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HOLIDAY 2009
ISSUE 37


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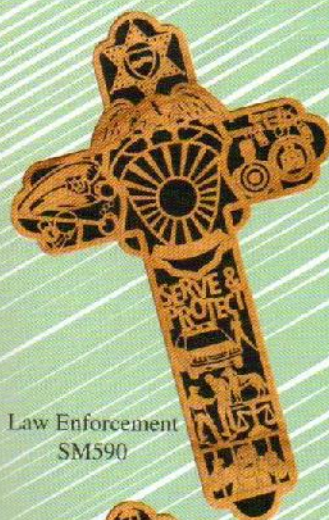
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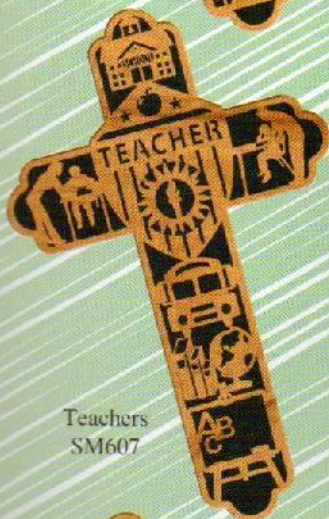
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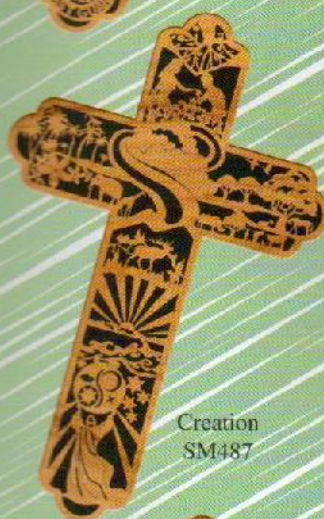
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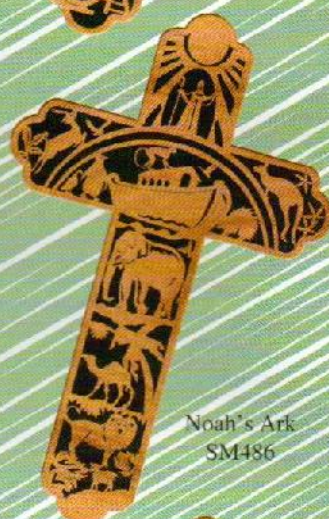
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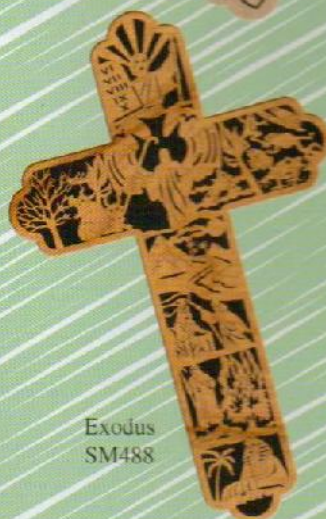
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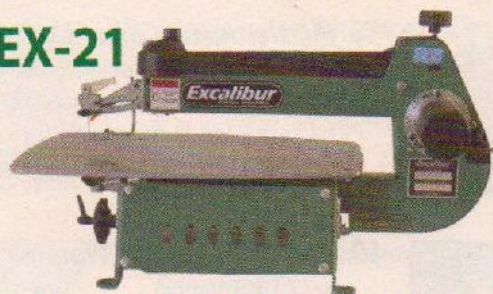
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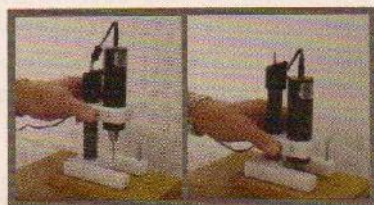
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Woodworking & Crafts

HOLIDAY 2009
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Making Beautiful Wooden Bowls, pg. 40

How-to video demonstrates technique to make stunning bowls with a scroll saw.

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- article index • free patterns • product reviews
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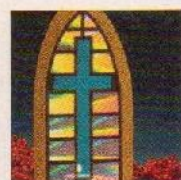
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Intarsia project is a fun way to greet holiday visitors

Scroll Saws, Food, and Fellowship

I was honored to once again take part in the Midwest Scroll Saw Trade Show (www.midwesttradeshow.com), hosted by Ocooch Hardwoods and The Art Factory.

Vendors were welcomed to their booths with a delicious cheese and cracker tray. The Friday-night banquet was held at a new location this year and the food was outstanding. I even made it to the Foremost cheese factory to pick up some aged Wisconsin cheddar to bring home to

my family. Can you tell I love to eat?

But enough about food, let's move on to one of my other passions—scroll saw projects! I always enjoy perusing the brag tables to see what folks are up to in their shops. Mike Lawson created a unique version of the giraffe puzzle featured in *Scroll Saw Woodworking & Crafts* fall issue (issue #36). He added a circle backing and a base for stability, and turned the giraffes into bookends. What a clever idea! I'm always amazed by the creativity of our readers.

The entries in the contest were fantastic. There was definitely some fierce competition this year. With everything from clocks and crosses to portraits and boxes, there was enough craftsmanship on display to make me feel a bit guilty about my poor neglected saw back home. I vow to get busy and at least make a few Christmas ornaments this season. Pat Lupori cleaned up, claiming both Best of Show and Scroller's Choice for her beautiful rendition of "Flight of Fancy" by Robin Wirtz (www.woodwirtz.com).

In my opinion, the best part of scroll saw shows is getting the chance to speak with other scrollers. Whether they are seasoned woodworkers or just starting out, I love to hear about their latest projects and chat about the magazine. The midwest show also provides an excellent opportunity to meet up with a few SSW&C contributors and catch up over grilled bratwurst and roasted corn on the cob. I'm already looking forward to next year's show!



Shannon Flowers

Shannon@FoxChapelPublishing.com

Pat Lupori of Round Lake Beach, Ill., made a clean sweep in the contest, claiming Best of Show and Scroller's Choice with "Flight of Fancy."



Mike Lawson of Wausau, Wis., created bookends using John A. Nelson's giraffe puzzle design.

SCROLLSAW

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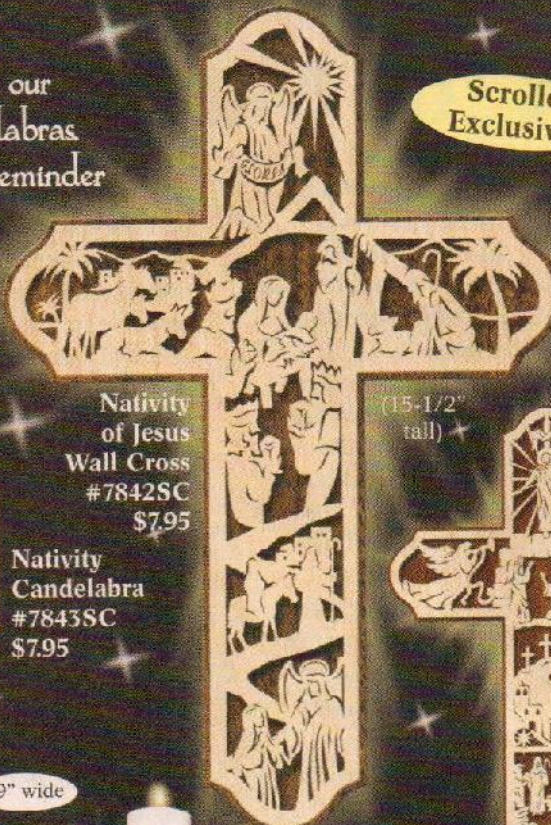
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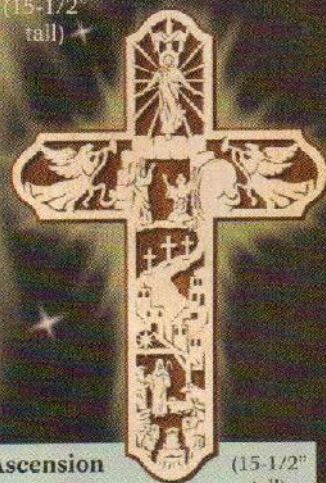
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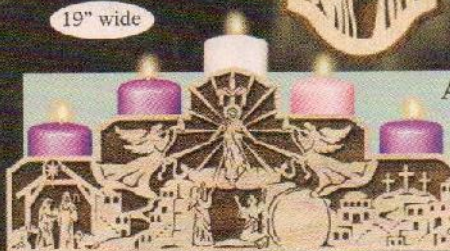
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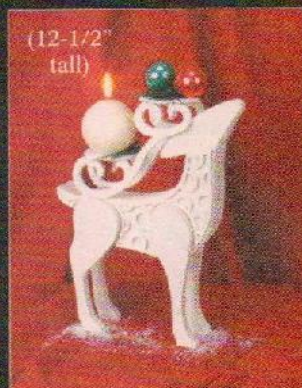
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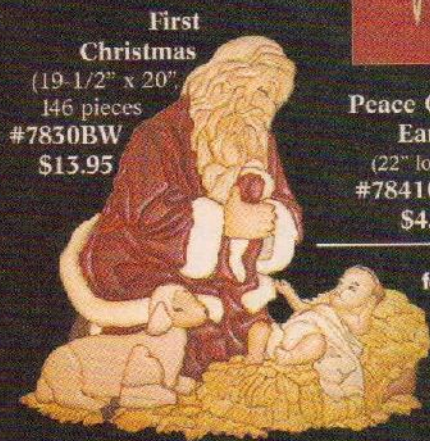


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Not Too Much Intarsia

I have been a subscriber to your fine magazine for several years. I respectfully disagree with Mr. Daniel Lynch's opinion in *Scroll Saw Woodworking & Crafts*' Fall 2009 (Issue 36) that there is too much intarsia featured in the magazine. I honestly think you do an excellent job of having both intarsia and fretwork projects in your magazine. I find it ironic that his letter appears in the fall issue, because I think it is one of the best issues you have printed. I will be making the Halloween intarsia, the scarecrow intarsia, the fretwork nativity cross, and the personalized sports plaques.

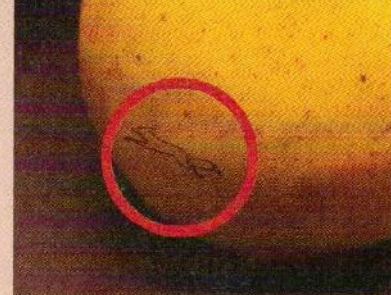
Because the name of your magazine is *Scroll Saw Woodworking & Crafts*, I think pretty much anything you can cut with a scroll saw is fair game. Personally, I prefer intarsia projects over fretwork projects. It would be great if there was a magazine specifically for intarsia enthusiasts. If the intarsia patterns go away in your magazine, so will this long-time subscriber. Keep up the good work.

Joe A. Haley
Jackson, La.

Having a magazine with a good balance of scrolling, fretwork, and intarsia is perfect for me. As the interest in intarsia grows, more and more people will be intrigued by it and will want more patterns and instructions. Having an equal weight of intarsia and fretwork in a scroll saw magazine only makes sense.

I remember when I was first starting out with my woodwork (easy scroll work mainly). I enjoyed seeing all the different styles, patterns, and different techniques, even though the vast majority of the patterns were beyond my ability or interest levels. The fact that I have very little interest in making boxes, for example, doesn't make me want the magazine to stop publishing box patterns. One day, I may want to make a box, and I will have several excellent patterns from which to choose. By keeping the intarsia patterns, techniques, and tips at a steady and balanced level in the magazine, many readers will take the plunge and give it a try.

Cindy Wilkins
Brandon, Miss.



Fox Hunt

Charles Toner of Carlisle, Pa., and Paul Baldwin of Ocala, Fla., were randomly drawn from the participants who located the fox in our last issue (Fall 2009, Issue 36). The fox was located on the pear in the cornucopia in the photo on page 54.

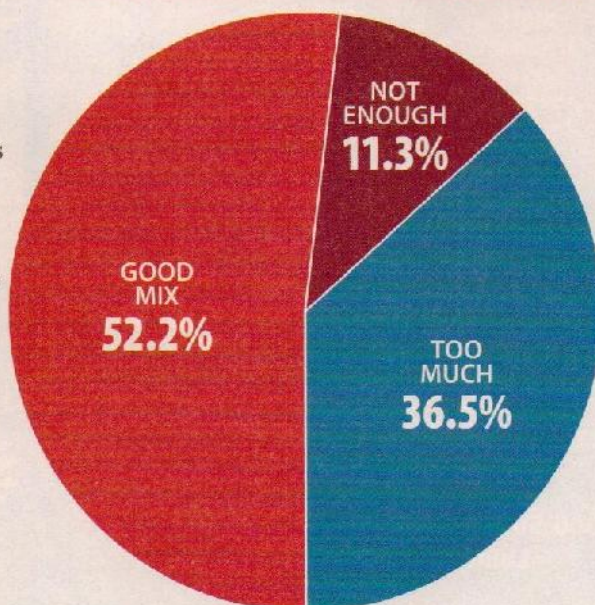
Find the fox in this issue, contact us, and tell us the page number and location. Two readers randomly selected from all correct replies will receive a \$25 Fox Chapel Publishing gift certificate. Entries must be received by December 1, 2009 to be eligible. *NOTE: The contest fox is an outline drawing 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 St., East Petersburg, Pa., 17520, or enter online at www.ScrollSawer.com.

READER POLL:

Editor's Note: In our fall issue, we asked readers to share their opinions in response to Daniel Lynch's letter that Scroll Saw Woodworking & Crafts features too many intarsia projects in each issue. While one third of the respondents agreed with Mr. Lynch, the majority of readers (63.5%) feel that the magazine provides a good mix of scrolling styles or want to see even more intarsia featured in each issue.

Does Scroll Saw Woodworking & Crafts feature too much intarsia?



Source: Online poll combined with direct feedback.

Scrolling Late in Life

My husband and I attend a tractor show in Moultrie, Ga., each year. There was an elderly couple there demonstrating the scroll saw. The husband did the scrolling and the wife did the painting. It was very interesting. When I got back home, I went shopping for a scroll saw.

At 86, I'm thankful the scroll saw gives me a craft I love.

Hazel Ekhooff
Plant City, Fla.

The Perfect Gift

Thank you for *Scroll Saw Woodworking & Crafts*' Holiday 2008 (Issue 33). Every year, I make at least sixteen gifts for family members with my scroll saw. I was having a problem deciding what to make as gifts for 2009 until your magazine arrived.

The Holiday Card Holder by John A. Nelson saved me. I have made nineteen of these card holders for holiday gifts.

Jim Etherton
Columbia, Ill.

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Milking in The Pasture ►

Jim Dabney of Point Pleasant, W.V., designed and created this intarsia scene of a young Dutch girl attempting to milk a cow in the pasture. This project contains more than 750 pieces and 21 different species of wood. Jim won awards at several competitions for "Milking in the Pasture."

**◀ Pedaling Santa**

Ruth Chopp of Gig Harbor, Wash., transformed the Pedaling Bobby, which appeared in *Scroll Saw Woodworking & Craft's* Holiday Ornaments, Toys, & Gifts, into a pedaling Santa toy. Ruth painted her project red and embellished it with cotton fluff.

Harry Potter's Owl ►

Casey Cowan, age 11, of Hot Springs, Ark., created this project from ¼"-thick red oak. This is the first portrait Casey cut. The pattern, called "Hedwig the Owl," was designed by Shelli and Kerry Robinson, and appeared in *Scroll Saw Woodworking & Crafts Holiday* 2003 (Issue 13). The piece earned Casey Best of Show in the teen and pre-teen category at the 2009 Texas Scroll Saw Picnic.



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Cutting Compound Designs

TOP TIP


Start with a blank slightly larger than the pattern to provide support for fragile compound-cut designs. Use blade-entry holes in the waste to keep the blank solid until you make your final cuts. I use a blank that is $\frac{1}{4}$ " wider and $\frac{1}{2}$ " longer than the pattern. For smaller blanks, I attach a 2" by 2" block to the narrow side of the blank with double-sided tape. The block stabilizes the blank, keeping it square on the saw table.

Donald Nichols
San Antonio, Tex.

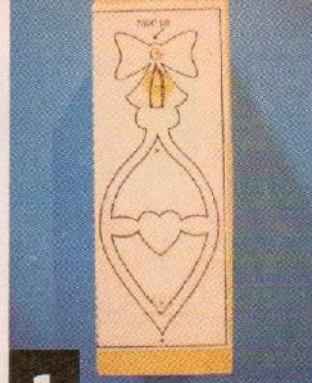
TOP TIP in our spring issue wins an assortment pack of Flying Dutchman scroll saw blades from Mike's Workshop. Send your tips or techniques to Bob Duncan, 1970 Broad Street, East Petersburg, PA 17520, or Duncan@FoxChapelPublishing.com



Improving Grip and Easier Blade Feeding

I print my patterns on full-sheet labels and I find the surface slippery when I try to make sharp turns. I bought rubber fingertips at an office supply store and I wear them on both index fingers to give me the grip I need to make sharp turns. I also use a small awl to enlarge the back of my blade-entry holes. The tapered hole is easier to feed a blade through.

Cheryl Sterrenburg
Milwaukee Wis.


1

Prepare the blank.

Attach the pattern leaving extra waste wood outside the design. Drill the blade-entry holes for the inner frets. Then drill a blade-entry hole outside the pattern lines on both sides of the blank.


2

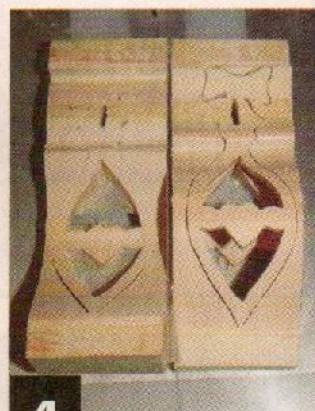
Make the initial cuts.

Cut the frets on both sides of the blank. Insert the blade through the blade-entry hole in the waste wood and cut around the perimeter of the design. Wrap the blank with clear packaging tape to hold the design in the solid piece of waste.


3

Finish cutting.

Rotate the blank, insert the blade through the blade-entry hole, and cut the perimeter of the other side. Then, cut straight out from the blade-entry hole to the outside of the block. Cut in from the opposite side of the blank to meet the cut line, separating the waste into two sections.


4

Free the design.

Cutting the waste wood on either end of the design makes it easy to open the blank and retrieve the 3-D project. Apply your finish of choice.

Glue Tips

Apply a light coating of petroleum jelly (Vaseline) to the nozzle of your cyanoacrylate glue bottle. The petroleum jelly prevents the glue from sticking to the nozzle, making it easier to open the bottle, and helps prevent the nozzle from clogging.

Amy Nielsen
Maple Valley, Wash.

Drill out the tip of an empty nasal spray bottle with a $\frac{1}{16}$ "-diameter drill bit. Fill the bottle with wood glue to make small clean lines and prevent glue squeeze out.

George Ivan
Felton, Del.



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New Owners of RBI Hawk Scroll Saw

Bushton Manufacturing has acquired all parts and manufacturing rights for RBI Hawk tools. The company, owned by brothers Nilus and Loren Orth, is in the process of organizing all of the parts and equipment after moving the inventory to their facilities in Bushton, Kan.

"The labels were gone by the time we bought the parts," Nilus said. So, Bushton had to find the engineers' drawings for each piece and match the parts with the dimensions and shapes on the drawings.

Bushton has been supplying Hawk parts since May 18, 2009.

"We sent out a fair number of wrong parts early on," Nilus said. "But we've pretty much gotten through that. Now, we're shipping parts daily to people who call or e-mail."

The company is also finishing up its trial production run on the Hawk 220 Ultra scroll saws.

"We're concerned about not releasing anything until the quality is there," Nilus said. Bushton hopes to start producing the 26" saws, such as the G4, sometime this fall.

"We're behind where we'd like to have been," Nilus said. "But the web page should be coming back up soon so people can order blades, blade holders, and other accessory packages online."

Nilus, who has a doctorate in mechanical engineering, has been reviewing the Hawk tools and the manufacturing process to see if there are any changes that would increase the quality of the tools. Changes have already been made to the router table system RBI had created. The improved router table system is available through Bushton.

New production of RBI's popular G4 model will begin in the fall of 2009.



To contact Bushton for Hawk parts, contact Jim at 620-562-3557, jnye@hawkwoodworkingtools.com, or www.rbiwoodtools.com.

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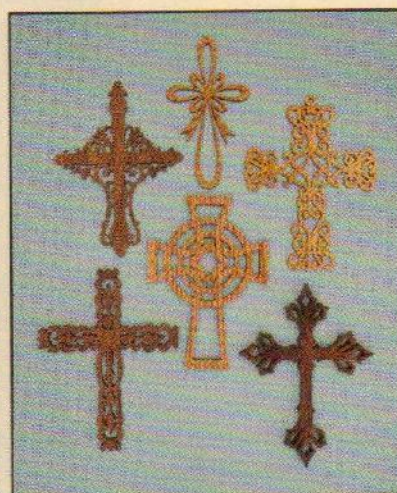
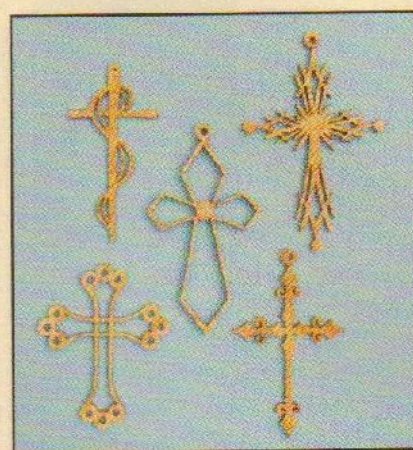
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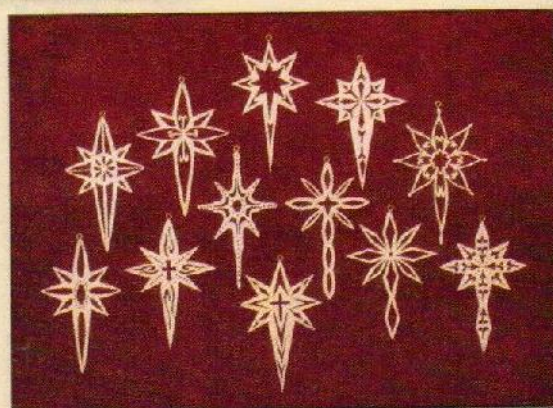


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Attaching Patterns

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 pattern, wait a few seconds, and 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 your 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 the 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 your 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 the holes may interfere with

delicate fretwork. Drill through your 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 your blades through. For thin veining cuts, use the smallest bit your blade will fit through.

Blade Tension

Before inserting a blade, the tension should be completely removed. 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 $\frac{1}{8}$ " 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 allow you to make cuts at different angles. There are times when you want your 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, your cuts will be angled. This interferes with puzzle pieces, intarsia, segmentation, and many other scrolling projects.

The most common method for squaring your table is the small square method. Set the square flat on the saw table against a blade that has been inserted and tensioned. Adjust the table to form a 90°-angle to the blade.



The cutting-through method is also popular. Saw through a piece of scrap wood at least $\frac{3}{4}$ "-thick and check the angle of the cut using a square. Adjust the table until you get a perfectly square cut.

To provide more projects per issue, we have consolidated basic scrolling information here. Because our articles will no longer cover these basics, we will publish this page in each issue to assist novice scrollers.



You can also use the kerf-test method. Take a $1\frac{3}{4}$ "-thick piece of scrap and cut about $\frac{1}{16}$ " into it. Stop the saw, 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. Scrollers

can use either masking tape, painter's tape, or clear packaging tape.

Another method uses hot-melt glue. Glue the blanks together with a dot of hot-melt glue on each side.

You can also join pieces for stack cutting by driving brads or small nails into as many waste areas as you can. Be sure to cut off any overhanging nails as close to the surface as you can; then sand them flush to avoid scratching or catching on the table.



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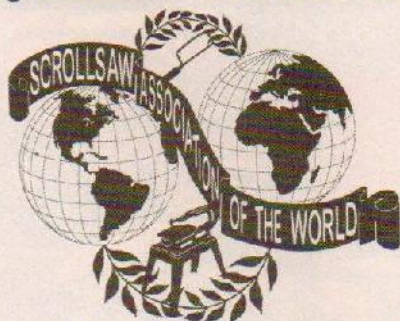
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You may enter as many projects as you wish, but entries must be your original designs. Entries will be evaluated on originality of design, quality of construction, and aesthetic appeal.

Entries are accepted in six categories

Each category listed above, as well as the Best in Contest Award, will have two winners: one chosen by the editors and one chosen by the online community. All entries are eligible for the Best in Contest

Awards. Entries will be posted on the SSW&C Website, www.scrollsawer.com, for voting.

Depending on the number of entries, it may not be possible to have all entries available for online voting. SSW&C staff reserves the right to determine the category for entries.

Category winners receive:

- \$50 Fox Books Gift Certificate
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- Commemorative Contest Pin

Best in Contest Winners receive:

- Category prize package PLUS
- \$50 Cash
- Autographed Fox Chapel Book

Entry deadline is December 31, 2009.

Artists retain all copyrights, but consent to having a pattern of their project published in SSW&C.

Entries will be acknowledged, but photos and materials received will not be returned. Please do not submit original artwork.

CONTEST RULES:

- Patterns must be your original design. Designs cannot be altered versions of existing patterns by another designer.
- Projects must feature a significant amount of scrolling. (Projects may include other common woodworking tools in the creation, for example: router, table saw, band saw.)

- Projects must be able to be made from commonly available wood.
- Projects cannot have been previously entered in a SSW&C sponsored contest.

TO ENTER:

- Submit the following information:
- Category of entry

- 1 or 2 clear photographs of your work
- Information on the project size and types of wood used
- Information on special construction or finishing methods
- Your name, address, phone number, and e-mail address



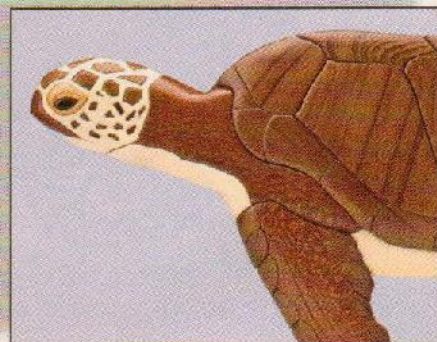
Grand Prize Winner: Art Ball by Tom Stewart



People's Choice Winner: Steam Locomotive by Bob Myers



Honorable Mention: Japanese Garden Clock by Pete DeFrancisco



Honorable Mention: Sea Turtle Intarsia by Tim Rogers



Honorable Mention: Fretwork Table Clock by Bruce L. Millward

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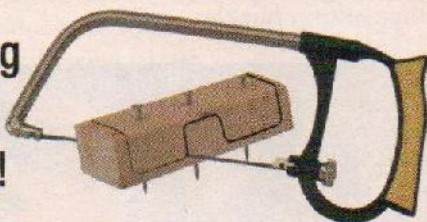
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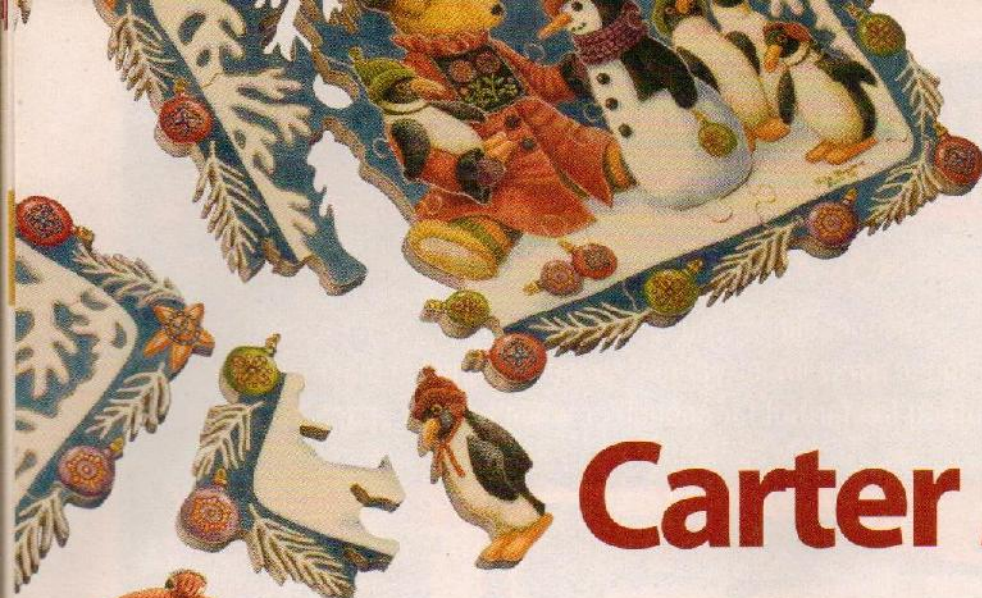
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Puzzlemaster Carter Johnson

Scroll saw artist specializes in cutting jigsaw puzzles without the aid of a pattern—and you can do it too!



Carter Johnson began cutting jigsaw puzzles in 1993 after moving to a larger home with room for a workshop in the basement. Both Carter's and his wife's families have been interested in wooden jigsaw puzzles for generations. Building on the family enthusiasm, Carter became determined to create his own puzzles.

To date, Carter has cut thousands of jigsaw puzzles including more than 600 full-size puzzles, each with 250 to 450 puzzle pieces.

"I cut them all without patterns, honoring the color lines in the pictures as the basis for the puzzle pieces," Carter explained. "I deliberately select calendar pictures and photographs with distinct colors and images within them. I try to follow all of the color lines, whether they are animals, plants, or roof lines. Utilizing the color lines for the boundaries of the pieces not only eliminates the need for patterns, but it makes the puzzles a lot more fun to assemble."

Carter also cuts puzzles out of postage stamps.

"I always keep a couple of one-cent stamp puzzles in my pocket to give away wherever I want to be remembered," Carter said.



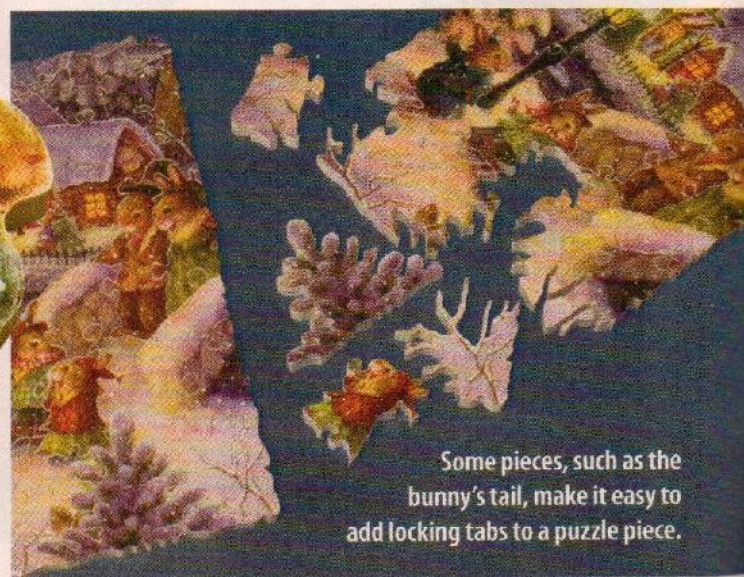
"I bet I've given away over 2,000 postage-stamp puzzles in the past ten years."

In late 1997, Carter and his wife were shopping for Christmas cards when he got the idea to create his trademark Christmas-card puzzles. 2009 marks the thirteenth year of sharing these unique holiday greetings with friends and family.

"I begin a year early, in January, and will have around 90 cards ready by December. I always select a card that's great fun to cut," Carter said.

Each full-size puzzle takes Carter five to six hours to cut. A Christmas-card puzzle takes less than thirty minutes to cut and Carter can cut a postage-stamp size puzzle in just over five minutes.

Carter uses Flying Dutchman #2/0 narrow-kerf superior puzzle blades for the full-size and Christmas-card puzzles. He uses an #8/0 jeweler's blade for the postage-stamp puzzles.



Some pieces, such as the bunny's tail, make it easy to add locking tabs to a puzzle piece.

Cutting Christmas Card Puzzles

Free-form puzzle-cutting technique creates unique keepsake from any picture

By Carter Johnson

These card-size puzzles make memorable gifts and are perfect for Christmas, birthdays, or any occasion. The process is simple, with no inside cuts requiring you to feed a blade through a blade-entry hole. Without the restrictions of a pattern, the puzzles are ideal for scrollers of all skill levels. Friends and family who receive one of these unique handmade greetings will be sincerely appreciative and amazed at your skill.

If you're planning to cut quite a few holiday puzzles, buy the cards a year in advance—you can find great bargains after the Christmas season. While you won't need to adhere a pattern to the puzzle you're going to cut, you may find it useful to make a couple of copies of the card and draw the pieces you intend to cut. You can use the drawing as a guide while you cut. This saves time and prevents you from making any mistakes. You can always make changes as you go.

Your puzzle should be anywhere from 20 to 35 pieces for a 5" by 7" card.

This year, I will make around 90 puzzle cards. Many will be mailed to friends and given to neighbors. I will also share some at my woodworking club, give a few to friendly local merchants, and provide puzzle cards for our grandchildren to take to their teachers.

TIP CREATING LOCKING TABS

Create locking tabs using traditional circles and sockets or by utilizing the color lines in the image. Each circle must be wider than its neck for the locking tab to be functional. In this piece, the branch the bird is sitting on creates the narrow neck with the bird's body creating the wider lock.



1

Prepare the card. Separate the sections of the card by cutting the front with the picture from the back with the message. Trim each half by cutting off the ridge where the card was folded. The picture is turned into the puzzle and the back of the card is included with a personal message.

PUZZLES: CUTTING WITHOUT A PATTERN



2 **Mount the card on the plywood.** Spread Aleene's white tacky glue thinly and evenly across the wood with a paint scraper. Press the card down slowly, starting in one corner and working toward the opposite corner. Smooth the edges and bubbles as they rise in the drying process.



3 **Cut the puzzle's perimeter.** The puzzle must be about $\frac{1}{2}$ " smaller in length and width than its original dimensions in order to fit in the envelope. I prefer a random edge, unless the card has a distinct border to follow. Coat the puzzle with triple-thick glaze spray or a gloss polyurethane spray. Let it dry for one day.



4 **Begin cutting the puzzle pieces.** Choose where to start cutting the pieces. For this image, I start with the pieces to the immediate right of the snowman's hat. Cut one piece at a time, following the color lines when you can. Cut locking tabs between the pieces where necessary to keep the puzzle secure.



5 **Cut the remaining pieces.** Continue cutting adjacent pieces. Often the color lines will produce their own locks, such as the birds, branches, and other shapes in this card. Remember that each piece should have a locking tab to connect it to adjacent pieces. Vary the size of the pieces to fit the images you are cutting.



6 **Finish the puzzle.** When done cutting, assemble the puzzle and sand the back. Wipe off the dust with a damp sponge. Trim the message portion of the card and add a personal note. Cut a piece of poster board or card stock to size, sandwich the puzzle between the message and the card stock, and return the card to its original envelope.

Materials:

- Christmas card or card of choice
- $\frac{1}{4}$ " x 5" x 7" 5-ply poplar plywood or plywood of choice
- Poster board or card stock
- Aleene's tacky glue
- Triple-thick glaze or gloss polyurethane spray
- Assorted grits of sandpaper

Materials & Tools

Tools:

- #2/0 Flying Dutchman superior puzzle blades or blades of choice
- Paint scraper (to spread glue)
- Damp sponge



Carter Johnson and his wife live in Bolingbrook, Ill. He doesn't sell his puzzles, but enjoys helping others learn this freestyle technique. You can view some of his puzzles at www.picturetrail.com/carterj, see his video by entering "cutting jigsaw puzzles" into YouTube or e-mail him at CarterJ636@aol.com.



Fretwork Poinsettia



Beautiful holiday flower design has a variety of uses

By Toni Burghout Cut by Dale Helgersen

I love the look of poinsettias around Christmas, but they never last as long as I wish they would. I created this poinsettia design so I can display the festive flower as long as I want.

Use this simple fretwork pattern in a variety of ways. Paint portions of the backing board red and green to add a striking

effect. Leave a border around the design and add a holiday message for a seasonal welcome sign. Stack several pieces of card stock between thin plywood for custom Christmas cards. The design is easily adaptable to create a napkin holder and matching trivet for your holiday table. Reduce the size of the pattern and turn it

Materials:

- ¼" x 6¾" x 8½" (trivet or wall hanging)
- ¼" x 4½" x 4½" (coasters or ornaments)
- Finish of choice
- Assorted grits of sandpaper

Tools:

- #3 reverse-tooth blades or blades of choice
- Drill with assorted small drill bits

Materials & Tools

into an ornament. Add a piece of red acrylic as a backing board to create a seasonal suncatcher. Use your imagination to create your own unique way of displaying this holiday icon.

