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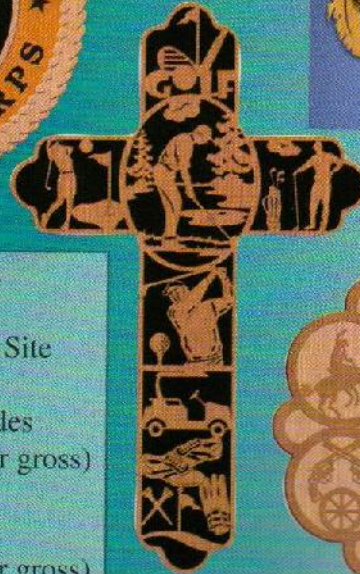
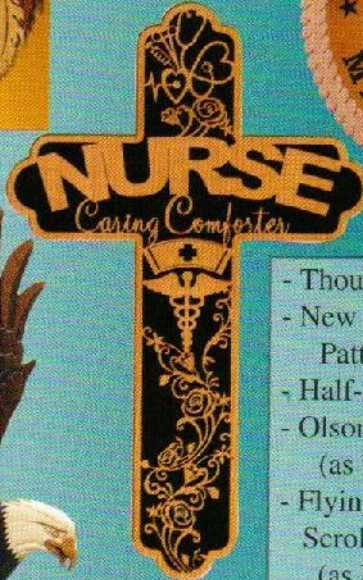


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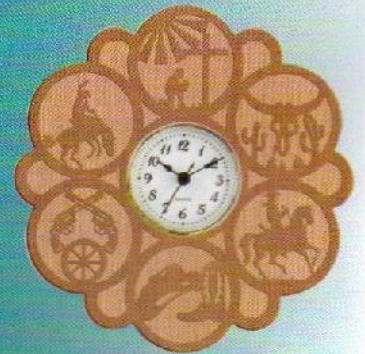


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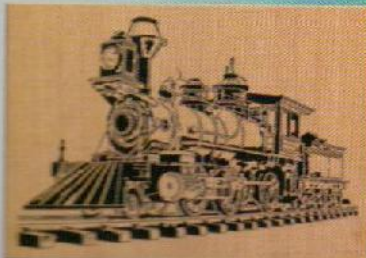
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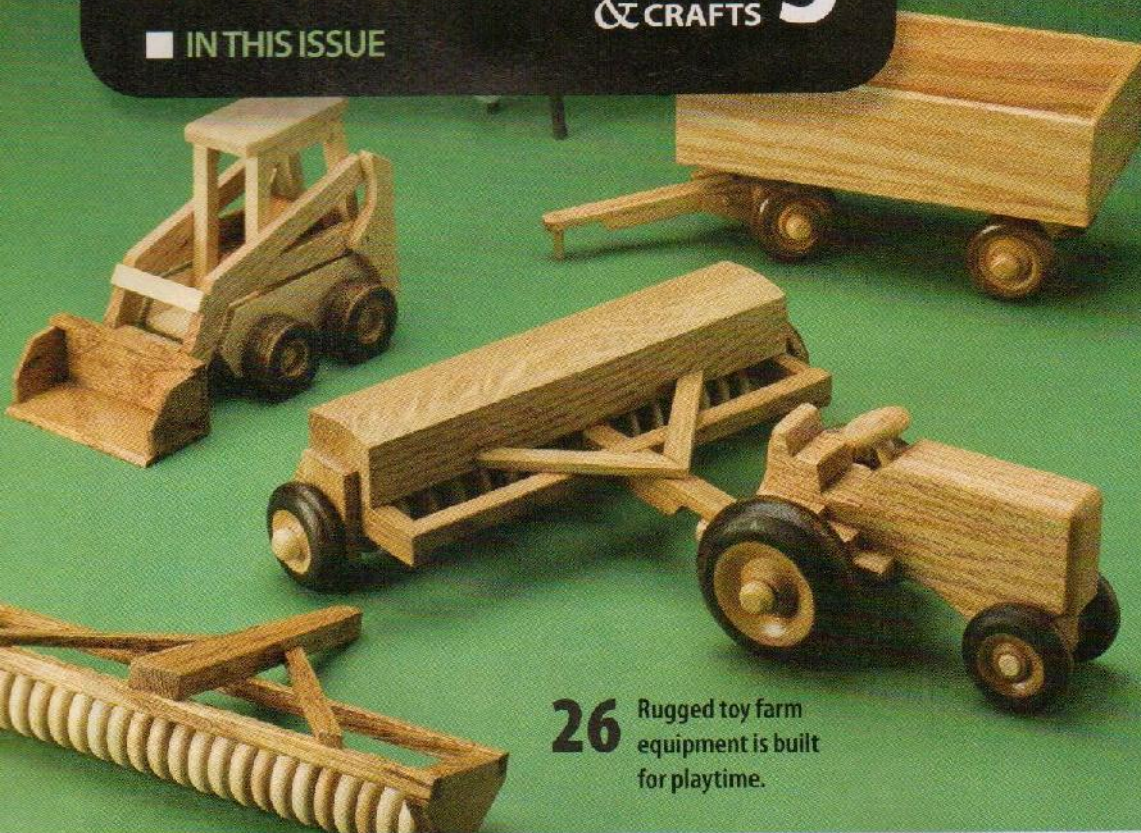
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Seven-Year Itch

I love a good challenge. In 2005, I took over the editorial duties at *Scroll Saw Woodworking & Crafts* as a temporary assignment. I was just filling in until we found the right person to be the new editor. Much to my surprise, I ended up falling in love with the job. And, thanks to the vast knowledge and unfailing support of our technical editor, Bob Duncan, I think I was fairly successful.

Over the next seven years, Bob and I worked as a team to nurture the magazine. Fortunately, we had the guidance of seasoned editor John Kelsey and the solid foundation of longtime designer Jon Deck to help us along the way. I learned a lot about scrolling and editing, made tons of friends, and developed new skills.

My husband and I recently made the decision to relocate to Florida. That change poses some interesting challenges. While it means that I will no longer be the editor, I will still be involved with the magazines in some fashion.

During my time as an editor, I've grown quite possessive. I knew I couldn't trust the magazine to just anyone. We started scouting for potential candidates to take over the job of being editor, and last year Mindy Kinsey joined our team. She started her career with Fox Chapel as a freelance editor for a special pyrography issue, and I quickly learned that Mindy and I have a lot in common. We're both organized and efficient—traits that Bob probably has some other terms to describe—and I feel confident that she is the right person to lead the magazine into the future.

Admittedly, I have some control issues and it's not going to be easy for me to step down. But I know Bob and Jon will keep Mindy in line. You can still write or e-mail me—in fact, I'd like that. It will help ease the withdrawal pains.

I look forward to facing my next challenge, and I wish the best of luck to Mindy as she takes the next step in her life's journey. I know you will make her feel as welcome in the role of editor as you did me.

Shannon Flowers

Shannon Flowers

Shannon@FoxChapelPublishing.com



Shannon Flowers gracefully passes the editorial torch to Mindy Kinsey under Bob Duncan's watchful eye.

SCROLLSAW Woodworking & CRAFTS

Printed in the USA

SUMMER 2012

Volume 13, Number 2, Issue 47

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

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Grab-Bag Benefit raises more than \$7,000

In September 2011, Tropical Storm Lee caused local streams, creeks, and rivers to rise to record levels in Lancaster County, Pa. The storm caused hundreds of thousands of dollars in flood-related damage to local residents' homes.

Shannon Flowers, a long-time Fox Chapel Publishing employee and the editor of *Scroll Saw Woodworking & Crafts* magazine, fled her home as flood waters rose through the basement and three feet high on the main level. Her family lost everything on those two floors. They have spent many months renovating their home and recovering a sense of normalcy.

In response, Fox Chapel Publishing sold Grab-Bags of books and donated 100% of the proceeds to Shannon and the fire department in Mount Joy, Pa. The benefit raised \$7,166.40. The fire department donated its share of the proceeds to Shannon and her family. Our thanks to all of the readers who responded to the benefit and helped Shannon and her family rebuild.

Upcoming Events

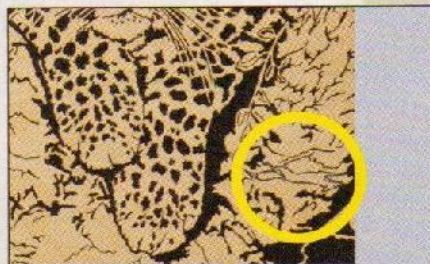
May 5-6: RICHFIELD, OHIO. North Eastern Ohio Scroll Saw Picnic. Richfield Days Inn and Conference Center. \$12 for both days with advance registration, \$7 a day. 9am-4pm Sat. & 9am-3pm Sun. Contact Richard Lee Neiden, 875 Berwin St., Akron, Ohio, 44310; www.northeasternohioscrollers.yolasite.com.

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

Aug 3-4: RICHLAND CENTER, WIS. 2012 Midwest Scroll Saw Trade Show. Richland Center High School. \$7 adm., children under 18 free. 9am-4pm Fri. & 8am-3pm Sat. Contact Dirk or Karen Boelman, 800-566-6394, www.midwesttradeshow.com.



Thanks to donations and gifts, Shannon and her family have nearly finished rebuilding their home, which suffered more than \$50,000 in flood damage.



Intricate leopard pattern tests your portrait-cutting skills

Fox Hunt

Martin Thulin of Wallingford, Conn., and James Day of North Liberty, Ind., were randomly drawn from the participants who located the fox in our last issue (Spring 2012, Issue 46). The fox was on page 79 in the leopard portrait photo.

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 May 28, 2012, to be eligible. *NOTE: The contest fox is an outline drawing that would face left if his feet were on the "ground" (other foxes appearing in SSW&C don't count).*

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



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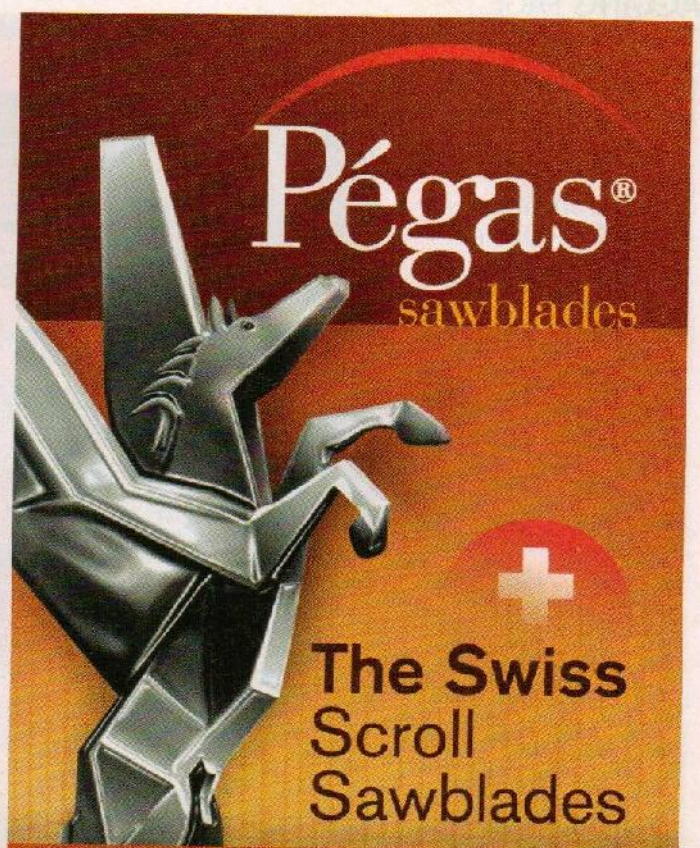
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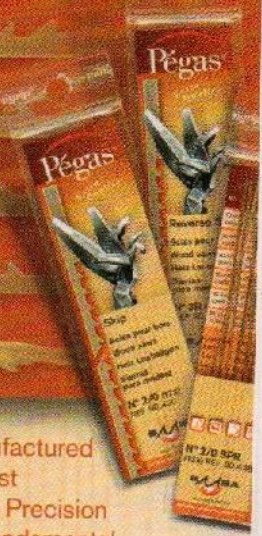
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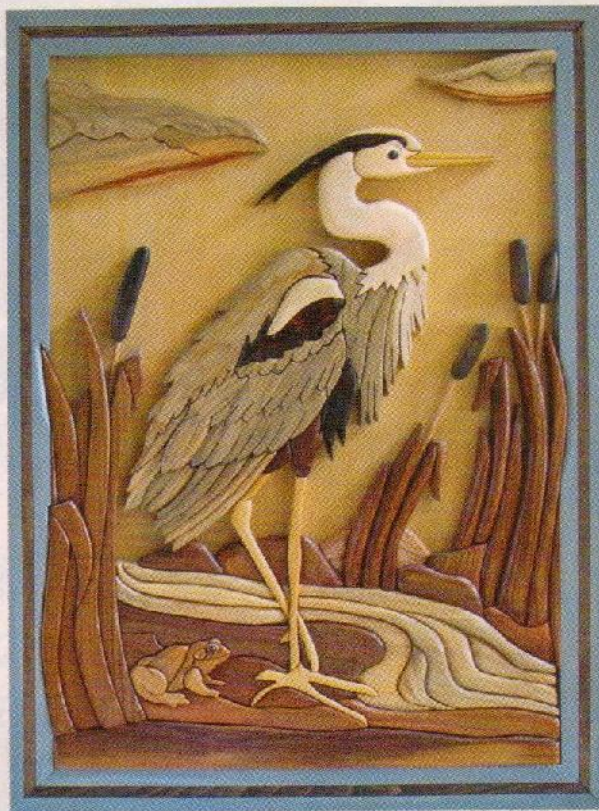
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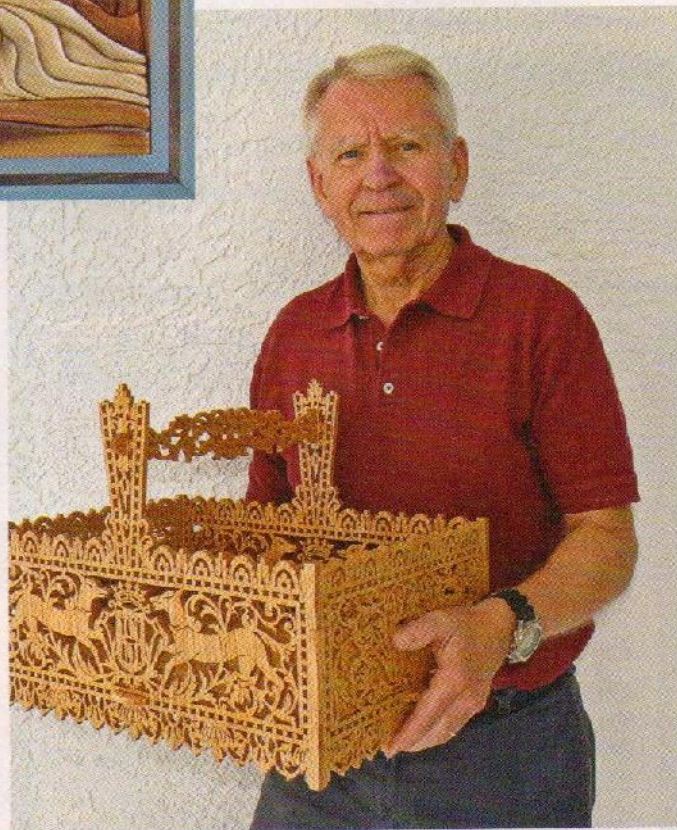
Bob Berzonsky of Stow, Ohio, based this blue heron on a pattern by Garnet Hall. A *Scroll Saw Woodworking & Crafts* article inspired the frame. Bob crafted the pieces from a variety of hardwoods and used a woodburner to darken the black pieces.

**Share Your Latest Work!**

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

Fretwork Basket ▶

Joe Mathis of Bradenton, Fla., made this fretwork basket from red oak. The pattern is based on an original design by a French company from the late 1800s or early 1900s and was recreated by Pedro Lopez using modern software. The project was published in the Spring 2010 issue of *Scroll Saw Woodworking & Crafts*. Joe finished the basket with Danish oil.

**Family Portraits** ▼

Phil Bethard of Marion, Md., created portrait patterns of his grandchildren. Phil cut the portraits from Baltic birch plywood and framed them before putting them on display.



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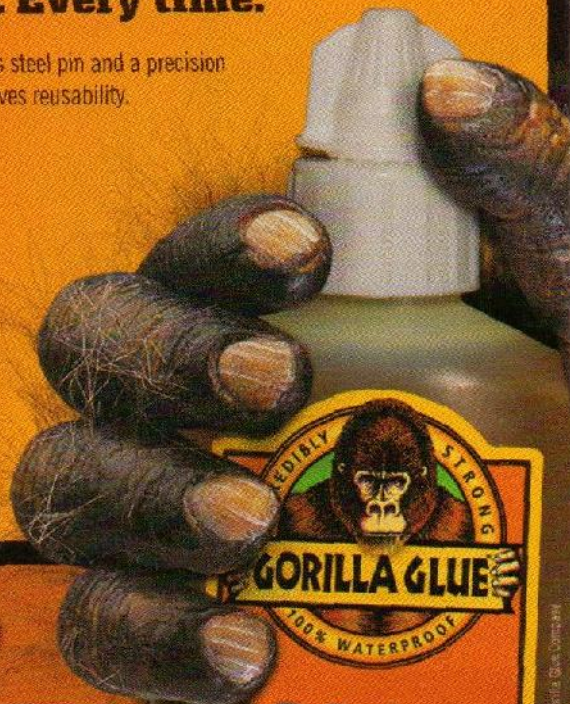
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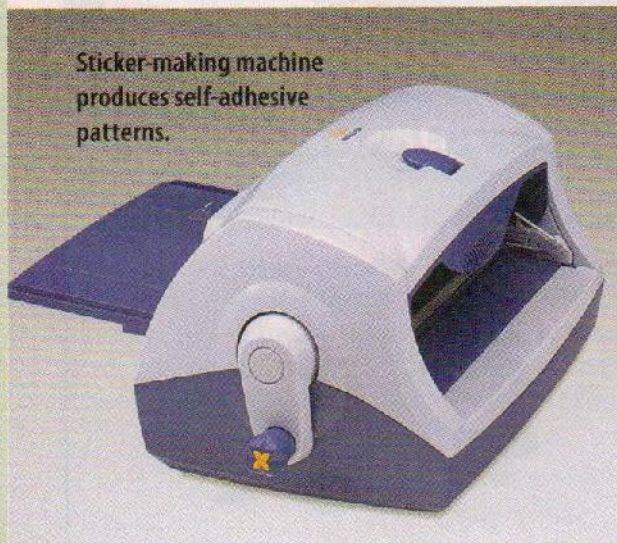
Instead of making elaborate finishing boards or buying tools to lift a project off the table while I apply a finish, I attach plastic carpet protection strips upside down on scrap wood using contact cement. The tiny plastic spikes allow the air to circulate under the work while the top dries also. The plastic shown cost about \$2 and can be found in most home improvement stores. Choose the strips with small, closely spaced spikes for best results.

Thad Jensen
Montrose, Colo.



Carpet protectors provide a uniform raised surface for drying painted or finished projects.

Sticker-making machine produces self-adhesive patterns.



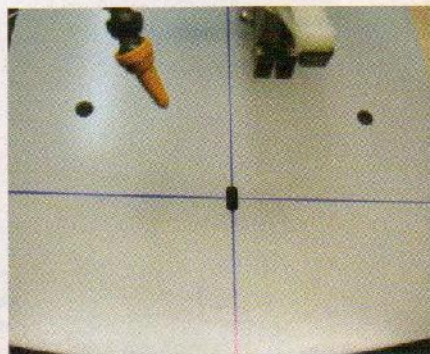
▲ Easy-to-Attach Patterns

Instead of applying spray adhesive or some other form of glue to the back of an intarsia pattern, feed the pattern through a Xyron sticker-making machine equipped with a repositionable adhesive cartridge. After the pattern comes out, peel off the backing paper and stick the pattern to the blank. The adhesive holds well while you cut but is easy to remove.

Duane Martin
Newfields, N.H.

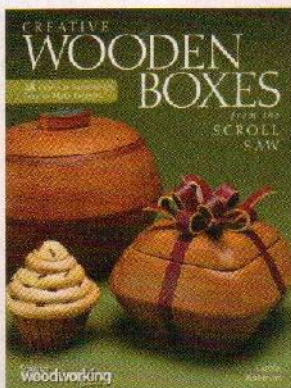
Blade-Feeding Crosshairs ▶

When cutting fretwork, I feed the blade down from the top through the wood whenever possible. I was bending blades because I had trouble finding the blade hole in the saw table. To make it easier, I used a permanent marker to draw vertical and horizontal lines across the saw table, intersecting at the blade hole. The crosshairs make it much easier to feed the blade from the top of the project.



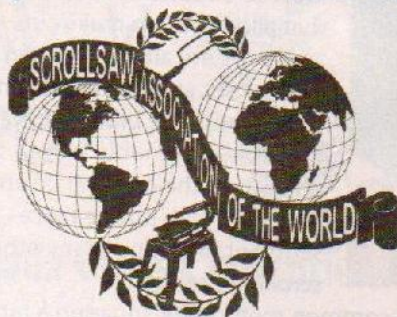
Saw table crosshairs let you top-feed your blade with ease.

Neil Chapin
Via E-mail



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

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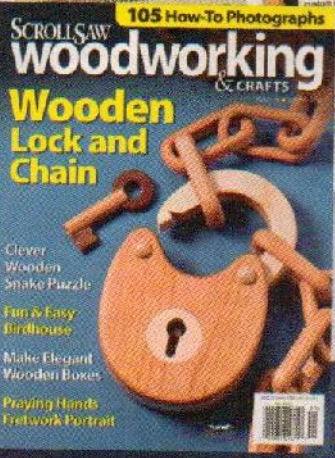
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Attaching Patterns

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

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

Removing Patterns

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



Blade-entry Holes

Some patterns have blade-entry holes marked. If the pattern doesn't, place the holes near a line to be cut to prolong the blade life, but don't place the hole on a curving line or inside corner (if possible). Drill the hole perpendicular to the blank. Use a drill press if you have one; otherwise, use a hand drill and make the holes as vertical as possible. Drill through the blank into scrap wood to prevent

tear out on the back side of the blank.

If you have the space, use a larger bit—it will make it easier to thread the blades through. For thin veining cuts, use the smallest bit the blade will fit through.

Blade Tension

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

A blade that does not have enough tension will wander. It will also flex from side to side, making for irregular or angled cuts. If you press too hard on a loose blade, it will usually snap.

A blade that has too much tension is more susceptible to breaking and tends to pull out of the blade holders. In general, it is better to make the blade too tight rather than too loose.



Squaring Your Table

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

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

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

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



Stack Cutting

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

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

painter's tape, or clear packaging tape.

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

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



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

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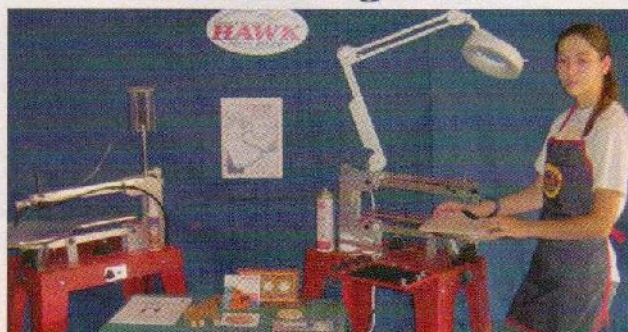
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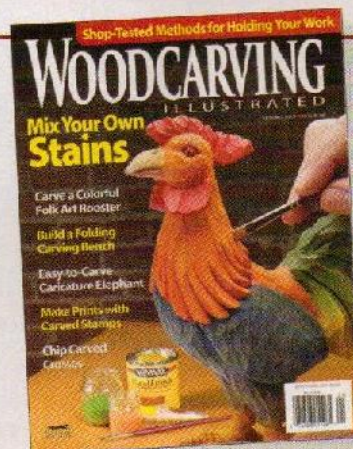
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Swirling Diamond Clock



Fanciful fretwork clock makes a great wall hanging

By Sue Mey
Cut by Norm Nichols

With its curling frets and diamond shape, this clock is a perfect Mother's Day gift. Cut it from thick wood, like the $\frac{3}{8}$ " (16mm)-thick Texas mesquite shown here, or choose thinner wood for a more delicate look. For a totally different effect, attach the fretwork to a contrasting backing board.

Start by preparing the stock. Cover the blank with masking tape or blue painter's tape and use spray adhesive or a glue stick to attach the pattern. Use a $\frac{1}{16}$ " (2mm)-diameter bit to drill blade-entry holes for the frets. For the clock insert opening, measure the back of your clock insert and use a compass to draw a circle that diameter on the blank. The center of the opening for the insert is marked with crosshairs on the pattern. Drill a blade-entry hole and cut the opening for the clock using a #5 blade. Cut the frets and then the perimeter of the project.

Remove the pattern and tape. Sand all of the surfaces by hand and remove the dust. Apply natural or clear stain if desired and allow it to dry. Apply several thin coats of clear spray varnish to all of the surfaces of the clock. Lightly sand the surfaces with 500-grit sandpaper between coats. Remove the sanding dust before applying the next coat. Attach a D-ring hanger to the back. Insert the clock in the center opening.

Pattern for the **SWIRLING DIAMOND CLOCK** is in the pattern pullout section.

Materials & Tools

Materials:

- Texas mesquite, $\frac{3}{8}$ " (16mm)-thick: 8" x 9" (203mm x 229mm)
- Masking tape or blue painter's tape
- Temporary-bond spray adhesive or glue stick
- Sandpaper
- Stain: natural or clear (optional)
- Spray varnish: clear

- D-ring hanger
- Clock insert: $2\frac{1}{2}$ " (65mm)-diameter

Tools:

- Blades:
#5 reverse-tooth
- Drill press and bit:
 $\frac{1}{16}$ " (2mm)-diameter
- Compass

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



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

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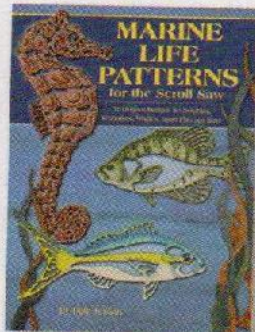
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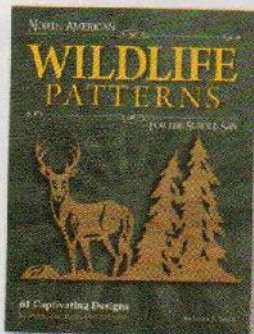


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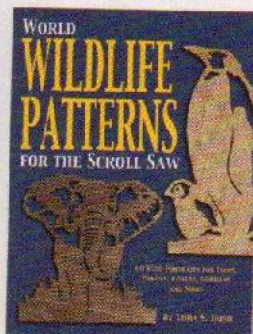
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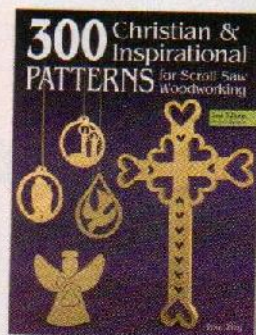
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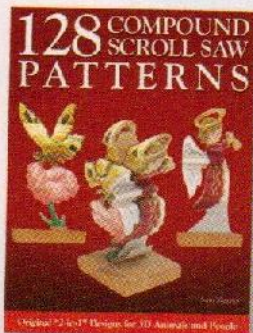
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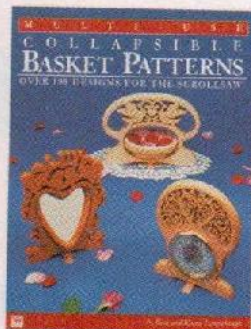
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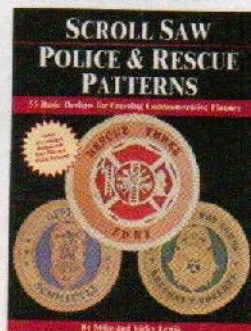
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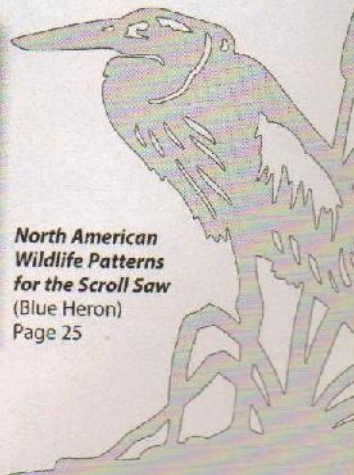
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North American Wildlife Patterns for the Scroll Saw (Blue Heron)
Page 25

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Freestanding Seahorse Puzzle

Use contrasting
hardwood or paint
to add dimension
to this classic
puzzle

By Chuck Petrovich

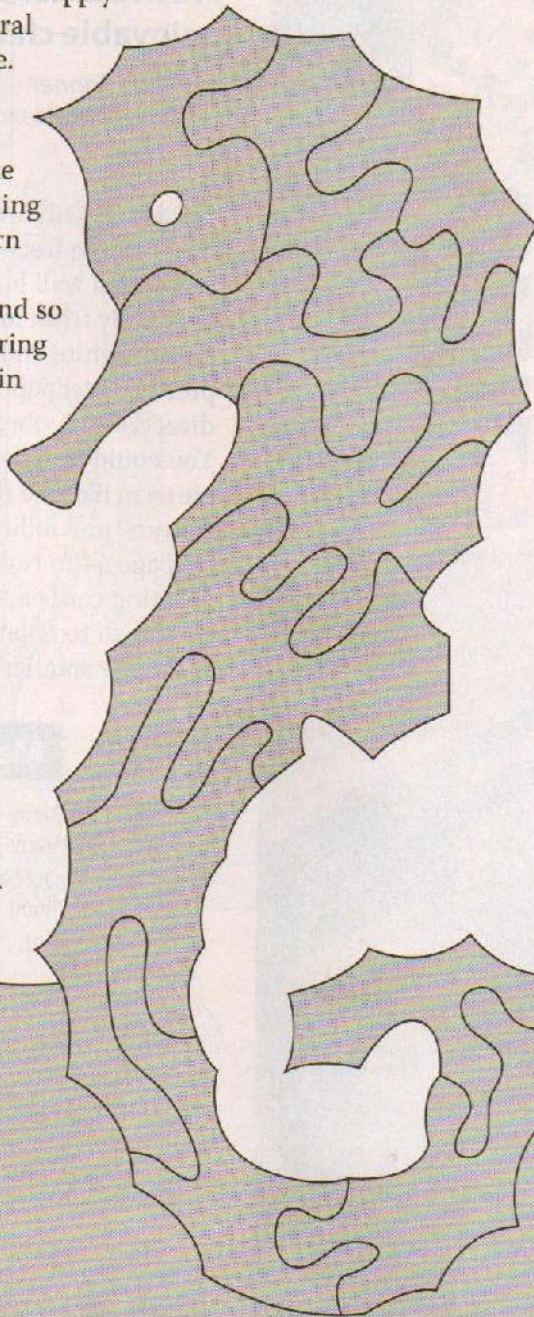


While thinking about new designs for my booth at the farmer's market, I realized many people love sea creatures. I wanted to do something different from the usual whales, dolphins, and penguins, so I decided to create a seahorse puzzle. When I saw a picture of a seahorse, I wondered how to make it stand. Then it hit me like a wave—a wave!

For the eye, you can either drill a countersunk hole or drill a blade-entry hole and cut as shown on the pattern. I painted the first puzzle I made, but I cut the second one from yellowheart with a walnut base. No matter what wood you choose, finish the puzzles by starting with a base coat of Zinsser Seal Coat. You can paint over the base coat or apply a clear finish, such as General Finishes gloss polyurethane.

Other than a love for wood and working with it, the two things that drive me are a need to create something every day and a need to learn something new each day. There is so much to learn and so little time. I encourage aspiring woodworkers to find and join a good woodworking club. You can get fantastic mentoring from a club.

Seahorse puzzle pattern



Materials:

- Light-colored wood, $\frac{7}{8}$ " (22mm)-thick: $7\frac{1}{2}$ " x $7\frac{1}{2}$ " (191mm x 191mm)
- Sandpaper
- Wood sealant, such as Zinsser Seal Coat
- Paint (optional)
- Polyurethane, such as General Finishes (optional): gloss

Tools:

- Blades, such as Olson: #5 skip-tooth

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



Chuck Petrovich joined the Evergreen Woodworkers Guild in Puyallup, Wash., after retiring in 2006. There, Chuck learned scrolling and intarsia. When Chuck moved to Lake Arrowhead, Calif., he joined the Inland Scrollers in

Fontana, Calif., and the Art Tribe community art group in Crestline, Calif.

Summer Garden Wall Hanging

Fretwork collage is an enjoyable challenge

*By Alison Tanner
Cut by Leldon Maxcy*

Gardeners will love this outdoorsy collage. The fretwork makes a wonderful wall hanging. For an especially fresh look, paint the cutting white and back it with pretty pastel paper or mount it directly on a vibrantly hued wall. You could also copy portions of the pattern, like the tall rectangles of flowers, and follow the instructions on page 44 to turn the designs into greeting cards and bookmarks. You may wish to enlarge the pattern to make the smaller frets easier to cut.

Materials & Tools

Materials:

- Maple, 1/2" (13mm)-thick: 7" x 9 1/2" (178mm x 241mm)
- Paper (optional): backing, 7" x 9 1/2" (178mm x 241mm)
- Frame (optional)
- Sandpaper

Tools:

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

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



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



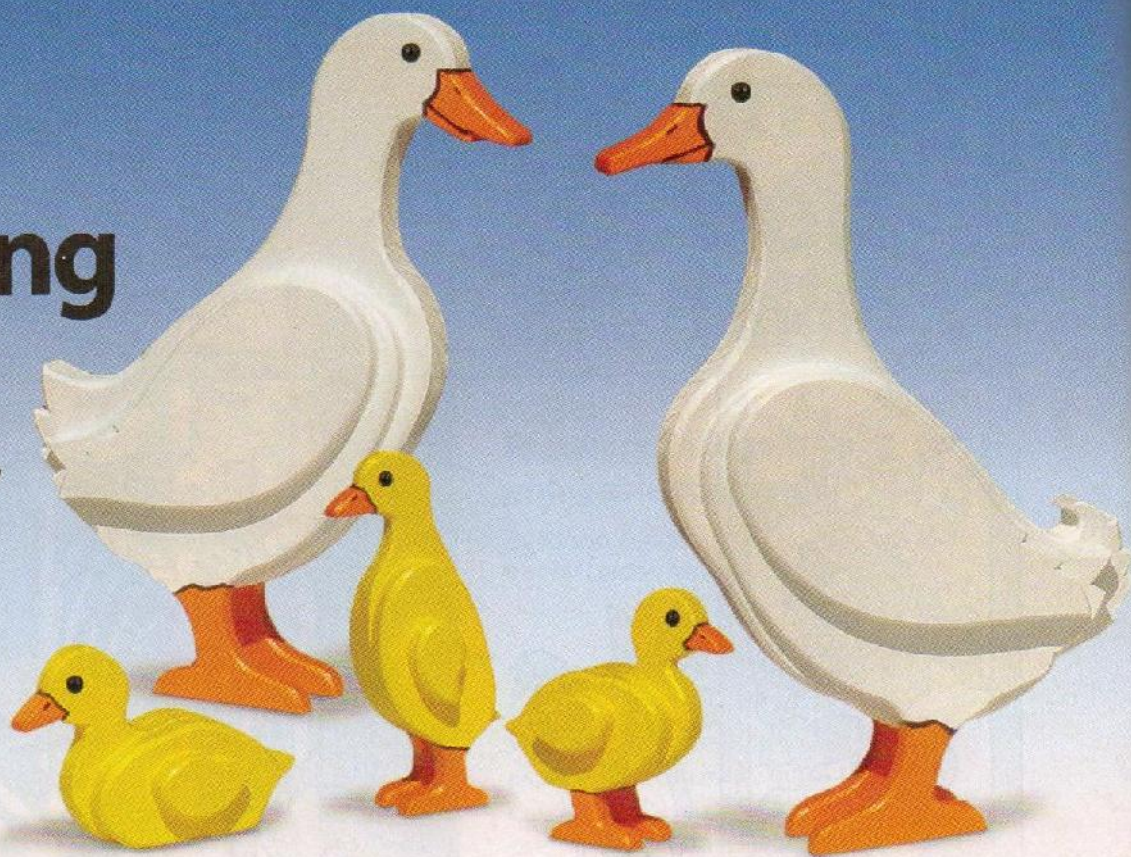
Summer garden pattern



Lawn-Roaming Duck Family

Simple weekend projects to dress up your yard

By Paul Meisel



You don't need to live on a farm to enjoy the sight of ducks in your yard. This fowl family is easy to cut and assemble, and a breeze to paint as well.

I cut all of the parts for these ducks from pine boards. The cutting diagram shows how best to position the patterns on the lumber. Transfer the patterns to the wood using your favorite method (see page 12 for several methods), positioning them to avoid knots. Knots can bleed sap through the paint—sometimes a couple of months after you've finished the project—and leave brown stains. However, you only have to worry about the knots that will be exposed. On the body pieces, for example, you can leave a knot in the middle where it will be covered by the sides. To see which parts of the body will be covered, check the patterns—the dotted lines show the locations of the sides.

TIP

EASIER CUTTING

I use a construction-grade 2x12 for the large duck bodies; the lumber is actually about 1½" (38mm) thick. Since a 1x12 (¾" (19mm)-thick stock) is easier to cut, you can cut two pieces from the thinner stock and glue them together. Sand away any variations after you glue the pieces together.

Cutting and Assembling the Parts

When you transfer the patterns to the wood, pay attention to the grain direction. For strength, the grain should run vertically whenever possible, especially on the small duck side pieces. Because the adult ducks are wider than standard 2x12 lumber, arrange the patterns so the grain is as close as possible to vertical, as shown in the cutting diagram. Use the wing position lines on the large side pattern to cut the large wings.

Because the legs are narrow relative to the rest of the body, they are the weakest point. For added strength, drill ¼" (6mm)-diameter holes in the sides where indicated on the pattern. Glue fiberglass dowels into the holes. Do not use wooden dowels. Ground moisture causes wooden dowels to rot quickly. Fiberglass dowels are smoother and stronger. If you place the ducks in your lawn, you will need to remove them to mow. Fiberglass dowels can be pulled out of the ground and pushed in easily, while wooden dowels may snap off.

After cutting the pieces, sand the edges as desired. Round some edges for a more finished look. Hold all of the parts for each duck together between two fingers or clamp them together without glue so you can see which edges to round. For example, on the Small Body 1, round the edges of the head and tail but not the areas of the back or bottom where the Small Side 1 pieces follow the same outline.

Drill the holes for the plastic eyes through the body pieces to insure the eyes will be in the same position on each side. After finishing the edges and sanding all of the parts, assemble the ducks. Use clamps and water-resistant glue. Attach the sides to the body. Then, attach the wings to the sides.

