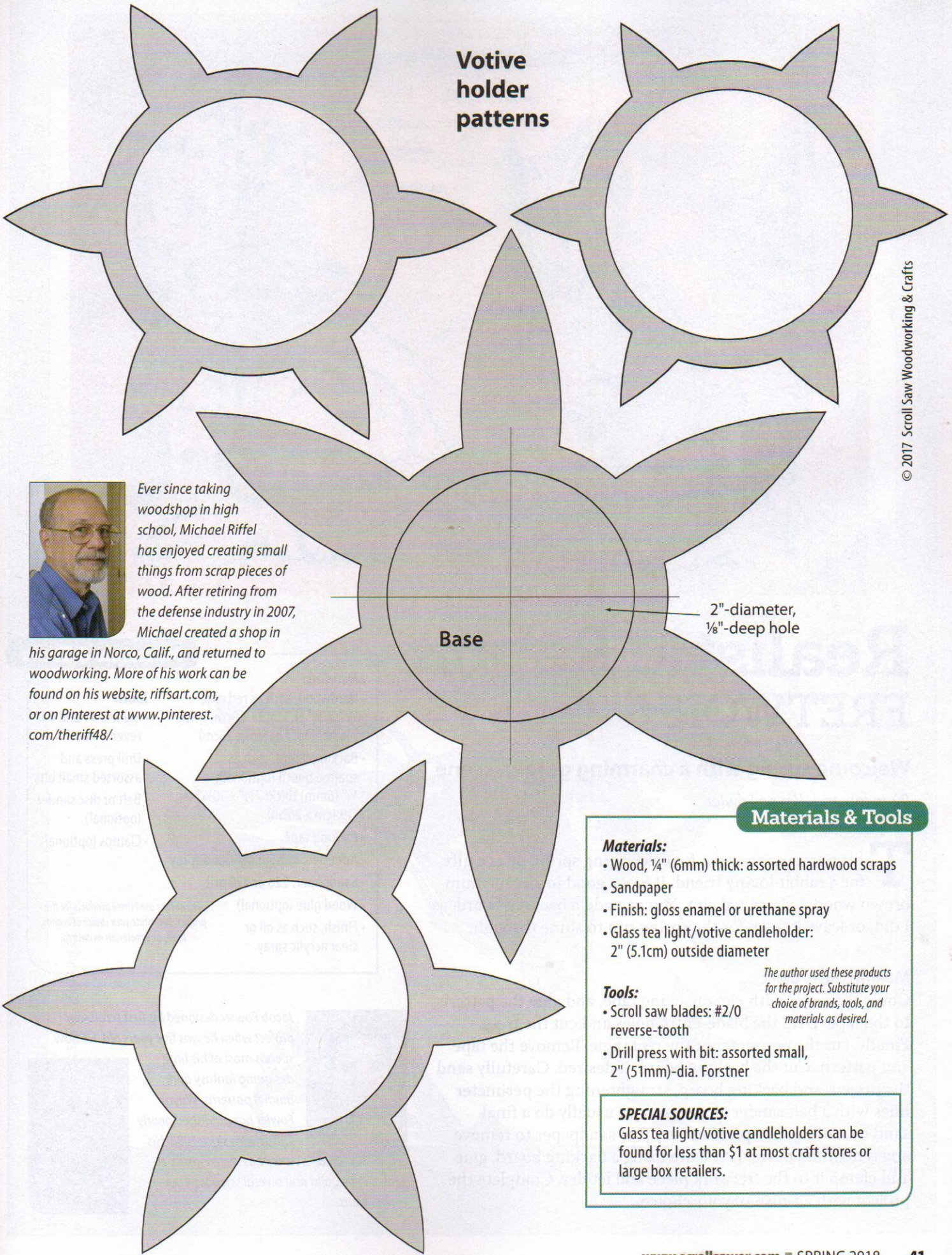
As well as being a perfect project for the beginning scroller, this floral votive holder provides a way to repurpose scraps of $\frac{1}{4}$ " (6mm)-thick lumber. My candleholder uses varieties of wood including walnut, pine, cedar, poplar, and redwood. For a different look, choose a light-colored wood you can paint or stain.

Making the Candleholder

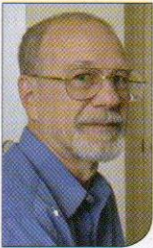
Attach the pattern to the base and drill a $\frac{1}{8}$ " (3mm)-deep hole with a 2" (51mm)-diameter Forstner bit. This creates a solid footing for the glass tea light/votive candleholder. Cut the rest of the base with a scroll saw. Attach the patterns to the other ring blanks. Cut the center holes with a scroll saw or drill them with the 2" (51mm)-diameter Forstner bit. Then, cut the perimeters. Sand, finish, and simply stack the rings to assemble the candleholder.

Additional patterns for the **FLORAL VOTIVE HOLDER** are in the pullout section.

Votive holder patterns



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Ever since taking woodshop in high school, Michael Riffel has enjoyed creating small things from scrap pieces of wood. After retiring from the defense industry in 2007, Michael created a shop in

his garage in Norco, Calif., and returned to woodworking. More of his work can be found on his website, riffsart.com, or on Pinterest at www.pinterest.com/theriff48/.

Base

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

Materials & Tools

Materials:

- Wood, 1/4" (6mm) thick: assorted hardwood scraps
- Sandpaper
- Finish: gloss enamel or urethane spray
- Glass tea light/votive candleholder: 2" (5.1cm) outside diameter

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

Tools:

- Scroll saw blades: #2/0 reverse-tooth
- Drill press with bit: assorted small, 2" (51mm)-dia. Forstner

SPECIAL SOURCES:

Glass tea light/votive candleholders can be found for less than \$1 at most craft stores or large box retailers.



Realistic Rabbit FRETWORK

Welcome spring with a charming garden scene

By Jacob and Wayne Fowler

This portrait is perfect for celebrating spring or as a gift for a rabbit-loving friend. It looks good in any medium-brown wood; I chose red elm. You can add a backing board, as I did, or leave it open for the spring sun to shine through.

Making the Project

Cover the wood with clear packing tape, and glue the pattern to the tape. Drill the blade-entry holes and cut the frets. Finally, cut the perimeter of the rectangle. Remove the tape and pattern. Cut the backing board, if desired. Carefully sand the project and backing board, straightening the perimeter lines with a belt sander as necessary. I usually do a final sand by hand with a piece of very fine sandpaper to remove any remaining burrs. If you are using a backing board, glue and clamp it to the fretwork piece and let dry. Complete the project with a finish of your choice.

Materials & Tools

Materials:

- Hardwood, such as red elm, ½" to ¾" (1.3cm to 1.9cm) thick: 7½" x 10¼" (19.1cm x 26cm)
- Backing board, such as spalted beech (optional), ¼" (6mm) thick: 7½" x 10¼" (19.1cm x 26cm)
- Packing tape
- Adhesive: temporary-bond spray
- Sandpaper: 220 or 320 grit
- Wood glue (optional)
- Finish, such as oil or clear acrylic spray

Tools:

- Blades: #1 and #4 reverse-tooth
- Drill press and assorted small bits
- Belt or disc sander (optional)
- Clamps (optional)

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

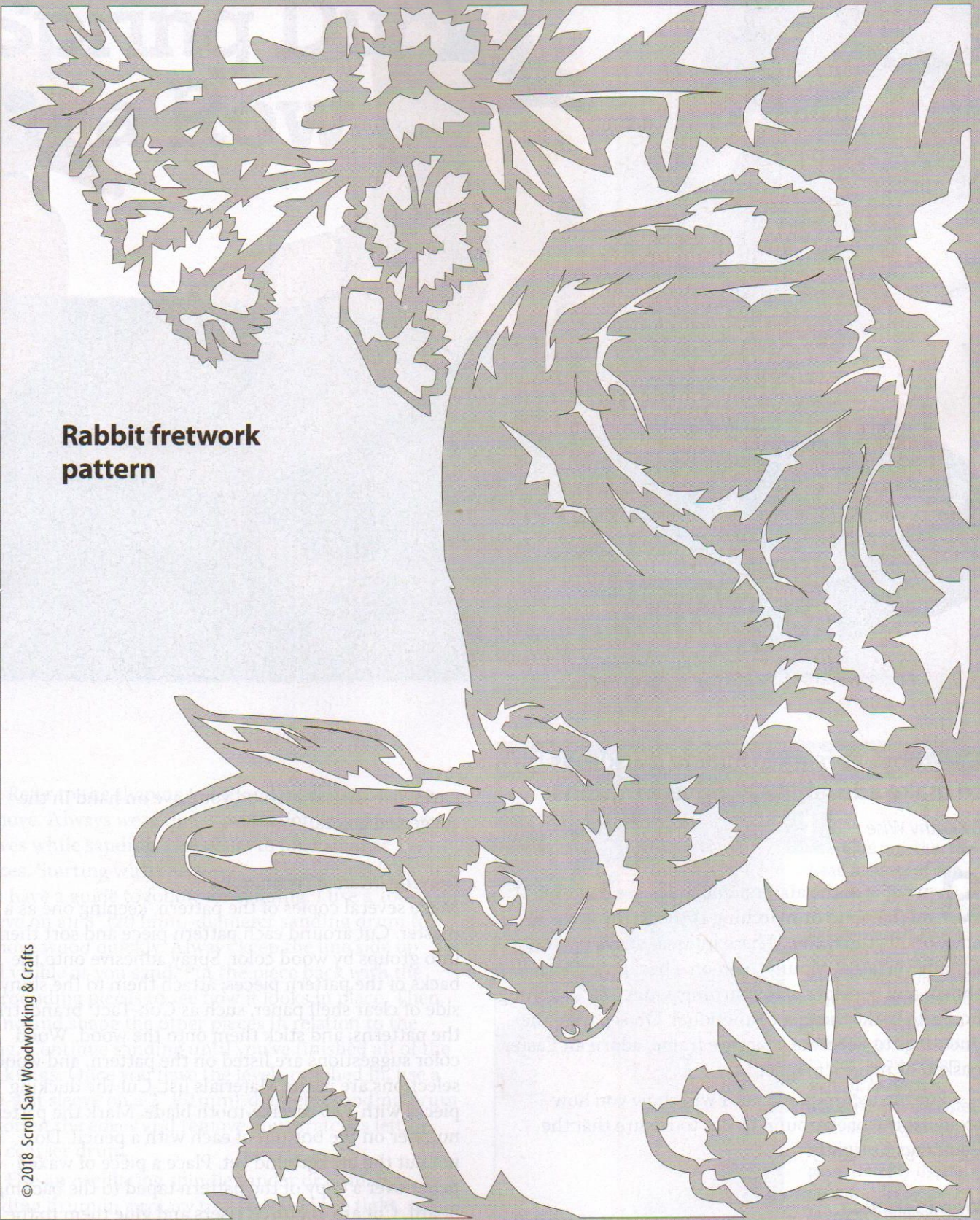


Jacob Fowler designed his first scroll saw project when he was five years old. He now spends most of his time designing fantasy and animal patterns. Wayne Fowler has published nearly 150 articles since 1998. His work has won awards at



a local craft guild and several science fiction conventions.

**Rabbit fretwork
pattern**



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Use these versatile intarsia ducklings to make adorable spring decorations

By Kathy Wise

Spring is in the air, and ducklings are paddling on the pond or marching through the grass in an adorably fluffy line. These intarsia ducklings are equally versatile. Mount them on a background as shown and consider woodburning a message or adding hooks to make the piece functional. Or, separate the ducklings to decorate a picture frame, adorn an Easter basket, or make a magnet.

For the technique focus, I will show you how to adjust the background pieces to ensure that the ducklings fit tightly.

Wood Selection

Yellowheart is hard and can be a challenge to cut; for an easier project, use a light softer wood, such as maple or basswood, and stain or dye it yellow. For the other

parts, use whatever wood you have on hand in the suggested colors.

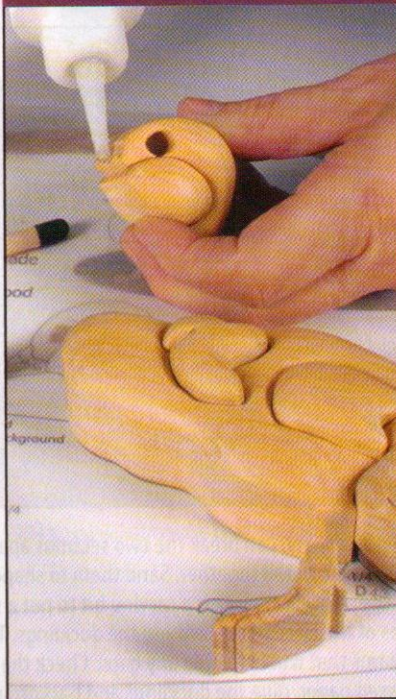
General Intarsia Techniques

Make several copies of the pattern, keeping one as a master. Cut around each pattern piece and sort them into groups by wood color. Spray adhesive onto the backs of the pattern pieces; attach them to the shiny side of clear shelf paper, such as Con-Tact® brand; trim the patterns; and stick them onto the wood. Wood color suggestions are listed on the pattern, and wood selections are in the Materials list. Cut the duckling pieces with a #5 reverse-tooth blade. Mark the pattern number on the bottom of each with a pencil. Do not cut the background yet. Place a piece of waxed paper over a copy of the pattern taped to the backing board. Cut any required risers and glue them to the corresponding pieces with cyanoacrylate (CA) glue.

Spring Ducks in a Row



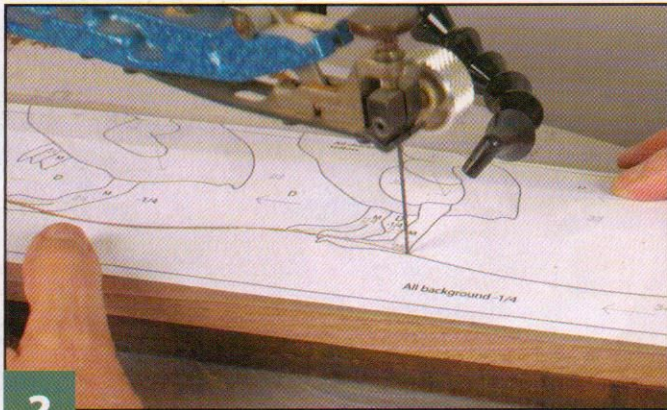
DUCKS: ADDING THE BACKGROUND



1 **Glue together the head sections of one duckling.** Place small dots of cyanoacrylate (CA) glue between the pieces and press them together. Next, assemble the body. Glue the head to the body. When possible have the adjoining pieces in place to keep the pieces from shifting. Accelerator makes the glue dry faster, but it doesn't give you much time to position the pieces correctly. Use the pattern under the pieces to help you position the feet sections. Assemble the other ducklings the same way.

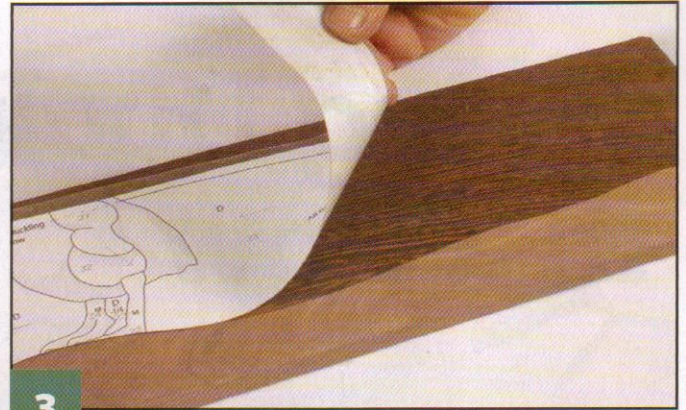
Refer to the shaping guide and mark the areas to remove. Always wear finger protection or protective gloves while sanding. Use pliers to hold smaller pieces. Starting with the wing, mark your levels so you have a guide to follow for sanding. I use a 100-grit sleeve on an 8" (203mm)-diameter sanding drum to remove wood quickly. Always keep the line side up and visible as you sand. Put the piece back with the surrounding pieces to see how it looks in place. Then, round and shape the other pieces in relation to the wing. Continue sanding until you've finished all of the ducklings. Once you have the levels roughed in, use a 220-grit sleeve on a 2" (51mm)-diameter sanding drum to soften the edges and remove any scratches left by the coarser drum.

Use an oscillating spindle sander or a small sanding drum in a rotary tool to round the tight, small edges. After shaping and sanding all of the pieces, buff with a sanding mop to give them a smooth surface that will take a finish well.



2

Stack the two background pieces together. Secure them with double-sided tape. Attach a copy of the pattern to the top of the stack. Cut along the middle line under the ducklings' feet. Peel off the pattern for now.



3

Tack the two background pieces together. Apply eight small dots of CA glue to the bottom edge of one piece and apply accelerator to the other piece. Press them together. Align the pattern on the top edge and cut the outline of the background.



4

Place the assembled ducklings on the background. Use a piece of scrap background material to support the heads. Use a mechanical pencil to trace the edges of the ducklings onto the pattern attached to the background. You may see a slight difference between the original pattern and your newly drawn lines due to the saw kerf (material removed by the saw blade) and a slight shifting when you glued the parts. Although a scroll saw blade kerf is very small, several kerfs together can create quite a gap. You must allow for the kerf on every piece you cut. Even if you saw exactly on the line, the kerf may interfere with the final fit.



5

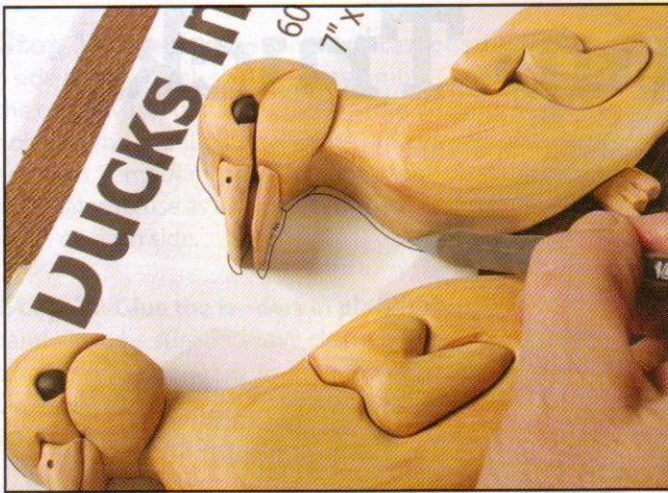
Cut the background pieces. You can break the two sections apart at this point for easier fitting or keep them glued together. Sand them to shape, and buff them with the mop sander. Use a rotary tool with a carving bit to put a small but sharp 45° angle on the edges of the background around the ducklings. This will create a small shadow along the seams that will help hide any gaps. Check the fit of the ducklings, and, on top of waxed paper, glue the ducklings and background together.

DUCKS: COMPLETING THE PROJECT



6

Flat-sand the back of the assembly. Use a portable flat drum sander, such as a Sand-Flee, to remove any uneven spots or glue.



7

Place the assembly on top of the pattern taped to the backing board and trace the outline. Cut the backing board and sand the edges. Check the fit and trim any overhang. Apply dots of CA glue and wood glue on the intarsia piece and accelerator on the backer board and press them together.



8

Apply finish to the completed project. I use clear satin spray finish. Follow the manufacturer's instructions and let the finish dry overnight. Add clear gloss finish to the eyes for a lifelike look. Attach a hanger to the back.