Seasons



Greetings

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Toni Burghout lives in Orillia, Ont., Canada. She and Sue Chrestensen are the owners of Chrestensen-Burghout designs. Visit their website at www.chrestensenburghoutdesigns.com.

Monkey Business Puzzle



Playful primates make a fun and easy gift

By John A. Nelson. Cut by Dale Helgersen

These crazy apes are great fun for children of all ages. The project is easy to cut and finish, making it ideal for last-minute gift giving.

I cut this piece from $\frac{3}{4}$ "- to 1"-thick hardwood. The thick wood allows the puzzle to sit upright on its base. You could also cut it from $\frac{3}{4}$ "-thick pine and paint or stain the pieces. If you paint the pieces, I suggest thin washes of acrylic paint. The thin finishes allow the wood grain to show through and won't clog the saw kerfs, which can prevent the pieces from fitting together properly.

Drill blade-entry holes for the internal veining lines and the small

monkeys' eyes with a $\frac{1}{16}$ "-diameter bit. I use a $\frac{1}{8}$ "-diameter drill bit for the eyes on the large monkey. Make sure your saw table is square to the blade before cutting the puzzle pieces. Sand the pieces smooth before applying a finish.

If you make this puzzle for children under three, enlarge the pattern to avoid a choking hazard. Apply a non-toxic finish and allow the finish to dry according to the manufacturer's instructions.

Materials & Tools

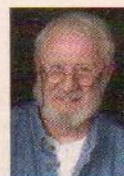
Materials:

- $\frac{3}{4}$ " to 1" x $8\frac{1}{4}$ " x $14\frac{1}{4}$ " wood of choice
- Finish of choice, such as tung oil or Danish oil
- Assorted grits of sandpaper

Tools:

- #5 reverse-tooth blades or blades of choice
- Drill with $\frac{1}{16}$ " and $\frac{1}{8}$ "-diameter bits

Pattern for the **MONKEY BUSINESS PUZZLE** is in the pattern pullout section.



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

Create a Contemporary Box

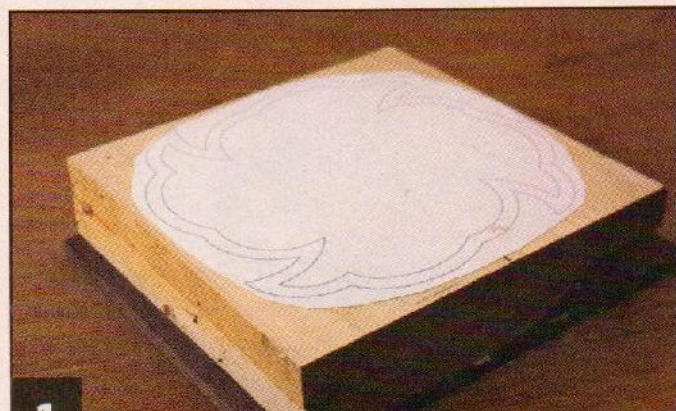
Simple cutting techniques make it easy to construct a colorful hardwood box

*By Thomas Haapapuro
Process photography by Greendoor Imaging*

One of the most appreciated gifts that any woodworker can give to friends and family is a custom-made box. With the unique cutting abilities of a scroll saw, you can create a box sure to be a treasured keepsake.

The methods used to create this box are fairly simple. Once you understand the basics of the technique, you can create a variety of boxes in this style. Whenever you are cutting thick wood, you will need an appropriate set of blades. I use a variety of the single-tooth Olson PGT blades and a good dose of patience. Thick wood must be cut slowly. Most scroll saws are capable of cutting 1 $\frac{3}{4}$ "-thick wood, but you may need to remove the hold-down arm.

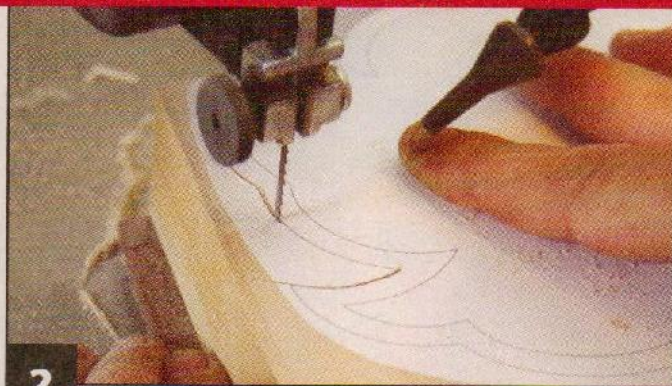
To make the lid for this box, I use two species of contrasting-colored wood. I use black walnut and American cherry. These woods contrast well with one another and have complementary warm tones.



1

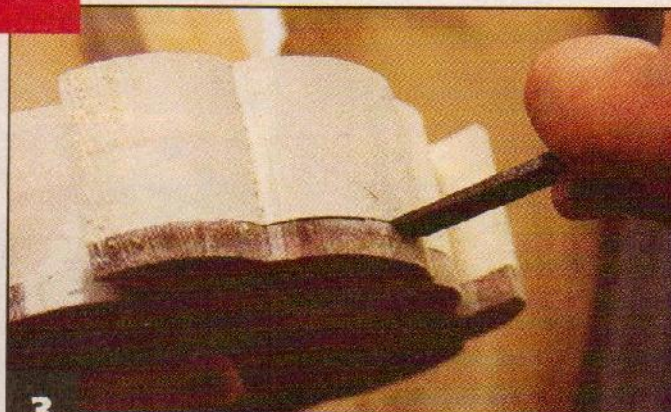
Assemble the sides and bottom. I use two pieces of $\frac{3}{4}$ "-thick cherry for the box sides. Glue and clamp the two side blanks together. Attach the $\frac{1}{4}$ "-thick bottom blank to the sides using double-sided tape. Attach the box body pattern to the top of the assembly with spray adhesive.

BOX: CUTTING THE BOX SIDES



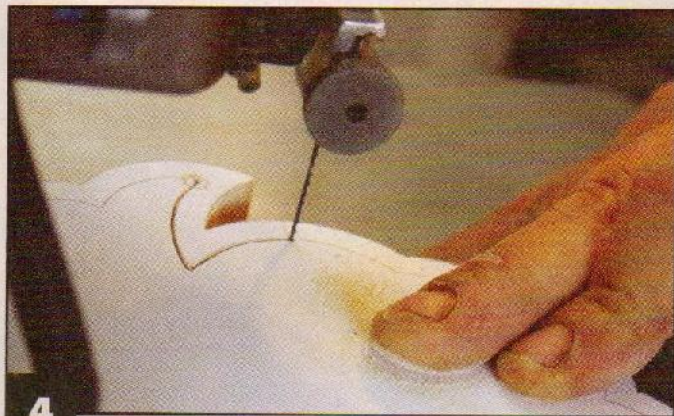
2

Cut the outside of the box. Turn the saw speed down and cut along the outside of the box. Some of the acute angles on the box are too tight to turn a blade around, especially the wider blades used to cut thick wood. I cut into the corner from both sides to keep the corners sharp.



3

Remove the bottom. Gently pry the bottom off with a sharp chisel. Do not dent the wood. Set the bottom aside. Drill a blade-entry hole in the inside corner of one of the points on the pattern attached to the sides. Use the smallest drill bit possible.



4

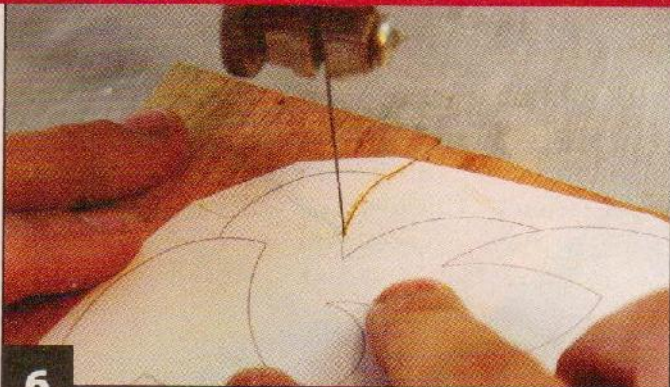
Cut the inside cavity. Use a #3 blade. This allows you to navigate the corners and produces a smaller kerf, which helps the lid fit tighter. Keep the center as one piece. Feed the wood slowly and carefully into the blade to prevent the blade from bowing or breaking. Set the waste aside, but do not discard it.



5

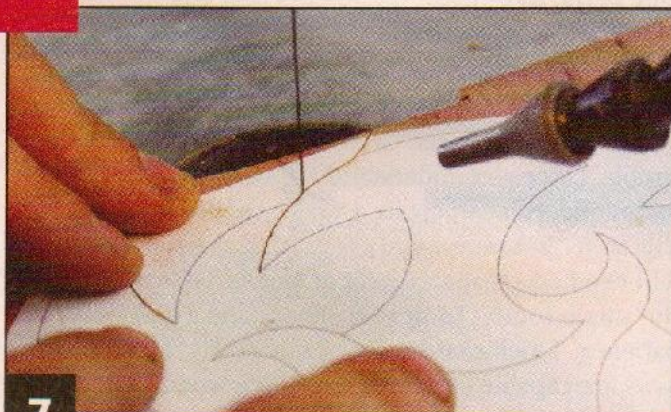
Sand the sides and bottom. Use progressively finer grits of sandpaper to smooth the inside of the box sides. Do not sand down any of the sharp angles. Place a sheet of sandpaper flat on the table and push the box bottom and bottom of the sides back and forth on the sandpaper to keep from rounding the edges.

BOX: CUTTING THE LID



6

Begin cutting the lid pieces. Attach a copy of the lid pattern to both the walnut and cherry blanks. Make sure the grain direction is running the same way in relation to the pattern on both blanks. Cut into one of the sharp inside corners from the outside edge.



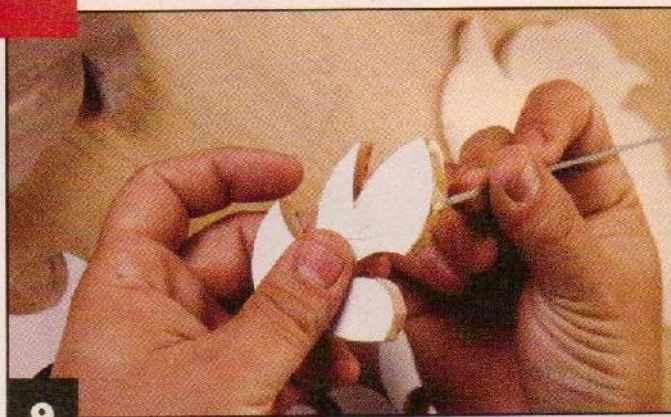
7

Finish cutting the lid pieces. Back out of the cut and cut into the corner from the opposite direction. Although this technique prevents you from stack cutting the lid, it produces the sharp corners integral to the design. Cut the remaining pieces in cherry and walnut using the same technique.

BOX: CUTTING THE LID



8 **Test fit the pieces.** Use the numbers on the pattern pieces to make sure you have them in the right order. If the pieces are too snug, place the oversized piece on the adjacent piece and trace the areas to be trimmed. Cut the piece again or sand it until the pieces fit together properly.



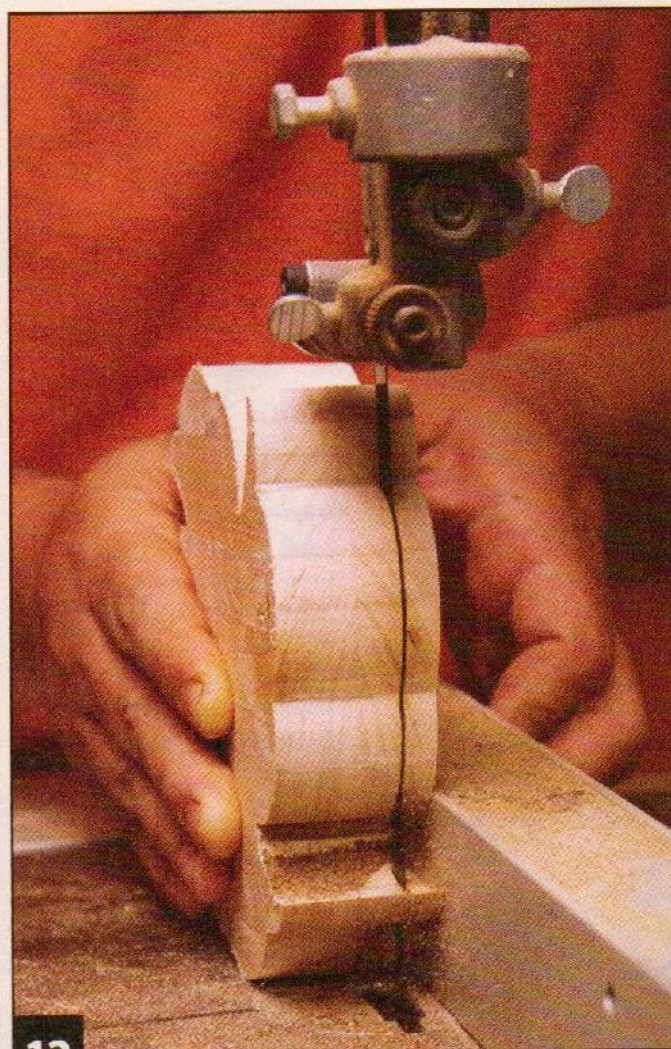
9 **Glue the contrasting pieces together.** Spread a thin layer of glue on the edges of the pieces and assemble them on top of a flat piece of wood. Place another flat piece of wood on top of the assembly and clamp the pieces together until the glue dries. Use waxpaper to prevent the lid from sticking to the clamping boards.



10 **Rough sand the lid top.** Use a random orbital sander to remove the pattern and even out any high spots. Do not round the corners of the lid.

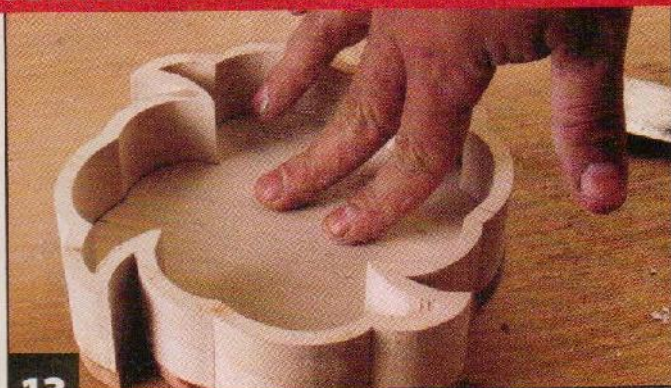


11 **Fill any gaps.** Use wood putty or make your own gap filler by mixing glue with sawdust from the lid cutting. Let the putty dry for two hours. Then sand the lid with progressively finer grits of sandpaper up to 220 grit.



12 **Create the lid liner.** Slice a $\frac{1}{8}$ "-thick section of the waste material cut in step 4. Use a band saw. Using the waste wood from the inside cavity of the box sides produces a lid liner that fits the box cavity perfectly.

BOX: ASSEMBLING THE BOX



13

Assemble the lid. Place the lid face down on the bench. Apply a thin layer of wood glue to the top of the lid liner. Keep the glue away from the cut-out center of the lid. Place the lid liner in position on the lid and align the box sides with the lid to help properly position the lid liner. Firmly press the lid liner to the lid and carefully remove the box sides.



14

Finish the box. Sandwich the lid assembly between two pieces of scrap wood and clamp the pieces until dry. Apply a thin layer of glue to the bottom of the box sides, align the bottom and sides, and clamp the bottom in place. After the glue dries, sand as necessary. Then apply your finish of choice. I apply Sam Maloof's poly/oil finish followed by Sam Maloof's oil/wax finish.

Contemporary box body pattern

Box body

Inside waste material
(Save for lid liner)

Materials:

- 2 each $\frac{3}{4}$ " x $8\frac{1}{4}$ " x $8\frac{1}{4}$ " cherry or wood of choice (sides)
- 2 each $\frac{1}{4}$ " x $8\frac{1}{4}$ " x $8\frac{1}{4}$ " walnut or wood of choice (lid, bottom)
- $\frac{1}{4}$ " x $8\frac{1}{4}$ " x $8\frac{1}{4}$ " cherry or wood of choice (lid)
- Assorted grits of sandpaper up to 220 grit
- Wood glue
- Putty (optional)

Tools:

- Spray adhesive
- Sam Maloof's poly/oil and oil/wax finish or finish of choice (Sam Maloof's finishes available at www.Rockler.com, 800-279-4441)
- #3 and #5 or #7 single-tooth Olson PGT blades or blades of choice

Materials & Tools

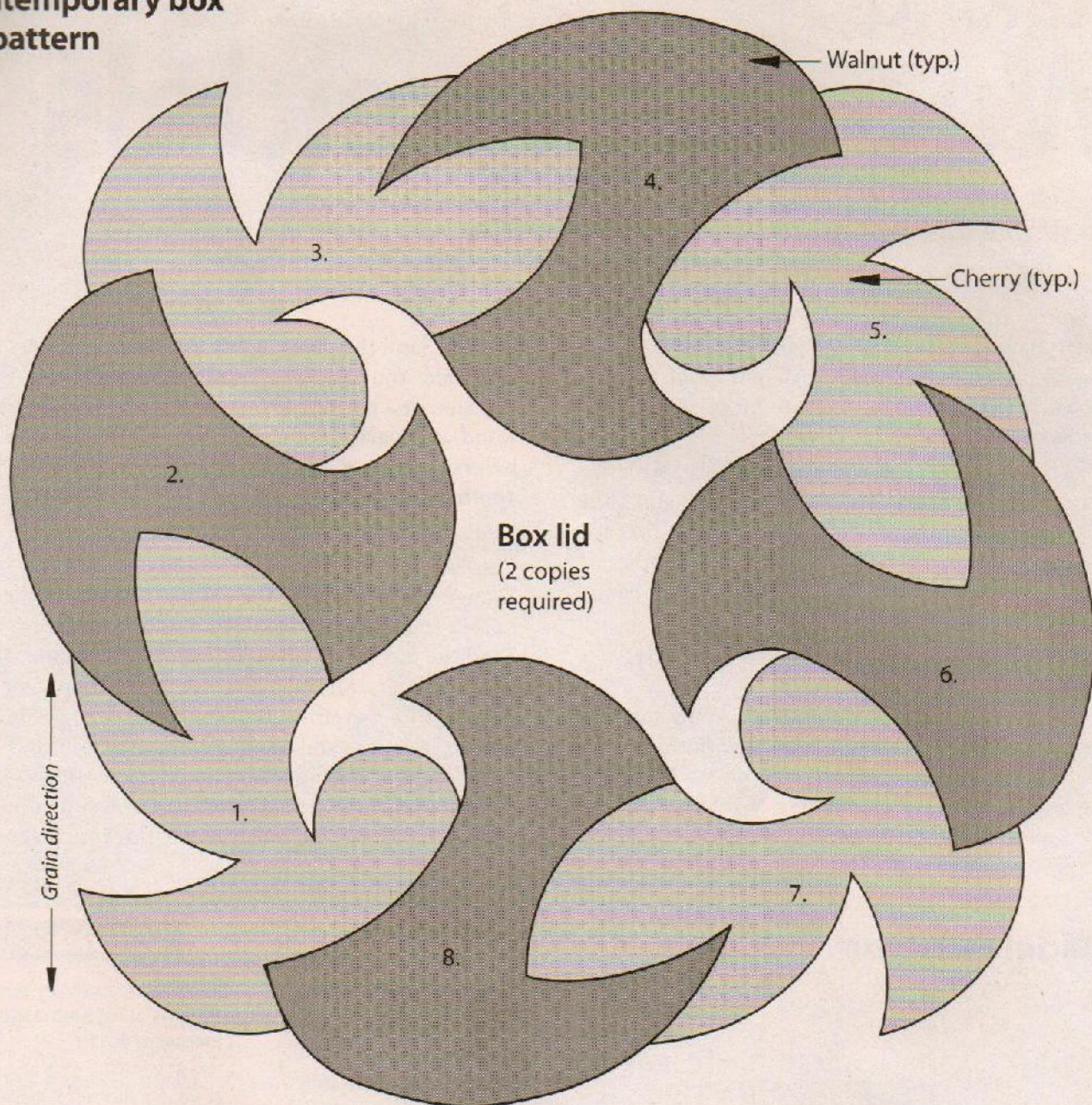
- Drill with assorted small bits
- Random orbital sander
- Putty knife
- Pencil
- Clamps
- Band saw

Grain direction

Inside edge of box

Outside edge of box

Contemporary box lid pattern



TIP PREVENT CHERRY FROM BURNING

To prevent cherry from burning, use only brand-new sharp blades at a slow cutting speed. Some scrollers cover their patterns with clear packaging tape to lubricate the blade.



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.



Making Wooden Dreidels

Two simple designs for traditional Hanukkah fun

By Carl Hird-Rutter Cut by Ben Fink

Dreidels have entertained people for centuries. Typically played during the Jewish holiday of Hanukkah, the Dreidel game is fun for everyone, regardless of age or religion.

Each side of the four-sided top is labeled with a different Hebrew letter: Nun, Gimmel, Hey, and Shin. The letters dictate the action the player must take in the game (see Playing the Dreidel Game). Together, the letters form the acronym Nes Gadol Haya Sham, "a great miracle happened there."

The Compound Dreidel

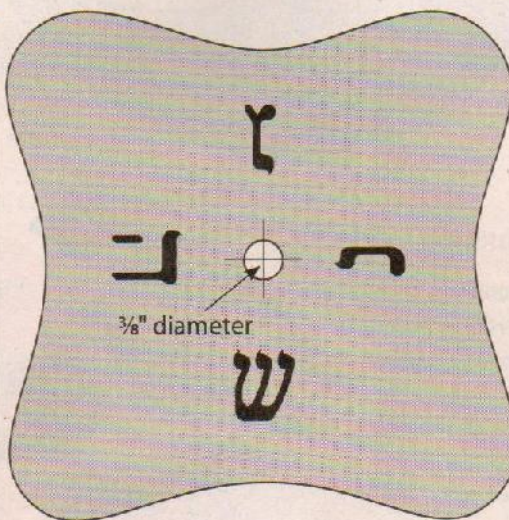
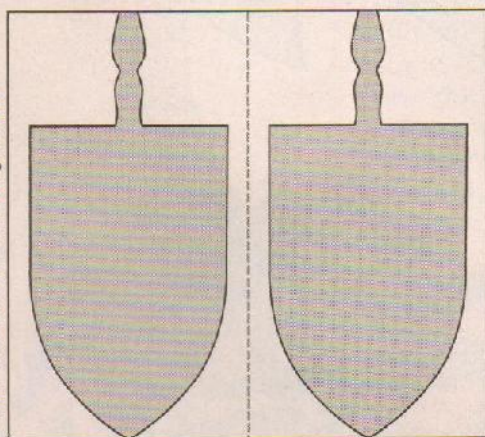
Fold the pattern along the dotted line. Apply spray adhesive to the pattern, align the fold with the corner of the blank, and press the pattern onto the blank. Cut along the pattern lines on one side. Wrap the blank with clear packaging tape and cut the second side. Use caution when cutting the thin stem on the top of the

dreidel. Sand the piece lightly and add the letters to each side. You can use a woodburner, paint, a T-shirt transfer, or a marker. If you use a marker, seal the wood with varnish or shellac before drawing on the letters to prevent the ink from bleeding. Then apply another coat of shellac or varnish to protect the wood.

The Flat Dreidel

Transfer the pattern to the blank. Drill the $\frac{3}{8}$ "-diameter hole in the center and cut around the outside edges. Sand the piece and follow the suggestions above to add the letters. Sharpen one end of a $\frac{3}{8}$ "-diameter dowel with an eyeliner pencil sharpener to produce a blunt point or sand the point onto the dowel. Drill a $\frac{3}{8}$ "-diameter hole in a wood bead. Glue the bead to the un-sharpened end of the dowel. Place the dowel through the hole in the blank and glue it in place.

Dreidel patterns



נ ג ה ש



Carl Hird-Rutter lives in Chilliwack, B.C., Canada. Visit his website at www.3.telus.net/public/scroller/.

Materials & Tools

Materials:

- 1 $\frac{1}{4}$ " x 1 $\frac{1}{4}$ " x 2 $\frac{1}{2}$ " hardwood block (compound dreidel)
- $\frac{1}{8}$ " x 3" x 3" Baltic birch plywood or wood of choice (flat dreidel)
- $\frac{3}{8}$ "-diameter by 4" dowel (flat dreidel)
- $\frac{3}{4}$ "-diameter wooden bead (flat dreidel)
- Assorted grits of sandpaper
- Varnish or shellac
- Paint or permanent marker

Tools:

- #5 skip tooth blades or blades of choice
- Assorted grits of sandpaper
- Drill with $\frac{3}{8}$ "-diameter bit
- Eyeliner pencil sharpener (optional)
- Woodburner (optional)



Playing the Dreidel Game

Each player needs to have some Gilt, or tokens, such as pennies or candies. Each player starts with the same number of tokens. At the beginning of each round, each player puts one token in the pot. Every time the pot is empty or only one token remains, each player contributes one token to the pot.

Each player spins the dreidel one time per round. If Nun (נ) comes up, the player takes nothing. If Hey (ה) comes up, the player takes half the pot. If the pot contains an odd number of tokens the player takes half of the total plus one. Gimmel (ג) entitles the player to the entire pot and Shin (ש) means the player must put one token in the pot. If a player is out of tokens, they are out of the game or they may ask a fellow player for a loan. The game continues until one player has all of the tokens.

Making Inlay Snowmen Ornaments

**Use hardwood scraps to create
adorable folk-art snowmen**

By Theresa Ekdorn

Add some color to your holiday tree with these fun and festive inlay ornaments. The whimsical snowman designs are sure to become family favorites. Use the ornaments to decorate a wreath, add a personal touch to wrapped gifts, or tuck them in with your Christmas cards.

The snowmen are a great way to use up small pieces of colorful hardwoods. For these designs, I use padauk, yellowheart, rosewood, purpleheart, zebrawood, and wengé.

Setting the correct table angle

Before cutting the ornaments, determine the correct table angle. Use scrap wood the same thickness as the stock you will be using for the ornaments. Attach two pieces of the testing stock together by running a line of hot glue along their edges. Tilt the right side of the saw table down $2\frac{1}{2}^{\circ}$. Drill a blade-entry hole with the smallest bit possible. Cut clockwise around in a circle—rotate your wood counterclockwise. Remove the blade and test the fit of the circular bottom piece into the hole in the top piece of wood. Adjust the angle of your saw table until the pieces fit flush with each other.

Cutting the inlay

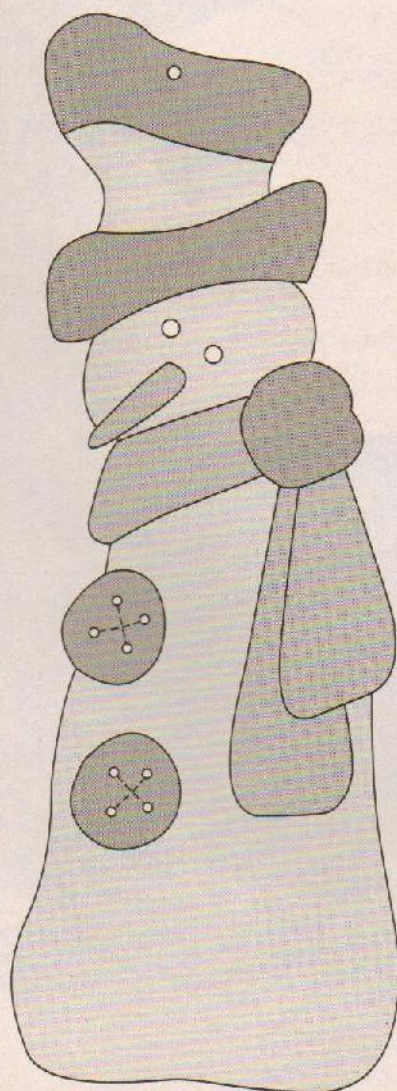
When inlaying multiple colors of wood, it's important to take each step slowly and make sure each stage is glued and dried completely before moving to the next step. Sand the bottom of the design between each step to ensure the wood is flat. Attach your pattern to the white wood. Stack the first two pieces of stock as you did with the test pieces and cut the inlay details. If sections overlap, such as the button and scarf, start with the element of the design that is farthest back first. For example, on the short snowman, inlay his scarf first, then add the button. As you cut each color of the inlay, push the pieces up through the holes in the white wood. Use wood glue to join the inlay pieces and allow the glue to dry before moving on to the next inlay. Use a copy of the pattern to trace any missing pattern lines onto the glued stock.

Once the inlay is complete, drill the holes for the buttons, eyes, and hanger. Return the table to square and cut around the perimeter of the ornaments. Hide any blade-entry holes by filling them with white glue and sawdust. Then sand the ornaments flat. Use a woodburner or permanent marker to add the thread lines on the buttons. Apply tung oil to the completed ornament and add the hanging string.

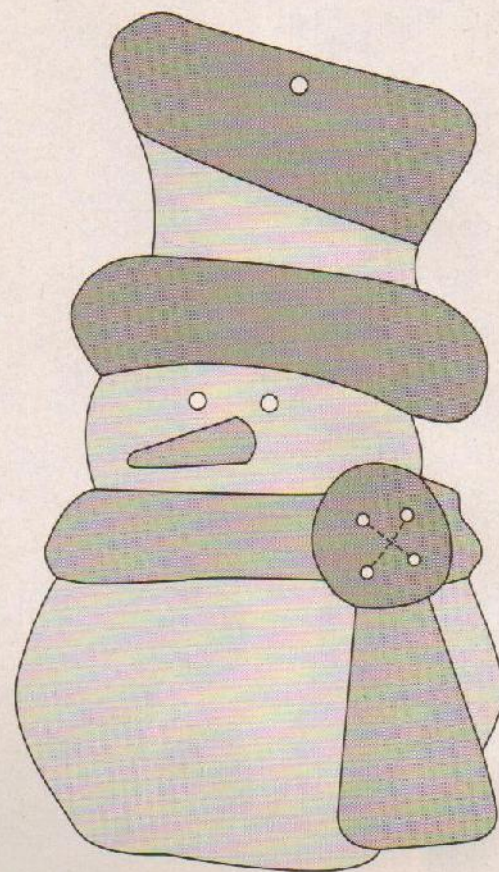
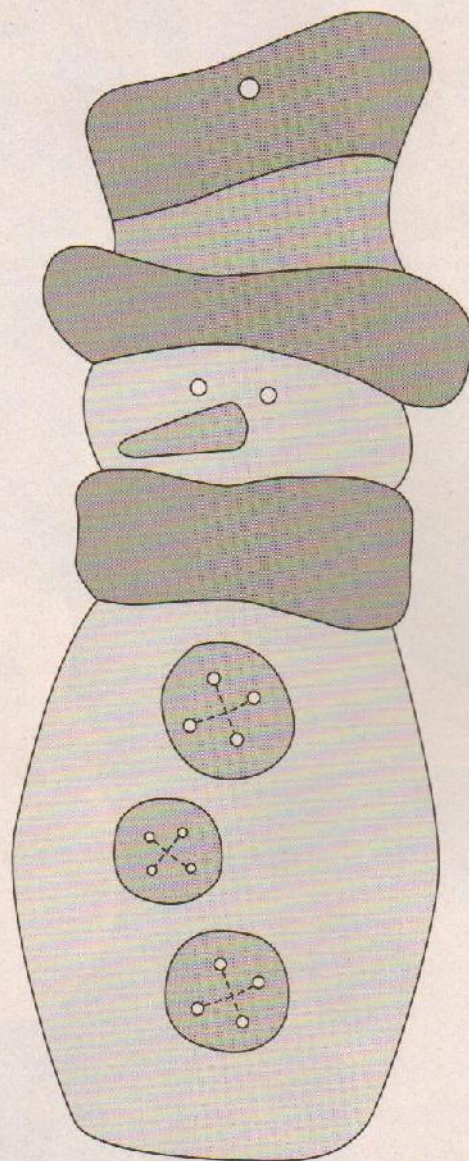


Use colorful hardwood scraps to make festive inlay ornaments.

Inlay snowmen patterns



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Materials:

- Scrap pieces of 1/4"-thick hardwood of choice in various colors
- Wood glue
- Hot glue gun and glue
- Glue stick (to attach pattern to wood)
- Tung oil or finish of choice
- Assorted grits of sandpaper
- Woodburner or permanent marker
- Graphite paper and stylus (to trace pattern lines on layered inlays)

Tools:

- #3 reverse-tooth blades or blade of choice
- Drill with assorted small bits



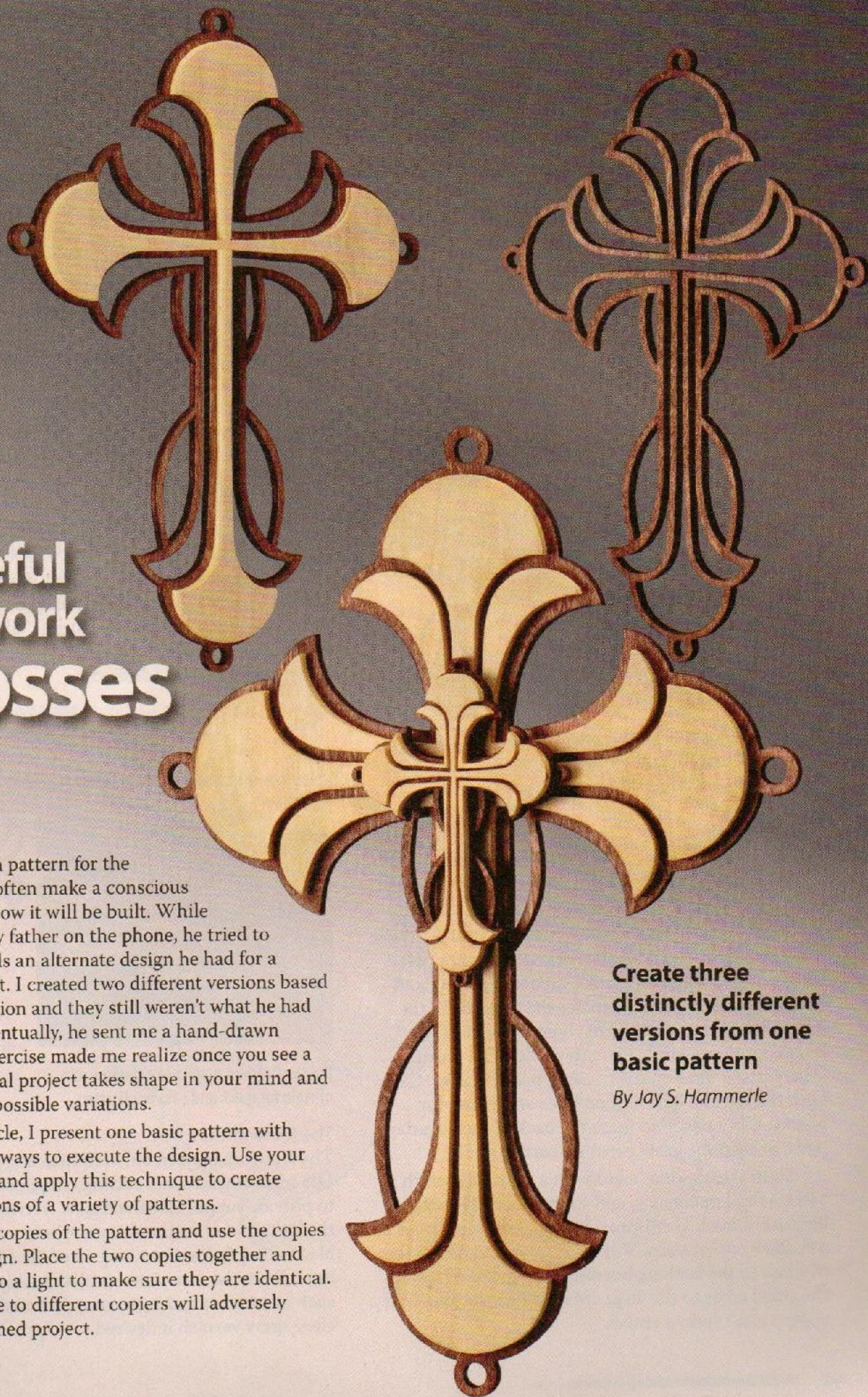
Theresa Ekdorf lives in Roscommon, Mich. She can be reached at ekdomtd@voyager.net.

Graceful Fretwork Crosses

When you see a pattern for the first time, you often make a conscious decision as to how it will be built. While talking with my father on the phone, he tried to explain in words an alternate design he had for a cross I had built. I created two different versions based on his explanation and they still weren't what he had envisioned. Eventually, he sent me a hand-drawn sketch. This exercise made me realize once you see a pattern, the final project takes shape in your mind and you fail to see possible variations.

