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June 2003

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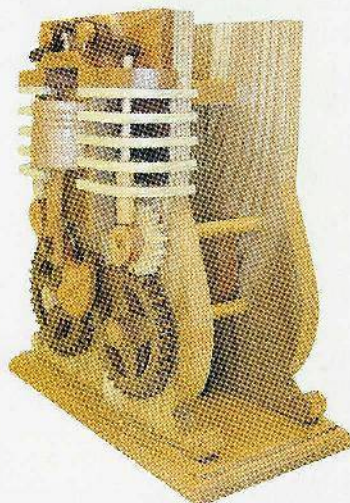
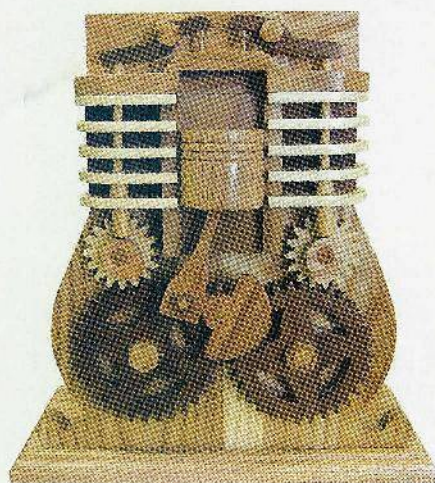
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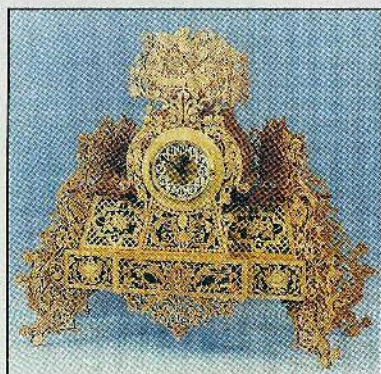
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The fisherman is in constant motion as he pulls in his catch. Size: 7"W x 7 1/2"D x 21"H.
Full size plans, order #SB-1155-P...\$14.95

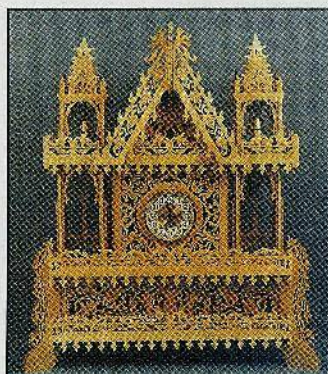
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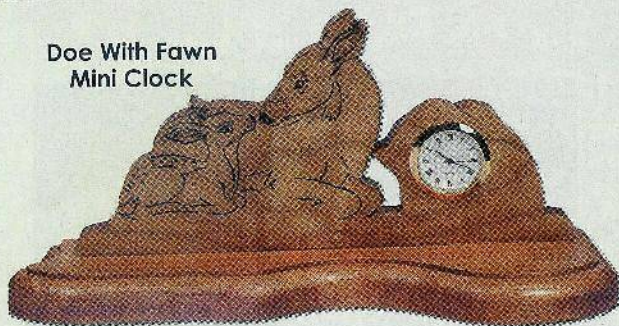
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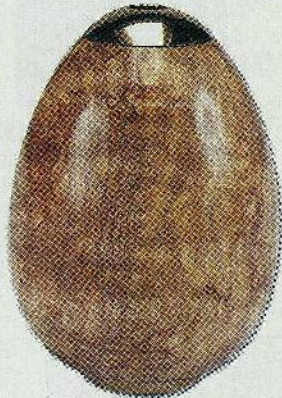
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Doe With Fawn
Mini Clock



Wyatt Earp



Kal-Egg-Oscope



Fretwork Mini Clock



Planter (no pattern for
this project)



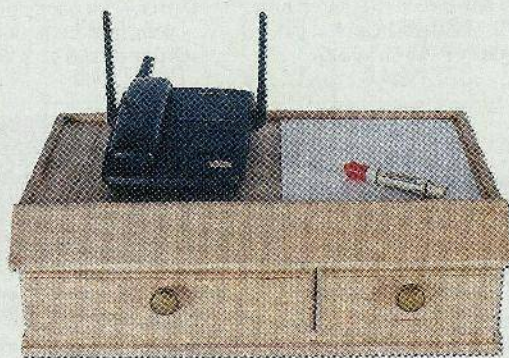
Round Basket



Fireman Birdhouse



Madame Butterfly



Telephone Center (no pattern for this project)



Astral Mirror

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CREATIVE WOODWORKS & CRAFTS June 2003, No. 92
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THE FULL SIZE PATTERNS FOR THE PROJECTS SHOWN ON THIS PAGE ARE LOCATED
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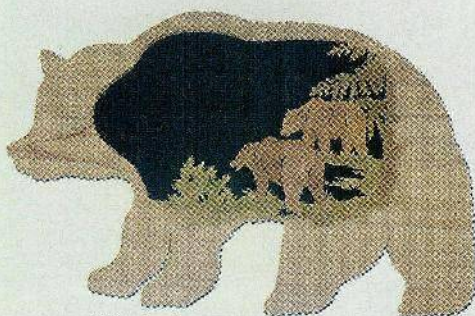
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Grizzly Bear



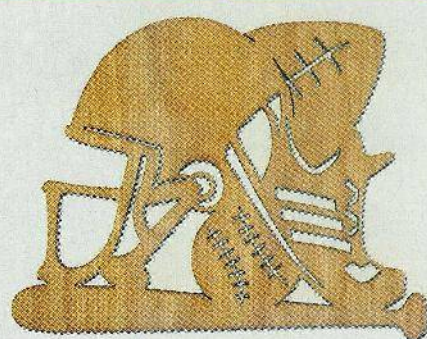
The Conestoga
Wagon



Angelic Keepsake Chest



Guitar CD Rack



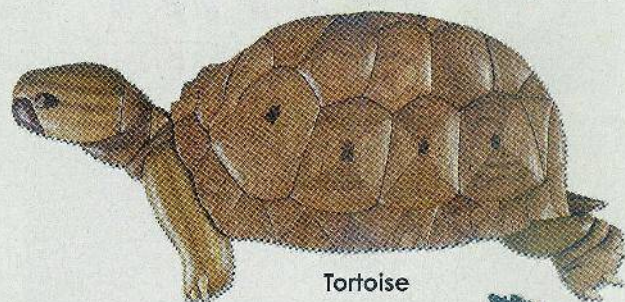
Sports Plaque



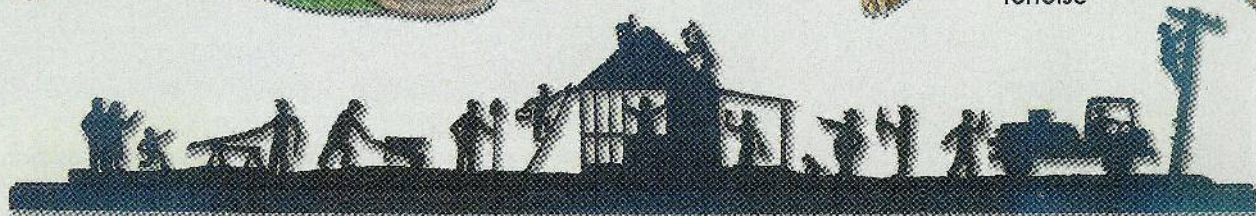
Love Plate



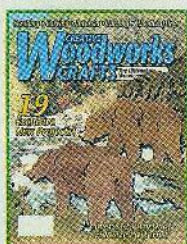
Corian Business Card Holder
(no pattern for this project)



Tortoise



Building A House Door Topper



ON THE COVER: The featured **Grizzly Bear** is a project from Marilyn Carmin of Heartland Creations. Marilyn may be reached at: P.O. Box 191, Yacolt, WA 98675; (360) 686-3133; or visit her website at heartlandcreations.net.



DOE WITH FAWN MINI CLOCK

by Floyd Jensen and Rick Parsons of Termite Crafts

Pattern Located in Full Size
Pattern Section No. 1!



SUPPLIES

Wood: cherry—one piece 3/4" x 4-1/2" x 9" (for the upright); mahogany—one piece 3/4" x 3-1/4" x 11" (for the base)
Tools: scroll saw with assorted blades; drill with bits including a 1-3/8"-Dia. Forstner bit; woodburning tool
Sandpaper, assorted grits
Temporary-bond spray adhesive
Wood glue
Mini clock movement of choice
Finish of choice

INSTRUCTIONS

Copy the patterns and transfer them to the selected stock, attaching them with spray adhesive. Bore a hole, which will receive the clock movement, as well as a blade entry hole in the waste area of the upright pattern. Cut the pieces to shape. Sand thoroughly. Add the detail lines to the upright with a woodburning tool.

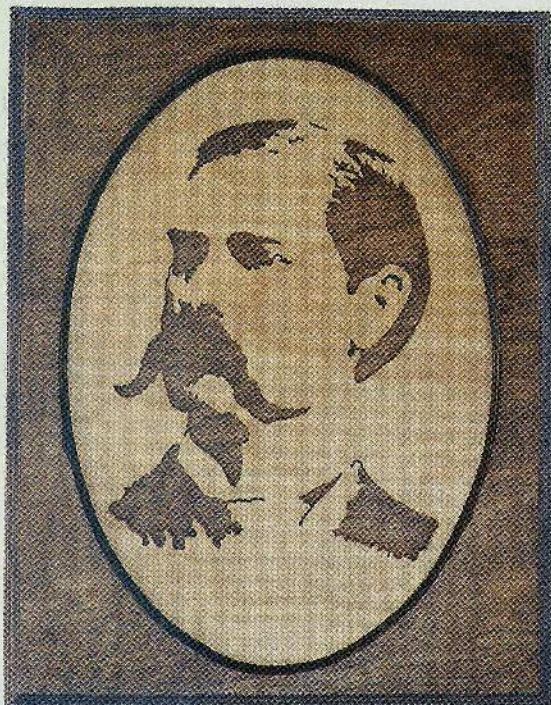
Glue the upright in place on the base. Apply finish of choice, insert the clock movement and enjoy!



WYATT EARP

by William R. Wilson (A.K.A. trucking_36@yahoo.com)

Pattern Located in Full Size
Pattern Section No. 1!



SUPPLIES

Wood: Baltic birch plywood or wood of choice—three pieces 1/4" x 9" x 12" (for the backer, portrait piece, and frame)
Tools: scroll saw with No. 0 spiral blade; No. 5 blade; drill with assorted bits; wood clamps
Sandpaper, 220-grit and 320-grit
Temporary-bond spray adhesive
Mineral spirits
Wood stain or finish of choice
Wood glue

INSTRUCTIONS

Make two photocopies of the pattern. Using spray adhesive, adhere one pattern to the wood selected for the frame and the other to the portrait piece. Cut out the oval frame pattern first using the No. 5 blade with the table set at 30°. Stain the front and back of the backer and the inside cut of the frame.

Square the saw table with the blade and install the spiral blade. Cut out the portrait to shape. Then remove the patterns using mineral spirits and sand the pieces.

Stack and glue the backer, portrait piece and frame together. Clamp and allow the glue to set. After the clamps have been removed, reset the table to 30° and, using the No. 5 blade, bevel the four outer sides. You can either attach a hanger to the back or use a picture stand for table display. Enjoy!





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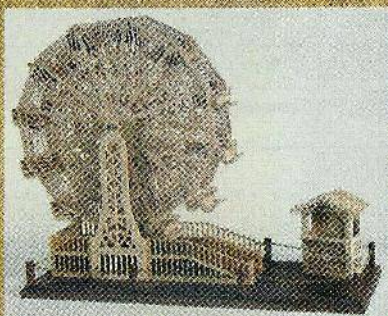
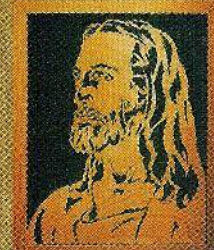
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Create this Candle Sconce from Dan and Raymond Wilckens



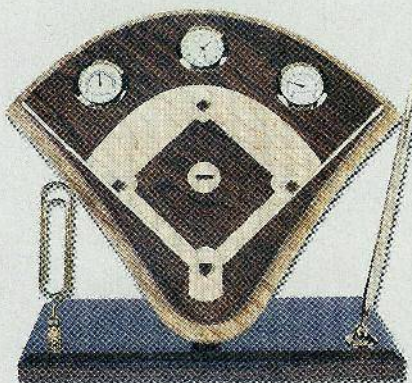
Make this intarsia Horse from Al Martinson



Saw the Howling Wolves from George Ahlers



Turn this Keychain with a secret compartment from Joseph Herrmann.



Craft this Baseball Weather Station from Ed Barry



Create this Train Shelf from Matthew Romack



Scroll this Family Frame from Marilyn Carmin

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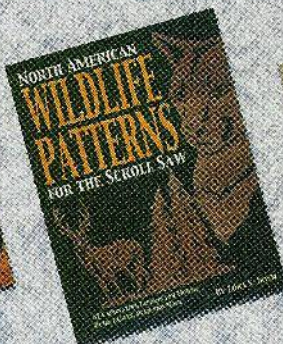
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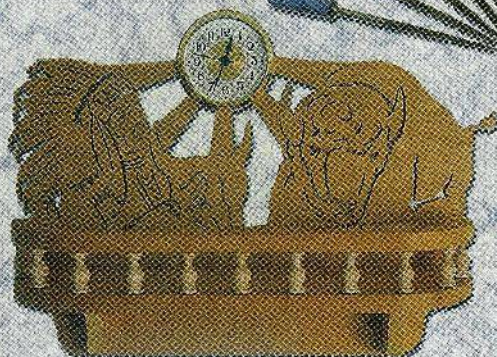
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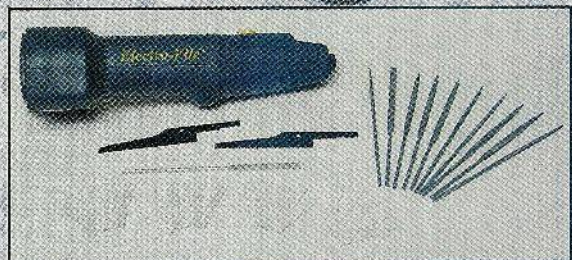


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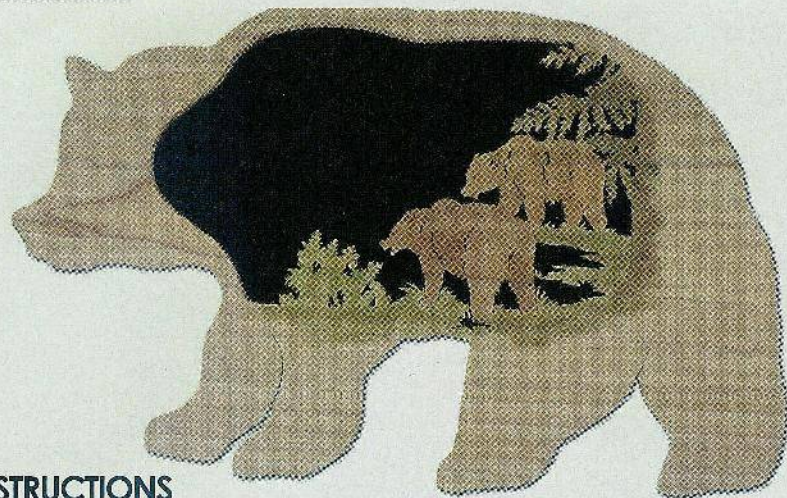
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Grizzly Bear

by Marilyn Carmin of Heartland Creations

Pattern Located in Full Size
Pattern Section No. 2!



SUPPLIES

Wood: wood of choice—one piece 1/2" x 12" x 19"
Tools: scroll saw with No. 2 scroll saw blades (20 teeth per inch); drill with No. 60 bit
Sandpaper, assorted grits
Temporary-bond spray adhesive
Acrylic paint (optional): Burnt Umber, Dark Jungle, Hunter Green, Raw Umber, True Green, Yellow Oxide
Clear finish of choice
Backing fabric in color of choice (optional)

INSTRUCTIONS

Using spray adhesive, transfer the pattern to the selected stock. Bore blade entry hole with the No. 60 drill bit. Cut using a No. 2 scroll saw blade. Sand as needed.

The painting on the project pictured is basically a thin wash. I used about fifteen parts water to one part paint and put very little wash on my brush (almost a dry brush). For the greenery, I used a mixture of the different greens and Burnt Umber. I changed the mixtures of the different paints to give color variation. For one bear, I used Burnt Umber and Yellow Oxide. For the other bear, I added Raw Umber. This helped contrast the bears slightly. The main thing to remember with this type of painting is keep your wash thin and apply it very dry to your wood. When satisfied with the painting, apply clear finish of choice. Put a dark contrasting fabric (leather, paper or wood) on the back of the project if desired.



FRETWORK MINI CLOCK

by Dan and Raymond Wilckens of Wilckens Woodworking

Patterns Located in Full Size
Pattern Section No. 1!



SUPPLIES

Wood: wood of choice—three contrasting pieces 1/4" x 6" x 6-1/2" (for the upright pieces, front, center and back), three contrasting pieces 1/4" x 3" x 7" (for the base pieces, top, center and bottom)
Tools: scroll saw with assorted blades; drill with bits including a 1-3/8"-Dia. Forstner bit
Sandpaper, assorted grits
Temporary-bond spray adhesive
Wood glue
1-7/16"-Dia. mini clock movement
1-3/8"-Dia. mini pendulum drive insert
Finish of choice

INSTRUCTIONS

Copy the patterns and transfer them to the stock selected for the front upright and top base pieces, attaching them with spray adhesive. Stack these pieces with the center piece and rear (or bottom) pieces. Saw around the perimeters of the patterns. Remove the rear and bottom pieces from the stack and bore blade entry holes in the shaded waste areas of the patterns. Cut out the shaded areas. Remove the center pieces from the stacks and bore blade entry holes in the remaining waste areas. Complete the cutting and sand the pieces.

Laminate the three upright and the three base pieces. Be sure to clean up any glue squeeze-out. Glue the upright in place on the base piece. Apply finish of choice to the wood. Insert the clock movement in from the front and the pendulum movement from the rear and enjoy!

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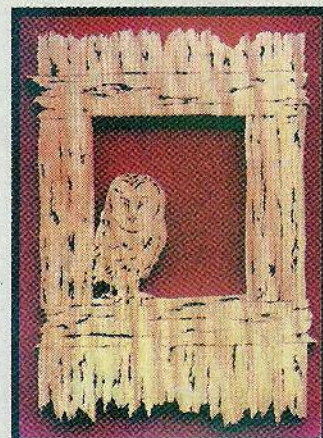
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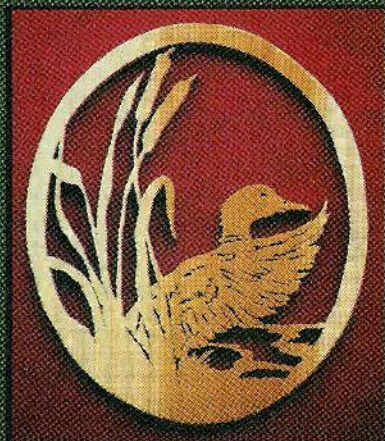
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PLANTER

by Bob and Becky Davis of Beardstown, IL



SUPPLIES

Wood: pine—one piece $\frac{3}{4}$ " x 11" x 12" (for the base piece); one piece $\frac{3}{4}$ " x $\frac{3}{4}$ " x 96" (for the side blocks)

Tools: scroll saw with No. 7 blade; band saw; torch; sander

Exterior wood glue

Exterior polyurethane

Sandpaper, assorted grits

Felt 10" x 10" in color of choice

INSTRUCTIONS

Sand the $\frac{3}{4}$ " x 11" x 12" board and cut it into a 10" circle with your scroll saw. This will be the planter base piece. Cut the $\frac{3}{4}$ " x $\frac{3}{4}$ " x 96" pine board into 1" long pieces for the side blocks. Set the 1" blocks $\frac{3}{4}$ " in from the edge of the base piece and start making the circle for the planter sides, making sure these are evenly spaced and not butting up against each other. Glue the blocks to the base. Build up and glue five rows of blocks for the planter. Take the torch and lightly burn the completed planter inside and out, imparting tones ranging from dark to light. **Hint:** if you don't want a wood burned look, you could also stain the planter in the color of your choice. Apply three coats of polyurethane, allowing 12 hours in between each coat. Finally, glue the felt to the bottom.



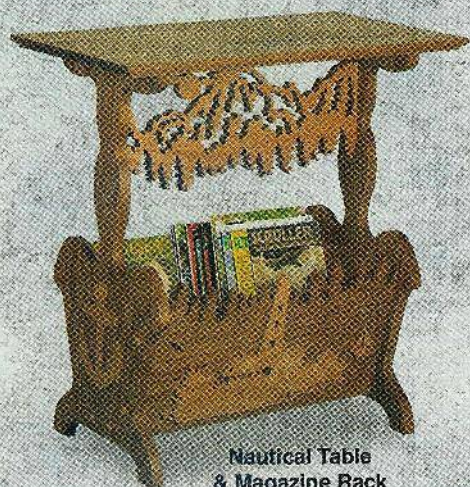
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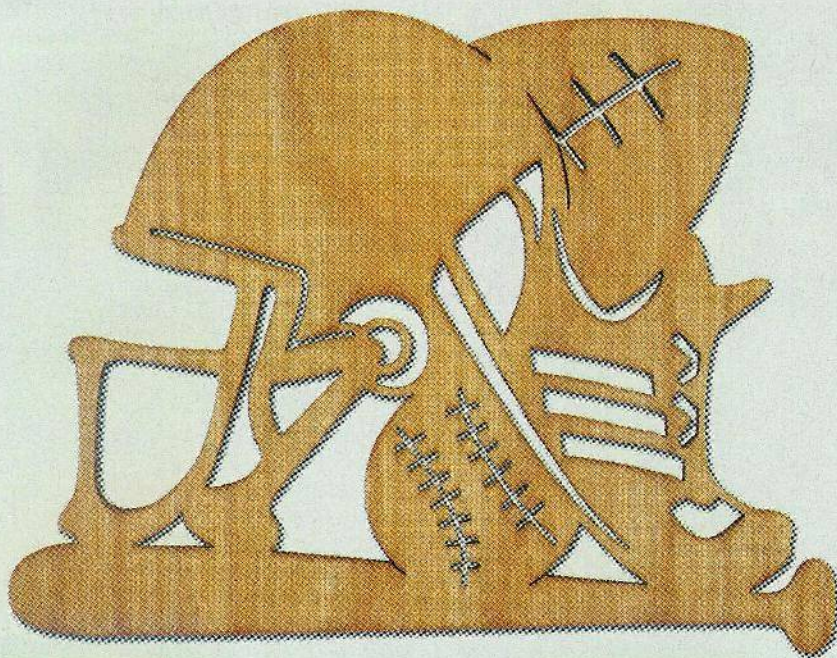
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SPORTS PLAQUE

by Denise Green of Daeden Woodworks

Pattern Located in Full Size
Pattern Section No. 2!



SUPPLIES

Wood: Baltic birch plywood—one piece 1/4" x 9-1/2" x 8"
Tools: scroll saw with assorted blades; drill with bits
Sandpaper, assorted grits
Temporary-bond spray adhesive
Finish of choice

INSTRUCTIONS

Copy the pattern and transfer it to the selected stock, attaching it with spray adhesive. Bore blade entry holes in the waste areas of the pattern. Make all cuts, beginning with the inside and working toward the perimeter.

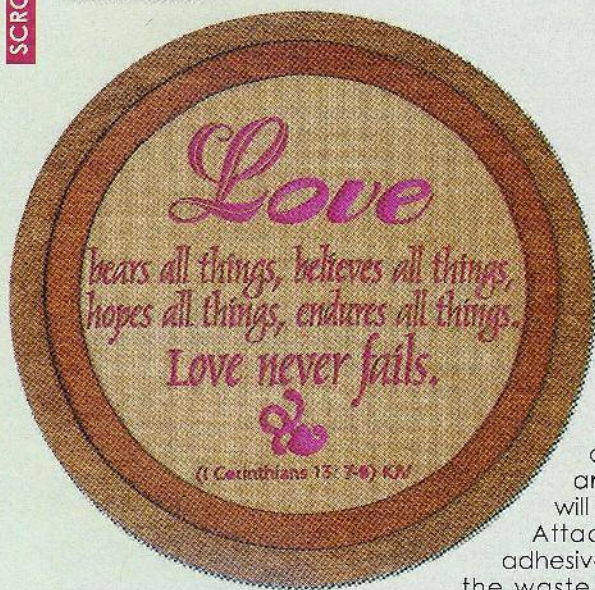
Thoroughly sand the piece. Apply finish of choice to the wood and enjoy!



Love Plate

by Joseph Preston

Pattern Located in Full Size
Pattern Section No. 2!



SUPPLIES

Wood: plywood of choice—one piece 1/4" x 10-3/4" x 10-3/4" (for the plate rim and center piece), one piece 1/8" x 9-1/2" x 9-1/2" (for the rim backer)

Tools: scroll saw with No. 2 reverse tooth blades and zero clearance cover on table; drill with 1/32"-Dia. bit

Temporary-bond spray adhesive

Sandpaper, assorted grits

Poster board, color of choice 8-1/2" x 8-1/2"

Stain of choice

Finish of choice

Hanger of choice

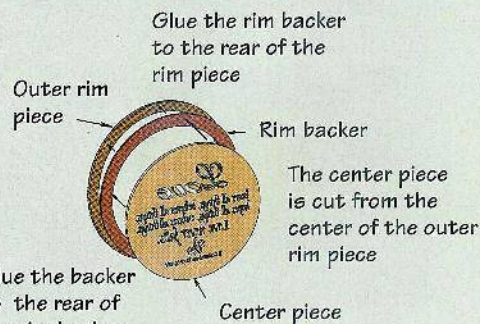
INSTRUCTIONS

Make two copies of the pattern and transfer one to the stock selected for the outer rim and center pieces and one to the piece which will be cut into the rim backer.

Attach the patterns with spray adhesive. Bore blade entry holes in the waste areas and make all cuts, beginning with the inside and working

toward the perimeter. Save the interior cutouts of the letters. Thoroughly sand the pieces and stain as desired.

Referring to the **Exploded View Drawing**, assemble the pieces. Apply finish of choice to the wood. When dry, cut the poster board to shape and attach it to the back. Affix hanger of choice. Hang and enjoy!



Exploded View Drawing

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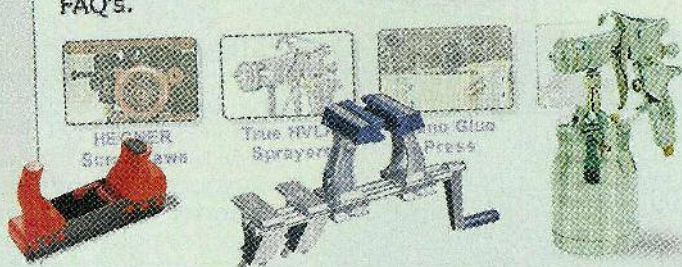
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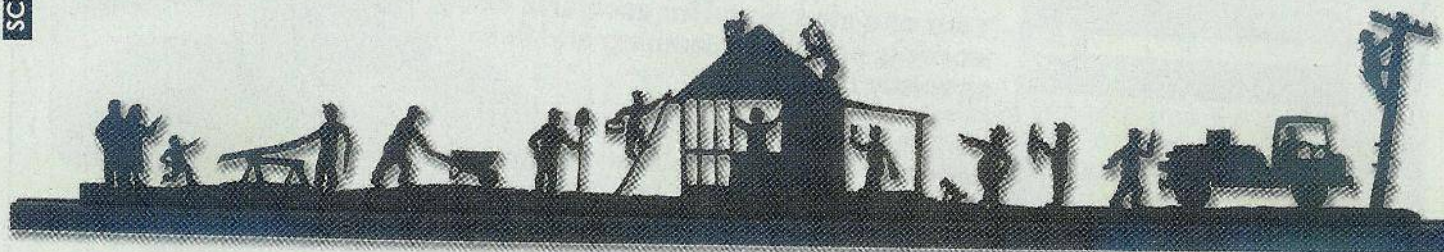
NOTE: All blades are flat end and are available in various sizes. We do not sell pin end blades.

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BUILDING A HOUSE DOOR TOPPER

by Clark Weeks



SUPPLIES

Wood: *Baltic birch plywood*—one piece $1/4" \times 4-3/4" \times 28"$ (for the door topper); *pine*—one piece $1/2" \times 3/4" \times 30-1/4"$ (optional, for the base)

Tools: scroll saw with assorted blades; drill with bits; router with $1/4"$ -Dia. straight bit

Temporary-bond spray adhesive

Sandpaper, assorted grits

Wood glue

Flat black paint or finish of choice

INSTRUCTIONS

Copy the pattern and transfer it to the selected stock, attaching it with spray adhesive. Bore blade entry holes in the waste areas of the pattern. Make all cuts, beginning with the inside and working toward the perimeter.

Thoroughly sand the piece. If desired, you can make a base for your door topper by simply routing a $1/4"$ -deep $\times 1/4"$ -wide groove lengthwise in a piece of pine. The door topper can then be glued into the groove. Paint the piece Black or apply finish of choice to the wood. Hang and enjoy!



Madame Butterfly

by David Wedoski



SUPPLIES

Wood: *Finnish, or Baltic birch plywood*, or *hardwood of choice*—one piece $1/4" \times 10-1/2" \times 10-1/2"$

Tools: scroll saw with No. 2 and No. 20 reverse tooth blades; drill with bits

Temporary-bond spray adhesive

Sandpaper, assorted grits

Frame of choice, (optional)

Backer board, $1/16"$ or $1/32"$ ply, sized to fit frame (optional)

Sanding sealer and clear wipe-on polyurethane, or finish of choice

INSTRUCTIONS

Copy the pattern and transfer it to the selected stock, attaching it with spray adhesive. Bore blade entry holes in the waste areas of the pattern. Make all cuts, beginning with the inside and working toward the perimeter.

Thoroughly sand the piece. Apply finish of choice to the wood. Frame as desired or simply hang and enjoy!



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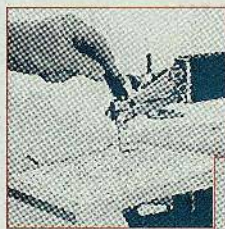


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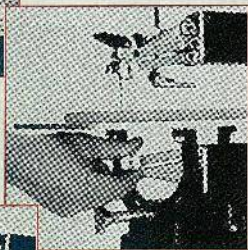
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...Twist the **BOTTOM** clamp knob to release the bottom end of the blade...

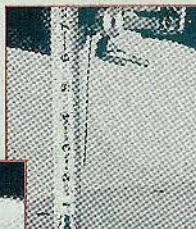


...Lift the top arm with the blade above the workpiece...



Add the optional PAL-01 "Top Arm Lift Pedal", to free both hands for guiding your blade and workpiece, by lifting the arm with your foot.

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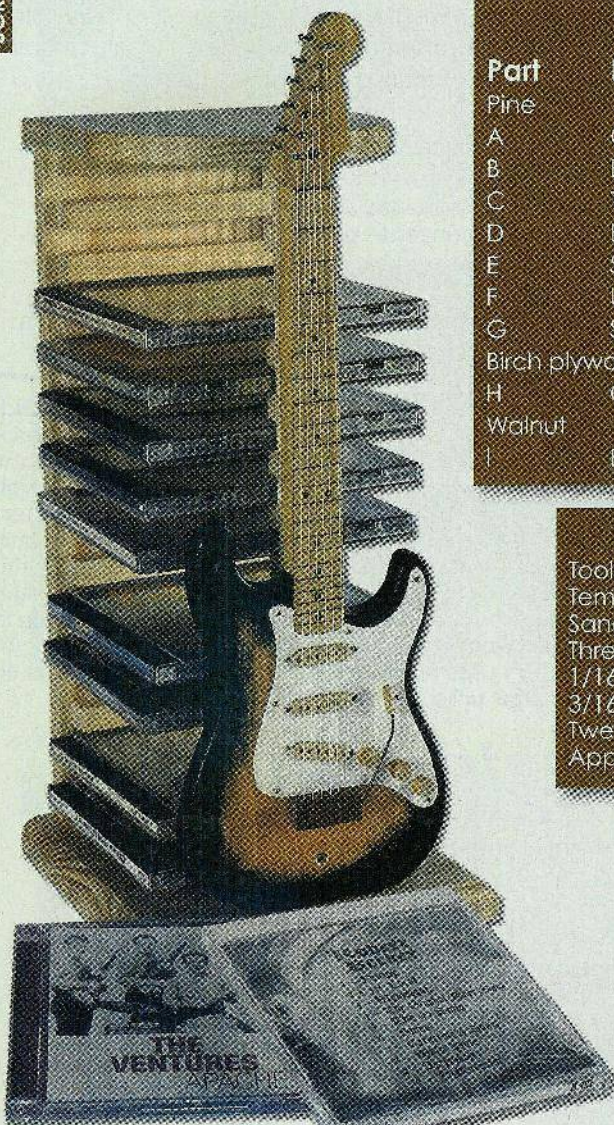
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Guitar CD Rack

by Dirk Boelman of The Art Factory

Patterns Located in Full Size
Pattern Section No. 2!



BILL OF MATERIALS

Part	Description	Size in inches	Quantity
Pine			
A	Guitar	1/2" x 5-1/2" x 16-1/4"	1
B	Base	3/4" x 7-1/4" x 7"	1
C	Top	1/2" x 6" x 6"	1
D	Back Panel	1/2" x 5-1/4" x 13-1/2"	1
E	Spacers	1/2" x 1/2" x 5"	14
F	Upright	3/4" x 3/4" x 13-1/2"	1
G	Stop	1/4" x 1-1/4" x 13-1/2"	1
Birch plywood			
H	Guitar overlays	1/16" x 6" x 12"	1
Walnut			
I	Bridge	1/4" x 3/8" x 1-1/4"	1

SUPPLIES

Tools: table saw (or similar); scroll saw with blades; drill with bits
Temporary-band spray adhesive
Sandpaper, assorted grits
Three 3/8"-Dia. dowels, approx. 3/16" long (for the knobs)
1/16"-Dia. wire, approx. 2-1/4" long (for the tremolo handle)
3/16"-Dia. dowel, approx. 5/8" long (for the knob for handle)
Twenty Brass escutcheon pins 3/8" x 1/4"
Approx. 64' thread, fishing line, etc. (for the strings)

Introduction

I have probably had more fun making this project than I've had for a very long time! The guitar looks and feels quite realistic, it's just a miniature one! And the rack is truly functional, holding 13 CDs that would otherwise be cluttering shelves and desks. The whole project is quick and easy to cut out and assemble. You can spend as much time as you want playing with your guitar to make it look just right. Make it look just like the one shown here by following the instructions, or customize it however you want in the colors you enjoy most.

INSTRUCTIONS

Making the guitar

Start with the fun part. A full size pattern for the guitar is provided in the pull-out section. To aid with assembly, all parts are shown in place on the

guitar. The neck, scratchplate, pickups, knobs and bridge are all overlays. To ensure that they will fit together just right, begin by making three photocopies of the guitar pattern. Adhere a full guitar pattern to a piece of 1/2" material and saw all the way around the profile (which includes the body, neck and headstock) creating a one-piece guitar. Next, from another copy of the guitar pattern, trim away some of the pattern with scissors, leaving the neck and scratchplate areas. Adhere this area of the pattern to a piece of 1/16" material. Saw around the perimeter first; then cut along the line at the base of the neck to separate the neck from the scratchplate, which allows each piece to be finished separately. **Note: DO NOT REMOVE PATTERNS FROM THE WOOD UNTIL LATER.** Use the third pattern to make the pickups from 1/16" material. Also use the pattern for the bridge. Make it from 1/4" material by sawing around its outline, then turn it on its side and saw notches approx. 1/8" deep to hold the guitar's strings.

Before removing patterns from wood, use an awl to mark locations for escutcheon pins on the headstock and mounting screws. Next, use the awl to mark locations of position markers on the neck, and use an X-acto knife, or similar, along a ruler's edge to scribe the lines that represent frets. Lastly, use the awl to mark locations on the scratchplate for escutcheon pins, pickups and knobs. The patterns can then be removed.

Begin working with the one piece guitar section. Slightly round over the edges of the body (not the neck or headstock) by sanding or filing. Drill 1/8"-Dia. holes for mounting screws. Countersink for screw heads. Finish can now be applied as desired. I applied one thin coat of Golden Oak liquid stain by Delta on the headstock and neck sections, front, sides and entire back of the complete guitar.

For the front of the body, I added just a little bit of orange and

brown acrylic paints to our golden oak stain to achieve a color that I think closely matches the real thing. Keep the stains or paints relatively thin; allowing the wood grain to show through. When completely dry, I painted the outside edges of the body with Mars Black acrylic paint, and to simulate a sprayed-on effect on the front and back surfaces, I used a dry brush to dab the paint onto the wood in lesser amounts as I worked inwards from the edges.

Neck overlay

I applied a thin coat of golden oak liquid stain to the front and sides of the overlay. When completely dry, use a black ink pen to draw lines to represent frets on the previously scribed knife lines. Also use the pen to draw 1/8"-Dia. circles to represent the position markers. The circles can be drawn freehand, but a plastic template really works great for this. When dry, glue the overlay on the neck of the guitar, clamp together until dry.

Note: You may want to temporarily place the scratchplate overlay in position to aid in placement of the neck overlay.

Scratchplate overlay

I applied two coats of Titanium White acrylic paint to the front and edges. When dry, glue into position on the guitar body. Predrill holes and install eight 3/8" x 16" brass escutcheon pins.

Pickups

I left these in their natural birch color. Glue into position, clamp and let dry.

Bridge

I left it in its natural walnut color. Glue into position, clamp and let dry. Make a knob for the lever from 3/16"-Dia. dowel. Shape to suit by sanding and filing. Drill a hole in one end to fit wire. Bend wire as suggested on pattern, and insert into bridge to form tremolo handle.

Knobs are 3/16" long sections cut from a 3/8"-Dia. dowel. Glue in position as shown.

Drive six 3/8" escutcheon pins into the face of the headstock at locations shown. Locate and mark locations for six more escutcheon pins, to install into the edge of the headstock to represent pegs. Pound the pins into position as shown.

Cover your completed guitar with a few coats of a clear gloss finish of your choice.

