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# SCROLLSAW WOODWORKING & CRAFTS

ISSUE 48 ■ FALL 2012

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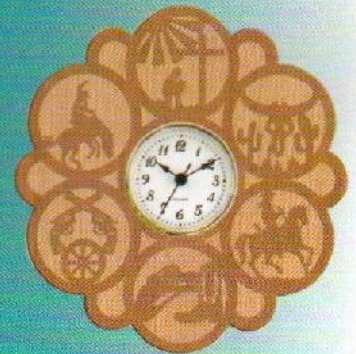
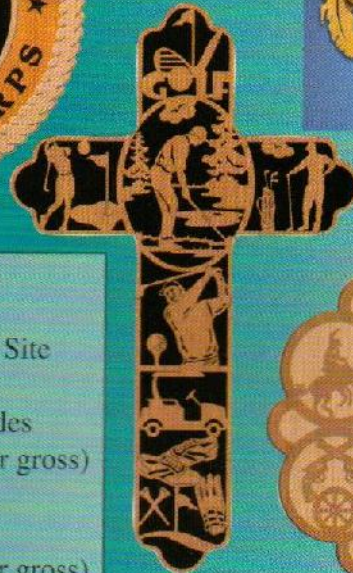
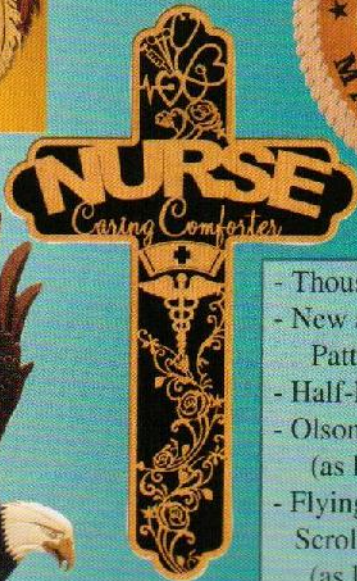
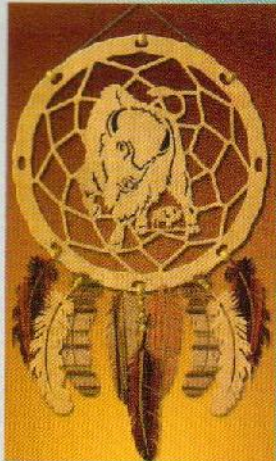


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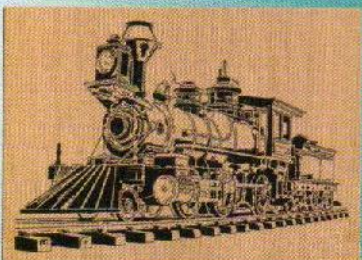
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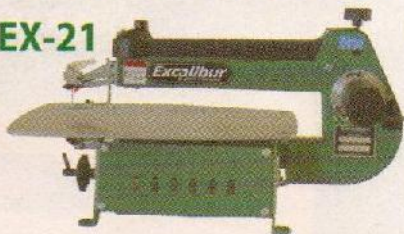
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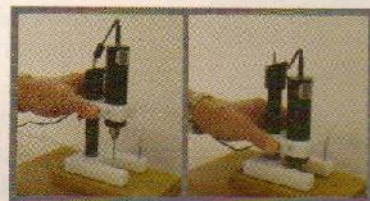


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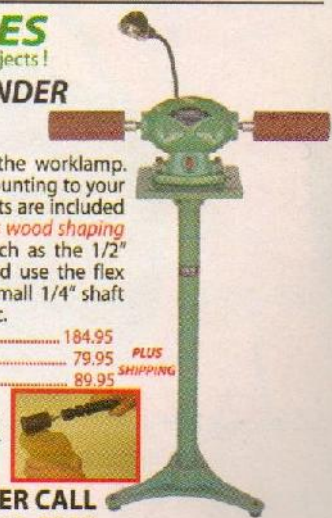
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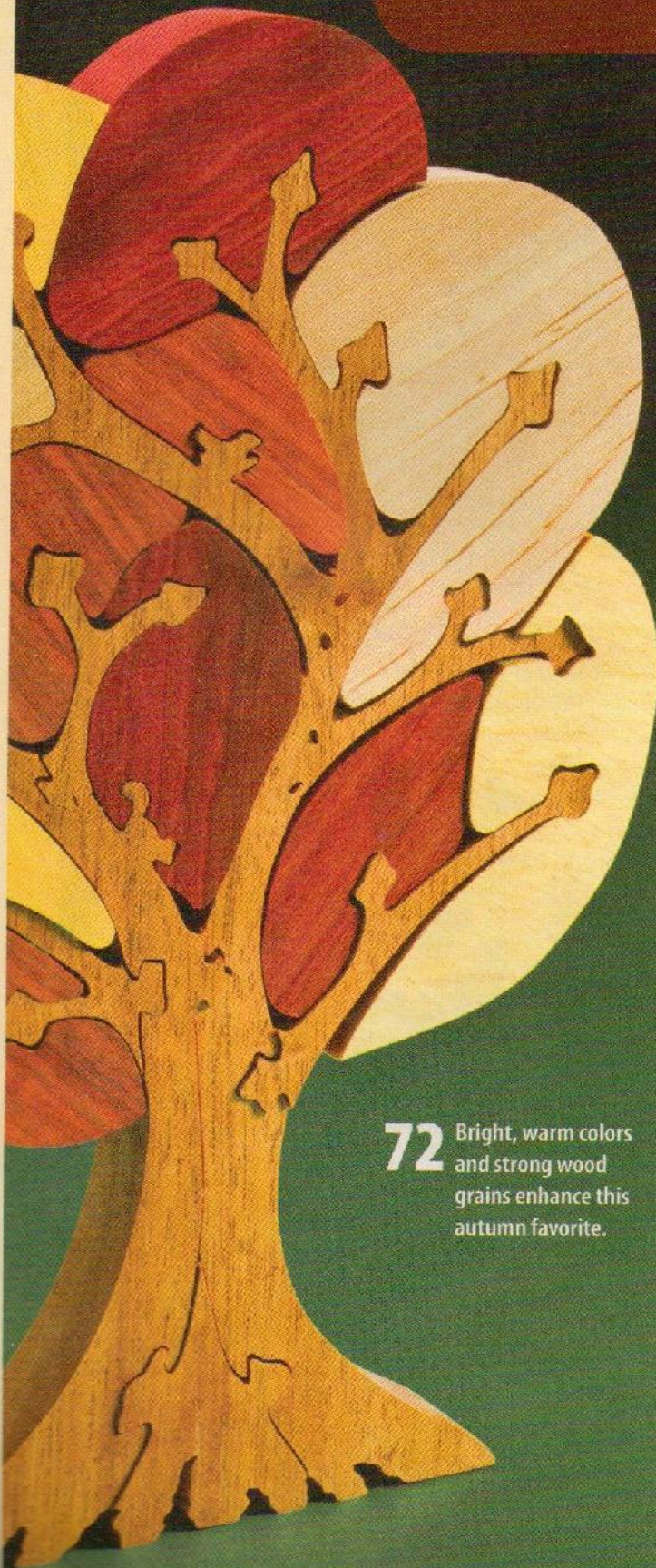


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# SCROLLSAW woodworking & CRAFTS



**72** Bright, warm colors and strong wood grains enhance this autumn favorite.

## FEATURES



### 18 Halloween Intarsia Scene

By Kathy Wise

Make the cat and pumpkin as stand-alone pieces or combine them in a single project



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By L. Kim Braa

Contrasting wood highlights this striking aboriginal art design



### 34 Labyrinth Maze Boxes

By Thomas Haapapuro

Notched sides add interest to these simple designs



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By John A. Nelson

Make a grand gift for the piano lover in your life



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Freestanding wooden tarantula is more tame than terrifying



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By Judy and Dave Peterson  
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- 70 Stately Lion Portrait**  
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Quick and easy portrait is perfect for beginners

## ON THE WEB [WWW.SCROLLSAWER.COM](http://WWW.SCROLLSAWER.COM)

### Online Exclusive Article

- ➔ *Creating a Custom Building Portrait* by Karl Taylor  
Step-by-step instructions to create a custom portrait pattern of your house or a memorable building.

### Convenient Pattern Download

- ➔ *Dragon Design Challenge*, p. 16  
Simply print the online pattern and get right to work making a functional design.

### Bonus Patterns

- ➔ *Political Party Puzzles*, p. 38  
Download three bonus patterns: a GOP elephant, and donkey and elephant Woodimals™.



## Fall Frolic

Autumn is one of my favorite times of year. I like the crisp air, crunchy leaves, and abundant apples, and I love the decorations. With the first tinge of orange on a leaf I start throwing rusted metal silhouettes, raffia, ghosts, and gourds at every available surface. In early November I swap the ghosts for turkeys and wallow in calico and chrysanthemums straight through 'til Thanksgiving.

Which perhaps explains the several Halloween- and autumn-themed projects in this issue. I especially like Judy and Dave Peterson's tree puzzle (page 72), which Leldon Maxcy cut just for us out of assorted hardwoods so it has a fall feel. Kathy Wise's cat and pumpkin intarsia (page 18) is nifty, too. It can be made as one layered project or two stand-alone pieces. The spooky cat and delicately tinted pumpkin will add a bit of fall fun to any room.

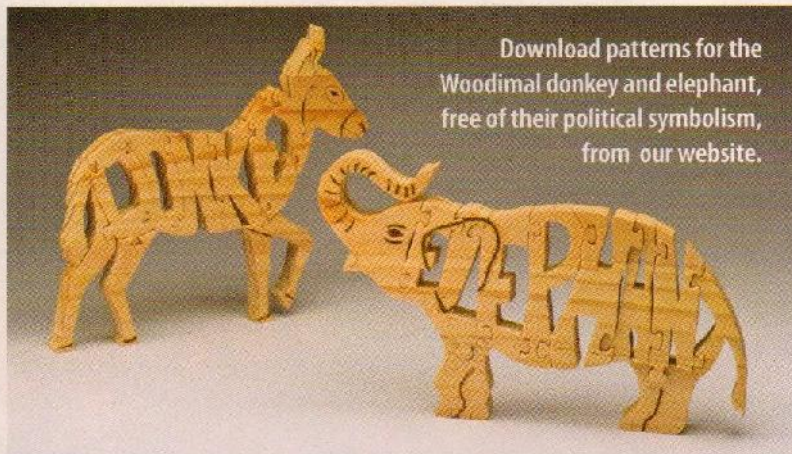
Autumn is also election season, and with the presidential campaign in full swing we've been talking about red and blue states all year. So when we looked at Jim Sweet's Woodimal™ elephant and donkey, of course we saw political party mascots. Jim designed exclusive Democrat and Republican patterns for us, and Donna Lloyd dressed them up with a little patriotic paint. If you prefer the actual animals, the original elephant and donkey Woodimals are available for free on our website, [www.scrollsawer.com](http://www.scrollsawer.com).

If you use autumn as your Christmas crafting season, I hope you'll take a second look at the three box projects in this issue—they're all great gift ideas. John Nelson's elegant *Piano Music Box* (page 40) is a gorgeous heirloom for any music lover. Kim Braa's *Tribal Turtle Box* (page 24) is stylish and distinctive, and Thomas Haapapuro's *Labyrinth Maze Boxes* (page 34) marry simple designs with a classic concept.

So, what's your favorite part of fall? Please drop me a line and let me know—and I'd love to hear what you think of this issue's projects, too.

Mindy Kinsey

[kinsey@FoxChapelPublishing.com](mailto:kinsey@FoxChapelPublishing.com)



Download patterns for the Woodimal donkey and elephant, free of their political symbolism, from our website.

# SCROLLSAW woodworking & CRAFTS

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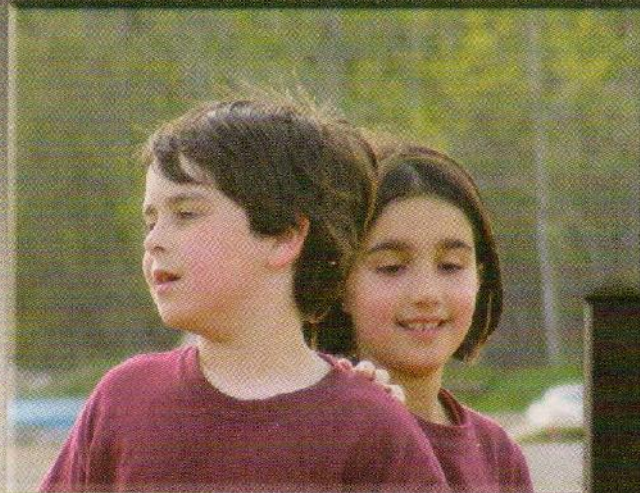
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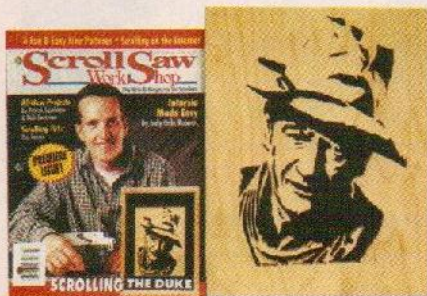
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# Lifelong Scroller

I am a 78-year-old scroll sawyer who has been cutting since he was a little boy. To this day, I have not sold any of my work. But I have given my work away to friends and family. I also give my work to charitable organizations. An apostle clock I made, for example, was raffled off and raised more than \$3,000 for the people of Haiti. I cut most of my work from Baltic birch plywood and stain it. I have worn out five scroll saws beyond repair.

You may ask what I get for making these clocks. Well, it's just the satisfaction of knowing that I can still be useful.

**Clarence Bechard**  
Leamington,  
Ont., Canada



## Favorite Cover

On the table in front of me are 42 issues of *Scroll Saw Woodworking & Crafts* and

a pile of other books and manuals I have purchased from Fox Chapel. All of them have been superb and interesting. However, to pick a favorite cover was not very hard. My favorite is Issue #1 with Gary Browning's portrait of John Wayne. Scrolling John Wayne added another sector to my woodworking hobby. Since then I have scrolled many portraits. The local grain terminal has let me display some portraits in their office. The last count was 60 scroll saw portraits hanging on their walls.

**Richard Skagenberg**  
Monticello, Ill.

## Magazines a Great Value

I've purchased your magazine here and there, but recently, I purchased a subscription. I was so delighted with the first issue I received that I purchased the package of all of the available back issues. I went through the back issues and I have found more than 20 patterns that I want to cut. If I went through a pattern company, I would spend at least \$5 per pattern and there is usually a \$5 shipping fee, which means I'd spend \$10 for one pattern. By buying the back issues of *Scroll Saw Woodworking & Crafts*, I got 20 patterns for less than \$200, plus the additional information and tips I received by reading the articles. Thank you!

**Stan Smith**  
Mohegan Lake, N.Y.



Clarence Bechard poses with some of the many clocks he has made.

## Fox Hunt

David L. Wedoski of Concord, Calif., and Destiney Hoopai of Wilmington, N.C., were randomly drawn from the participants who located the fox in our last issue (Summer 2012, Issue 47). The fox was located on page 42 in the Step 10 photo of the Intarsia Frog Box project.

Find the fox in this issue, contact us, and tell us the page number and location. Two readers randomly selected from all correct replies will receive a \$25 Fox Chapel Publishing gift certificate. Entries must be received by August 27, 2012, 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](http://www.ScrollSawer.com).



## Let's Hear From You

We'd love to hear your thoughts on our projects, ideas for new patterns, scrolling experiences, and woodworking show stories. Write to us at:

Letters to the Editor, *Scroll Saw Woodworking & Crafts*, 1970 Broad Street, East Petersburg, Pa., 17520 or e-mail [Editors@ScrollSawer.com](mailto:Editors@ScrollSawer.com).

Carolyn Melvin  
ANIMAL PATTERNS

INTRODUCTORY SPECIAL!

6 Animal Patterns

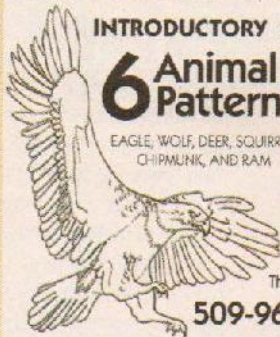
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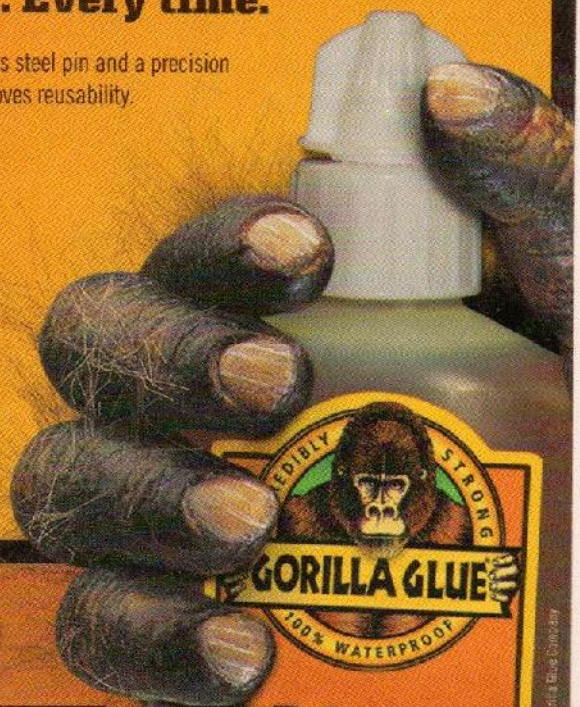
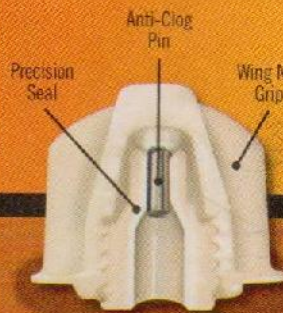
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**Patriotic Intarsia** ▶

A husband and wife team, **Dana and Sharon Starcala** of Jacksonville, N.C. (the home of Camp LeJeune), created this eagle, globe, and anchor intarsia. Sharon drew the pattern based on a print hanging on a friend's wall and cut more than 345 pieces from aspen, blue pine, poplar, walnut, yellowheart, purpleheart, lacewood, and red cedar. Dana fit the pieces together and created the walnut frame. The piece now hangs at the local VFW.

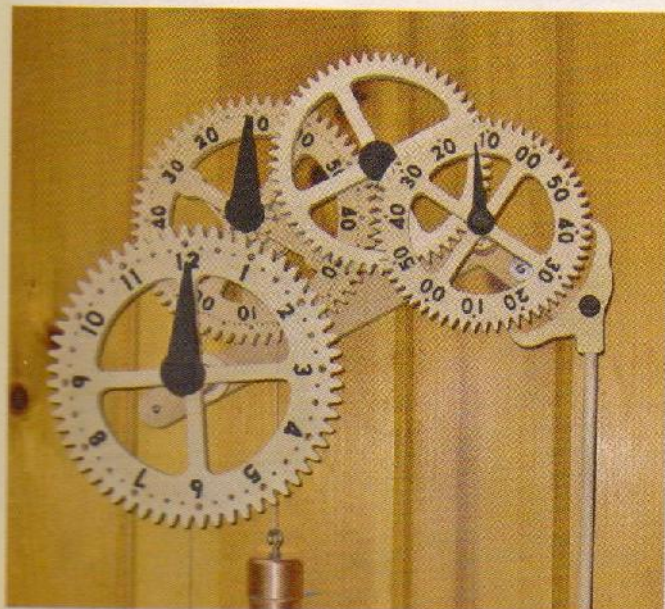
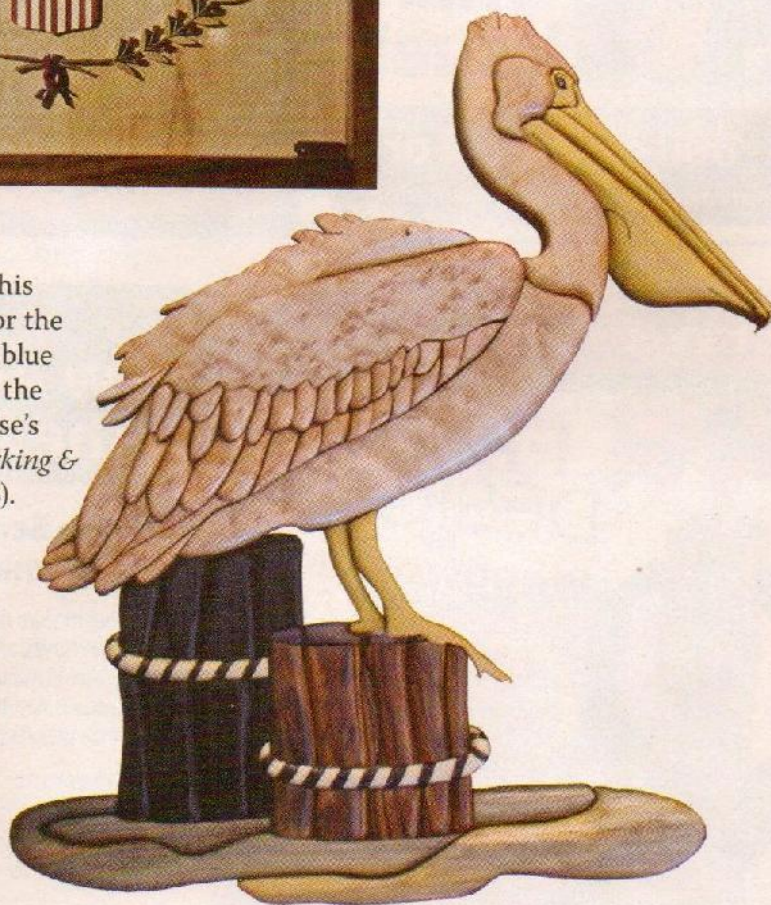


**Share Your Latest Work!**

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

**Pelican Intarsia** ▶

**Bob Berzonsky** of Stow, Ohio, created this intarsia pelican using bird's-eye maple for the body, yellow heart for the beak and legs, blue pine for the water, bocote and wenge for the pilings, and ivory for the rope. Kathy Wise's pattern appeared in *Scroll Saw Woodworking & Crafts* magazine (Summer 2011, Issue 43).



◀ **Wooden Gear Clock**

**Gordon Marshall** of Winsted, Conn., created a wooden gear clock based on the plans by Clayton Boyer that appeared in the Spring 2011 (Issue 42) of *Scroll Saw Woodworking & Crafts*. Gordon has been scrolling for three years and this is his first wooden gear clock. Gordon cut the numbers from 1/8" (3mm)-thick Baltic birch plywood and spray-painted them black.

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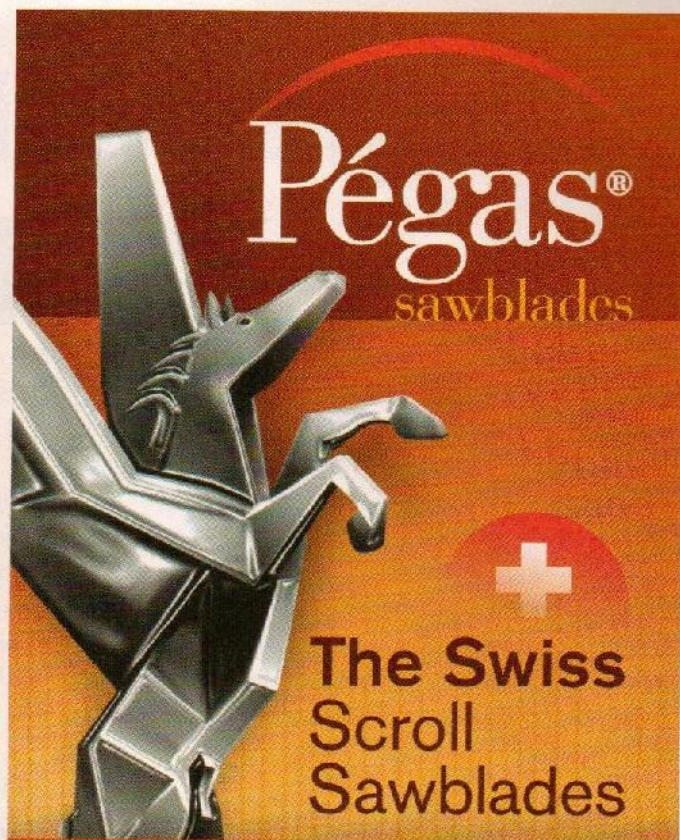
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# Drilling Dowels

It can be challenging to drill a hole in the center of a dowel if you do not have a lathe. I created a jig to hold dowels while I drill holes with my drill press.

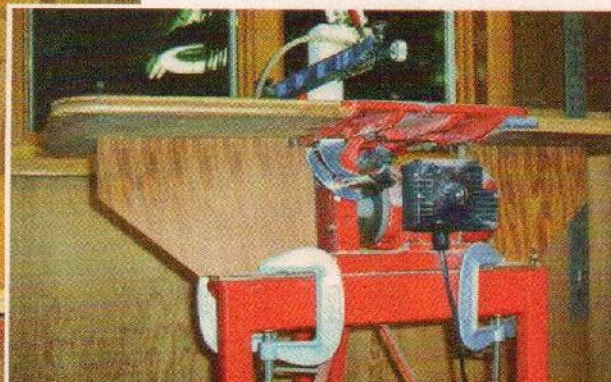
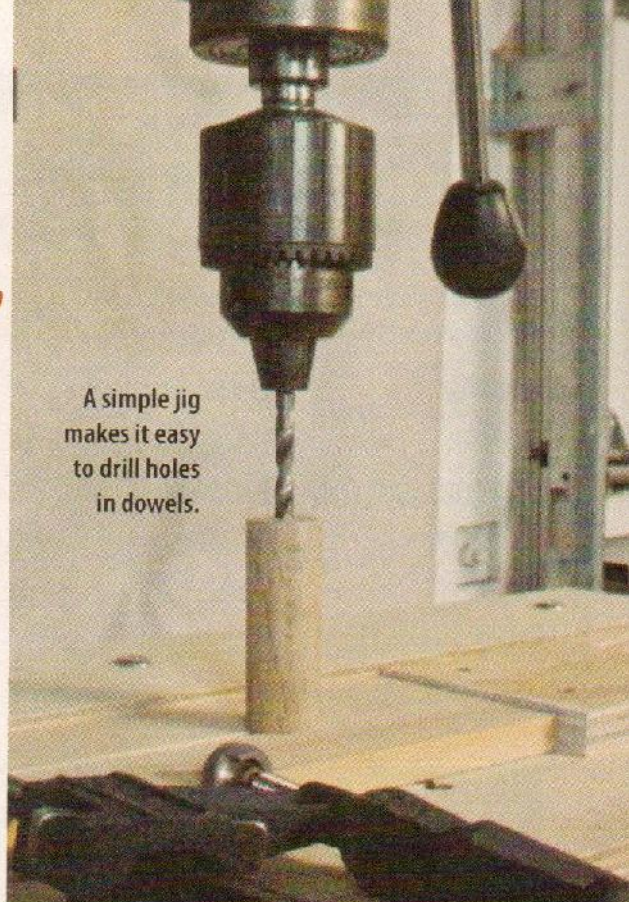
**TOP TIP** ✓

Even if you only move the drill press table up and down, the weight can pull it out of square from front to back. Before beginning, I chuck a dial indicator in the drill and use it to check the table for square.

Choose a Forstner bit the same diameter as the dowel you are using and drill a hole in a piece of scrap. (I drilled additional holes the same diameters as many of the dowels I use.) Do not cut the whole way through the scrap. Align the jig with the bit and clamp scraps of wood to your drill press table to act as a fence. Insert a dowel in the appropriate hole, clamp the jig tightly so it won't spin, chuck the drill bit, and drill the hole.

**Tim Puig**  
Orlando, Fla.

A simple jig makes it easy to drill holes in dowels.



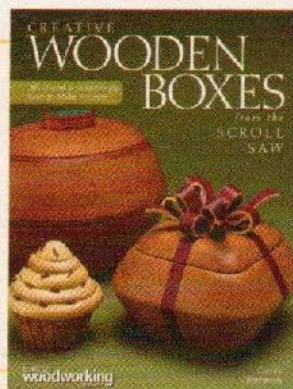
Scrap plywood wings extend your scroll table for larger projects.

## ▲ Table Extension

I had trouble while I was working on a large project—my saw table was too small. Using scrap plywood, I built extensions that clamp onto my saw base. It's easy to make extensions for a saw with a square table, like an Excalibur or Hegner. For tables with a different shape, trace the shape onto a piece of tempered hardboard and use it as a template while you cut the plywood.

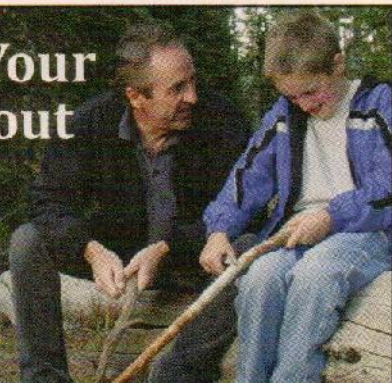
**Jerry Jones**  
Winamac, Ind.

**TOP TIP** in our Holiday issue wins an autographed copy of Carole Rothman's *Creative Wooden Bowls from the Scroll Saw*. Send your tips or techniques to Bob Duncan, 1970 Broad Street, East Petersburg, PA 17520, or [Duncan@FoxChapelPublishing.com](mailto:Duncan@FoxChapelPublishing.com)



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Alice Bongirno

# North Eastern Ohio Scroll Saw Picnic

A lot of enthusiasm was crowded into a small ballroom during the first North Eastern Ohio Scroll Saw Picnic on May 4 through 6, 2012. The picnic was hosted by the North Eastern Ohio Scrollers and held at the Days Inn in Richfield, which is located between Akron and Cleveland.

According to the club's president, Richard Lee Neiden, hosting a show has been a goal since the group formed about two years ago. "We wanted the opportunity to mingle with other scrollers, meet people, and have fun," he said. About 10 exhibitors and at least 100 visitors helped the group meet their goal. Shannon Flowers and Mindy Kinsey represented *Scroll Saw Woodworking & Crafts*.

The weekend's events included a meet-and-greet on Friday; a group dinner on Saturday; and seminars by Mike Anderson, Barbara Peters, Bruce Worthington, and Cherie L. Eppler throughout the weekend. Exhibitors and supporters donated generously to support the raffle, including a grand prize of a Sand-Flee Portable Drum Sander donated by R.J.R. Studios.

In the contest, Dave Keppy of Donahue, Iowa, took first, second, and third prizes for his *Veterans' Cross*, eagle, and Navy plaque fretwork projects. Spencer Bloom of Skokie, Ill., won the Best of Show award for his *Wavy Ribbon* scrolled sculpture. Intarsia artist Bruce Worthington, pattern guru Steve Good, and editor Mindy Kinsey judged the contest.

The club considers the show a success, but Lee Neiden says it is "too early to tell" if they will reprise the event in the future.

To learn about the club or encourage them to host another show, visit <http://northeasternohioscrollers.yolasite.com>.



Shannon Flowers at the North Eastern Ohio Scroll Saw Picnic.

Contest winners Dave Keppy (left) and Spencer Bloom (right) with club president Lee Neiden (center).



Exhibitor Mike Anderson demonstrated his Thunder Wood technique of inscribing wood with electricity.

## Upcoming Events

**Jul 13-14:** Springfield, Mo. Scrollsaw Association of the World Expo and SAW Contest. Ramada Oasis Hotel and Convention Center. \$10 for both days with advance registration, \$6 a day at the door. 9am-4pm Fri. & 9am-3pm Sat. Contact Gene Jamtgaard, 417-256-4334, [www.SAW-Online.com](http://www.SAW-Online.com).

**Aug 3-4:** Richland Center, Wis. 2012 Midwest Scroll Saw Trade Show. Richland Center High School. \$8 adm. Contact Dirk or Karen Boelman, 800-566-6394, [www.midwesttradeshow.com](http://www.midwesttradeshow.com).

**Aug 4-5:** Albury, NSW, Australia. Albury-Wodonga Woodcrafters' yearly scroll saw weekend. Contact J. Vyner, [kejuvy@gmail.com](mailto:kejuvy@gmail.com), or call Ed Kilo, +61 60 24 24 82.

**Oct 27:** Seymour, Tenn. Judy Gale Roberts' annual open house, with special guests Ray and Cindy Seymore of Seyco and Stephen Raffo of R.J.R. Studios. Roberts Studio, 2620 Heather Rd. 10am-3pm. Contact Judy, 800-316-9010 or [judy@intarsia.com](mailto:judy@intarsia.com).



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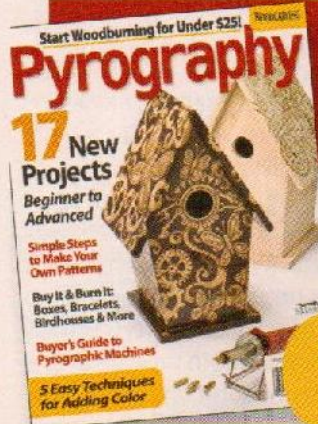
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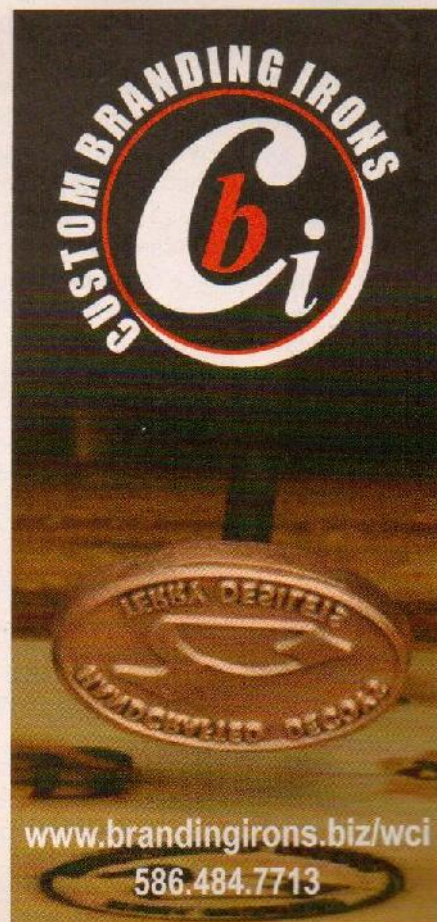
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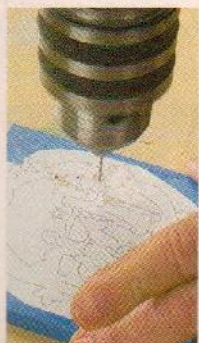
## Attaching Patterns

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.

## 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.



## 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.

## 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  $\frac{1}{8}$ " (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.



## 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  $90^\circ$  angle to the blade.

The cutting-through method is also popular. Saw through a piece of scrap wood at least  $\frac{3}{4}$ " (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  $1\frac{3}{4}$ " (44mm)-thick piece of scrap wood and cut about  $\frac{1}{16}$ " (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.



## 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.



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



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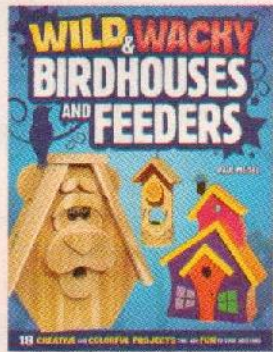
By Paul Meisel

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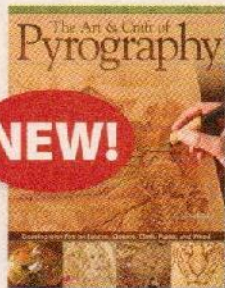
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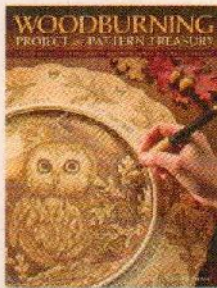


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# Dragon Design Challenge

**Transform these fierce dragons  
into a functional design**

*Designed by Lora S. Irish*

Dragons are symbols of mystery and mayhem, and these two have brought a little of both to the *Scroll Saw Woodworking & Crafts* editorial office. When Lora S. Irish sent this pattern to us, we fell in love with the design. But, we ran into trouble figuring out the best way to transform the pattern into a project. We decided to offer the pattern to our readers as-is to see what you do with it.

So here's our challenge to you: Take this pattern and make something with it. We can imagine a picture frame, mirror, miniature stool, or box lid. What do you see? The only rule is that the design must be functional (don't make a plaque).

Otherwise, it's up to you to work out the construction details.

Send pictures of your completed project to Dragon Design c/o Bob Duncan, *Scroll Saw Woodworking & Crafts*, 1970 Broad St., East Petersburg, PA 17520, or e-mail high-resolution photos to [Duncan@foxchapelpublishing.com](mailto:Duncan@foxchapelpublishing.com). The editors will choose

a few designs to highlight in a future issue. The deadline for submissions is October 1, 2012.

# Double dragon pattern



### About the Designer

Lora S. Irish is a nationally known artist and author. Her Fox Chapel books include *Great Book of Dragon Patterns* and *North American Wildlife Patterns* for the Scroll Saw. Visit Lora's digital pattern warehouse at [www.CarvingPatterns.com](http://www.CarvingPatterns.com) for free patterns and patterns for purchase.