In this article, I present one basic pattern with three different ways to execute the design. Use your own creativity and apply this technique to create alternate versions of a variety of patterns.

Make two copies of the pattern and use the copies to cut the design. Place the two copies together and hold them up to a light to make sure they are identical. Distortions due to different copiers will adversely affect the finished project.



**Create three
distinctly different
versions from one
basic pattern**

By Jay S. Hammerle

I stack cut two projects at one time. Cutting more than two layers of wood can cause problems, especially if your blade is not square. Always cut the centermost frets first and work your way out to the edges to help support the pieces as you cut. Always sand both surfaces of your stock before applying the pattern.

For fragile fretwork projects, I use an auxiliary table for additional support because the table insert near the scroll saw blade is not flush with my saw table. For a quick and easy table, drill a $\frac{1}{8}$ "-diameter hole in the center of a piece of $\frac{1}{4}$ "-thick plywood, insert your blade through the hole, and place the plywood in position on the saw table.



Cut the overlays and the backing boards using two copies of the pattern. Use a dark stain for the backing boards to provide contrast.

The Double Cross

Enlarge the main pattern so the large cross is 13" tall. The larger size provides the proper scale for the small cross. The small cross pattern is not enlarged. The small cross also can be cut as a stand-alone ornament.

The large and the small cross each require two blanks or two stacks of blanks: an overlay blank and a backing-board blank. Transfer the patterns to the blanks using your method of choice. The backing board requires eight blade-entry holes. Cut only the solid pattern lines on the backing-board blanks. Cut both the red and blue dashed lines on the overlay blanks. Use a pencil to mark the back of each overlay piece to keep the grain oriented correctly.

Stain the backing board with a dark stain, such as Minwax red mahogany, and stain the overlay with a light stain, such as Minwax natural. I dip the pieces in a shallow pan of stain. When dry, glue and clamp the overlays to the backing boards. Then glue and clamp the small cross to the large cross. When the glue is dry, apply a clear spray varnish.

THE TWO-TIER CROSS



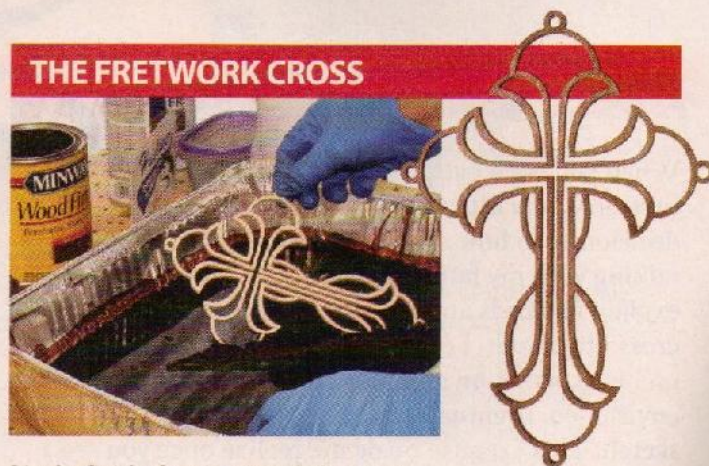
The two-tier cross only has one overlay piece.

The Two-tier Cross

As with the double cross, you will have two blanks: an overlay blank and a backing-board blank. Transfer the patterns to the blanks. The backing board requires twelve blade-entry holes. On the backing board piece, cut both the solid lines and the blue dashed lines. Cut the red dashed lines for the overlay piece.

Stain the backing board with a dark stain, such as Minwax red mahogany, and stain the overlay with a light stain, such as Minwax natural. Glue and clamp the overlay to the backing board. When dry, apply a clear spray varnish if desired.

THE FRETWORK CROSS

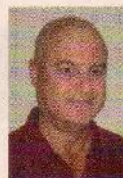


Dip the finished project in a shallow pan of stain for quick and easy application.

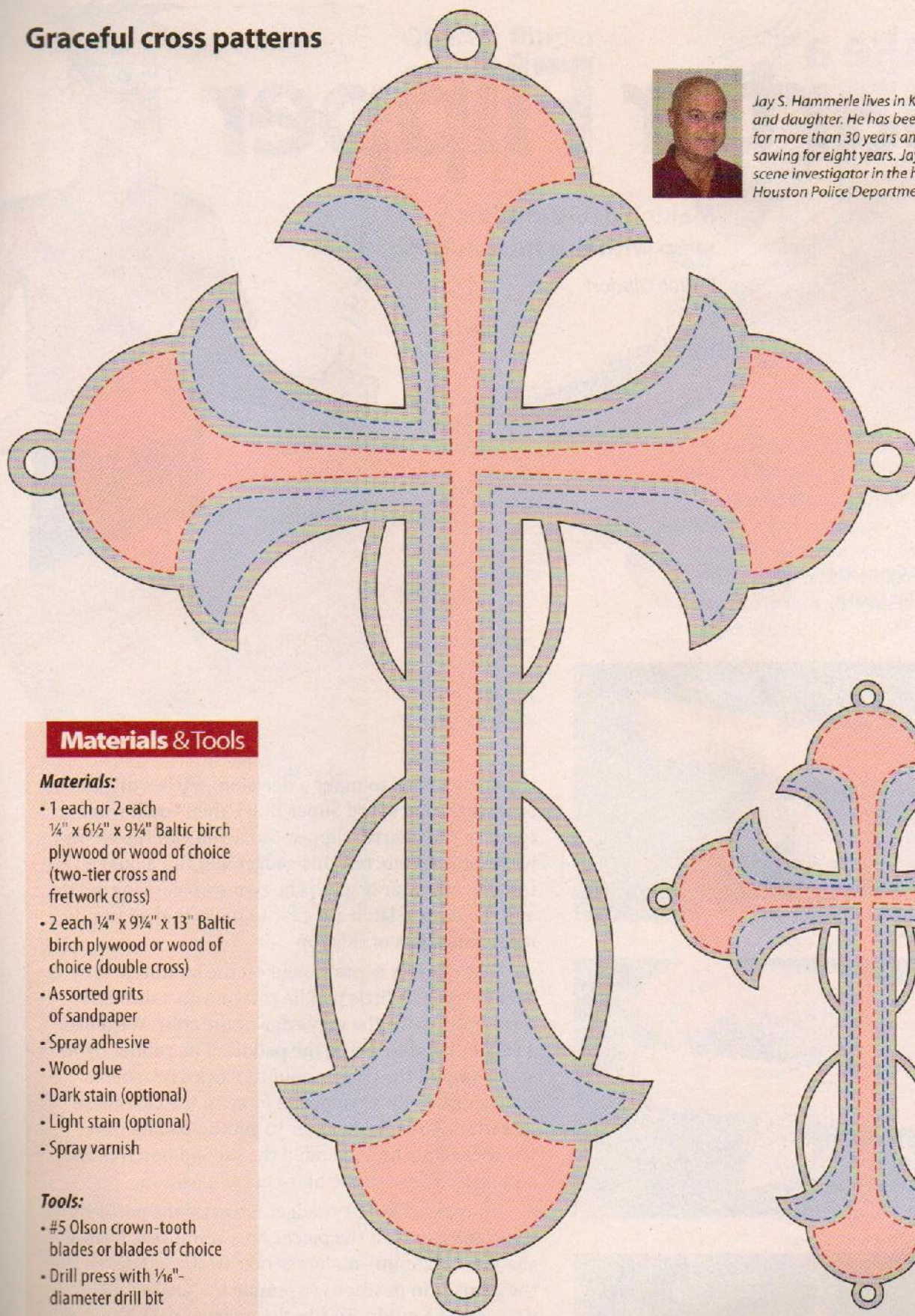
The Fretwork Cross

The fretwork pattern only requires one blank, however I do recommend stack cutting two crosses at one time to provide support for the fragile fretwork. Transfer the pattern and secure the stack before drilling the 13 blade-entry holes. Cut along all of the solid and dashed lines. Stain the completed project with a dark stain, such as Minwax red mahogany. When dry, apply a clear spray varnish if desired.

Graceful cross patterns



Jay S. Hammerle lives in Katy, Tex., with his wife and daughter. He has been working with wood for more than 30 years and has been scroll sawing for eight years. Jay works as a crime scene investigator in the homicide division of the Houston Police Department.



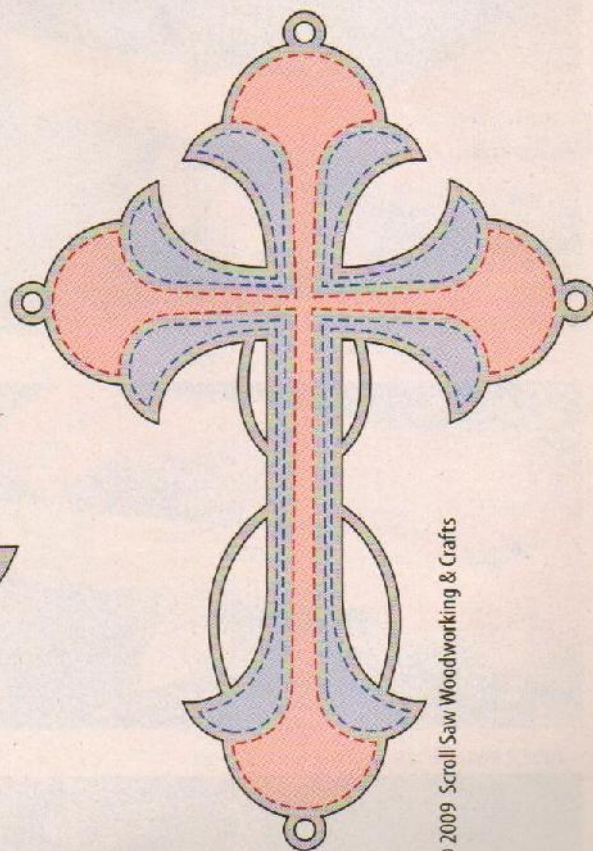
Materials & Tools

Materials:

- 1 each or 2 each $\frac{1}{4}$ " x $6\frac{1}{2}$ " x $9\frac{1}{4}$ " Baltic birch plywood or wood of choice (two-tier cross and fretwork cross)
- 2 each $\frac{1}{4}$ " x $9\frac{1}{4}$ " x 13" Baltic birch plywood or wood of choice (double cross)
- Assorted grits of sandpaper
- Spray adhesive
- Wood glue
- Dark stain (optional)
- Light stain (optional)
- Spray varnish

Tools:

- #5 Olson crown-tooth blades or blades of choice
- Drill press with $\frac{1}{16}$ "-diameter drill bit
- Spring clamps
- Aluminum roasting pan (optional for staining)

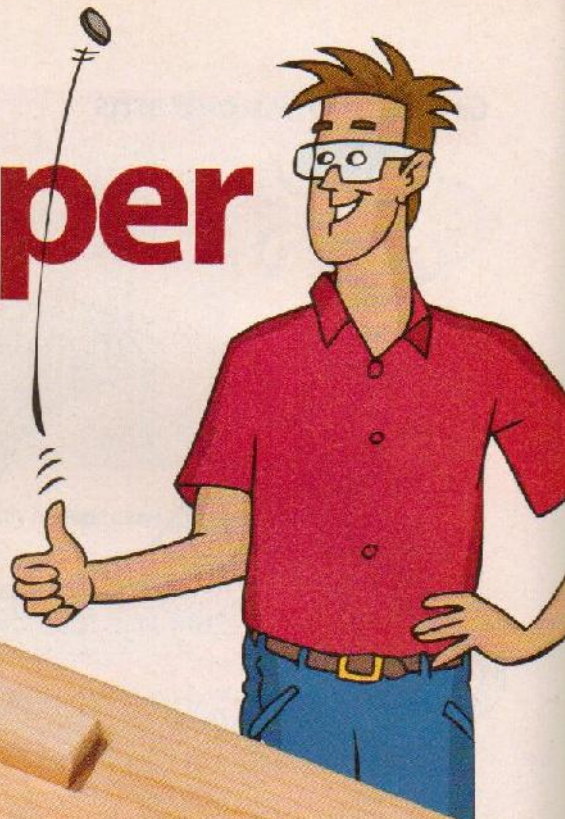


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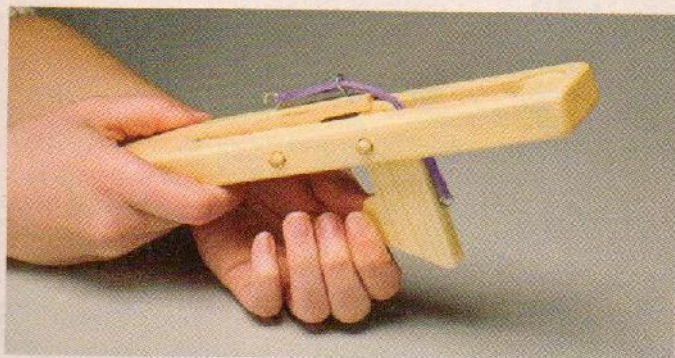
Make a Quarter Flipper

Making decisions is a snap with this fun gadget

By Bob Gilsdorf



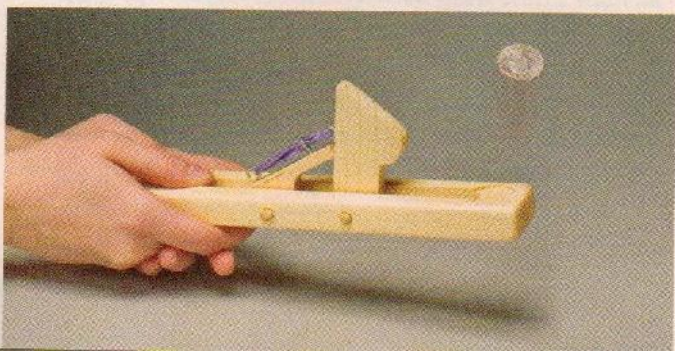
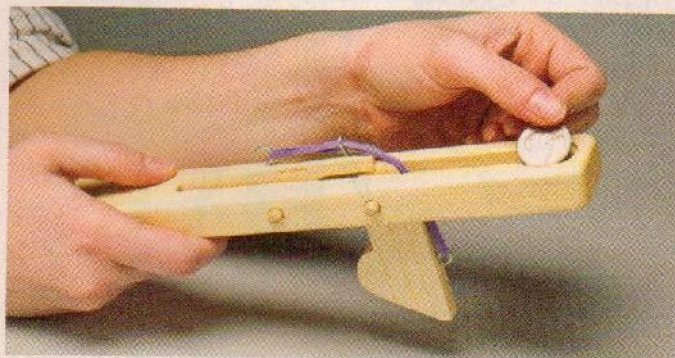
Cock the paddle, place the quarter in position, and press the latch to flip the quarter in the air.



If you ever need to make a decision, settle a dispute, or start the backyard Super Bowl, then you'll want to make the quarter flipper. Sure, you can flip a coin with your thumb, but this gadget will flip a quarter so fast you can hear it spin. The two-step cocking action and the release latch are easy to make and add to the mechanical fun of this toy.

The quarter is positioned on the handle so it hangs over an edge. A little paddle rotating on a dowel is positioned to hit the very edge of the coin. We'll use a rubber band to swing the paddle. The rubber band wants to pull the paddle counterclockwise, so our latch must apply an opposite force in the clockwise direction. To make it easier to get the paddle into the cocked position, I added the second notch in the paddle to hold it in the half-cocked position.

To make this nifty gadget, transfer the patterns to the blanks and cut the pieces on a scroll saw. Drill a shallow 1" (25mm)-diameter hole in the handle to keep the quarter in position. Assemble the project using the drawing as a guide. To flip the quarter, cock the paddle by pulling it down from below, set the coin in place, and press on the latch to release the paddle and send the quarter sailing through the air.



Handle

Quarter flipper pattern

Fold patterns on dotted lines

1/4" diameter through

1" diameter 1/8" deep

hook

Latch

5/16" diameter through

eye

eye

Paddle

Rubber band

Latch

Handle

Paddle

1/4" dowels

Further Reading

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

From marble shooters to nickle spinners, this book features 28 easy-to-make projects that will delight kids of all ages. Full color photographs, detailed drawings, a chapter on getting started, and two step-by-step project included.

Available for \$19.95 + \$4.75 s&h (parcel post) from Fox Chapel Publishing, 1970 Broad St., East Petersburg, PA 17520, 800-457-9112, www.foxchapelpublishing.com.



Materials & Tools

Materials:

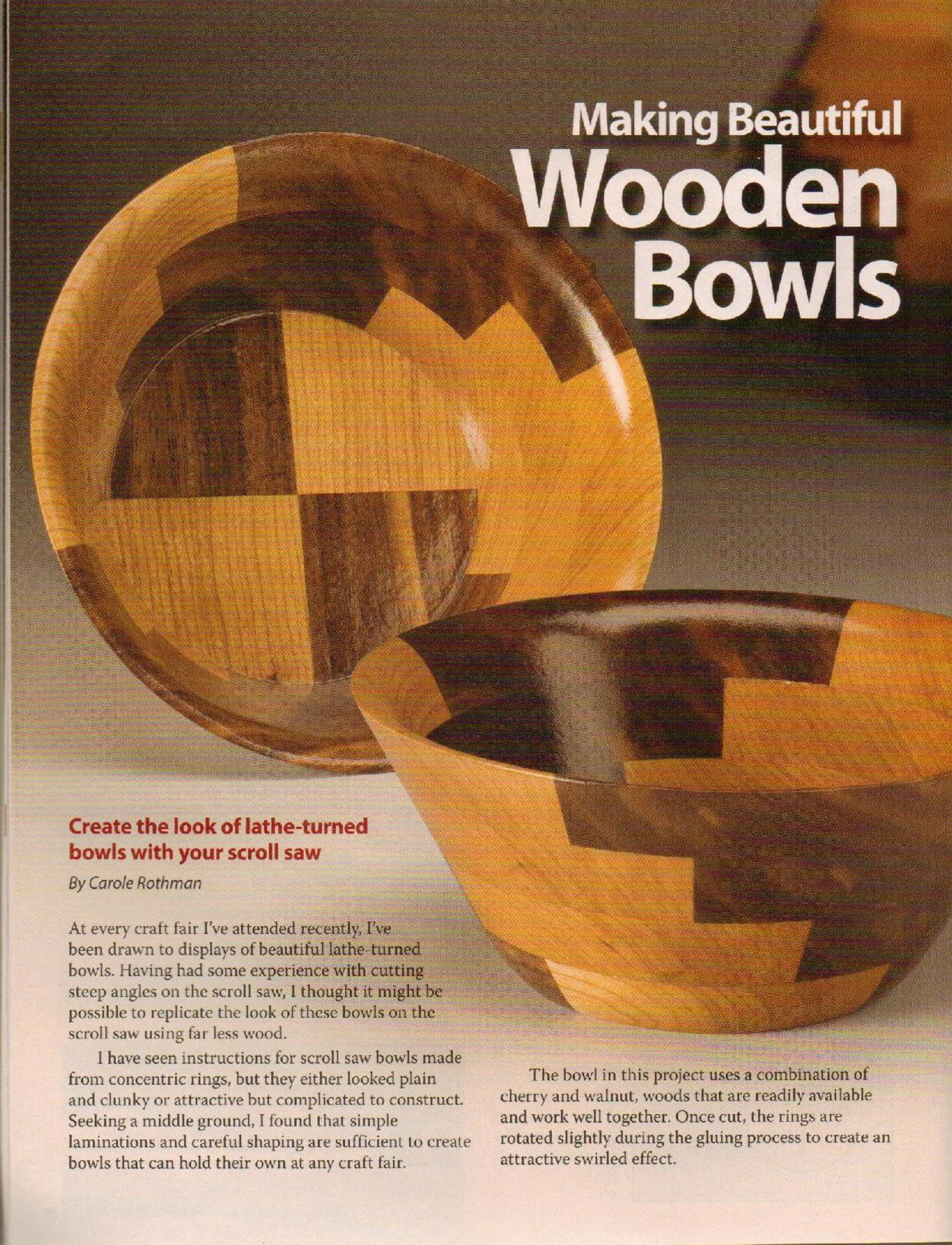
- 3/4" (19mm) x 1 1/2" (38mm) x 10" (254mm) pine or wood of choice (handle)
- 3/8" (10mm) x 1 1/2" (38mm) x 7" (178mm) pine or wood of choice (paddle and latch)
- 1/4" (6mm)-diameter by 3" (76mm)-long dowel
- 3 each 1/2" (13mm)-diameter eye screws
- #64, 1/4" (6mm)-wide by 3 1/2" (89mm)-long rubber band

Tools:

- #5 reverse-tooth blades or blades of choice
- Drill
- 1/4" (6mm)-, 5/16" (8mm)-, and 1" (25mm)-diameter drill bits
- Awl to mark starter holes
- Needle-nose pliers to screw in eye screws



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



Making Beautiful Wooden Bowls

Create the look of lathe-turned bowls with your scroll saw

By Carole Rothman

At every craft fair I've attended recently, I've been drawn to displays of beautiful lathe-turned bowls. Having had some experience with cutting steep angles on the scroll saw, I thought it might be possible to replicate the look of these bowls on the scroll saw using far less wood.

I have seen instructions for scroll saw bowls made from concentric rings, but they either looked plain and clunky or attractive but complicated to construct. Seeking a middle ground, I found that simple laminations and careful shaping are sufficient to create bowls that can hold their own at any craft fair.

The bowl in this project uses a combination of cherry and walnut, woods that are readily available and work well together. Once cut, the rings are rotated slightly during the gluing process to create an attractive swirled effect.



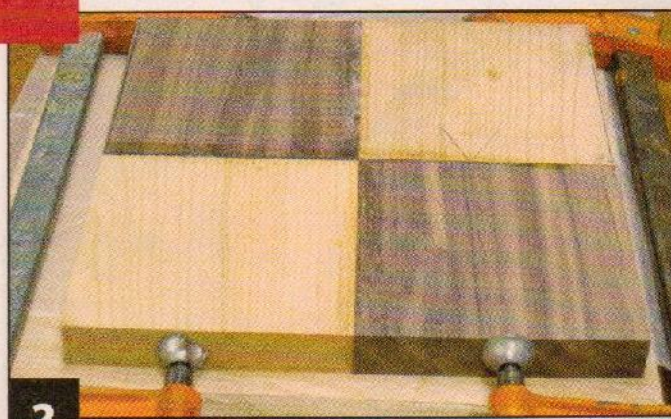
Testing and adjusting the table angle

I tilt the left side of the saw table down at a 28° angle to create the angled sides of the bowl. Wood that is thicker or thinner than specified or an incorrect table tilt may create misalignments when you stack the rings. To check ring alignment, place the first ring you cut on top of the bowl blank. The outside edges of the two pieces should be closely aligned. If they are not, hold the ring next to the blade on your saw to see if your cut was made at the angle you intended or if the blade distorted during cutting. If blade distortion occurred, try a tighter blade tension and be careful not to let the ring slide down while you cut. If your ring was cut accurately but it hangs too far over the edge of the blank, increase the cutting angle by 1° or 2°. If the ring sits too far inside the edge of the blank, reduce the cutting angle by 1° or 2°.

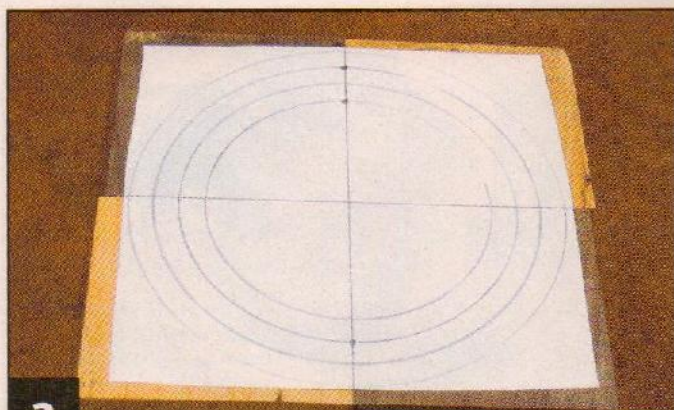
BOWL: PREPARING THE BLANKS



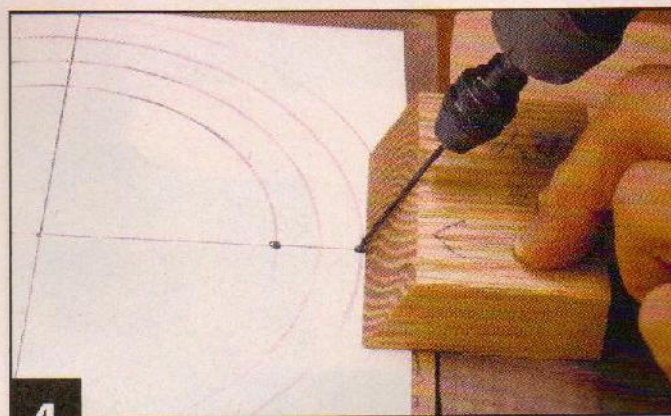
1 **Glue together the first part of the blank.** Edge glue the cherry and walnut together, clamp the pieces in place, and let the glue dry. To keep the glue-up flat, clamp a piece of wood, called a caul, across the top of the blanks. Place wax paper under the caul to prevent it from sticking to the blank.



2 **Create the checkerboard lamination.** Cut the glued-up blank in half and invert one piece to form a checkerboard pattern. Edge glue the two pieces, clamp them in place, and let the glue dry. Sand the blank smooth.



3 **Align the pattern.** Apply tape to the surface of the blank to prevent burning. Apply repositionable spray adhesive to the pattern. Puncture the middle point of the pattern with an awl and place the point of the awl at the middle point of the blank. Press the pattern into place.



4 **Drill the blade-entry holes.** Mark the blade-entry holes with an awl to prevent the bit from slipping. The holes alternate from side to side to prevent back-to-back drill marks on the rings. Cut a scrap block of wood at a 28° angle to guide the drill. Drill the blade-entry holes with a #54 or 1/16"-diameter bit at a 28° angle.

BOWL: CUTTING THE RINGS



5

Cut the perimeter of the outer ring. Tilt the left side of your saw table down at a 28° angle. Cut clockwise along the outer ring. Rotate the wood counterclockwise so the blade seems to move clockwise. The upper face of the circle will be wider than the lower face. Transfer the T from the pattern to the edge of the ring. The T ensures proper grain alignment when gluing up the rings.



6

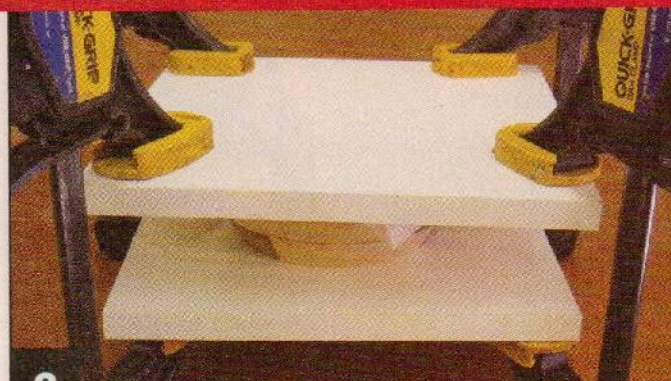
Cut the rings. Insert the blade through the outermost blade-entry hole and cut clockwise along the line to complete the first ring. Use the same technique to cut the remaining rings free from the base. Transfer the T from the pattern to the edge of the rings and base. Each ring should line up with the previous ring.



7

Rotate and mark the rings. Remove the patterns and tape. Stack the three rings, aligning the T marks on the edges. Rotate each ring about 1" to create the swirling effect. When you have the rings positioned to your satisfaction, draw a line across all three rings to guide you when you glue the rings together.

BOWL: ASSEMBLING THE BOWL



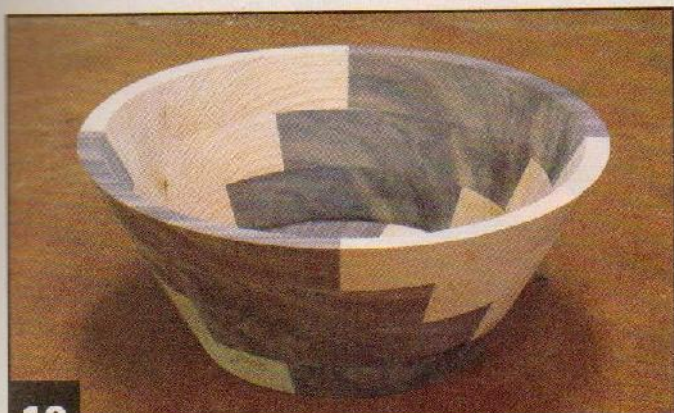
8

Glue the rings together. Start with the smallest ring. Spread glue evenly and thoroughly on the top of the ring and press the next ring firmly into place using the line you drew in step 7 as a guide. Sandwich the rings between two boards and clamp the boards in place to apply even pressure. When dry, glue and clamp the third ring to the assembly. Use wax paper to prevent the clamping boards from sticking to the rings.



9

Smooth the inside of the rings. Sand any irregularities on the inside of the bowl using progressively finer grits of sandpaper. I use a spindle sander with the table set to 28°. Make sure the rings contact the spindle only at that angle to prevent distortion of the shape. Do not remove too much material: keep the bottom ring at least ¼" wide. You can also use an inflatable-ball sander or flexible-pad sander chucked in a drill press or flexible shaft machine.



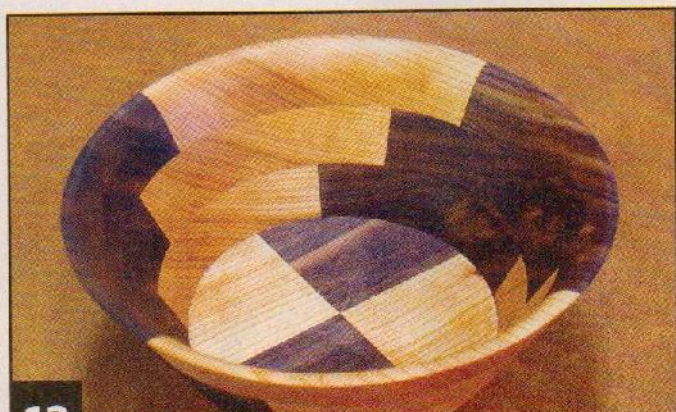
10

Attach the base. Sand the top of the base smooth and glue it to the bottom ring, rotating the design to continue the swirl effect. Clamp the base in place using the technique explained in step 8. After 5 minutes, unclamp the bowl and clean off any excess glue from the inside bottom surface. Re-clamp and let it dry thoroughly.



11

Sand the outside. Use a vertical belt sander or flexible-pad sander to sand the outside smooth using progressively finer grits of sandpaper. Re-sand any inner surfaces if necessary. Keep the width of the top rim as even as possible. Contour the top ring and base with a flexible-pad sander.



12

Apply the finish. Apply mineral spirits to the bowl to identify any glue spots. Mark these with a white pencil or chalk and sand off the glue by hand when the mineral spirits have dried. Apply the first coat of shellac and let it dry. Smooth the surface with 0000 steel wool. Vacuum the dust away and remove any remaining particles with a damp cloth or paper towel. Apply as many coats as you like.

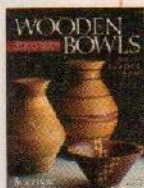
Further Reading

Wooden Bowls from the Scroll Saw

by Carole Rothman

Learn to make beautiful wooden bowls on your scroll saw. Includes 5 step-by-step projects and complete patterns and instructions for 23 additional projects.

Available for \$19.95 + \$4.75 s&h from Fox Chapel Publishing, 1970 Broad St., East Petersburg, PA 17520, 800-457-9112, www.foxchapelpublishing.com.



ONLINE BONUS

Exclusive demonstration video on our website.

www.scrollsawer.com

Carole Rothman of Somers, N.Y., is a retired psychologist and college professor. She is also an award-winning cake decorator. Visit Carole online at scrollsawbowls.blogspot.com.



Materials & Tools

Materials:

- 3/4" x 4" x 8" cherry
- 3/4" x 4" x 8" walnut
- Wood glue, such as Weldbond
- Repositionable spray adhesive
- Clear packing tape or blue painter's tape
- Sandpaper for hand sanding, 220 to 400 grits
- 0000 steel wool or synthetic steel wool
- Mineral spirits (to detect glue spots)
- Spray shellac or finish of choice

Tools:

- #9 Flying Dutchman ultra-reverse blades or blades of choice
- Drill with #54 or 1/16"-diameter bit
- Awl
- Clamps
- Scrap boards (for clamping)
- Sanding Tools: Spindle sander, vertical belt sander, flexible-pad sander, and/or inflatable-ball sander

Pattern for the **BEAUTIFUL WOODEN BOWL** is in the pattern pullout section.

SPECIAL SOURCES:

Flying Dutchman blades:

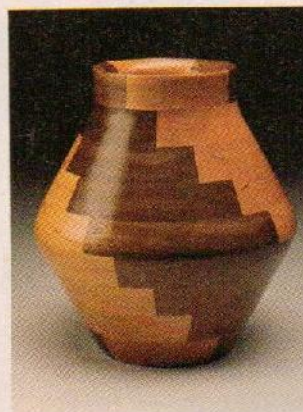
Mike's Workshop, 605 582-6732, www.mikesworkshop.com

Flexible-pad sanders: Klingspor's Woodworking Shop, 800-228-0000, www.woodworkingshop.com

Inflatable sanders: King Arthur's Tools, 800-942-1300, www.katools.com

Beyond the Bowl

You can combine two bowls to make a vase. The bottom section of this vase consists of a three-ring bowl with the base glued on as usual. The top section is an inverted three-ring bowl with a hole cut in the base to form the vase opening and a matching straight ring added to form the neck.



Build a Mirrored Votive Holder

Create the look of stained glass with colored acrylic and DVDs

By Carol and Homer Bishop

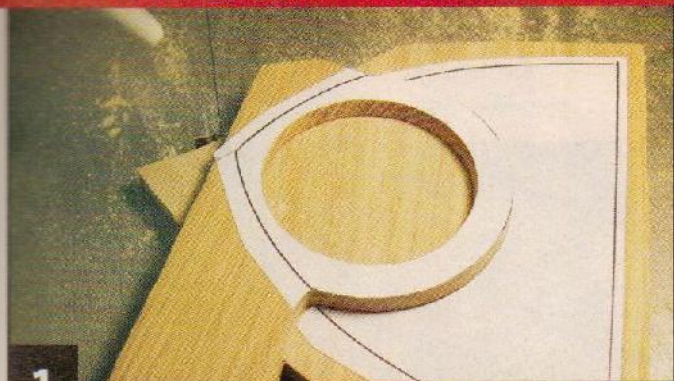


We've always admired the look of stained glass, but it requires a lot of practice and expensive materials. This project uses colored acrylic and recycled DVDs to produce the look of stained glass using your scroll saw.

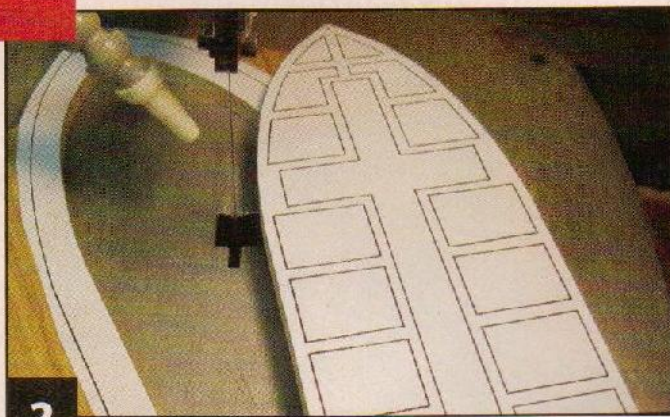
This votive holder is the perfect accent for an end table and looks great mounted on the wall as a sconce. Substitute different colors of wood for the acrylic to create a totally different look or cut the design from a single piece of wood and paint or stain the sections.

We use the same paper pattern and transfer it to the different materials to ensure a good fit. That way, if there are slight errors on one section, the adjoining pieces will match perfectly because you are following along the paper pattern used for the initial cut.

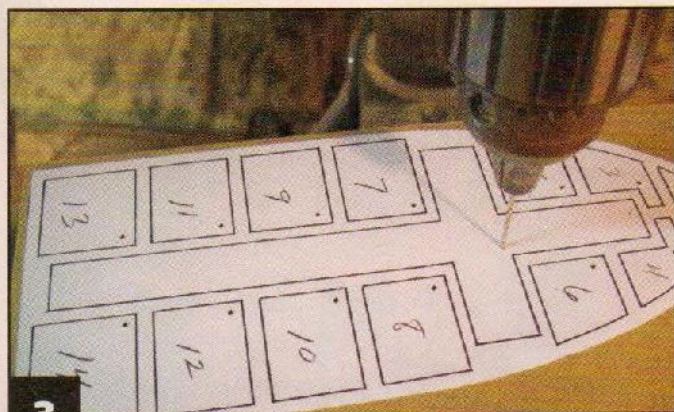
VOTIVE HOLDER: CUTTING THE PIECES



1 **Cut the base.** Separate the pattern along the red line. Attach the rim pattern and base pattern to the appropriate stock. Cut the rim pattern along the dotted lines only. Sand the inside circle and the bottom of the rim stock smooth. Align the perimeter pattern lines on both sections and glue the rim to the base. Then cut along the solid line. Remove the patterns and sand the base.