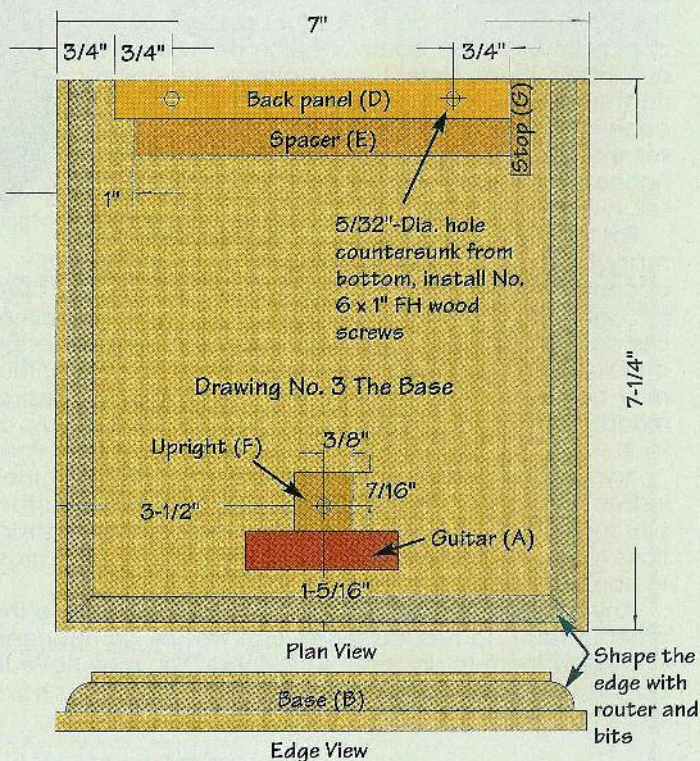
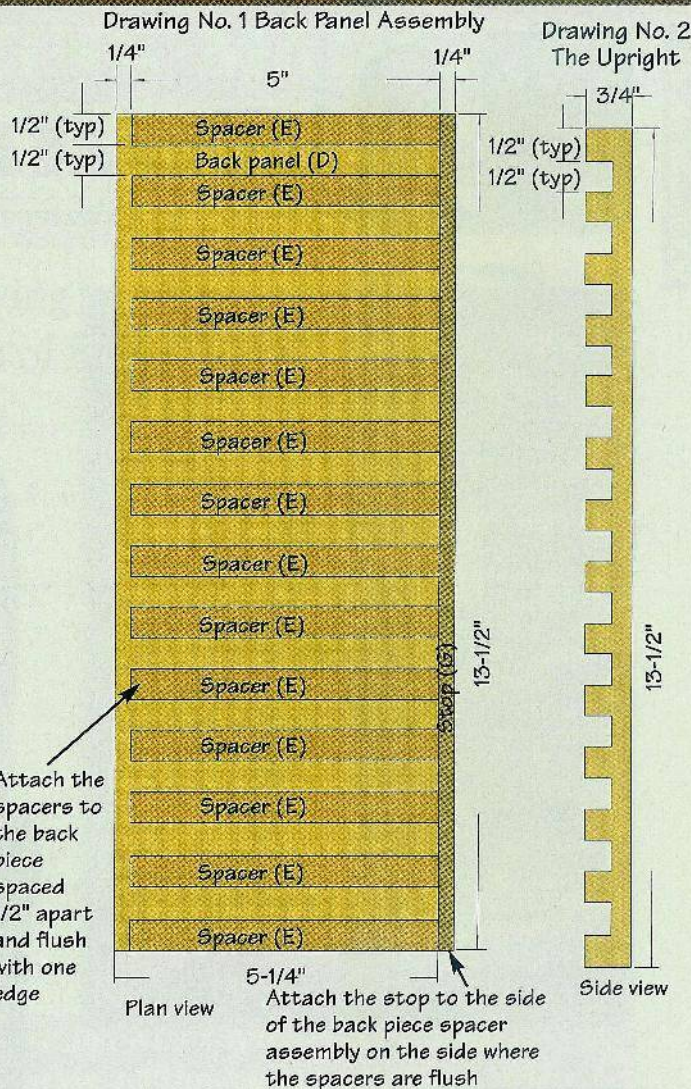
Tie one end of thread to pin A (shown on pattern). Take the thread down neck to the first slot in the bridge; around end and up through second slot; up the neck to pin B; wind around B and stretch it up over pin C, and then go down the neck to the third slot in the bridge; wind around end and up through slot 4; up the neck to pin D; wrap around D and stretch it up to pin E; go around top of E and down neck to slot 5; go around end of bridge; up through slot 6 to pin F. Wind thread around pin F a few times and tie off with a couple of knots.

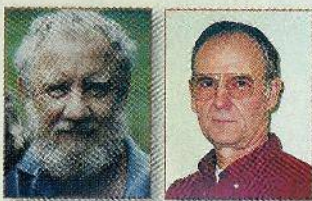
Show off your new mini guitar to family and friends, and proceed to...

Make the rack

Make a base 3/4" x 7-1/4" x 7". Drill holes for screws. Shape front and side edges as desired. Use pattern to make the top from 1/2" x 6" x 6". Drill holes for screws. Make a back panel 1/2" x 5-1/4" x 13-1/2". Make fourteen spacers 1/2" x 1/2" x 5". Make a stop strip 1/4" x 1-1/4" x 13-1/2". Make an upright 3/4" x 3/4" x 13-1/2". Referring to the main photograph, assemble the rack with glue and wood screws. Add finish to the rack as desired. We sprayed ours with a couple coats of sanding sealer, topped off with a couple spray coats of satin Deft. Sand between coats.

Attach the guitar to the front upright piece of the rack with two No. 4 x 5/8" brass wood screws. When completed, you can insert up to thirteen CDs, in their cases, into the slots from the left hand side. Then just set it up on the shelf or desk and enjoy... functional and pretty cool tool!





Patterns Located in Full Size
Pattern Section No. 1!

Round Basket

by John Nelson and sawn by Wes Demarest

SUPPLIES

Wood: ailanthus or wood of choice—three pieces $1/4" \times 6-1/4" \times 6-1/4"$ (for one level "A" piece and two level "B" piece); four pieces $1/2" \times 6-1/4" \times 6-1/4"$ (for three level "A" pieces and one level "B" piece); walnut or wood of choice—two pieces $1/4" \times 6-1/4" \times 6-1/4"$ (for the lip and bottom); white oak or wood of choice—one piece $3/16" \times 3/4" \times 20"$ (for the handle)
Tools: scroll saw with blades; drill with bits, including $3/16"$ and $1/4"$ drill bits; hot-melt glue gun

Temporary-bond spray adhesive
Sandpaper, assorted grits
Two $1/4"$ -Dia. $\times 3-9/16"$ long dowels
Rit® dye*, colors of your choice
Glue
Wood finish of your choice

* Rit® Liquid Dye, Rit® Consumer Affairs, P.O. Box 21070, Indianapolis, IN 46221-1070; (317) 231-8044, 9:00 to 4:00 Eastern Time. See their ad on page 21 of this issue.

INTRODUCTION

This project is sure to be a hit either as a gift or on display in your craft booth, so plan on making a number of them. **Note:** these patterns are copyrighted; however, you are permitted to make copies for your personal use and give away or sell the items you make from them, but you are not permitted to make copies of these patterns to sell, give away, or otherwise distribute.

For this project, we chose $1/2"$ ailanthus for the primary layers, and $1/4"$ walnut for top and bottom accent, $1/4"$ ailanthus for the middle accents, and used Rit® Liquid Dye as an accent color. We selected ailanthus because it accepts the dye well, allowing you a full range of colors and we had some on hand at the time. Ailanthus may be hard to find as it not commercially harvested or milled, but any other light colored wood will work just as well.

If you are not familiar with Rit® Liquid Dye, request their instructions for using their product on wood and rattan, plus their recipes for custom colors. They also offer instructions for use on other mediums such as flowers and grass to name a few.

Any water based product used on wood will cause the grain to raise. To reduce this effect, wet all components and allow them to dry, then sand them. You may have to do this several times depending on the wood you have chosen to reduce the amount the grain raises.



INSTRUCTIONS

Cut the pieces

Cut your material to size, affix the pattern with spray adhesive to the top layer, and stack cut as many pieces as possible. **Hint:** a hot-melt glue gun works great for holding the stacked layers together (see Fig. 1). Stack cutting saves time and will give you evenly matched layers.

Drill the blade entry holes with any size drill bit that allows the blade to easily enter unobstructed. Cut the rings with a scroll saw blade you are comfortable with. If you choose a hard dense wood such as ailanthus, use a blade with teeth that are spaced further apart such as an Olson PGT #5 or Steebar PTT 3. The wide spacing removes dust from the kerf better, and by slowing your blade speed, you can eliminate the burning to which these woods are prone. Sand all layers through 220 grit to remove mill marks and blemishes.

continued on page 22

Wood Works With Rit!

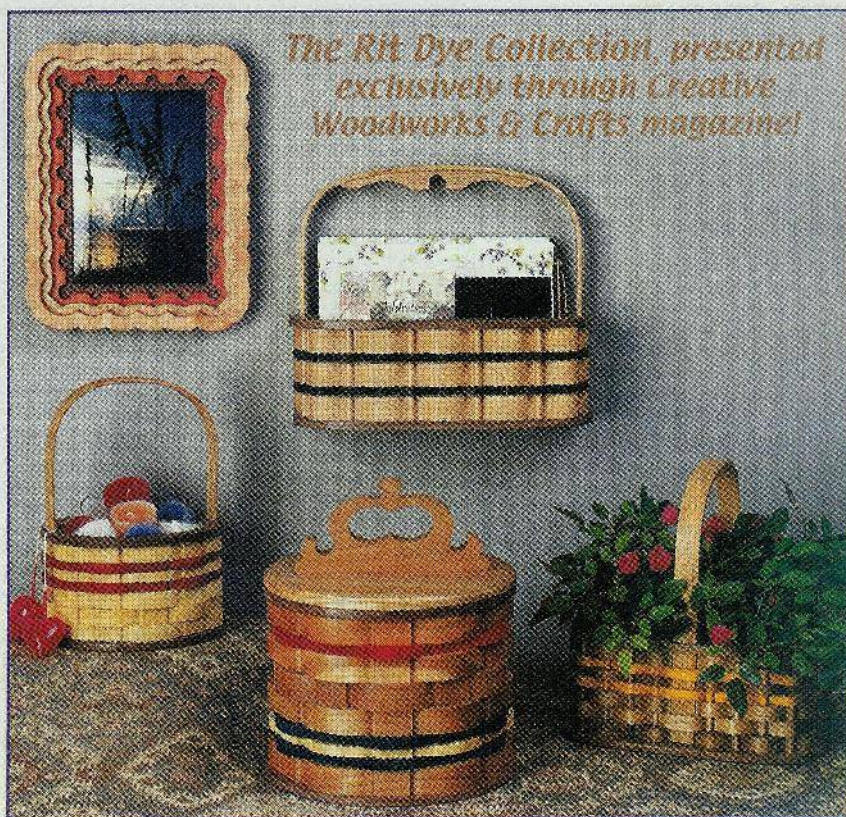


Revealing Rit...The Secret Ingredient!

Professional and hobby woodworkers, basket and toy makers of all kinds have known for years that the easiest way to evenly and deeply color raw wood has been to use Rit powder or liquid dye. Wood fibers open up and welcome the dye color!

It is far easier to batch-dye small items than to paint them. The color penetrates more deeply, and the rich, vibrant colors enhance natural wood grains.

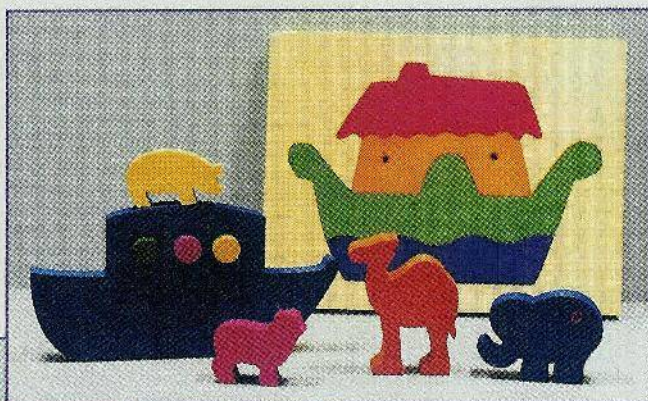
The five scroll saw projects shown to the right were designed by John Nelson exclusively for *Creative Woodworks & Crafts*. All five were made using Rit Dyes and will be featured in upcoming issues of *Creative Woodworks & Crafts*.



The Rit Dye Collection, presented exclusively through Creative Woodworks & Crafts magazine!

These five projects have appeared in the five most recent issues of Creative Woodworks & Crafts!

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Patriotic Basket by Hatley Baskets



Make the handle

Rip the strips for the bent handle from a 3/4" thick board that is several inches longer than required. Choose a flat sawn, straight grained wood such as white oak, the straighter the grain the better. If there is any grain run out the wood will not bend without splintering. Be sure to cut a few extras in the event things do not go as planned. Cutting the strip from a flat sawn board yields a quarter sawn handle that usually bends more successfully than one that is flat sawn.

Make your bending jig from a piece of scrap wood that is at least 3/4" thick according to the pattern. Soak the handle stock in water overnight. Begin bending by loosely clamping the center. Align the handle around the frame, keeping it in location with a little clamp pressure. Do the same for both sides. Once everything is in position without moving, fully tighten the center clamp, then the sides. Put it aside for a day or two until it is completely dried.

Stain the accent pieces

Rit® Liquid Dye should be used only in stainless steel or glass containers, and should be applied with either a brush, rag, or by immersing. Cover your work area with plastic and newspaper, and wear disposable gloves and old clothes. Each species of wood has its own dyeing characteristics, but all will change color, and once the color is applied, it will be nearly impossible to remove it in the future. You can blend the colors to achieve any shade you desire, but this will take a bit of experimenting to nail it. Regardless of the color you want, make a few tests on various species of wood to see how the shade will vary and proceed from there. You will find that the end grain will have a deeper color than the edge grain of the wood. You can reduce the effect by either wetting it first, then apply the color, or apply a solution of wood glue thinned with water and allowing it to dry, then apply the color. This will also require experimentation to achieve the desired effect. If you use the glue method, remember that hot water may dissolve the glue, so work accordingly.

Remove the piece from the solution and rinse it in clear water, then wipe it off and allow it to dry. Be sure to rinse, and wipe after each application, if you do not, you will find that some color will bleed through your finish especially in damp weather.

Allow the parts to completely dry. Remember, water raises the grain and there is no exception here. Depending on the wood you chose, there may be a little or a lot. The softer the wood (such as white pine), the more the grain is raised. If you don't mind a rough surface, skip this step, but if you want a smooth surface, you will have to sand them. Sand carefully with 320-grit sandpaper of fine Scotch Brite® being careful so as not to remove too much color. Once you have sanded everything, reapply the dye to achieve the color you planned on. **Hint:** my wife, Alice, has been using pieces of brown paper bags for years to burnish the surfaces of our wood projects rather than sandpaper. It is not practical in all instances but worked here, and provides a further advantage on not getting dust in the grain or removing color.

Finish and assembly

If you are planning on using a water based finish, do not use steel wool because the fine fibers remaining in the wood will cause rust stains.

Apply the finish of your choice (see Fig. 2). We use Watco Natural Danish Oil as a pre coat and allow it to cure at least three days then brush on Minwax Wipe On

Poly, and wipe it off. This method provides adequate penetration of the end grain and eliminates the dry look that often occurs after the finish has dried. Brushing the wipe on finish gets it into the crevices better than daubing with a rag. **BE SURE TO FOLLOW THE INSTRUCTIONS ON THE CAN FOR PROPER RAG DISPOSAL.**

You may find finishing before gluing to be contrary to good woodworking practices. We have used this method successfully for years on this type of project because the finish is more easily applied in an even coat on all surfaces without runs, dry spots or buildup inside and out.

You may have to clean out the dowel holes with the drill bit because the contact with water may have swollen the fibers of the wood and made the holes too tight to insert them. Trim the dowels to length, measuring three times and cutting once. Begin assembling by applying a little glue to the mating surfaces of each layer and a bit in the dowel hole (see the **Exploded View Drawing**). Do not attempt to glue more than two layers at a time without clamping and allowing the glue to set before moving on. Test fit the handle (without any glue on it) as you glue up the layers to save yourself some aggravation later on. We use Aileen's Tacky Glue, Quick Bond or cyanoacrylate glue because it works with nearly any properly cured finish, plus we also scrape the area of contact before we apply the glue.

Finish up by gluing the handle in place (see the **Handle Assembly Drawing**) and touching up any finish that may have gotten marked up. Regardless of how you make this project, the layers may eventually separate. The surfaces of contact between the layers is very small and does not allow for much glue. This coupled with the seasonal swelling and shrinking of the wood will insure separation, however, the dowels should hold the project together.

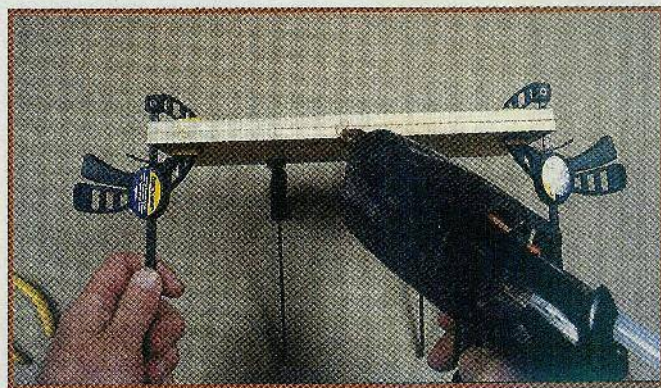


Fig. 1. We use hot-melt glue to secure the layers, rather than nailing or taping them.



Fig. 2. Apply finish of choice before assembly.

Handle Assembly Drawing

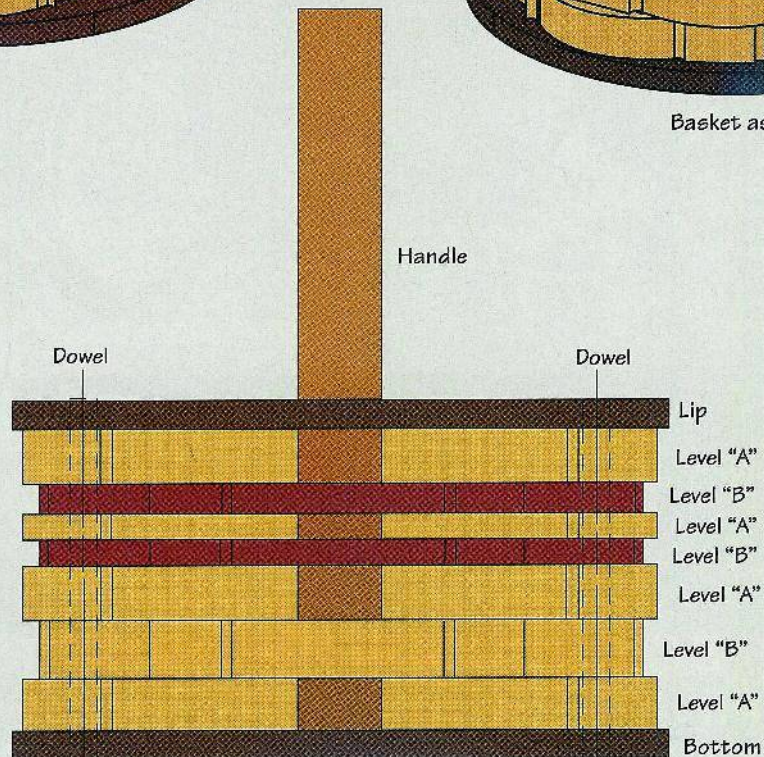
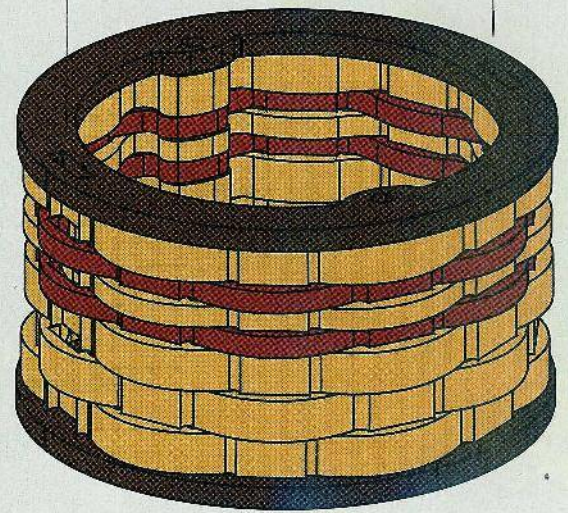
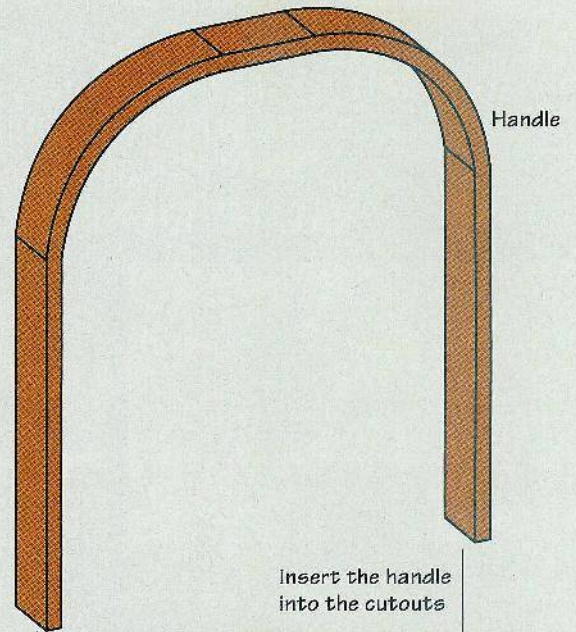
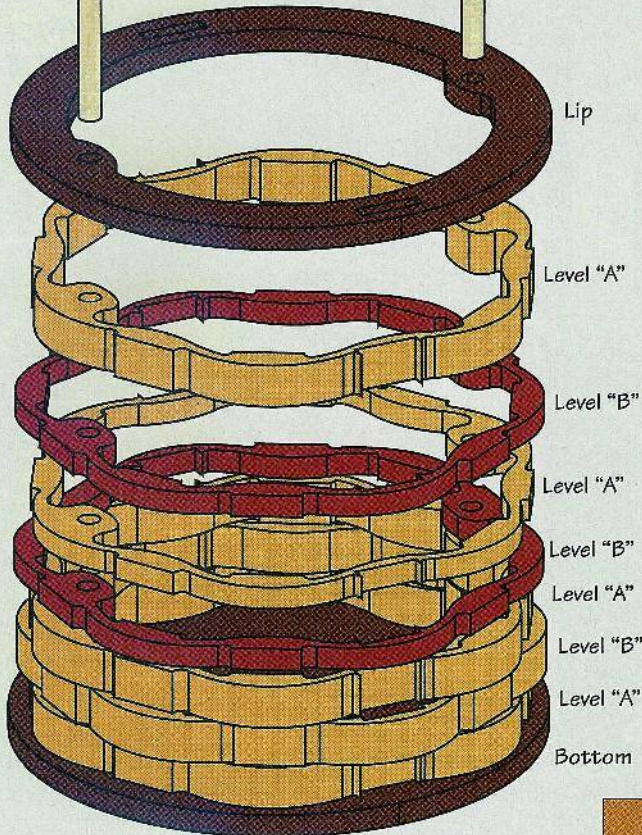
Exploded View Drawing

1/4"-Dia.
dowel

Begin assembly of the basket
by joining the lip, layers, and
bottom with glue and locking
them together with dowels

1/4"-Dia. dowel

Insert dowel
to lock basket
components
together



Plan View Drawing

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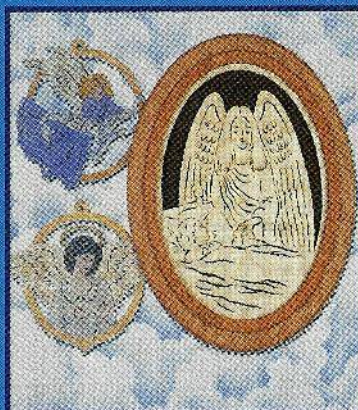
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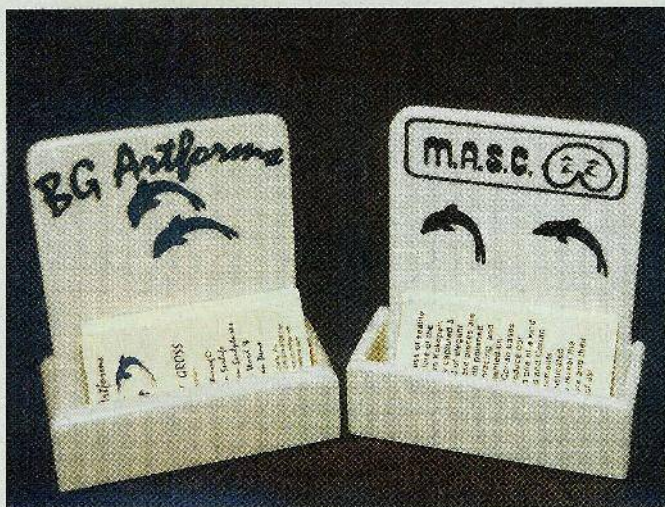


FL138 Forest Leaf
Hummingbird 2



Corian Business Card Holder

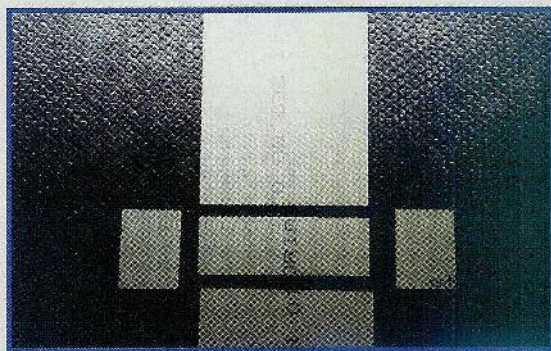
by Barry Gross, Mr. Solid Surface of BG Artforms



INTRODUCTION

I have received many requests for business card holders made from *Corian*®. To answer this demand, Mr. Solid Surface has come up with the following project. You can use any logo you wish for the top part of the design. I chose the one pictured because my dive shop happened to be one of the many businesses requesting a card holder.

INSTRUCTIONS



Step 1. Cut the 1/4" *Corian*® according to the measurements provided for all the pieces needed.



Step 2. Note that the back of the *Corian*® has writing on the surface. This must be wiped off with acetone or denatured alcohol.



Step 3. Place the front piece and the bottom piece on a sheet of wax paper and glue them together using the *Hot Stuff Super "T"* CA glue and clamps. Allow this section to dry for 5 minutes.

SUPPLIES

Corian® in color of choice—one piece 1/4" x 4-1/16" x 5-1/8" (for the back), one piece 1/4" x 4-1/16" x 1-3/8" (for the front), one piece 1/4" x 4-1/16" x 1-3/8" (for the bottom), two pieces 1/4" x 1-3/8" x 1-7/8" (for the sides)

Tools: scroll saw with No. 4 Artisan blade*; drill with 1/16" Dia. bit or smaller; router or pneumatic sander*; polishing wheel with muslin wheel and a good polishing compound (optional); random orbital sander (optional); clamps; hone

3M Spray Mount™ Artist's Adhesive

Wet/dry sandpaper, assorted grits (including 220, 320, 400, and 600)

2" x 2" aluminum oxide sanding pads*

Black *InLace* and clear *InLace* with blue metal flake*

Denatured alcohol

Wax paper

Masking or packing tape

Hot Stuff Super "T" Cyanoacrylate glue* (CA glue)

[**Note:** this brand represents a medium viscosity and is recommended because it will bond in approximately 15 to 30 seconds.]

*Available from BG Artforms, 2189 Philip Drive, Bensalem, PA 19020; (888) 717-4202; or visit their website at www.bgartforms.com. *InLace* is available in two separate specially designed Scroll Saw kits with 4 different colors in each kit. These kits are exclusively offered through BG Artforms for \$39.95. A solid surface aluminum oxide sanding kit (CSK-3) is also available for \$15.95. Photos and descriptions of these sanding products can be found on BG Artforms' website.

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Part Number	Teeth per inch	Corian®	Hardwood	Acrylic
AB #2/0	30	n/a	Marquetry	n/a
AB #2	23	up to 1/8"	up to 1/4"	up to 1/8"
AB #4	16	up to 1/4"	up to 1/2"	up to 1/4"
AB #5	16	up to 1/4"	up to 3/4"	up to 1/4"
AB #7	14	up to 1/2"	up to 1"	up to 1/2"
AB #9	14	up to 1"	up to 1 1/2"	up to 1"
AB #12	12	n/a	up to 2"	n/a
Metal	Metal			
MAB #3	42	up to 1/8"		
MAB #5	36	up to 1/4"		

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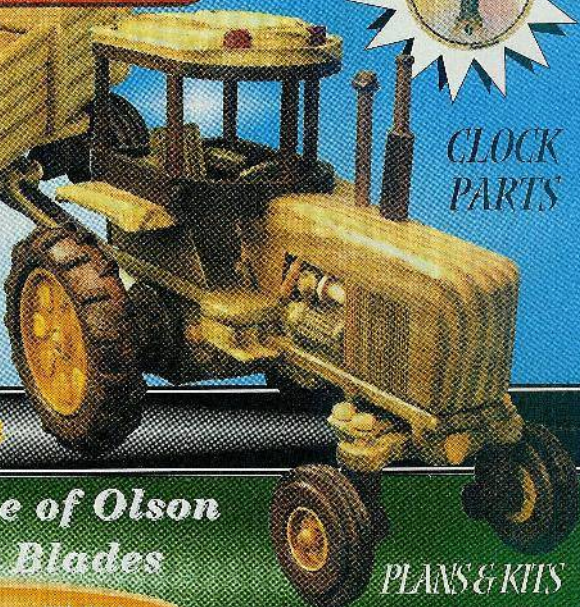
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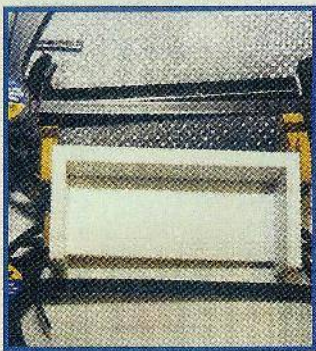
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Step 4. Glue the sides to the front and bottom. Do not glue the back to the front at this time. We first have to cut out the logo and fill it in with *InLace*.



Step 5. Place masking tape on the front of the Corian® back piece. Use 3M Spray Mount Artist's Adhesive to adhere the desired pattern to the masking taped surface. The tape will also help to prevent your blade from overheating when you are cutting the material.



Step 6. Bore blade entry holes using the 1/16"-Dia. drill bit.



Step 7. Round over the back of the Artisan No. 4 scroll saw blade using a hone.



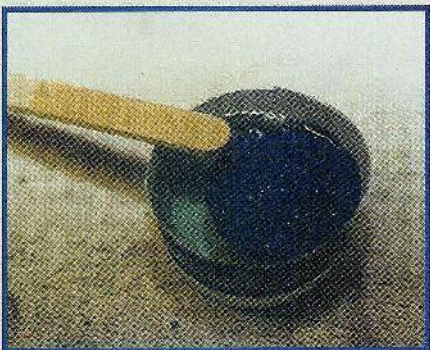
Step 12. If you need to sharpen any edges of logo you cut, use a small file or sandpaper to accomplish this.



Step 13. Place the previously cut pieces into the back piece.



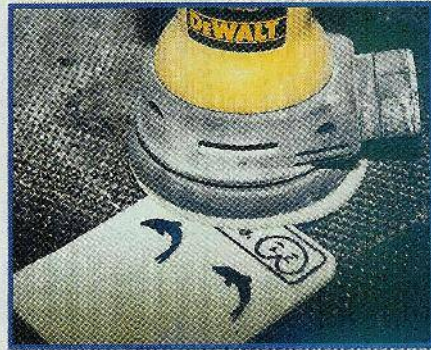
Step 14. Now fill in all the cut out sections with the *InLace* color of choice, making sure that you overfill the piece so you can sand it flush later. Also note that an old scroll saw blade is being used to assist in filling the smaller areas to avoid gaps.



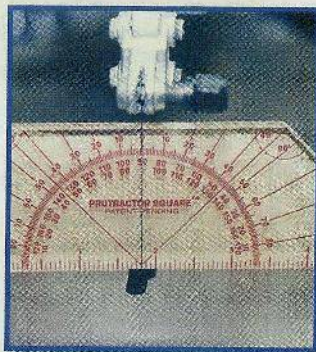
Step 18. Mix the clear *InLace* with the metal flake.



Step 19. Once again, overfill the holes with the blue metal flake *InLace*. At this time, if you had any gaps in the backside of the upper portion of the logo you can fill them in as well.



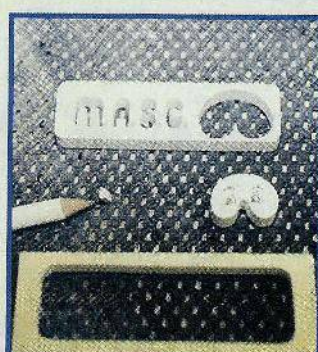
Step 20. Sand the front and back sides flush and finish the surface with the special padded aluminum oxide sanding pads.



Step 8. Make sure that the scroll saw blade is exactly 90° to your scroll saw table.



Step 9. Prepare for the *InLace* by cutting the inside portions of the pattern first.



Step 10. Remove any portion of the letters that you will have to replace at a later time, such as the small inside portion of the letter "A" shown by the point of the pencil. Notice that the other pieces of the logo have also been removed.



Step 11. After the inside of the pattern is cut, place a piece of masking tape on the rear of the back piece and place it on the wax paper. Since you will be filling the top portion of the logo first, cover the two dolphins with tape so no *InLace* material can get in those holes.



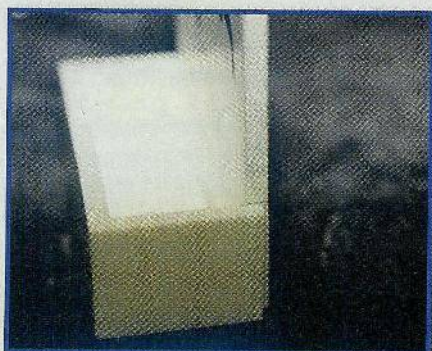
Step 15. Sand off the overfilled *InLace* until smooth.



Step 16. Round over the top edges of the back.



Step 17. Since the bottom portion of the logo will be using clear *InLace* with metal flake, place masking tape on the front side of logo.



Step 21. Dry fit the back piece into the front and side pieces and place a mark where the side piece fits into the back piece. This mark will show you where to stop sanding when you round over the back piece.



Step 22. Round over the back and side using a pneumatic sander and the special padded aluminum oxide 2" x 2" pad.



Step 23. Glue the back to the front using Hot Stuff Super "T" CA glue.

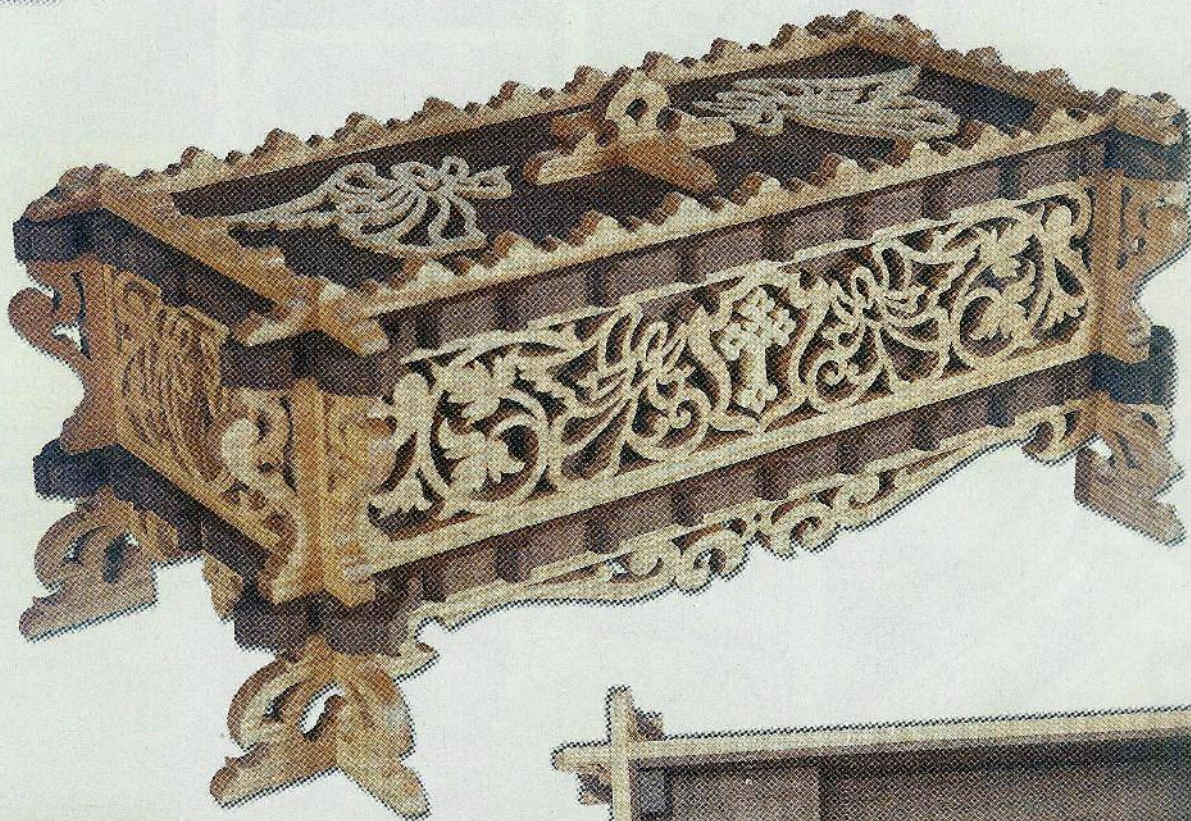
Note: The people at *InLace* recognize that we scroll saw people do not use a lot of *InLace* for a single project. That is why they decided to come out with these two special scroll saw kits. Each kit will include 2-oz. cans of four different colors. Scroll Saw kit #1 will include Black, Clear, Lindsey (light blue fleck) and Lacey (dark green fleck). Scroll Saw kit #2 will include White, Beek (dark red and black fleck), Becca (medium blue fleck) and Turquoise. Kits retail for \$39.95 each. These kits are exclusively distributed by BG Artforms. For information on the special Scroll Saw *InLace* kits, look on the BG Artforms website, www.bgartforms.com or call (888) 717-4202.