Materials & Tools

Materials:

- Medium wood, such as Australian cypress, $\frac{3}{4}$ " (1.9cm) thick: beak, legs, 6" (15.2cm) square
- Yellow wood, such as yellowheart, $\frac{3}{4}$ " (1.9cm) to 1" (2.5cm) thick: body, 4" x 28" (10.2cm x 71.1cm)
- Dark wood, such as wenge, $\frac{1}{2}$ " (1.3cm) thick: dark background, 4" x 26" (10.2cm x 66cm)
- Medium dark wood, such as black walnut, $\frac{1}{2}$ " (1.3cm) thick: light background, 3" x 26" (7.6cm x 66cm)
- Black wood, such as ebony, $\frac{1}{2}$ " (1.3cm) thick: eyes, 2" (5.1cm) square or dowels dyed black
- Tempered hardboard, $\frac{1}{8}$ " (3mm) thick: backing board, 10" x 26" (25.4cm x 66cm)
- Glue: cyanoacrylate (CA), wood
- Cyanoacrylate glue accelerator
- Shelf paper, such as Con-Tact® brand: clear

- Spray adhesive
- Tape: double sided
- Waxed paper
- Sanding drum sleeves: 100, 220 grits
- Finish: clear satin spray, clear gloss
- Hanger

Tools:

- Scroll saw blades: #5 reverse-tooth
- Sanders: drum, oscillating spindle, portable flat drum, mop
- Rotary tool with bits: small sanding drum, carving
- Mechanical pencil
- Finger protection
- Pliers
- Scissors

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

Pattern for **SPRING DUCKS IN A ROW** is in the pattern pullout section.



Mom Duck
Pattern #757



Kathy Wise is a nationally acclaimed intarsia artist. She has written consecutive articles for Scroll Saw Woodworking & Crafts for the past 13 years, including 52 articles for regular issues and additional patterns for a variety of special issues. Kathy has also written three books. For a free catalog of 560 patterns, contact Kathy

Wise Designs Inc., P.O. Box 60, Yale, Mich. 48097, fax 810-387-9044, www.kathywise.com, kathywise@bignet.net.

Cartoon Pickup Truck Coin Bank



Put a friendly face on savings with a cute character truck

By Paul Meisel

Combine kids' love of vehicles with a friendly face, and you've got a bank that kids will love to use.

Getting Started

Cut each piece to the rough size provided in the Parts List; these pieces are much easier to manage on the scroll saw. Photocopy the patterns and attach them to the blanks with temporary-bond spray adhesive. Drill the blade-entry holes and cut the pieces. Do not drill any other holes yet.



Step 1: Glue the two center pieces together. Then, glue a side piece to each side of the assembly. Sand the inside of the oval cavity; I use an oscillating spindle sander. Drill the holes for the headlights, taillights, radiator cap, axle pegs, and eyes. Temporarily position one of the plastic coin bank side plates to use as a drilling template, and drill screw pilot holes on each side.

Step 2: Glue the fenders in place. Position them carefully to be sure you have clearance for the wheels to turn freely. Glue the bumpers to the front and back of the assembly. Do not permanently attach the wheels until after you have painted the body assembly.

Step 3: Place the oval center cutout pieces inside the assembly. They can serve as "backer blocks" to help reduce tear-out when you drill the coin plug hole through the bottom of the assembly. To drill this hole, turn the assembly upside down and clamp it securely to the drill press table. Use a drill press vise or hand-screw clamps to secure the assembly. Set the drill press to the slowest speed and, using a Forstner bit, drill the hole through. Remove and discard the oval plugs.

Step 4: Finish-sand the pieces. Paint the truck body as desired. Paint the bumpers, the heads of the axle pegs, the radiator cap, the front and rear windshields, and the outside rims of the headlights and taillights silver. Paint the grill and eye background white. Paint the centers of the headlights yellow. Paint the centers of the taillights red. Paint the wheels black. Finish the grill and face details with a black paint marker. *Note: Paint markers dry slowly, so wait a day or two.* Top-coat the project with clear satin varnish and allow it to dry.

Step 5: Tap the plastic eyes in place. Glue the radiator cap and lights in place. Attach the plastic side plates. Add a dot of glue to each axle hole. Slip a piece of thin cardboard (such as a cereal box) between the wheel and truck body as you insert the axles. Stop pounding when the wheel touches the cardboard, and remove the cardboard. Spin the wheel frequently to keep it from gluing in place. Insert the plastic coin bank plug in the bottom. *Note: At first it may appear that the plastic plug won't fit in the hole. The trick is to position the plug and, with your thumb in the center, push very hard. The plug will stretch slightly and seat tightly in the hole.*

TIP

CLEANER DRILLING

Save the oval cutouts from the side and center pieces to use as shims when you drill the coin plug hole in a later step.

Materials:

- Pine 1x8x8, which technically measures ¾" x 7¼" x 8" (1.9cm x 18.4cm x 2.44m)
- Sandpaper: 80, 220 grits
- Spray adhesive: temporary
- Wood glue
- Acrylic paints, such as Delta Ceramcoat : blue (#02051)*, silver (#02603)*, gray (#02057)*, white (#02505)*, yellow (#02509)*, red (#02507)*, black (#02506)*
- Varnish, such as Delta Ceramcoat: clear satin (#07003)*
- Paint marker, medium line: black (#3247)*
- Acrylic plates, ⅛" (3mm) thick: 2 each 4" x 5¼" (10.2cm x 13.3cm) (part of kit #3033)*
- Screws, #2 round-head: 8 each ½" (1.3cm) long (part of kit #3033)*
- Coin bank plug (part of kit #3033)*
- Wooden wheels: 4 each 1¼" (3.2cm) dia. (part of kit #3033)*
- Wooden axle pegs, 1½" (9mm) dia.: 4 each 1½" (3.8cm) long (part of kit #3033)*
- Plastic eyes, ¼" (6mm) dia. shaft: 2 each ¾" (1cm) long (part of kit #3033)*
- Screw hole buttons: 5 each ½" (1.3cm) dia. (part of kit #3033)*

Tools:

- Scroll saw blades: #5 reverse-tooth, such as Olson #446-R
- Drill press with bits: ¼" (2mm), ¼" (6mm), 1½" (9mm), and ½" (13mm) twist; 1¼" (32mm) Forstner
- Spindle sander
- Paintbrushes
- Clamps
- Screwdriver, Philips: size #1 tip

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

SPECIAL SOURCES:

The items above marked with an asterisk (*) are available from Meisel Hardware Specialties. Call 1-800-441-9870 or visit their website, www.meiselwoodhobby.com.

Parts List

Part	Quantity	Dimensions
Truck center	2	¾" x 6¾" x 10¾" (1.9cm x 16.2cm x 27.3cm)
Truck side	2	¾" x 6¾" x 10¾" (1.9cm x 16.2cm x 27.3cm)
Fender	2	¾" x 2¾" x 11¼" (1.9cm x 6.7cm x 28.1cm)
Bumper	2	¾" x ¾" x 4¼" (1.9cm x 1.9cm x 10.8cm)

Patterns for the **PICKUP TRUCK COIN BANK** are in the pattern pullout section.



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

Retirement Woodworking



Scrolling is a popular activity at senior communities nationwide

By Kathleen Ryan
Photography by David Smith

Retired seniors from all walks of life are discovering the joys of scrolling at an independent living community in Ooltewah, Tenn. Residents, many of whom have never done woodworking before, meet at the community's in-house workshop to create everything from toys and puzzles to beautiful fretwork.

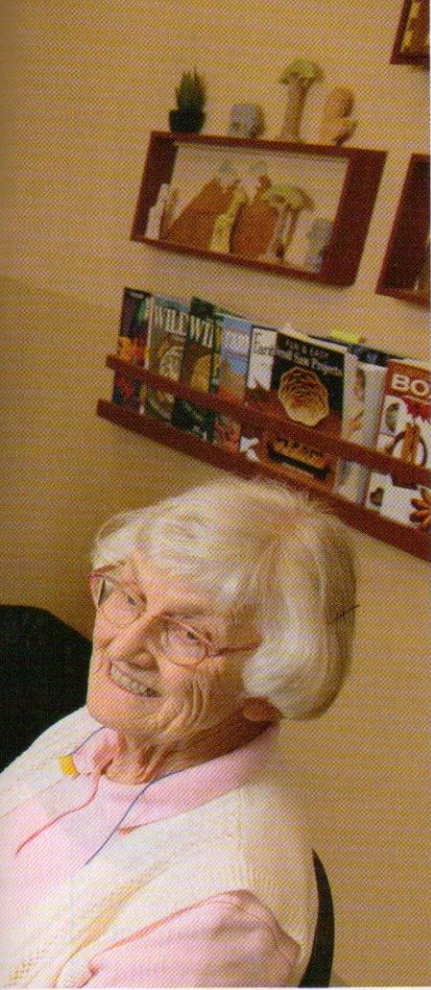
It all started in 2010, when Pam Lewis's father moved to Garden Plaza of Greenbriar Cove Independent Living Community. Pam volunteered to help with group activities, one of which was carving walking sticks. It occurred to Pam that they might enjoy learning to use one of her favorite tools. "I've always loved working with wood and made all kinds of puzzles and toys for my kids as they were growing up," said Pam. "I thought the residents might enjoy working with a scroll saw."

With permission from the community, Pam equipped a small classroom with a borrowed scroll saw, a belt sander, an ancient drill press, a folding

table, and some stain, paints, and scrap wood. Twelve students signed up for Pam's three-part class. They enjoyed it so much that they begged the activities director for more. "Three classes led to four more, and so on," said Pam with a laugh. "By then, the residents had long lists of other projects they wanted to try, so we kept classes going a few more weeks."

Before long, everyone involved could see that the benefits of the activity stretched beyond a simple project. "There were remarkable changes in the residents as they became involved, and the therapeutic values became obvious," Pam recounted. "Working with their hands to create quality projects for themselves and others gave them a sense of purpose and dignity—something to look forward to. The fun, laughter, and camaraderie they shared amazed me, and their projects turned out great!"

Eight years later, the scroll saw program is a vibrant and valued activity functioning at capacity with 47 regular participants. They enjoy a larger room equipped with three scroll saws, two drill presses, a worktable, six different kinds of sanders, and lots of smaller equipment. The residents also have access to safety equipment, such as gloves, masks, earplugs, and bright lights with magnifying glasses. "The beauty of the scroll saw is that it can be used to make so many



Photography courtesy Garden Plaza of Greenbriar Cove.

Retirement Options for Woodworkers

For many woodworking seniors, retirement and downsizing used to mean giving up the tools and activities they spent a lifetime enjoying—but not anymore. Today, more and more retirement communities, senior living centers, and assisted-living facilities offer a wide range of woodworking options. Here are just a few examples.

At Cadbury Senior Lifestyles in Lewes, Del., residents can whittle away to their heart's content or try their hand at furniture making and repairing in a well-equipped woodworking shop.

Southminster Retirement Community in Charlotte, N.C., offers a workshop where woodworkers can operate power tools any hour of the day. Resident Dave Lewis chose to retire to Southminster specifically for the woodworking shop. He even donated his own saws and drills to continue working with his favorite tools.

The woodworking shop at Quail Creek, a retirement community in Sahuarita, Ariz., is well equipped for creating all types of wood items like tables, toys, inlay projects, and also woodburning and whittling.

Green Ridge Village in Newville, Pa., recently renovated their expansive woodshop to provide more space, new tools, restrooms, a handicapped entrance ramp, and a separate finishing room for painting.

diverse things, from simple animal puzzles to detailed fretwork, and it's so safe," Pam explained. "We use #7 blades for most things and run the machines on slow speeds, making the saws even safer."

The residents also have a wide assortment of wood for making their various projects. "I love wood, and it is awesome to share it with others," said Pam. "I've seen so many of the residents become awestruck with the different types of wood and what they can be used for. Sometimes I will bring in a unique board just to show it off. Many will handle it with reverence, feeling it and studying it."

Pam stresses the importance of programs like this and encourages other senior living facilities and communities to start one in their area. "When I see the joy on the faces of these seniors as they make, share, and pass their projects on to family or friends, the feeling is overwhelming," she said. "I only hope that when it's my time to downsize, someone will be there to help me continue to feel creative and productive."

For more information on this program, e-mail Pam Lewis at scroller4god@gmail.com, or view the resident's projects at www.blurb.com/b/6952063-scroll-saw-2014.



Pam helps a resident use a scroll saw.

Heart-Shaped Boxes

Easy-to-make box is perfect for a special gift

By Albert Baggetta

I originally built these boxes in the shape of guitar picks to make a unique place to store my picks. Then I added a curve here and there, and ended up with boxes that looked like little hearts. These are more universal and make nice gift boxes for Valentine's Day and other special events. They are easy to make, and you can decorate them by adding an inlay to the top.

Selecting the Wood

I use a light wood with an attractive grain for the tops and bottoms of my boxes. Ambrosia maple is one of my favorites—I think the grain is oddly attractive. For the bodies of my boxes, I use a dark wood, such as walnut, to create a contrast. Use slightly oversized blanks so you can choose the best areas of grain.

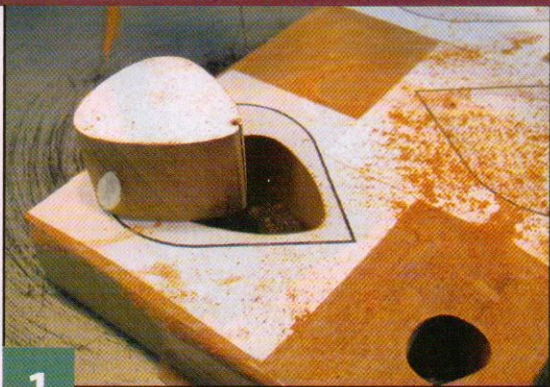
I make three or four boxes at a time, so I select pieces of wood big enough to fit several patterns. The photos show several patterns in progress, but the instructions are for a single box.

Getting Started

Cover the top of the body blank with clear packaging tape. Attach the body pattern to the tape with spray adhesive. Make sure the blade is square with the table (see page 70).



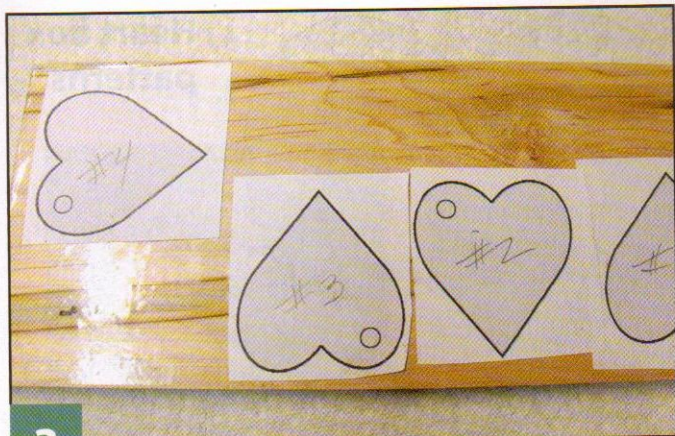
HEART BOX: CUTTING THE PIECES



1 Drill a blade-entry hole to cut the center of the box body. Use a $\frac{1}{16}$ " (2mm)-diameter bit. Cut the inside of the box body with a #5 blade.



2 Apply wood glue to one side of the body blank. If glue gets inside the body opening, remove it with a paper towel wrapped around your finger. Place the glued surface on the bottom blank. Place a heavy weight on the body blank or clamp it tightly until the glue dries.



3

Cover the top blank with clear packaging tape. Attach the top pattern, arranging it so the top has an attractive grain pattern. Cut the top. Add an inlay to the lid if desired (see Adding an Inlay, page 54).



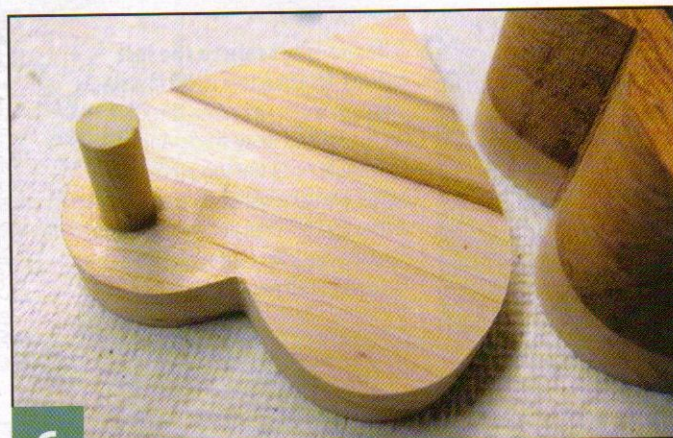
4

On the body, drill a blade-entry hole at the point of the heart. Insert a #9 reverse-tooth blade and cut the perimeter of the box. Don't force the blade, which will angle the cut.



5

Place the lid on the box. Align the edges as much as possible, and secure it with packaging tape. Set the drill press to drill $\frac{1}{4}$ " (6mm) into the body. Then, drill a $\frac{1}{4}$ " (6mm)-diameter hole through the lid into the body. Remove the tape. If you are making multiple boxes, keep the lids with the matching boxes.



6

Cut the dowel to length. It should fit through the lid into the body and protrude a little bit. Glue the dowel into the lid, making sure it protrudes a small amount. When the glue is dry, use a belt sander to smooth the lid. Trim the dowel as needed so the lid sits flush with the sides.

HEART BOX: FINISHING THE PROJECT



7

Round the edges of the box. Use a router table with a roundover bit. Then, open the box and round the inside edges of the opening. Buff the box with a sanding mop or hand-sand it.



8

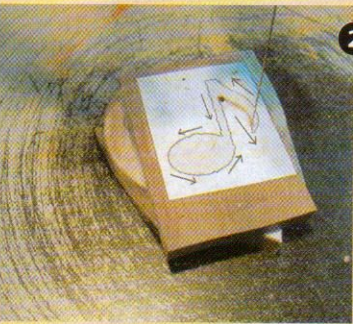
Apply a clear sealer to the box and lid. I apply two coats. If the box feels rough, buff it with fine steel wool.

Adding an Inlay

The grain of the wood is often enough to make a heart box attractive, but you might want to decorate the top by adding a simple wood inlay.



- 1 Choose the inlay wood.** Pick wood that contrasts with the lid. Cover the wood with packaging tape and attach the pattern (I'm using a music note). Place the inlay on top of the lid and tape them together. Drill a $\frac{1}{16}$ " (2mm)-diameter blade-entry hole somewhere that will be easy to disguise (such as the inside point of the flag on the music note).



- 2 Tilt the saw table to the left about 4°.** Cut a test circle in a stack of scrap wood the same thickness as the lid and inlay stack. Adjust the angle until the top piece of scrap protrudes slightly from the other piece. Then, cut the inlay in a counterclockwise direction (see the arrows in the photo).

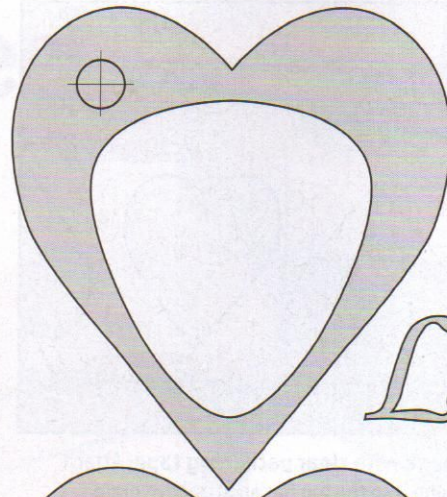


- 3 Separate the stack and remove the tape.** Mark the dowel hole in the top and remove the pattern. Apply glue to the edges of the inlay and press it into place.