# Halloween Intarsia Scene

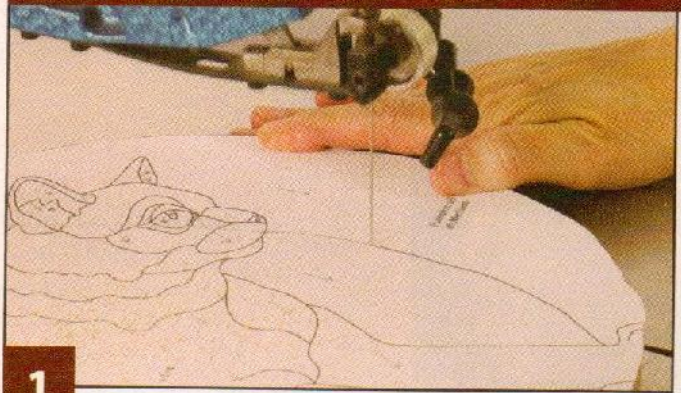
**Make the cat and pumpkin as stand-alone pieces or combine them in a single project**

By Kathy Wise

Customize this Halloween project by choosing the elements you want to make. You can cut just the black cat or just the pumpkin, or combine them as shown. Share your version by posting a picture on the *Scroll Saw Woodworking & Crafts* forum ([www.scrollsawer.com/forum](http://www.scrollsawer.com/forum)) or on the magazine's Facebook page.

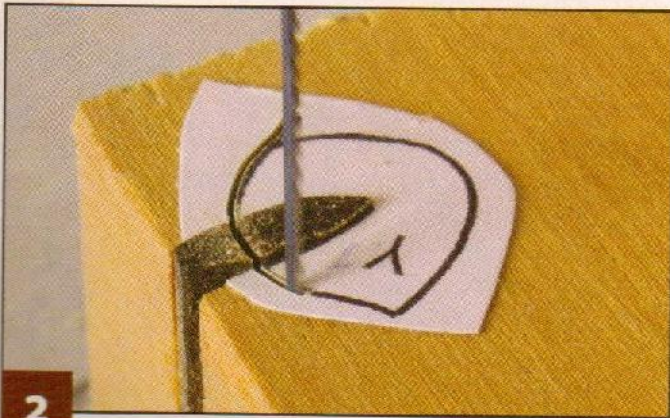
To begin, make several copies of the pattern. Keep one as a master copy. Apply spray adhesive to the backs of the patterns and attach them to the shiny side of Con-Tact brand clear shelving paper. Choose your wood and plane it to the desired thickness. Peel the backings off and stick the patterns onto the blanks. If your wood is wide enough, you can cut the cat as one piece; otherwise, separate the cat into two pieces at the shoulder. I cut the pumpkin from two pieces of wood.

## INTARSIA: CUTTING THE PIECES



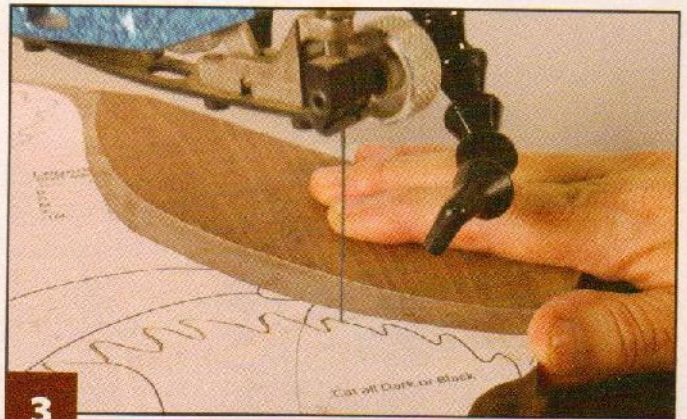
1

**Cut the pumpkin.** Use a #5 reverse-tooth blade to cut the pumpkin stem and body pieces. If you are using two pieces of wood for the pumpkin body, color the center lines on each pattern with a highlighter and cut them carefully so the halves fit together well. Cut the base along the dotted line; we will fit the cat's feet into the base after sanding it.



2

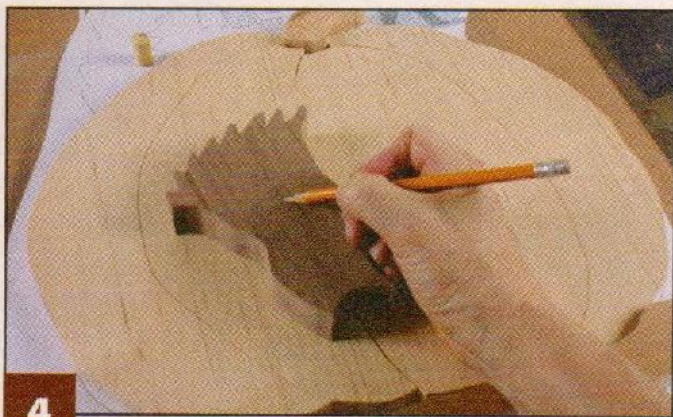
**Cut the cat's eye and pupil.** Attach the eye pattern to the blank and cut the wedge of wood for the pupil. Cut a piece of dark wood to fit into the opening and glue it in place. Then, while you still have a larger piece of wood to hold, cut the perimeter of the eye.



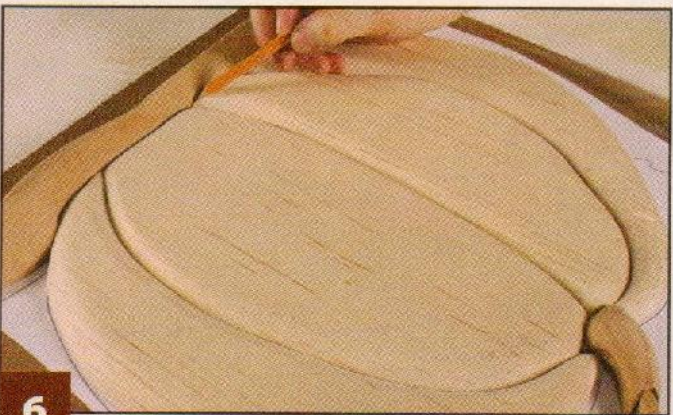
3

**Cut the cat.** If you are using two pieces of wood, color the line between the shoulders with a highlighter and cut carefully along this line for a good fit. Turn the wood slowly and let the blade catch up when cutting the raised back hair. If you wander off the line in this area, it won't affect the final look of the project because you will shape the raised fur later with a rotary tool.





**4 Organize the pieces.** Number the bottoms of the cut pieces with a pencil to ensure you sand the correct side. Attach a copy of the pattern to a piece of thin hardboard or plywood and cut  $\frac{1}{8}$ " (3mm) inside the lines of the pumpkin and base to create a backing board. Check for fit. Place the cut pieces of the pumpkin and base on the backing board, and put the pieces of the cat on a copy of the pattern.



**6 Shape the pumpkin.** Keep the pumpkin fairly flat because you will glue the cat onto the pumpkin. Just slope the edges smoothly with a pneumatic drum sander to give the impression that the pumpkin is round. Shape the stem and fit it into place. Sand and mark the top edge of the base to meet the bottom of the pumpkin.



**7 Add the details.** Shape the inside edges of the cat with an oscillating spindle sander, especially the eyes and the ruffled fur at the neck. Use a rotary tool with a carving bit to add more detail to the standing fur on the back. Then, buff all of the pieces smooth with a sanding mop to prepare the surfaces for varnish.

## INTARSIA: SHAPING THE PIECES



**5 Sand and shape the cat.** I use a pneumatic drum sander. Mark the final thickness on the edge of each piece and sand down to that line. Sand the thinnest pieces (pieces 25, 22, 8, 7) of the cat down to  $\frac{1}{2}$ " (13mm) thick. Slightly round the edges of the thickest pieces (pieces 24, 20). Mark the thickness of the pieces around the belly and sand the belly. The belly should be thinner than the front legs and rounded at the bottom. Put the pieces back into place often to check the flow and re-mark as needed.

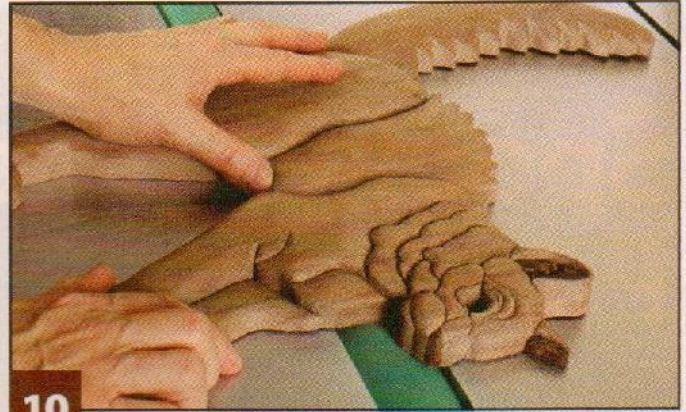
## INTARSIA: FINISHING THE PROJECT



**8 Glue the cat pieces together.** Place a piece of waxed paper on the pattern, and then position the cat pieces on the waxed paper. Make sure the pattern is on a flat surface. Start with the head and use dots of cyanoacrylate (CA) glue to join three or four parts of the cat. Allow the glue to set before adding the adjoining pieces. You can use accelerator to speed up the glue setting, but you must position the pieces quickly.



**9** **Tint the pumpkin pieces.** I mix orange Tints-All Universal Tinting Colorant with clear satin gel varnish. Test the color on scraps of the wood you cut the pumpkin from. You want a light tint of color, not a solid painted look. Apply the tinted varnish with a brush and wipe it off with a clean dry rag. Let the varnish dry overnight and then glue the pumpkin and stem pieces together. Do not glue on the base yet.



**10** **Finish the cat and pumpkin.** Sand the backs of the cat and pumpkin pieces flat. I use a Sand-Flee portable drum sander. Position the cat on top of the pumpkin and base, and sand the base so the feet fit closely but the cat lies perfectly flat. Glue the base to the pumpkin. Then, apply your choice of finish. I use a clear satin spray finish on the cat and apply a clear satin gel varnish to the pumpkin and base with a brush. Use a clean, dry rag to wipe off the excess gel varnish, and allow the finish to dry overnight.

**Materials:**

- Dark wood, such as black walnut, 1" (25mm)-thick: cat, 12½" x 20" (318mm x 508mm) or 2 each, 8" x 20" (203mm x 508mm)
- Medium-dark wood, such as cherry, ¾" (19mm)-thick: stem, 3" x 4" (76mm x 102mm); base, 4" x 16" (102mm x 406mm)
- Medium wood, such as birch, ½" (13mm)-thick: pumpkin, 9" x 27" (229mm x 685mm)
- Black wood, such as ebony or wenge, 1" (25mm)-thick: pupil, 2" x 2" (51mm x 51mm)
- Yellow wood, such as yellowheart, 1" (25mm)-thick: eye, 2" x 2" (51mm x 51mm)
- Tempered hardboard, ⅛" to ¼" (3mm to 6mm)-thick: backing board, 16" x 20" (406mm x 508mm)
- Glues: cyanoacrylate (CA); wood
- CA glue accelerator

**Materials & Tools**

- Clear shelf paper, such as Con-Tact brand
- Spray adhesive
- Hanger, mirror-style
- Wood screw: 1" (25mm) long
- Varnish: clear satin gel; clear satin spray
- Colorant, such as Tints-All Universal Tinting Colorant: orange

**Tools:**

- Blades: #5 reverse-tooth
- Sanders: pneumatic drum, portable drum, oscillating spindle, sanding mop
- Planer (optional)
- Rotary tool and bits: sanding drum, assorted carving
- Brush
- Pencil
- Clean dry rag

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

Pattern for the **HALLOWEEN INTARSIA SCENE** is in the pattern pullout section.



**11** **Glue the cat and pumpkin together.** Add dots of wood glue to the back of the pumpkin. Then, add dots of CA glue between the dots of wood glue. Apply CA glue accelerator to the backing board and attach it to the back of the pumpkin. Use the same technique to attach the cat to the pumpkin. Use small amounts of glue to avoid squeeze out. Reinforce the tail by putting a 1" (25mm)-long wood screw through the backing board and pumpkin into the base of the tail. Add a hanger to the back or make a stand for the base.



A nationally acclaimed intarsia artist, Kathy Wise has written two books and more than 30 articles. Her new book, *Intarsia Birds: Woodworking the Wise Way*, has more than 30 beautiful bird patterns. Private and semi-private intarsia classes are available. For a free catalog of 500 patterns, contact Kathy Wise Designs Inc., P.O. Box 60, Yale, Mich. 48097, fax 810-387-9044, [www.kathywise.com](http://www.kathywise.com), [kathywise@bignet.net](mailto:kathywise@bignet.net).



# Spooky Spider Puzzle



## Freestanding wooden tarantula is more tame than terrifying

By Judy and Dave Peterson

Several years ago, I saw a magazine picture of a tarantula taken at eye level to the spider. I couldn't remember my customers ever asking for a tarantula, but I looked at the picture and decided it would make a good puzzle.

Tarantulas have a bad reputation, in part because movie directors love to feature them in horror flicks. Tarantulas may be

big and fuzzy, but they are seldom dangerous. I sold my first tarantula puzzle in Arizona, which is one of the places the creatures live—perhaps familiarity overcomes fear. Regardless, my tarantula puzzles have been popular, and I think you'll enjoy cutting the pattern.

I cut this puzzle from walnut, but it also looks nice cut from cherry, maple, or quarter-sawn sycamore.

## Making the Puzzle

Cover the blank in packaging tape to lubricate the blade. Apply repositionable spray adhesive to the back of the pattern and attach it to the blank. Drill the eyes first. Then, you can start cutting the pieces anywhere. Reassemble the pieces as you cut the puzzle. Lightly sand all the exposed surfaces. I keep the perimeter scraps to use as supports when I send the puzzle through my drum sander. The scraps keep the legs from breaking in the sander. Carefully round the edges of the pieces. I use a flap sander to remove any rough spots and to give more definition to the pieces.

## Finishing the Puzzle

Clear Danish oil penetrates the wood, making it less likely to break, and brings out the natural beauty of the wood. I put some oil in a gallon-size freezer bag and add all of the puzzle pieces. Shake the pieces around gently until they are totally covered with oil and then remove them from the bag. Set the pieces on paper towels and wipe off the excess oil. Allow the pieces to dry overnight.

Be careful with Danish oil because it contains boiled linseed oil and can spontaneously combust. Put the used paper towels in a large, open metal container and let them dry thoroughly overnight in a well-ventilated location before discarding.

## Materials & Tools

### Materials:

- Walnut, 1" (25mm)-thick: 4½" x 8" (114mm x 203mm)
- Repositionable spray adhesive
- Packaging tape, 2" (50mm)-wide
- Danish oil: clear
- Resealable plastic bag: gallon-size
- Paper towels

### Tools:

- Blades: #7 skip-tooth or #7 reverse-tooth
- Drill and bit: ¼" (2 mm)-diameter
- Assorted sanders: flap sander, drum sander, disc sander

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

## Spooky spider puzzle pattern

¼"-diameter holes (4)

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

# Tribal Turtle Box



**Contrasting wood highlights  
this striking aboriginal art design**

*By L. Kim Braa*

**M**aking boxes with a scroll saw, I am not confined to squares or rectangles; I can get creative and let my imagination go. I am hooked! The inspiration for this box came from a tribal turtle wall sculpture I created a few years ago. To add extra dimension to the project, I added an overlay to the lid.

The box is made using stacked-ring construction, which I like because I can mix and match different thicknesses and varieties of wood. Choose types of wood with similar hardnesses and densities; when sanding different varieties of wood, it's easy to oversand a softer wood. Wood varieties with similar densities also absorb finish in a similar manner.

## Getting Started

Before you start cutting, prepare the stock. Make sure all of the wood is as flat as possible and sand both sides of each piece with 120-grit sandpaper. Choose the order for the side rings and test-fit the pieces to make sure the blanks fit together tightly.

Make several copies of the box pattern and two copies of the overlay pattern. To expedite the cutting process, stack-cut several of the side layers together. Attach the box pattern to the stock and apply clear packaging tape to lubricate the blade. Do not attach



the overlay pattern at this time. Pay attention to the grain direction arrows on the pattern as you attach the patterns to the blanks. Make sure the saw table is square with the blade. Do not cut out the center on the bottom and lid.

## Making the Lid Overlay

The overlay pattern includes references that show where to adhere double-sided tape. The tape is important for cutting a clean and accurate overlay and minimizing shifting between the book-matched pieces. To create a perfectly symmetrical design, cut the head and eyes first, and then cut the blank in half and stack-cut the remaining pieces.

If you veer from the pattern line while cutting, gradually work back to the line instead of making a jerky correction. Cut the areas where the tape is last to minimize the chance of the pieces shifting, which can cause a difference in size between the top and bottom layers of the stack. If pieces begin to shift while you are cutting, apply more pressure to the taped areas or wrap the stack with clear packaging tape.

After you cut the pieces, place the overlay pieces face up on a reference copy of the pattern to keep them organized.



1

**Cut the rings.** Drill  $\frac{1}{16}$ " (2mm)-diameter blade-entry holes and cut the insides of the box rings with a #7 reverse-tooth blade. Then, cut the outsides of all of the pieces, including the bottom and lid. Remove the patterns and separate any stacks using a putty knife. Rub the rings back and forth against a piece of 120-grit sandpaper attached to a flat surface to remove any fuzzies. Remove any remaining sawdust or adhesive residue with mineral spirits.



2

**Glue the rings together.** Dry-assemble the rings and make any necessary adjustments. Apply a thin, uniform coat of wood glue onto one ring. Place the next ring on top and rub the two back and forth until the glue gets tacky. Align the edges, and then repeat the process to add the other rings. Clamp the stack together for 5 minutes, and then release the clamps and remove any glue squeeze-out. Use slightly damp cotton swabs to remove the glue from the tight areas. Reclamp the box and allow the glue to dry.



3

**Sand the inside of the box.** Use an oscillating spindle sander with a  $\frac{1}{2}$ " (13mm)-diameter drum or a drum sander in a rotary tool to sand the inside of the box. You could also wrap sandpaper around a dowel and sand the inside by hand. Use progressively finer grits of sandpaper. Do not round the edges.



4

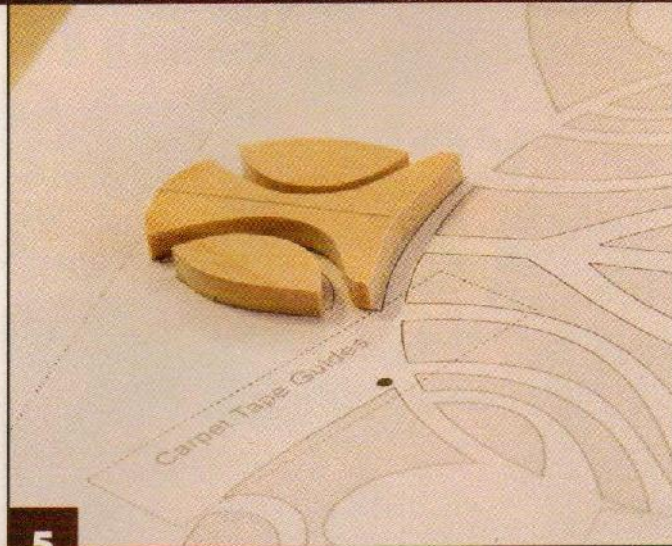
**Attach the bottom.** Sand the top side of the bottom piece with progressively finer grits of sandpaper up to 220 grit. Do not round the edges. Apply white wood glue to the bottom of the stacked rings and place the bottom in position. Clamp the stack for 5 minutes. Release the clamps, remove any glue squeeze-out, reclamp the stack, and allow the glue to dry. Use the same process to glue together the two layers of the lid.

## TIP

### USING A BOWL PRESS

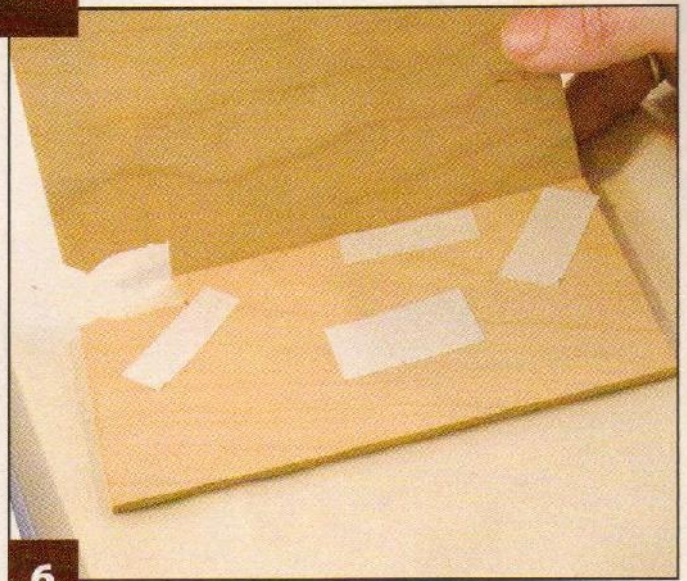
*For this project, I use a bowl press, which is a system that uses pieces of wood, threaded rods, and wing nuts, instead of clamps to hold the box rings together. If you decide to make more boxes and want to make a press, many designs are available on the Internet.*

## TRIBAL TURTLE: CUTTING THE OVERLAY



5

**Cut the head and eyes.** Make a zero-clearance insert if desired (see Tip). Draw a pencil line down the center top of the overlay blank, matching the grain direction marked on the pattern. Scribble on the back of the blank with a pencil to keep track of the tops and bottoms of the small pieces. Attach the head and eye patterns to the top of the blank using the centerlines as guides. Cut the pieces with a #3 reverse-tooth blade, and place the cut pieces on the reference pattern.



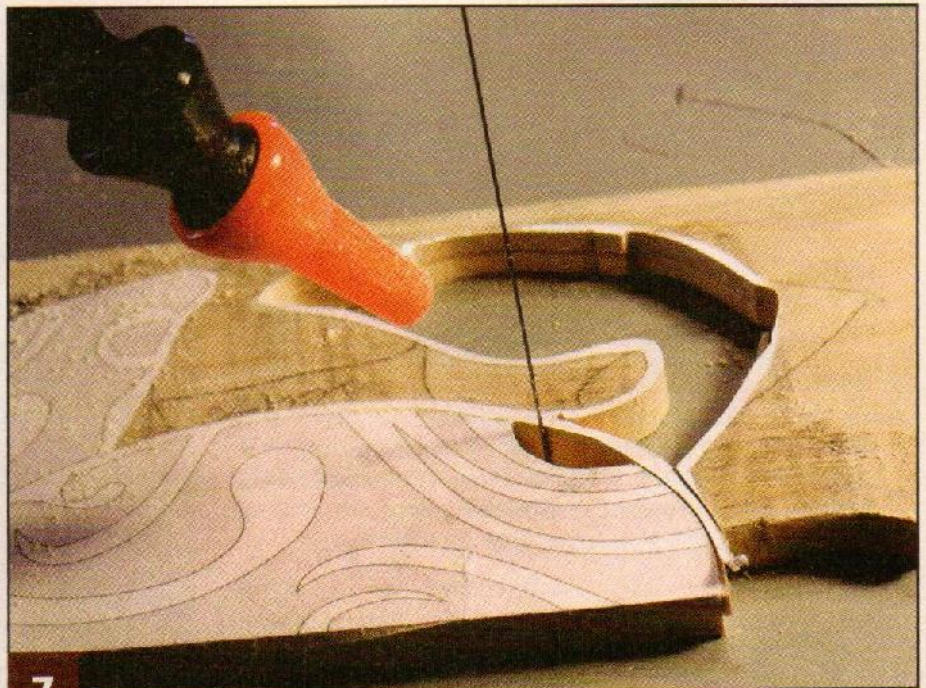
6

**Prepare the overlay blank.** Cut along the centerline of the blank with a #3 reverse-tooth blade and remove any burrs or sawdust. Place the blanks side by side and apply small pieces of double-sided tape to one side per the pattern guidelines. Remove the tape backing, fold the other side onto the taped blank as if you were closing a book, and apply firm pressure. The backs of both blanks should be facing out. Attach the half pattern to the blank, aligning the centerline with the cut edge of the stacked blanks. Cover the pattern with clear packaging tape.

### TIP

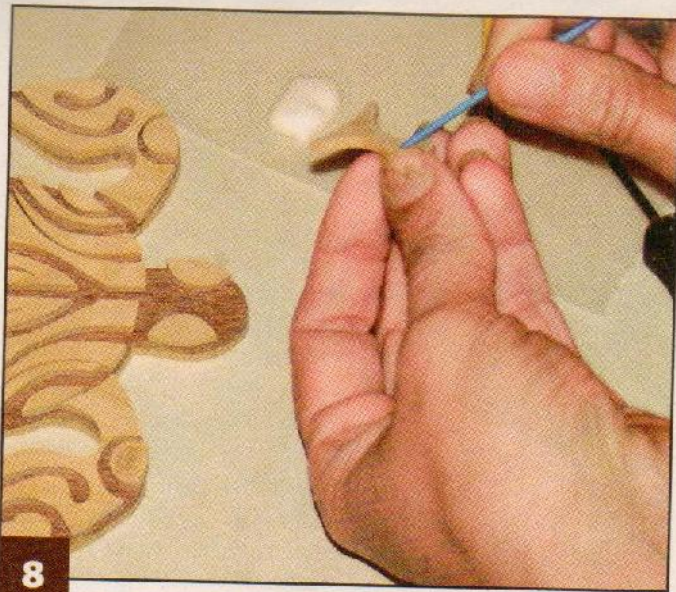
#### MAKING A ZERO-CLEARANCE INSERT

*Because some of the overlay pieces are small, I place a piece of clear packaging tape over the blade hole on the saw table to create a zero-clearance insert, which prevents the pieces from falling through. Punch through the tape with the blade to create a hole just large enough for the blade.*



7

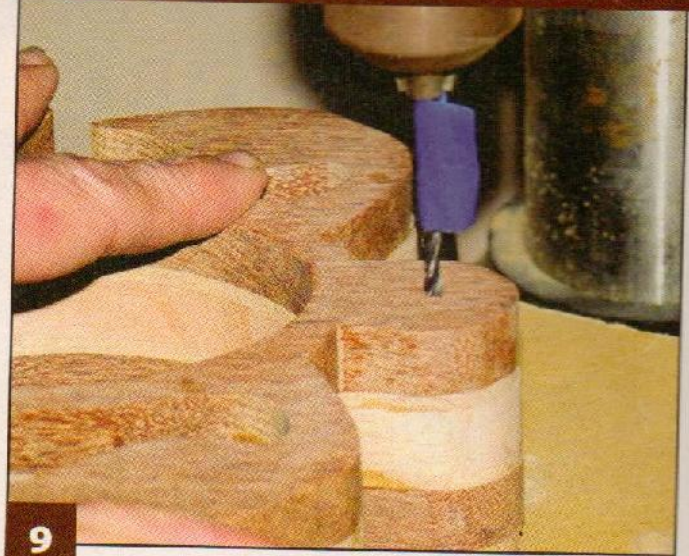
**Cut the overlay pieces.** Drill a blade-entry hole where indicated and cut the overlay pieces in the order marked. This provides a larger piece of wood to hold as you cut the small pieces. Save the large swirl in Piece 9 for last. Carefully twist apart the small stack-cut pieces and use a sharp hobby knife to separate the large stack-cut pieces. Place the pieces on the reference pattern. Remove the sawdust, patterns, and tape. Rub the pieces on 220-grit sandpaper attached to a flat surface.



8

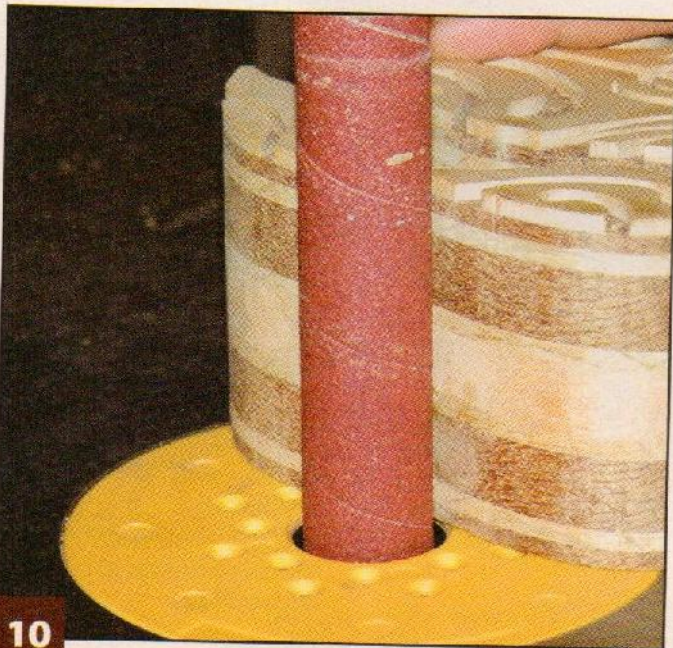
**Attach the overlay to the lid.** Dry-assemble the overlay on the lid. Remove one overlay piece from the lid and apply small dabs of white wood glue to the back with a toothpick. Replace it on the lid and apply firm, uniform pressure. Remove any squeeze-out using a clean toothpick. Attach the largest piece in a section first, and then the smaller inserts. Check that all pieces are attached firmly and remove any squeeze-out. Carefully clamp or weight the pieces and let the glue dry.

## TRIBAL TURTLE: FINISHING THE BOX



9

**Drill the hole for the pivot.** Place a copy of the pattern in position on the box rings and use an awl to pierce the center of the crosshairs to mark the wood. Flip the lid over and use the same pattern to make a mark on the bottom of the lid. Drill a  $\frac{1}{8}$ "-diameter by  $\frac{1}{2}$ "-deep (3mm by 13mm) hole into the box ring and a  $\frac{1}{8}$ "-diameter by  $\frac{3}{16}$ "-deep (3mm by 5mm) hole in the lid using a brad-point bit. Use epoxy to glue the pivot pin into the hole in the box rings.



10

**Sand the box.** Use small pieces of double-sided tape to secure the lid to the sides. Sand the outside of the box to remove any blade marks or glue residue. Use progressively finer grits of sandpaper up to 220 grit. I use different drum diameters with an oscillating spindle sander to get into tight areas. Wrap sandpaper around a pencil to sand the tightest areas. Round the tips of the flippers, the bottom of the box, and the edges of the lid. Use a 220-grit sanding mop to round the edges of the overlay. Finish sanding the box with 400-grit sandpaper.



11

**Apply the finish.** Remove the box lid using a clean putty knife. Remove all of the sander dust and saw dust with compressed air, a vacuum, or a clean, soft-bristle paintbrush. Wipe the box with mineral spirits to remove any adhesive residue. Apply several thin coats of shellac, and buff between coats with 0000 steel wool or a brown paper bag. Make sure you don't get any puddles of finish between the overlay pieces. Then, apply several thin coats of semi-gloss lacquer.



L. Kim Braa grew up in the Midwest and moved to the Gulf Coast region over 13 years ago. To see more of Kim's work, visit her website at [www.gonecoastalart.com](http://www.gonecoastalart.com). You can contact her at [lkimbraa@cablone.net](mailto:lkimbraa@cablone.net).

## Tribal turtle box patterns

### Materials & Tools

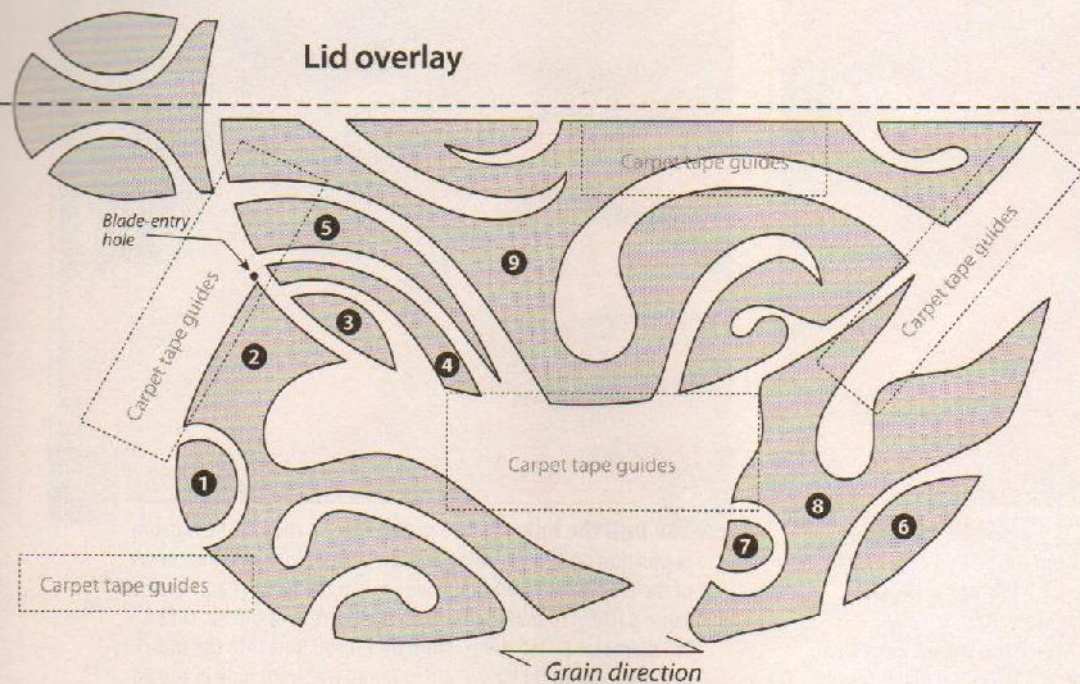
#### Materials:

- White oak,  $\frac{1}{8}$ " (3mm)-thick: sides, lid, bottom, 4 each  $5\frac{1}{2}$ " x  $5\frac{3}{4}$ " (140mm x 146mm)
- Leopardwood,  $\frac{1}{8}$ " (3mm)-thick: lid, bottom, 2 each  $5\frac{1}{2}$ " x  $5\frac{3}{4}$ " (140mm x 146mm)
- Leopardwood,  $\frac{1}{2}$ " (13mm)-thick: sides, 2 each  $5\frac{1}{2}$ " x  $5\frac{3}{4}$ " (140mm x 146mm)
- Mahogany,  $\frac{1}{2}$ " (13mm)-thick: sides,  $5\frac{1}{2}$ " x  $5\frac{3}{4}$ " (140mm x 146mm)
- Cherry,  $\frac{1}{8}$ " (3mm)-thick: lid overlay,  $5\frac{1}{2}$ " x  $5\frac{3}{4}$ " (140mm x 146mm)
- Brass or aluminum rod, OR hardwood dowel,  $\frac{1}{8}$ " (3mm)-diameter: pivot,  $\frac{3}{4}$ " (19mm) long
- Repositionable spray adhesive
- Tape: lightweight clear packaging; double-sided plastic carpet
- Glue: white wood; epoxy
- Disposable glue brush (optional)
- Sandpaper for hand-sanding: assorted 120- to 400-grit
- Sandpaper for oscillating spindle sander: assorted 80- to 220-grit
- Cotton swabs
- Toothpicks
- Mineral spirits
- Paper towel or lint-free cloth
- Brown paper bag or 0000 steel wool
- Shellac
- Lacquer finish, spray: semi-gloss

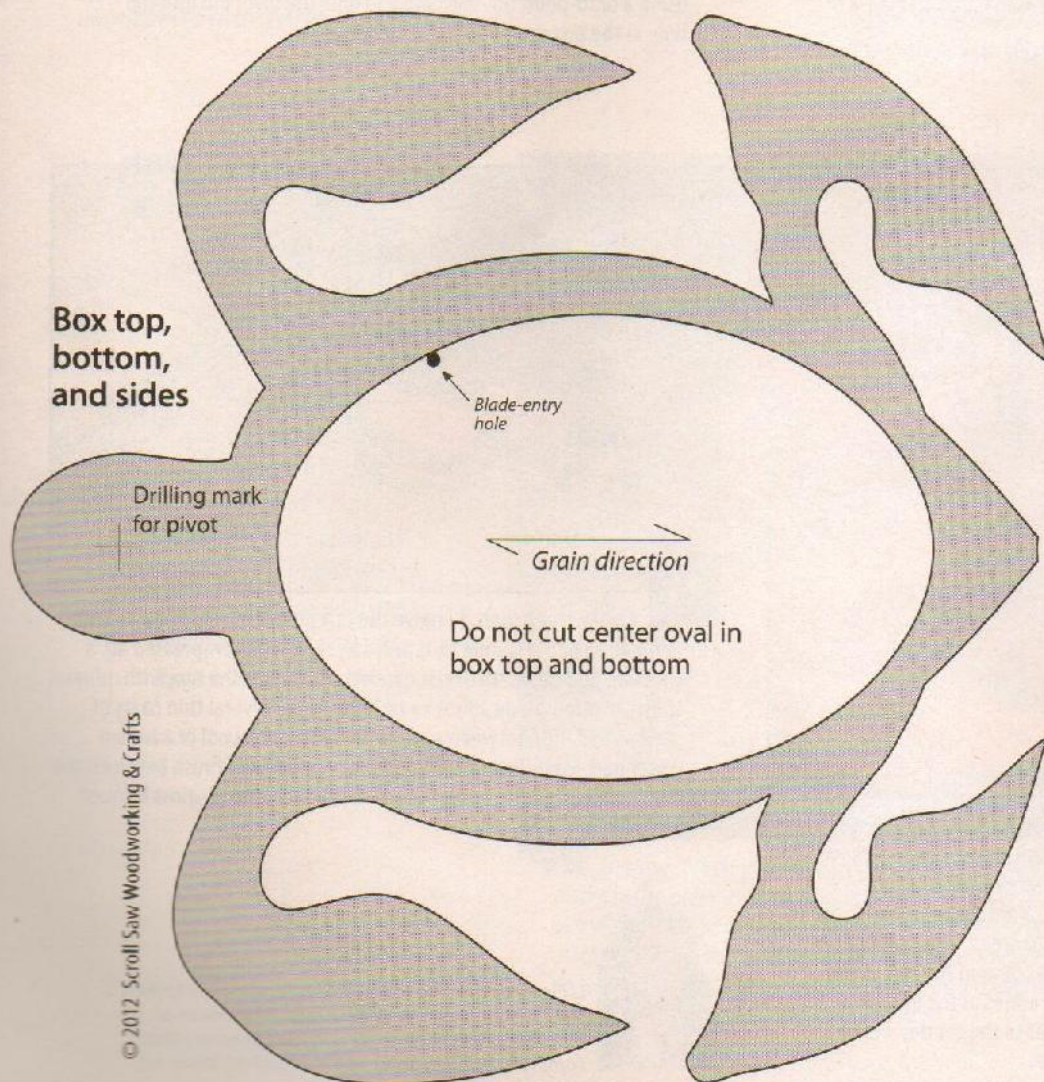
#### Tools:

- Drill or drill press and bits:  $\frac{1}{16}$ " (2mm)-diameter;  $\frac{1}{8}$ " (3mm)-diameter brad-point
- Blades, such as Flying Dutchman Ultra Reverse: #3 and #7 reverse-tooth
- Oscillating spindle sander and drums: assorted sizes  $\frac{1}{4}$ " to  $1\frac{1}{2}$ " (6mm to 38mm)
- Detail sander
- Mop sander: 220-grit or higher
- Clamps and/or bowl press
- Pencil
- Scissors
- Putty knife
- Hobby knife
- Ruler
- Awl or ice pick

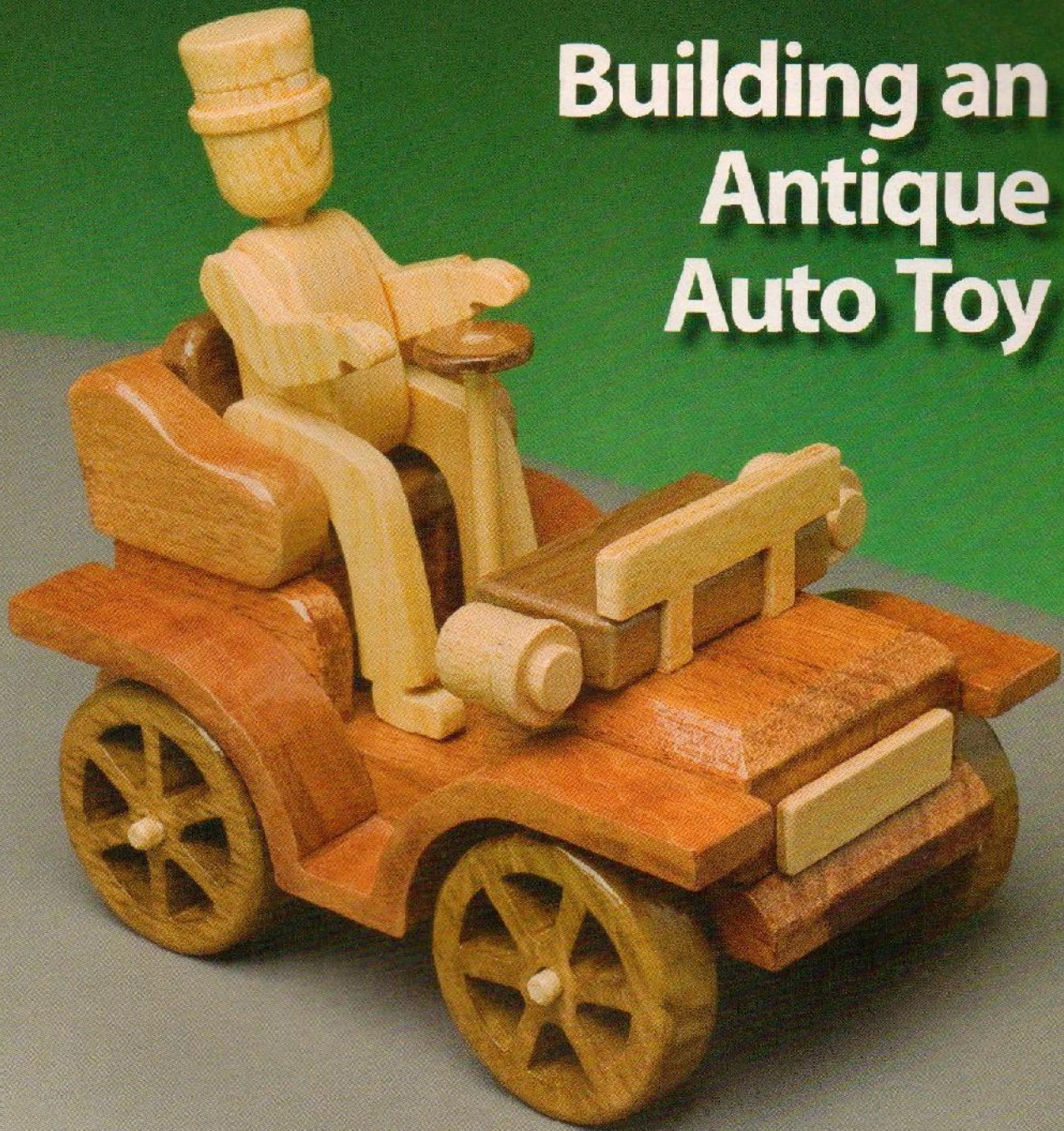
*The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.*



### Box top, bottom, and sides



# Building an Antique Auto Toy



**A simple mechanism  
bounces the driver as  
the car rolls forward**

*By Robin Balls*

**R**eminiscent of cars from the early 1900s, this toy will have you humming, “Come away with me Lucille, in my merry Oldsmobile...” You can make the car in contrasting varieties of hardwood, as shown, or use pine and paint it instead. The cam that bounces the driver is easy to make and install.

I turned the driver’s head and the headlights, but I’ve provided compound-cut patterns for both pieces in case you don’t have a lathe. You could also fashion these round pieces from dowels.

## MAKING THE CAR AND DRIVER

**Step 1: Cut the pieces.** Transfer the patterns to the blanks (see page 14 for several methods) and drill any required blade-entry holes, axle holes, and the hole for the neck. Then, cut the pieces. Tilt the saw table or use a chamfer bit or chamfer plane to remove the sharp corners from the hood and the floor boards.



**▲ Step 2: Assemble the car body and driver.** Use the assembly drawing as a guide to assemble the body of the car. Do not add the fenders yet. Glue and clamp the pieces in place. Then, assemble the driver.

**Step 3: Assemble the wheels.** For the wheel spacers, drill a  $\frac{3}{16}$ " (5mm)-diameter hole down the center of a  $\frac{3}{8}$ " (10mm)-diameter dowel. Then, cut the pieces. Use the axle dowels to help you align the wheel spacers as you glue them to the insides of the wheels. Then, glue wheels onto one side of the axles. The axles should protrude about  $\frac{3}{16}$ " (5mm) on the outside of the wheels. Woodburn a name on the license plate if desired. Glue the fenders and license plate in place. Apply a coat of sealer and two coats of gloss varnish to the pieces and let dry. Insert the front axle through the axle holes and glue on the other front wheel. Do not assemble the back axle yet.

**Step 4: Assemble the mechanism.** Glue the dowel into the bottom of the driver. Insert the dowel through the hole in the seat and put the bottom plate in place. Insert the back axle through the hole in one axle support, slide the cam on, insert the axle through the other axle support, and then put the other wheel in place. Position the cam under the bottom plate and spin the wheels to check the action of the piece. You may need to drill a larger hole in the seat to allow the figure to move up and down properly. When the action is correct, glue the bottom plate and cam in position. Then, glue the other wheel in place.

### Materials:

- Hardwood,  $\frac{1}{8}$ " (3mm)-thick: steering wheel, 1" x 1" (25mm x 25mm); license plate (no pattern),  $\frac{1}{2}$ " x  $1\frac{3}{4}$ " (13mm x 44mm)
- Hardwood,  $\frac{1}{4}$ " (6mm)-thick: windshield, 1" x  $2\frac{1}{2}$ " (25mm x 64mm); arms, 2 each 1" x 2" (25mm x 51mm); legs, 2 each  $2\frac{1}{4}$ " x  $2\frac{1}{4}$ " (57mm x 57mm)
- Hardwood,  $\frac{1}{2}$ " (13mm)-thick: wheels, 4 each  $2\frac{1}{4}$ " x  $2\frac{1}{4}$ " (57mm x 57mm); seat back, 1" x  $1\frac{1}{2}$ " (25mm x 38mm); seat,  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ " (38mm x 38mm); dashboard,  $1\frac{1}{4}$ " x  $2\frac{3}{4}$ " (32mm x 70mm); cab sides, 2 each  $1\frac{1}{2}$ " x  $2\frac{1}{4}$ " (38mm x 57mm); cab back,  $1\frac{1}{4}$ " x  $1\frac{3}{4}$ " (32mm x 44mm); axle supports, 2 each,  $\frac{1}{2}$ " x  $4\frac{5}{8}$ " (13mm x 117mm); chassis,  $2\frac{1}{2}$ " x  $6\frac{1}{4}$ " (64mm x 159mm); axle cam, 1" x 1" (25mm x 25mm); bottom plate,  $\frac{3}{4}$ " x  $1\frac{1}{4}$ " (19mm x 32mm)
- Hardwood,  $\frac{3}{4}$ " (19mm)-thick: seat supports, 2 each 1" x 2" (25mm x 51mm); fenders, 2 each  $1\frac{3}{4}$ " x 6" (44mm x 152mm); body,  $1\frac{1}{4}$ " x  $1\frac{3}{4}$ " (32mm x 44mm); headlights, 2 each  $\frac{3}{4}$ " x 1" (19mm x 25mm)

### Materials & Tools

- Hardwood, 1" (25mm)-thick: hood,  $2\frac{1}{4}$ " x  $2\frac{1}{2}$ " (57mm x 64mm) head, 1" x  $1\frac{1}{4}$ " (25mm x 32mm)
- Dowel,  $\frac{3}{16}$ " (5mm)-diameter: axles, 2 each  $4\frac{1}{8}$ " (105mm) long; driver pole,  $2\frac{1}{4}$ " (57mm) long; steering pole,  $3\frac{1}{4}$ " (83mm) long; neck,  $\frac{3}{4}$ " (19mm) long; headlight posts, 2 each  $\frac{1}{2}$ " (13mm) long
- Dowel,  $\frac{3}{8}$ " (10mm)-diameter: wheel spacers, 4 each  $\frac{1}{8}$ " (3mm) thick (see Step 3)
- Spray adhesive
- Wood glue
- Sandpaper
- Wood sealer
- Gloss varnish

### Tools:

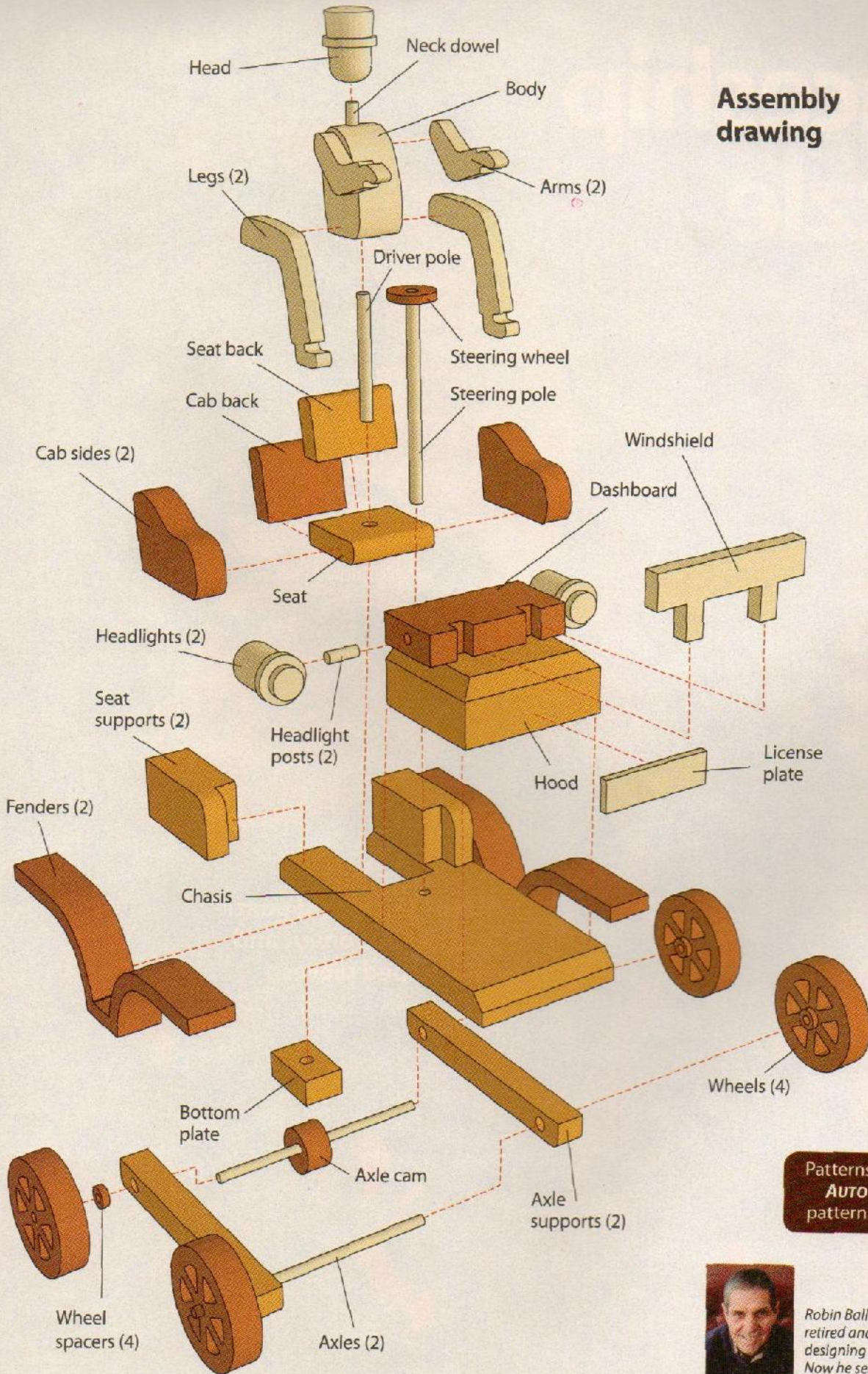
- Blades: #3 reverse-tooth
- Clamps
- Drill and assorted bits
- Chamfer bit or chamfer plane (optional)
- Woodburner (optional)

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

A cam on the rear axle causes the driver to bounce as the car rolls forward.



# Assembly drawing



Patterns for the **ANTIQUE AUTO TOY** are in the pattern pullout section.



Robin Balls of Malvern, England, retired and started scrolling and designing patterns as a hobby. Now he sells his work to buy tools and materials.

# Spaceship Puzzle



**Out-of-this-world puzzle features astronaut and star-shaped pieces**

*By Rob Caplan*

# BEST PROJECT DESIGN CONTEST

HONORABLE MENTION

SCROLL SAW WOODWORKING & CRAFTS

Who hasn't dreamed of flying to the moon? Cut and assemble this puzzle to create a 3-D spaceship on a visit to the man in the moon. On the moon, the four astronauts (who serve double duty as fun puzzle figurals) find the footprints of a previous astronaut, the man in the moon's moonshine lantern, and several stars. The puzzle makes a great display, and kids will think it's a fun play-set, too (just keep the pieces away from the little ones).

I chose maple for the moon's face and walnut for the dark side of the moon. You can use any two contrasting varieties of wood, but make sure the face is lighter than the dark side.

## Making the Puzzle

Transfer the patterns to the blanks and cut the outlines of the dark and light sides of the moon. Make sure the two pieces fit together tightly; the place where the face meets the dark side is the only part of the moon that requires extreme precision. If you stray from the line when cutting the first half of the moon, trace the edge that you actually cut onto the second half so they match.

Once the two sides fit together to form the moon's circle, cut the puzzle pieces and the figurals. I drilled blade-entry holes

## Cutting Puzzles

Freehand cutting is easy and fun; my master pattern contains just the overall outline and figurals. Each version is unique, and you can make the puzzle easier or harder by changing the size and complexity of the pieces. You can experiment with different shapes and styles of pieces. Cut knobs as classic pegs, double locks, curlicues, waves, or any other shape. The important things to keep in mind are:

- Make sure the knobs loop back enough so they lock solidly.
- Make sure the vertical parts of the spaceship are well connected so it stands on its own.
- There is no wrong way to do this! Your imagination is the only limit.

and cut the figurals first. Then, I cut the remaining puzzle pieces freehand. Cut slowly and make sure the blade cuts vertically without bending. Change blades frequently before they get dull.

The two halves of the spaceship support each other, so the slots must match the thickness of the wood. Measure your wood against the pattern. If it is wider or narrower than the slot, trace the actual thickness of the wood. Cut both spaceship parts. Test the fit and, if needed, shave the edges of the slots until they just slide together. The slots will loosen a bit because of the kerfs cut between the individual puzzle pieces. Then, cut the remaining puzzle pieces.

After cutting all of the puzzle pieces, round the edges slightly with a sanding mop. To finish the pieces, dunk them in Danish oil, wipe off the excess, and let them dry on a rack.

## Materials:

- Maple or other light-colored wood,  $\frac{3}{4}$ " (19mm)-thick: man in the moon face,  $7\frac{1}{2}$ " x 10" (191mm x 254mm)
- Walnut or other dark-colored wood,  $\frac{3}{4}$ " (19mm)-thick: dark side of the moon,  $6\frac{1}{2}$ " x 10" (165mm x 254mm)
- Cherry,  $\frac{3}{4}$ " (19mm)-thick: spaceship, 2 each,  $5\frac{1}{2}$ " x 10" (140mm x 254mm)

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

## Materials & Tools

- Sandpaper: 180-grit
- Sanding mop
- Danish oil

## Tools:

- Blades: #5
- Drill and small bit

Patterns for the **SPACESHIP PUZZLE** are in the pattern pullout section.



*Rob Caplan has been creating scroll sawn puzzles in Redmond, Wash., for four years. He can be found on the scrollsawer.com forum as Arcy.*

# Labyrinth Maze Boxes



**Notched sides add interest to these simple designs**

*By Thomas Haapapuro  
Step-by-step photos  
by Erin L. Hubbs*

The inspiration for these boxes is the spiral, adapted to the confines of a rectangular shape. Originally I designed the box with an ornate lid and simple, flat sides. After completing the box, I realized the design would be even more attractive if the lines from the top wrapped around like the lines on a striped birthday present. You can cut the notched lines with a scroll saw, but that limits the height of

the box; it's simpler to use a band saw. To make the second box, I modified the design to a square and added as many notches in the sides as possible to highlight my newfound trick.

To begin, cut the blanks to size. Because shorter pieces are more dangerous to cut, I rip a longer piece and then cross-cut the shorter piece from the board after cutting the grooves.

## MAZE BOX: BUILDING THE BOX



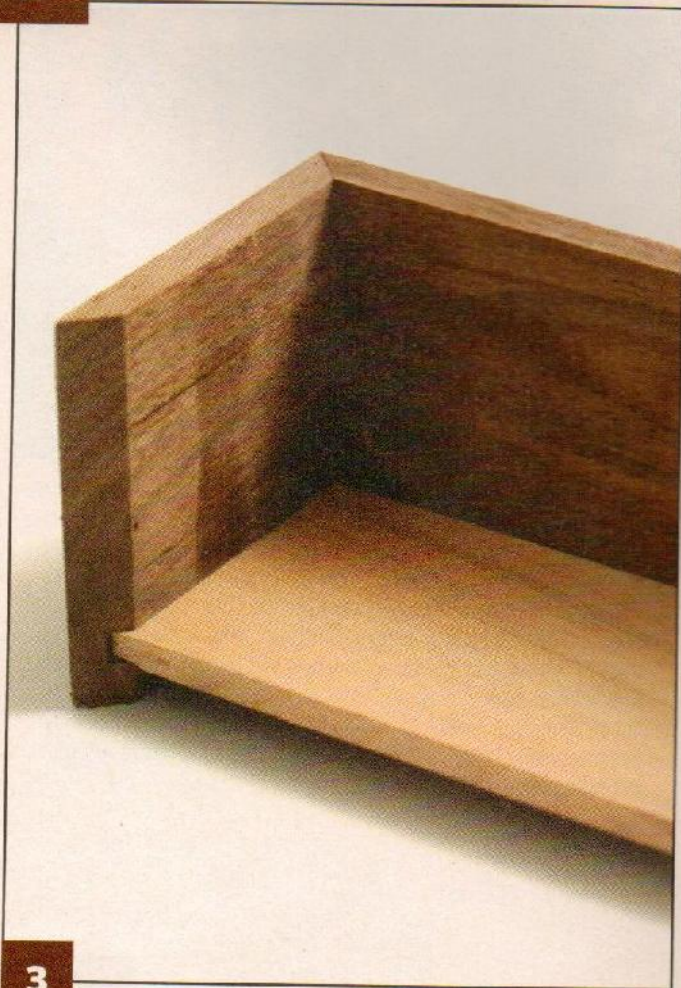
1

**Cut the groove.** On a table saw, set the fence  $1\frac{1}{2}$ " (38mm) from the inside edge of the blade. Raise the blade to a scant  $\frac{1}{8}$ " (3mm). With a side board lying flat, cut a  $\frac{1}{8}$ " (3mm)-wide groove. Repeat for the other side piece. Turn off the saw and make sure the bottom board fits easily into the grooves. The bottom board should float freely in the grooves, giving the box space to expand and contract with the seasons. If the bottom fits tightly, move the fence  $\frac{1}{16}$ " (2mm) closer to the blade and make a second cut.



2

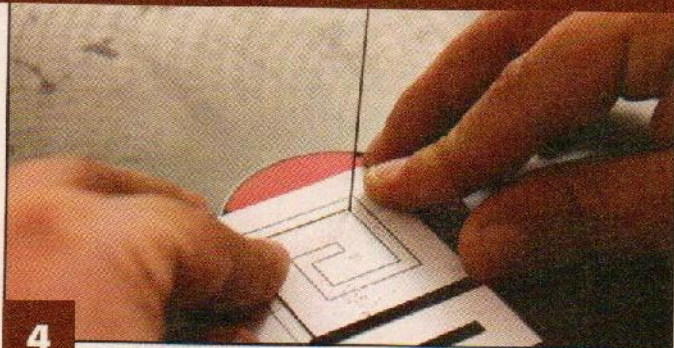
**Cut the corner miters.** Using a miter saw or table saw, cut the boards to the final dimensions, with the ends cut to 45° angles. Even using the best digital protractor, you will need to tweak the angle to get airtight joints. Cut the pieces a little long and test-fit them together. Adjust the blade angle and re-cut the pieces to the final dimensions of  $2\frac{3}{8}$ " (60mm) for the short sides and 8" (203mm) for the long sides.



3

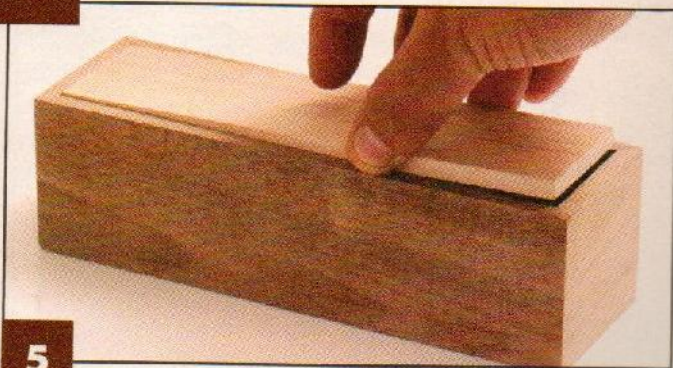
**Assemble the box.** Tape a piece of 150-grit sandpaper to the workbench and sand the box bottom and sides smooth. Burnish the pieces with 00000 steel wool. Before assembling the box, insert the bottom but do not glue it in place; the bottom floats in the groove. Apply a thin film of glue to all of the mitered ends and match the box corners. Wrap the box in strong rubber bands and let dry. The rubber bands pull on all corners evenly and ensure a near-perfect square box.

## MAZE BOX: MAKING THE LID



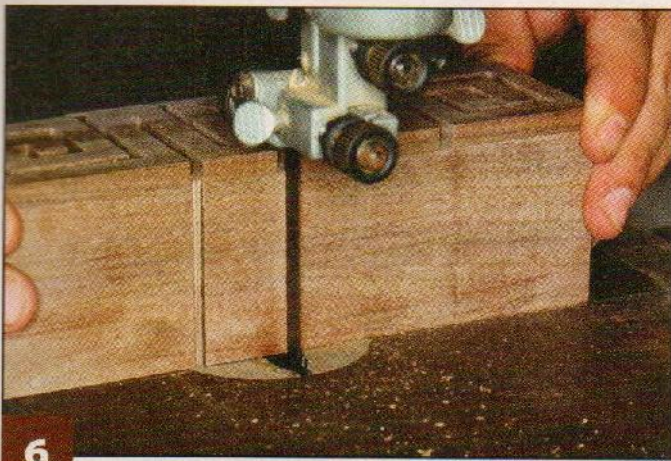
4

**Cut the design.** Apply the pattern to the walnut lid blank using spray adhesive. Using a scroll saw and a #2 or #3 reverse-tooth blade, cut one end of the spiral pattern. Cut the notches in the middle next, and finish with the spiral at the other end. Cutting in this way maintains the strength of the wood for as long as possible during the cut, but be careful because the piece is fragile. Remove the pattern and carefully sand the lid.



5

**Cut the lid liner.** To ensure the liner is the correct size, measure the inside dimensions of the assembled box before cutting the liner with a table saw. Sand the liner. Turn the lid upside down, apply small droplets of glue, and smear the glue into a thin film. Avoid getting glue within  $\frac{1}{4}$ " (6mm) of the edge, as this portion will be visible in the finished product. Align the liner and press it onto the lid. Clamp the lid between two pieces of scrap plywood and let dry.



6

**Cut the side notches.** When the lid is dry, put it onto the box body. Install a finish-grade blade (32 teeth per inch) onto a band saw and check that the table is square. Then, with the saw running, gently push the edge of the box into the blade, aligning the blade with the edges of the notches in the box lid. Chip at the notches until they are the same width as those in the lid. Note: Cut a little less than  $\frac{1}{8}$ " (3mm) into the side of the box. The bottom of the box is in a  $\frac{1}{8}$ " (3mm)-wide groove and the side is only  $\frac{1}{4}$ " (6mm) thick. If you cut  $\frac{1}{8}$ " (3mm) or greater into the sides, the bottom of the box may become visible. After completing the notches, sand any rough spots or glue squeeze-out areas.

### Finishing the Box

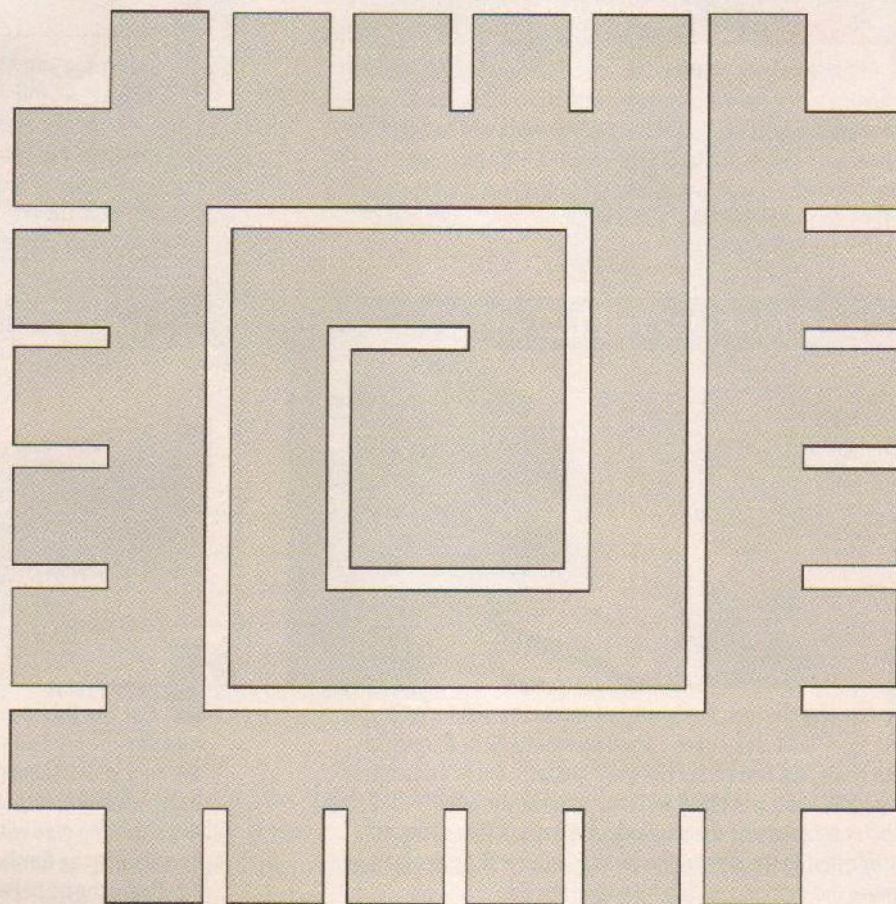
I like to use a hybrid finish such as the Sam Maloof oil/varnish mixture. This finish is a blend of linseed oil, tung oil, and varnish. It provides the beauty of penetrating oil and the durability of a film finish. It can be applied without buffing and isn't overly shiny.

To apply an oil/varnish finish, use a bristle brush to cover the box with a liberal coating of finish, making sure to get it in all the edges, corners, and kerf lines. Let this sit for about 10 minutes and then, using a clean, lint-free cloth, gently wipe away the excess finish. Repeat this process several times.

It can be difficult to wipe all the excess oil from the edges and corners of a work piece. I use an air compressor fitted with an air gun to blow air into the corners and along the edges. The concentrated air vaporizes a lot of the oil, and the rest puddles on the flat faces of the work piece. Wipe up the excess oil, and then blow the work piece again with the air gun. Repeat as necessary until you have wiped off all of the excess oil.

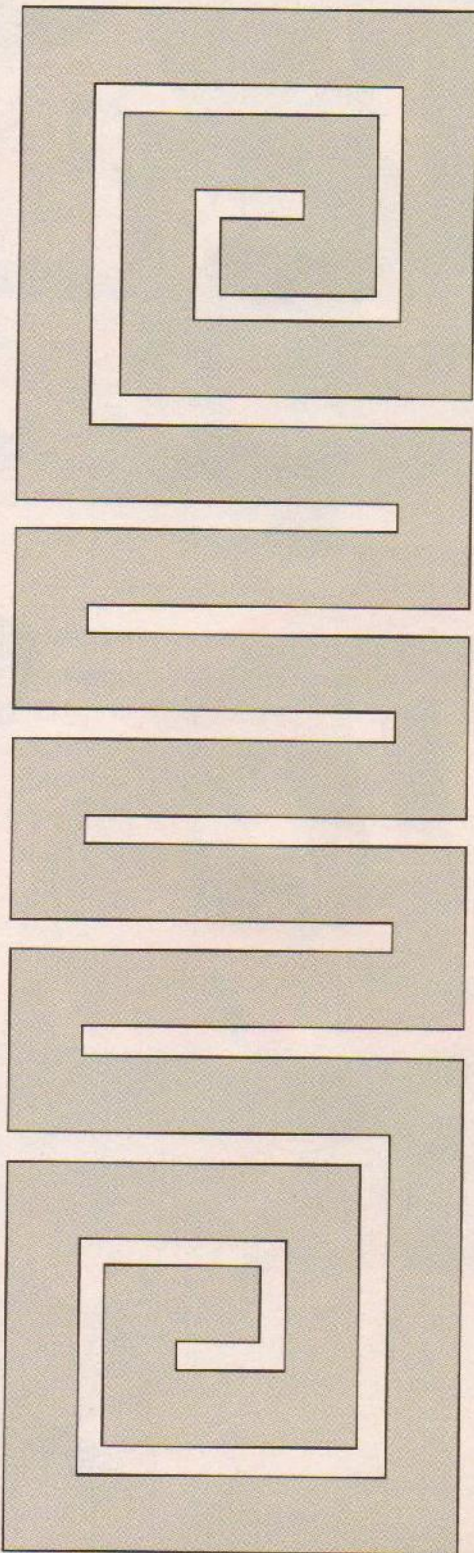
### Square box pattern

Create the square box using the same techniques employed for construction of the rectangular box. Cut the notches in the lid before cutting the center spiral. The final length of each side is  $4\frac{5}{8}$ " (117mm).



## Rectangular box pattern

The final length of the long sides is 8" (203mm). The final length of the short sides is 2 $\frac{3}{8}$ " (60mm). Cut the sides slightly longer at first until you test-fit the miter joints.



## Materials & Tools

### Materials:

#### Rectangular box:

- Walnut,  $\frac{1}{4}$ " (6mm)-thick: sides (each board makes 1 long and 1 short side), 2 each 1 $\frac{3}{4}$ " x 11 $\frac{1}{2}$ " (44mm x 292mm); top, 2 $\frac{1}{2}$ " x 8" (64mm x 203mm)
- Cherry,  $\frac{1}{8}$ " (3mm)-thick: bottom, 2 $\frac{1}{8}$ " x 7 $\frac{3}{4}$ " (54mm x 197mm)
- Cherry,  $\frac{3}{16}$ " (5mm)-thick: lid liner, 2" x 7 $\frac{1}{2}$ " (51mm x 191mm)

#### Square box:

- Walnut,  $\frac{3}{4}$ " (19mm)-thick: sides (each board makes 2 sides), 2 each 2" x 10" (51mm x 254mm)
- Walnut,  $\frac{1}{4}$ " (6mm)-thick: top, 4 $\frac{5}{8}$ " x 4 $\frac{5}{8}$ " (117mm x 117mm)
- Cherry,  $\frac{3}{16}$ " (5mm)-thick: bottom, 3 $\frac{3}{8}$ " x 3 $\frac{3}{8}$ " (86mm x 86mm); lid liner, 3 $\frac{1}{8}$ " x 3 $\frac{1}{8}$ " (80mm x 80mm)

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

### All projects:

- Sandpaper: 150-grit
- Steel wool: 00000
- Wood glue
- Finish, such as Sam Maloof oil/varnish finish

### Tools:

- Blades: #2 or #3 reverse-tooth
- Table saw
- Band saw with finish-grade blade (32 TPI)
- Miter saw (optional)
- Spray adhesive
- Rubber bands: 8 large bands
- Clamps
- Scrap plywood (clamping boards)
- Bristle brush
- Lint-free cloth
- Air compressor and air gun (optional)

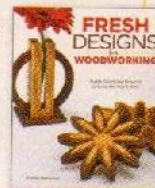
## Further Reading

### Fresh Designs for Woodworking

By Thomas Haapapuro

AVAILABLE AUGUST 2012

Awaken your modern design aesthetic with 21 striking contemporary designs for the home. The fusion of nature's elegant shapes and modern architecture's bold symmetry yields a dynamic and engaging collection of designs for scroll saw woodworking.