Patterns Located in Full Size
Pattern Section No. 21

Angelic Keepsake Chest

by Dirk Boelman of The Art Factory



SUPPLIES

Tools: scroll saw with blades; table saw (or similar); drill with bits; carpenter's square; miter clamp
Temporary-band spray adhesive
Sandpaper, assorted grits
Two brass flat head wood screws
One No. 6 x 3/4" wood screws for handle
Four No. 4 x 5/8" wood screws for lid guides
Six No. 0 x 3/8" wood screws for mounting board and cover
Musical wind-up movement*: *Wind beneath my wings*
Finish of choice

*The music movement for this project is available from Swiss Music Box, Ltd., 6309 W. 126 Ter, Overland Park, KS 66209. Order toll free: 1-800-255-0676. Order the 1, 18 musical movement. Suggested tune: *Wind Beneath My Wings*, but many other tunes are available. One movement (\$&H included) is \$21.00/US. Best buy: two movements only \$32.00 (\$&H included).



INTRODUCTION

This magnificent fretwork project is truly a joy to behold. It is approximately 7-1/2" wide, 14-1/4" long and 6" tall. Made from woods of contrasting colors, the completed chest is a show-piece of quality. It is adorned with heavenly angels and contains a musical movement which plays "Wind Beneath My Wings" whenever the lid is removed.

INSTRUCTIONS

Make the front/rear leg sections (B) from 1/4" material. Two pieces can be stack-sawn simultaneously. Make the end leg sections (D) from 1/4" material. Both pieces can be stack-sawn simultaneously. **Note:** the leg sections utilize a halved-joint for assembly. Before cutting the joint areas, double check the actual thickness of material

BILL OF MATERIALS

Part	Description	Size in inches	Quantity
Red oak			
A	Front/back panels	1/4" x 2-5/8" x 11-1/2"	2
B	Front/rear leg sections	1/4" x 1-7/8" x 15"	2
C	End Panels	1/4" x 2-5/8" x 7-5/8"	2
D	End leg sections	1/4" x 1-7/8" x 8-1/4"	2
E	Brackets	1/4" x 2-5/8" x 1-1/4"	4
F	Decorative trim (long)	1/4" x 5/8" x 14"	2
G	Decorative trim (short)	1/4" x 5/8" x 7"	2
H	Handle	1/4" x 1-3/8" x 5"	1
I	Handle side pieces	1/4" x 3/4" x 3"	2
Black walnut			
J	Lid/bottom panel	3/8" x 7-5/8" x 14-1/2"	2
K	Liner panels (long)	1/8" x 2-5/8" x 11-1/4"	2
L	Liner panels (short)	1/8" x 2-5/8" x 4-3/4"	2
M	Music box cover (sides)	1/8" x 1-9/16" x 3-1/8"	2
N	Music box cover (top)	1/8" x 3" x 3-1/4"	1
O	Shutoff block	3/8" x 3/4" x 1-3/8"	1
P	Glue block (short)	3/8" x 3/4" x 1-5/16"	1
Q	Support blocks	3/8" x 1/2" x 1-1/2"	2
R	Guide blocks (long)	3/8" x 3/4" x 4-1/2"	2
Holly, birch, or wood of choice			
S	Cross	1/4" x 1-1/4" x 1-3/4"	2
T	Angel overlays	1/8" x 3-1/2" x 4"	2
U	Mounting board	1/16" x 3" x 2-3/4"	1

you are using. Place it on edge directly on the pattern; adjust the width of the cutout area as needed to ensure that the leg sections fit perfectly together.

Make the bottom panel (J) from 3/8" material. Cut an opening for access to the musical movement. Locations are shown for the parts that attach to the top of this panel, to aid with assembly.

Make the front/back panels (A) from 1/4" material. Both parts can be stack-sawn simultaneously, or the back panel can be made as a solid panel if desired. **Note:** the brackets (E) should be made to mate with the front and back panels. They are separate pieces and attach to the outside of the side panels (C). For continuity of the wood color and grain patterns, place the patterns on the wood as if all are made in one piece, but separate them by cutting out the 1/4" space between them. Make the four brackets (E), as described, from 1/4" material. Make the end panels (C) from 1/4" material. Both parts can be stack-sawn simultaneously.

Make the lid (J) from 3/8" material. Locations are shown for the parts that attach to the top of the lid. Make the two guide blocks (long) 3/8" x 3/4" x 4-1/2". The blocks attach to the underside of the lid, and are used to line up the lid when it is placed on the box. Make two long strips of decorative trim (F) from 1/4" material. Both parts can be stack-sawn simultaneously. Make two short strips of decorative trim (G) from 1/4" material. The pattern includes two end pieces which should be separated from the main piece. Both parts can be stack-sawn simultaneously. Make the main section of the handle (H) as well as the two side sections for the handle from 1/4" material.

Make two angel overlays (T) from 1/8" material. Make crosses (S) to insert into front and rear panels from 1/4" material.

Make front and back liner panels (K) from 1/8" material to fit inside the box, approx. 2-5/8" high by 11-1/4" long. (Make slightly larger, and trim to fit during assembly.) Because they are basically rectangles, no pattern is provided for the liner panels. Make two end liner panels (L) from 1/8" material, approx. 2-5/8" high by 4-3/4" long. (Make slightly larger, and trim to fit

during assembly.) Again no pattern necessary.

Make a mounting board (U) for the musical movement from 1/16" material. Make sides for a box to cover the musical movement (M) from 1/8" material. Cut one piece to 1-9/16" x 3", and leave the other piece 1-9/16" x 3-1/8". Make the top for the cover (N) from 1/8" material. Make a glue block (P) to strengthen the cover assembly, 3/8" x 3/4" x 1-5/16". Make two support blocks (Q) 3/8" x 1/2" x 1-1/2" to use for securing box to liner. Make a block 3/8" x 3/4" x 1-3/8" to use as a shut-off for the musical movement (O).

Assembly

Start by dry-fitting the leg sections together. Use rasps, needle files, and etc., to adjust the halved-joints to fit together. Place all four sections upside down on a flat work surface; start in one corner and apply glue to all surfaces of the joints that will contact; work your way around to complete all four corners; use a carpenter's square to square-up the assembly; clamp together until dry.

Glue the front, back and side panels together to make the box. Take your time to ensure that all the corners are square, and that all four of the panels are also standing perfectly vertical. Clamp together until dry. **Note:** Don't attach these panels to the bottom panel yet; there are a few steps to do first.

Place the mounting board for the musical movement over the opening in the bottom panel. Mark locations for the mounting screws, and predrill one or two pilot holes through the panel. Temporarily attach the mounting board to the panel with a couple No. 0 x 3/8" mounting screws; set the box assembly in position to check that there will be clearance for the box liner. Make adjustments as needed, and finish drilling the pilot holes and installing the other mounting screws. Then remove it all, turn the bottom upside down, and proceed as follows.

With the bottom panel upside down on a flat work surface, glue the leg assembly in position. Basically, it attaches directly below the front, back and side panels, whose locations are shown on the pattern for the bottom panel. Clamp together until dry.

Glue the front, back and side panel assembly to the top of the bottom panel. Clamp together until

continued on page 32

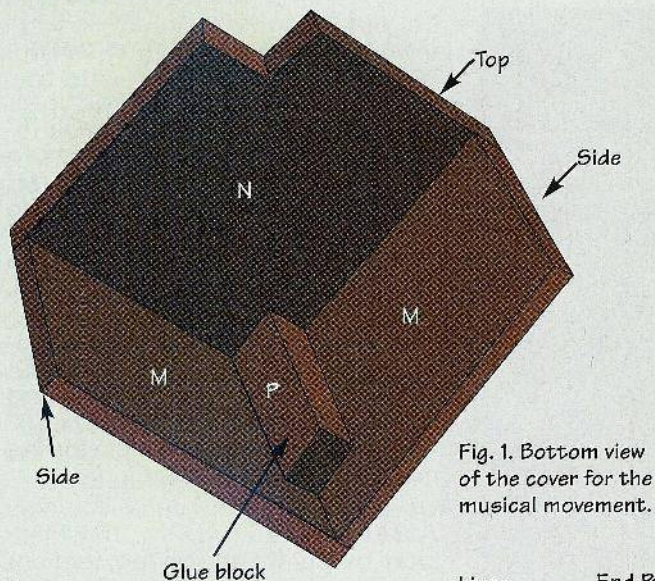
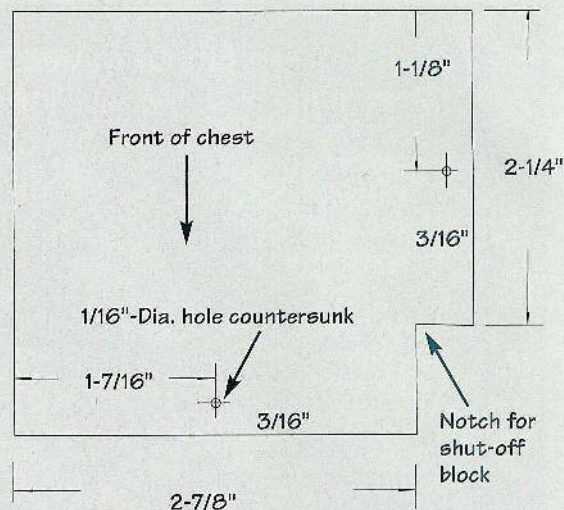


Fig. 1. Bottom view of the cover for the musical movement.



Drawing No. 1. Top Of Cover

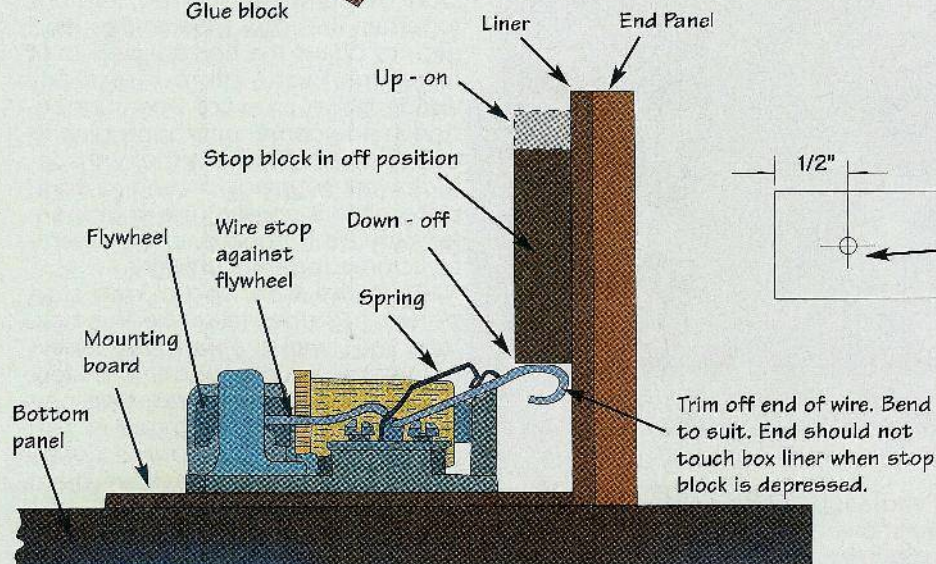
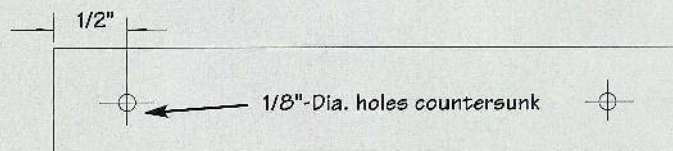


Fig. 2. Front view showing musical movement with stop wire trimmed and bent to accommodate the stop block.



Drawing No. 2. Guide Blocks

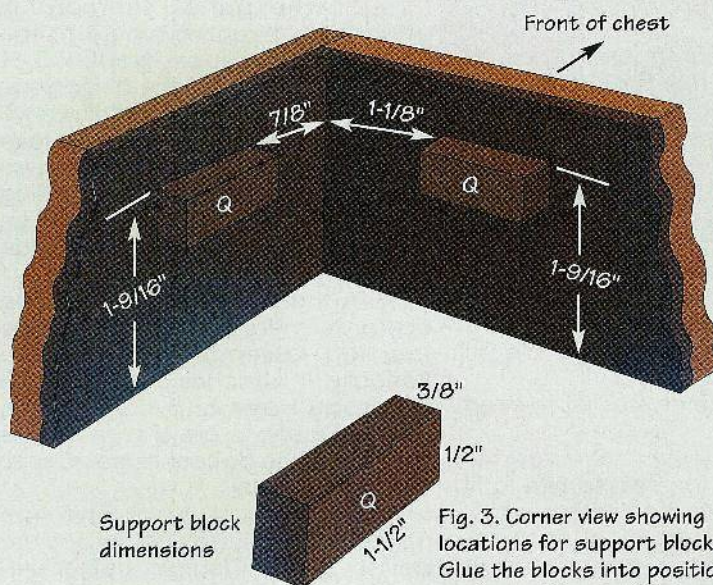
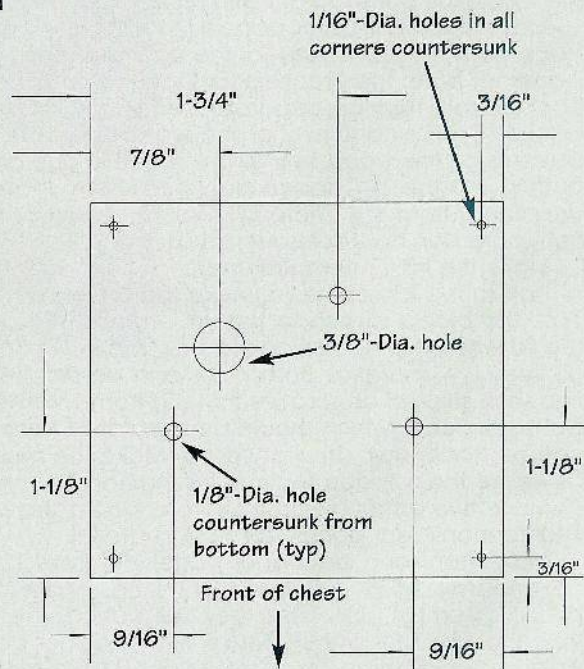


Fig. 3. Corner view showing locations for support blocks. Glue the blocks into positions as shown. The music box cover fastens to these blocks.



Drawing No. 3. Mounting Board

dry. Dry fit the bracket ends (E). Make adjustments as needed. Glue into place, and let dry.

Install the liner panels. Make adjustments as needed to make the panels fit perfectly inside the box, flush with top edge. Glue in place. Clamp together until dry.

Make the music box cover. Start by gluing the side pieces together, with the glue block positioned in the corner, flush with the top edges. Use a mitre clamp, carpenter's square, or homemade jig to hold these parts in correct position until glue dries. Then glue the top panel to the top edges (see Fig. 1).

Attach the musical movement to the mounting board (see Fig. 2). Depress the wire stop to contact the flywheel, stopping the movement. Using the edge of the mounting board as a guide, trim off the end of the wire stop with wire cutters and bend the end as shown. Next, set the movement, on it's mounting board, inside the box. Check that the wire stop does not touch the liner as you move it down; adjust if needed. Install the mounting screws.

Attach two support blocks to the inside of the box liner to hold the inside of the box liner to hold the cover for the musical movement (see Fig. 3). These measurements locate the blocks in areas that will allow access to the screws in the mounting board when the cover is removed, and are at a height that should be exactly correct for the cover to rest perfectly on the bottom of the box. Double check all of these measurements with your completed cover, etc. Adjust as needed. Glue and clamp in position until dry.

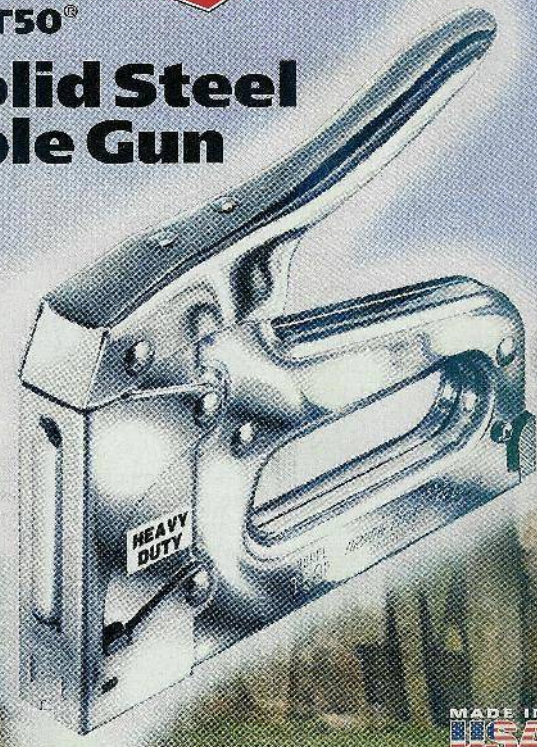
Install the music box cover. Locate and drill pilot holes into the support blocks. Attach the cover with two No. 0 x 3/8" screws.

Insert the shut-off block into the slot in the cover. It should slide freely up and down in the slot and rest securely on the wire stop. Check operation. Make adjustments as needed.

The lid uses two guides attached to its underside to direct its placement upon the box. You will want to take your time cutting the guides to the correct length and installing them at the right distance apart. Start by measuring the inside of your completed box. Cut the guides to correct length which allows them to slip inside the box freely, with very little play or extra space. Measure and mark locations for the guides on the underside of the lid. Start by locating



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the exact center. You will need this point to drill a hole for a No. 6 x 3/4" screw to attach the handle for the lid. From the centerpoint reference, transfer your box measurements to the lid, and make light pencil lines to locate your guides. Attach the guides to the lid with four No. 4 x 5/8" wood screws. Test fit. If necessary, you can ream out the holes in the guides to allow you to move them to achieve the best fit.

Glue the handle, decorative trim parts, and angel overlays to the top of the lid. Install a wood screw into the handle to secure it for regular usage.

Test the fit of the lid on the box to ensure that the shut off block works perfectly to control the musical movement. If it doesn't, you may need to adjust the dimensions of the block, or bend the wire stop just a bit.

Don't forget to glue the crosses into position in the openings in the front and back panels.

Next, remove the musical movement. Then apply finish to all of the wood parts as desired. We used Watco Natural Danish Oil finish.

When dry, put it all back together again... and go "wow" somebody with your completed project!



WES' WORKSHOP

SUBJECT: Putting the "Creative" in Creative Woodworks & Crafts

by Wes Demarest

Hey, loosen up!

Once your scrolling skills have progressed to the point that you can cut straight lines and acceptable radii, you might want to loosen up a bit and start taking liberties with your patterns. When my wife, Alice, and I first started scrolling, we followed the patterns religiously, occasionally getting into trouble when the artist made the lines too close together or when my cutting was a little uncoordinated. You have to understand that I was not the high school hero athlete who was a .300 plus hitter or shot 90% from the foul line. Shucks, I had trouble running without tripping over my own feet, but I sure was good with the water bucket. No one on the team ever suffered from thirst! So when I say it took me a while to get the hang of scrolling, it means that it has taken me years. In fact, Alice says I still have a ways to go.

As you can see in the Rhino project pictured here (scheduled to appear in a future issue of *Creative Woodworks & Crafts*), not all pieces of wood provide the proper perspective for a design without some modification. In this case, rather than shrink the pattern, I removed some of the detail. You may be thinking, why not just reduce it on a copy machine? Well, the rhino's eyes are very small to begin with; if I did that they were way too small. Not only that, but with the wood I was using being on the thick side, there was a very good possibility that my drill would run out and ruin one or both of the eyes. It would not matter if we blew out any other detail in the pattern because no one would be able to tell what happened, but the eyes have to be right on the money.

Other creative considerations

Could I have used a larger piece of wood for the rhino? Yes, of course, but not every board has grain characteristics which play into the design. Then there is the constant problem of what wood we have on hand, as well as the saw we use. As far as the saw is concerned, several folks have requested that I use a more "normal" saw, something in the 20" range, because that is what they use. Granted, you do have greater control with a larger saw, but economically it may not be possible for many scrollers and I respect that. A smaller saw would necessitate using smaller stock instead of the unwieldy slabs I sometimes work with.

On top of that, larger pieces of material are also more expensive and the price goes up exponentially with the quality of the

wood. To be perfectly frank, if I didn't own a sawmill, I would be quite reluctant to make a lot of these projects with the wood I use. Prior to getting my sawmill, Alice and I used a chain saw and slabbed logs salvaged from our firewood pile. We also developed a relationship with several local sawmills. Back in the 70's, we had to beg for thin wood or else be fortunate enough to be around when the sawyer skimmed off a thin piece while they worked up a log for dimensional lumber.



Some of the pattern detail was removed so that the rhino pictured here would work with this piece of wood.



The original pen and ink drawing by George Ahlers used to make the pattern. I then took a little liberty with that pattern to make the final project.

That was then, this is now

We once had a piece of 5/16" red oak that was 18" wide and 10' long stored in the rafters and whenever we got a special request for something in solid wood at a show, we would nip a piece off and complete the order. Other than that, we used 1/8" & 1/4" hardwood plywood for 90% of our work. Then along came Marilyn Carmin! Her patterns really got our creative juices flowing. Marilyn's designs and the way she used slabbed wood with live edges captured Alice's and my imagination. Her influence is still felt nearly every day in our shop.

An early discovery was the realization that even more detail could be added to Marilyn's designs by doing a little carving after the pattern had been cut out. After all, the hard work had already been done and the thicker wood was usually perfect for that kind of detailing. Thus, "Sculptural Scrolling" evolved. Then we learned that our editor, George Ahlers, is a wildlife artist along with being an accomplished woodworker. Yes, he does draw his patterns; they are not the scanned work of others or photographs—he does them the hard way. *Creative Woodworks & Crafts* has had the good fortune to be able to bring you some of the best designs from both these artists.

And it does not stop there. Here at the magazine, we constantly use the term "Carminesque" when we evaluate some of the patterns I'll be sawing out for publication, and try to decide how it will be completed. We inevitably become involved in long discussions about what kind of wood to use and just how we each visualize the finished piece. One strategy we have found to be extremely effective is for me to hold on to several patterns slated for future publication. When I come across "just the right piece of wood" for a particular design, I go ahead and make that project. I try to add detail to the designs I saw out using methods that have proven to be effective and hope that you are inspired to try it too.



WOOD PROFILE: Northern White Cedar

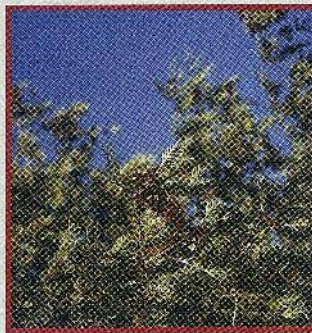
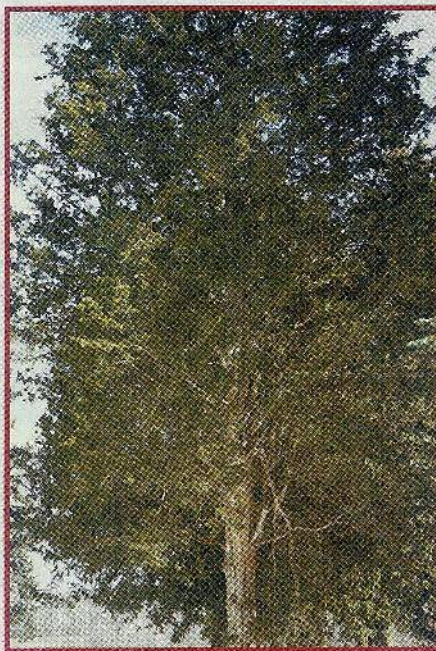
by Wes Demarest

Northern White Cedar, *Thuja occidentalis*, is also known as *arborvitae*, a name that is also applied to Atlantic White Cedar, and Western Red Cedar. Just as with Eastern Red Cedar, it too is not a true cedar, but is a member of the cypress (*cupressaceae*) family. You can find it growing across eastern Canada south of St. John's Bay, southward to northern New England, westward to the Great Lakes states and in upper elevations of Tennessee and North Carolina. You will also find it growing in isolated pockets in between, most often in bogs and swamps which provide the proper elevation, high humidity and a neutral to slightly alkaline soil.

Northern White Cedar is not as tolerant of growing conditions as other species, but it can be grown as an ornamental. It is not a large tree, normally attaining a height of 50 to 60 feet with diameter of 2 to 3 feet; however, occasional specimens can be found considerably larger. You may wonder why the photo for this article was taken in a cemetery rather than in the woods. It is difficult to find an isolated tree in a natural stand that would allow a view of the growth density of the branches and leaves. If you compare the photo of the Eastern Red Cedar (within the same cemetery) from our previous issue's wood profile, you can clearly see the difference. The shape and characteristics of tree crowns is a diagnostic tool used by folks involved in tree, woodlot and forestry management. That is not to say that individual specimens cannot have denser growth; they can and do.

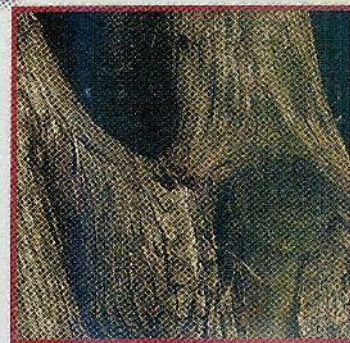


The most common diagnostic tool in tree identification is the leaf (or needle in the case of conifers). If you compare this with that of the Eastern Red Cedar in the last issue, you will see that this one is flatter and not needle-like on the ends of the new growth. This species as well as others in the cypress family provide wildlife with food and cover in the winter, and so it is not uncommon to find entire stands "pruned" as high as deer or moose can reach.



The trunks of Northern White Cedar are less fissured than Eastern Red Cedar and the bark is lighter in color. Just as with other species in the cypress family, the bark can be used for tinder.

You will also observe that the fruiting body of this species is a small cone, whereas the Eastern Red Cedar is a blue fleshy cone. As you can see they are produced rather abundantly. The whole tree was covered with large clusters of cones, providing an important food source for birds and squirrels.



I find that the wood is a delight to work. The sapwood is nearly white and the heartwood a light tan with a complementary grain pattern. It machines well, hand planes well, glues and finishes beautifully. Just as with any other wood, you should pre-drill screw holes, especially near the end of the board, to prevent splitting. It is light, relatively soft, not too strong, and low in shock resistance, though it is also durable and resistant to decay. It finds use for shingles, poles, log cabins, railroad cross ties, water tanks and boats. Native Americans pounded short logs so that the layers could be separated and made into canoes, thus it has another regional name "canoe wood".

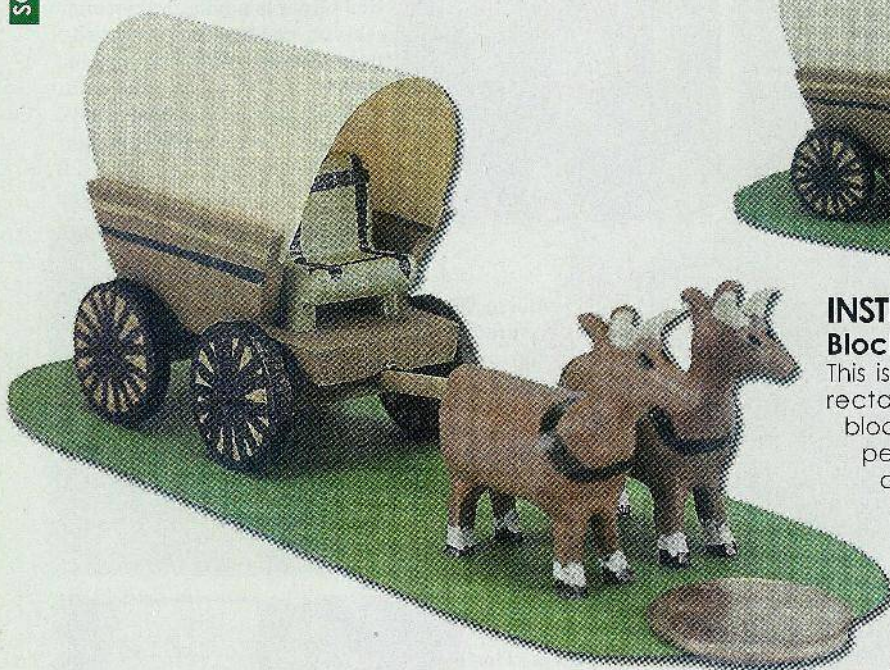
Northern White Cedar is slightly aromatic, though not nearly as much as Eastern Red Cedar, having a pleasant spicy odor that diminishes with time. I have not had any reaction to the sawdust or contact with the bark or sap and find the dust to be far less irritating than Eastern Red Cedar. In any event, be sure to wear a dust mask because all saw dust (wood dust) is harmful.

The wood shrinks about 5% off the sawmill, and a 12" board will move about 1/8" in service after proper seasoning. It does not have annoying pitch pockets like most of the pines, but you can find some fissuring in the outer cuts as shown here.



The Conestoga Wagon

By Henry Donald Berns



INSTRUCTIONS

Block preparation

This is a typical 3-D scroll saw project and will require rectangular saw blocks for the components. These blocks will need parallel sides and one end cut perpendicular to the sides. They can be made by using a table saw with a fence. It will be helpful to have a stationary belt sander to get the sides and ends of the blocks smooth and square. Basswood is recommended for wood blocks. Other soft plain-grained woods could be used. The blocks need to be at least several inches longer than the pattern area so there is sufficient length to hold the block while it is being cut. Usually the front view of the item is cut first, and

then masking tape is put over the saw cuts to hold the block together while the other view is cut. To use the same block for a second item, cut and square the end of the saw block so the patterns can be glued on again.

SUPPLIES

Wood: basswood saw blocks or soft plain-grained wood of choice—one piece $3/4" \times 1-3/8" \times 5"$ (for the ox bodies), one piece $1-1/2" \times 1-1/4" \times 5"$ (for the wagon body), one piece $3/4" \times 3/4" \times 4"$ (for the wagon seat and ox tails)

Tools: table saw; scroll saw with No. 2 and No. 5 blades; drill with small diameter drill bit to match the round toothpicks used for the wagon tongue; awl to make a starter hole for the drill bit; rotary sander (optional); stationary belt sander

$5/8"$ -Dia. x 8" long wood dowel rod for the wheels

Round toothpicks for wagon tongue

$3/4" \times 2"$ stick about 15" long for scroll saw fence

$1/4" \times 3/4" \times 3"$ strip of wood for wheel gluing fixture

Manila file folder for canvas top

Green file folder or similar stiff paper for mounting base

Sandpaper, assorted grits

Fingernail emery boards and clippers

Small needle or riffler files

Two C-clamps to hold fence on saw table

Super glue for the ox tails, wheels, wagon tongue, etc.

White glue to attach patterns to saw blocks

Masking tape to cover front view saw cuts when doing side view cuts

Clear polyurethane spray to seal raw wood items

Long sewing needles

Acrylic paints of choice—Black, Brown, Gold, Ivory, Reddish Brown, White, etc.

Black fine point permanent pen

Pattern preparation

Photocopy the patterns at 100%. Cut around the rectangular outline block for each set of side/front view patterns. Fold the paper on the line between the two views and crease the fold with the backs of the two views together. **Note:** the fold line for the wagon body is at the front of the wagon floor. (This is to keep the size of the saw block smaller.) Open the fold in the paper so the front and side views are at a 90° angle. Check the 90° folded pattern set on the saw block to be sure it fits properly. The bottom of each view should match the squared end of the saw block, and there should be about $1/16"$ of material outside of the item being cut at each edge of the block, except for the side view of the wagon body. This material is needed to hold the block together until the sawing is completed.

Open the pattern set up flat and lay it face down on a bigger scrap of paper. Put white glue on the rear of the patterns and spread the glue around with your fingertip. Excess glue can be pushed off onto the paper scrap. Refold the patterns to the 90° position and place on the saw block. **Fig. 1** shows patterns glued on the three saw blocks for the wagon body, an ox body, and the ox tails. Make sure the pattern edges are in line with the edges of the saw block and match the end of the block.

Sawing

Sawing is done with a No. 2 blade in the typical 3-D fashion. One view of the item is cut first, and then masking tape is put over the saw cuts to hold the block together while the other view is cut.

For the ox body, cut the material away from between the

legs in the side view first. Then go to the front view and cut between the legs. Finish the front view by cutting around the rest of the body. **Fig. 2** shows the front view sawing in progress. Use care in turning at the end of the horns. Put masking tape over the saw cuts on the front and back of the saw block to hold the loose piece in place. Go back to the side view to finish sawing the ox body.

Make sure you keep a straight line at the upper back end of the body so there will be a flat area where the tail will be glued on. Cut and sand the end of the saw block square again and do the second ox body.

Place the paper pattern block for the tails on the saw block with the bottom of the tails at the end of the saw block as seen in **Fig. 1**. When cutting the tails, saw the front (rear) view first. Tape the front and back of the saw block and go to the side view cutting. **Note:** there are two tails in the side view so both ox tails can be completed with one sawing operation. Use care in cutting the flat areas where the tails will be glued to the ox bodies.

After cutting the first tail in the side view, stop and add more tape to keep all the little pieces in place. Continue cutting the second tail. Carefully remove the tape and the tails will come free from the saw block. The ox bodies and tails are shown in **Fig. 1** as they look after sawing. Cut and sand the end of the saw block square again so the seat can be made from the same saw block.

For the wagon seat, place the patterns on the block with the bottom of the seat at the end of the saw block. Start with the front view and cut out the material from between the sides at the bottom of the seat first. Next, do the side view and tape the block. Finish with the rest of the front view cutting. Starting at the front of the seat will make the final cut down the back side easier.

For the wagon body, place the patterns on the block with the axles at the end of the saw block as seen in **Fig. 1**. Cut

out the material from between the axles in the side view first. Then do the front view. Be very careful to keep the cuts for the sides straight and parallel to form each side of the body. When sawing down the second side, go very slow as you get near the top of the axle. When you get to the top of the axle, there is suddenly much less wood for the blade to cut and it can quickly saw into the top of the axle if you are pushing hard to make the cut. (This is the area where the material was earlier cut from between the axles.)

Tape the block and go back to the side view cutting. **Note:** there is no extra material at the front or back of the wagon body. This was done to keep the block size smaller and make the greater depth of cut in the front view easier to do. The first step is to cut away the little piece in front of the front axle. Put a new piece of tape over what was cut away to keep the main piece in the saw block in place. Next, cut away the little piece behind the back axle and add another small piece of tape. Cut out the triangular piece behind the sides and above the back axle next. Finally, cut across the top, down to the floor and out to the front to complete the side view sawing. **Fig. 1** shows all the items after the 3-D sawing has been completed.

Use fingernail clippers to cut the sharp ends off of a round toothpick for the wagon tongue. Drill a hole, which matches the diameter of the round toothpick, for the wagon tongue in the middle of the front axle as shown in the pattern drawing. Use an awl to make a starter hole for the drill bit. The hole needs to have a slight upward slope so the front end of the tongue can be at the middle of the bellies of the oxen and will match the harness collars. This can be seen in the photo of the finished project.

Making the canvas top

Use the pattern drawing and transfer the canvas top shape to a piece of manila file folder. Cut the canvas top out with

continued on page 38

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continued from page 37

a pair of scissors. Be careful not to crease the material while cutting. The top is glued in place on the wagon body after the body has been painted. The straight line edges will fit into the notches at the top of the sides. The top will need to be gently bent into a curve. It may help to form it around the wheel stock dowel rod or some other round object.

Check the fit of the wagon body top. There should be just a little "spring" in the curved top that will hold it in the notches at the top of the sides. If the top does not have enough curvature in it, it may crease when it is put in place. You may have to trim the front or back edge a bit to make it match the top corners at the front and back of the sides. When the top fits okay, put it aside until later when the wagon is assembled.

Cutting the wheels

The wheels are cut about 1/16" thick from the end of the 5/8" wood dowel rod. Use care in selecting the dowel rod so as to be sure it is as near round as possible. Some dowel rods are poorly made. **Fig. 3** shows a wheel being cut with a No. 5 blade on the scroll saw. A 3/4" thick stick of wood has been C-clamped to the saw table to make a fence so all the wheels are the same thickness.

Information Note: when scroll saw blades are manufactured, the teeth are "sheared" from the saw blade stock material and, as a result, they have a "burr" on one edge and not on the other. This makes the blade cut as if it had "set" in the teeth on one side but not on the other. As a result, in order to make the perpendicular cuts in the dowel rod, it must be fed into the blade at an angle (see **Fig. 3**). This angle will depend on the "burr" for the individual blade being used. For the No. 5 blade used in the setup shown in **Fig. 3**, this was about 15°.

Initially set up the fence at about this angle and about 1/16" from the blade. Be sure to keep the end of the dowel rod perpendicular to the fence while cutting. Make a trial cut; if the wheel gets thicker as the dowel is cut, the angle is too small. If the wheel gets thinner as the dowel is cut, the angle is too big. Adjust the fence until the sawing produces wheels that are uniform in thickness.

After adjustments have been made, it will help to cut about three-fourths of the way into the dowel and then rotate the dowel without moving it forward while finishing the cut in order to avoid tear-out at the end of the cut. Smooth and defuzz the edges of the wheels with an emery board before giving them a coat of polyurethane. If the sides of the wheels need sanding, slide them across a flat piece of sandpaper.

Finish work

After each item has been cut out (see **Fig. 1**), there will be some fuzz on the edges where the saw blade exited the cut at the bottom of the saw stroke. This can be removed with light sanding by using a fingernail emery board or a narrow strip of fine-grit sandpaper. The sandpaper will be easier to use if it is folded over along the length of the strip so there is grit on both sides. This also makes it stiffer and easier to use. A rotary sander can also be used if one is available. A small diameter (about 1/8" or smaller) fine stone is best for finishing.

For the oxen, use an emery board to narrow the front of the nose. Be careful with the horns and ears as they will break if not handled carefully. Round most of the details of the legs, body, neck, etc. Be very careful not to round over the middle of the flat area at the back of the body where the tail will be glued on. Slightly rounded edges and corners on animals make them appear more natural. This can also be done very easily with a rotary sander. A course stone, about 1/4" in diameter, will quickly round the corners of the body where more material is removed. Finish up with a smaller diameter fine stone. This final finishing can also be done with emery boards, strips of sandpaper, and small needle or riffler files.

After most of the rounding is done, use super glue to attach the tail in place. Be sure that the flat areas to be joined match okay. Put a small drop of super glue on the flat areas that will be joined and hold the tail in place for a moment while the glue sets up. Sometimes you need to let the super glue set a short time before you hold the two pieces together. Finish rounding the tail and body where they are joined.