2 **Cut the wooden frame.** Attach the pattern to the frame blank. Drill a blade-entry hole and cut the inside of the frame. Then cut the outside of the frame. Sand the frame. Remove the pattern from the interior waste section and attach it to the backer board stock. Cut along the edge of the paper pattern to create the backing board. Remove the pattern from the backing board.



3 **Cut the brown acrylic.** Attach the pattern from step 2 to the brown acrylic, which represents the leading in a stained-glass window. Drill blade-entry holes near the corners and cut the frets. Keep the patterns from the waste pieces. Cut next to the outside edge of the paper pattern, but do not cut the paper. Remove any fuzzies and test the fit of the acrylic in the wooden frame.



4 **Cut the cross.** Attach the cross pattern remaining from step 3 to the blue acrylic. Cut right next to the paper pattern. Approach the corners from two directions to produce nice sharp corners. Do not turn the blade in the sharp corners; this produces slightly rounded corners which will not fit in the brown acrylic. Remove any fuzzies and test the fit of the cross in the brown acrylic.



5 **Cut the windows.** Glue two pair of DVDs together with the label sides toward each other or use mirrored acrylic. Attach the patterns from step 3 to the DVDs and tape the DVDs to thin scrap wood for support. Orient the patterns like the dial of a clock for an even reflection. Cut past the corners, turning in the waste to keep the corners square. Remove the fuzzies and test the fit of the pieces.



6

Assemble the wood pieces. Glue and clamp the candleholder base to the wood frame. Apply your finish of choice to the wooden parts. We use a spray varnish.



7

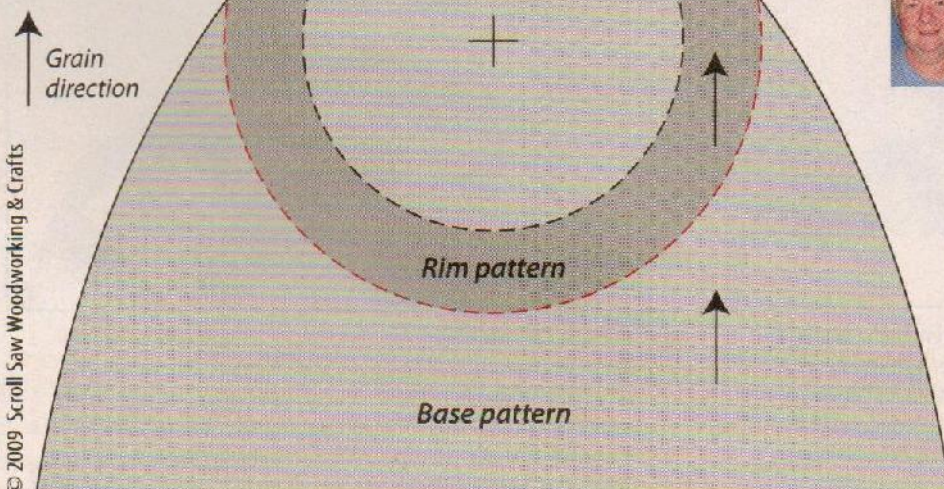
Assemble the acrylic pieces. Clean the acrylic pieces with mineral spirits to remove any glue or fingerprints. Dry assemble the acrylic pieces, placing them face down on a paper towel near the edge of the table.



8

Complete the candleholder. Position the wood frame around the acrylic with the base hanging over the edge of the table. Apply glue to the surface and edges of the backing board and position it inside the frame on top of the acrylic. Clamp the backing board in place until the glue is dry.

Votive holder base pattern



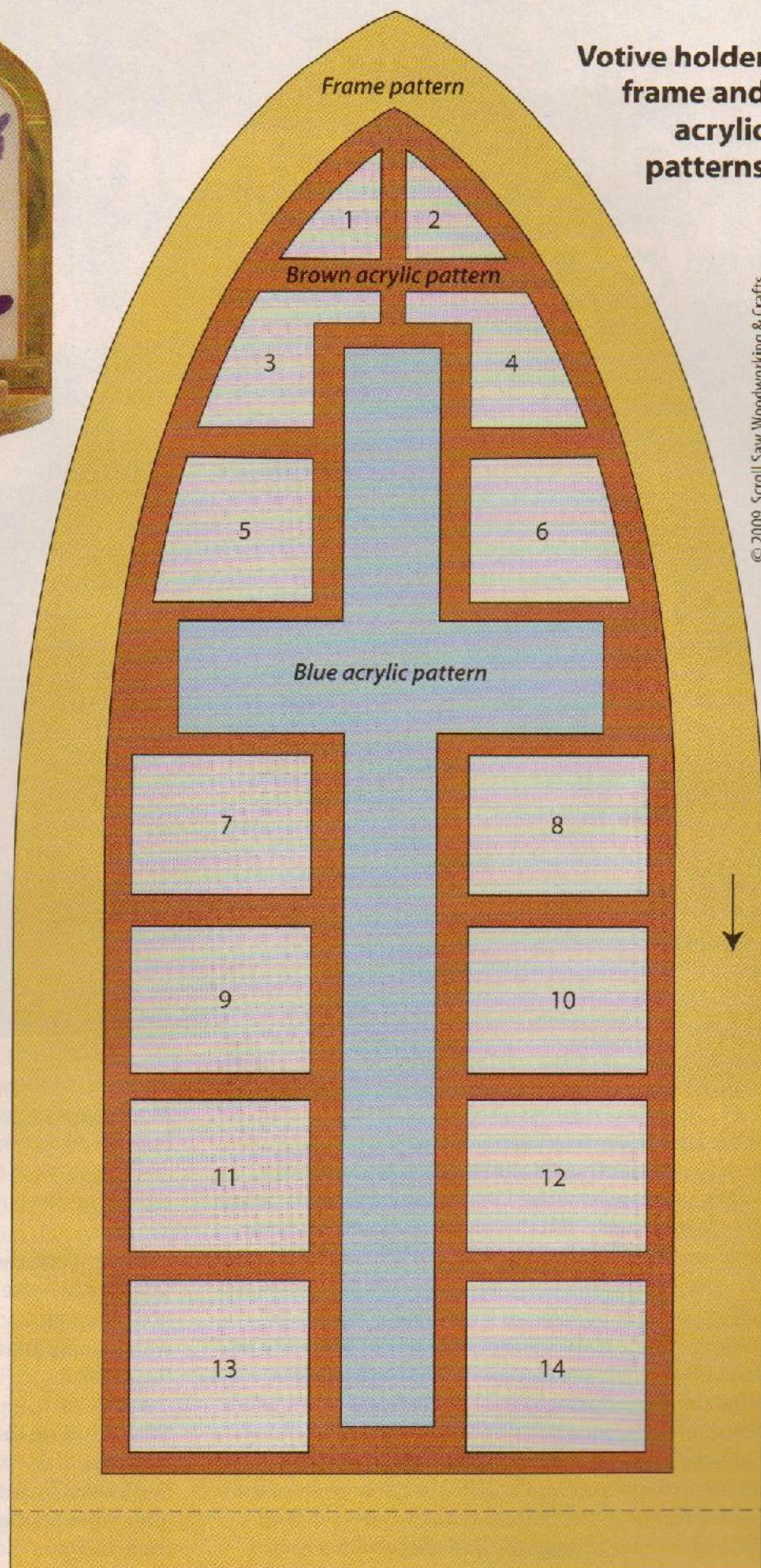
Carol and Homer Bishop have been cutting and designing intarsia patterns for over five years. Some of their patterns can be found through Scroller Ltd. and The Wooden Teddy Bear. For an e-catalog of all of their patterns, contact the Bishops at hcbishop2005@yahoo.com.

Author's Note: The grain runs horizontally across the base on the original project. By orienting the grain direction to run front to back, you avoid cross-grain gluing, which can cause problems when the wood expands and contracts. Matching the grain direction on the base and the frame produces a sturdier joint.

Use this technique with a variety of designs to create votive holders for any occasion.



Votive holder frame and acrylic patterns



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Materials & Tools

Materials:

- $\frac{3}{8}$ " x 5" x 17" oak (frame and candleholder base)
- $\frac{1}{4}$ " x $2\frac{3}{4}$ " x $2\frac{7}{8}$ " oak (candleholder rim)
- $\frac{1}{8}$ " x $3\frac{5}{8}$ " x $8\frac{5}{8}$ " Baltic birch plywood (backing board)
- Brown acrylic
- Blue mirrored acrylic
- 4 each DVDs or mirrored acrylic
- Spray adhesive
- Wood glue
- Varnish or finish of choice
- Assorted grits of sandpaper
- Mineral spirits

Tools:

- #4 skip-tooth blades
- Drill press and assorted small drill bits
- Clamps

SPECIAL SOURCES:

Opaque brown and blue mirrored acrylic are available from Sloan's woodshop, 888-615-9663, www.sloanswoodshop.com.

Building a Horse-drawn Wagon

Easy-to-make nostalgic wagon is a beautiful holiday centerpiece

By Paul Meisel



With the holiday season approaching, our thoughts turn to gifts for friends and family. This horse-drawn wagon makes a beautiful focal point for your mantel or dining room table. Fill the wagon with nuts or candy for a memorable gift.

The cutting and assembly is straightforward and can easily be completed in a weekend. Transfer the patterns to the blanks and cut the pieces following the solid black lines. The dotted lines help you properly align the parts during assembly. Drill and countersink the screw clearance holes in the wheels and the base. Drill the screw pilot holes in the ends of the axles, but do not drill the screw pilot holes in the bottom of the horse's feet or in the bottom of the wheels yet. Add a decorative edge around the base piece with a router.



Assembling the wagon

Most of the project is glued and clamped together, but I use wood screws to attach the wheels to the wagon and the horse to the base. Use the assembly drawing as a guide as you put the project together.

Step 1: Glue the horse together. Glue the ears and sides of the horse to the horse body. Glue the screw-hole plugs around the collar. Space the plugs out evenly with four plugs each on the top, bottom, and sides of the collar.

Step 2: Glue the wagon together. Assemble the main box of the wagon by gluing the front, back, sides, and bottom together. Glue the seat back, seat bottom, and seat sides together. Glue the footrest to the wagon front and glue the seat sides to the wagon sides. Glue



the trim pieces to the top of the main wagon. Glue the holly leaves and the screw plugs (holly berries) to the wagon sides. Glue the front and rear axles to the wagon bottom. Position the front axle so the screw pilot hole is $\frac{3}{8}$ " from the bottom edge. This will raise the front of the wagon so it will be horizontal even though the front wheels are smaller than the rear wheels. The axles extend $\frac{1}{8}$ " beyond each side piece.

Step 3: Finish assembling the project. Using just screws, attach the wheels to the axles. Position the horse and wagon on the base. Use a scratch awl guided through the clearance holes on the bottom of the base to mark the location of the pilot holes in the horse and wagon wheels. Temporarily attach the horse and wagon to the base to check the fit. Do not attach the hubs until after final assembly and finishing.

Finishing the wagon

Gently round the exposed edges with sandpaper. To make it easier to brush on a finish, remove the wheels and the horse and wagon assemblies. Start by applying a coat of sanding sealer to the entire project. Let the sanding sealer dry and then sand the pieces with 220-grit sandpaper. Apply a coat of polyurethane varnish. Paint the holly berries, the strip around the wagon, and the horse's collar bright red. Paint the holly leaves and the wheel hubs green. Paint the screw-plug bells around the collar and the center of the hubs gold.

After the finish is dry, reattach the wheels to the wagon with wood screws. Then attach the horse and wagon to the base with wood screws. Glue the hubs to the wheels to hide the screw heads.

Materials & Tools

Materials:

- 2 each $\frac{1}{4}$ " x 3" x 12" oak or wood of choice (hubs, seat sides, seat back, footrest, leaves, ears, #1423)*
- $\frac{3}{4}$ " x $7\frac{1}{2}$ " x $21\frac{1}{2}$ " oak (base)
- $\frac{3}{4}$ " x $5\frac{3}{4}$ " x 6" oak (horse left side)
- $\frac{3}{4}$ " x 6" x $6\frac{3}{8}$ " oak (horse right side)
- $\frac{3}{4}$ " x $4\frac{1}{4}$ " x $9\frac{1}{4}$ " oak (horse body)
- 2 each $\frac{3}{4}$ " x $4\frac{1}{4}$ "-diameter oak (front wheels)
- 2 each $\frac{3}{4}$ " x $4\frac{3}{8}$ "-diameter oak (back wheels)
- 2 each $\frac{3}{4}$ " x $2\frac{1}{4}$ " x 9" oak (wagon sides)
- 2 each $\frac{3}{4}$ " x $1\frac{1}{4}$ " x $5\frac{1}{4}$ " oak (axles)
- 2 each $\frac{3}{4}$ " x $2\frac{1}{4}$ " x $3\frac{1}{2}$ " oak (wagon front and back)
- 2 each $\frac{1}{4}$ " x $\frac{3}{8}$ " x 5" oak (front and back trim)
- 2 each $\frac{1}{4}$ " x $\frac{3}{8}$ " x $9\frac{1}{2}$ " oak (side trim)
- $\frac{3}{4}$ " x $3\frac{1}{2}$ " x $7\frac{1}{2}$ " oak (wagon bottom)
- #6 x $1\frac{1}{4}$ "-long flat-head wood screws
- 16 each $\frac{3}{8}$ "-diameter birch round-top screw-hole plugs (#1472, package of 20)*
- Wood glue
- Assorted grits of sandpaper
- Sanding sealer
- Polyurethane varnish
- Delta Ceramcoat paints: red (#02507)*, green (#02068)*, gold (#02604)*

Tools:

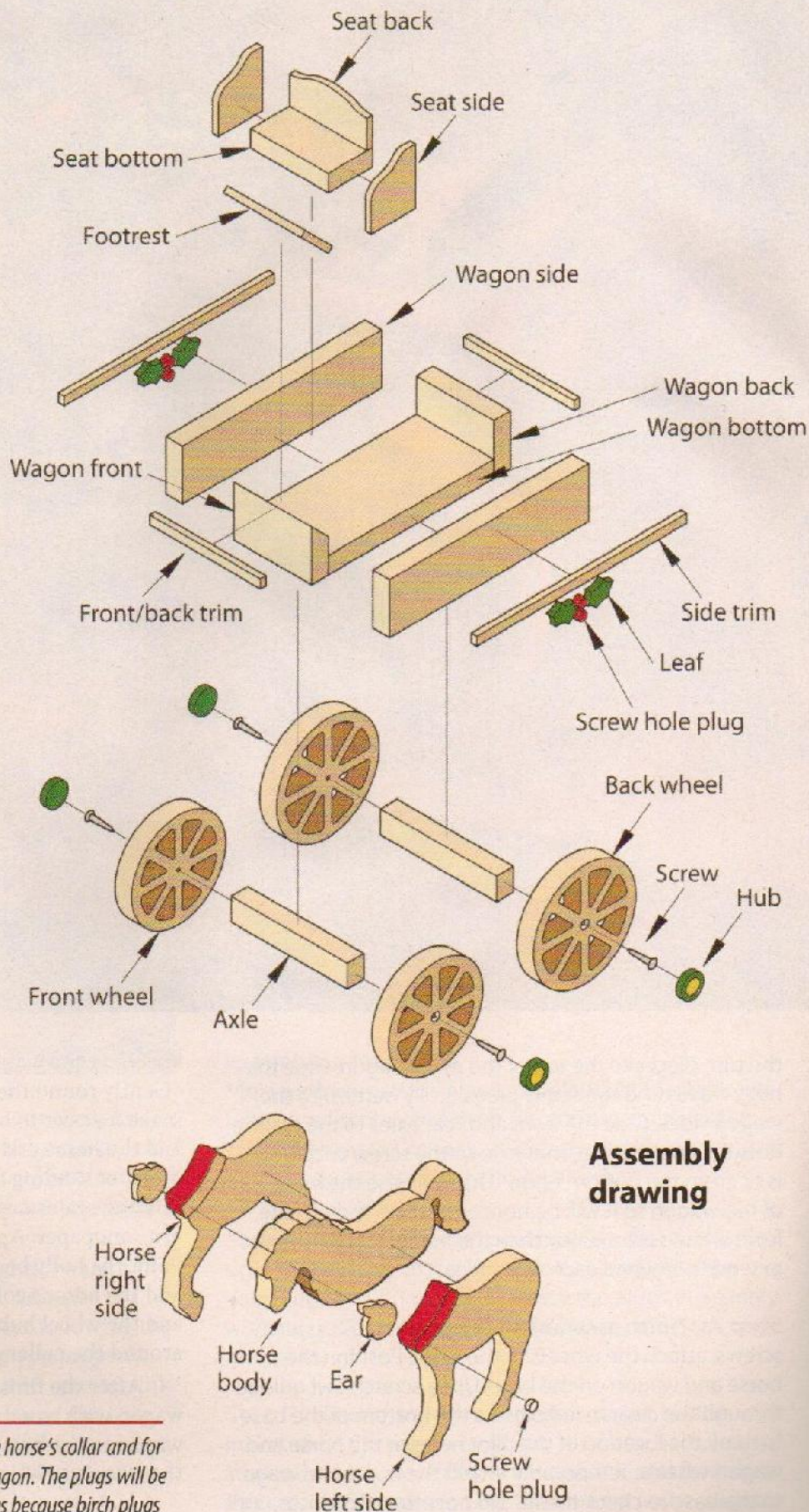
- Table saw (optional)
- Router with chamfer bit
- Olson #443-R and #446-R blades or blades of choice
- Drill
- $\frac{1}{16}$ "-diameter drill bit
- Countersink bit
- Scratch awl
- Paintbrushes

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, or call 800-441-9870.

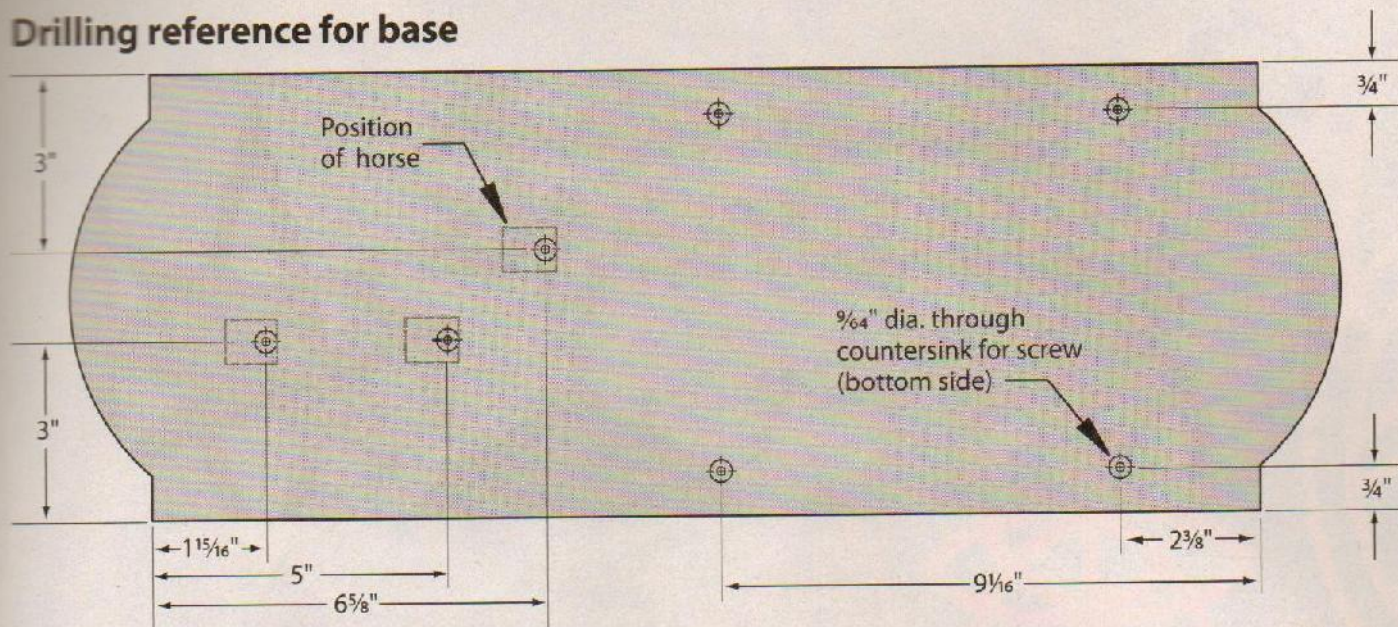
TIP SAVING MONEY

I use round-top screw-hole plugs to decorate the horse's collar and for the holly berry decorations on the sides of the wagon. The plugs will be painted, so I use birch plugs rather than oak plugs because birch plugs have a smoother surface. They are also less expensive.



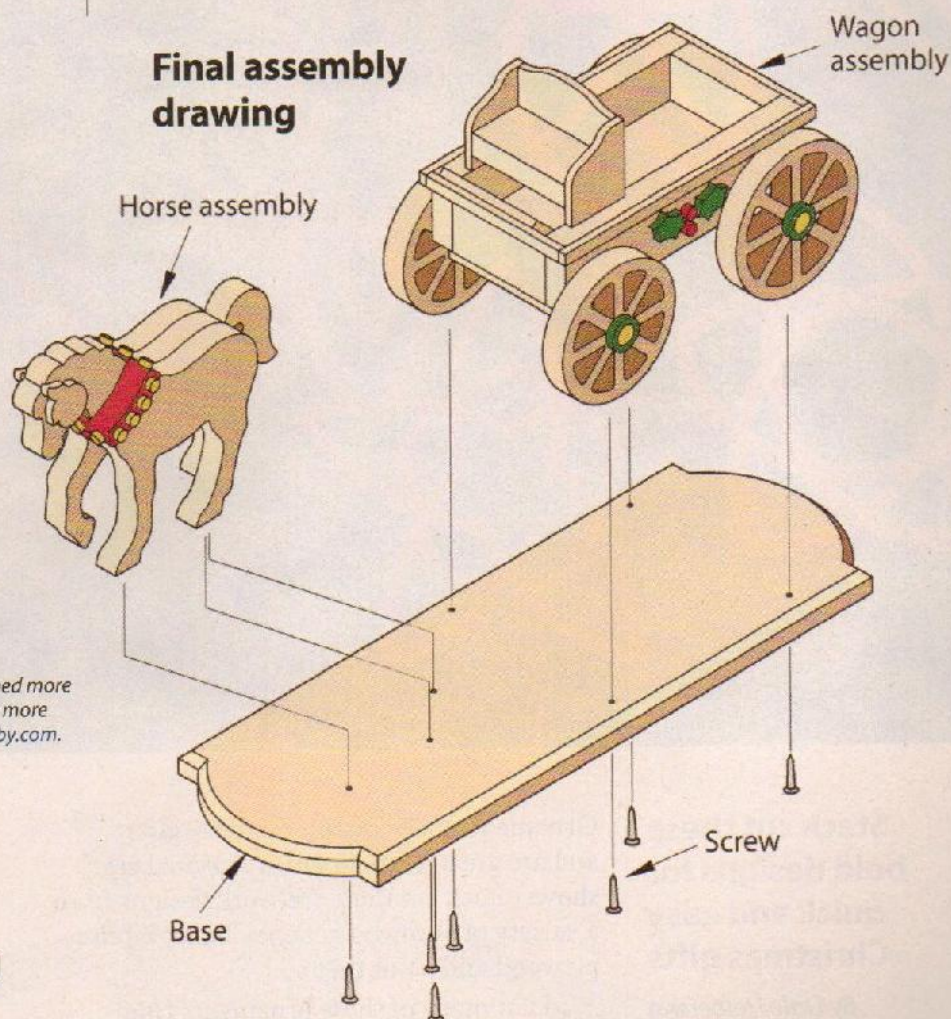
Assembly drawing

Drilling reference for base

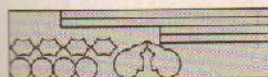


Patterns for the **HORSE-DRAWN WAGON** are in the pattern pullout section.

Final assembly drawing



Paul Meisel of Mound, Minn., designed more than 3,000 woodworking plans. For more projects, visit www.meiselwoodhobby.com.

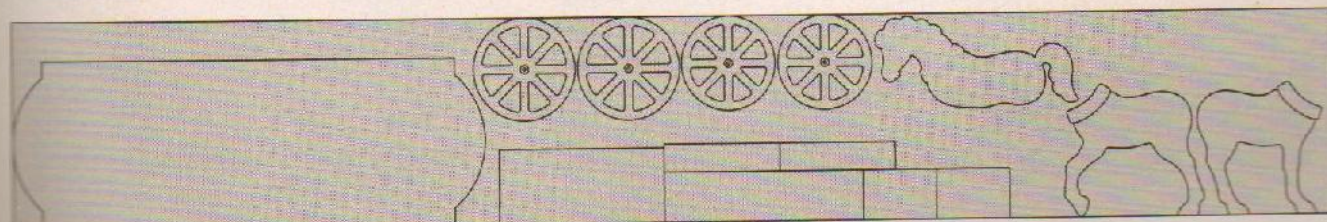


1/4" x 3" x 12"



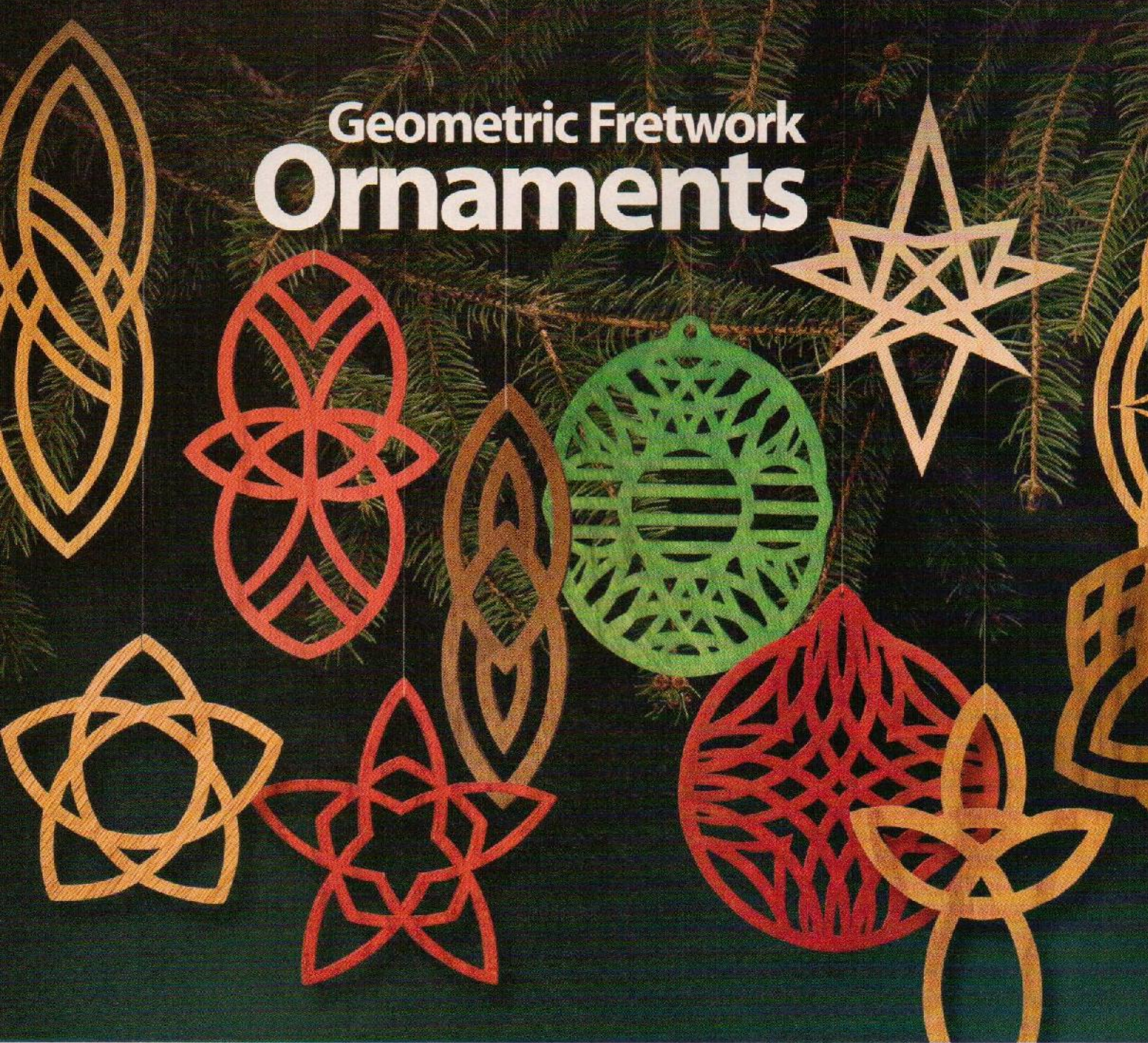
1/4" x 3" x 12"

Cutting guide



3/4" x 10" x 5"

Geometric Fretwork Ornaments



Stack cut these bold designs for quick and easy Christmas gifts

By Dale Helgersen

Ornaments make popular holiday gifts and are great items to sell at seasonal craft shows. Stack cut these fretwork designs from a variety of hardwoods or use Baltic birch plywood and paint them.

I cut many of these ornaments from $\frac{1}{8}$ "-thick maple. I chose maple because it is strong enough to support the fragile designs and light enough to color using aniline wood dyes. Sand the cut ornaments to remove any fuzzies, and then seal the ornaments with a clear finish or dye them with aniline dyes.

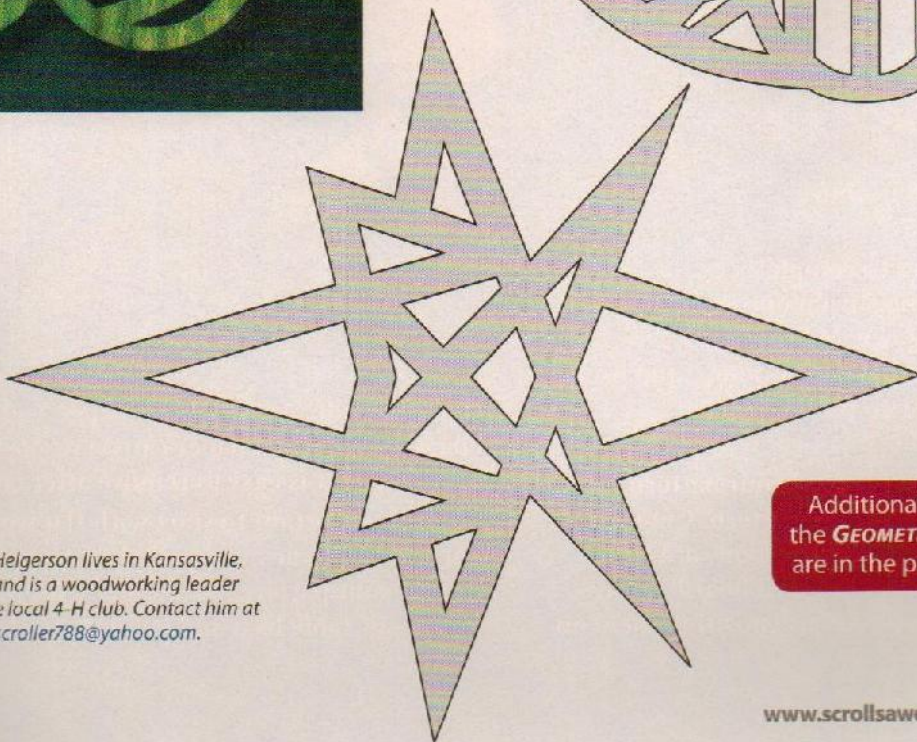
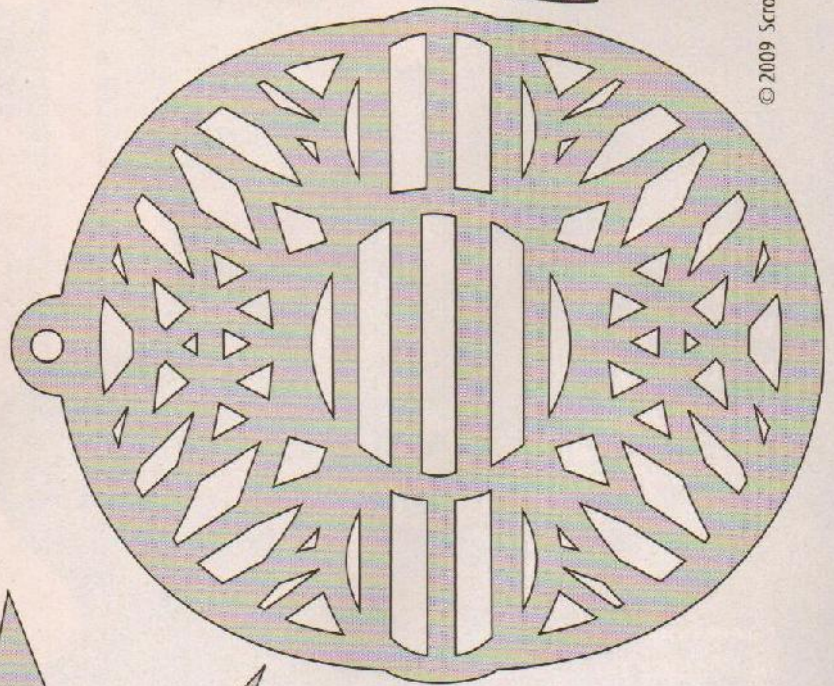
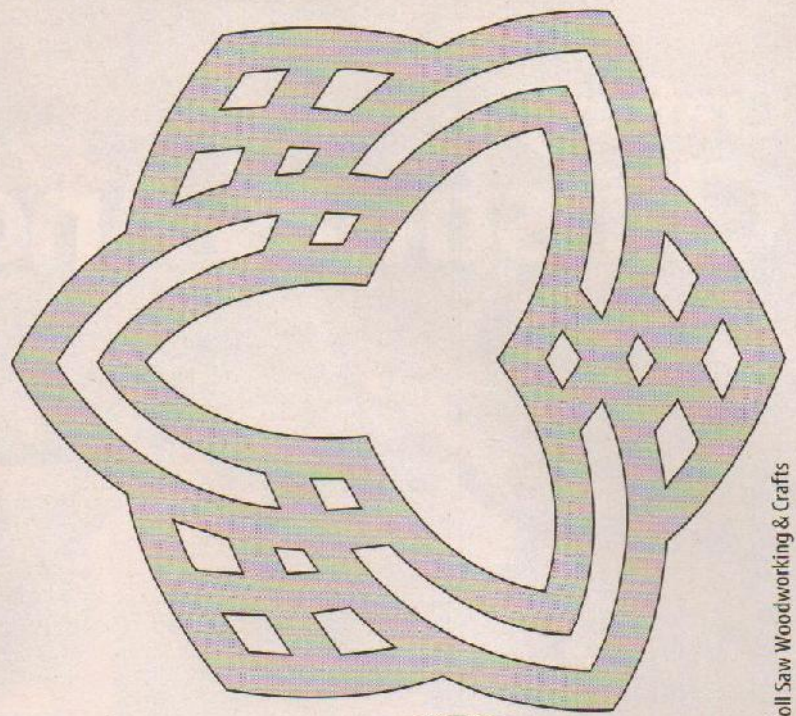
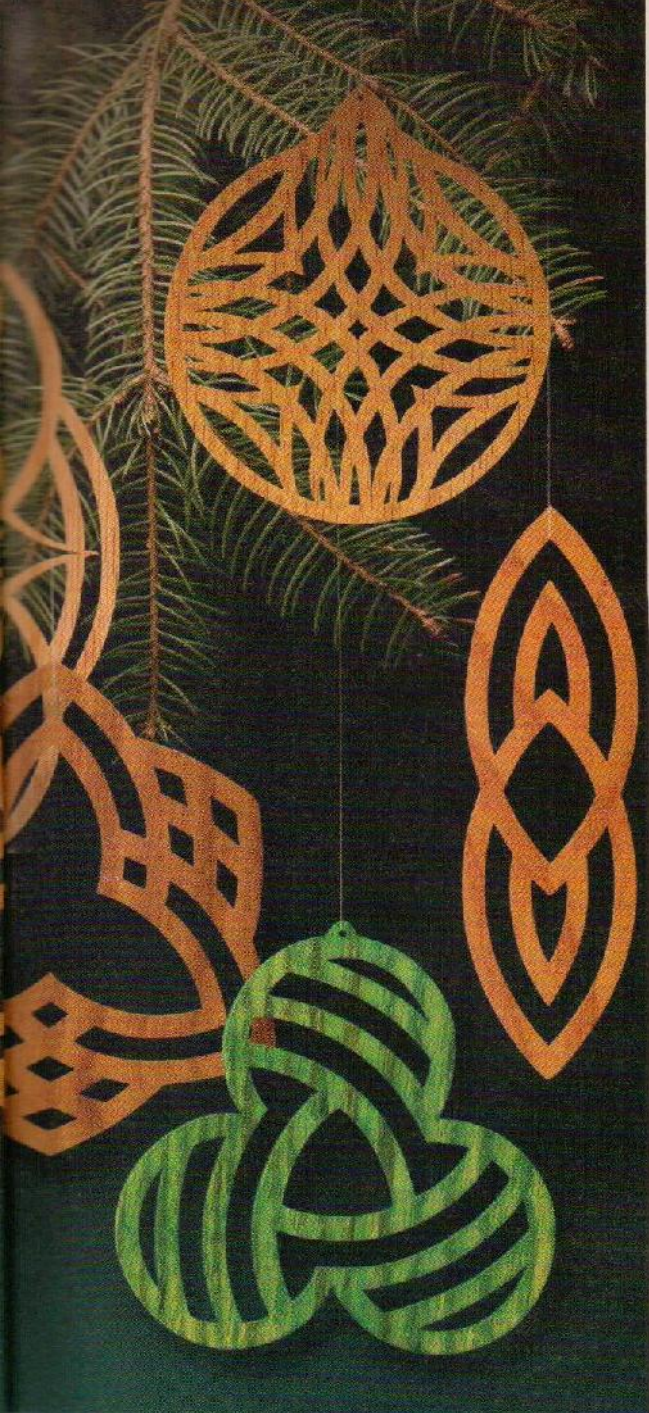
Materials & Tools

Materials:

- $\frac{1}{8}$ "-thick hardwood or wood of choice (largest ornament is 6" long)
- Assorted grits of sandpaper
- Spray adhesive
- Clear packaging tape or blue painter's tape
- Aniline dyes (optional)
- Clear finish such as Deft semi-gloss spray lacquer

Tools:

- #1 Flying Dutchman two-way cut blades or blades of choice
- Drill with #68 drill bit



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Dale Helgeson lives in Kansasville, Wis., and is a woodworking leader for the local 4-H club. Contact him at luckyscroller788@yahoo.com.