Finishing the Ducks

Because being outdoors places tremendous demands on paint, always purchase the best grade of primer and paint you can reasonably afford. I used exterior acrylic latex paint and primer—the same type used for painting house trim.

It's important to apply a primer for items displayed outdoors because it seals the wood and prepares it for the finish coats. I prefer acrylic latex primers because they dry quickly, are non-flammable, have minimal offensive odor, and can be cleaned up with soap and water. In addition, acrylic latex primers and paints are permeable (breathable) so they allow water to vaporize and escape. They are also flexible and resist cracking or flaking, which are useful qualities in paint that will be applied to projects subject to extremes of weather and humidity.

For the white topcoat, I bought a quart of white exterior acrylic latex house paint. Because I needed such small amounts of yellow and orange paint, I used two-ounce bottles of Delta Ceramcoat acrylic craft paint. This high-quality paint is available in wonderfully bright colors, but it is not formulated for outdoor use. Simply top-coat the craft paints with Delta clear exterior satin varnish, which has an ultraviolet inhibitor, for beautiful, weather-resistant colors in manageable quantities.

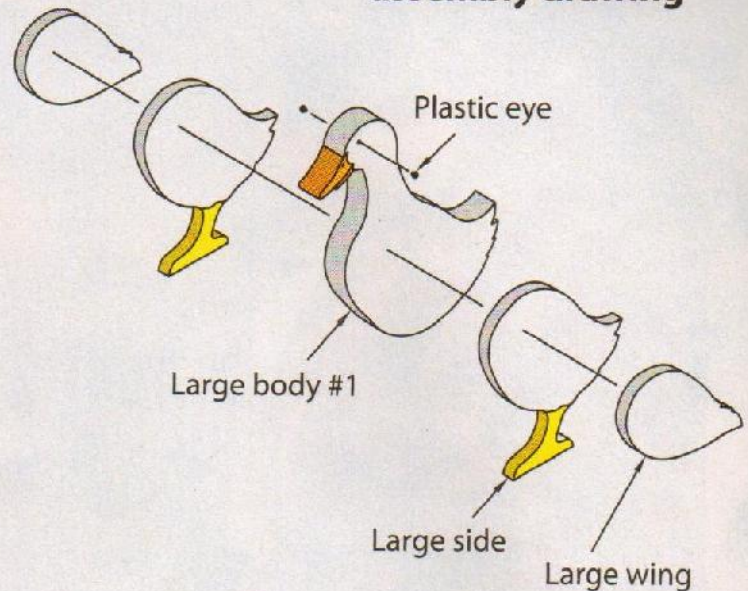
For the best results, use a paint marker for the black detail lines around the beak. Do not use a permanent-ink felt pen or marker. A marker line will fade quickly outdoors.

After you finish painting, tap the plastic eyes into the holes in the body and glue the fiberglass dowels into the holes in the sides.

TIP SHARPENING DOWELS

To make them easier to push into the ground, the fiberglass dowels should be sharpened to a point on one end. This is best done on a disk sander. **CAUTION:** Wear safety goggles, gloves, and a mask when sanding fiberglass.

Duck family assembly drawing



Materials & Tools

Materials:

- Pine boards, 1" (25mm)-thick: 12" x 8' (305mm x 2438mm)
- Construction lumber: 2" x 12" x 36" (51mm x 305mm x 914mm) OR 2 each 1" x 12" x 36" (25mm x 305mm x 914mm) (See Tip, page 20)
- Plastic eyes, 7/16" (11mm)-diameter: 10 each black (#8627, package of 10)*
- Fiberglass dowels, 1/4" (6mm)-diameter: 6 each 13 1/4" (337mm)-long (#8637)*
- Paint, acrylic craft, such as Delta Ceramcoat: yellow (#0509)*, orange (#02042)*, clear satin exterior varnish (#07003)*

- Paint marker, medium line: black (#3247)*
- Primer, acrylic latex exterior
- Paint, acrylic latex gloss exterior house: white
- Wood glue, water resistant
- Sandpaper

Tools:

- Blades, such as Olson: #7 reverse-tooth (#448-R)*
- Drill and bits: 13/64" (5.2mm)-, 1/4" (6mm)-diameter
- Paintbrushes
- Clamps

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

SPECIAL SOURCES:

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

Patterns for the **DUCK FAMILY** are in the pattern pullout section.



Paul Meisel of Mound, Minn., and his staff have designed more than 3,500 woodworking plans. To see project plans in many categories, visit his website (see Special Sources).

Building Garden Lanterns



Combine compound-cut sections to make festive tea light lanterns

By Sue Mey

Cut by Norm Nichols

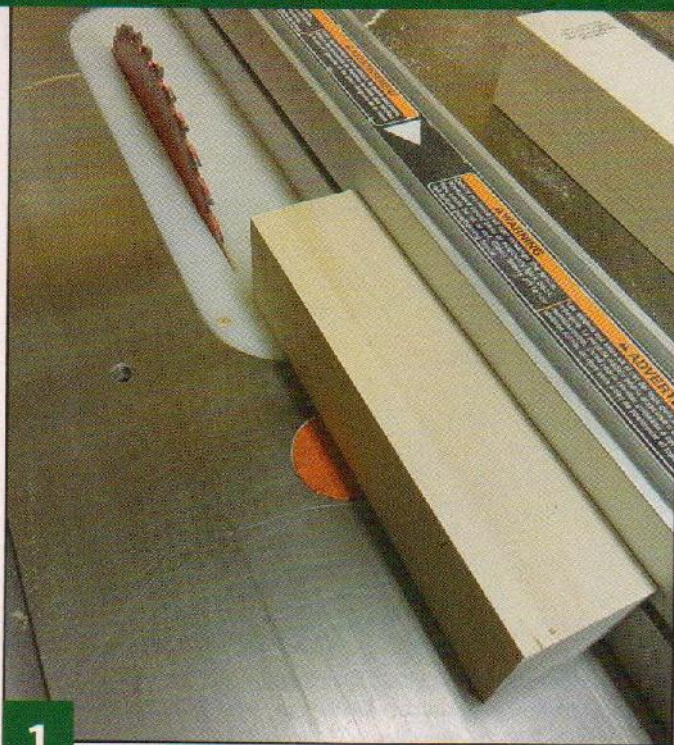
Frustrated by the small size of compound-cut projects, I developed a way to cut four compound pieces and join them together into a larger project. I'll teach the technique with these lanterns, which are nearly 4" wide and 4" thick—far bigger than a standard compound-cut design.

The success of the lanterns depends on two crucial factors: precisely cutting or sanding the blanks to size before attaching the patterns, and carefully and consistently cutting on the pattern lines. If the clearance on your saw does not allow you to cut 2"-thick material, reduce the size of the patterns

slightly and use the largest wood that your saw will accommodate.

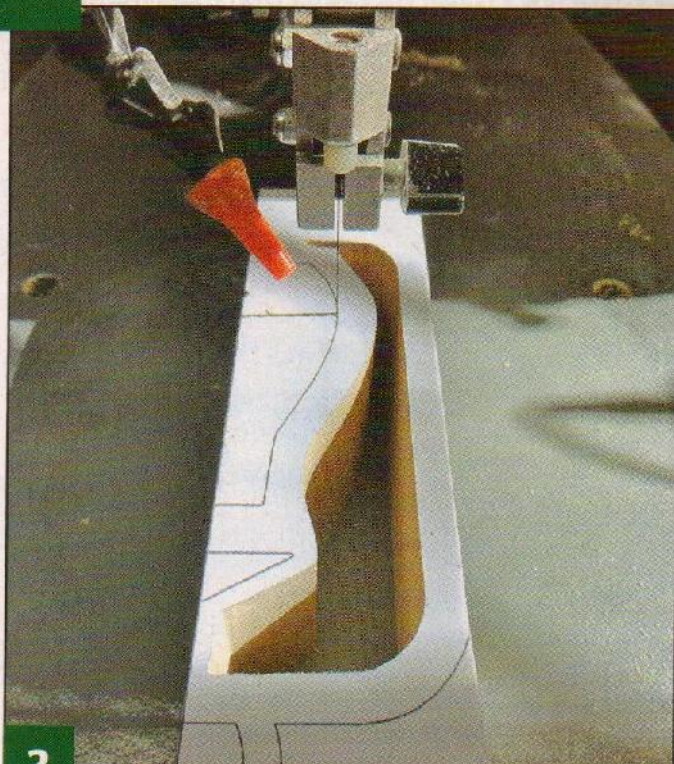
It is easiest to glue together two quarters at a time and then glue the two halves together. However, you can also glue all four quarters at one time. Use needle files, carving tools, or a rotary-power carver to remove any irregularities in the assembled lantern. You can thread thin link chain through the top opening to hang the lanterns or sit them on a flat surface. For a different look, paint the lanterns traditional black or a variety of festive colors. Use only battery-operated tea lights with these designs.

GARDEN LANTERN: CUTTING THE PIECES



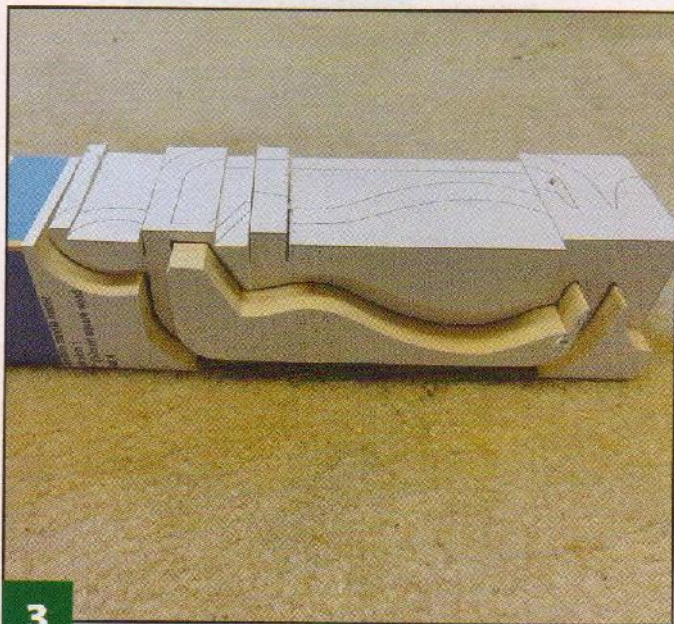
1

Prepare the blanks. Use a table saw to cut the blanks to size. You can also cut them with your choice of saw and use a disc sander or belt sander to sand the blanks to the exact dimensions. Cover the blanks with blue painter's tape. Fold the patterns on the dotted lines, apply adhesive to the backs of the patterns, align the folds with the corners of the blanks, and press the patterns into place.



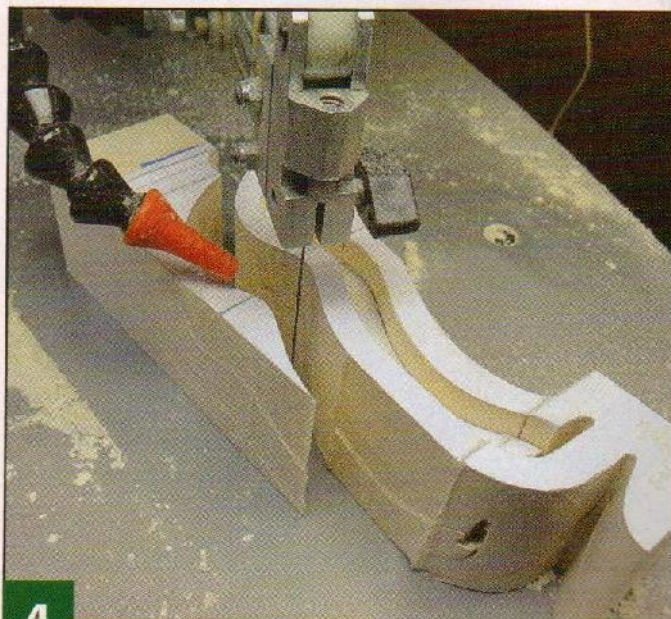
2

Make the first cuts. Drill $\frac{1}{8}$ " (3mm)-diameter blade-entry holes in both sides for the inside cuts. Make the interior cuts on the first side with a #9 blade. Be careful because the saw arm or the blade holder may pinch your fingers against the wood when you are cutting thick wood.



3

Cut the perimeter of the first side. Cut the perimeter lines on one side and replace the waste pieces. Use small pieces of clear tape to hold the waste in place while you wrap the blank with clear packaging tape to secure the pieces.

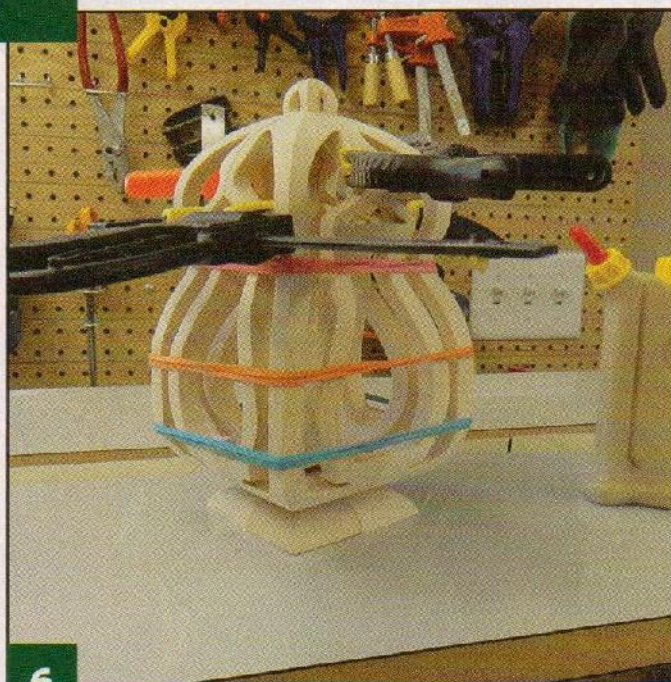


4

Cut the second side. Rotate the blank 90° and cut along all of the pattern lines. Carefully separate the piece from the waste. Remove the pattern and tape, and hand-sand away any visible irregularities. Remove the sanding dust with a stiff-bristled paintbrush. Use the process explained in Steps 1 to 4 to cut the other three quarters of the lantern.



5 **Glue the quarters to form halves.** Glue and clamp two sets of quarters together to create two halves. Remove any glue squeeze-out with a damp rag. Cover the areas that will be glued together with tape and apply finish to the inside of the lantern. I use spray lacquer.



6 **Assemble the lantern.** Glue together the two halves and clamp them in place. Rubber bands work well to hold the pieces together while the glue dries.



7 **Finish the lanterns.** Use a chisel, rotary-power carver, or sandpaper to smooth the profile of the lantern as needed, especially along the glue joints. Hand-sand the lanterns with progressively finer grits of sandpaper to get a smooth finish. Apply several coats of clear spray lacquer. Allow the lacquer to dry thoroughly between coats, and sand lightly with 500-grit sandpaper.

Materials & Tools

Materials:

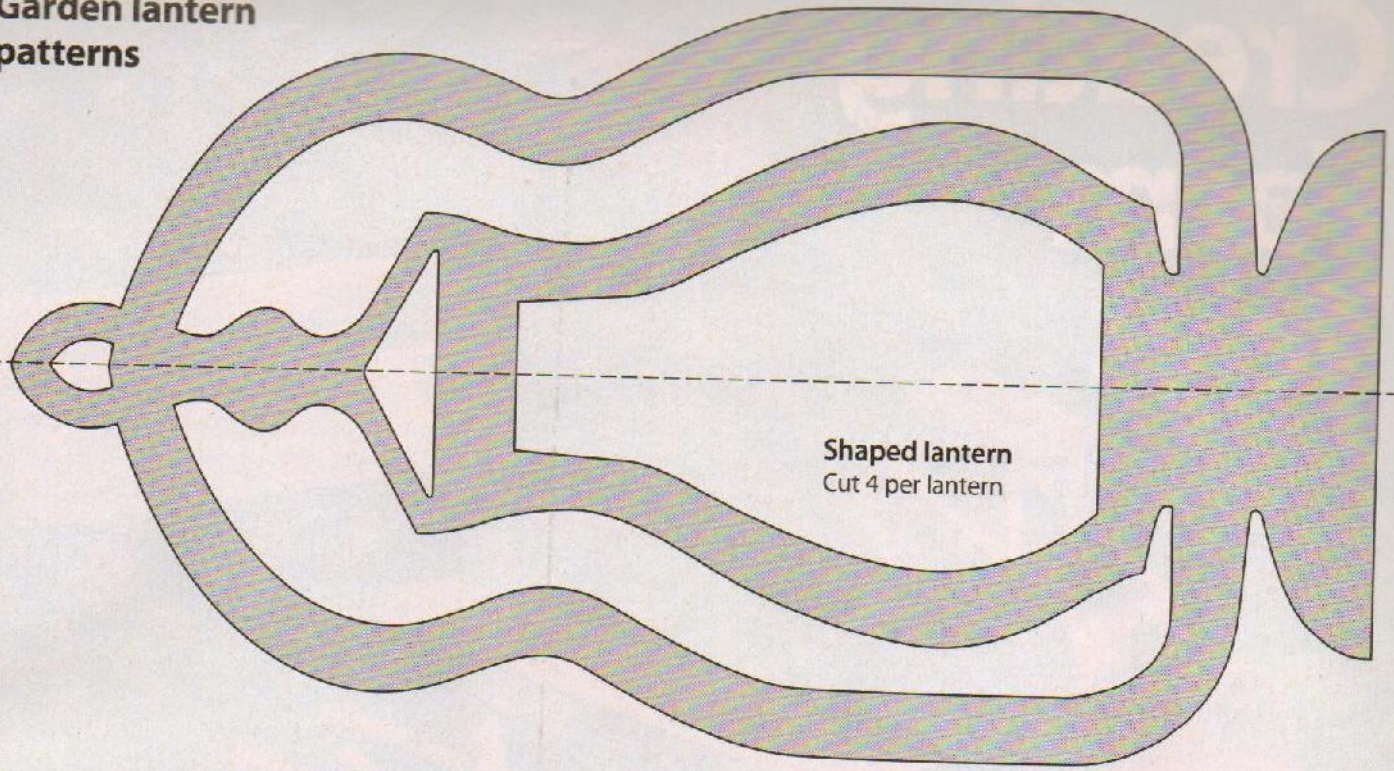
- Basswood, 2" (51mm)-thick: 4 each 2" x 7¼" (51mm x 185mm) per lantern
- Tape: clear tape; blue painter's tape; clear packaging tape
- Temporary-bond spray adhesive or glue stick
- Sandpaper: assorted to 500-grit
- Wood glue
- Spray lacquer: clear

Tools:

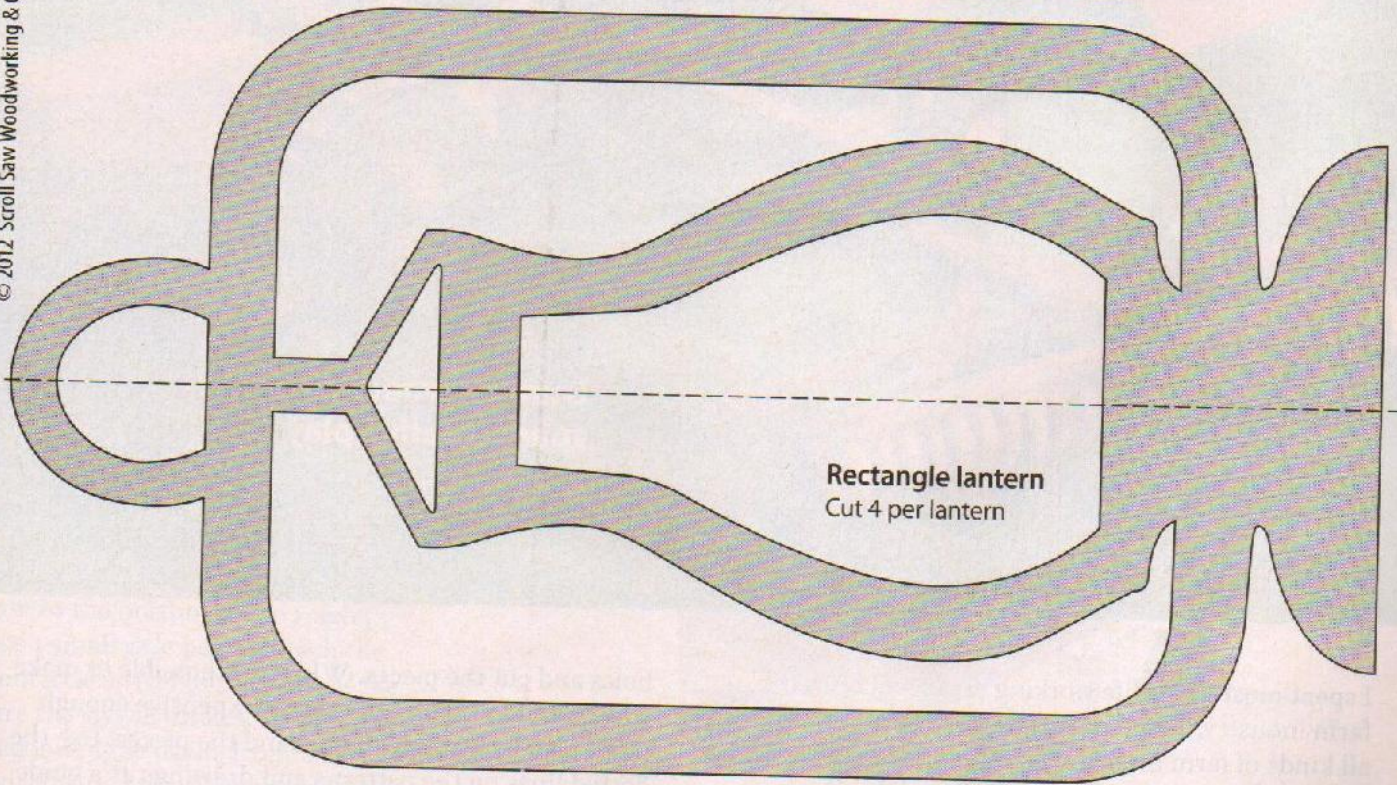
- Blades: #9 skip reverse-tooth
- Drill press with bit: ¼" (3mm)-diameter
- Table saw or your choice of saw and disc or belt sander
- Stiff-bristled paintbrush
- Damp cloth
- Scissors
- Clamps and rubber bands
- Carving tools, rotary-power tool, or needle files

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

Garden lantern patterns



Shaped lantern
Cut 4 per lantern



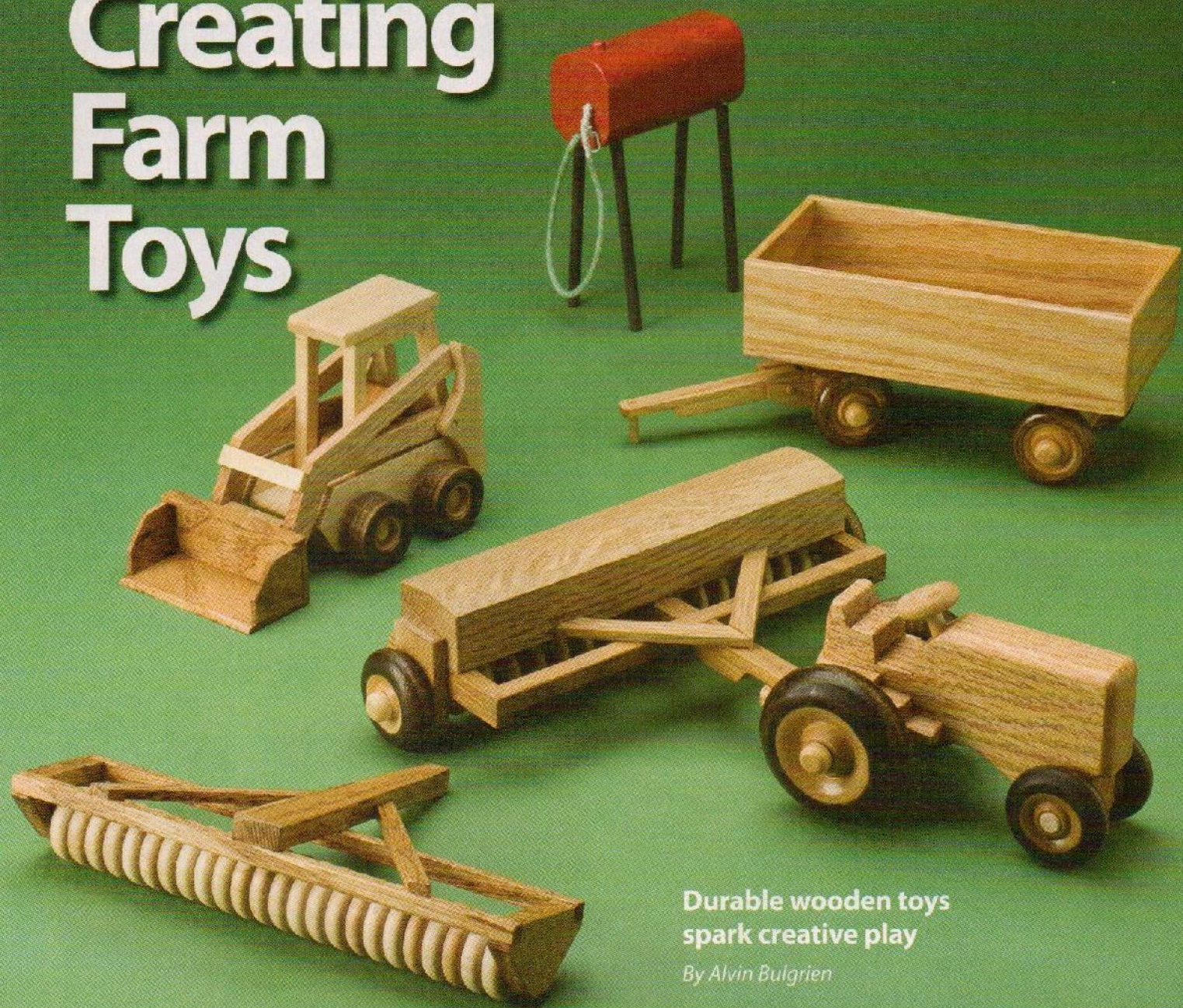
Rectangle lantern
Cut 4 per lantern

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

Creating Farm Toys



Durable wooden toys spark creative play

By Alvin Bulgrien

I spent most of my life working on a farm or in the farm industry, which means that I'm familiar with all kinds of farm implements—from tractors to grain drills. In the past, I shared plans for a John Deere tractor. But, it's a lot more fun to have several toys to play with.

Most of these farm implements are simple to cut and assemble. Dimensions for square or rectangular pieces are in the Materials list. Attach the patterns to the appropriate blanks using your choice of method (see page 12 for several methods). Drill the required

holes and cut the pieces. While it is possible to make wheels and axle pegs, they are inexpensive enough that I usually just buy them. Sand the pieces. Use the dotted lines on the patterns and drawings as a guide as you glue and clamp the pieces in place. I darken the tire section of the wheels with dark stain.

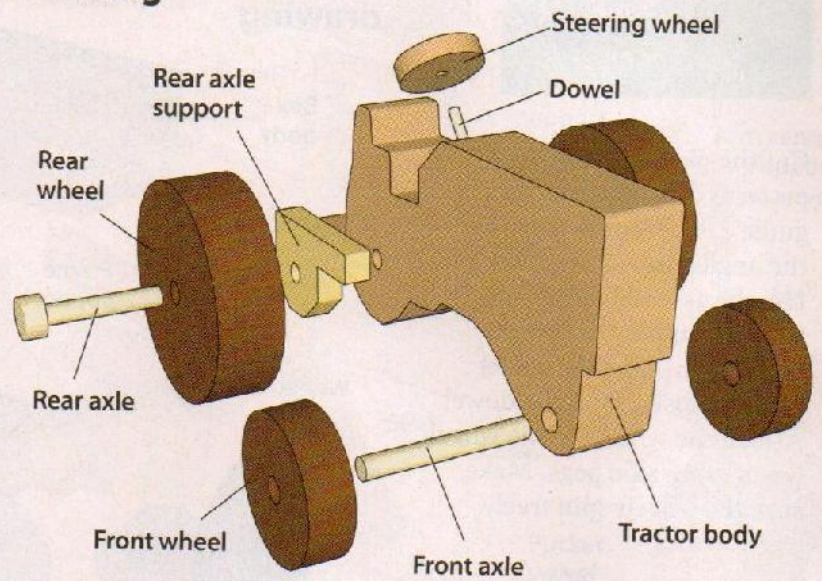
I attach all of the wheels using axle pegs. Dry-assemble the wheels and axle pegs to test the fit; you may need to trim the pegs to length. Insert the peg through the wheel before adding glue to the tip of the peg and inserting the peg into the hole in the axle.

MAKING THE TRACTOR



Use the patterns to cut the pieces. Use larger wheels for the back of the tractor. For the steering wheel, drill the angled hole into the tractor body and glue a dowel in place. Glue a smaller wheel to the other end of the dowel. Make sure the end of the dowel is flush with the surface of the wheel. Instead of using axle pegs for the front wheels, I use a dowel. Cut the dowel to size and glue one end into one front wheel. Insert the dowel through the axle hole, add a dot of glue, and insert it into the other wheel. Unlike most of the other wheels in this project, the axle spins with the wheels instead of the wheels spinning on the axle pegs.

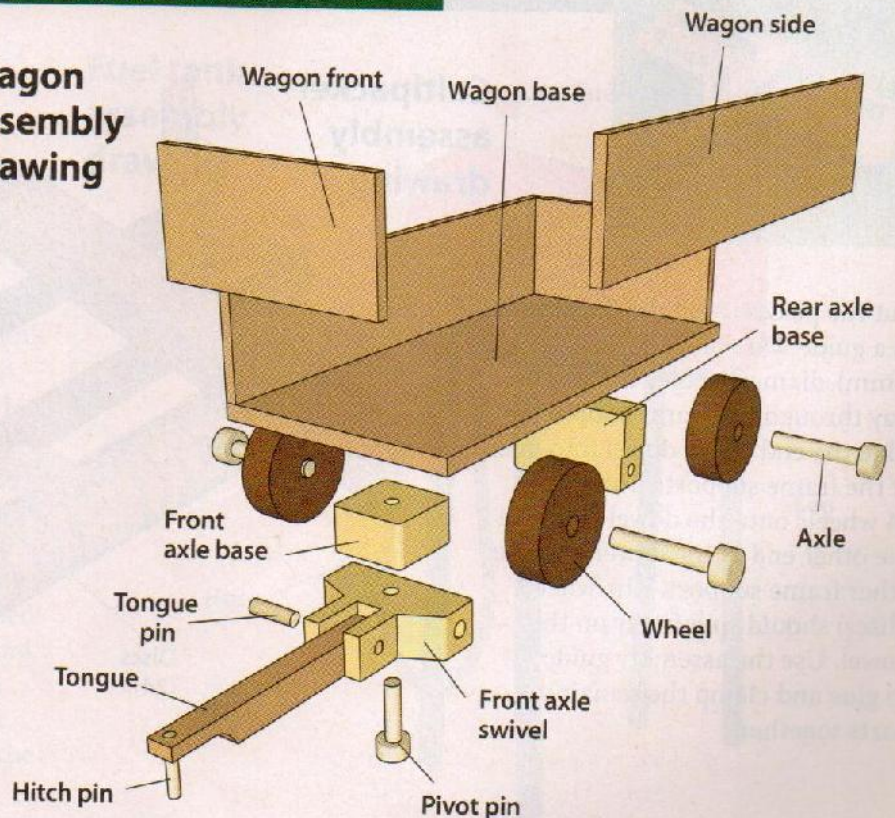
Tractor assembly drawing



MAKING THE WAGON

Cut the pieces. Glue and clamp the rear axle base and front axle base to the bottom of the wagon. Use a small axle peg to attach the front axle swivel to the base. Make sure the swivel rotates. Attach the wagon tongue to the front axle swivel with a dowel, making sure the tongue moves up and down. Glue and clamp the front, back, and sides to the base of the wagon. Attach the wheels and insert a short piece of dowel in the tongue for the hitch pin.

Wagon assembly drawing

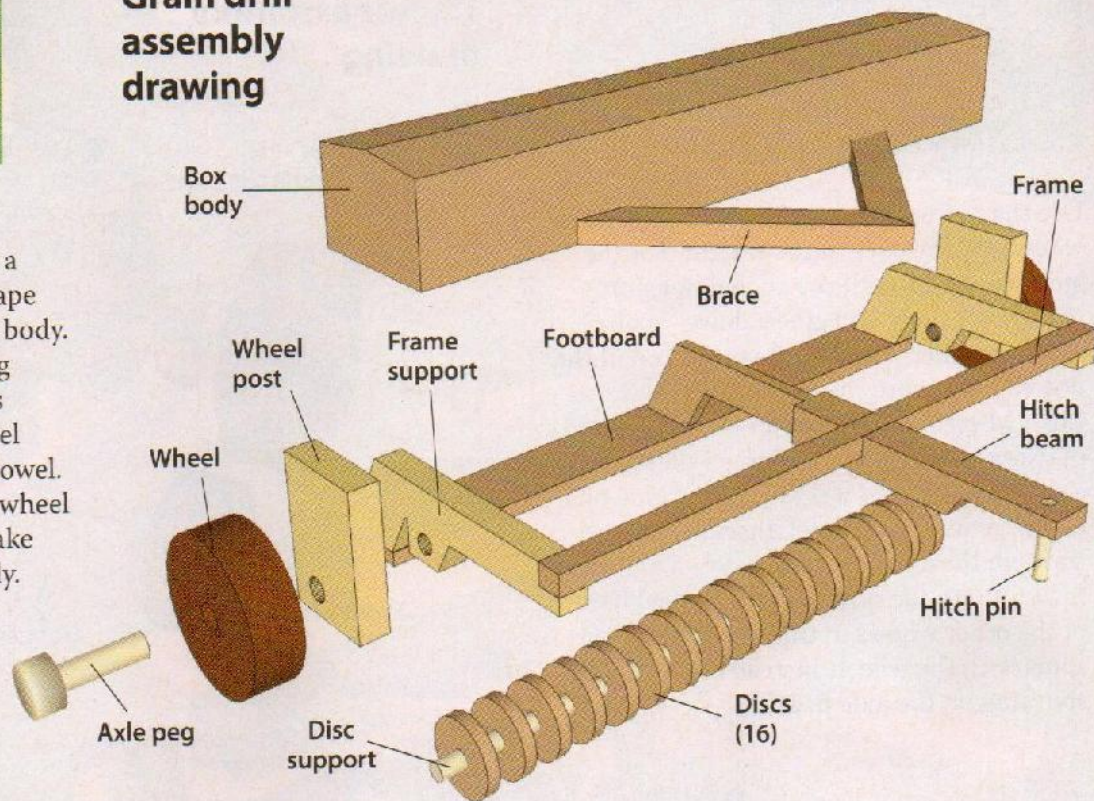


MAKING THE GRAIN DRILL



Grain drill assembly drawing

Cut the pieces using the patterns and drawings as a guide. Use a sander to shape the angled top of the box body. Use the assembly drawing to help you put the pieces in position. Glue the wheel discs in position on the dowel. Attach the wheels to the wheel posts using axle pegs. Make sure the wheels spin freely.

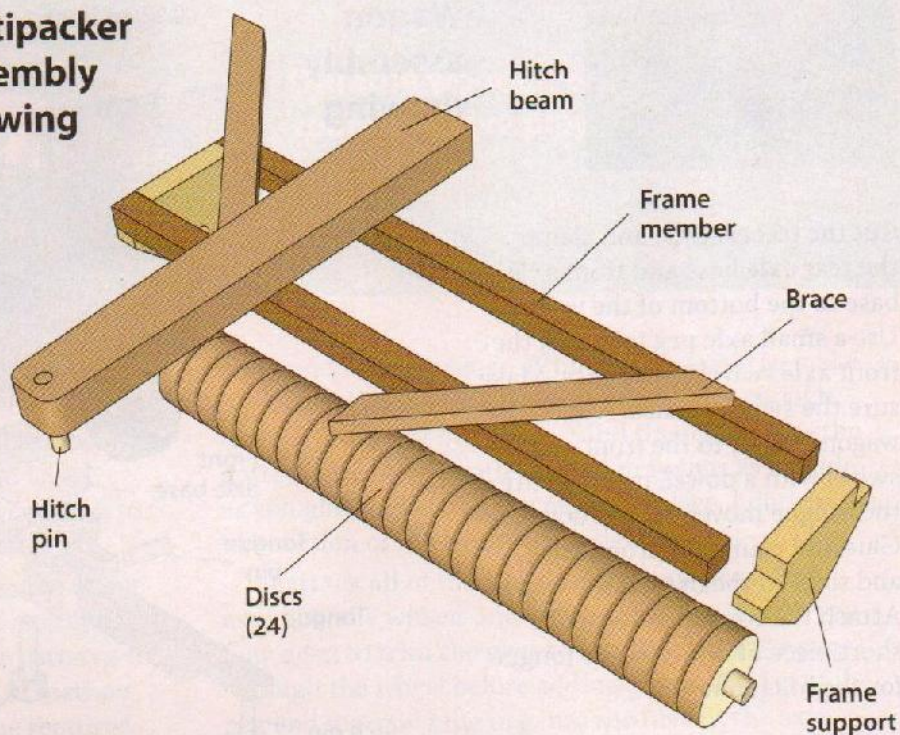


MAKING THE CULTIPACKER



Cultipacker assembly drawing

Cut the pieces using the patterns as a guide. Do not drill the $\frac{3}{16}$ " (5mm)-diameter holes the whole way through the frame supports. Glue the end of the dowel into one of the frame supports. Insert the 24 wheels onto the dowel and glue the other end of the dowel into the other frame support. The wheels (discs) should spin freely on the dowel. Use the assembly guide to glue and clamp the remaining parts together.