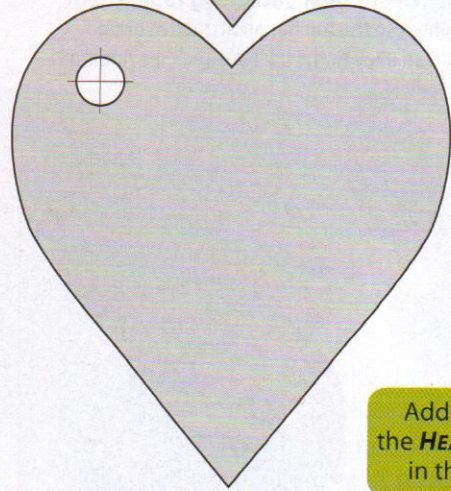
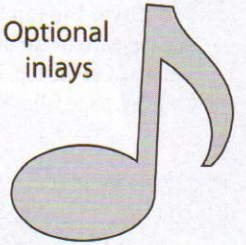
- 4 Mix sawdust from one of the woods with glue to make a paste.** Use a toothpick to pack the paste into the visible blade-entry holes and any other gaps. Allow the glue to dry, and then sand the top smooth with a belt sander. Wear gloves to protect your fingers.

Heart box patterns



Love

Optional inlays



Additional patterns for the **HEART-SHAPED BOXES** are in the pullout section.

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Materials & Tools

Materials:

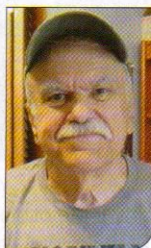
- Dark wood, $\frac{3}{4}$ " (1.9cm) to 1" (2.5cm) thick; body, 3" (7.6cm) square
- Light, figured wood, $\frac{1}{4}$ " (6mm) thick: top & bottom, 2 each 3" (7.6cm) square (see *Selecting the Wood*, page 52)
- Dark wood, $\frac{1}{4}$ " (6mm) thick (optional): inlay, scraps
- Dowel, $\frac{1}{4}$ " (6mm) dia.: 1" (2.5cm) long
- Spray adhesive
- Tape: clear packaging
- Sandpaper
- Wood glue

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

- Wood sealer, such as Ace premium enamel; clear gloss

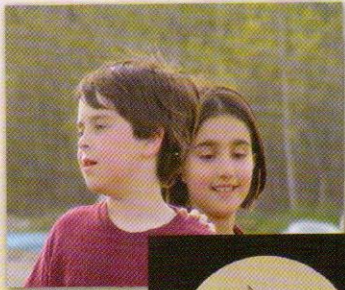
Tools:

- Scroll saw blades: #5, #9 reverse-tooth
- Drill press with bits: $\frac{1}{4}$ " (6mm) dia., $\frac{1}{16}$ " (2mm)-dia. twist
- Router table with bit: small roundover
- Sanders: belt, mop
- Clamps



Al Baggetta is a retired English teacher and former musician who took a liking to scroll sawing. Visit his pattern site at baggetta.com/pebooks/puzzle_patterns.htm.

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Majestic Whitetail Intarsia

Intricate scene allows you to add as many textural details as you want

*Project, photos, and article by Janette Square
Pattern by Bruce Worthington*

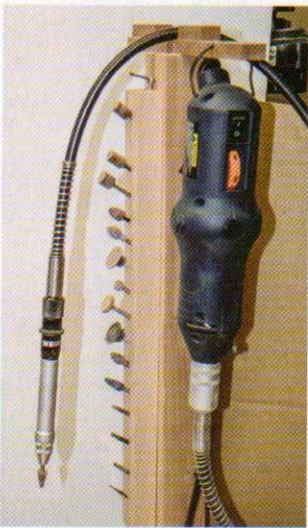
This complex wilderness scene may test your patience, but the final product will make you proud of your accomplishment. It strives to capture the feeling of coming across a deer while hiking through the woods.

Although the completed project is fairly large at 16" by 22" (40.6cm by 55.9cm), some of the pieces, especially on the deer's face, can be fairly small and difficult to handle. For an easier project, enlarge the pattern; doubling the size would make a truly impressive finished piece.

Shaping with a Rotary Tool

Due to the sizes and shapes of the pieces in this project, I chose not to use my standard flexible drum sanders. Instead, I shaped the entire project with a rotary tool fitted with a flame-shaped carbide-point bit. I left some surfaces slightly rough to add an element of texture, sanded some surfaces smooth with a sanding drum in the rotary tool, and gave each piece a final buffing with a mop sander after shaping to soften the grooves.

When using rotary tools, always keep safety in mind. The bits rotate at high speeds and will carve anything that gets in their way—including fingers. Wear safety glasses and use some sort of dust collection (I used a down-draft table). To avoid fatigue, take frequent breaks and try to use a rotary tool that is comfortable to hold. A flexible shaft connected to a smaller handpiece is much more comfortable to use for extended periods of time than a chunky rotary tool.



DEER: CUTTING & SHAPING THE PIECES



1

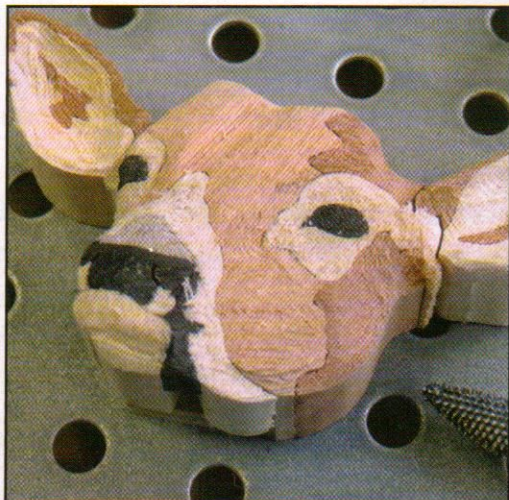
Transfer the patterns to the blanks. Wherever there is no adjoining piece, trace along the pattern lines with a highlighter. This allows you to cut faster, knowing you don't have to worry about precisely fitting two pieces together. For the rocks, try to select wood with interesting grain that adds a rocky, uneven texture. I used several varieties of spalted wood and walnut with interesting grain. I made the pieces at different heights to enhance the rugged feel.



2

Cut the pieces. Number the back of each piece to keep them straight and to avoid shaping the wrong side of the piece. Then, glue together the sections shown in the photo with cyanoacrylate (CA) glue. We will shape each section as one piece.





3

Shape the pieces. Shape the head as one piece. Rough the shapes out with the rotary tool and carbide-point bit, and then use a sanding drum bit to smooth some of the rough spots. Repeat the process to shape the rest of the deer, the tree that adjoins the deer, and then the outer tree. Finally, shape the rocks. Make adjustments as needed to accommodate areas that shift during the process. I adjusted the way the grass pieces fit into the tree trunks and deer legs.

Finishing the Project

Once you have completed the project, select a complementary piece of wood or plywood to use as a backer. I glued together three pieces of blue pine and cut a mountain silhouette at the top. Secure the pieces to the backing board with wood glue. I don't recommend using a traditional backing board (where you cut just inside the silhouette of the project) because even the backing board would be fragile due to all of the cutouts. You could also frame this project.

Materials & Tools

Materials:

Sizes are approximate. Larger pieces provide more options for grain selection.

- Dark green wood, such as poplar, $\frac{3}{4}$ " (1.9cm) thick: dark trees, 8" x 12" (20.3cm x 30.5cm)
- Light green wood, such as poplar, $\frac{3}{4}$ " (1.9cm) thick: light trees, 8" (20.3cm) square
- Walnut, $\frac{5}{8}$ " (1.6cm) thick: tree trunk, branches, 4" x 11" (10.2cm x 27.9cm)
- Medium wood, such as light cherry, $\frac{3}{4}$ " (1.9cm) thick: medium-colored areas on deer, 6" (15.2cm) square
- Medium-dark wood, such as dark cherry, $\frac{3}{4}$ " (1.9cm) thick: medium dark areas on deer, 3" x 13" (7.6cm x 33cm)
- Light wood, such as hackberry, $\frac{3}{4}$ " (1.9cm) thick: antlers, 5" x 6" (12.7cm x 15.2cm)
- White wood, such as aspen, $\frac{3}{4}$ " (1.9cm) thick: white areas on deer, 4" x 6" (10.2cm x 15.2cm)
- Black wood, such as ebony, $\frac{3}{4}$ " (1.9cm) thick: eyes, nose, around mouth, 2" (5.1cm) square

- Wood with interesting grain, such as spalted, silver, or curly maple, or figured walnut, $\frac{3}{4}$ " (1.9cm) thick: ground, assorted scraps
- Wood or plywood of choice, $\frac{3}{4}$ " (1.9cm) thick: background, 18" x 28" (45.7cm x 71.1cm)
- Hanger: heavy duty
- Packing tape
- Spray adhesive
- Glue: wood, cyanoacrylate

Tools:

- Scroll saw blades: #7 reverse-tooth
- Rotary tool with bits: flame-shaped carbide-point, small sanding drum
- Drill with bit: $\frac{1}{16}$ " (2mm)-dia. twist
- Mop sander
- Spindle sander (optional to add dents and divots to trees and rocks)

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

TIP

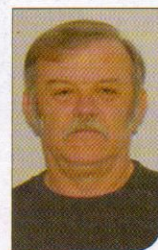
CUTTING SMALL PIECES

When cutting tiny pieces, such as those in the deer's face, put a piece of scrap $\frac{1}{8}$ " (3mm) or $\frac{1}{4}$ " (6mm)-thick plywood under the pieces you are cutting. This covers the blade hole in the saw table and keeps the tiny pieces from falling through as you finish the cut.

Pattern for the **MAJESTIC WHITETAIL INTARSIA** is in the pattern pullout section.



Janette Square lives in Yachats, on the Oregon coast. For more of her work, visit her website at www.square-designs.com. Contact Janette via e-mail at: jsquare@square-designs.com.



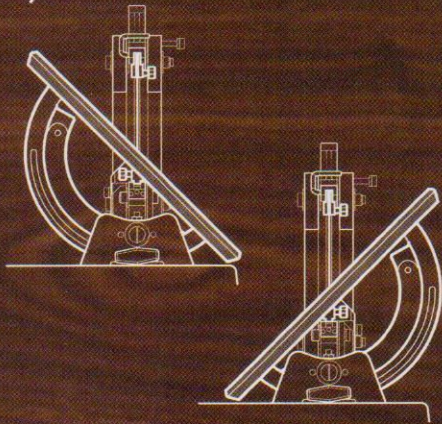
Bruce Worthington lives in Brownstown, Mich. For more of his patterns, visit www.intarsia.net, or contact him at bruceworthington@intarsia.net.

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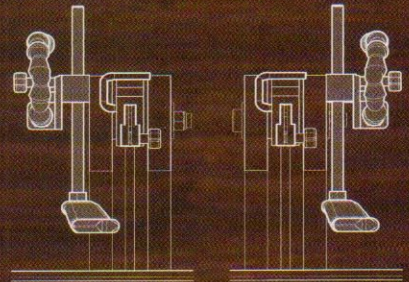
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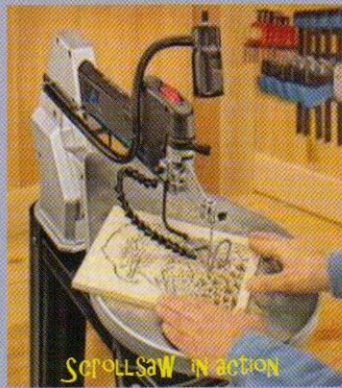
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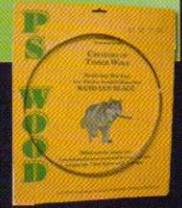
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Magic Basket

Beautiful basket looks like solid wood, but it packs flat for easy storage

By Carole Rothman

Collapsible baskets come in many shapes and sizes. They emerge from a flat piece of wood as if by magic and can collapse just as quickly for easy storage. These baskets can be made in two different ways: with the spiral part swinging freely from a frame, or with the spiral part locked into place by the handle. Although somewhat more demanding to make, those with locking handles, like this wavy basket, more closely resemble conventional baskets and are similar in capacity and stability.

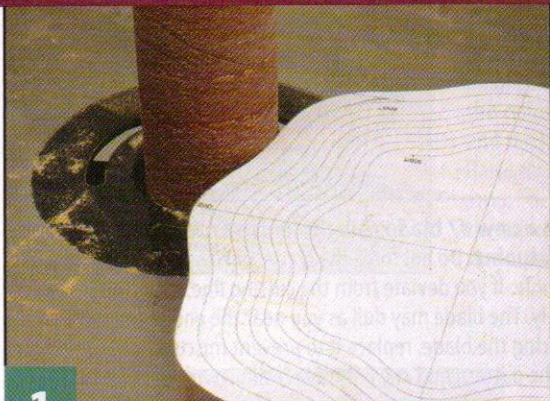
These baskets lend themselves to “production runs,” because the drilling setup and table angle setting can be used for several blanks in sequence. They are practical and make good gifts or craft show items. You’ll also enjoy watching lifelong woodworkers scratch their heads as they try to figure out how you did it.



Basket Basics

The heart of the basket is a long spiral cut at a slight bevel. The spiral, when extended, drops down to form the basket interior. The challenge is to cut the spiral at an angle that creates sufficient depth when extended, but not so much that the rings slip through each other. Because the cutting angle depends on the thickness of the blank, the wood type, and the blade configuration, it's a good idea to cut a test spiral (see Testing the Cutting Angle). This allows you to make adjustments in the cutting angle and to practice the long, beveled cut. Almost any hardwood can be used for this project, but because you can't sand the spiral portion, it's easiest to use woods like poplar, walnut, or mahogany that cut easily without burn or bounce. If you prefer a harder wood like maple, cherry, or oak, consider applying clear tape to the wood to prevent burning and using an aggressive skip-tooth blade.

BASKET: PREPARING TO CUT



1

Align the vertical line on the pattern with the grain of the wood and attach the pattern.

Use repositionable adhesive and be sure the pattern is securely attached. Cut the perimeter of the pattern with the saw table level. Sand the cut edges just until smooth with a spindle sander and a 1½" to 2" (38mm to 51mm)-diameter spindle.

TIP

JUST UNTIL SMOOTH

For this basket to work, you need to carefully use a sander to remove the rough spots, but not change the overall shape of the pieces. It's easy to sand off too much, especially when using an oscillating spindle sander.

Testing the Cutting Angle

A #7 blade and 2½° cutting angle should allow the spiral portion of the basket to drop deeply enough to look attractive, but not so deep that the rings will slip through each other as you extend them to lock them into position. However, because of variations among blades and wood types, a slightly smaller or larger angle may be required. Here's how to cut a test spiral to determine the best cutting angle for your combination of wood and blade:

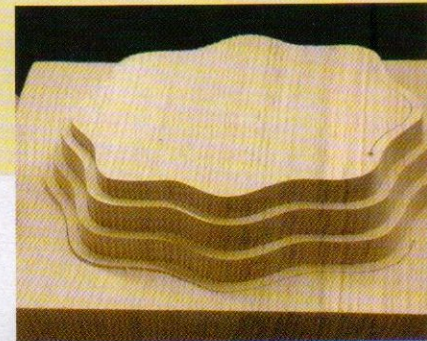
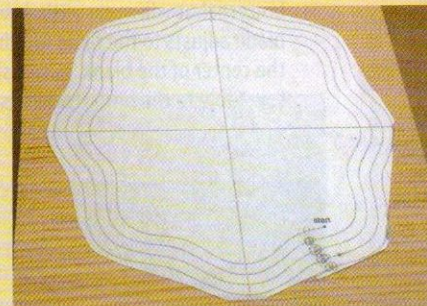
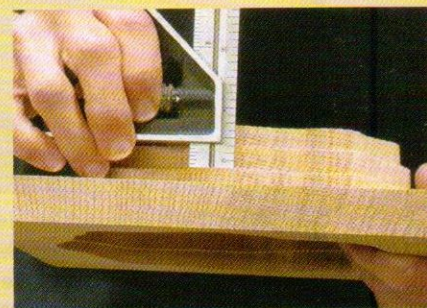


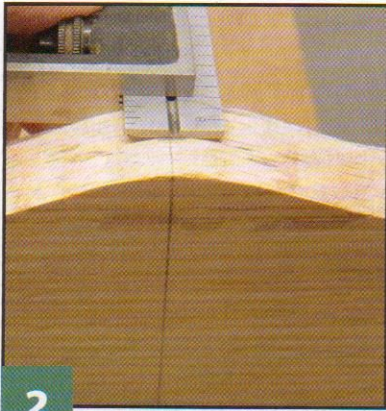
A. Set your saw table accurately.

Use a 2" (51mm) engineer's square to verify that your blade is perpendicular to the table when the saw's angle gauge reads 0°. Tilt the left side of the saw table down to 2½°. If you prefer to use a digital readout (DRO) angle guide, set your saw table perpendicular to the blade, place the DRO on the table, zero it, and then adjust the table until the angle reads 2½°.

B. Trim a copy of the pattern to include only the first four rotations of the spiral section.

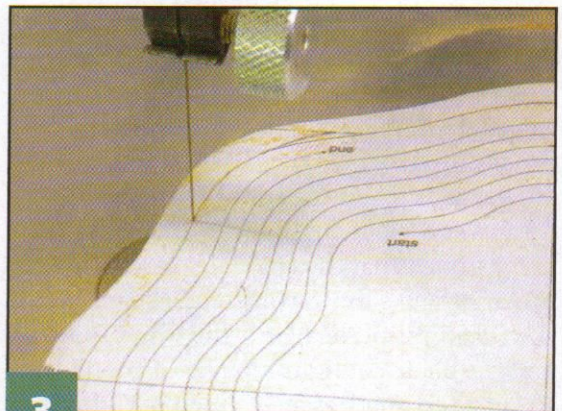
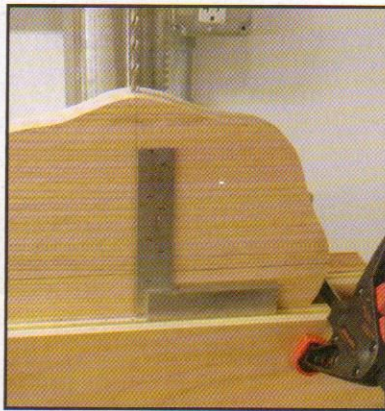
Attach it to the test blank. Drill a blade-entry hole at the center, insert the blade, and cut the four rotations. Remove the pattern. With the bottom facing up, hold the wood with two hands and push firmly upward with your fingers just until the rings grab and the spiral holds its shape. Do not extend the rings beyond this point. The drop should be about ⅜" (1cm) to ⅞" (1.1cm) at its deepest point. If it is too shallow, decrease the cutting angle slightly, ¼° to ½°; if too deep, increase the cutting angle by the same amount.





2

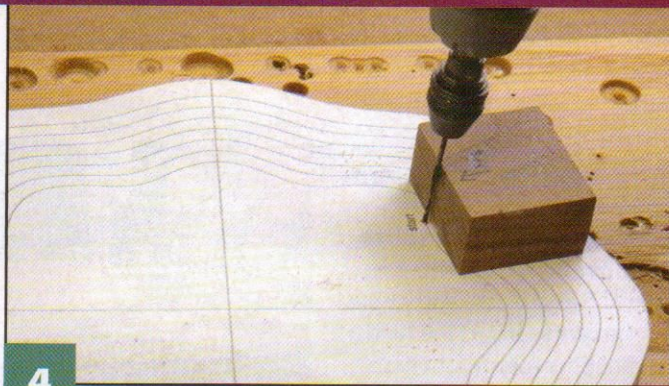
Extend the ends of the pattern lines down the sides and across the back. They will cross in the center. Drill a $\frac{1}{8}$ " (3mm)-diameter by $\frac{1}{2}$ " (1.3cm)-deep hole at the intersection. Use the pattern to mark the drilling points on the edges halfway between the top and bottom faces. Use a drill press to drill a $\frac{3}{16}$ " (5mm)-diameter by $\frac{1}{2}$ " (1.3cm)-deep hole straight in at each point.



