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SCROLLSAW

# Woodworking & CRAFTS

FALL 2018  
ISSUE 72

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Elk Plaque**
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Bird  
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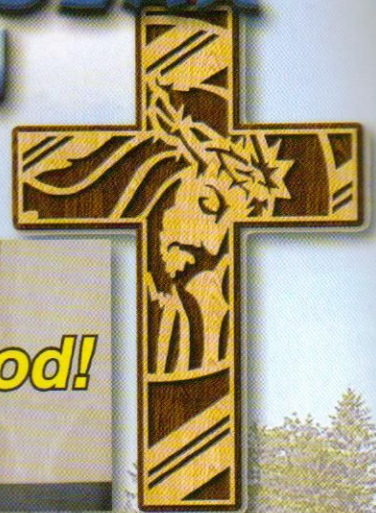


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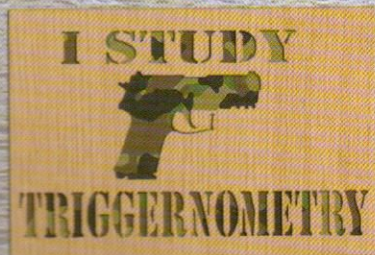


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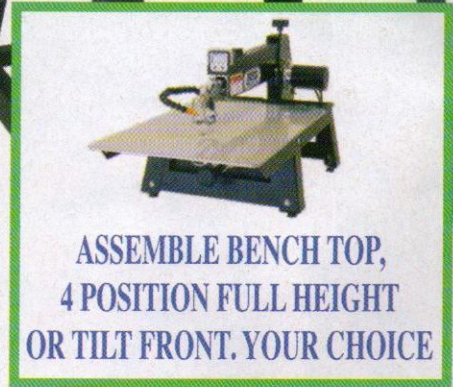
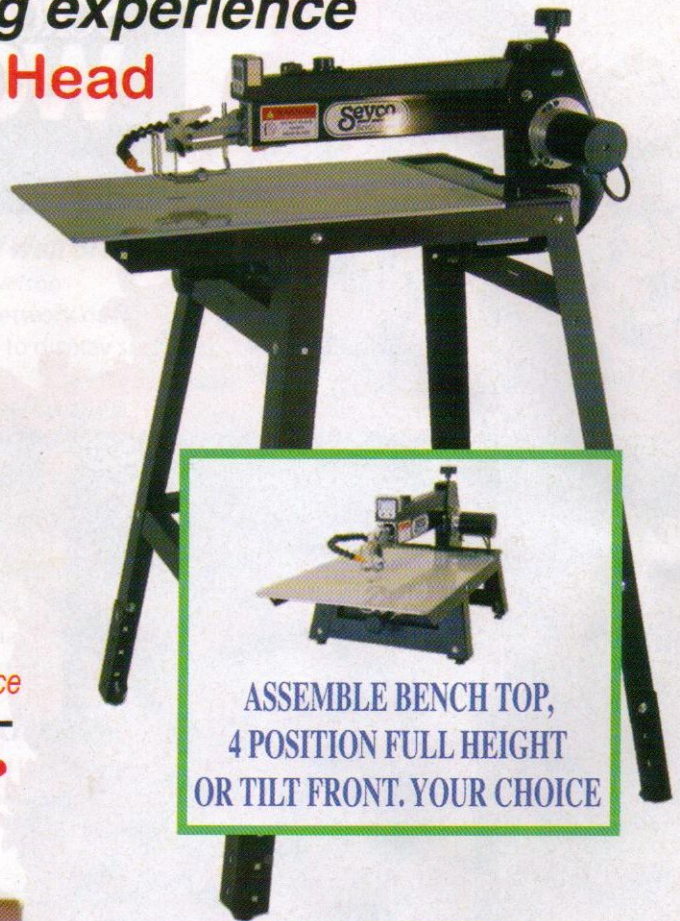
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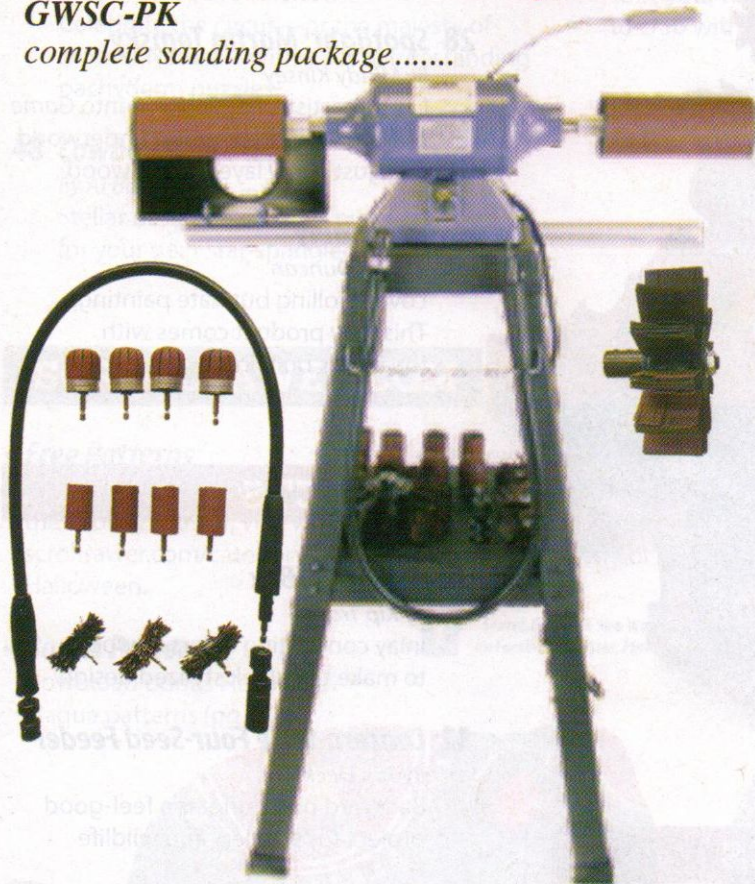


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# SCROLLSAW woodworking & CRAFTS



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## SCROLLSAWER.COM

### • Free Patterns

For free patterns to ring in the spooky season, visit [www.scrollsawer.com/category/Halloween](http://www.scrollsawer.com/category/Halloween).

### • Bonus Patterns

Download bonus Halloween Plaque patterns (pg. 62).

### • Online Gallery

Like our interview with Martin Tomsy (pg. 28)? See an expanded gallery of his work.



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## Transitions

Although the new year is traditionally the time for resolutions, it is fall that I associate with change. I'm sure it's because I've spent most of my life either going to school myself or sending my son, which has somehow created in me an expectation of—even longing for—something new at this time of year. Fortunately, this issue is crammed with new projects, techniques, and ideas.

School generally starts with review, and so do we. Specifically, product reviews of new versions of two well-known items: blade clamps and plywood. We worked with members of our online forum ([www.scrollsawer.com/forum](http://www.scrollsawer.com/forum)) to test Pegas' new Blade Chuck Heads on a number of different machines and were amazed at the way they transformed some scroll saws; see our notes on page 16. We were introduced to SpectraPly, a brightly colored plywood, by Bruce Shea of Dayton, Ohio, who uses it to make spectacular scrolled bowls. We used it to cut a couple of projects and asked several experienced scrollers to do the same; you'll find the results on page 66.

Next, we set out to solve the mysteries of sanding. Among our questions: Which sanding tools do you need for each type of scrolling? What is "sanding through the grits?" And what is grit, anyway? You'll find our guide on page 53.

Everyone's favorite part of school was recess, which reminds me: if you play games with kids, you need a dice tower. Board games have exploded in popularity in recent years, meaning millions of people are gathered around the table—often spending more time searching for their dice than actually playing. Carole Rothman's tower (see page 42) contains the dice so you can keep the game moving. Make a bunch; they will be popular holiday gifts.

Speaking of holidays, we included a couple of projects appropriate for Halloween and Thanksgiving. (Being a word girl, I especially like Bob Duncan's graceful word art on page 64.) For more free patterns, please visit our website: [scrollsawer.com/category/Halloween](http://scrollsawer.com/category/Halloween). You can also use the site's "How To" menu to find plenty of patterns, tips, and techniques, and even videos of some of our projects in action.

Finally, as it turns out, this fall issue heralds a big change for me. After more than seven years with the magazine, I am leaving to explore new challenges. Like a kid graduating from school, it's a bittersweet time for me—I'm sorry to go, but excited to see what comes next. Thanks to all of you for demanding the best of us and making me learn, think, and grow over the years. During this season of transition, I look forward to joining you on the other side of the scroll saw to make some of my favorite projects from past issues, as well as seeing what the new team shares with us readers in the future.

Happy Scrolling!

Mindy Kinsey

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

# SCROLLSAW woodworking & CRAFTS

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

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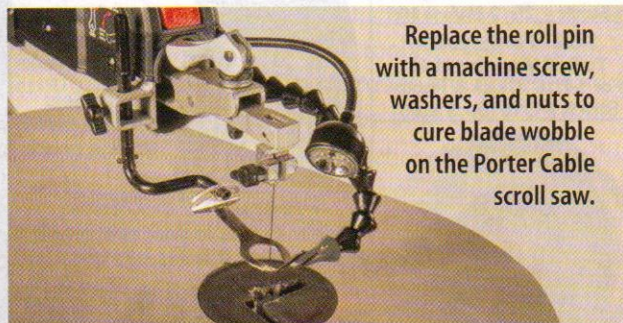
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# Bugging My Grandson

My daughter asked that I create wall shelves for my grandson's bedroom to display the models that he makes. She wanted something simple and bug-related, but I got a bit carried away. This bug shelf is a variation on my "Crawly Critter Mobile" project in Issue #67. The shelf is 36" (91.4cm) long and 11 1/2" (29.2cm) tall at its peak. I cut it from 3/4" (1.9cm)-thick solid pine and finished with stain and Minwax clear gloss polyurethane.

**Tom St. Aubin**  
Maumee, Ohio



Replace the roll pin with a machine screw, washers, and nuts to cure blade wobble on the Porter Cable scroll saw.

## Best Beginner Saw

I just finished making the revisions you suggest on my recently purchased Porter Cable scroll saw. Those modifications help tremendously. One problem that I still have is "blade wobble." My saw blade has between 1/16" and 1/8" wobble. I can't find any information on the web about how to correct this. Can you help?

**Bob Adkins**  
Haines, Alaska

*Editor's Response: I'm glad our suggestions helped. To reduce the blade wobble, I suggest you replace the roll pin that the blade head pivots on with a machine screw, a couple of washers, and a nut. I've posted a video on our website: <http://scrollsawer.com/2018/05/23/hacking-porter-cable-scroll-saw/>.*



## Cutting Coins

I received my Summer 2018 issue (#71) today, and saw Randy Gloden's article, "Cutting Coins." I understand that people make these and have seen similar articles before. What people fail to realize, though, is that this is illegal. To quote the law, "It is illegal to fraudulently alter, deface, mutilate...or lighten any of the coins coined at the mints of the United States." As scroll saw artists, I think that it is crucial to act as law-abiding citizens to preserve the reputation of our craft.



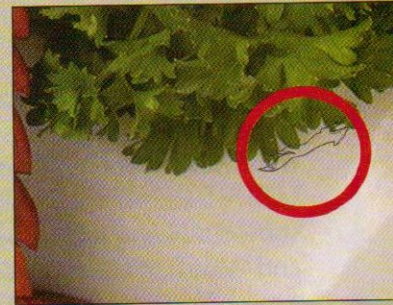
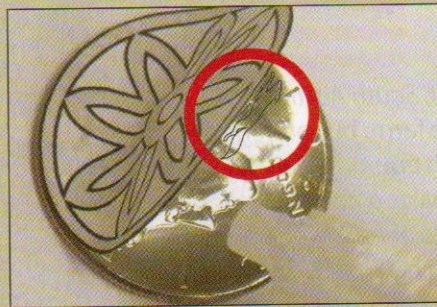
**Laura Shannon**  
Via e-mail

*Editor's Response: Thanks for your concern. As Randy Gloden says in the first paragraph of his article, "While it's illegal to modify coins to try to defraud people, it's perfectly legal to turn coins into works of art." The U.S. Treasury reiterates this point in its page on portraits and designs on circulating coins: "Section 331 of Title 18 of the United States code provides criminal penalties for anyone who 'fraudulently alters, defaces, mutilates impairs, diminishes, falsifies, scales, or lightens any of the coins coined at the Mints of the United States.' This statute means that you may be violating the law if you change the appearance of the coin and fraudulently represent it to be other than the altered coin that it is. As a matter of policy, the U.S. Mint does not promote coloring, plating or altering U.S. coinage; however, there are no sanctions against such activity absent fraudulent intent." Be assured that the manner in which Randy cut his coins was strictly aboveboard.*



### Write To Us!

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



### DOUBLE TROUBLE at the Fox Hunt

Because we inadvertently hid two foxes in the Summer issue, we drew four winners. Harvey Schiller of Bellville, Texas; Paul Stevens of Clacton on Sea, Essex, U.K.; Dean Bornofska of Racine, Wa.; and Dan Martinez of Albuquerque, N.M., were randomly drawn from the participants who located the foxes in our last issue (Summer 2018, Issue 71). A fox was hiding in the parsley on page 18. Another was sighted in Step 3 on page 33.

Find the fox in this issue, and tell us the page number and location. Two readers randomly selected from all correct replies will receive a \$25 Fox Chapel Publishing gift certificate. Entries must be received by August 20, 2018, to be eligible. *NOTE: The contest fox is an outline drawing that would face left if his feet were on the "ground" (other foxes appearing in SSW&C don't count).* Send your entry to SSW&C, Attn: Find the Fox, 1970 Broad St., East Petersburg, PA 17520, or enter online at [www.ScrollSawer.com](http://www.ScrollSawer.com).

Our readers bagged two foxes as the wiley critters ran amok in the Summer issue!



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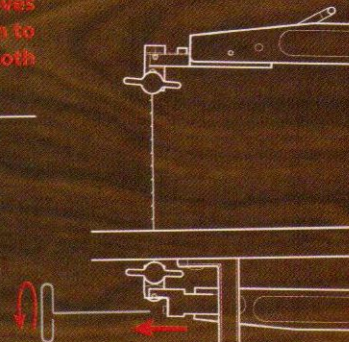
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**Roger Jenkins** *Port Vincent, South Australia*

"I grew up on a South Aussie farm, but preferred woodwork to operating farm equipment!" Roger said. After stints in cabinetmaking and toy design, he started building scale models of Australian big rigs and "Monster" road trains on his scroll saw. He uses a mix of red pine, meranti, kauri pine, and plywood for his creations. This model/toy Kenworth T908 Sleeper is 5" by 71" (12.7cm by 1.8m). Find Roger at [aussiebigrigplans.com](http://aussiebigrigplans.com).



**Brenton Wahl** *Niles, Mich.*

"When I was eight, my mom bought me a scroll saw and I made my first piece—the cartoon Roadrunner," Brenton said. Now, after a 10-year hiatus, he's back in the workshop, creating commissioned pieces out of reclaimed fence panels and whatever else he can find. "Last year, I removed most technology from my life and my long-lost art came back to me. Before I knew it, scroll sawing had changed my family's and my life." He made this Tribal Fox out of birch. Contact Brenton at [rusicwahl@gmail.com](mailto:rusicwahl@gmail.com).



**John Falkowski**

*Milton, Wash.*

John has been making intarsia pieces for 18 years. *Puff the Magic Dragon* is his take on Sam Willcox's project, "Converting Any Pattern to an Intarsia Plan," from SSWC Fall 2001 (Issue #4), which was based on content from *The Great Book of Dragon Patterns* by Lora Irish. For a personal touch, he used assorted colorful hardwoods and enlarged the pattern. Said John, "For the body fin, I individually sprayed and assembled it six pieces at a time to the body to ensure there were no gaps." Contact John at [wood\\_wine@comcast.net](mailto:wood_wine@comcast.net).



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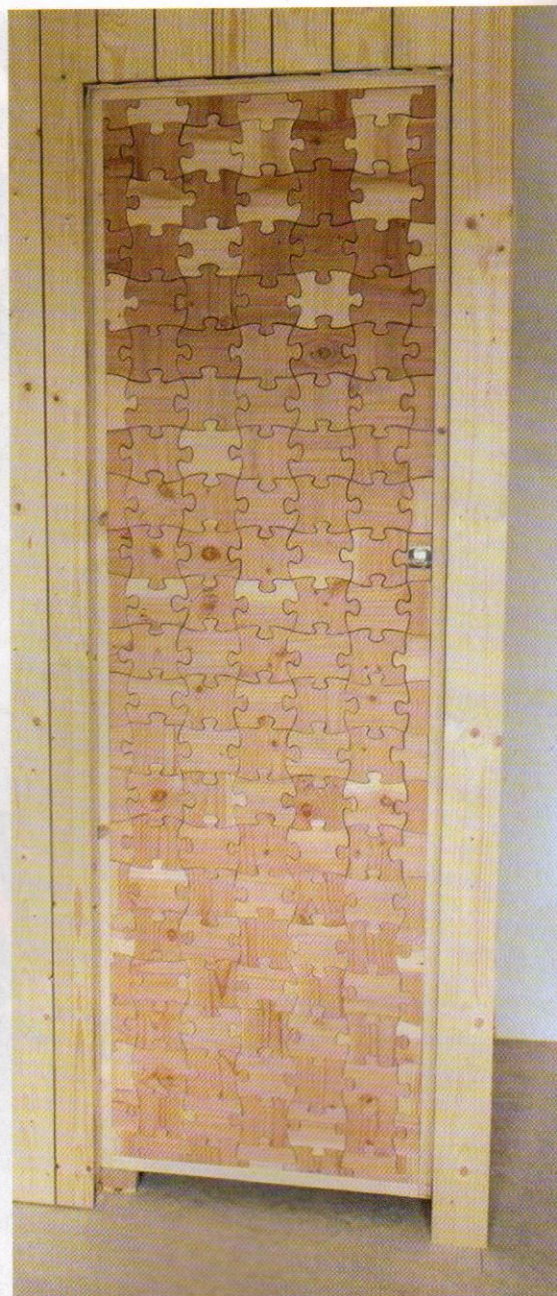
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**Luis Martinez** *Aguadilla, Puerto Rico*  
 Luis grew up watching surfers and beach-lovers in his coastal hometown, a place that often figures prominently in his work. *Island Spirits* incorporates more than 200 pieces, ranging from poplar and ash to cocobolo and padauk, and measures 13" by 26" (33cm by 66cm). As yellowheart is now an endangered species, Luis dyed the wood for the sun.



**Ivan Govaerts** *Mechelen, Belgium*  
 A self-taught scroll saw artist and pyrographer, Ivan shies away from the strictly conventional. He drew the pieces for his bathroom puzzle door in CorelDRAW and then cut them from Douglas pine. Each piece is hand-sanded and glued onto an MDF panel for added support. Find Ivan at [www.woodcreator.be](http://www.woodcreator.be).



**Jay Roberts** *Mason, Mich.*  
 Jay is happiest when using his scroll saw to create intricate fretwork portraiture and abstract art. Both pieces in *Filling the Void 2* are 11" by 17" (27.9cm by 43.2cm); Jay cut them from Baltic birch and cherry and walnut veneer. He used suede for the backing. Find him on Etsy at [JMRDesignsOnline.com](http://JMRDesignsOnline.com).

**Share Your Latest Work!**

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

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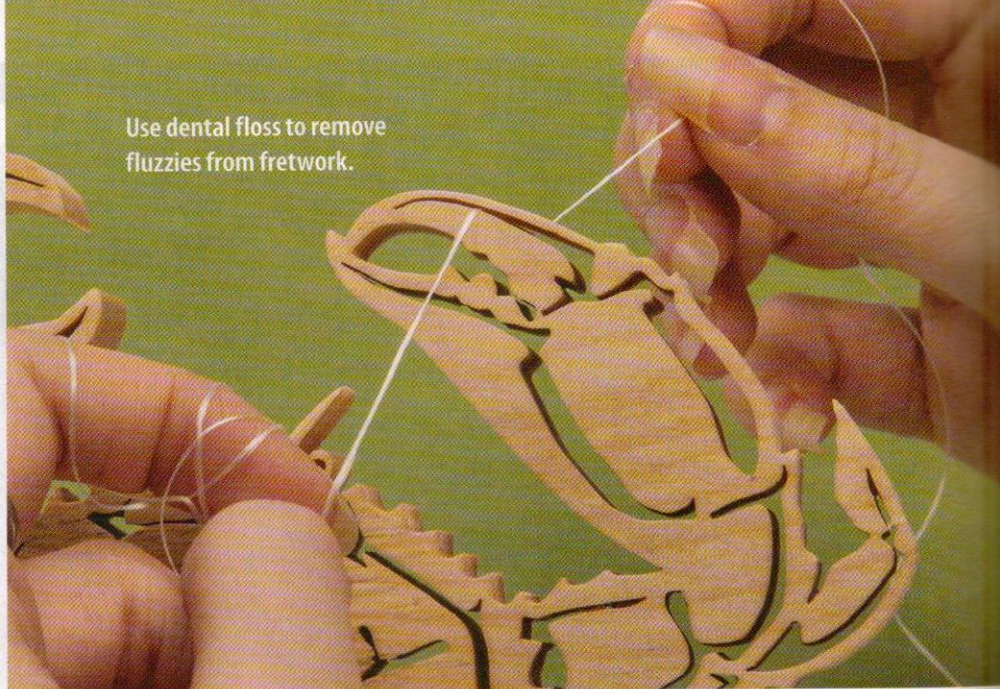
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# Don't Forget to Floss

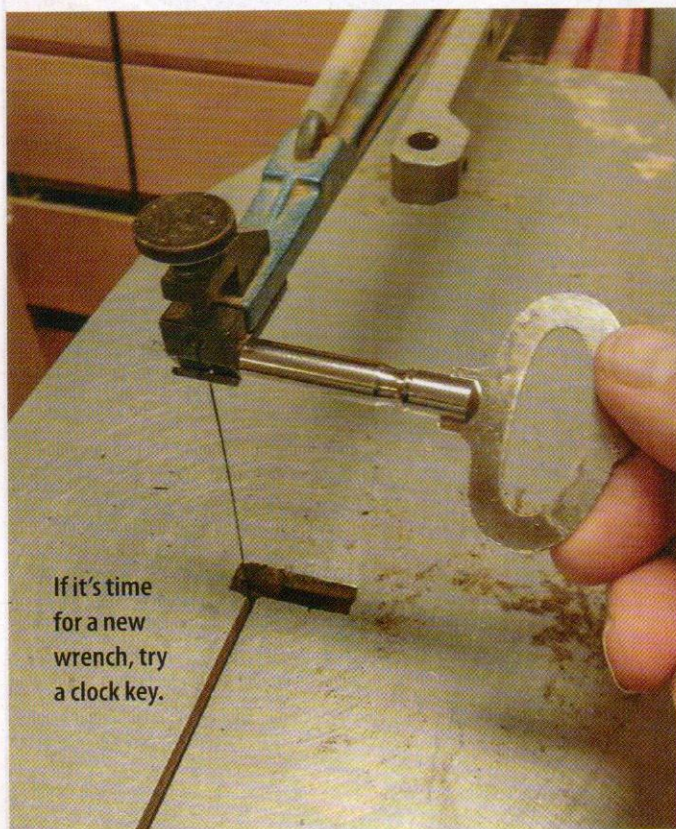


By Fred Kahle, Wichita, Kan.

Sometimes an air compressor doesn't clear all of the dust from detailed projects. For a final sweep, I use unwaxed dental floss to tidy the veining and decorative cuts.



Use dental floss to remove fluzzies from fretwork.

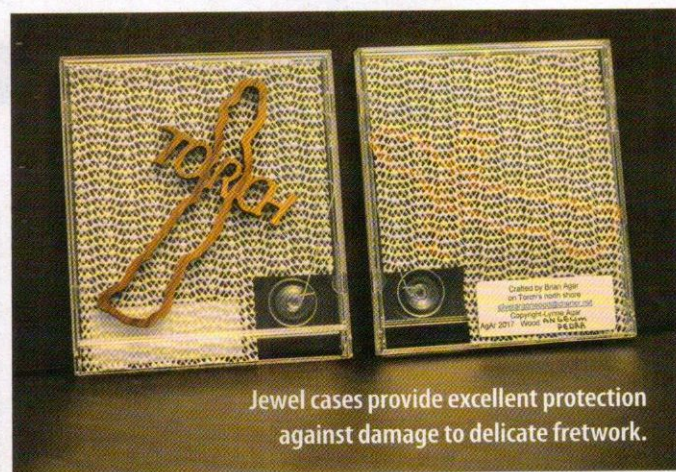


If it's time for a new wrench, try a clock key.

## Replacement Scroll Saw Wrench

By Dave Van Ess, Chandler, Ariz.

I lost the wrench for my Hegner scroll saw, so I replaced it with a 5mm clock key. It's rugged and multi-functional; I even use it to open bottles. My \$4 nickeled French clock key came from Timesavers.com, but you can find one almost anywhere online for a similar price.



Jewel cases provide excellent protection against damage to delicate fretwork.

## Transporting Fragile Ornaments

By Brian Agar, Central Lake, Mich.

I buy clear CD jewel cases in bulk and use them to store, transport, and ship wooden ornaments. The cases are large enough for the ornament, a small suction cup, and some thin, non-slip shelf liner for padding. These jewel cases can be purchased in bulk from Polyline Corp ([www.polylinecorp.com](http://www.polylinecorp.com)), and the mini suction cups can be found at Adams Manufacturing ([suctioncups.com](http://suctioncups.com)) or other online retailers.

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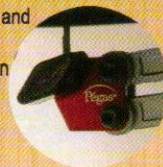
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### Blade Chuck Lower Head for Jet scroll saw JWSS-22

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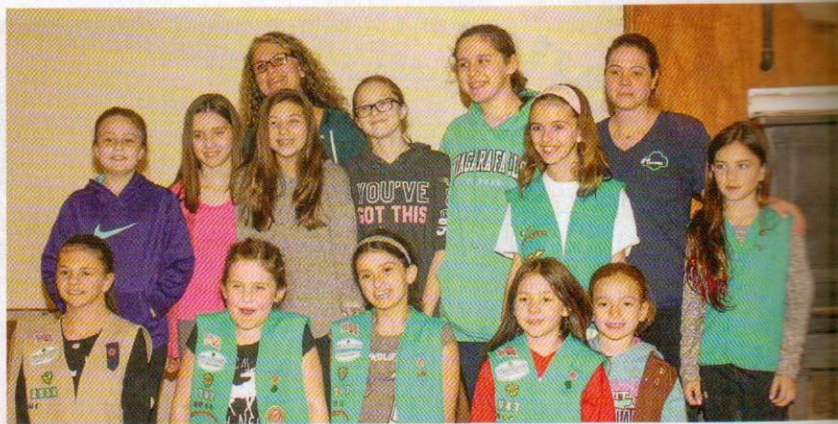
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# Project Blossom

For the past five years, the Long Island Scroll Saw Association has been making painted wood flowers and donating them to area nursing homes for Mother's Day. The group began by donating to two different homes, but this year, thanks to an enthusiastic group of Girl Scouts, the project really expanded.

After the scrollers invited Junior Girl Scout Troop 747 and Cadet Troop 2589 to join the project, the work on the flowers began. Members stepped up to make sure the Scouts would have enough flowers to paint. On project day, 12 young girls and two Troop Leaders came ready for hard work, painting the scrolled flowers and decorating them with cellophane and ribbon. In all, the club and its Girl Scout helpers made 153 flowers this year. They distributed them to five different area nursing homes and assisted living facilities.

*Submitted by Jean Piotrowski. For more information, visit [www.liwoodworkers.org/lisa](http://www.liwoodworkers.org/lisa).*



## 2017 Showcase of Toys

The Grand Woodcrafters in Surprise, Ariz., had another successful year designing and building toys in preparation for Christmastime. On November 30, 2017, all of the toys—race cars, puzzles, games, jewelry boxes, and more—were amassed in the Cimarron Center and then sorted into bundles to be delivered to the designated organizations: Luke Air Force Base for Operation Angel Tree, Eve's Place, St. Mary Food Bank, and the Surprise Fire Department.

In 2017 alone, the Woodcrafters produced 1,313 toys—23 percent more than last year and a far cry from the 200 produced in the Toy Project's infancy back in 2002.

*Submitted by Jim Fenley. For more information, visit [www.grandwoodcrafters.com](http://www.grandwoodcrafters.com).*

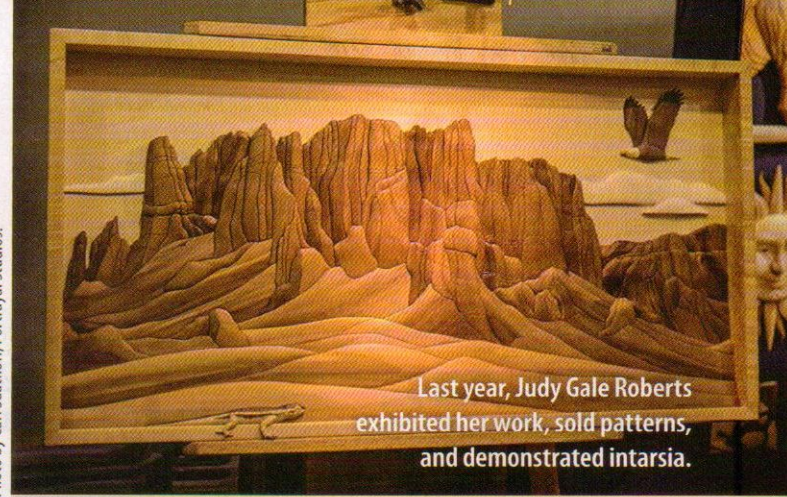


# Scrolling at Artistry in Wood

“Artistry in Wood is a perfect name for the show,” said the well-known intarsia artist Judy Gale Roberts about the Dayton Carvers Guild’s annual event. “The show encompasses so many woodworking techniques—carving, pyrography, fretwork, intarsia, woodturning, and combinations of all five skills.”

Judy was just one of several scrolling celebrities at the 2017 event. And you can expect scroll sawyers at the 2018 event held Oct. 13-14 at the Roberts Center in Wilmington, Ohio, as well. In addition to displays and vendors offering a variety of woodworking projects, tools, and materials, the event features a competition with cash prizes for woodworking projects—including a scroll saw category.

At the 2017 show, Curt Blosser took home both First Place and Best of Scroll Saw Category for his chess set, made using a pattern by Dan Wilckens that appeared in *Scroll Saw Woodworking & Crafts* Fall 2017 (Issue 68). Bruce Shea won Second Best of Category with a red, white, and blue scrolled bowl. Erick Ortiz won the Deitz Religious Award for his cubist depiction



Last year, Judy Gale Roberts exhibited her work, sold patterns, and demonstrated intarsia.

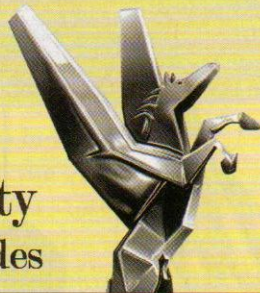
Photo by Carl Saathoff, Portrayal Studios.

of Jesus, as well as Third Best of Woodworking for his eagle head portrait. Vickie Schaub was a winner as well, taking a prize for her angel intarsia, made using a pattern by Kathy Wise that appeared in *Scroll Saw Woodworking & Crafts* Holiday 2015 (Issue 61).

Over the course of the weekend, there are also free demonstrations organized by *Scroll Saw Woodworking & Crafts* and *Woodcarving Illustrated*. Scott Phillips, host of The American Woodshop, usually shows off some new tools. The other demos range from general woodworking to carving to scroll sawing.