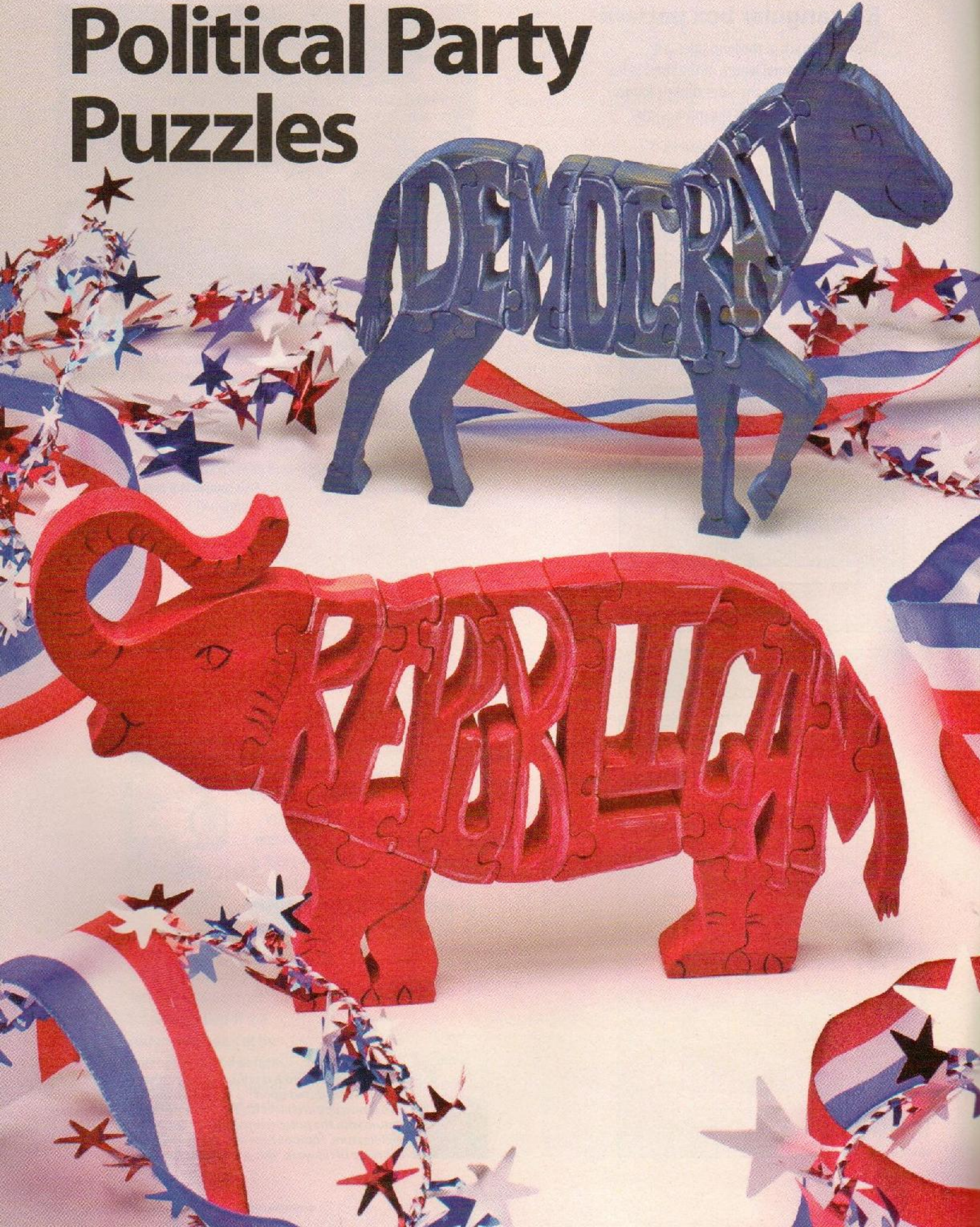


Available for \$19.99 plus \$3.99 S&H from Fox Chapel Publishing, 1970 Broad St., East Petersburg, Pa., 17520, 800-457-9112, [www.foxchapelpublishing.com](http://www.foxchapelpublishing.com), or check your local retailer.



Thomas Haapapuro is a self-taught woodworker and sculptor who draws upon his education and experience as a landscape architect to fuse the organic shapes of nature with the pattern and balance of contemporary architecture. Thomas lives and works in Charlotte, N.C. For more of his work, visit [www.thaapdesigns.com](http://www.thaapdesigns.com).

# Political Party Puzzles



## Support your presidential candidate with a patriotic puzzle

By Jim Sweet

Cut by Rolf Beuttenmuller

Show your support for your favorite political party with these whimsical Woodimal™ puzzles. A Woodimal usually spells the name of the animal it represents, but this unique set honors the Republican and Democratic parties instead. If you prefer, download patterns that say “donkey” and “elephant” at [www.scrollsawer.com](http://www.scrollsawer.com).

On the patterns, the dotted lines are for painting or woodburning reference only—do not cut along those lines. Use a #5 reverse-tooth blade for most of the cutting, but use a #1 reverse-tooth blade for the veining details. I use a 1/8" (3mm)-diameter drill bit for the blade-entry holes for the letters and a #60 drill bit for the veining details. If you are not comfortable scrolling the eyes, paint them or burn them with a woodburner.

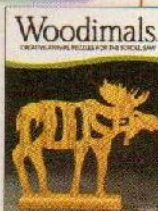
These puzzles were cut from pine and are painted with patriotic colors. Alternately, oak, ash, and poplar look nice with a natural finish.

### Further Reading

**Woodimals** By Jim Sweet

AVAILABLE DECEMBER 2012

*These engaging puzzles depict animals from around the world. The name of each animal is incorporated into its design, making the puzzles great gifts for young readers. The patterns are perfect for beginning scrollers to build their skills and as project and gift ideas for advanced scrollers.*



Available for \$16.99 plus \$3.99 S&H from Fox Chapel Publishing, 1970 Broad St., East Petersburg, PA 17520, 800-457-9112, [www.foxchapelpublishing.com](http://www.foxchapelpublishing.com), or check your local retailer.

### About Those Animals

The donkey and elephant gained their political allegiances during the 1870s, thanks to the famous political cartoonist Thomas Nast. Nast was a household name at the time, and his images of Uncle Sam and Santa Claus are still known today. He drew for Harper's Weekly, and the national weekly circulation of the magazine ensured that Nast's cartoons were widely viewed. According to a 1908 New York Times article, "In his day he wielded an influence on the affairs of the Nation such as is accorded to few men. Public opinion followed his caricatures of men and events." So, when Nast decided to draw Democratic leaders as a donkey, the depiction stuck. Nast, a Republican, represented his own party as a large and lumbering elephant, which he labeled "G. O. P." for Grand Old Party. The associations survive to this day.

### Materials & Tools

#### Materials:

- Pine, 3/4" to 7/8"-thick:  
Democrat/donkey, 8 1/4" x 9"  
(209mm x 229mm)
- Pine, 3/4" to 7/8"-thick:  
Republican/elephant, 7" x 10 3/4"  
(178mm x 273mm)
- Spray adhesive, transfer paper,  
or graphite paper (to transfer  
pattern to blank)
- Finish or paint
- Sandpaper

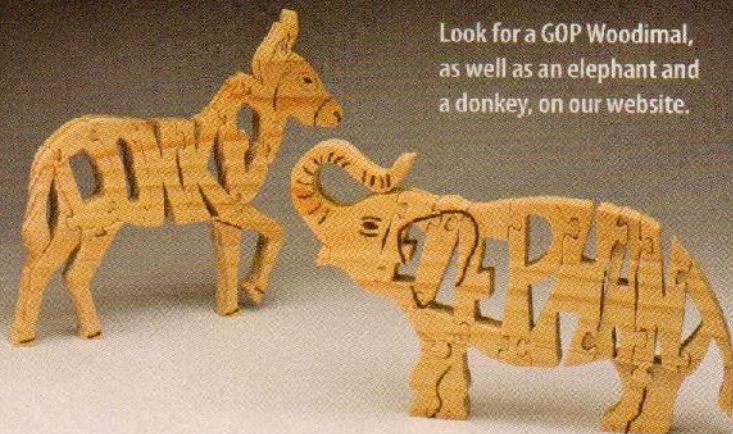
#### Tools:

- Blades,  
reverse-tooth:  
#5 and #1
- Drill and bits: 1/8"  
(3mm)-diameter,  
#60

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

Patterns for **PRESIDENTIAL** **Puzzles** are in the pattern pullout section.

Look for a GOP Woodimal, as well as an elephant and a donkey, on our website.



### ONLINE BONUS

Patterns of GOP elephant, elephant, and donkey Woodimals on the Web.

[www.scrollsawer.com](http://www.scrollsawer.com)



Jim Sweet is the inventor of the popular Woodimal puzzles. Jim and his wife, Lois, worked the craft show circuit for several years before deciding to focus on designing patterns. For more Woodimal patterns, visit [www.FoxChapelPublishing.com](http://www.FoxChapelPublishing.com).

# Making a Piano Music Box



## Make a grand gift for the piano lover in your life

By John A. Nelson

Cut by Rolf Beuttenmuller

**M**y Yamaha C-7 concert grand piano is so much fun to play that I decided to design a smaller version. Building this miniature piano music box will give you a chance to practice precision and compound cutting, as well as make a grand gift for the piano lover in your life.

### PIANO: CUTTING THE PIECES

**Step 1: Prepare the pieces.** Start by studying the assembly drawing so you understand how the pieces fit together. Cut the pieces to the sizes listed in the materials list and sand them with fine-grit sandpaper. If you have a porous wood, such as oak, apply grain filler and sand the pieces again. Attach a copy of the patterns to the pieces. Fold the patterns for the legs and the lyre on the dotted lines, align the folds with the corners on the appropriate blanks, and attach the patterns to the blanks. Drill any required holes and cut the piano bottom and top.

**Step 2: Cut the body.** Cut around the perimeter of the body with a #5 blade. Cut the side view with a coping or band saw.

**Step 3: Adding the details to the body and top.** Use a handsaw or a chisel to cut the notches (mortises) for the top hinge, and sand the piece again. Shape the edges of the top with a router and a  $\frac{1}{16}$ " (2mm)-radius concave bit. A rotary tool works well, but you can skip this step if you lack the tool.

**Step 4: Cut the remaining pieces.** Cut one view of the legs and the lyre. Use clear tape to hold the pieces together while you cut the second views. Cut the spacers and the leg tops, and sand them smooth. Cut the outlines of the black and white parts of the keyboard, but do not cut on the dashed lines yet.

### PIANO: ASSEMBLING THE PROJECT

**Step 5: Check the fit of the top and bottom on the body.** Use a brass hinge and tape to temporarily attach the top to the body. Glue the bottom to the body and sand the edges to hide the joint and produce a smooth top, body, and bottom edge. Remove the top.

**Step 6: Assemble the legs, lyre, and lid support.** Glue a leg peg into the top of a leg and glue a wheel dowel into the bottom of the leg. Thread a leg top onto the peg, and

then glue the peg and top to the bottom of the back spacer. Repeat for the remaining two legs, gluing them into the bottom of the front spacer. Glue the pedal dowels into the three holes in the bottom of the lyre. Glue a leg peg into the top of the lyre and glue the lyre to the bottom of the front spacer. Glue the lid support into the hole in the lid support spacer. Use a  $\frac{3}{4}$ " (19mm)-long hinge to attach the lid support spacer to the hinge support. Glue the assembled hinge support to the inside of the piano body as marked. Cut, sand, or drill a notch into one end of the  $\frac{5}{16}$ " (8mm)-diameter lid holder support dowel. Align the notch with the support and glue the dowel to the inside of the piano bottom. Glue and clamp the front and back spacers to the underside of the piano bottom as indicated on the pattern. Let dry.

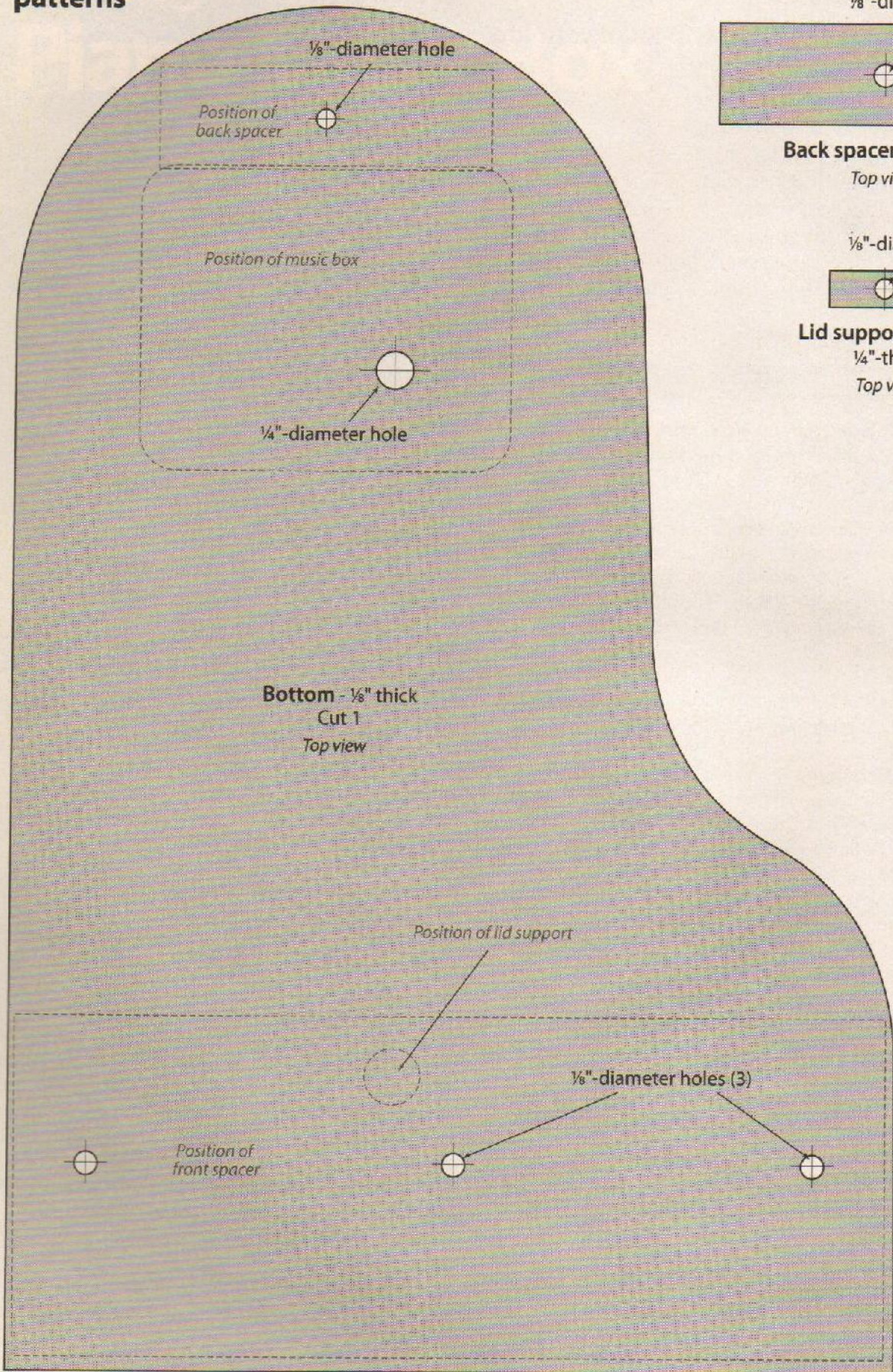
**Step 7: Assemble the keyboard.** On the white keyboard, use a hobby knife to scribe lines in the wood to simulate the lines between the keys, or carefully cut shallow lines in the top and front edge with a scroll saw. Our test cutter, Rolf Beuttenmuller, cut the white keys from holly and the black keys from wenge. You can also paint the keys white and black and allow the paint to dry. Glue the black keys to the white keys. After the glue dries, cut the pieces along the dashed line and sand the back lightly. Fit the keyboard in place and fit the keyboard trim onto the ends. Do not glue the keyboard in place yet.

**Step 8: Apply the finish.** If you are using a natural wood finish, apply a few coats of shellac or lacquer. For a painted finish, sand the assembled pieces with 320-grit sandpaper and apply a coat of primer. When the primer is dry, apply three coats of high-gloss black paint. Sand between coats with 400-grit sandpaper to get a smooth high-gloss finish.

**Step 9: Complete the piano.** Glue the keyboard and trim in place. Paint the three wheels gold. Apply a coat of paste wax to the piano exterior. Use epoxy to attach the music box mechanism. Screw or nail the 3" (76mm)-long hinge to the piano body and then use cyanoacrylate (CA) glue or epoxy to attach the hinge to the lid.

**Step 10: Finish the inside of the box (optional).** There are several methods for finishing the inside of the box. You can finish it with shellac or paint to match the outside. You can cut a piece of velvet to size and glue it in place. Or, flock the box by carefully painting the inside with red paint. Immediately fill the box with red flock. Let the paint dry overnight and then remove the excess flock.

# Piano music box patterns



1/8"-diameter hole

Position of back spacer

Position of music box

1/4"-diameter hole

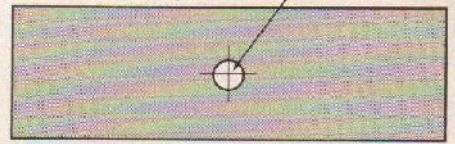
Bottom - 1/8" thick  
Cut 1  
Top view

Position of lid support

1/8"-diameter holes (3)

Position of front spacer

1/8"-diameter hole in center



Back spacer - 1/4"-thick

Top view

1/8"-diameter hole in center

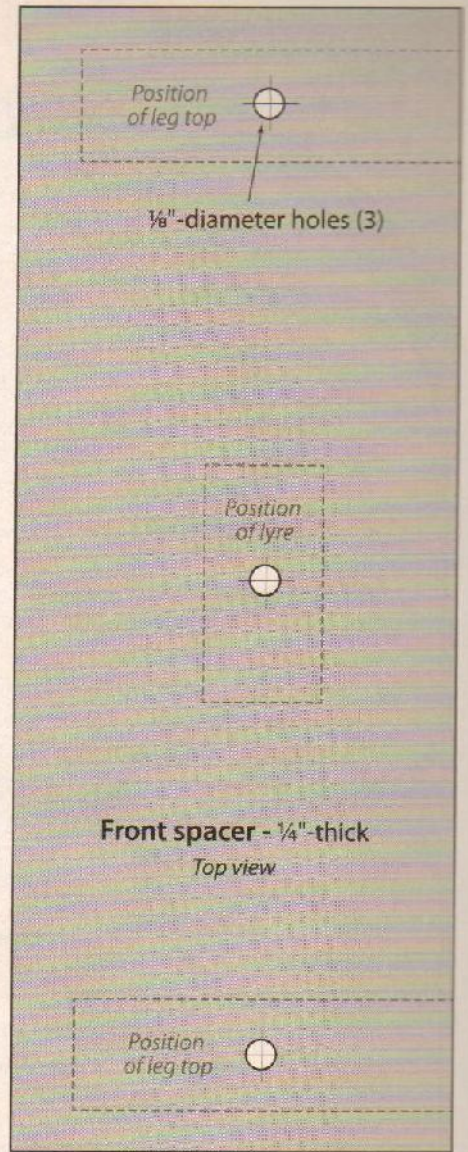
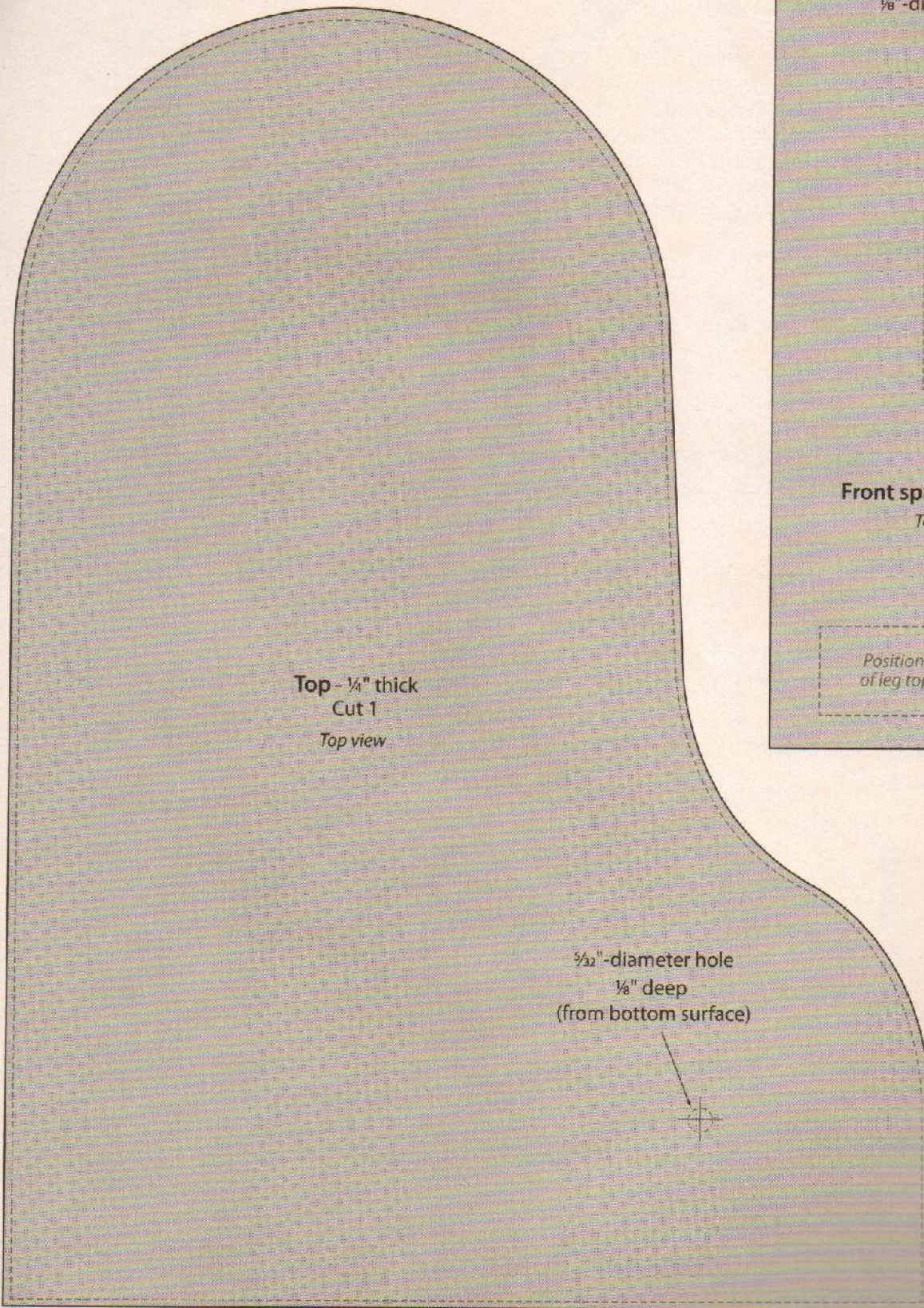


Lid support spacer

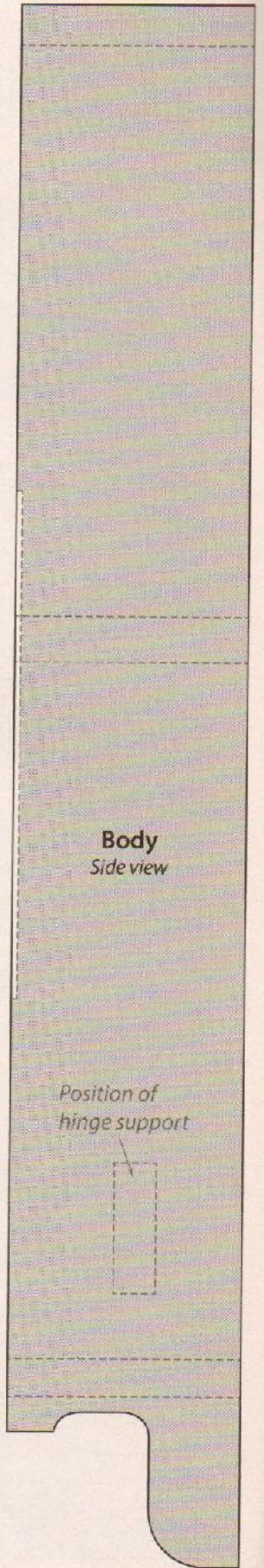
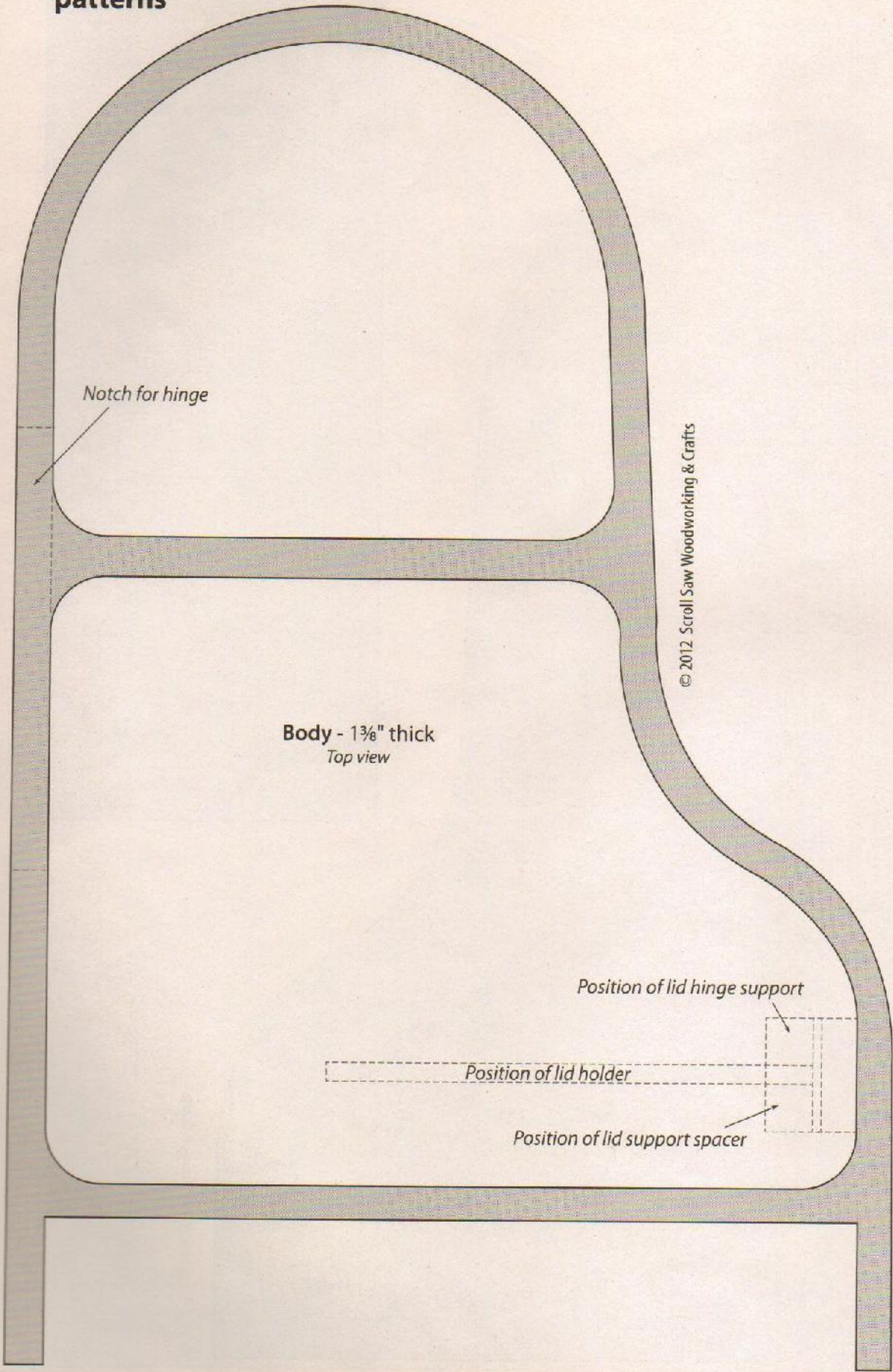
1/4"-thick

Top view

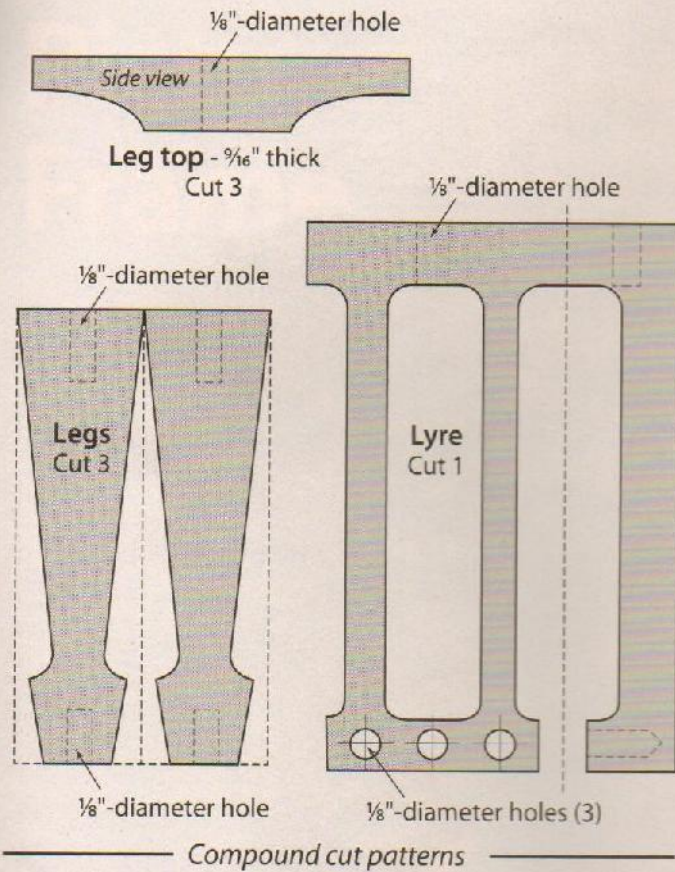
# Piano music box patterns



# Piano music box patterns



# Piano music box patterns



## Materials & Tools

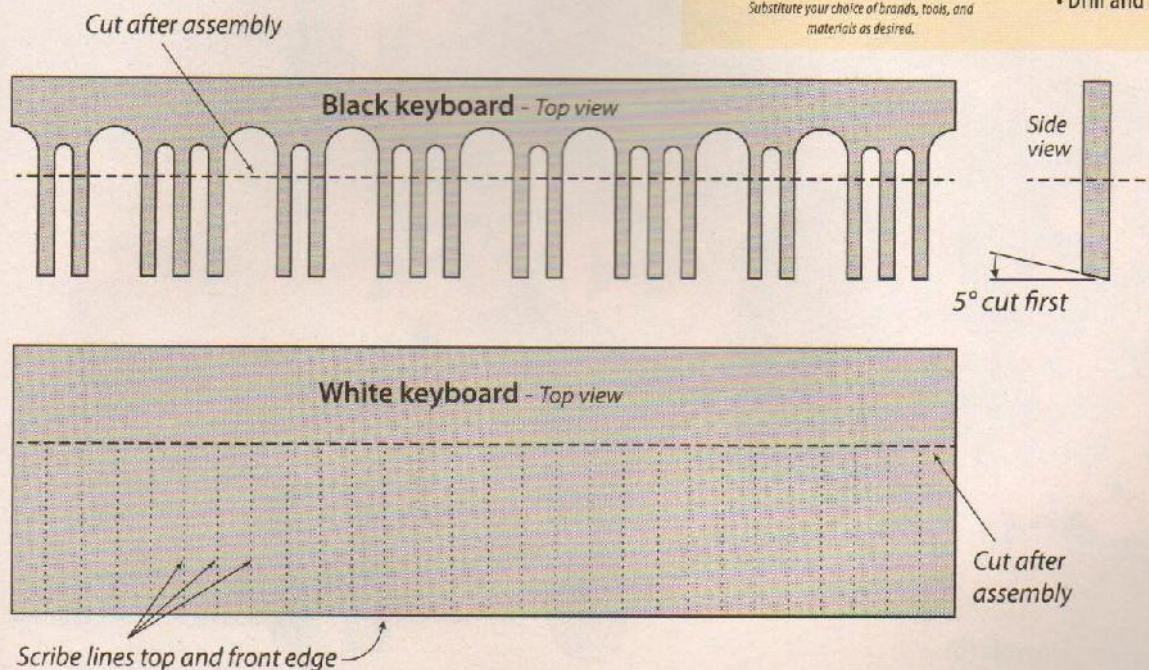
### Materials:

- Mahogany, 1 3/8" (34mm)-thick: body, 6" x 9 1/4" (152mm x 235mm)
- Mahogany, 5/16" (16mm)-thick: legs, 3 each 3/8" x 2 3/16" (16mm x 59mm); lyre, 1 1/4" x 2 7/8" (32mm x 73mm)
- Mahogany, 9/16" (11mm)-thick: leg tops, 3/8" x 2" (10mm x 51mm)
- Mahogany, 5/16" (8mm)-thick: keyboard end trim (no pattern), 2 each, 5/16" x 1/2" (8mm x 13mm)
- Mahogany, 1/4" (6mm)-thick: top, 6" x 8 7/16" (152mm x 214mm); lid support spacer, 1/4" x 3/4" (6mm x 19mm); hinge spacer (no pattern), 1/4" x 3/4" (6mm x 19mm); front spacer, 2 5/16" x 5 15/16" (59mm x 150mm); back spacer, 9/16" x 2 1/4" (15mm x 57mm)
- Mahogany, 1/8" (3mm)-thick: bottom, 6" x 9 1/4" (152mm x 235mm); front keyboard trim (no pattern), 1/8" x 5 1/2" (3mm x 140mm)
- Wenge, 1/8" (3mm)-thick: black keyboard, 1" x 4 7/8" (25mm x 124mm)
- Holly, 1/4" (6mm)-thick: white keyboard, 1" x 4 7/8" (25mm x 124mm)
- Wood dowel, 3/8" (3mm)-diameter: lid holder, 3 1/4" (83mm)-long; leg pegs, 4 each, 1" (25mm)-long; wheels, 3 each, 3/8" (10mm)-long; pedals, 3 each, 1/2" (13mm)-long
- Wood dowel, 5/16" (8mm)-diameter: lid holder support, 1" (19mm) long
- Brass hinges, 1/4" (6mm)-wide: 3/4" (19mm)-long; 3" (76mm)-long
- Spray adhesive
- Clear tape
- Wood glue
- Clear finish OR primer and high-gloss black paint
- Paint: white, black, gold, red (optional)
- Red flocking or velvet (optional)
- Sandpaper: assorted up to 400-grit
- Paste wax
- Epoxy
- Music box mechanism
- Grain filler (optional)

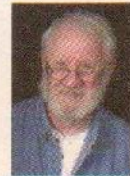
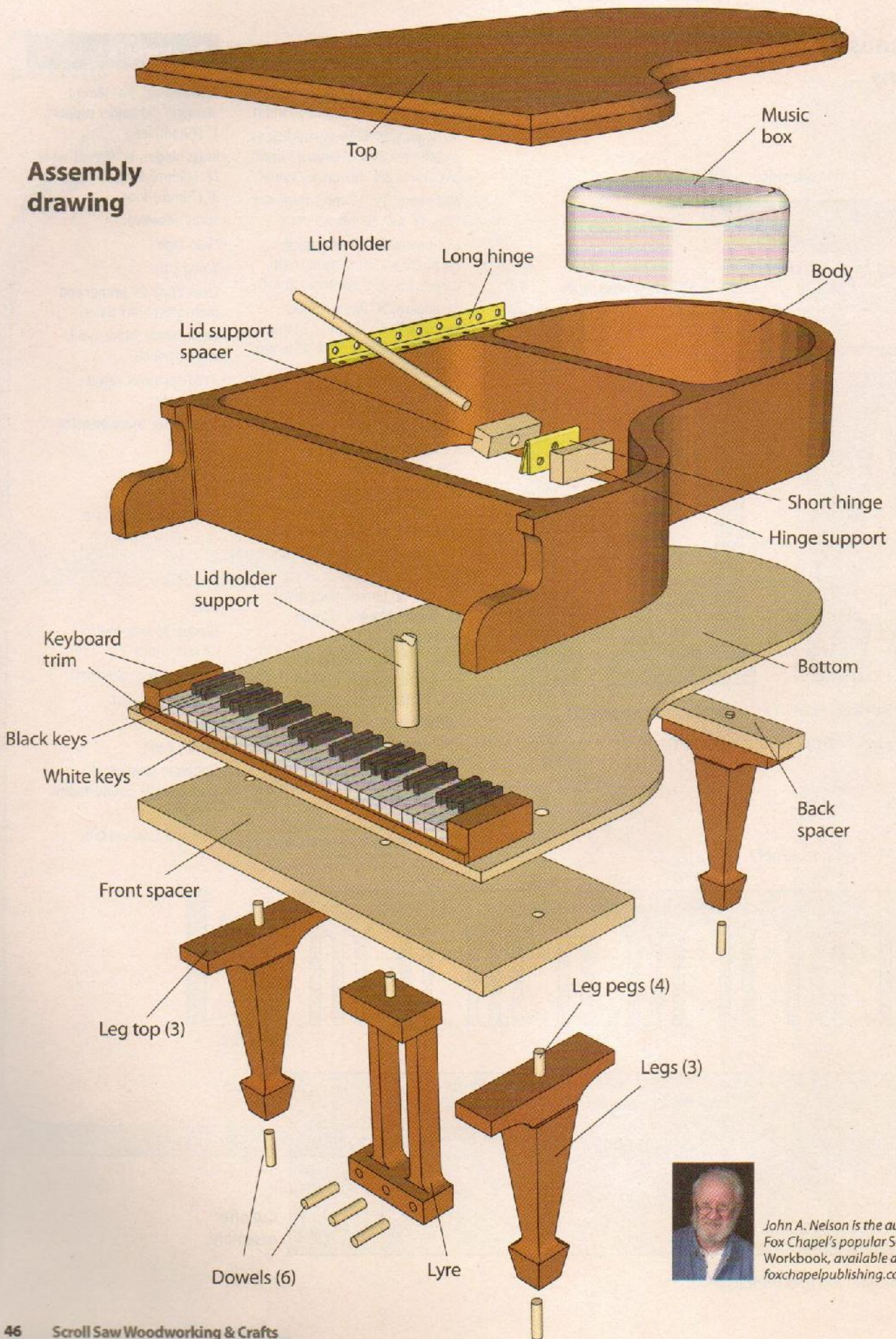
### Tools:

- Blades: #5 skip-tooth, #1 skip-tooth
- Coping saw or band saw
- Chisel and mallet
- Clamps
- Hobby knife
- Router or rotary tool with bit: 1/16" (2mm)-radius concave
- Drill and assorted bits

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



**Assembly drawing**



John A. Nelson is the author of Fox Chapel's popular Scroll Saw Workbook, available at [www.foxchapelublishing.com](http://www.foxchapelublishing.com).