3

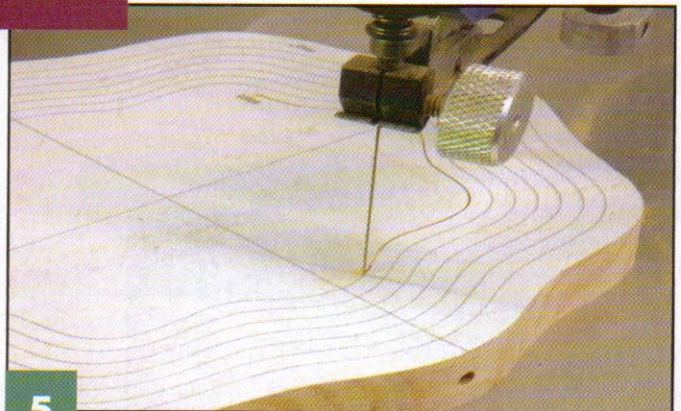
Make sure the saw table is level. Cut along the pattern line to separate the handle from the basket. Cut the handle ends where indicated. The handle is longer than needed and will be cut to exact length in Step 11. Using the spindle sander, sand the inside of the handle and the outside of the basket just until smooth.

BASKET: CUTTING THE SPIRAL



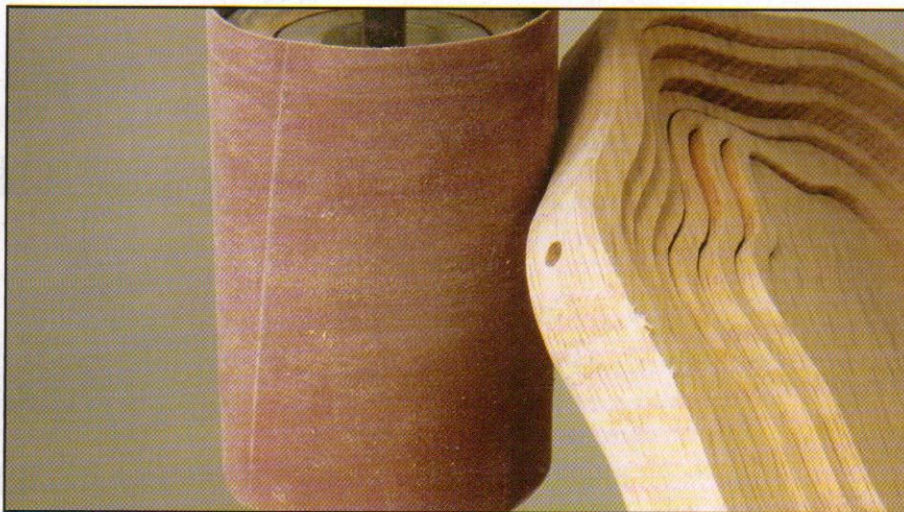
4

Drill a blade-entry hole where indicated at the start of the spiral. Use a #54 or smaller drill bit. To eliminate the slight bounce that will occur with a straight blade-entry hole as the blade adjusts to the table tilt, drill the hole angled $2\frac{1}{2}^\circ$ toward the center of the blank. I use a shop-made angle guide. Tilt the saw table to the proper angle (see Testing the Cutting Angle).



5

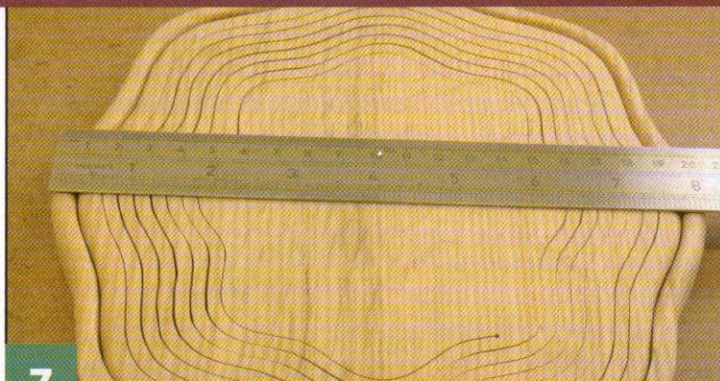
With a new #7 blade, cut clockwise around the spiral to the endpoint. Do not force the blade, or it may change the cutting angle. If you deviate from the cutting line, steer the blade back gently. The blade may dull as you near the end of the spiral. If you're forcing the blade, replace it to prevent miscuts or burning. Remove the pattern and any adhesive residue with mineral spirits.



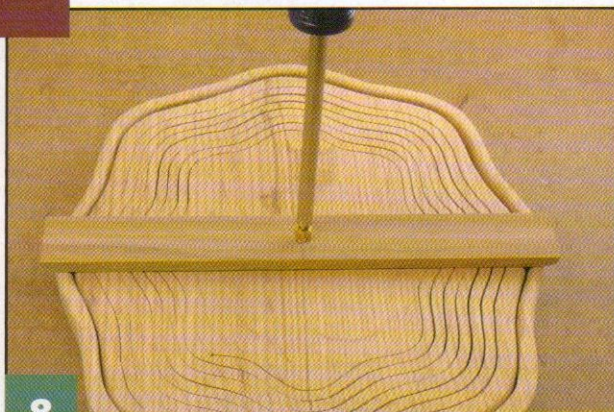
6

Sand the flat faces of the basket and handle. Use progressively finer sandpaper up to 220 grit. Use a pneumatic sanding drum with a 150-grit sleeve to bevel the curved outer edges of the basket and all edges of the handle, but do not bevel the bottom 1" (2.5cm) at each end of the handle. Use a 220-grit sleeve to round the bevels into smooth curves and to sand the sides of the handle and basket. Finish by hand-sanding. Do not sand the spiral, but use a sanding mop to remove any remaining fuzzies from its bottom.

BASKET: MAKING THE HANDLE & BASE



7 With the basket lying flat, return the handle to its original position. Measure the total width at the pivot holes, add $\frac{1}{4}$ " (6mm), and cut one of the base strips to this length. Sand the upper edge at each end into a smooth curve. Then, sand the entire strip smooth. Place the strip bottom facing up. Locate the center and mark it with an awl. Drill a hole at this mark with a #6 countersink bit. Make the countersunk area just deep enough to contain the head of a #6 brass flat-head wood screw.



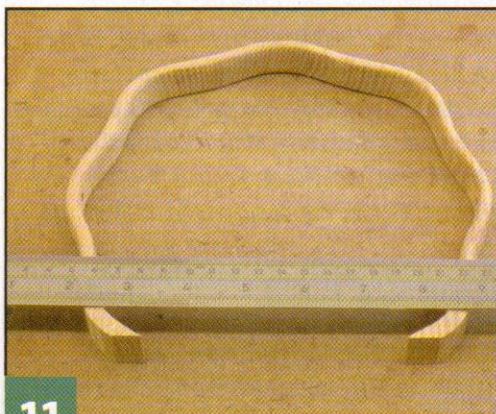
8 Place the basket flat with the face side down. Rotate the spiral, if needed, so that the grain is aligned. Place the strip, countersunk side up, between the pivot points, aligning the countersunk hole with the hole in the bottom of the basket. Drive a #6 brass flat-head wood screw through the strip into the spiral just until it starts to get tight. You may need to rotate the strip in Step 12 to center the handle on the strip.



9 Place the basket and handle face side up. Insert the pivot dowels through the handle into the pivot holes. Sand the dowels so they can be pushed in easily, but without excessive play. Open the basket by pressing on the bottom, using gentle pressure to extend the spiral fully and evenly until it holds its position solidly when balanced on the crosspiece. Do not force it past this point. The rings should be evenly extended and the height of the basket the same all around. Raise the handle until the ends meet the cross strip. The distance from this point to each end of the handle should be the same. If not, adjust the rings until the overhang is identical.



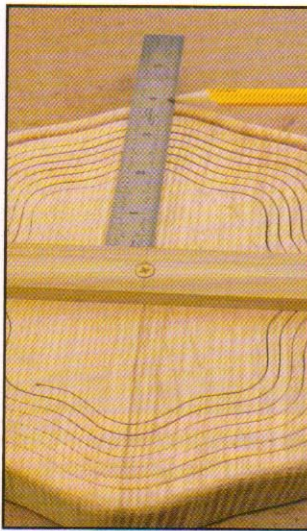
10 Mark each side of the handle where it meets the top of the cross strip. Collapse the basket, and remove the dowels and handles. Mark the handle so it can be replaced in the same position.



11 Place a straightedge across the marks drawn at the ends of the handle. Extend the marks across the face. Make the lines parallel to the ends of the handle or the handle will not sit solidly on the cross strip. Cut the lines.



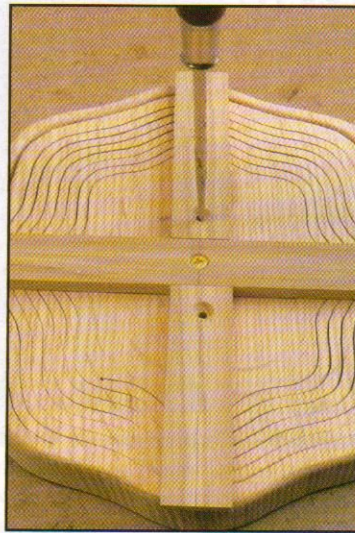
12 Attach the handle by reinserting the dowels. Open the basket and slide the ends of the handle onto the cross strip. Push down on the upper rim to seat the basket. The handle ends should be centered on the cross strip and sit solidly. If either end meets the cross strip at an angle, sand to correct the angle so that the end can meet the cross strip securely. If the ends are not centered, rotate the cross strip slightly, and then screw it down firmly. Collapse the basket, remove the handle, and sand any unshaped parts at its ends to match the rest of the handle.



13

Reattach the handle and place the collapsed basket on its face.

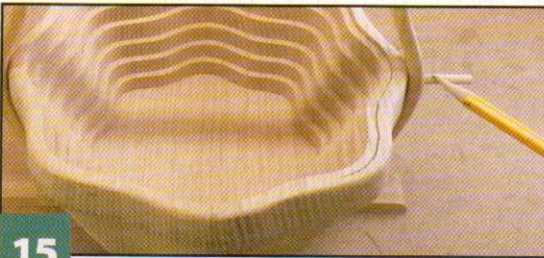
The cross strip should lie directly above the dowel pieces. Measure the distance from the top edge of the cross strip to the top of the handle, and from the bottom edge of the cross strip to the bottom of the basket.



14

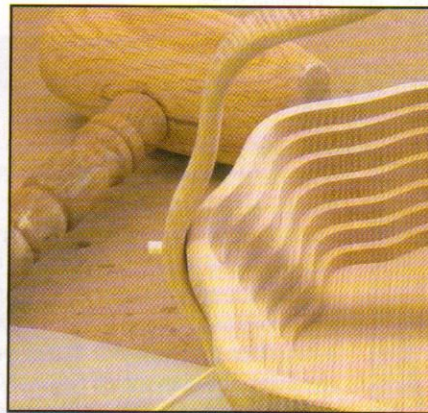
Use the remaining 1/4" (6mm)-thick strip to cut two shorter pieces that correspond to these lengths.

Sand a curve on one end of each strip to match the curves of the cross strip. Draw a line down the center of the underside of each strip. Drill a hole on that line, with the #6 countersink bit, 1/2" (1.3cm) in from the uncurved end. Center both pieces on the basket, at right angles to the cross strip. Use an awl to mark the centers of the holes of the short strips. Drill a 1/2" (1.3cm)-deep hole at the marks, using a 1/8" (3mm) bit. Screw the pieces into place with a #6 brass flat-head wood screw.



15

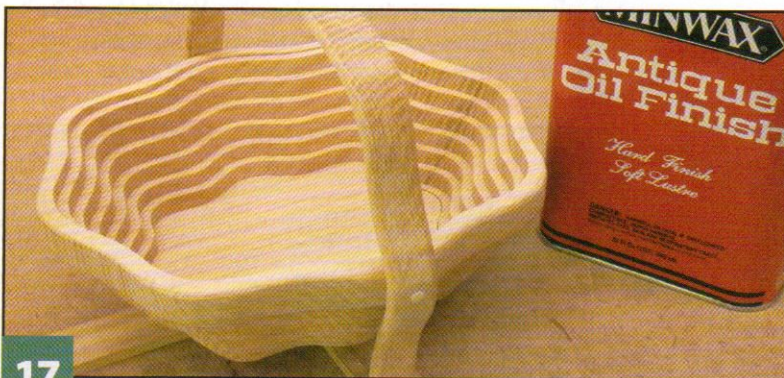
Open the basket, making sure that each dowel is seated fully. If you prefer plain dowel ends, mark each dowel about 1/4" (6mm) beyond the handle. For dowel ends with decorative caps, see Decorative Caps. Collapse the basket. Remove the dowels and handle.



16

Cut the dowels at the marks.

Insert a drop of wood glue into each pivot hole. Place the handle into position and insert each dowel piece through the handle and into the basket. Tap gently with a mallet to seat the dowel fully. Clean up any excess glue. Open the basket and let the glue dry. Sand each dowel until almost flush with the handle, and then round the edges of the dowel slightly by hand.



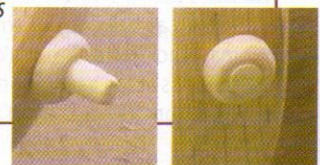
17

Apply several coats of finish. An oil finish is typically used for baskets of this type. To get full coverage, you'll need to open and close the basket as you apply the finish. You may find a small brush is useful for hard-to-reach areas. Two coats are usually sufficient. Let each coat dry thoroughly, rubbing the non-spiral areas with 0000 steel wool between coats. Be sure to allow sufficient time after finishing, as much as several weeks, for the odor to dissipate. Although not typical, a sprayed coat of shellac or lacquer can also be used. It's easiest to apply this type of finish with the basket opened. Be sure to move the rings of the spiral as soon as each coat is dry to prevent them from sticking to each other.

TIP

DECORATIVE CAPS

Draw two 7/16" (1.1cm)-diameter circles on a piece of 1/8" (3mm)-thick contrasting wood. Drill a 3/16" (5mm)-diameter hole in the center of each. Cut the circles and sand a slight bevel on the top of each outer edge. Slide a circle onto each dowel, pushing until it reaches the basket. Mark each dowel about 1/4" (6mm) beyond the circle. Remove the circles and dowels, and follow the gluing procedure in Step 16, but do not sand the dowel once the glue has dried. Instead, place a small amount of glue into the center holes of the circles and push them onto the dowels until they meet the basket. Remove any excess glue and rotate the handle to keep the circles from sticking to the basket. When dry, sand the dowel ends flush with the circles and sand each circle into a smoothly curved cap.



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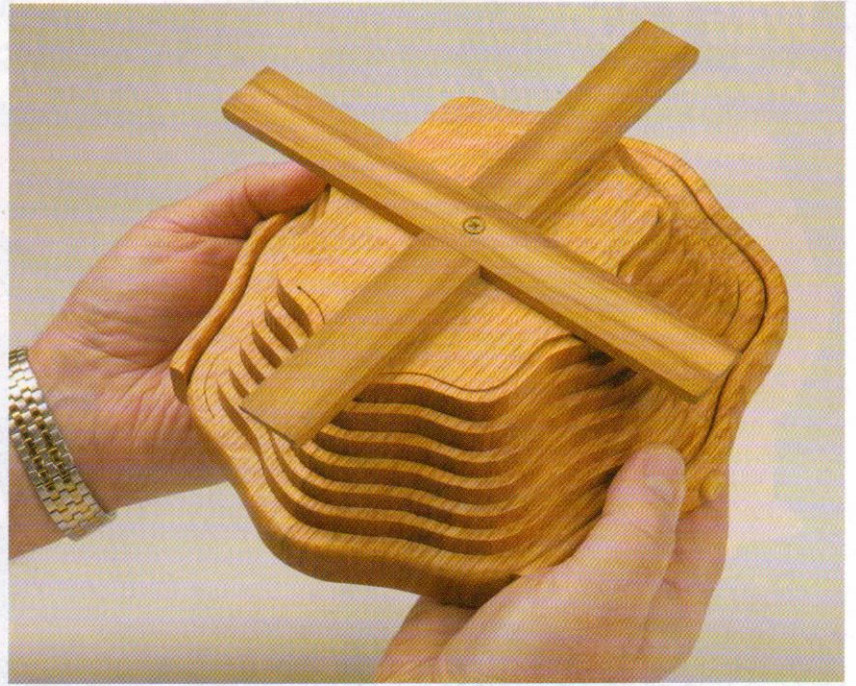
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Opening and Closing the Basket

To open the basket, invert it and press up on the bottom with your fingers to extend the spiral until the handle ends can just clear the cross strip. As the spiral extends, make sure that the rings open evenly on all sides. Place the basket right side up, center the ends on the cross strip, and press down on the top rim until the handle is firmly seated.

To close the basket, swing the ends of the handle up toward the blade-entry hole in the bottom until they are in line with the top rim, and then push down on the top rim. If the spiral resists collapsing, invert the basket and gently tap on the bottom to release the pressure.



Pattern for the **MAGIC BASKET** is in the pattern pullout section.



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.