Additional patterns for the **GEOMETRIC ORNAMENTS** are in the pullout section.

Crafting a Christmas Angel Wreath

Adorable angel welcomes visitors to your home

By Kathy Wise

Greet holiday visitors by hanging this heavenly angel on your front door. The project also makes a beautiful focal point hung above your fireplace mantel.

This wreath is easier to complete than it looks. Cut the angel from one piece of aspen and stain the gown and slippers white. You can cut the pieces from different woods if you prefer. The wreath is cut from two pieces of cedar and joined in the middle.

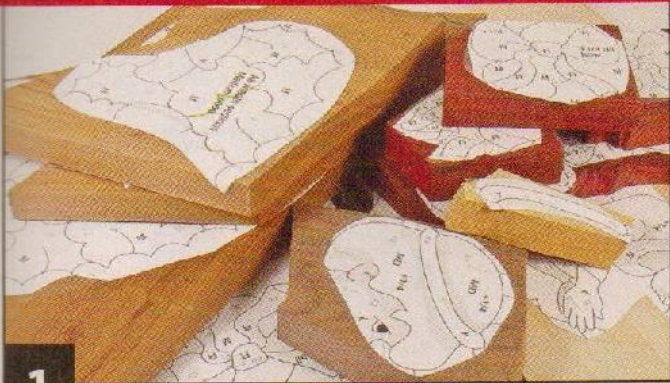
Always keep a master copy of your pattern for later use. Make six copies of the pattern. Cut the pattern pieces apart and separate them into color groups. Tape contact paper flat on a board. Spray adhesive on the pattern pieces and position them on

the shiny side of the contact paper. Cut the pieces apart. The contact paper can be re-positioned as needed and it is easy to remove after cutting.

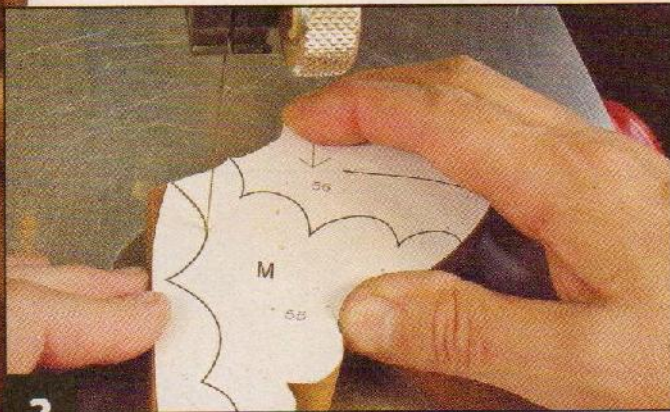
It is important to start with flat wood for a good cut and fit. Plane any wood that is not flat before you lay out your pattern. Make sure your blade is square to the saw table by using a square to check a cut piece.



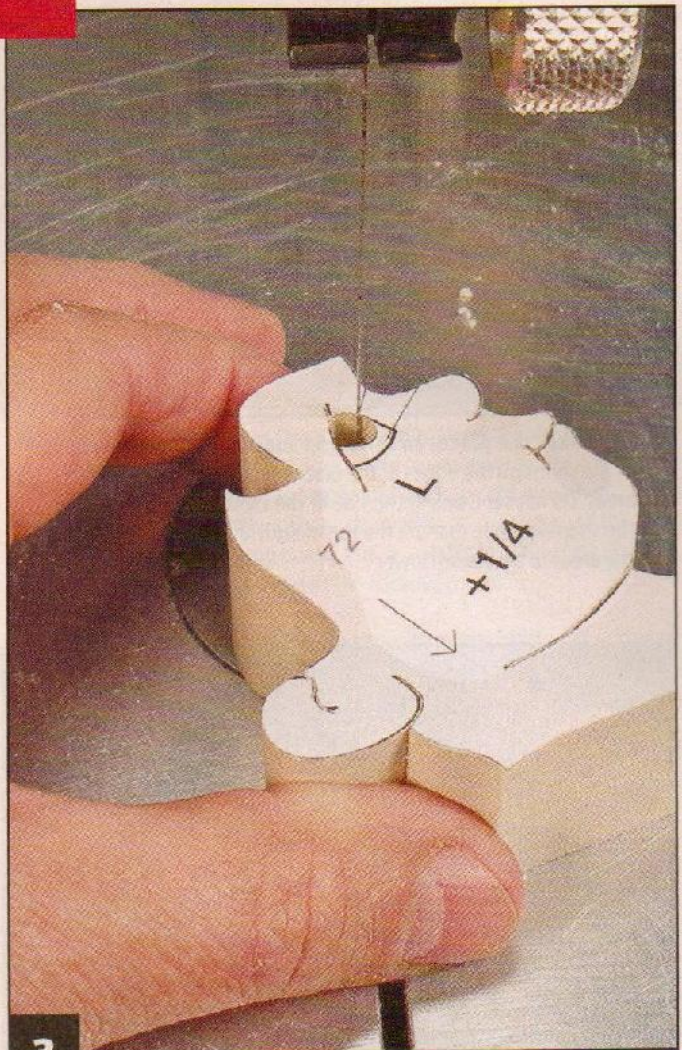
ANGEL WREATH: CUTTING THE PIECES



1 Choose your wood. Peel and stick the pattern pieces onto your selected pieces of wood. Align the grain direction with the arrows on the pattern. Tape a full-size copy of the pattern to the backing board.



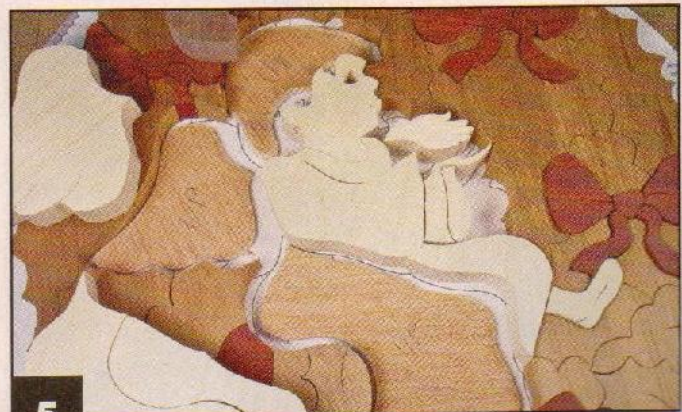
2 Cut the pieces. Carefully cut the pieces using a #5 reverse-tooth blade for the aspen and cedar. Use a #5 skip-tooth blade for the harder woods. Number the back of each piece with a pencil. Position the cut pieces on the full-size pattern.



3 Assemble the eye. Drill a blade-entry hole and cut the two eyeball pieces from the aspen face. Save the white section. Cut the pupil from a piece of ebony or woodburn the pupil area. Glue the eyeball pieces together and round the section with a drum sander.



4 Check the fit of the pieces. Assemble all of the pieces on the pattern taped to the backing board and check for fit. Also check the grain pattern and color of the pieces. If you want to make any color or grain direction changes, do it now.



5 Cut the risers. Place the hair, wing, and gown on the riser stock and trace around them. Cut just inside the traced line. Place the risers in position on the pattern taped to the backing board.

ANGEL WREATH: SHAPING THE PIECES



6

Mark the pieces to sand and shape. Mark the thickness of the shims on the edges of the pieces adjacent to the shimmed areas. Do not sand below this line or the shim will be exposed. Use the shaping guide to mark the top of individual pieces, indicating the areas to be sanded lower.



7

Sand and shape the wreath pieces. Use a pneumatic drum sander, oscillating spindle sander, and sanding drum, or a rotary power carver with a small sanding drum. Replace the pieces back together often to check the fit and flow. Put a slight concave slope on the middle of the leaves for a realistic look.

TIP PROTECT YOUR FINGERS

I wear rubber fingertips, like those found in office supply stores, to protect my fingers while sanding on a big sanding drum.



8

Shape the angel pieces. Start with the lowest pieces: the back sleeve and the back hand. Mark, sand, and replace each piece to check your progress. I use a hobby knife to carve small areas and add details. You could use a rotary power carver or traditional carving tools.



10

Finish sand each piece. Use a sanding mop to quickly get into all of the curves and crevices, and to add a sheen to the wood. Softer woods, like cedar, will sand down quickly, but the harder woods will take a bit longer to sand smooth.

ANGEL WREATH: FINISHING AND ASSEMBLY



9

Shape the top hand. The wreath pieces under the hand should be sanded lower so the hand will fit on top. Place the hand next to the wreath pieces and mark the bottom. Sand the bottom of the hand so it fits over the wreath. Round the top of the hand and carve the areas between the fingers.



11 **Stain the gown and shoes.** I use a white stain to add contrast between the light aspen of the exposed skin and the white gown and shoes. Follow the manufacturer's directions. Let the stain dry overnight. If the grain rises, you will need to lightly sand with 220-grit sandpaper to remove the rough areas.



12 **Glue the sections together.** Put a few drops of 100% silicone glue/caulk on the edges of the pieces you want to connect. Glue the angel together as one section and glue the wreath in several sections. Let the silicone dry overnight. Trace around the wreath onto the backing board. Cut $\frac{1}{8}$ " inside the traced line. Sand and stain or paint the edges of the backing board.



13 **Glue the intarsia to the backing board.** Assemble the sections on the backing board. Glue the intarsia in place. Only lift one section at a time. Apply wood glue and a few dots of cyanoacrylate (CA) glue to the back of the intarsia. Spray CA glue accelerator on the backing board and replace the section. Use the same technique to glue down all of the sections.



14 **Apply the finish.** I use clear satin spray polyurethane varnish. Let the finish dry and apply a second coat. Then let the finish dry overnight. Paint clear gloss on the eye for a lifelike shine. Attach a mirror-style hanger on the back of the project, but be careful not to drill the hole through to the front of the piece. Remember to sign and date the back of the project.

Materials:

- $\frac{3}{4}$ " x 8" x 41" medium-tone wood, such as cedar (wreath)
- 1" x 8" x 16" white wood, such as poplar (angel)
- 1" x 5" x 5" dark wood, such as black walnut (hair)
- $\frac{1}{2}$ " x 1" x 1" ebony (eye)
- 1" x 8" x 12" red wood, such as bloodwood (bows)
- 1" x 2" x 5" yellow wood, such as yellowheart (halo)
- White stain
- Mirror-style hanger
- Clear gloss wood finish (for eye)

Materials & Tools

- Satin spray polyurethane varnish or finish of choice

Tools:

- #5 reverse-tooth and #5 skip-tooth blades or blades of choice
- Drill with $\frac{1}{16}$ "-diameter drill bit and drill bit sized for hanger
- Sanders of choice. I use pneumatic drum sander, an oscillating spindle sander, and a rotary power carver equipped with a sanding drum
- Sanding mop
- Hobby knife or carving tools of choice



Alternate wreath designs are available at www.kathywise.com.

Pattern for the **CHRISTMAS ANGEL WREATH** is in the pattern pullout section.



Kathy Wise's new book, *Intarsia Woodworking for Beginners*, will be available in November. Both of Kathy's books are available at www.FoxChapelPublishing.com, 800-457-9112. For a free catalog of more than 400 patterns or to order a signed copy of her books, contact: Kathy Wise Designs Inc., P.O. Box 60 Yale, Mich. 48097, fax 810-387-9044, www.kathywise.com.

Create an **Elegant Wall Clock**



**Ornate design
is highlighted by a
contrasting backing board**

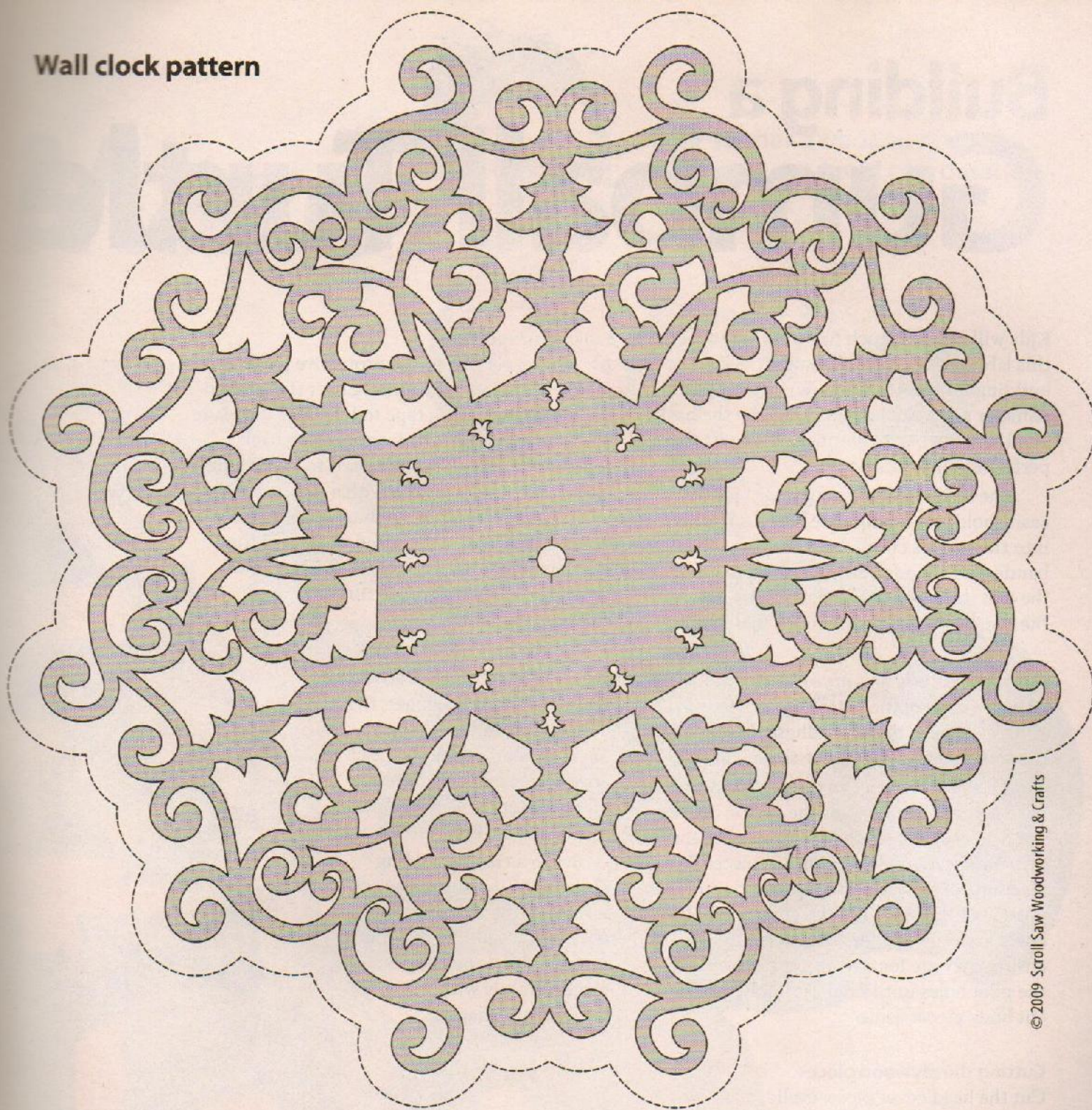
*By Sylvia Mendiola
Cut by Dale Helgersen*

This intricate fretwork clock makes a great gift for the holidays or any time of year. Make the clock with or without the backing board for distinctly different looks. While the project looks impressive, construction is simple and most scrollers can cut the fretwork in a weekend.

Select your wood for the fretwork and the contrasting backing board. Stack cutting supports the fretwork during cutting and makes the most

efficient use of your time. Make two separate stacks, one consisting of the two blanks for the fretwork and a second stack consisting of the two blanks for the backing board. Secure the stacks using your method of choice (see page 14). Drill the blade-entry holes and the hole for the clock movement. Cut the fretwork and separate the stacks. Glue and clamp the backing board to the fretwork clock. Apply your finish of choice and install the clock movement. Add your hanger of choice.

Wall clock pattern



© 2009 Scroll Saw Woodworking & Crafts

Materials:

- $\frac{1}{4}$ " to $\frac{3}{8}$ " x $7\frac{1}{2}$ " x $7\frac{1}{2}$ " Baltic birch plywood or hardwood of choice (clock)
- $\frac{1}{4}$ " to $\frac{3}{8}$ " x 8" x 8" Baltic birch plywood or hardwood of choice (backing board)
- Clock hands (Klockit #66930)
- Clock movement (Klockit #10004)
- Assorted grits of sandpaper
- Wood glue

- Finish of choice

Tools:

- #3 reverse-tooth blades or blades of choice
- Drill with $\frac{1}{16}$ "-diameter bit and a bit sized to fit your clock movement
- Clamps

Materials & Tools

SPECIAL SOURCES:

Clock movements and hands are available from Klockit, 800-556-2548, www.klockit.com.



Sylvia Mendlola lives in Hondo, Tex., with her husband, David. She sells patterns through Wooden Teddy Bear. She also assists other pattern designers on the SSW&C Message Board, www.scrollsawer.com/forum. For more of her work, visit her website at www.kerfdesigns.com.

Building a Gumball Turtle

Kids will have so much fun working through this labyrinth they won't realize they're building fine motor skills. Write the child's name or a personalized message on the back and include a bag of gumballs for a gift that's perfect for any occasion.

The maze is large enough for kids to easily hold and manipulate. Drop a gumball into the turtle's cheek, hold the maze in both hands, and tilt and turn the turtle to guide the ball through the maze. Add two balls at the same time to make it more challenging.

Cutting the body and maze

Attach a copy of the pattern to a piece of $\frac{3}{4}$ "-thick pine with spray adhesive. Cut along the solid lines outlining the shaded areas.

The circular piece in the middle of the head acts as a support for the plastic eye. Do not drill the hole for the eye until after the plywood head has been glued in place. The locations of the screw pilot holes around the outside of the body and the entrance-hole cover are provided for reference only. To ensure they are located correctly, do not drill the pilot holes until final assembly. Set the cut body pieces aside.

Cutting the plywood pieces

Cut the head cover piece, eyelid, and entrance-hole cover from the $\frac{1}{8}$ "-thick plywood. Cut the backing board by following the red line on the main pattern. To fit the pieces on a 12" x 12" piece of plywood, cut the feet separately and glue them to the back of the pine. Cut the backing board as one piece by using a 12" x 15" piece of plywood.

Drill or saw a $\frac{5}{8}$ "-diameter entrance hole for the gumball through the turtle head cover piece. Do not drill the hole for the eye until you glue the head cover piece in place.

Cutting the acrylic

Attach the pattern to the protective paper or plastic on top of the acrylic. Cover the pattern with clear packaging tape to lubricate the blade and prevent the acrylic from melting back together as it's cut. Set your saw to a medium speed and cut the acrylic with a #5 reverse-tooth blade. Cut along the blue line. Sand the edges of the plastic if desired, then drill the $\frac{1}{8}$ "-diameter screw pilot holes. Remove the protective paper or plastic film from both sides of the acrylic.

Assembly and finish preparation

Begin by gluing the maze and body pieces to the $\frac{1}{8}$ "-thick backing board. Glue the head cover piece in place. Drill the $\frac{1}{4}$ "-diameter by $\frac{5}{8}$ "-deep hole for the plastic eye.

Brush a coat of sanding sealer onto the entire project, including the entrance-hole cover and eyelid. When the sealer is dry, sand the project lightly with 220-grit sandpaper.



Maze

Easy-to-make wooden maze promotes eye-hand coordination

By Paul Meisel



Painting and final assembly

Paint the top and edges of the feet, head, and tail green. Paint the eyelid and the top surface of the maze yellow. Paint the entrance-hole cover orange. Use black paint for the mouth and the line under the eyelid. Use the painting guide as a reference. Finally, brush a coat of clear polyurethane varnish over the entire project.

Place the clear acrylic in position and mark through the holes with a scratch awl. Drill the $\frac{1}{16}$ "-diameter screw pilot holes into the body. Position the entrance-hole cover piece and drill the corresponding screw pilot hole.

Attach the clear acrylic piece and the entrance-hole cover piece to the maze with #4 by $\frac{1}{2}$ "-long round-head screws. The screw that holds the entrance-hole cover piece should be just tight enough that it will pivot to open and close. Glue the plastic eye and the eyelid in place.

Puzzle body

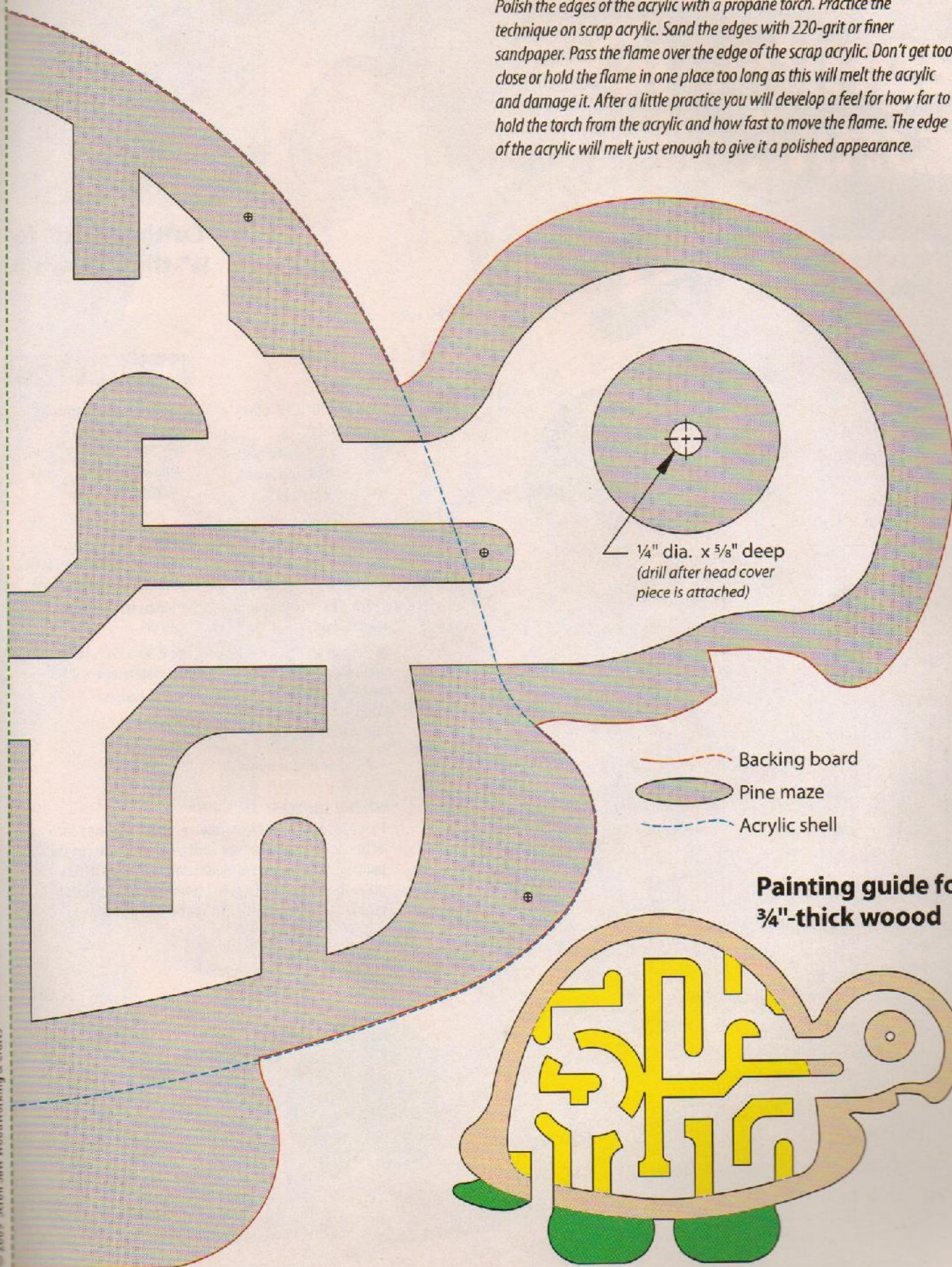
$\frac{3}{4}$ " x $9\frac{3}{4}$ " x $14\frac{1}{2}$ "

$\frac{1}{16}$ " dia. x $\frac{3}{8}$ " deep (5)

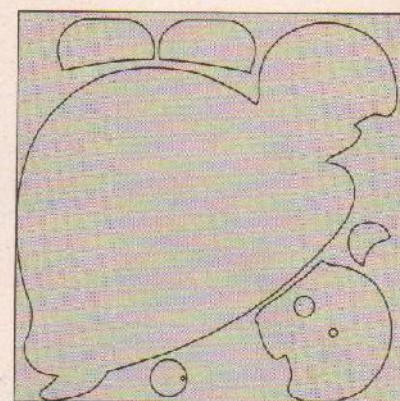
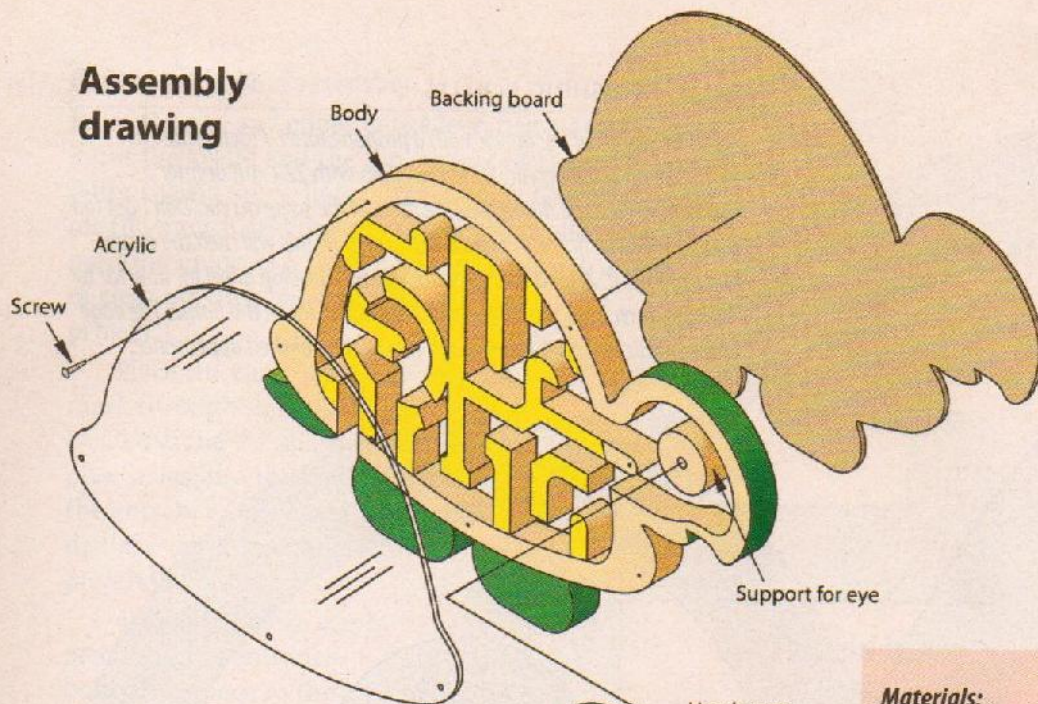
Gumball turtle maze pattern

TIP POLISHING ACRYLIC

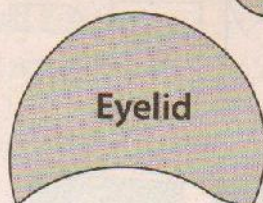
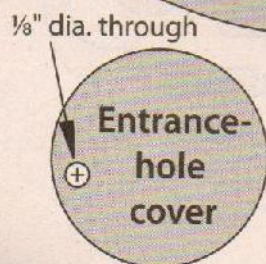
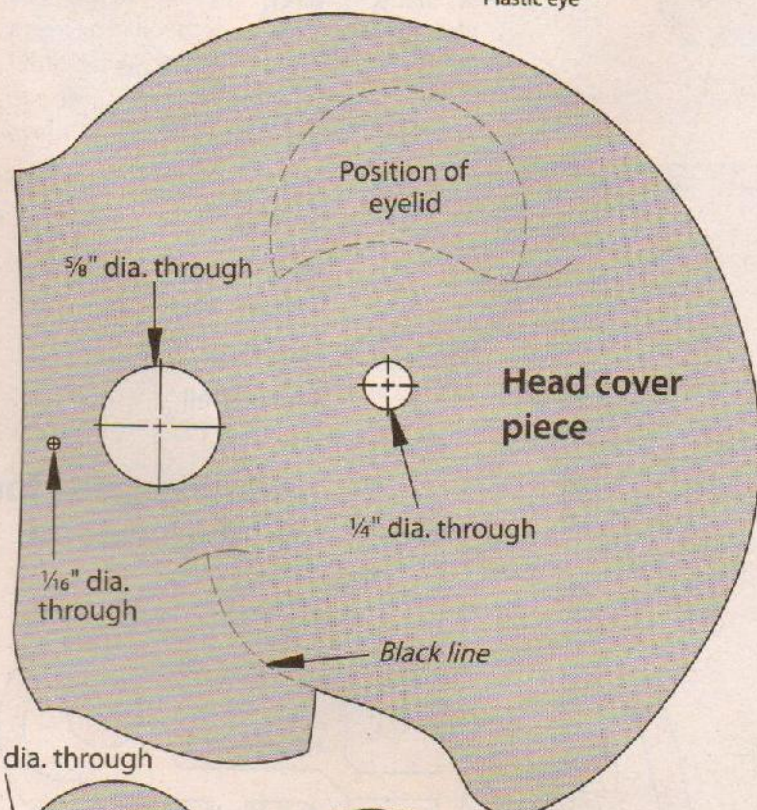
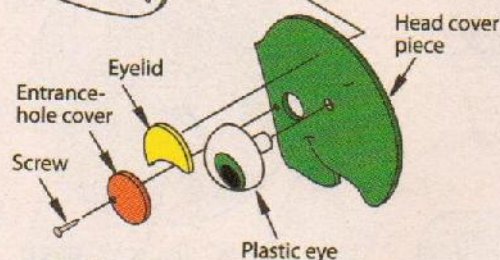
Polish the edges of the acrylic with a propane torch. Practice the technique on scrap acrylic. Sand the edges with 220-grit or finer sandpaper. Pass the flame over the edge of the scrap acrylic. Don't get too close or hold the flame in one place too long as this will melt the acrylic and damage it. After a little practice you will develop a feel for how far to hold the torch from the acrylic and how fast to move the flame. The edge of the acrylic will melt just enough to give it a polished appearance.



Assembly drawing



Cutting guide for 1/8"-thick plywood



Plywood cutting pattern

Materials:

- 3/4" to 1" x 10" x 15" pine (Puzzle body)
- 1/8" x 12" x 12" Baltic birch plywood (Backing board, head cover piece)
- 1/10" x 12" x 12" clear acrylic (#8778)*
- 1 1/16"-diameter plastic eye (#9299)*
- 6 each #4 x 1/2"-long round-head screws
- 3/16"-diameter marbles or gumballs of choice (white marble #MWH, black marble #MBK, green marble #MGR, blue marble #MBU)*

Note: marbles pose a choking hazard for children under three years of age.

Materials & Tools

- Paints: Delta Ceramcoat or equivalent: black (#02506)*, green (#02662)*, yellow (#02509)*, orange (#02042)*

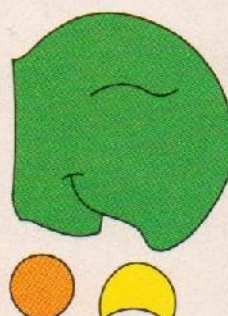
Tools:

- Olson #443-R and #446-R blades or blades of choice
- Phillips screwdriver, size #0
- Drill with 1/16", 1/8", and 1/4"-diameter twist bits
- Paintbrushes
- Wood glue

SPECIAL SOURCES:

Part #3130 Turtle Maze Hardware, which contains each of the items marked above with an asterisk (except the paints) is available from Meisel Hardware Specialties. To order the hardware parts kit and/or the Delta paints or to request a catalog, visit www.meiselwoodhobby.com, or call 800-441-9870.

Painting guide



Paul Meisel of Mound, Minn., designed more than 3,000 woodworking plans. For more projects, visit his website.



Season's Greetings Santa

Intarsia project is a fun way to greet holiday visitors

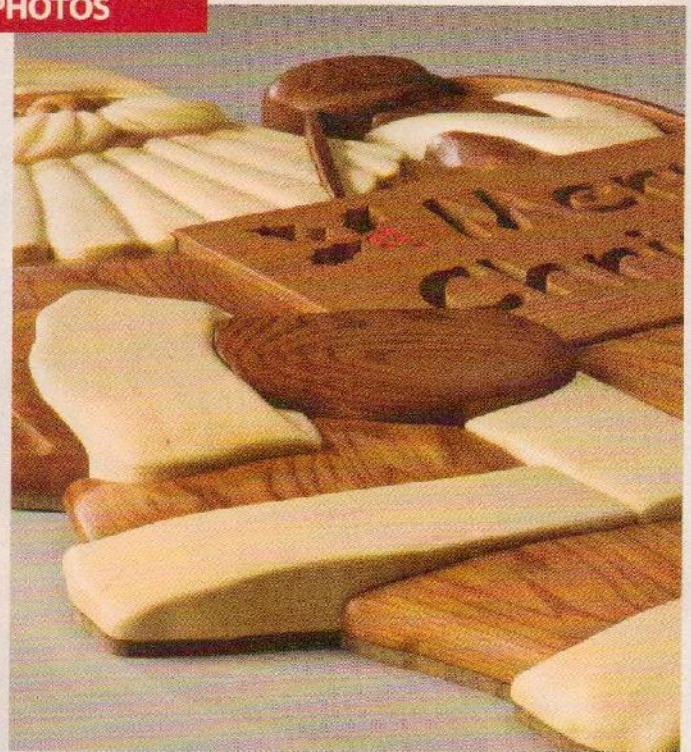
By Judy Gale Roberts



Merry Christmas

The holiday season typically brings increased visits from family and friends. This cheerful Santa is an ideal way to welcome guests and showcase your woodworking skills. The festive design will outlast many store-bought decorations and is sure to become a family favorite handed down through generations.

The design is relatively simple. To get started, make several copies of the pattern. Make all of the copies at the same time. Copiers can distort images slightly and size variations occur from day to day even when using the same copier.



Santa: Cutting the Pieces

Separate the individual pattern pieces, leaving $\frac{1}{8}$ " to $\frac{1}{4}$ " of pattern line beyond the part to be cut. This gives you a lead-in line to get your blade on track before you start cutting the part. When the color and grain direction of several parts are the same, cut the parts as a section from one piece of wood.