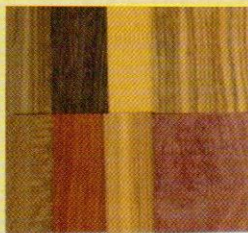
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# Pegas Blade Chuck Heads

**Want to revamp your scroll saw? Switch out that clunky old blade clamp for a tougher, more streamlined model**

*By Bob Duncan and Mindy Kinsey*

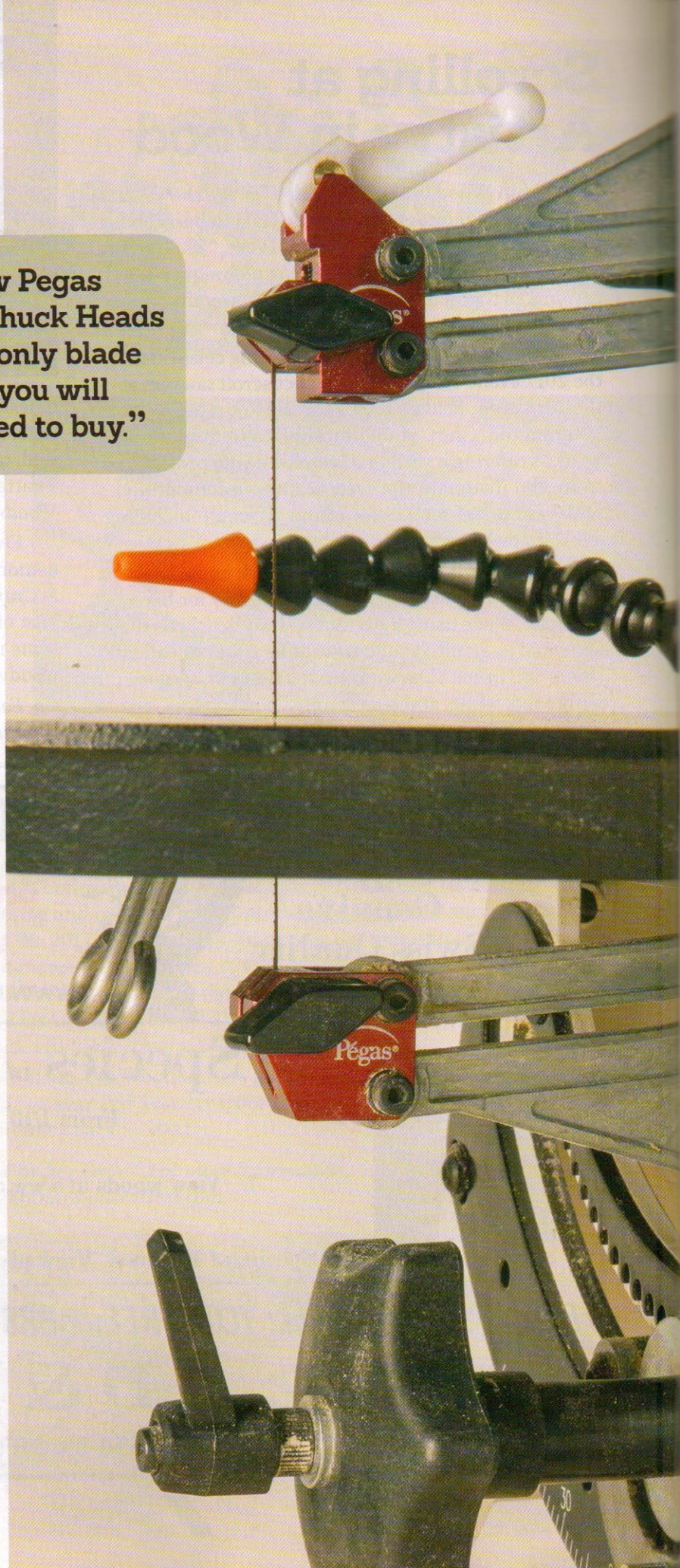
The blade clamps are among the first parts to fail on a scroll saw. The clamps, which are also called blade chucks or blade heads, are subject to constant vibration and are repeatedly tightened and loosened as part of any scrolling project. Further, there are problems inherent in cast aluminum that encourage users to overtighten the thumbscrew while securing the blade, which strips the threads in the head. Overtightening the thumbscrews can also split the entire chuck. Plus, poorly designed clamps are hard to use and can let the blade slip free while you cut.

The new Pegas Blade Chuck Heads are the answer to these problems. Designed to fit on saws that use the link drive system (such as DeWalt, Excalibur, King, Jet, and Seyco), these are the only blade heads you will ever need to buy.

## Engineering Better Blade Chucks

In the summer of 2017, Pegas took their scroll saw to an engineering school in Switzerland and asked the students and instructors how to improve it. According to the engineers, the best way to reduce vibration and make the saw easier to use was to replace the standard cast-aluminum blade heads with precision machined heads made from aircraft aluminum. The grade of aircraft aluminum used in these heads is as hard as steel—much harder than cast

**“The new Pegas Blade Chuck Heads are the only blade chucks you will ever need to buy.”**



aluminum—so they could be made smaller, but remain durable. This material also keeps the threads in the thumbscrew holes from stripping. And because the heads are machined, not cast, there's no seam that might lead to cracking.

### Reducing Slippage and Vibration

Clarence Magee of Chenango Forks, N.Y., a long-time member of the SSWC forum, was at the point of replacing his Excalibur EX21 saw when he purchased the Pegas Blade Chuck Heads in early February. "It is a vast improvement over the original blade heads," he said. "I broke several stock clamps trying to get the proper torque to hold the blade without slipping. It would split the holder. Now that I've installed the Pegas blade clamps, I can look forward to many more years of use." As of press time, Clarence more than 40 hours of operation with the new heads and still has not had a blade slip.

Randy Gloden of Manchester, Tenn., an SSWC contributor and forum member, found the Pegas clamps hold tightly with less force. "When I first started using the clamp, the main thing that stuck out was that so little effort is required to apply tension," Randy said. "It just didn't seem possible that I could be getting enough tension with so little force. But, it seems to be fine, at least for me. And unlike the original blade clamps, where the tension lever kept flipping and releasing the tension, the lever on the Pegas heads has not flipped itself once."

In addition, Randy used a seismometer app to examine the differences in vibration between his original Excalibur blade clamps and the Pegas blade clamps at various speeds. "I spent hours testing this, and the vibration was measurably less with the Pegas clamps," he said. Data aside, however, Randy admitted that he didn't notice much of a difference in vibration when he was focusing on a project.

Speed	Original Excalibur Blade Heads	Pegas Blade Heads
7	15	12.1
9	35	20.2
10	29	28.1
11	39.5	35.1

Using a seismometer app, Randy Gloden found that the Pegas heads cause less vibration than the original heads on his Excalibur saw. Because his saw didn't have numbers on the speed dial, Randy taped a small clock face to it and designated the lowest speed as 1 and the top speed as 11.

### Transforming Performance

In our shop, we replaced the blade clamps on our Jet with the Pegas Blade Chuck Heads. We mentioned in our review of the Jet scroll saw in Summer 2017 (Issue 67) that we didn't like Jet's clamping system. The Pegas Blade Chuck Heads transformed this saw. It went from being our least-used saw to one of our most-used. The blades were easy to clamp and stayed in place after prolonged use.

Carole Rothman of Pawling, N.Y., an author and SSWC contributor, agreed. In the past, Carole has been forced to use a shop-made wrench to tighten the thumbscrews on her saws. Now, she said, "I have had no problem tightening the screws by hand with the Pegas clamps installed on the Jet." In addition, noted Carole, the original Jet clamps were "a nightmare to bottom-feed at an angle, get the blade positioned correctly, and tension it all at the same time." Using the Pegas heads, she said, "I can top-feed when I use the Jet for bowls, which is useful for large blanks." If you like the top clamping system on the Jet but dislike the bottom barrel clamp, Pegas is releasing a set that includes just the bottom clamp.

We also tried the Pegas Blade Chuck Heads on a couple of other saws. Our King scroll saw is new, so the benefits were slight. We saw a modest reduction in vibration and had fewer blades slip out.

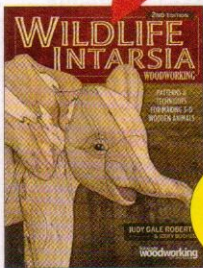
The Pegas Blade Chuck Heads improved the performance of our DeWalt 788, once we solved one issue: adjusting the tension. The tension lever on the DeWalt is separate from the blade clamps, so installing the Pegas Blade Chuck Heads created a second tensioning method. We found reasonable success by totally releasing the DeWalt tensioner and using the blade heads to adjust the tension (and vice versa). However, we saw the least amount of vibration when we put the DeWalt tension lever in the middle and then tensioned the blade with the Pegas Blade Chuck Heads. Aware of the issue, Pegas is releasing a new kit with a standard bottom blade head and a top head without the tensioning lever for DeWalt and Delta scroll saws. That way, you can have the benefits of the Pegas Blade Chuck Heads and convenience of the DeWalt-style blade tension lever.

*Pegas Blade Chuck Heads are available from your favorite specialty woodworking store, or contact Grobet USA at 201-939-6700 (ask for Customer Service) or [custserv@grobetusa.com](mailto:custserv@grobetusa.com) to find a local retailer. The MSRP for the full Blade Chuck Heads is \$90 plus S&H; the DeWalt/Delta kit is \$64; the Jet bottom blade holder kit is \$40.*

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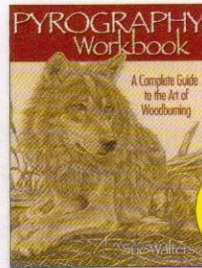


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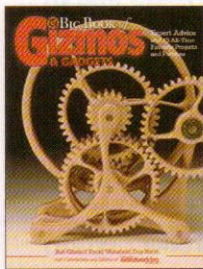


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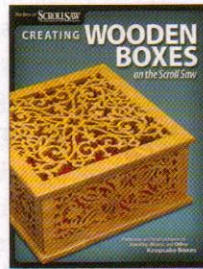


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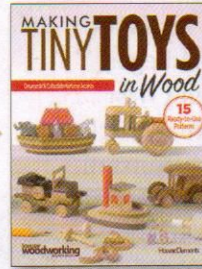


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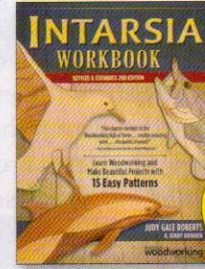


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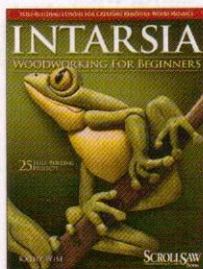
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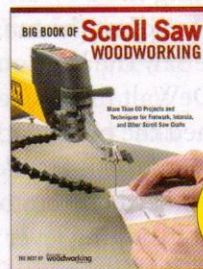


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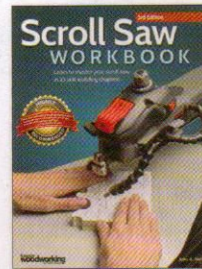
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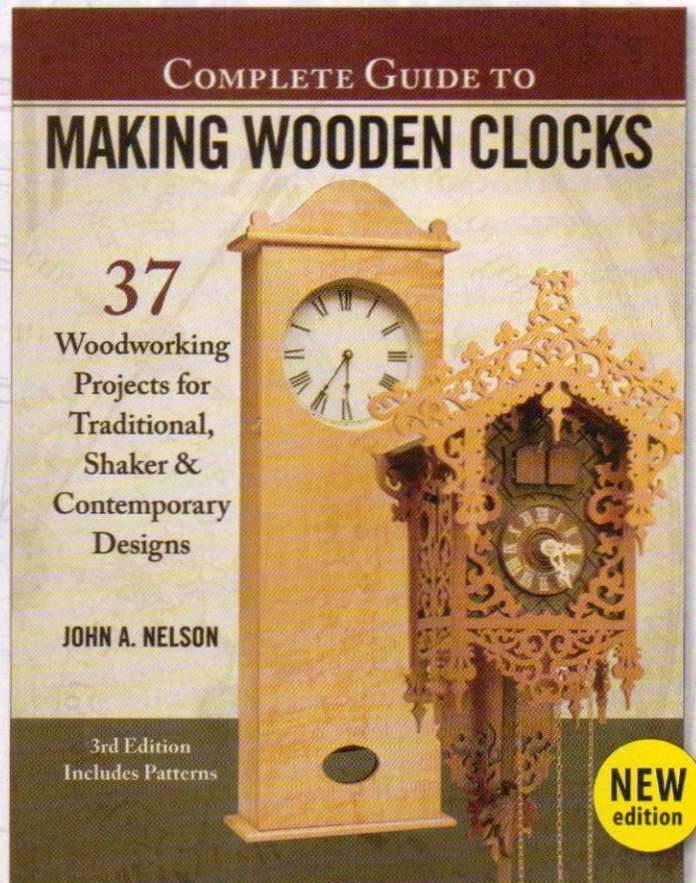
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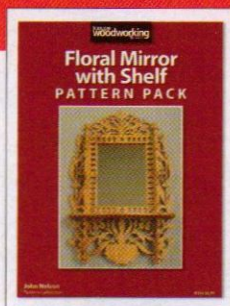
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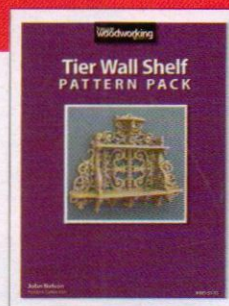
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# Rocky Mountain Elk

A rugged burl makes a natural backdrop for this impressive portrait

By Don Calhoun



**T**he Rocky Mountain elk sports the largest and most distinctive antlers of North American elk. On fully grown adults, the antlers alone can weigh 40 pounds (18.1kg), so I really wanted to make them the star of this project. Use long, decisive cuts to shape the antlers; keep the cuts small and precise around the back and ruff to create the illusion of fur.

### Selecting the Wood

For this piece, I suggest using wood with an attractive grain. I used a slice of an irregularly shaped Northwestern big leaf maple burl with a natural bark edge.

### Cutting the Project

Sand the wood with 80-grit sandpaper, and then use progressively finer grits up to 320-grit. Remove all sanding dust from the wood before you start on each new grit.

If you've got great grain patterns in your blank, take advantage of it. I trace the outline of the pattern onto semi-rigid clear plastic with a fine-point permanent marker. I use a hole punch to add reference holes on each side of the design. Move the clear plastic around on the blank to find the best orientation for the pattern. Use the reference holes to mark the location.

With highly figured wood, you may run into hidden bark pockets or voids. When

you hit one of these, it's like cutting through butter. Because of this, I use carbon paper to trace the pattern directly onto the blank. That way, I can see the surface of the wood and adjust in advance if the blade approaches a delicate spot.

Use the reference marks to align the paper pattern on the blank. Tape it in place, slip carbon paper under the blank, and trace the pattern onto the wood. Carbon paper stays on the surface better than graphite paper, and it wipes off easily with denatured alcohol after you finish cutting.

Remove the carbon paper and pattern, and cut the design.

### Finishing the Portrait

Sand the piece with a random orbital sander and 220-grit sandpaper. Hand-sand delicate areas. Sand again with 320-grit sandpaper, and then rub it down with 000 steel wool. Remove all sanding dust. If you choose an interesting hardwood, stain is not necessary. I apply a high-gloss varnish or lacquer, sanding lightly between coats with 320-grit sandpaper. I apply enough coats to create a deep, high-gloss finish.

For the backing, I find a black pebble mat board, cut it to size with a craft knife, and attach it with permanent-bond glue. You could also use dark fabric or foam.

Pattern for the **ROCKY MOUNTAIN ELK** is in the pattern pullout section.

## Materials & Tools

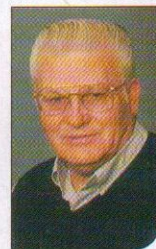
### Materials:

- Hardwood, such as Northwestern big leaf maple burl, ¾" (1.9cm) thick: 11" x 15½" (27.9cm x 39.4cm)
- Sandpaper
- Carbon paper
- Clear plastic
- Marker: fine point permanent
- Glue stick: quick-dry permanent bond
- Denatured alcohol
- Finish: high-gloss varnish or lacquer
- Hanger: large sawtooth

### Tools:

- Scroll saw blades: #2/0 spiral, #2/0 flat
- Drill with bit: #60 wire size
- Sander: random orbital
- Hole punch
- Craft knife
- Pencil or stylus

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



*Don Calhoun began scroll sawing 14 years ago after receiving a saw as a gift. Scroll sawing opened up Don's hidden talents and helped him connect with his childhood love of nature.*

*He has participated in a variety of craft shows and won several awards for his scrolling abilities. He enjoys cutting and modifying patterns to create a piece of art that evokes the beauty of nature. He is the owner of Don and Inge's Creations, where he and his wife make gifts to sell at craft shows. Visit his website at [pacificscrollsawart.com](http://pacificscrollsawart.com).*

# Sea Turtle Box



**Inlay contrasting colors of wood to make this sleek stylized design**

*By Kip Travis*

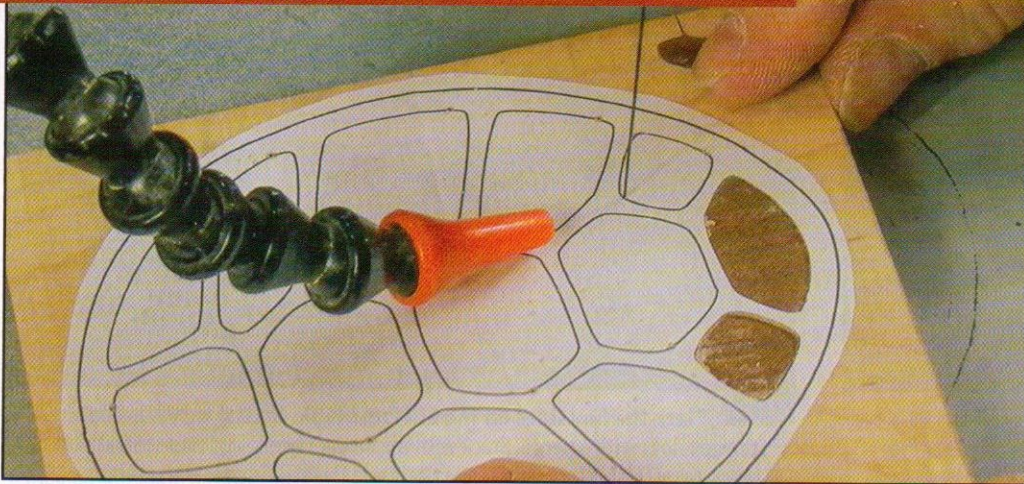
**T**he yearly pilgrimage of the loggerhead sea turtles to the beaches of Oak Island, N.C., inspired this box. They come ashore during the night to build nests and lay their eggs. Many diligent people donate their time to monitor and protect these nests until the eggs hatch and the hatchlings make their nocturnal rush to the sea.

## Getting Started

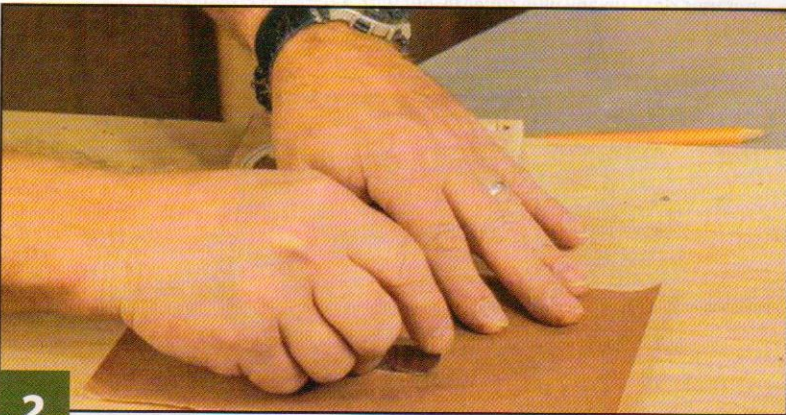
Cut the blanks to size and make sure all of the wood is flat. Set the saw to the proper angle (see *Setting the Saw Angle* on page 24). Determine which side of each blank you want to be the top of the lid, and keep that side up when stacking the wood for the inlay. Attach the maple lid blank to the top of the walnut inlay blank with double-sided tape. Wrap the stack with packing tape and attach the pattern to the maple. Attach the patterns to the rest of the boards.



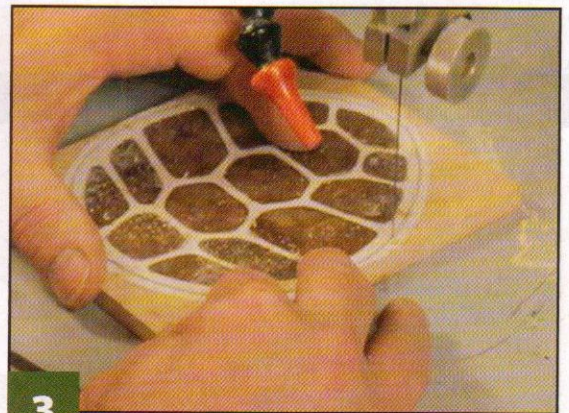
## TURTLE: MAKING THE LID



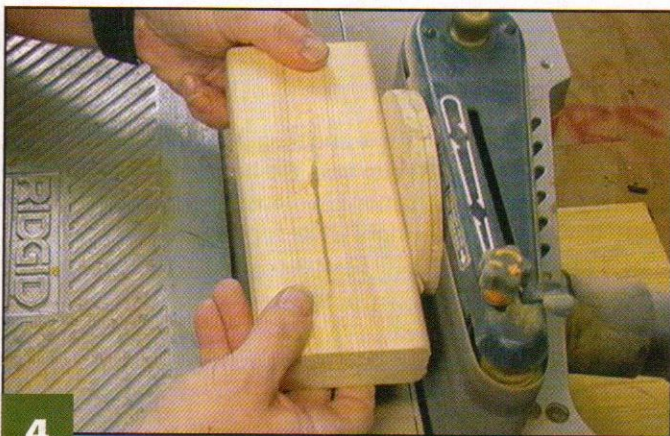
**1** Use an awl to mark the location of the blade-entry hole. This prevents the bit from wandering. Use a #65 bit to drill a blade-entry hole at the correct angle (see Setting the Saw Angle on page 24). Cut counterclockwise along the inlay outline using a #3 skip-tooth blade. End the cut in line with the blade-entry hole. As you work, discard the maple cutouts and push the walnut inlay pieces up into the maple shell. Repeat until you have cut all of the inlays. Cut the packing tape and separate the stack with a putty knife.



**2** Adjust the fit of the inlays. The walnut inlays should be flush or slightly above the top surface of the maple. If it is not, put a piece of 150-grit sandpaper on a flat surface and sand the edges of the inlay. Carefully rotate the inlay, keeping the edge of the inlay flat on the sandpaper. Adjust as needed until the inlays fit correctly. Remove the pattern from all the inlay parts and glue the inlays into the lid, but leave the pattern on the rest of the lid. Set aside to dry.

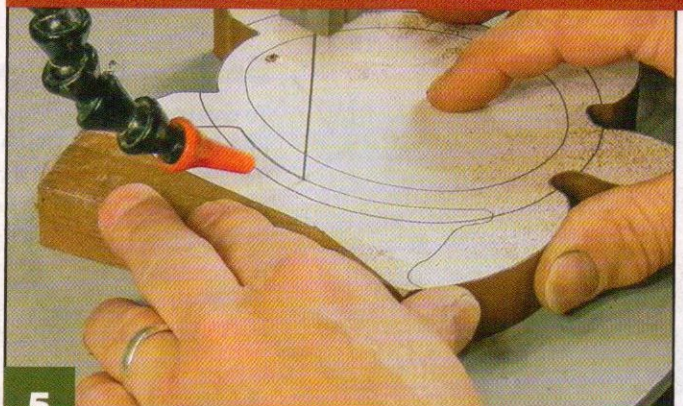


**3** Glue and clamp the lid base to the inlay assembly. Allow the glue to dry. Return the blade to square with the table. Cut the perimeter of the lid line with a #5 skip-tooth blade. Remove the pattern.

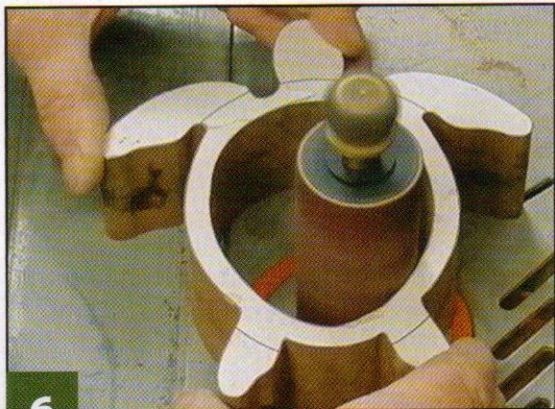


**4** Sand the inlay flush with the top of the lid. Fill any holes or gaps with a paste made from glue and fine sawdust of the proper wood color. Allow the filler to dry. Sand the lid with progressively finer grits of sandpaper up to 220 grit.

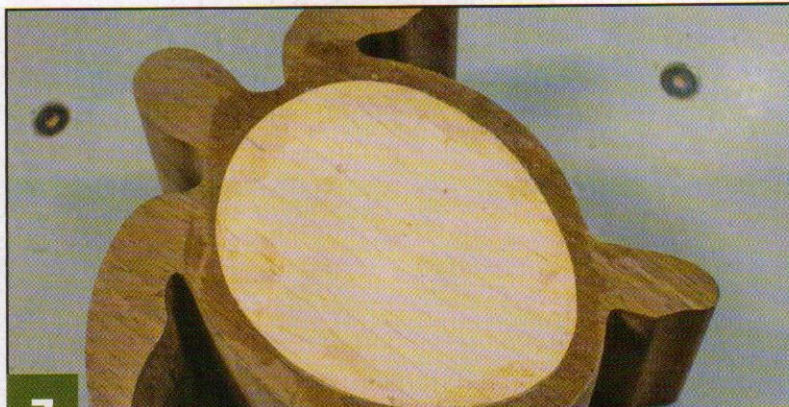
## TURTLE: MAKING THE BOX



**5** Cut two side pieces. Carefully follow the pattern line. The accuracy of your cuts determines how much you must hand-sand once you glue the pieces together. Glue and clamp the two sides together. I use a bowl press, but you can also use clamps. Allow the glue to dry.

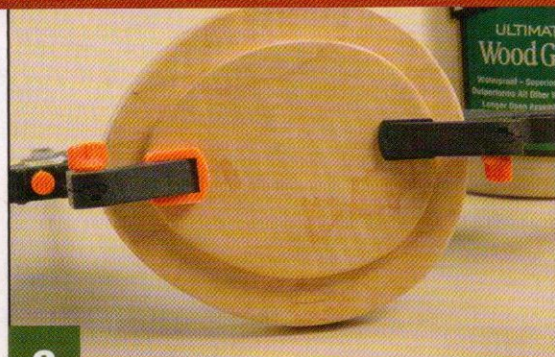


**6** **Sand the sides flush.** Use a spindle sander or drum sander. I hand-sand the tighter areas of the outside with sandpaper wrapped around a dowel or a thin piece of wood. Finish-sand the sides with 220-grit sandpaper.

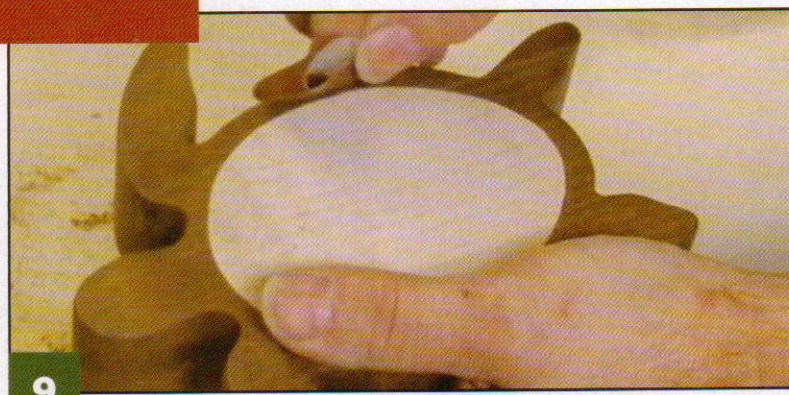


**7** **Place the box sides on the bottom blank.** Trace along the inside of the box sides with a pencil. Stack with the lid liner blank, cut, and separate the stack. Sand the bottom until it just fits inside the box. Sand it with progressively finer grits of sandpaper up to 220-grit. Apply glue to the edge of the bottom and insert into the body. Carefully align the bottom so it is flat with the sides. After 10 minutes clean up any glue squeeze-out with a flathead screwdriver.

## TURTLE: FINISHING THE BOX



**8** **Sand the lid liner to fit easily within the sides.** Glue and clamp the lid liner to the bottom of the lid and let the glue dry for 10 minutes. Remove clamps, remove any glue squeeze-out, reattach the clamps, and let the glue dry thoroughly.



**9** **Hand-sand the entire box with 220-grit sandpaper.** Carefully round the edges slightly. Apply two or three coats of satin lacquer, sanding between coats with 400-grit sandpaper. Sign and date the bottom of your box. I prefer to use a woodburner, but a fine tip permanent marker will also work. Apply one or two final coats of finish to seal in the signature.

## Setting the Saw Angle for Inlays

To create inlay, you cut two blanks together at a slight angle and then push the smaller piece into the larger one. I align the blanks so the inlay pushes up from the bottom. (Others drop the inlay from the top, but that will not work with my instructions.) Because every saw and piece of wood is different, you'll need to experiment to find the right angle for cutting the inlay.

Join two pieces of  $\frac{1}{4}$ " (6mm) wood with double-sided tape. Draw a small circle and attach the pattern to the stack. Tilt the left side of the table down, or tilt the saw arm to the right,  $2\frac{1}{2}^\circ$ . Cut counterclockwise (turn the wood clockwise) with a #3 skip-tooth blade. Discard the top cutout and push the bottom piece up into the top. If the inlay does not reach the surface, reduce the saw angle to  $2\frac{1}{4}^\circ$ . If the inlay goes too far past the surface, increase the angle to  $2\frac{3}{4}^\circ$ . Repeat as needed until you get a good fit. The inlay should sit slightly above the surface so you can sand it flush without reducing the lid's thickness.

Once you have established the desired angle, make a drilling guide by cutting a piece of scrap wood with the table tilted to the inlay angle. Use the guide to drill blade-entry holes at the proper angle.