Materials & Tools

Materials:

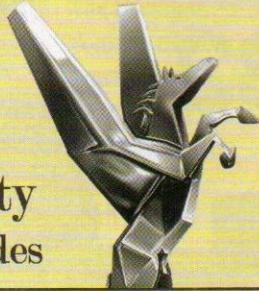
- Oak, $\frac{3}{4}$ " (1.9cm) thick: $8\frac{1}{2}$ " x $9\frac{1}{2}$ " (21.6cm x 24.1cm)
- Oak, $\frac{3}{4}$ " (1.9cm) thick: spiral test cut, $6\frac{1}{2}$ " x $7\frac{1}{2}$ " (16.5cm x 19.1cm)
- Oak, $\frac{1}{4}$ " (6mm) thick: base, 2 each, $1\frac{5}{16}$ " x $8\frac{1}{2}$ " (2.4cm x 21.6cm)
- Dowel, $\frac{3}{16}$ " (5mm)-dia.: 2 each, $1\frac{1}{2}$ " (3.8cm) long
- Brass wood screws, #6 flat-head: $\frac{3}{4}$ " (1.9cm) long
- Finish (see Step 17)
- Repositionable adhesive
- Sandpaper
- Steel wool: 0000
- Spindle sander drums: $1\frac{1}{2}$ " (38mm) or 2" (51mm)
- Pneumatic drum sander sleeves: coarse, fine
- Wood glue

Tools:

- Scroll saw blades: aggressive #7 skip-tooth, such as Pegas Super Skip
- Drill with bits: #54 wire size, #6 countersink, $\frac{1}{8}$ " (3mm) and $\frac{3}{16}$ " (5mm) twist
- Sanders: vibrating pad, spindle, pneumatic drum
- Shop-made angle guide set to proper angle (see Testing the Cutting Angle) (optional)
- Awl
- Engineer's square
- Straightedge

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

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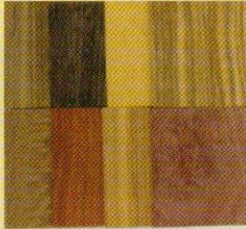


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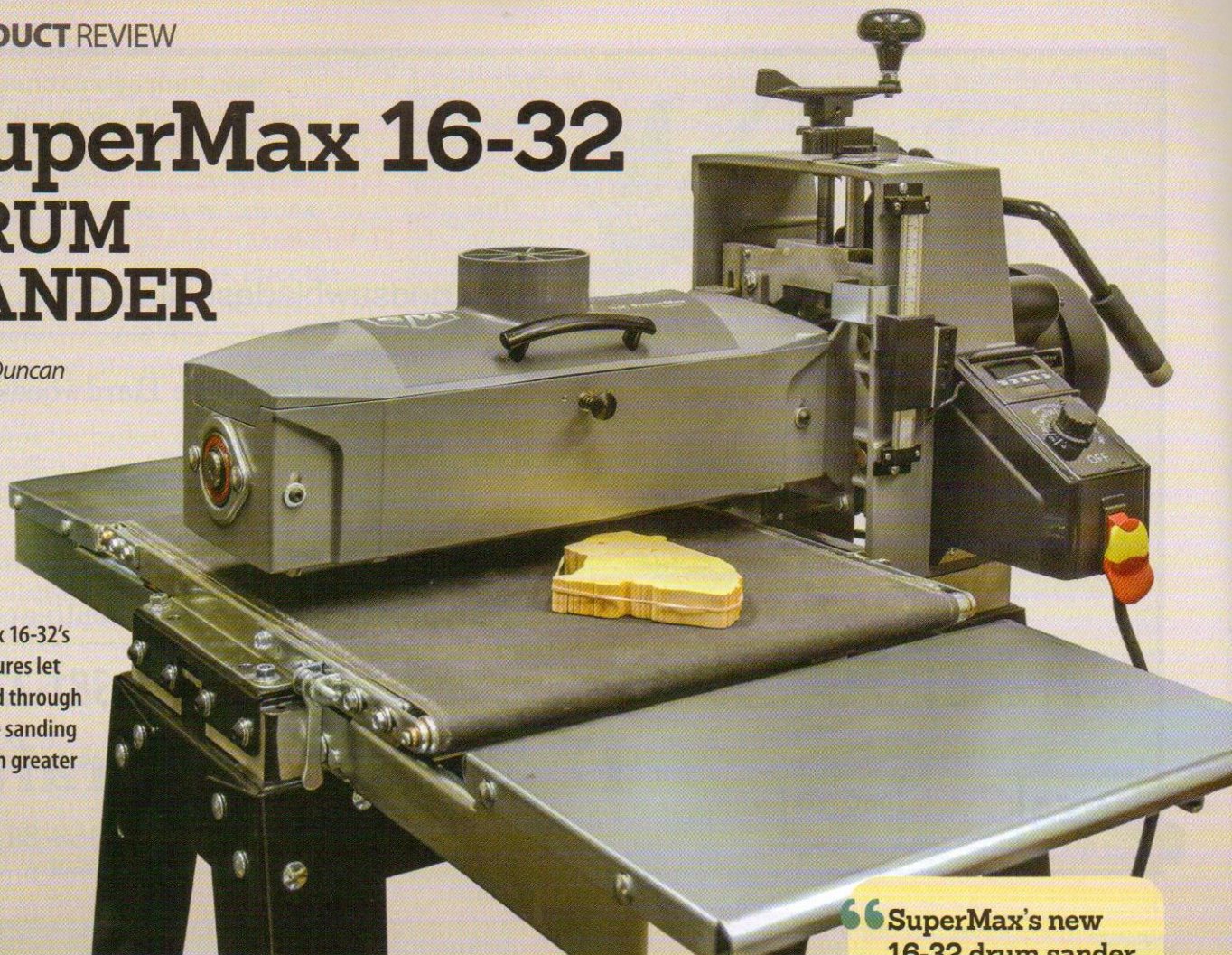
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SuperMax 16-32 DRUM SANDER

By Bob Duncan

SuperMax 16-32's new features let you speed through mundane sanding steps with greater accuracy.



“SuperMax’s new 16-32 drum sander takes the pain out of sanding scroll saw projects.”

SuperMax’s new 16-32 drum sander takes the pain out of sanding scroll saw projects.

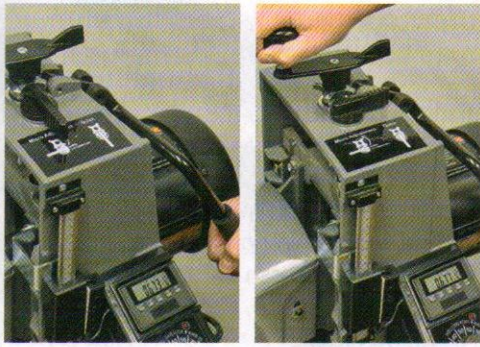
A full-size drum sander is useful to a scroll sawyer for many reasons, including creating flat surfaces that are ready to cut or glue and sanding projects, like puzzles and inlays, quickly. Author and artist Carole Rothman uses a drum sander to flatten cupped and twisted wood and to transform scrap wood into colorful veneer to accent her bowls, baskets, and vases. Woodworker and contributing designer Dave Van Ess uses a drum sander to resurface inexpensive roughly planed wood and to clean dirty or painted wood. He also uses it in place of a planer to dimension stock, especially delicate figured wood.

Like its predecessor, the 19-38, the SuperMax 16-32 is solidly built, with a sturdy stand and locking castors. It has a powerful 1½HP motor and uses Intellisand technology to control the speed of the conveyor, preventing gouging, damaging, or burning of the blank and giving you a constant finish even with grain and wood density changes. The motor and technology together allow you to sand away astounding amounts of wood very quickly. Plus, the

16-32 has SuperMax’s amazingly easy quick-change sandpaper system, so you can sand through the grits in next to no time. And, both sanders are open-ended to effectively double the length of the drum when sanding wide boards.

However, the upgrades to the SuperMax 16-32, including a new quick-adjustment lever, a digital thickness guide, newly designed turbo vented dust port, and folding infeed and outfeed tables, are so impressive that we have named it our new “Dream Drum Sander.”

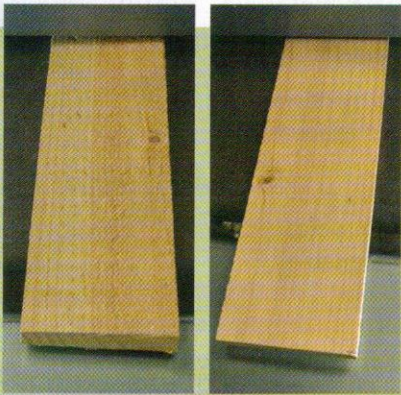
The quick-adjustment lever allows you to go from sanding ¼" (6mm)-thick wood to 3" (7.6cm)-thick wood in seconds. With previous drum sanders, you’d need to crank a hand wheel 44 times to move the drum that distance. With the quick-adjustment lever, you just position the crank, flip a switch, and use the lever to move the drum up and down. The digital thickness guide helps you move the drum to the right position in a few seconds. The guide also helps when you’re trying to get wood to an exact thickness, down



The thickness controls allow you to make coarse (left) and fine (right) adjustments with digital precision.



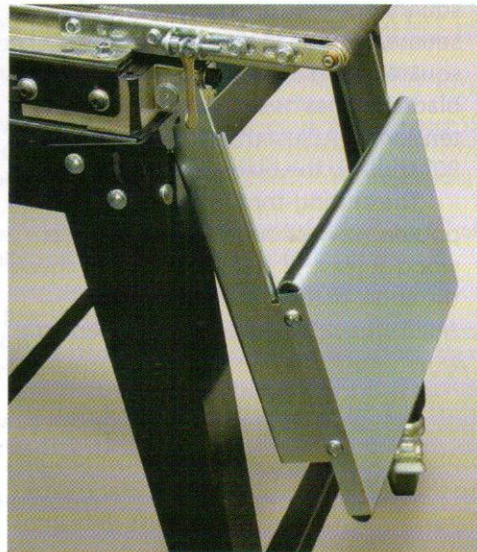
The 4" turbo vented dust port effectively removes sawdust, even during aggressive sanding.



How Fast Is Fast?

Using 12" samples, the 16-32 smoothed both sides of a piece of pallet wood in 1.25 minutes.

In an aggressive test, a 2x4 was reduced to 1" thick in 3.5 minutes.



The optional infeed and outfeed tables support larger workpieces, but fold down to save valuable space in your shop.

to a minimum of $\frac{1}{32}$ " (1mm). There's no way to get this kind of accuracy sanding by hand or with a belt or pad sander.

The more wood you remove, the more dust you create, and you need to collect that dust before it gets into your lungs or all over your shop. The 16-32 has a newly designed turbo vented dust port that increases the flow of air to the dust collectors by 15%, according to the manufacturer. More air movement means less dust escaping. Paired with a good dust collector, you could probably use this sander in your living room—I use it in our office workshop and our desks remain dust free.

Laguna Tools Acquires SuperMax

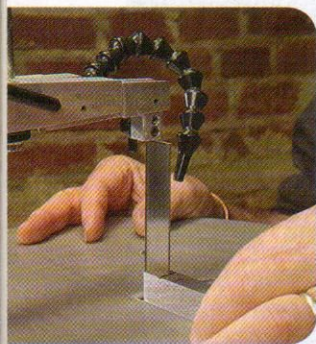
Laguna Tools, known for its high-end woodworking tools, has acquired SuperMax tools. The deal makes the SuperMax tools available through Laguna's greater distribution network, and Laguna picks up an excellent line of sanding tools. For more information about Laguna tools, visit www.LagunaTools.com.

If you're sanding small pieces, infeed and outfeed tables may not be important, but if your project is long enough to hang off the conveyer, you run the risk of sanding a groove at the end of the board. Infeed and outfeed tables prevent this, but they generally increase the footprint of the tool. However, the optional infeed and outfeed tables available for the new 16-32 fold down. You'll still need space to work, but the sander stores in a much smaller space than similar tools. The tables fold and unfold easily; so much so that you have to watch your fingers when dropping them.

Many scrollers consider a drum sander a must-have tool. The features of the SuperMax 16-32 make it our must-have choice.

The SuperMax 16-32 is available for \$1,199; the outfeed tables cost an additional \$119. Visit www.Supermax.com to purchase a sander or find a local retailer.

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



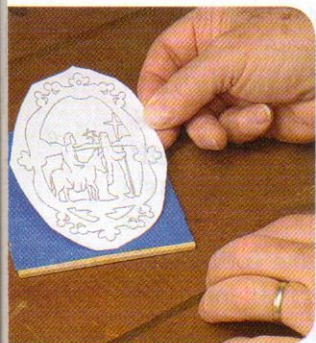
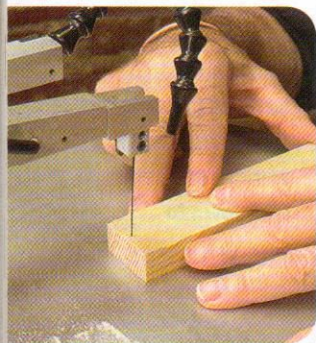
Squaring Your Table

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.

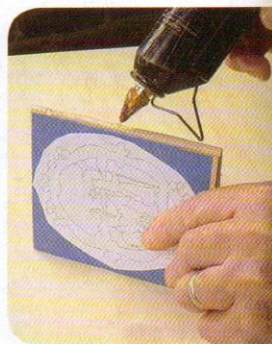
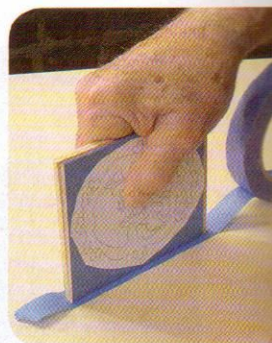
Stack Cutting

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

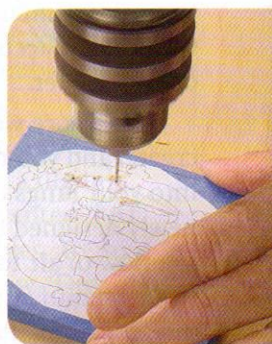
Before inserting a blade, completely remove the tension. Clamp both ends of the blade into the blade holders and adjust the tension. Push on the blade with your finger. It should flex no more than 1/8" (3mm) forward, backward, or side to side.

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.



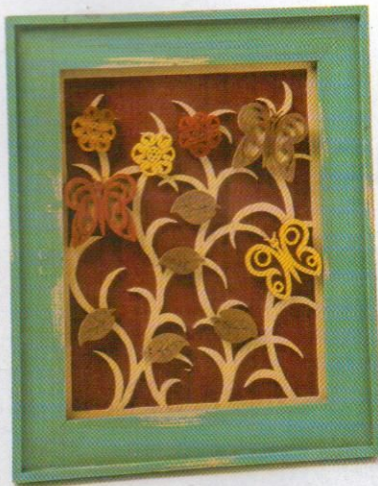
Removing Patterns

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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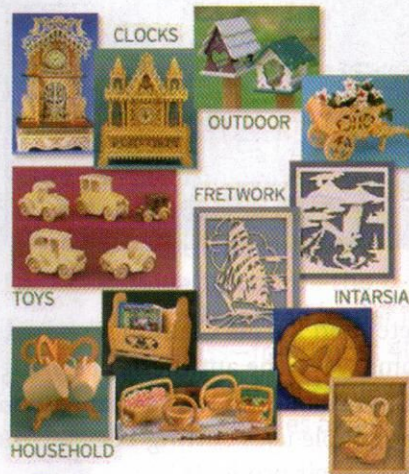
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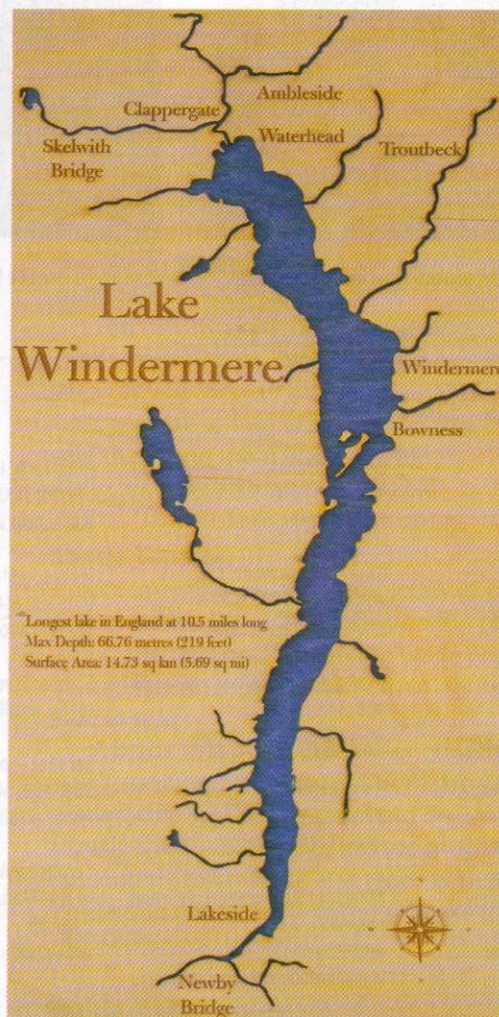
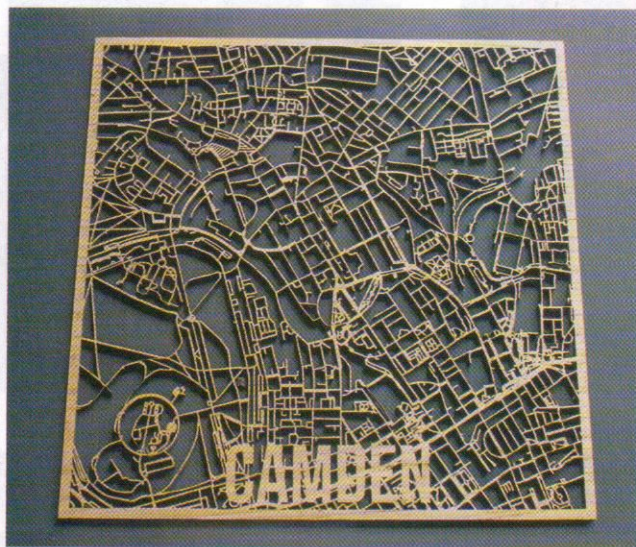
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Wooden Maps



(Clockwise from top left) Fretwork street map of Camden, England; waterway map of Lake Windermere, England; and topographical map of the United States.

Peter and Rachel Crummey's wooden maps are, in some ways, the antithesis of the digital age. They are not portable and they certainly don't talk to you. But, the couple uses cutting-edge technology, literally, to make their products.

Using design software and cutting with lasers, Peter and Rachel create stacked topographical maps, waterway maps, maps that hold beer cap collections, and their most popular product, delicate fretwork street maps that can be customized for any area worldwide. They could cut most of the maps on a scroll saw, but "the quality and accuracy of engraving using lasers means that it is perfect every time," says Peter. Plus, the laser takes an hour to do what would be many days' work by hand. The couple balances the machine perfection with the warmth of real wood and hours of hand finishing to create interesting, unique

designs that are "a labor of love which are intended to spark conversation."

The Crummeys live in Derby, Derbyshire, England and have been in business for about two years. Peter was introduced to laser cutting by a friend during college, while Rachel has a degree in computer design. Peter has always been interested in maps and thought their "transferability to the laser really made them an opportunity not to miss." However, the couple also makes personalized cake toppers, wedding products, and home decor. "We love working with wood," says Peter. "This is the perfect home craft business for us."

See more of the Crummeys' work at lasaris.com.