Notate the position of the pattern on the selected wood before applying the adhesive to the pattern. This allows you to easily re-align the pattern to make the best use of the color and figure of the wood. Make sure your saw table is square to the blade and cut the pieces.

I use $1\frac{1}{2}$ "-thick wood for the boots so the toe portion extends far enough to allow Santa to stand on his own two feet. The boots are all cut from the same piece of wood and then the upper portion of the boots are sanded down to $\frac{3}{4}$ " thick. I use a #5 blade for $\frac{3}{4}$ "-thick wood, but use a smaller blade, such as a #1, #0, or #2/0 to make the internal cuts on sections cut from the same piece of wood. Keep the blade in the center of the pattern line. You will need to drill blade-entry holes to cut the fretwork letters on the sign.

Number the back of each piece to keep them in order and keep track of which is the front of the piece. Check the fit of the pieces. If the parts don't fit together properly, you can often see where the pattern line is heavy. Recut these areas with a sharp blade for best results. Sanding pieces to fit usually results in noticeable gaps.

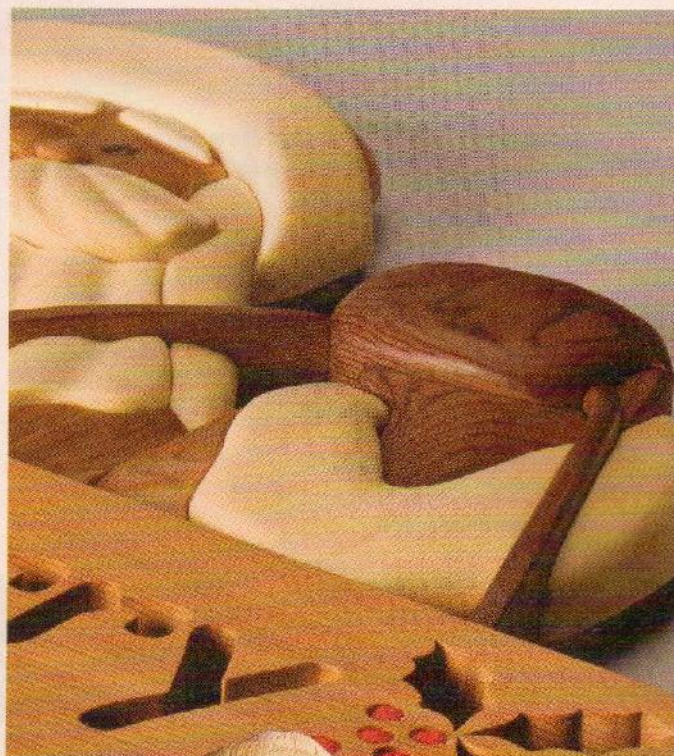
Assemble all of the cut pieces on a master copy of the pattern. I use $\frac{1}{4}$ "-thick plywood to raise up the nose, mustache, and lower lip as one section, and another piece of plywood to raise Santa's right glove.

Santa: Shaping and Finishing the Project

Rough in the entire project to achieve the overall depth of the pieces before fine tuning the parts. After sanding sections, use a pencil to mark the height on adjoining parts. The dotted lines with arrows indicate the contours of individual pieces. The dashed lines indicate wrinkles and grooves, which are added with a Wonder Wheel or rotary power carver. Hand sand the grooves to soften the sharp corners.

Hand sand all of the pieces to remove any cross-grain scratches or pencil marks. Blow off the dust and check for more scratches. Apply a heavy coat of gel polyurethane to the surface and sides of each piece. Let the gel soak for a minute and wipe off the excess. Let the first coat dry overnight and then apply two more lighter coats six to eight hours apart.

When the finish is dry, cut the backing board. Apply a light coat of spray adhesive to a large piece of paper and assemble the pieces on the paper. The adhesive keeps the pieces from sliding around as you trace around them with a pencil. Attach the traced pattern to a piece of hardboard or Baltic birch plywood and cut $\frac{1}{16}$ " inside the lines. Remove the paper and glue the pieces to the backing board with wood glue.



Start with three or four exterior parts to lock the project in place. When those pieces have set, pick up each part, one at a time, place some dots of glue on the back and carefully put the piece back in place. Glue the red pom poms in the holly berry holes and attach a hanger to the back of the project if desired.

Materials:

- 5 photocopies of the pattern
- Glue stick, spray adhesive, or sticker-making machine
- 1½" x 4" x 6" dark wood, such as dark western red cedar or walnut (boots)
- ¾" x 4" x 4" dark wood, such as dark western red cedar or walnut
- ¾" x 6" x 6" medium-dark wood, such as western red cedar, mahogany, or cherry
- ¾" x 8" x 12" medium-tone wood, such as western red cedar, pecan, or red oak
- ¾" x 5" x 12" light wood, such as western red cedar, oak, or northern white cedar
- ¾" x 6" x 16" white wood, such as aspen, white pine, or holly

Materials & Tools

- ¼"-diameter by 6"-long dark wood dowels (eyes)
- Polyurethane gel or finish of choice
- ⅝" to ¾" x 14" x 22" hardboard or Baltic birch plywood (backing board and shims)
- Wood glue
- Small red pom poms (optional)
- Assorted grits of sandpaper

Tools:

- #5 and #1 skip-tooth blades or blades of choice
- Sanders of choice
- Rotary power carver or Wonder Wheel
- Drill with ¼"- and ⅝"-diameter bits
- Pencil

A matching Mrs. Claus pattern is available at www.intarsia.com.



Pattern for the **SEASON'S GREETINGS SANTA** is in the pattern pullout section.



Judy Gale Roberts, born in Houston, Tex., has long been recognized as the leading authority on Intarsia. Judy was one of the first ten people to be inducted into the Woodworking Hall of Fame. For more of her work or information on classes held at her home studio in Seymour, Tenn., visit www.intarsia.com. Judy's numerous intarsia books are available at www.FoxChapelPublishing.com, 800-457-9112.

Amazing 3-D Christmas Ornaments



Fun compound-cut designs can be made from solid or laminated wood

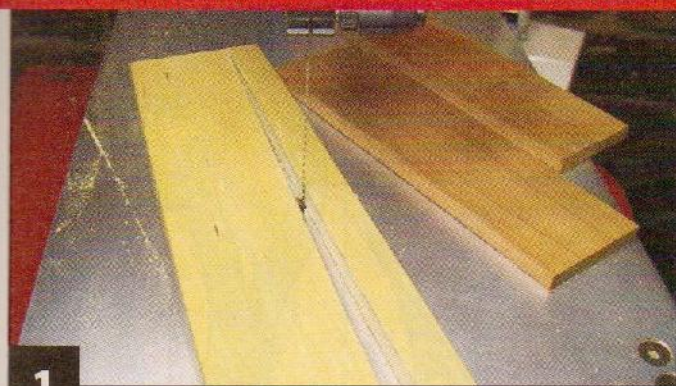
By Sue Mey

Compound-cut ornaments make fun and easy holiday presents. The ornaments can be made from a solid piece of wood and painted or stained, or finished naturally. To give the ornaments a unique look, glue up your blank using thin strips of contrasting wood.

I cut my stock slightly oversized and sand it down to 1½" by 1½" (45mm by 45mm). For straight blade-entry holes and neat inside cuts, the blocks must have perfectly straight edges at a 90° angle to each other. If you are not laminating your blank for a multi-colored ornament, you can skip right to step three.



3-D ORNAMENTS: GLUING UP THE BLANK

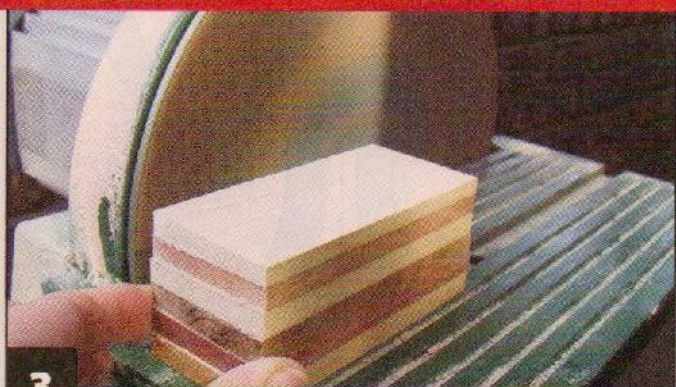


1 **Cut the strips to size.** I cut an assortment of $\frac{1}{4}$ " to $\frac{3}{8}$ " (6mm to 10mm)-thick wood into $1\frac{7}{8}$ " (48mm)-wide strips. Cut the strips into $5\frac{1}{2}$ " (140mm)-long pieces. Shorter pieces can be used for smaller ornaments.

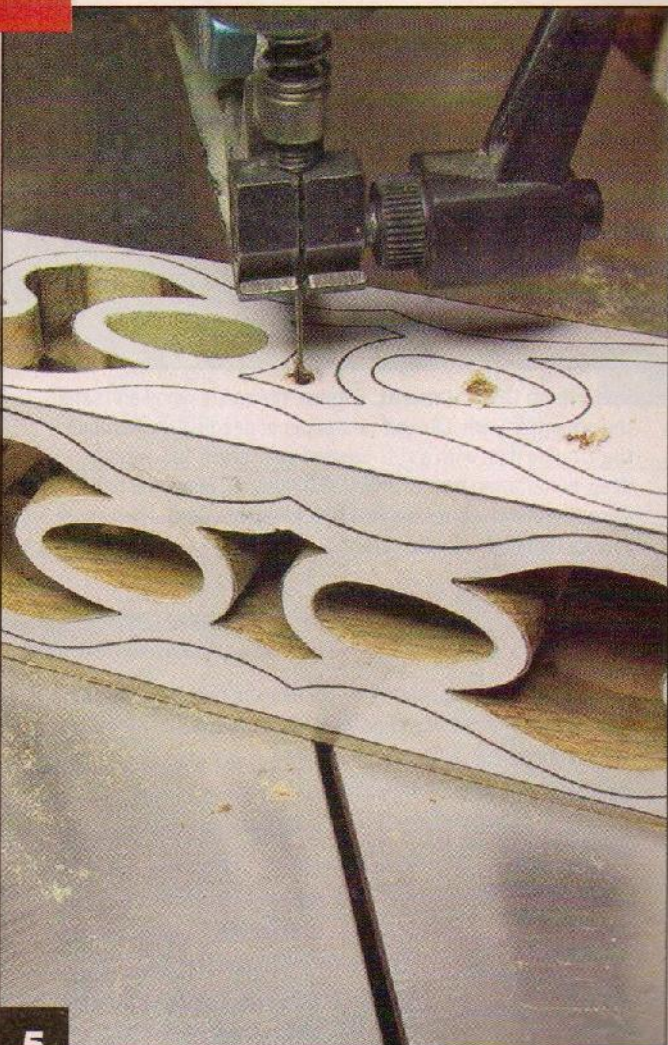


2 **Glue the strips together.** Mix and match the strips of wood for unique color combinations. The stack should be about 2" (51mm)-thick. Apply wood glue between the layers and clamp the strips together until the glue dries.

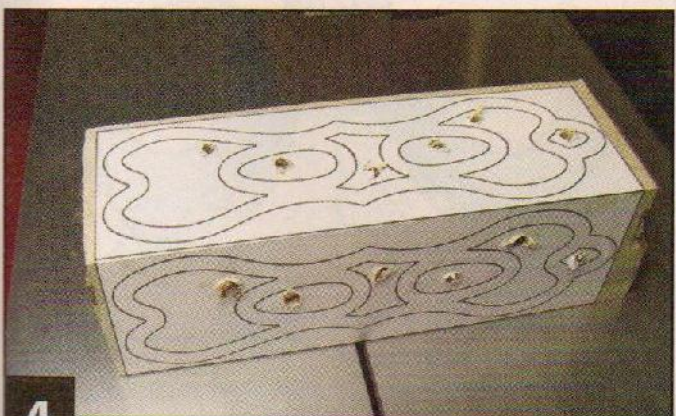
3-D ORNAMENTS: CREATING THE ORNAMENT



3 **Prepare the blank.** Sand or trim the blank down to $1\frac{3}{4}$ " (45mm) by $1\frac{3}{4}$ " (45mm). I use a disc sander, but you can use a table saw or your method of choice. It is critical for the sides to be flat and square to each other.



5 **Cut the fretwork.** I use a #9 blade for soft woods and a #12 blade for the laminated blanks. Cut the frets on one side, remove the waste, and then turn the blank and cut the frets on the adjoining side.

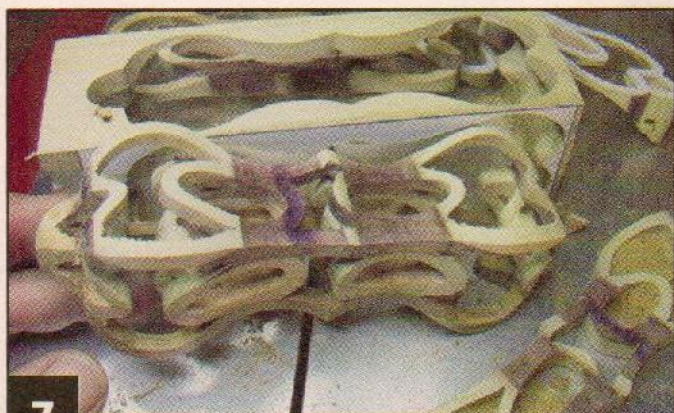


4 **Drill the blade-entry holes.** Cover the blank with masking tape. Fold the pattern on the dotted line and attach the pattern to the blank. Drill the blade-entry holes with a $\frac{1}{8}$ "-diameter bit. Remove the rough edges with sandpaper or a scraper.



6

Cut the perimeter. Start with the end-grain area. Cut the entire perimeter on one side. Then hold the ornament and waste in place while you wrap clear tape around the blank. Rotate the blank and cut the perimeter of the ornament on the second side.



7

Finish the ornament. Remove the waste wood and sand the ornament with 320-grit sandpaper or needle files. Remove the sanding dust with a stiff-bristled paintbrush and apply a deep-penetrating furniture wax or Danish oil. Allow the finish to dry and remove any excess with a dry lint-free cloth. Then apply several thin coats of clear varnish.

Materials:

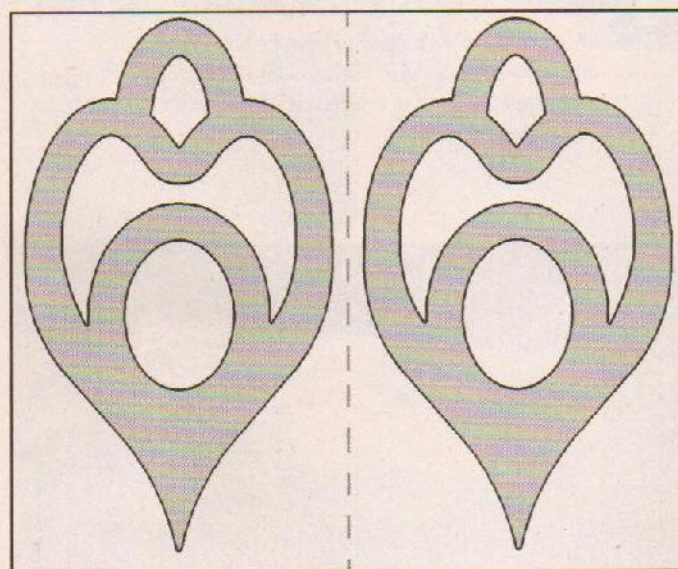
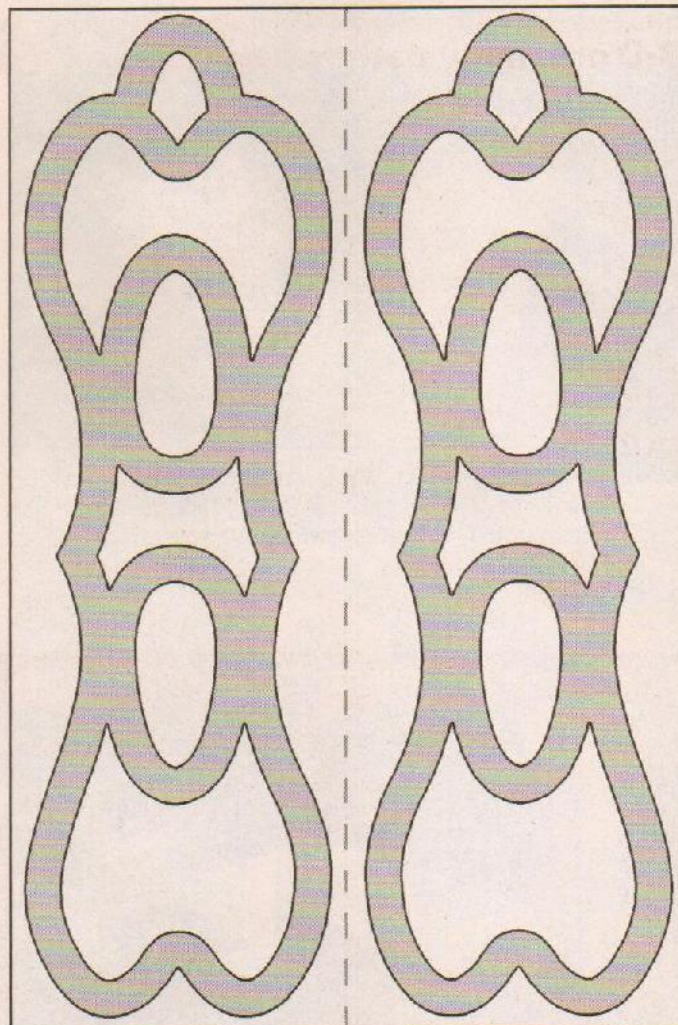
- 1¾" (45mm) x 1¾" (45mm) x 5½" (135mm) wood of choice (large ornaments)
- 1¾" (45mm) x 1¾" (45mm) x 4½" (105mm) wood of choice (medium ornaments)
- 1¾" (45mm) x 1¾" (45mm) x 3" (76mm) wood of choice (small ornaments)
- Masking tape
- Temporary-bond spray adhesive or glue stick
- Wood glue (laminating strips of hardwood)
- Clear packing tape
- Sandpaper, assorted grits

Materials & Tools

- Deep-penetrating furniture wax liquid or Danish oil
- Lint-free cloth
- Clear spray varnish
- 320-grit sandpaper

Tools:

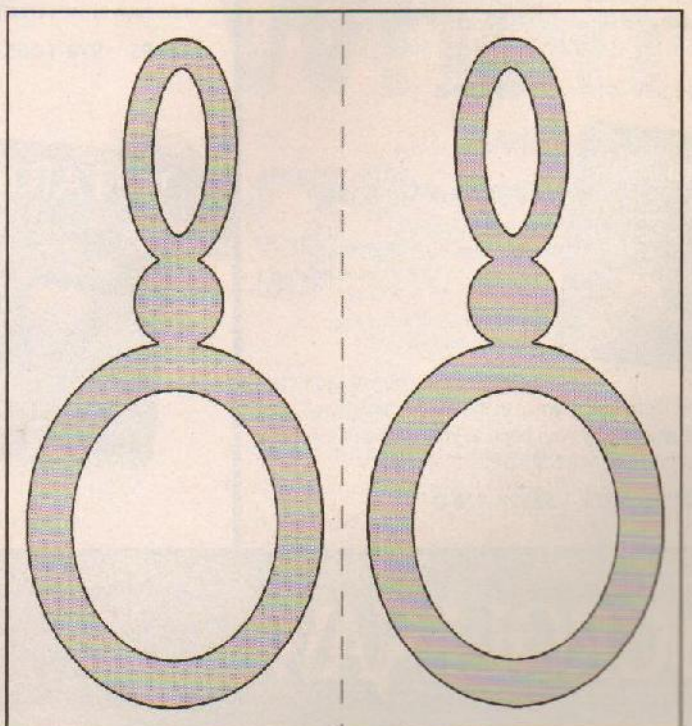
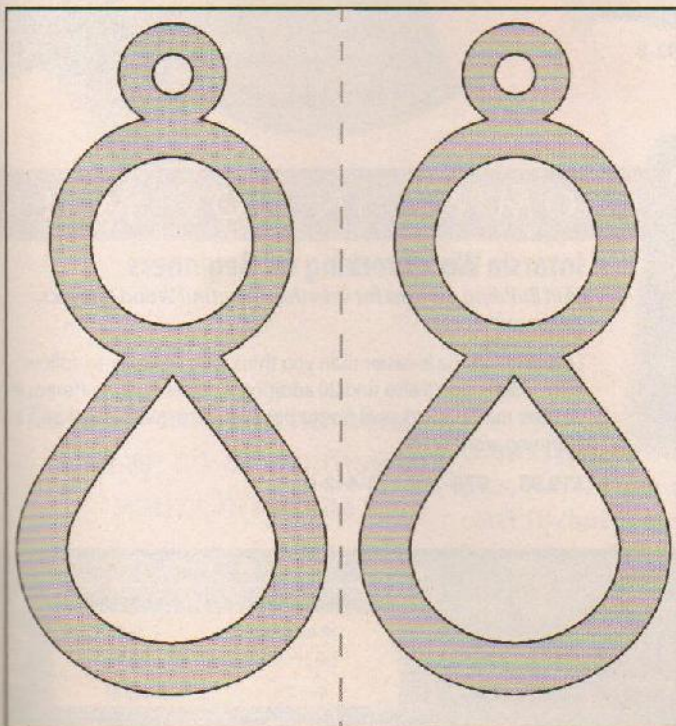
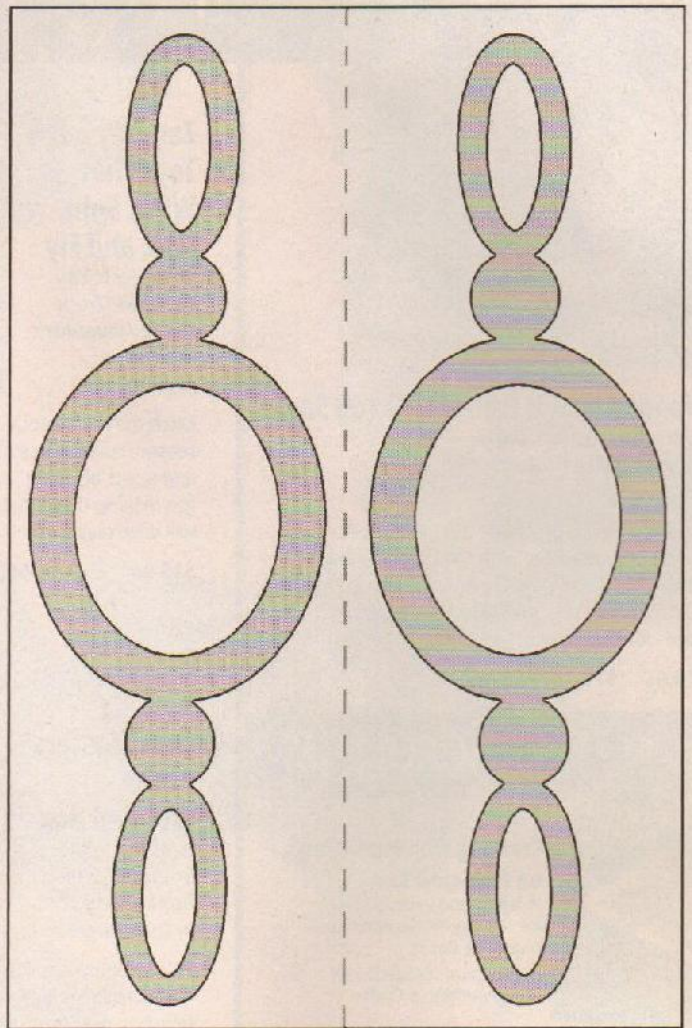
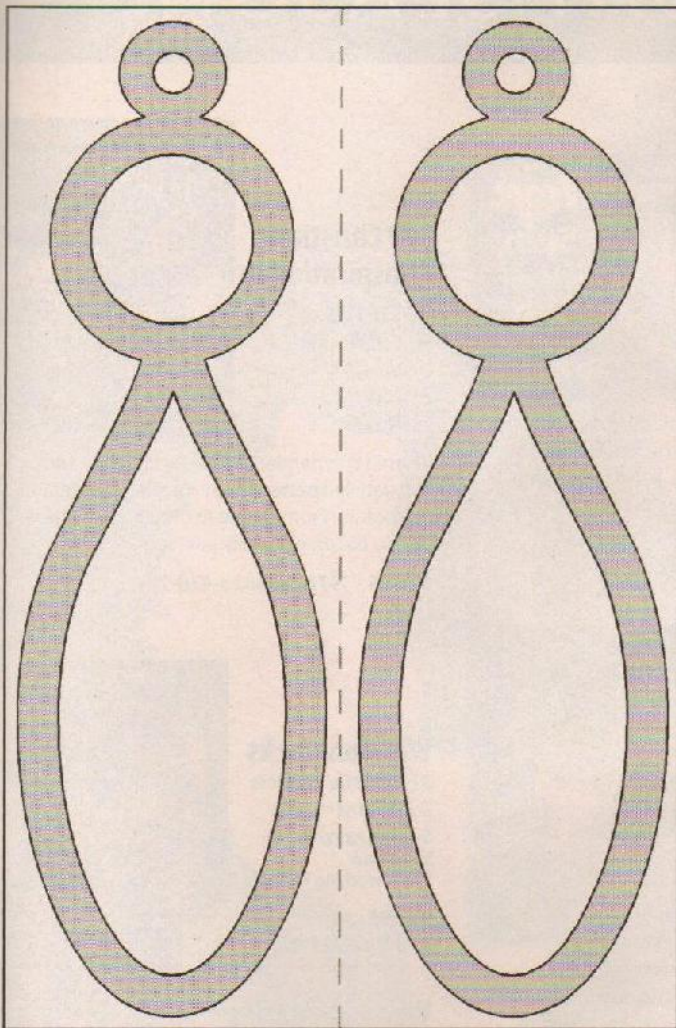
- #9 and #12 skip-tooth blades or blades of choice
- Drill press with ⅛"-diameter bit
- Disc sander
- Needle files
- Stiff-bristled paintbrush
- Medium-sized artist's brush



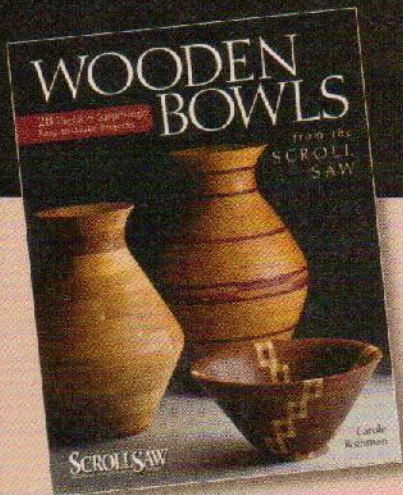
Sue Mey lives in Pretoria South Africa. To see more of her work or for pattern-making tutorials and a wide variety of patterns for sale, visit www.scrollsawartist.com.

Additional patterns for the 3-D ORNAMENTS are in the pattern pullout section.

3-D ornament patterns



CRAFT YOUR GIFTS THIS HOLIDAY SEASON!



Wooden Bowls from the Scroll Saw

28 Useful & Surprisingly Easy-to-Make Projects

By Carole Rothman

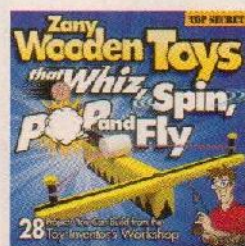
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28 Projects You Can Build from the Toy Inventor's Workshop

By Bob Gilsdorf



Ditch the mass-produced, plastic toys this holiday season; create some old-fashioned fun with wood and good 'ol craftsmanship. You'll have as much fun making these toys as the kids and grandkids will have playing with them.

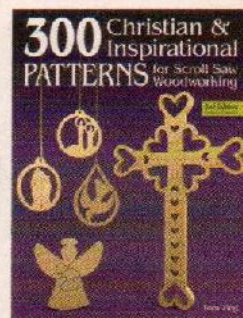
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By the Editors of Scroll Saw Woodworking & Crafts

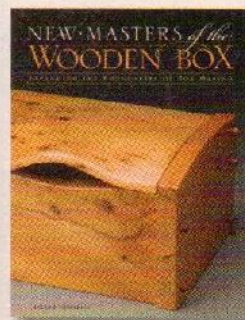
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By Oscar Fitzgerald



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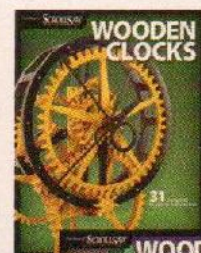
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31 Favorite Projects & Patterns

By the Editors of Scroll Saw Woodworking & Crafts

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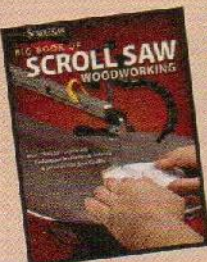
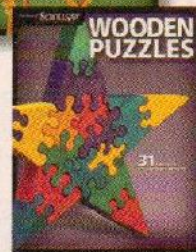


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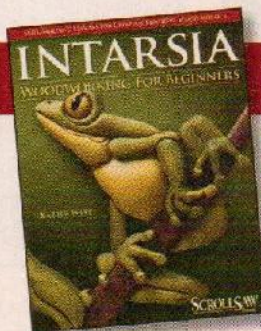
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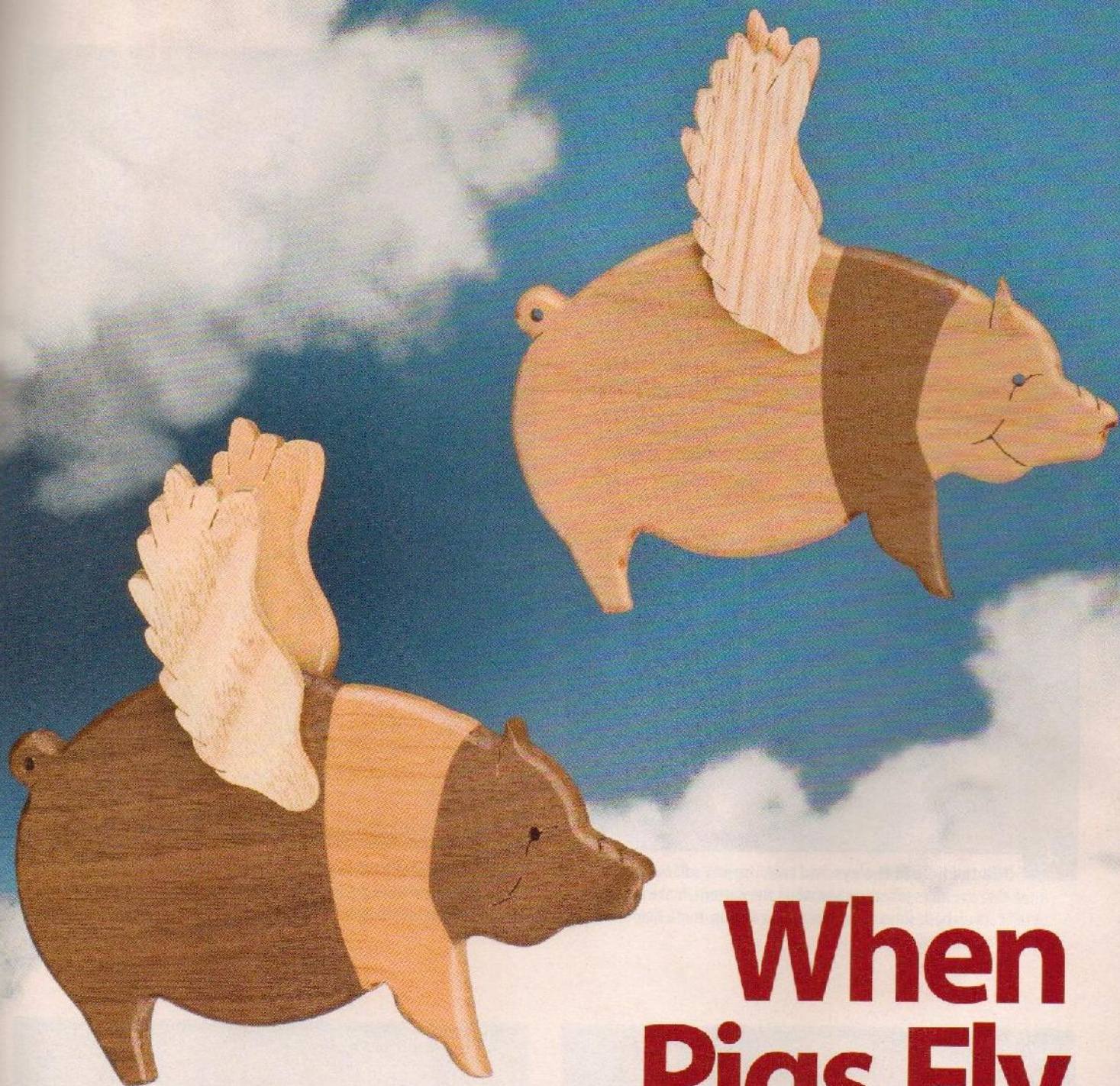
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When Pigs Fly

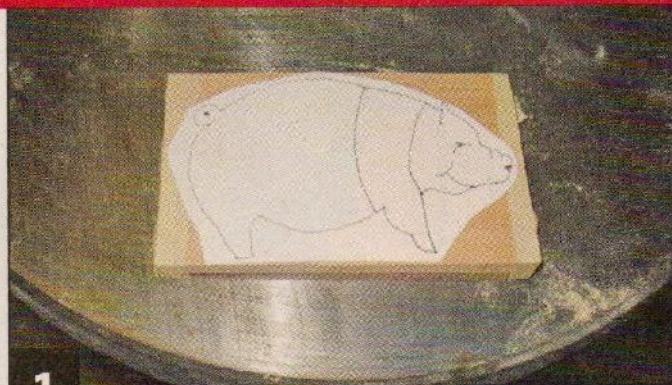
**Easy-to-make ornaments
add an air of whimsy to
your Christmas tree**

By Daniel and Ruth Johnson

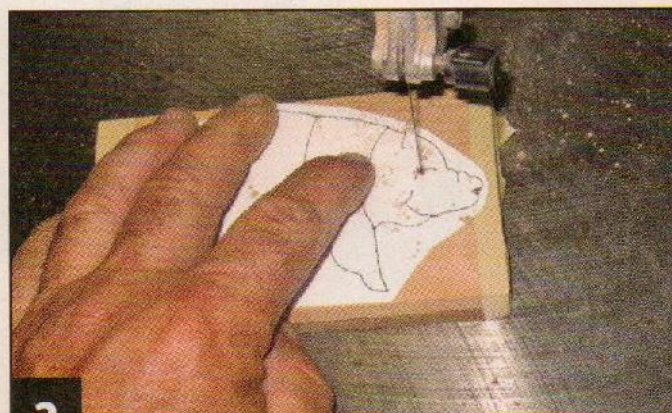
The inspiration for this piece comes from our two pot-bellied pigs, Harold and Donelda. They can't fly, but they do bring a light-hearted joy to our family. The ornament makes a whimsical addition to your Christmas tree, and is a well-suited gift for friends who tend to stretch the truth.

Start with two pieces of contrasting wood the same thickness. We use $\frac{3}{8}$ "-thick cherry and walnut. We prefer to use natural hardwoods rather than painting or staining the wood. Before making the first cut, always make sure the saw table is at a 90° angle to the blade. I use a small square.