# Creating a Victorian Picture Frame



**Delicate fretwork  
design dresses up  
any décor**

*By Sue Mey  
Cut by Norm Nichols*

**S**pecial photos deserve special frames. Highlight your favorite image and your scrolling skills by cutting this versatile Victorian-style frame. The frame can hold a photo or a mirror and looks equally nice hung on the wall or placed on a shelf or table.

Due to the swirling design, I suggest cutting this pattern from wood that doesn't have a noticeable grain. Norm Nichols used  $\frac{5}{8}$ " (16mm)-thick Texas pecan accented with an overlay made of  $\frac{1}{8}$ " (3mm)-thick narra wood. You could also cut the frame from thinner wood or stack the fretwork with a contrasting wood when you cut the perimeter to give it a decorative backing board.

When you cut the pieces, save the cutout from the frame opening to act as a backing for the photo. You may need to reduce the thickness of the backer or cut the backer from thinner wood if you plan to use the frame for a mirror or if you want to put glass in front of your photo. If you do not add glass, apply artist fixative to the photo for additional protection.

### Making the Frame

Start by covering the blanks with masking tape or blue painter's tape. Use spray adhesive or a glue stick to attach the patterns.

Next, use a  $\frac{1}{32}$ " (1mm)-diameter bit to drill a blade-entry hole for the frame center opening right on the pattern line. Drill the blade-entry holes for the larger frets with a  $\frac{1}{16}$ " (2mm)-diameter bit. Use a  $\frac{1}{32}$ " (1mm)-diameter bit for the smaller frets. Cut the overlay and the larger frets with a #5 blade. Cut the small frets with a #2/0 blade. Carefully cut the frame opening with the #5 blade—this cutout becomes the backing for your photo or mirror. Cut the perimeter lines of the patterns.

Remove the patterns and tape. Hand-sand all of the surfaces and remove the sanding dust. Apply natural or clear stain if desired. Allow the stain to dry, and then glue and clamp the overlay to the front of the frame. Apply several thin coats of clear spray varnish or spray lacquer to all of the surfaces of the frame.

To attach the backing to the frame, pre-drill openings for the small screws and fit the turn buttons to the back of the frame. Center and attach a small triangle picture hanger to the back of the frame with two-part epoxy. Allow the epoxy to dry. Or, use the top fret opening to hang the frame.

## Victorian frame overlay pattern

### Materials:

- Texas pecan,  $\frac{5}{8}$ " (16mm)-thick: frame, 8" x 11" (203mm x 279mm)
- Narra,  $\frac{1}{8}$ " (3mm)-thick: overlay, 5 $\frac{3}{4}$ " x 8 $\frac{3}{4}$ " (146mm x 222mm)
- Masking tape or blue painter's tape
- Temporary-bond spray adhesive or glue stick
- Wood glue
- Sandpaper: assorted grits
- Stain, such as Minwax (optional): natural or clear
- Finish: clear spray varnish or lacquer
- Artist's fixative (optional)
- Small triangle picture hanger

### Materials & Tools

- Two-part epoxy
- Small turn buttons and screws: 2 each

### Tools:

- Reverse-tooth blades: #5 and #2/0
- Drill press and bits:  $\frac{1}{16}$ " (2mm) and  $\frac{1}{32}$ " (1mm) diameters
- Clamps

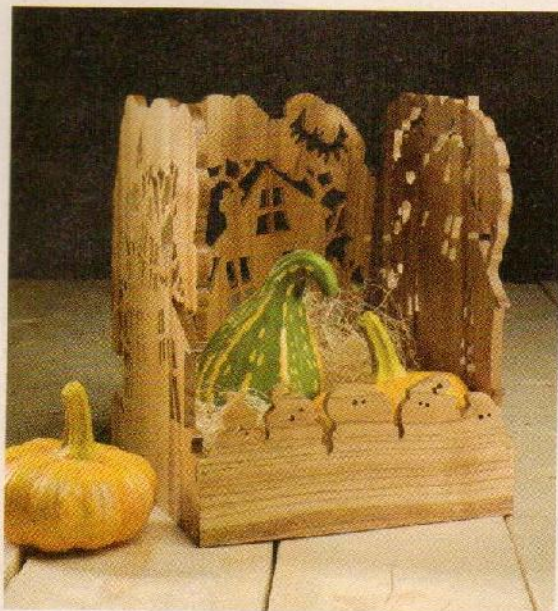
*The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.*



## Victorian frame pattern



*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](http://www.scrollsawartist.com). Her first pattern book, *Lighted Scroll Saw Projects*, is available from [www.schifferbooks.com](http://www.schifferbooks.com) and other outlets.*



# Ghost Town Candleholder

Eerie light flickers through the frets of this haunted Halloween decoration

By Lora S. Irish  
Cut by Ben Fink



**M**ake spooky luminaries or a creepy candy dish with this simple pattern. Stack-cut several sets of pieces to create multiple candleholders or boxes at once.

Cut the four sides, and then cut the bottom to fit within them. You can use plywood or hardwood for the sides, but I suggest you use plywood for the bottom to avoid the seasonal expansion and contraction of the wood that can push the sides apart. Use glue and small brads or small screws to attach the front and back to the sides and then to the bottom. If you use plywood, paint or spray-paint the pieces black or decorate them as desired.

I suggest using battery-powered tea lights or jar candles only; open flames are dangerous in wood holders.



## Materials & Tools

### Materials:

- Plywood,  $\frac{1}{8}$ " to  $\frac{1}{4}$ " (3mm-6mm)-thick: front,  $3\frac{3}{4}$ " x 8" (95mm x 203mm); back, 8" x  $10\frac{1}{4}$ " (203mm x 260mm); sides, 2 each,  $7\frac{1}{2}$ " x  $10\frac{1}{4}$ " (191mm x 260mm); bottom (no pattern),  $7\frac{1}{2}$ " x  $7\frac{1}{2}$ " (191mm x 191mm)
- Sandpaper

- Glue
- Small brads or screws
- Spray paint or finish of choice

### Tools:

- Blades: #2 reverse-tooth
- Clamps
- Drill and assorted small bits

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

Patterns for the **GHOST TOWN CANDLEHOLDER** are in the pullout section.



Lora S. Irish is a nationally known artist and author. Her Fox Chapel Books include North American Wildlife Patterns for the Scroll Saw and World Wildlife Patterns for the Scroll Saw. Visit Lora's digital pattern warehouse, [www.CarvingPatterns.com](http://www.CarvingPatterns.com), which features patterns free and for purchase.



# Making Mischievous Monkey Ornaments

**Amusing project introduces  
basic inlay techniques**

*By Dan and Ruth Johnson*

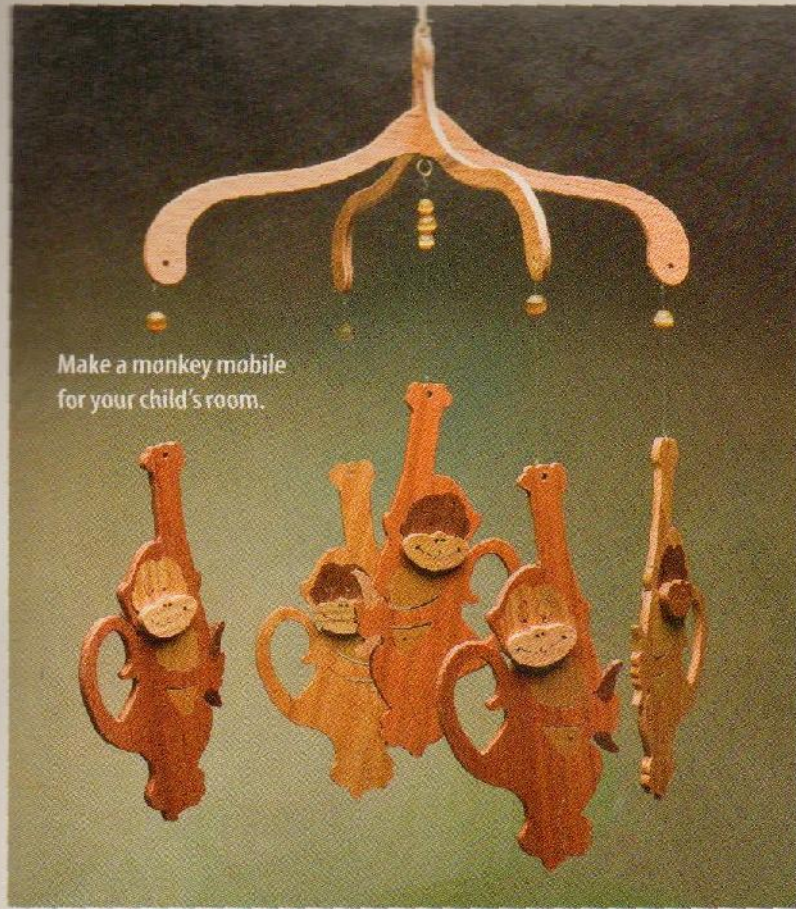
Something about monkeys makes people smile. I suspect it might be the perception of happy-go-luckiness that surrounds monkeys. These ornaments are an attempt to capture that sense of fun. You will stack-cut three monkeys; use them individually as ornaments or fashion them into a mobile; reduce the pattern to make pins. If desired, use the second nose/mouth overlay pattern to make double-sided ornaments.

For ornaments like this, I prefer  $\frac{3}{16}$ " (5mm)-thick wood. I know that  $\frac{1}{4}$ " (6mm)-thick wood is more commonly available, but I think thicker ornaments look bulky. You can use a planer to reduce the thickness of the blanks or simply ask your supplier to send the stock through the planer an extra time.

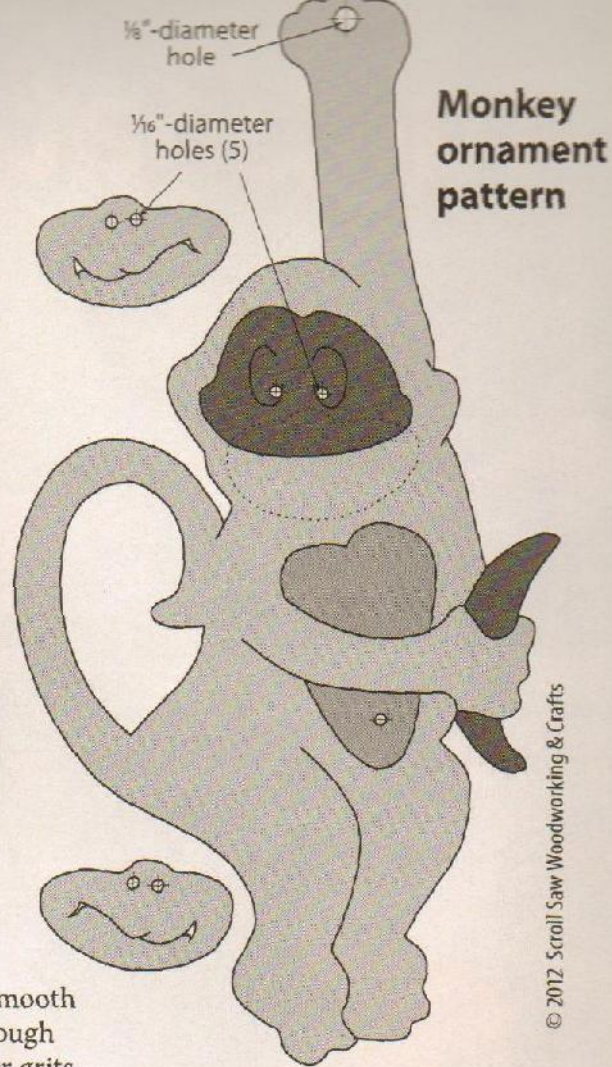
## **Making the Monkeys**

To start, stack three contrasting varieties of hardwood on top of each other, secure the stack, and attach the patterns to the stack.





Make a monkey mobile for your child's room.



© 2012 Scroll Saw Woodworking & Crafts

(See page 14 for several methods of securing stacks and attaching patterns.) Drill the holes as indicated on the patterns, and then drill blade-entry holes for the mouth, eye piece, and tail opening.

Cut the mouth and then the perimeter of the nose/mouth overlay(s). Next, cut the veining lines near the eyes, the eye piece, and the opening beside the tail. Cut the perimeter of the body and the veining lines between the legs and near the head. Then, cut the two parts of the banana. Finally, cut the veining lines that outline the arm and continue those cuts to remove the chest and stomach pieces.

Mix and match the three contrasting colors and dry-assemble three monkeys. Apply wood glue to the edges of the pieces and glue the ornaments together. Do not glue on the nose/mouth overlays yet.

I use a drum sander to smooth the pieces and remove any rough edges. Use progressively finer grits of sandpaper up to 220 grit. Then, use a  $\frac{1}{16}$ " (2mm)-radius brass-tip round-over bit in a router table to remove the sharp corners of the monkeys and nose/mouth overlays. Hand-sand any rough edges with 220-grit sandpaper.

Glue and clamp the nose/mouth overlays on both sides of the faces. String cord through the top holes and knot. Hang the ornaments and apply a spray finish.



Daniel and Ruth Johnson live with their many dogs, cats, and pot-bellied pigs in south-central Indiana between the Brown County State Park and the Hoosier National Forest. They participate in many art shows each year in Indiana, Illinois, and Ohio. Daniel has been making a living as a woodworker since 1994.

### Materials & Tools

#### Materials:

- Walnut,  $\frac{3}{16}$ " (5mm)-thick: 3" x 6" (76mm x 152mm)
- Cherry,  $\frac{3}{16}$ " (5mm)-thick: 3" x 6" (76mm x 152mm)
- Oak,  $\frac{3}{16}$ " (5mm)-thick: 3" x 6" (76mm x 152mm)
- Wood glue, such as Titebond II
- Sandpaper: assorted to 220-grit
- Hemp cord
- Spray finish, such as lacquer

#### Tools:

- Blades, such as Pebeco #5 reverse-tooth
- Drill and bits:  $\frac{1}{16}$ " (2mm) and  $\frac{1}{8}$ " (3mm) diameters
- Drum sander
- Router in router table and  $\frac{1}{16}$ " (2mm)-radius brass-tip round-over bit
- Clamps

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

#### SPECIAL SOURCES:

A variety of wood kits for this project are available at [www.thinwoods.com](http://www.thinwoods.com).

# Tugboat Puzzle

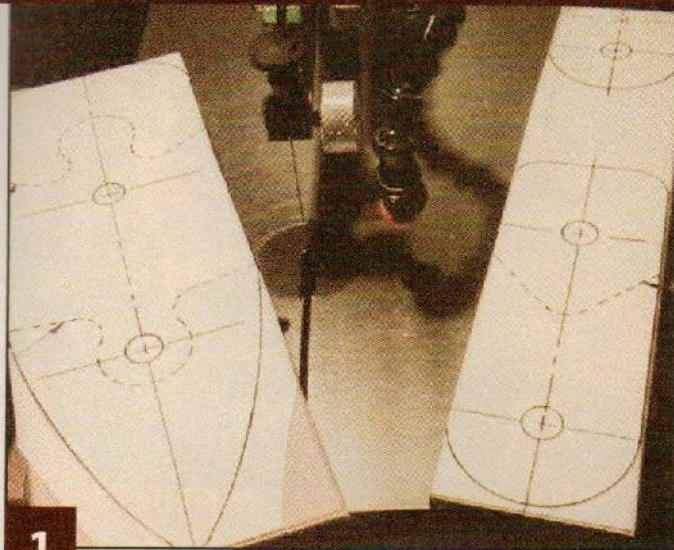


## Simple puzzle doubles as a toddler toy

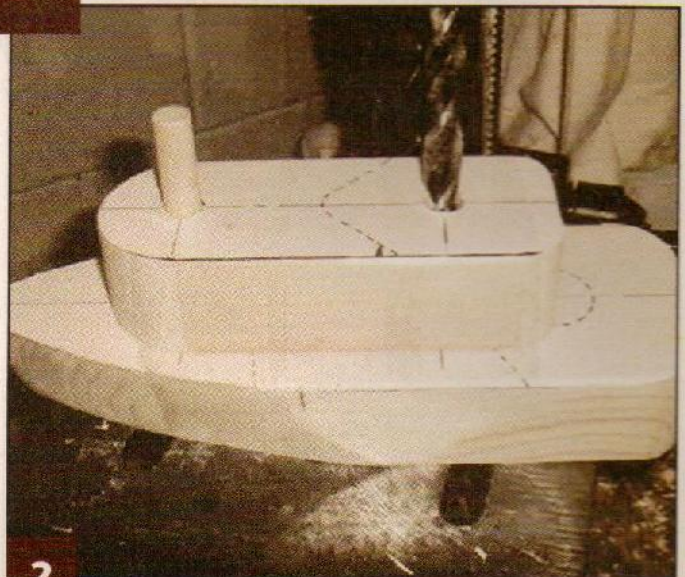
*By Jim Sonnleitner*

**T**ugboats are used to maneuver barges up and down rivers and to help ships dock in harbors. This tough little tugboat puzzle is easy to make and simple for young children to put together. You can push this toy around the floor, but don't go near the water!

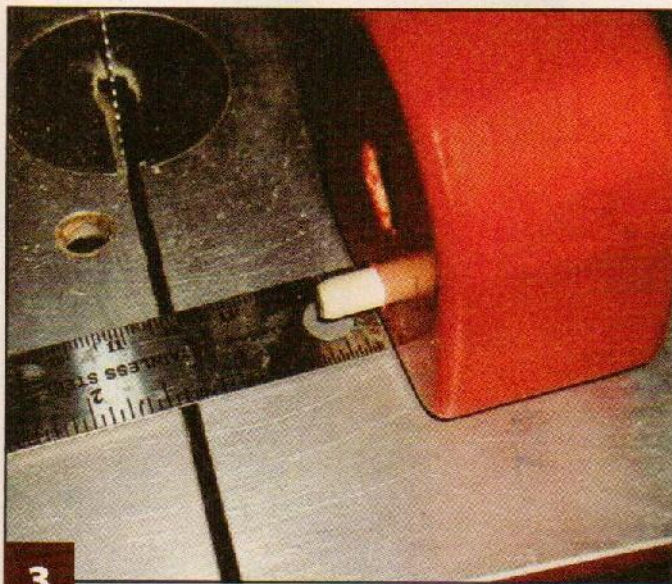
## TUGBOAT: CUTTING THE PIECES



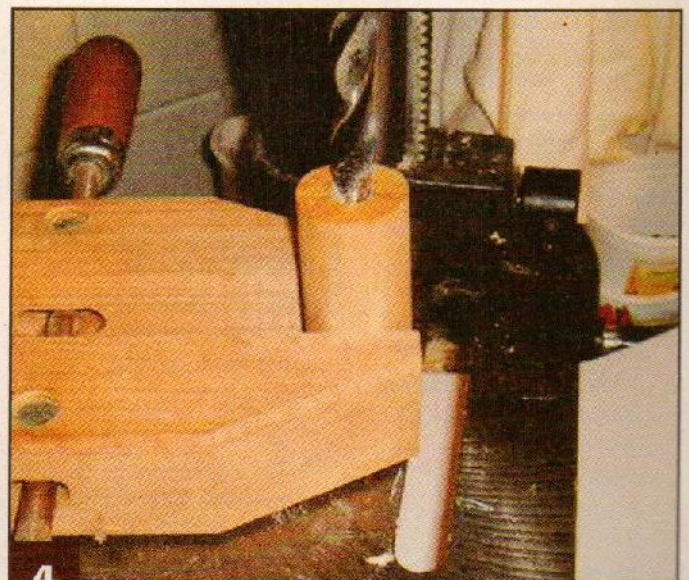
**1** **Cut the pieces.** Attach the patterns to the blanks with temporary-bond spray adhesive. Cover the patterns with clear packaging tape. Make the tapered shape of the boat hull bow (pointed end) by cutting it on an angle. Tilt the left side of the saw table down 10°. Using a #9 blade and starting at the puzzle lobe line, cut the bow in a counterclockwise direction until you reach the second lobe line. Return the table to 0° and make sure it is perfectly square with the blade. Cut the rest of the hull, the deckhouse, and the pilohouse. Do not cut the puzzle lobes yet. Use sandpaper to round the hull and any sharp corners.



**2** **Drill the first two holes.** Cut the dowels to length. Line up the hull and deckhouse blanks and tape them in position. Use a brad-point bit to drill ½" (13mm)-diameter holes where indicated. You may need to remove the top blocks to be able to drill to the depth indicated on the pattern. When you've drilled one hole, insert a ½" (13mm)-diameter dowel into it to help hold the piece together while you drill the second hole. Most dowels are made in metric sizes, so they should fit into holes drilled with imperial-sized bits. If the dowels stick, sand them lightly.



**3** **Add the dowels to the pilohouse.** Drill a ½" (13mm) hole through the pilohouse where indicated. Drill a ⅜" (7mm)-diameter hole where indicated and glue a ¼" (6mm)-diameter dowel in place. Make sure the dowel protrudes ⅜" (10mm) from the bottom. Place the pilohouse in position on the deckhouse and tap the top of the pilohouse with a hammer to mark the place to drill the ⅜" (7mm)-diameter hole in the deckhouse. Drill the hole where indicated.



**4** **Drill the hole in the stack piece.** I use a 1⅜" (35mm)-diameter closet pole for the stack, but any dowel with a diameter of 1¼" to 1½" (32mm to 38mm) will work. Clamp the stack piece securely and drill a ½" (13mm)-diameter hole in the dowel. Glue one ½" (13mm)-diameter dowel into the stack and the other ½" (13mm)-diameter dowel into the pilohouse. The ½" (13mm)-diameter dowels should protrude 2½" (64mm). Glue a mushroom-shaped screw hole plug in the hole on the top of the pilohouse.



**5**

**Cut the puzzle lobes.** Paint the pieces as desired, adding windows if you like. Replace the patterns onto the hull and deckhouse using temporary-bond spray adhesive. You may need to use a new pattern. Cut the puzzle lobes slowly and avoid putting side pressure on the blade.



**6**

**Finish the project.** Sand any rough spots and touch up the paint if necessary. Redrill the 1/2" (13mm)-diameter holes to clear out any paint.

**TIP**

**KEEP IT CLEAN**

*Cut the puzzle shapes after painting the project because it reduces the amount of cleanup in the cut area. You can also wax the saw table to make it easier to move the pieces and to keep the pieces clean.*

**Materials:**

- Pine, 1 1/2" (38mm)-thick: boat hull, 3 1/2" x 10" (89mm x 254mm); deck house, 2 1/4" x 6" (57mm x 152mm); pilot house, 2 1/4" x 2 1/2" (57mm x 64mm)
- Dowel, 1 1/4" to 1 1/2" (32mm to 38mm)-diameter: stack, 3" (76mm) long
- Dowel, 1/2" (13mm)-diameter: assembly dowels, 2 each, 3 1/2" (89mm) long
- Dowel, 1/4" (6mm)-diameter: pilothouse alignment dowel, 3/4" (19mm) long

**Materials & Tools**

- Temporary-bond spray adhesive
- Clear packaging tape
- Mushroom-shaped hole plug, 1/2" (13mm)-diameter
- Acrylic paints, nontoxic
- Wood glue

**Tools:**

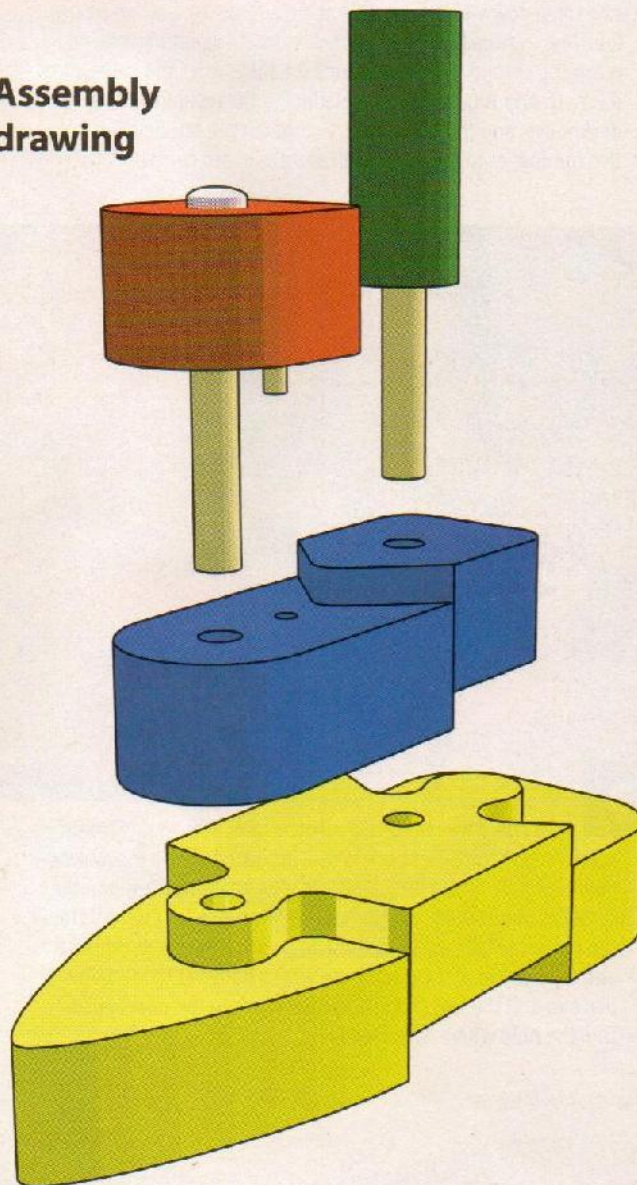
- Blades, such as #9 Olson PGT: #9 reverse-tooth
- Drill press with bits: 1/2" (13mm) and 3/32" (7mm)-diameter
- Paintbrushes

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

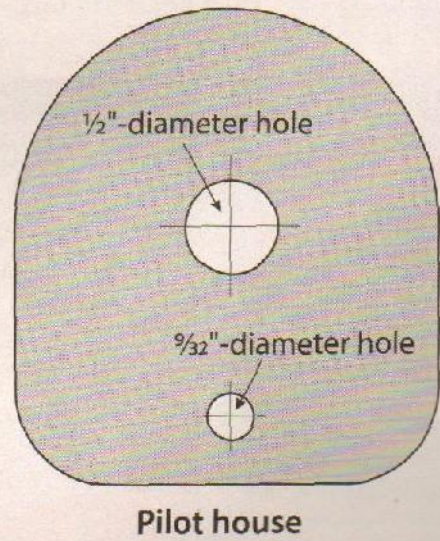
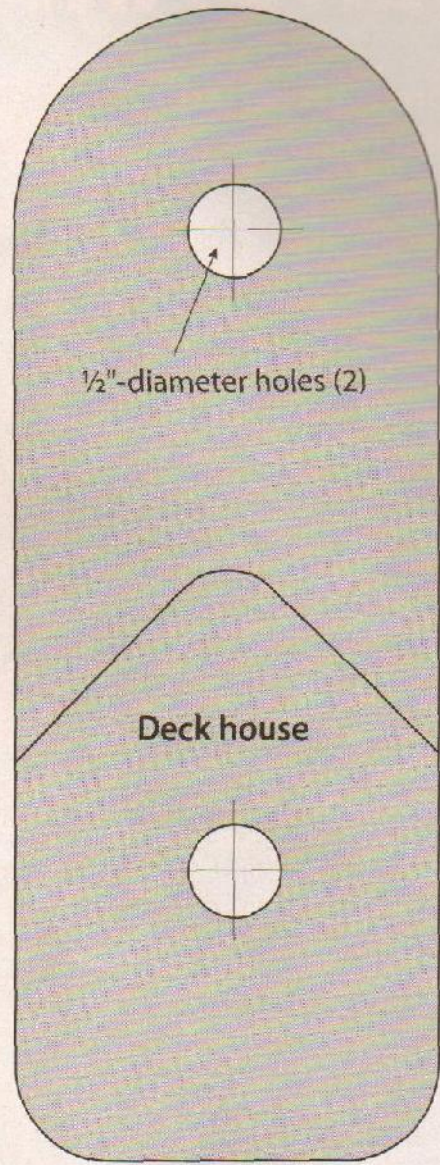
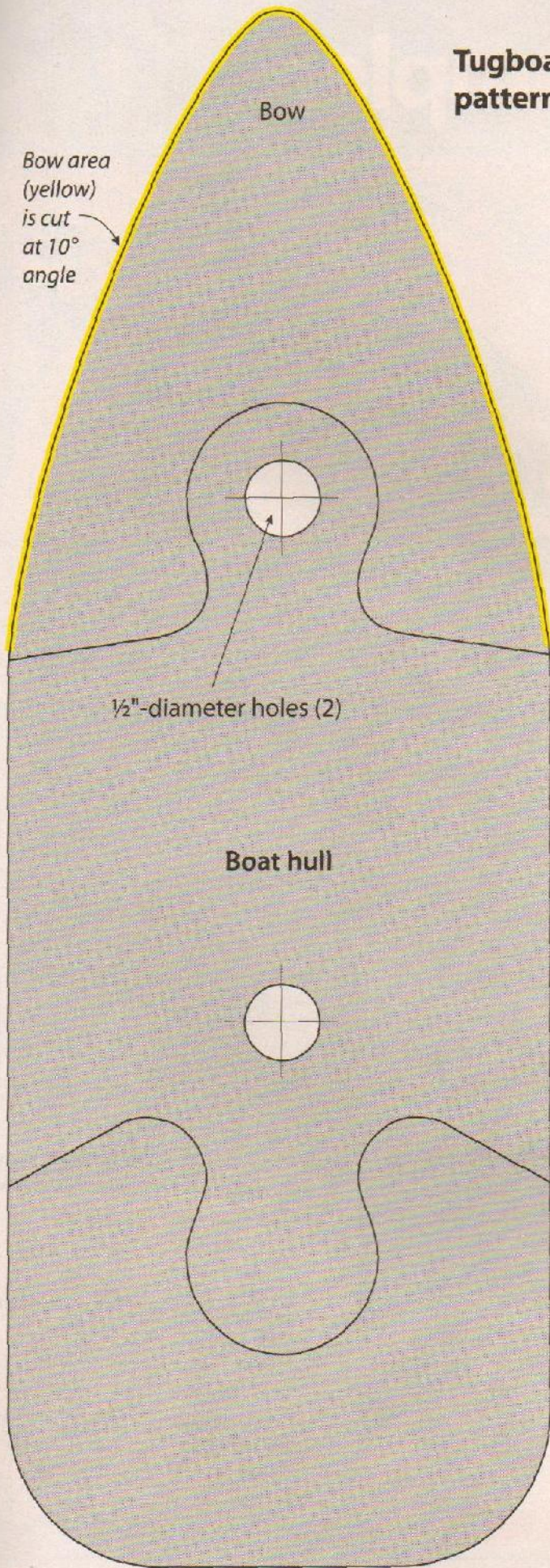


*Jim Sonnleitner, a pilot and full-blown airplane nut, lives in Wisconsin.*

**Assembly drawing**



# Tugboat puzzle patterns



# Noah's Ark Sampler

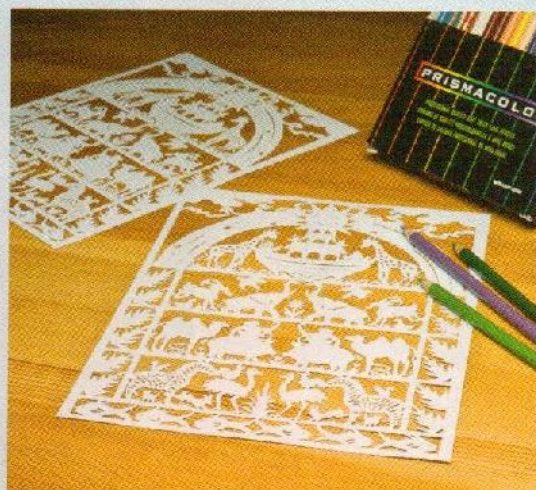
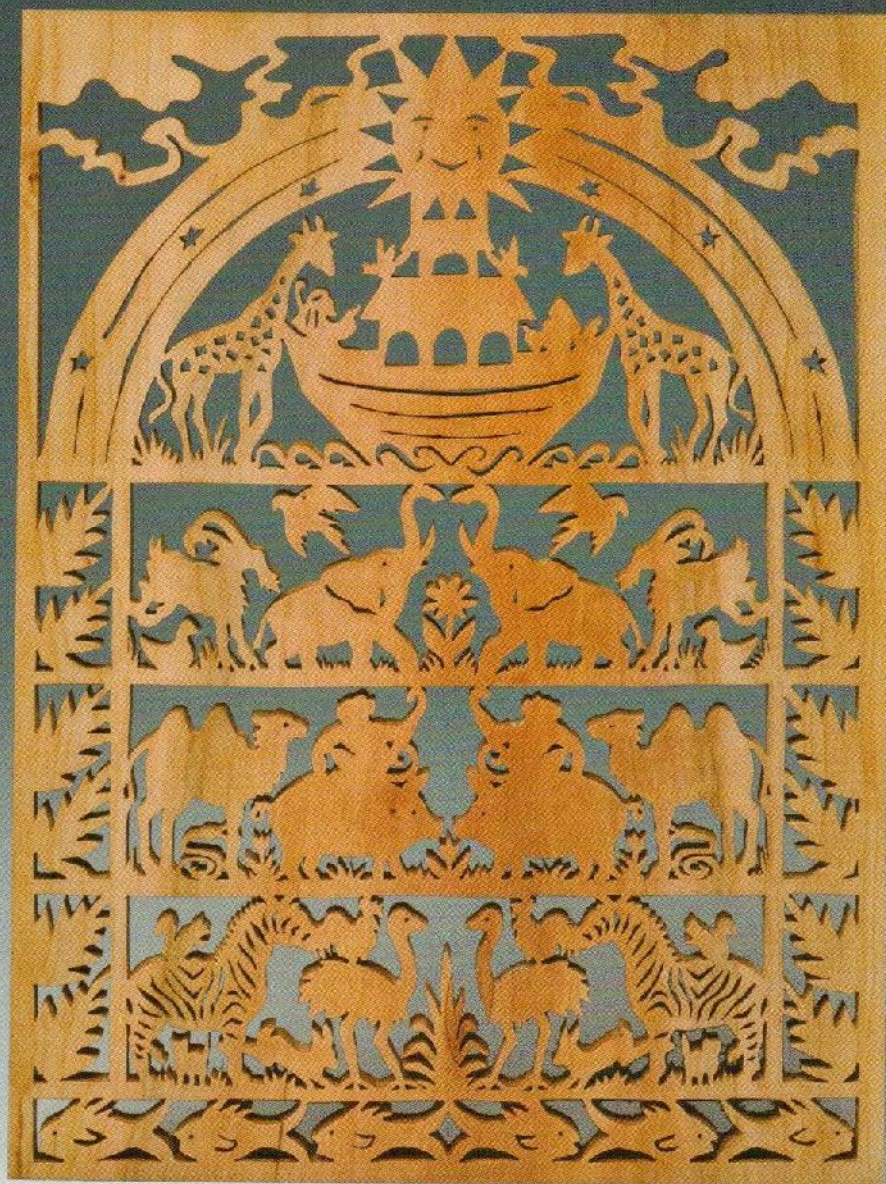
Parable project is perfect painted or plain

By Alison Tanner  
Cut by Leldon Maxcy  
Painted by Donna Lloyd

This classic Bible story is a favorite of most children. Cut the piece from thicker hardwood to make an impressive wall hanging. Or, cut the sampler from plywood and paint the individual animals. You could also stack-cut this design by sandwiching cardstock between two pieces of plywood; let kids decorate the paper versions with markers, colored pencils, or paint. I'd love to see what you do with the pattern; share your photos at [www.woodcarvingillustrated.com/forum](http://www.woodcarvingillustrated.com/forum).



Alison Tanner began cutting paper at the age of 8, inspired by a visit to the home of fairy-tale writer Hans Christian Andersen in Denmark. Alison is the owner/creator of Papercuttings by Alison, which carries the largest variety of patterns and supplies for the scissorist. For more of her work, visit [www.papercuttingsbyalison.com](http://www.papercuttingsbyalison.com).