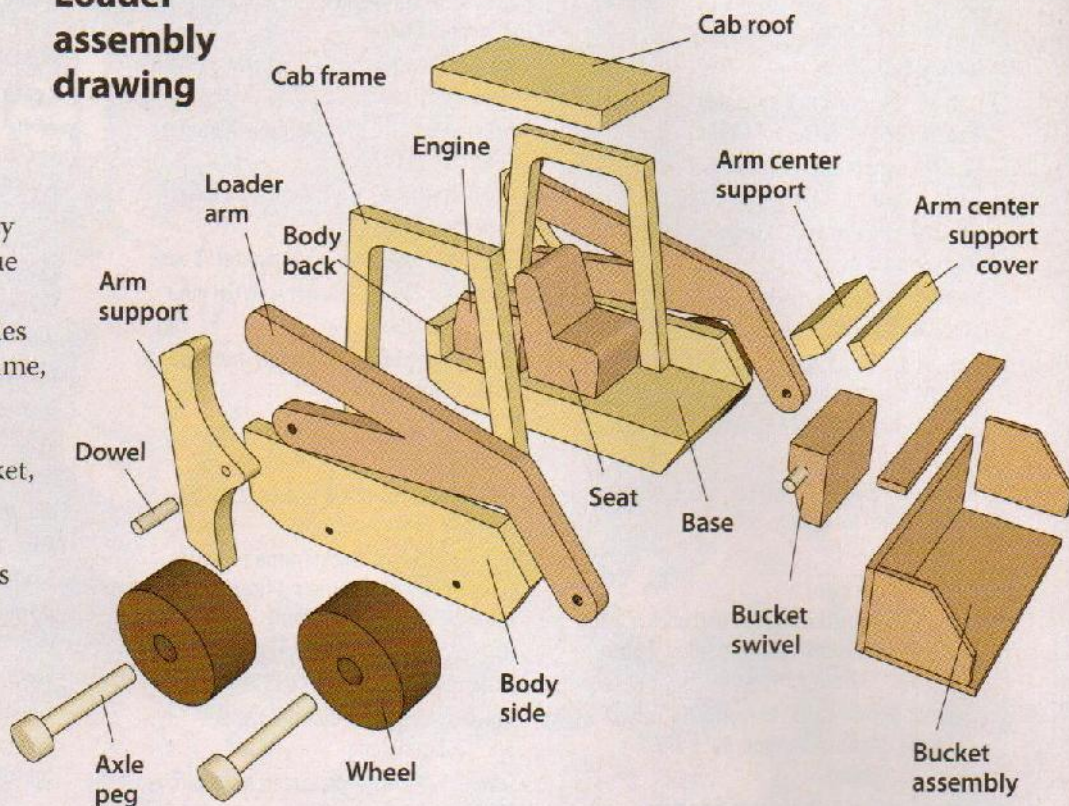


MAKING THE LOADER



Loader assembly drawing

Cut the pieces, and then start by assembling the cab section. Glue and clamp the sides, seat, and engine to the base. Drill the holes for the axles. Attach the cab frame, cab roof, and body back. Then, attach the arm supports for the loader arms. Assemble the bucket, and glue and clamp the bucket swivel to the back. Attach the loader arms to the arm supports and to the bucket swivel with dowels. Attach the arm center support and cover. Make sure the arms move up and down and the bucket rotates. Attach the wheels using axle pegs.

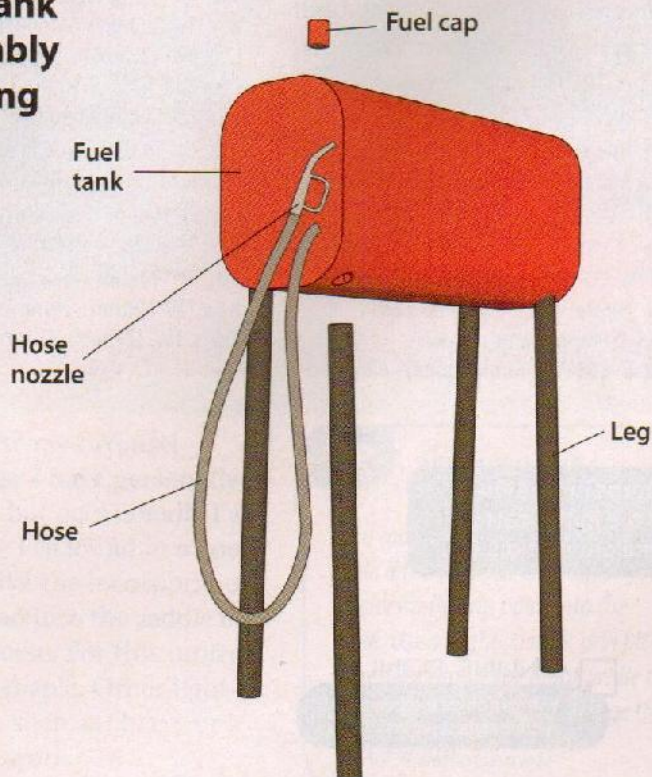


MAKING THE FUEL TANK



Fuel tank assembly drawing

Cut the blank to size and drill the required holes; the holes are angled to give the tank a wider and more stable base. Then, use a router with a $\frac{1}{2}$ " (13mm)-radius round-over bit to remove the sharp corners from the blank. You could also sand the tank to shape. Cut the leg dowels to length and glue them in the holes. Glue the fuel cap on top of the tank. Glue the cord into the hose hole. Attach a hose nozzle, fashioned from fine wire, to the end of the cord, and paint the wire and cord with aluminum paint. If you want the fuel tank to be for diesel, paint it gray. For gasoline, paint the tank red.



Materials:**TRACTOR**

- Oak, $\frac{3}{4}$ " (19mm)-thick: body, $2\frac{1}{2}$ " x 5" (64mm x 127mm)
- Oak, $\frac{5}{16}$ " (8mm)-thick: rear axle support, 2 each 1" x $1\frac{3}{4}$ " (25mm x 44mm)
- Wooden wheels, 2" (51mm)-diameter: back, 2 each
- Wooden wheels, $1\frac{1}{4}$ " (32mm)-diameter: front, 2 each
- Wooden wheel, $\frac{7}{8}$ " (22mm)-diameter: steering wheel
- Axle pegs, $\frac{7}{32}$ " (5.5mm)-diameter: back wheels, 2 each
- Dowel, $\frac{3}{16}$ " (5mm)-diameter: steering wheel, $\frac{7}{8}$ " (22mm) long
- Dowel, $\frac{1}{4}$ " (6mm)-diameter: front wheels, $1\frac{1}{8}$ " (29mm) long

WAGON

- Oak, $\frac{1}{8}$ " (3mm)-thick: front and back, 2 each $1\frac{1}{4}$ " x $2\frac{7}{16}$ " (32mm x 62mm); sides, 2 each $1\frac{1}{4}$ " x $5\frac{5}{8}$ " (32mm x 143mm)
- Oak, $\frac{1}{4}$ " (6mm)-thick: bottom, $2\frac{3}{4}$ " x $5\frac{5}{8}$ " (70mm x 143mm); tongue, $\frac{3}{8}$ " x $2\frac{7}{8}$ " (10mm x 73mm)
- Oak, $\frac{1}{2}$ " (13mm)-thick: rear axle base, 1" x $1\frac{5}{8}$ " (25mm x 41mm); front axle swivel, $1\frac{5}{16}$ " x $1\frac{5}{8}$ " (33mm x 41mm); front axle base, $\frac{7}{8}$ " x $\frac{7}{8}$ " (22mm x 22mm)
- Dowel, $\frac{1}{8}$ " (3mm)-diameter: tongue pin, hitch pin, 2 each $\frac{3}{8}$ " long (16mm)
- Wooden wheels, 1" (25mm)-diameter: 4 each
- Axle pegs, $\frac{5}{32}$ " (4mm)-diameter: 5 each

GRAIN DRILL

- Oak, $\frac{1}{8}$ " (3mm)-thick: braces, 2 each $\frac{1}{4}$ " x $2\frac{1}{2}$ " (6mm x 64mm); foot board, $\frac{1}{2}$ " x $6\frac{1}{4}$ " (13mm x 159mm)
- Oak, $\frac{3}{16}$ " (5mm)-thick: wheel posts, 2 each $\frac{3}{4}$ " x $1\frac{3}{16}$ " (19mm x 30mm)
- Oak, $\frac{1}{4}$ " (6mm)-thick: frame $\frac{1}{4}$ " x $6\frac{1}{4}$ " (6mm x 159mm); frame supports, 2 each $\frac{3}{4}$ " x $2\frac{3}{4}$ " (19mm x 70mm)

- Oak, $\frac{3}{8}$ " (10mm)-thick: hitch beam, 1" x $4\frac{1}{2}$ " (25mm x 114mm)
- Oak, $\frac{7}{8}$ " (22mm)-thick: box body, $1\frac{1}{8}$ " x $6\frac{1}{4}$ " (29mm x 159mm)
- Wooden wheels, $1\frac{1}{4}$ " (32mm)-diameter: 2 each
- Wooden wheels, 1" (25mm)-diameter: 16 each
- Axle pegs, $\frac{7}{32}$ " (5.5mm)-diameter: 2 each
- Dowel, $\frac{1}{8}$ " (3mm)-diameter: hitch pin, $\frac{5}{8}$ " (16mm) long
- Dowel, $\frac{3}{16}$ " (5mm)-diameter: disc support, $6\frac{1}{8}$ " (155mm) long

CULTIPACKER

- Oak, $\frac{1}{8}$ " (3mm)-thick: braces, 2 each $\frac{1}{4}$ " x $3\frac{1}{4}$ " (6mm x 83mm)
- Oak, $\frac{5}{16}$ " (8mm)-thick: frame supports, 2 each 1" x $1\frac{3}{4}$ " (25mm x 44mm); hitch beam, $\frac{5}{8}$ " x $4\frac{1}{4}$ " (16mm x 108mm)
- Oak, $\frac{3}{16}$ " (5mm)-thick: frame members, 2 each $\frac{3}{16}$ " x $6\frac{3}{4}$ " (5mm x 171mm)
- Dowel, $\frac{3}{16}$ " (5mm)-diameter: axle, $6\frac{1}{2}$ " (165mm) long
- Dowel, $\frac{1}{8}$ " (3mm)-diameter: hitch pin, 1" (25mm) long
- Wooden wheels, $\frac{7}{8}$ " (22mm)-diameter: 24 each

LOADER

- Oak, $\frac{1}{8}$ " (3mm)-thick: bucket bottom, 1" x $2\frac{1}{2}$ " (25mm x 64mm); bucket back, $\frac{7}{8}$ " x $2\frac{1}{2}$ " (22mm x 64mm); bucket ends, 2 each $\frac{7}{8}$ " x $\frac{7}{8}$ " (22mm x 22mm); bucket top, $\frac{1}{4}$ " x $2\frac{1}{2}$ " (6mm x 64mm)
- Oak, $\frac{3}{16}$ " (5mm)-thick: loader arms, 2 each $2\frac{1}{4}$ " x $3\frac{1}{2}$ " (57mm x 89mm)
- Oak, $\frac{1}{4}$ " (6mm)-thick: arm center support, $\frac{1}{4}$ " x $1\frac{3}{16}$ " (6mm x 30mm)
- Ash, $\frac{3}{8}$ " (10mm)-thick: bucket swivel, $\frac{3}{4}$ " x $1\frac{1}{8}$ " (19mm x 29mm); cab base, $1\frac{1}{8}$ " x $3\frac{1}{4}$ " (29mm x 83mm)

- Maple, $\frac{1}{8}$ " (3mm)-thick: arm center support cover, $\frac{1}{4}$ " x $1\frac{1}{2}$ " (6mm x 38mm)
- Maple, $\frac{1}{4}$ " (6mm)-thick: arm supports, 2 each $\frac{3}{4}$ " x $2\frac{1}{4}$ " (19mm x 57mm); cab frames, 2 each $2\frac{1}{4}$ " x $2\frac{1}{2}$ " (57mm x 64mm); cab roof, $1\frac{1}{8}$ " x $1\frac{7}{8}$ " (29mm x 48mm); body sides, 2 each $\frac{7}{8}$ " x $3\frac{1}{4}$ " (22mm x 83mm); body back, $\frac{3}{8}$ " x $1\frac{1}{8}$ " (10mm x 29mm)
- Cherry, $\frac{7}{8}$ " (22mm)-thick: seat, 1" x $1\frac{1}{4}$ " (25mm x 32mm); engine, $\frac{7}{8}$ " x $\frac{7}{8}$ " (22mm x 22mm)
- Wooden wheels, 1" (25mm)-diameter: 4 each
- Axle pegs, $\frac{5}{32}$ " (4mm)-diameter: 4 each
- Dowel, $\frac{1}{8}$ " (3mm)-diameter: 4 each $\frac{3}{8}$ " (10mm) long

FUEL TANK

- Pine, $1\frac{1}{4}$ " (32mm)-thick: $1\frac{1}{2}$ " x 3" (38mm x 76mm)
- Dowels, $\frac{3}{16}$ " (5mm)-diameter: legs, $3\frac{3}{8}$ " (86mm) long; fuel cap, $\frac{1}{4}$ " (6mm) long
- Cord: 7" (178mm) long
- Fine wire
- Paint: aluminum-colored (nozzle), red (gasoline tank), gray (diesel fuel tank)

General Materials:

- Wood glue
- Dark stain (for tires)
- Polyurethane finish

Tools:

- Blades: #3 reverse-tooth
- Clamps
- Drill press and assorted small bits
- Router with bit: $\frac{1}{2}$ " (13mm)-radius round-over (optional)
- Sander

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

Patterns for the **FARM TOYS** are in the pattern pullout section.

**ONLINE BONUS**

Visit our website to see painted versions of these projects.

www.scrollsawer.com



Alvin Bulgrien runs Al's Custom Crafts in Sandusky, Mich.

Crafting a Carousel Horse Puzzle

Embellish this
freestanding puzzle with
paint, pens, and beads

By Judy and Dave Peterson



My interest in carousels started about 10 years ago. Whenever we encountered a carousel, we stopped and I took pictures. For the past three years we've belonged to the National Carousel Association. Before leaving on business trips, I visit their website and plan to stop at carousels we haven't yet visited.

I like to base my carousel puzzles on those I have personally photographed, but occasionally I am inspired by one I've found in a book. I particularly like the incorporation of the eagle head into the saddle on this carousel horse. For this project, I used 1"-thick maple. Other light-colored woods, such as cherry or birch, will also work.

TIP REAMING THE SPINDLE HOLE

You may need to ream the spindle hole if the weather is damp or you accidentally drip paint into the hole. Use a slightly larger drill bit or carefully wiggle the blank while the drill press is running to enlarge the hole slightly.

CAROUSEL HORSE: CUTTING THE PIECES

Step 1: Transfer the pattern to the blank. Use repositionable spray adhesive to attach a photocopy of the pattern to the blank. Orient the pattern so the spindle (pole) hole runs with the grain.



▲ Step 2: Flatten the bottom. Because the puzzle is freestanding, the feet must be flat. Cut just outside line A at the bottom of the feet and sand up to the line using a disc sander. Cut along dotted line B on the back to create a flat surface to make it easier to drill the spindle hole.



▲ Step 3: Drill the spindle hole. You must drill this hole straight through the blank, so I use several blocks of wood to create a solid fence to hold the blank perpendicular to the drill press table. To keep the wood from moving, slip a piece of sandpaper between the fence and the blank. Center the drill bit on the board and align with the dashed spindle lines shown on the pattern. Drill the hole, but make sure the drill chuck doesn't hit the head and mane. You may need to cut the head and mane pieces free before drilling the hole.

Step 4: Cut the pieces. Cover the pattern with clear packing tape to lubricate the blade if desired. Cut along the pattern lines. Cut the smaller pieces off the larger one; it can be difficult to hold and cut small pieces. Cut the brass rod to length. Brass is soft enough to cut with a scroll saw and ordinary scroll saw blades, or you can use a hacksaw or a rotary-power carver with a cut-off wheel. Use sandpaper to refine the cut edges and remove any sharp corners.

Step 5: Sand the pieces. I use a pad sander in a drill to remove any imperfections from the perimeter of the horse. Buff the pieces carefully with a flap sander to remove the sharp corners and give the piece a finished look.

CAROUSEL HORSE: DECORATING THE PUZZLE

Step 6: Seal the puzzle. Apply a coat of clear or natural Danish oil finish. Allow the finish to dry. This coat of finish keeps the paint and pens from bleeding into the wood.



▲ Step 7: Decorate the horse. Paint the details using Rustoleum metallic paints and Lumiere metallic acrylic paints. I use a glitter paint pen to add the bridle, and I draw the details on the trappings, mane, and tail with UniBall Signo metallic pens. I add the other details with a Staedtler Pigment Liner pen. Pens are so much easier than brushes.

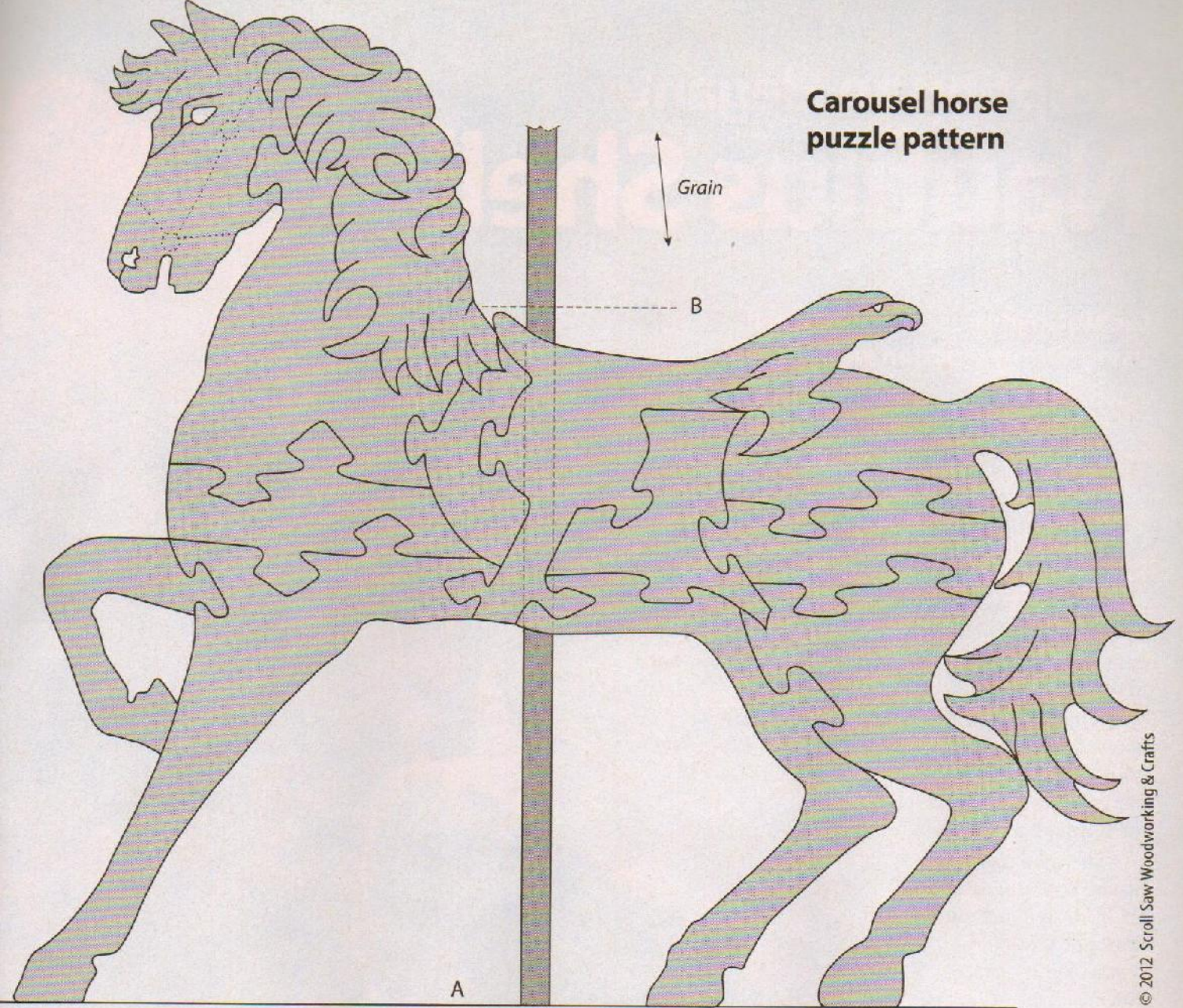
Step 8: Install the spindle and shaft collars. Carefully insert the spindle into the hole. Slide the shaft collar up the spindle from the bottom until it touches the horse's belly, and then tighten the screw to lock the shaft in place.



▲ Step 9: Add the finial. Use commercial glass or wooden beads. Choose one bead with a hole large enough to fit over the shaft. Glue another smaller bead on top of the first bead. Paint the beads if desired.

Step 10: Create the stand. Cut the stand to size. Position the horse on the stand and mark the location for the spindle. Then, drill a $\frac{3}{16}$ " (5mm)-diameter hole at the mark to support the spindle. Sand the stand smooth. Use a flap sander to remove the sharp corners. Apply clear or natural Danish oil finish and allow the finish to dry.

Carousel horse puzzle pattern



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Materials:

- Maple, 1" (25mm)-thick: horse, 7" x 8" (178mm x 203mm)
- Walnut, 1" (25mm)-thick: stand, 2½" x 8½" (64mm x 216mm)
- Adhesive spray, repositionable
- Packing tape (optional)
- Scrap wood (drilling fence)
- Brass rod, ⅜" (5mm)-diameter: 9" (229mm) long
- Shaft collar: ⅜" (5mm)-diameter
- Sandpaper: 220-grit
- Danish oil: natural or clear

- Metallic paints, such as Rustoleum and Lumiere brands
- Paint pen: glitter style
- Metallic pens, such as Uniball Signo
- Pigment liner, such as Staedtler
- Finial/spindle topper: wood and/or glass beads
- Wood glue, such as Elmer's

Tools:

- Blades: #7 skip-tooth or reverse-tooth

Materials & Tools

- Drill press and bit: ⅜" (5mm)-diameter by at least 5" (127mm) long
- Sanding disk pad for drill
- Flap sander

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

SPECIAL SOURCES:

Brass rods and shaft collars are available at hobby stores that sell model trains and airplanes, or at Graingers, www.graingers.com.



Dave and Judy Peterson live in Monona, Wis. They are the authors of Animal Puzzles for the Scroll Saw, Fantasy & Legend Scroll Saw Puzzles, Dinosaur Puzzles for the Scroll Saw, and Zodiac Puzzles for Scroll Saw Woodworking, all available from www.FoxChapelPublishing.com.

Sculpting an Elegant Nautilus Shell

Create an impressive spiral shell using simple wooden wedges

By Steve Garrison

While these shells look complicated, they are surprisingly simple to make. If you can make a scroll saw bowl by cutting beveled rings, you will be able to make a spiraling shell. Instead of using a flat piece of wood with a uniform thickness, like those used to create scroll saw bowls, I use tapered pieces of wood. These wedge-shaped blanks create a tight curve that becomes the logarithmic spiral you see in some seashells.

With this technique, there are no pre-drawn patterns. Instead, you just need to follow a few guidelines to shape the initial pieces. Then, use each cut segment as the pattern for the next larger segment.

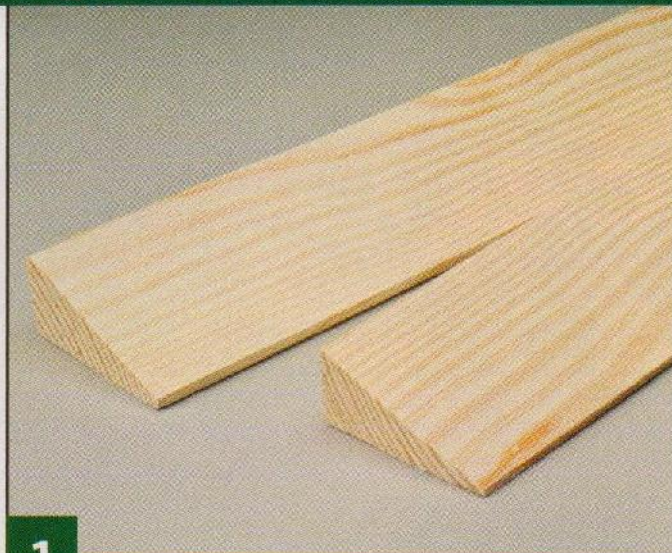
These instructions produce a basic nautilus shell, but the technique does not stop there. If you experiment, you can create a variety of shell shapes.





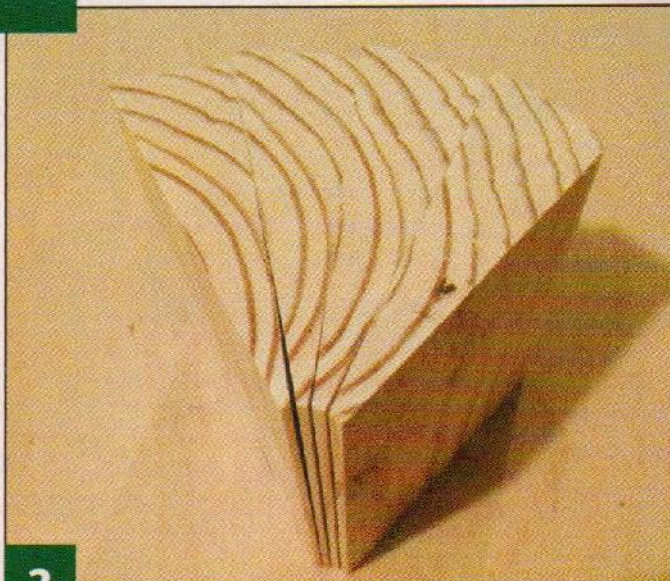
Produce stunning results using a variety of woods, including everything from beautifully figured hardwood to ordinary construction pine.

SHELL: PREPARING THE BLANK



1

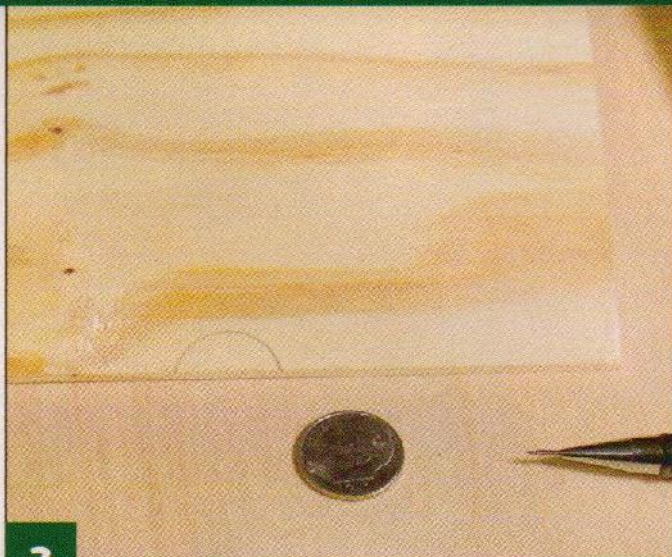
Create the wedge. Cut a 30" (762mm) section of pine 2x4. Use a table saw or band saw, or use shims to angle the blank as you run it through a surface planer, to create an 18° to 20° taper on the piece across the 4" (102mm) width. I cut the piece on a band saw and use hot glue to join the two halves together before running the blanks through a surface planer to smooth the surfaces. The surfaces don't need to be perfectly smooth, but the smoother the surfaces, the less sanding you'll have to do later. When cutting the pieces, don't make them too thin because moisture in the air or even in the glue can cause the pieces to warp. Make sure the thin edge of the blank is at least 1/8" (3mm) thick. If the wood splinters, apply a light film of wood glue to the thin edge of the blank to reinforce it.



2

Prepare the blanks. Cut the wedge into four equal-length pieces. Orient these pieces so the 90° corner faces up and the growth rings in the end grain curve the same way. The patterns formed by the growth rings will be exposed in the sides of the shell, and this is a fun aspect to experiment with. Number the wedges with a marker in a corner on the thick side of each wedge. Multiple wedges are needed to give the shell enough wall thickness to work with. The more wedges you make, the thicker the walls will be.

SHELL: CUTTING THE SEGMENTS



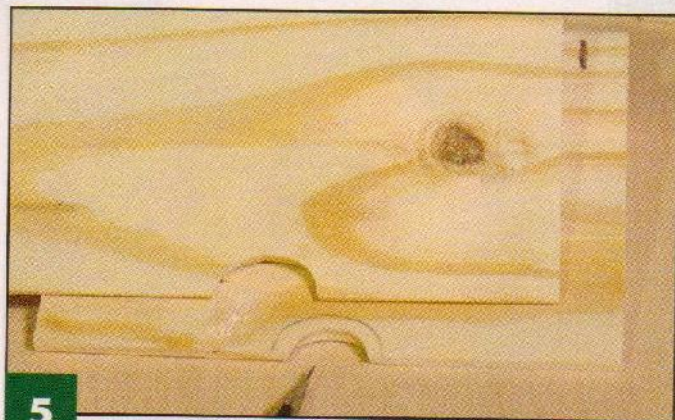
3

Cut the first segment. With the numbered side of the blank as the top, draw a semicircle in the center of blank 1. I use a dime or a small coin as a pattern. Tilt the left side of the saw table down to the same angle you used to cut the wedge. Cut along the line in a counter-clockwise direction so the opening on the bottom of the segment is slightly larger than the opening at the top of the segment.



4

Cut the second segment. Align the edges of blank 1 on top of blank 2. Make sure the thin edges are aligned and both numbered sides are on the top. Trace the bottom outline of blank 1 onto the top of blank 2. The large side of shell segment 1 will be the same size as the small side of shell segment 2. This is what makes the shell grow larger with the addition of each new segment.



5

Continue cutting segments. Continue making the cuts at an angle and tracing the bottom edge on the top of the next numbered blank. When you get to the fifth cut, trace the large side of the cut on blank 4 onto the top of blank 1. As you cut along this line, you are cutting the inside of the larger segment and the outside of the smaller segment. Keep the segments in order as you cut. Continue cutting segments in all four blanks until you reach the edge of a blank.

SHELL: GLUING THE SEGMENTS



6

Prepare to glue the first 16 segments together. Pair up the segments and flatten only the surfaces to be joined. Draw a pencil line on the joint surface and rub it on 80- to 120-grit sandpaper attached to a piece of plate glass or other perfectly flat surface until all of the pencil mark is sanded off. This will make the joint surfaces flat so they fit together tightly when glued.



7

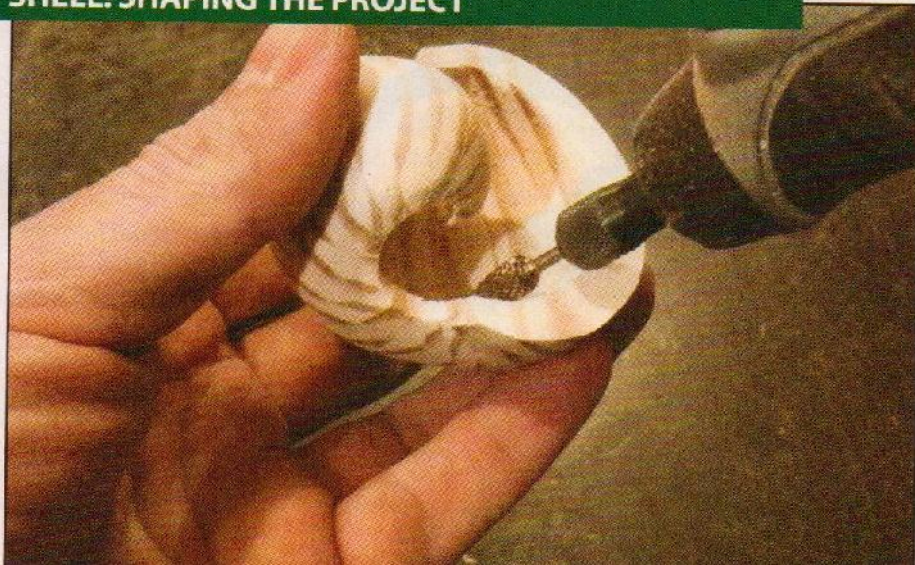
Glue the segments together in pairs. Glue segment 1 to segment 2, and then glue segment 3 to 4, and 5 to 6, and so on. The first 16 segments will become eight pairs. After the glue is set, begin flattening the joint surfaces to join the pairs into groups of four. Do not flatten the joint until right before you are ready to glue; moisture in the air or even the glue from the previous joint can cause the wood to warp, which produces a bad joint.



8

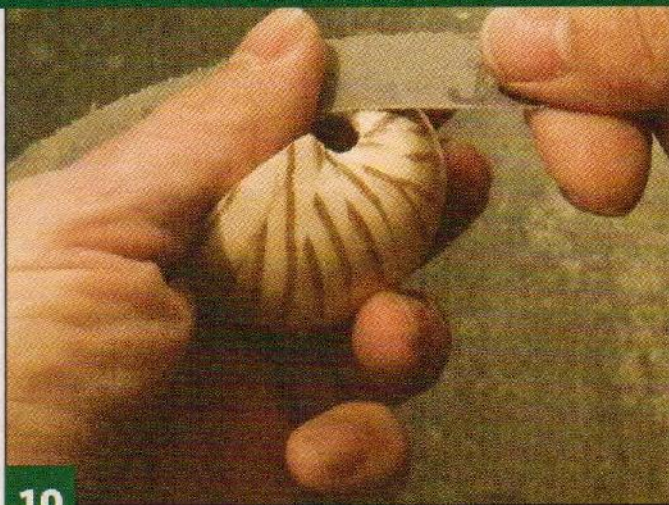
Glue the pairs into groups. Glue the 1-2 segment to the 3-4 segment, and so on. When these sections are dry, flatten the joints and continue pairing up the groups until you have just two groups to glue together. Smooth the joint surfaces, and then smooth the area where segment 16 will attach to segment 17; it will not be possible to flatten this joint after the two groups of segments are joined. Then, glue the two sections together.

SHELL: SHAPING THE PROJECT



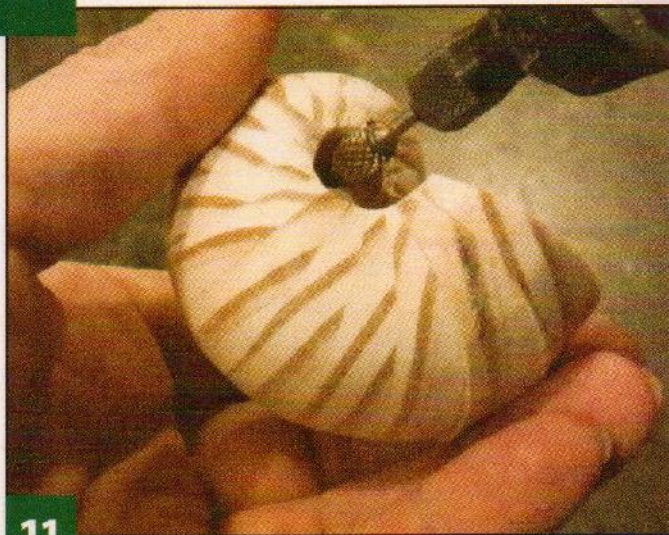
9

Rough-shape the shell. I use a 5" (127mm)-diameter disc sander with a thick backing pad in a drill press to shape the outside of the shell. The thick pad will not change the curved shape, but still removes imperfections. Start with the smallest segments and work your way toward the edge where future segments will be added. Do not sand the last segment; wait until you have attached more segments so you don't accidentally mar the joint surface. Use a rotary-power carving tool with a carving bit to curve the flat surfaces in the shell interior.



10

Refine the shell. Sanding the exterior and making it feel pleasing is the most difficult part of making a shell. Hold strips of sandpaper against the shell with your thumb and pull the strips across the surface of the shell to smooth away imperfections. Use strips of sandpaper pulled under your thumb to smooth the interior as well.



11

Continue assembling the shell. Make sure you are happy with the surface of the smallest segments before proceeding. Glue the remaining segments together in pairs, flattening the surfaces to be joined as you go. Then, add the glued-together 17-18 section to the shell. Use a rotary-power carving tool to refine the edges of the center hole as you add segment pairs.



12

Finish assembling and shaping the shell. Use the pad sander in the drill press to shape the outside of the shell. Repeat Steps 10 and 11 to add and shape the rest of the shell segments. Progress will become slower as the shell becomes larger. Finally, shape the lip of the shell using a mushroom shaping wheel in a rotary-power carver.

Sanding the Shell

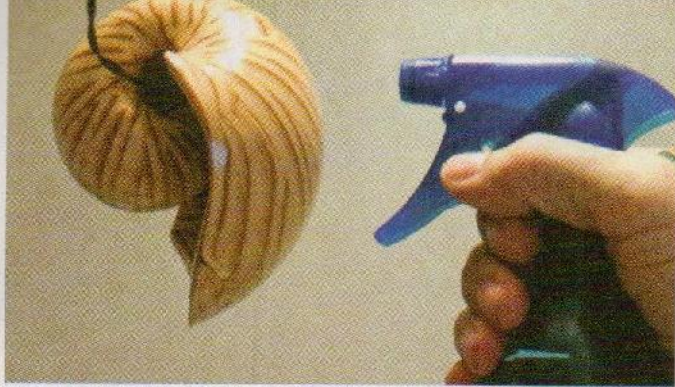
To get the smoothest surface possible, do the final sanding by hand. I use strips of cloth-backed sandpaper in various grits. Hold the strip with one hand while gently pressing the strip against the shell with your thumb and pulling the strip under your thumb. This is more effective and less tiring than the standard back and forth motion; it's like a belt sander with a lot more control. Feel for bumps and dips in the surface with your hands—they will find spots needing attention that your eyes may overlook. Defects will be more noticeable with a high-gloss finish. When the shell feels smooth, wipe the wood with a damp cloth to raise the grain. After the water evaporates, remove any raised fibers by sanding the surface lightly with the finest-grit paper you used before wetting the wood.



A Shell Stand

Make an optional stand for your shell by cutting a circle of wood with three or four prongs extending upward. Shape the ends of the prongs to fit the surface of the shell. I have

found that adding a tiny dot of hot glue to each prong provides enough friction to hold the shell in position. Let the glue cool before resting the shell on it—don't glue the shell to the stand.



Finishing the Shell

To finish the shell, I bend a piece of stiff wire into a hook and attach it to the ceiling. The hook should fit inside the shell and support it from the high spot inside. The shell should tilt forward so the wet finish runs out instead of pooling in a low spot inside. The hook should only touch the shell at one point.

Seal the dry, bare wood with three coats of spray shellac or some other sanding sealer. After the sealer hardens completely, wet-sand the surface with wet-dry sandpaper to remove any ripples, dips, or bumps in the sealer. Remove any sanding dust with compressed air.

The curved shape of the shell makes it difficult to apply any finish straight out of the can. I thin five parts polyurethane with three parts naphtha thinner, which reduces the surface tension of the polyurethane enough that the finish flows over the surface of the wood like a sheet rather than pulling together and forming drops. The wet finish flows to the low point and the excess drips off, leaving behind a glass-like finish after a few applications. Put the mixture in a disposable spray bottle and set the spray bottle to mist; I get a new sprayer for every project because the finish gums up the mechanism over time. Apply a heavy coat and allow the excess to run off into a trash can. As the finish becomes tacky, use a folded corner of a paper towel to barely touch the drip to remove it. Sanding between coats is not necessary. If you spot an area that you missed, do not spray more finish on it if the coat has already become tacky; just make sure it gets covered when you spray it again the next day. Spray the finish in a warm room without any air circulation. Air in motion carries dust that will adhere to the surface of the finish. Leave the finish to dry without being touched or disturbed. If the wood was sealed before applying the finish, the glossy coat should start forming on the first spraying. If you do not seal the wood, the first few coats of thinned polyurethane just soak into the wood. Three or four coats on sealed wood should be enough. Wait until each coat is fully hardened (I usually wait overnight between coats) before spraying on the next coat.