Depending on how well you sawed, you may want to smooth up the floor of the wagon body with a flat riffler file or a piece of sandpaper folded around the edge of the wheel gluing fixture. There may be a slight "bump" where the front part of the floor meets the rest of the floor between the sides.

Slide the front edge of the wagon floor on a flat sheet of sandpaper to remove the remaining piece of the paper pattern that was glued to the

saw block. Remove any fuzz on the edges of the wagon body. The only finishing needed for the wagon seat is to remove the fuzz on the edges.

Painting

Give the wood parts a coat of clear polyurethane spray to seal the wood grain. The parts can be held with long sewing needles poked into the bottom of each item (see **Fig. 2**). After spraying or painting, push the head end of the needle into a piece of Styrofoam while the item dries.



Fig. 1. Saw blocks ready for cutting and the 3-D items after sawing is done.

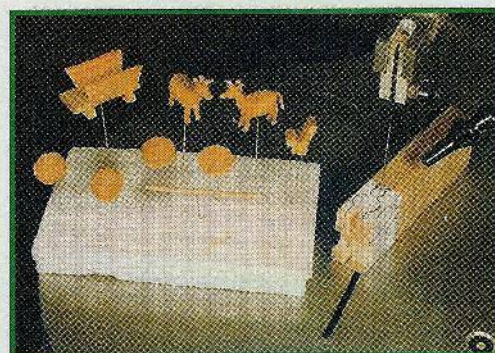


Fig. 2. Front view sawing of an ox body and 3-D items mounted on needles and Styrofoam for painting.

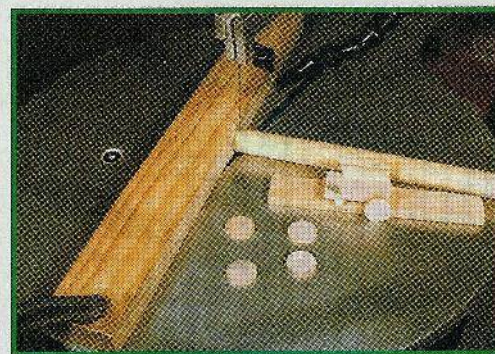


Fig. 3. Scroll saw set up for cutting wheels and the wheel gluing fixture.

Suggested paint colors for the various items are shown in the finished project photo. Other color combinations can be used as desired.

Paint the wagon body brown as the first step. You may add gold or black trim decorations, etc., to the wagon body as you like. The wagon tongue can be the same color as the wagon body.

The wheels can be left natural with the polyurethane sealer and the rim and spokes added with a permanent black fine tip pen. Make 16 spokes in the wheels. First do vertical and horizontal spokes. Keep dividing the space between the spokes to get 16. Make a black or gold center hub. Don't paint the hub on the inside of the wheels where they will be glued in place.

The oxen bodies can be reddish brown or other colors of choice. Make the tip of the tails white. Paint the feet white and when the paint is dry, make the hooves black with a fine point felt tip pen. Use the black pen to make the harness collars as seen in the finished photo. The horns can be an ivory color. Use black dots for the eyes. The seat can be a light green with black trim lines.

Assembly

The wheels can be glued to the ends of the axles easier if a gluing fixture is used. **Fig. 3** shows the wagon body sitting on the glue fixture in position for gluing wheels in place. The glue fixture is simply a 1/4" thick piece of wood that is narrower than the axle length. **Note:** the wheels are glued on after the painting is completed. Clean any paint off of the ends of the axles before gluing. Be careful to keep the ends perpendicular to the axle. Setting the bottom of the axles on the wood strip will hold them at the right height to center the wheels on the ends of the axles when they are glued. This will also insure that all four wheels sit evenly on the mounting base.

Glue the seat to the floor of the wagon body so it is just a bit behind the front end of the floor. The next step is to use a toothpick and put a tiny bit of white glue in the "notches" at the top of each side. Make sure you earlier "formed" the canvas top into a curve so you can set it in place.

This project can be assembled on a wood base or on a stiff piece of paper such as green file folder material, as seen in the photo of the finished project. Make the base from a 2" x 5" piece of green file folder material. It can have round corners or be trimmed to whatever shape looks best.

The oxen need to be positioned so the front end of the tongue is next to the harness collars. Set the pieces in place on the base and adjust their positions until they look okay. Pick up and glue one of the oxen in place first with a tiny drop of glue on the bottom of each leg. (If you use white glue, put a drop on a scrap of paper and use the end of a toothpick to transfer a very small amount to the bottom of each leg.)

Next glue the tongue into the hole in the front axle. This should be a snug fit and the tongue can be placed in an inclined position. Put a small drop of glue on the tongue where it will contact the belly of the first ox. Then put tiny drops of glue on the bottom of each wheel and set the wagon in place. Move the second ox out of the way when you put the wagon in place. Make sure the front of the wagon tongue stays in place by the harness collar on the first ox. After this, the second ox can then be glued in place. Put a tiny drop of glue on the wagon tongue where it will contact the second ox and on the bottom of each leg.



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If it looks like fun... Helen Heisey wants to try it!

by Dirk Boelman of The Art Factory

Helen Heisey started scroll sawing seven years ago at the tender young age of 80. At a time in life when many people would be thinking about slowing down a little, Helen is as active as ever. "There's so much to do," she says. "I just can't understand these senior citizens who just sit around!"

Helen first became interested in scrolling when she saw someone operating a scroll saw at a craft show. She thought it looked like something she'd like to try, so she decided to buy herself a saw. That first saw was a little 2-speed machine, and learning to use it was an adventure, to say the least. "One speed was too slow, and the other speed was too fast. The blade picked up the wood and slammed it down time after time. It

burned the wood and made quite a bad smell in the garage," she said. "One time it caught my finger and gave me a big blister!" She wished time and time again that she would have someone to talk to about her problems, but she stuck with it, and never gave up. Eventually, Helen did find some books, and she learned about using different woods and various types of blades, and things started going much better.

Nowadays, Helen saws on a RBI Hawk, which, she says, "draws me in like a magnet. My RBI and I are going steady! If someone asks me why I bought my first scroll saw, I tell them when I see something that looks like fun, I want to try it."

And it's that same energetic drive and enthusiasm about things that has led Helen to explore a multitude of hobbies and interests throughout her lifetime. She has always enjoyed an active lifestyle that has included fishing and deer hunting, snowmobiling, and even motorcycling up to this very day. This past summer she operated a backhoe all by herself, and last year went up in a high lift.

In her spare time, Helen plays the piano, organ, harmonica, Jew's harp and marimba. She has raised African Violets for 63 years, having had over 120 different varieties at one time. She also collects keychains and thimbles. Would you believe she has over a thousand thimbles... and over two thousand keychains?

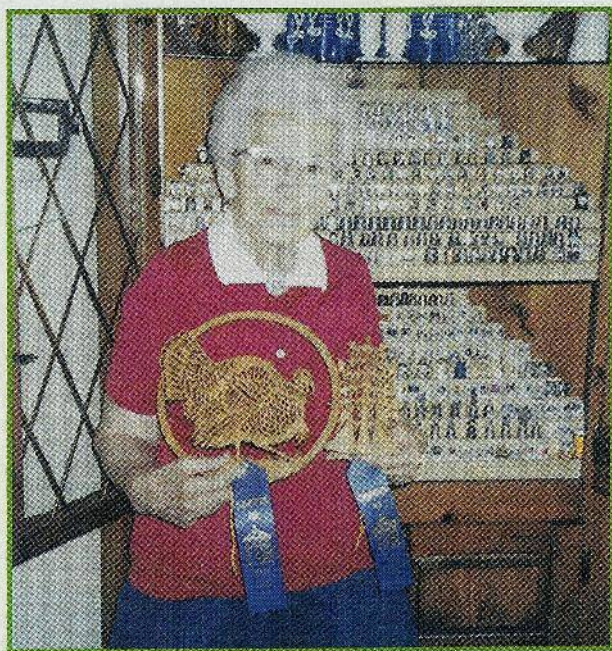
*Helen says,
"I believe life is
what you make it."*

Over the years, Helen has probably done more things than many people could do in two lifetimes. She has done leathercraft, needlework, painting, ceramics and craftwork of all kinds. Truly a gifted and talented person, she has always enjoyed doing things for others and has donated her time as well as numerous articles to various organizations, including her local nursing home and fire department.

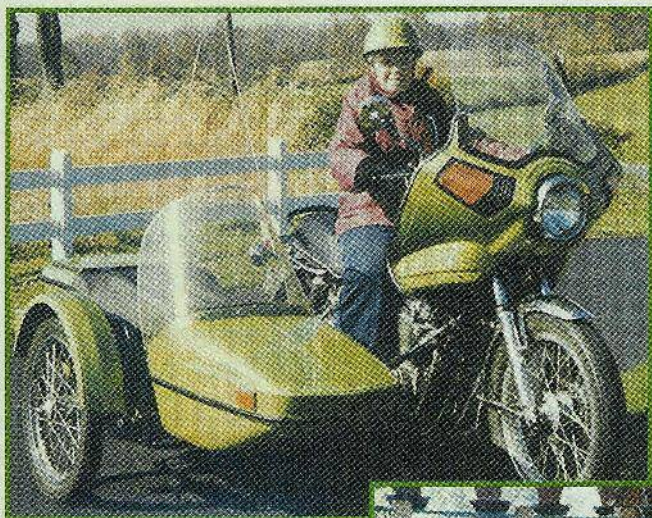
Helen says, "I believe life is what you make it." In my opinion, she has definitely made the most from her life thus far, and who knows what the future will bring. I'd be willing to bet that if it looks like fun to Helen, she's probably going to give it a try!



At age 87, Helen Heisey is an inspiration for us all. She is shown here with her RBI Hawk Scroll Saw and a few of her most recent projects.



Helen's scroll saw work exhibited at the local fair. Her two entries resulted in two blue ribbons.



Here's Helen on her motorcycle. "Cruising the backroads on a Sunday afternoon is something I really enjoy. I still ride my motorcycle every summer."

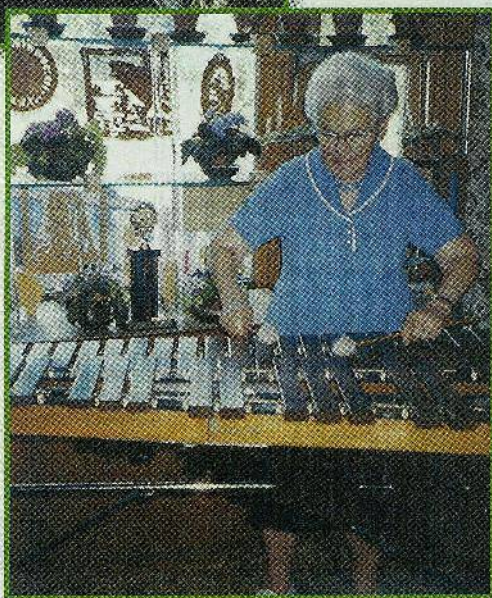
"There's so much to do," she says. "I just can't understand these senior citizens who just sit around!"

They say that all good things come in small packages. Helen Heisey is just that. I first met her at the 1999 Woodcrafting show in New Jersey. This petite little lady, with a sparkle in her eye, asked me if I'd like to see a couple pictures of her riding her hog. First she showed me a photo of her as a young child riding on the back of a big old pig, and followed it with a photo of her riding on her motorcycle, "Hog". The experience was the highlight of the show for me, and it is with great pleasure that I share her amazing story with you here.

Helen lives in southeastern Pennsylvania with her husband of 63 years, Earl Heisey, a retired elementary school supervisor. They have a son, Glenn, and a daughter, Jean.

Over the years, Helen has probably done more things than many people could do in two lifetimes.

Helen's marimba is 70 years old. She bought it during the Depression, and since she didn't have money for lessons, she taught herself to play it. She recently won first place in a talent contest, often entertains senior citizens with half-hour programs, and played it in her church service a short time ago.



Here are a few more projects Helen has made with the help of her husband, Earl. "I keep him very busy sanding, staining and finishing our work."



ASTRAL MIRROR

by Garnet Hall

Pattern Located in Full Size
Pattern Section No. 1!



INSTRUCTIONS

Transfer the pattern and cut the pieces

Start by transferring the pattern to the wood using whichever method you prefer. I still like to make a template of the pattern. I use whatever thin material is the cheapest. Lately, it's been 1/8" hardboard. Trace carefully using a sharp pencil or fine tipped pen, held at about a 45° angle to get the point right into the corner where the template meets the paper (see Fig. 1).

Carefully cut out the pieces with a good blade. I usually use a No. 7 or No. 9 P/S, or No. 7 or No. 9 DT/R blade. Experienced scrollers will have their favorite blade. You can also cut the pieces with a band saw; the best blade I have found for this is a 1/8" 14-15 TPI blade. Make sure your blade is square to the table and cut right on the line.

Fitting

Once the pieces are cut out, assemble the project and check for fit. Careful cutting will make the fitting a lot easier, but the process can still test the nerves. A light box can be useful. Mark the trouble spots and sand them off with a spindle sander. Holding two pieces together and running a blade down the joint is also a good technique, especially for beginners. It's slower but easier to get good results. Finally, don't get too fussy; if you are within a saw kerf it won't really be noticeable.

Raise and lower the pieces

Once the fit is to your standards, raise and lower any pieces the pattern or your own imagination suggests. I design my patterns so the pieces raise and lower in 1/8" increments. I just use scrap plywood for shims to raise the pieces and resaw or sand them thinner to lower them.

Safety tip

The next two steps involve a lot of sanding, which makes a lot of wood dust. It is very important to limit your exposure to this dust. A dust collector is probably the most important tool in your shop. Remember what I always say: "Woodworking is a hobby, breathing isn't." You should have your tools hooked up to a dust collector, have an air filtration device, and, as the third line of defense, a good dust mask. Declare war on wood dust, make it your enemy, track it down like the dirty dog it is. Well, enough hyperbole, you get the point.

SUPPLIES

Wood: pau amarillo—one piece 3/4" x 8" x 18"; poplar (or vera wood)—one piece 3/4" x 4" x 8"; mahogany—one piece 3/4" x 2-1/2" x 7"; light colored western red cedar—one piece 3/4" x 2" x 4"; medium colored western red cedar—one piece 3/4" x 1" x 1"; dark colored western red cedar—one piece 3/4" x 6" x 12"; spruce or pine boards—one piece 3/4" x 6" x 16"

Tools: scroll saw with assorted blades; drill press with assorted sanding drums and sanding mop; oscillating spindle sander (optional); pneumatic sander (optional); palm sander

Tracing paper

Sharp pencil or fine tipped pen

Graphite paper and stylus

Sandpaper, assorted grits

Carpenter's glue

Clamps

Hanger of choice

Mirror, 16-3/4" diameter

Finish of choice

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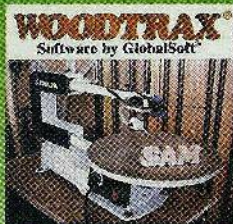
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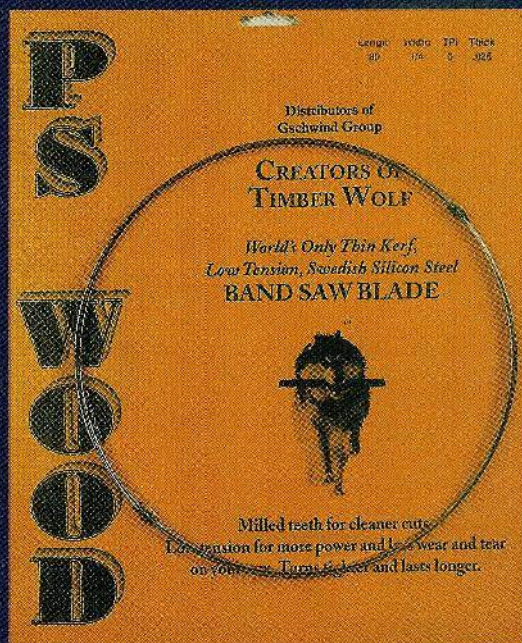
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Shaping

Dry assemble the pieces and mark reference lines for shaping. These lines will help with the fitting. Shape down to these lines with whichever tool you prefer. I like using a small pneumatic sander for most of the shaping (see Fig. 2). If I need to take a lot of material off, I also use a 6" belt sander. Shape down to the reference lines and try to achieve a smooth transition from one level to the next.

Sanding

There are not many choices when it comes to sanding. You can use either good old elbow grease and sandpaper, a contour sander like a flap sander (see Fig. 3), or a Star Twister sanding mop (see Fig. 4). I don't sand past 220-grit anymore. Why create more fine dust than you have to?

Finishing

With this project you have to apply the finish before the glue up. Use whichever finish you like. I use a natural gel finish called *Old Masters*. I like gel finishes because you don't have to worry about runs. In this project, any runs would be even more evident because of reflections in the mirror. With gel finishes you don't have to worry about runs, fish eyes, overlap marks, or sanding between coats. The gels wipe on with a cloth so there are no brushes to dry up on you because you forgot to put them in the thinner when you were done.

Backing

For this project the backing material is a mirror. Go to your local glass store and have a circle cut 16-3/4" in diameter. I had a notch cut out of the back at the top to allow room for a hanger (see Fig. 5).

Assemble the project on the mirror glass and start the glue up, one piece at a time.

The glue I have used is called *Weldbond*. It has held on every mirror project I've done so far. It may not be available in your area, so look for any glue that says it will glue glass on the label. *Weldbond* claims to be able to glue china, wood, glass, ceramics, porcelain, marble, *Corian*®, leather, metal, and fabric, to name just a few.

It's a bit tricky gluing on the glass because the pieces move around easily. I usually glue a couple outside pieces first, let the glue set, and continue on. I allow more time for drying just to be safe. Once the glue has dried, attach the hanger and it's a done deal. Gaze upon your reflection amongst the moon and stars and enjoy.

Contact Information:

If you have any questions regarding this project, feel free to contact me at 1-800-729-2473, or www.sawbird.com.

My patterns are available in the US from P.S. Wood Machines; 1-800-939-4414.



Fig. 1. Transfer the patterns to the selected stock.



Fig. 2. I like to use a pneumatic sander to shape the pieces.

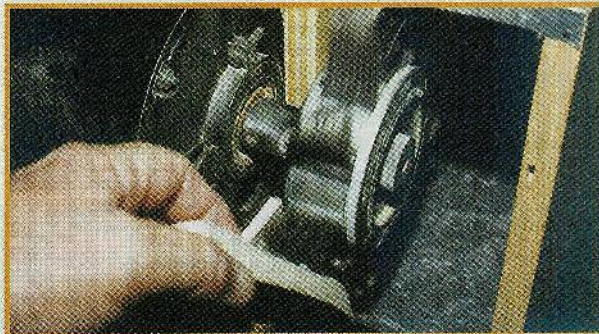


Fig. 3. A flap sander can be used to smooth the pieces, once shaped.



Fig. 4. Another good tool for sanding intarsia pieces is the Star Twister sanding mop.

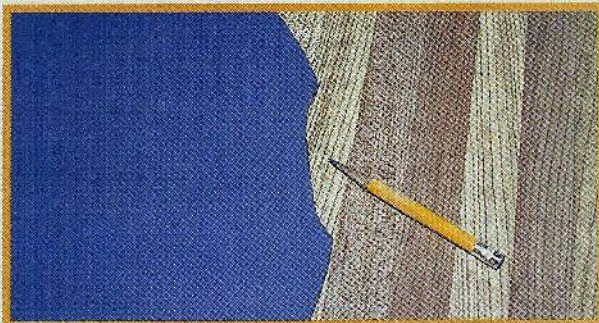


Fig. 5. When you purchase the mirror, it's a good idea to have a notch cut into the circle to allow for a hanger.

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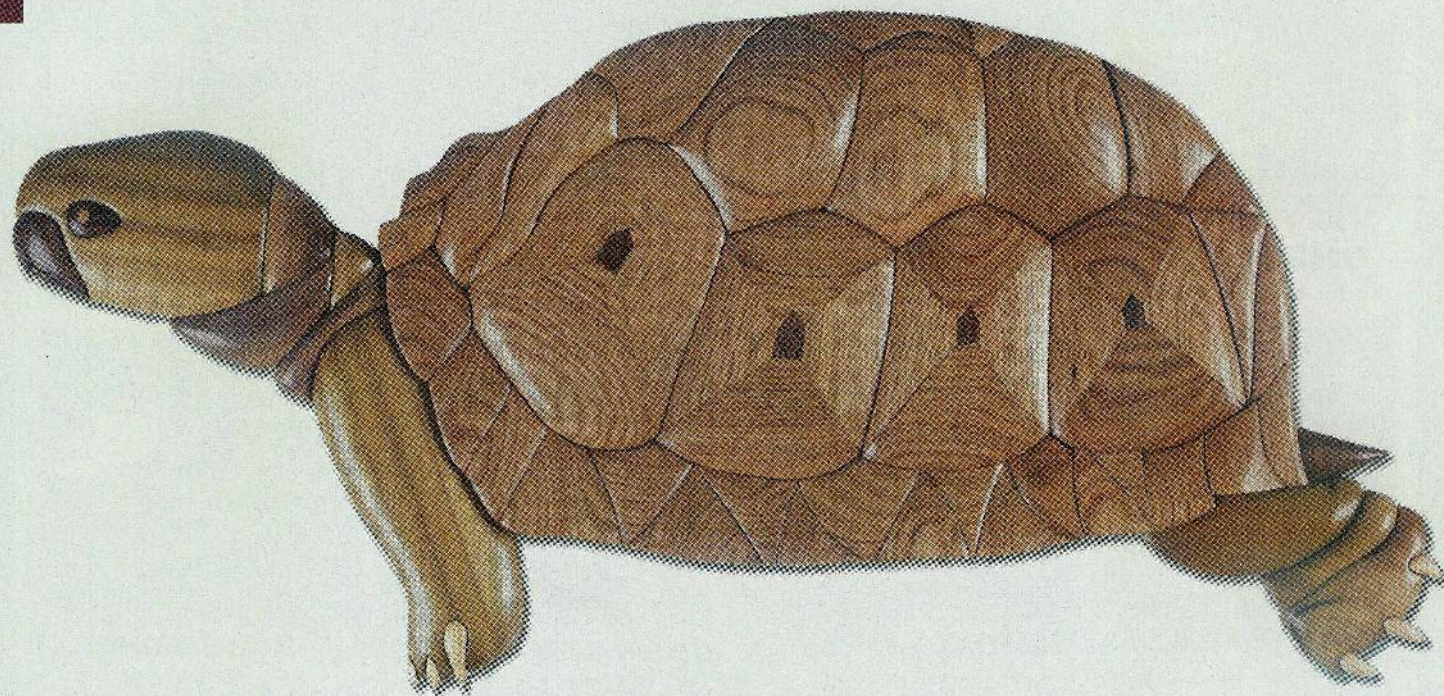
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Tortoise

By Fred Martin

Pattern Located in Full Size
Pattern Section No. 21



SUPPLIES

Wood: butternut—one piece 3/4" x 6" x 24" (for tortoise shell); yellow poplar—one piece 3/4" x 6" x 12" (for head, neck and legs); black walnut—one piece 3/4" x 2" x 4" (for eye and tail); white ash—one piece 3/4" x 4" x 4" (for claws and highlight in eye)

Tools: scroll saw with No. 5 and No. 9 blades or band saw (1/16" - 1/4" blade); oscillating spindle sander or sanding drum mounted in a drill press; bow sander*; 1/8" drill bit; pneumatic drum sander for shaping (optional)

Tracing paper

Transfer paper (carbon paper)

Draftsman pencil and leads

Accordion glue bottle and glue

Duct tape

Finish of choice

Hanger

*Available at www.intarsiabyfred.com



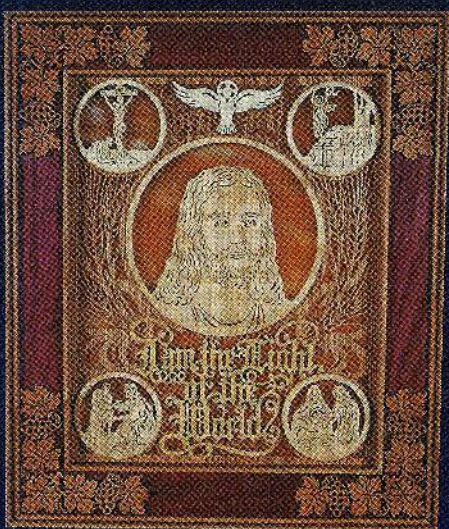
INSTRUCTIONS

Butternut was used for the shell, as the grain gives a textured look and varying shades depending on the angle at which it's viewed. The types of wood I have used are only suggestions; use what is available to you.

Step 1. Transfer the pattern onto tracing paper, making sure you include the grain directions. The tracing paper will allow you to see the grain of the wood as you mark the pieces. Mark the first piece using the traced pattern and transfer paper, then cut it to shape. Using a bow sander or just a piece of sandpaper, remove the small burrs from the back edge. This will allow the piece to sit flat. Sand the edges square using an oscillating spindle sander or a drum sander in a drill press.

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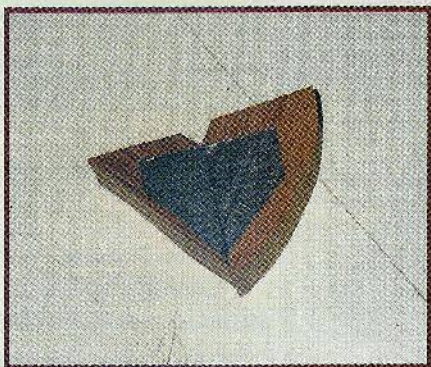


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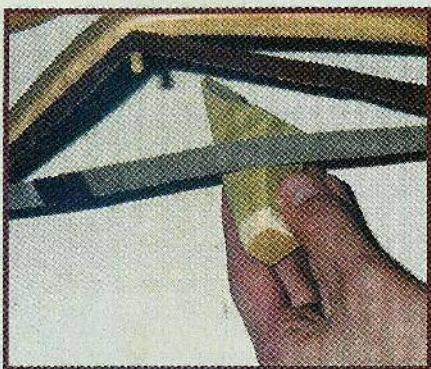
Step 2. Select the wood for the next piece, orientate the pattern, slide the transfer paper under it, and place the first piece cut into its position on top of the pattern. Mark the second piece using the pattern and the adjoining edge of the first piece as a guide. Cut, deburr, fit this piece to the first, and tape the pieces together with duct tape.



Step 3. Continue marking, cutting, fitting and taping.



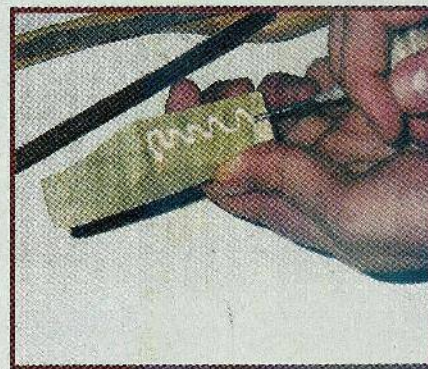
Step 4. Once all the pieces are cut using the same method, remove duct tape.



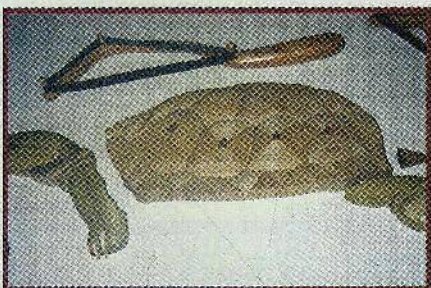
Step 5. Shape and contour each piece. I use a pneumatic drum sander to rough shape the pieces and a bow sander to finish.



Step 6. It is easier to assemble the shell in sections.



Step 7. Use an accordion glue bottle to accurately apply the glue.



Step 8. Shape and contour the entire tortoise in sections.



Step 9. Glue the head and back leg sections to the shell. Let the glue cure. If you intend to use a backer piece, now is the time to mark, cut, and glue it to your tortoise. For the backless method (which I prefer), you can sand the back with a sander and smooth the back edges with the bow sander.



Step 10. Apply the finish of choice. Attach hanger and enjoy.

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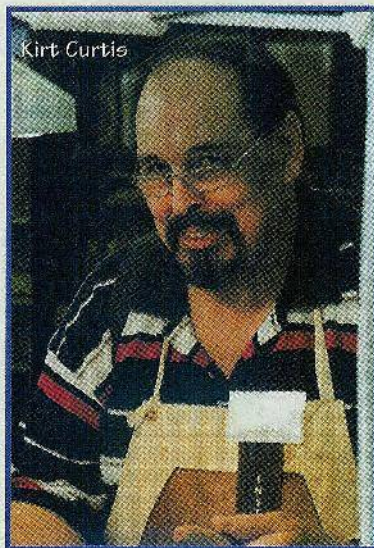
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ACR/SUB

Get To Know Kirt Curtis

Interview and photos by Marnie Whillock, Carving Magazine editor



Kirt Curtis

I had the pleasure of visiting with Kirt Curtis in his home workshop. Kirt is a highly sought-after wood carving instructor. He teaches 25-27 classes a year throughout the United States and Canada. He also sells his carvings through galleries.

Kirt was raised on a farm in Northern Maine. He has a degree in Art and worked as a commercial artist for Eastman-Kodak before becoming a full-time carver. He has always enjoyed working with wood

and began carving in 1987. He now lives in Iowa with his wife Linda, who is also a talented carver.

This article will give you a quick overview of Kirt's carving process. To see the entire project carved step-by-step, please see Issue #1 of the new Carving Magazine.

To create these masterpieces, Kirt uses a variety of tools including both power and hand carving tools, a wood burning system, and paints. He believes in doing a lot of research for authenticity. Shelves and file drawers are full of magazine articles, reference books and photos featuring numerous kinds of animals. He keeps selected photos handy during the entire project.

For information about his carvings or his classes, write to: Kirt Curtis, 140 Partridge Ave., Marion, IA 52302-5656

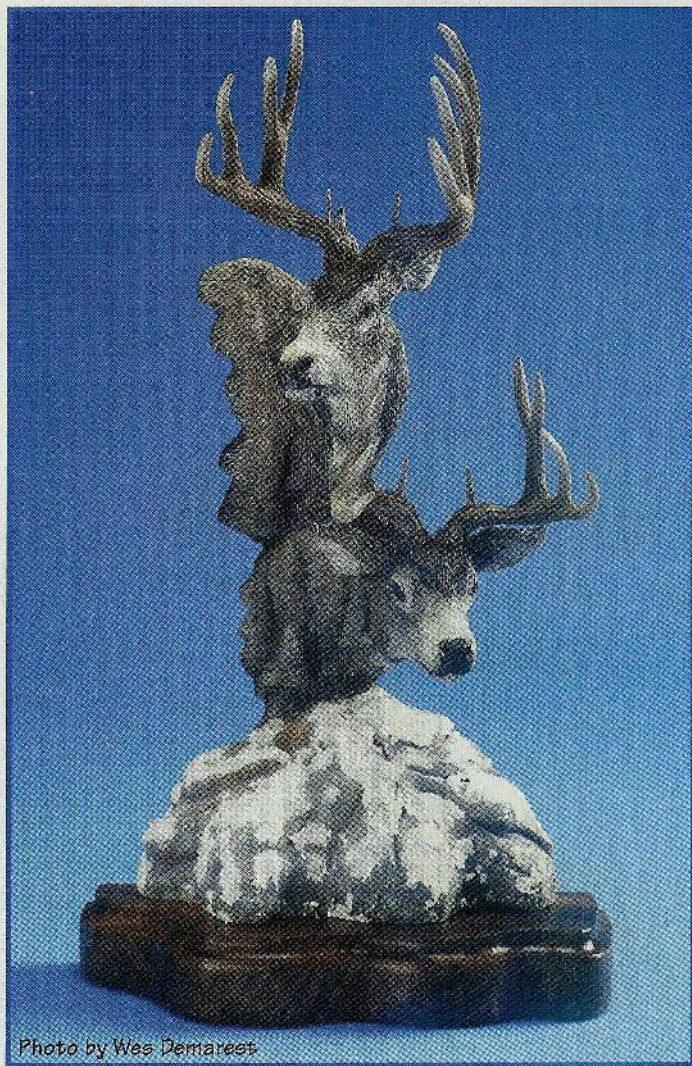


Photo by Wes Demarest

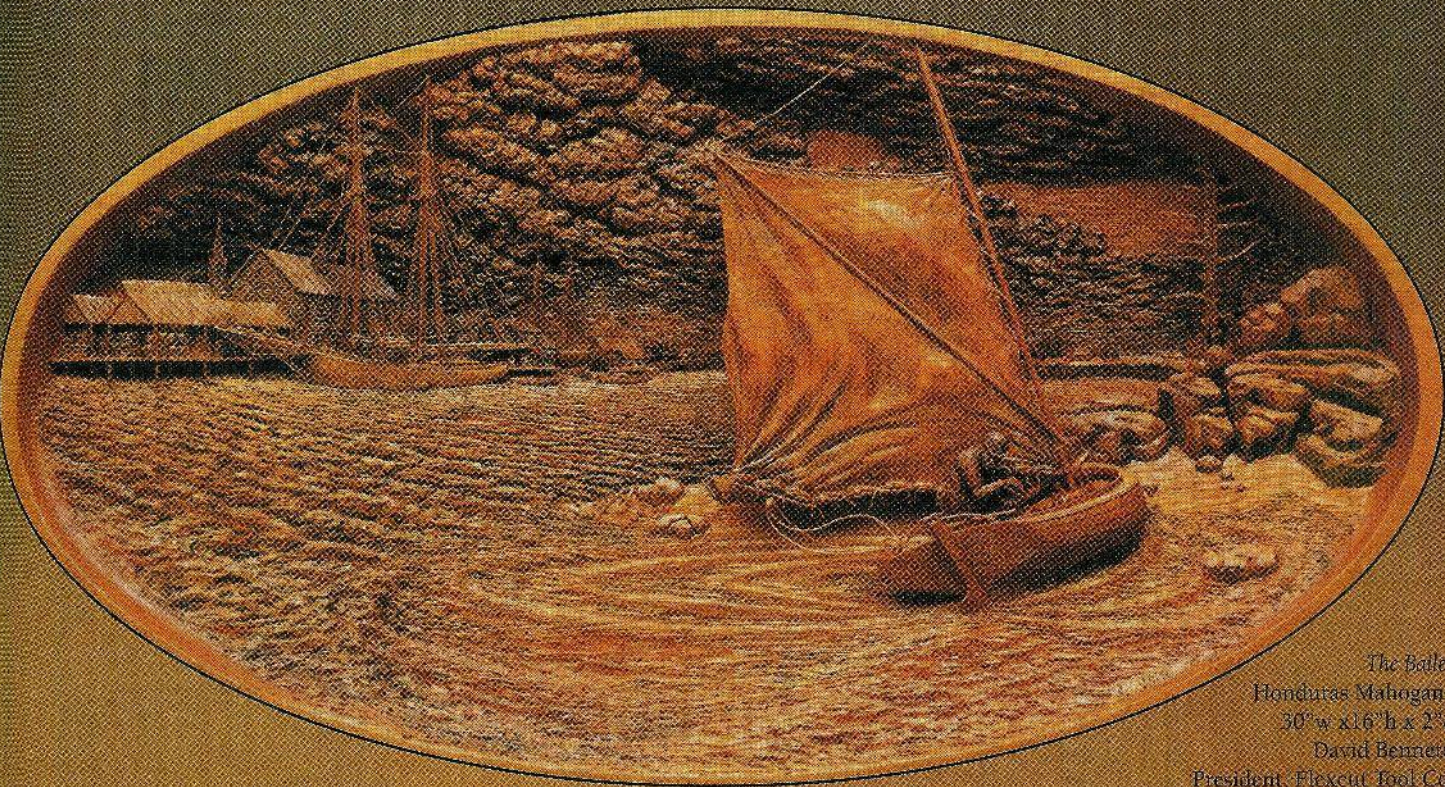


This is the model Kirt made from wood and clay. He then uses his duplicating machine to rough cut a piece of basswood to carve.



Kirt begins the carving process with his power carving tools.

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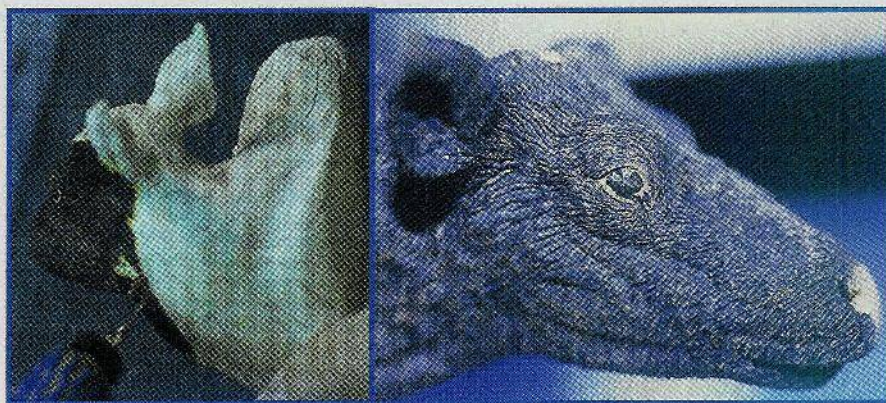
A close-up view of the power tool in action.



Kirt studies his reference photos before each step to make sure his carving is accurate. He carefully measures, marks and carves.



A close-up view of some of the detail so far.



Kirt uses a special technique for wood burning to give his carving a more realistic look. He "walks" the tip around the wood rather than stroking so the hair doesn't look combed. The mule deer starts to come alive during the burning process.



Kirt prepares for the painting process. He finds reference photographs which he will follow while painting.



Kirt paints the mule deer with acrylic paint. He paints the base color, shadows and highlights.

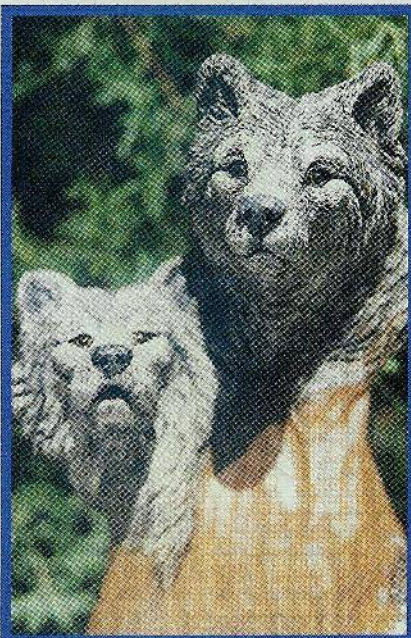


A close-up of the head after painting.