## Materials & Tools

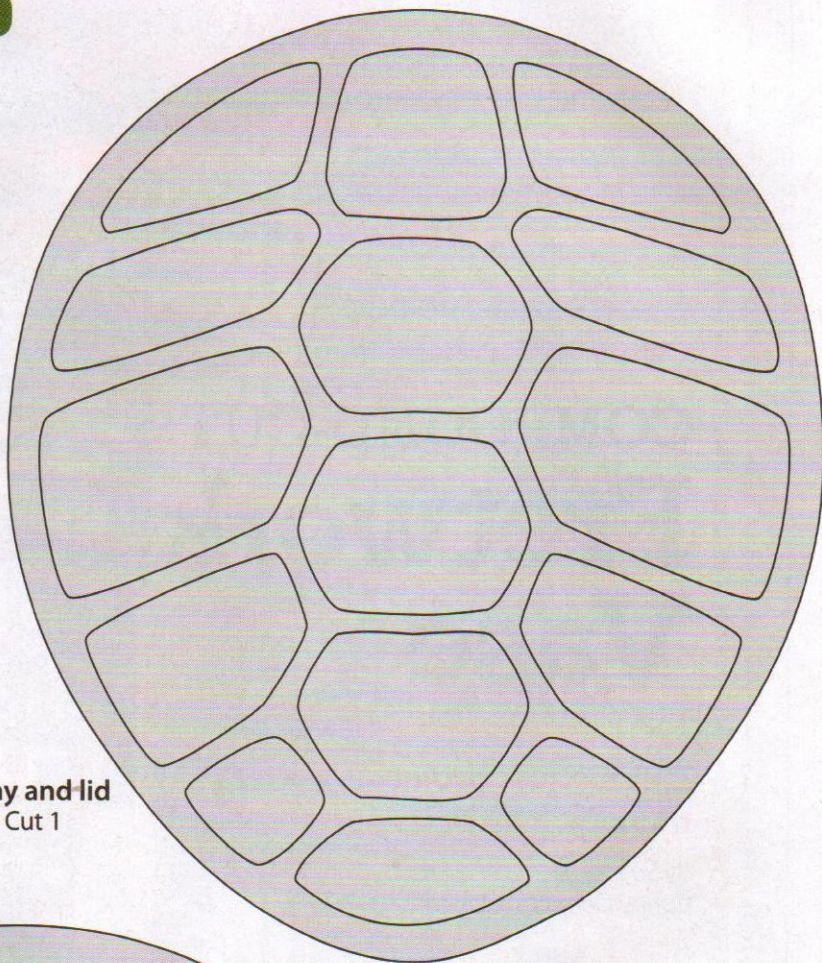
### Materials:

- Maple, 1/4" (6mm) thick: lid, lid base, lid liner, bottom, 4 each 4 1/2" x 5 1/2" (11.4cm x 14cm)
- Walnut, 1/4" (6mm) thick: lid inlay, 5" x 6 1/2" (12.7cm x 16.5cm)
- Walnut, 3/4" (1.9cm) thick: box sides, 2 each 6 1/2" x 7" (16.5cm x 17.8cm)
- Scrap wood (angle drilling guide)
- Tape: double-sided, clear packing
- Spray adhesive
- Wood glue
- Sandpaper: assorted grits up to 150; 220; 400
- Mineral spirits (to remove patterns)
- Finish: spray satin lacquer

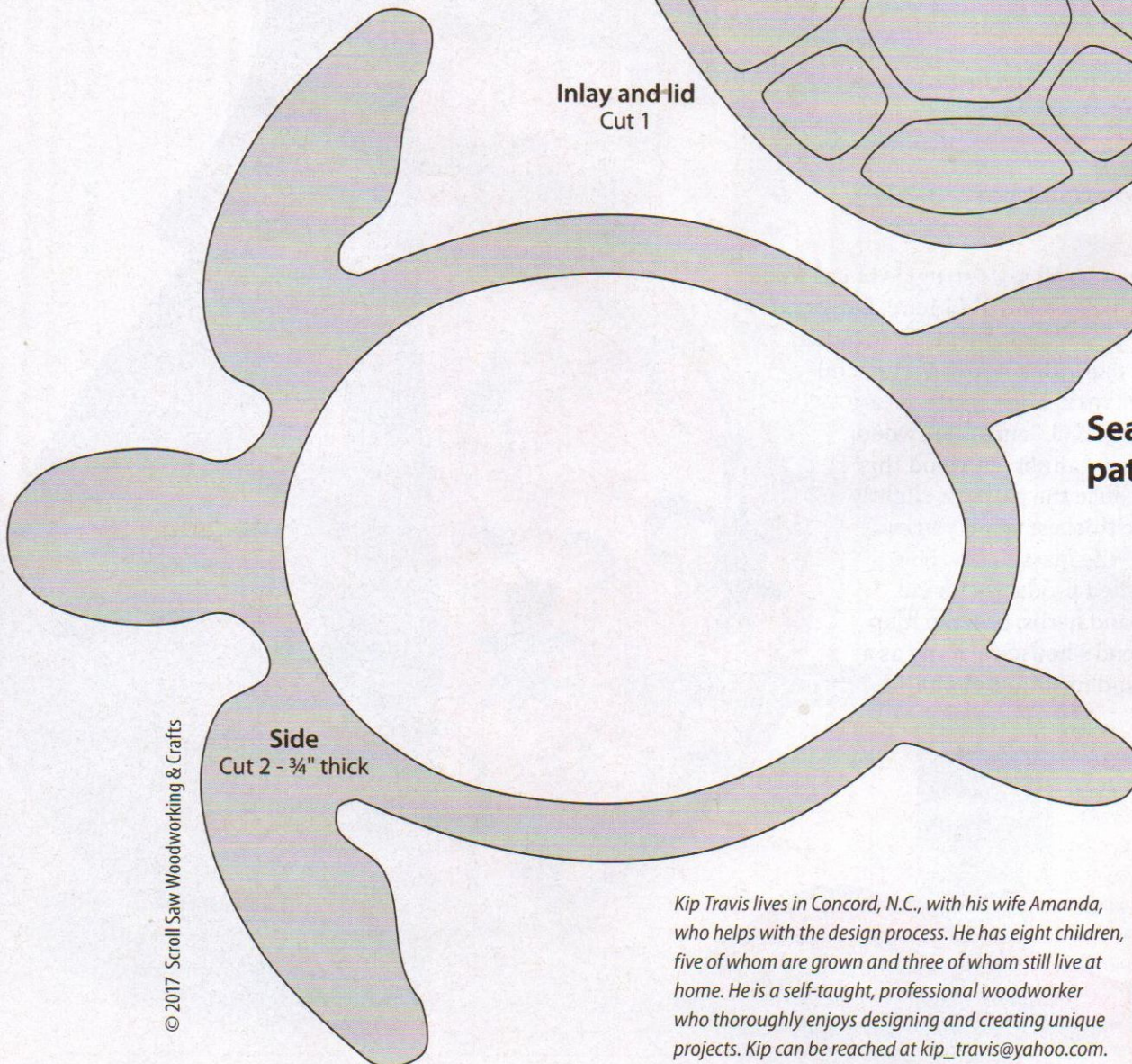
*The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.*

### Tools:

- Drill with bit: #65 wire size
- Scroll saw blades, skip-tooth, such as FD Polar: #3, #5
- Awl
- Putty knife
- Scissors
- Sanders: spindle, drum, belt, palm
- Screwdriver: flat-head
- Clamps
- Bowl press (optional)
- Woodburner (optional)



Inlay and lid  
Cut 1

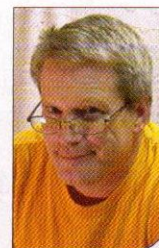


Side  
Cut 2 - 3/4" thick

## Sea turtle box patterns

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Kip Travis lives in Concord, N.C., with his wife Amanda, who helps with the design process. He has eight children, five of whom are grown and three of whom still live at home. He is a self-taught, professional woodworker who thoroughly enjoys designing and creating unique projects. Kip can be reached at [kip\\_travis@yahoo.com](mailto:kip_travis@yahoo.com).



A wooden fretwork vase with a red rose and a petal. The vase is made of light-colored wood and features intricate scrollwork cutouts. A single red rose with green leaves is placed in the vase. A single red rose petal lies on the surface in front of the vase. The background is a light-colored, vertically striped wall.

## COMPOUND-CUT Fretwork Vase

**This elegant project is better  
than the sum of its parts**

*By Sue Mey  
Cut by Dennis Knappen*

**M**ost scroll saws struggle to cut wood thicker than 2" (5.1cm), but if you cut four pieces and glue them together, you can make this nearly 4" (10.2cm)-diameter vase. These patterns are sized for 1 $\frac{7}{8}$ " (4.8cm)-thick wood; if your saw cannot cut wood this thick, reduce the patterns slightly to fit the thickest wood you can cut. Add the glass insert. Fill the finished product with cut flowers and herbs, or wrap it up for a friend's housewarming as a stylish and meaningful gift.

## MAKING THE VASE

**Step 1:** Cut four pieces to the exact size listed in the Materials list. Use a table saw or cut away from the line and sand up to it.

**Step 2:** Make four copies of the pattern. Fold each pattern on the dotted line. Apply spray adhesive to the back of each, align the fold with the corner of the blank, and press it into place. Drill all of the blade-entry holes.

**Step 3:** Cut the frets on one face. Rotate the blank 90° and cut the other frets.

**Step 4:** Cut the perimeter of one side. Remove the dust with a vacuum and tape the cut pieces back in place.

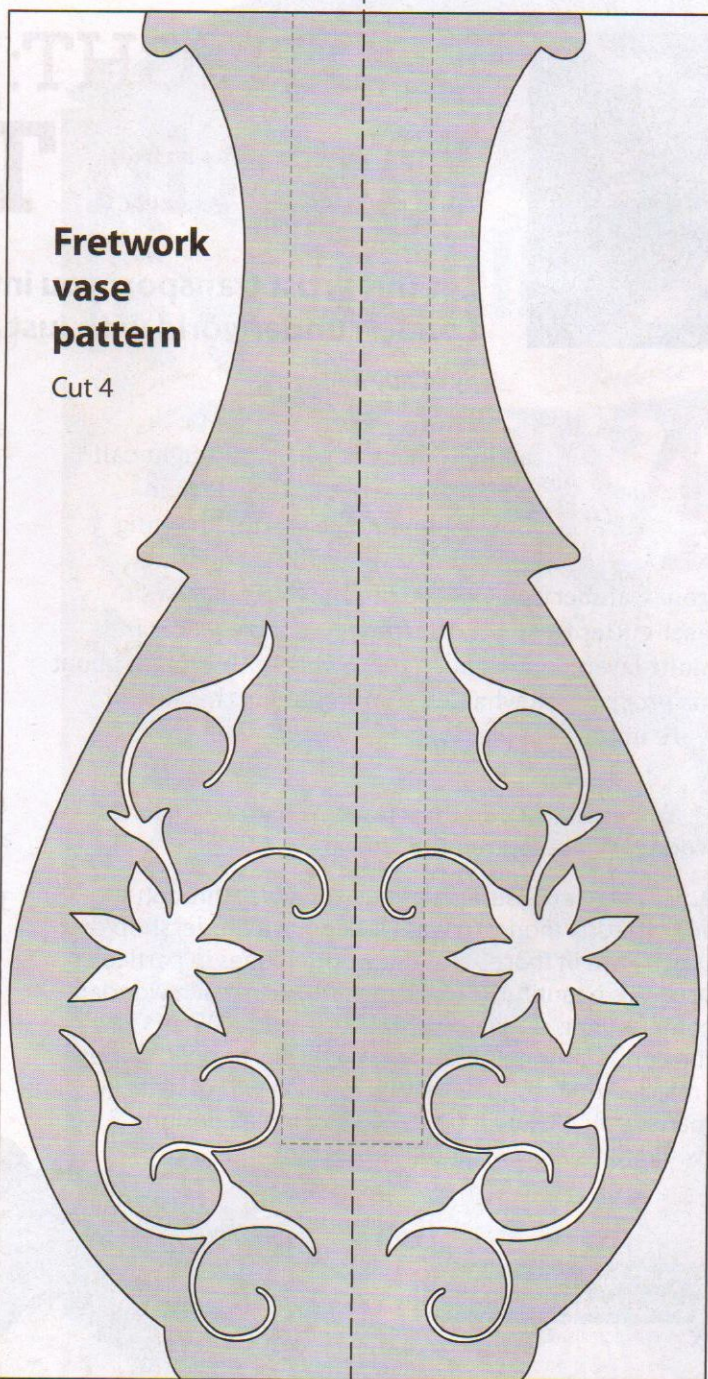
**Step 5:** Rotate the blank 90°. Cut the perimeter of the other side. Remove the pieces from the waste wood. Repeat Steps 2 to 5 for the other three pieces.

**Step 6:** Glue and clamp together two pieces to create half the vase. Repeat with the other two pieces. Allow the glue to dry.

**Step 7:** Glue and clamp the two halves together. Hand-sand the outside surfaces to remove any irregularities.

**Step 8:** Drill the hole for the bud vase. Use a  $\frac{3}{4}$ " (1.9cm)-diameter Forstner or spade bit. Drill the hole deep enough to accommodate the bud vase, usually at least 6" (15.2cm) deep. You might need to use an extra long drill bit or drill bit extension.

**Step 9:** Apply several coats of clear spray lacquer to the assembled vase. Allow the finish to dry thoroughly between coats. Insert the glass bud vase and add your flowers!



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## Materials & Tools

### Materials:

- Wood, such as basswood, jelutong, butternut, or cedar,  $1\frac{7}{8}$ " (4.8cm) square: 4 each  $7\frac{1}{4}$ " (18.4cm)
- Spray adhesive
- Wood glue
- Finish, such as clear spray lacquer
- Glass bud vase,  $\frac{3}{4}$ " (1.9cm) dia.

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

### Tools:

- Scroll saw blades: #9 skip-tooth
- Drill with bits:  $\frac{1}{8}$ " (3mm)-dia. twist,  $\frac{3}{4}$ " (19mm)-dia. Forstner or extra long spade
- Drill bit extension

### SPECIAL SOURCES:

Glass bud vases are available for \$5.50 plus S&H from The Wooden Teddy Bear, 888-762-9149, [www.WoodenTeddyBearonline.com](http://www.WoodenTeddyBearonline.com).



Sue Mey lives in Pretoria, South Africa. To see more of her work, including a wide variety of patterns and pattern-making tutorials available for purchase, visit [www.scrollsawartist.com](http://www.scrollsawartist.com).

She can be contacted at [suem@storage.co.za](mailto:suem@storage.co.za). Her pattern book, *Lighted Scroll Saw Projects*, is available from [www.schifferbooks.com](http://www.schifferbooks.com) and other outlets.



# SPOTLIGHT: Martin Tomsky

Let this artist transport you into *Game of Thrones* or the London underworld with just a few layers of plywood

By Mindy Kinsey

**M**artin Tomsky is what you might call an extreme wood artist. Born in South London, he started drawing as a child, eventually graduating from Camberwell College of Arts. Now, he uses a laser cutter to create sweeping narrative pieces in multi-layered plywood. I got to chat with Martin about his process and what led him to pursue this line of work in the first place.

**Q: You used to be an illustrator. What drew you to wood? What inspired the layers?**

A: My initial exposure to laser cutting was through architectural models (I was working in a model shop that specialized in these), and the wooden ones in particular have this beautiful, graphic quality where each wooden component is outlined by the burnt edge. When I saw the contour models that used flat layers to build slopes, I realized that my drawing style, which was essentially made of shapes built up to make complex designs, would translate well into the laser cut

medium. Wood was the obvious choice; it's affordable and long lasting, each piece is unique, it can easily be stained or painted, and it's a very forgiving material to work with, unlike acrylic or paper.

**Q: How did you learn the laser and accompanying design software? (What kind of laser and software are you using?)**

A: I got a job at a laser cutting studio, where I learnt all the ins and outs of laser cutting. I already knew Adobe Illustrator before working there, and now I have a basic understanding of Corel Draw and AutoCAD as well. I mainly use Adobe Illustrator for all my design work and Corel Draw to send the final designs to the machine.

**Q: Do your designs originate in the computer, or do you start with sketches?**

A: All my pieces start as very rough scribbles in my sketchbook. These are then drawn out by hand at a life-size scale and then scanned into the computer, where

**ON THE WEB** See an expanded Martin Tomsky gallery online.  
[www.scrollsawer.com](http://www.scrollsawer.com)



**Game of Thrones Crest:**

11" by 16 $\frac{1}{8}$ "  
(28cm by 41cm).

**Dragon Egg:** 4 $\frac{1}{2}$ " by  
6 $\frac{5}{16}$ " (11.5cm by 16cm).

**Mouse:** 4 $\frac{15}{16}$ " by 6 $\frac{7}{8}$ "  
(12.5cm by 17.5 cm).

I manually redraw the whole thing in Illustrator. This three-step process allows me to continually refine the design as I go along. All my laser works are essentially drawings that have been brought out into the real world.

**Q: The designs are so complex. How do you know when to stop?**

A: When it starts to look a mess! It's easy to get lost in a design and keep adding detail. I often have to take a step back and simplify. The challenge for me is always balancing out the simple areas with areas of high detail.

**Q: For all the whimsical nature of the designs, there are dark themes—skeletons, demons. Please talk about your inspiration and the evolution of your ideas.**

A: The reason why I draw is purely escapism, to create worlds, characters to inhabit those worlds and make stories that bring them to life. My two biggest sources of inspiration are literature, particularly science fiction and fantasy, and the natural world.

Books are the ultimate form of world-building; they suck you in and for a while you are fully enveloped in another place and time. My favourite authors include Tolkien, Ursula K. Le Guin, China Mieville, Ian M. Banks, and Philip K. Dick. These authors (and many others) write books with fully realised worlds and huge leaps of imagination, the kind of books filled with ideas that I wish I'd thought of and inspire me to draw.

Nature is the obvious source of inspiration when it comes to world-building. I've always been fascinated by animals since my childhood. Growing up on David Attenborough documentaries, I love all the complexities in form, seeing how it all works (inside and out) and how it all comes together—the evolution of species and the environments they live in.

It's a cliché, but I find myself drawn to darkness. I have always loved monsters in fantasy books and had a soft spot for Gothic literature (especially Lovecraft). There is something in the harsh reality of the natural world that appeals to me. Skeletons appear again and again in my work. I love drawing them and my interest is almost scientific, but when it boils down to it, I think they look great in wood. The layers and coloring give them an almost fossilized feel, making them a little bit like specimens in a natural history museum.

**Q: For the how-to folks among us, what kind of wood are you using? What materials do you use for color? Do you use regular wood glue or a special concoction?**

A: I mainly use birch plywood but occasionally I use MDF too. I find good quality PVA style wood glue is the best, and for colouring, I use paint and stain depending on the job.

Contact Martin Tomsky  
at [www.tomsky.co.uk](http://www.tomsky.co.uk).

**London Below:**  
7<sup>1</sup>/<sub>16</sub>" by 16<sup>15</sup>/<sub>16</sub>"  
(19.5cm by 43cm).





# Layered Stork

Stack and glue layers of plywood to make this sleek, multi-dimensional design

By Martin Tomsky

I find that the easiest way to add dimension and detail to a project is to add more layers. Adding open spaces, or smaller pieces on top of larger ones, adds depth to projects made from flat wood, and makes this simple stork silhouette a work of art. I create custom colors of stain to accentuate the depth.

For a more challenging project, reduce the size of the pattern to make a pin. Enlarge the pattern and cut it from thicker wood to make a wall art piece for your favorite bird-watcher or parent-to-be. Regardless of project size, the cutting, coloring, and assembly processes remain the same.

## Making the Stork

Transfer the patterns to the blanks; I use Baltic birch plywood and color it with water-based stain, but you could use thin colorful hardwood. Cut the pieces and carefully mark the layer number on the back to keep them organized.

Color the different pieces as desired. I mixed the colors for my stork using honey pine, chestnut, and dark teak stains. Test the color mixtures on scrap wood before applying them to your project. Allow the stain to dry thoroughly. Then, brush a layer of good-quality PVA (wood) glue to the back of Layer 2, place it in position on Layer 1, and clamp the assembly between two flat pieces of wood to get a strong glue joint. Let the glue set up for a few minutes, remove the clamps, and remove any glue squeeze-out with a damp brush or cloth. Re-clamp and allow the glue to dry. Repeat the process with Layers 3 and 4. The much smaller top layer (Layer 5) can just be glued in place. Allow the glue to dry thoroughly, and then attach a hanger to the back.

## Materials & Tools

### Materials:

- Baltic birch plywood, 1/16" (or 1.5mm) thick: 10 1/2" x 13" (26.7cm x 33cm)
- Water-based stain: honey pine, chestnut, dark teak
- Glue: good-quality PVA (wood)
- Hanger

### Tools:

- Scroll saw blades: #5 reverse-tooth
- Clamps and flat pieces of wood (for clamping)
- Brush or cloth (to remove glue squeeze out)

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



Patterns for the **LAYERED STORK** are in the pattern pullout section.



Martin Tomsky lives in London, England, and creates a variety of layered designs inspired by books and his own imagination. For more of his work, visit [www.tomsky.co.uk](http://www.tomsky.co.uk).

# LANTERN-STYLE Four-Seed Feeder

**Backyard bird buffet is a feel-good project for scrollers and wildlife**

*By Jon Deck*

**A**utumn is a great time to provide wild birds much-needed nutrition as natural supplies grow scarce. With four seed hoppers, this feeder holds a large amount of food for winter feeding, and lets you offer a variety of seed mixes to attract more species to your backyard all year long.

This project requires basic scrolling skills, but the woodworking aspects can be a bit of a challenge. It's important that the components are measured and cut with care for a good fit during assembly. I recommend cutting all the hopper face layers (plywood, hardboard, and acrylic) on a table saw for accurate panels. The feeder must bear up to the elements, so materials should be rated for exterior use. When called for, allow adequate painting and drying time between those steps before moving on. Plastic milk jugs make perfect seamless seed hoppers, and let you recycle in a rather unique way.

## **Getting Started**

All of the ½" (or 12mm) plywood parts can be cut from a single 24" by 48" (61cm by 1.2m) sheet. Follow the measured drawing and parts list (page 37) and lay out all your measurements carefully with a square.



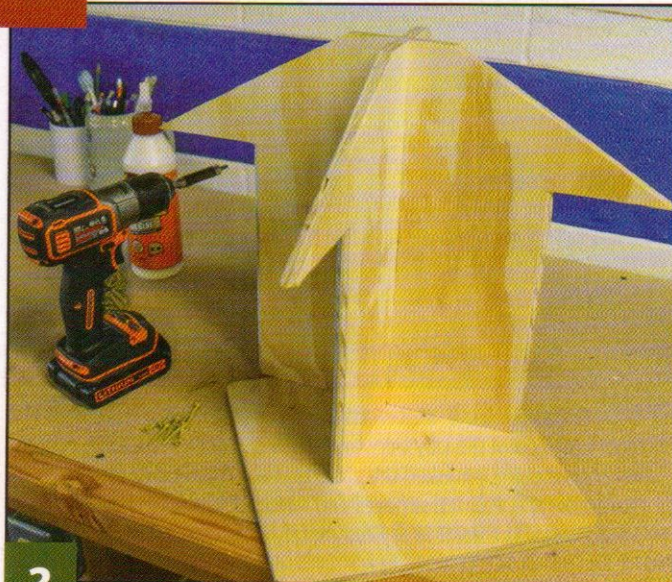
## FEEDER: BUILDING THE MAIN STRUCTURE



1

### Cut out the section supports (A).

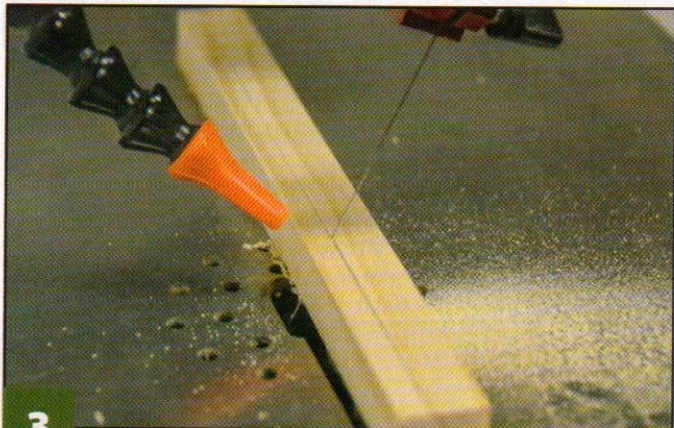
Use a scroll saw. For one, make a slot from the top, and for the other, from the bottom. Draw a pencil line  $\frac{1}{4}$ " (6mm) from the right and left edges on both sides of each support. Set the scroll saw to  $45^\circ$  and cut a bevel on the four marked edges to form the outside corners of the feeder. Make these bevels on both supports. Cut the tray (B) on the table saw.



2

### Slide the two section supports together.

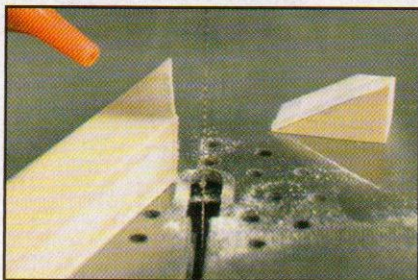
It should be a snug fit. Mark the tray with a line from corner to corner and drill  $\frac{1}{8}$ " (3mm)-diameter holes to mount the section supports. Be sure one hole is dead center on the tray. After drilling, cut  $\frac{1}{4}$ " (6mm) off the points on all four corners of the tray with the scroll saw to provide drain holes. Apply glue to the bottom of the section support assembly. Starting with the center hole, from the underside, mount the assembly onto the tray where the two supports cross with  $1\frac{1}{4}$ " (32mm)-long screws. Align the supports with the pencil lines and add the remaining screws.



3

### Cut the roof supports (C) to size.

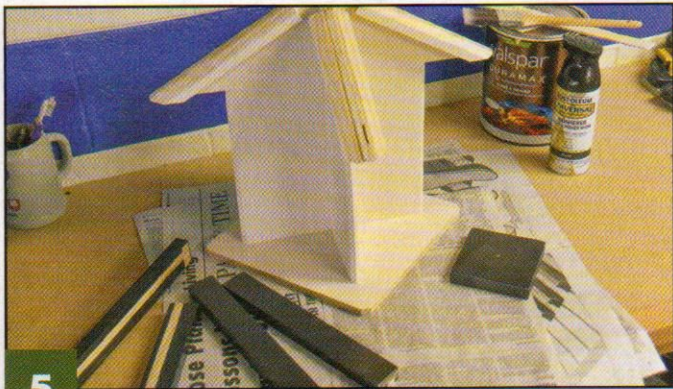
Make eight blanks. Draw a pencil line  $\frac{5}{16}$ " (8mm) in from the edge of each blank. Set the scroll saw at  $25^\circ$ , and cut the smaller section off the blank. Align the angled blank with the section support so the angle meets the roofline from the flat top portion down to the gable end. Holding the blank in position, run a pencil across the end of the blank along the bottom of the gable. Cut the waste off the end of the roof support. Mark and cut the roof supports, one at a time. The angles will be opposite on the companion side of the gable, so it is easier to do than keeping each individual angle straight.



4

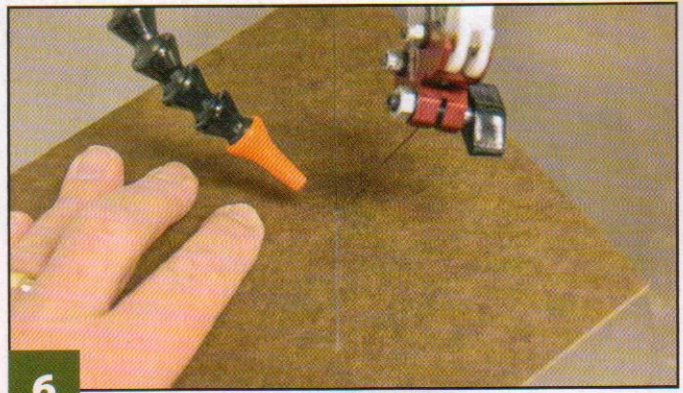
### Glue and clamp the roof supports in place.

Let the glue dry. Repeat with each gable. Measure and cut the roof cap (D). Cut the tray sides (F1, F2) to length with the miter saw. Sand the roof cap, tray sides, and bird feeder assembly to prepare for painting.



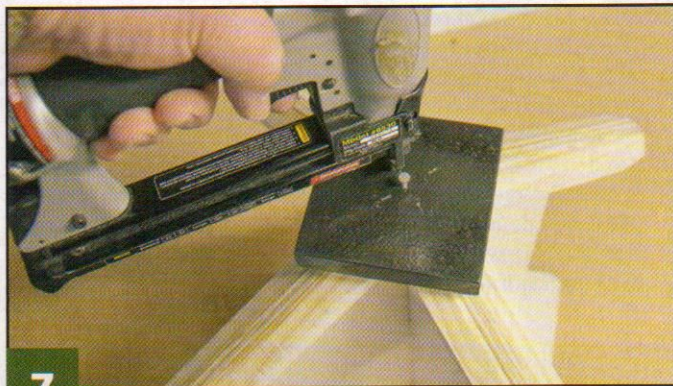
5

**Paint the bird feeder assembly.** Use a good exterior paint. Also paint the tray sides and roof cap. Because I used a high gloss paint, I masked the areas that will glue together with painter's tape. Painted surfaces don't accept glue as well as bare wood. Allow the paint to dry completely before assembling.



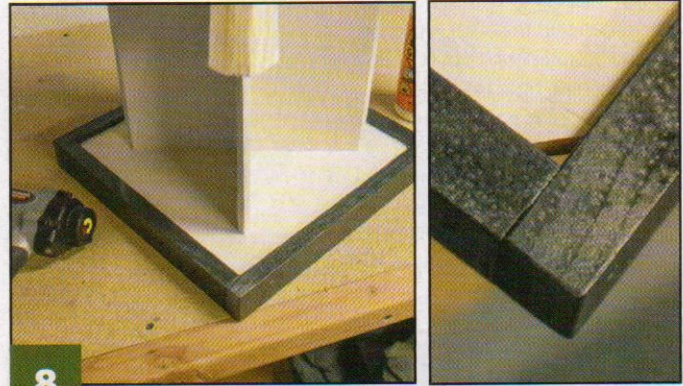
6

**Cut the roof sections (E) to size.** I use a table saw. Measure and mark the gable ends on the blanks using the measured drawing on page 36. Set the scroll saw to 25° and undercut a bevel along the lines you've just drawn.



7

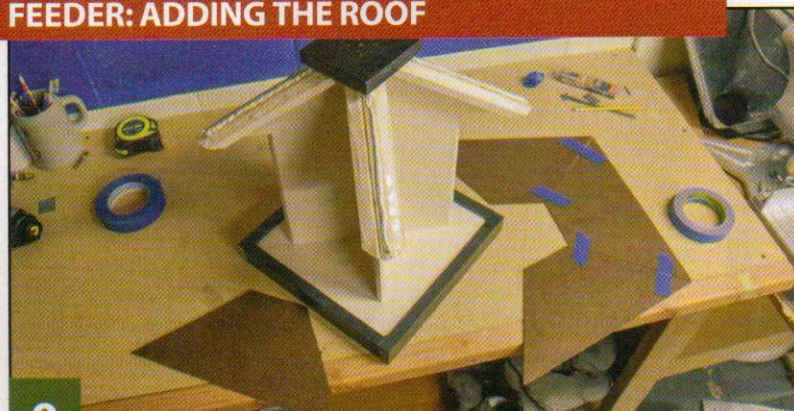
**Add the roof cap to the feeder.** Drill a 1/8" (3mm)-diameter hole in the center of the roof cap and the top of the assembly where the two support sections meet. Apply glue to the top of the assembly and, using a small nail, align the roof cap through the drilled holes. Be sure the corners of the roof cap align with the gables, and tack the roof cap in place with 1 1/4" (3.2cm)-long nails.



8

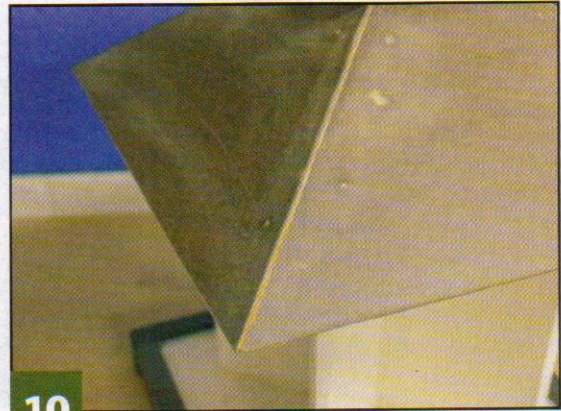
**Add the tray sides.** Set the assembly on a scrap of 3/4" (or 20mm) plywood just smaller than the tray. This lifts the tray so you can position the sides properly. Apply glue to the edges of the tray and position the tray sides—short sides (F1) and long sides (F2) on opposite ends. Tack the tray sides onto the tray with 1 1/4" (3.2cm)-long nails. This assembly should set drain holes in each corner of the tray.