## Materials & Tools

### Materials:

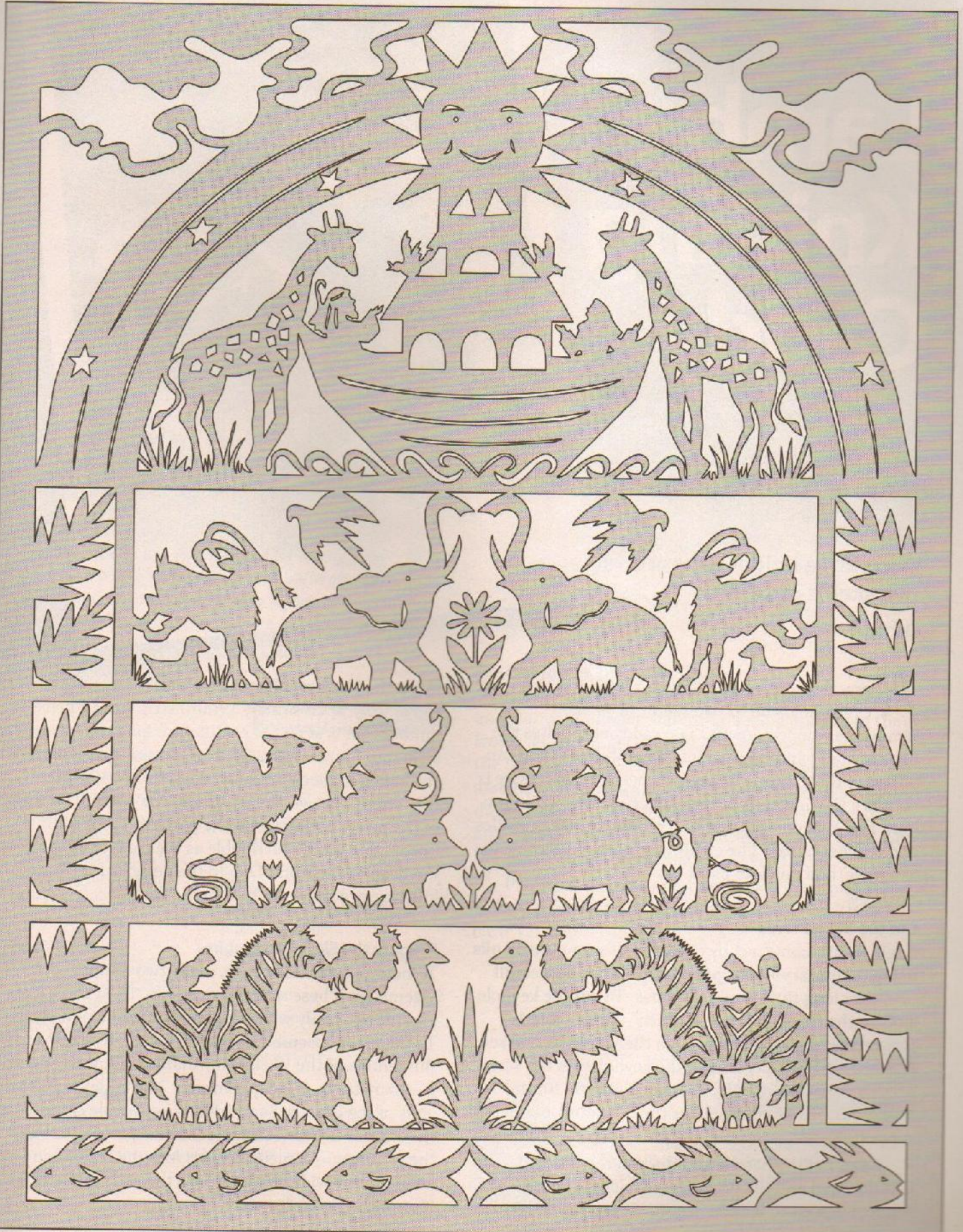
- Hardwood, 1/2" to 3/4" (13mm-19mm)-thick, OR plywood, 1/8" to 1/4" (3mm-6mm)-thick: 7 1/2" x 9 1/2" (191mm x 241mm)
- Spray adhesive
- Clear spray finish or acrylic paints
- Sandpaper

### Tools:

- Blades: #1 reverse-tooth
- Drill and assorted small bits
- Paintbrushes

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

# Noah's ark pattern



# Lamb Knitting Caddy

**Decorative holder supports two skeins of yarn**

*By Paul Meisel*

**A** practical project that knitters will love, this caddy holds up to two skeins of yarn on removable wooden dowels. The caddy eliminates the time wasted winding yarn into a ball because you can pull yarn directly off the skein as needed. Plus, there is no more chasing balls of yarn that roll away while you knit. Brackets on each end neatly hold knitting needles and crochet hooks. The caddy is easy to cut, simple to assemble, and quick to paint.

## **Cut the Main Pieces**

Begin by attaching a copy of each pattern to the blanks using temporary-bond spray adhesive. Using a scroll saw, cut along the heavy solid lines. To cut the keyhole slots in the front and back, drill  $\frac{5}{16}$ " (8mm)- and  $\frac{5}{8}$ " (16mm)-diameter holes through the blanks as marked. After drilling, finish cutting the keyholes on the scroll saw. Drill  $\frac{1}{4}$ "-diameter by  $\frac{3}{8}$ "-deep (6mm by 10mm) holes in the front and back for the  $\frac{1}{4}$ " (6mm)-diameter support dowels.

Next, cut the handle and discard the inside part. Cut the head and the head overlay piece. Then, cut the support dowels to length.

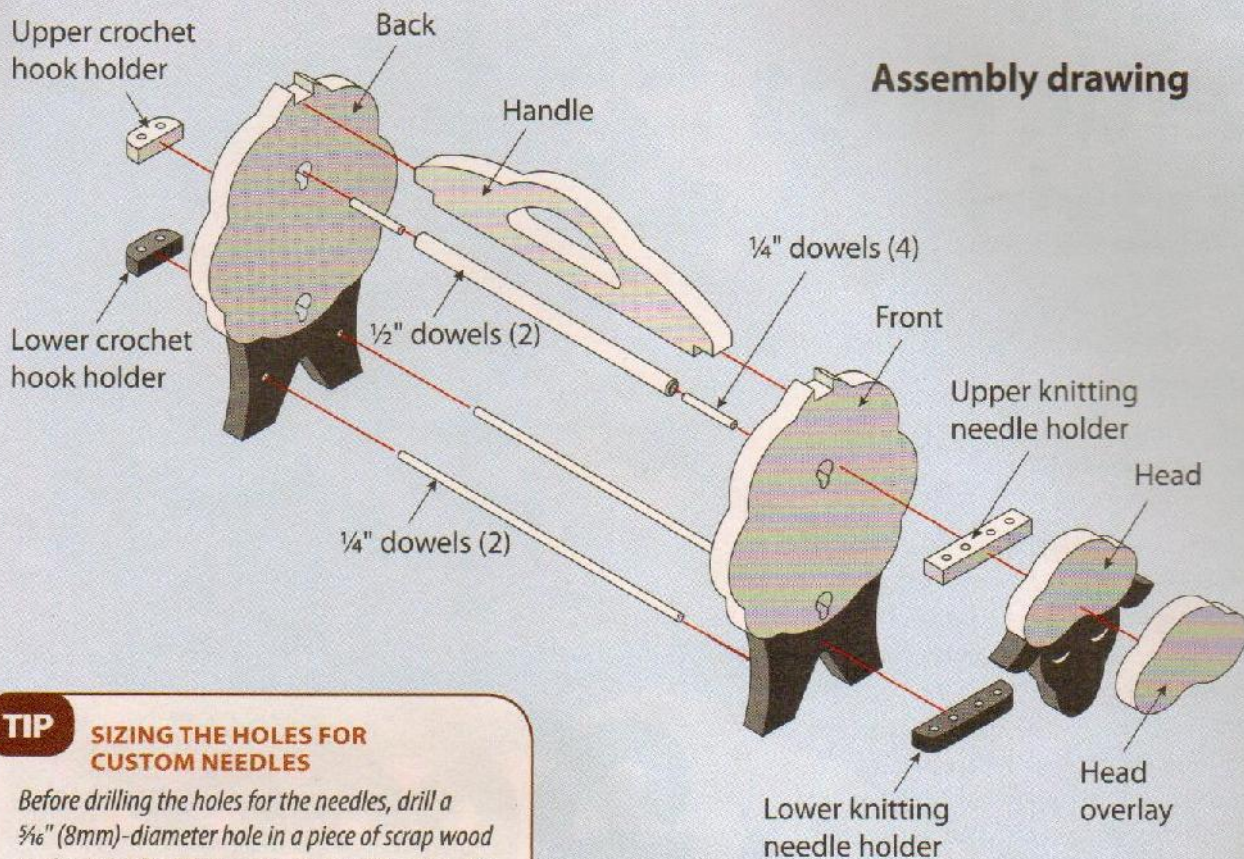


## **Make the Hook and Needle Holders**

Rip a  $\frac{3}{4}$ " by  $\frac{3}{4}$ " (19mm by 19mm) strip from a piece of lumber that is at least 12" (305mm) long. Then, cut the strip into four holders. Drill  $\frac{5}{16}$ " (8mm)-diameter holes through two pieces and to a depth of  $\frac{3}{8}$ " (10mm) in the remaining two pieces. Round the corners on three of the pieces as shown on the pattern. The fourth, unrounded piece will double as the cleat to attach the head to the front. Due to the design of the head, knitting needles work best in the front.

## **Prepare the Skein Assemblies**

To hold two skeins of yarn, make two dowel assemblies. These assemblies rest in the keyhole slots and lift out easily when you need to load a new skein. To make the assemblies, cut the dowels to size. Mark the centers of the  $\frac{1}{2}$ " (13mm)-diameter dowels and drill  $\frac{1}{4}$ "-diameter by 1"-deep (6mm by 25mm) holes in both ends of the dowels. Sand a  $\frac{1}{16}$ " (2mm)-wide chamfer on the ends of the  $\frac{1}{2}$ " (13mm)-diameter dowels, and glue the  $\frac{1}{4}$ " (6mm)-diameter dowels into the holes. Sand a  $\frac{1}{16}$ " (2mm)-wide chamfer onto the ends of the  $\frac{1}{4}$ " (6mm)-diameter dowels.



## Assembly drawing

### TIP

#### SIZING THE HOLES FOR CUSTOM NEEDLES

Before drilling the holes for the needles, drill a  $\frac{5}{16}$ " (8mm)-diameter hole in a piece of scrap wood to check the fit of the needles that will be placed in the holder. Increase or decrease the hole diameter to accommodate fatter or thinner needle diameters.

#### Materials:

- Pine board,  $\frac{3}{4}$ " (19mm)-thick: 10" x 48" (254mm x 1219mm)
- Birch dowel,  $\frac{1}{4}$ " (6mm)-diameter: supports, 2 each 11 $\frac{1}{8}$ " (282mm); skein assemblies, 4 each 2" (51mm)
- Birch dowel,  $\frac{1}{2}$ " (13mm)-diameter: skein assemblies, 2 each 10 $\frac{1}{8}$ " (257mm)
- Acrylic paints, such as Delta Ceramcoat: black (#02506)\*, white (#02505)\*, clear satin varnish (#07003)\*
- Sandpaper

#### Materials & Tools

- Wood glue
- Wire brads, 17-gauge: 1 $\frac{1}{4}$ " (32mm)-long
- Spray adhesive, temporary-bond

#### Tools:

- Blades, such as Olson: #5 skip-tooth (#446-R)\*
- Drill press and bits:  $\frac{1}{4}$ " (6mm),  $\frac{5}{16}$ " (8mm),  $\frac{3}{8}$ " (16mm) diameters
- Paintbrushes

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

#### SPECIAL SOURCES:

Items marked with an asterisk (\*) are available from Meisel Hardware Specialties. To order parts or to request a catalog, visit their website, [www.meiselwoodhobby.com](http://www.meiselwoodhobby.com), or call 800-441-9870.

#### Assemble and Finish the Caddy

Sand all of the pieces. Refer to the pattern and glue and clamp the upper and lower needle holders to the front, the upper and lower crochet hook holders to the back, the head overlay to the head, and the head assembly to the upper needle holder. Glue the support dowels into the  $\frac{1}{4}$ " (6mm)-diameter holes in the front and back pieces. Glue and nail the handle in place. Slip the skein assemblies in place to check the fit.

Paint your lamb as desired. I used black and white Delta Ceramcoat acrylic paints top-coated with Delta clear varnish.

Patterns for the **LAMB KNITTING CADDY** are in the pattern pullout section.



Paul Meisel of Mound, Minn., has designed more than 3,000 woodworking plans. For more ideas of what to build, to order parts, or to request a catalog, call 800-441-9870, or visit his website, [www.meiselwoodhobby.com](http://www.meiselwoodhobby.com).

# Cutting a Celtic Knot Puzzle

## Simple design is challenging to assemble

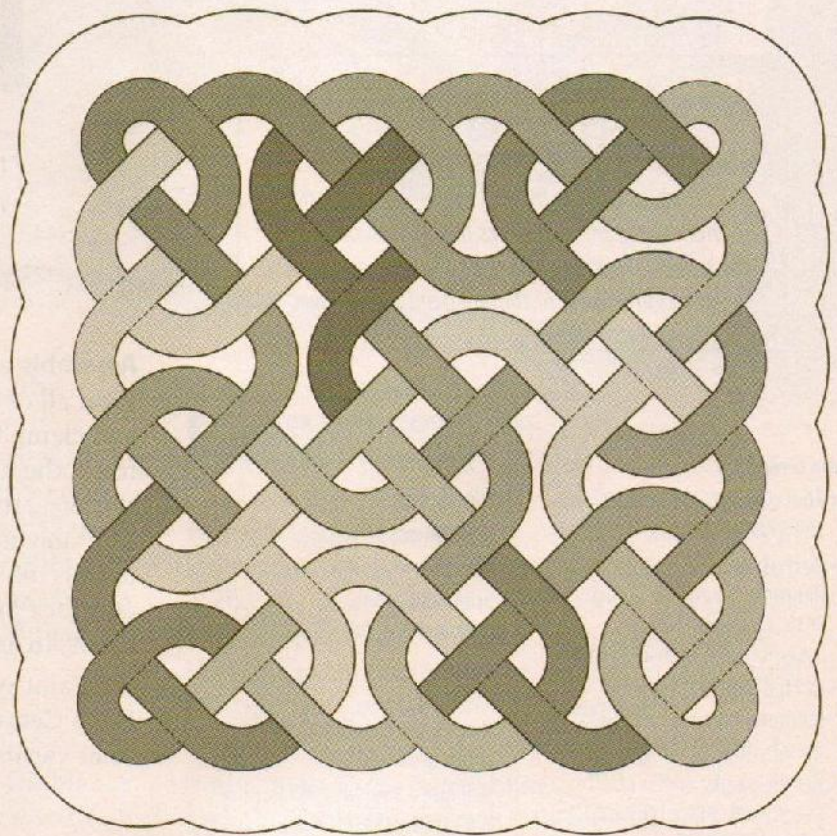
By William Waite

Cut by Rolf Beuttenmuller

**B**ased on an interlacing Celtic knot design, this puzzle fits together at least two ways. Seeing the pieces that fit against the edge makes assembly a little easier, but this puzzle is still a challenge.

To make the puzzle, attach a pattern to a light wood such as Baltic birch plywood. Stack the plywood with a piece of walnut and cut around the perimeter of the blank. Separate the stack, drill blade-entry holes as needed, and cut the puzzle pieces from the plywood, reserving the waste wood around the perimeter as the puzzle frame.

There are several ways to add the detail lines on both sides of the puzzle pieces: engrave them with a rotary-power carver, burn them with a woodburner, or draw them with a permanent marker. Align the frame with the puzzle bottom and glue it in place; clamp it until dry. Sand the pieces to remove any rough spots. Finally, apply your choice of finish. Note that you can see the dark walnut base through the spaces between the pieces, which creates a pleasing contrast of wood colors.



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## Celtic knot puzzle pattern

### Materials:

- Baltic birch plywood, ¼" (6mm)-thick; puzzle and frame, 4½" x 4½" (114mm x 114mm)
- Walnut, ¼" (6mm)-thick; bottom, 4½" x 4½" (114mm x 114mm)
- Sandpaper: 220-grit
- Finish

### Materials & Tools

#### Tools:

- Blades: #1 reverse-tooth
- Drill or drill press and bits

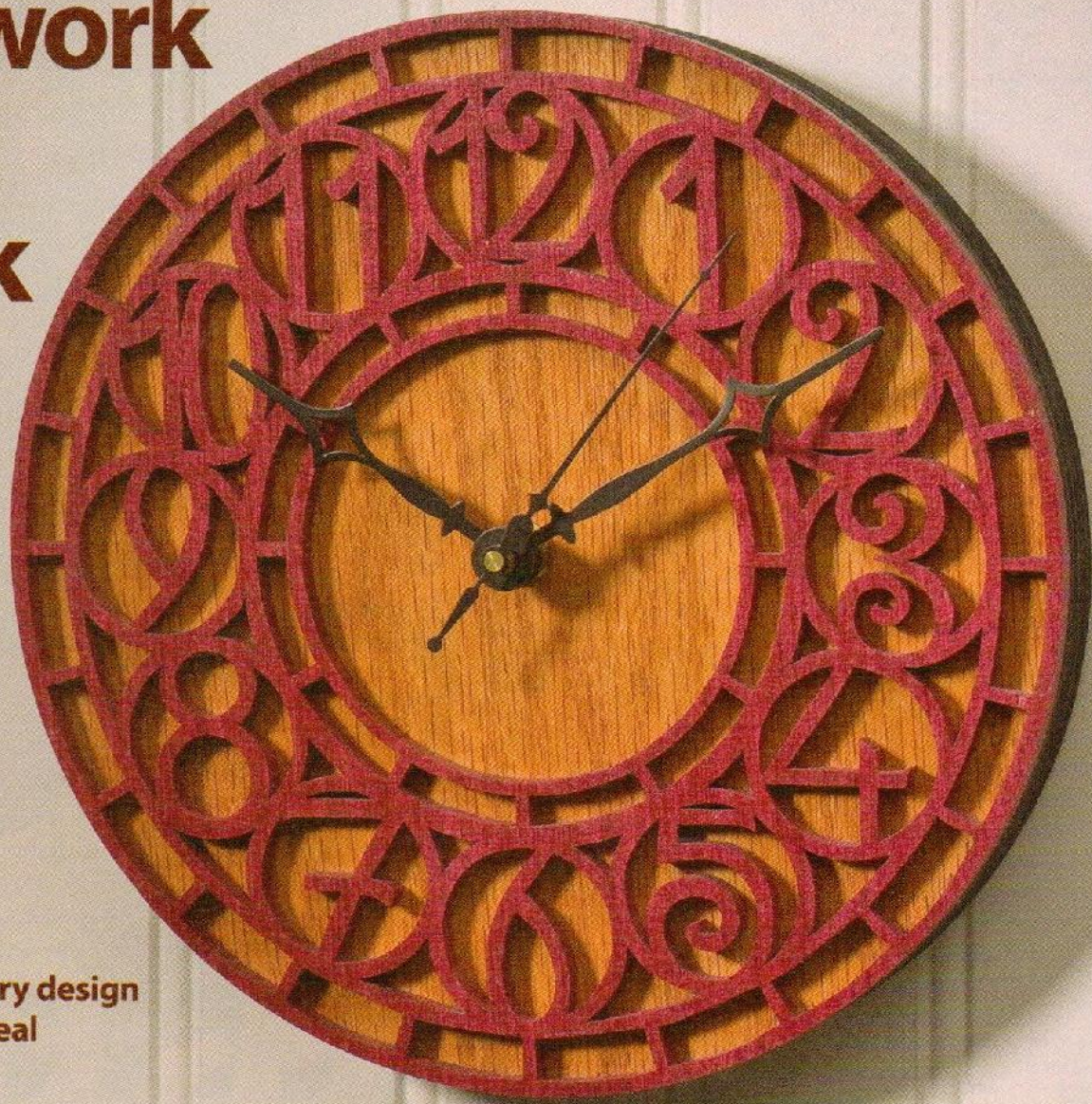
*The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.*



William Waite of Prairie du Chien, Wis., has designed hundreds of puzzles and brainteasers. For more of William's work, visit his website at [www.puzzlemist.com](http://www.puzzlemist.com).



# Fretwork Wall Clock



**Early 20th-century design  
has modern appeal**

*By John A. Nelson*

*Cut by Leldon Maxcy*

**A** reproduction of a historic design, this Art Deco-style clock is simple enough that beginning scrollers can cut it. Because you can stack-cut the components, it is also a good project for seasoned scrollers to sell at craft shows or to give as gifts.

The most difficult component to cut is the clock face. You can cut it from any wood; I've even seen it cut from acrylic plastic. For beginners, I suggest using thin plywood because it is durable in the thin areas. Here, test cutter Leldon Maxcy used purpleheart for the clock overlay and red oak plywood for the clock back.

Transfer the pattern to the clock overlay blank and cut the frets. Determine the center of the clock back and the backing board by drawing diagonal lines from corner to corner on both blanks. The two lines will meet in the center of the blanks. Stack the clock

overlay, the clock back, and the backing board and cut around the perimeter of the clock. Separate the stack and sand the pieces until smooth.

Follow the manufacturer's instructions to drill a hole in the center of the clock back and the backing board for the quartz movement. Place the mechanism in position on the backing board and trace around its perimeter. Cut just outside the traced line to inset the movement into the backing board. Glue and clamp the clock overlay to the clock back and allow the glue to dry. Then, glue and clamp the clock back to the backing board. Apply your choice of finish, allow it to dry, and then assemble the clock mechanism. If the movement does not include a hanger, attach a D-ring hanger to the backing board.

## Fretwork wall clock pattern



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### Materials:

- Baltic birch plywood, 1/2" (13mm)-thick: backing board, 8 1/4" x 8 1/4" (209mm x 209mm)
- Red oak plywood, 1/4" (6mm)-thick: clock back, 8 1/4" x 8 1/4" (209mm x 209mm)
- Purpleheart, 1/8" (3mm)-thick: clock overlay, 8 1/4" x 8 1/4" (209mm x 209mm)
- Sandpaper
- Wood glue
- Finish
- Clock movement, quartz: 3/4" (19mm)-long shaft and 2 1/4" (57mm)-long hour hand
- Hanger, D-ring (optional)

### Materials & Tools

#### Tools:

- Blades: #1 reverse-tooth
- Drill and assorted bits
- Clamps

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



John A. Nelson is the author of Fox Chapel's popular

Scroll Saw Workbook, available at [www.foxchapelublishing.com](http://www.foxchapelublishing.com).

# Oriole Feeder Box

Lure colorful birds with this inexpensive and easy feeder

By Paul Meisel

Among the most colorful birds in North America, orioles are a welcome sight in backyards across the continent. The male oriole has a brilliant orange and black body and black head, while the female has an olive-brown top and burnt-orange and yellow underside. Those of us who live in the northern states look forward to seeing the first oriole each year, because their appearance signals the coming of spring. This attractive feeder, which looks like a miniature wishing well, should draw orioles in droves.

Orioles eat caterpillars and other insects, but they like fruit and nectar as well. They are attracted to feeders that contain oranges, grape jelly, or peanut butter. With that in mind, I designed this feeder with a 2½" (64mm)-long finishing nail on each side to hold a slice of orange; I positioned the perches below and to each side of the fruit. Use a small dish-shaped plastic plug to hold jelly or peanut butter.



This project is made from a 5/8" (16mm)-thick cedar fence board, which keeps building costs low. You can substitute standard 3/4" (19mm) boards with minor modifications.

## Cutting the Pieces

Cut roof A and roof B from 5/8" (16mm)-thick stock. For the front, attach the pattern to the blank and cut out. Drill 1/16"-diameter by 1/2"-deep (2mm by

## TIP FEEDING BIRDS

If you are new to the hobby of feeding birds, start by purchasing blends of wild bird food that will attract the widest variety of species. This way, you will be able to see which species of birds come to your feeder. As you study their habits, you will see that some birds, like sparrows, starlings, and some black birds, are more aggressive than others. Eventually you may decide you want to attract only certain species. You can do so by switching to seeds specific to the species you prefer. For example, by filling your feeder with sunflower seeds, you can expect blue jays and cardinals, but few other species.

13mm) pilot holes for the finishing nails, offsetting the holes on the two sides. Drill the remaining holes marked on the pattern.

Cut the five pieces for the well. On the top well piece, drill and countersink the  $\frac{1}{4}$ " (4.4mm) holes indicated on the pattern; you will use these holes to screw the top ring to the front. On the top two pieces, use a  $\frac{1}{4}$ " (57mm)-diameter Forstner bit to drill the holes in the center for the plastic plug. Sand all of the pieces with fine-grit sandpaper.

### Assembling the Project

Use two wood screws to attach the top well piece to the bottom of the front piece. Rotate the second well piece to position the points of the octagonal piece in the center of the flats of the top piece. Glue and nail the well piece in place. Use the same process to attach the three remaining well pieces. Glue and nail the roof pieces together. Glue the dowels in the front piece. If the

dowels appear loose, use a small brad to lock them in place.

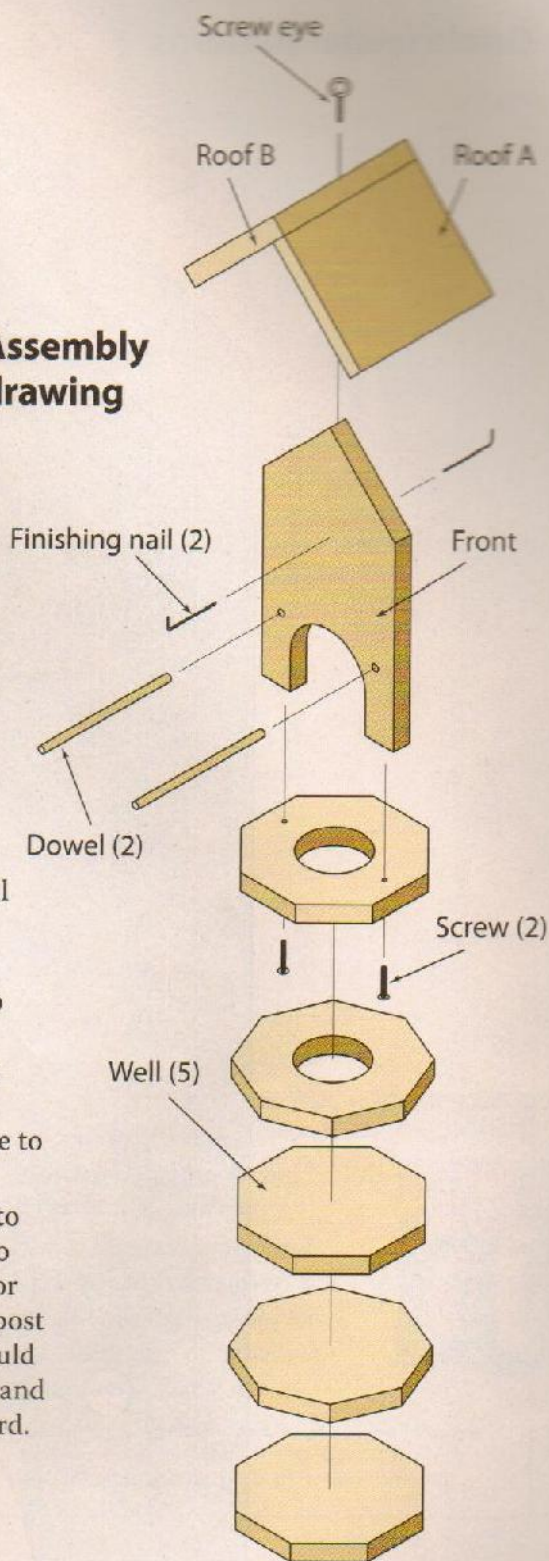
On each side, drive a  $\frac{1}{2}$ " (64mm)-long finishing nail into the pilot hole and use pliers to bend the head up to hold a slice of orange. Place a  $\frac{1}{4}$ " (57mm)-diameter plastic plug in the base to hold jelly or peanut butter.

You can attach a screw eye to the top of the finished project to suspend the feeder from chain or rope, or mount the feeder on a post or deck railing. Mounting it would provide stability on windy days and allow you to add a predator guard.

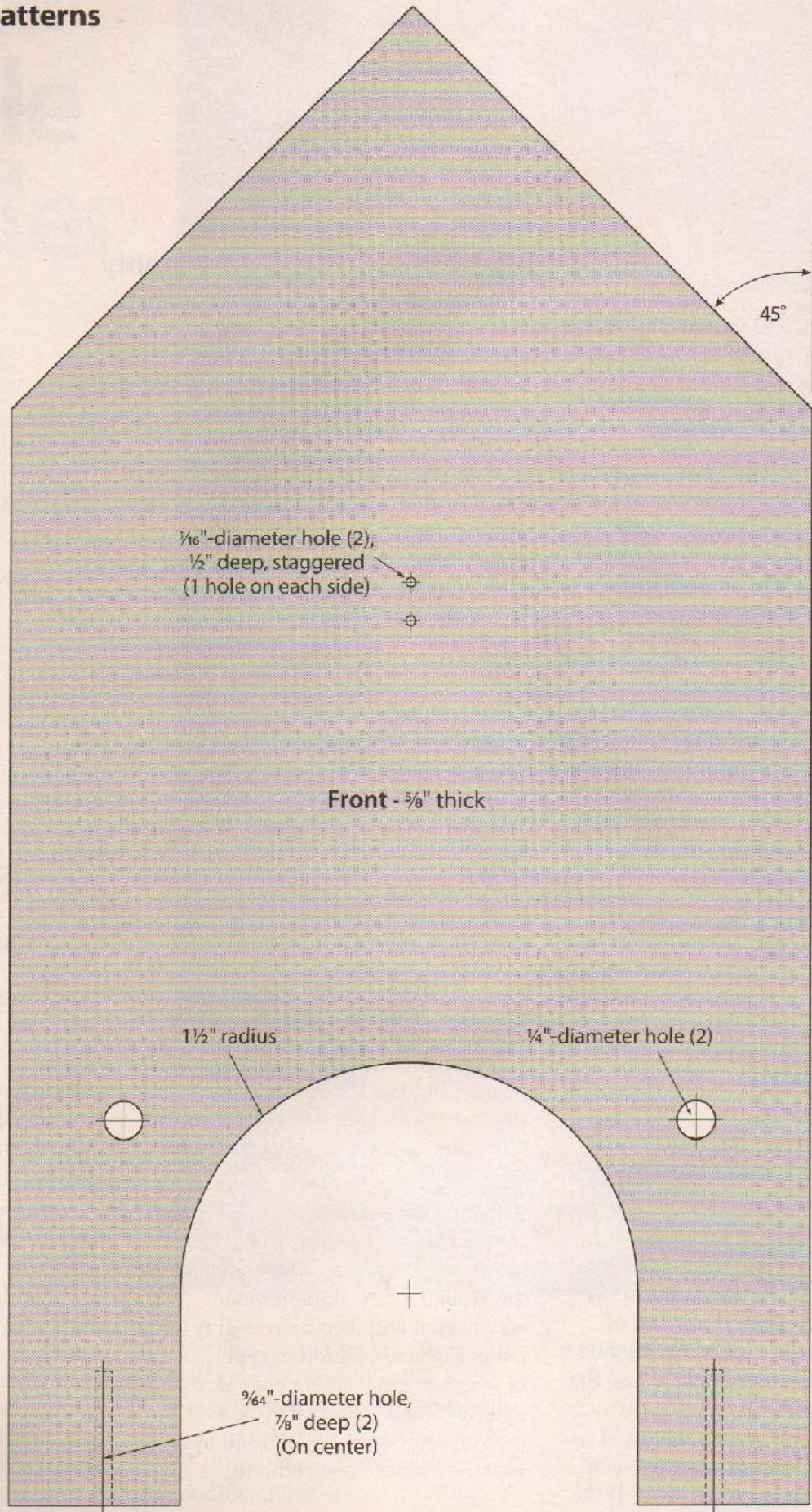
### Finishing the Feeder

If you make this project from cedar, you do not need to apply any finish. As the durable wood weathers, it will turn a silver-gray color. If you used another type of wood, brush it with a coat of exterior wood preservative or a coat of sanding sealer followed by a coat of exterior polyurethane.

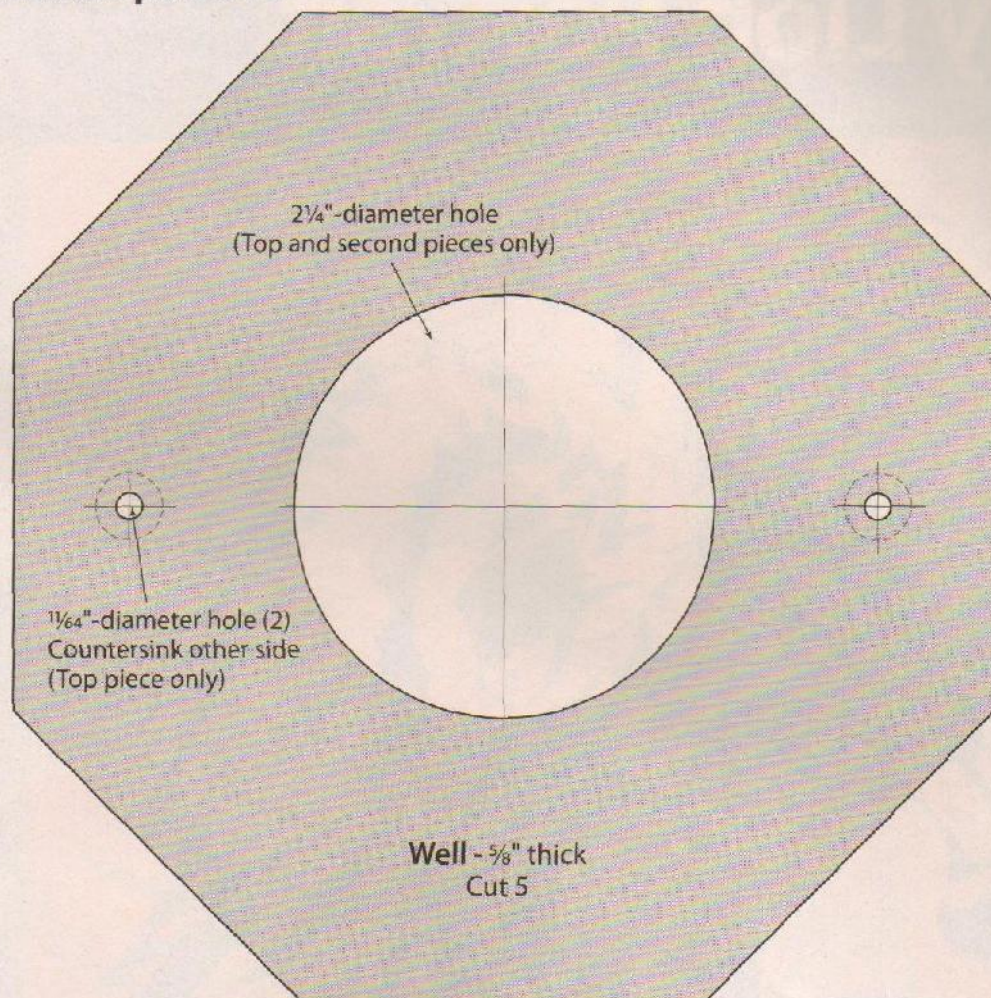
## Assembly drawing



# Oriole feeder patterns



## Oriole feeder patterns



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### Materials:

- Cedar fence board,  $\frac{5}{8}$ " (16mm)-thick: roof A (no pattern),  $4\frac{3}{8}$ " x  $5\frac{1}{4}$ " (111mm x 133mm); roof B (no pattern),  $5$ " x  $5\frac{1}{4}$ " (137mm x 133mm); front,  $5\frac{1}{4}$ " x  $9\frac{3}{4}$ " (133mm x 248mm); well, 5 each  $5\frac{1}{4}$ " x  $5\frac{1}{4}$ " (133mm x 133mm)
- Dowels,  $\frac{1}{4}$ " (6mm)-diameter: 2 each  $5$ " (127mm) long
- Finishing nails: 2 each  $2\frac{1}{2}$ " (64mm) long
- Brads: assorted small
- Wood screws, #8 diameter: 2 each  $1\frac{1}{2}$ " (38mm) long
- Dish-shaped plastic plug:  $2\frac{1}{4}$ " (57mm)-diameter (#1279)\*
- Screw eye:  $1\frac{1}{8}$ " (40mm)-long
- Sandpaper
- Wood glue, water-resistant

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

### Materials & Tools

- Finish, water-resistant (if you don't use cedar)

### Tools:

- Blades: #5 skip-tooth
- Drill and bits:  $\frac{1}{16}$ " (2mm)-diameter,  $\frac{1}{8}$ " (4.4mm)-diameter pilot and countersink,  $2\frac{1}{4}$ " (57mm) Forstner (#1278)\*
- Screwdriver
- Hammer
- Pliers

### SPECIAL SOURCES:

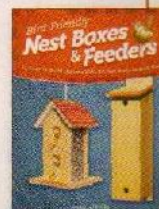
Items marked with an asterisk (\*) are available from Meisel Hardware Specialties. To order parts or to request a catalog, call 800-441-9870 or visit [www.meiselwoodhobby.com](http://www.meiselwoodhobby.com).

### Further Reading

#### Bird-Friendly Nest Boxes & Feeders

By Paul Meisel

*Plans to build twelve functional birdhouse and feeder projects, plus valuable insights on creating the perfect backyard environment to attract birds.*



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Paul Meisel of Mound, Minn., has designed more than 3,000 woodworking plans. For more ideas of what to build, to order parts, or to request a catalog, call 800-441-9870, or visit his website, [www.meiselwoodhobby.com](http://www.meiselwoodhobby.com).