ON THE WEB See more wooden maps on our website.
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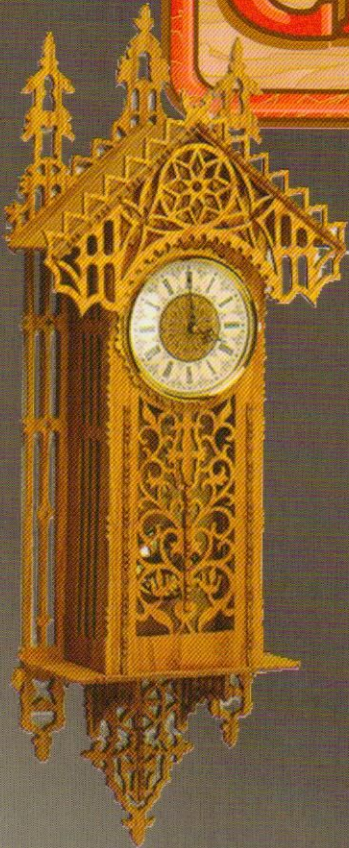
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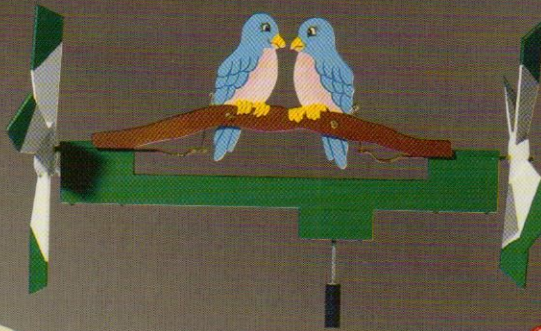
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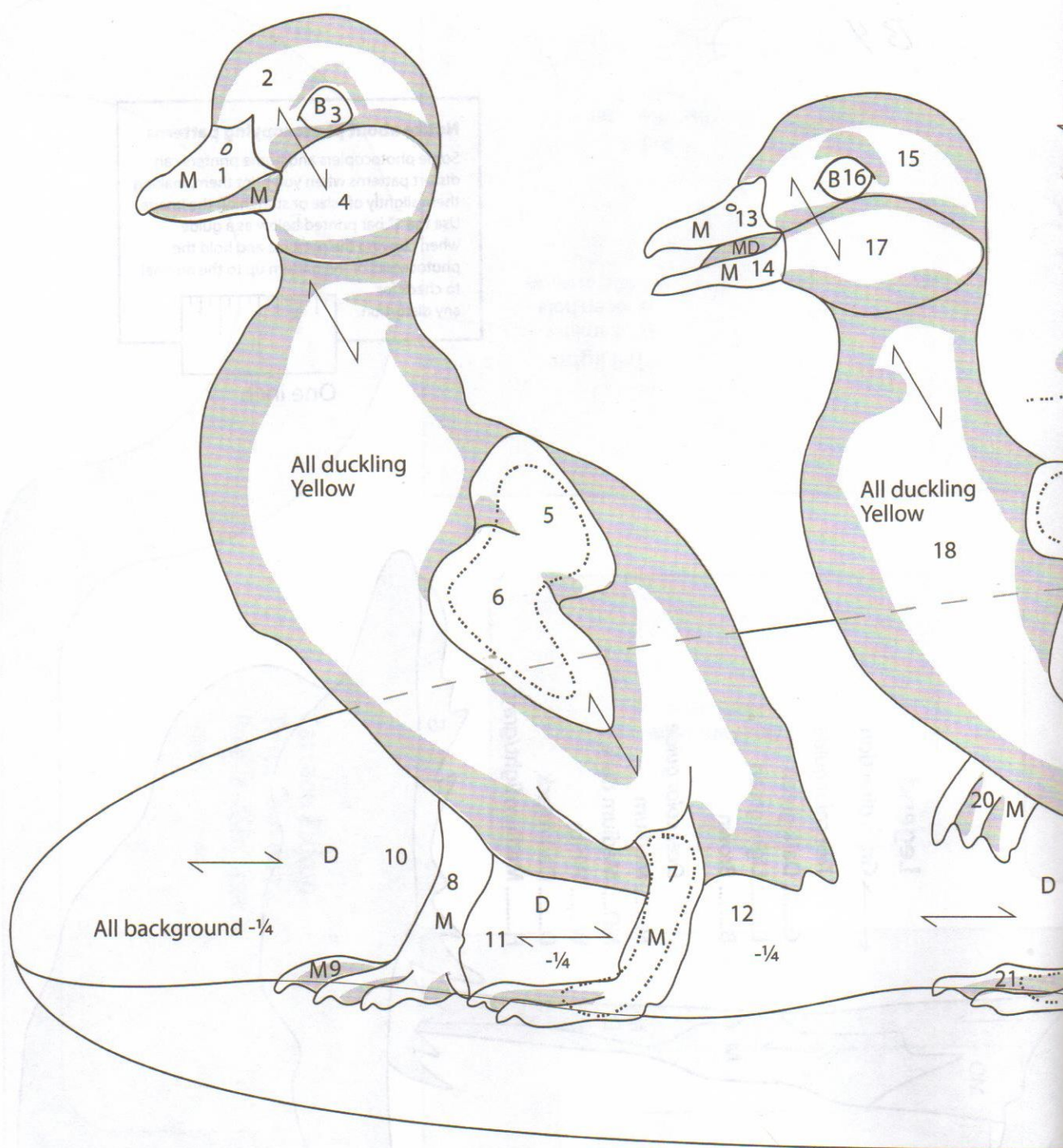


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A1



Legend

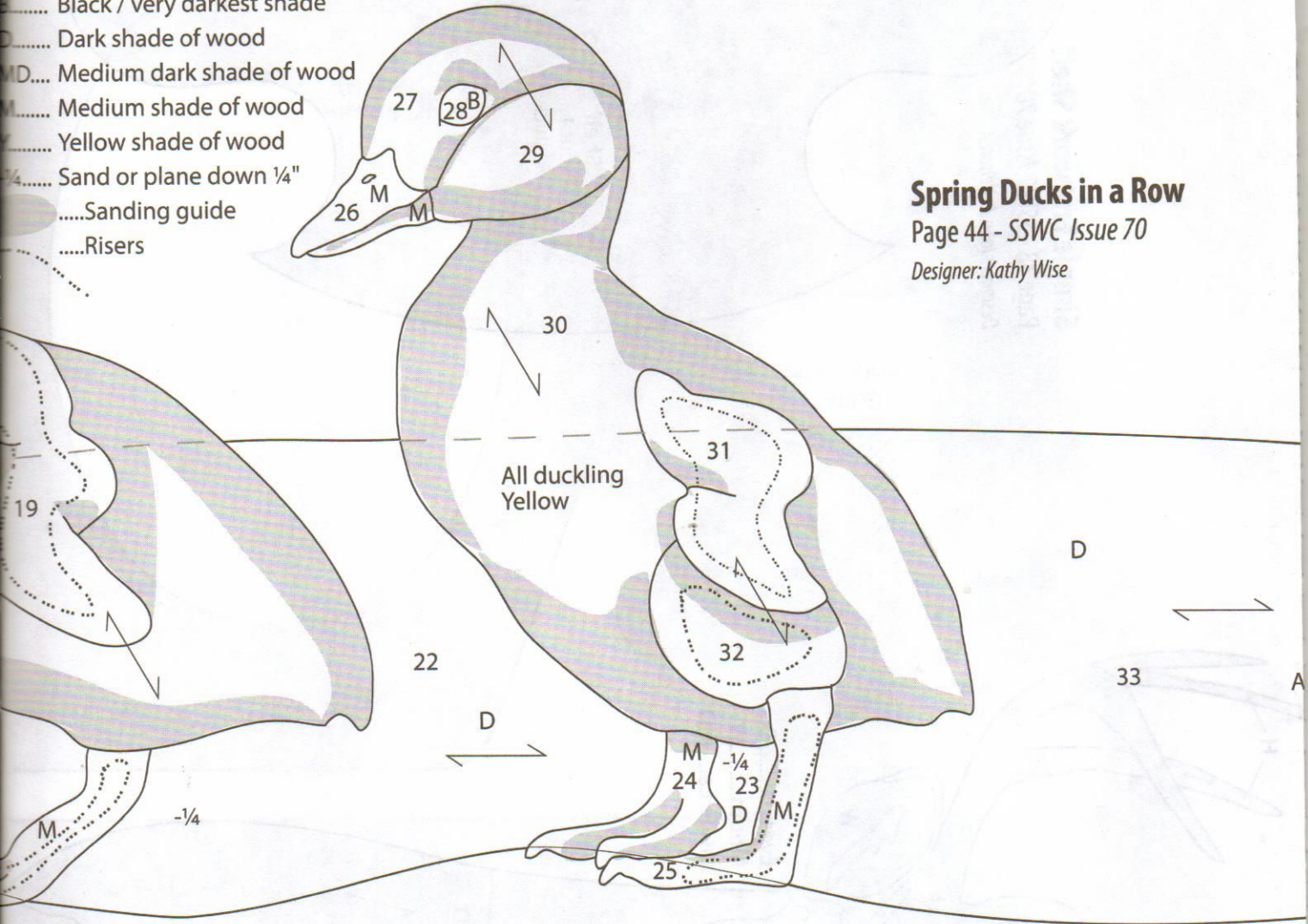
Start with 3/4" or 1" thick wood

- Grain direction
- Black / very darkest shade
- D..... Dark shade of wood
- MD... Medium dark shade of wood
- M..... Medium shade of wood
- Y..... Yellow shade of wood
- Sand or plane down 1/4"
-Sanding guide
-Risers

Spring Ducks in a Row

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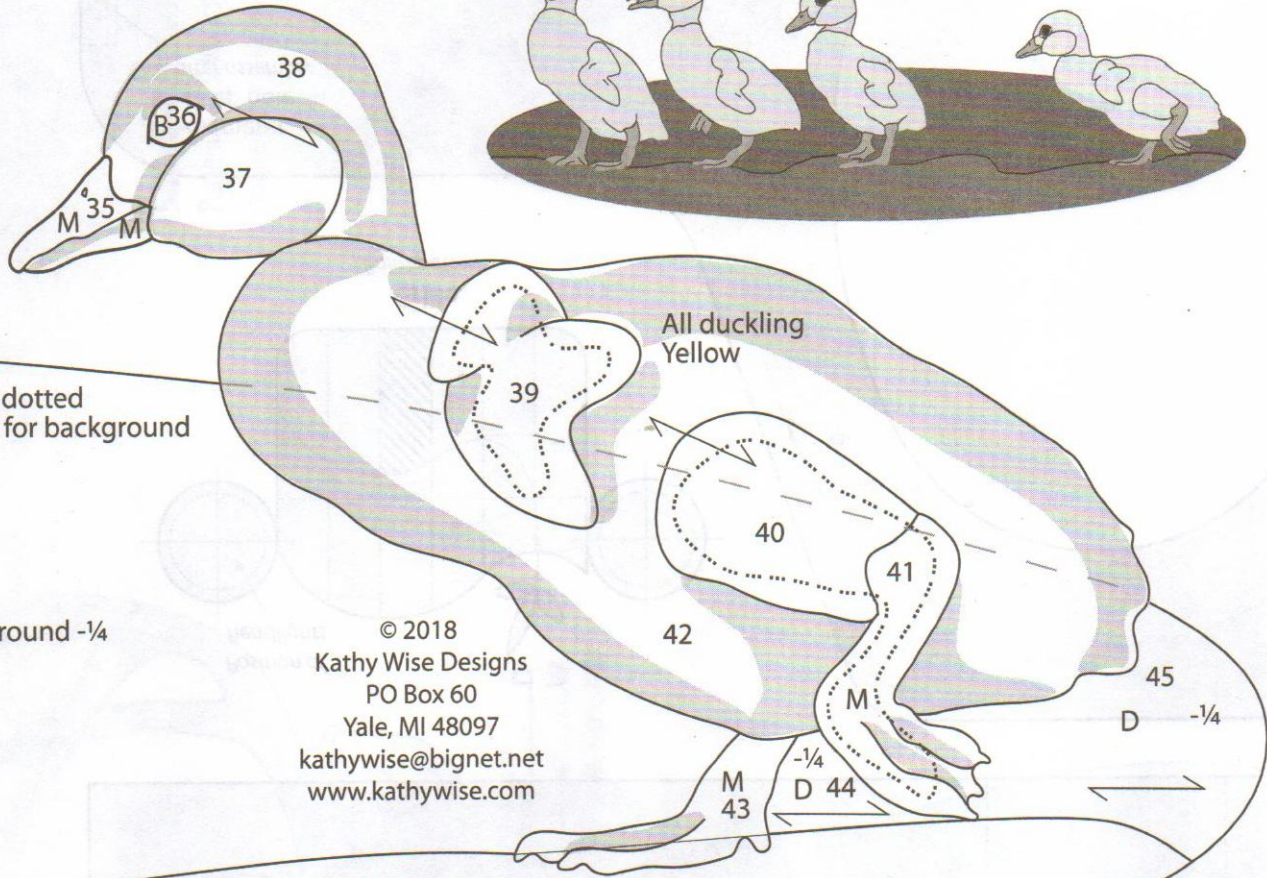
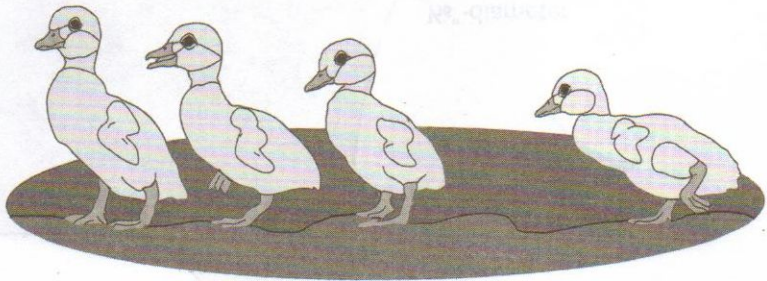
Designer: Kathy Wise



All background -1/4



A3



Cut dotted line for background

background -1/4

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4
MD

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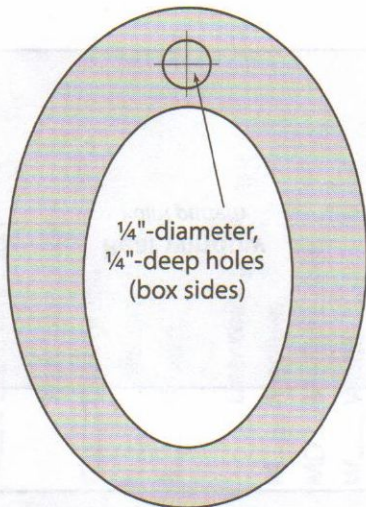
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Precious Love	37	Cartoon Pickup Truck Coin Bank.....	48
Simple Fretwork Shelf	38	Heart-Shaped Boxes.....	52
Stacked Floral Votive Holder	40	Majestic Whitetail Intarsia	56
Spring Ducks in a Row	44	Magic Basket	60

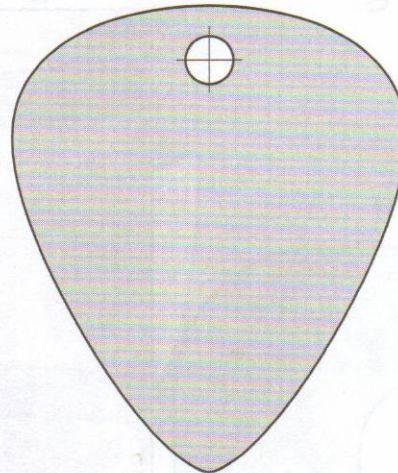
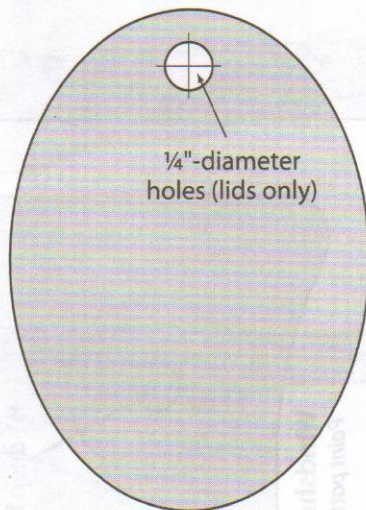
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Heart-Shaped Boxes

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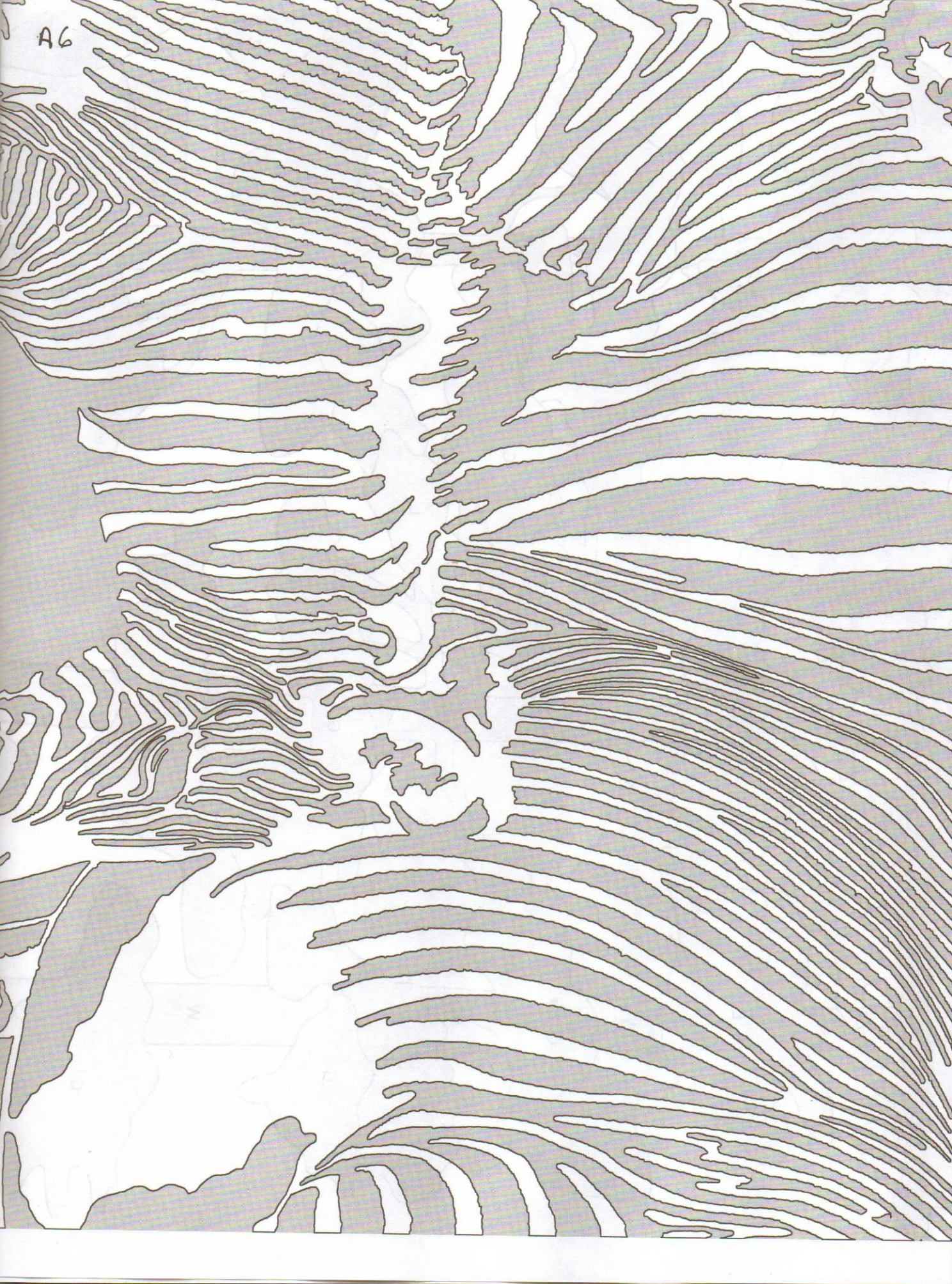
Designer: Al Bagetta



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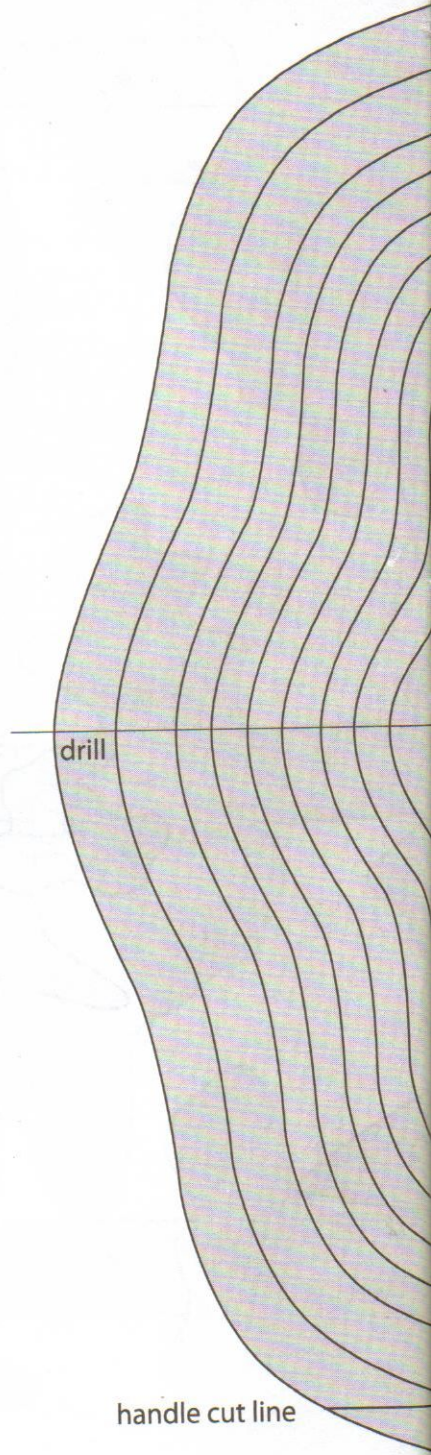