## FEEDER: ADDING THE ROOF



9

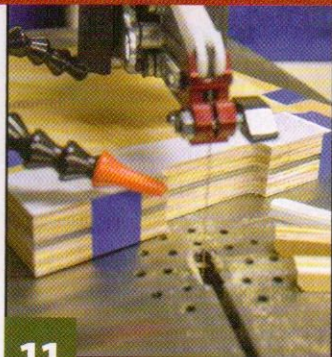
**Dry-fit the roof sections (E).** Tape three roof sections together along their gable ends with painter's tape. Drape the sections over the assembly, sliding the sections up under the roof cap. Slide the fourth roof section in place and check the fit of the entire roof. When satisfied with the fit, run a bead of caulk down the gable and wood glue to the gable supports. Return the roof sections as you did in the dry-fit, and tack them in place with 5/8" (1.6cm)-long nails.



10

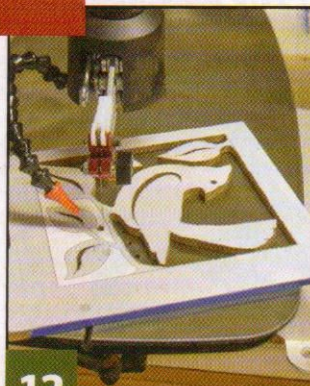
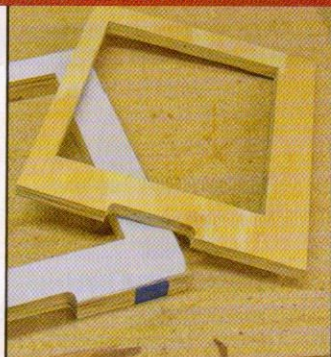
**Detail the roof.** Repair minor misalignments on the gables by trimming with a utility knife, adding wood putty, and sanding. Fill nail holes with wood putty. This is mainly for cosmetics—the caulk under the gables will keep rain out of your feeder. When finished, paint the roof with exterior paint.

## FEEDER: BUILDING THE SEED HOPPERS



11

**Cut blanks for the face frames (G), face panels (H), and hopper windows (I).** Use a table saw. Stack the materials to cut all four face frames and hopper windows at once. Sandwich the acrylic plastic between the wood pieces. Apply a pattern to the stack, and cut the seed slot. Unstack, remove the acrylic plastic, and restack the face frames. Drill a blade-entry hole, and cut the face frame opening.



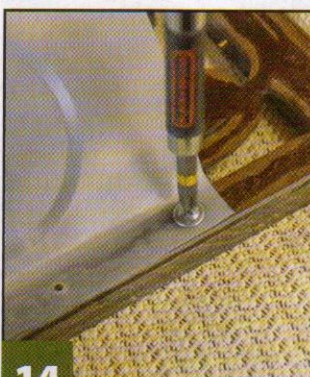
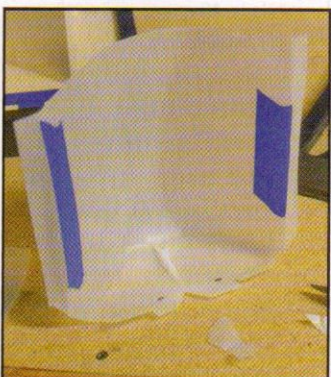
12

**Stack face panel blanks in pairs, with the smooth side up.** Apply the songbird pattern to one stack, and the cardinal pattern to the other stack. Drill blade-entry holes and cut the panels. When finished, sand the panels and face frames, and glue them together. Paint the assemblies and let them dry. Remove the film from one side of the hopper windows and mount it to the backside of the face panel with cyanoacrylate (CA) glue. *NOTE: Be sure the seed slots all line up before gluing.*



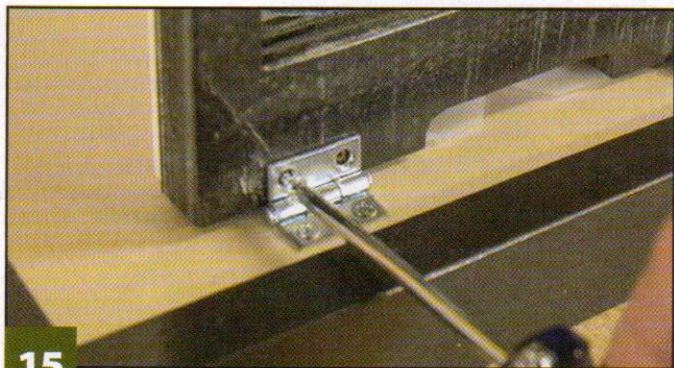
13

**Cut the plastic jugs.** Initially, cut the top and handle side off with a kitchen shears. Place the jug in the feeder and mark the jug where the corners, front edge, and seed slot of the hopper section are located with painter's tape. *NOTE: All the hopper frames are offset, so the left side of the frame aligns with the corner of the section support.* Crease the plastic along the tape to form a flange. Trim the bottom corners of the jug to fit the hopper frame, but leave a flange to mount to the bottom of the frame. Repeat for all of the hoppers.



14

**Remove the remaining film from the acrylic plastic.** Place the hopper frame face down on a padded surface. Position the hopper and drill three  $\frac{1}{8}$ " (3mm)-diameter pilot holes on each side flange and one on both sides of the seed slot. Run a bead of silicone caulk down each side and along the bottom of the frame. Place the hopper in position and secure with  $\frac{9}{16}$ " (1.4cm)-long lath screws in each pilot hole. Fill any gaps in the corners with silicone caulk. Repeat for the other hoppers.



15

**Place a hopper with the left side of the frame aligned with the corner of the section support.** Position a hinge on both sides of the seed slot, 1" (2.5cm) from the opening. Drill  $\frac{1}{16}$ " (2mm)-diameter pilot holes in the frame and the tray. Add the screws to secure the hopper. Repeat for all of the hoppers.



16

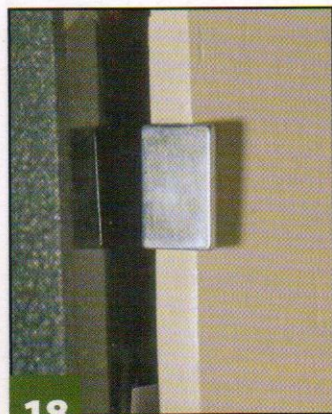
**Cut the perches (M) and supports (N) to length.** Measure in  $1\frac{1}{2}$ " (3.8cm) from the end of each perch and drill a  $\frac{3}{16}$ " (5mm) by  $\frac{3}{8}$ " (1cm)-deep hole. Make sure the holes align with each other. Glue the perch supports into these holes. Apply spar varnish to these assemblies. Paint the finial and let everything dry.

## FEEDER: ADDING THE DETAILS



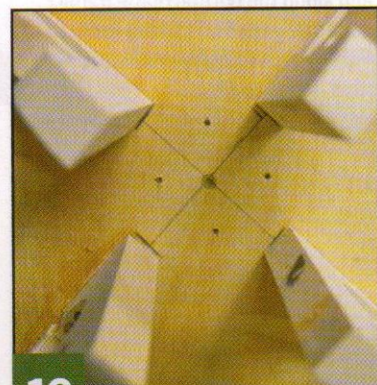
17

**Add the perches.** Drill two  $\frac{3}{16}$ " (5mm)-diameter mounting holes in each tray side. Glue the perches in place keeping an equal distance from the tray on all sides. Cut the frame edge trim (J), and paint it to match the face frames. When dry, glue them to the outside right edge of each face frame for a finished look. Screw the finial into the hole in the roof cap.



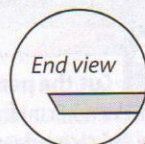
18

**Mount the magnets.** Glue a rare earth magnet to each section support corner, and each corner of the hopper so they meet for a firm closure. Use CA glue.



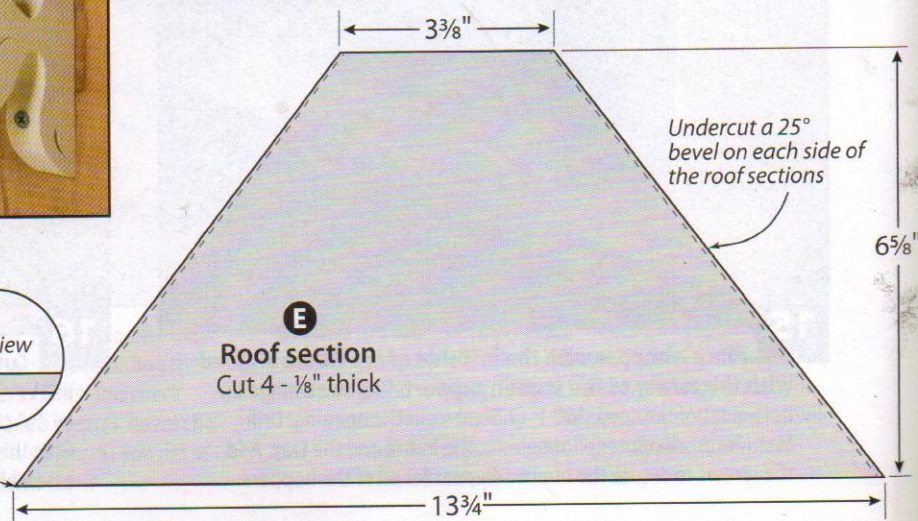
19

**Apply the bracket (L) pattern to the blanks.** Drill blade-entry holes and cut on the scroll saw. Sand, and then paint the brackets with exterior paint. Drill holes in each hopper quadrant under the feeder tray, inside the space where the post will go. This will allow you to secure the feeder to the post from the inside. The brackets will add support to the whole project.



End view

## Measured drawings



## Materials & Tools

### Materials:

- Exterior plywood,  $\frac{1}{2}$ " (or 12mm) thick: 24" x 48" (61cm x 1.2m)
- Pine 1x2: 72" (1.8m) long
- Pine 1x6: 48" (1.2m) long
- Tempered hardboard,  $\frac{1}{8}$ " (3mm) thick: 24" x 48" (61cm x 1.2m)
- Clear acrylic plastic, 2mm thick: 18" x 24" (45.7cm x 61cm)
- Plastic jugs: 4 each one gallon
- Dowels:  $\frac{3}{16}$ " (5mm)-dia. x 18" (45.7cm),  $\frac{1}{2}$ " (1.3cm)-dia. x 48" (1.2m)
- Large wooden finial
- Screws, exterior:  $1\frac{1}{4}$ ",  $2\frac{1}{2}$ " (3.2cm, 6.4cm)
- Screws, lath:  $\frac{9}{16}$ " (1.4cm)
- Nails, 18 gauge:  $\frac{5}{8}$ ",  $1\frac{1}{4}$ " (1.6cm, 3.2cm)
- Glue: exterior wood, cyanoacrylate (CA)
- Wood filler, exterior
- Caulk, exterior silicone: clear
- Sandpaper: 120, 220 grit
- Temporary-bond spray adhesive
- Tape: blue painter's, clear packaging
- Paint, exterior: spray and/or brushable
- Spar varnish: clear spray
- Rare earth magnets, rectangular: 8 each 2mm-thick
- Hinges, narrow: 4 pair 1-inch

### Tools:

- Tape measure
- Steel rule or straightedge
- Large square
- Scroll saw blades: #5 skip-tooth
- Saws: table, miter
- Drill with bits:  $\frac{1}{16}$ " (2mm)-,  $\frac{1}{8}$ " (3mm)-,  $\frac{3}{16}$ " (5mm)-dia. twist, #2 Phillips head
- Nail gun: 18 gauge finish
- Screwdriver
- Caulking gun
- Clamps: assorted
- Utility knife
- Kitchen shears
- Paintbrush

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

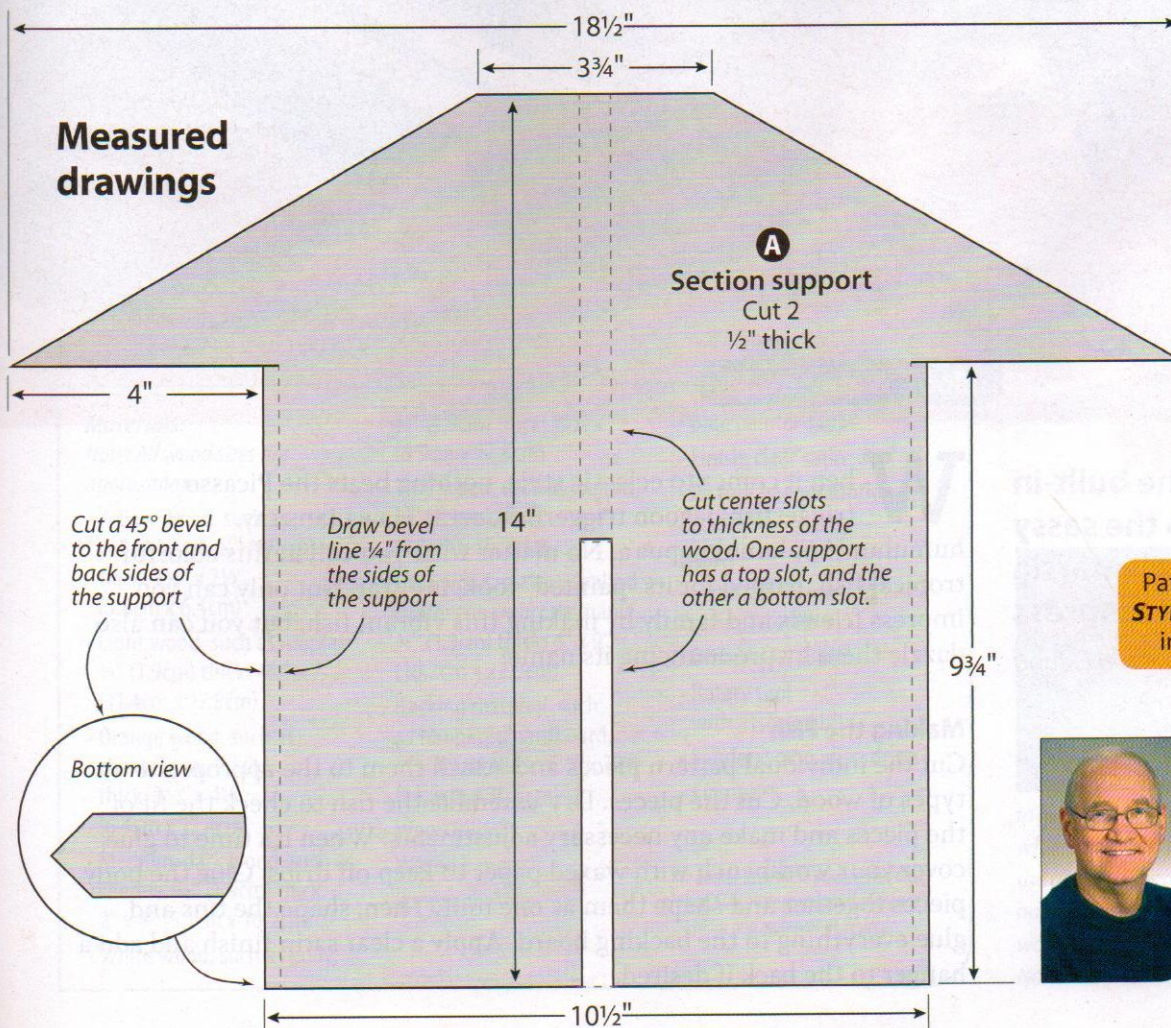
### SPECIAL SOURCES:

Most materials are available from home improvement stores, including the acrylic sheet, the hinges, and the large craft finial.

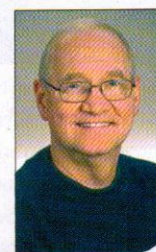
The rare earth magnets from Treehouse Studio are available at Hobby Lobby, [www.hobbylobby.com](http://www.hobbylobby.com).

## Parts List

	Part	Quantity	Materials	Dimensions	Presentation
<b>A</b>	Section support	2	Plywood, 1/2" (or 12mm) thick	14" x 18 1/2" (35.6cm x 47cm)	Drawing
<b>B</b>	Tray	1	Plywood, 1/2" (or 12mm) thick	11" (27.9cm) square	Dimensions
<b>C</b>	Roof support	8	Pine, 3/4" (1.9cm) thick	3/4" x 8 1/2" (1.9cm x 21.6cm)	Dimensions
<b>D</b>	Roof cap	1	Pine, 3/4" (1.9cm) thick	4 1/4" (10.8cm) square	Dimensions
<b>E</b>	Roof section	4	Hardboard, 1/8" (3mm) thick	6 5/8" x 13 3/4" (16.8cm x 34.9cm)	Drawing
<b>F1</b>	Tray side, short	2	Pine, 3/4" (1.9cm) thick	1 1/2" x 11" (3.8cm x 27.9cm)	Dimensions
<b>F2</b>	Tray side, long	2	Pine, 3/4" (1.9cm) thick	1 1/2" x 12 1/2" (3.8cm x 31.8cm)	Dimensions
<b>G</b>	Face frame	4	Plywood, 1/2" (or 12mm) thick	8 5/16" x 9 1/2" (21.1cm x 24.1cm)	Pattern
<b>H</b>	Face panel	4	Hardboard, 1/8" (3mm) thick	8 5/16" x 9 1/2" (21.1cm x 24.1cm)	Pattern
<b>I</b>	Hopper window	4	Acrylic plastic sheet, 2mm thick	8 5/16" x 9 1/2" (21.1cm x 24.1cm)	Dimensions
<b>J</b>	Frame edge trim	4	Hardboard, 1/8" (3mm) thick	3/4" x 9 1/2" (1.9cm x 24.1cm)	Dimensions
<b>K</b>	Hopper	4	Plastic milk jug	One gallon	
<b>L</b>	Bracket	4	Pine, 3/4" (1.9cm) thick	5 1/2" x 6 1/2" (14cm x 16.5cm)	Pattern
<b>M</b>	Perch	4	Dowel, 1/2" (1.2cm)-dia.	12" (30.5cm) long	Dimensions
<b>N</b>	Perch support	8	Dowel, 3/16" (5mm)-dia.	1 3/4" (4.4cm) long	Dimensions



Patterns for the **LANTERN-STYLE FOUR-SEED FEEDER** are in the pullout section.



A lifelong designer and woodcrafter, Jon Deck has been the art director of *Scroll Saw Woodworking & Crafts* magazine for 16 years. Contact him at [jon@foxchapelpublishing.com](mailto:jon@foxchapelpublishing.com).

# Picasso Triggerfish



**From the built-in bandanna to the sassy lips, this tropical intarsia project is sure to impress**

*By Brad and Hazel Eklund*

**W**hen it comes to eclectic style, nothing beats the Picasso triggerfish, lagoon triggerfish, or, as Hawaiians say, humuhumunukunukuapua'a. No matter what you call it, this colorful tropical fish, named for its "painted" look, is a star. Not only can you impress friends and family by making this vibrant fish, but you can also dazzle them by pronouncing its name!

## **Making the Fish**

Cut the individual pattern pieces and attach them to the appropriate types of wood. Cut the pieces. Dry-assemble the fish to check the fit of the pieces and make any necessary adjustments. When it's time to glue, cover your workbench with waxed paper to keep off drips. Glue the body pieces together and shape them as one unit. Then, shape the fins and glue everything to the backing board. Apply a clear satin finish and add a hanger to the back if desired.



## Materials & Tools

### Materials:

Note: All wood sizes are approximate.

- Yellow wood, such as yellowheart,  $\frac{3}{4}$ " (1.9cm) thick:  $1\frac{1}{2}$ " x  $2\frac{1}{2}$ " (3.8cm x 6.4cm)
- Light wood, such as maple,  $\frac{3}{4}$ " (1.9cm) thick:  $4\frac{1}{2}$ " x 7" (11.4cm x 17.8cm)
- Orange wood, such as chakte viga,  $\frac{3}{4}$ " (1.9cm) thick:  $2\frac{1}{2}$ " x  $4\frac{1}{2}$ " (6.4cm x 11.4cm)
- Medium-dark wood, such as shedua,  $\frac{3}{4}$ " (1.9cm) thick: 2" x 4" (5.1cm x 10.2cm)
- White wood, such as holly,  $\frac{3}{4}$ " (1.9cm) thick:  $3\frac{1}{2}$ " x 7" (8.9cm x 17.8cm)
- Dark wood, such as walnut,  $\frac{3}{4}$ " (1.9cm) thick: 3" x 4" (7.6cm x 10.2cm)
- Gray wood, such as spalted cypress or ambrosia maple,  $\frac{3}{4}$ " (1.9cm) thick: 4" x 9" (10.2cm x 22.9cm)
- Backing material, such as tempered hardboard,  $\frac{1}{8}$ " (3mm) thick:  $6\frac{1}{2}$ " x 12" (16.5cm x 30.5cm)
- Wood glue
- Waxed paper
- Spray adhesive

- Blue painter's tape
- Finish: clear satin
- Picture hanger (optional)

### Tools:

- Scroll saw blades: #5 or #7 reverse-tooth
- Drill bit:  $\frac{1}{8}$ " (3mm)
- Rotary tool with assorted bits
- Sanders: mop, disc, drum
- Clamps

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

Pattern for the **PICASSO TRIGGERFISH** is in the pattern pullout section.



Brad and Hazel Eklund have been creating scroll saw art for the last seven years. They have always been fascinated by the beauty and intricacies of wildlife and nature

in general. Brad has a degree in horticulture, while Hazel has a degree in wildlife. They avoid the use of stains or dyes, instead relying on the natural appeal of the wood itself. They live and work next to a nature preserve in coastal North Carolina.

# Elephant Parade



**Celebrate the circus—  
or the majesty of Mother Nature—  
with a set of freestanding pachyderm puzzles**

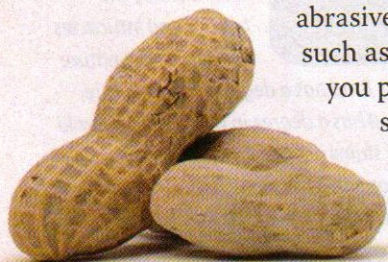
*By Judy and Dave Peterson*

*Decorative painting by Kristen Scanlan*

**A**s the world's largest land mammals, elephants know how to make an entrance. And whose heart doesn't melt watching the baby rush to keep up with its parents? This parade of freestanding pachyderm puzzles looks lovely cut from hardwood, but with a little paint, they can satisfy your nostalgia for the classic stars of a circus parade or the Dumbo story.

## Making the Puzzles

Cut the pieces, and then sand any rough spots. For a finished look, I round the corners with a Sand-O-Flex abrasive wheel. Then, either apply a finish such as Danish oil or paint the puzzles. If you paint them, keep the paint off the sides of the interlocking pieces, as it can interfere with the fit of the parts.



## Paint Chart

**Exposed skin:** thinned oxide black

**Skin highlights:** oxide black lightened with titanium white

**Toenails, blanket, headdress details:** titanium white

**Blanket, headdress:** vermilion

**Blanket, headdress details:** deep yellow

**Ear, tongue:** vermilion lightened with titanium white



*A former teacher and librarian, Judy Peterson found her niche in life as a woodworker. A winner of many design awards, she sells her puzzles at art shows around the country. Her husband, Dave, runs the record-keeping side of the business. Together they have written several*

*books, which are available at [www.foxchapelublishing.com](http://www.foxchapelublishing.com).*



### Materials & Tools

#### Materials:

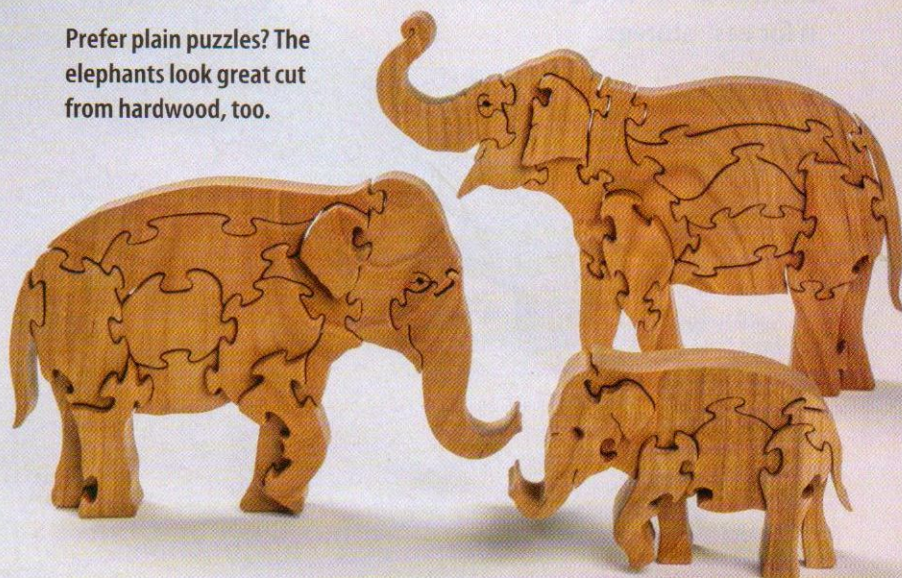
- Cherry or poplar,  $\frac{3}{4}$ " to  $\frac{7}{8}$ " (1.9cm to 2.2cm) thick: small, 4" x 5 $\frac{1}{2}$ " (10.2cm x 14cm); medium, 6" x 9 $\frac{1}{2}$ " (15.2cm x 24.1cm); large, 9" x 11 $\frac{1}{2}$ " (22.9cm x 29.2cm)
- Spray adhesive
- Danish oil, such as General Finishes
- Acrylic paint, such as Artist's Loft: vermilion, titanium white, oxide black, deep yellow
- Sandpaper

#### Tools:

- Scroll saw blades, such as Tru Line Blades: #7 premium
- Sander
- Drill press with Sand-O-Flex abrasive wheel

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

Prefer plain puzzles? The elephants look great cut from hardwood, too.



Patterns for the **ELEPHANT PARADE** are in the pattern pullout section.

# Making a Dice Tower

**Hate pausing a game to hunt for lost dice? Stay in the zone longer with this innovative creation**

*By Carole Rothman*

**G**one are the days of trying to keep the dice on the table as you work your way around the Monopoly board. With this dice-rolling tower, you dump the dice into the top and they tumble randomly down ramps to land neatly together in a tray. Because more board games now use a variety of many-sided dice, which roll farther than a regular six-sider, this machine is even more useful to keep these dice from running amok.

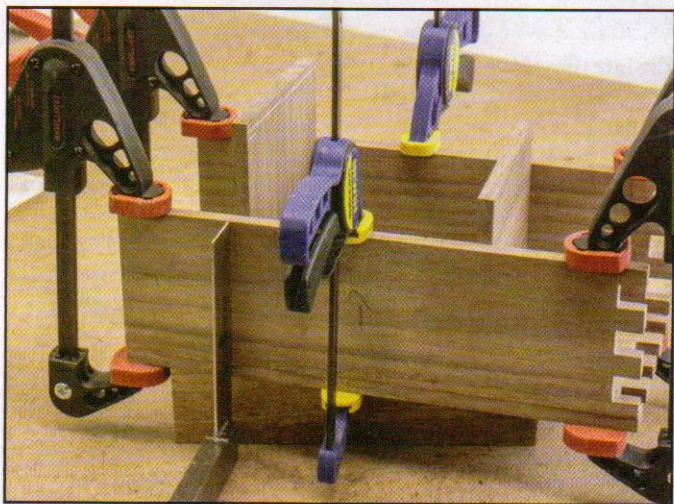
For this dice-roller, I made the tower and tray separate and sized the tray so the tower fits inside it for easy storage.



## Getting Started

While it's possible to cut the project entirely with a scroll saw, a table saw and miter saw speed up the process, especially since most of the pieces are attached using butt joints. While these joints look simple, they require you to cut precisely with clean, square edges, and glue carefully to produce tight joints and an attractive appearance. Given the thinness of the stock, I used spacers and an engineer's square to ensure correct positioning.

Cut the pieces to the specified dimensions. The dimensions in the Materials list reflect the finished size of each part, except for the ramps and paddles, which include extra length to make it easier to cut the bevels. Attach the patterns to the appropriate pieces with repositionable adhesive.

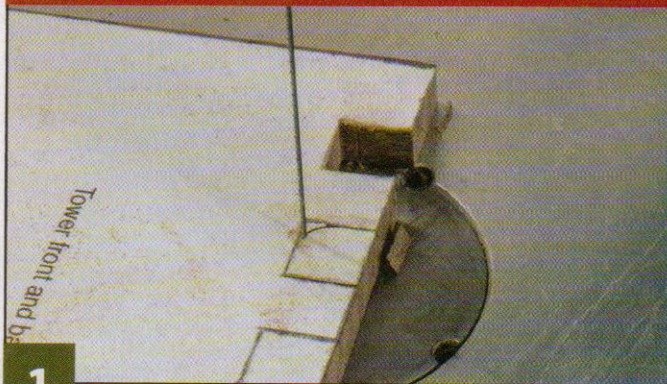


2

### Glue the sides to the back, using a quick-setting wood glue.

Place the blank for the ramp and the tower spacer between the sides as temporary spacers to hold the sides apart during the glue up; remove them when the glue is dry. Use an engineer's square to make sure the sides are parallel to each other and perpendicular to the back. Make sure the sides are flush with the long edges of the back and all of the pieces match at the top and bottom. Be careful that the pieces don't shift as you apply clamping pressure. Remove any squeeze-out and let the assembly dry.

## TOWER: MAKING THE BATTLEMENTS

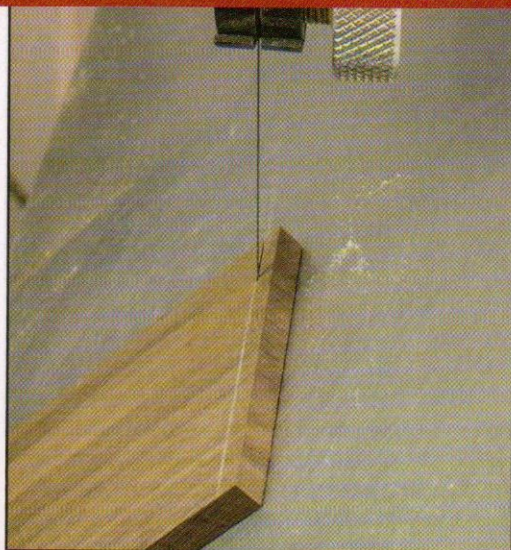


1

### Cut the crenellations on the front, back, and side tower pieces.

To get a square bottom for the crenellations, cut down one side of the square, back out, cut down the other side, back up a little, and then make a curved cut down to the bottom line and cut to the corner. The cut portion will drop out. Cut off the remaining small piece. Then, cut the opening at the bottom of the front. Remove the patterns, clean up glue residue with mineral spirits, and correct any cutting irregularities. Sand the flat surfaces just until smooth and soften the edges of the curved opening on the front.