Materials:

- Pine 2x4: 30" (762mm) long
- Wood glue, such as Titebond
- Cloth-backed sandpaper: assorted grits
- Wet-dry sandpaper: 400-grit
- Shellac sanding sealer
- Polyurethane, wipe-on: gloss
- Naphtha thinner
- Disposable sprayer
- Paper towels

Materials & Tools

Tools:

- Blades: #5 skip-tooth blades
- Plate glass or other flat surface
- Drill press
- Disc sander with thick foam pad
- Rotary-power carver with bits: mushroom shaping wheel, assorted carving
- Stiff wire (for hanging the shell while finishing)
- Compressed air

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



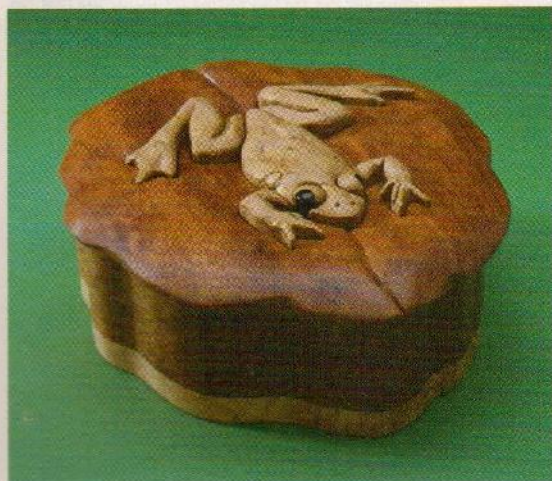
Steve Garrison was born and raised in Russellville, Ark., and has been working with wood off and on since the early 1990s. Steve taught himself how to work with wood, and he likes to stay off the beaten path and dream up his own ideas. In 2010, Steve's work was shown at the annual Flora and Fauna exhibit at the del Mano Gallery in Los Angeles. Steve sells an e-book detailing the creation of alternate shells on his website, www.StevenGarrison.com. See more of his work on his Facebook page, *Spirals by Steven*.

Making a Frog and Lily Pad Box



Combine intarsia and inlay techniques in this whimsical keepsake box

By Kathy Wise



The nature enthusiast in your life will love this lily pad-shaped box, which features a whole colony of frogs. The box includes both intarsia and inlay designs, but is simple enough to complete in a weekend.

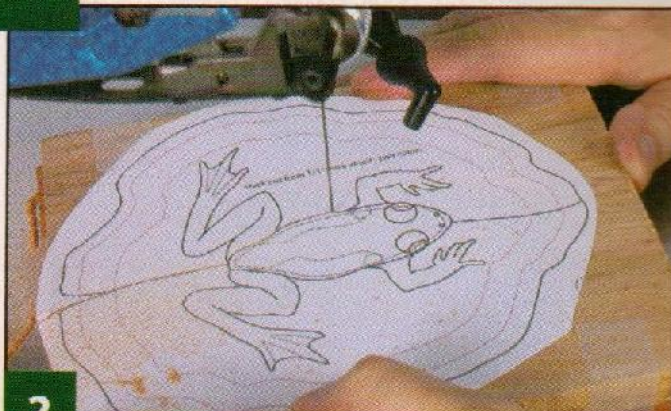
By stack-cutting the pieces, you'll create parts that fit together precisely. Swap the contrasting pieces to create an inlay, which is visible on both the inside and outside of the box bottom. Then, shape the top using standard intarsia techniques.

Start by making several copies of the pattern. Keep one as a master copy. Spray the backs of the patterns with adhesive and attach them to the shiny side of clear contact paper.

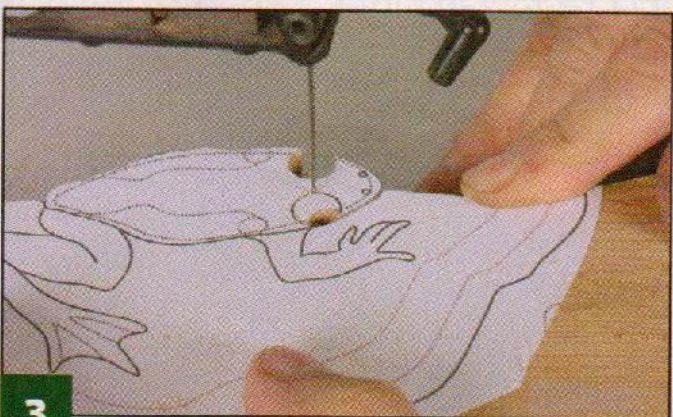
FROG BOX: CUTTING THE PIECES



1 Prepare the blanks. Sand or plane the lid and bottom blanks so they are flat and clean. Use double-sided carpet tape to attach the blanks together; you can wrap cellophane tape around the edges to keep the pieces tightly together. Peel and stick the pattern to the stack. Sand one or more blanks for the sides and stack if necessary; attach the box sides pattern to the blanks.



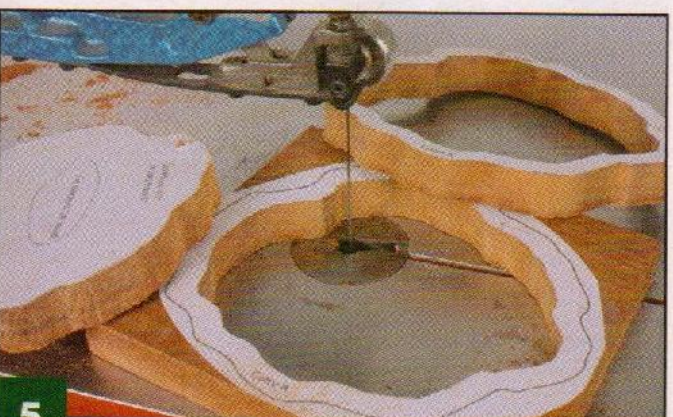
2 Begin cutting the top and bottom. Make sure your saw table is square with the blade. Cut down the middle of the lily pad and along one side of the frog to divide the blank into two sections and open the inside cuts for easier access. Use a #5 reverse-tooth blade and cut slowly. Allow the blade to catch up when you make a turn or the blade will flex and the pieces won't fit tightly together.



3 Cut the remaining pieces. Cut the eyes first while you still have large blanks to hold. Place the cut pieces on a copy of the pattern. Be careful when cutting the toes and feet. Stop, allow the blade to catch up, and then turn the wood in place as you cut the tips of the toes. Trace the black eye sections onto a piece of black wood and cut them.



4 Mix and match the pieces. Take the frogs and lily pads apart and mark the bottom sides with a pencil. Interchange the pieces so the light frog is on a dark pad and the dark frog is on a light pad. Choose which will be the lid. I use the light frog for the lid. Attach a frog pattern to a blank that matches the lid; cut along the inner dotted line to make the lid liner.

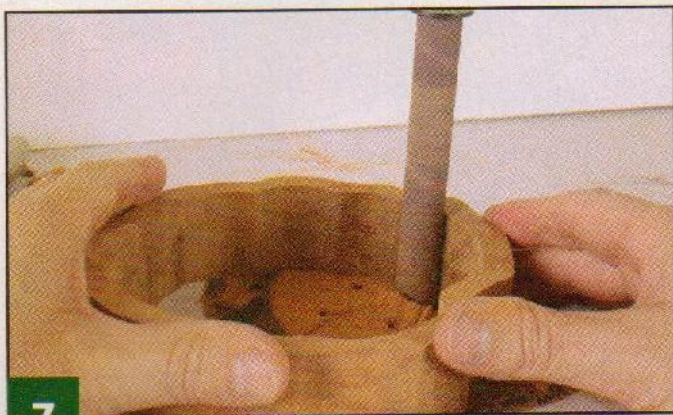


5 Cut the box sides. The depth of the box depends on how many sides you cut. To make a 1½" (38mm)-deep box, I cut two ¾" (19mm)-thick sides. I cut the sides from the same wood as the top lily pad, but you can also cut the sides from wood that matches the bottom lily pad. Make sure the top and bottom surfaces of the sides are smooth; I use a Sand Flee portable drum sander.

FROG BOX: ASSEMBLING THE BOX



6 Glue together the box sides. Apply dots of wood glue to the top of one of the box sides. Add drops of cyanoacrylate (CA) glue between the wood glue and press the box sides together until the CA glue sets. If you use just wood glue, clamp the sections together overnight.



7

Sand the box sides. I use an oscillating spindle sander on the inside and the outside of the box sides. You could also use a drum sander in a rotary-power carver. Buff the inside and outside of the box sides with a sanding mop. Test the fit of the lid liner and sand any spots where the lid liner doesn't fit within the sides.



8

Glue together the bottom. Cut the bottom lily pad into four sections. I use two-part five-minute epoxy to glue the lily pad, eyes, and frog together. Because of the saw kerf, there can be small gaps between the pieces; epoxy fills gaps better than wood glue. Let the epoxy dry, and then sand both surfaces of the bottom smooth. I use a Sand Flee. Fill any remaining gaps with epoxy and sand it smooth.



9

Attach the bottom. Place the sides on the bottom and trace the outside edges of the sides. Cut the bottom and use the process explained in Step 6 to attach the bottom to the sides. You can also use a brad nailer or pin nailer. Sand the outside edges again with an oscillating spindle sander or sanding drum, and then buff the sides with a sanding mop. Fill any gaps with CA glue mixed with sawdust, and sand off the excess. Carefully round the edge of the bottom.

FROG BOX: SHAPING THE INTARSIA



10

Cut the riser for the frog. Attach the frog pattern to a piece of $\frac{1}{4}$ " (6mm)-thick tempered hardboard. Cut inside the lines of the frog body and place the riser inside the lily pad. Mark the thickness of the riser on the inside of the lily pads so you do not sand below the riser.



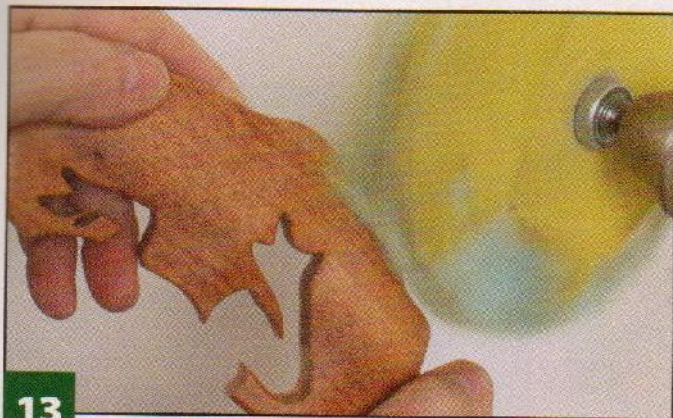
11

Shape the lily pad. Use a pneumatic drum sander. The lily pad should taper from the frog out to the edges. Sand the underside of the edges to give the lily pad a thin, wavy look.



12

Shape the frog. Use a sanding drum or carving bits in a rotary-power carver. Use the dotted lines as a guide to carve the details. Mark the desired thickness of each piece, and do not sand any parts lower than the lily pad. Round the edges of the feet and body. You can add additional details to the frog with a woodburner.



13

Buff the pieces. Use a sanding mop to smooth the frog and lily pad sections. The sanding mop puts a nice sheen on the pieces, which makes it easier to apply a varnish finish.



15

Apply the finish. Apply gel varnish with a brush and wipe off the excess with a clean dry rag. Use compressed air to remove any extra varnish from tight areas and wipe off the excess. Apply two coats and allow it to dry overnight. Apply a clear gloss finish to the black eyes.

FROG BOX: FINISHING THE BOX



14

Assemble the top. Use dots of CA glue and wood glue and the technique explained in Step 6 to assemble the frog, riser, and lily pad. When the CA glue sets, flip the lid upside down, center the liner on the lid, and trace around the lid liner. Lift the lid liner and use dots of CA glue and wood glue to attach the lid liner to the lid.

Materials:

- Medium-tone wood, such as tigerwood, $\frac{1}{2}$ " (13mm)-thick: lid, 8" x 12" (203mm x 305mm)
- Medium-tone wood, such as tigerwood, $\frac{1}{4}$ " (6mm)-thick: lid liner, 6" x 7" (152mm x 330mm)
- Medium-tone wood, such as tigerwood, $\frac{3}{4}$ " to 1" (19mm to 25mm)-thick: sides, 6" x 13" (152mm x 330mm)
- Light wood, such as bird's eye maple, $\frac{1}{2}$ " (13mm)-thick: bottom, 6" x 7" (152mm x 178mm)
- Black wood, such as ebony, $\frac{1}{2}$ " (13mm)-thick: eyes, 1" x 1" (25mm x 25mm)
- Tempered hardboard, $\frac{1}{4}$ " (6mm)-thick: frog riser, 4" x 4" (102mm x 102mm)
- Epoxy, two-part five-minute
- Cyanoacrylate (CA) glue
- Wood glue

Materials & Tools

- Tape: double-sided carpet; cellophane
- Contact paper: clear
- Spray adhesive
- Gel varnish
- Spray finish: clear gloss

Tools:

- Blades: #5 reverse-tooth
- Sanders: pneumatic drum, portable drum, oscillating spindle, sanding mop
- Planer (optional)
- Rotary-power carver and bits: sanding drum, assorted carving
- Woodburner and tips (optional)
- Brush
- Pencil
- Brad nailer or pin nailer (optional)
- Clean dry rag

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



Patterns for the **FROG AND LILY PAD BOX** are in the pattern pullout section.



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

Versatile Floral Fretwork

Use a saw and your imagination to craft an assortment of projects

By Gloria Cosgrove

Cut by Ralf Beuttenmuller

As useful as the scroll saw is for woodworking, it is also a terrific tool for crafting. In addition to wood, the scroll saw can cut paper, thin metal, Corian®, acrylic, and other materials. With a little experimentation, you can make all sorts of things with your saw.

For example, use your saw and these pretty patterns to produce floral greeting cards. Stack heavyweight paper between two thin sheets of wood, wrap the stack tightly with tape, and attach the pattern. For tri-fold cards, place the pattern at the left side of an 8½" by 11" (216mm by 279mm) page. Drill blade-entry holes and use a #3 blade to cut the design. Carefully unwrap the stack and fold the pages in thirds with the cut design on the outside. Glue a contrasting paper rectangle to the right flap if desired, and write your message in the center.

If you prefer a standard bi-fold card, trim the paper to size before stacking, or center the design in the left half of an 8½" by 11" (216mm by 279mm) sheet. Cut the design and glue a contrasting backer to the inside. You can also use cut paper designs to make gift tags (add a solid paper backing) and scrapbook decorations.

For bookmarks, either glue a contrasting backer to the cut paper design or sandwich it in clear plastic contact paper. You could also cut the fretwork from ¼" (2mm) wood or metal. Stack the thin sheets between plywood for easy cutting.

To make trivets, enlarge the pattern on a photocopy machine. Enlarging by 200% creates a pattern that is 4¾" by 13" (121mm by 330mm), which is perfect for a casserole dish. Cut the pattern from ½" (13mm)- to ¾" (19mm)-thick hardwood. Seal the wood with an oil finish to protect it from moisture. No finish will protect the wood from a hot dish, but light scorch marks will add character to the piece. You could also cut trivets from ½" (13mm)-thick pieces of Corian countertop material. Use a standard (not

reverse-tooth) blade and cover one side of the Corian with tape to lubricate the blade.

Finally, you can cut the patterns from wood to make decorations for your home. I suggest enlarging and cutting three different patterns to make a grouping. You can back the cuttings with paper or fabric and frame them, or hang them directly on the wall. Consider backing them with mirrors or thin sheets of metal for a contrast of colors and textures.

I'd love to hear how you use these patterns. Post your photos and description online at www.scrollsawer.com/forum or e-mail them to editors@scrollsawer.com.

Materials & Tools

Materials:

Choose the materials appropriate for your project

- Heavyweight paper: 1 each 8½" x 11" (216 mm x 279mm) per card or per 3 other items
- Contrasting paper: 1 each 8½" x 11" (216 mm x 279mm) per 2 to 3 cards or 3 other items
- Contact paper: clear (optional, for paper bookmarks)
- Wood or metal, ¼" (2mm)-thick: 1 each 8½" x 11" (216mm x 279mm) per 3 bookmarks
- Hardwood or Corian material, ½" to ¾" (13mm to 19mm)-thick: 4¾" x 13" (121mm x 330mm) per trivet
- Wood, ¼" to ½" (6mm to 13mm)-thick: sized to fit pattern, per wall hanging

- Backing material, such as paper, fabric, metal, or mirror (optional): sized to fit pattern, per wall hanging
- Plywood, ¼" (3mm)-thick: 2 each 8½" x 11" (216mm x 279mm) for stack-cutting paper or thin metal
- Tape
- Sandpaper
- Oil finish
- Frames (optional, for wall hangings)

Tools:

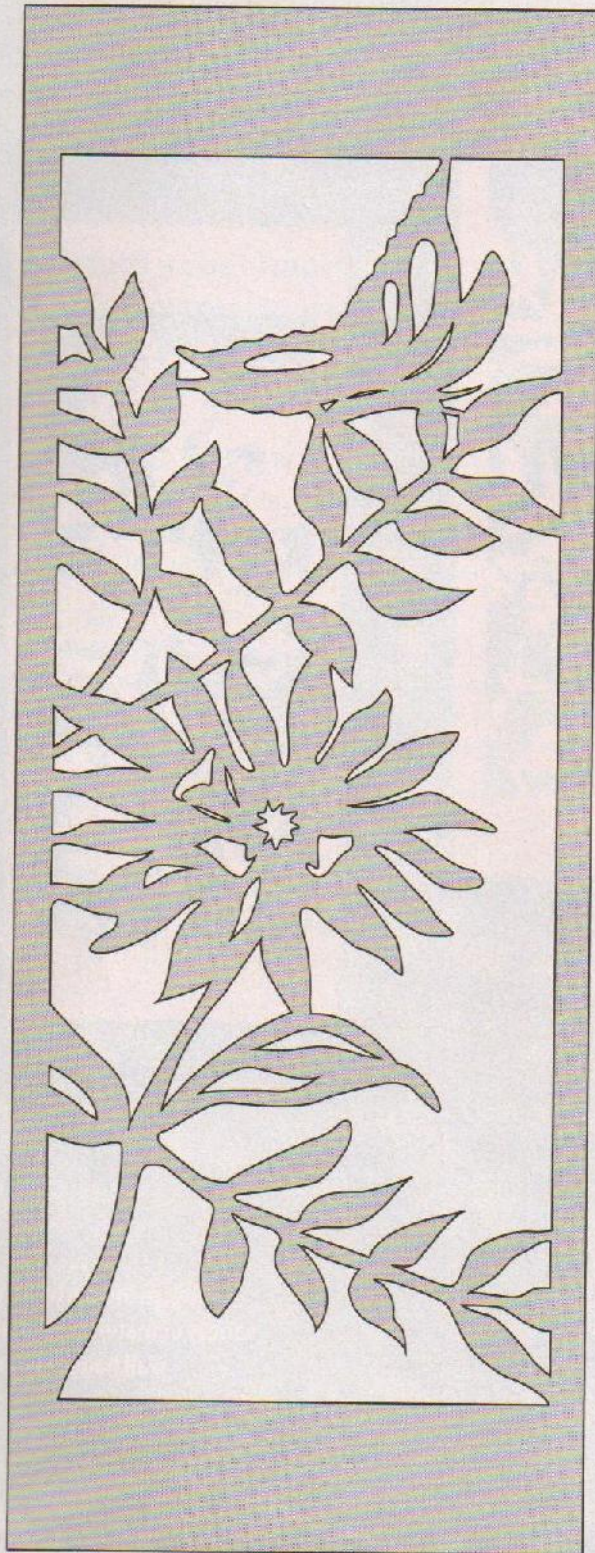
- Blades: #3 skip-tooth for stack-cutting paper; #1 skip-tooth for stack-cutting metal; #5 for cutting hardwood or Corian
- Drill and assorted bits

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



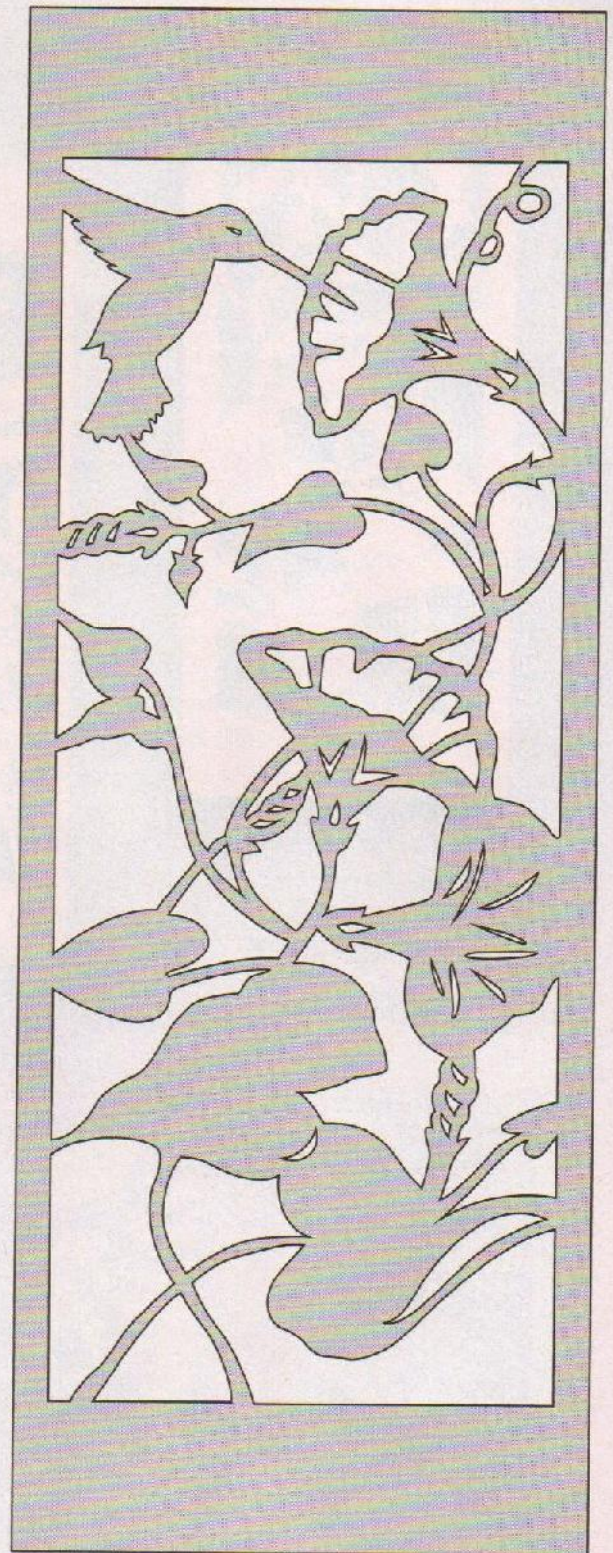
Resize the patterns and use a variety of materials to make cards, wall hangings, and more.

Floral fretwork patterns



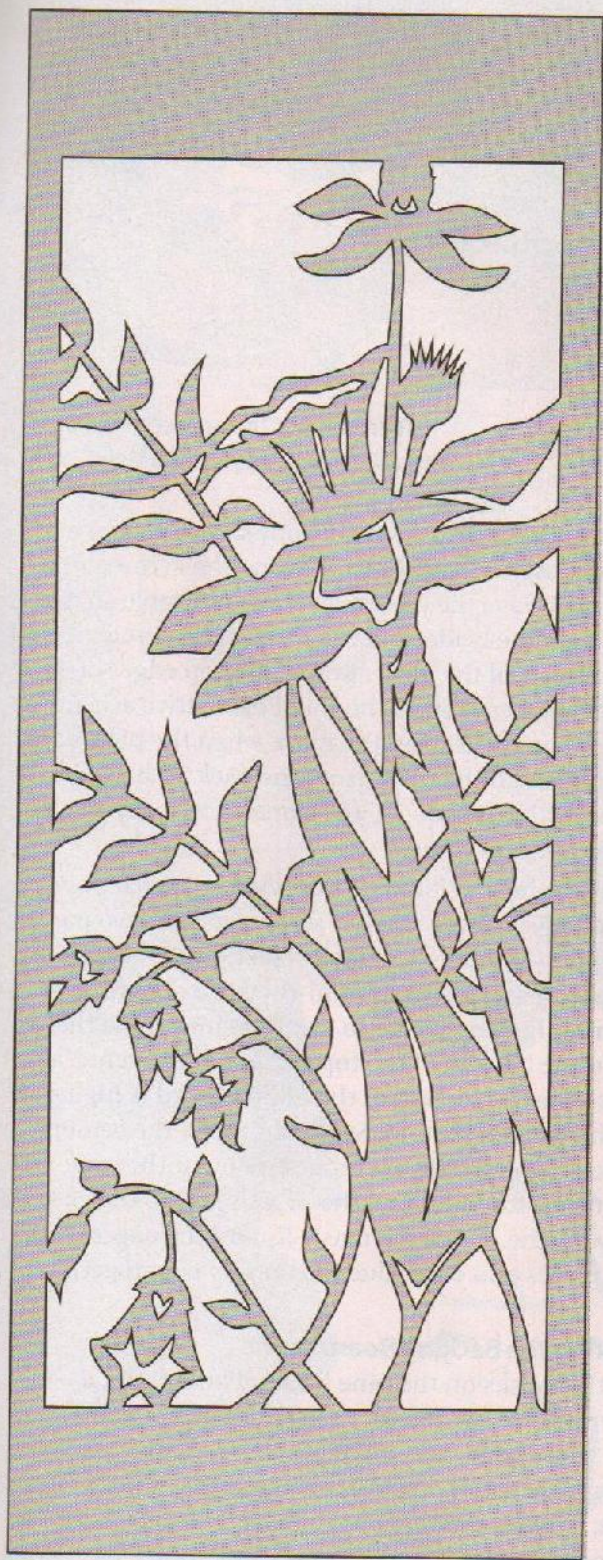
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Additional pattern for the
FLORAL FRETWORK is in the
pattern pullout section.



Art has always been a part of Gloria Cosgrove's life. Gloria started sketching as a child. She quilted and worked with pastels, watercolors, and oil paints before discovering scherenschnitte (paper cutting). With her daughter, Alison, she maintains a mail-order business selling original artwork and papercutting patterns. For more of her work, visit www.papercuttingsbyalison.com.

Floral fretwork patterns



Cut pretty and appealing bookmarks from any thin material, such as paper, wood, or metal.



Enhance your dining table by enlarging a pattern and cutting it from thicker wood to make a trivet. The iris design in this photo is featured as a bonus pattern on www.scrollsawer.com.

ONLINE BONUS

Download a bonus iris fretwork pattern from our website.

www.scrollsawer.com

Venetian Carnival Masks



Combine intarsia, fretwork, and relief techniques to create this colorful design

By Theresa Ekdorn

While on a school trip, my daughter and I took a guided tour of Venice, Italy. As we walked through the streets, a display of masks in a shop window caught my eye and I snapped a picture. This wall hanging is my version of two of the masks.

Making the Bottom Mask

Apply the pattern to the wood using a glue stick. Drill blade-entry holes and, starting with the interior, cut each section. Because you will be drastically sanding the edges, including some of the cut areas, save the waste sections and tape them back into the holes using blue painter's tape on the back of the mask.

Remove the pattern from the front of the mask. Use a rotary-power carver and small sanding drum to round the edges of each eye hole and the outside edge of the mask. Carefully sand down the right side of the mask using your choice of sander. Round and taper it to help create the illusion of a rounded mask. When you are done sanding, remove all waste wood and tape from the mask.

Making the Top Mask

Apply clear packing tape to the blanks and repositionable adhesive to the back of the pattern. On the original mask, the border along the perimeter and between the two halves was made from a decorative braided cord. I use cherry to represent the braided cord. Attach the pattern to the braid blank, cut the pieces, and remove the pattern. Then, reapply adhesive, and attach the same pattern to the next blank. Where two pieces join, cut carefully along the edge of the pattern to get a tight fit between the pieces.

Drill blade-entry holes with a small bit along the lines of the decorative accents on the right side of

the mask. Tilt the right side of your saw table down 5° and cut each segment by following the arrows on the pattern. Save the pieces, level the saw table so it is square with the blade, and cut the eye holes and around the perimeter of the piece. Round the top edges of all of the cut pieces. Round the small decorative accent pieces so the edges meet the mask when the pieces are pushed through the mask from the back. When you are satisfied with the shaping and dimensional effect, glue the accent pieces in place.

The center section of the braided cord that divides the two halves of the mask is separated into two pieces by the mouth line. Trace the top section of the center piece onto a scrap of 1/8" (3mm)-thick hardboard. Cut 1/16" (2mm) inside the line to create a shim. Glue the shim to the bottom of the top section of the center cord piece so the top section of the braided cord is higher than the bottom section. Sand and shape the center cord so it tapers from the highest point at the nose down to the forehead and the mouth, where the cord is flush with the rest of the mask. Round the edges of all of the pieces and edge-glue the mask pieces together.

Preparing the Backing Board

Place the masks on the pine backing board. Put a washer next to the masks, insert the tip of a pencil inside the washer, and roll it along the masks, tracing a line approximately 1/4" (6mm) around the outside of the masks. Tilt the right side of the saw table down 20° and cut along the line in a clockwise direction. This creates a beveled edge on the backing board. Sand the backing board and stain, dye, or paint it black; let it dry. Apply your choice of finish to both masks and the backing board. When the finish is completely dry, glue and clamp the masks to the backing board. When dry, add a sawtooth hanger to the back.

Theresa based this project on a photo of masks she took during a trip to Venice, Italy.



Materials & Tools

Materials:

- Cottonwood, 1" (25mm)-thick: bottom mask, 7½" x 9" (191mm x 229mm)
- Leopardwood, ¾" (19mm)-thick: left side of top mask, 5½" x 9" (140mm x 229mm)
- Purpleheart, ¾" (19mm)-thick: right side of top mask, 3" x 7½" (76mm x 191mm)
- Cherry, ¾" (19mm)-thick: braided cord, 6" x 18" (152mm x 457mm)
- Pine, ½" (13mm)-thick: backing, 12" x 15" (305mm x 381mm)
- Hardboard, ⅛" (3mm)-thick: shim, scrap
- Stain, dye, or paint: backing board, black
- Washer: ⅜" (10mm)-diameter
- Sandpaper
- Adhesives: glue stick; wood glue; repositionable adhesive
- Tape: clear packing; blue painter's

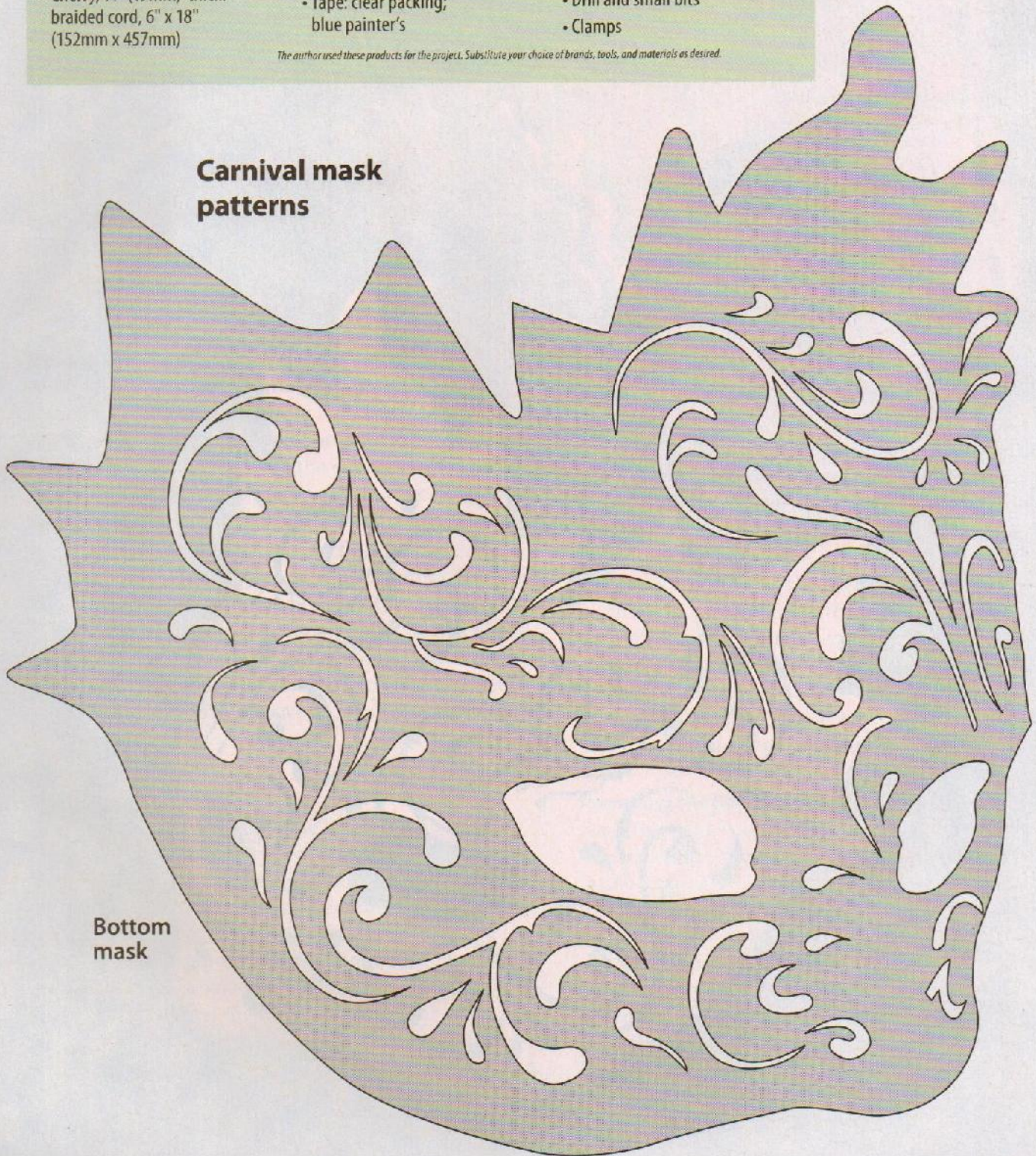
- Finish of choice
- Sawtooth hanger

Tools:

- Blades, such as Flying Dutchman Polar: #5 and #3
- Drill and small bits
- Rotary-power carver and small sanding drum
- Drill and small bits
- Clamps

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

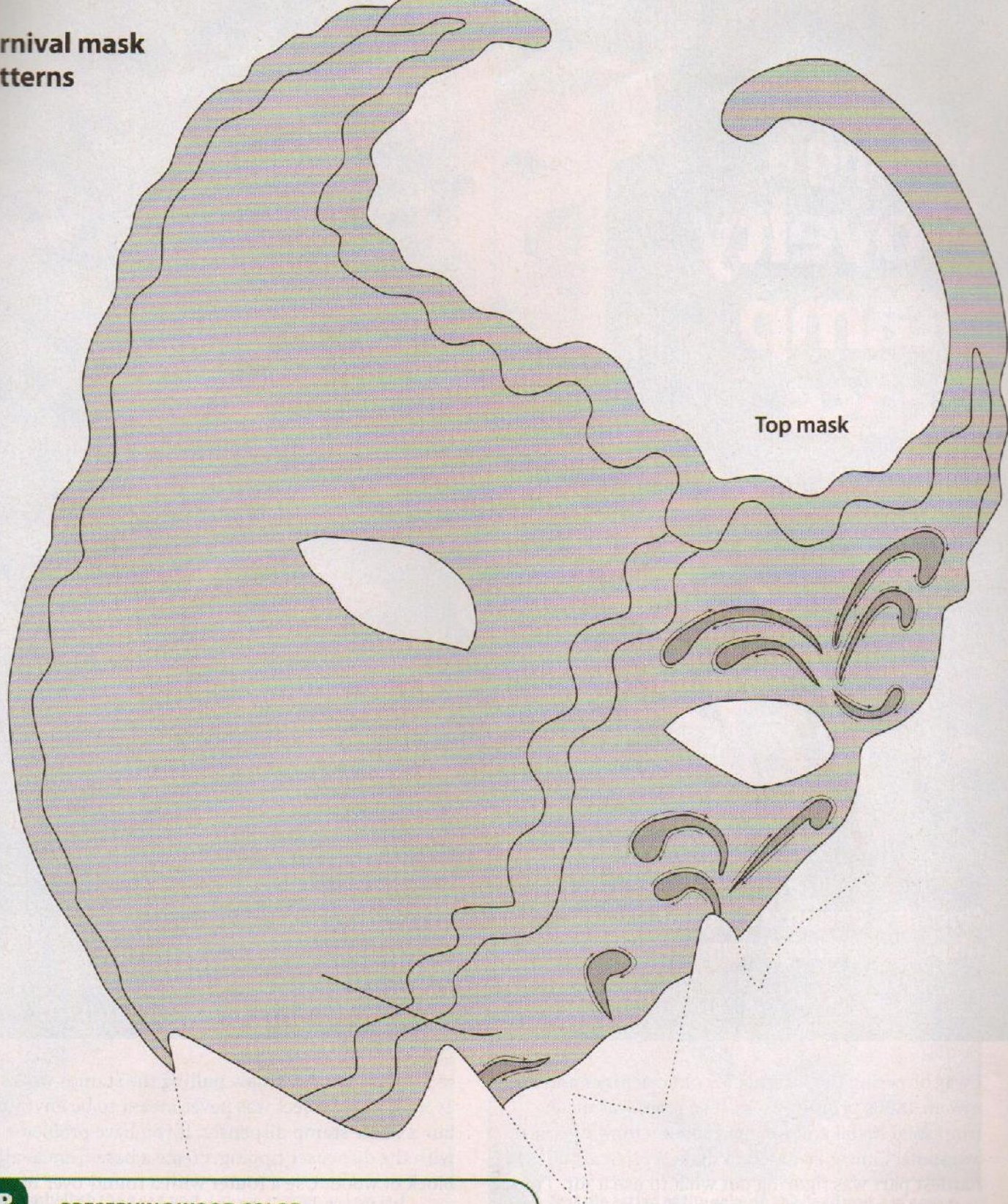
Carnival mask patterns



Bottom mask

Carnival mask patterns

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TIP

PRESERVING WOOD COLOR

White wood tends to turn yellow when coated with an oil-based finish; water-based finishes are clear. Water-based finishes raise the grain in the wood, so once the first coat is dry, lightly sand the wood with fine-grit sandpaper before applying the second coat of finish. When the second coat is dry, lightly rub the wood with a piece of brown paper bag for a perfectly smooth finish.