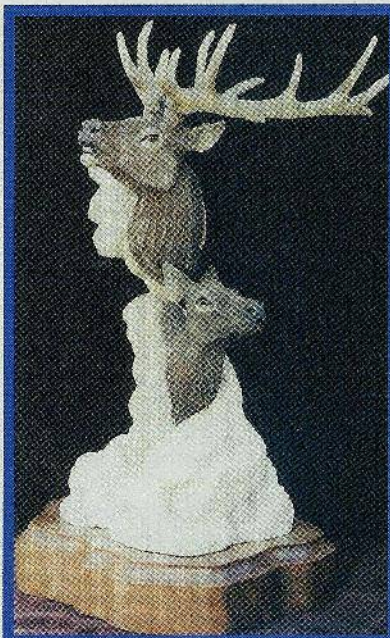


Kirt attaches the antlers with super glue. He then builds the coronet with repair putty and pokes holes to texture with a dental pick.

Kirt Curtis Photo Gallery



"Heart to Heart" – A double wolf bust.



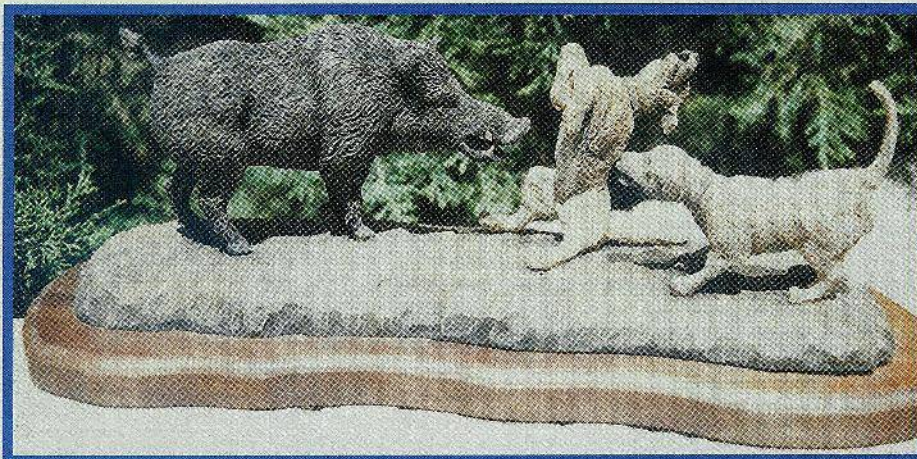
"Yellowstone Pride" – A double elk bust.



"Extinction is Forever" – Frame.



Close up view



"Hogs on Dogs" (pronounced like Häagen-Dazs ice cream).
A wild boar fighting dogs.



"Silent Intruder" – A wild bear carving.



KAL-EGG-OSCOPES

by Joseph M. Herrmann

Pattern Located in Full Size
Pattern Section No. 1!



SUPPLIES

Wood: maple burl or wood of choice—one piece
2" x 2" x 2-1/4"
Tools: band saw; chop saw; drill press with a 13/16"-
Dia. Forstner bit (#PK-1289)*; awl; adjustable hand
screw clamp; lathe with assorted chisels including
a large roughing gouge and small detail gouge,
revolving center, and a 7mm pen mandrell; calipers;
hand held electric drill with assorted power sanding
discs; buffing system; X-acto knife
#PK-1090, "Kal-egg-oscope" kit*
#PK-1288, bushings*
Assorted grits of abrasive paper
Danish oil
Deft oil
*Available from: Steebar Corp.—
www.penmakingsupplies.com; 973-383-1026

INTRODUCTION

Kaleidoscopes were invented in Scotland in the early 1800's and were introduced to this country by the middle of the 1870's. They soon became the televisions of their time. Just as modern families sit and watch their televisions, Victorian-era families sat in their parlors and viewed the ever-changing images created by the

objects reflected in the interior mirrors of their kaleidoscopes.

I have always been fascinated by kaleidoscopes and have bought several at different craft shows around the country. Some of the more complex creations I've seen feature large, elaborate stands holding massive wooden tubes that produce extremely complicated reflections as the tube is rotated. Obviously kaleidoscopes of this quality are quite expensive, some of them even selling for thousands of dollars!

The kal-egg-oscope featured here is nowhere near as complicated, is far easier to make, and would probably sell in the \$35.00 to \$50.00 range at most craft shows. The egg-shaped body holds a tube inside of which are the workings of the kaleidoscope. These parts are shown in Fig. 1.

Kaleidoscope theory

The interiors of kaleidoscopes contain 2, 3, 4, or more first surface mirrors running the full length of the tube. The angles of these mirrors determine the number of reflections viewed, which, in turn, determines the shapes of the images formed. For example, a two-mirror kaleidoscope image will appear as a cathedral window pattern.

Conventional household mirrors are usually referred to as second surface mirrors because the silver surface is applied to the rear of the glass. The resulting reflection is oftentimes distorted because it passes through the glass after being reflected off the mirrored surface. On the other hand, the reflective material on first surface mirrors is applied directly to the front surface of the glass and produces virtually no distortion, making them ideal for kaleidoscopes. Like most kaleidoscopes, our project uses three of these mirrors and will produce an image that is reflected along the full length of the mirrors.

Preparing the block

I started my project by deciding what species of wood I was going to use. While any kind of wood can be used, I decided to make mine from maple burl. Burls are usually never completely dry and, because of this, they will often shrink after they have been sanded and finished. This gives the surface of the object a leathery texture that I personally find appealing. The simple egg-shape of this project is a great platform to display the intricate figure patterns often present in burls.

Sometimes referred to as "nature's jewels," burls are the wart-like growths that appear on trees. While scientists do not know for certain what causes them to develop, a virus is strongly suspected.

I started with a block of wood measuring 2" x 2" x 2-1/4". I found the center of the block by connecting the corners and center punched this point with an awl.

I used a 13/16"-Dia. Forstner bit to drill the hole through the block. I think you get a cleaner, more accurate hole with this type of bit. Chuck the bit up in the drill press and set the depth stop so you just penetrate the bottom of the blank. Be sure to have a piece of scrap stock under the block to prevent damage to the table of the drill press and to the drill bit itself. You will also get a cleaner exit hole with virtually no chipping if you use this precaution (see Fig. 2).

I have had the misfortune of having small pen blanks catch on the bit and spin in my fingers. I didn't want to risk that happening with such a large blank, so I clamped the block in an adjustable hand screw. This provided more stability to the block and gave me a handle to better control the stock while it was being drilled. Take your time and **BE SURE** to raise the bit often to clear the chips from the hole. In the past, while teaching wood shop, I have had students who failed to do that and I've discovered that it is very difficult to remove the bit from the hole once sawdust gets packed tightly around its shaft!

Turning the blank

The bushings provided for this project allow it to be turned on a standard, 7mm pen mandrell. I like to keep my turnings as close as possible to the headstock of the lathe so I used spare bushings supplied for other pens to shim out the remainder of the mandrell. I also used another bushing as a spacer to keep it just slightly away from the headstock end of the mandrell. This gives you a little more room to maneuver the sander when the time comes (see Fig. 3).

Turn the blank to 1-3/4"-diameter. I chose a large roughing gouge to do this and I used a pair of outside calipers to continually check my progress. The blank doesn't have to be that precise, but you do want to be as accurate as possible.

Once the blank was round and to the correct diameter, I used a small detail gouge to square up the ends of the blank so they were perpendicular to the hole (see Fig. 4). Just take off enough wood to do the job; don't get carried away and substantially reduce the length of the block.

Measure over 7/8" from the headstock end of the blank and draw a line around the wood. This marks the transition point between the two large beads that together form the shape of the egg (see Fig. 5).

It helps to be able to visualize exactly what an egg looks like—even if it means going to the refrigerator and getting a real one to use as a model! Most people forget that an egg is more rounded and they actually end up turning more of a taper rather than a large, elongated bead. I have found that it is helpful to make a small template to use as a guide so you don't remove too much material from the wrong place (refer to the kal-egg-oscope template located in Full Size Pattern Section 1).

I started at the headstock end of my blank and turned the large bead that will form the bottom of the egg-shape (see Fig. 6). I just try to get close at this point because I will come back later and refine the shape. It is important to get a clean cut to minimize any sanding later on, so be sure to shear cut rather than scrape.

Turn your attention to the front bead next. Start at the tailstock end of the blank and work back toward your line. Use a sharp gouge and remove as little stock as possible in each pass until you get to the desired form. Continually check your shape as it evolves against that of the template. Remember the shape doesn't have to be perfect, just close.

Once you have finished, step back away from the lathe and look closely at the shape (see Fig. 7). Refine it as needed to get a smooth flowing curve that is free of any lumps and bumps.

Sanding and finishing

I power sanded the egg with the rigid sanding discs as well as the padded Velcro ones. A lot of sanding won't

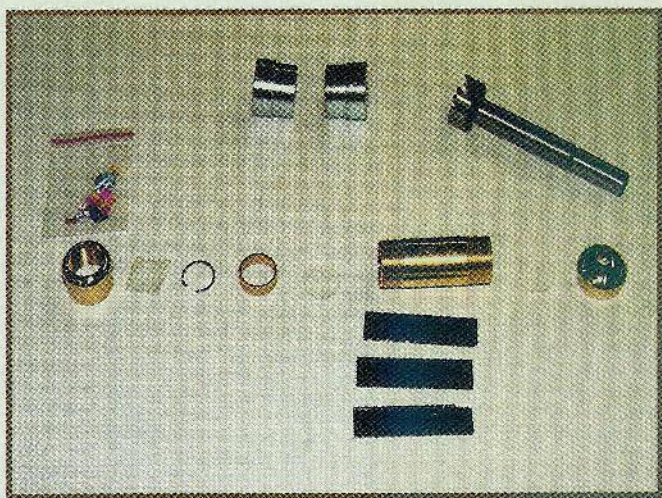


Fig. 1. As you can see here, there are quite a few parts to this kit. In addition, you will need a set of bushings and a drill bit.



Fig. 2. Drill the hole completely through the block. This is a rather large block, so I recommend that it be held in an adjustable hand screw clamp. This provides a little more stability for the block and will prevent it from spinning in case the drill bit catches.

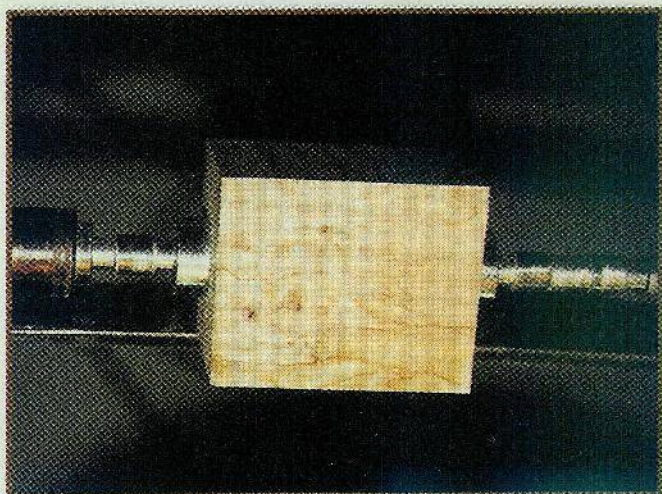


Fig. 3. The block is mounted on a standard pen mandrell for turning. Spare bushings are used to fill out the length of the mandrell.

continued on page 56

continued from page 55

be necessary at this point if you were careful and produced a clean cut. Whatever you do, however, **DON'T** change the shape of the egg.

Once I had all the scratches cleared away, I removed the blank from the mandrell. I carefully inspected the project and noticed that a few scratches were left on the ends, right up next to the bushings. I hand sanded these areas with a small piece of abrasive paper to remove any remaining flaws.

I have discovered that, a lot of times, burl wood can be very "punky" and will absorb a lot of oil. Therefore, I altered my finishing routine somewhat. I still applied a light coat of Danish oil to the blank because I like the way it uniformly darkens the wood. But then, with the lathe running, I applied a heavy coat of a lacquer-based finish (called Deft) to the wood with a cloth. I let it dry on the lathe for about 5 minutes and then I applied another heavy coat. Just be careful not to allow lumps to form on the surface of the finish; they are difficult to remove.

I allowed the finish to dry for about an hour, then I buffed the wood using the three-step buffing process that I have detailed in other articles. The first wheel is charged with a Tripoli compound. Because the Tripoli is slightly abrasive, it will remove any superficial scratches that might remain on the wood. The second wheel is charged with a White Diamond compound that removes any excess Tripoli and begins the polishing process. The third wheel is charged with Carnuba Wax, which polishes the project to a high shine.

Assembly

There are a lot of parts that must be assembled to complete the project. Take it slow and follow the manufacturer's instructions and you won't have any problems.

I started with the eyepiece first. Remove the **rounded** lens from the tape enclosure and place it into the proper position. Put the metal split ring on top of the lens and screw in the tube. Don't bottom out the tube; screw it in about halfway. Start from the smaller end of the egg and carefully insert the entire assembly into the drilled hole.

Remove the protective film from both surfaces of the two **flat** lenses. I found that the sharp point of an X-acto hobby knife worked best to lift the corner of the film without scratching the surfaces of the lenses.

Place one of these lenses into the "objective" end cap of the kit. Next, put the cardboard ring on top of the lens and fill it with the colored plastic "jewels" that are supplied. Don't pack it full; space must be left to allow the jewels to move into different positions as the kaleidoscope is rotated. You will have to experiment a little to find the right mix.

When you look at the mirrors, you will see that one surface has a dark line drawn on it. This surface must be facing to the **outside** of the tube. Carefully slide the mirrors into the tube, forming an equilateral triangle. This should be easy to do; if you have any problems, stop and rearrange the mirrors until they are inserted properly. Whatever you do, **DON'T FORCE THEM INTO POSITION!**

Screw the objective cap into position and rotate both caps, a little at a time, until they are tightened down evenly. Point the scope toward the light and rotate it to change the image. Once you are satisfied with the mix of stones, turn off the TV and pass your kal-egg-oscope around to your friends and family in your parlor. Enjoy the sights!

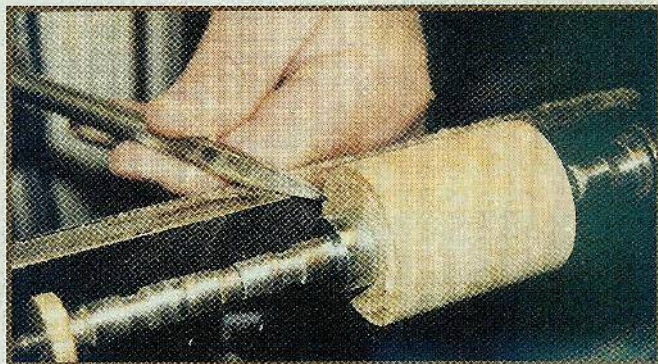


Fig. 4. Square up the ends of the block with a small detail gouge.

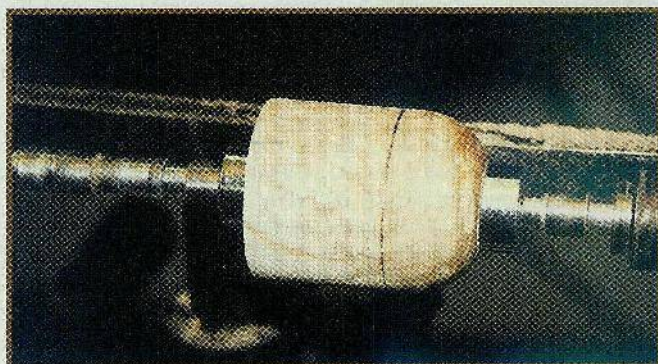


Fig. 5. Draw a line 7/8" away from the headstock end of the lathe to indicate where the beads will start.

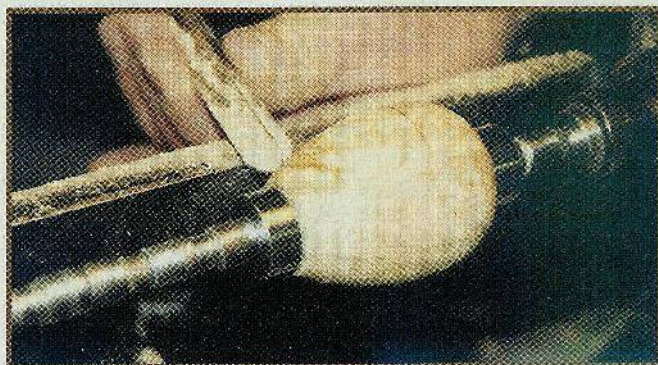


Fig. 6. Use a sharp spindle gouge to form the beads.

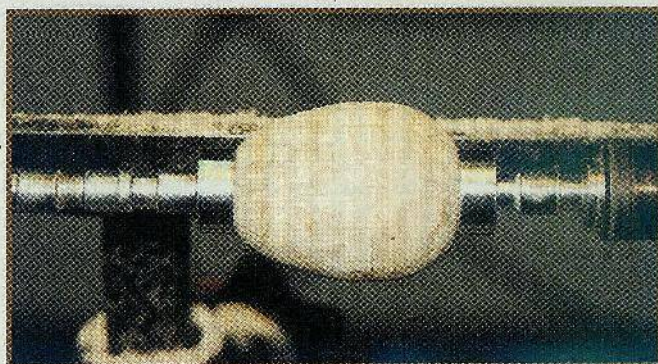
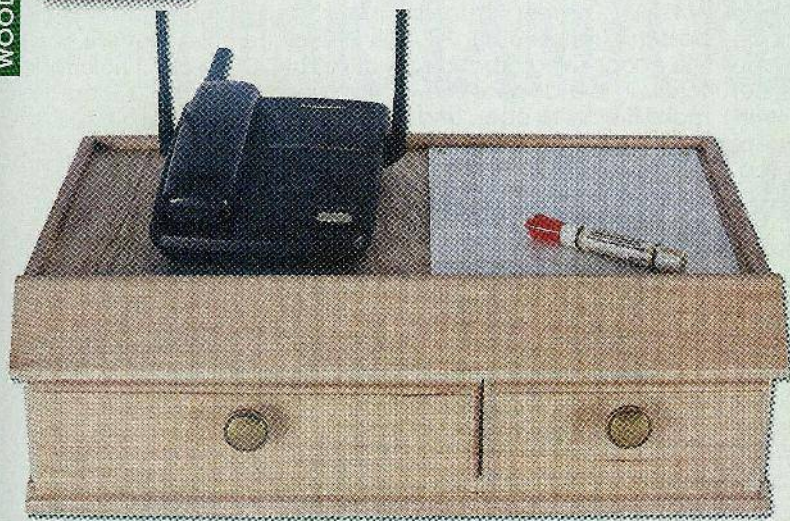


Fig. 7. The shape should resemble an egg when it is completed.



Telephone Center

by Scott Edgar



SUPPLIES

Tools: miter saw; band saw; table saw; 1/2", 3/4"-Dia. Forstner bits; 5/16" drill bit; router in table with 5/32" radius, roman ogee bit; 3/8" radius round over bit; and multi rabbeting bit; small Phillips screwdriver
 Sandpaper, assorted grits
 Wood glue
 Whiteboard 8-1/2" x 9-5/8" (available at most stationary stores)
 Five 1" x 1" hinges
 Two spring loaded catches
 Two drawer pulls of choice
 Twelve No. 6 x 1/2" wood screws
 Metal sheet rock hollow wall anchor with screw
 Three 3/4" x 18 gauge brads
 Oak edge banding (optional)

BILL OF MATERIALS

Part Description	Size in inches	Quantity
oak plywood		
A Top	1/2" x 11-1/2" x 20"	1
B Base	3/4" x 12" x 20"	1
C Cord storage divider	1/4" x 4-1/4" x 7"	1
D Sides	1/2" x 5" x 12"	2
E Center divider	1/2" x 5" x 12"	1
F Rear panel	1/4" x 11-9/16" x 4-3/4"	1
G Cord storage door	1/4" x 7" x 4-5/8"	1
oak		
H Front panel	3/4" x 3" x 20-9/16"	1
I Large front door	3/4" x 3-3/8" x 12-1/4"	1
J Small front door	3/4" x 3-3/8" x 7-5/8"	1
K Cord storage divider	1/4" x 4-1/4" x 7"	1
L Cord storage divider cleat	3/4" x 3/4" x 7"	1
M Cord storage door latch	3/4" x 1-3/8" x 2"	1
N Top end trim pieces	3/4" x 7/16" x 11-7/16"	2
O Top rear trim piece	3/4" x 7/16" x 20-9/16"	1
P Lower front trim piece	3/4" x 7/16" x 20-9/16"	1
Q Lower end trim pieces	3/4" x 7/16" x 12-5/8"	2
R Lower rear trim piece	3/4" x 7/16" x 20-9/16"	1
S Rear corner pieces	3/4" x 7/16" x 4-5/8"	2
T Tray supports	3/4" x 1/2" x 11"	2
plywood of choice		
U Tray	1/4" x 11-1/2" x 11-1/4"	1

Low enough to fit under kitchen cabinets. Holds phone book, pencils, paper, etc. Large enough to hold most phones.

Introduction

My mission, if I chose to accept it, was to provide a place for all the stuff that goes with the telephone: the phone book, scrap paper for messages, and pencil and/or pen. At my house any or all of these always seemed to be misplaced. To add an additional challenge, my wife informed me that she did not want to see the extra wires all over the kitchen counter—rolled up and held with a rubber band was not an option here. If this sounds familiar, this phone center just might be the solution to your problem. Before you start, you should gather up everything you require for the phone at your house and make sure it will fit. I believe I have covered all bases here, but if not, you may want to increase the dimensions to fit your stuff.

Cutting-Edge Tips

This project is fairly easy to build. The biggest challenge is cutting the plywood without chipping it. There are several tricks to this. The first thing to remember is, the plywood will chip when the teeth of the blade come out of the wood. When you use a table saw, cut with the good side up because any tearing will occur on the bottom side. If you want both sides cut clean, you have several options. The method I use the most is to first make a scoring cut about 1/8" deep on one side, raise the blade to the proper depth, then flip the board over, and cut all the way through. You can also place some masking tape over the line on the side where chipping will occur and then cut. The tape will keep the plywood from chipping out, but after cutting make sure you get any sticky residue off the workpiece.

Some of the plywood requires edging to give a solid wood appearance. You can buy pre-cut edge banding or you can make your own. I prefer to make my own because I can use strips ripped from the wood I am using. That way the color of all the pieces will match. Cut the pieces of oak 1/16" thick x 3/4" wide and glue them on to the front edges of the 1/2" plywood. You can cut the 3/4" thick plywood edging from a piece of 5/4" stock or cut a piece on an angle. This wider piece will give you enough for trimming to the exact width after gluing it on. When gluing, use a flat piece of scrap wood the length of the edging you are gluing to provide even pressure on the edging when you clamp it to the plywood (see Fig. 1). Let these dry overnight. When the glue has set, use a small hand plane to trim the edging almost down to the thickness of the plywood, then finish by sanding with 150-grit paper and a flat sanding block.

Cut the two side pieces and the center divider from 1/2" plywood as shown in (see Fig. 2). Use a stop when making all cuts so all three pieces will be exactly the same size. After cutting to size, set up the stop on your miter saw and cut the 45° angle on each piece (see Fig. 3). Apply edging to front edge of the sides and center divider. This will give a finished appearance when you open the doors.

Cutting Bottoms and Tops

The following steps will make it easier to construct a square case. Since you are changing back and forth between the top and the bottom when cutting, make

continued from page 57

sure to double check before you cut.

You need to set a stop to cut the 3/4" thick base and the 1/2" thick top to the same length. Cut the base 20" long x 12" wide. Cut the top 20" long x 11-1/2" wide. This 11-1/2" measurement is a little wider than necessary, but you will finish to the correct width later. Set the top aside for finishing later.

Apply edging to the front edge of the base. Then cut the 1/2" wide x 3/8" deep rabbet in each end of the base. Since you want the grooves for the center divider to be the same distance from the ends in both the base and the top, you need to set up a stop before cutting the center groove. Cut the 1/2" wide x 3/8" deep groove in the base (see Fig. 4). With the stop still in place, reset the cutting depth to 1/8" deep, and cut the corresponding groove in the 1/2" plywood top. Finally, cut the 1/2" wide x 1/8" deep rabbet in each end of the top for the sides.

Before you cut the 1/2" plywood top to the right width, fit it to the sides and center divider. First cut the front edge to 45°, to match the bevel. With the rabbets and groove cut into the top, you can dry fit the top to the sides. Make sure the front edge is flush with the front edge of the sides, mark and cut the top to 11-1/8" wide, so it is flush with the rear edge of the sides and center divider.

These rabbets in the base and the top are for the back panels to fit into. Cut the 1/4" wide x 1/4" deep rabbet on the back edge of the base. Cut the 1/4" wide x 1/8" deep rabbet in the rear edge of the top.

Eliminating the mess of cords and phone books

The cord storage is nothing more than a divider that will keep the cords in one area as you push them into the case.

Cut a piece of wood 3/4" x 3/4" x 7" long for the storage divider cleat. Cut a piece of 1/4" plywood 7" wide x 4-1/4" high for the storage divider. Glue and clamp the storage divider to the divider cleat. Set this assembled piece aside for later.

The cutout on the front edge of your tray does not have to match mine exactly. However, it should be cut in far enough to allow you to easily grip the phone book and pull it out. Cut two pieces of 1/2" x 3/4" x 11" long for the supports. The 1/4" plywood tray is cut 11-1/4" long x 11-1/2" wide. Use a jig saw, coping saw or scroll saw to cut the pattern into the front edge of the tray.

Putting It All Together

Referring to Fig. 5, start assembly by gluing and clamping the center divider into the center groove. Make sure the front edge is flush with the front edge of the base and is square with the base. The shelf supports, the shelf, and cord storage divider can also be glued in at this time. To provide clearance for the hinges, make sure both the shelf supports are set back 1/2" from the front edge of the base. The right support should be glued to the base and center divider. The left support can be glued to the base flush with the inside edge of the rabbet. Do not get glue into the rabbet and make sure the support does not hang over into the rabbet. After the glue for the supports has set, glue in tray, with the front of the tray flush with the front of the supports. The cord storage divider should be glued in 1-1/2" from the back edge of the base.

Once the glue has set, there are a couple of things you need to do before putting on the top. You should put a finish, of varnish or shellac, on all the inner pieces, such as the shelf, top side of the base, and sides of the center divider. Also, install the hinges to the base for the two front doors (see Fig. 6).

Dry fit everything before gluing the top and ends on. The end should fit flush with the front and rear edges of the base, and the top should fit flush with the front edge.

Glue the sides into the rabbets on the top and the base. Make sure the front edges of the sides fit flush with the front

edge of the base and the bevel on the top fits the bevel on the front of the sides and center divider.

For the rear panel, cut a piece of 1/4" plywood 4-3/4" wide x 11-9/16" long and glue into the rabbets previously cut in the top and base.

Cut a piece of 1/4" plywood 7" long x 4-3/4" wide for the rear door of the cord storage area. After cutting to size, use a 3/4"-Dia. Forstner bit to drill the access holes for the cords to pass through (see Fig. 7). After drilling the holes, cut the slots to the edges using a band saw or jig saw. Drill a 5/32" hole for the screw in the door as shown. The door can have a loose fit to make it easy to open and close.



Fig. 1. Glue the edging in place where the plywood will be exposed.

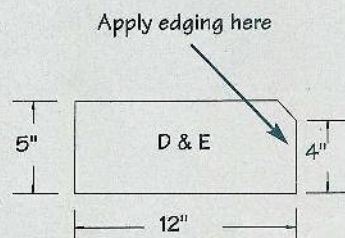


Fig. 2. Cut the two side pieces and center divider to shape.



Fig. 3. Cut the 45° angle on the side pieces and center divider with a power miter saw.

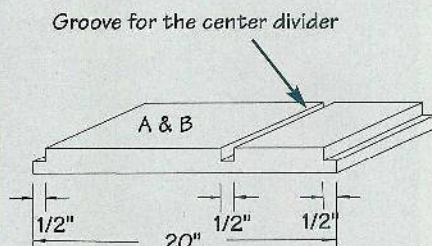


Fig. 4. Cut the groove for the center divider and the rabbets for the side pieces in both the top and base pieces.

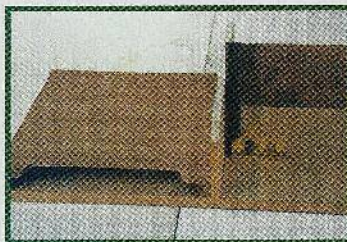


Fig. 5. Begin assembly.

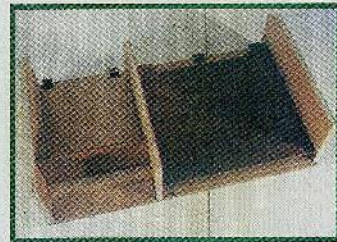


Fig. 6. Apply finish to the inside of the telephone center before attaching the top and install the hinges.

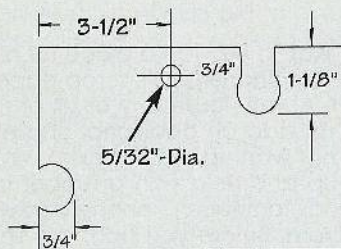


Fig. 7. Cut the rear door to shape.

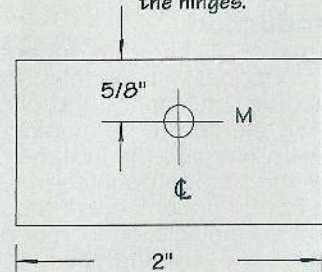


Fig. 8. Make the board to receive the latch for the rear door.

The latch is a wall board anchor used for sheet rock. Cut a piece of $3/4"$ x $2"$ long x $1-1/2"$ wide to hold the anchor (see Fig. 8). Use a $1/2"$ -Dia. Forstner bit to drill a flat bottom hole about $1/16"$ deep, and then follow with a $5/16"$ hole all the way through for the anchor. The shallow $1/2"$ hole is to allow the anchor to fit flush with the wood.

The front doors are from one piece of $3/4"$ stock 3- $3/8"$ wide x 20" long. When you cut the piece, draw and cut on a line $7-3/4"$ from one end to make the small and large doors. After cutting, use a small roman ogee router bit in your router to shape all four edges of both drawers. After cutting and routing, sand with 180 and 220-grit sandpaper. For the decorative curves smooth with No. 0000 steel wool. Install the knobs and mount the doors, being careful to keep them straight and flush with the outer sides of the case. Install the door catches using eight No. 6 x $1/2"$ wood screws (see Fig. 9).

The end view (see Fig. 10) shows the finished dimensions of the trim. Try to cut the trim from long pieces of stock, then cut to the correct length. When cutting and routing use feather boards to keep the cuts as straight and even as possible. Install the front piece of trim with the $7/16"$ edge to the front. This provides you extra clearance for the doors to open. Install the remainder of the trim, with the $3/4"$ edge on the sides. Make an additional 45° cut where the lower side trim meets the front trim (see Fig. 11). A band saw works well for these angle cuts. Cut and fit the sides to the front trim first, then cut the side trim to length with 45° angle cuts at the rear (see Fig. 12). Cut and install the lower rear trim. The top side trim needs to fit flush with the 45° angle on the front edge of the sides. Notch the top rear trim to allow the cord storage door to open (see Fig. 13). Cut to length with 45° cuts and glue in place. After the top and bottom trim are glued in place, cut and install the rear corner trim.

For the front panel, start with a 20" long x $3-1/8"$ wide piece of oak and cut as shown (see Fig. 14). Cut the 45° bevel on the lower edge and with a $3/8"$ radius round over the top edge. With your table saw still set to 45° , trim the width down to $2-3/4"$ (see Fig. 15).

To glue the front panel on, put some points in to keep the panel in place while clamping. First mark the underside of the panel to indicate where the edges of the side and center divider will be. Then drive a $3/4"$ x 18 gauge brad into the panel, leaving $1/4"$. Cut the head of the brad off leaving about an $1/8"$ sticking out. (Cutting the brad with cutters [see Fig. 16] leaves a sharp point that will easily drive into the soft plywood edges, keeping the panel from slipping.) Apply the glue and tap the panel in place. Now you can clamp without the panel slipping (see Fig. 17).

Sand with 220-grit sandpaper, then rub with #0000 steel wool. Stain and varnish. For varnish, I used a polyurethane varnish thinned about 30% with thinner, and applied with a soft cotton cloth. You will need to put on at least four coats, rubbing out with #0000 steel wool after the second coat.

Attach the white board. The size and location of the white board will depend on the size of your phone. Cut and sand the rough edges of the board before attaching with No. 6 x $1/2"$ wood screws.

My wife really enjoys having her phone center where she can store everything neatly and in one place. But now she says that her mission is to train me and our 14 year old son to put the phone book, scrap paper for messages, and pencil and/or pen back when we finish using them. She has high hopes for success with our son, but claims that after 20 years of marriage, my training is probably an impossible mission for her.

Scott Edgar is the owner of SQUARE 1 Woodworking Plans Inc., a company that offers woodworking plans. For comments on this project or to view other projects you may contact him through his web site at www.square1wp.com.



Fig. 9. Hinge the doors and install the catches.

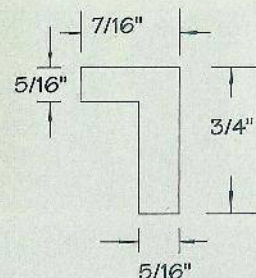


Fig. 10. End view of trim.

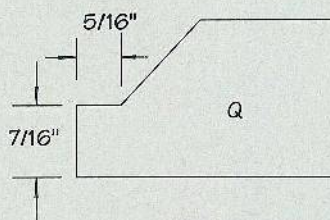


Fig. 11. Make an additional 45° cut where the lower side trim meets the front trim.

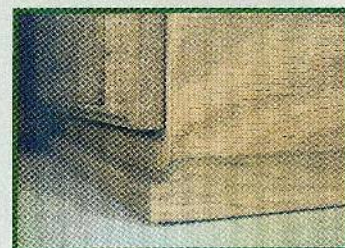


Fig. 12. Fit the lower end trim pieces to the front before mitering them to length.

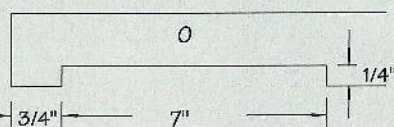


Fig. 13. Notch the top rear trim piece to receive the cord storage door.

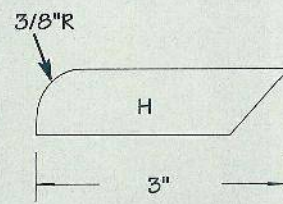


Fig. 14. Begin making the front panel.

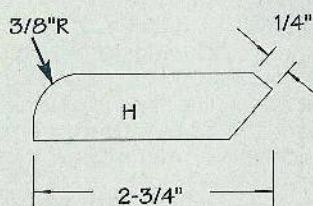


Fig. 15. Trim the width of the front panel down to $2-3/4"$ with your table saw.



Fig. 16. Drive brads partially into the surface of the front piece which will join with the case and cut off the heads. The nubs left proud will engage with the case and prevent the piece from slipping while clamping.

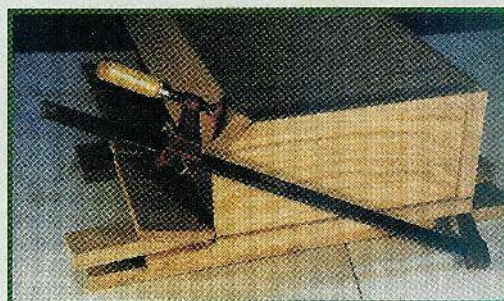


Fig. 17. Glue and clamp the front panel in place.



Patterns Located in Full Size
Pattern Section No. 1!

Fireman Birdhouse

by Dan Fenelon of Fenelon Designs and sawn by John Polhemus of JP Woodworks



SUPPLIES

Wood: plywood or wood of choice—one piece $3/4"$ x $4"$ x $4"$ (for bottom); two pieces $3/4"$ x $4"$ x $10-3/4"$ (for the sides); two pieces $3/4"$ x $5-1/2"$ x $13-3/4"$ (for the front/back); one piece $3/4"$ x $6-1/2"$ x $5"$ (for the small roof piece); one piece $3/4"$ x $6-1/2"$ x $5-3/4"$ (for the large roof piece); one piece $1/4"$ x $4-1/2"$ x $5-3/4"$ (for the hydrant), one piece $1/4"$ x $3-1/4"$ x $6-1/2"$ (for the hose), one piece $1/4"$ x $6"$ x $13-1/4"$ (for the fireman body); one piece $1/4"$ x $5-3/4"$ (for the coat); one piece $1/4"$ x $4"$ x $7"$ for the fireman head; one piece $1/4"$ x $3-7/8"$ x $3-3/4"$ (for the facial details and eyebrows); one piece $1/4"$ x $2"$ x $8-3/4"$ (for the

ladder); one piece $1/4"$ x $1-3/4"$ x $1-3/4"$ (for the hydrant coupling); two pieces $1/4"$ x $1"$ x $1-1/4"$ (for the hands)

Tools: table saw or similar; scroll saw with assorted blades; drill press with bits, including $7/16"$ -Dia. twist and $1-1/8"$ -Dia., $1-1/4"$ -Dia., and $1-3/8"$ -Dia. Forstner bits, biscuit joiner with biscuits (optional)

Sandpaper, assorted grits

Acrylic paints—Black, Blue, Brown, Flesh (color of choice), Gray,

Green, Red, Silver, White, Yellow

Sealer/primer of choice

Cyanoacrylate glue (instant set type)

Spar Urethane

INSTRUCTIONS

Start by cutting and sanding all the pieces (see Fig. 1). The pieces which require shaping cuts with a scroll saw are found in Full Size Pattern Section 1; cut the remaining pieces with the table saw (or similar). I chose to miter the ends of the sides on my birdhouse to give more glue surface when attaching the roof pieces instead of the square end cut shown in the **Birdhouse Assembly** and **Exploded View Drawing**. If you prefer to do that also, make the side pieces about two inches longer than the pattern calls for and align the mitered edge with the roof line of the front/back pieces. Mark the bottom of the side pieces using the bottom edge of the front and back pieces and cut to match. Referring to the **Birdhouse Assembly Drawing**, assemble the birdhouse. The birdhouse pictured here was put together with biscuits and glue (see Fig. 2), but dowels, nails or screws would work just as well.