## TOWER: MAKING THE TUMBLER RAMPS AND PADDLES



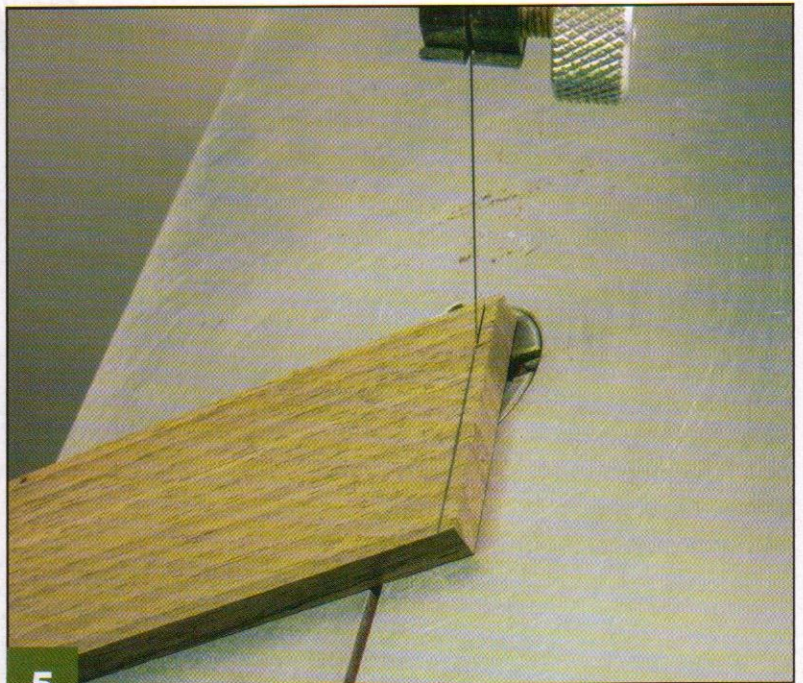
3

### Draw a line 1/4" (6mm) from one end across the width of the ramp blank.

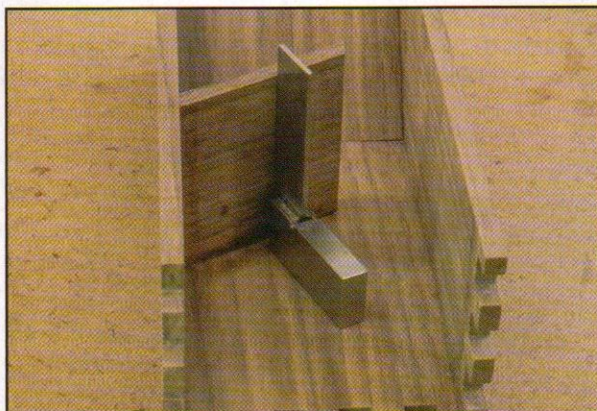
Tilt the left side of the saw table down 45° and cut on the line with the larger part of the wood to the left of the blade. Measure 3 5/16" (8.4cm) from the upper edge of the bevel and draw a line straight across the wood. Position the wood with the larger part to the left of the blade and cut a bevel on this line. The two bevels angle toward each other. Sand the upper face with progressively finer sandpaper up to 220 grit.



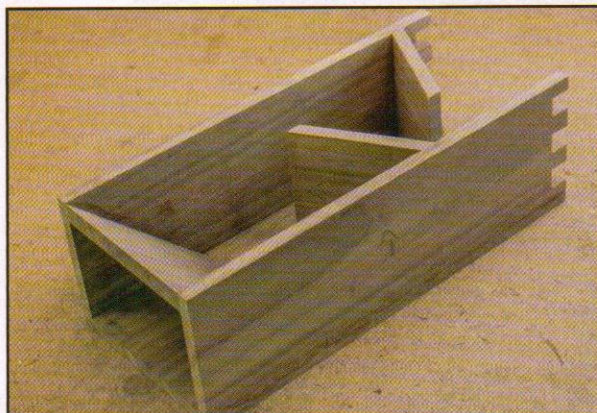
**4** **Test the fit of the ramp.** Position it at a 45° angle inside the tower. The upper bevel rests against the back of the tower, and the lower bevel ends at the front edge of the sides, flush with the bottom of the tower. The piece should fit snugly. Remove the ramp, apply glue to the sides and rear bevel, press it into place, and let it dry.



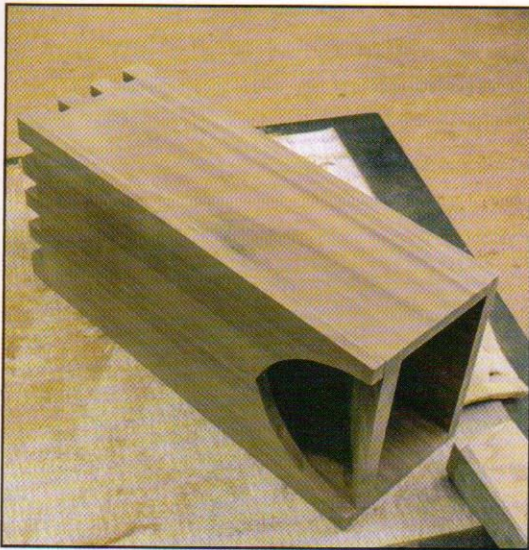
**5** **Tilt the left side of the table down to 30°.** Draw a line 1/4" (6mm) from one end across the width of the paddles blank. With the larger part of the wood to the left of the blade, cut along the line. With the larger side facing up, measure 2 3/8" (6cm) from the cut end. Draw a line straight across the wood and cut a second 30° bevel in the same direction as the first to complete the first paddle. Place the remaining wood with the larger side facing up. Measure down 2 3/8" (6cm) from the cut edge and cut a 30° bevel to complete the second paddle. Sand the upper faces with progressively finer sandpaper up to 220 grit.



**6** **Position the tower on its back with the crenellations at the top.** Make a mark on the edge of the right side 3" (7.6cm) from the top. Make a mark on the left side 3/4" (1.9cm) from the top. Apply glue to the upper bevel and back edge of the first paddle. Position it on the right side of the tower, with the upper edge of its bevel at the 3" (7.6cm) mark. The beveled edge should be flush against the side, and the face of the paddle should be square to the back. Use an engineer's square or block of wood to ensure that it's square. Hold the piece firmly in place until set. Use the same procedure to glue the second paddle to the left side with its upper edge located 3/4" (1.9cm) from the top.



**7** **Sand away any squeeze-out and visible glue spots from the interior areas.** The paddles must be smooth so the dice can slide freely. Apply glue to the edges of the sides and the paddles. Glue the front to the assembly, matching the sides, tops, and bottoms. Clamp it in place until the glue sets, and then let it dry thoroughly.

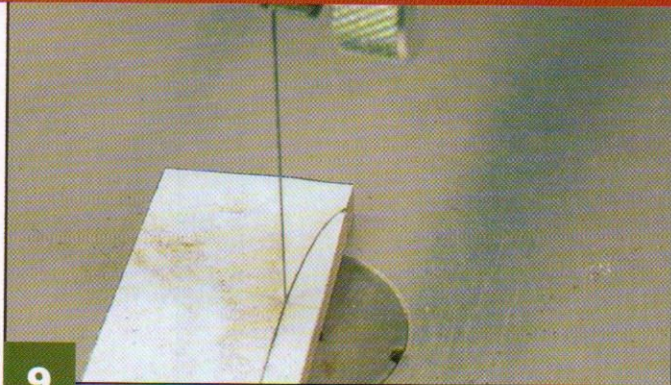


8

**Remove any irregularities on the top and bottom edges.**

I use a piece of sandpaper on a floor tile to make sure everything is perfectly flat. The tower should be completely stable when placed upright. Sand the outside with progressively finer sandpaper up to 220 grit. Soften the vertical edges and crenellations by hand-sanding.

**TOWER: MAKING THE TRAY**



9

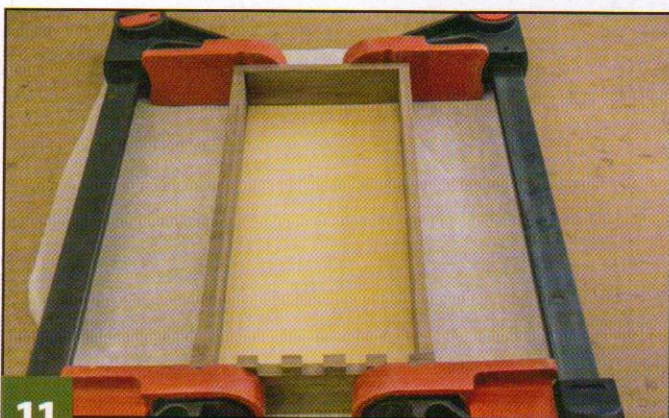
**Cut the curves of the sides and the crenellations of the front of the tray.** Remove the patterns. Clean up any glue residue with mineral spirits. Correct any cutting irregularities, and sand the flat surfaces with progressively finer sandpaper up to 220 grit.



10

**Apply glue to the long edges of the plywood bottom.**

Attach the sides with the curves facing front. Make sure that the front and back edges are aligned and that all pieces sit flat on the work surface. Insert the tray spacers at the ends and center. Clamp the sides into place, using an engineer's square to be sure they are vertical and parallel to each other. Correct any slippage caused by clamping pressure. Clean up any squeeze-out and let the assembly dry.



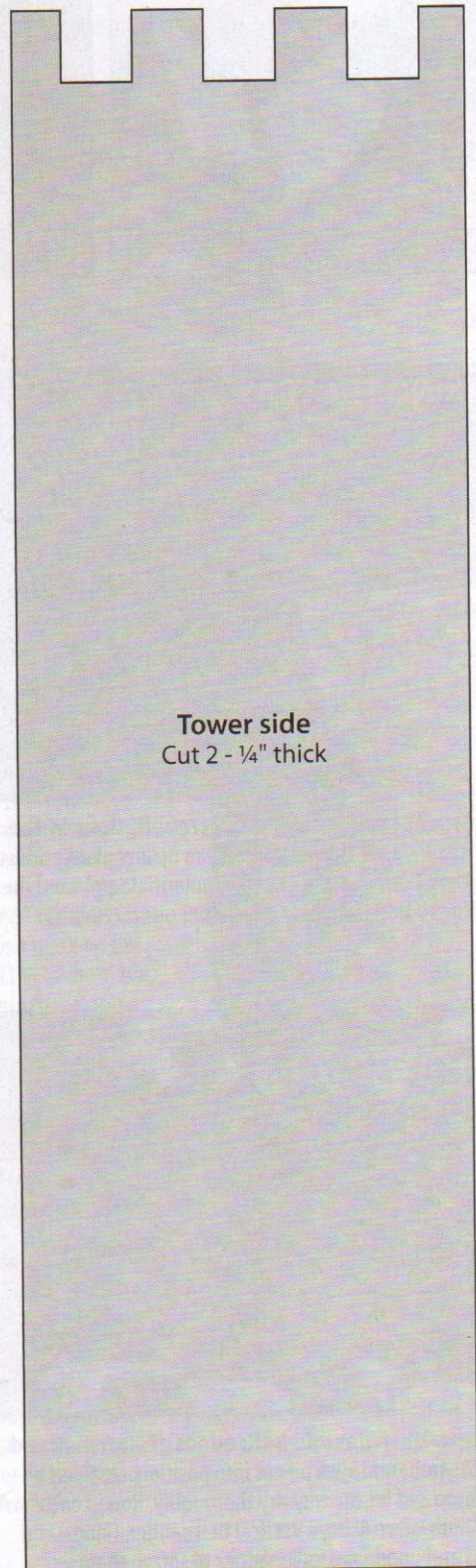
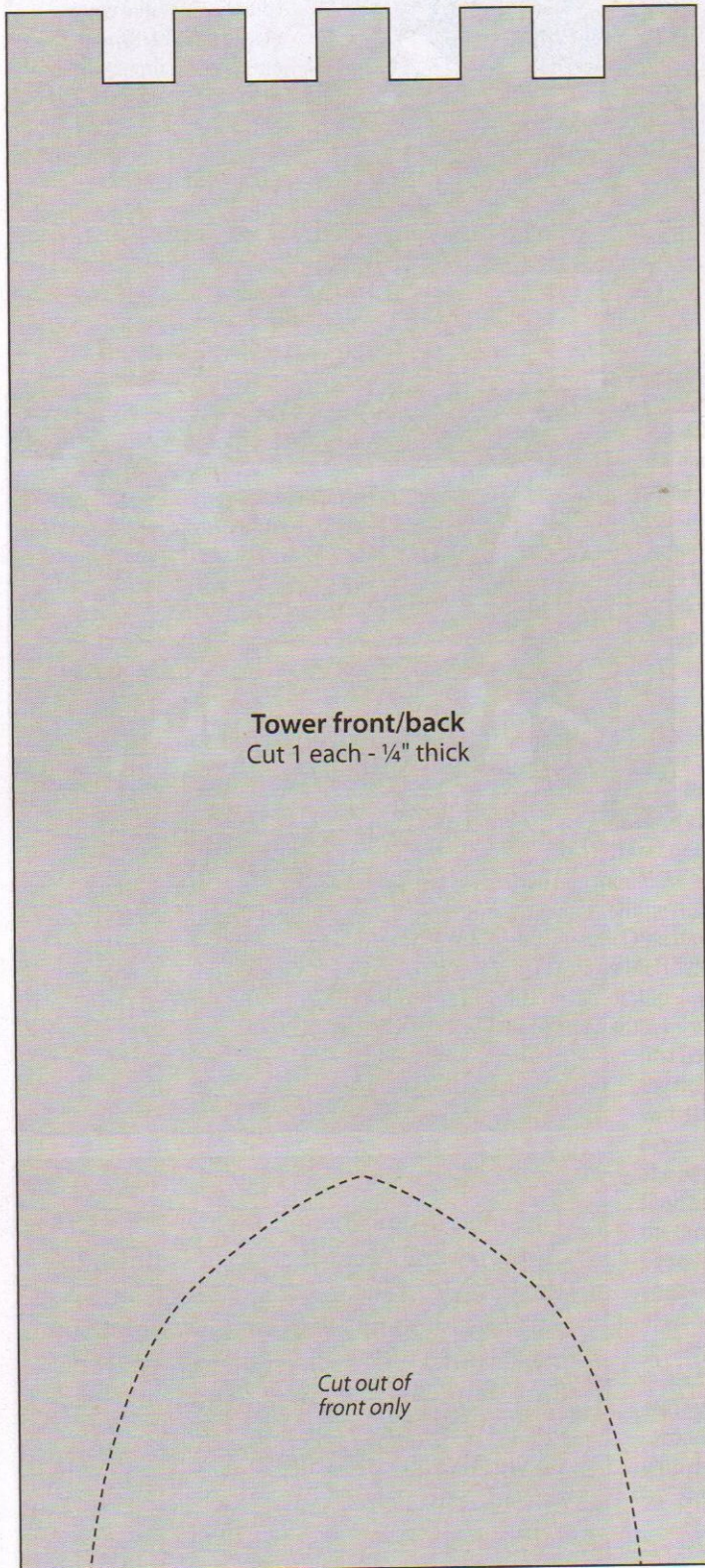
11

**Apply glue to the front and back edges of the sides and bottom.** Glue the front and back pieces into position, cleaning up squeeze-out. Clamp and let the tray dry thoroughly. Round each corner into a smooth curve using a vertical belt sander. Hand-sand the crenellations and upper and lower edges to soften them.

**Finishing the Tower and Tray**

Apply several coats of clear gloss finish to the outside of the tower and visible inner surfaces, rubbing between coats with 0000 steel wool. Do the same for the tray. If you are leaving the bottom of the tray uncovered, apply the finish to the upper face of the plywood. You could also line the tray with self-adhesive felt.

## Dice tower patterns



## Parts List

Part	Quantity	Materials	Dimensions	Presentation
Tower front/back	2	Walnut, 1/4" (6mm) thick	3 5/8" x 8 1/8" (9.2cm x 20.6cm)	Pattern
Tower sides	2	Walnut, 1/4" (6mm) thick	2 3/8" x 8 1/8" (6cm x 20.6cm)	Pattern
Tower paddles	1	Walnut, 1/4" (6mm) thick	2 3/8" x 5 1/2" (6cm x 14cm)	Dimensions
Tower ramp	1	Walnut, 1/4" (6mm) thick	3 1/8" x 4 1/2" (7.9cm x 11.4cm)	Dimensions
Tower spacer	1	Scrap wood, 1/4" (6mm) wide	3" x 3 1/8" (7.6cm x 7.9cm)	Dimensions
Tray bottom	1	Hardwood plywood, 1/4" (6mm) thick	3 3/4" x 8 3/8" (9.5cm x 21.3cm)	Dimensions
Tray sides	2	Walnut, 1/4" (6mm) thick	1 1/2" x 8 3/8" (3.8cm x 21.3cm)	Pattern
Tray front	1	Walnut, 1/4" (6mm) thick	1 1/2" x 4 1/4" (3.8cm x 10.8cm)	Pattern
Tray back	1	Walnut, 1/4" (6mm) thick	1 1/4" x 4 1/4" (3.2cm x 10.8cm)	Dimensions
Tray spacers	3	Scrap wood, 1/4" (6mm) thick	2" x 3 3/4" (5.1cm x 9.5cm)	Dimensions

Tray side  
Cut 2 - 1/4" thick

## Materials & Tools

### Materials:

- Walnut, 1/4" (6mm) thick: 4 each 4" x 24" (10.2cm x 61cm)
- Hardwood plywood, 1/4" (6mm) thick, 3 3/4" x 8 3/8" (9.5cm x 21.3cm)
- Scraps, 1/4" (6mm) thick (spacers)
- Repositionable adhesive
- Wood glue, quick-setting, such as Weldbond
- Self-adhesive felt: 3 1/4" x 8 3/8" (8.3cm x 21.3cm) (optional)
- Sandpaper

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

- Finish: clear gloss
- Steel wool: 0000

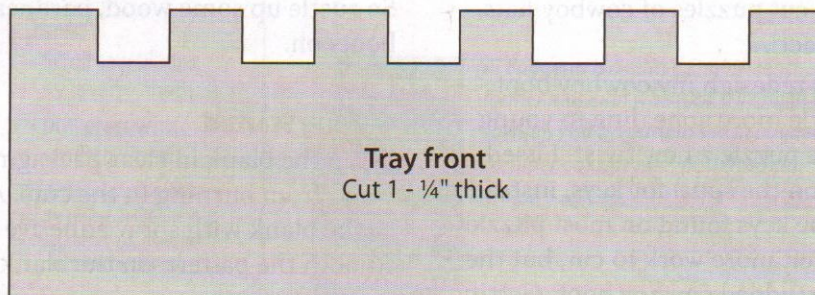
### Tools:

- Scroll saw blades: #3 reverse-tooth
- Clamps
- Sanders: vertical belt sander, random orbital
- Engineer's square
- Scissors



Carole Rothman of Pawling, N.Y., is a retired psychologist and college professor. She is also an award-winning cake decorator. Visit Carole online at [www.scrollsawbowls.blogspot.com](http://www.scrollsawbowls.blogspot.com). You'll find her books, *Creative Wooden Boxes* from the *Scroll Saw* and *Wooden Bowls* from the *Scroll Saw*, at [www.foxchapelpublishing.com](http://www.foxchapelpublishing.com).

## Dice tower patterns



Tray front  
Cut 1 - 1/4" thick

# Cowboy Boot Puzzle



**Stellar design makes this puzzle perfect for your next star-spangled rodeo**

*By Al Baggetta*

**I**'m a fan of the Old West, so many of my scroll saw projects reflect my interest in this rugged period in American history. I've cut puzzles of cowboy hats, stagecoaches, and even cacti.

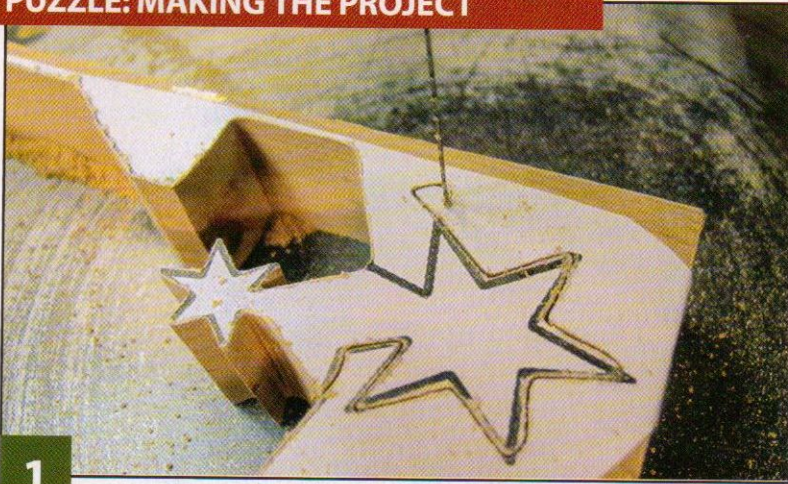
Recently I decided to redesign my cowboy boot pattern to make the puzzle more appealing to young Western fans. To give the puzzle a new twist, I used stars (similar to the one on the spur) for keys, instead of the regular bubble-type keys found on most puzzles. This makes the puzzle a bit more work to cut, but the result is a stunning star-studded cowboy boot. Getting

those star points nice and sharp is a bit tricky, but I'll show you a technique you can use to cut pointy ends. So rustle up some wood, pardner, and let's get our boots on.

## **Getting Started**

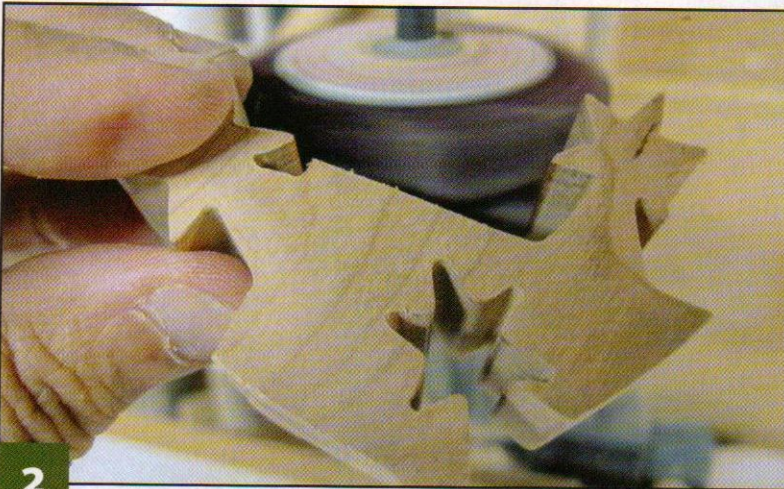
Wrap the blank in clear packaging tape to keep the wood from burning in the cuts. Attach the pattern to the blank with spray adhesive or a glue stick, and smooth the pattern on the blank.

## PUZZLE: MAKING THE PROJECT



1

**Cut the project.** Start with the perimeter. To make sharp corners on the star-shaped spur, cut past each point about  $\frac{1}{2}$ " (1.3cm). Cut a small circle, and then align the blade with the point and cut the next side. This will create nice sharp points on the star. *Note: Do not use this technique on the star-shaped keys; it will ruin the puzzle.* For the puzzle pieces, cut slowly and spin the wood quickly to cut sharp points. For best results, practice on scrap wood first.



2

**Finish the puzzle.** Peel off the patterns. Hand-sand the face of each piece. Then, use a sanding wheel on a drill press to round the edges slightly. This makes the pieces smoother to the touch and gives the assembled puzzle a finished look. Apply a clear acrylic spray finish.

### Materials & Tools

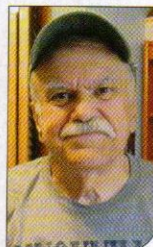
#### Materials:

- Cherry, walnut, or maple wood,  $\frac{3}{4}$ " (1.9cm) thick: 6" x 7" (15.2cm x 17.8cm)
- Sandpaper
- Spray adhesive or glue stick
- Tape: clear packaging
- Finish: clear acrylic spray

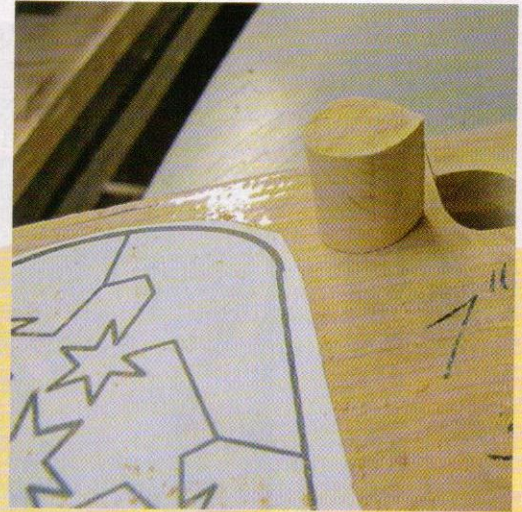
#### Tools:

- Scroll saw blades: #9 reverse-tooth
- Drill press with sanding wheel

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



Al Baggetta is a retired English teacher and former musician who took a liking to scroll sawing. Visit his pattern site at [baggetta.com/pebooks/puzzle\\_patterns.htm](http://baggetta.com/pebooks/puzzle_patterns.htm).



### Tips for Cutting Puzzles

When you're cutting puzzles, it's important that the blade is perfectly square to the table (the blade makes a perfect right angle with the table). Otherwise, the puzzle keys will not move in and out of the puzzle smoothly. To test the blade alignment, cut a rough circle in a piece of scrap. The circle should move in and out of the surrounding wood from either direction. If it binds, adjust the angle of the saw and cut another circle. Repeat the process until the circle moves in and out from the front and the back.

Use a #9 reverse-tooth blade for this puzzle. The large blade cuts through the wood without bowing or bending. Do not apply a lot of pressure to the piece; let the blade do the work.

Pattern for the **COWBOY BOOT PUZZLE** is in the pattern pullout section.

# A Friendly Fish Tank



**These colorful wooden fish are as fascinating as the real thing**

By Dan Wilckens

Photos by Ewelina Basinski

**A**quariums are colorful, lively, and fun; they can excite the imagination or help us think of happier things on the way to a root canal. The fish in my fish tank project are stationary, but don't let that fool you—they're as dynamic and eye-catching as can be.



For a different look, apply flocking according to the manufacturer's instructions. Add a 1/8" (3mm)-thick flocked background to help the design stand out.

## Making the Fish Tank

Cut the aquarium pieces. Glue and clamp the lower support board to the side panels. Then, glue on the front, using the back as a clamping board (with no glue). Make sure the front is flush on all three sides. Then, use the same process to glue and clamp the back in place.

To hide the seams, fill each of the joints with a small bead of glue and then immediately sand along the joints to fill them with a mixture of sanding dust and glue. Then, glue the aquarium assembly to the base. Make sure it's centered side-to-side and flush with the back. Reinforce it with a few pneumatic-driven staples. Attach the upper support to the bottom of the lid. Use the aquarium assembly to ensure a perfect fit. Reinforce it with a few staples.

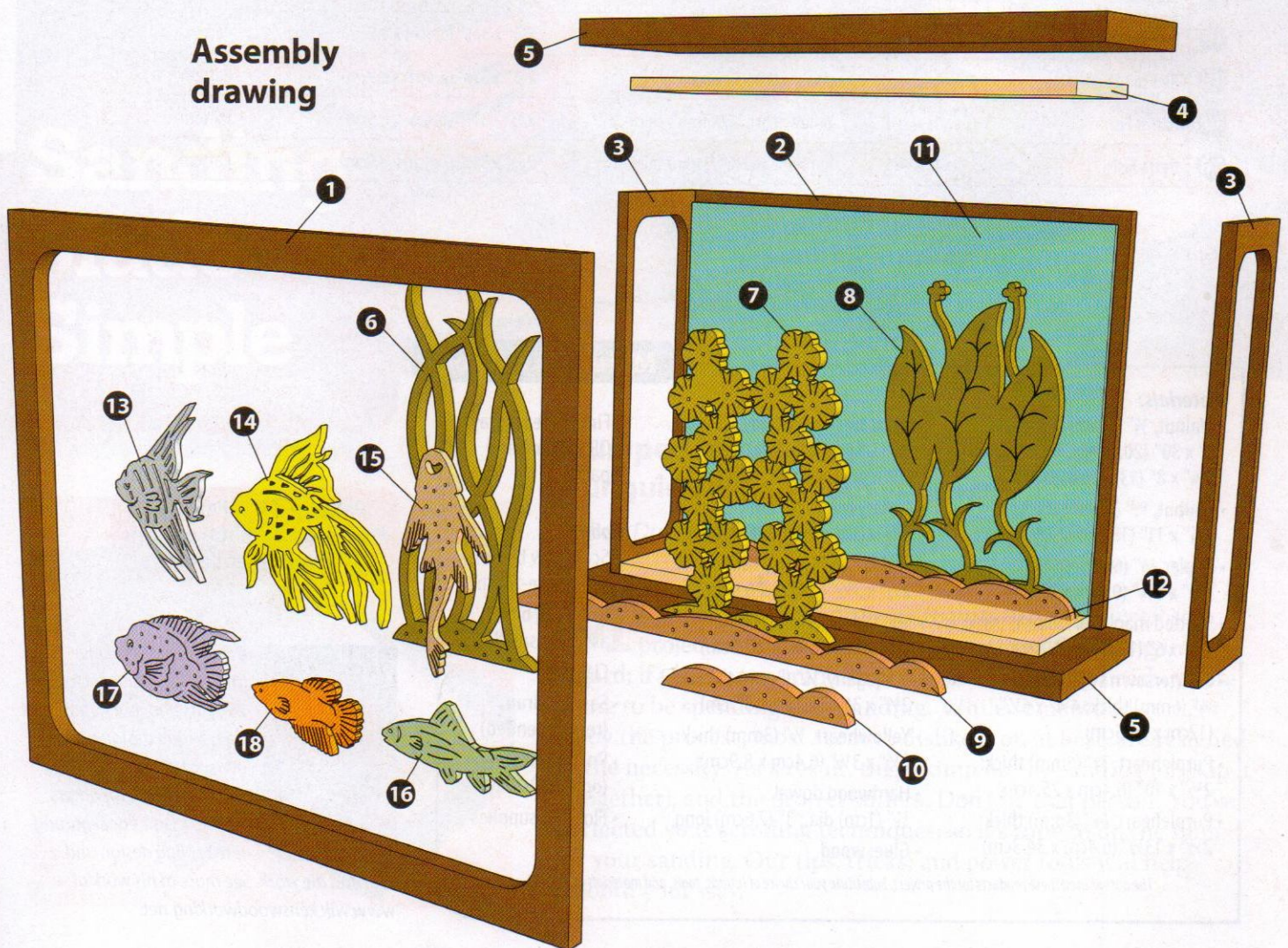
Cut and sand the plants and rocks. Glue and clamp the two outer plants to the front of each of the rocks. Make them flush on the bottom and close to the ends.

Then, glue and clamp these two assemblies together and add a spacer to one end. Finally, glue the center plant to the middle of the back of the plant assembly. Sand the bottom flush; I use a belt sander.

Cut the fish and then pose them as desired on the plants. Glue and staple a piece of thin hardwood (the base) to the bottom. Glue the plant and fish assembly centered on the bottom of the aquarium.

For the pleco (algae-eater), measure from the plant to the back edge of the aquarium front panel and cut a dowel long enough that it looks like the pleco is on the glass. Glue the dowel to the center of the pleco mass and use a spacer block to hold it in place as you glue the dowel to the plant. Apply clear spray finish to the completed fish tank.