Theresa Ekdome lives in Roscommon, Mich. Contact her at ekdomtd@voyager.net or www.WoodNGoods.artfire.com

Making a Novelty Stamp Press



Nostalgic design stores and dispenses postage stamps

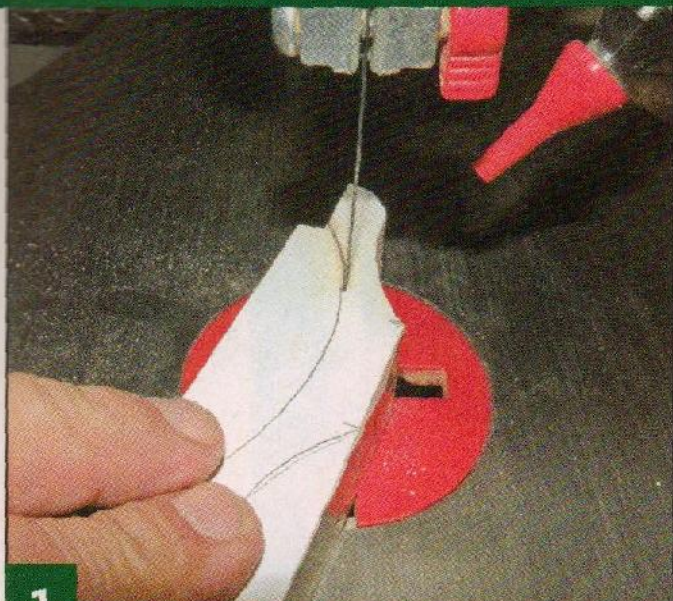
By Richard Roble

I was browsing the Internet for old machines and saw an 1800s printing press. The press was made from solid metal and weighed about a ton—it looked awesome! I knew I wanted to make a replica, but the hardest part was figuring out what to use it for. They still print postage stamps, so the printing press evolved into a stamp dispenser.

When I first made the press, I used little rubber bands on the press rollers so that turning the wheel caused the machine to feed the stamps. That idea changed when the arid climate of New Mexico dried out the bands and they rotted away. I decided not to

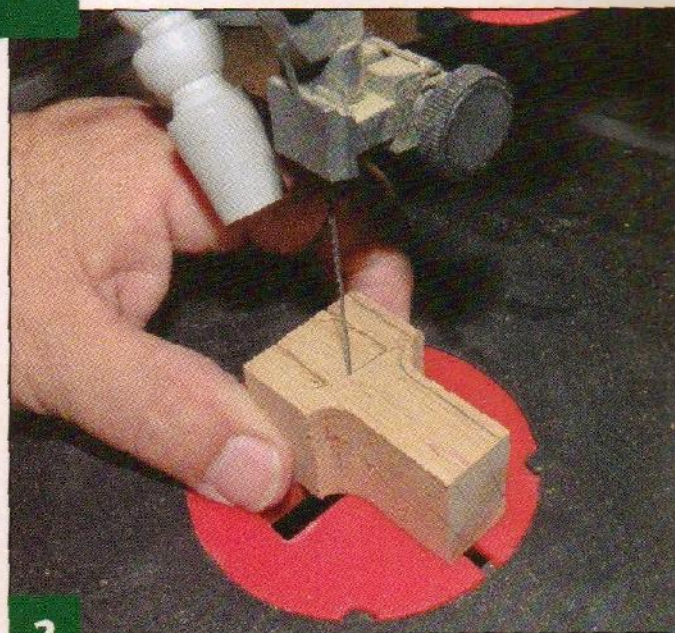
replace the bands; simply pulling the stamps works just as well. This project was never meant to be anything but a single stamp dispenser. If you have problems with the dispenser tipping, create a base from a larger block of wood. Use a router with a round-over bit, or your choice of decorative bit, to dress up the edges of the base, and then glue the feet of the press to the base.

I get alder from a cabinetmaker, and because it's a tough wood, I use it for almost everything. I use birch dowels from a hobby shop and I dress up the advancing wheel with cocobolo. The wood selection is a personal preference.



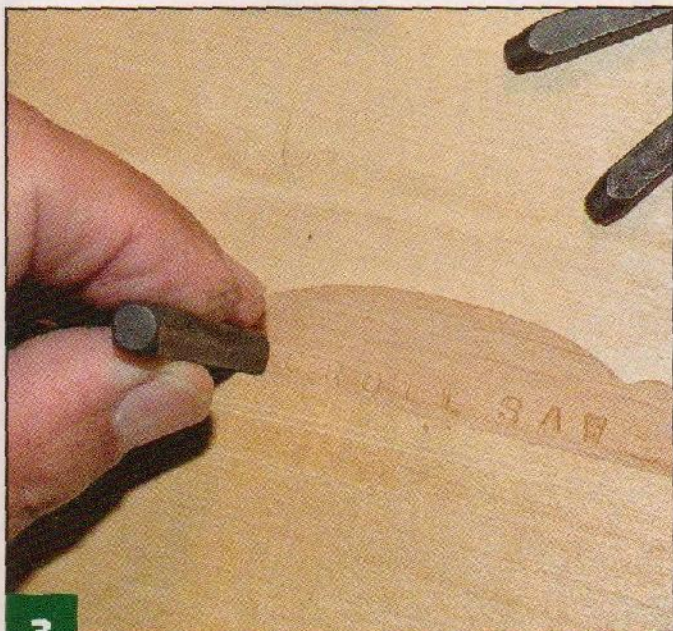
1

Cut the feet, pedestal, head unit, advance wheel, bed, and rails. Sand the blanks with progressively finer grits of sandpaper up to 320 grit. Transfer the patterns to the blanks, aligning any straight lines with the straight edges of the blanks. Keep the scrap you cut off to make custom clamping blocks. Drill the holes in the wheel and the head unit.



2

Cut the yoke. In a real printing press, the yoke stamps the ink onto the paper. I clamp a fence to my saw table when I cut the flat sections. When I reach the curved part, I cut straight to the edge of the blank. After cutting the straight area on both sides, remove the fence and go back to cut the curved areas. Tape the two cutouts back in place with blue painter's tape. Rotate the blank and cut the rounded top. Then, drill the hole for the pin. Finally, remove the tape, cut the middle area, and sand the yoke.



3

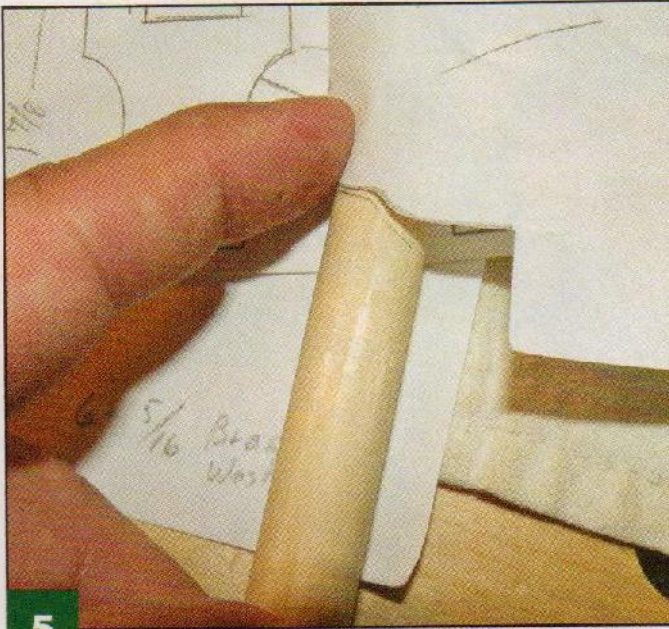
Embellish the head unit. I carved an acorn and oak leaf decoration and attached it to one side of the head unit. On the other side, I used alphabet punches (inexpensive letter punches usually used on metal) to emboss "Scroll Saw" into the wood. Clamp a block of scrap over the head unit and use the scrap to keep the letters in a straight line. Put the punch in position and tap it with a hammer. Make sure you tap all of the punches with the same force to keep the depth of the letters consistent.



4

Test the action of the yoke on the head unit. Cut a piece of $\frac{1}{8}$ " (3mm)-diameter dowel to length. Thread it through one side of the yoke, into the head unit, and out through the other side of the yoke. You may need to sand the dowel a little to fit it into the holes. Make sure the yoke swings freely. Then, remove the yoke and dowel.

STAMP PRESS: ASSEMBLING THE PRESS



5

Cut the tops of the pillars. Use the head unit or the pattern for the head unit to trace the profile of the bottom of the head unit onto the tops of the dowels. Cut the profiles and test the fit against the head unit. Continue cutting and testing the fit until you get a good fit. The pillar blanks are oversized to give you the space to experiment and get the best possible fit. Cut the pillars to their final length of $4\frac{3}{16}$ " (107mm).



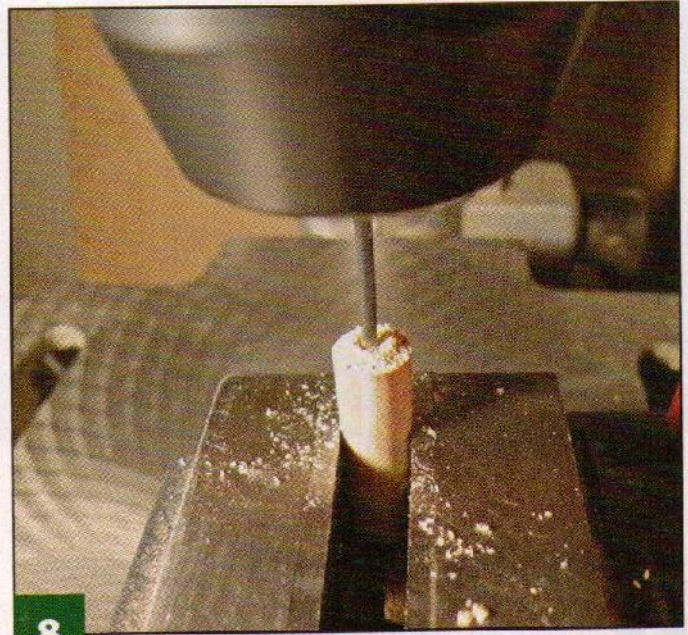
6

Glue the pillars to the head assembly. Dry-assemble the head unit, pillars, and pedestal. Use the scrap from the head unit to square the top of the piece for easier clamping. Apply glue to the top of the pillars, press them into place, and clamp the three pieces together. Note: Do not glue the pillars to the pedestal yet. Remove any glue squeeze-out. When the glue is dry, remove the pedestal and install the yoke. Test the action of the yoke. Then, glue and clamp the pedestal to the pillars.



7

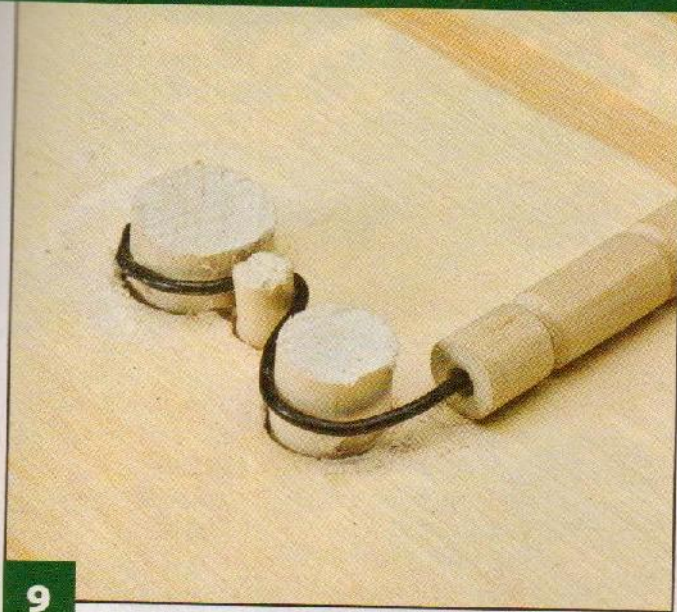
Create and attach the bed assembly. Drill $\frac{1}{8}$ " (3mm)-diameter holes where indicated on the sides of the rails. Align the end of the bed with the advance wheel end of the rails, and glue and clamp the rails to the bed. Test-fit the bed between the yoke and the pedestal. Cut a wedge of wood to fit between the yoke and bed to hold the bed in place while the glue dries. Remove the bed, put a spot of glue on the pedestal, and replace the bed. Use the wedge to hold the bed in place while the glue dries. Then, glue the feet to the bottom of the pedestal.



8

Drill the dowels. Cut a $\frac{3}{8}$ " (10mm)-diameter dowel to size for the rollers and stamp holder, and use an awl to make a dimple in the centers of both ends of each dowel. I clamp each piece of dowel in a vise, but you can also drill a $\frac{3}{8}$ " (10mm)-diameter hole in scrap wood. Push the dowel into the hole, and the scrap will hold the dowel in place while you drill the ends. Drill $\frac{1}{16}$ " (2mm)-diameter by $\frac{3}{4}$ " (19mm)-deep holes in both ends of the three roller dowels; the holes should connect in the middle. Then, drill a $\frac{1}{8}$ " (3mm)-diameter by $\frac{3}{4}$ " (19mm)-long hole in from both ends of the stamp holder dowel. Carve or turn a design in the stamp holder dowel if desired.

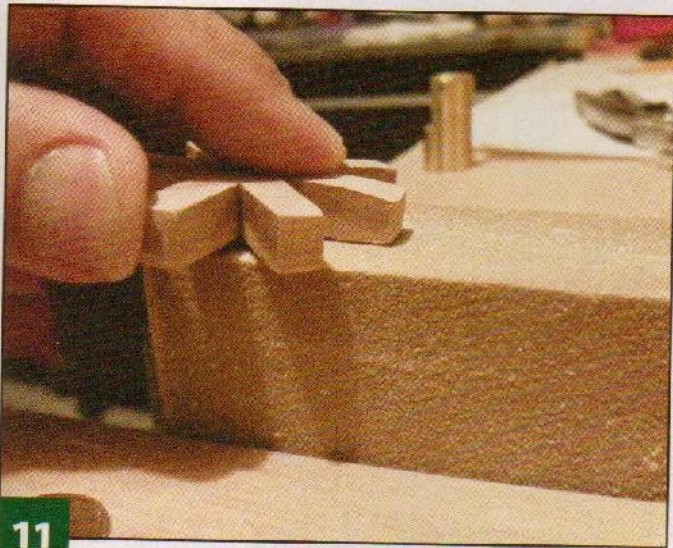
STAMP PRESS: ADDING THE DETAILS



9 **Make the stamp holder.** Make a wire-bending jig by drilling the holes where indicated on the pattern and gluing the dowels in place. Thread the stamp holder dowel onto an 8" (203mm)-long piece of baling wire or Romex. Center the dowel at the bottom of the jig, and then bend the wire through the jig using the pattern as a guide. Trim off the excess with wire cutters.



10 **Attach the stamp holder to the press.** Use square-tip pliers to make 90° bends in the ends of the wire where the holder attaches to the bed. Load the stamp roll, and then insert the ends of the wire into the holes in the rails, adjusting the wire with pliers as necessary.



11 **Shape the wheel.** Clamp a sanding block in a vise and rub the wheel back and forth to taper the ends of the spokes. Then, sharpen the ends of the spokes to a soft point.

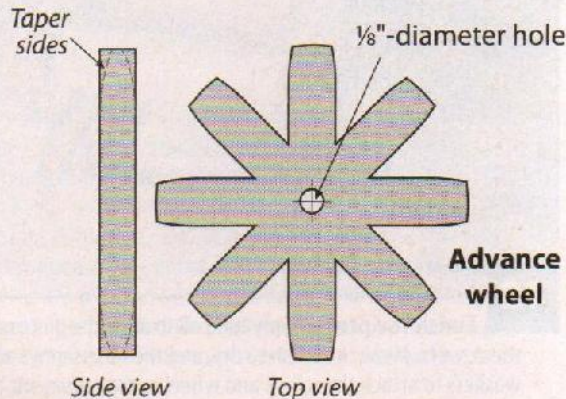
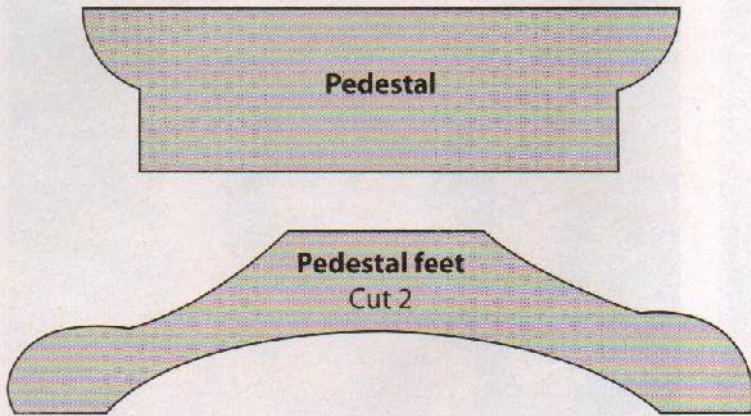
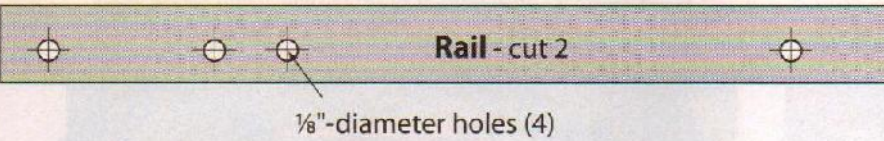
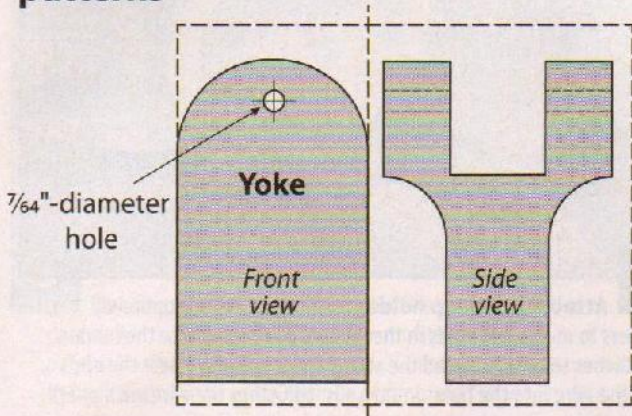
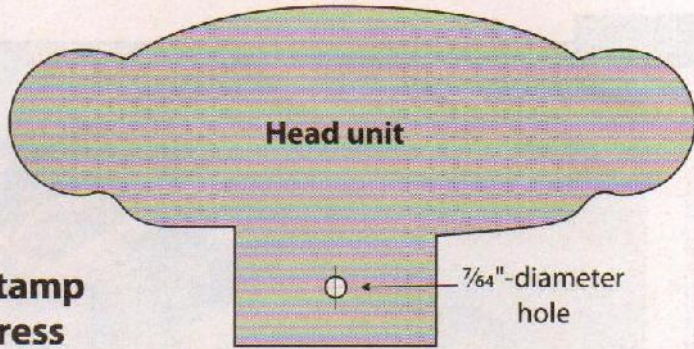
TIP EMBELLISHING THE DOWELS

You can carve a thin groove around the pillar dowels or cut the groove with a scroll saw. I chuck the dowels in my lathe and quickly turn them using a parting tool.



12 **Finish the press.** Apply tung oil to all of the pieces except the dowels. Allow the finish to dry, and then use screws and washers to attach the rollers and wheel to the rails.

**Stamp
press
patterns**



Materials & Tools

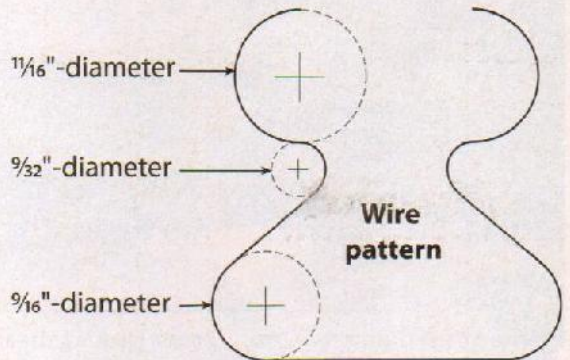
Materials:

- Alder, 1" (25mm)-thick: pedestal, 1" x 3 1/4" (25mm x 83mm); yoke, 1 3/8" x 2" (35mm x 51mm)
- Alder, 1/2" (13mm)-thick: head unit, 2" x 3 3/4" (51mm x 95mm); feet, 2" x 4" (51mm x 102mm)
- Alder, 1/4" (6mm)-thick: rails, 1" x 4 3/8" (25mm x 111mm)
- Alder, 1/8" (3mm)-thick: bed, 1 3/4" x 4 1/8" (44mm x 105mm) (no pattern)
- Cocobolo, 1/4" (6mm)-thick: advance wheel, 1 5/8" x 1 5/8" (41mm x 41mm)
- Dowel, 1/8" (3mm)-diameter: yoke, 1 1/16" long
- Dowel, 1/2" (13mm)-diameter: pillars, 2 each 2 3/16" (56mm) long
- Dowel, 3/8" (10mm)-diameter: rollers, 3 each 3/8" (10mm) long; stamp holder, 1 each 1 1/4" (32mm) long
- Dowel scraps: wire-bending jig, 3/16" (14mm) and 3/32" (7mm)
- Scrap wood: optional carved decoration; dowel-drilling and wire-bending jigs
- Sandpaper: 220- and 320-grits
- Wood screws, #6: 6 each 3/4" (19mm)-long
- Brass washers, #8: 6 each
- Wire, such as black baling, silver Romex, or copper Romex: 8" (203mm)
- Wood glue, such as Titebond
- Tung oil finish
- Painter's tape

Tools:

- Blades: #5 reverse-tooth
- Drill press and assorted bits
- Pliers, square-tip
- Awl
- Lathe, alphabet punches, vise (optional)

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



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Richard Roble lives in Rio Rancho, N.M., and has been a woodworker for about eight years. Previously, he worked for the Department of Energy, and before that, he was a news photographer for 20 years. While he was a photographer, Richard met all of the presidents between 1970 and 1987, as well as Mickey Mantle and Sugar Ray Leonard. Richard's goal is to build a replica of Heinrich Himmler's chair.

Retro

Salt and Pepper Shakers



Learn inlay and practice basic techniques with this quirky condiment set

By Gary MacKay

These fun salt and pepper shakers remind me of the dancing snacks that were featured in the old concession-stand promotions. The short clips used to run before the film started at drive-in movie theaters.

The whimsical shakers are a fun scroll saw project for beginners. You'll learn how to make a simple inlay and practice techniques like laminating and stack-cutting blanks. Use contrasting woods, such as aspen and walnut, that will show off the S, P, and shaker feet.

SHAKERS: CREATING THE INLAYS

Step 1: Prepare the front/back stock. Place a sheet of newspaper on a flat surface. Use wood glue to edge-glue the aspen front/back stock to the walnut feet stock. Clamp the stock together with two quick-grip clamps and let the glue dry. Then, use a ruler and pencil to divide the front/back stock into four 3" (76mm)-long pieces. Cut the stock as divided to produce four identical blanks.

Step 2: Test the inlay-cutting angle. Use double-sided tape to stack two ¼" (6mm)-thick pieces of scrap wood and apply the test pattern to the top of the stack using temporary-bond spray adhesive. Wrap clear packing tape around the edges of the stack. Tilt the right side of the scroll saw table down 3°. Using a #5 blade, cut along the dashed line until you reach the circle. Cut in a counter-clockwise direction along the perimeter of the circle. After cutting, the bottom circle should drop out. Separate the stack and clamp the saw blade kerf on the bottom piece closed. Test-fit the top circle into the hole in the bottom piece. If the circle fits too tightly (sits above the surface), reset the table to 2½° and re-test. If the circle fits too loosely (sits below the surface), reset the table to 3½° and re-test. When you are satisfied with the fit, proceed to the next step. (My circle fit best at 3°.)

Step 3: Inlay the center of the P. Use double-sided tape to stack the aspen P center blank on top of the walnut P blank. Adhere the P pattern to the aspen and wrap the stack with clear packing tape. With the scroll saw table tilted at the tested angle, use a #5 blade to cut along the dashed line on the P pattern. Cut in a counter-clockwise direction around the center half-circle of the P. Save the aspen cut out piece. Separate the stack and use a pin to place wood glue into the walnut saw kerf and the center of the P. Place the aspen cut out piece into the center of the walnut P stock. Use a quick-grip clamp to clamp the saw kerf closed. Wipe off any excess glue and leave the piece clamped for one hour.

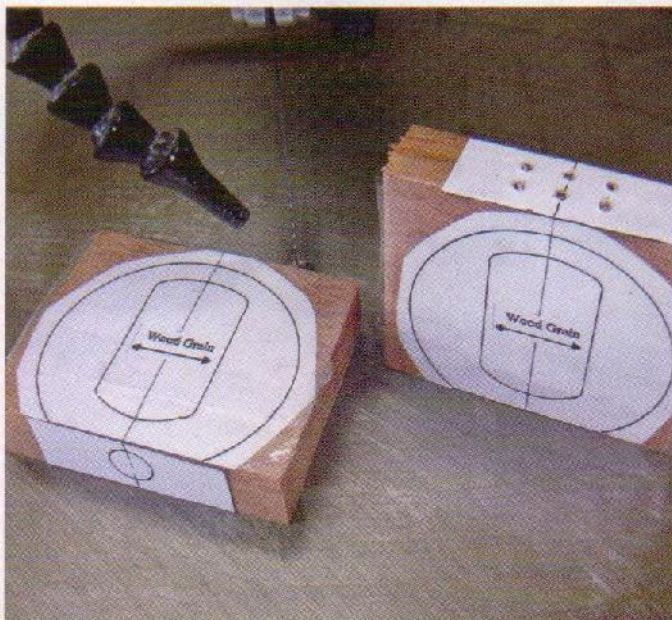


▲ Step 4: Inlay the S and P. Use spray adhesive to adhere front/back patterns to two front/back blanks, aligning the pattern glue line with the glue line between the aspen and walnut. Adhere the square S and P patterns to the square

walnut inlay stock, carefully aligning the P pattern with the inlay completed in Step 3. Use double-sided tape to attach the walnut S and P blanks to the squares on the front of the patterns. Cover the stacked blanks with clear packing tape. Use a ¼" (2mm)-diameter bit to drill blade-entry holes as indicated. With your table still tilted, cut the S and P on the pattern lines in a counter-clockwise direction. Return the scroll saw table to 0° and check that the table is square to the blade. Leave the patterns attached, but remove the S and P cut outs. Cut along the perimeter of the fronts, remove the patterns, separate the stacks, and glue the walnut S and P pieces into the aspen fronts.

SHAKERS: CUTTING THE PROJECT

Step 5: Cut the shaker backs. Adhere patterns to the two back blanks with the pattern glue line aligned with the aspen/walnut glue joint. Cut the backs on the pattern lines, and then remove the patterns.



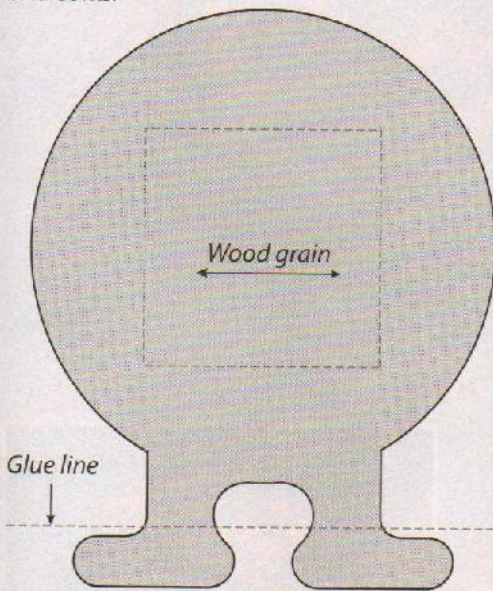
▲ Step 6: Drill the pour holes. Cut and adhere the body, fill hole, and pour holes patterns to the mahogany body blanks, using the marks to align the patterns. Cover the patterns with clear tape. Clamp the body pieces in a vise and use a ⅜" (2.5mm)-diameter drill bit to drill the six salt and four pepper holes to a depth of at least ¾" (19mm).

Step 7: Cut the body pieces. Clamp a body piece in a vise with the fill hole pattern facing up. Mark the center of the fill hole with a nail, and then use a ⅞" (11mm)-diameter bit to drill a hole at least ⅜" (10mm) into the blank. Remove the blank from the vise. Drill a blade-entry hole inside the center rectangle. Use a #9 blade to cut the center rectangle. Cut the outside profile of the body. Repeat for the second shaker. Remove the patterns.

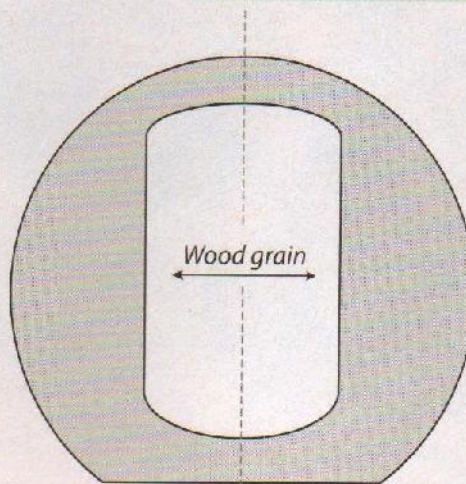
SHAKERS: FINISHING THE PROJECT

Step 8: Assemble the shakers. Sand the bottom and flat surfaces of the body pieces and the inside surfaces of the front and back pieces. Glue and clamp the S piece and a back to the body with six holes. Glue and clamp the P piece and a back to the body with four holes. Let the glue dry. I glue the front and back to the body against a flat 90° surface (like a metal bookend) so all four feet are flat on the surface.

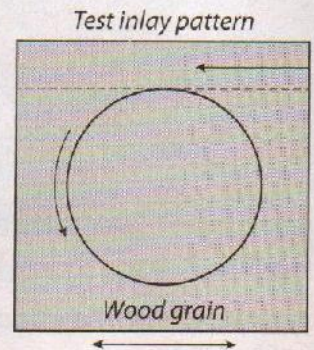
Step 9: Finish the shakers. Use a belt sander to round the shakers, and then hand-sand the other surfaces. Re-drill the pour holes to clean them out. Apply a food-safe clear finish. When the finish has thoroughly cured, add salt, pepper, and corks.



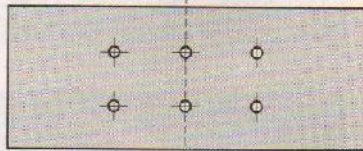
Shaker front/back



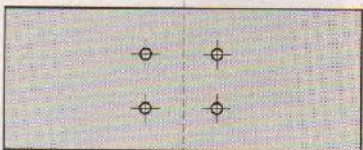
Shaker body



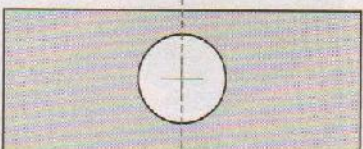
Salt and pepper shaker patterns



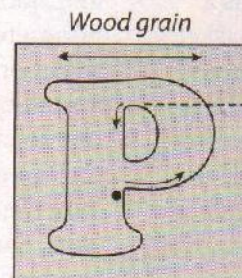
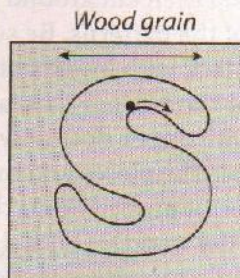
Salt pour holes - $\frac{3}{32}$ "-diameter holes



Pepper pour holes - $\frac{3}{32}$ "-diameter holes



Fill hole



Materials:

- Aspen, $\frac{1}{4}$ " (6mm)-thick: shaker front/back, 3" x 12" (76mm x 305mm); P center, $1\frac{1}{4}$ " x $1\frac{1}{4}$ " (32mm x 32mm)
- Walnut, $\frac{1}{4}$ " (6mm)-thick: shaker feet, $\frac{3}{4}$ " x 12" (19mm x 305mm); S and P, 2 each $1\frac{1}{4}$ " x $1\frac{1}{4}$ " (32mm x 32mm)
- Mahogany, $\frac{3}{4}$ " (19mm)-thick: shaker body, 2 each $2\frac{1}{2}$ " x $2\frac{3}{4}$ " (64mm x 70mm)
- Scrap wood, $\frac{1}{4}$ " (6mm)-thick: test inlay, 2 each
- Spray adhesive: temporary-bond
- Tape: double-sided; clear packing
- Newspaper
- Wood glue
- Sandpaper: assorted grits

Materials & Tools

- Cork stoppers: 2 each $\frac{1}{2}$ " x $\frac{3}{4}$ " (13mm x 19mm) (sold at most craft stores)
- Food-safe clear finish, such as shellac

Tools:

- Scroll saw blades: #5 and #9
- Drill and bits: $\frac{1}{16}$ " (2mm)-, $\frac{3}{32}$ " (2.5mm)-, $\frac{7}{16}$ " (11mm)-diameter
- Belt sander
- Quick-grip clamps: 2 each
- Pin (for glue placement)
- Pencil
- Ruler

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



Gary MacKay of Myrtle Beach, S.C., is a frequent contributor to Scroll Saw Woodworking & Crafts magazine. He is the author of Box-Making Projects for the Scroll Saw, available from Fox Chapel Publishing, www.FoxChapelPublishing.com.

Multi-Use Fretwork Basket



Fancy but functional, this basket is also surprisingly strong

*By Rick and Karen Longabaugh
Cut by Ben Fink*

Add Victorian flair to your dinner table, desk, or dresser with this 7"-square basket. Designed as a napkin holder, the shallow basket works equally well as a catch-all in your bedroom or office. The tab-and-slot construction makes for easy but strong joints, and the botanical motif matches any décor.

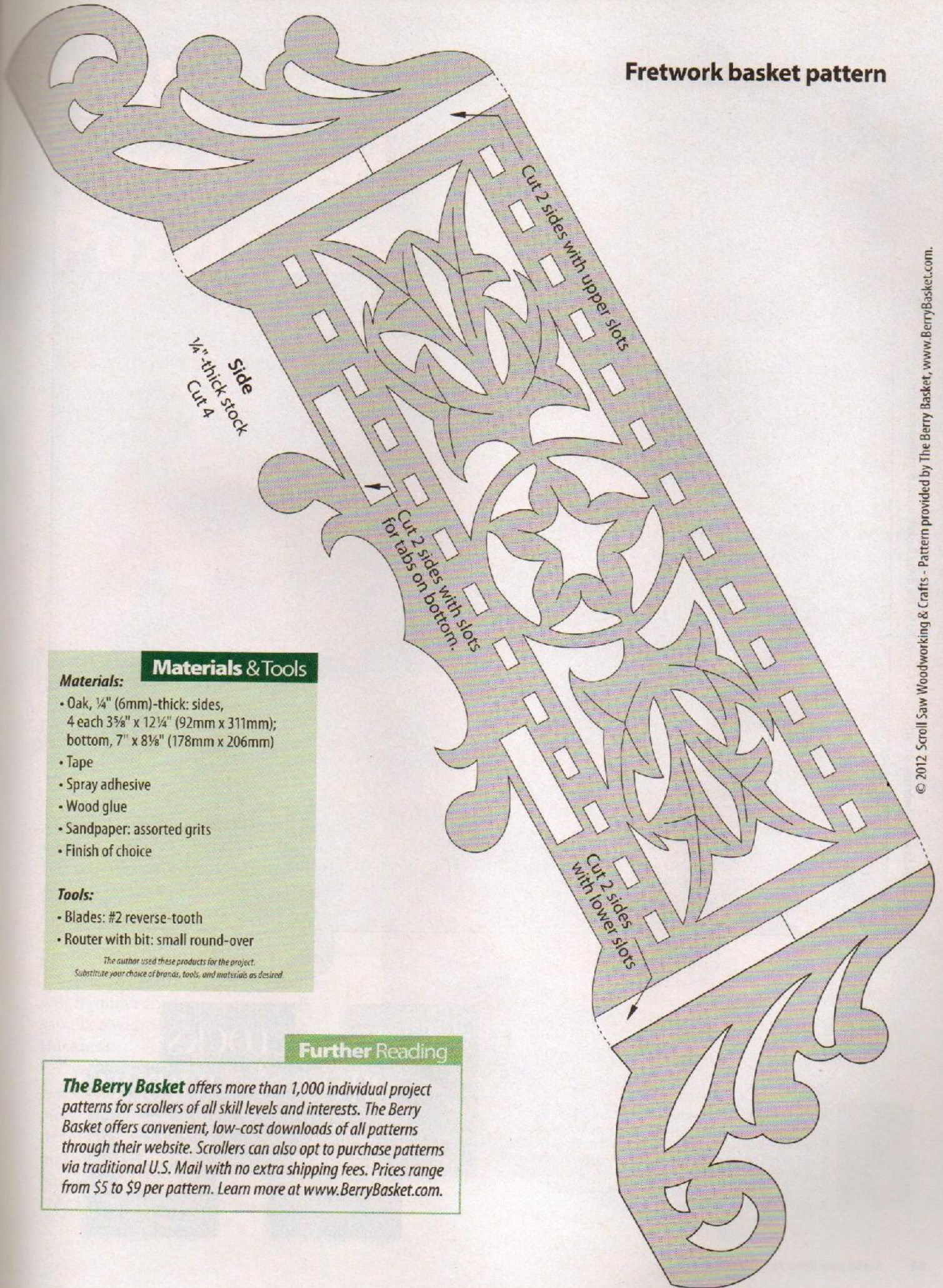
While this basket is made from oak, you can make it from any hardwood or even plywood. Make two stacks of two blanks each, wrap the stacks in tape, and attach a photocopy of the pattern to each stack using spray adhesive. If you use a different thickness of wood, adjust the sizes of the slots

accordingly. Drill any necessary blade-entry holes. Cut the frets and slots, and then cut around the perimeter of the patterns. Be sure to cut one stack with lower slots and slots for the bottom tabs, and one stack with upper slots only. Dry-assemble the pieces and make sure the tabs fit properly into the slots. Sand the wood smooth. Use sandpaper or a router equipped with a small round-over bit to round the edges of the pieces.

Glue the bottom tabs into the side slots. Then, add the other sides and glue them in place. Apply several coats of spray lacquer finish.