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is Love
SSWC Issue 70
erry Hallam

One inch

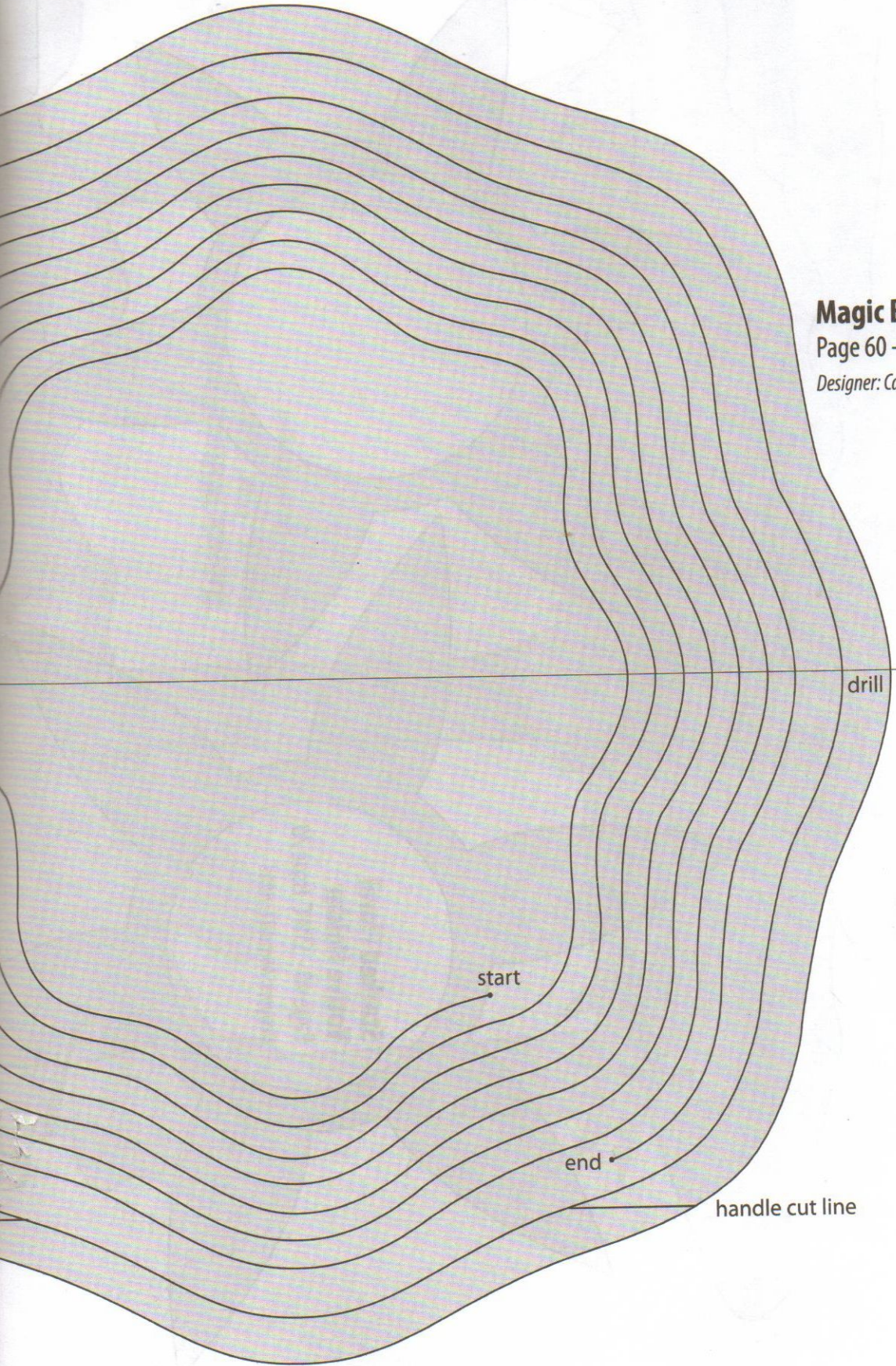
9" x 8" overall
Outer rings measure $\frac{5}{16}$ "
Inner rings measure $\frac{3}{16}$ "



drill

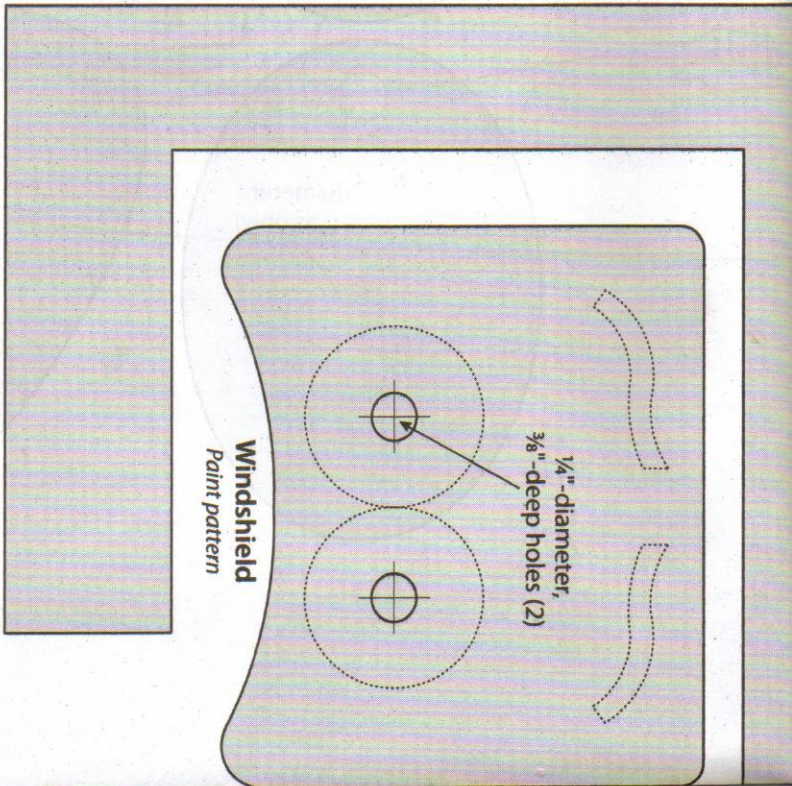
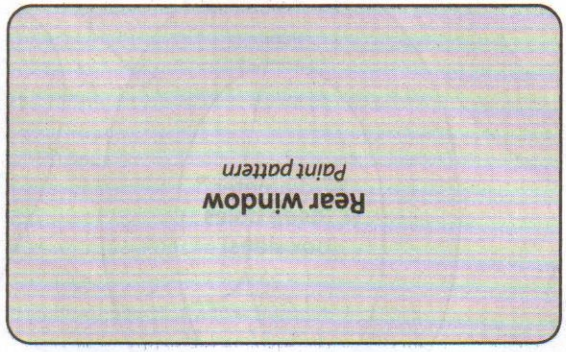
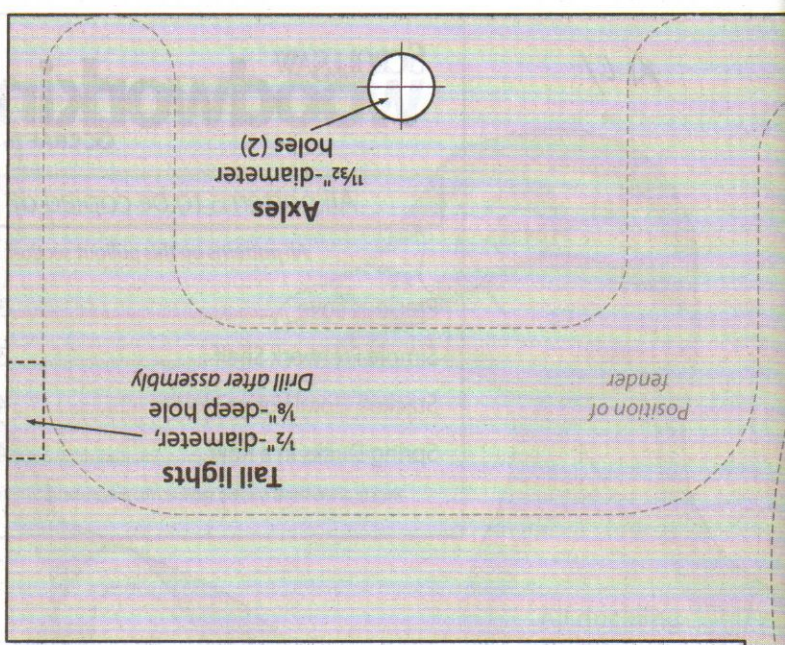
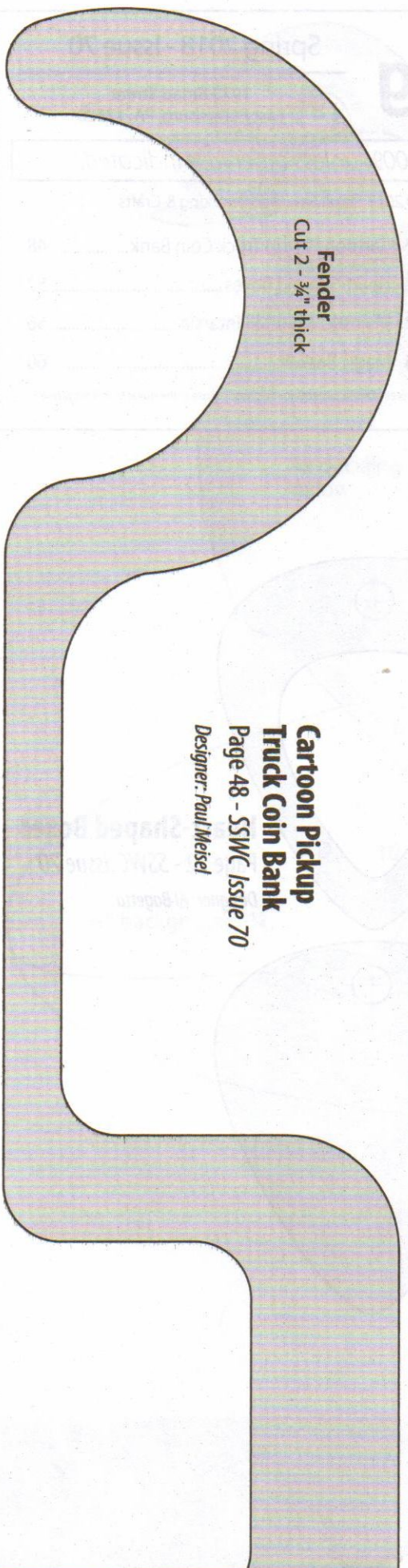
handle cut line

A8

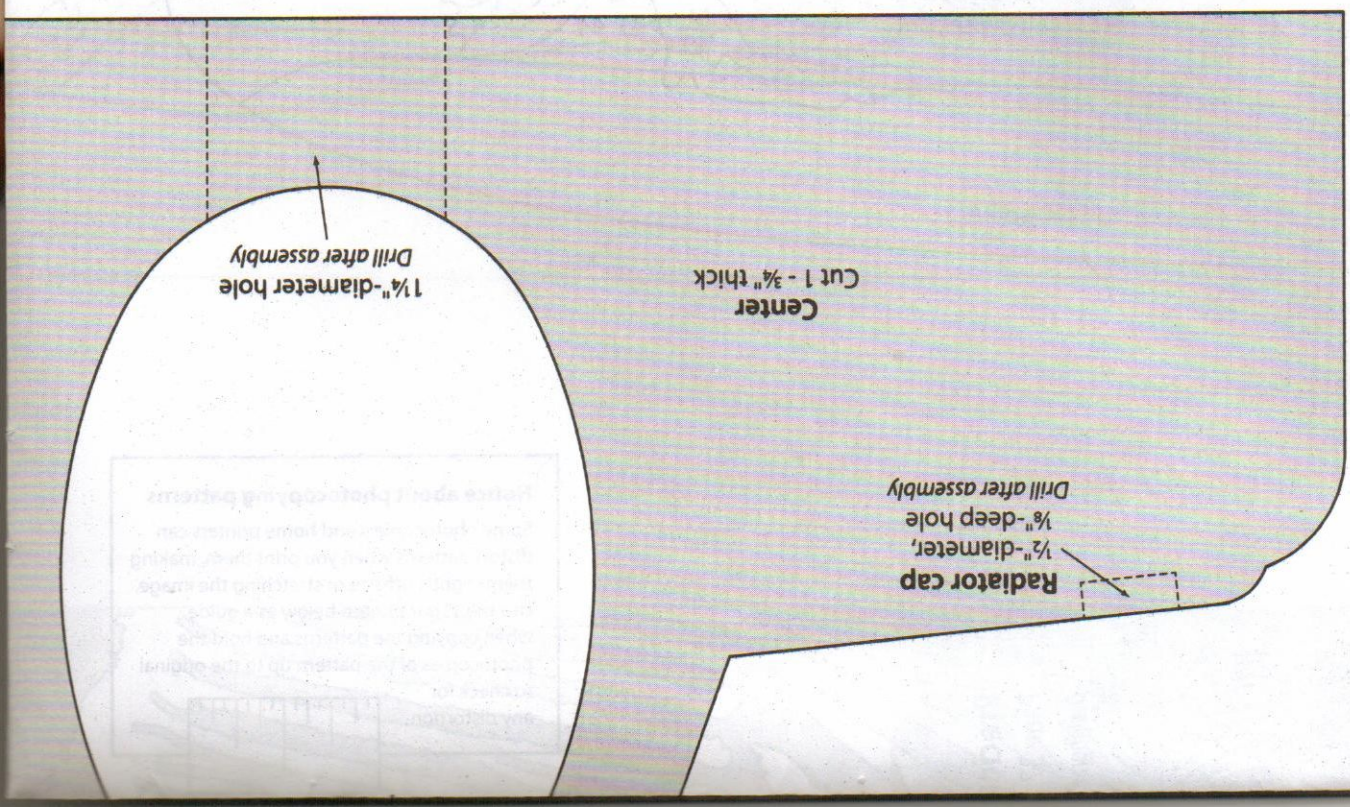
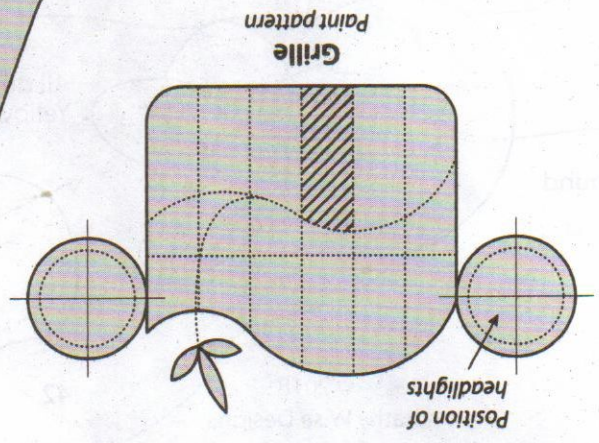
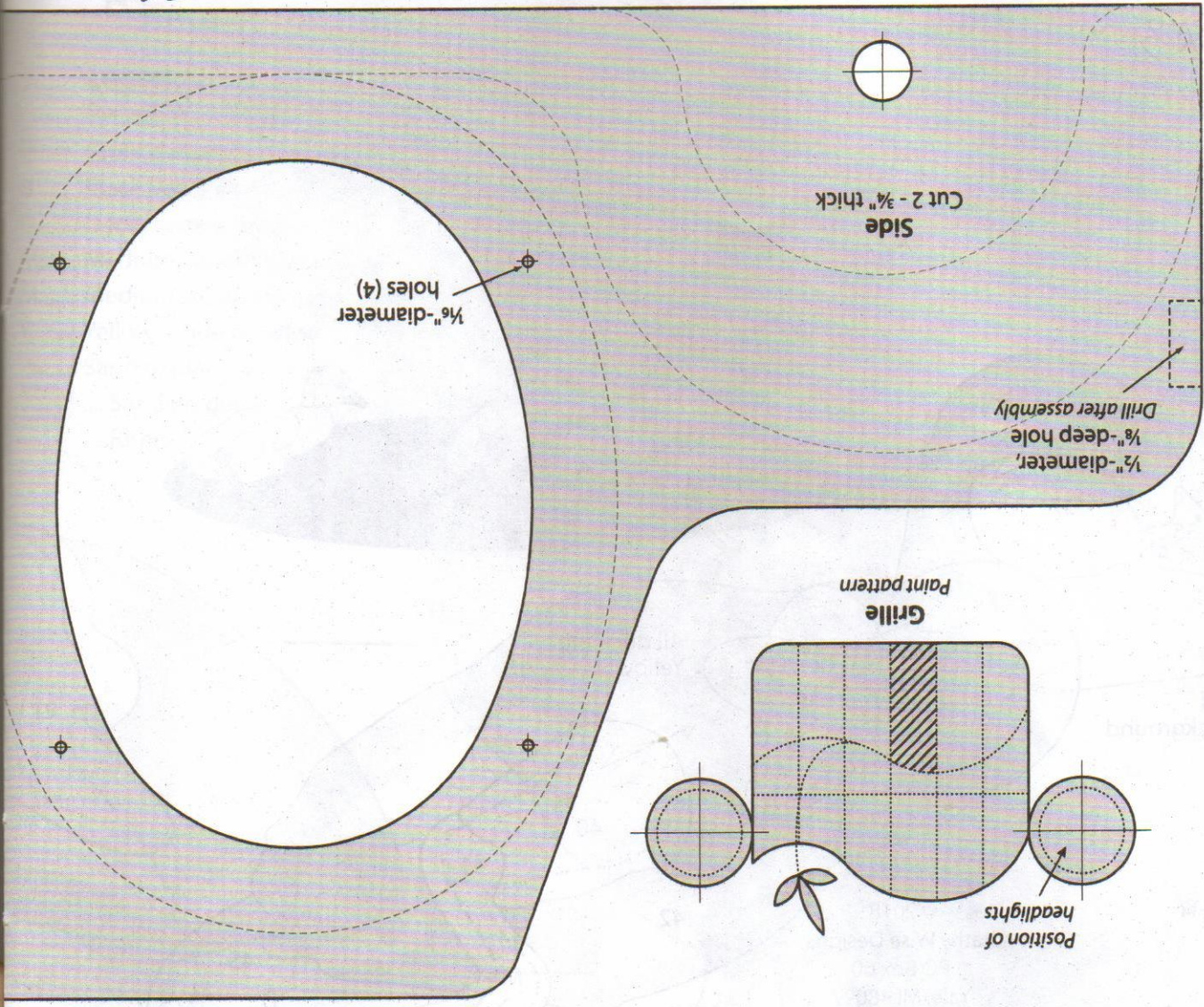