### Assembly drawing



## Parts List

	Part	Quantity	Materials	Dimensions	Presentation
1	Front	1	Walnut, ¼" (6mm) thick	8" x 10" (20.3cm x 25.4cm)	Pattern
2	Back	1	Walnut, ¼" (6mm) thick	8" x 10" (20.3cm x 25.4cm)	Dimensions
3	Sides	2	Walnut, ¼" (6mm) thick	2½" x 8" (6.4cm x 20.3cm)	Pattern
4	Supports	2	Walnut, ¼" (6mm) thick	2½" x 9½" (6.4cm x 24.1cm)	Dimensions
5	Top/Bottom	2	Walnut, ½" (1.3cm) thick	3½" x 11" (8.9cm x 27.9cm)	Dimensions
6	Plant A	1	Poplar, ¼" (6mm) thick	3¾" x 6¾" (9.5cm x 17.1cm)	Pattern
7	Plant B	1	Spalted maple, ¼" (6mm) thick	4¼" x 6" (10.8cm x 15.2cm)	Pattern
8	Plant C	1	Quartersawn sycamore, ¼" (6mm) thick	4¾" x 6½" (12cm x 16.5cm)	Pattern
9	Rocks	2	Purpleheart, ¼" (6mm) thick	¾" x 9½" (1.9cm x 24.1cm)	Pattern
10	Rocks spacer	1	Purpleheart, ¼" (6mm) thick	¾" x 4" (1.9cm x 10.2cm)	Pattern
11	Background (painted or flocked version only)	1	Baltic birch plywood, ⅛" (3mm) thick	7½" x 9½" (19.1cm x 24.1cm)	Dimensions
12	Base	1	Purpleheart, ⅛" (3mm)	2½" x 9½" (6.4cm x 24.1cm)	Dimensions
13	Angelfish	1	Canarywood, ⅛" (3mm) thick	2½" x 3½" (6.4cm x 8.9cm)	Pattern
14	Goldfish	1	Padauk, ⅛" (3mm) thick	2½" x 3½" (6.4cm x 8.9cm)	Pattern
15	Pleco	1	Shedua, ⅛" (3mm) thick	2½" x 3½" (6.4cm x 8.9cm)	Pattern
16	Red Tail Shark	1	Mahogany, ⅛" (3mm) thick	2½" x 3½" (6.4cm x 8.9cm)	Pattern
17	Parrot Fish	1	Yellowheart, ⅛" (3mm) thick	2½" x 3½" (6.4cm x 8.9cm)	Pattern
18	Betta Fish	1	Purpleheart, ⅛" (3mm) thick	2½" x 3½" (6.4cm x 8.9cm)	Pattern

## Materials & Tools

### Materials:

- Walnut, ¼" (6mm) thick: 8" x 30" (20.3cm x 76.2cm), 5¼" x 8" (13.3cm x 20.3cm)
- Walnut, ½" (1.3cm) thick: 7¼" x 11" (18.4cm x 27.9cm)
- Poplar, ¼" (6mm) thick: 3¾" x 6¾" (9.5cm x 17.1cm)
- Spalted maple, ¼" (6mm) thick: 4¼" x 6" (10.8cm x 15.2cm)
- Quartersawn sycamore, ¼" (6mm) thick: 4¾" x 6½" (12cm x 16.5cm)
- Purpleheart, ¼" (6mm) thick: 2½" x 10" (6.4cm x 25.4cm)
- Purpleheart, ⅛" (3mm) thick: 2½" x 13½" (6.4cm x 34.3cm)
- Baltic birch plywood, ⅛" (3mm) thick: 7½" x 9½" (19.1cm x 24.1cm)
- Canarywood, ⅛" (3mm) thick: 2½" x 3½" (6.4cm x 8.9cm)
- Padauk, ⅛" (3mm) thick: 2½" x 3½" (6.4cm x 8.9cm)
- Shedua, ⅛" (3mm) thick: 2½" x 3½" (6.4cm x 8.9cm)
- Mahogany, ⅛" (3mm) thick: 2½" x 3½" (6.4cm x 8.9cm)
- Yellowheart, ⅛" (3mm) thick: 2½" x 3½" (6.4cm x 8.9cm)
- Hardwood dowel, ⅜" (1cm) dia.: 3" (7.6cm) long
- Glue: wood

- Finish: clear spray OR flocking and paint

### Tools:

- Scroll saw blades: #3 reverse-tooth
- Drill with bits: assorted small
- Clamps
- Sander: drum (recommended)
- Pneumatic stapler (optional)
- Flocking supplies

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

Patterns for **A FRIENDLY FISH TANK** are in the pattern pullout section.



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

tool and die work. See more of his work at [www.wilckenswoodworking.net](http://www.wilckenswoodworking.net).



# Sanding Made Simple

## Stumped by sanding? Our guide will smooth your way.

By Bob Duncan and Mindy Kinsey

**M**ost woodworking projects require sanding. Scroll saw projects are no different from fine woodworking in this regard; if you want a smooth, professional-looking finish, you're going to be spending time sanding. While some woodworkers enjoy the process, most seem to dislike it or, at best, are resigned to the necessity. As a result, they skimp on the sanding (or skip it altogether), and the project suffers. Don't be that person. You've perfected your scrolling techniques, so it's time to do the same for your sanding. Our tips, tricks, and power tools will help smooth your way.



# About Sandpaper

Sandpaper started out a simple product: literally, sand glued to paper. Later, sand was replaced by aluminum oxide, silicon carbide, and other materials, but it still smooths and shapes wood.

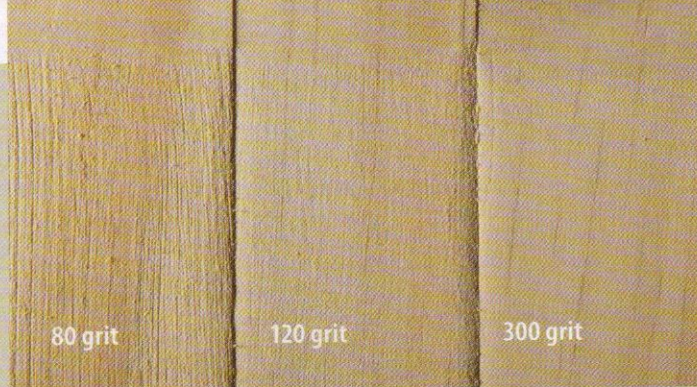
Sandpaper comes in a variety of grits, usually referred to by number. The lower numbers, such as 60 and 80, are the coarser grits, which remove the most wood and are used for shaping, while the higher numbers—220 and above—are finer grits that remove less wood and are used for smoothing. The numbers refer to the average number of particles per square inch. The lowest grit I've seen is 36; it's used for removing rust from pipes. The highest is measured in microns and is effectively smooth to the touch. I can't find any rhyme or reason for the increments

between grits; if you know the story, I'd love to hear it.

There are different types of sandpaper. For our purposes, we're talking about standard paper-backed "sandpaper." The finest grits of sandpaper (400 and above) are usually intended for polishing metal, although we use them for buffing between coats of finish on woodworking projects. Wet-dry sandpaper literally can be used wet or dry. (The wet application is useful for car repairs but is not needed for woodworking.) Cloth-backed sandpaper is more durable than the paper type, but also more expensive and harder to find in sheets.

You'll see sandpaper in a wide range of prices. More expensive paper might have a cloth back, more durable grit, or be made with compounds that prevent the sanding dust from sticking to the paper and "loading" it (see page 55 for info on loading).

Finally, sandpaper comes in a variety of shapes and sizes. It's commonly sold 9" by 11" (22.9cm by 27.9cm) sheets, as well as discs, triangles, belts, and rolls to fit assorted power sanders. More on power sanders on page 56.



## Sanding Through the Grits

To sand, you simply rub sandpaper on a project until the wood is smooth and shaped the way you want, and then move on to a finer grit of paper and repeat. "Sanding through the grits" is the process of using progressively finer papers to smooth the scratches left by the coarser grits. Each paper is slightly smoother than the last and will make the project slightly smoother, as well.

- **Where do you start?** I use 80-grit for fast stock removal, but for general sanding, I start with 100- or 120-grit. (I never use sandpaper more coarse than 80-grit. Coarser sandpaper creates deep scratches that take extra sanding to remove.)
- **How do you know when to go to the next grit?** When all the scratches are the same depth and size, and you can't see or feel any scratches across the grain. A quick spritz with rubbing alcohol helps make the scratches visible. Some woodworkers use water, but rubbing alcohol dries faster.
- **How many grits do you use?** This is a matter of personal preference, but there's some science to it, as well. Some woodworkers patiently work through every grit. However, because there really isn't much difference in the particle sizes and effectiveness of, say, 100- and 120-grit sandpapers, it's generally safe to skip a grit. I use every other grit (80, 120, 180, 220). I do not recommend skipping directly from coarse grit, like 80, to a fine grit, like 220; it will cause more work because the fine paper isn't designed to tackle heavy shaping or big scratches.
- **Where do you stop?** If I'm applying a film finish (Danish oil, lacquer, shellac, polyurethane, or varnish), I usually stop at 220-grit because the film finish will fill the scratches left by the paper. Buff between coats with 320-grit to get a smooth-to-the-touch surface. For penetrating finishes, such as a pure oil finish, I use 320-grit or 400-grit because there is no finish to build up and fill the scratches. I also sand to the higher grits if I'm planning to use a soft finish, like wax, that rubs off quickly.

80 grit

120 grit

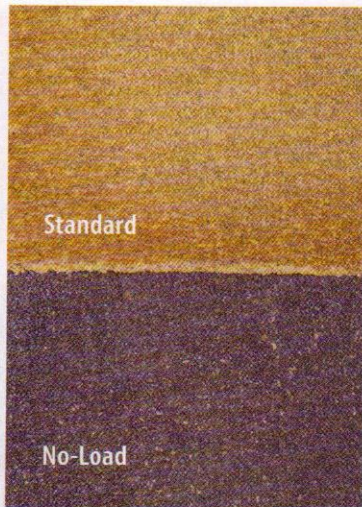
220 grit

# Super Sanding Strategies

## No-Load Sandpaper

As you sand, and particularly if you sand green, wet, resinous, or soft wood, the sandpaper will become coated and clogged—“loaded”—with dust. This is a problem because loaded paper burnishes (polishes) wood instead of shaping and smoothing it, and burnished wood accepts finish differently from sanded or even unfinished wood.

No-load sandpaper is treated with compounds that help the paper shed sawdust, finish residue, etc. It's a little more expensive than standard sandpaper, but can be helpful if you often work with soft wood like pine, basswood, and poplar.



## Sanding Mixed Varieties of Wood

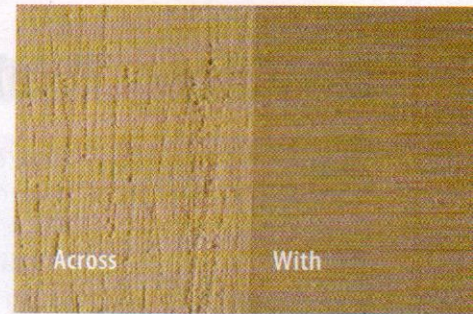
There are times when you'll glue together several different types of wood to make one project—bowls and intarsia come to mind. It's important to note that different varieties of wood sand at different rates depending on their hardness. It's easy to sand away more wood from the softer varieties than the harder ones, creating a wavy surface. This can also happen along grain lines, because the dark lines in the grain are often harder than the surrounding light wood.

The solution is to pay attention as you sand to be sure that you remove hard wood at the same rate as nearby softer varieties. Finishing expert Bob Flexner recommends using a sanding block or random orbital sander rather than your hand when sanding flat surfaces to avoid this problem.

## Sanding With the Grain

As much as possible, sand in the same direction as the wood grain. Do not sand across the grain. The reason is simple:

sanding scratches the wood, and the scratches will be far less visible if they are aligned with the grain rather than across it. A vibrating pad or random orbital sander will create a less obvious, squiggly sanding pattern, but it is still valuable to do the final sanding by hand, with the grain, to conceal the marks.



## Sanding Sealer

For fuzzy wood, such as poplar, basswood, and pine, apply a sanding sealer, allow it to dry, and then sand again. The sealer stiffens the fuzzies and makes them easier to sand off to produce a smooth finish.

## Removing Wood Quickly

Need to remove a lot of wood? For flat pieces, use a disc or belt sander. For curved or rounded pieces, use sanding drums. Start with large pneumatic drums with coarse sandpaper and then switch to finer paper as needed. It's also possible to shape rounded items with a belt or disc sander, but you need to be careful not to remove too much wood.

## Sanding Drum vs Drum Sander

These two tools have similar names, but are very different in design and function. Sanding drums are small, cylinder-shaped attachments for drill presses, freestanding sanding units, and even rotary tools. They are used to shape curved or rounded projects.

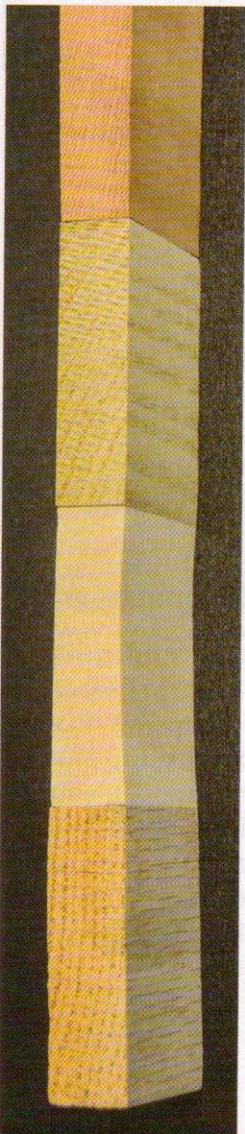
A drum sander is a large machine with a central cylinder wrapped in sandpaper. It's used for smoothing, flattening, and adjusting the thickness of large panels.



Sanding drum



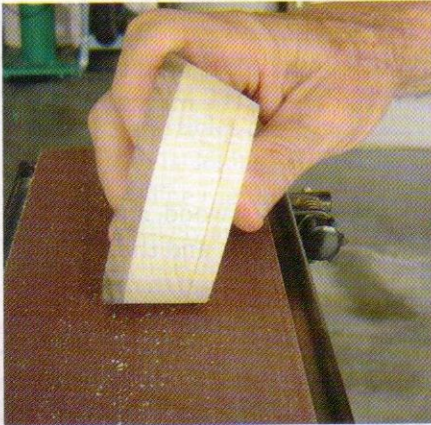
Drum sander



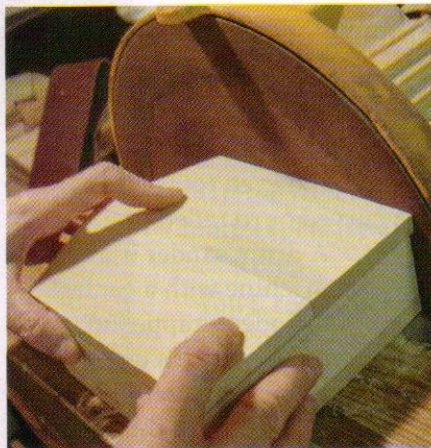
# Sanding Tools

While hand-sanding takes no special tools, it's time-consuming. After spending a few hours sanding, most woodworkers start thinking about power sanders. Depending on the type of scrolling you do, you'll need different sanders.

## GENERAL SCROLL SAWING



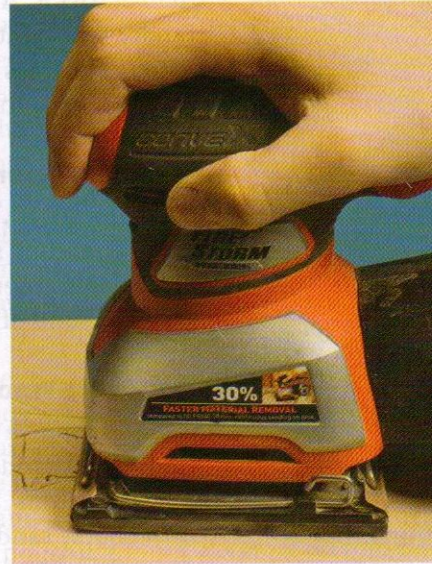
**Belt sander:** Literally, a flat, motor-driven belt of sandpaper; can be hand held or mounted. Useful to flatten small pieces of wood, sand up to lines, and shape some curves.



**Disc sander:** A vertical disk of sandpaper, often combined with belt sander. Used to sand edges and angles.

**Vibrating pad or random orbital sander:** Useful for smoothing wood before cutting as well as finishing some projects.

## FRETWORK

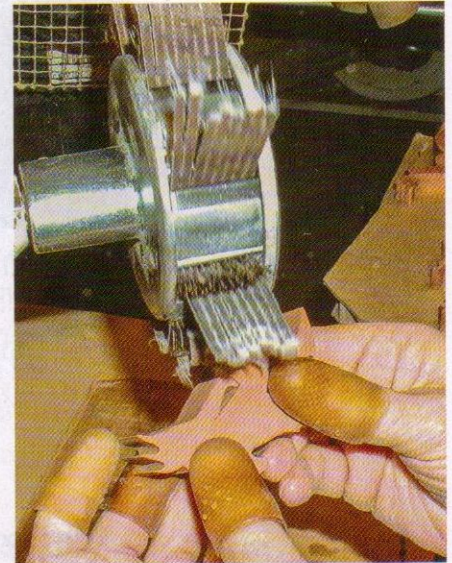


**Vibrating pad or random orbital sander:** Both sand flat surfaces well. Vibrating pad sanders use standard sandpaper, but don't sand as fast. Random orbital sanders require special sanding discs, but remove wood faster. Used to smooth the wood before cutting and to remove fuzzies after cutting.

**Disc or belt sander:** Useful for squaring the edges of projects.

**Needle files and sanding sticks:** Used to clean fuzzies out of frets after cutting.

## PUZZLES



**Flap sander:** Strips of sandpaper are attached to a mandrel to create a disc of flying strips. A flap sander is used in a drill press or freestanding sanding unit. The strips fit into tighter areas to remove fuzz without grabbing and breaking delicate pieces. Depending on the grit, a flap sander can aggressively remove wood to change the shape of a piece. Used to round the edges of puzzle pieces.

**Vibrating pad or random orbital sander:** Used to smooth the wood before cutting.

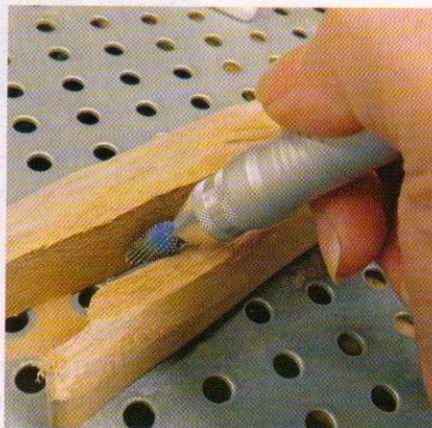
## INTARSIA & SEGMENTATION



**Sanding drums:** Cylinder-shaped attachments used in a drill press or freestanding sanding unit. The drum can be inflatable, foam-backed, or rubber, and is encased by a sandpaper sleeve. Used to shape irregular pieces.



**Sanding mop:** Strips of sandpaper are stacked one on top of each other on a mandrel. Use caution, because given the concentration and orientation of the sandpaper, it can grab and break small or delicate pieces. Used to soften the edges and smooth pieces without changing the overall shape.

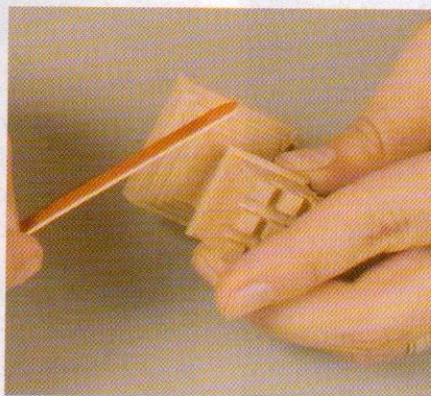


**Carving bits and mini sanding drums:** Small cylinders and other shapes used in a rotary tool (Dremel, etc.). Used for detailed shaping.

**Disc or belt sander:** Used for basic shaping.

## COMPOUND

**Disc or belt sander:** Useful for squaring the edges of projects.



**Needle files and sanding sticks:** Thin, round, metal files and slim sticks, often shop-made, with sandpaper attached. Used to smooth tight areas and clean the frets after cutting.

## BOWLS & BOXES



**Foam pad sanders:** Foam pads of various densities attached to a mandrel you can chuck in a drill. Hook and loop sandpaper attaches to the pad. Softer pads conform to the shape of the wood, but denser pads allow you to change the shape of the wood. Used to shape and smooth the interiors of projects.



**Mini inflatable drums:** Small cylinders and balls that can be chucked into a flexible shaft tool or drill press. Used to sand small, oddly shaped areas.

**Disc or belt sander:** Used to square edges and roughly shape projects.

**Vibrating pad or random orbital sander:** Used to smooth wood before cutting as well as sand finished projects.

# Premium Sanders

If you have the space and your budget allows, these specialty tools can make sanding even faster and easier.



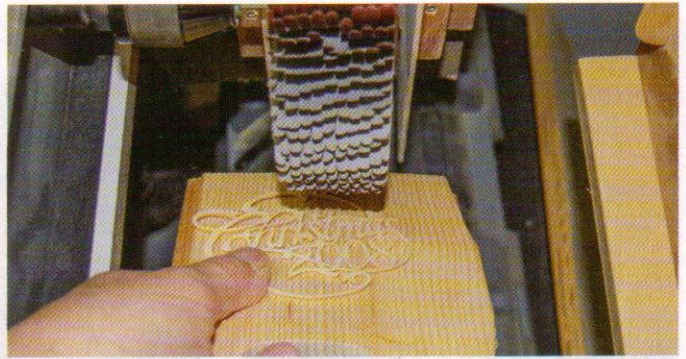
## Oscillating Spindle Sander

**Useful for: Intarsia, bowls, boxes.** This freestanding sander comes with a variety of drums in different diameters. The drum moves up and down while it rotates to help clear dust and avoid burning the wood. The table can tilt to shape curves. Useful for shaping intarsia pieces and the interiors of boxes and bowls. Our favorite spindle sander is the Jet JOSS-S Spindle Sander; find a retailer at [www.jettools.com](http://www.jettools.com).



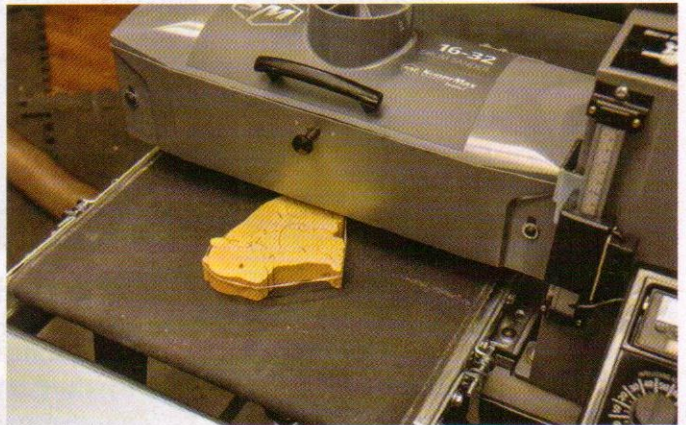
## Portable Drum Sander

**Useful for: Fretwork, intarsia, bowls, boxes.** This benchtop sander comprises a horizontal spinning drum covered with sandpaper and set in an adjustable table. Because you feed the wood across this tool by hand, you can control the speed. Useful for flattening the back of an assembled intarsia or removing fuzzies from fretwork. The most widely known is the Sand-Flee, available from R.J.R. Studios, [www.rjrstudios.com](http://www.rjrstudios.com).



## Mac Mop

**Useful for: Fretwork, intarsia, compound.** Like a sanding mop combined with a flap sander, the Mac Mop has thousands of tiny strips of sandpaper attached to a central drum. Useful for sanding irregular surfaces and fragile fretwork. Available from Klingspor, [www.woodworkingshop.com](http://www.woodworkingshop.com).



## Belt-fed Drum Sander

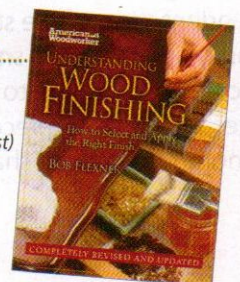
**Useful for: Fretwork, puzzles, bowls, boxes, general wood preparation.** A drum sander is a large machine with a central horizontal cylinder wrapped in sandpaper. A motorized belt feeds wood into the drum, the height of which is adjustable. Useful for smoothing and flattening wood, or adjusting its thickness (especially for highly figured wood that a planer would destroy). Can be used to finish-sand some projects, such as puzzles. Our favorite is the Laguna Tools Supermax 16-32; find a retailer at [www.lagunatools.com](http://www.lagunatools.com).

## WANT MORE INFORMATION?

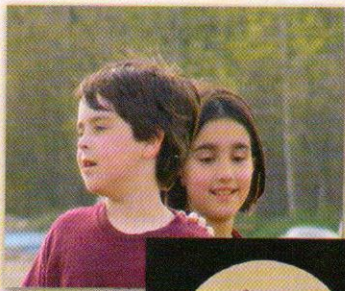
### Understanding Wood Finishing

by Bob Flexner

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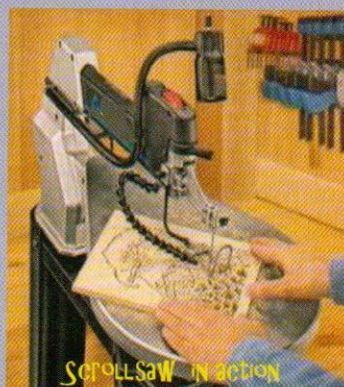


FretWork...

Intarsia



Marquetry



ScrollSaw in action

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# Two-Shelf Wall Bracket

**Timeless fretwork design is a stylish way to display small items**

Designed by John A. Nelson  
Cut by Rolf Beuttenmuller

**Y**ou can never have too many shelves—they spruce up bare walls while reducing clutter in your home. I use this delicate fretwork shelf to display knickknacks and small keepsakes that might otherwise get lost, but it can also be displayed as a work of art itself.

## Selecting the Wood

For a fragile project like this, plywood is the most durable wood option, but with all of the frets, the plywood layers (or plies) will be on full display. It's possible to stain or dye the wood to disguise the plies, but that takes trial and error.

Cutting the piece from solid wood is a challenge because it can be fragile, especially when it's been cut to  $\frac{3}{16}$ " (5mm) thick. Test cutter Rolf Beuttenmuller cut the back from  $\frac{1}{4}$ " (6mm)-thick wood for increased durability. Stack-cut the pieces to support the delicate fretwork. Avoid wood with a prominent grain (such as oak or ash), because it will break easily along the grain. However, you can glue pieces back on if they snap.

## Making the Wall Bracket

Stack the pieces as appropriate, and then attach the patterns to the top of the stack. Drill blade-entry holes and cut the frets. Then, cut the perimeters of the pieces. Mask the glue joints and apply a finish, such as clear spray lacquer. Remove the masking tape. Glue and clamp the shelves onto the bracket. Reinforce the joints with brads if desired. Allow the glue to dry. Add a hanger to the back.

## Materials & Tools

### Materials:

- Cherry,  $\frac{1}{4}$ " (6mm) thick: backing board, 13 $\frac{1}{2}$ " x 17" (34.3cm x 43.2cm)
- Cherry,  $\frac{3}{16}$ " (5mm) thick: bottom shelf, 3 $\frac{1}{4}$ " x 13" (8.3cm x 33cm); top shelf, 3" x 11" (7.6cm x 27.9cm); brackets, 2 each 2 $\frac{1}{4}$ " x 3 $\frac{1}{4}$ " (5.7cm x 8.3cm)
- Spray adhesive
- Sandpaper
- Wood glue
- Finish, such as clear spray lacquer
- Brads
- Hanger

### Tools:

- Scroll saw blades: #2 reverse-tooth
- Drill with bits: assorted small
- Hammer or brad nailer
- Clamps

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

Patterns for the **TWO-SHELF WALL BRACKET** are in the pattern pullout section.



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



Step 1  
Materials  
Tools  
Instructions

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# Halloween Plaques

**“Haunt” your house with these self-framing silhouettes**

*By Sheila Landry*

**A**s fall approaches, I’m always looking for new ways to bring a bit of spooky fun into the house. These wonderful silhouette designs are a perfect accent to your holiday decor. The center of the piece slides back, and the frame locks into place to give the plaque added interest and dimension.



## MAKING THE PLAQUES

**Step 1: Attach the patterns to the background and overlay blanks.** Drill the blade-entry holes. Cut the frets, and then cut the perimeter of the plaque and overlay.

**Step 2: Determine the cutting angle.** Drill a blade-entry hole in a piece of scrap the same thickness as the ornament and tilt the left side of the saw table down 7° (or tilt the saw head to make the same cut). Cut a circle in the scrap and press the center in. The center should recess slightly before catching tightly. If the circle wants to protrude, cut another circle in the opposite direction. If the circle goes too far in, adjust the cutting angle and test again.

**Step 3: Drill a blade-entry hole in the plaque.** Use the angle you determined in Step 2. Cut the oval marked on the pattern.

**Step 4: Separate the pieces.** Sand away any fuzz, and remove the dust. Reinsert the center and run a bead of clear glue around the cut line on the back of the plaque to secure the pieces. Glue and clamp the overlay centered on the plaque. Remove any excess glue with a wet paper towel. Apply the finish and hang the plaque to dry.

**Step 5: Finish the plaques.** Paint the silhouettes with black acrylic paint or several light coats of flat black spray paint. If you cut these plaques from an attractive hardwood, use mineral oil and spray shellac to allow the natural beauty of the background and frame to show.

### Project Idea

For a different look, cut the ornaments from light wood and paint the frame black as well. Then, paint the background bright orange or cut and attach a piece of decorative paper to the background. After the frame is dry, use a sea sponge to apply metallic gold acrylic paint to just the frame. After the paint dries, apply a gloss finish (a matte finish dulls the metallic paint) and allow it to dry.



## Halloween Trees

If you reduce the size, these patterns make perfect ornaments for a Halloween Tree. Retailers are reporting record sales of these trees, and a search of Pinterest brings up pages of examples. The one pictured above was created by Kandi Jung of Richmond Hill, Ga. Kandi is a Halloween lover and professional door decorator who owns Kandi's Kreations.

While you can make your own tree from a creepy-looking branch, many retailers, including Target and Wayfair.com, have ready-to-decorate trees complete with LED lights.

For more custom Halloween trees, check out Kandi's Kreations on Facebook, [www.facebook.com/Kandis-Kreations-647710865251099/](http://www.facebook.com/Kandis-Kreations-647710865251099/).

## Materials & Tools

### Materials:

- Hardwood, 1/4" (6mm) thick: plaque, 4 1/2" x 6" (11.4cm x 15.2cm)
- Baltic birch plywood, 1/8" (3mm) thick: plaque overlay, 3" (7.6cm) square
- Hardwood, 1/8" to 3/16" (3mm to 5mm) thick: ornament 3 1/2" x 4 1/2" (8.9cm x 11.4cm)
- Baltic birch plywood, 1/8" (3mm) thick: ornament overlay, 2" (5.1cm) square
- Spray paint: black (optional)
- Acrylic paint, such as DecoArt Americana (optional): lamp black (DA67), bright orange (DA228), Venetian gold metallic (DA072)
- Mineral oil (optional)
- Shellac: spray (optional)
- Finish: clear gloss spray, such as DecoArt (DAS12) (optional)
- Tape: blue painter's, 2" (5.1cm) wide; clear packaging, 2" (5.1cm) wide (optional)
- Spray adhesive: temporary bond
- Wood glue: clear drying
- Sanding discs: assorted grits between 120 and 400
- Ribbon (to hang ornaments, optional)
- Hanger (for plaques, optional)

### Tools:

- Scroll saw blades: plaques, #3 premium reverse-tooth, such as Olson Mach Speed; ornaments, #2/0 regular reverse-tooth, such as Olson
- Drill press with bits: assorted small
- Sander: random orbital
- Sea sponge (available at most craft stores) or nicely textured sponge

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

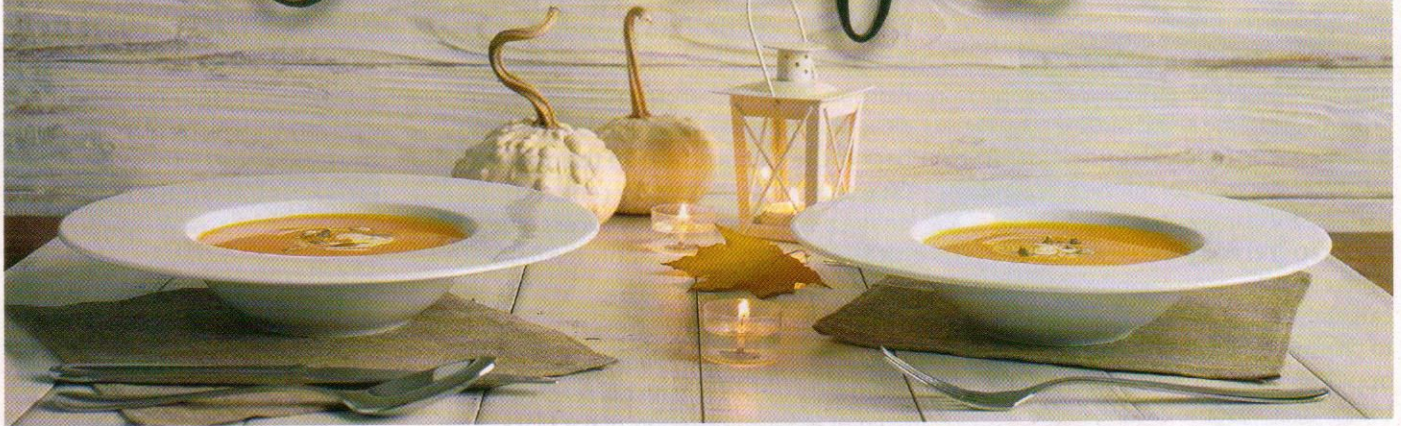
Patterns for the **HALLOWEEN SILHOUETTE PLAQUES** are in the pullout section.