Apply a coat of sealer/primer to all the pieces (see Fig. 3). Paint the birdhouse assembly green and the roof brown (see Fig. 4). Referring to the main photograph for the appropriate color placement, paint the overlay pieces (see Fig. 5).

Assemble the overlay pieces and glue them in place on the birdhouse. Apply spar urethane to the overlays and the inside and outside of the house. The box bottom can be permanently installed or have screws through the sides so it can be pulled out to clean inside the box if needed.



Fig. 1. Size the pieces, cut them to shape and gather them together.

Fig. 2. Join the sides with the front/back pieces. Biscuits were used on the birdhouse pictured.

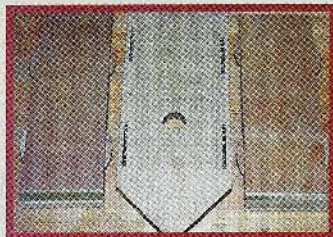
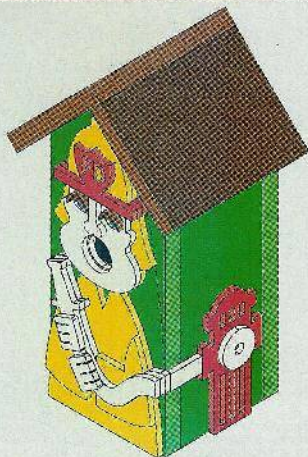


Fig. 3. Apply a coat of sealer/primer to the various components.

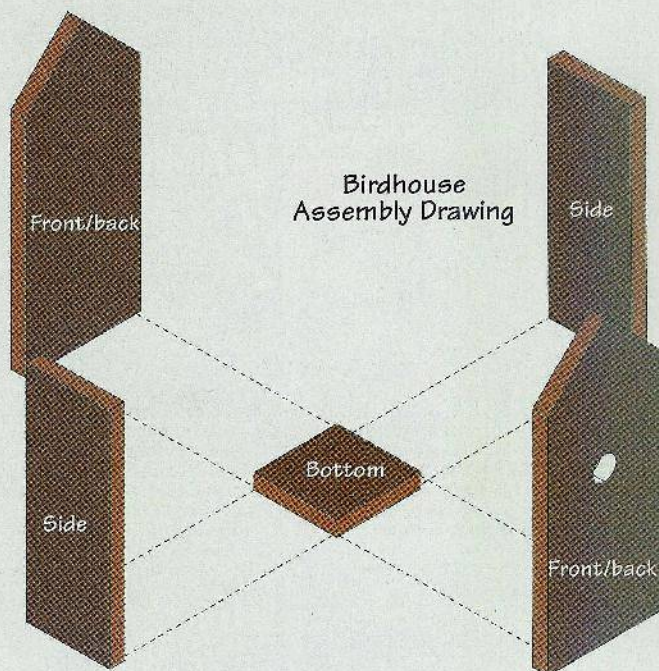
Fig. 4. Paint the birdhouse assembly.



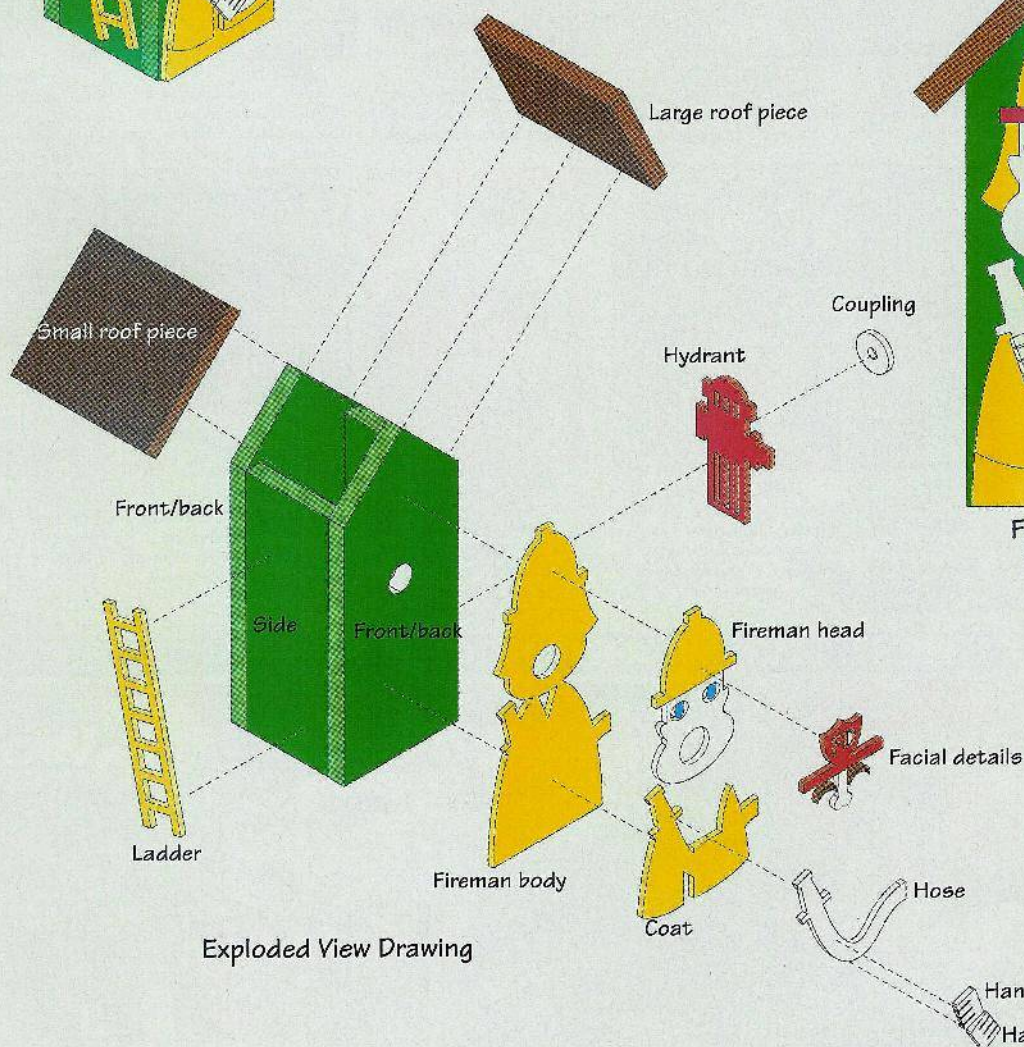
Fig. 5. Paint the overlay pieces.



Painting reference



Birdhouse
Assembly Drawing



Exploded View Drawing



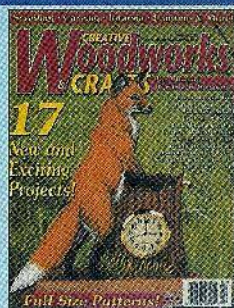
Front View
Drawing

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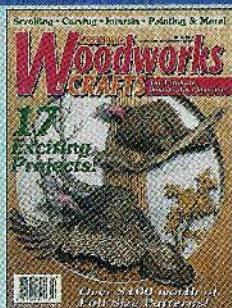
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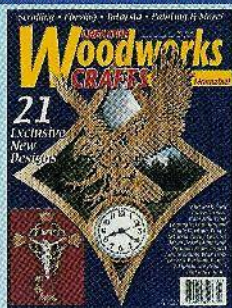
JANUARY 2001

Bull Rider Lightbox, Fish Clock, Musician's Shelf, "Sailing The Globe" Silhouette, Spider Clock, Two Wilckens Mini Clocks, and more!



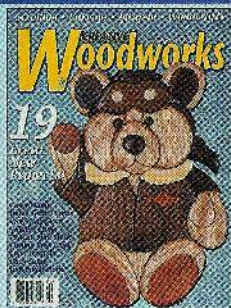
MARCH 2001

Wild Turkeys, Fretwork Music Box, Nascar Plaque, 3-Dragons, Nightlight, Fretwork Cross Candleholder, Grizzly Bear, Hawk, Sharpening Carving Tools, and much more!



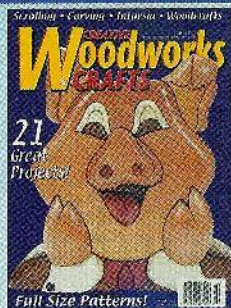
APRIL 2001

Patriotic Plaque, Breadboard, K-9 Rookie Desk Set, Ram Mini Clock, Fretwork Shelf, Two Lighthouses and more!



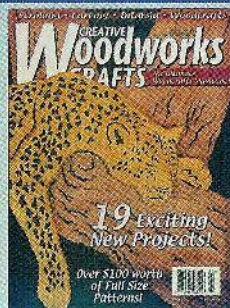
JUNE 2001

Loons Intarsia, Wolf Clock, Puzzle, Five Robins Clock, Horse Plaque, and more!



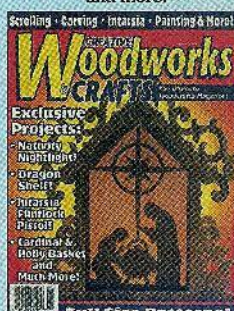
AUGUST 2001

NASCAR Shelf, Pumpkin Puzzle, Five Robins Clock, Mission Bench, Victorian Sled, and more!



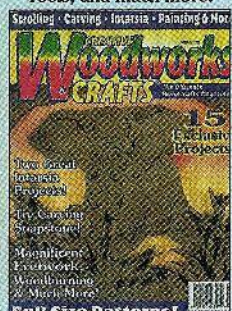
OCTOBER 2001

Angelfish Intarsia, Wedding Ensemble, Carved Pup, Bluegill with Lily Pad, Sweetheart Box, and more!



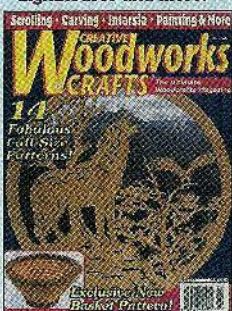
JANUARY 1999

Dragon Shelf, Slotted Ornaments, British Naval Flintlock (Intarsia), & more!



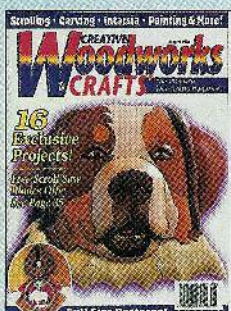
MARCH 1999

King Penguins (Intarsia), Lion Inlay, Queen Anne Fretwork Frame, and more!



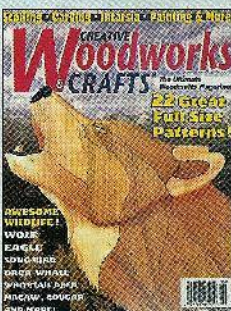
APRIL 1999

Orca Ornament, New Basket Design, Bear, Piano Music Box, and more!



AUGUST 1999

Dog Intarsia, Pheasant Collector's Plate, Love Birds Clock, and more!



OCTOBER 1999

Wolf Intarsia, Eagle Dreamcatcher, Cougar, Whitetail Buck, "Bless Our Home" Silho, and more!



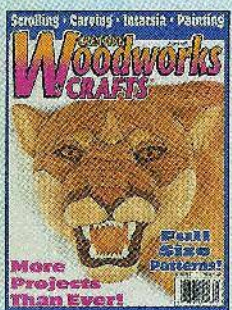
NOVEMBER 1999

Two Lighthouse Mini Clocks, Dragon, Butterfly Band Saw Box, Mini Grandmother Clock, and more!



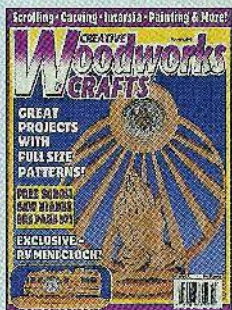
JUNE 1997

Tiger and Eagle Mini Clocks, Midnight Snacker (Raccoon) Intarsia, Fretwork Eagle, Carving a Frame, Christopher Mantel Clock, and more!



AUGUST 1997

Intarsia Cougar, Cardinal Mini Clock, English Pipe Box, article on Marvin Kaisersatt: "Carver of the People", Two Wolf Scroll Saw Projects, and more!



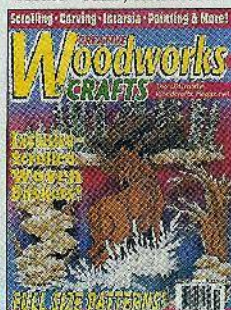
OCTOBER 1997

Praying Hands and RV Mini Clocks, Dinosaurs 4-Pack Toy, Santa Fe Pueblo, Fabulous Fretwork Clocks, and more!



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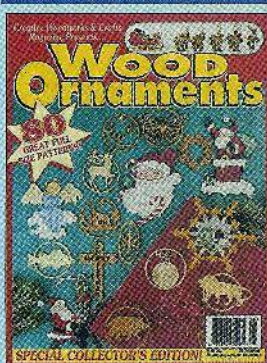
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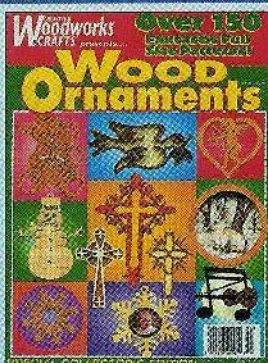
MARCH 1998

Fretwork Trivet, Scrolled Phone & Accessory Stand, Northwoods Nightlight, and more!

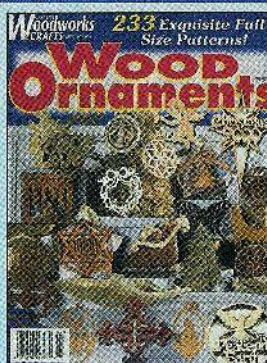
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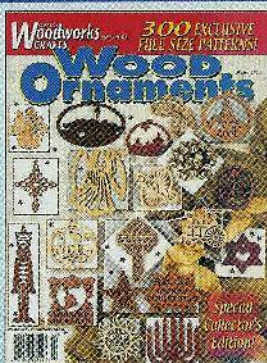
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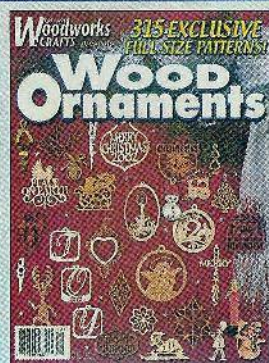
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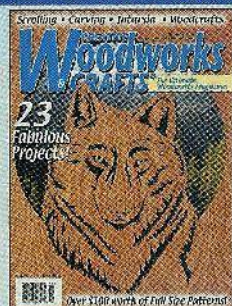
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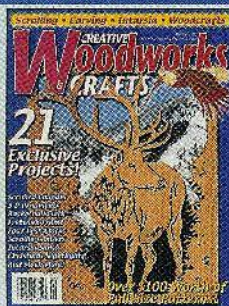
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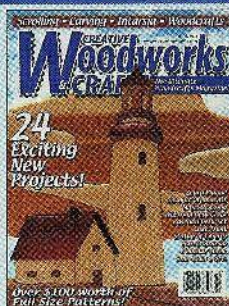
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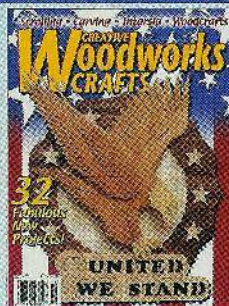
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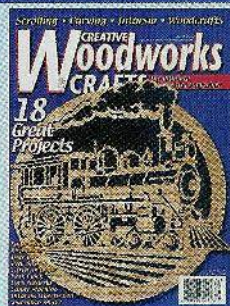
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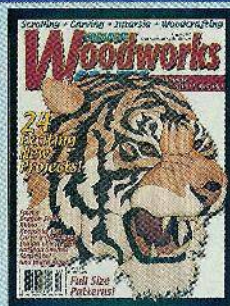
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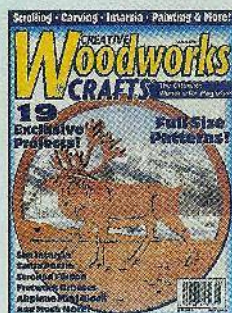
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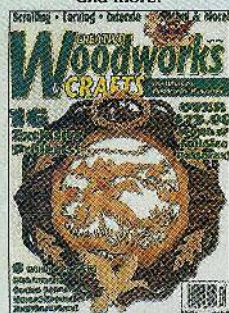
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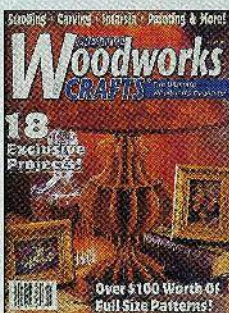
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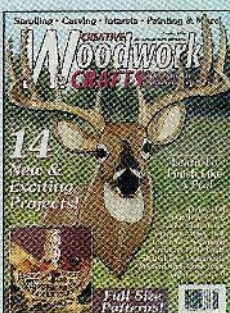
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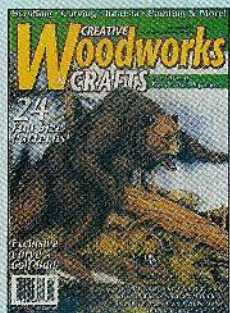
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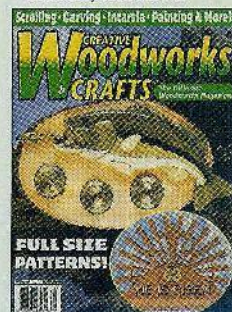
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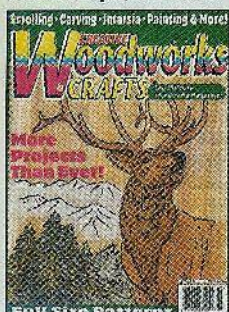
OCTOBER 2000
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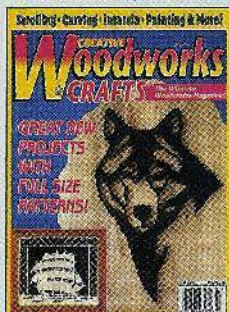
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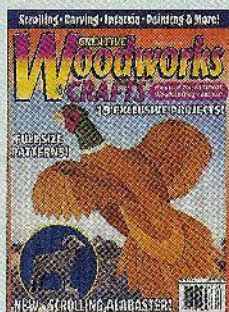
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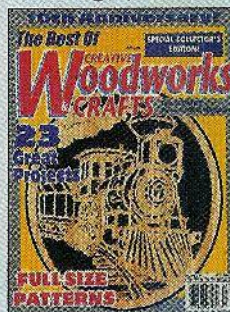
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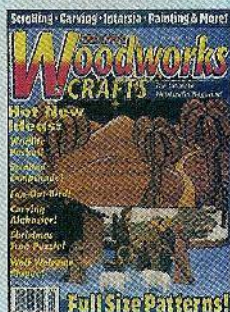
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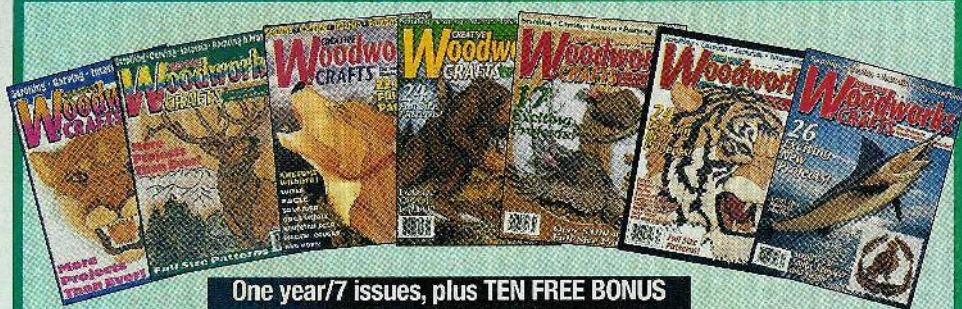
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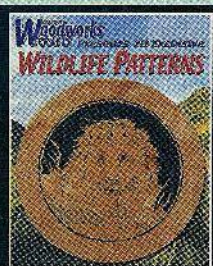
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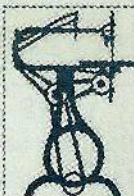
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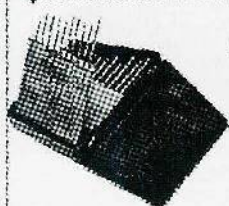
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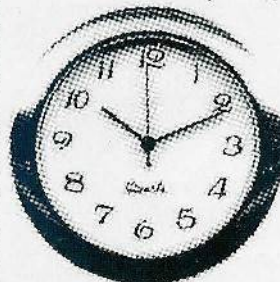
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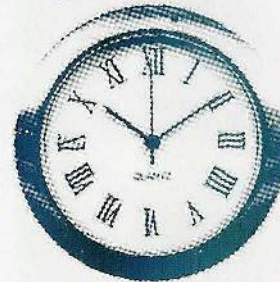
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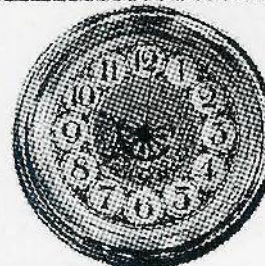


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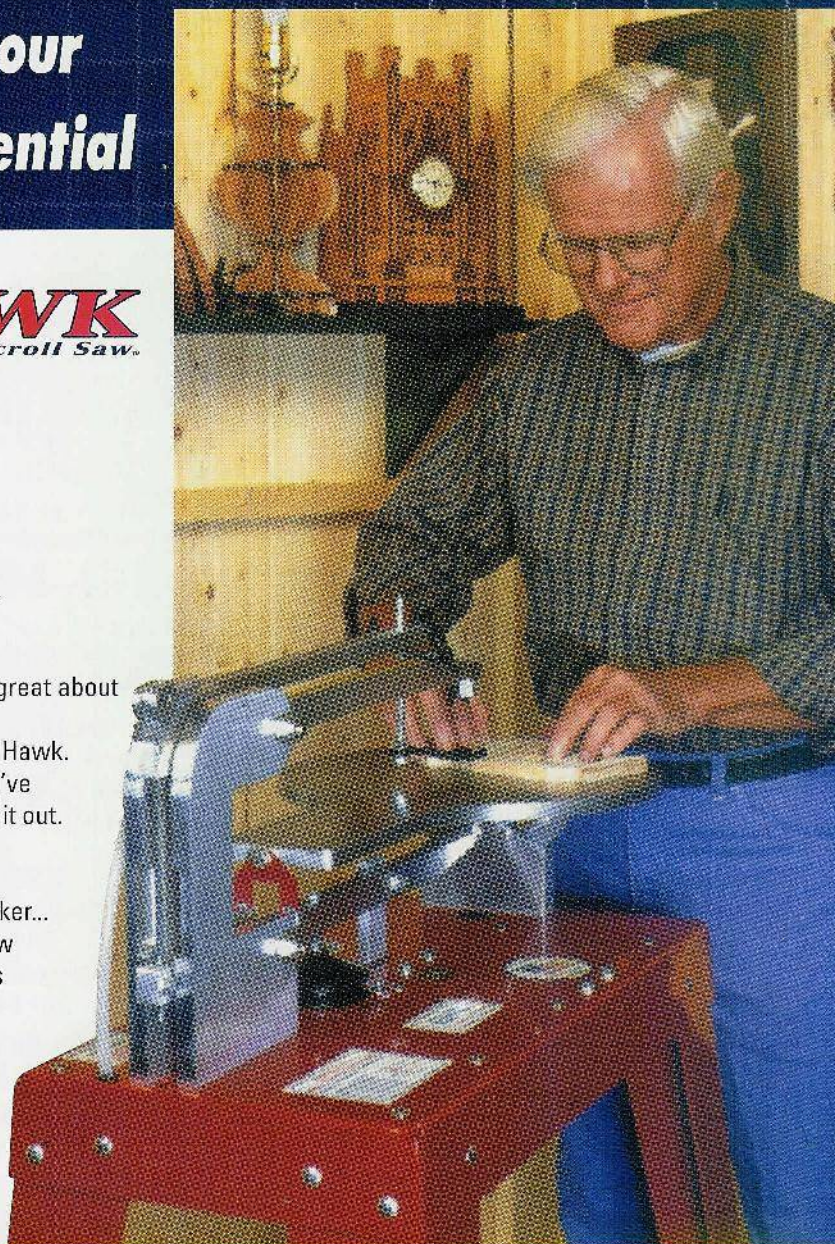


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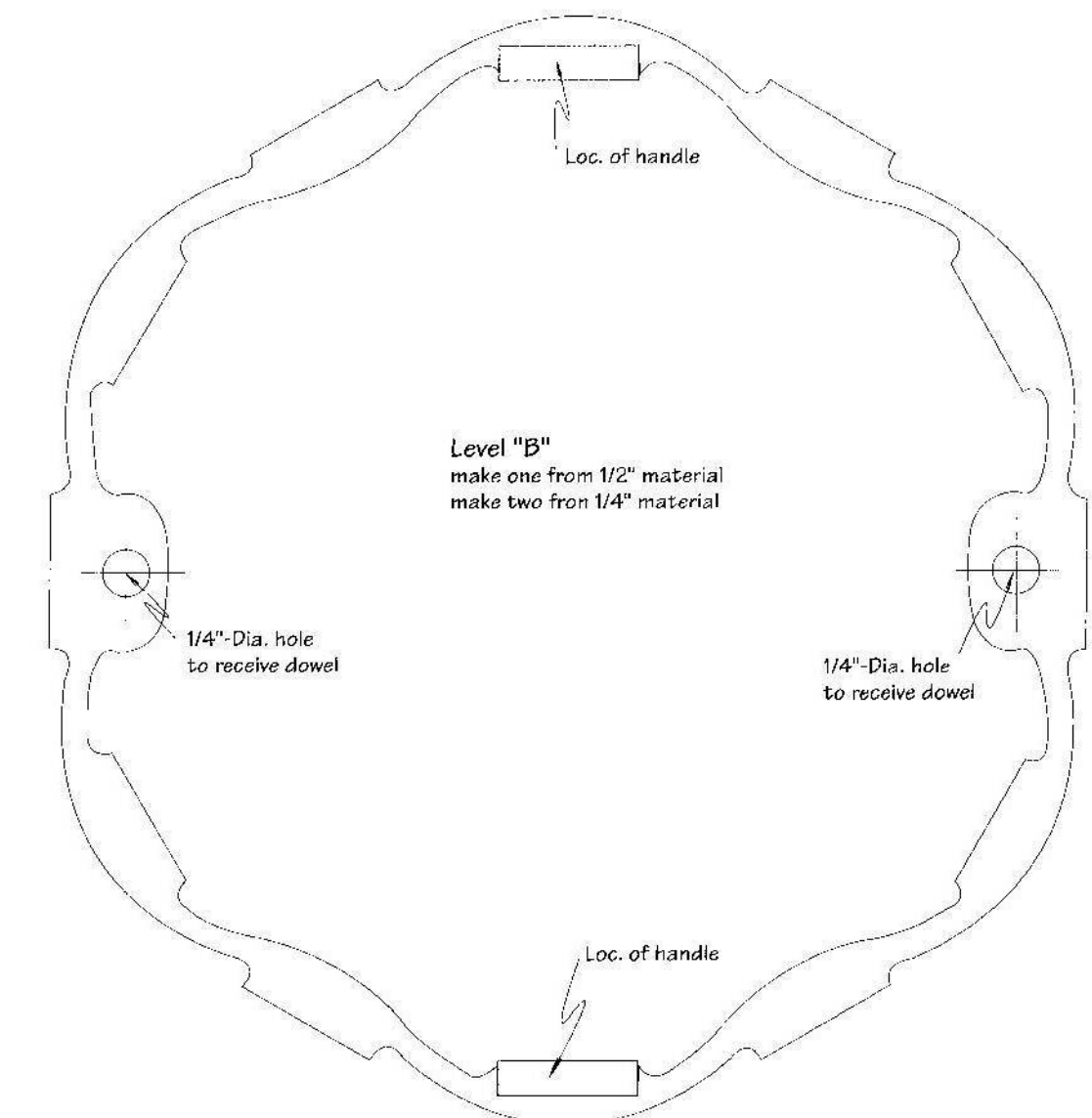
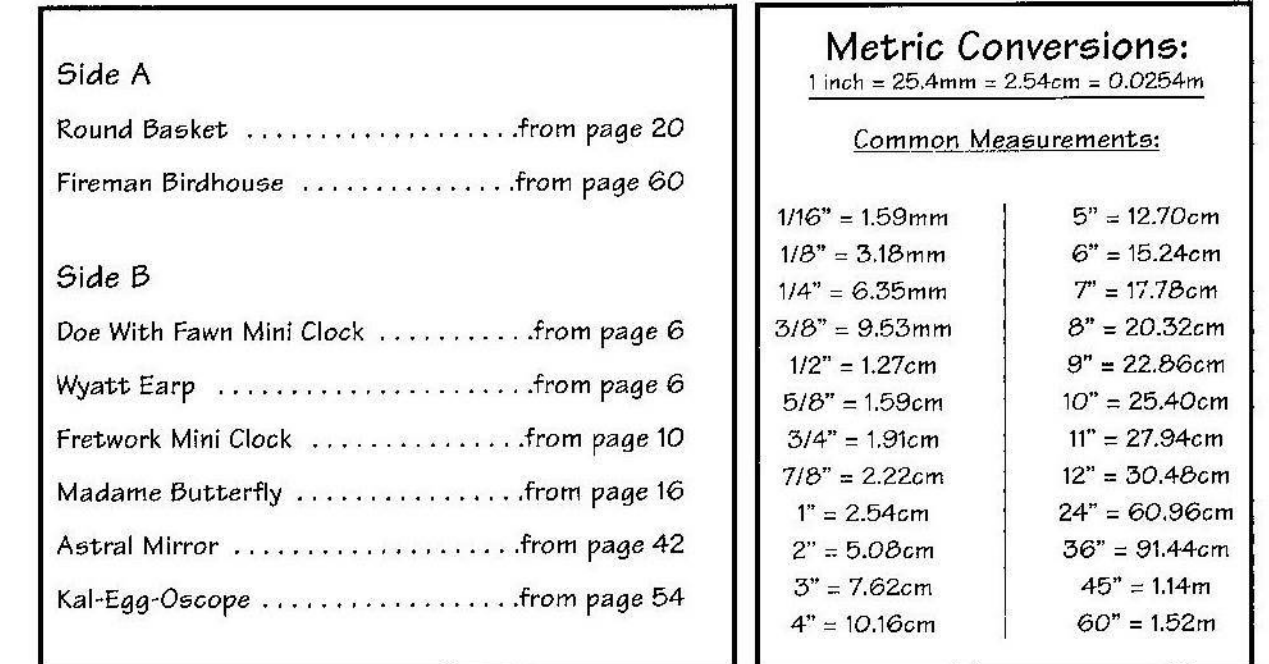
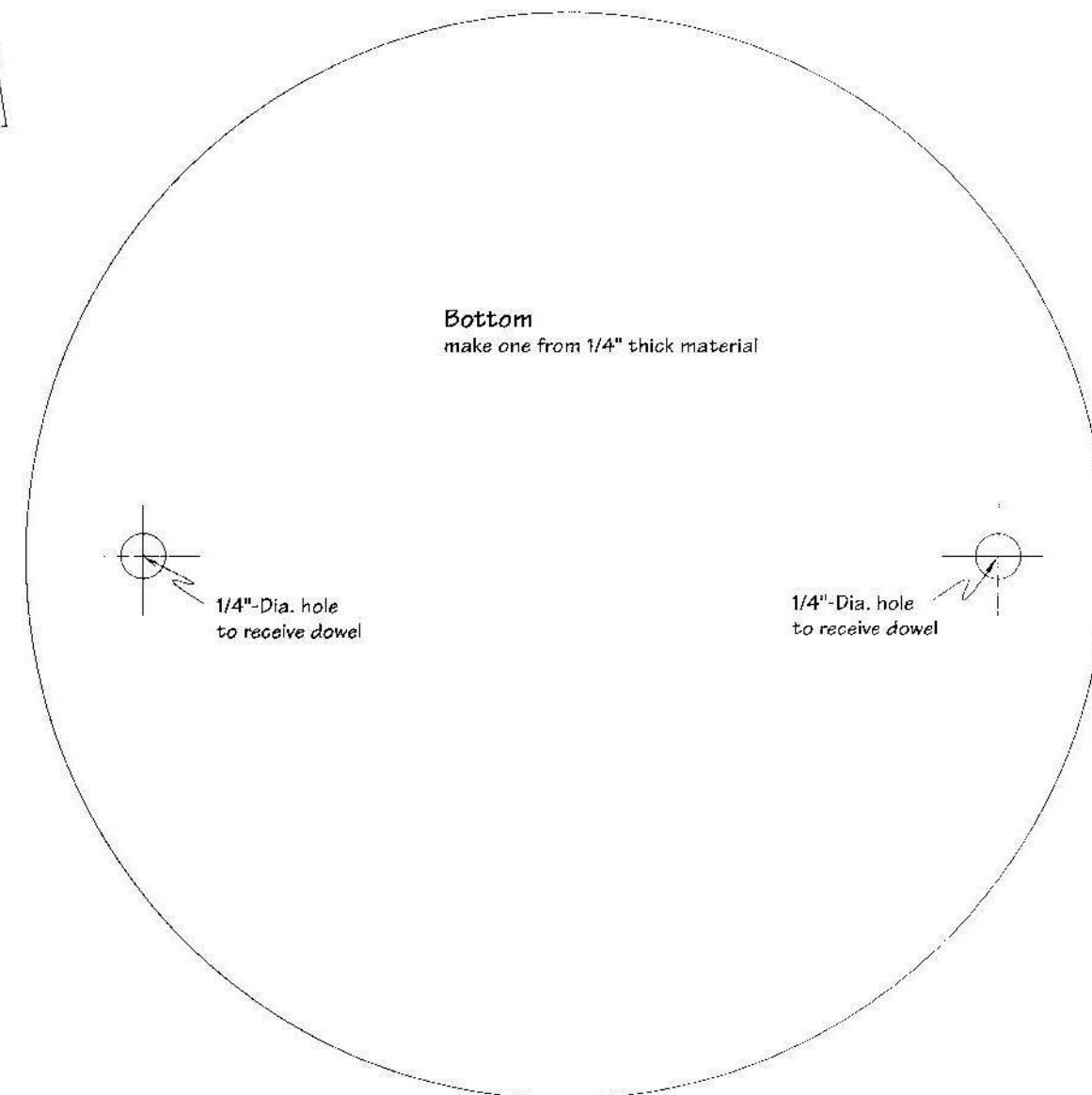
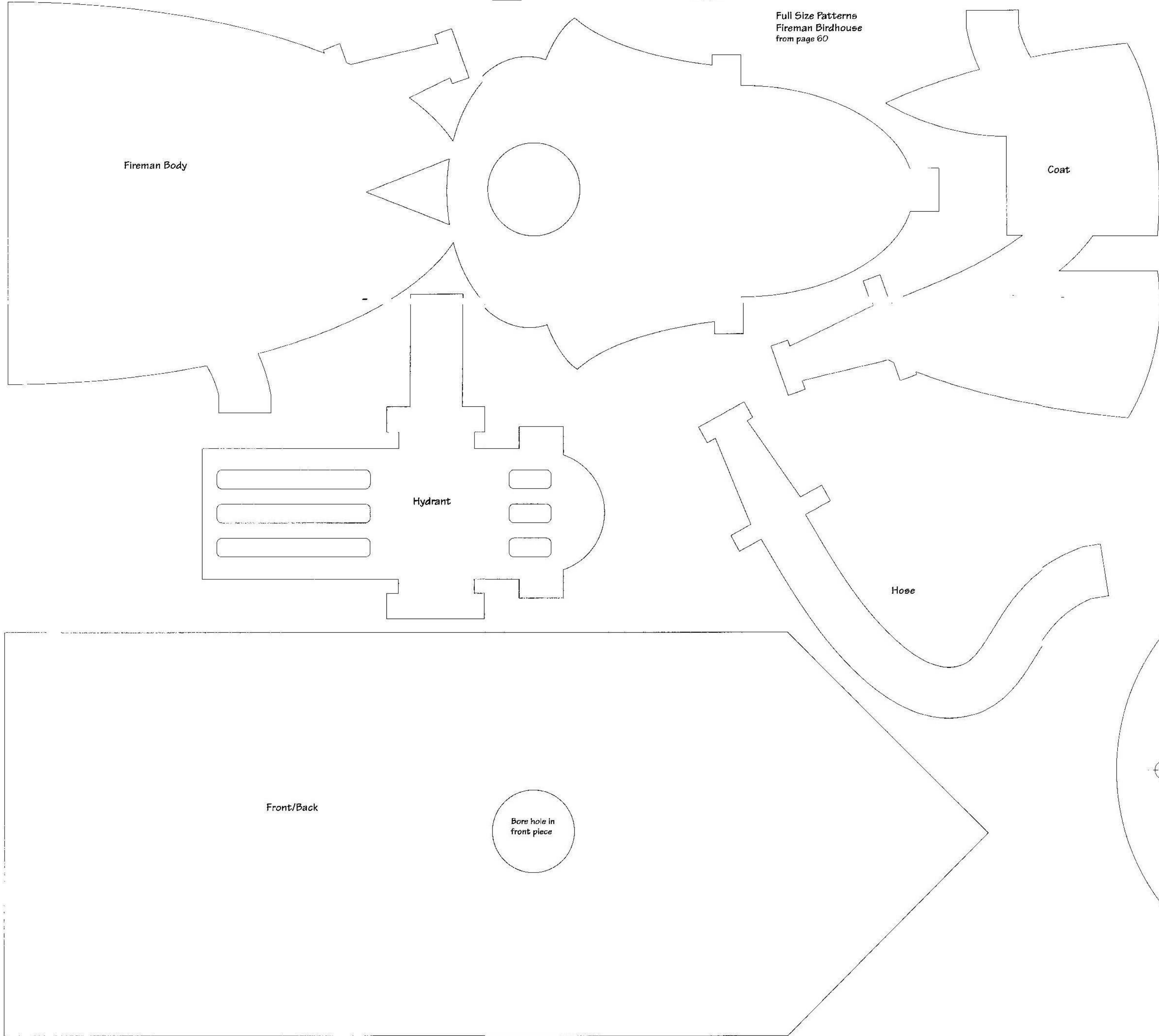
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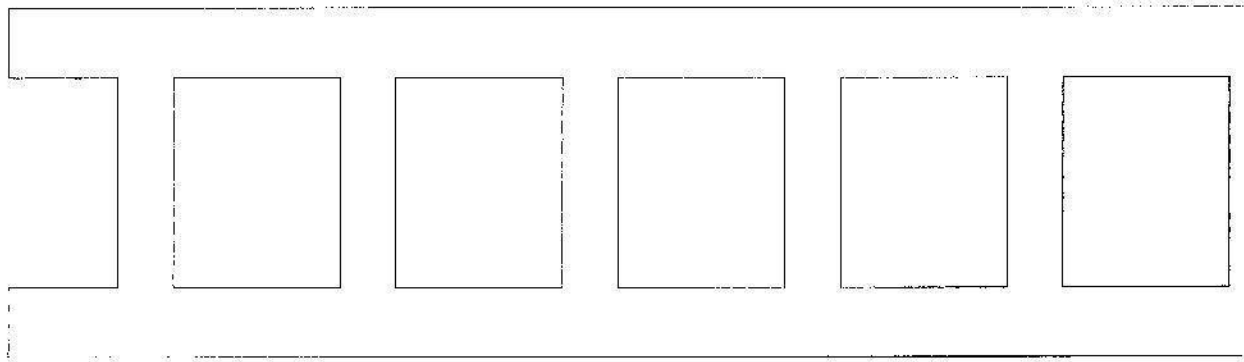
1801 Vine Street
P.O. Box 369
Harrisonville, MO 64701-0369