Fretwork basket pattern



Materials & Tools

Materials:

- Oak, 1/4" (6mm)-thick: sides, 4 each 3 3/8" x 12 1/4" (92mm x 311mm); bottom, 7" x 8 3/8" (178mm x 206mm)
- Tape
- Spray adhesive
- Wood glue
- Sandpaper: assorted grits
- Finish of choice

Tools:

- Blades: #2 reverse-tooth
- Router with bit: small round-over

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

Further Reading

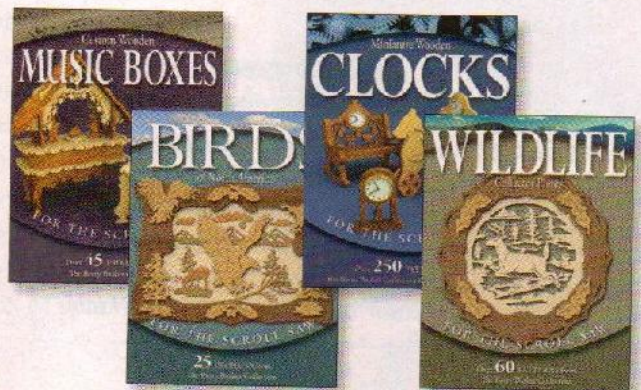
The Berry Basket offers more than 1,000 individual project patterns for scrollers of all skill levels and interests. The Berry Basket offers convenient, low-cost downloads of all patterns through their website. Scrollers can also opt to purchase patterns via traditional U.S. Mail with no extra shipping fees. Prices range from \$5 to \$9 per pattern. Learn more at www.BerryBasket.com.

Bottom
1/4"-thick stock

© 2012 Scroll Saw Woodworking & Crafts - Pattern provided by The Berry Basket, www.BerryBasket.com.



Rick and Karen Longabaugh are the authors of Holiday Ornaments for the Scroll Saw, Custom Wooden Music Boxes for the Scroll Saw, Miniature Wooden Clocks for the Scroll Saw, Scenes of North American Wildlife for the Scroll Saw, Wildlife Collector Plates for the Scroll Saw, and Birds of North America for the Scroll Saw, all available from Fox Chapel, www.foxchapelublishing.com.



Making a Two-Sided Puzzle Box

Create this novel yet functional box with just seven cuts

By Dave Danchuk
Cut by Rolf Beuttenmuller

Make the box in your choice of wood. Pictured here are walnut, maple, and spalted mango.

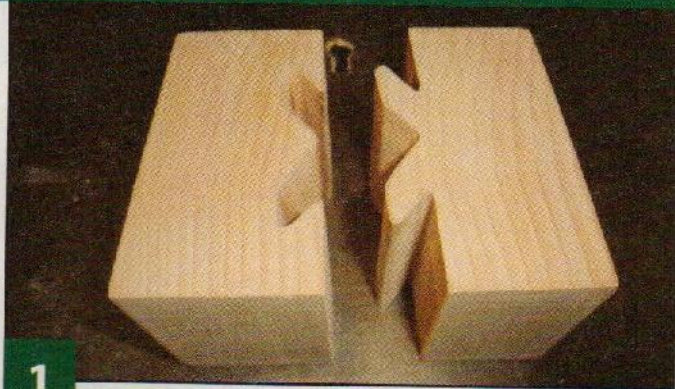


Making boxes with a scroll saw is easy once you know the steps. This two-sided box requires only seven cuts. Do a little sanding, apply a couple coats of finish, and the box is done. Boxes like these are quick and easy, and are a great way to use up small sections of leftover wood.

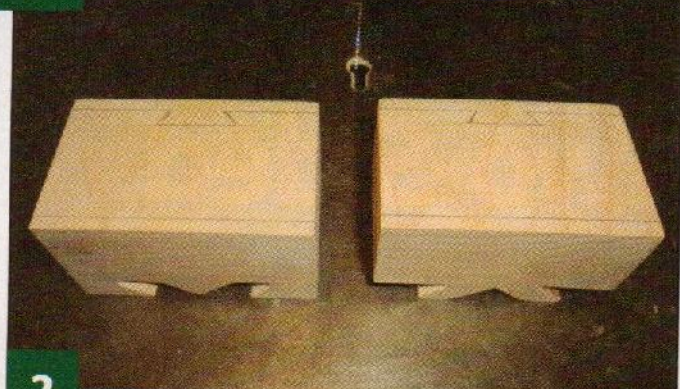
The box blank should be as tall as will fit under the arm of your scroll saw. The width should be twice the thickness.

You don't need to follow the pattern exactly as long as you cut interlocking pieces. Once you master these simple techniques, use your imagination to make three-piece or even heart-shaped puzzle boxes. Send photos of your creations to editors@scrollsawer.com.

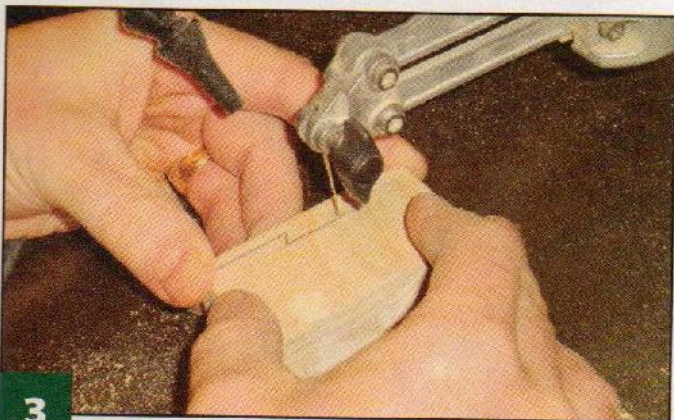
PUZZLE BOX: CUTTING THE PROJECT



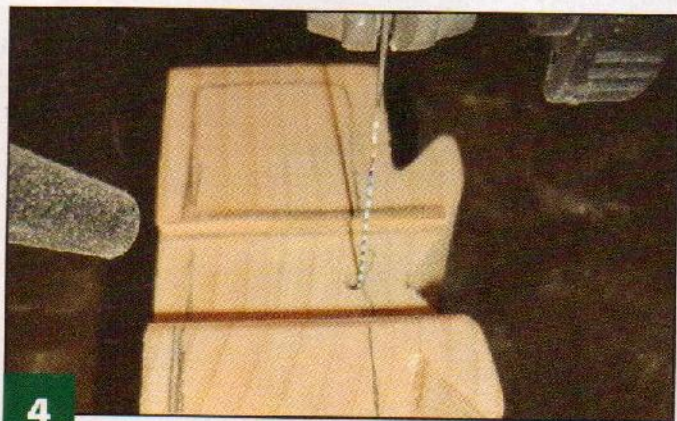
1 **Make the first cut.** Transfer the pattern to the top of the blank and cut down the middle of the block. If you want to make a more difficult puzzle, tilt the saw table slightly so you will only be able to slide one side of the box up to open it. Experiment with scrap wood to determine the proper angle.



2 **Cut the box bottoms.** Rotate the two halves of the box 90° and transfer the side-view pattern to both pieces. Cut the flat bottom of the blank.



3 **Cut the box lids.** Cut the interlocking puzzle piece for the lid of the box. Don't worry about cutting the pattern exactly on both halves; you want the pieces to be different enough that you can't slide the top off without separating the two halves.

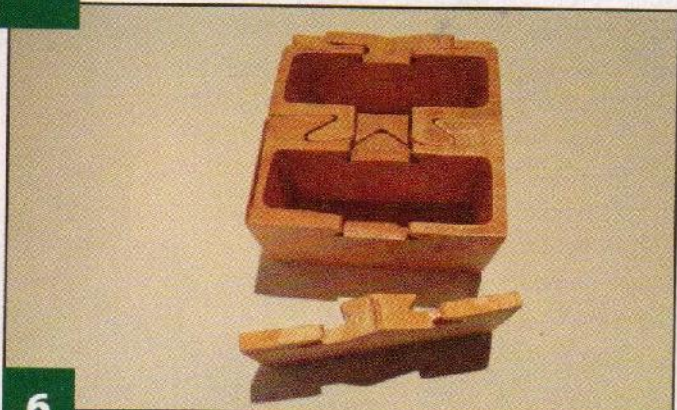


4 **Cut the inside of the box.** Trace the dotted lines from the top-view pattern onto the two halves of the box. Drill a blade-entry hole inside the rectangle, thread a blade through the hole, and cut the inside of the box.

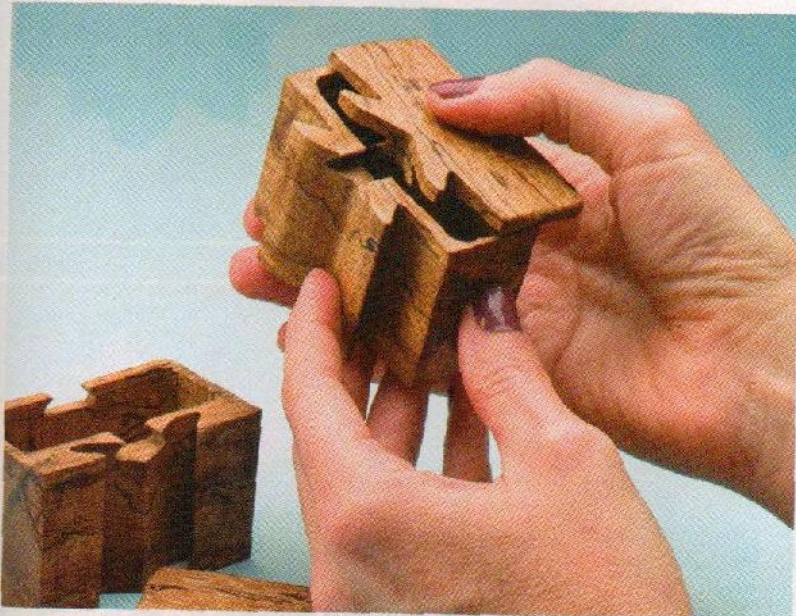
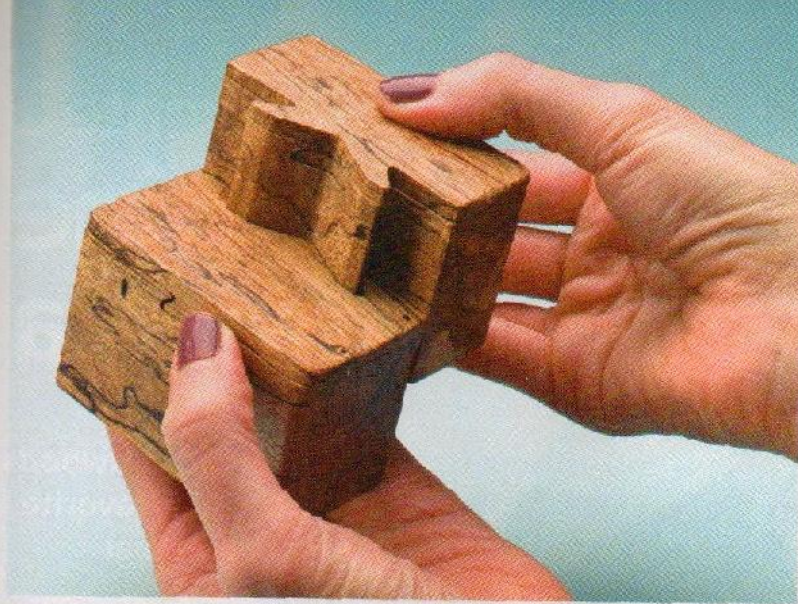
PUZZLE BOX: FINISHING THE PROJECT



5 **Sand the box pieces.** Start with the lids of the boxes and the top edge of the sides. Carefully sand away the fuzzies from the bottoms of the box sides, but do not change the overall shapes of the pieces. Sand the bottoms of the box bottoms.



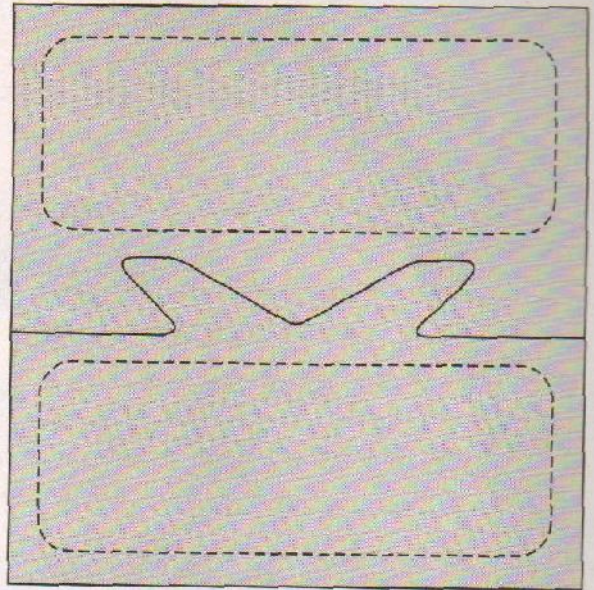
6 **Assemble the box.** Apply wood glue to the bottoms of the box sides and carefully align the bottoms with the sides. Clamp the bottoms in place until the glue dries. Remove any glue squeeze-out and sand the sides and edges of the bottoms to make them match. Apply a spray lacquer finish.



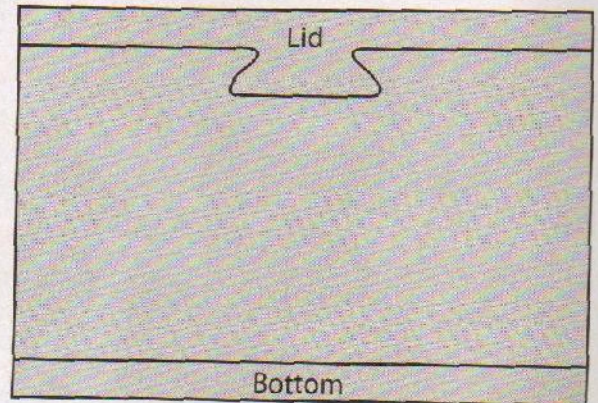
This puzzle box is simple to make and assemble but will not open unless the pieces are moved in the correct order.

Puzzle box patterns

Top view



Side view



© 2012 Scroll Saw Woodworking & Crafts

Materials:

- Maple, 2" (51mm)-thick:
3" x 3" (76mm x 76mm)
- Sandpaper: assorted grits
- Wood glue
- Spray lacquer finish

Materials & Tools

Tools:

- Blades: #5 reverse-tooth
- Drill and assorted small bits
- Clamps

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



Dave Danchuk is mostly known for his large, colorful scroll-sawn portraits, but enjoys creating anything he can with his DeWalt saw. Dave lives in Coquitlam, B.C., Canada with his wife and two young children. To see more of Dave's work, visit his website at www.amazedcreations.com.

Create a Columbine Intarsia

Use colorful hardwoods
to portray this favorite
garden perennial

By Janette Square



I first fell in love with columbines in 1992, when my husband and I took a vacation to Virginia. One of our stops was Thomas Jefferson's estate, Monticello. Beautiful gardens surrounded the impressive home, and I found dainty columbines in many colors throughout the gardens. I bought a packet of seeds that had been gathered from these gardens, took them home, and planted them in my own Toronto garden. When we moved to Oregon in 1995, I gathered seeds from my own plants to bring with me. They thrive here and grow all over my gardens. They have cross-pollinated over the years, and I've added different varieties as well, creating quite a mixture of colors and styles.

I've wanted to create a columbine intarsia design for a long time. Every spring I take my camera out to

the garden and take lots of photos of them at their peak. I based my design on some of these photos.

The finished size of this project is approximately 11½" by 20", but the design has some small pieces. If you have trouble working with very small pieces, you may want to enlarge the pattern. A larger version will make an impressive focal point on the wall. Note that sizes of wood pieces needed in the materials list will change if you do this, so plan according to the size you select.

TIP CUTTING HARD WOOD

If you are using a very hard wood, such as yellowheart, cut slowly and use a new blade. You may use several blades for each variety of wood.

COLUMBINE: CUTTING THE PIECES

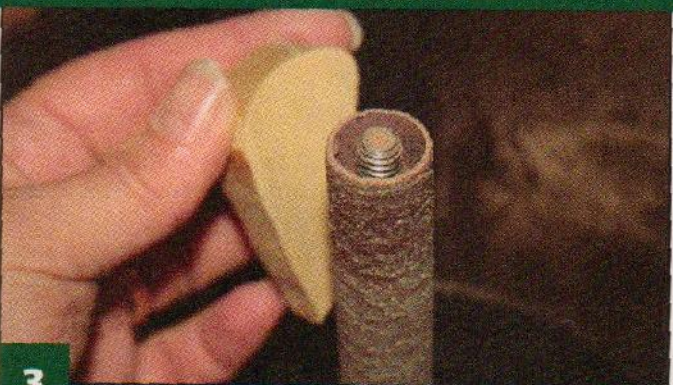


1 Prepare the patterns. Make six copies of the pattern, reserving one as the master. Apply clear packing tape to the blanks, spray adhesive on the backs of the pattern pieces, and adhere the patterns to the packing tape. Pay attention to the wood grain as you place the patterns.

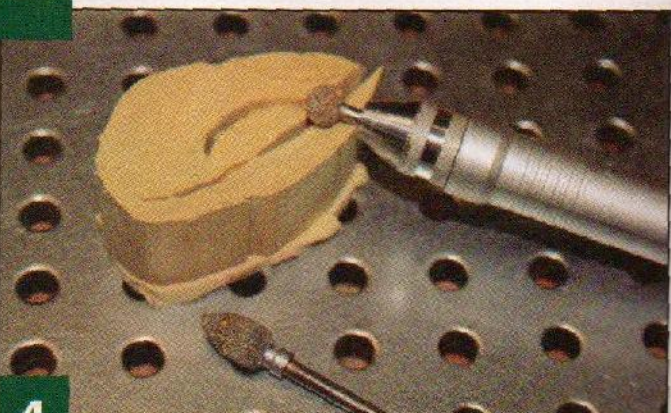


2 Cut the pieces. Use #7 reverse-tooth blades. For the flower buds, use a #3 blade to cut the small pieces apart. Label the back of each piece and place it on the master pattern as you cut. When you are finished cutting, sand the fuzzies from the bottoms of the pieces.

COLUMBINE: SHAPING THE PIECES



3 Shape the single-piece yellow petals. Using a spindle sander or rotary-power carving tool with a flame-shaped bit, sand the inside of the petal down to ½" (13mm). Carve out the middle of the petal as you go, creating a deep scooped effect. Leave the outside edge of the petals thicker to add depth.



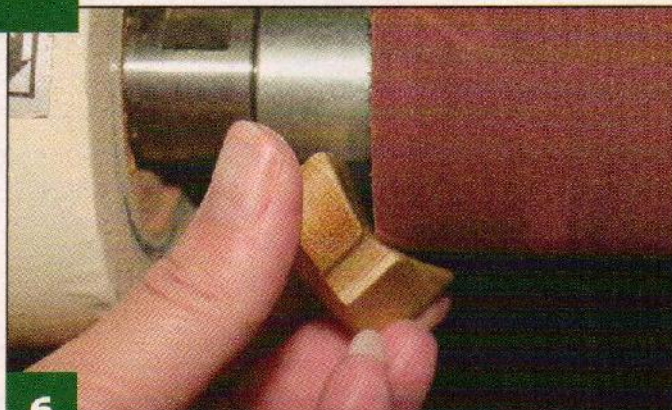
4 Shape the multi-piece yellow petal. Use a sanding shim and double-sided tape for the petal that has multiple pieces. Because the interior yellow piece is so thin, you may want to remove that piece and shape it separately. Continue rough-shaping all of the yellow petals.

COLUMBINE: FINISHING THE FLOWER



5

Shape the red petals. Thin the two red petals on the left side to $\frac{1}{2}$ " (13mm) thick to create the illusion that they are behind the other petals. The right red petals appear closer, so keep them thick. When shaping the tail pieces of the flower, some appear to go behind others. Note the varying thicknesses to create this look.



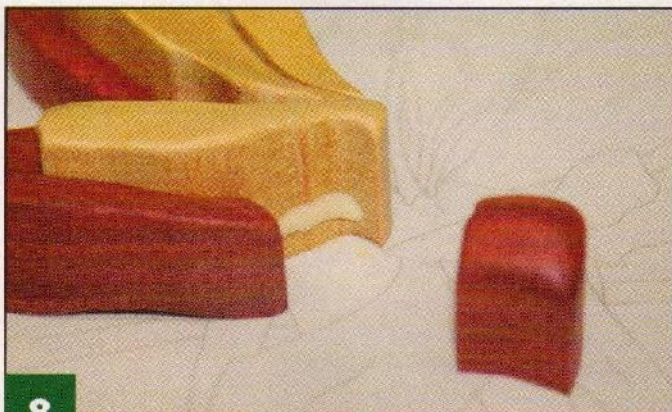
6

Smooth the scratches. Dry-assemble the red and yellow petals and make sure you are happy with the shaping. Then, use the edge of a Flex drum sander to remove the scratches made by the rotary-power tool or spindle sander.



7

Finish the petals. Hand-sand the edges of each piece to soften them, and then finish each piece with a mop sander. Because the pieces of this project are delicate, I glue the flower together before shaping the rest of the project.



8

Glue the flower. Place a sheet of waxed paper over the master pattern and align the pieces. Insert the stamen pieces as place holders and edge-glue the remaining flower pieces. Be careful not to get glue on the stamen pieces. After the rest of the flower is dry, hand-sand the stamens and glue them in place.



9

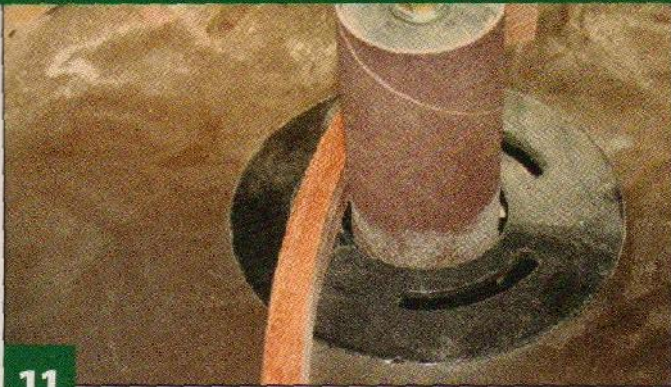
Shape and glue the remaining pieces. Follow the instructions in Steps 4 to 8 to shape and glue the flower buds and the upper leaves and stems. Use a sanding shim when shaping the flower buds. Shape the rest of the leaves and stems.



10

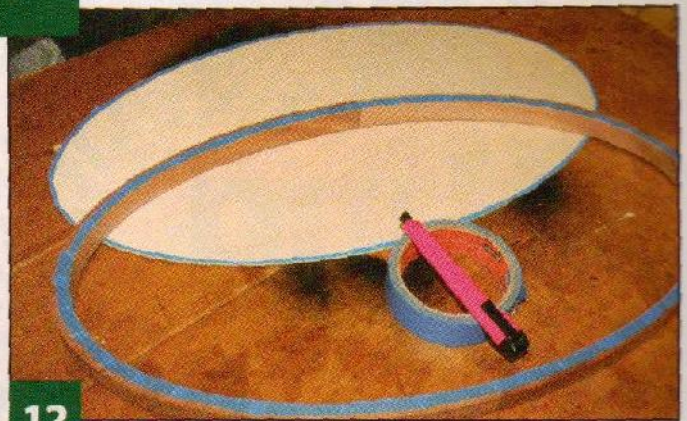
Glue the pieces in groups. Dry-assemble all of the shaped pieces on the master pattern and make any adjustments necessary. Then, glue together the rest of the flower in sections. Set aside and let dry.

COLUMBINE: ASSEMBLING THE FRAME



11

Sand the frame. Use a belt sander to smooth the frame surface and a spindle sander to sand the inner and outer sides of each piece. Hand-sand each piece to soften the edges, and finish with a mop sander. Dry-fit the pieces together, making sure they are in their proper positions. Apply wood glue to the edges and blue painter's tape to the top to hold the pieces in place until they are completely dry.



12

Cut the backer. Remove the tape from the frame, position the frame on the backer stock, and trace the outer rim onto the backer. Using a #1 blade, cut the backer piece approximately $\frac{1}{8}$ " (3mm) inside the line. Sand the backer and check for proper fit behind the frame. Using a pencil, mark the face of the backer in a place that will not show. Apply blue painter's tape $\frac{1}{8}$ " (3mm) wide around the perimeter of the backer face and on the back of the frame. This keeps some areas unfinished for a better glue joint.

Completing the Project

Using clear gel varnish and following the manufacturer's instructions, finish all of the pieces. I use an air compressor and dental tools to remove excess finish from hard-to-reach areas. Allow the pieces to dry overnight, and then apply a second coat. Align the flower sections on the master pattern and edge-glue them together to form the whole flower.

Remove the painter's tape when the frame is dry. If desired, color the edges of the backer with a black marker. Using a fine-point marker, sign the back and list the varieties of wood you used in the project. Apply wood glue around the perimeter of the face side of the backer in the previously taped, unfinished area. Align the backer and frame, clamp the pieces together, and allow the glue to dry thoroughly.

Carefully turn the intarsia flower over and apply dots of glue to the back side. The flower is extremely fragile, so handle it carefully by holding the largest pieces. Apply the flower to the backing board. Remove any glue squeeze-out and let dry.

Once the project is completely dry, determine placement for the hanger by using your thumb and forefinger to hold it until balanced. Mark this spot with a pencil on the back. Be sure that you will be screwing into a solid piece of wood in the flower portion of the project. Lay the project face down on a soft protected surface and pre-drill the hole for the hanger. Attach the hanger. You may wish to apply bumpers to the lower back of the project to help it stay level when hanging on the wall.

Materials & Tools

Materials:

- Redheart, 1" (25mm)-thick: flower and buds, $4\frac{1}{2}$ " x 9" (114mm x 229mm)
- Yellowheart, 1" (25mm)-thick: flower, 3" x 7" (76mm x 178mm)
- Dark green poplar, $\frac{3}{4}$ " (19mm)-thick: leaves, 6" x 8" (152mm x 203mm)
- Light green poplar, $\frac{3}{4}$ " (19mm)-thick: stems, 3" x 7" (76mm x 178mm)
- Spanish cedar, $\frac{7}{8}$ " (22mm)-thick: stamens, 3" x 4" (76mm x 102mm)
- Mahogany, $\frac{3}{4}$ " (19mm)-thick: frame, 6" x 28" (152mm x 711mm)
- Clear Baltic birch plywood, $\frac{1}{8}$ " (3mm)-thick: backer/background, 12" x 22" (305mm x 559mm)
- Permanent markers, black: fine-point; wide-point
- Tape: clear packing; double-sided; blue painter's

- Spray adhesive
- Sandpaper: 220-grit
- Wood glue
- Gel varnish: clear satin
- Hanger
- Bumpers (optional)
- Misc. items: skewer, waxed paper (gluing); paper towels, rubber-tipped dental tool, foam brush, gloves, eye protection (finishing)

Tools:

- Blades, reverse-tooth: #1, #3, #7
- Flex-shaft rotary tool with power-carving bits
- Flex drum sanders: 100-, 220-grit
- Oscillating spindle sander with drum: $\frac{3}{4}$ " (19mm)-diameter
- Mop sander
- Air compressor (optional)
- Forceps or tweezers
- Drill and bit

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

Pattern for the **COLUMBINE INTARSIA** is in the pattern pullout section.



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

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Sitting Pretty

Intricate leopard fretwork makes an impressive display

By Kerry Hallam

Original photo by Phyl Gatlin

I love big cats, so when I saw this photo by Phyl Gatlin, I knew I had to create a fretwork portrait. Phyl took this photo while she was on a safari in Botswana. She kindly gave me permission to turn the photo into a pattern and enter the resulting fretwork portrait in the 2009 *Scroll Saw Woodworking & Crafts* Best Project Design Contest.



Phyl Gatlin's striking photograph is the basis of Kerry Hallam's detailed fretwork portrait.

While drafting the pattern, I changed the eyes so the leopard looks toward you, instead of away as in the photo. I wanted the eyes to draw the viewer into the picture.

The fretwork is fragile, so stack-cut two portraits at a time to add stability. I cut the portrait in Baltic birch plywood, but oak would also work well. The leopard pattern is 11" by 14" and some of the cuts are very tight; you can resize it to 8½" by 11", but it will be challenging to cut.

Materials:

- Baltic birch or oak plywood, ½" (3mm)-thick: 11" x 14" (279mm x 356mm)
- Baltic birch plywood painted black or black foam core, ¾" (3mm)-thick: backing board, 11" x 14" (279mm x 356mm)
- Sandpaper: assorted grits

Materials & Tools

- Wood glue
- Finish
- Frame

Tools:

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

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

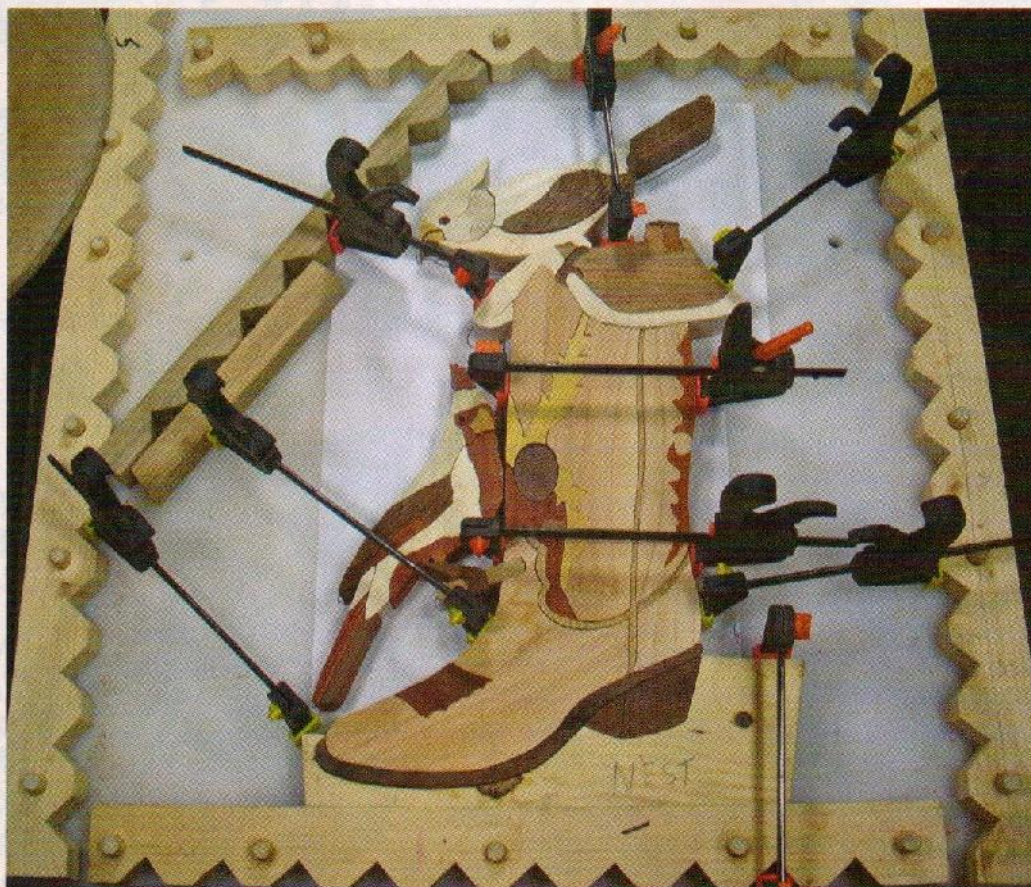
Pattern for *SITTING
PRETTY* is in the pattern
pullout section.



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



Building an Intarsia Clamping Jig



Clamp projects securely with this easy-to-use system

By Carol and Homer Bishop

After many years and more than 250 scroll saw projects, we have finally created a helping hand for gluing up intarsia. This system holds the pieces in place and allows us to check the fit as the project progresses.

Over the years, we have tried different clamps and clamping arrangements to hold projects together as we checked for fit and performed the final assembly. Most were clumsy to use, could damage pieces, and took a long time to adjust.

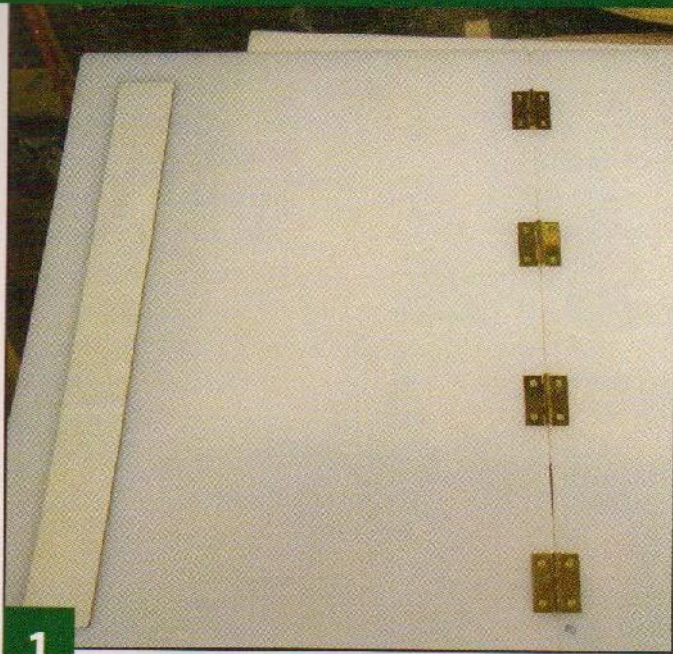
In designing our ideal system, we had several criteria. The system had to be easy to use, accommodate a large range of project sizes and shapes, and clamp at any angle or position. We wanted something that would hold one section tight if we released the clamp on another section, hold securely without marking the pieces, and allow us to see the entire project without the clamps obstructing our view. Finally, of course, we wanted to make it

inexpensively and from readily available materials and hardware.

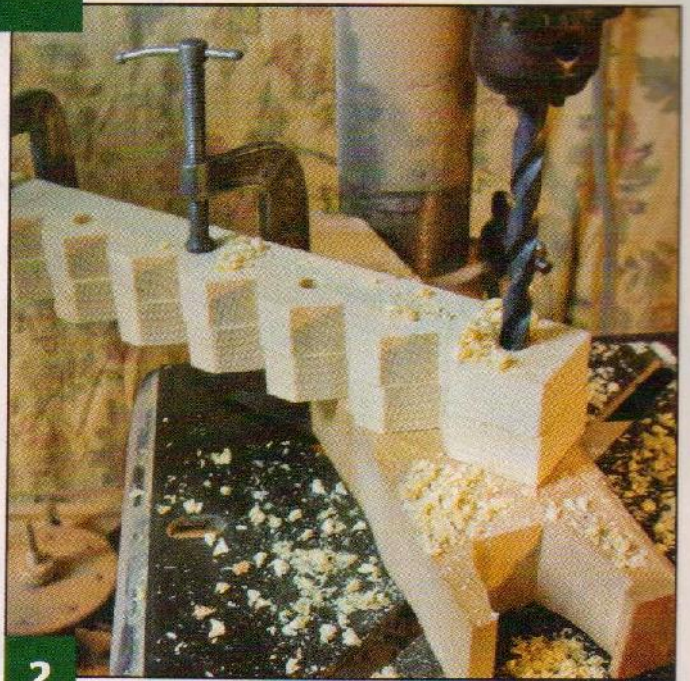
We made the base for our system from two commercial plastic cutting boards, which are stable, easy to clean, and withstand clamping pressure. The unit folds for storage and can be used folded while you work on a small project. You can customize the shopmade rails and base or use our suggested dimensions, which work for most projects. We use small bar clamps with the rail system. We reverse the clamping surfaces, essentially switching the tools from clamps to spreaders. This allows us to secure a piece in place without covering the project with the bar of a clamp. The notches cut in the rails allow you to position the clamps at various angles.

We created several prototypes before developing this jig. We hope it will be useful to you, and we look forward to hearing how woodworkers improve upon the idea.

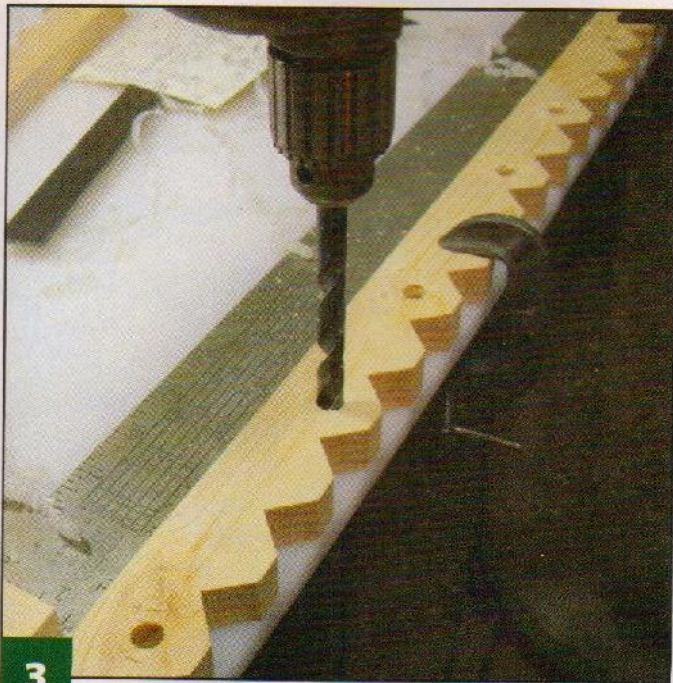
CLAMPING JIG: MAKING THE SYSTEM



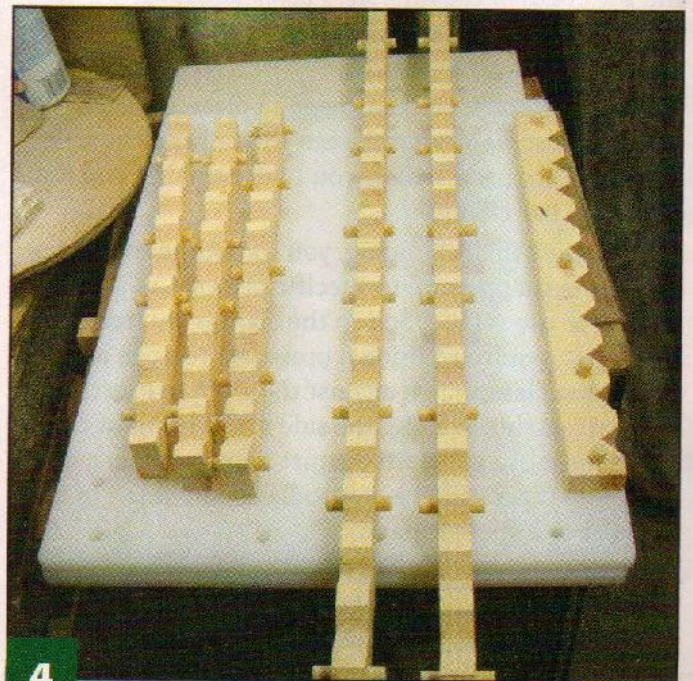
1 Construct the base. Trim any bevel off the mating edges of two commercial plastic cutting boards. Mount four hinges, equally spaced, along the bottoms of the boards. Use epoxy or silicone-based glue to attach shims the same thickness as the hinges to the outer edges to keep the boards flat. Position the shims so they will miss each other when you fold the boards.