**ON THE WEB** Bonus silhouette patterns available on our website.  
[www.scrollsawer.com](http://www.scrollsawer.com)



Sheila Bergner-Landry grew up in the Chicago area and began her woodworking and painting career when her daughter Danielle was born, more than 20 years ago. A friend, Cari Denison, introduced her to scroll sawing. Sheila relocated to Nova Scotia, Canada, where she has found new inspiration for designs. For more of her patterns, call 902-482-7174 or visit [www.sheilalandrydesigns.com](http://www.sheilalandrydesigns.com).

# Thankful



## Thanksgiving Word Art

**Cut these classic words in any size and keep them up all year**

By Bob Duncan  
Pattern designed by Jon Deck

**D**ecorating for the holidays can be a fun way to bond with family. It can also be a source of extra clutter and stress. Instead of filling your house with turkeys, pilgrim hats, and cornucopias this year, make these simple but elegant word art designs. They work as a symbol of the season that you don't have to take down once Thanksgiving's over.

Enlarge the pattern to make a statement as a wall hanging. Make smaller ones to use as centerpieces. You can even stack cardstock between two pieces of thin wood to make multiple paper cutouts for your table.

### Cutting the Word Art

- Hardwood is challenging to cut because of the weak cross-grain sections. It's possible to cut if you're

careful, but a misstep often results in multiple breaks. Plywood is easier to cut but must be painted to disguise the layers. If you have your heart set on hardwood, cut a backing board from thin tempered hardboard or plywood. Cut inside the lines so the backing board won't be visible from the front, and glue it to the back of the hardwood for additional support.

- If you use flat blades, be aware of the length of your saw arm. This determines how large a piece you can cut.
- If you join pattern sections together, use double-sided tape or spray adhesive in the overlap areas. This will keep the pattern in place as you cut.
- Draw a rectangle just outside the pattern lines and cut away the excess wood. As you cut, use tape to reattach the waste wood around the letters. This supports the fragile letters and keeps the whole project stiff. Even with plywood, the letters are thin enough to bow if they are hanging off the table and get caught on the table edges.

### Finishing the Word Art

Apply a clear spray finish to hardwood word art. Avoid any finish you need to rub or brush on—why risk breaking a fragile section? For a plywood version, I suggest multiple light coats of spray paint. The spray makes it easy to get good coverage in tight areas, and it dries quickly. After the finish dries, attach a few D-ring hangers to the back.

### Materials & Tools

#### Materials:

- Wood, ¼" to ½" (6mm to 1.3cm) thick: sized for pattern
- Finish: clear spray or spray paint
- Spray adhesive
- Hangers: D-ring

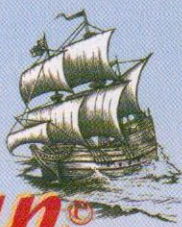
#### Tools:

- Scroll saw blades: #3 reverse-tooth
- Drill with bits: assorted
- Screwdriver

Patterns for **THANKSGIVING WORD ART** are in the pullout section.

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

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# SpectraPly

Love scrolling but hate painting?  
This new product comes  
with the colors built in

By Bob Duncan

“Easy to cut and work, SpectraPly can add a welcome pop of color to your next project.”



**W**hen woodworkers use plywood for a piece, they often design it to hide the visible plies at each end. With SpectraPly, embrace the layers instead of trying to hide them! Each layer is dyed a bright or deep color, which you can use to your advantage in your design.

SpectraPly comes in a variety of shapes, but for scroll sawing, we found the  $\frac{3}{4}$ " (1.9cm)-thick by  $9\frac{1}{2}$ " (24.1cm)-wide size most useful. Thicker pieces are available for turners.

The colorful layers offer all sorts of design possibilities. Bruce Shea designed a pair of bowls. Judy Gale Roberts shaped the wood into an intarsia chameleon, and Wayne Fowler made a freestanding fretwork creation. We cut it into a bracelet and puzzle. You can easily see that some designs take better advantage of the layers than others. With the fretwork and puzzle, the vibrant color of the front was the focus and the layered effect was somewhat lost. The intarsia, bowl, and bracelet displayed the layers more effectively.

Wayne Fowler usually cuts fretwork wildlife from hardwoods. He said that cutting SpectraPly was like cutting hardwood of a similar thickness, but without any grain issues. "Because of the wood grain,

sometimes the wood dictates where the blade goes," Wayne explained. "With SpectraPly, the saw went where it was supposed to go."

Because the color seemed like a perfect fit for the pattern, I asked Wayne to cut his crab design from red and black SpectraPly (see page 68). He noted that it cut more slowly than hardwood and dulled the blades more quickly. It also generated a lot of heat, but the packaging tape he covered the blank with prevented any burning. Wayne said that even though he didn't use a reverse-tooth blade, the good-quality wood used for the plywood layers didn't chip or leave burrs on the bottom.

Bruce Shea had similar comments about the cutting, but he warned that within a panel, the thickness of the layers can vary. "The pattern may not repeat when you stack them," he explained. "Also, the panels are colored with a water-based dye, so plan to apply some sort of protective top coat. Otherwise, if the project gets wet, the dye may bleed between layers."

The intarsia master Judy Gale Roberts agreed that the plywood was abrasive compared to the hardwood she usually uses. "I went through almost a dozen blades cutting this chameleon," she said, although she noted that some of her blade changes were optional. "I only had

Bruce Shea built a complex blank from SpectraPly and then scrolled it into a bowl.

Wayne cut colorful SpectraPly into ¼" (6mm)-thick strips and glued them together to make a striped ornament.

Judy Gale Roberts used SpectraPly to create the vivid color in this chameleon.



one shot at making the chameleon and I wanted to make sure the cuts were square," she explained. "I used a #5 Platinum Plus blade for most of the cutting," Judy added. "On these blades, every third tooth is reversed, which helped the blade cut through the layers. I didn't push the wood. When I would find myself pushing harder, I would change the blade."

Judy said the plywood sanded easily. "I used 80-grit to sand the parts close to the finished thicknesses," she said. "Then, I smoothed it with progressively finer grits up to 220. I did notice some of the thinner plies on the surface flaked off a little, but overall it held together well."

Easy to cut and shape, SpectraPly can add a welcome pop of color to your next project. If you try it, send a photo to us: [editors@scrollsawer.com](mailto:editors@scrollsawer.com) (subject: SpectraPly).

*Prices for SpectraPly start at \$52 for a ¾" by 9½" by 40" (1.9cm by 24.1cm by 1.02m) piece from Cousineau Wood Products. Each piece is custom-made, but the panels will ship within 30 days of your order. Visit [www.cwp-usa.com](http://www.cwp-usa.com) for more information.*



An uncut piece of SpectraPly together with a bracelet and puzzle cut by SSWC staff members.

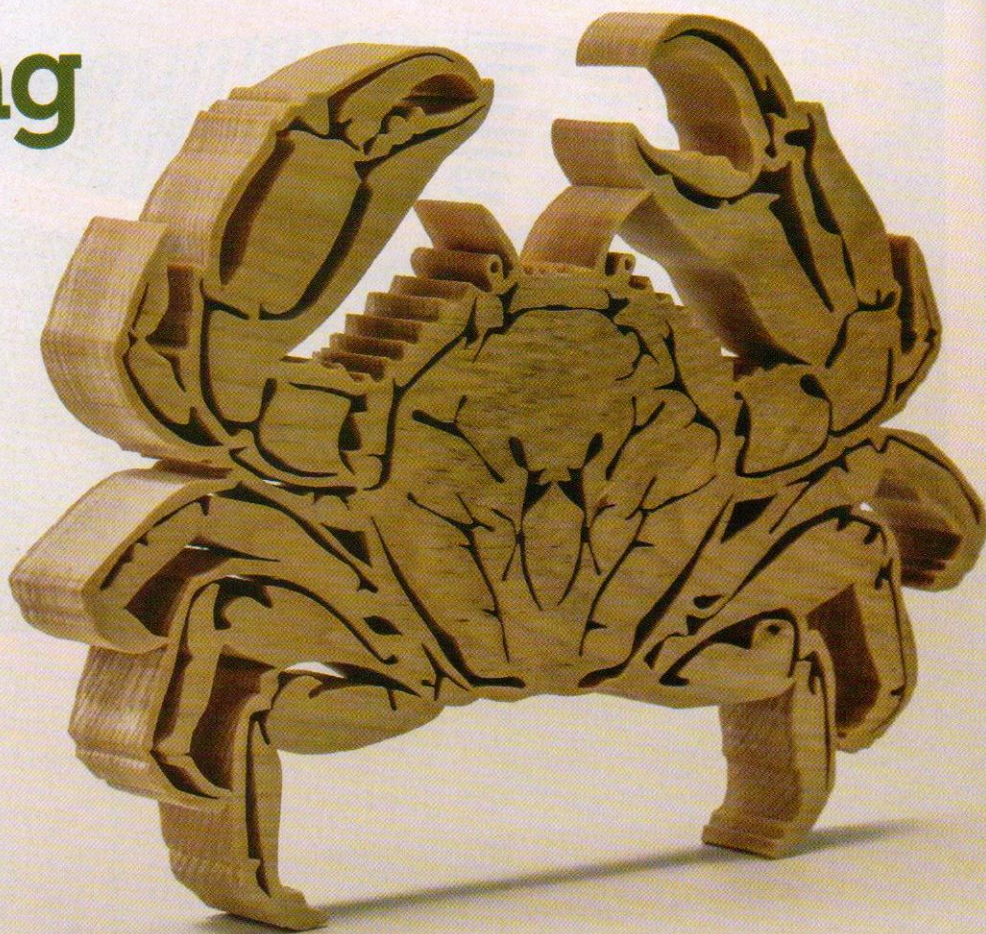
# Standing Crab

Take your hardwood from drab to crab with this snappy pattern

By Jacob and Wayne Fowler



The standing crab cut in red Spectraply plywood.



## Materials & Tools

### Materials:

- Maple or colorful wood such as SpectraPly AppleJack,  $\frac{7}{8}$ " (2.2cm) thick:  $5\frac{3}{4}$ " x  $8\frac{3}{4}$ " (14.6cm x 22.2cm)
- Sandpaper: 220 or 320 grit
- Oil finish

### Tools:

- Scroll saw blades, such as On-Line TLB: #4 skip-tooth
- Drill press with bit:  $\frac{3}{64}$ " (1.2mm) dia.
- Belt or disc sander (optional)

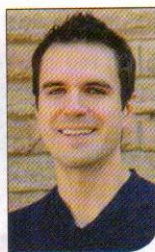
*The author used these products for the project. Substitute your choice of brands, tools, and materials as desired.*

Pattern for the **STANDING CRAB** is in the pattern pullout section.

**T**his multiuse design works well with many kinds of wood. I thought it would be fun to cut it from a piece of maple as a freestanding decoration or a gift for those born under the Cancer zodiac sign. Then, the editors asked my opinion on SpectraPly (see page 66), so I cut a crab from that, as well. I have also experimented with it as a smaller design, cutting it out of  $\frac{1}{4}$ " (6mm)-thick hardwood for Christmas ornaments.

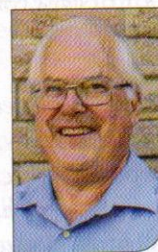
### Making the Crab

First, cover the wood with clear packaging tape. Attach a copy of the pattern to the tape. Drill the blade-entry holes and cut the frets. Save the exterior cuts for last. Be careful on the freestanding antennae; the veneer layers in the SpectraPly chipped on these as I cut. After you finish cutting, remove the pattern and hand-sand with 220-grit sandpaper. Apply an oil finish to bring out the color.



Jacob Fowler designed his first scroll saw project when he was five years old. Today, he designs fantasy and animal patterns for his father, Wayne. They often take pictures of wildlife at zoos and preserves and turn them into fretwork patterns. Jacob has published over 200 of his 1,000 designs in partnership with his father.

Wayne Fowler began scrolling 27 years ago. He published his first article in 1998. Since then he has published almost 150 articles. Wayne's work has won awards at a local craft guild and several science fiction conventions.



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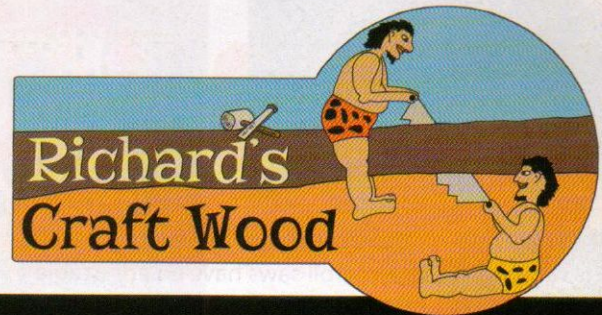
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7	.045"	.017"	11.5	3/4" to 1 1/2" hardwood	\$9.95	\$65.00
9	.053"	.018"	11.5	1 1/2" to 2 1/2" hardwood	\$9.95	\$65.00
12	.062"	.024"	9.5	straight-line cutting	\$9.95	\$65.00
NEW 2/0M	.022"	.010"	61	up to 1/16" wood & metal	\$9.95	\$65.00
NEW 2M	.028"	.013"	30	up to 1/8" wood & metal	\$9.95	\$65.00
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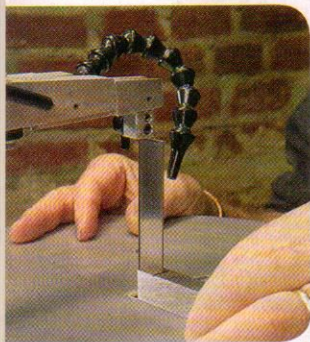
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To avoid repetitive instructions, this page is included in each issue to assist novice scrollers with basic scrolling techniques.



## Squaring Your Table

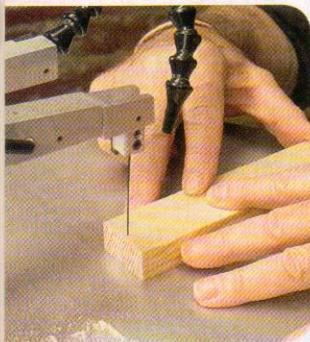
Most scroll saws have an adjustable table that allows you to make cuts at different angles. There are times when you want the saw set at an angle, but most cutting is done with the blade perpendicular to the table. If the table is even slightly off-square, the cuts will be angled. This interferes with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

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

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

Adjust the table until you get a perfectly square cut.

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

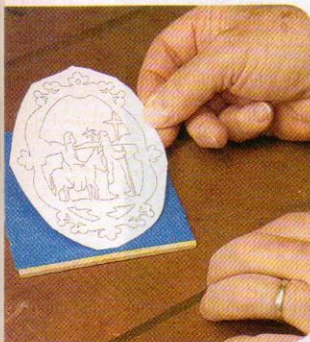


## Attaching Patterns

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

You can also use graphite or carbon transfer paper. Place the pattern on the blank and slip a sheet of transfer paper

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



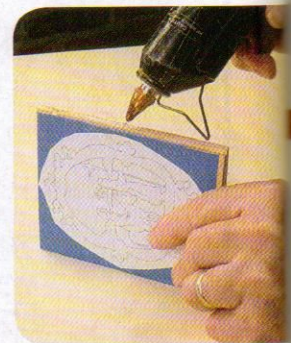
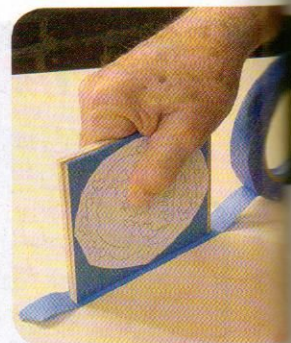
## Stack Cutting

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

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

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

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



## Blade Tension

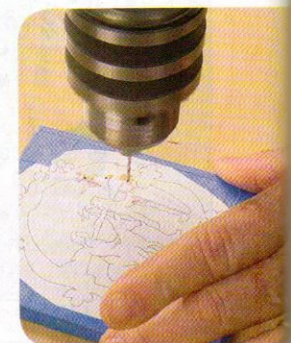
Before inserting a blade, completely remove the tension. Clamp both ends of the blade into the blade holders and adjust the tension. Push on the blade with your finger. It should flex no more than 1/8" (3mm) forward, backward, or side to side.

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

## Blade-Entry Holes

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

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



## Removing Patterns

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

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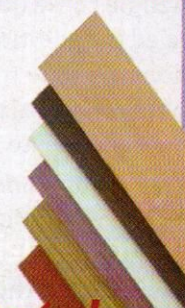


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## Is it time to add a table saw to your shop?

Until recently, I believed that all cuts for scroll saw projects should be made exclusively with a scroll saw. It was fine if the project used an array of other tools, such as sanders, clamps, and drills—just no other type of saw. I made all my cuts, straight and curved, with the scroll saw, never thinking that just because I could do it that way, I should.

I'd use auxiliary supports to cut long stock into small blanks, and would dimension strips, squares, and rectangles with the help of a miter gauge and belt sander. It was cumbersome and time-consuming, but acceptable, since my work was primarily non-linear and I seldom did multiples. However, when faced with projects like the dice tower (see page 42) and its many straight cuts, the lure of a tool that could handle these quickly, accurately, and without need for additional sanding was irresistible. I don't hesitate to knead bread with the dough hook in my mixer, so why should I resist another way to save time and energy?

For someone accustomed to the scroll saw, everything about the table saw was intimidating—the size of the tool; its noise; the speed of the blade; the need for fences, push sticks, and jigs—and especially its potential for harm from cuts and kickback. All things considered, the SawStop Jobsite

Saw seemed the right tool for my size and needs.

I completed the package with some basic accessories—crosscut sled, outfeed table, quality miter gauge, and GRR-Ripper.

*(Editor's Note: For a complete review of the saw, see SSWC Winter/Spring 2016, Issue 62. For a video of its hand-safety system in action, see [scrollsawer.com/2016/02/05/sawstop-jobsite-saw/](http://scrollsawer.com/2016/02/05/sawstop-jobsite-saw/).)* I'm still uneasy as I watch the spinning blade, but the time saved, especially for production work, makes the learning process well worth the effort.

Best of all, I now feel no more “disloyal” using the table saw than any other tool in my shop. It obtains the results that I want—just more efficiently!



Carole Rothman of Pawling, N.Y., is a retired psychologist and college professor. She is also an award-winning cake decorator. Visit Carole online at [www.scrollsawbowls.blogspot.com](http://www.scrollsawbowls.blogspot.com). You'll find her books, *Creative Wooden Boxes* from the Scroll Saw and *Wooden Bowls* from the Scroll Saw, at [www.foxchapelpublishing.com](http://www.foxchapelpublishing.com).



Although push-sticks do an adequate job, the GRR-Ripper tool keeps your hands safely away from the spinning blade.



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- Steve Good  
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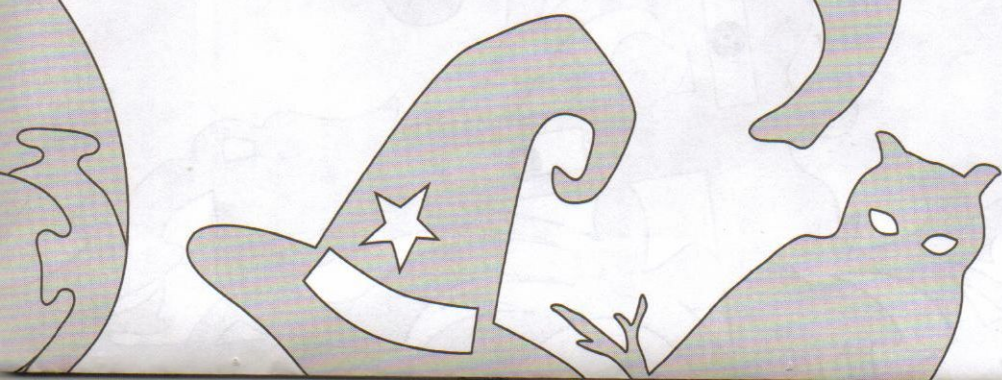
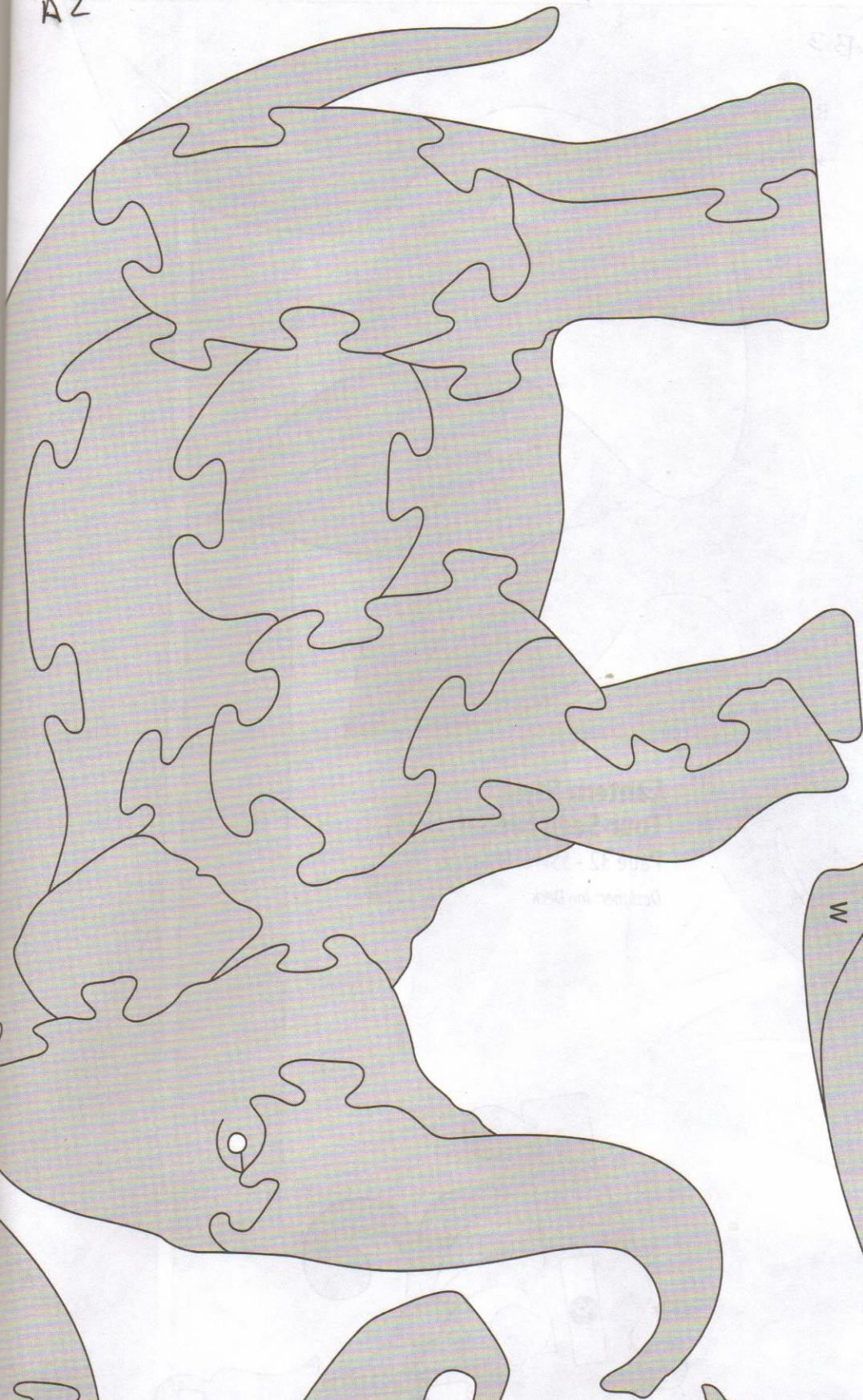
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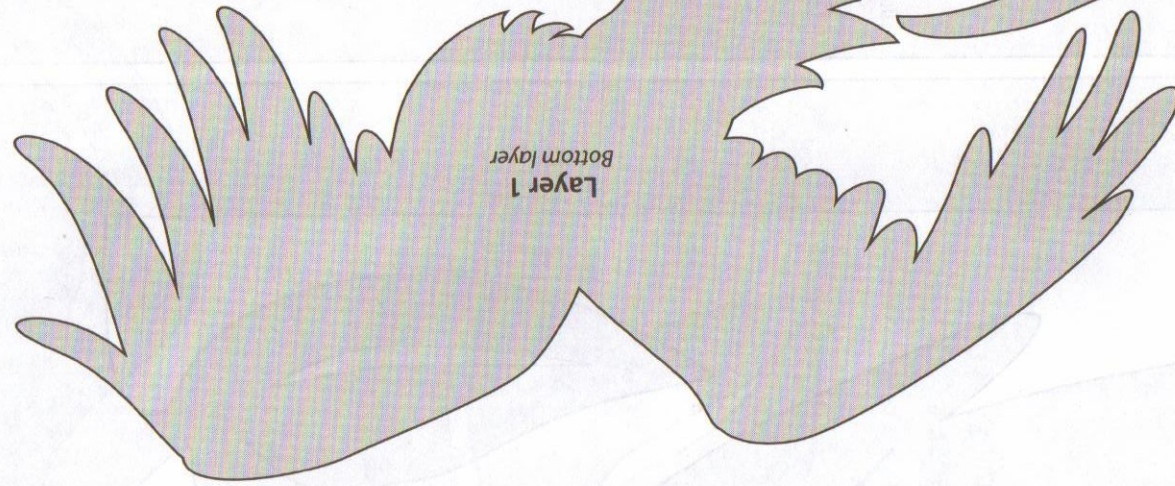


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**Elephant Parade**  
Page 40 - SSWC Issue 72  
Designer: Judy & Dave Peterson





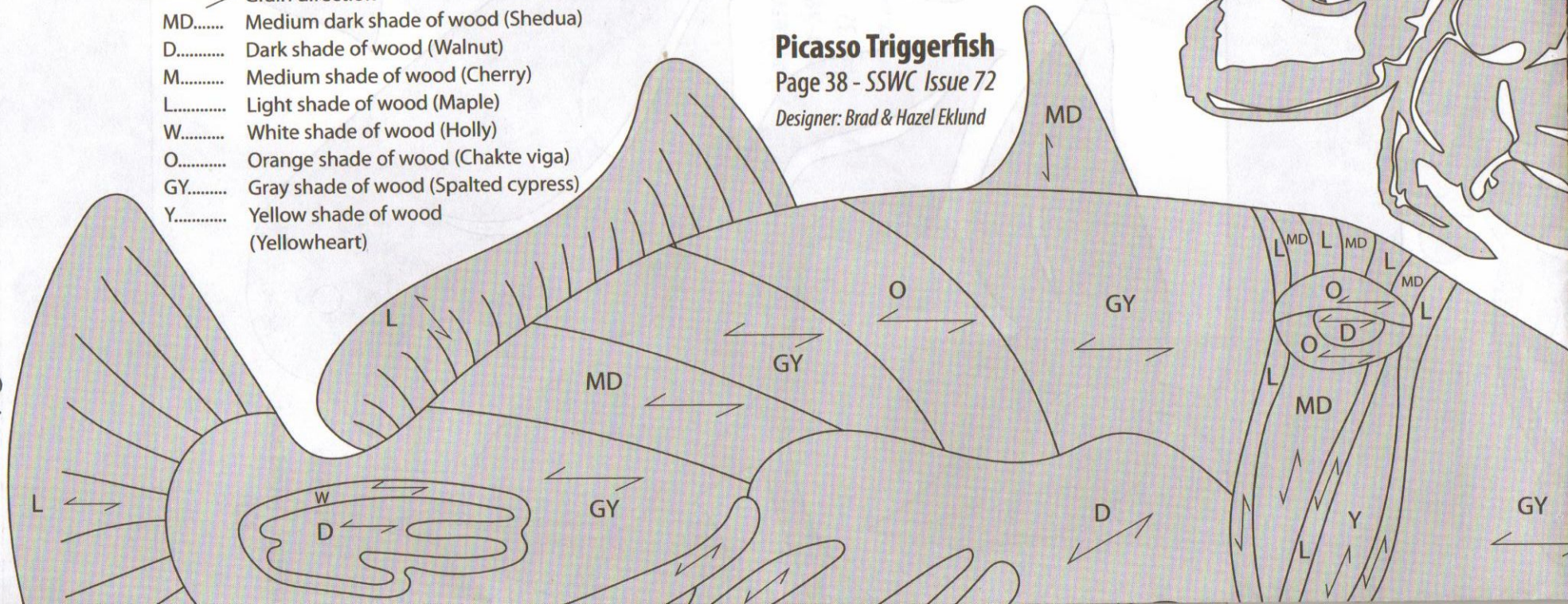
### Legend

- ↔ Grain direction
- MD..... Medium dark shade of wood (Shedua)
- D..... Dark shade of wood (Walnut)
- M..... Medium shade of wood (Cherry)
- L..... Light shade of wood (Maple)
- W..... White shade of wood (Holly)
- O..... Orange shade of wood (Chakte viga)
- GY..... Gray shade of wood (Spalted cypress)
- Y..... Yellow shade of wood (Yellowheart)

### Picasso Triggerfish

Page 38 - SSWC Issue 72

Designer: Brad & Hazel Eklund



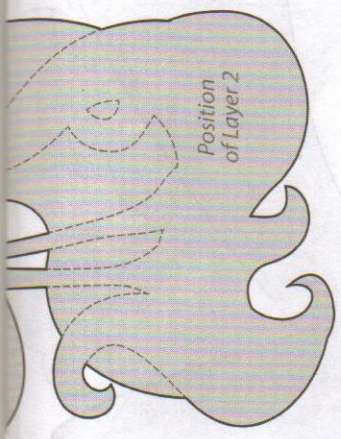
A 3

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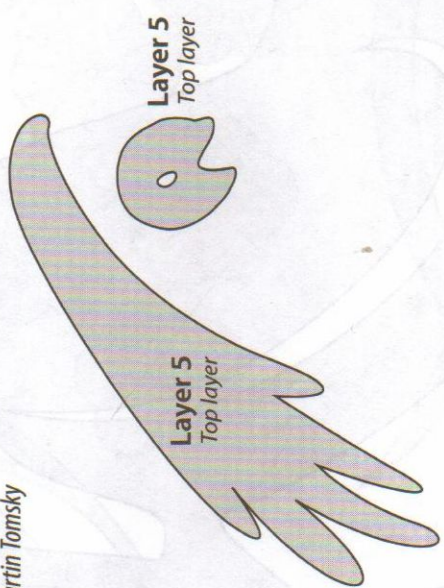
All patterns on this pullout section: © 2018 Scroll Saw Woodworking & Crafts

Rocky Mountain Elk.....	20	A Friendly Fish Tank.....	50
Layered Stork .....	30	Two-Shelf Wall Bracket.....	60
Lantern-Style Four-Seed Feeder .....	32	Halloween Plaques.....	62
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Elephant Parade.....	40	Standing Crab.....	68
Cowboy Boot Puzzle .....	48		

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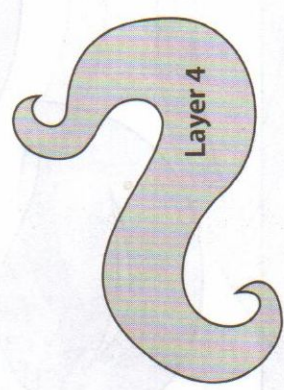