www.rbiwoodtools.com

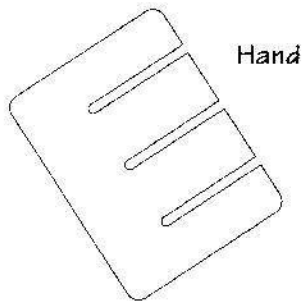
A048



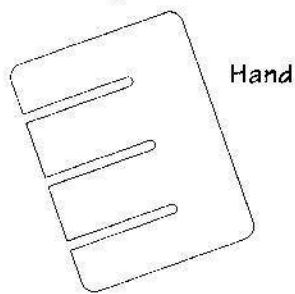
1a



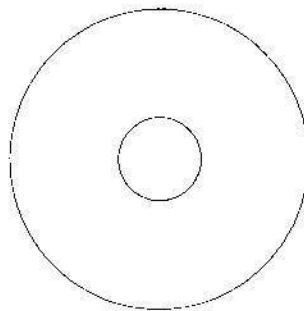
Ladder



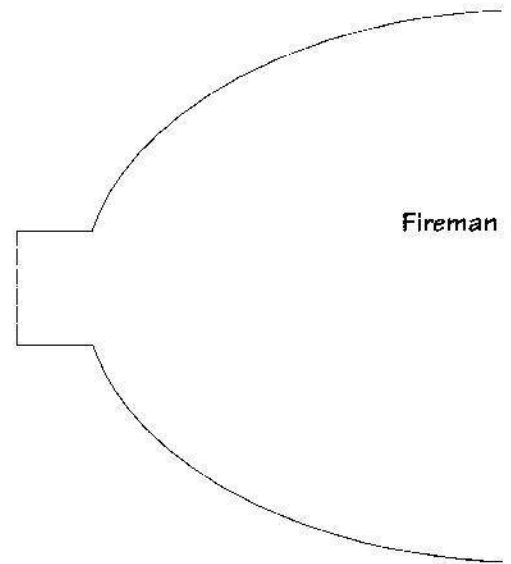
Hand



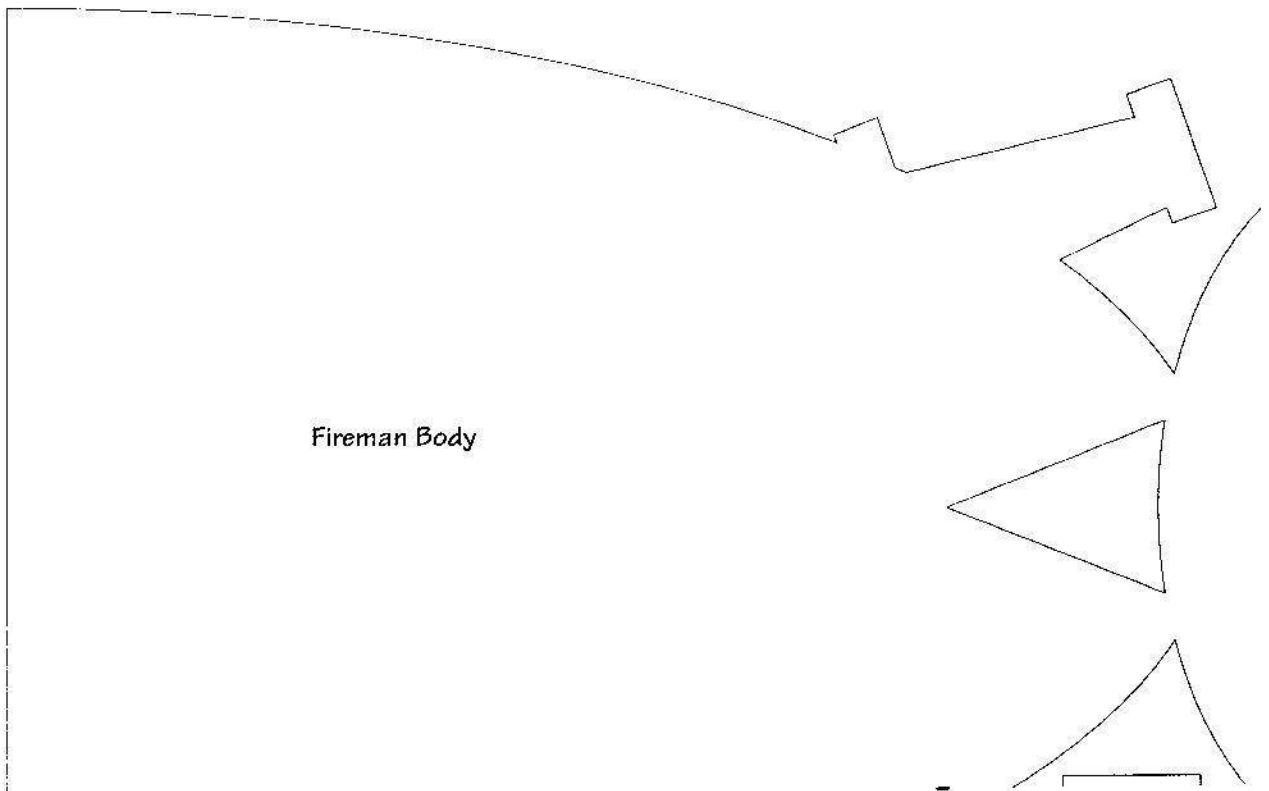
Hand



Hydrant Coupling

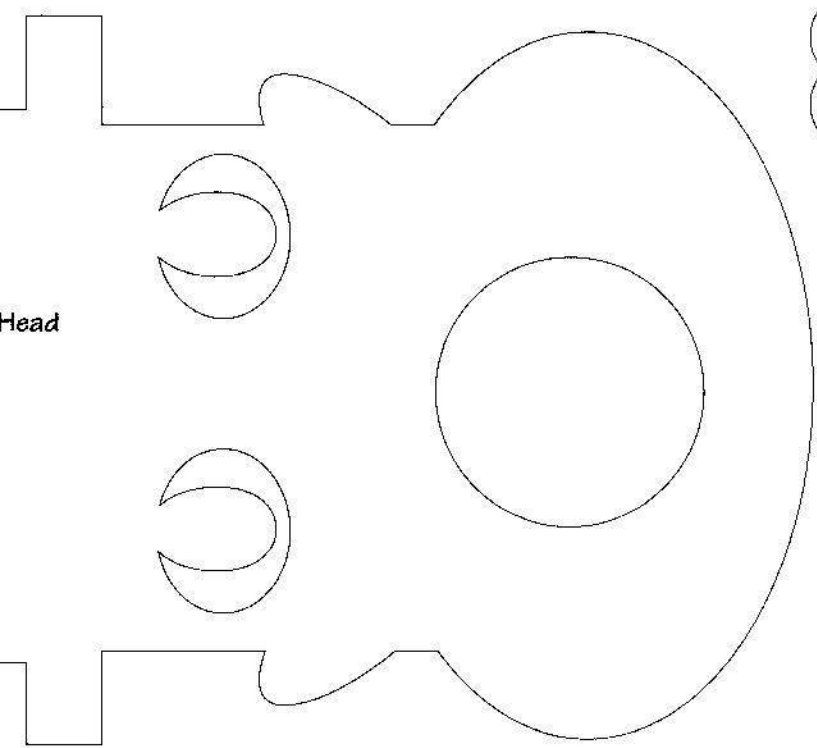
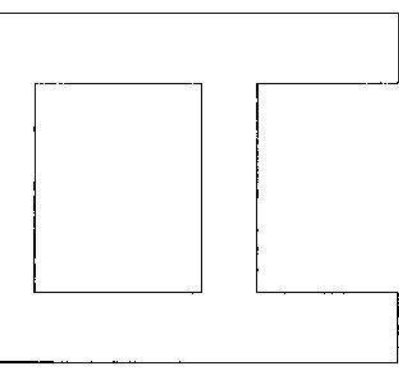


Fireman

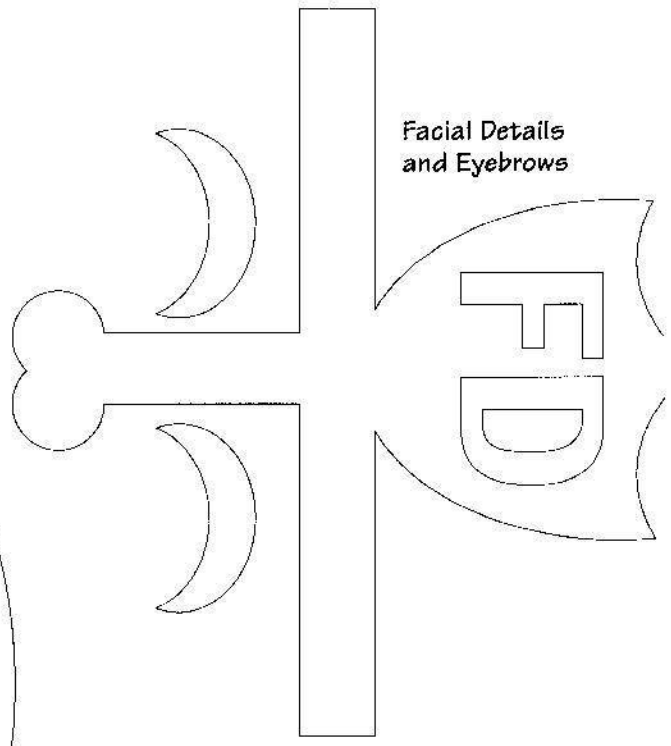


Fireman Body

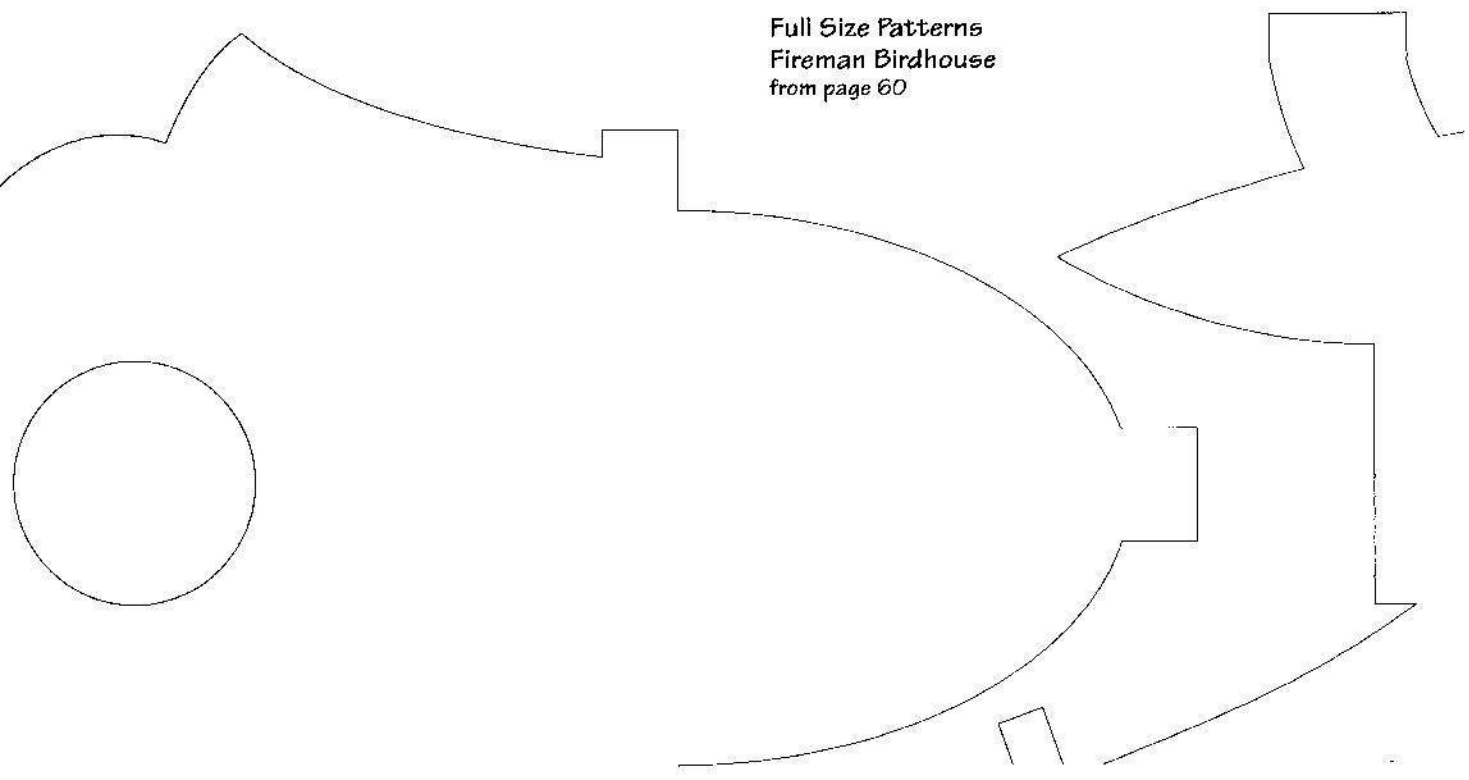
2a



Head

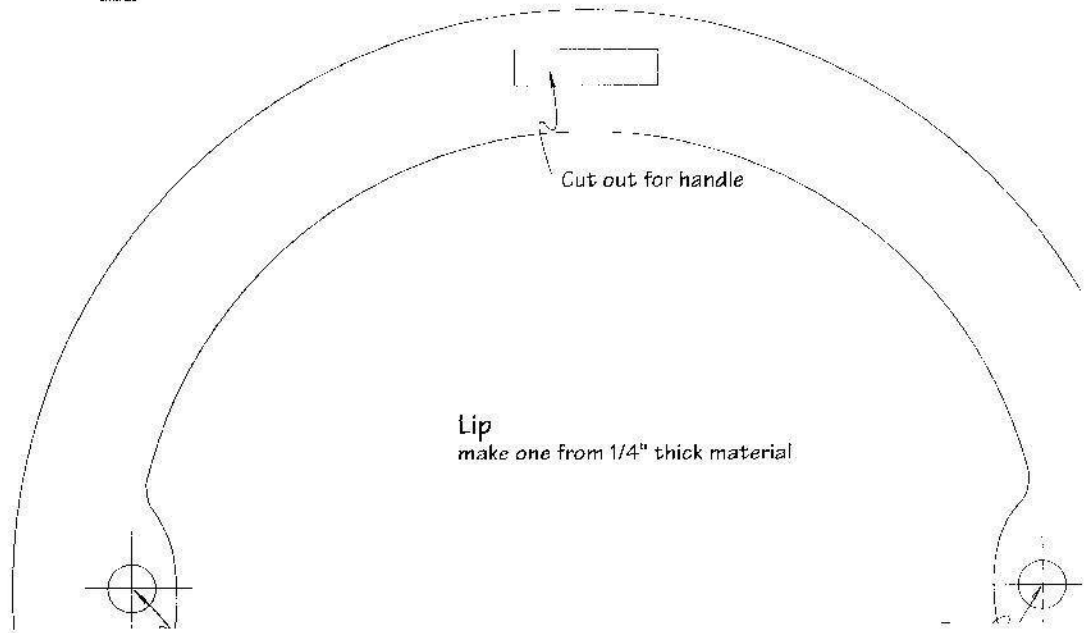
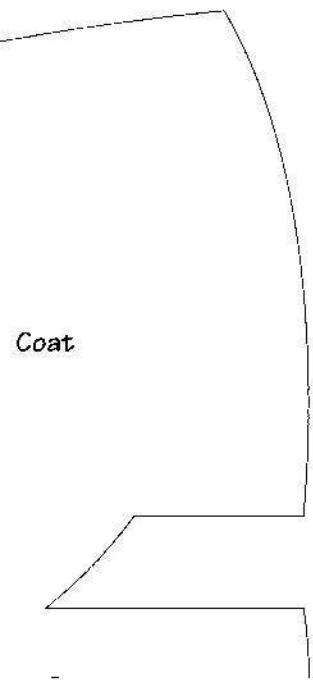
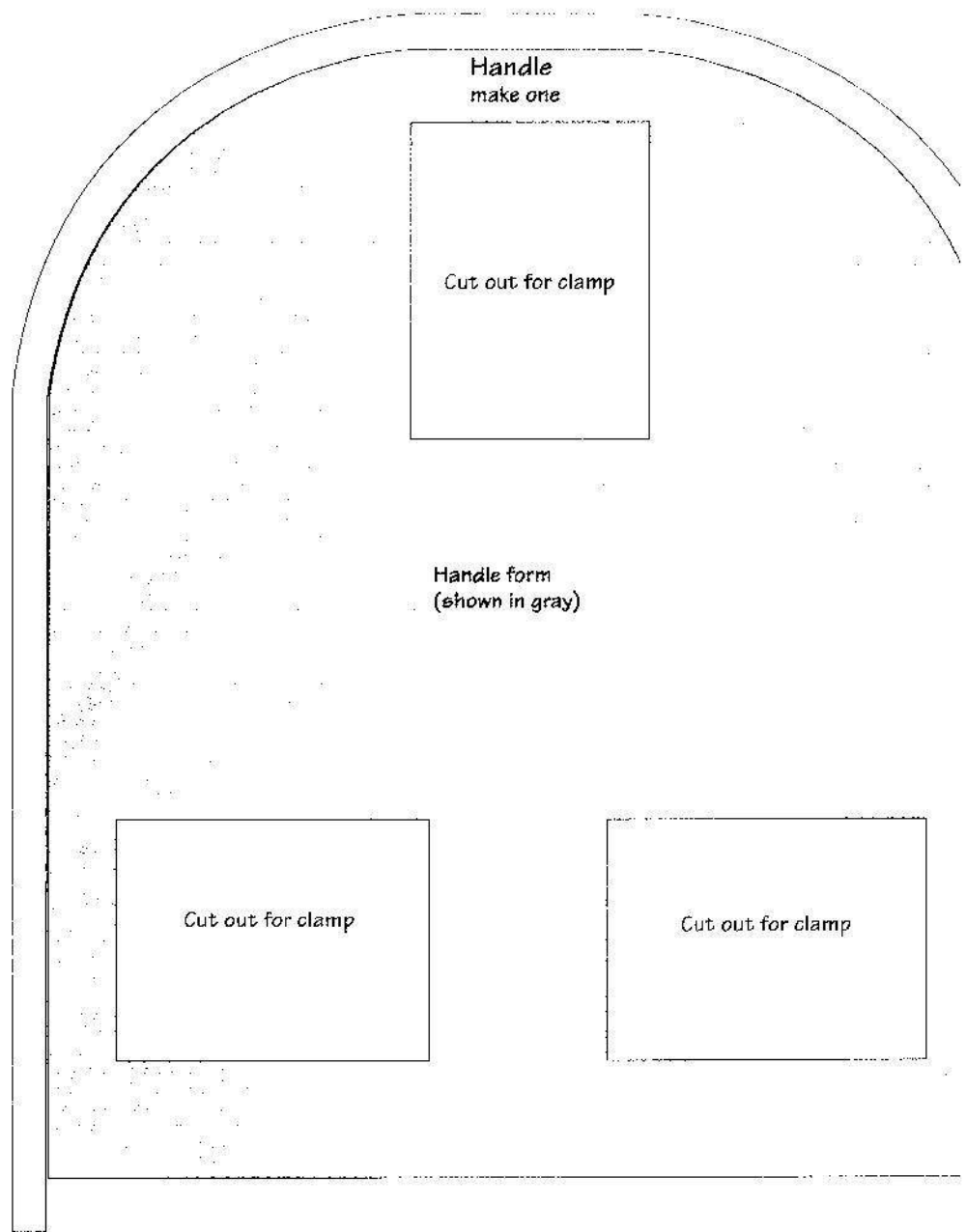


Facial Details
and Eyebrows



Full Size Patterns
Fireman Birdhouse
from page 60

3a



4a

CREATIVE Woodworks & CRAFTS

FULL SIZE PATTERN SECTION NO. 1 JUNE 2003

Side A

Round Basketfrom page 20
Fireman Birdhousefrom page 60

Side B

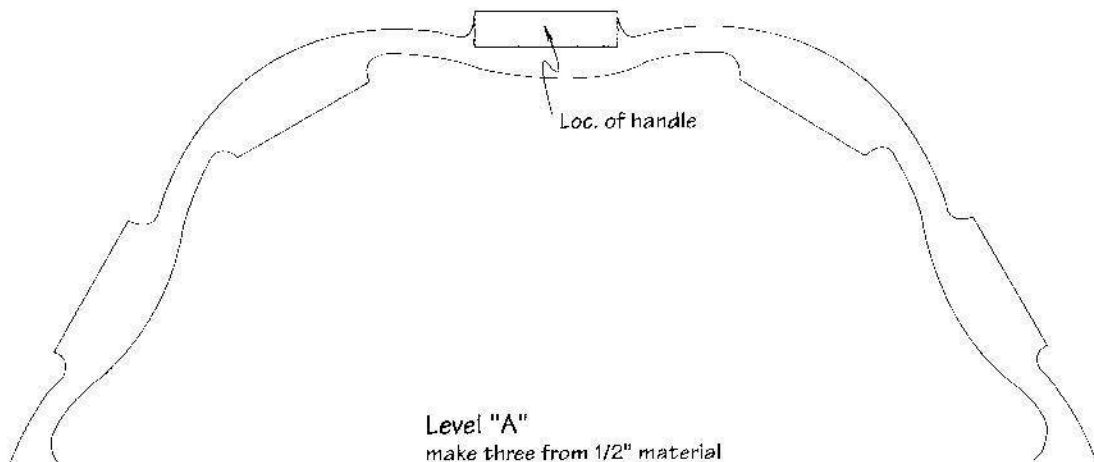
Doe With Fawn Mini Clockfrom page 6
Wyatt Earpfrom page 6
Fretwork Mini Clockfrom page 10
Madame Butterflyfrom page 16
Astral Mirrorfrom page 42
Kal-Egg-Oscopefrom page 54

Metric Conversions:

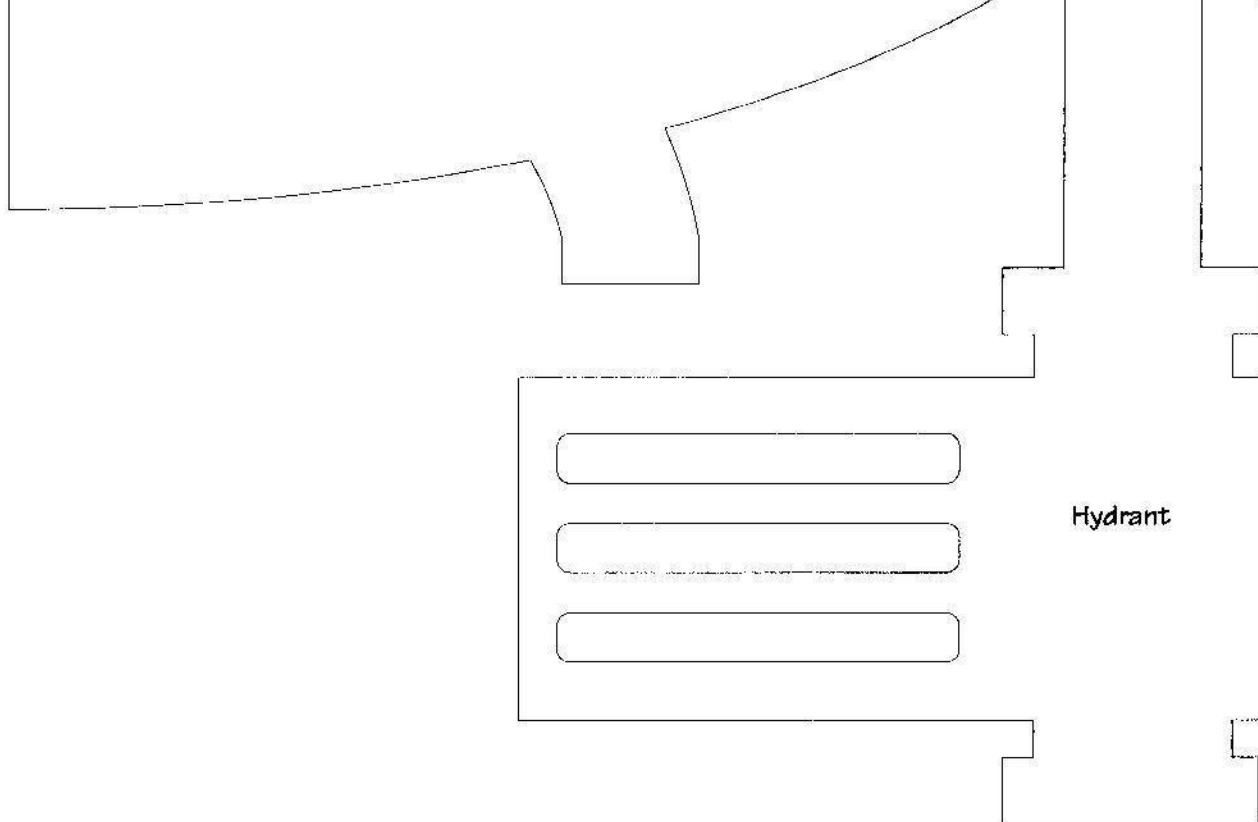
1 inch = 25.4mm = 2.54cm = 0.0254m

Common Measurements:

1/16" = 1.59mm	5" = 12.70cm
1/8" = 3.18mm	6" = 15.24cm
1/4" = 6.35mm	7" = 17.78cm
3/8" = 9.53mm	8" = 20.32cm
1/2" = 1.27cm	9" = 22.86cm
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3/4" = 1.91cm	11" = 27.94cm
7/8" = 2.22cm	12" = 30.48cm
1" = 2.54cm	24" = 60.96cm
2" = 5.08cm	36" = 91.44cm
3" = 7.62cm	45" = 1.14m
4" = 10.16cm	60" = 1.52m

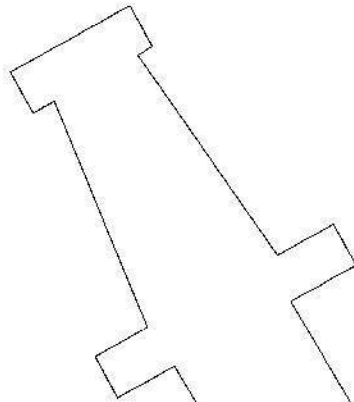
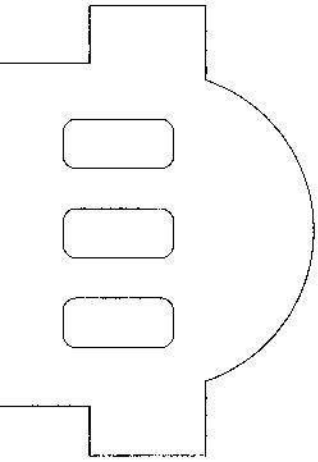


5a



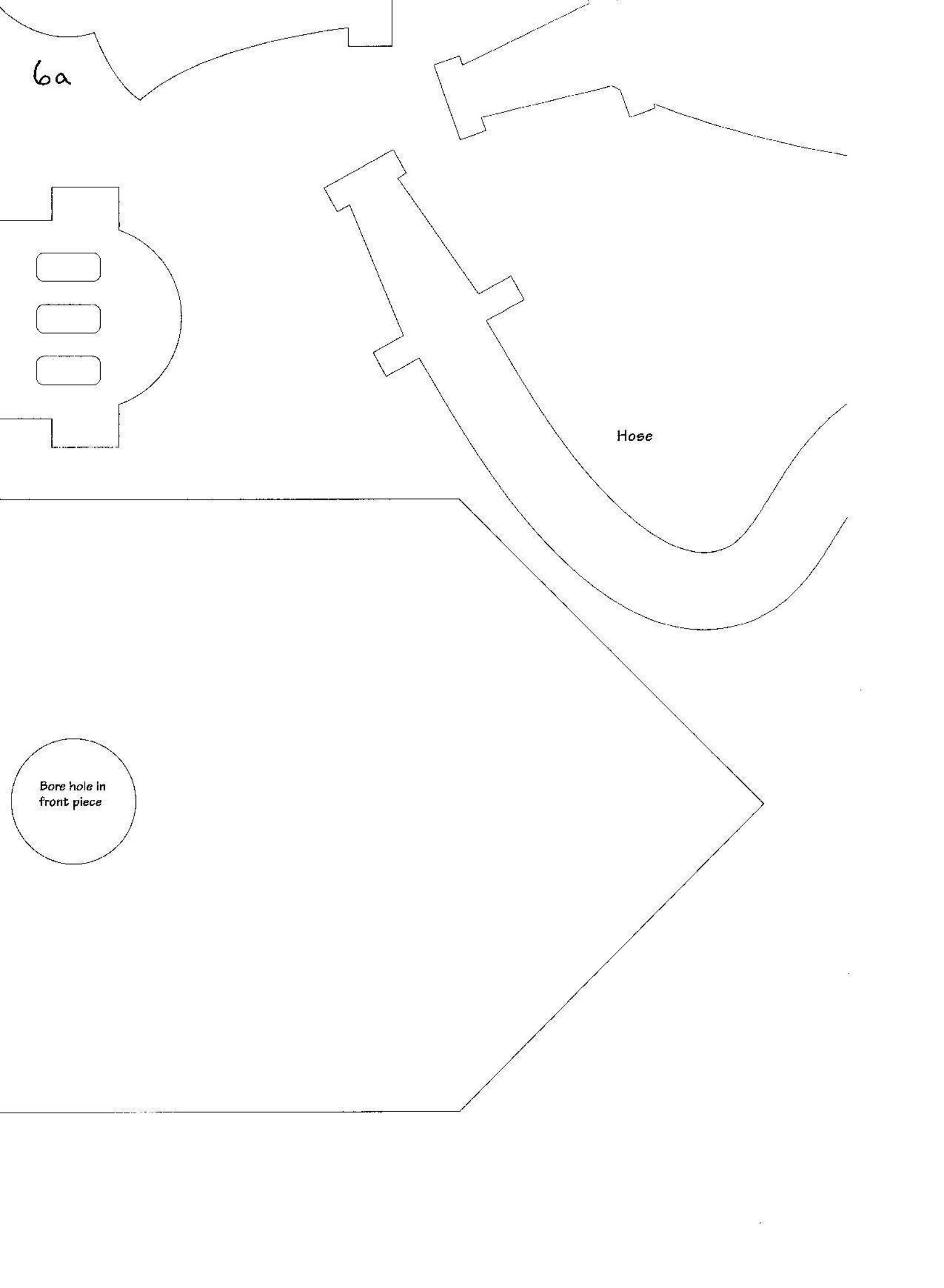
Front/Back

6a



Hose

Bore hole in
front piece



7a

1/4"-Dia. hole
to receive dowel

1/4"-Dia. hole
to receive dowel

Cut out for handle

Bottom

make one from 1/4" thick material

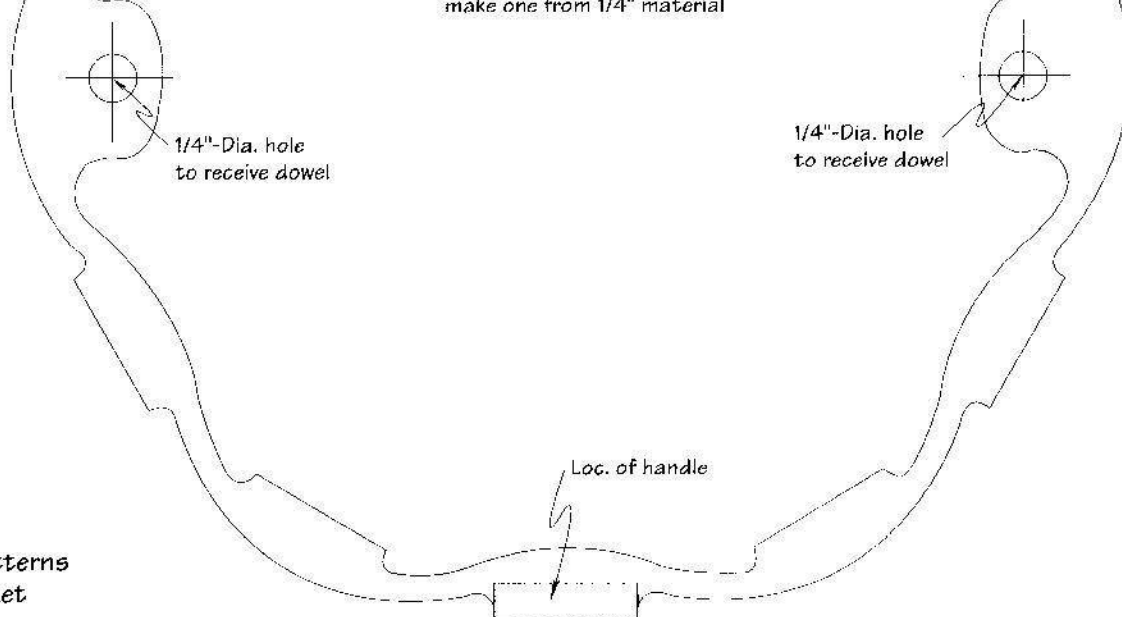
1/4"-Dia. hole
to receive dowel

1/4"-Dia. hole
to receive dowel

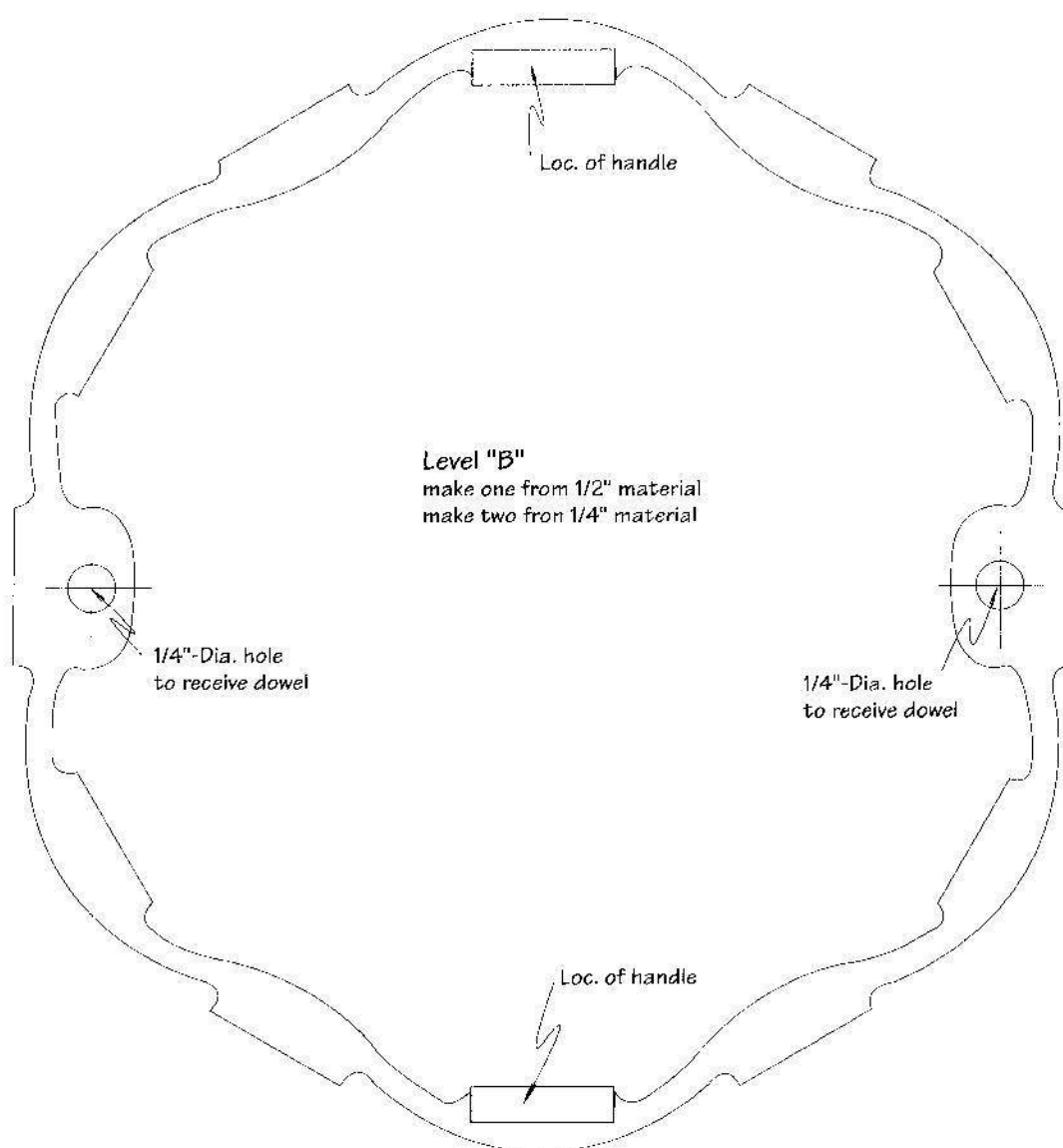
11

make one from 1/4" material

8a

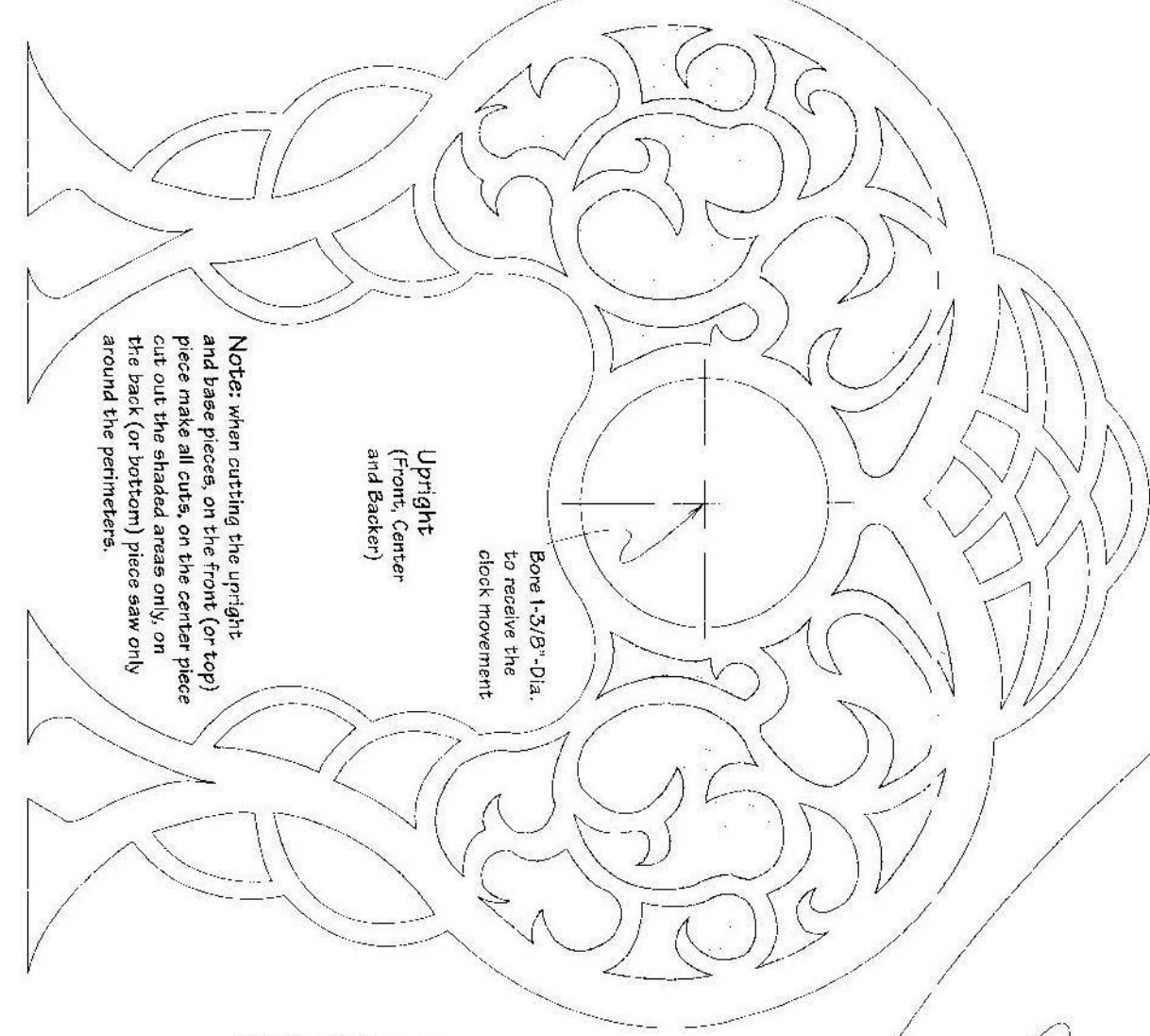


Full Size Patterns
Round Basket
from page 20





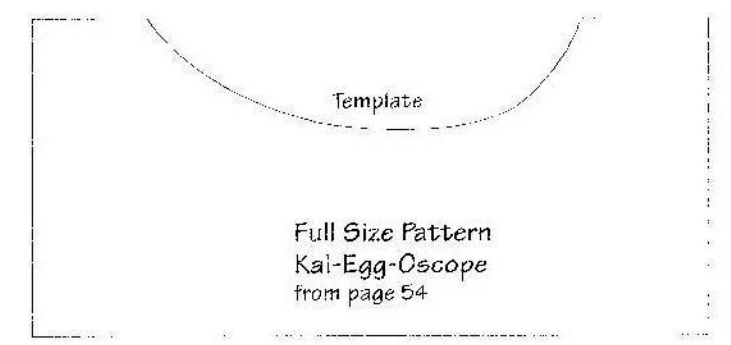
Full Size Pattern
Madame Butterfly
from page 16



Note: when cutting the upright
and base pieces on to front (or top)
pieces, use the dashed lines to place
cut out the etched areas only, on
the back (or bottom) piece saw only
around the perimeters.