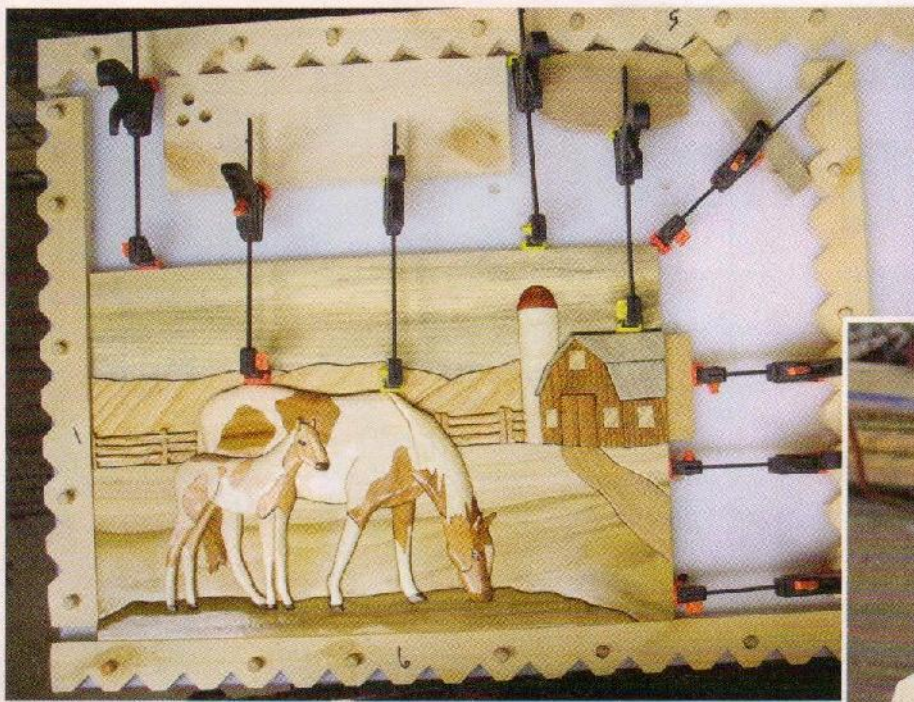
2 Cut the side rails. Cut the rails to size, and then cut the notches. Place the rails in position and adjust any holes that will interfere with the hinges or shims. Leave space between the side rails and the end rails so you can remove dirt or sawdust that may throw a project out of square. Stack the strips and drill $\frac{3}{8}$ " (10mm)-diameter holes through them and into a backing board to prevent tearout. Center the holes across the width of the rails.



3 Drill the holes in the base. Clamp the side rails in place and use the holes as guides for drilling matching holes through the base. Cut and drill two shorter rails for use when the base is folded. Make sure the holes in the shorter rails align with the holes in the folded base. Use a square to position and clamp the end rails at several different intervals. Drill holes at each position so you can adjust the size of the work area based on your project.



4 Attach the dowels. Cut a $\frac{3}{8}$ " (10mm)-diameter dowel into $1\frac{3}{4}$ " (44mm)-long sections. Test the fit of the dowels in the rails. Make sure the dowel sections protrude $\frac{1}{2}$ " (13mm) on each side (the thickness of the base) and glue them into the side and end rails. Do not glue the dowels into the base. Because the dowels protrude on both sides of the rails, you can use either the flat or the notched side of the rails when clamping your work.



Use a combination of clamps and spacers to secure the intarsia pieces in place.

Use a shim to exert extra pressure on pieces along flat sides, such as the fence rail.



Using the Clamping Jig

The jig is simple to use. Set the bar clamps to act as spreaders, nestle the project against the rails, and tighten the clamps.

For square projects, position a corner against two flat rails. Place the clamps between the opposite rails and the edges of the intarsia. Push against the corner with an angled bar clamp to keep everything firmly against the rails.

In some cases, you may need to place a spacer made from scrap wood between the rail and the intarsia. The spacers allow you to use smaller and less-expensive bar clamps

During a final clamping, you sometimes need to apply extra pressure to specific pieces. Cut small spacers or use scrap wood so the clamps will reach the areas that require additional pressure. You can also cut scraps and clamp them against the work to exert extra pressure, as shown along the side of the barn. In cases where most of a piece fits against a flat rail, you can use a thin tapered piece of wood, called a shim, to add pressure to a specific part.

The notched sides allow you to angle the clamps to accommodate irregularly shaped projects. Use as many clamps as you need to ensure a tight, strong glue joint; it never hurts to add extra clamps.

For complicated projects, cut a custom nest from scrap wood to create a flat side. I traced the cut project and cut a nest to make a flat edge along the bottom of the boot. You can also position notched supports between the side and end rails to clamp at different angles using shorter clamps.



Create a custom nest to clamp irregularly shaped items. Use the notches in the rails to clamp pieces at any angle.

Materials:

- Commercial-grade cutting boards, 1/2" (13mm)-thick: 2 each 15" x 20" (381mm x 508mm)
- Pine, 3/4" (19mm)-thick: 2 each, 1 1/2" x 30" (38mm x 762mm); 2 each 1 1/2" x 16" (38mm x 406mm); 2 each, 1 1/2" x 15" (38mm x 381mm)
- Shim material, 1/8" (3mm)-thick: 2 each, 2" x 12" (51mm x 305mm)
- Epoxy or silicone-based glue
- Dowel, 3/8" (10mm)-diameter x 4 1/2" (1156mm)
- Hinges with matching screws: 4 each, 1 1/4" x 1 1/2" (32mm x 38mm)
- Wood glue

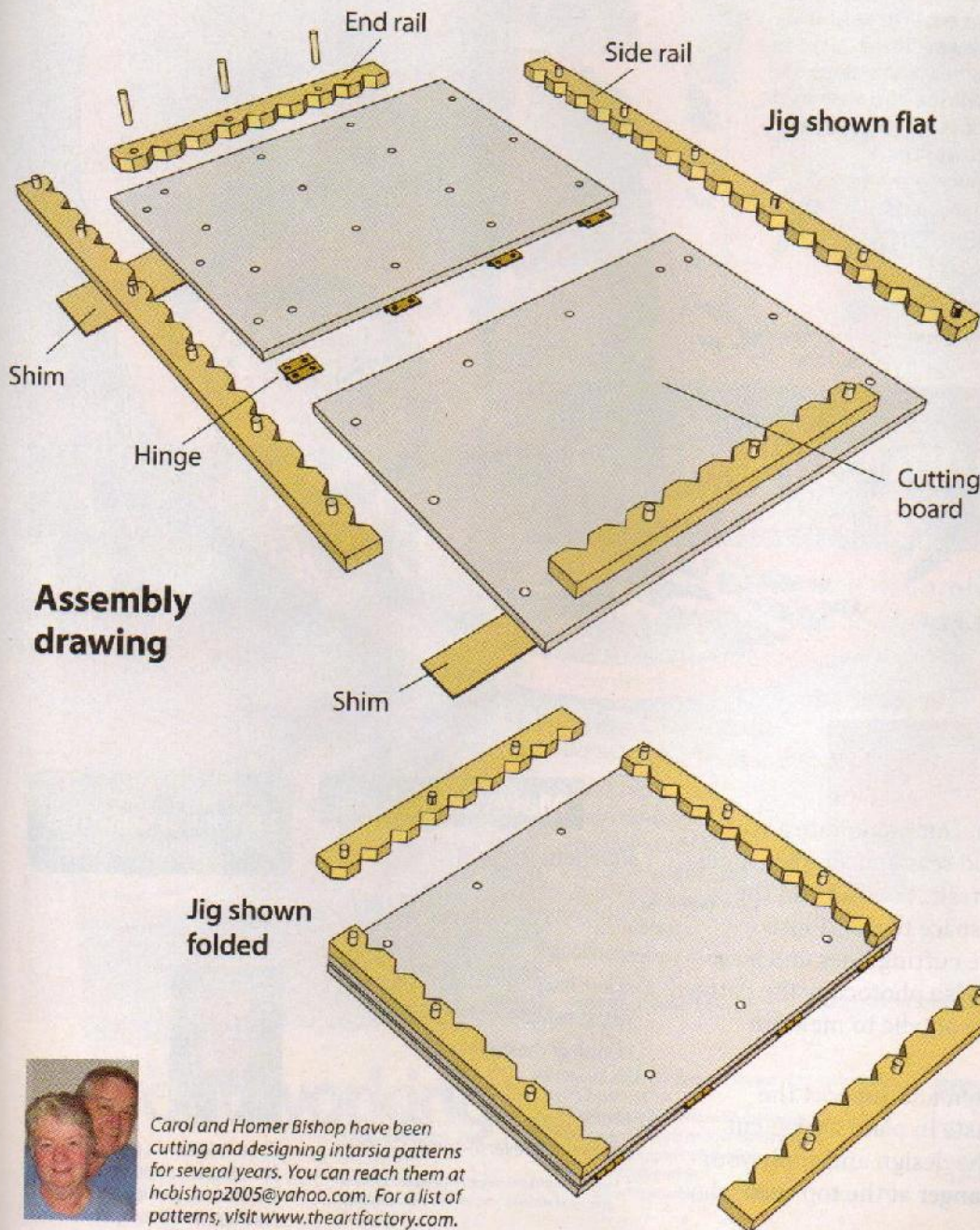
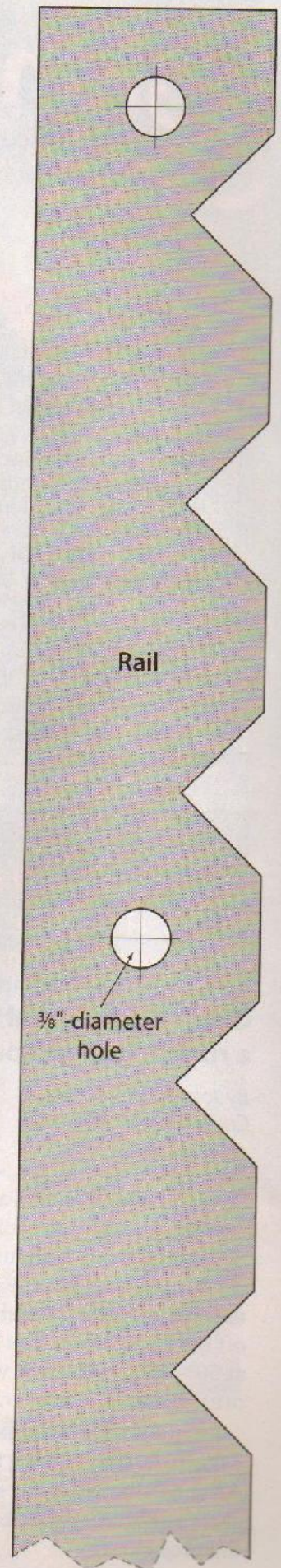
Materials & Tools

Tools:

- Blades: #4 skip-tooth
- Drill press and bits: assorted bits
- Flap sander
- Clamps: small reversible bar clamps

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

Rail pattern



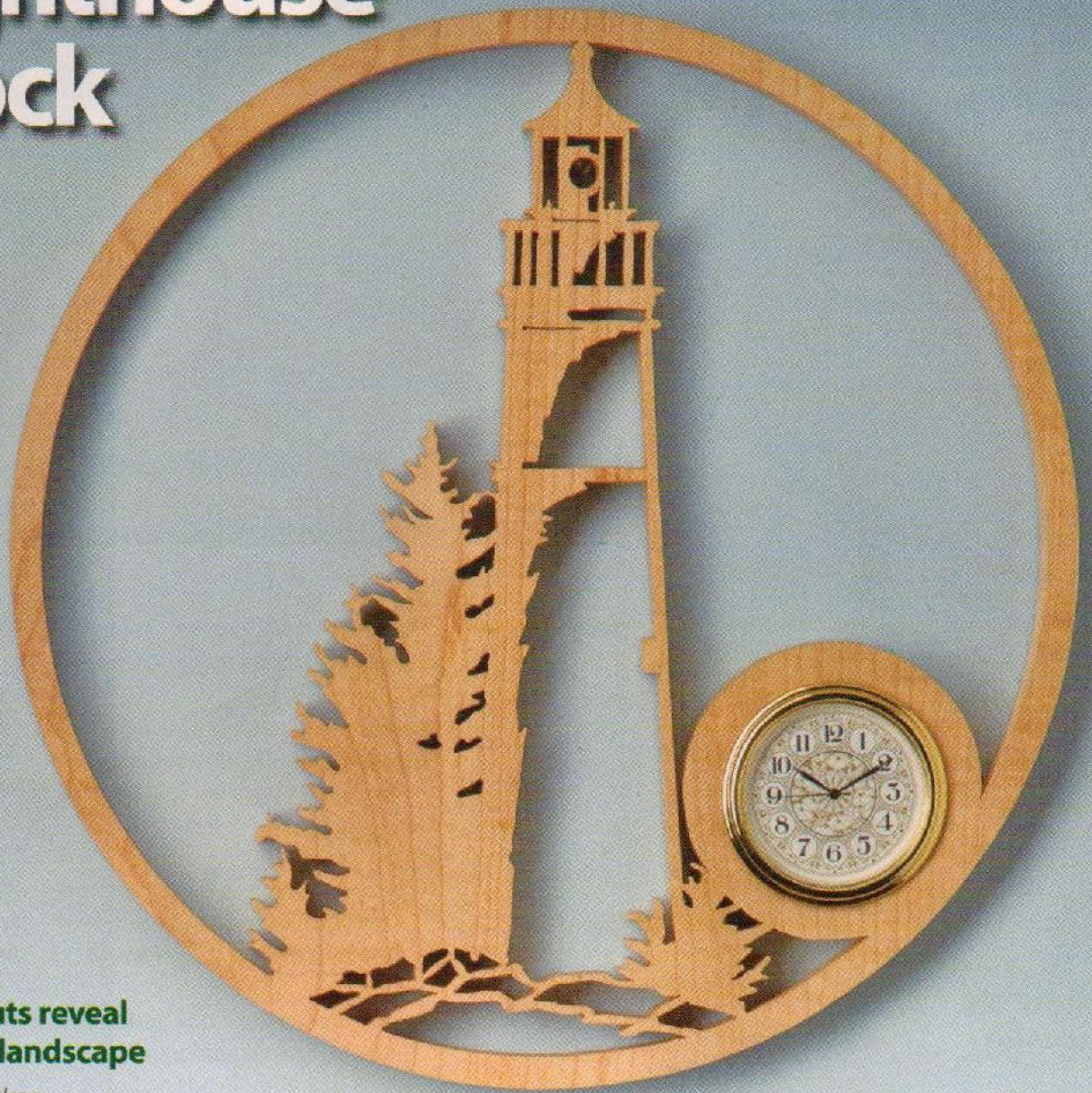
Assembly drawing



Carol and Homer Bishop have been cutting and designing intarsia patterns for several years. You can reach them at hcbishop2005@yahoo.com. For a list of patterns, visit www.theartfactory.com.

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Lighthouse Clock



Careful cuts reveal a rugged landscape

By John A. Nelson
Cut by Dale Helgerson

Remember your shore vacation, commemorate a sea captain, or simply dream of wild seas and simpler times with this rustic lighthouse portrait. You can add the clock, as shown, use the circle space to woodburn a message, or follow the alternate cutting lines and leave off the insert circle. You could also photocopy the pattern at 50% and use thinner wood or acrylic to make an ornament or suncatcher.

Cut outward from the center, and support the delicate frets by leaving the waste in place as you cut. After cutting, carefully sand the design and apply your choice of finish. Add a brass hanger at the top to display the project.

Materials & Tools

Materials:

- Maple, ½" (13mm)-thick: 9½" x 9½" (241mm x 241mm)
- Sandpaper
- Clock insert: 2" (51mm)-diameter
- Brass hanger
- Finish of choice

Tools:

- Blades: #3 reverse-tooth

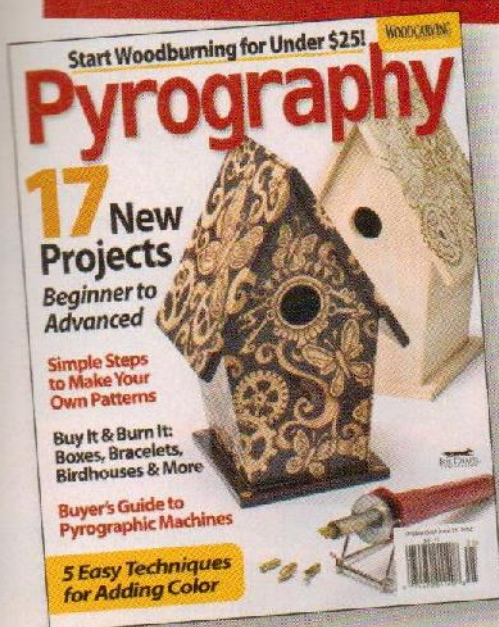
The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.

Pattern for the
LIGHTHOUSE CLOCK is in
the pullout section.



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

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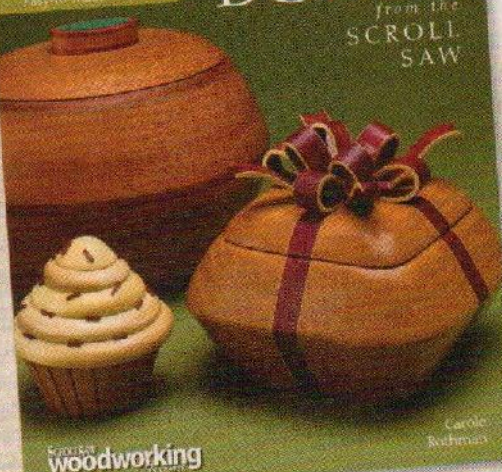
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Shop Lights

Improve your scrolling experience with proper lighting

By Bob Duncan

Many home workshops are lit with a few hanging screw-in incandescent (or compact florescent) bulbs. Some have a few bars of traditional tube florescent lights. These can be a good starting point, but in your shop, you need several different types of light. For every aspect of scrolling, the better your lighting, the better your end result will be. Plus, more light gives you a safer working environment; not only can you see what you are doing, but you'll avoid the eyestrain and headaches caused by working in dim light.

Fill Lighting

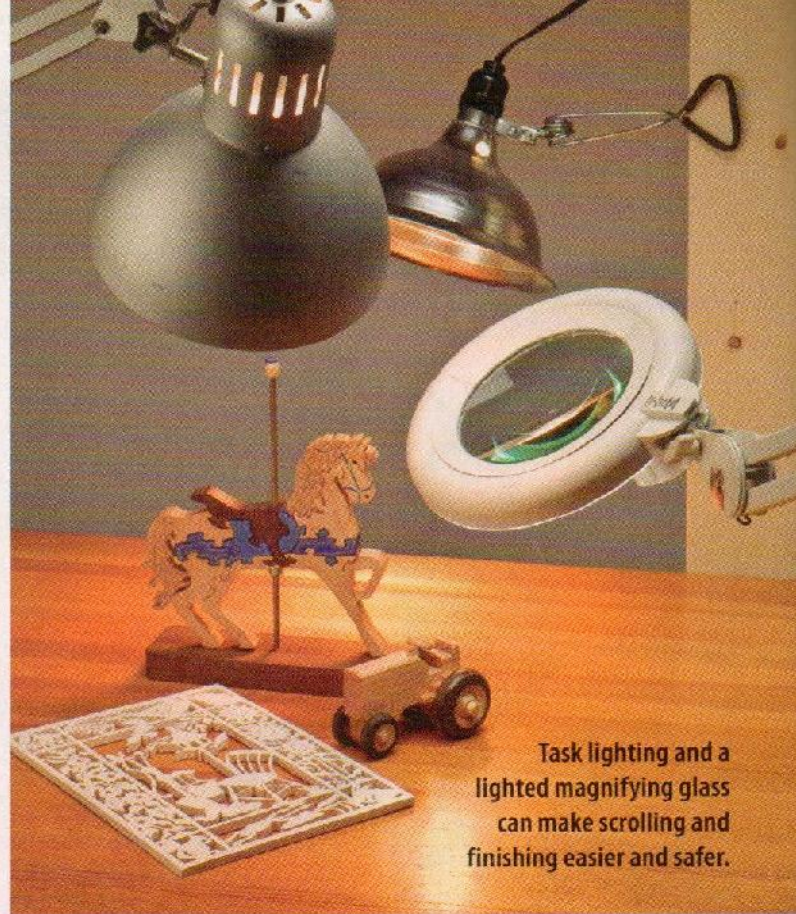
Fill lighting does exactly that: fills the space and chases away deep shadows. The best fill lighting is natural sunlight, which is why many art studios have big windows. If you don't have much natural lighting—or you often work at night—install banks of tube florescent fixtures, which provide a great deal of light without consuming a lot of power.

Unfortunately, inexpensive florescent light fixtures can be finicky when the temperatures get cold. If you don't line up the bulbs exactly in these fixtures, which are sold as shop lights and available for around \$10 at most home improvement stores, the lights won't always turn on right away. I have two lights in my shop that I occasionally need to bump before they will turn on. Mid-range fixtures, which cost around \$30, are more reliable.

Sometimes you need more fill lighting in a specific area, such as around the band saw or sanding station. Incandescent fixtures are inexpensive but can be difficult to adjust so the light comes from the right angle and direction—you may need to angle the electrical box. Instead, I installed adjustable outdoor floodlight fixtures and use them with halogen bulbs. Both the fixtures and bulbs are more expensive than standard options, but I find they are easier to install and adjust, and provide more light than other choices.

Task Lighting

One of my saws has an integrated light attached directly to the saw. This fixture, on an adjustable gooseneck, allows me to position the light right on the lines I'm cutting. Position the light so the blade



Task lighting and a lighted magnifying glass can make scrolling and finishing easier and safer.

casts a shadow across the blank. As you cut, align the intersection of the blade and shadow with the pattern line to cut exactly on the line.

For intricate projects, I have a lighted magnifying glass. The magnifier makes it easier to cut small frets, but it does take a bit of practice to use because a slight movement looks much bigger through the magnifier.

When finishing, especially if I'm painting, I switch to a light with a daylight bulb. Incandescent, halogen, and florescent bulbs all have temperatures that can change the way a color looks. Florescent bulbs are considered cool lights and can give your piece a blue cast. Halogens and incandescents are warm lights and can give your piece a red or orange cast. Daylight bulbs are calibrated to resemble natural sunlight, which is considered white light. No artificial light can match natural sunlight exactly, but daylight bulbs come close. You can find compact florescent bulbs, spotlights, and regular incandescent bulbs calibrated as daylight bulbs.

When I use a clear finish, I position a light to shine across the surface of the wood. The finished and unfinished wood pick up the light differently, so I can see at a glance which areas need more attention.

When planning lighting for your shop, err on the side of too much light. You'll enjoy the scrolling experience more if you can see what you are doing and work without a headache or injury.

In our next issue...



Use contrasting cutouts to create the design on this stylized box.



Themed pieces make this 3-D puzzle fun to cut and challenging to assemble.



Notched sides and labyrinth lids add interest to these simple boxes.

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Turning Rescued Wood into Wearable Art

The eco-minded Australian artist Samantha Gilkes is conscientious about her carbon footprint and lets nothing go to waste. That's why she uses a scroll saw and artist pencils to create unique brooches and other accessories from salvaged timber that she and her carpenter husband have rescued over the past 15 years. Some of Samantha's wood is hundreds of years old and quite rare, but her artistic touch brings it back to life.

Samantha hand-cuts and then hand-illustrates each piece in her wearable art collection. "My work is a marriage between art, woodwork, and my love of old timbers," said Samantha. "Being completely hands-on is important to me for a couple of reasons. I like to be in complete control of my creative process from start to finish—there's nothing better

than to see some hand-drawn lines. I love knowing that my hands have created something beautiful or cute out of salvaged materials."

Samantha's collection of indigenous recycled woods includes red cedar, brown pine, red mahogany (tea tree), southern silky oak, crows ash, and laurel. She says, "I only use timbers that have been discarded (offcuts from sawmills), very old timbers from demolition and renovation sites, or salvaged logs destined for chipping. I also occasionally use old pieces of floorboard and skirting that have been discarded as waste."

The artist's process is to draw each original design freehand on the wood,



Samantha Gilkes (inset) makes pins and ornaments from recycled wood.

cut it on the scroll saw, and sand it. Then, she outlines the design in black ink, meticulously hand-colors it with colored artist pencils, and finally seals it with a coating of spray varnish.

To see more of Samantha Gilkes' work or to contact the artist, visit www.jettasnest.com.



Scrolling Youth Learns Persistence

The DuPage Woodworkers Club in Glen Ellyn, Ill., has been buzzing since their youngest member, 11-year-old Will Richards, showed up. "He's amazing," said Bill Hochmuth, the club's president. Will joined the club a year ago, after his grandfather introduced him to the scroll saw. Since then, the fifth-grader has won a ribbon at the county fair and got his own subscription to *Scroll Saw Woodworking & Crafts* magazine. While most kids his age are lost in video games and electronic devices, Will holds scroll saw demonstrations and has completed a set of walnut chess pieces. "The men and women in the club could not have been more enthusiastic or welcoming to a 10-year-old kid," said Eleanore Richards, Will's mother. "They've really embraced him and given him so

much help. The stuff he's making now is incredible."

Will spends hours in his basement woodshop fine-tuning his skill. "I can cut straighter and I am better at squaring up the blades," he said. Will likes the challenge of working with different kinds of woods and blades, and enjoys making fretwork, puzzles, silhouettes, and compound projects. He made a clock for his grandmother and even created a few of his own patterns. "It's fun to make things out of a plain piece of wood," he said. "I like giving gifts to people knowing that it's something I made myself." According to his mother, woodworking has proved beneficial to Will in other ways, too. "It's taught him persistence," said Eleanore. "If something breaks or doesn't come out the way he wants it to, he figures out why and starts over." When he's not working on a scrolling project, Will is an avid reader and enjoys acting, Boy Scouts, chess club, and band.

A scroller for a year, fifth-grader Will Richards has made a walnut chess set and other projects.

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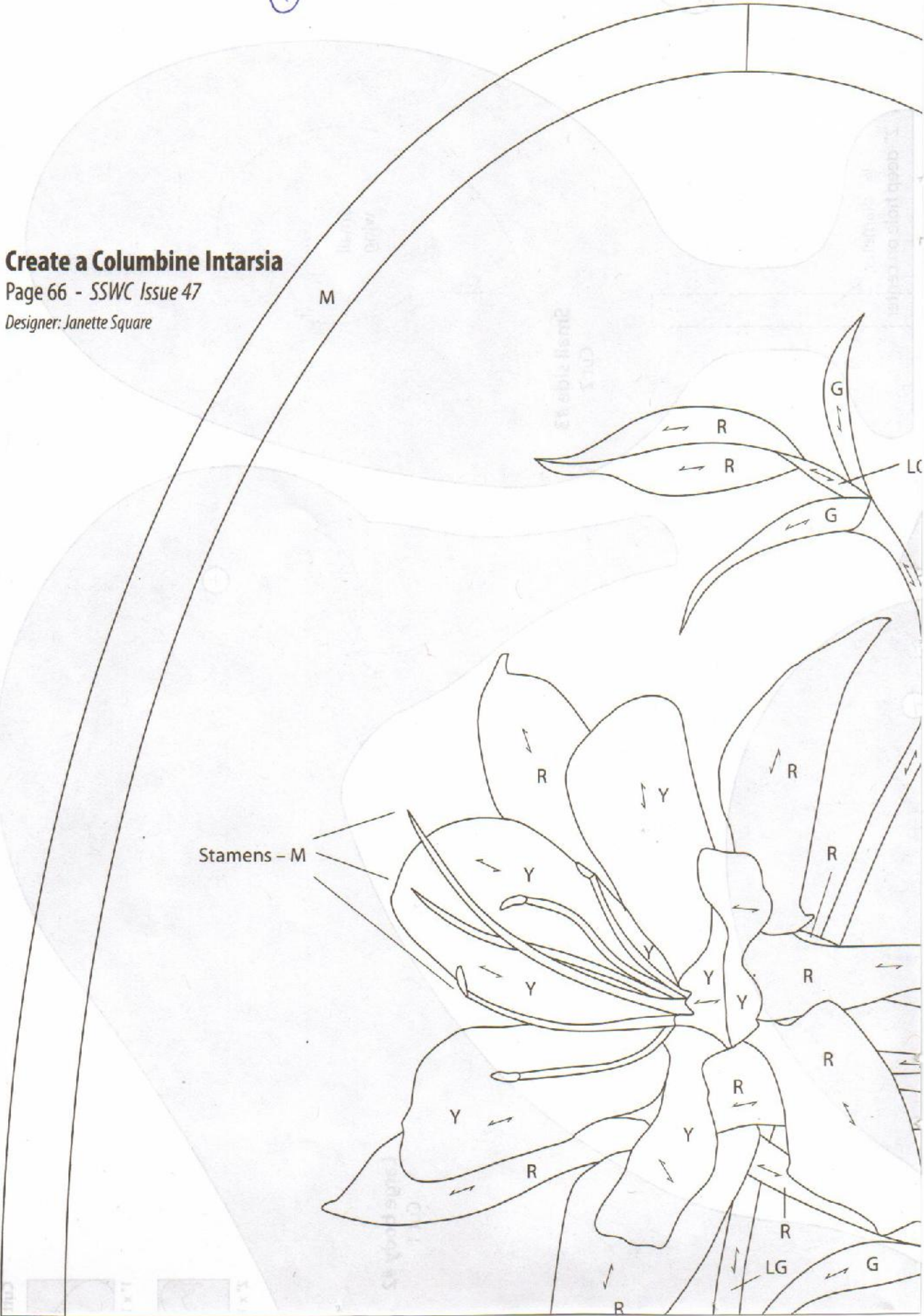
Create a Columbine Intarsia

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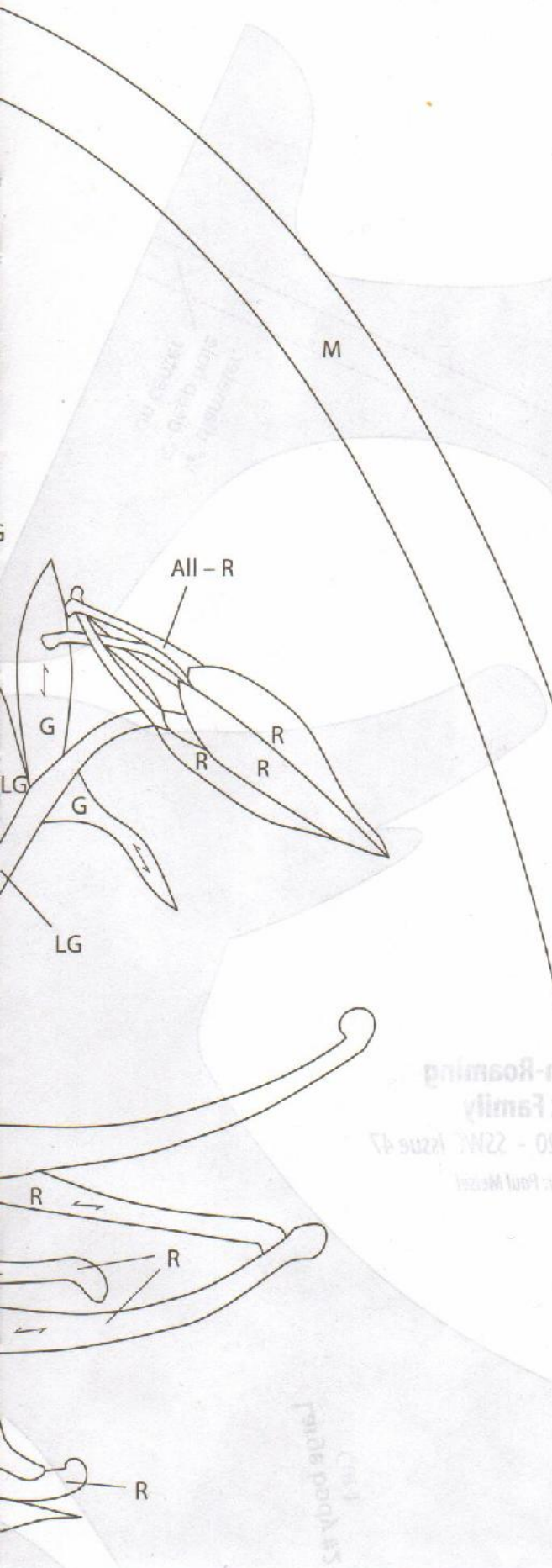
Designer: Janette Square

M

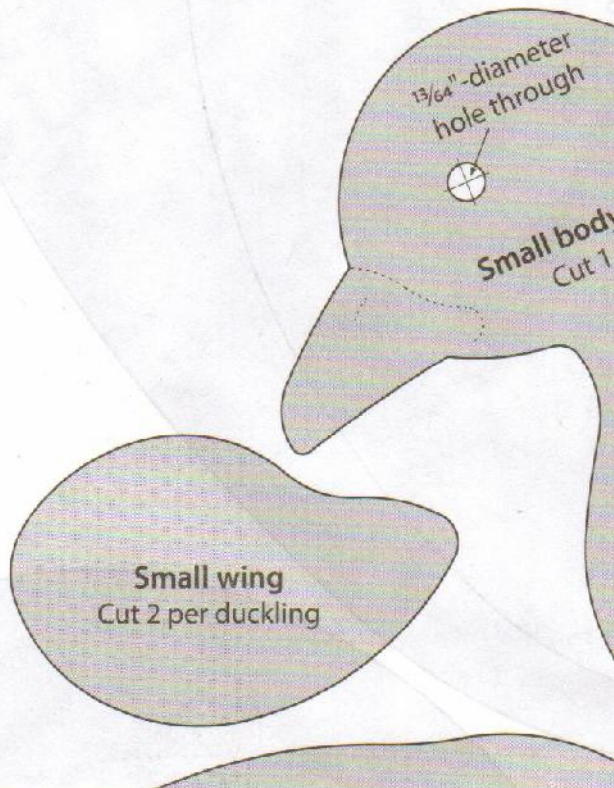
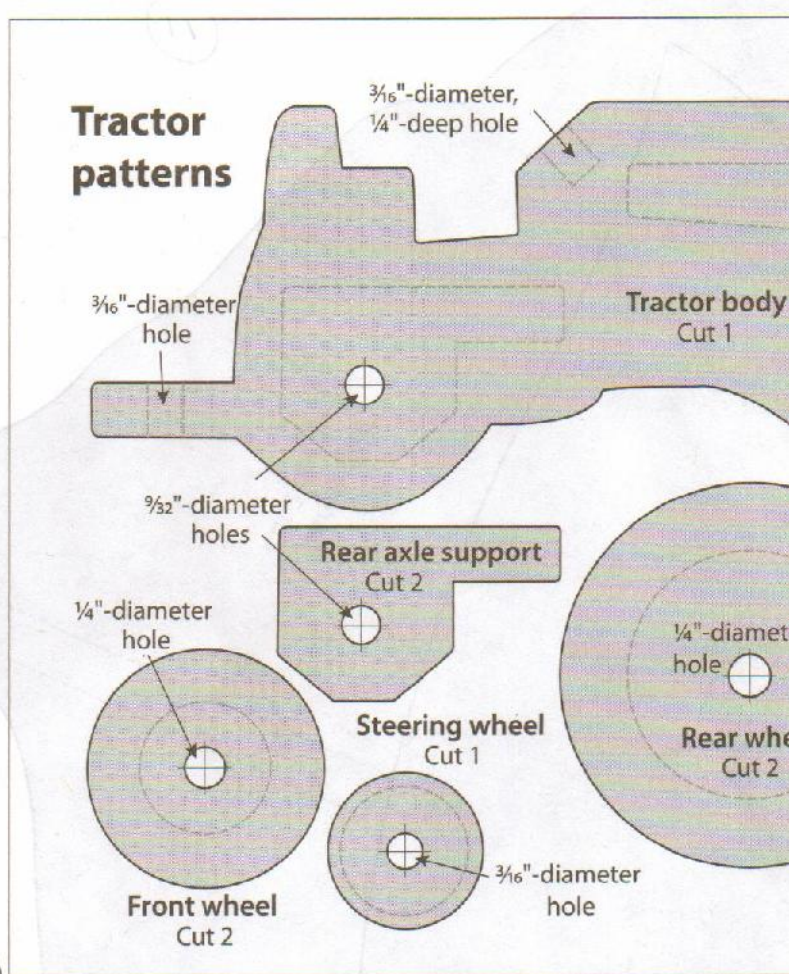
Stamens - M