Magic Basket
Page 60 - SSWC Issue 70
Designer: Carole Rothman

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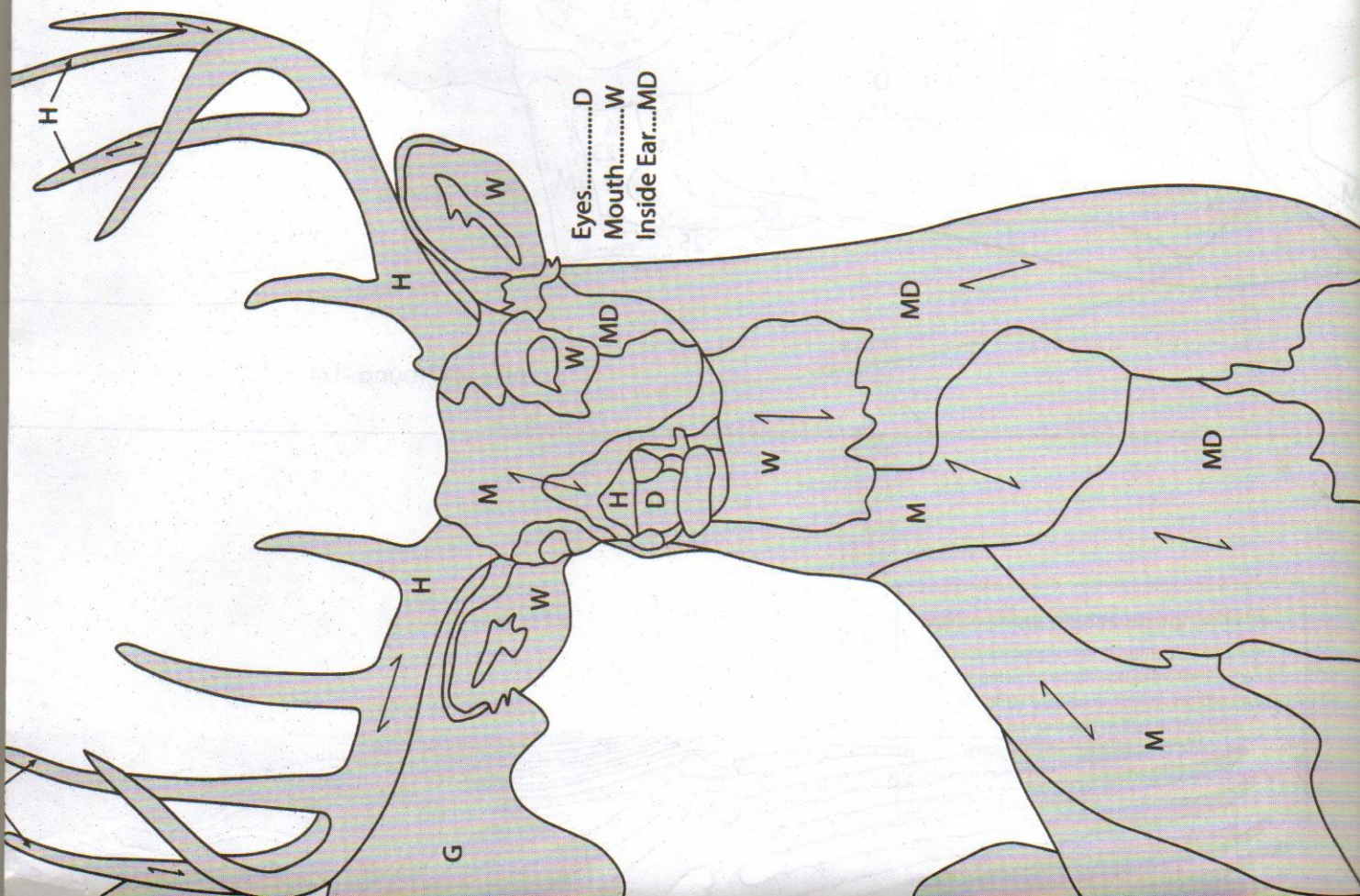
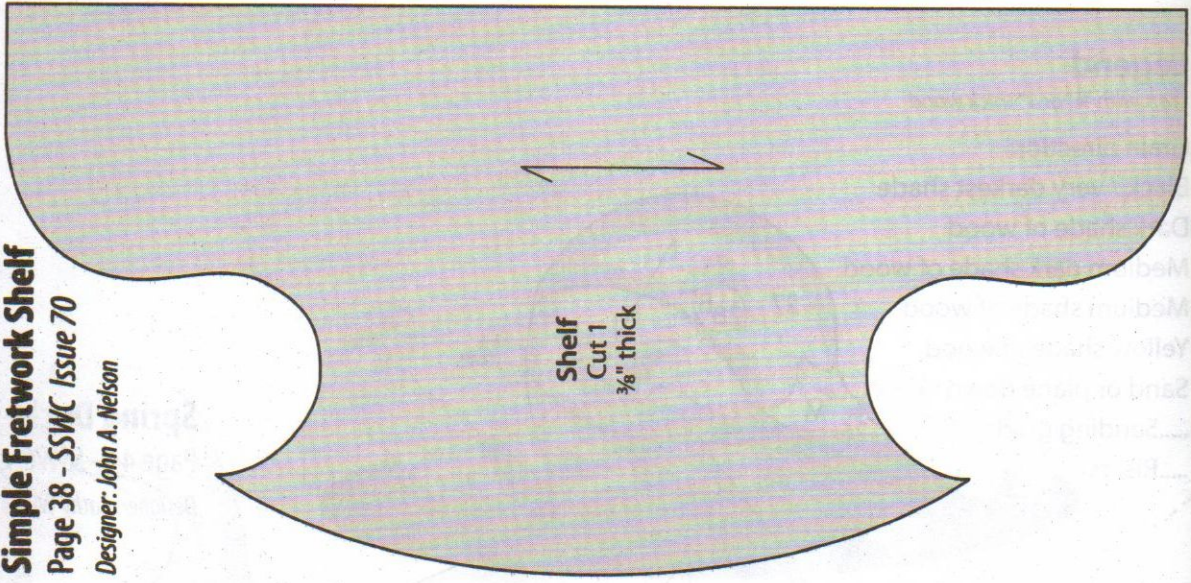
Cartoon Pickup Truck Coin Bank
Page 48 - SSWC Issue 70
Designer: Paul Meisel



Simple Fretwork Shelf

Page 38 - SSWC Issue 70

Designer: John A. Nelson



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One inch

Legend

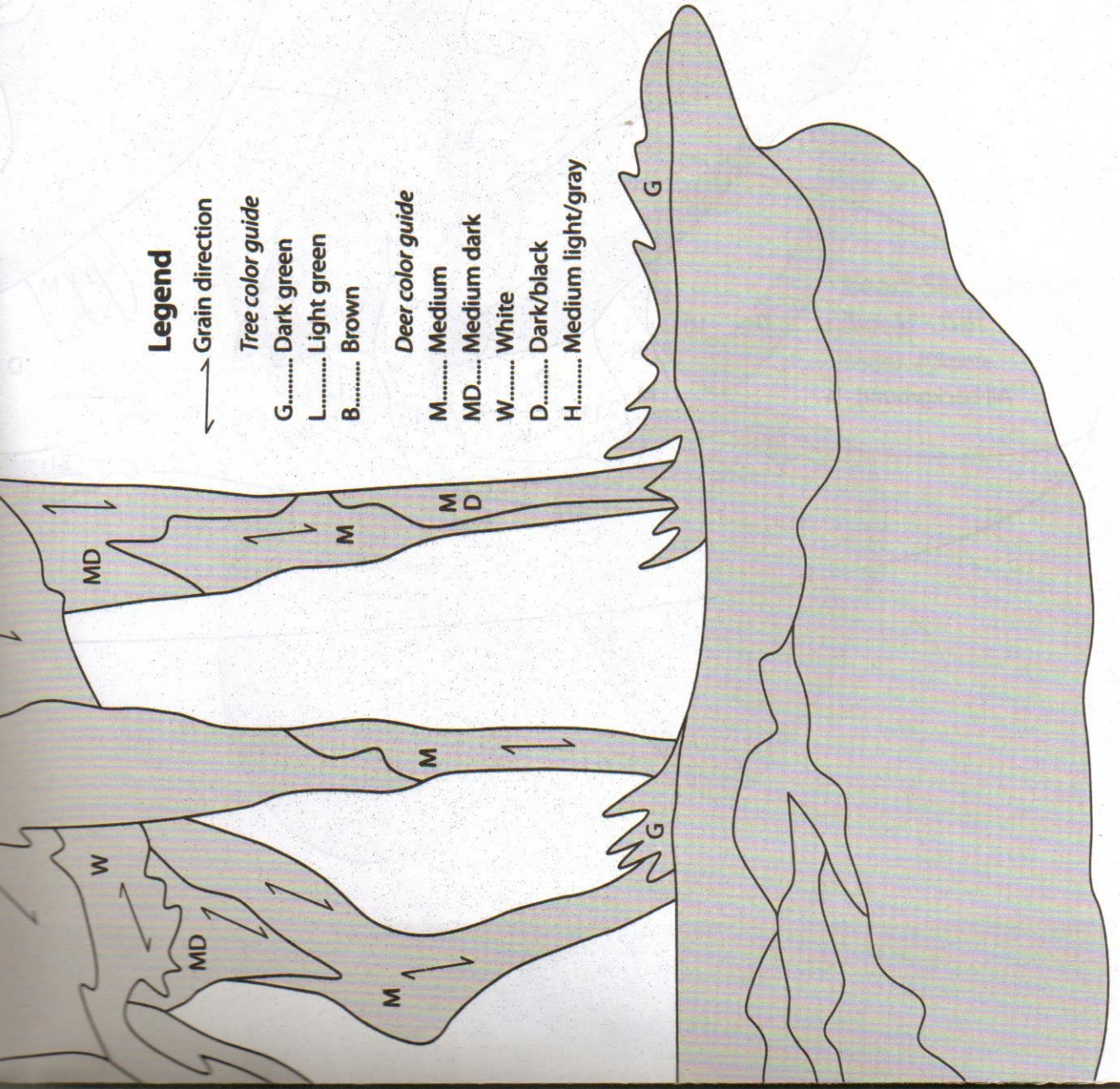
↔ Grain direction

Tree color guide

- G..... Dark green
- L..... Light green
- B..... Brown

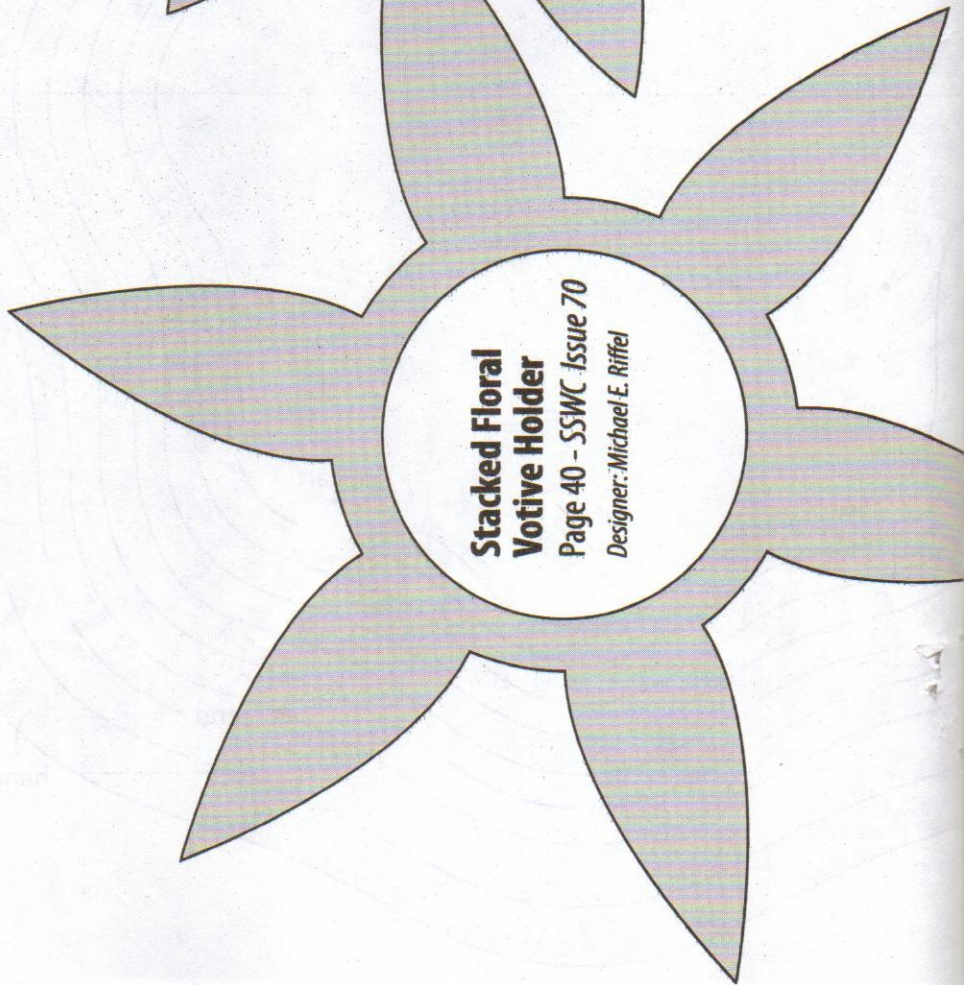
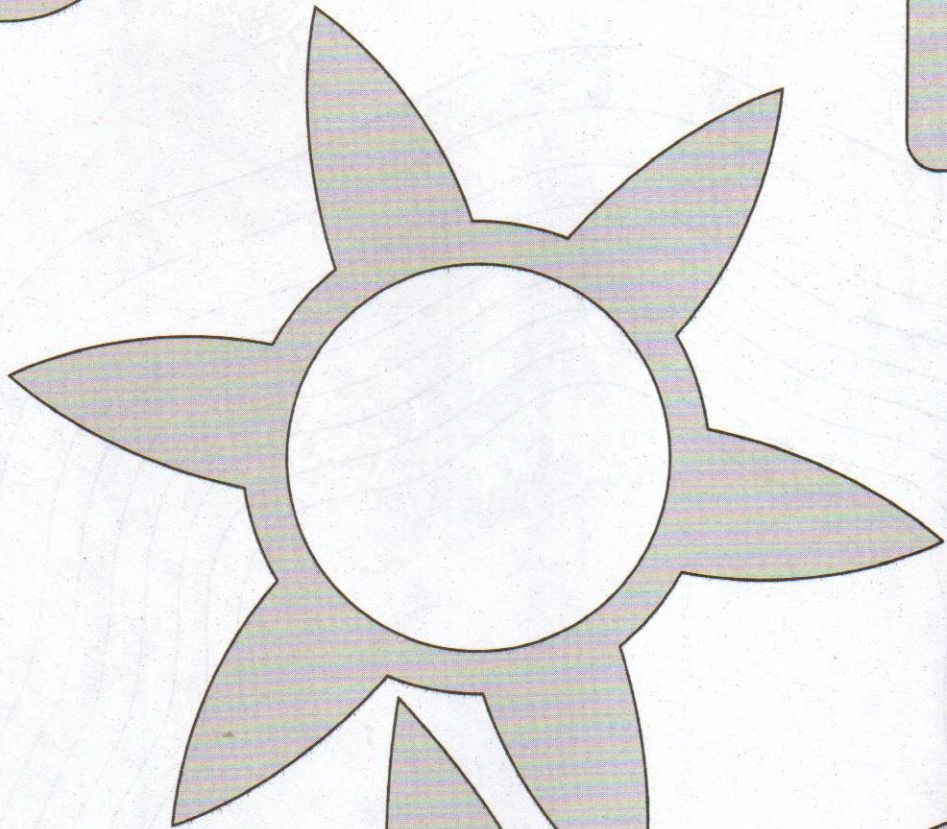
Deer color guide

- M..... Medium
- MD.... Medium dark
- W..... White
- D..... Dark/black
- H..... Medium light/gray



B5

BA



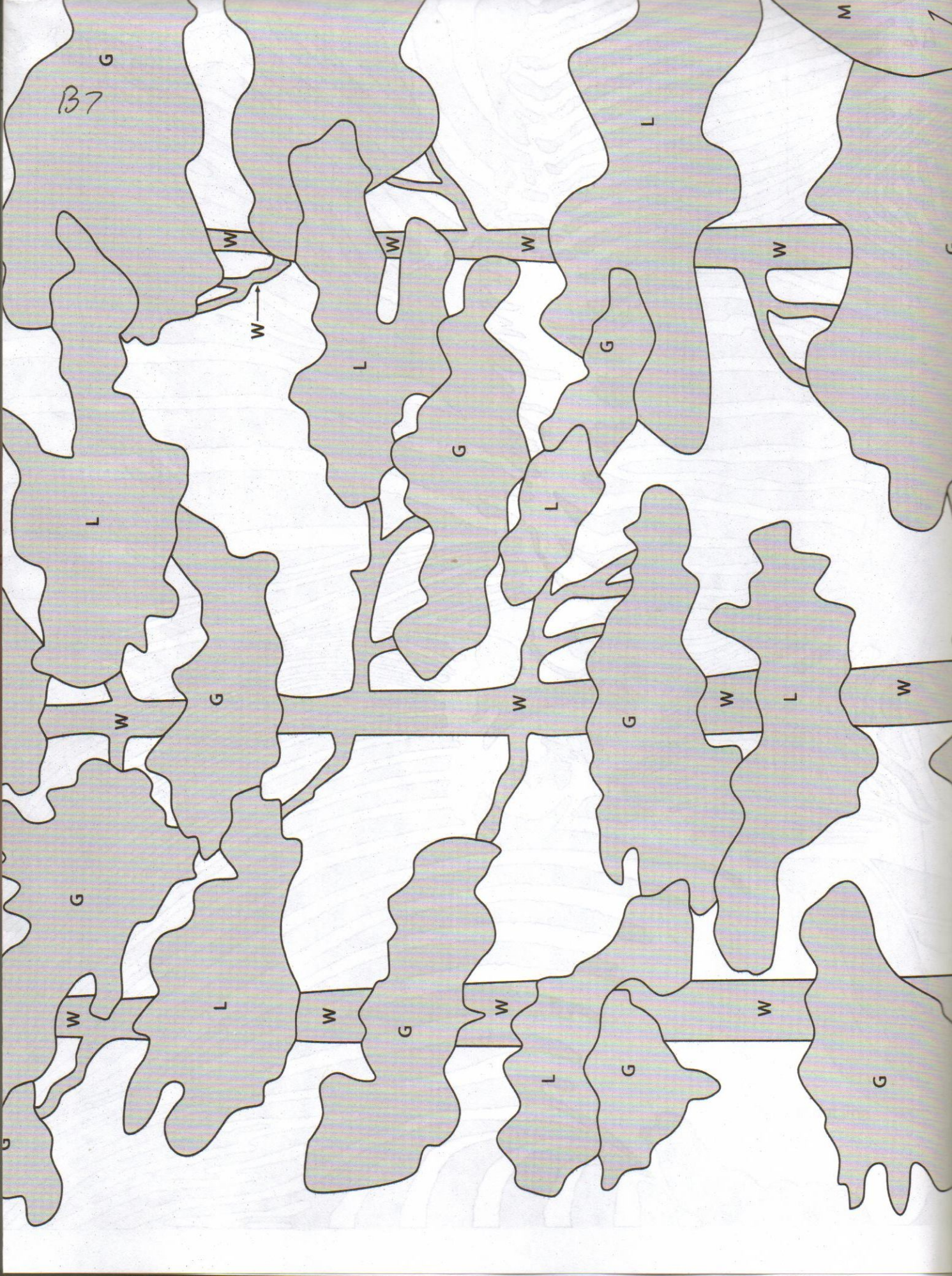
B6

Eyes
1/4" diameter



Scissors cut lines

B37



B8

Majestic Whitetail Intarsia

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Designer: Bruce Worthington