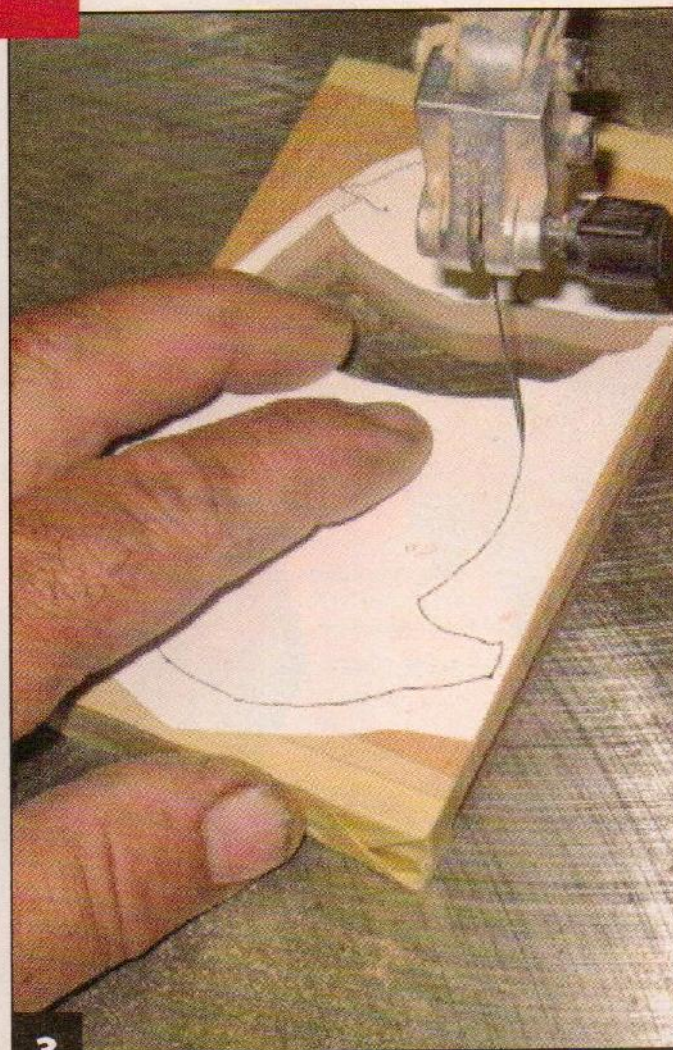
PIG: MAKING THE BODY



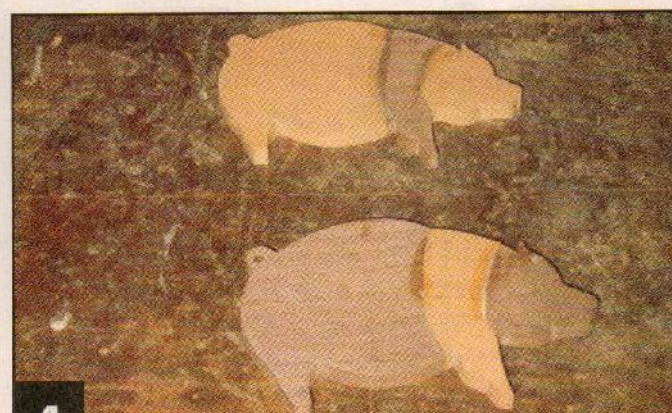
1 Prepare the stack. Run a thin strip of masking tape around the edges to secure the stack of contrasting wood. Attach the pattern with spray adhesive. Apply the adhesive only to the pattern; if you apply adhesive to the wood and pattern, the pattern will be difficult to remove.



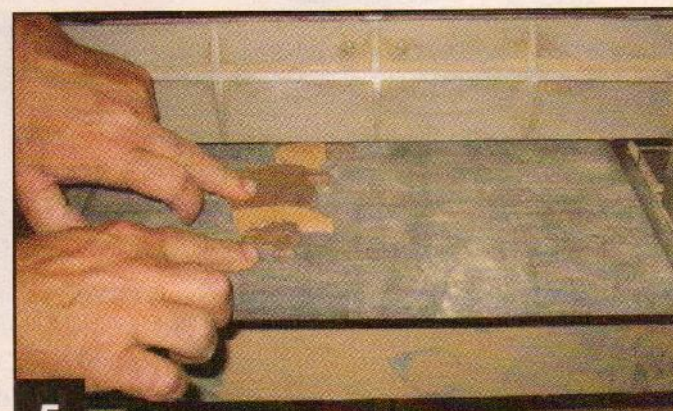
2 Drill the hole in the eye and tail. Use a $\frac{1}{8}$ "-diameter drill bit to drill the holes where indicated on the pattern. Make the detail cuts on both sides of the eye with a #5 skip-tooth blade. I prefer Pebecco blades.



3 Cut the pig's body. Cut the center strip and set it aside. Then cut the hind end and set it aside. Cut the detail lines for the mouth and nose before cutting the head free.



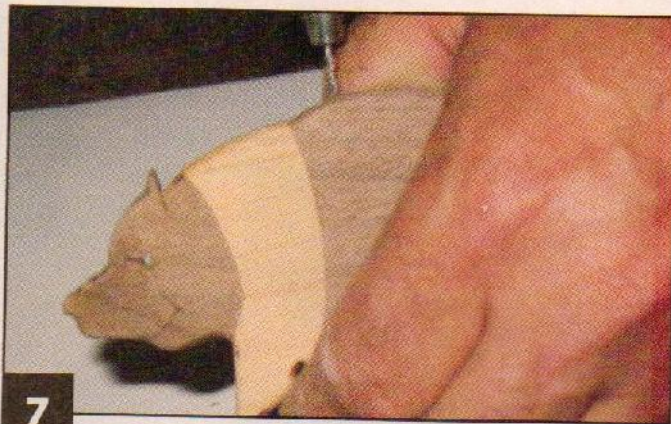
4 Glue the pieces together. Mix and match the pieces so the center strip contrasts with the tail and head. Apply Tightbond II glue to both of the edges to be glued and hold the pieces together for a few seconds. Set the pieces aside to dry.



5 Sand the pigs smooth. I use a drum sander, but you could sand them with a belt sander or random orbital sander. This removes any rough areas left from gluing the sections together.



6 Round over the edges. Use a $\frac{1}{16}$ "-radius brass-tip roundover bit in a router table. This smooths over the sharp corners of the ornament. Hand sand any rough edges left by the router with 220-grit sandpaper.

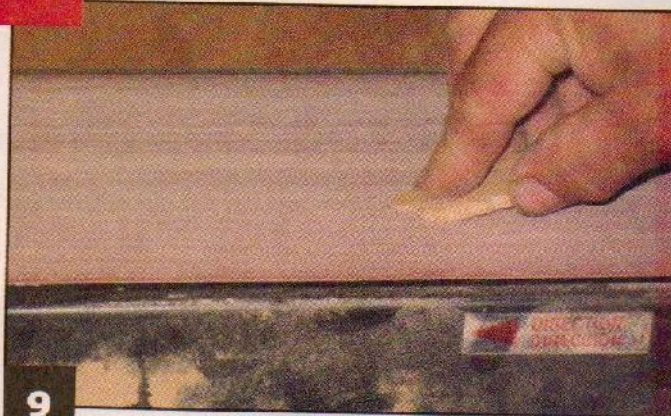


7 Attach the hook. Hold the pig upright between your thumb and forefinger to determine the location where the pig balances from front to back. Drill a $\frac{1}{16}$ "-diameter by $\frac{1}{4}$ "-deep hole in the top of the pig at that location. Insert a screw eye into the hole.

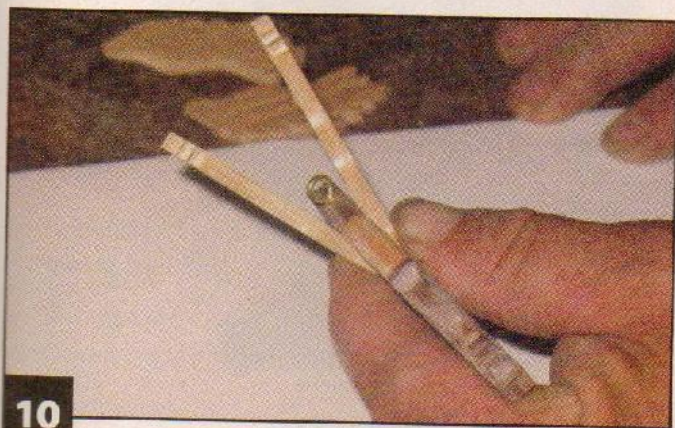
PIG: ADDING THE WINGS



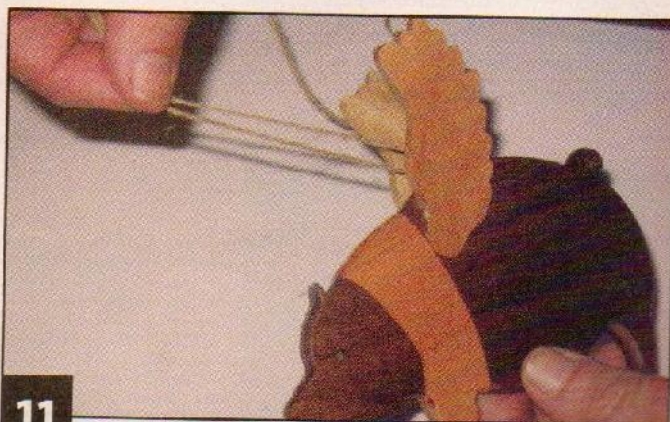
8 Cut the wings. Stack together four pieces of $\frac{3}{16}$ "-thick scrap wood using masking tape. Attach the pattern with spray adhesive and cut the pieces with a #5 skip-tooth blade. Be careful when cutting the feather details.



9 Bevel the wings. Use a belt sander equipped with 120-grit sandpaper to taper the bases of the wings where they attach to the pig's body. Keep the bevel consistent on all four wings.



10 Attach the wings. Position the wings on either side of the screw eye approximately 1" down from the top of the pig's back. Dab a small amount of Titebond II glue on the beveled edge of each wing and hold the wings in place.



11 Apply the finish. String hemp cord through the screw eye and tie a bow knot on the top. Hang the pig and apply a moisture-resistant vinyl sealer. Sand the sealer lightly to remove any raised grain and apply a moisture-resistant lacquer with a medium-rubbed effect. Allow the lacquer to dry.

Reduce the pattern and mount the pigs on dowels to add a touch of humor to potted plants or use the design to inlay a box lid.



Flying pig pattern

Materials:

- $\frac{3}{8}$ " x 3" x 5" walnut and cherry or woods of choice (pig)
- 4 each $\frac{3}{16}$ " x $1\frac{1}{4}$ " x $2\frac{5}{8}$ " scrap wood (wings)
- All-purpose spray adhesive
- Masking tape
- Titebond II glue or wood glue of choice
- 2 each $\frac{1}{8}$ "-diameter screw eye
- Hemp, yarn, ribbon, or string
- Assorted grits of sandpaper
- Moisture-resistant lacquer (we use one with a medium-rubbed effect by Sherwin Williams)

Materials & Tools

- Moisture-resistant vinyl sealer

Tools:

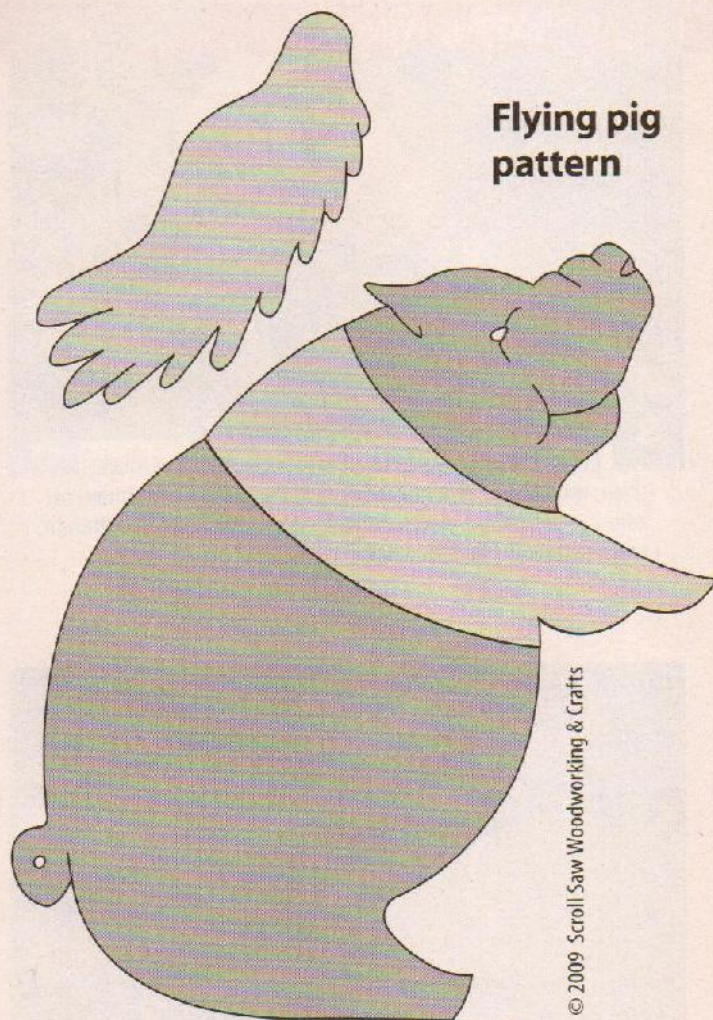
- #5 Pebecco skip-tooth blades or blades of choice
- Drill with $\frac{1}{16}$ "- and $\frac{1}{8}$ "-diameter bits
- Drum sander or sander of choice
- Router table with a $\frac{1}{16}$ "-radius brass-tip round-over bit
- Belt sander



Daniel and Ruth's pot-bellied pigs, Harold and Donelda, inspired this design.



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.



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In our next issue...



Heart-detail photo frame makes a lovely Valentine's gift



Detailed fire engine intarsia is perfect for current and future firefighters



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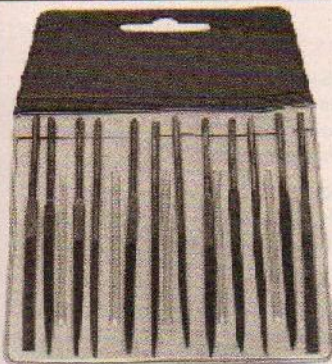
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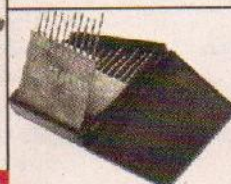
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By Kathleen Ryan

Christmas Carousel

In the true spirit of giving, Bill Frerking designed a Christmas carousel to help his community with their fundraising event. The carousel was selected as the table centerpiece for the "Queen of the Parade" banquet. The banquet is part of the East Peoria, Ill., Festival of Lights Parade. Now in its 25th year, the festival was named one of the top 100 events in North America for 2009.

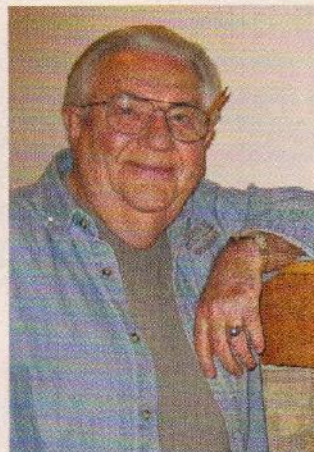
"This festival draws people from all over middle America," said Bill. "I feel honored to have a small part in it."

"I saw a carousel project in a magazine some time ago," Bill said. "With that idea in mind, I made a carousel and mounted figures from past parades on the cage. Now, I'm making 21 carousels to be auctioned off at the end of the banquet."

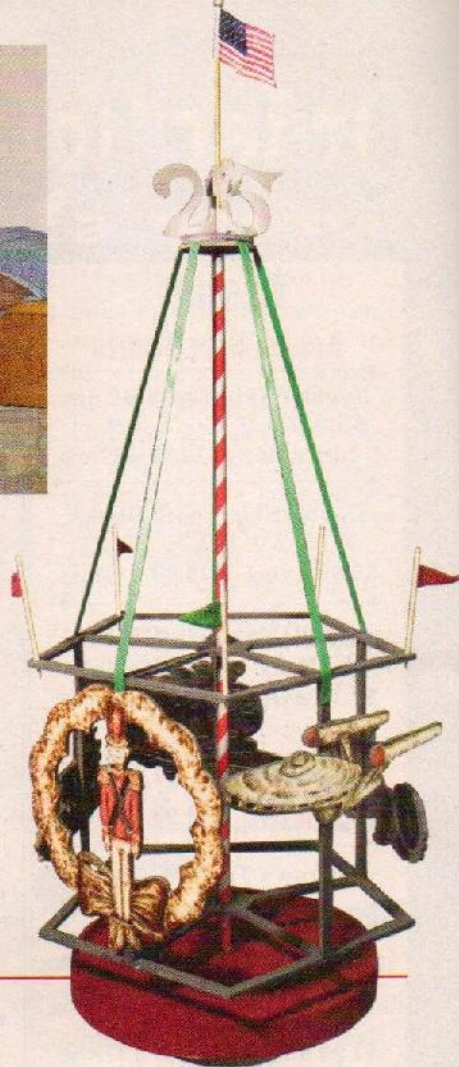
Bill has been woodworking for most of his life. "But I didn't do the fun stuff until I retired five years ago," the 75-year-old said with a laugh. Bill builds many items for fundraising projects, but never accepts money for his work.

Cut from Baltic birch plywood, the carousel measures 21" high by 8" wide. The woodburned figures stand 2½" to 4" tall. The cage hangs free from the post. When the carousel is turned, the ribbon winds around the pole. The cage spins as the ribbon unwinds and rewinds itself in the opposite direction.

Contact Bill at bf110@comcast.net.



This twirling carousel centerpiece will be auctioned off to benefit Bill's community.



Hugh cut these letter openers from a pattern he purchased from Wooden Teddy Bear, www.woodentedybearonline.com.

Saved by a Scroll Saw

Australian native Hugh McDonald spent forty years creating beautiful items on a woodturning lathe. His collection of tools and wood nearly filled three sheds. But two years ago, Hugh suffered a major stroke that left him paralyzed on the right side.

"It would have been a lot easier if it affected my left side because I'm right-handed," he quipped. "But there's no use in feeling sorry for yourself. That won't get you anywhere."

During a hospital stay, Hugh planned to sell all of his tools on Ebay, but his wife, Helen, discouraged him from doing anything too soon. With therapy, Hugh learned to read and speak again. He recovered enough function in his right leg to hobble short distances with the aid of a cane, but his right hand was totally useless.

"I knew I couldn't do the kind of woodworking I used to do, but I thought I could maybe manage some handles for my tools on the lathe," he said. "But my left hand was so shaky Helen was afraid I'd lose it trying to cut the wood with the band saw."

Hugh struggled until he saw a woman at a woodworking show using a scroll saw.

"She showed me how easy it was," Hugh said. "I knew this was something I could do with one hand, so I looked around until I found the right scroll saw."

Hugh is now back in his shop, cutting away on the scroll saw. Although he needs help gluing and assembling his projects, Hugh does most of the cutting on his own.

"I'm going to have a go at making a miniature replica of the Eiffel Tower next," Hugh said with a laugh. "If I couldn't scroll saw anymore, I'd probably go barmy!"

Hugh can be contacted at hmacd@westvic.com.au.



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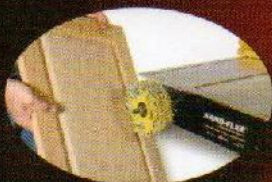
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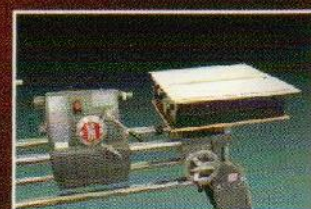
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$\frac{9}{64}$ " dia. through
countersink
for screw

$\frac{9}{64}$ " dia. through
countersink
for screw

Front wheel
 $\frac{3}{4}$ " x $4\frac{1}{4}$ " dia.
(cut 2)

45°

Wagon front
 $\frac{3}{4}$ " x $2\frac{1}{4}$ " x $3\frac{1}{2}$ "

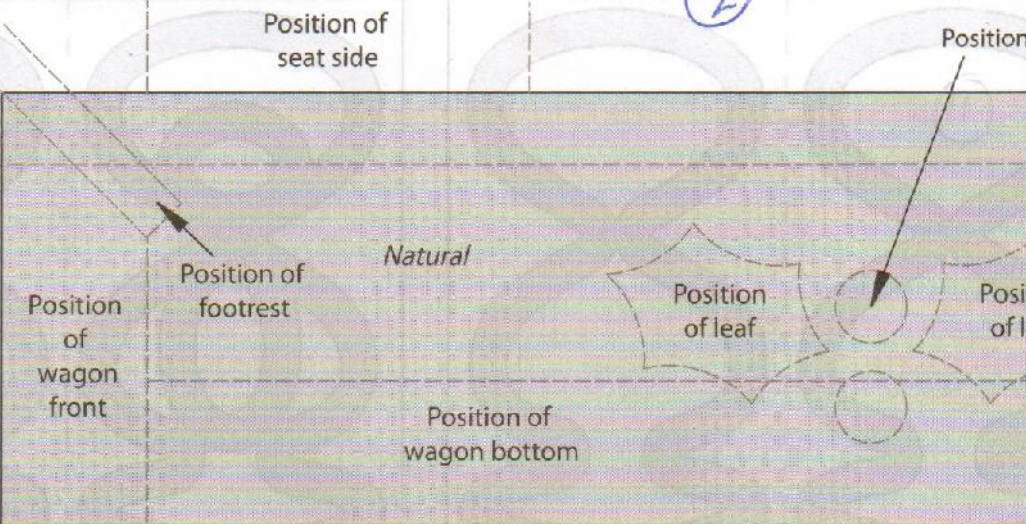
Wagon bottom
 $\frac{3}{4}$ " x $3\frac{1}{2}$ " x $7\frac{1}{2}$ "

Position of
seat back

Making Bows
Page 40 - 22WC Issue 3
Designer: Cade Robinson

2

Back wheel
 $\frac{3}{4}" \times 4\frac{5}{8}"$ dia.
(cut 2)



Front & back trim - $\frac{1}{4}" \times \frac{3}{8}" \times 5"$

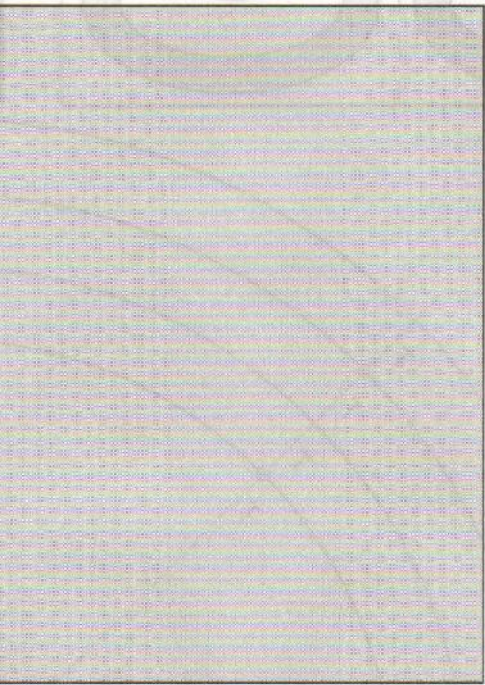
Side trim

Green

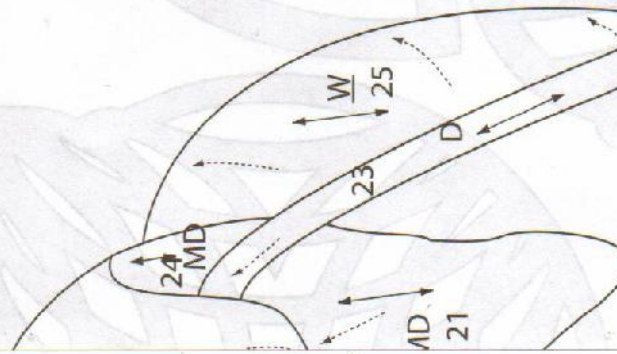
Leaf
 $\frac{1}{4}" \times \frac{7}{8}" \times 1\frac{1}{4}"$
(cut 4)

Wagon back
 $\frac{3}{4}" \times 2\frac{1}{4}" \times 3\frac{1}{2}"$

Seat bottom
 $\frac{3}{4}" \times 2" \times 3\frac{1}{2}"$



st
 $\frac{3}{4}"$



Position of trim



Wagon side

$\frac{3}{4}" \times 2\frac{1}{4}" \times 9"$ - (cut 2)

Position of wagon back

Position of axle

Rear axle

$\frac{3}{4}" \times 1\frac{1}{4}" \times 5\frac{1}{4}"$

$\frac{7}{64}"$ dia.
(or)

Front axle

$\frac{3}{4}" \times 1\frac{1}{4}" \times 5\frac{1}{4}"$

$\frac{7}{64}"$ dia.
(or)

$\frac{1}{2}"$ (cut 2)

Seat back

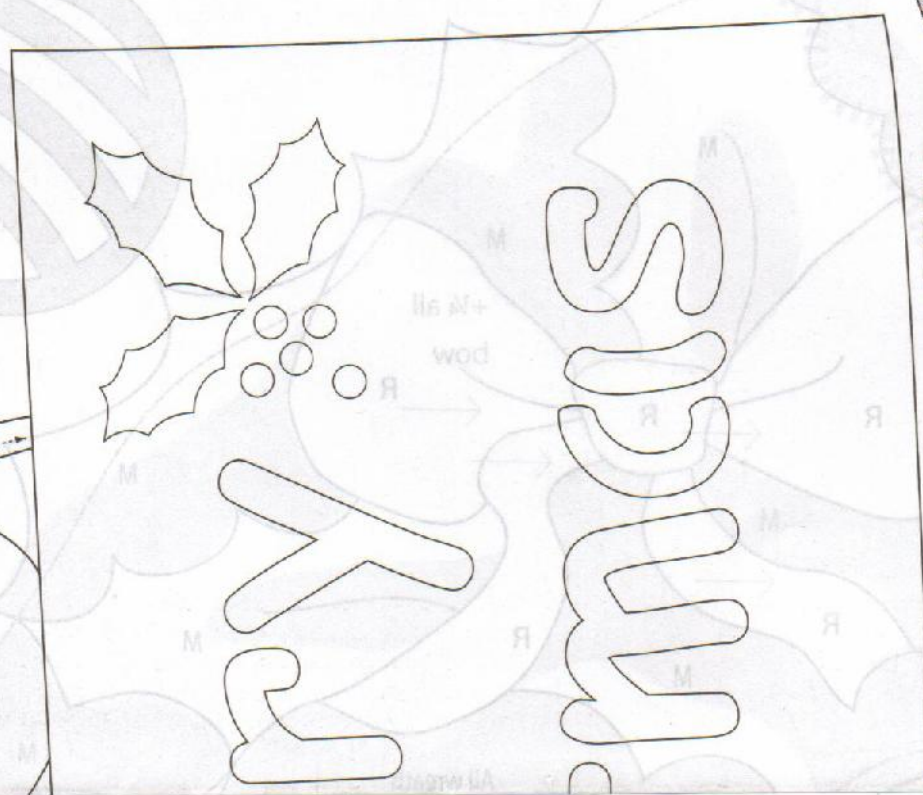
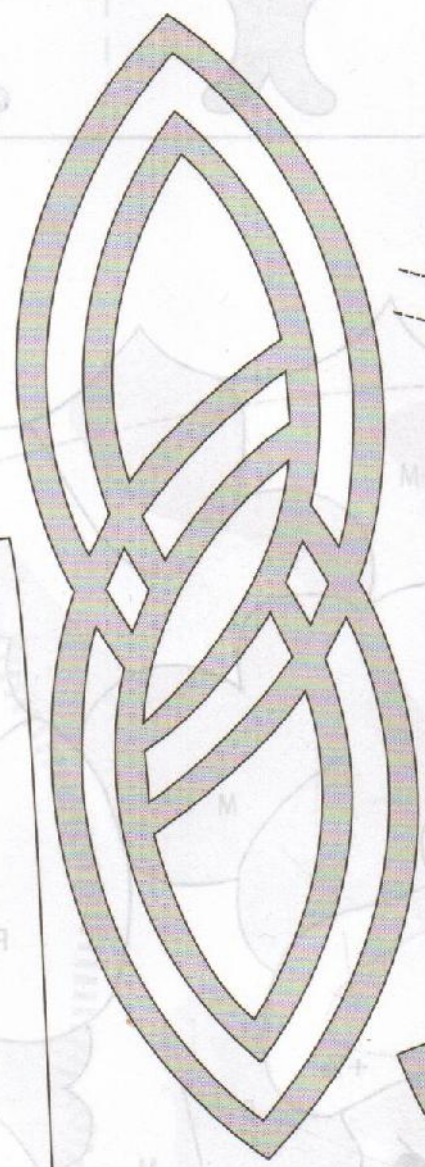
$\frac{1}{4}" \times 1\frac{3}{4}" \times 3\frac{1}{2}"$

Green

Gold

Hub

$\frac{1}{4}" \times 1$ dia."
(cut 4)

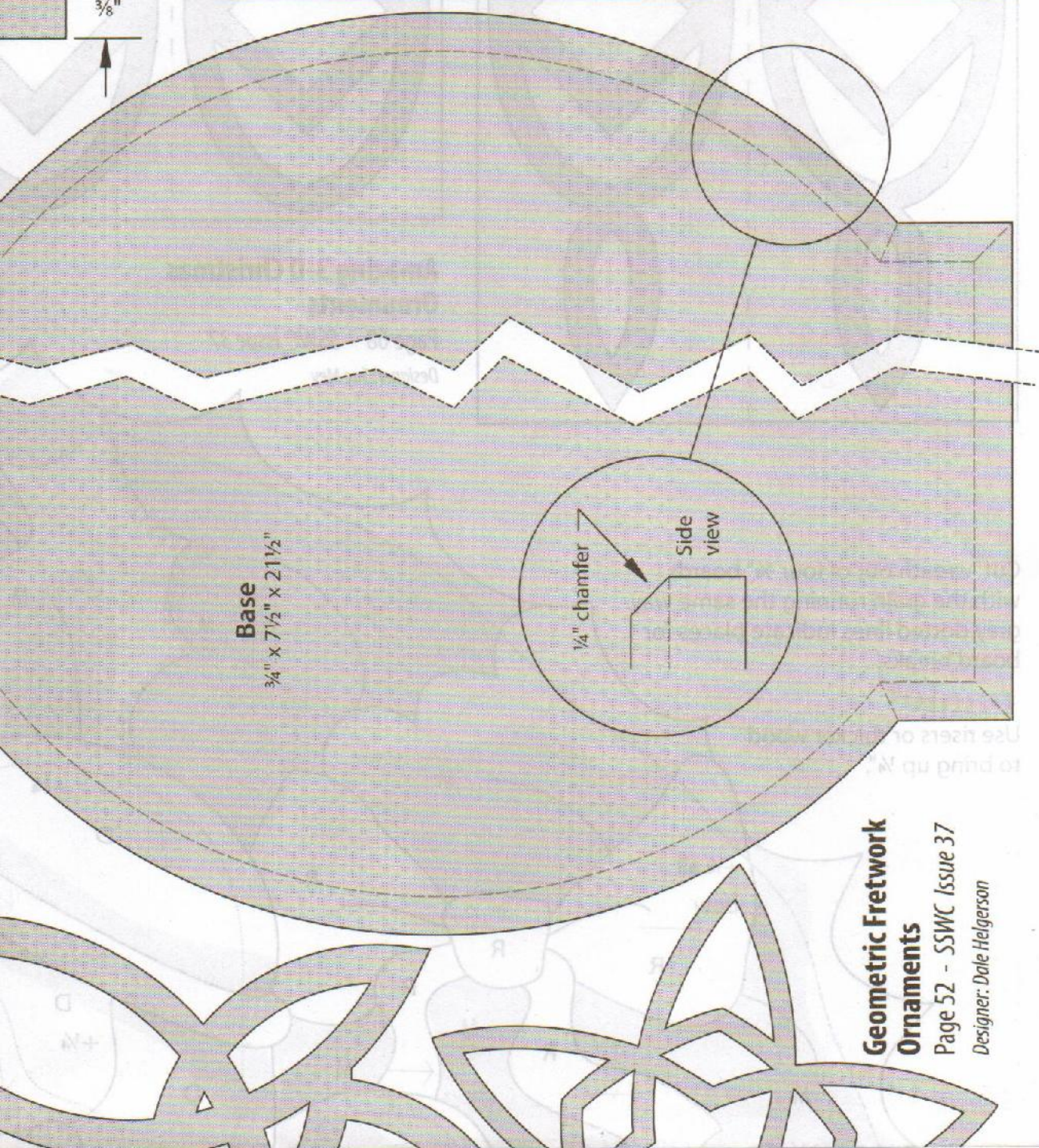


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**Geometric Fretwork
Ornaments**

Page 52 - SSWC Issue 37

Designer: Dale Helgerson

Horse right side
 $\frac{3}{4}$ " x 6" x $6\frac{3}{8}$ "

Ear
 $\frac{1}{4}$ " x $1\frac{1}{2}$ " x $1\frac{3}{8}$ "
(cut 2)

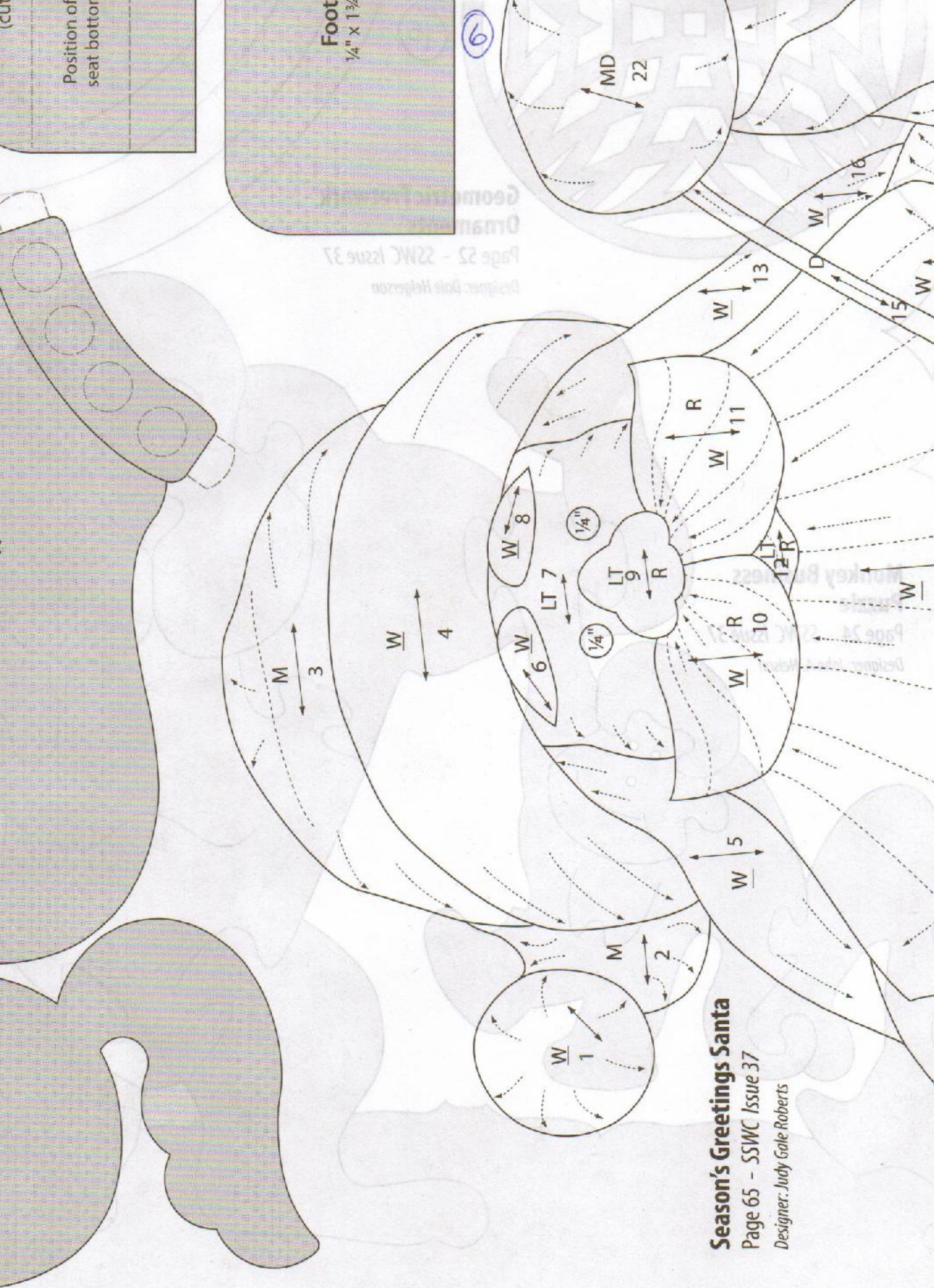
**Building a
Horse-drawn Wagon**
Page 48 - SSWC Issue 37

Designer: Paul Meisel

Position
of ear

Position of
screw hole
button

Horse body
 $\frac{3}{4}$ " x $4\frac{1}{4}$ " x $9\frac{1}{4}$ "



Season's Greetings Santa

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Designer: Judy Gale Roberts



LT 32

7

M 17

M 18

27

M

M 26

M

28

M

29

W

30

MD

R

31

M

33

M

36

Legend

→ Grain direction

D..... Dark shade of wood.

MD..... Medium dark shade of wood.