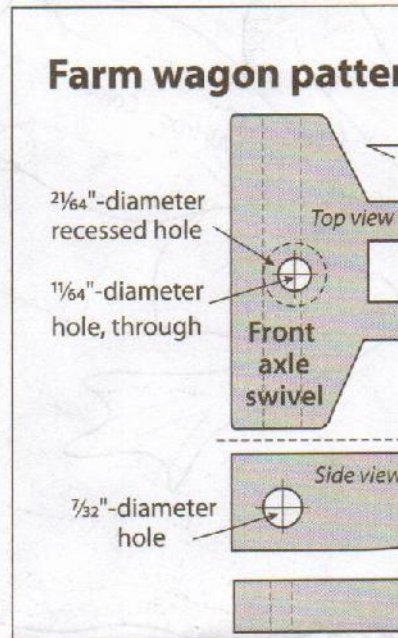
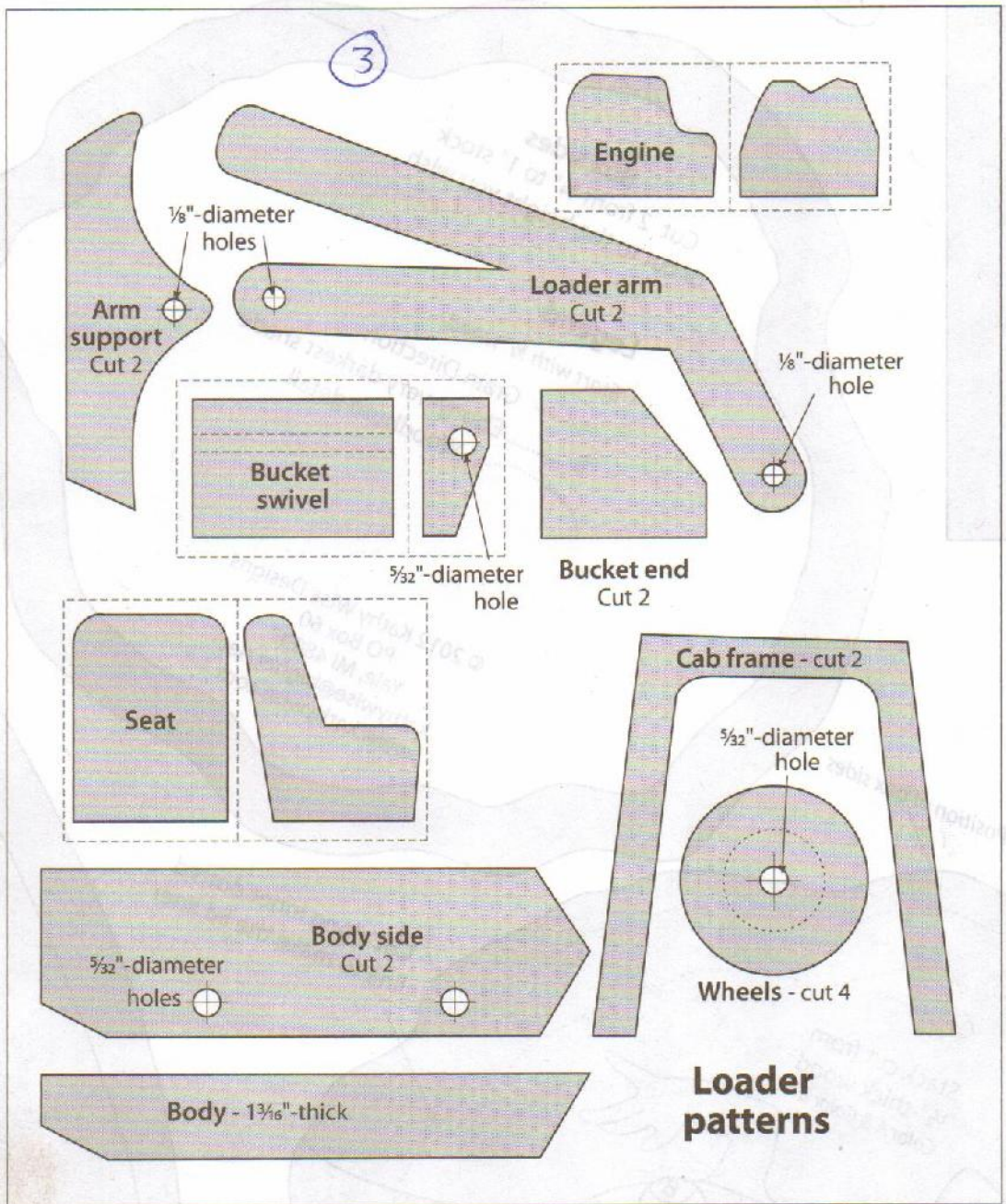
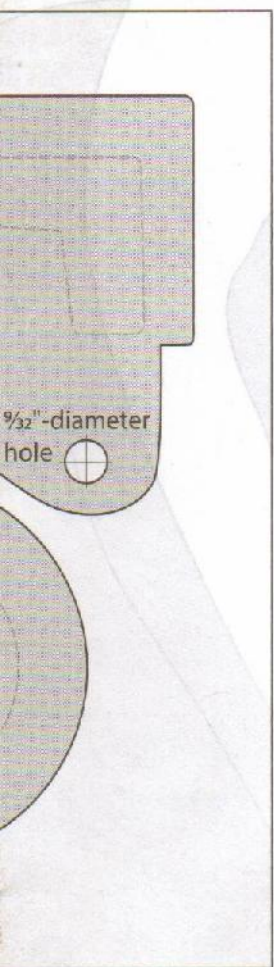


2



Tractor patterns





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

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

Swirling Diamond Clock	14	Versatile Floral Fretwork	44
Lawn-Roaming Duck Family	20	Create a Columbine Intarsia	66
Creating Farm Toys	26	Sitting Pretty	70
Making a Frog and Lily Pad Box	40	Lighthouse Clock	76

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

1/2"-roundover
in corners

End
view

3/16"-diameter
holes, at an angle

Bottom
view

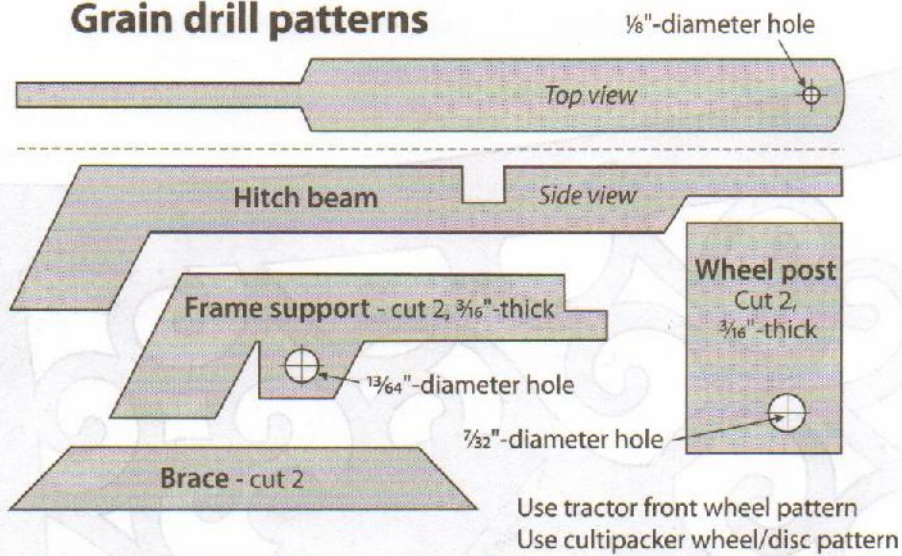
Fuel tank patterns

Building Farm Toys

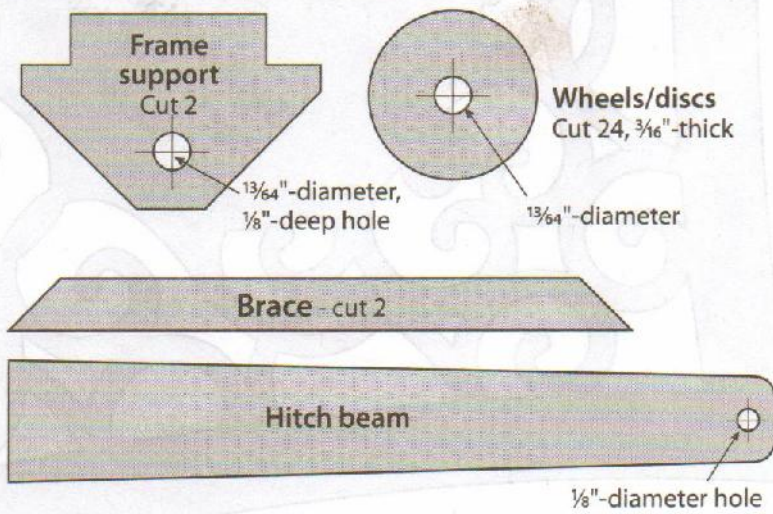
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by Alvin Bulgrien

Grain drill patterns



Cultipacker patterns



direction

Rear axle base

5/32"-diameter
hole

Front axle
base

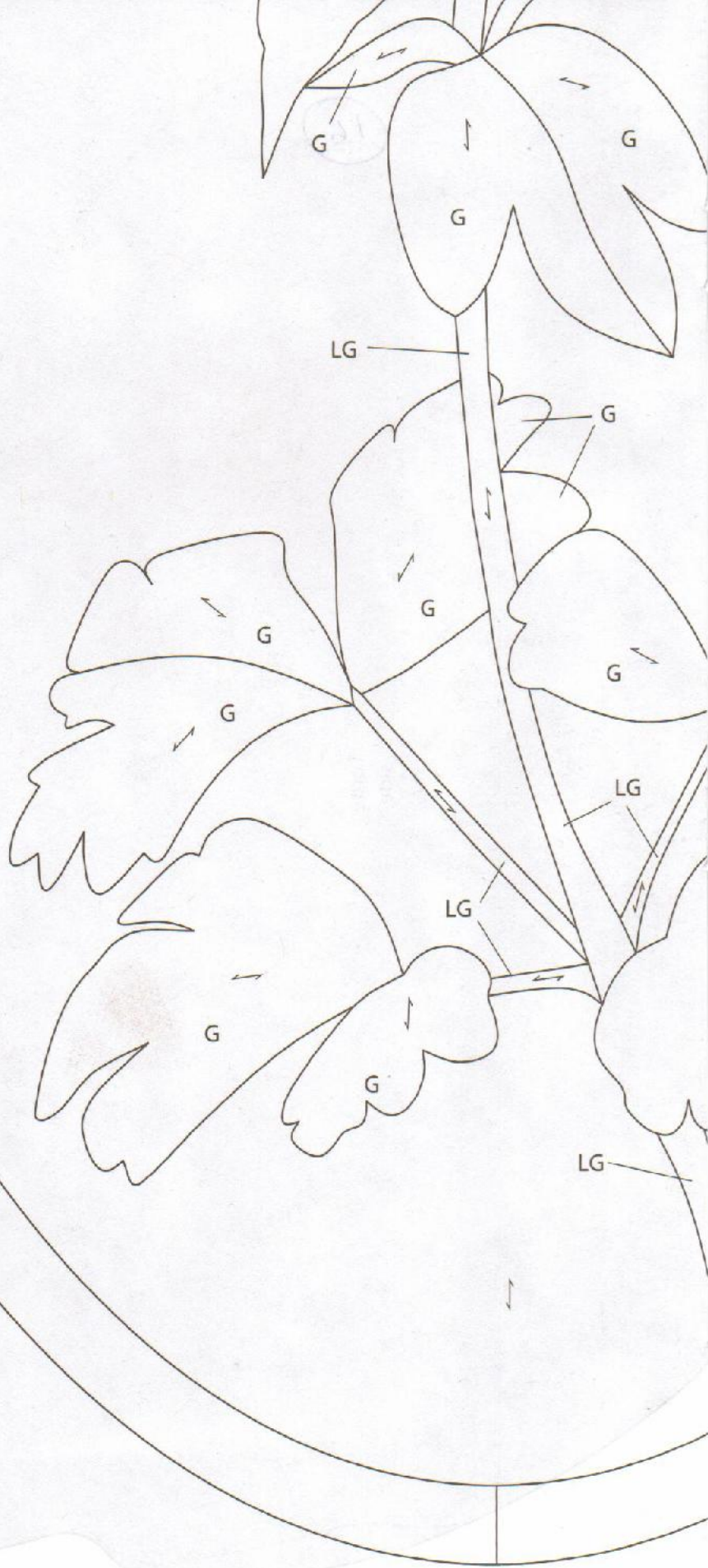
meter hole

1/8"-diameter hole

Top view

Notice about photocopying patterns

5

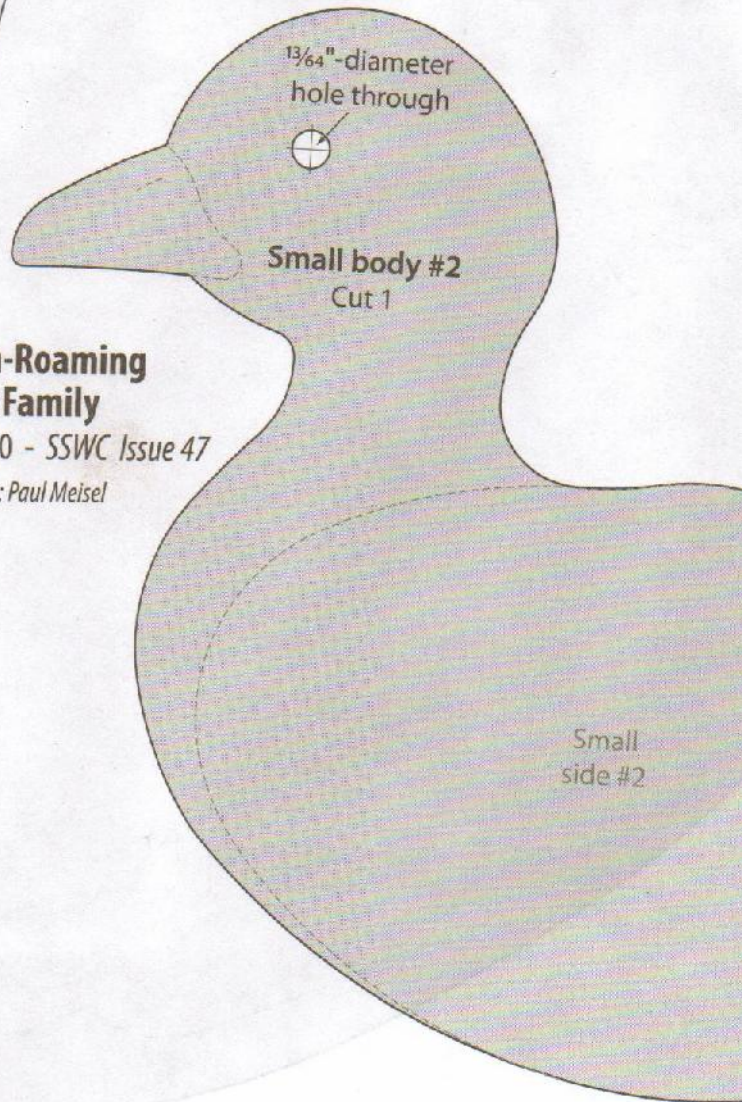
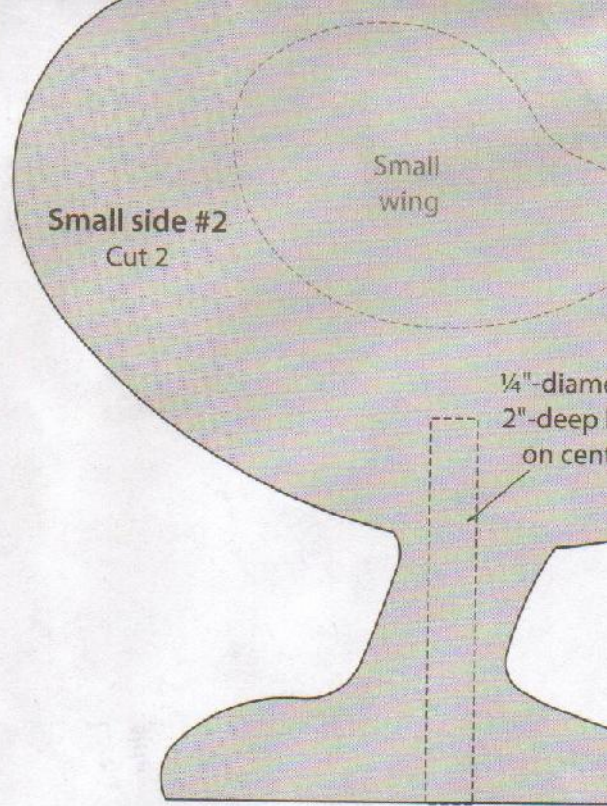


Legend

- L Light
- LG Light green
- G Darker green
- R Red
- Y Yellow
- M Medium brown

L 1/8"

6



Lawn-Roaming Duck Family

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Designer: Paul Meisel

Use tractor
front wheel
pattern

7
9/64"-diameter h

Small body #3
Cut 1

Small
side #3

Small
wing

Small side #1
Cut 2

1/4"-diameter,
2"-deep hole
on center

**Lighthouse
Clock**
Page 76
SSWC Issue 4
Designer: John A

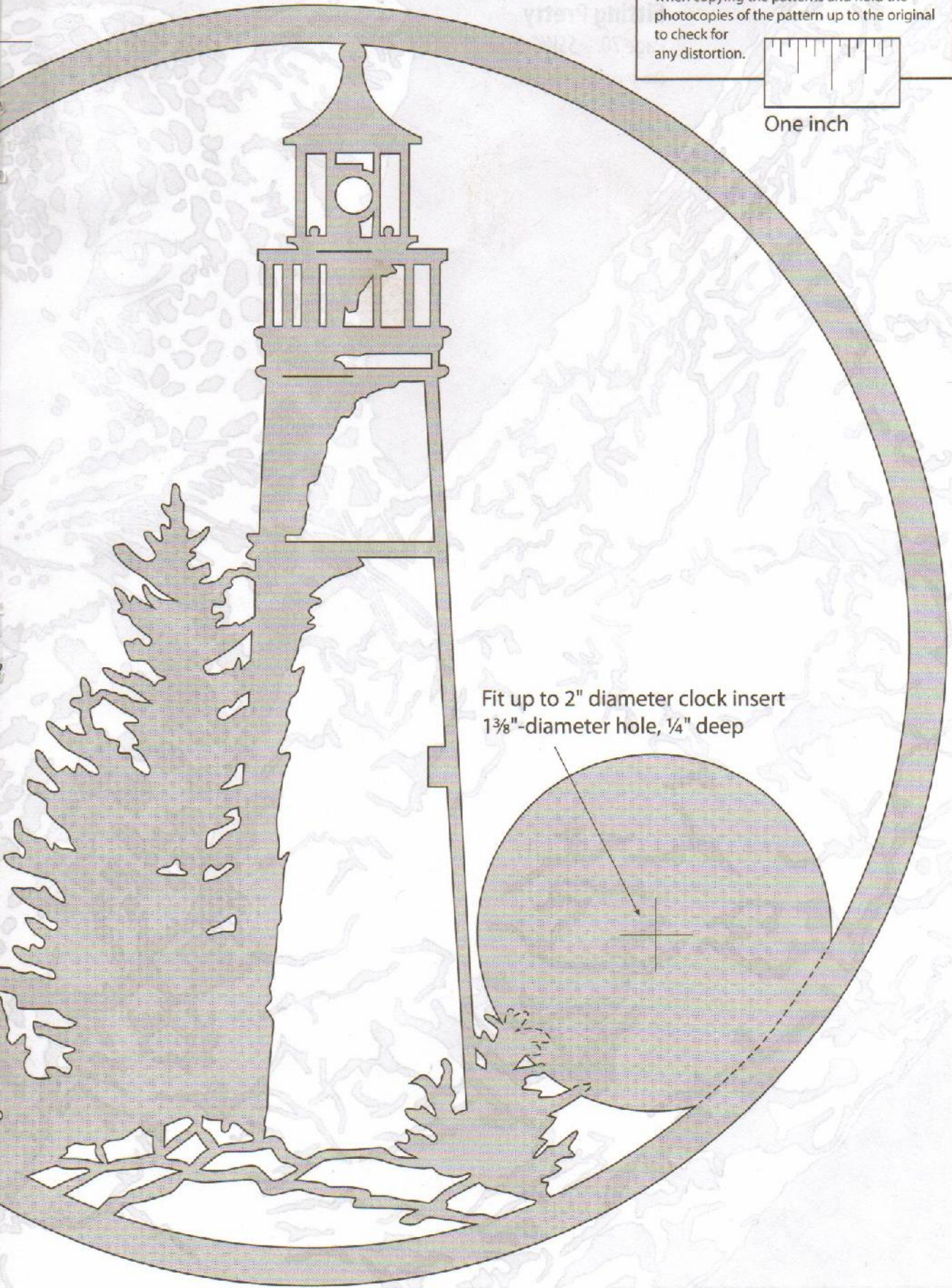
Side view

8

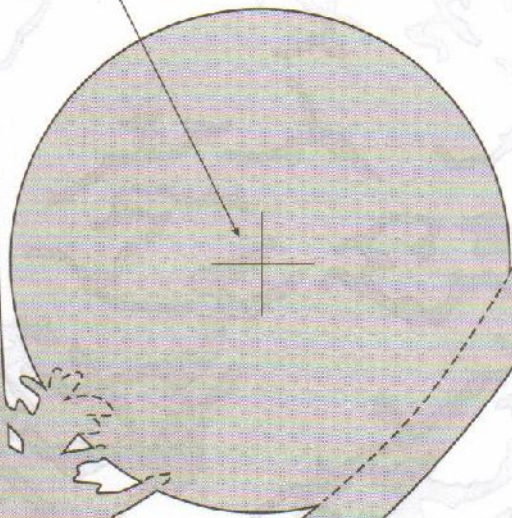
Some photocopiers and home printers can distort patterns when you print them, making them slightly off-size or stretching the image. Use the 1" bar printed below as a guide when copying the patterns and hold the photocopies of the pattern up to the original to check for any distortion.



One inch



Fit up to 2" diameter clock insert
 $1\frac{3}{8}$ "-diameter hole, $\frac{1}{4}$ " deep

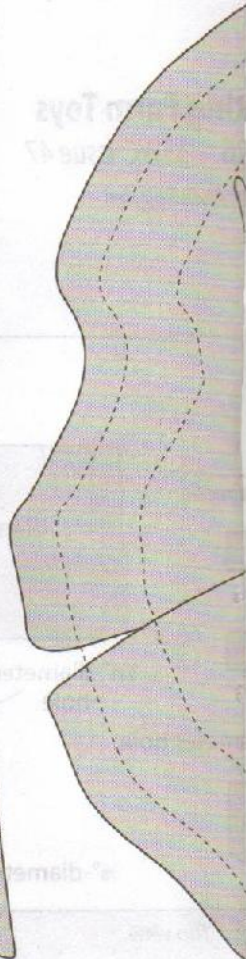




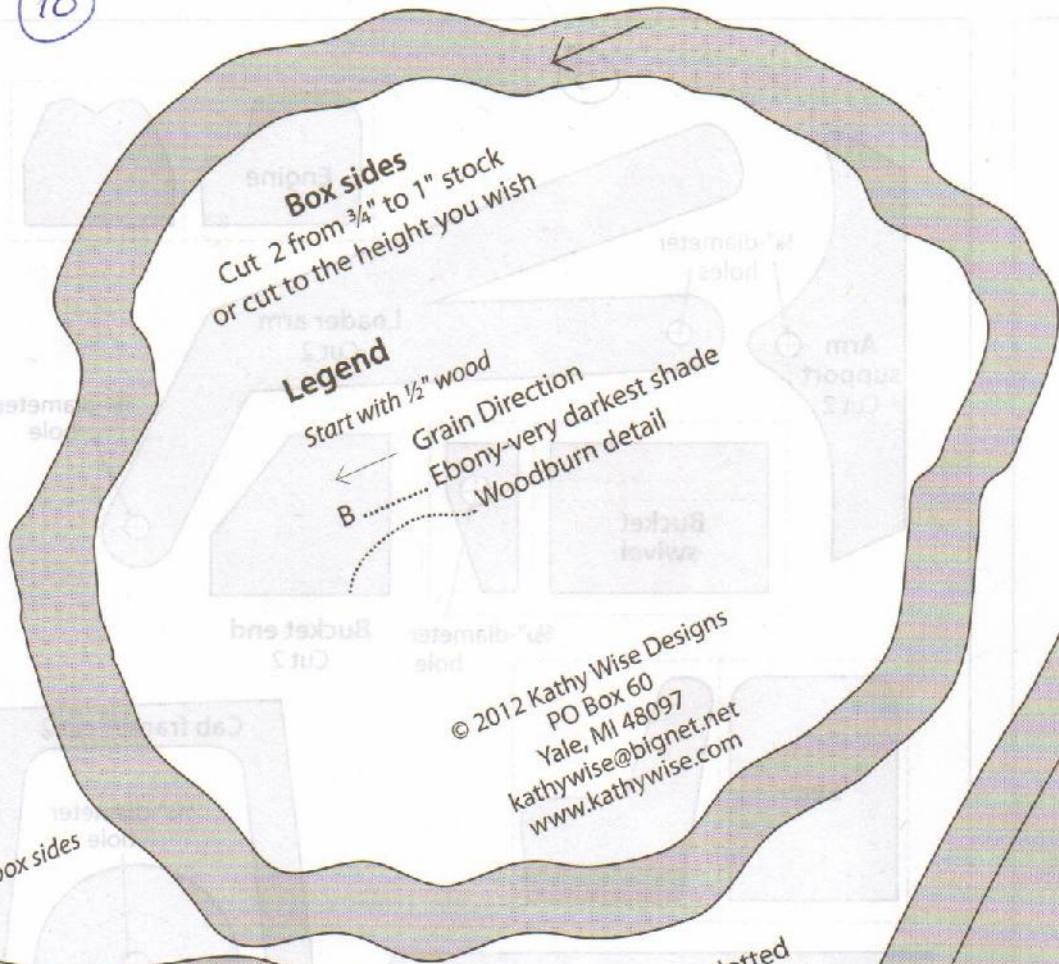
**Versatile Floral
Fretwork**

Page 44

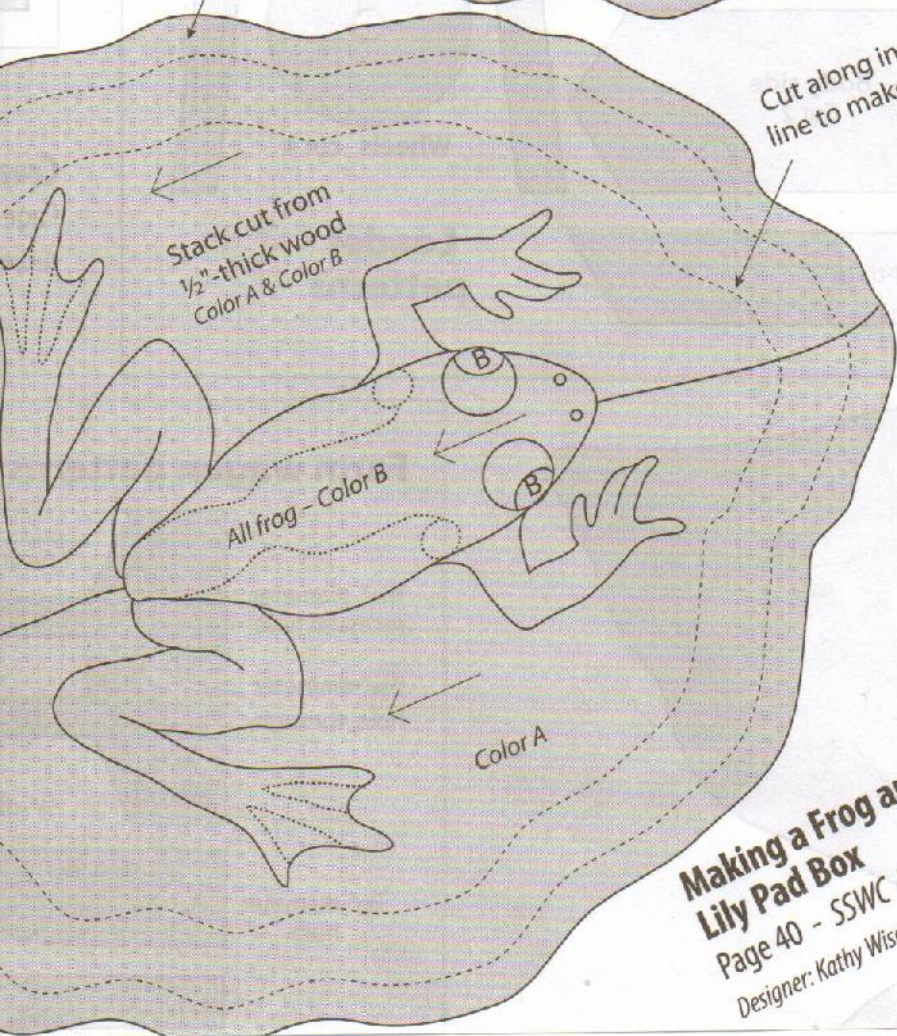
SSWC Issue 47



Designer: Gloria Cosgrove



Position of box sides



**Making a Frog and
Lily Pad Box**
Page 40 - SSWC Issue 47
Designer: Kathy Wise

11

Tractor
patterns

Large side
Cut 2 per duck

1/4" diameter,
5"-deep hole,
on center

Large
Cut 2 per duck
(Use placement pattern to
place)

**Lawn-Roaming
Duck Family**
Page 20 - SSWC Issue 47
Designer: Paul Meisel

Large body #2
Cut 1

1

2

Small wing

Small side #3
Cut 2

1/4"-diameter,
2"-deep hole on center



Large body #2
Cut 1



1" x 1"

2" x 1"

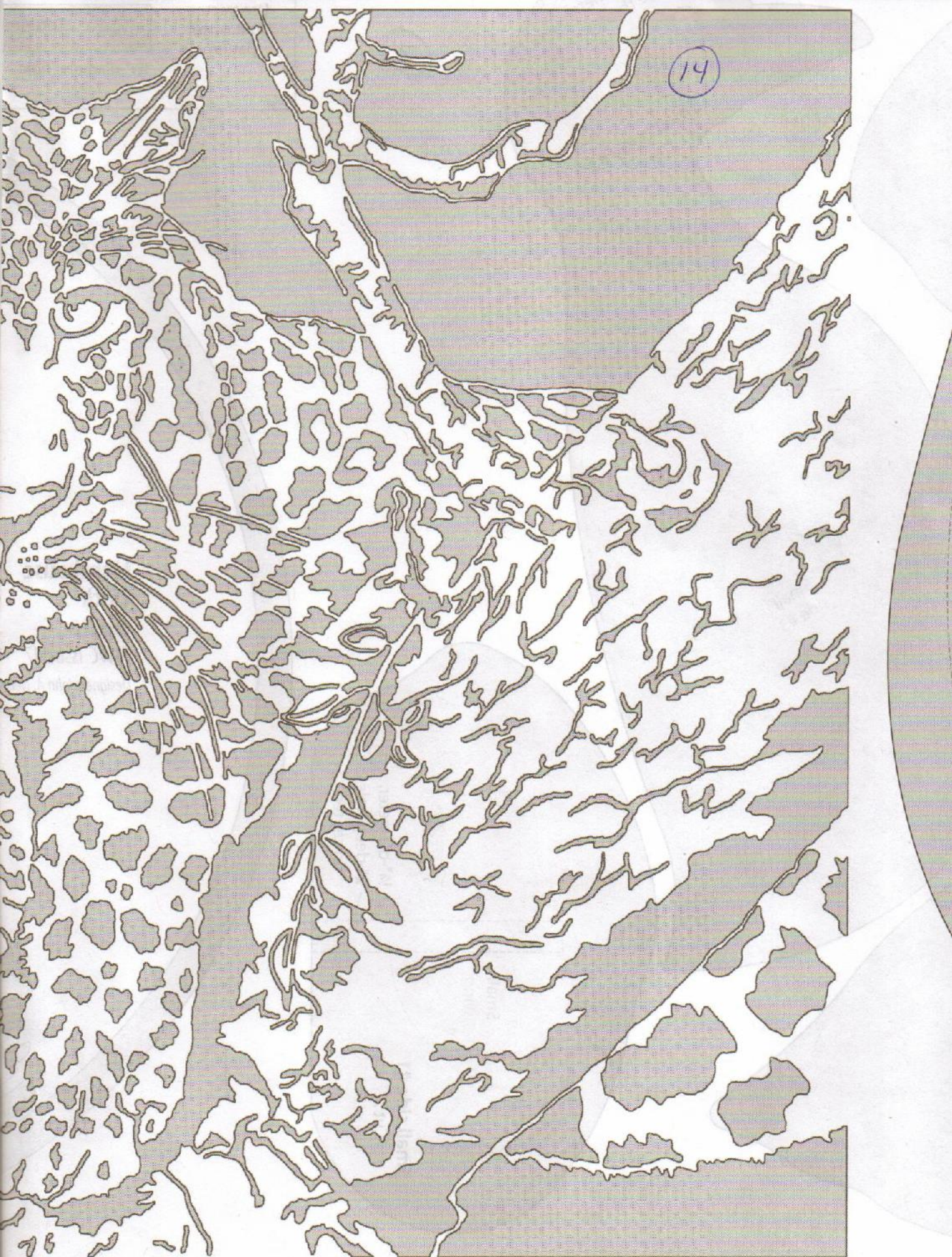
Cut

Sitting Pretty

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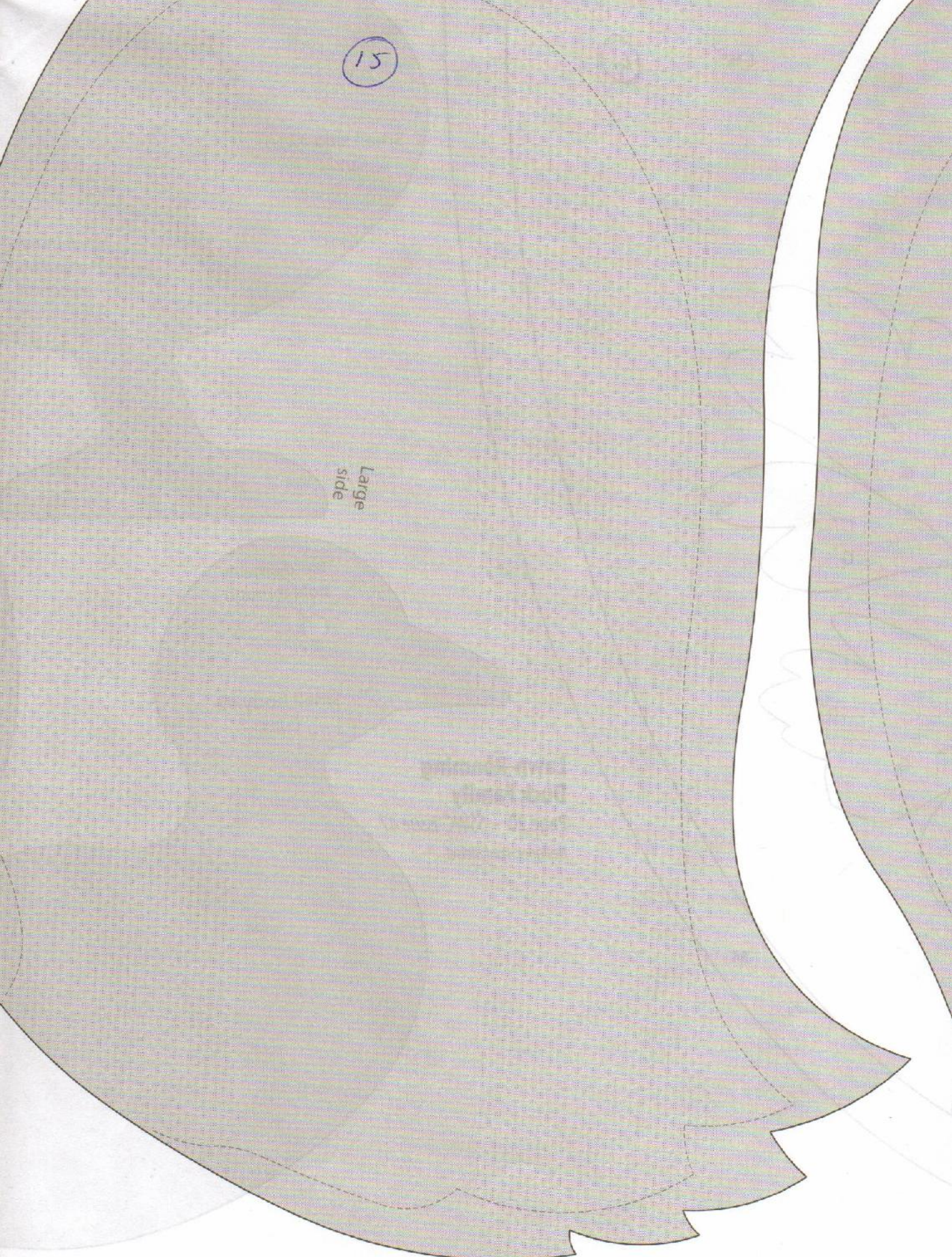
Designer: Kerry Hallam

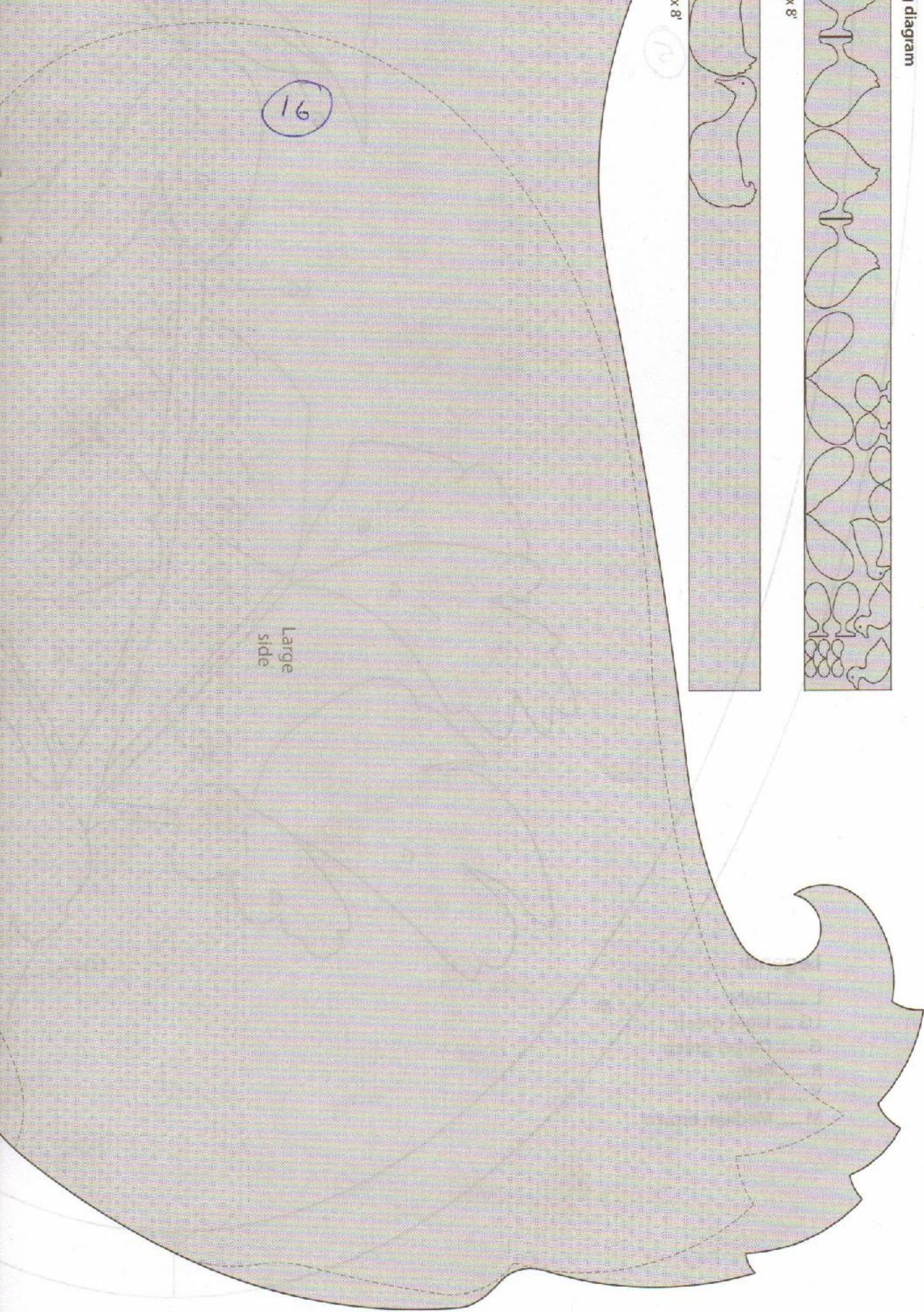




15

Large
side





16

Large side

17

x 8



x 8



diagram