# Stately Lion Portrait



**Quick and easy portrait is perfect for beginners**

*By Ralph Hammer*

**W**hile going through some old files, I discovered a disk of public-domain clip art. Among the images was this gem. Simple, clean lines made this drawing easy to modify for cutting, and I completed the portrait in a short time. I finished the project by backing it with black scrapbook paper instead of plywood. This quick and easy piece is great for beginning scrollers.

## Lion portrait pattern

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Ralph Hammer is a Marine Vietnam veteran and an Air Force retiree who has been scrolling for more than seven years. He and his wife, Peggy, have three children and six grandchildren. They live on a fourth-generation farm near Askov, Minn. E-mail Ralph at [ralphhammer@peoplepc.com](mailto:ralphhammer@peoplepc.com).

### Materials:

- Baltic birch plywood, 1/8" (3mm)-thick: 8½" x 11" (216mm x 279mm)
- Scrapbooking paper, black: 8½" x 11" (216mm x 279mm)

- Spray adhesive, temporary-bond
- Sandpaper
- Clear finish
- Glue (backing)
- Frame (optional)

### Materials & Tools

#### Tools:

- Blades: #2/0 spiral
- Drill and bit: 1/16" (2mm)-diameter

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

# Autumn Colors Puzzle

## Figural keys and assorted hardwoods bring this tree to life

By Judy and Dave Peterson  
Cut by Leldon Maxcy

At first glance, this puzzle is just a tree, but if you look carefully, you'll find forest friends hiding among the branches. The woodland creatures are more than just cute additions. I needed puzzle keys in those locations anyway, so instead of using standard designs, I added interest by sketching three animals normally found in trees.

I design puzzles for a living, but for fun I read science fiction. In 1995, Sharon Lee and Steve Miller wrote *Two Tales of Korval*, their first book in the Liaden Universe series. I loved the book and was intrigued by the Liaden Universe logo featuring a tree and dragon. In 2000, I met Sharon and Steve. After we got acquainted, I asked if I could design a puzzle based on their logo. They agreed, and we worked out a distribution agreement. Although the tree-and-dragon puzzle seemed likely to appeal only to sci-fi fans, I discovered when I took it to craft shows that a lot of people were interested in a puzzle of a tree. I reworked the pattern slightly to create this Tree with Friends puzzle.

### Making the Puzzle

To cut the puzzle from a single piece of wood, attach the pattern to the blank (see page 14 for instructions) and cut the pieces using a #5 or #7 skip-tooth or reverse-tooth blade. To cut the puzzle from assorted varieties of hardwood as shown, make multiple copies of the pattern and attach them to the blanks as desired. Then, cut carefully on the lines. If a few pieces don't fit together, put them together as much as possible, holding or taping them in place, and then cut the line between them again. Retain the waste wood to use as supports during sanding.

To use a drum sander for flat sanding, I attach the waste wood to the puzzle with rubber bands to add support; otherwise, the drum sander can crunch the trunk pieces. You can also hand-sand the pieces until they are smooth. Soften the edges of the pieces with a flap sander if desired.

I like to stain the tree's trunk and branches a darker color and then finish all of the pieces with clear Danish oil.



A science fiction tale provided the inspiration for this puzzle. The original version, now sold out, is above.

### Materials:

- Hardwood, 1" (25mm)-thick: 7½" x 10" (191mm x 254mm)
- Spray adhesive, repositionable
- Packing tape: clear
- Sandpaper: 220-grit
- Danish oil: clear
- Stain (optional)

### Materials & Tools

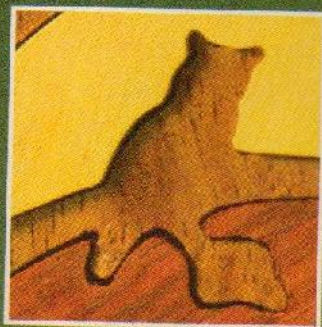
#### Tools:

- Blades: #5 or #7 skip-tooth or reverse-tooth
- Drill or drill press and assorted bits
- Drum sander (optional)
- Flap sander (optional)

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

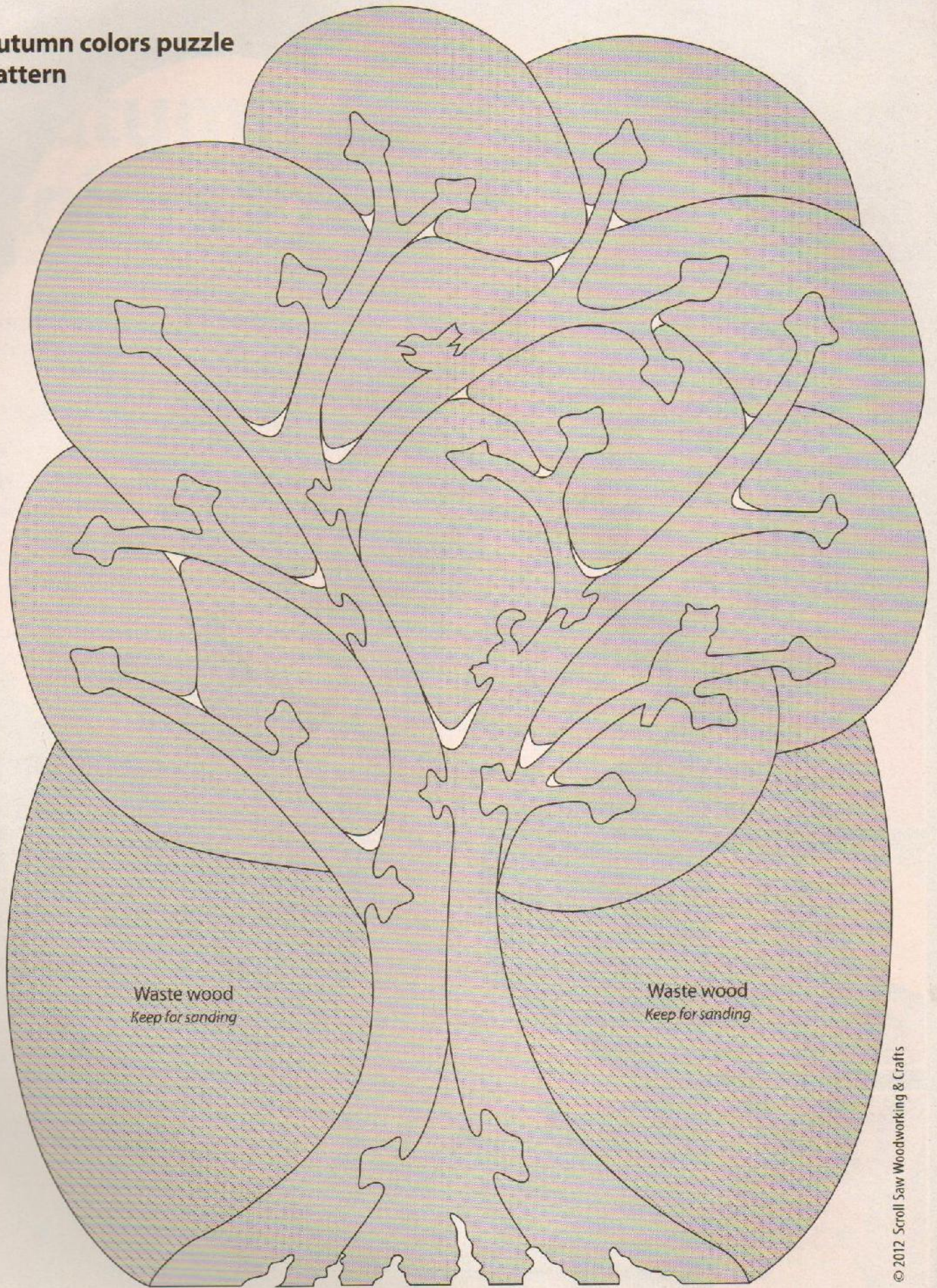


A former teacher and librarian, Judy Peterson found her niche in life as a woodworker. A winner of many design awards, she sells her puzzles at art shows around the country. Her husband, Dave, runs the record-keeping side of the business. Together they have written several books, which are available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



Look for figural puzzle keys in the shapes of a nesting bird, an owl, and a squirrel hidden among the branches.

**Autumn colors puzzle  
pattern**



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*Keep for sanding*

Waste wood  
*Keep for sanding*

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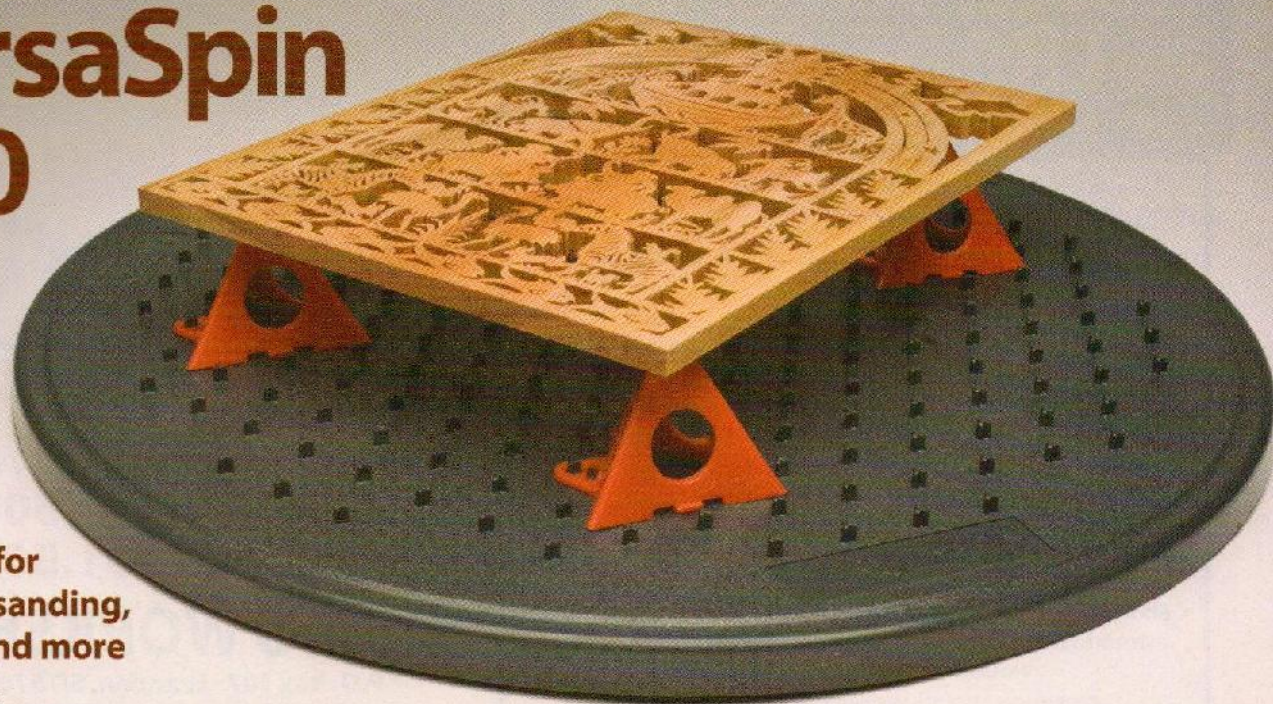
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# VersaSpin 360



**Use this turntable for finishing, sanding, routing, and more**

*By Bob Duncan*

The VersaSpin 360 combines the convenience of a turntable with finishing pyramids and non-slip pads. What's more, this new tool by K & M of VA is infinitely adjustable.

Tools combining painter's pyramids with a turntable have been out for a while. What make the VersaSpin 360 different are the short pegs covering the turntable. You can align painter's pyramids on these pegs or use the company's new low-profile non-slip pads, called "Grabbers." You can use the Grabbers on or off the turntable and with or without the pyramids.

The versatility of the VersaSpin 360 makes it a marked improvement on the older products on the market. The older tools were useful for finishing, but not much else. Thanks to the Grabbers, I start using the VersaSpin for scroll saw projects as soon as I'm done cutting—for routing, sanding, and finishing.

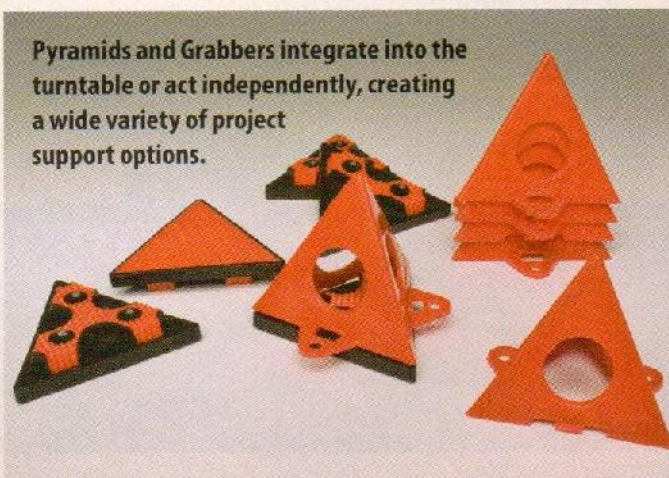
If I need to use a router to add a profile or to round the edges of the piece, I position the Grabbers on the table under the project, where they hold the project securely but without marring its surface. The Grabbers also have a much lower profile than some of the other non-slip pads available. When I'm done routing, it's simple to position the Grabbers on the turntable for sanding.

I was concerned that the project would spin while I was trying to sand, but that wasn't the case. The turntable was tight enough to hold steady while I was working but still moved freely when I needed to sand from a different angle.

After I was done sanding, I easily added the pyramids to the top of the Grabbers to elevate the project for finishing. The turntable allows you to spin the project around to apply a spray finish from every direction. If you are applying a brush finish, the turntable holds the piece steady but turns as needed. Elevating the project allows excess finish to drip off, and the increased airflow helps the finish dry faster.

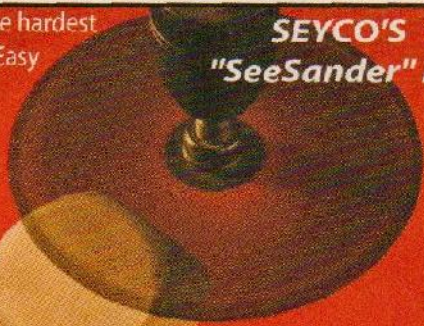
The VersaSpin 360 is available in two sizes. The 11" (279mm)-diameter model can support up to 50 pounds (22.6kg) and costs \$24.99. The 16" (406mm)-diameter model can support up to 200 pounds (90.9kg) and is available for \$34.95. Both models come with painter's pyramids and Grabbers. For more information or to purchase a VersaSpin 360, contact K & M of VA at 804-426-4366 or visit [www.versaspin360.com](http://www.versaspin360.com).

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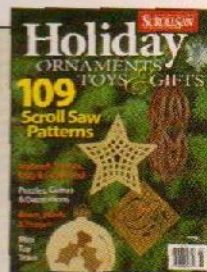
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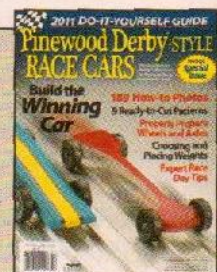
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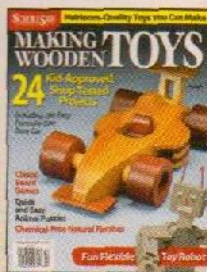
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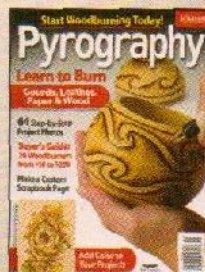
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# Food-Safe Finishes

Find a finish that will protect your family and your work

By Bob Duncan



Woodworkers often want to apply safe finishes to pieces used with food, such as bowls, or toys that children may put in their mouths. However, they aren't always sure which finishes are safe. All of the following methods are commonly considered food-safe; I have listed them in order from least to most protective of the wood.

## No Finish

The safest finishing method is no finish. Especially for toys, choose a non-toxic wood and leave it alone. Common non-toxic woods include maple, cherry, aspen, and basswood. Make the toy, sand it with progressively finer grits of sandpaper up to 220 grit, and consider it done. Over time, the toy may get a bit dingy, but you can easily refresh the surface with a few minutes of sanding.

## Mineral Oil

For a little more protection, use a butcher-block finish, which is essentially mineral oil (sold as a laxative at drug stores). Mineral oil is a good choice for projects that will hold food. The oil protects the wood, but must be reapplied on a regular basis because it doesn't fully dry (or cure) and thus wears off over time. It also washes off with soap and water. Simply apply a coat of mineral oil every time you wash and dry the piece and it will always be protected and ready to use.

## Beeswax

Beeswax is easy to apply and food safe, but it's also soft and must be periodically reapplied. Fortunately, that's a quick process—use a rag to rub the soft wax onto the project, allow it to set for a few minutes, and then buff the wax with a clean, dry rag.

## Walnut Oil and Tung Oil

Unlike vegetable oils, which do not cure and can turn rancid, some nut oils do dry. Walnut oil and tung oil are commonly used for finishing. However, because these oils are pressed from nuts, people with nut allergies may be sensitive to them.

Apply walnut oil like you would any oil finish. I apply a heavy coat with a brush and rub off the excess with a

clean rag. Allow the finish to dry for a few hours, and then apply a second coat. The oil soaks into the wood.

Pure tung oil is a thick liquid. It can be difficult to apply and can take a long time to dry, so it is often sold pre-thinned with solvents fortified with chemicals to make it dry faster (the chemicals evaporate as the finish dries, rendering it safe). I apply pure tung oil with a rag. Unlike many other oil finishes, tung oil builds up a protective finish on top of the wood if you apply enough coats.

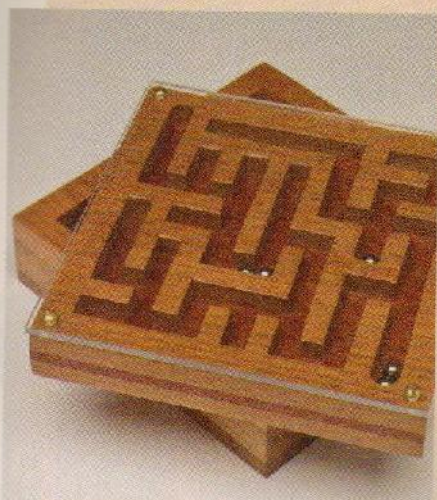
## Shellac

According to Teri Masaschi, author of *Foolproof Wood Finishing*, shellac is used in everything from cosmetics to pills, and even as a glossy coating on food. Shellac comes in flake and liquid forms. Shellac flakes are usually dissolved in denatured alcohol, which is ethanol (the alcohol in alcoholic drinks) that has been treated to be poisonous and to taste bad. When the alcohol evaporates and leaves the shellac on the surface of the wood, it produces a food-safe finish. Some people fear that the denatured alcohol will leave a poisonous residue, but Bob Flexner, author of *Understanding Wood Finishing*, says all of the alcohol evaporates without leaving a residue. If you are still concerned, use pure grain alcohol or ethanol to dissolve the flakes. (Note that some states have laws regulating the sale of grain alcohol, which can make it difficult to find.)

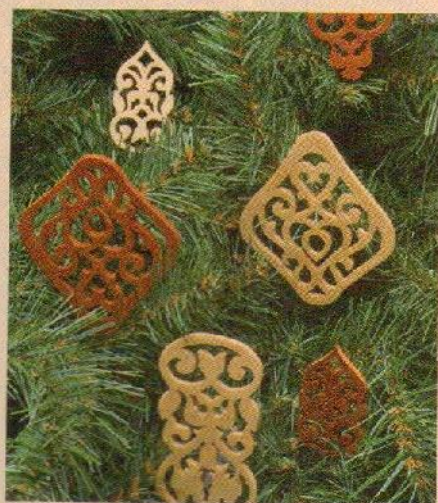
## All Other Finishes

Many other finishes, ranging from varnish to Danish oil, include chemicals (solvents and chemicals to help a finish dry faster) that you wouldn't want to drink. And, until the 1970s, lead was used as a drier. But Bob Flexner explains that the Food and Drug Administration lists all of these solvents and driers as safe for food contact as long as the finish is fully cured, and lead was removed from all finishes in the 1970s. Bob says if you smell the wood and can't smell a finish, the finish is cured; some finishes can take months to fully cure. If you are willing to wait, these finishes are more durable than many designated as food-safe.

# In our next issue...



Make the wrapping part of the gift with a clever maze-top box.



Small swirly ornaments are easy to stack-cut and always appreciated.



Santas squash into their box like clowns in a car in this decorative puzzle.

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## Scrolling Back the Pages of Time

Restoration designer Hal Forbes refused to allow an abandoned neighborhood in downtown Halifax, N.S., Canada, to decay and disappear. Hal, a former Neptune Theater set and costume designer, purchased a dilapidated home and turned it into a historic Victorian showcase. In the 27 years since then, Hal has restored more than 30 homes and shops in the neighborhood and another 24 in nearby areas. He uses a scroll saw when needed.

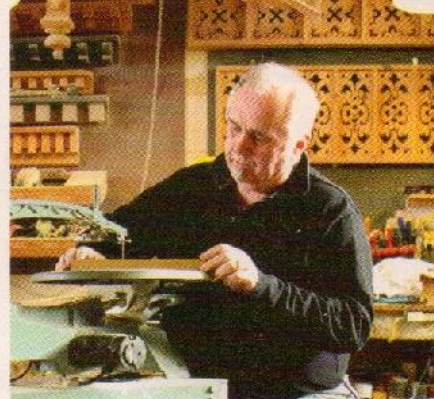
"I had always enjoyed the Victorian period known as the Stick Style that was popular in the 1880s. That's when the scroll saw was really developed and its potential explored," said the 57-year-old woodworker. "After I bought my first house I consulted a master carpenter I worked with at the theater. He was smart enough not to get involved, but bright enough to talk me through the steps to save my hide," Hal said with a laugh.

Working on a 20-year-old Delta scroll saw, Hal recreates the old brackets, corbels, moldings, spandrels, spindles, wooden shingles, and a host of other period embellishments and design elements. "With restoration carpentry, the obligation is to faithfully reproduce what has already existed," Hal explained.

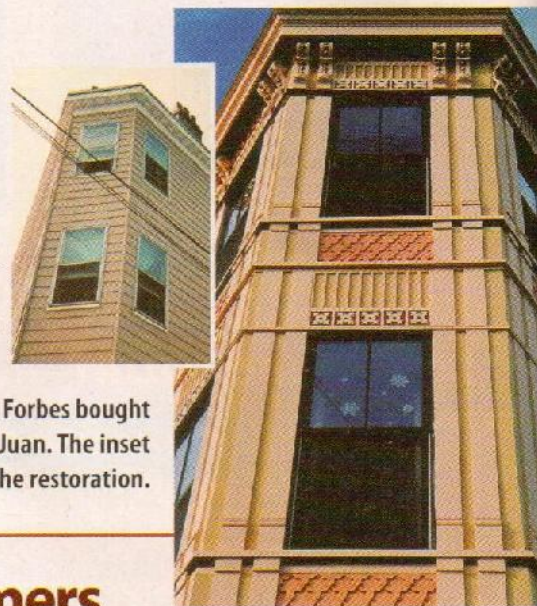
The woodworker uses clues, such as scarring on the paint or a portion of the original scroll detail, to create the reproduction. He cuts most of the pieces from ponderosa pine, stack-cutting to speed the process. Hal usually cuts two  $\frac{3}{4}$ "-thick pieces, but he has cut pieces up to  $2\frac{3}{8}$ "-thick.

For more information, contact Hal at [halforbes@hfx.eastlink.ca](mailto:halforbes@hfx.eastlink.ca), visit his website, [halforbes.com](http://halforbes.com), or visit Forbes Restoration on Facebook.

**A Halifax tenement building that Hal Forbes bought and restored in 2003 after Hurricane Juan. The inset photo shows the building before the restoration.**



The restoration designer Hal Forbes in his Halifax, N.S., Canada, workshop.



## Catering to Customers

David Griffin's successful scroll saw business is going to the dogs, and he couldn't be happier. David said a tip from a customer inspired a niche marketing idea that proved both fun and profitable. "We had just wrapped up the 2008 show season and were looking at a few months of no activity when a customer noticed our dog breed puzzles and suggested we look into doing dog shows," David recalled.

After a quick Internet search, David learned that exhibiting at dog shows is relatively inexpensive and sometimes even free. The scroller found an upcoming dog show in a nearby city, packed up all his "doggy stuff," and tried the show. "We were very warmly welcomed and received several invitations to other breed-specific shows," he said.

**David and Jenny Griffin make breed-specific jewelry and decorations to exhibit at dog shows.**

One of those invitations came from the National Specialty Show for Scottish terriers in Dayton, Ohio. "Our task, obviously, was to put a Scottie on as many things as we could possibly think of," said David. He and his wife Jenny made Scottie-themed puzzles, clocks, toy boxes, ornaments, magnets, bookmarks, key chains, trophies, and urns. They resized the ornament pattern to make earrings, pins, and barrettes.

"On those Scotties, we even included dog collars made from Swarovski rhinestones and crystals," he said. The show was so successful that David did the same thing for other breeds, such as Labrador retrievers, bearded collies, and schnauzers. "Agility shows are the most fun for us," said David. "Plus, when folks aren't buying, you can always go watch the dogs run!"

For more information, contact David Griffin via his website, [www.tuliptreecrafts.com](http://www.tuliptreecrafts.com).



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SCROLL SAW & FRETWORK



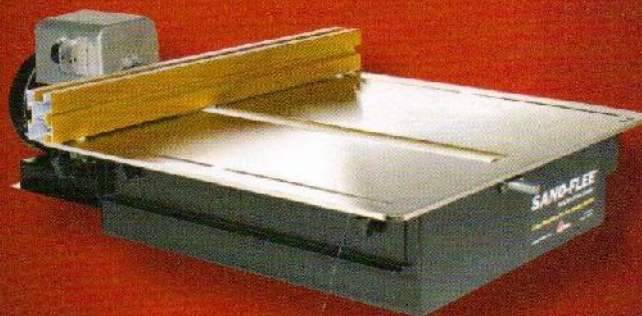
RAISED PANELS & OTHER TALL PARTS



DOVETAILS & OTHER JOINERY



PROFILE SANDING



BOWL FINISHING



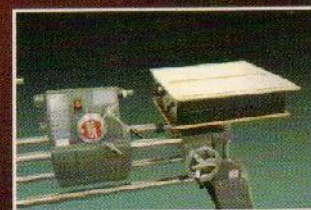
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1

51

12A

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



One inch

**Halloween Intarsia Scene**

Page 18 - SSWC Issue 48

Designer: Kathy Wise

**Legend**

Start with 3/4" wood

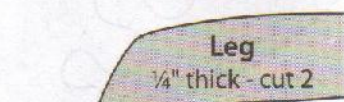
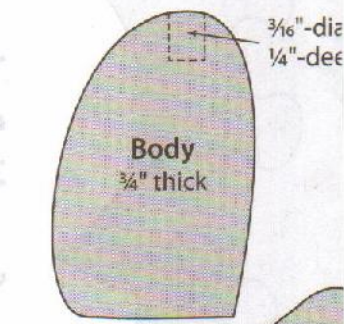
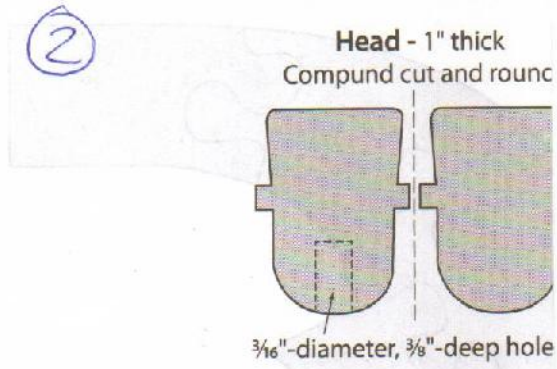
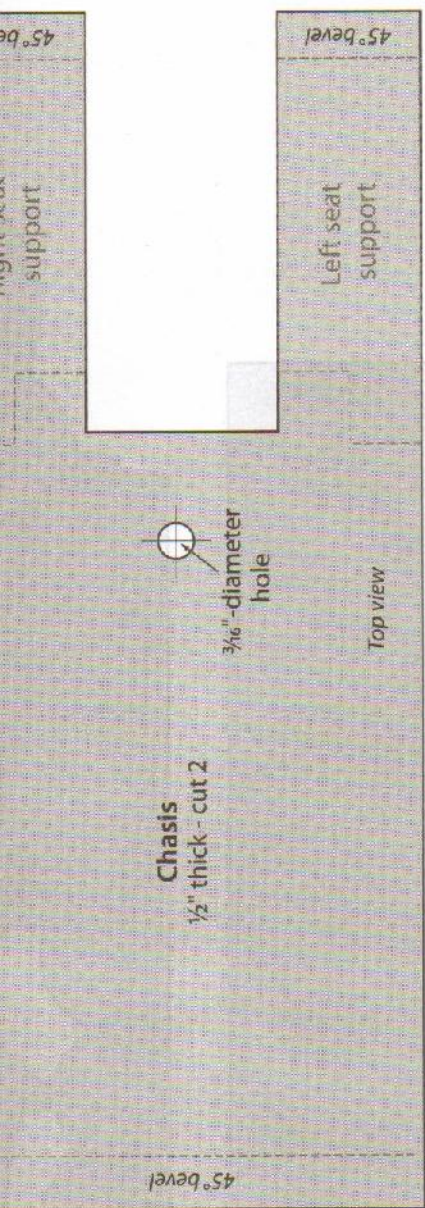
- ← Grain direction
- B..... Ebony / very darkest shade
- D..... Dark shade of wood
- M..... Medium shade of wood
- Y..... Yellowish wood
- 1/4..... Sand or plane down 1/4"



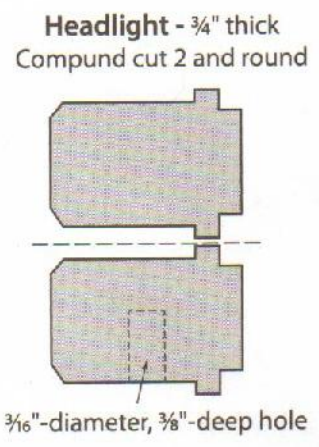
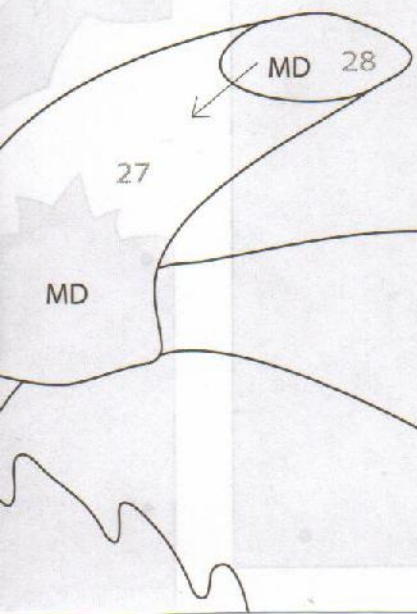
Axle support  
1/2" thick - cut 2

1/4"-diameter holes (2)

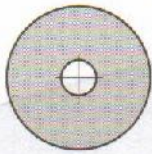
This copyrighted pattern is sold for the personal use of the purchaser. Any reproduction of this pattern for redistribution is prohibited. Purchaser may make up to 10 reproductions for his/her own use.



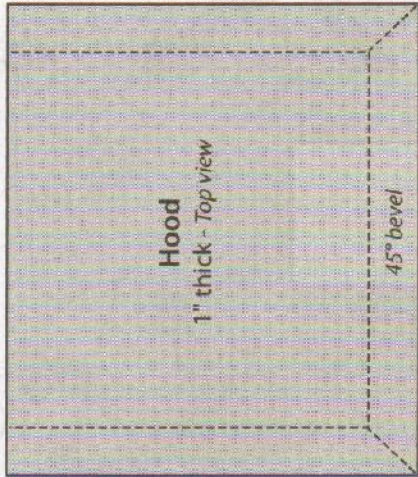
**Building an Antique Auto Toy**  
Page 29 - SSWC Issue 48  
Designer: Robin Balls



3



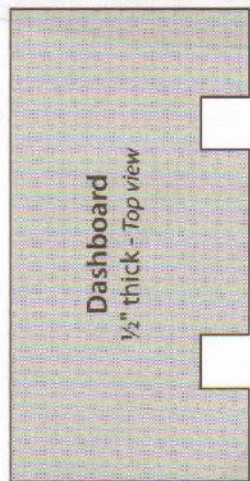
Steering wheel  
1/8" thick - 1/8" diameter  
hole in center



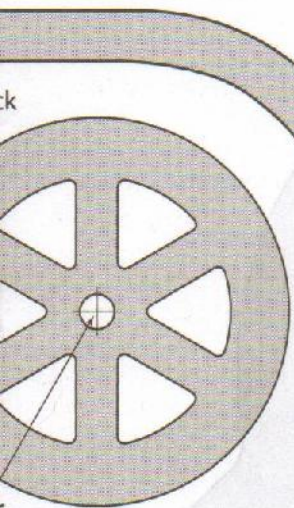
Hood  
1" thick - Top view  
45° bevel



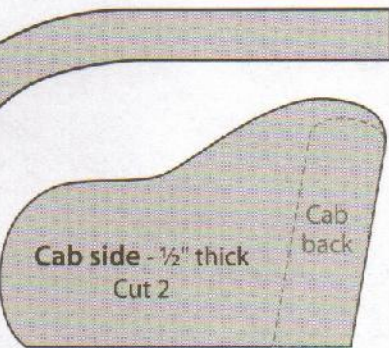
Windshield  
1/4" thick - Front view



Dashboard  
1/2" thick - Top view

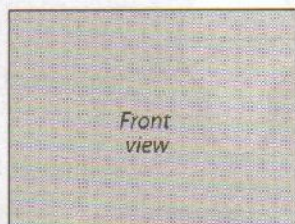


Fender - 3/4" thick  
Cut 2



Cab side - 1/2" thick  
Cut 2

Cab back



Front view



Side view

10°

Preside  
Page 38 -  
Designer: Jim

4

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

*All patterns on this pullout section: © 2012 Scroll Saw Woodworking & Crafts*

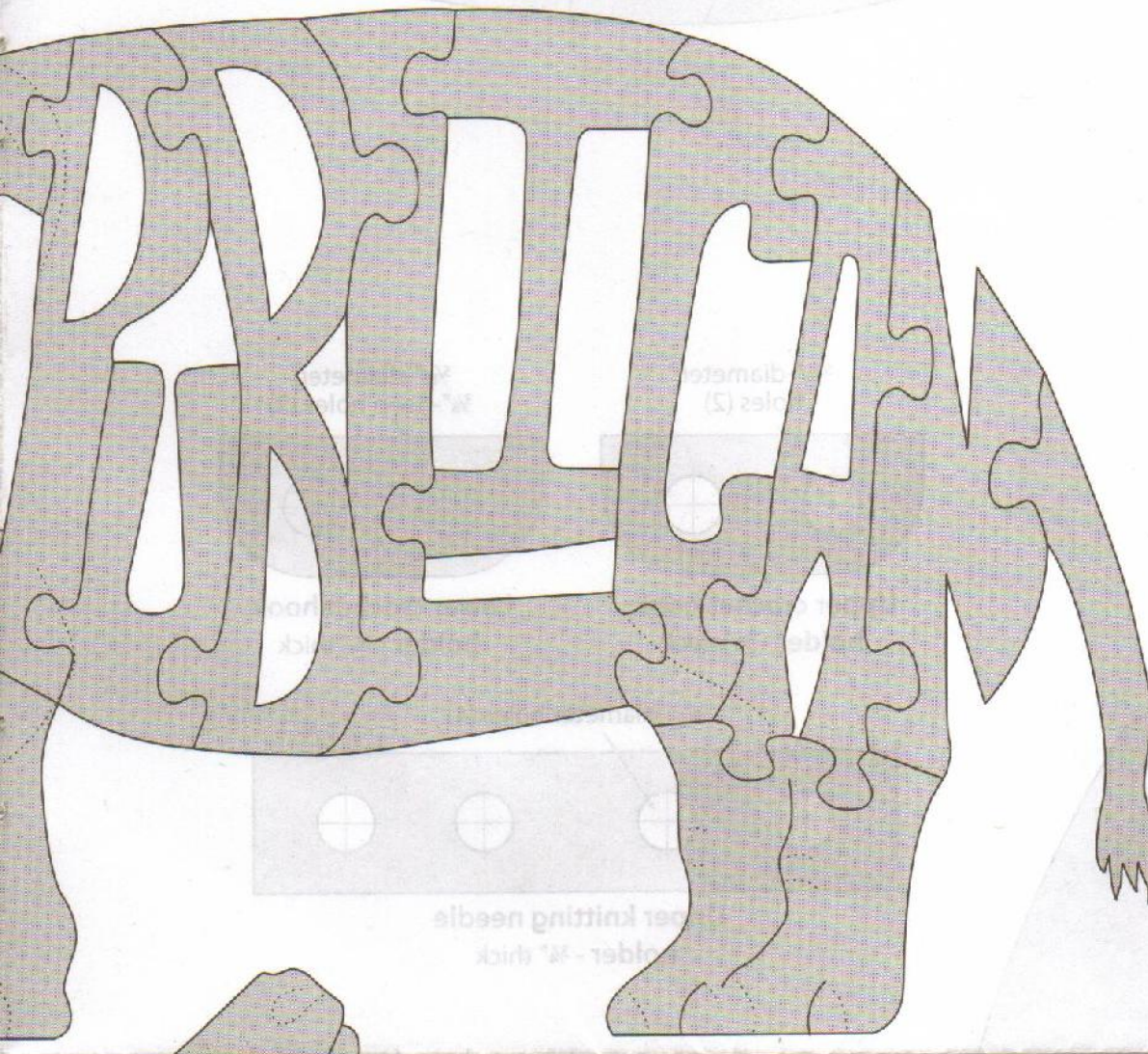
Halloween Intarsia Scene .....	18	Presidential Puzzles .....	38
Building an Antique Auto Toy .....	29	Ghost Town Candleholder.....	50
Spaceship Puzzle .....	32	Lamb Knitting Caddy .....	60

Note to professional copying services. You may make up to ten copies of these patterns for the personal use of the buyer of this magazine.