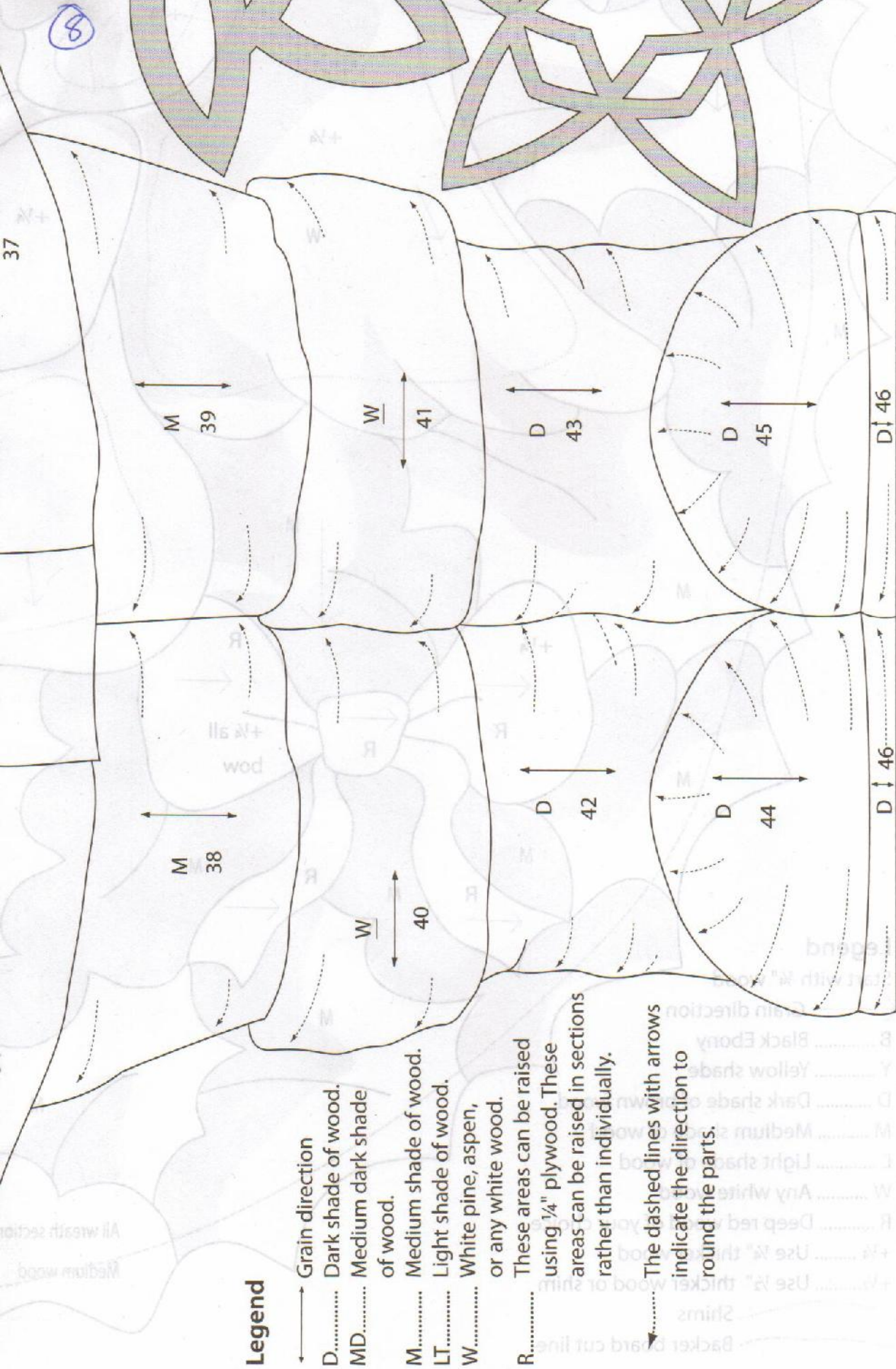
M..... Medium shade of wood.

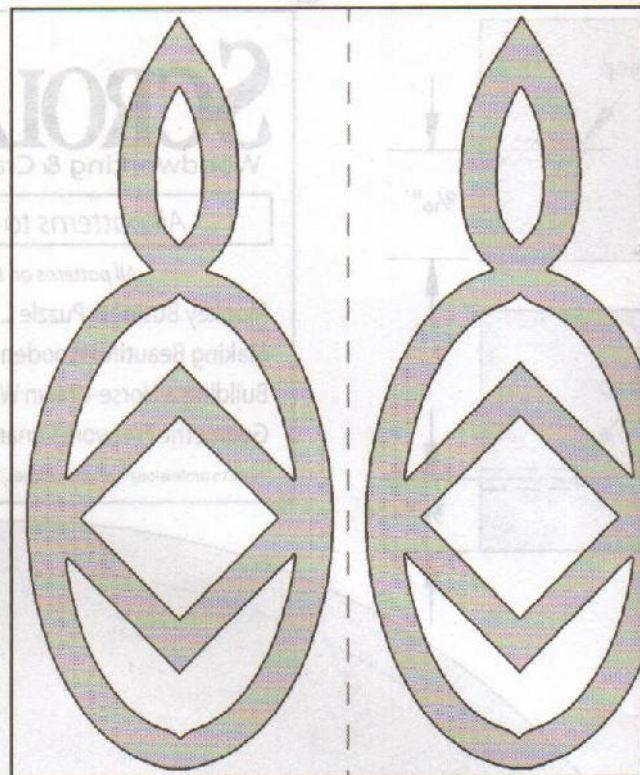
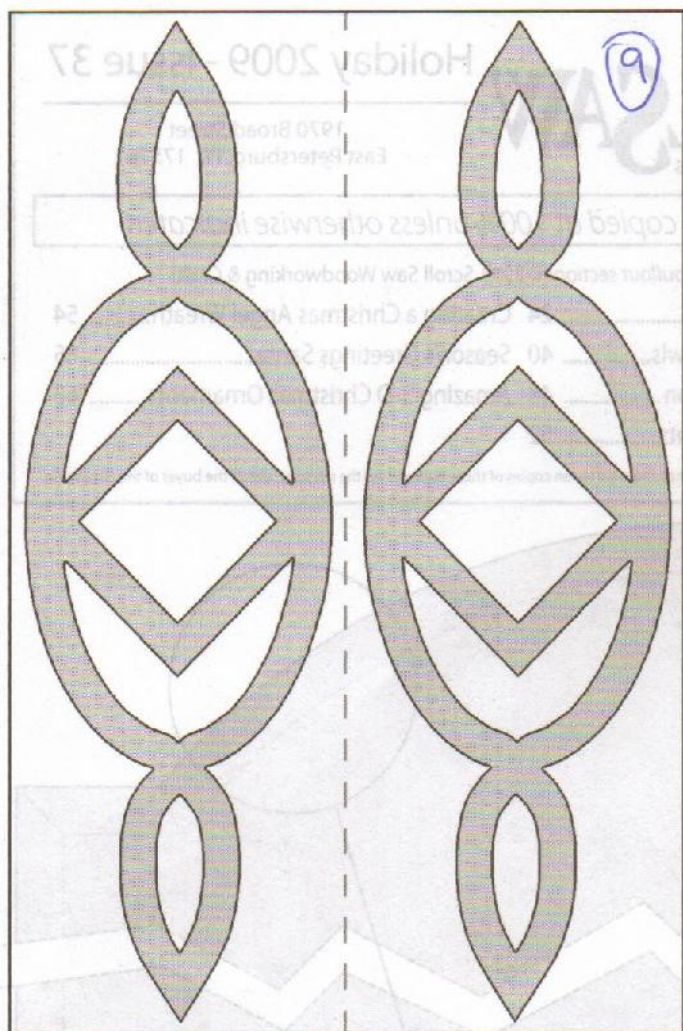
LT..... Light shade of wood.

W..... White pine, aspen, or any white wood.

R..... These areas can be raised using 1/4" plywood. These areas can be raised in sections rather than individually.

..... The dashed lines with arrows indicate the direction to round the parts.





Amazing 3-D Christmas Ornaments

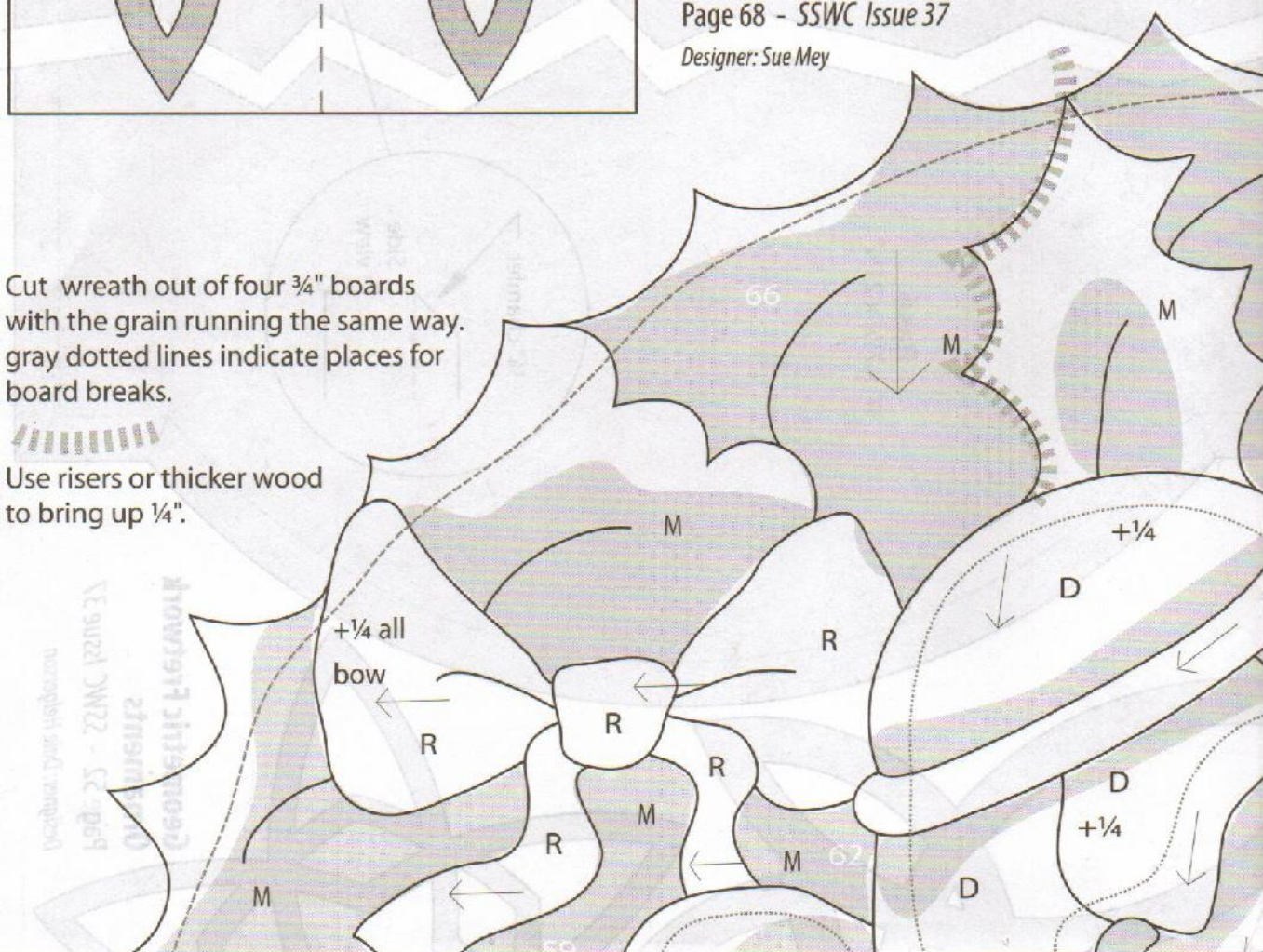
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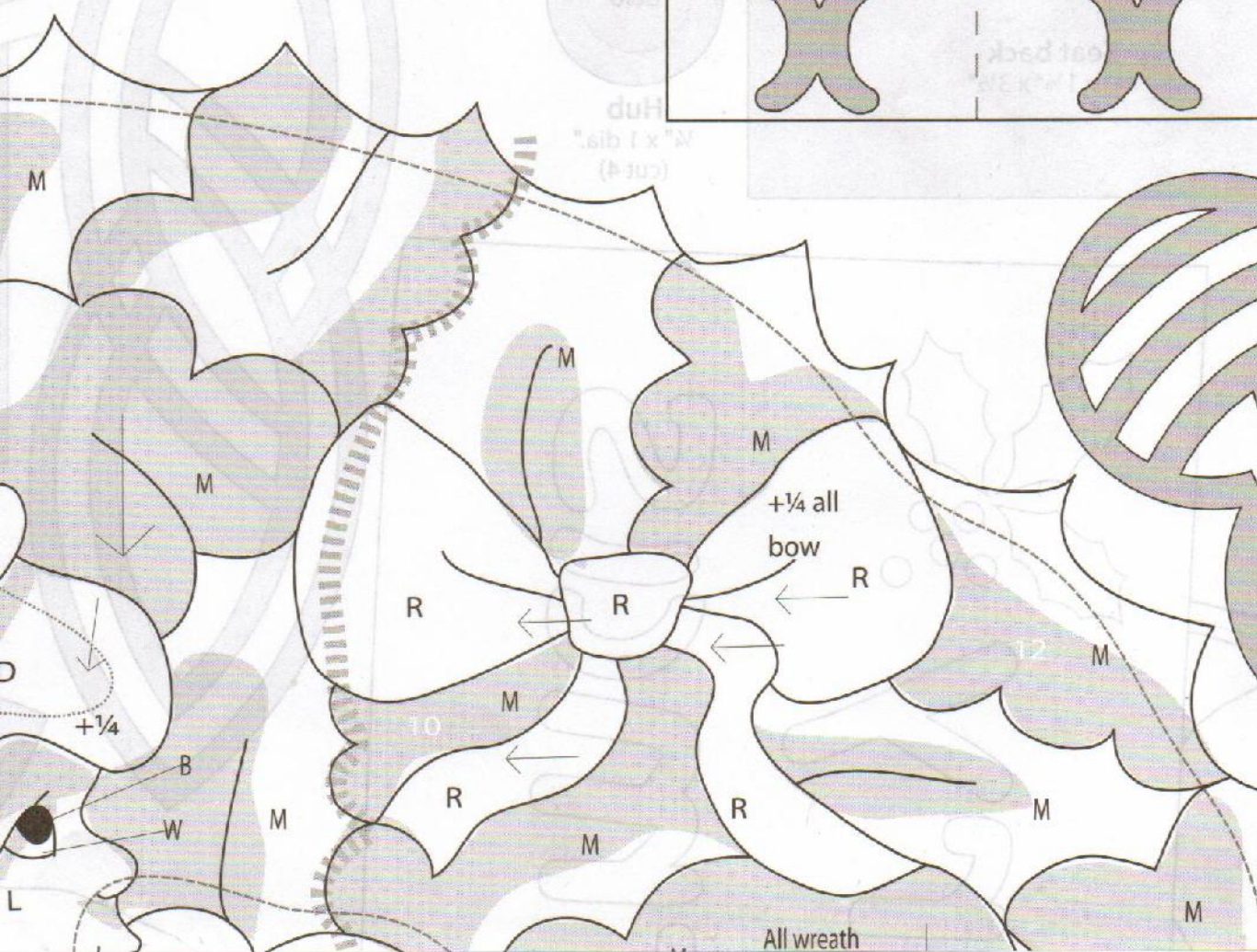
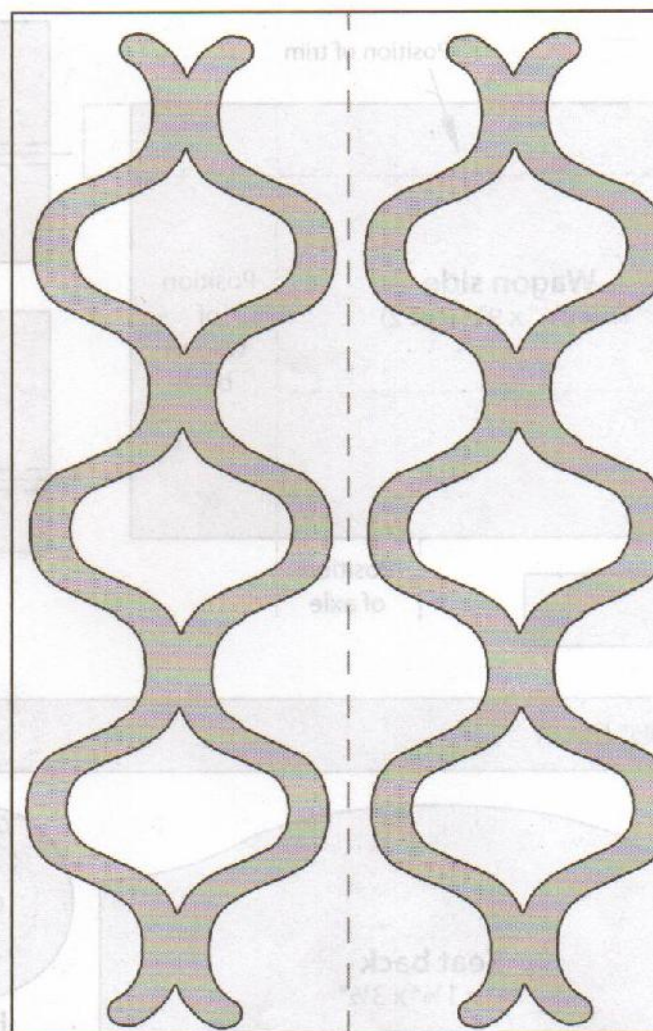
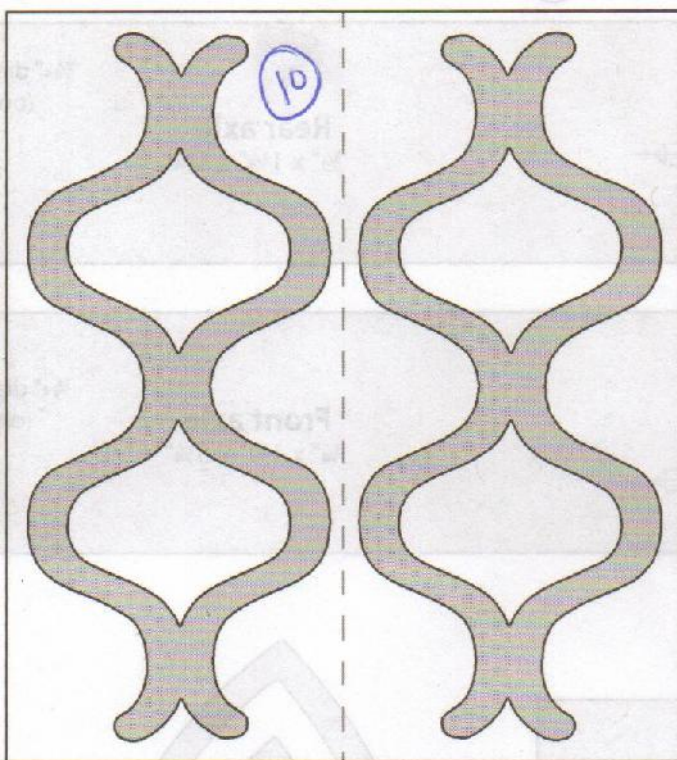
Designer: Sue Mey

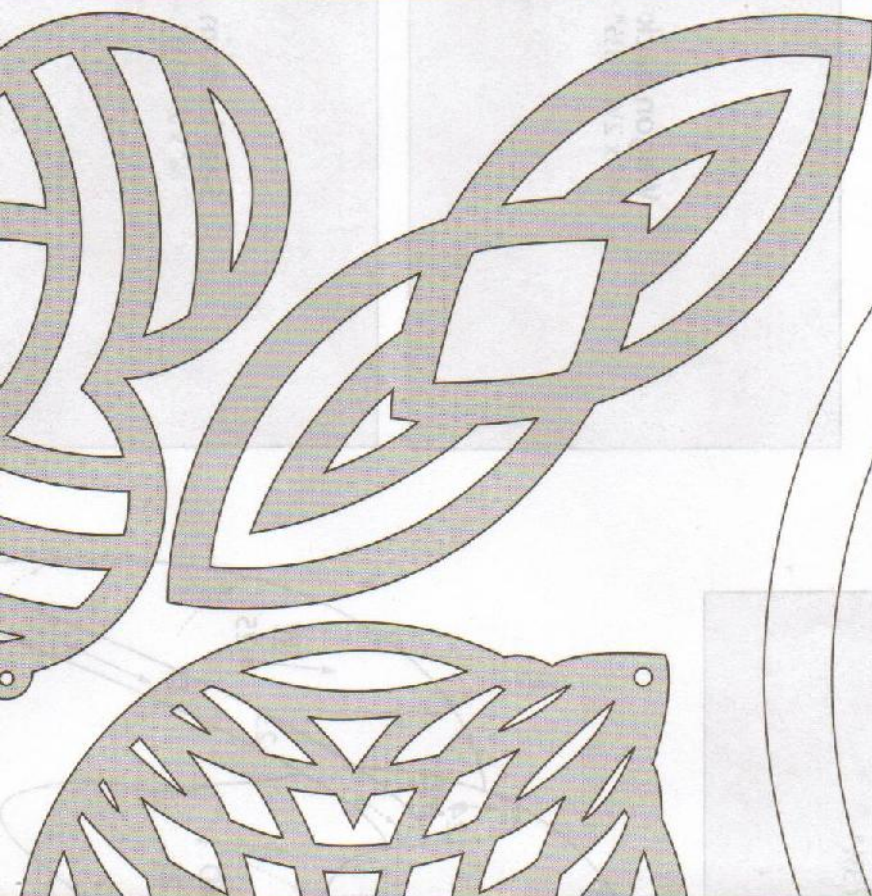
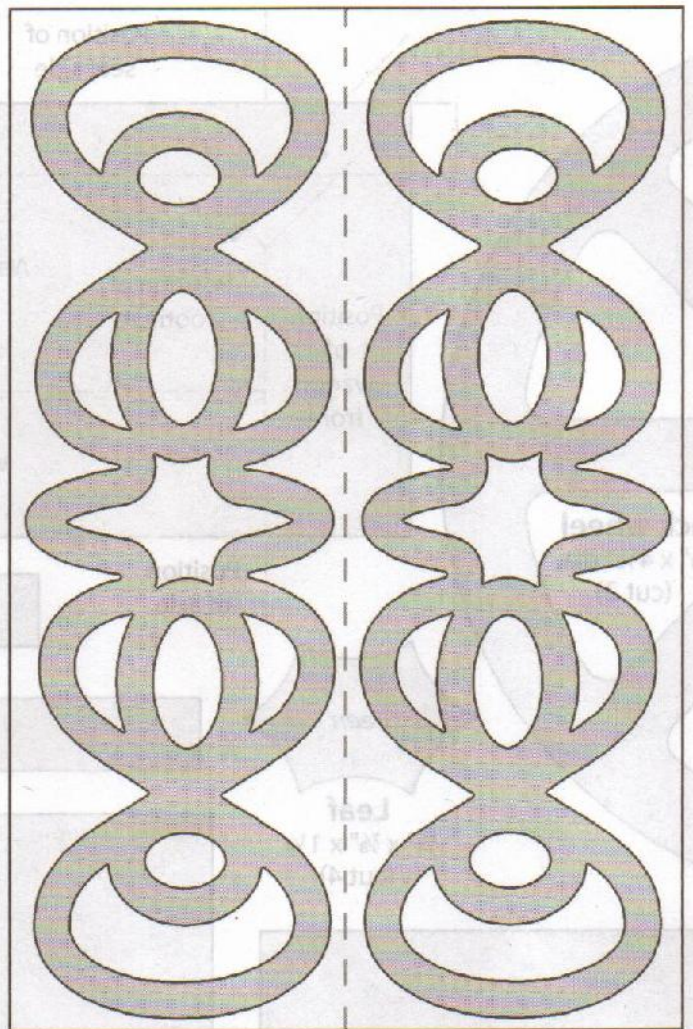
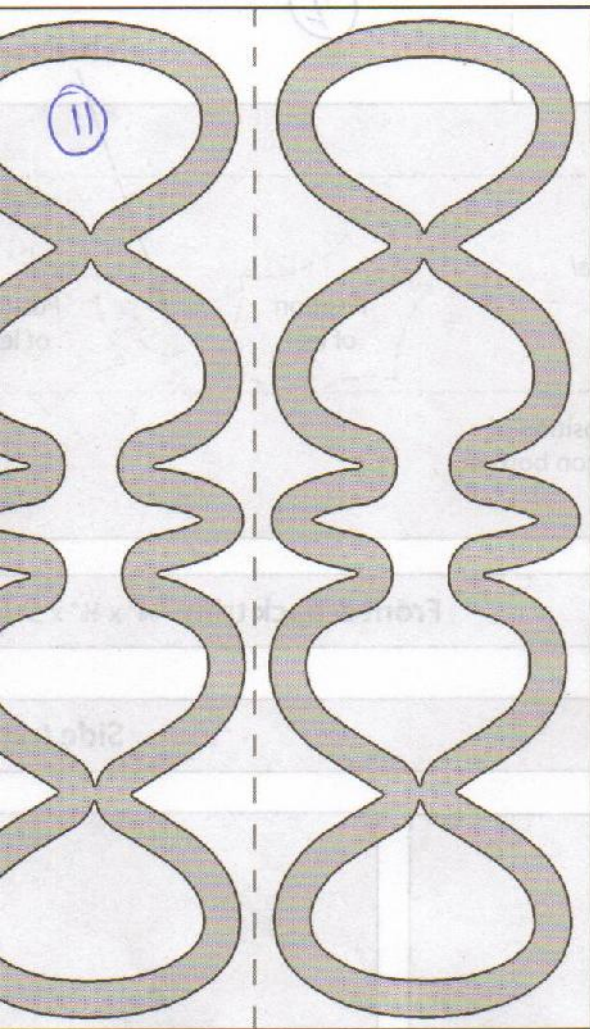
Cut wreath out of four $\frac{3}{4}$ " boards with the grain running the same way. gray dotted lines indicate places for board breaks.

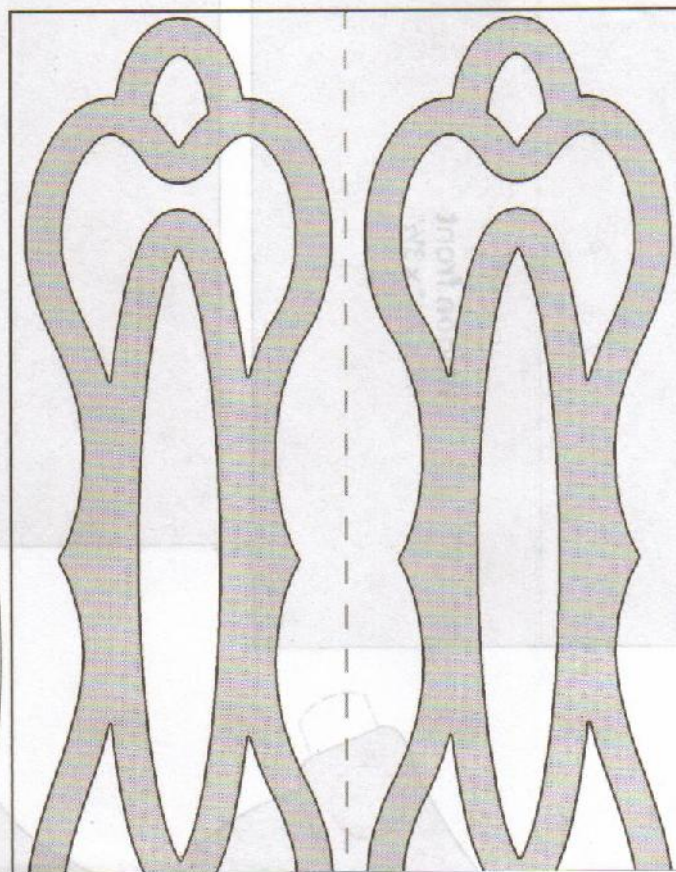
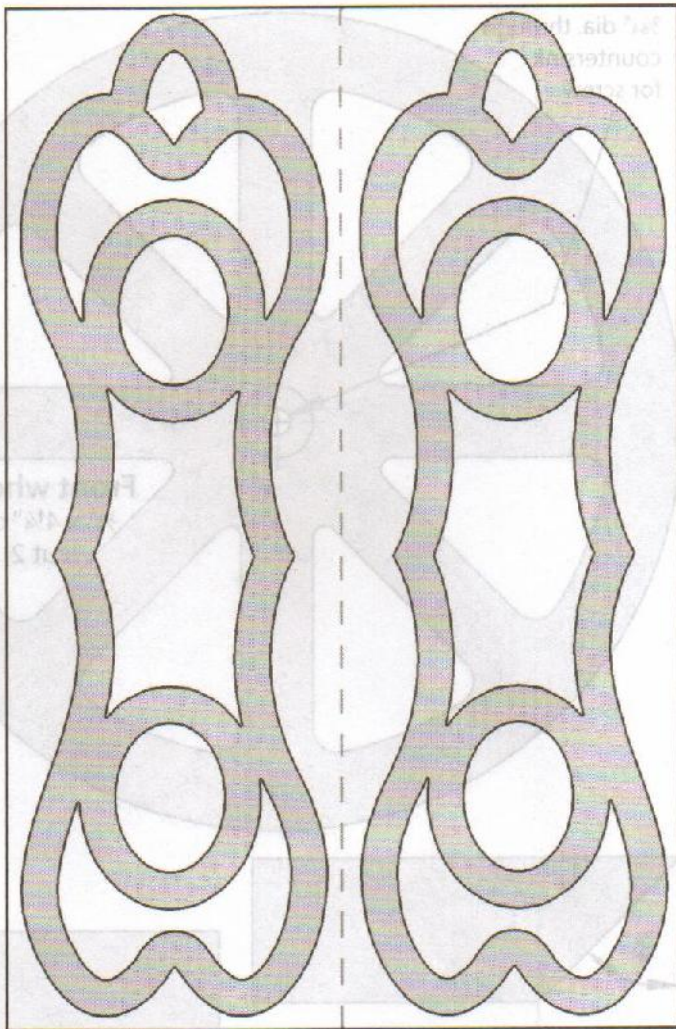
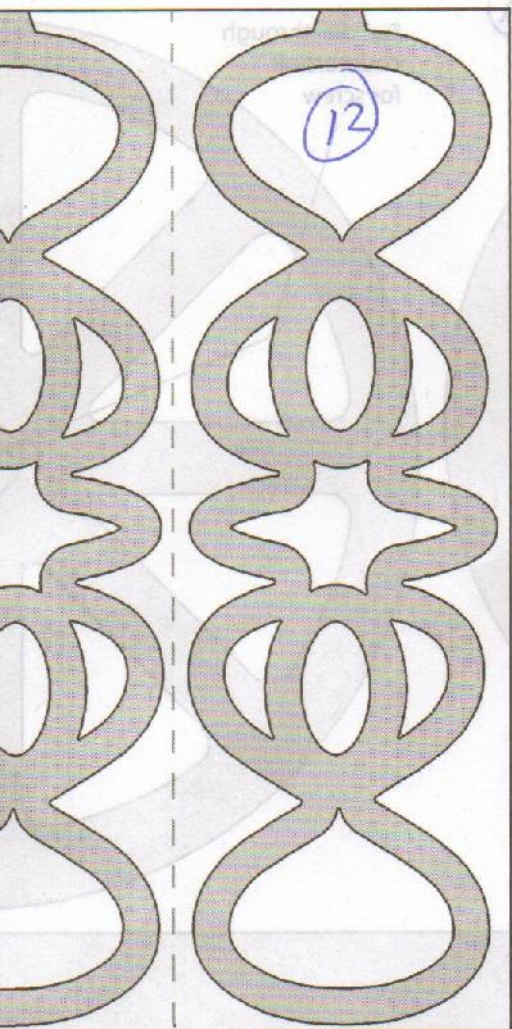


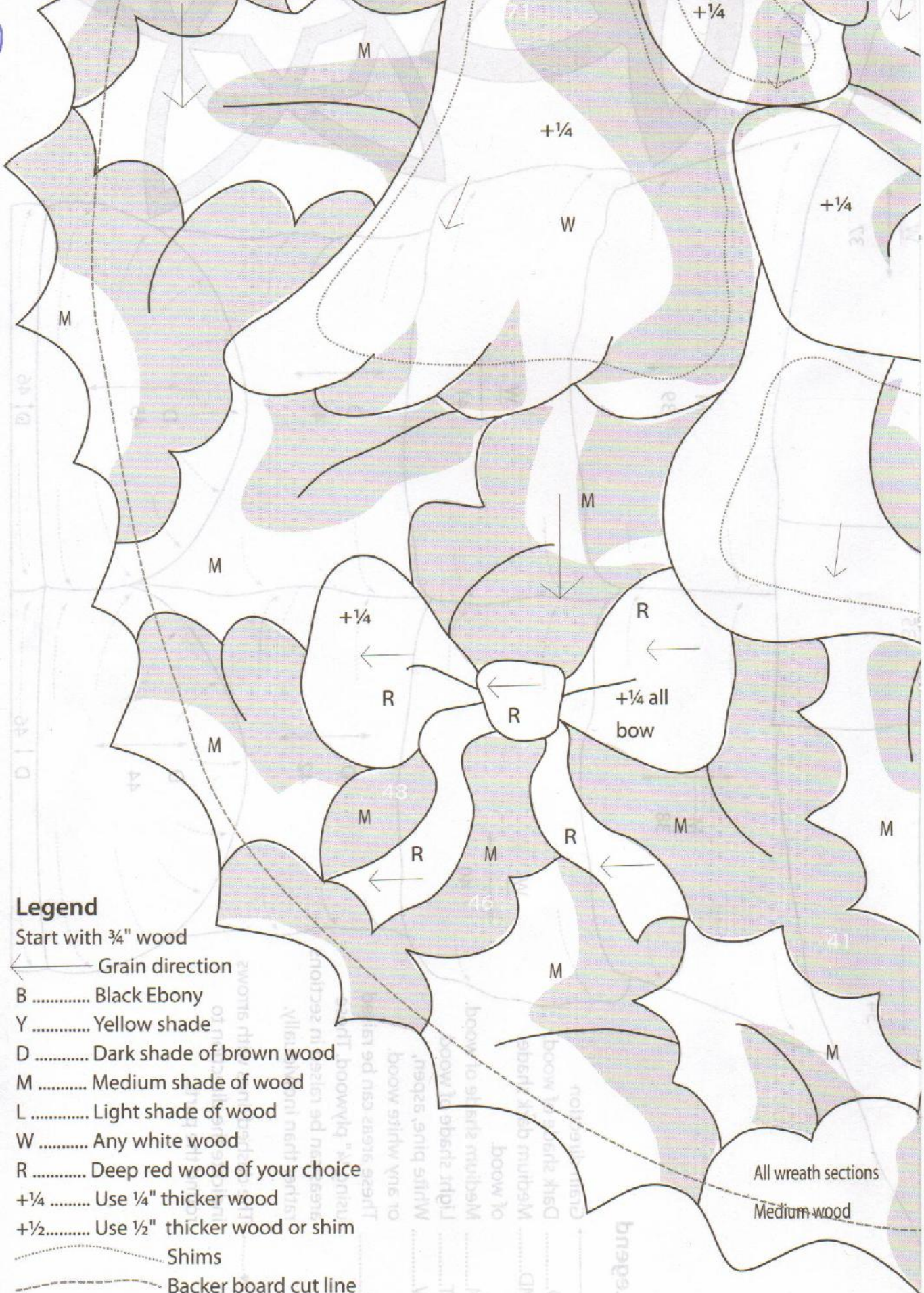
Use risers or thicker wood to bring up $\frac{1}{4}$ ".











Legend

Start with 3/4" wood

- ← Grain direction
- B Black Ebony
- Y Yellow shade
- D Dark shade of brown wood
- M Medium shade of wood
- L Light shade of wood
- W Any white wood
- R Deep red wood of your choice
- +1/4 Use 1/4" thicker wood
- +1/2 Use 1/2" thicker wood or shim
- Shims
- - - - - Backer board cut line

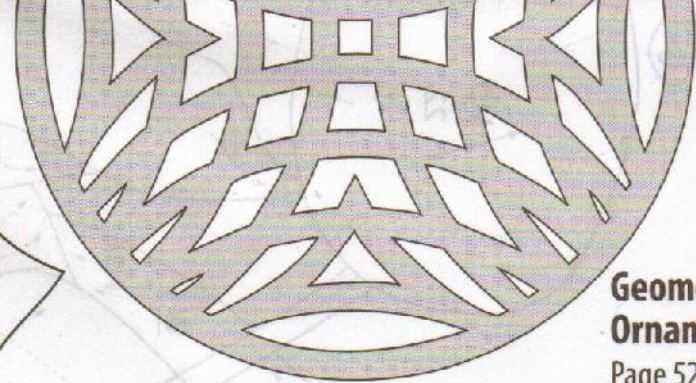
All wreath sections
Medium wood



Crafting a Christmas Angel Wreath

Page 54 - SSWC Issue 37

Designer: Kathy Wise



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Geometric Fretwork Ornaments

Page 52 - SSWC Issue 37

Designer: Dale Helgerson

Monkey Business Puzzle

Page 24 - SSWC Issue 37

Designer: John A. Nelson