Position of Layer 2



Layer 5  
Top layer

Layer 5  
Top layer

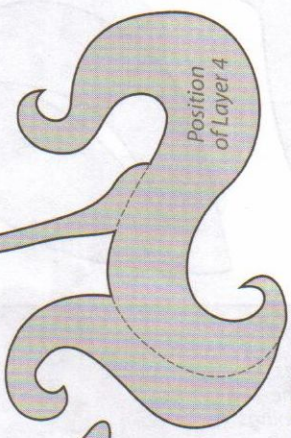


Layer 4

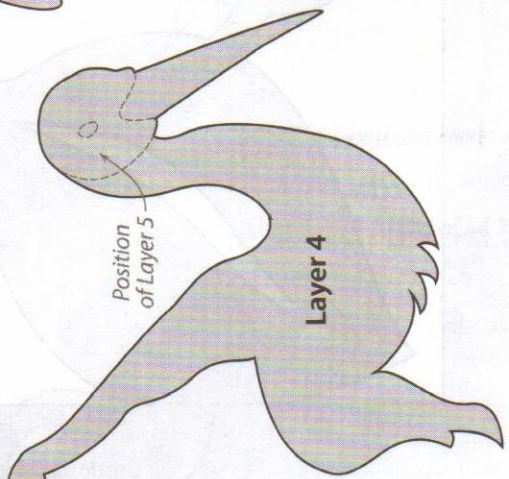
**Layered Stork**  
Page 30 - SSWC Issue 72  
Designer: Martin Tomskey



Position of Layer 4



Position of Layer 4



Layer 4

Position of Layer 5



Position of Layer 5

A 5

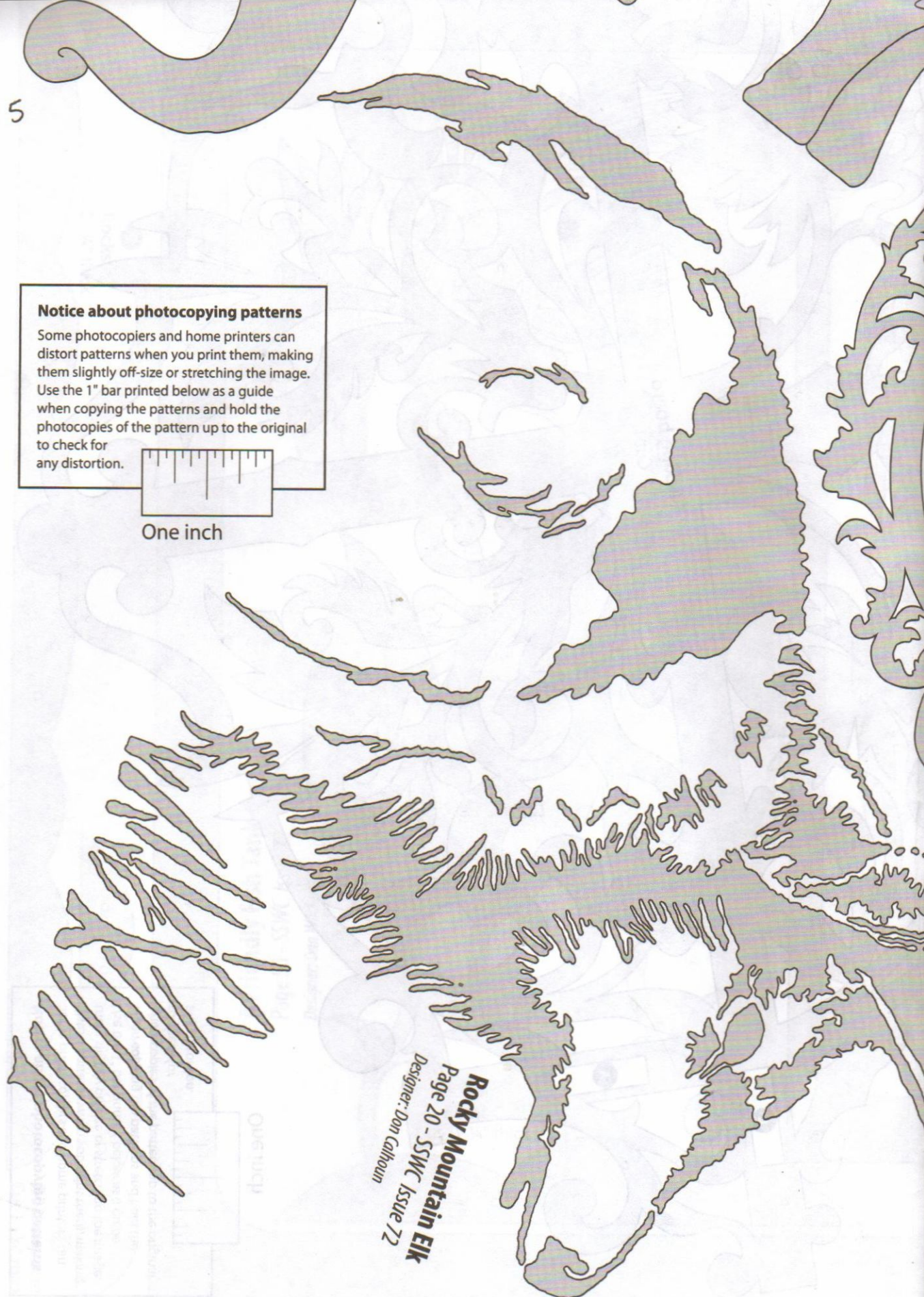
**Notice about photocopying patterns**

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

**Rocky Mountain Elk**  
Page 20 - SSWC Issue 72  
Designer: Don Calhoun



A6



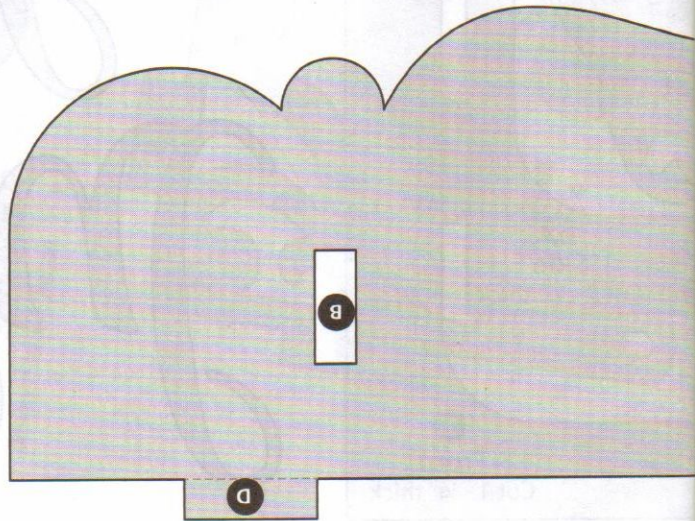
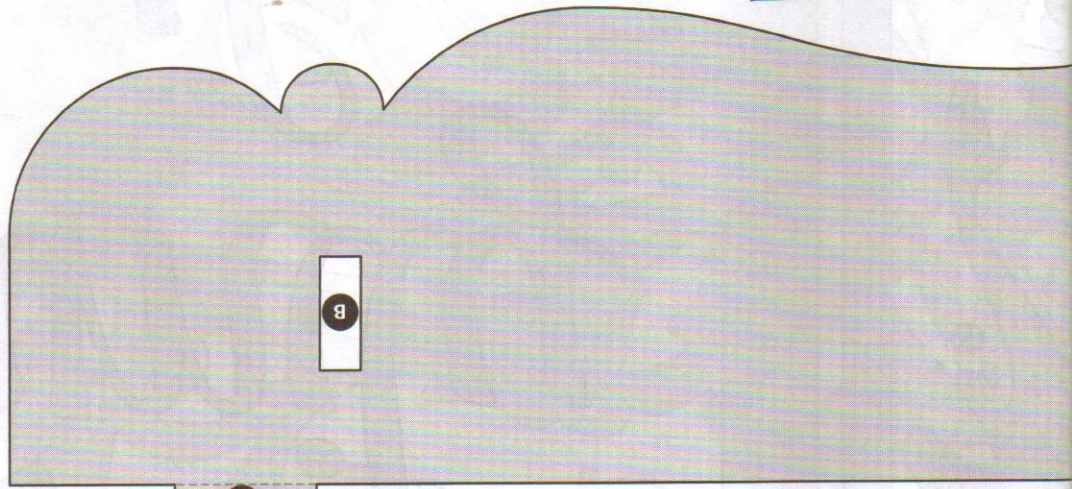
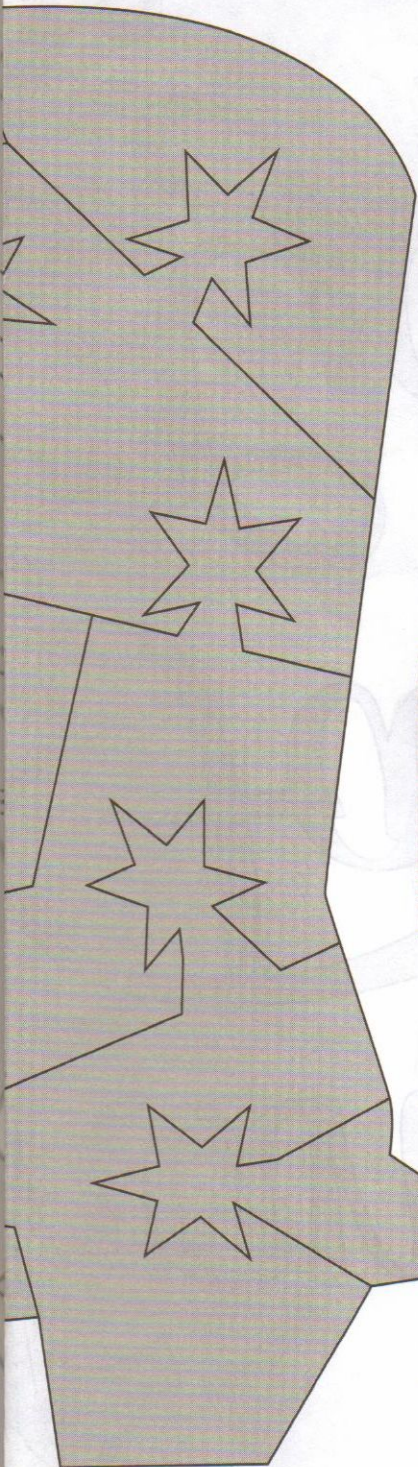
**Halloween Plaques**  
Page 62 - SSWC Issue 72  
Designer: Sheila Landry

**Cowboy Boot Puzzle**  
Page 48 - SSWC Issue 72  
Designer: Al Baggetta

A7



**Standing Crab**  
Page 68 - SWC Issue 72  
Designer: Jacob & Wayne Fowler



A8

Layer 2

Position  
of Layer 3

### Two-Shelf Wall Bracket

Page 60 - SSWC Issue 72

Designer: John A. Nelson

Bottom shelf  
Cut 1

B

C

Top shelf  
Cut 1

B

D

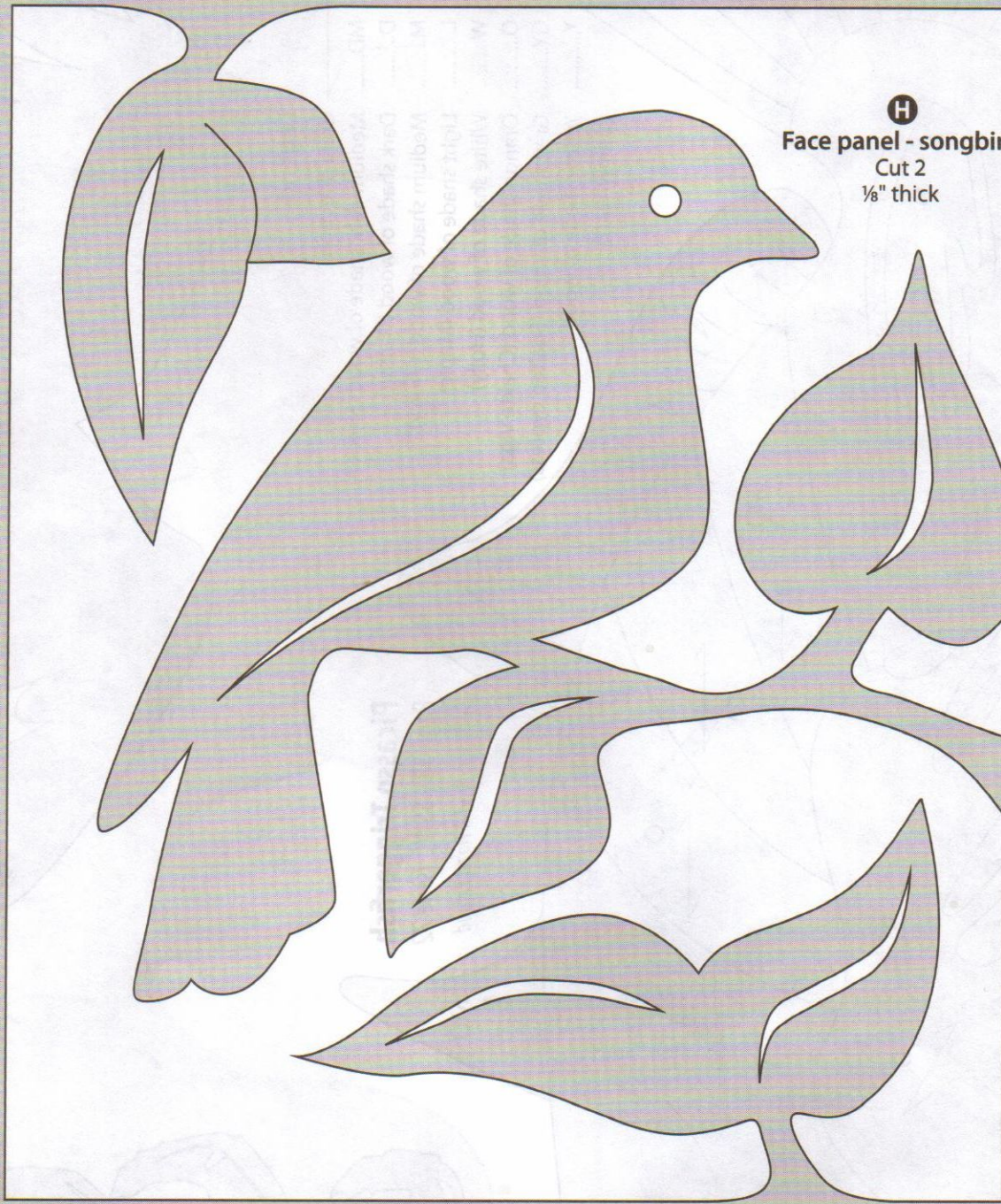
B1

Use dashed lines  
when cutting the  
face frame openings



Use dashed lines  
when cutting the  
face frame openings

**G**  
Face fram  
Cut 4 - 1/2" th



H

Face panel - songbird

Cut 2  
1/8" thick

The dashed lines  
when cutting the  
the frame openings

ck

B3

L

Bracket

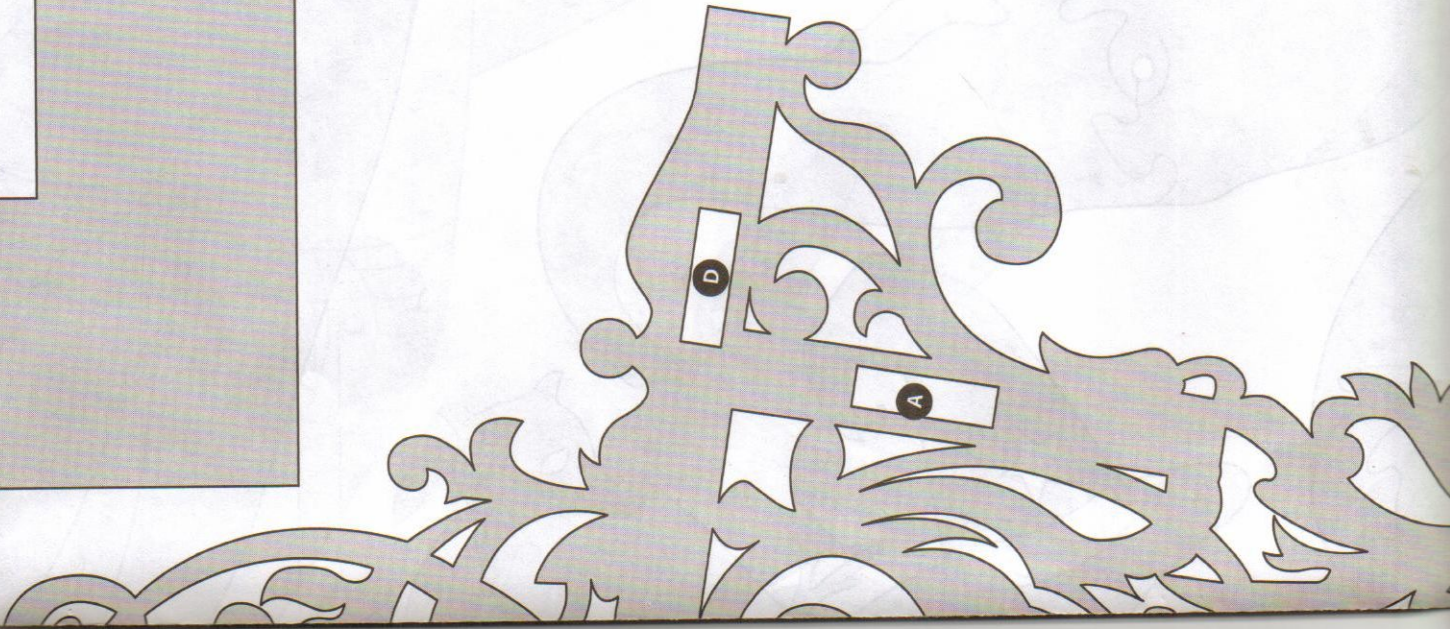
Cut 4

3/4" thick

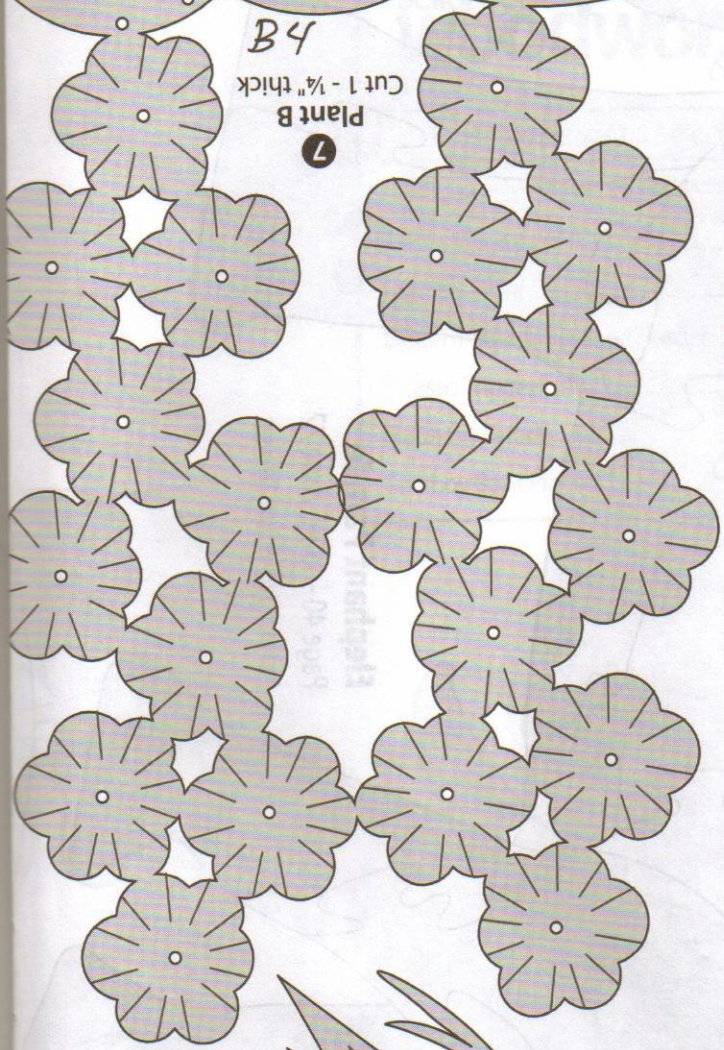
**Lantern-Style  
Four-Seed Feeder**

Page 32 - SSWC Issue 72

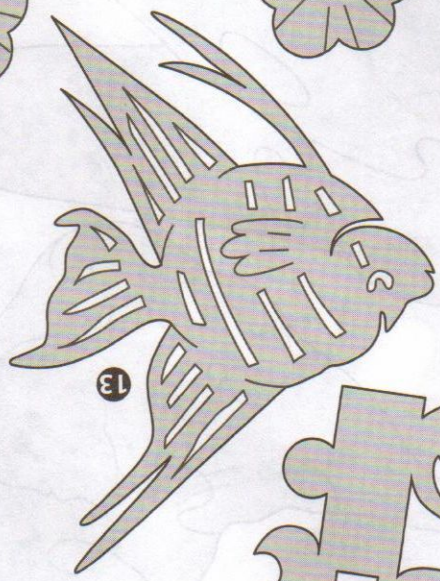
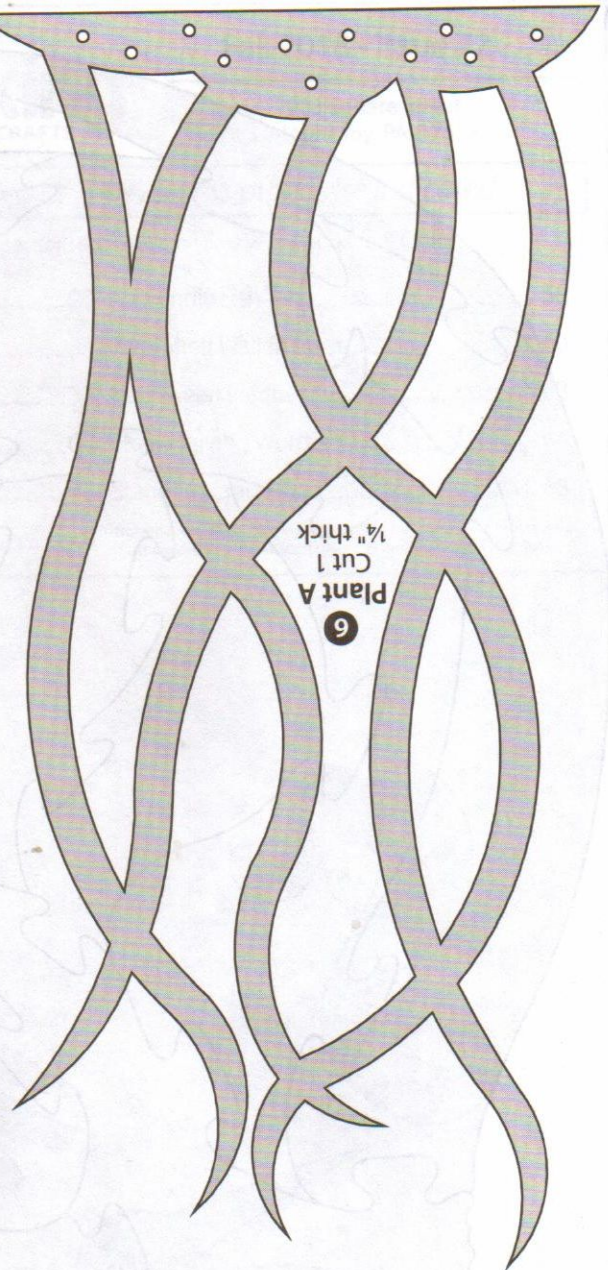
Designer: Jon Deck



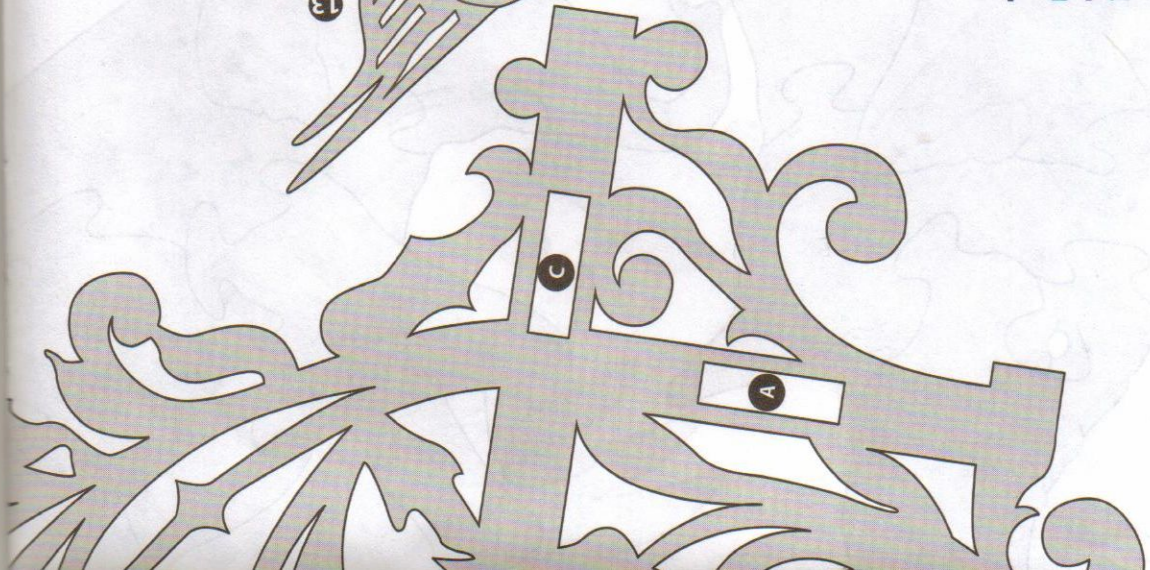
Plant B  
Cut 1 - 1/4" thick  
7



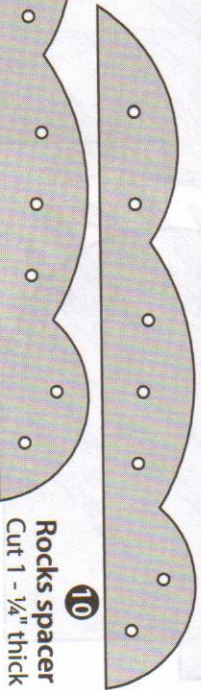
Plant A  
Cut 1  
1/4" thick  
6



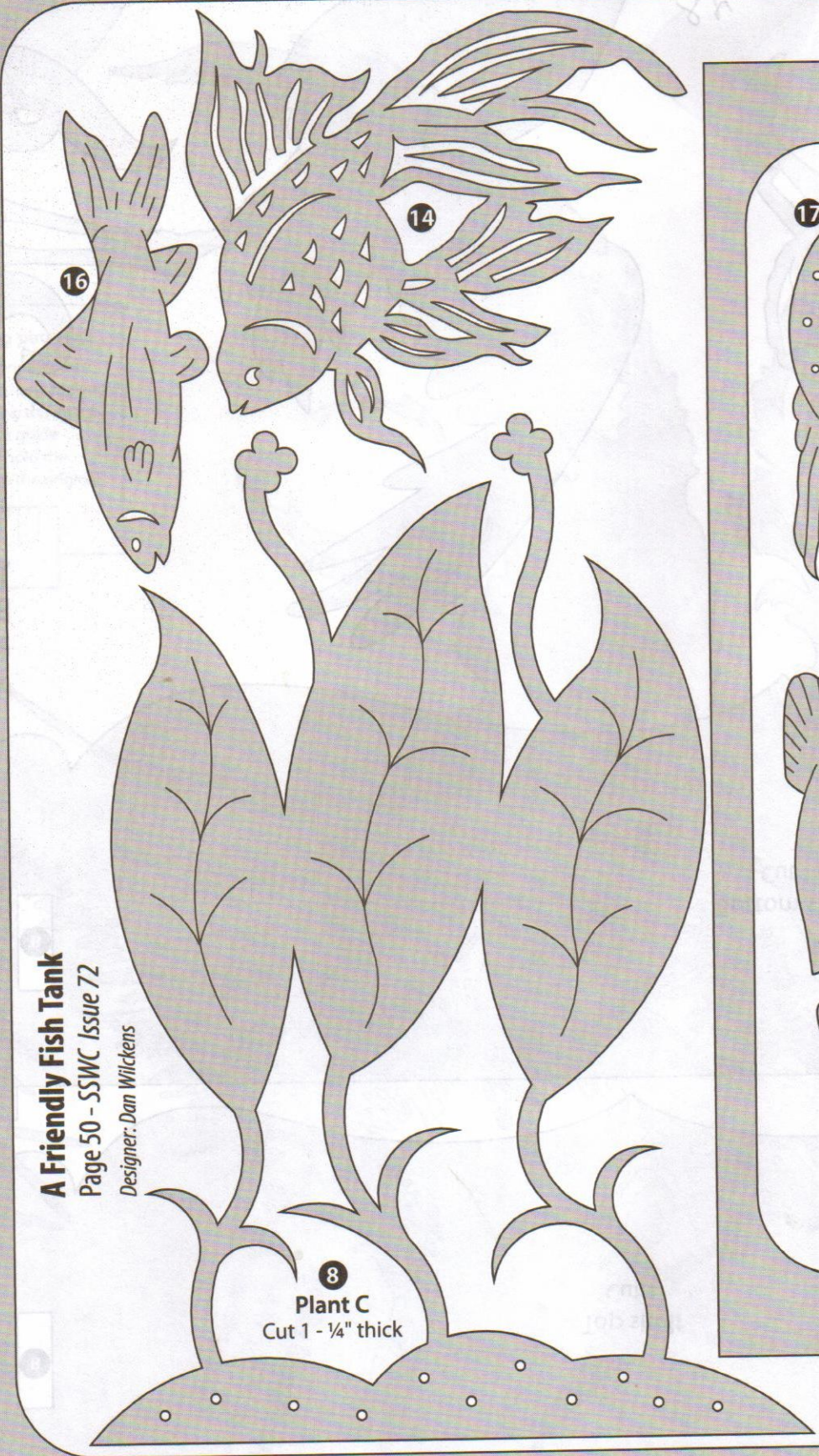
**A Friendly Fish Tank**  
Page 50 - SSWC Issue 72  
Designer: Dan Wilkens



9  
Rocks  
Cut 2 - 1/4" thick

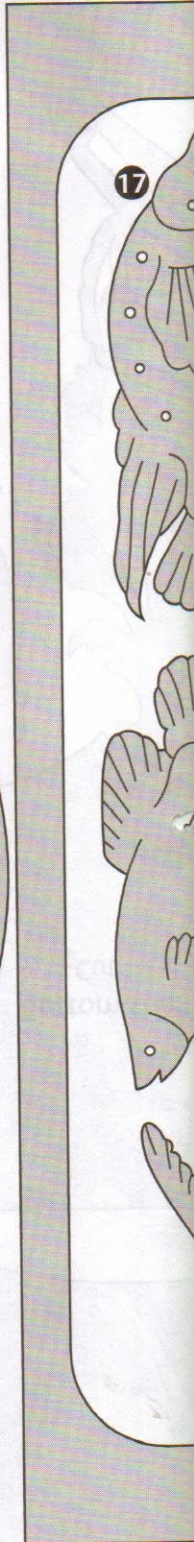


10  
Rocks spacer  
Cut 1 - 1/4" thick



**A Friendly Fish Tank**  
Page 50 - SSWC Issue 72  
Designer: Dan Wilckens

8  
Plant C  
Cut 1 - 1/4" thick



17

Thanksgiving  
Word Art



Enlarge this art to 275%,  
or to any desired size.



3

Side

Cut 2 - 1/4" thick

1

Front

Cut 1 - 1/4" thick



**Two-Shelf Wall  
Bracket**

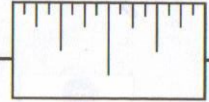
Page 60 - SSWC Issue 72  
Designer: John A. Nelson



**Bracket  
Cut 4**

**Notice about photocopying patterns**

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