**Presidential Puzzles**

SSWC Issue 48

Sweet



5

Cat is an overlay on top  
of the pumpkin and base

24

+1/4

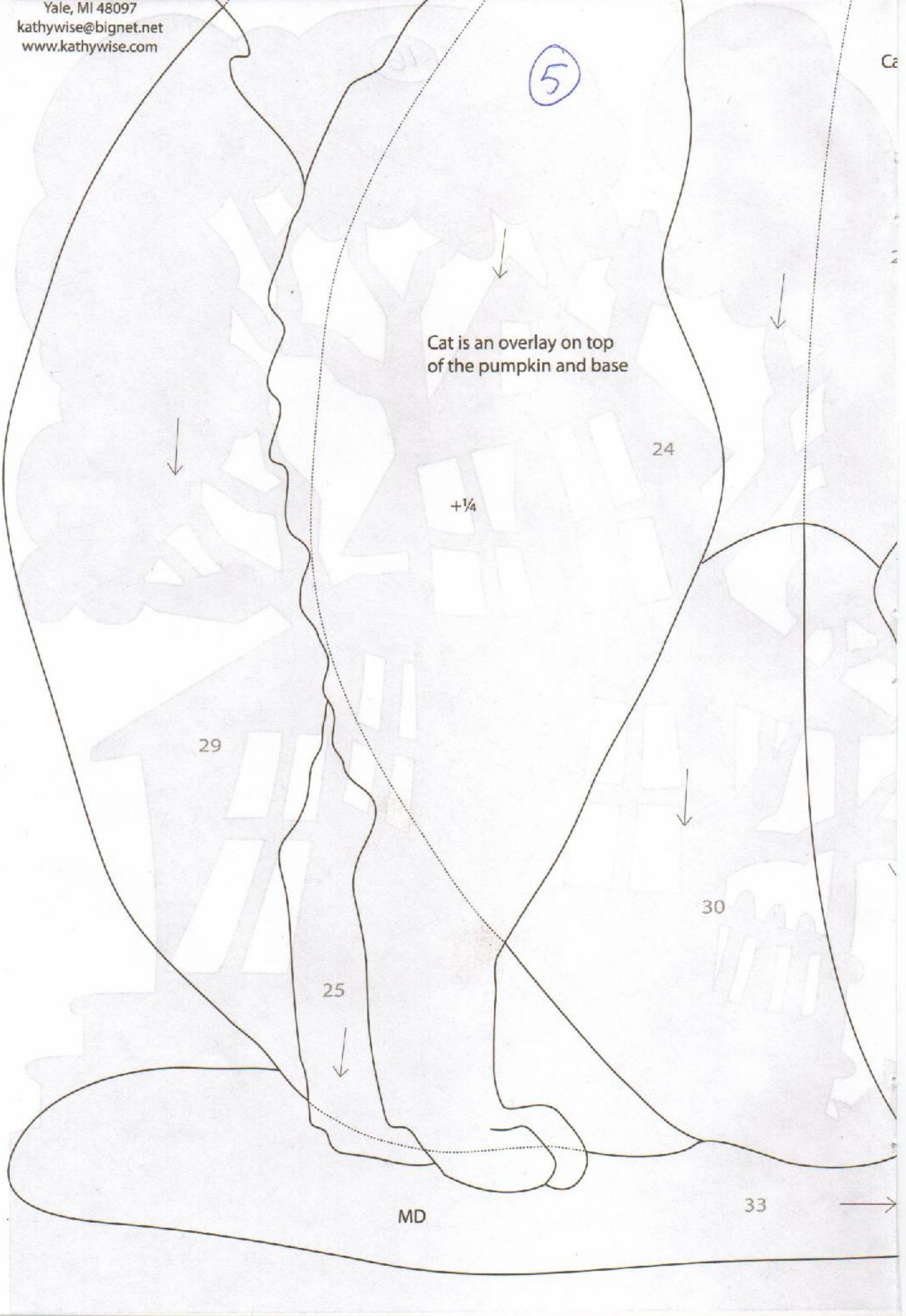
29

30

25

MD

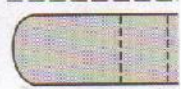
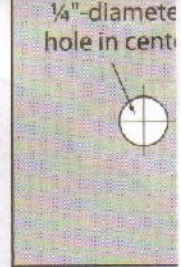
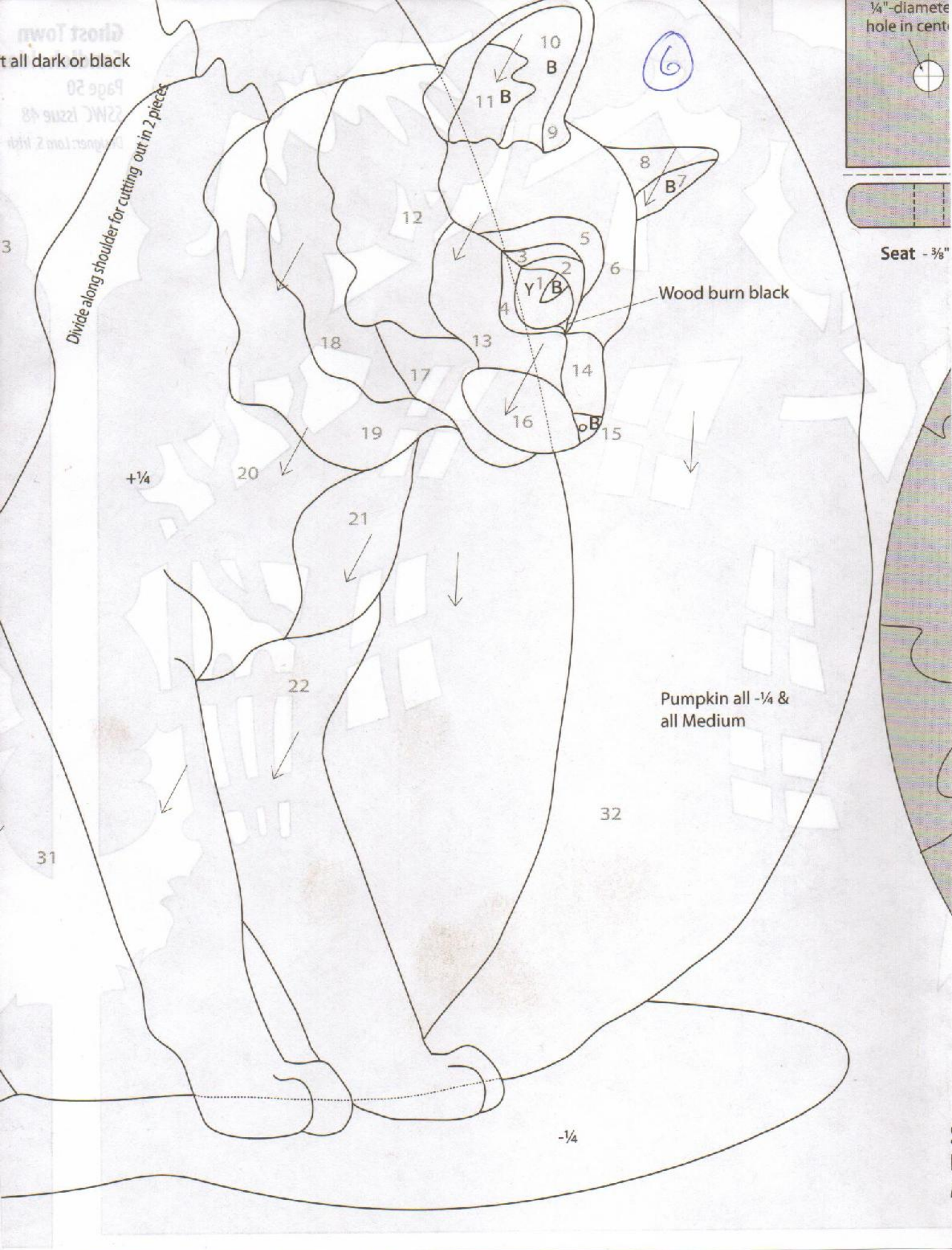
33



all dark or black

Page 50  
22WC Issue 48  
Project: Tom 2 (right)

Divide along shoulder for cutting out in 2 pieces



Seat - 3/8"

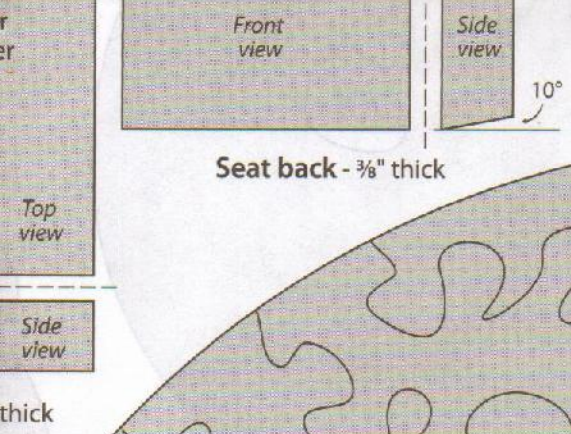
Wood burn black

Pumpkin all -1/4 & all Medium

+1/4

-1/4

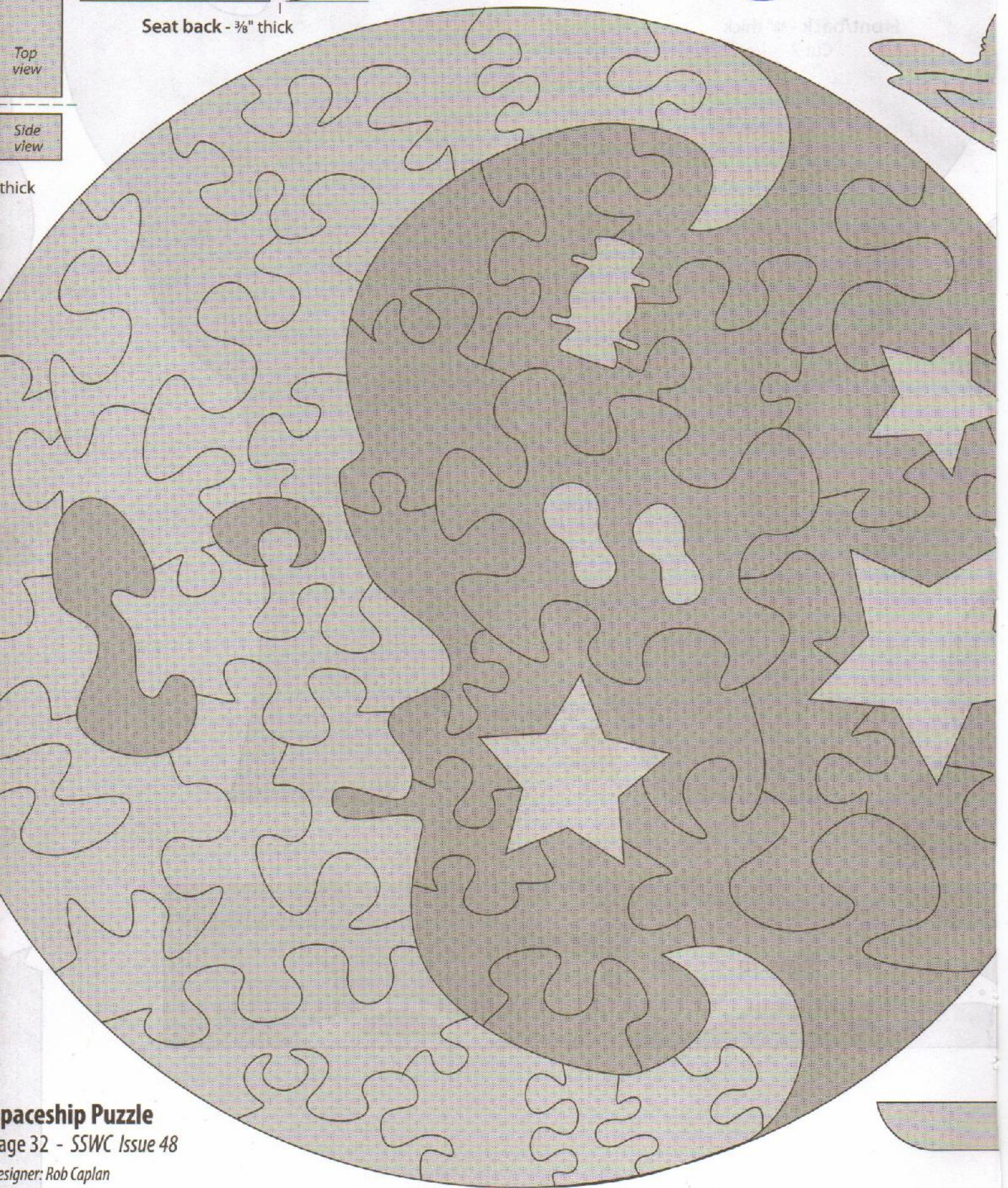
S  
P  
D

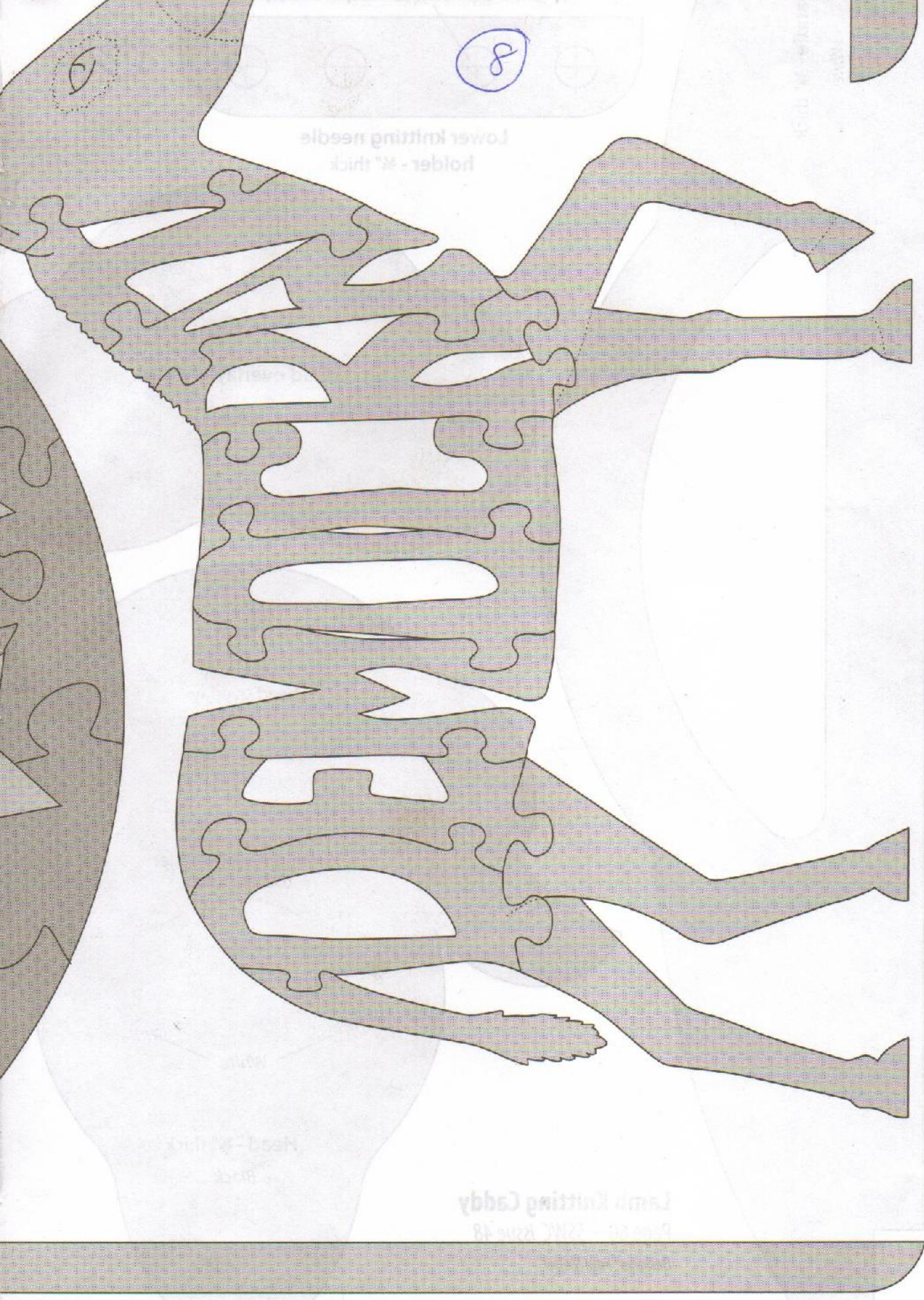


Cab back - 3/8" thick

7

Seat back - 3/8" thick





8

Lower knitting needle  
holder - 8" thick

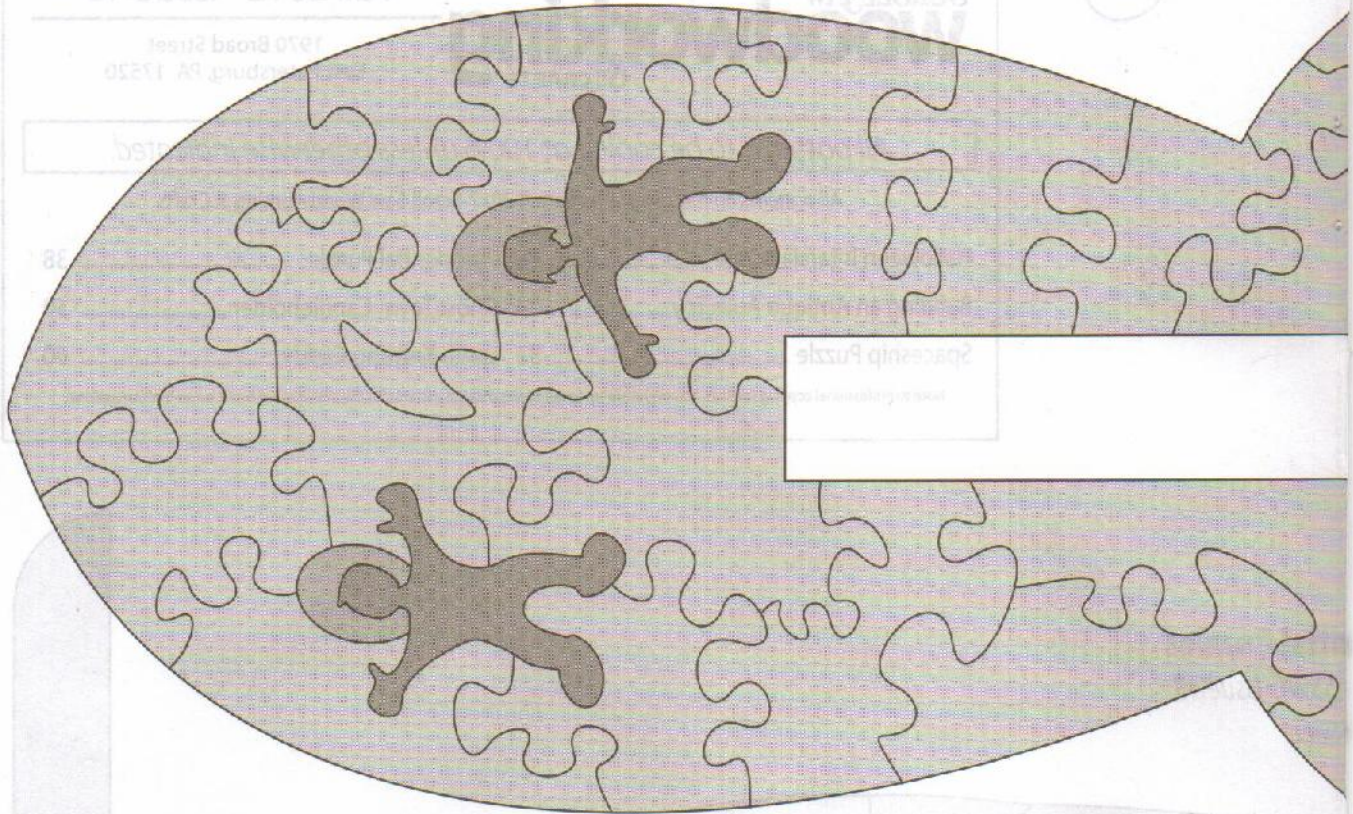
Lamb Knitting Caddy  
Issue 48

9

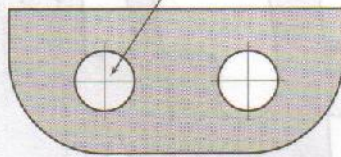
12

Spacing Puzzle

www.scrollsaw.com



$\frac{5}{16}$ "-diameter  
holes (2)



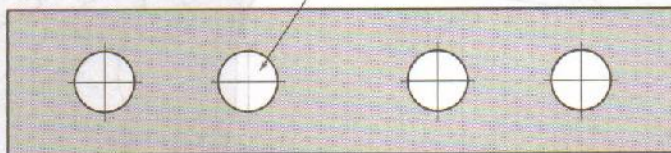
**Upper crochet hook  
holder -  $\frac{3}{4}$ " thick**

$\frac{5}{16}$ "-diameter,  
 $\frac{3}{8}$ "-deep holes (2)



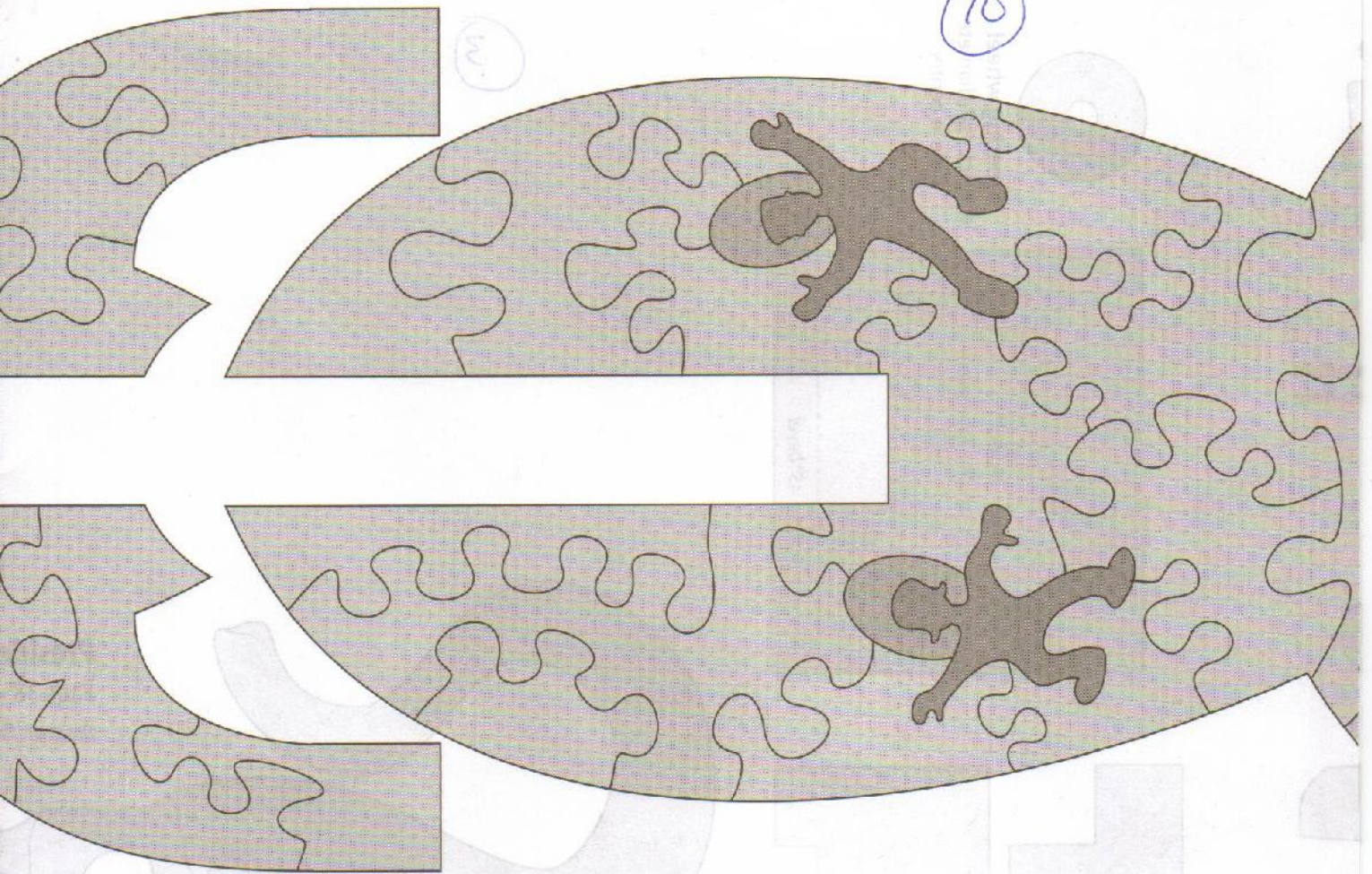
**Lower crochet hook  
holder -  $\frac{3}{4}$ " thick**

$\frac{5}{16}$ "-diameter holes (4)



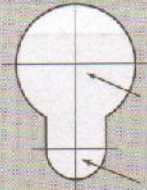
**Upper knitting needle  
holder -  $\frac{3}{4}$ " thick**

$\frac{5}{16}$ "-diameter,  $\frac{3}{8}$ "-deep holes (4)



Position of handle

Front  
Position of upper  
knitting needle holder  
(other side)



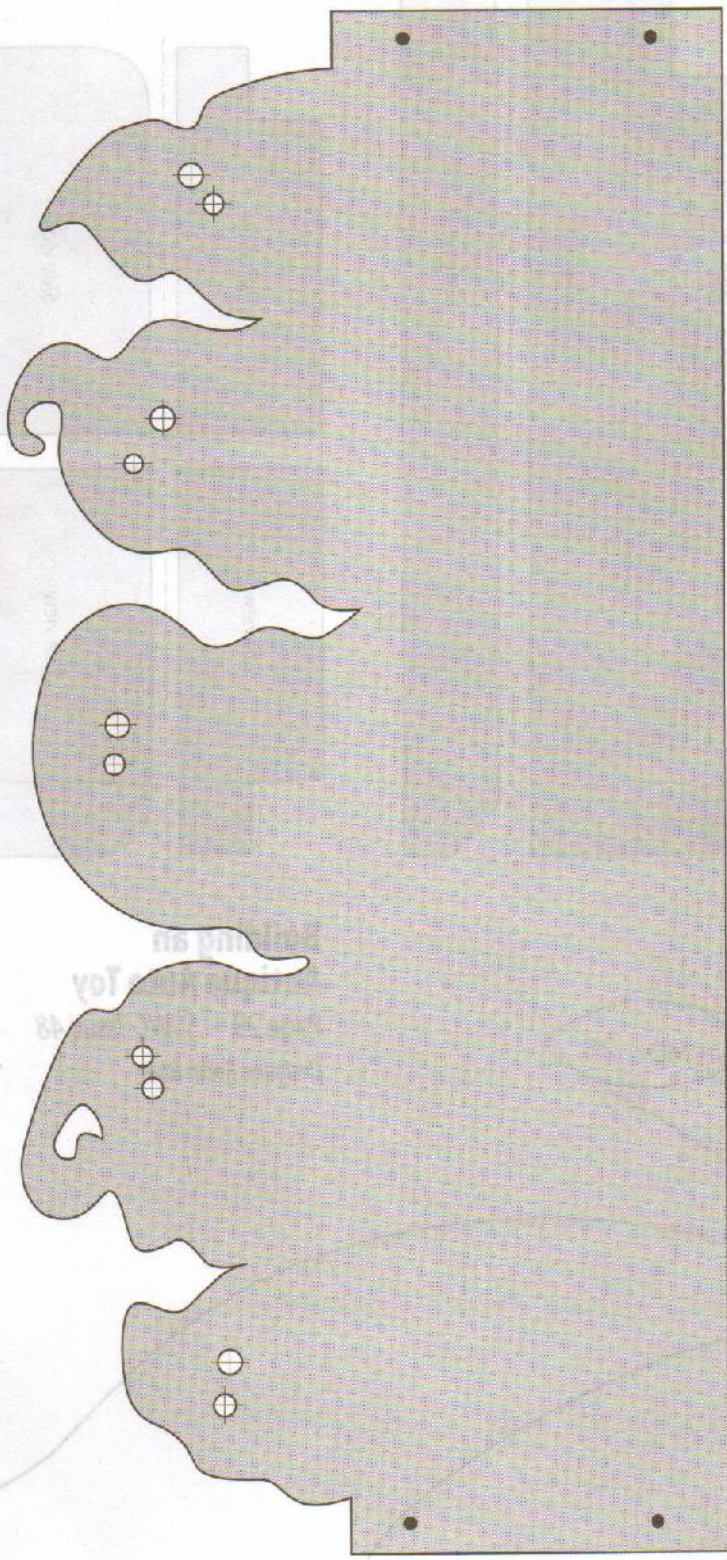
5/8" - diameter hole

5/16" - diameter hole

# Spaceship Puzzle

Page 32 - SSWC Issue 48

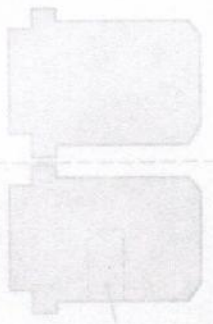
Designer: Rob Coplan



pois je centre  
1/2" diameter  
1/2" thick  
gourow byre



Headlight - 1/2" thick  
Compound cut 2 and round



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



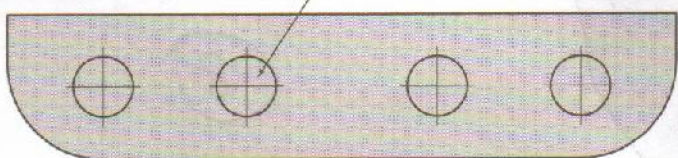
Wheel - 1/2" thick  
Cut 4



1/2" diameter  
hole

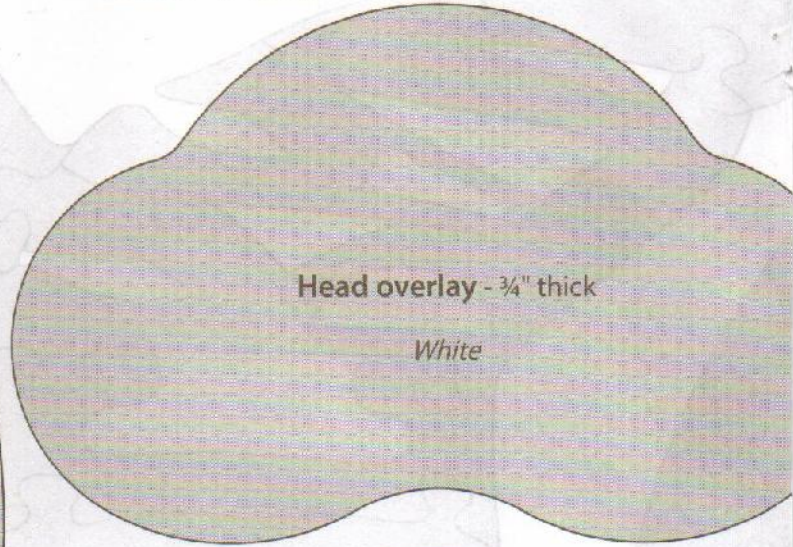


13



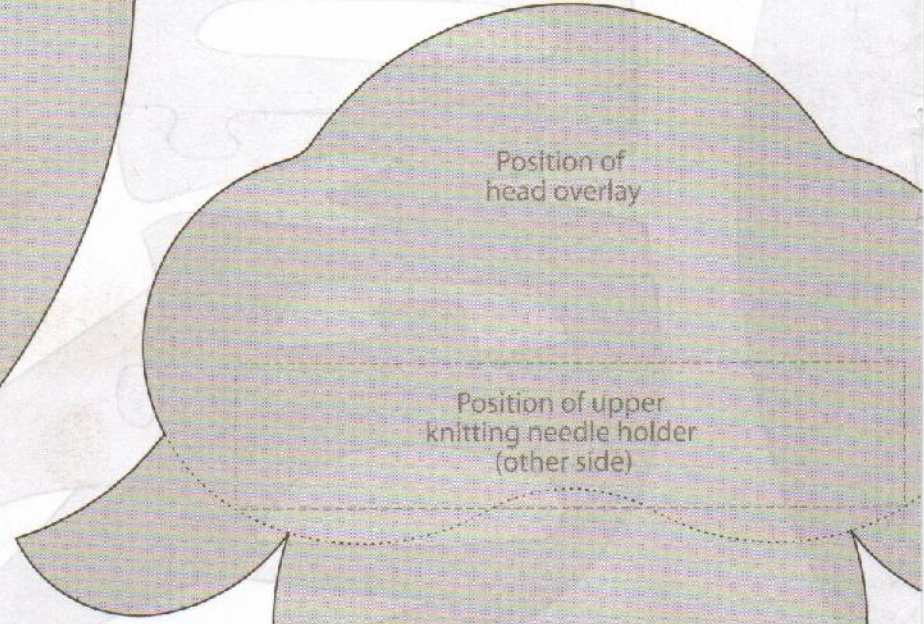
Lower knitting needle holder - 3/4" thick

Handle - 3/4" thick  
White



Head overlay - 3/4" thick

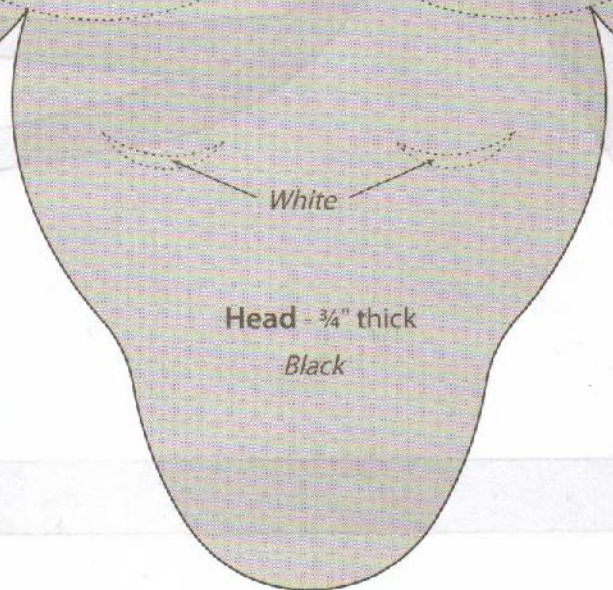
White



Position of head overlay

Position of upper knitting needle holder (other side)

White



Head - 3/4" thick

Black

**Lamb Knitting Caddy**  
Page 60 - SSWC Issue 48  
Designer: Paul Meisel

14

Front/back - 3/4" thick  
Cut 2

Back  
Position of upper  
crochet hook holder  
(other side)

White

Black

5/8"-diameter hole  
(optional)

5/16"-diameter hole  
(optional)

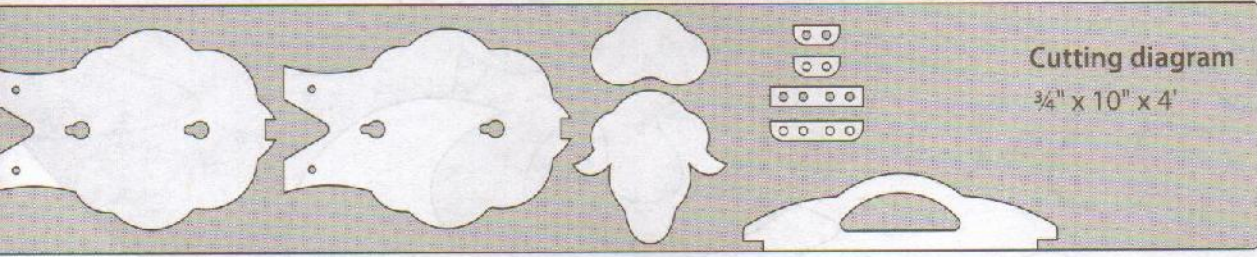
Front  
Position of lower  
knitting needle holder  
(other side)

Back  
Position of lower  
crochet hook holder  
(other side)

1/4"-diameter,  
3/8"-deep holes (2)

Cutting diagram

3/4" x 10" x 4'



Ship Puzzle  
- 22WC Issue 48  
Ron Caplan



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