Upright
(Front, Center
and Back)

Full Size Patterns
Fretwork Mini Clock
from page 10
(Base Pattern is inside
the Astral Mirror)

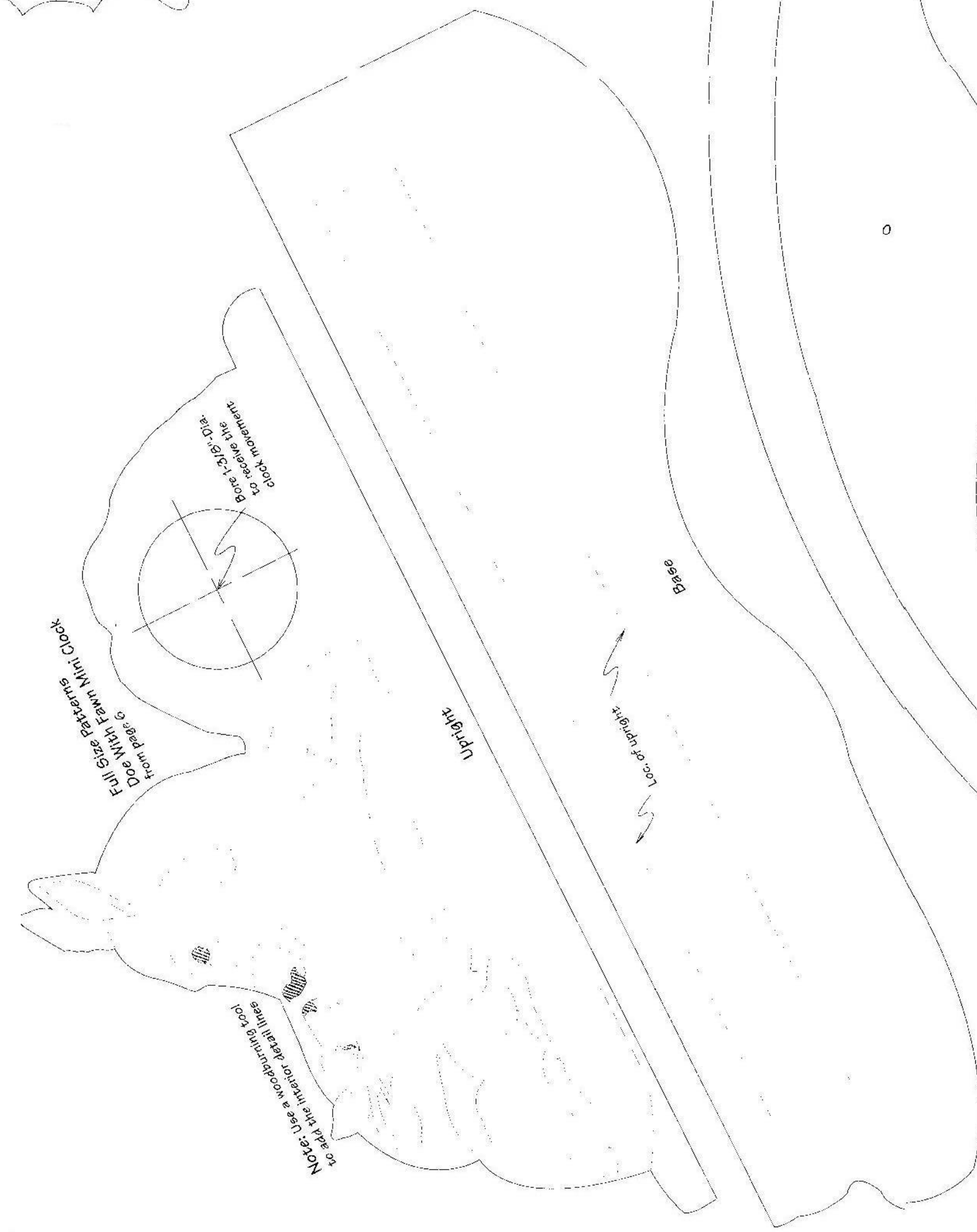


Template

Full Size Pattern
Kai-Egg-Oscope
from page 54



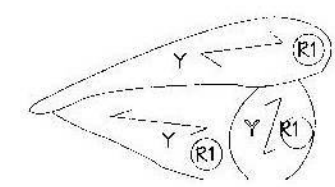
Full Size Pattern
Wyatt Earp
from page 6



Full Size Patterns
Fretwork Mini Clock
from page 10

Note: when cutting the upright
and base pieces on to front (or top)
pieces, use the dashed lines to place
cut out the etched areas only, on
the back (or bottom) piece saw only
around the perimeters.

Note: Use a woodburning tool
to etch the intricate details.

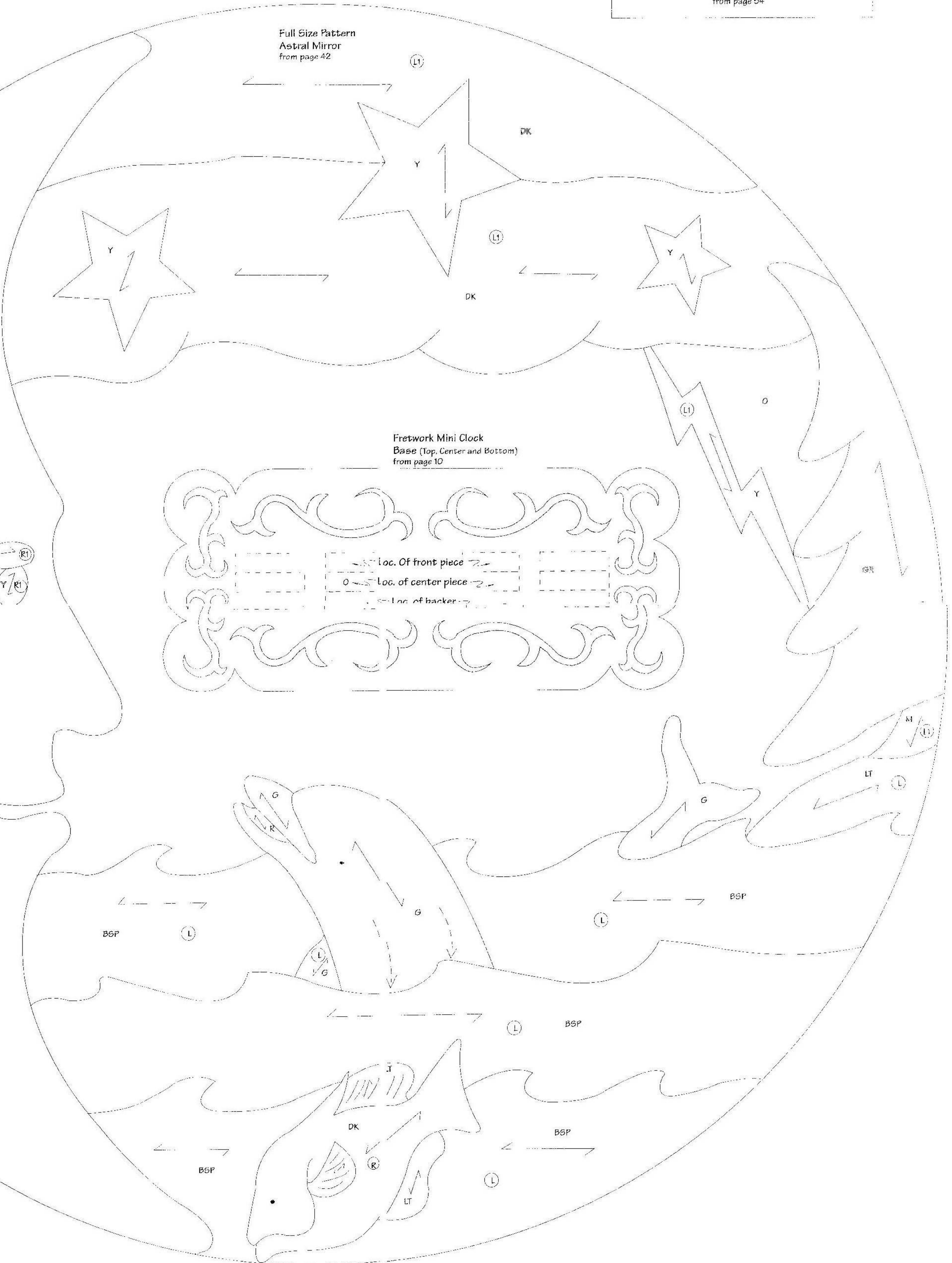


Loc. Of front piece

Loc. of center piece

Loc. of backer

Full Size Pattern
Astral Mirror
from page 42



Fretwork Mini Clock
Base (Top, Center and Bottom)
from page 10

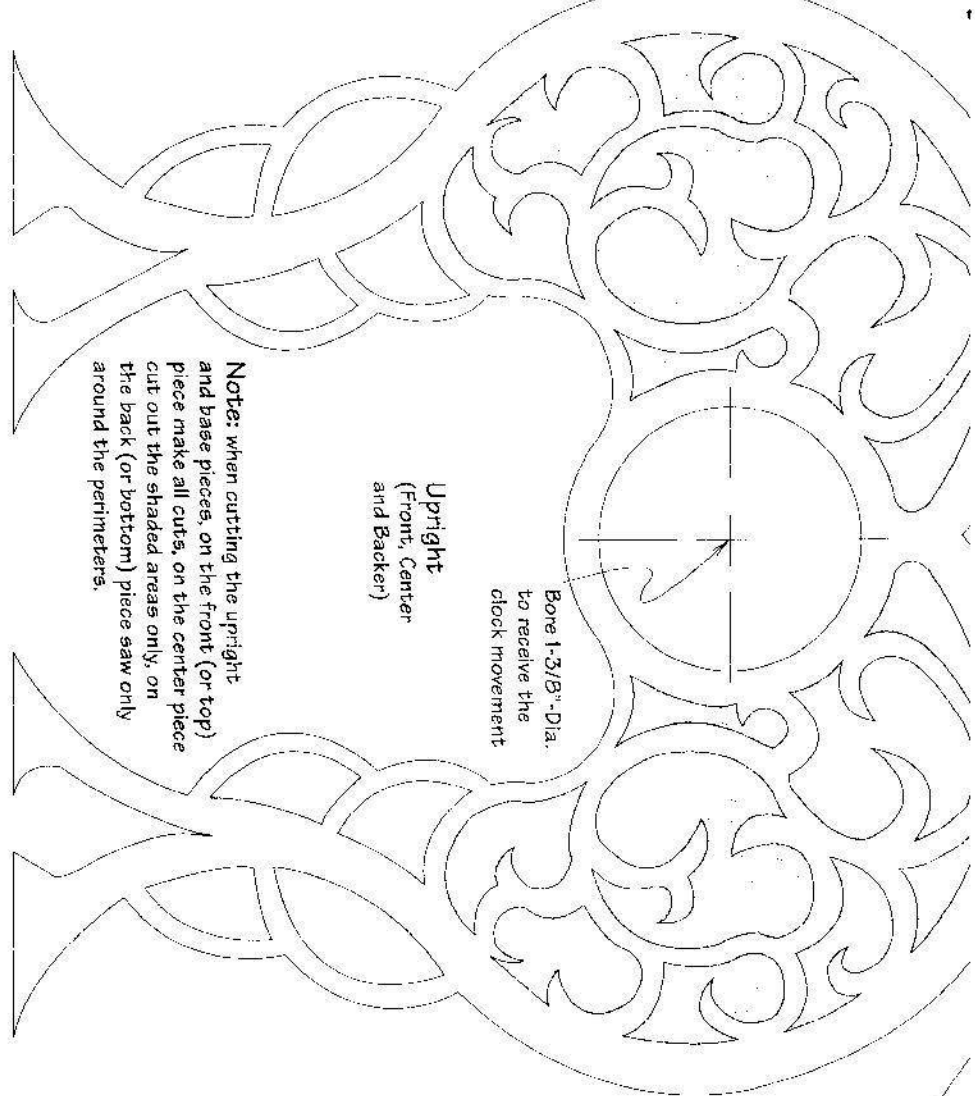
Loc. Of front piece

Loc. of center piece

Loc. of backer

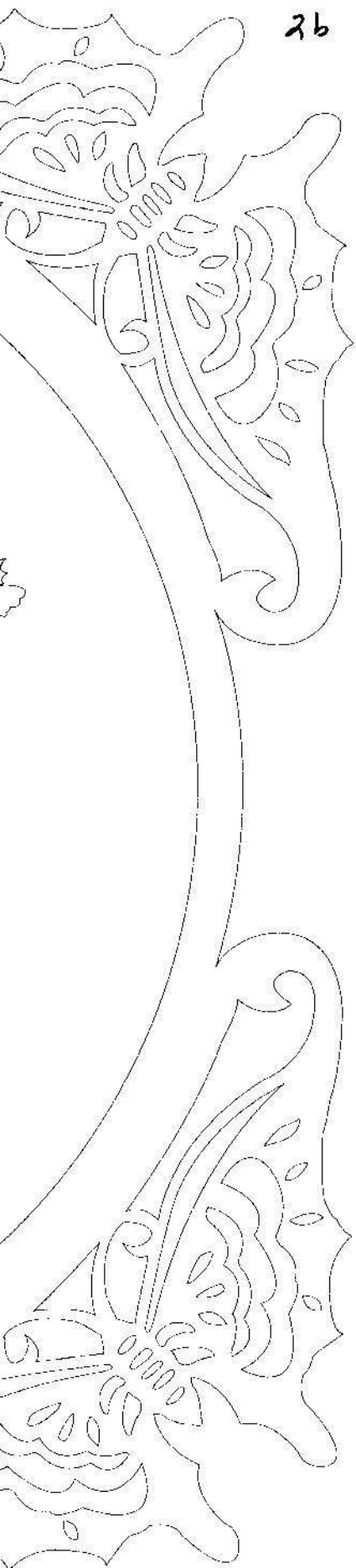
Full Size Pattern
Madame Butterfly
from page 16

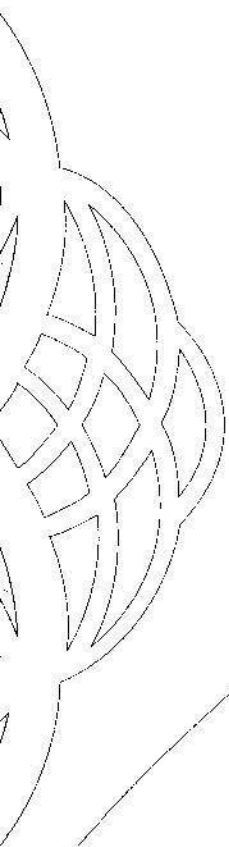




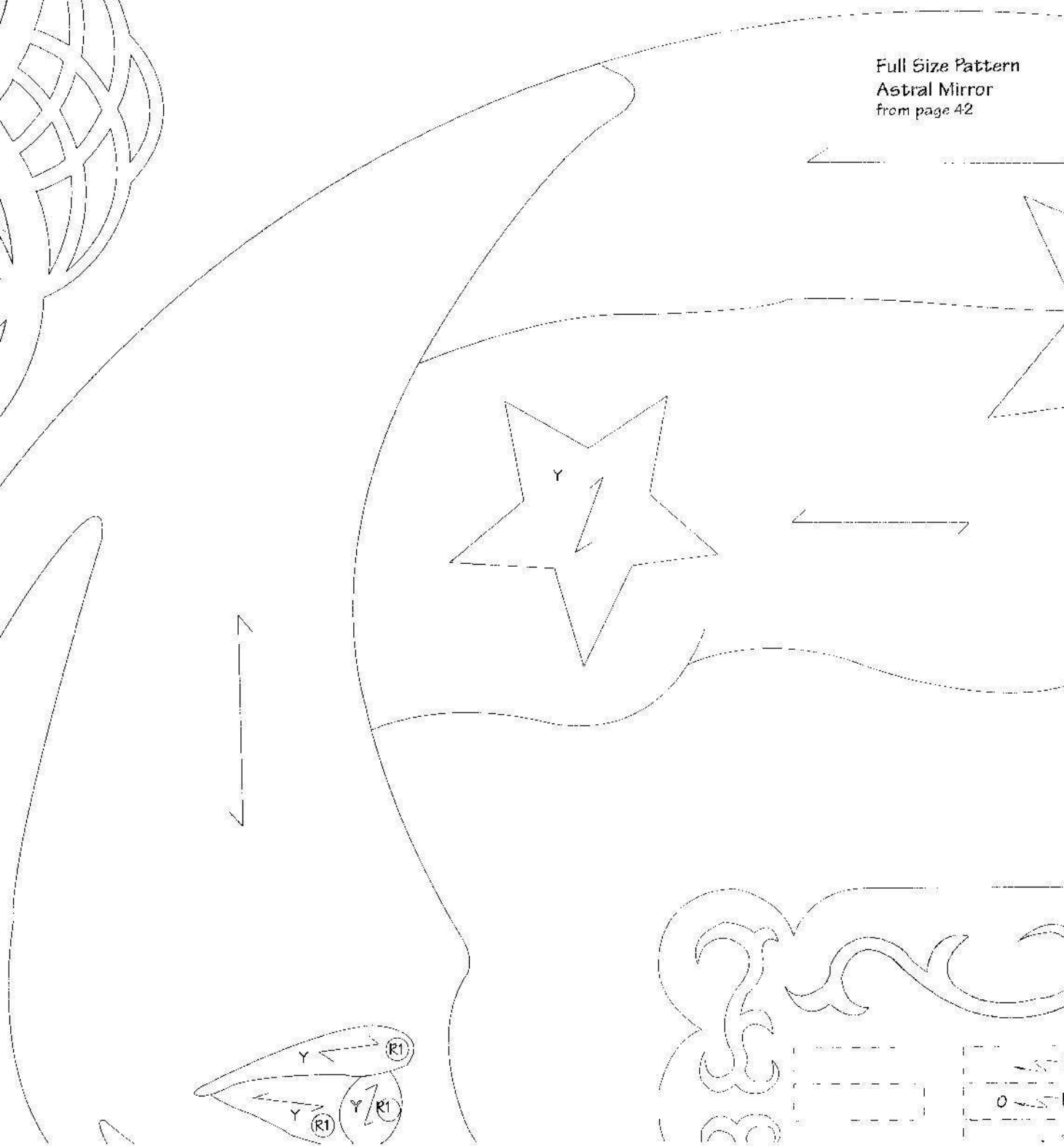
Note: when cutting the upright and base pieces, on the front (or top) piece make all cuts, on the center piece cut out the shaded areas only, on the back (or bottom) piece saw only around the perimeters.

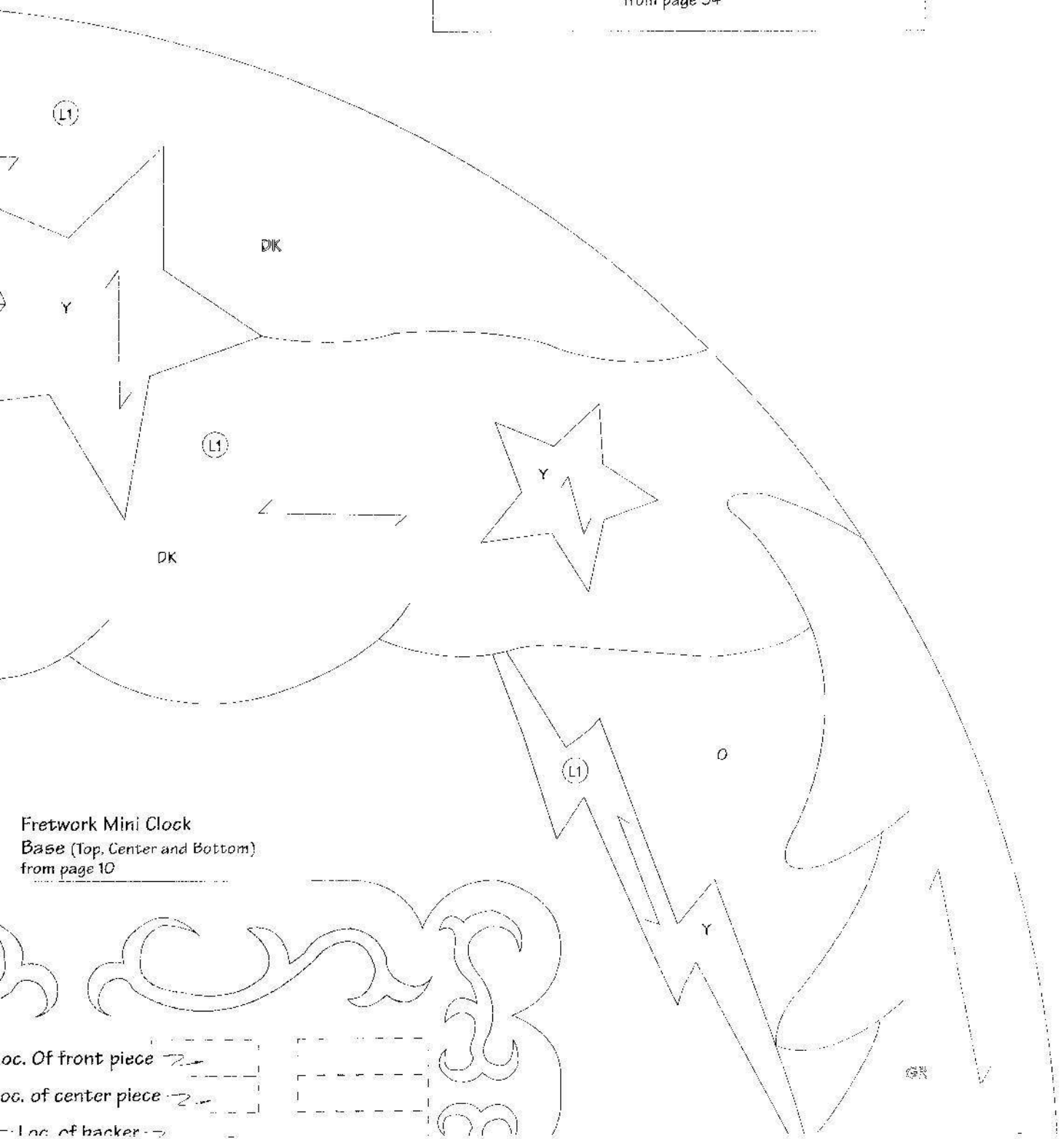
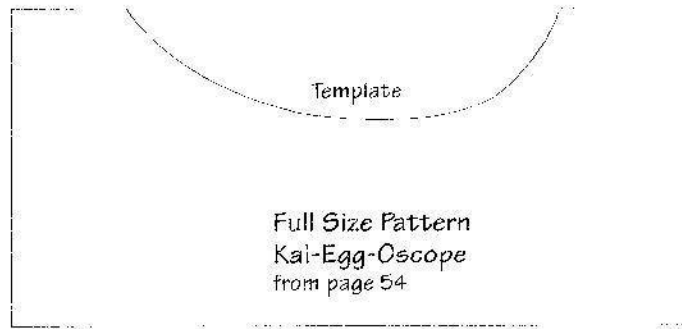
Full Size Patterns
Fretwork Mini Clock
from page 10
(Base Pattern is inside
the Astral Mirror)



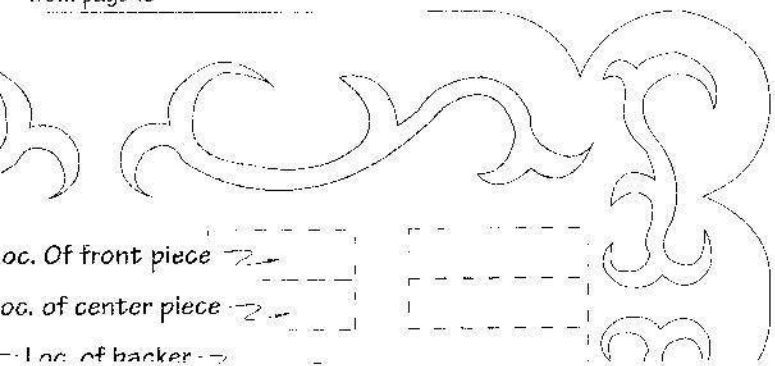


Full Size Pattern
Astral Mirror
from page 42



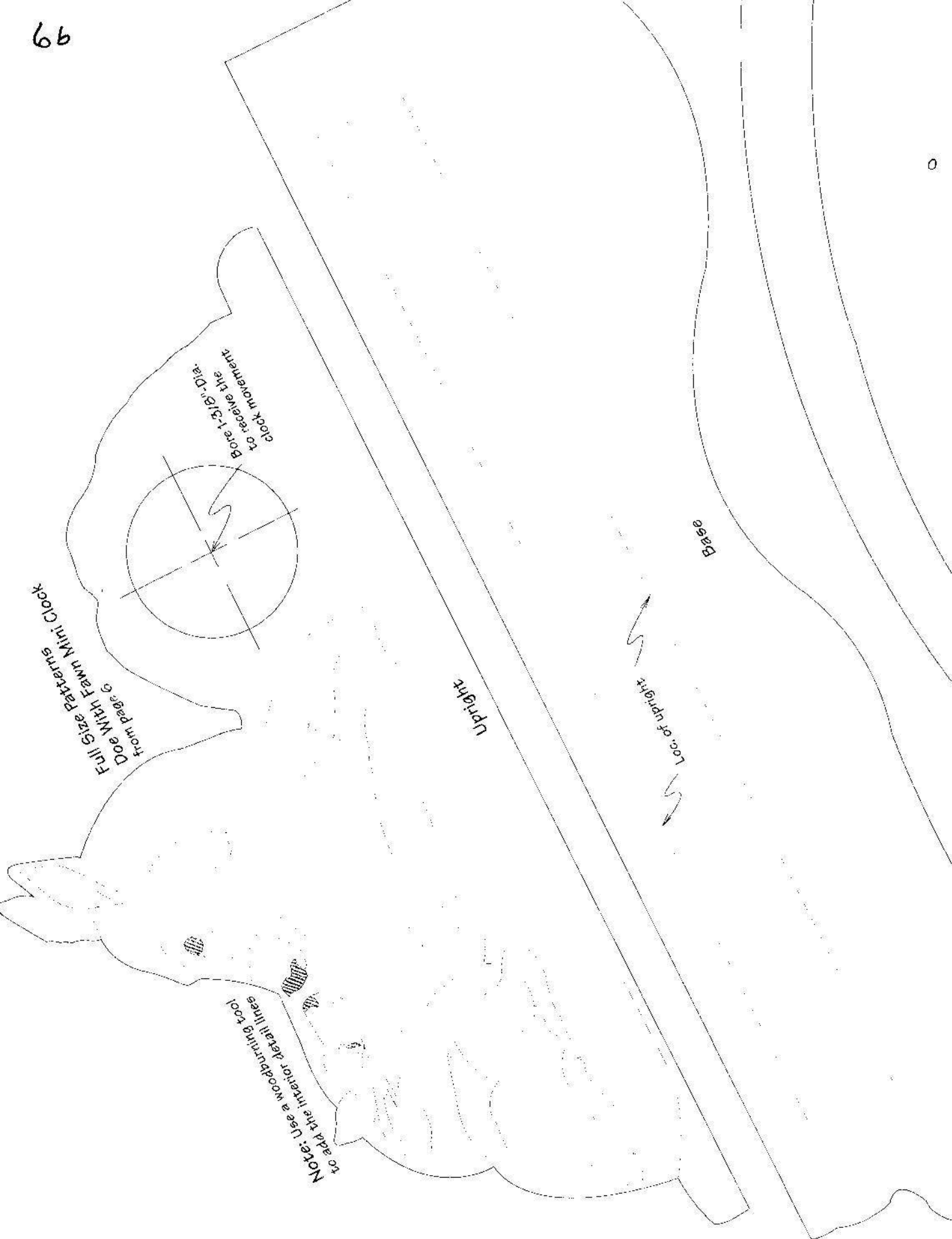


Fretwork Mini Clock
Base (Top, Center and Bottom)
from page 10



Full Size Pattern
Wyatt Earp
from page 6







86



Side A

Grizzly Bearfrom page 10
 Love Platefrom page 14
 Building A House Door Topperfrom page 16
 Guitar CD Rackfrom page 18

Side B

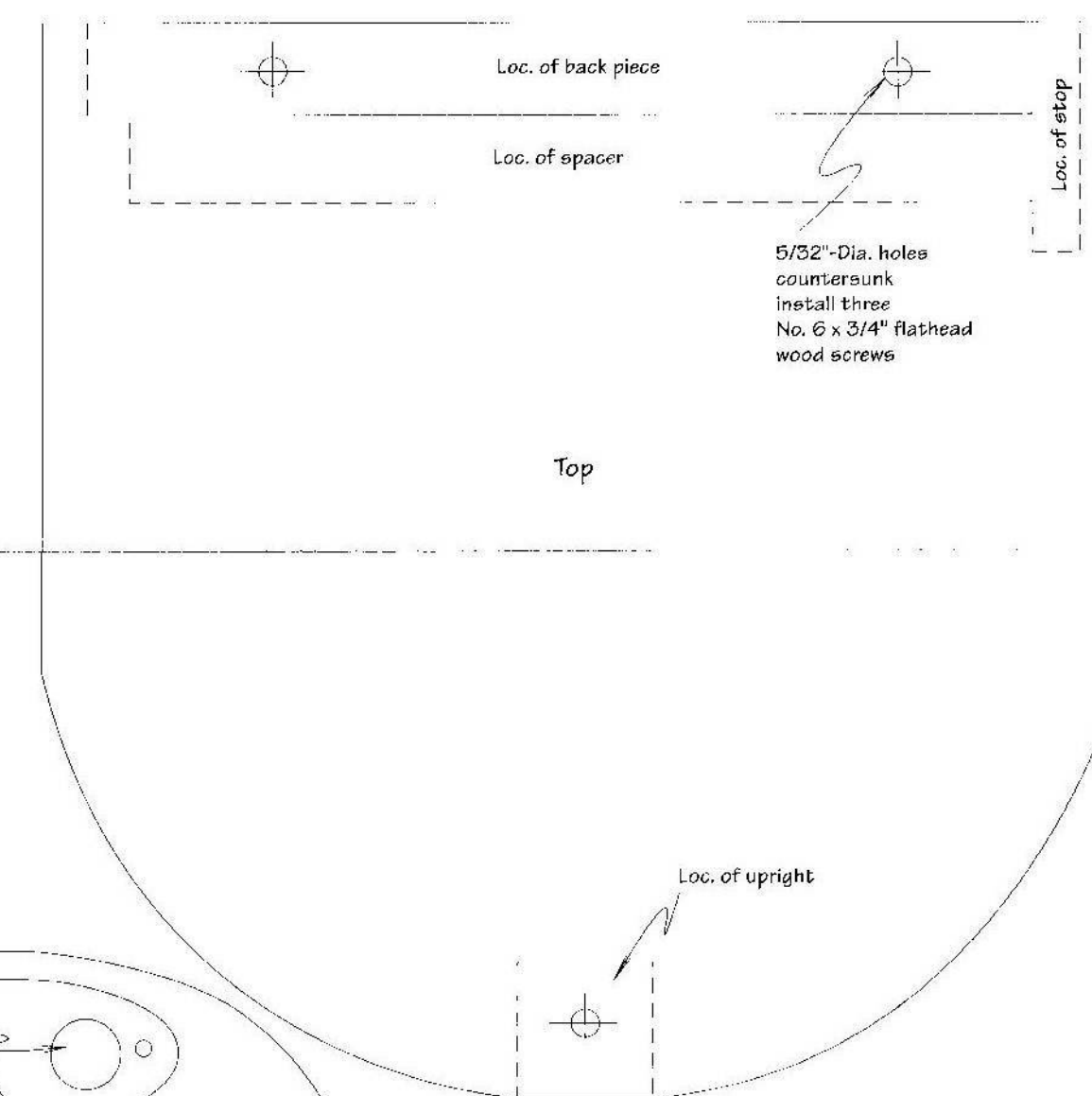
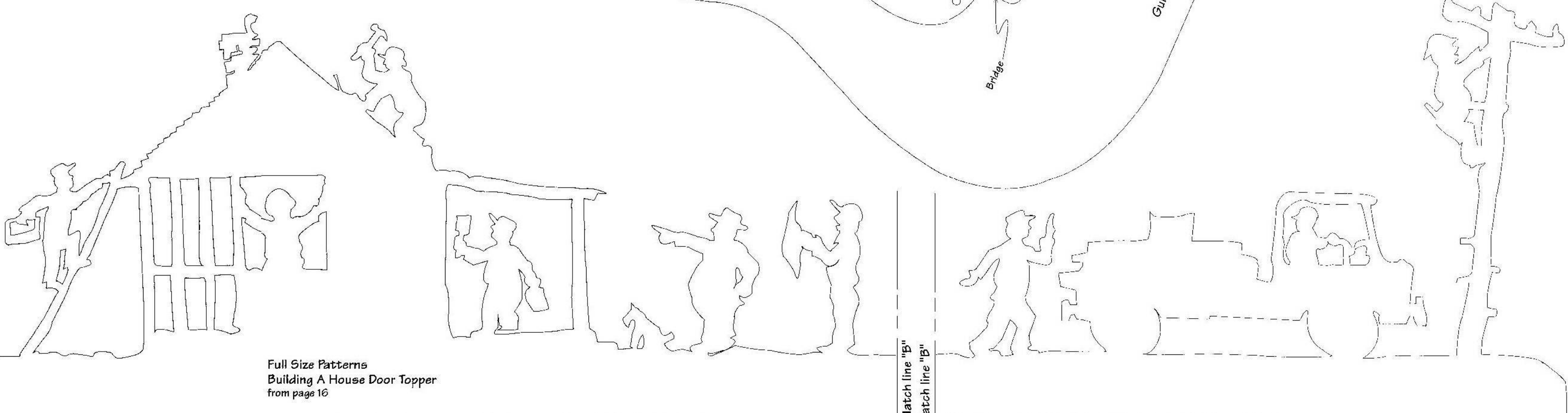
Sports Plaquefrom page 14
 Angelic Keepsake Chestfrom page 30
 The Conestoga Wagonfrom page 36
 Tortoisefrom page 46

Metric Conversions:

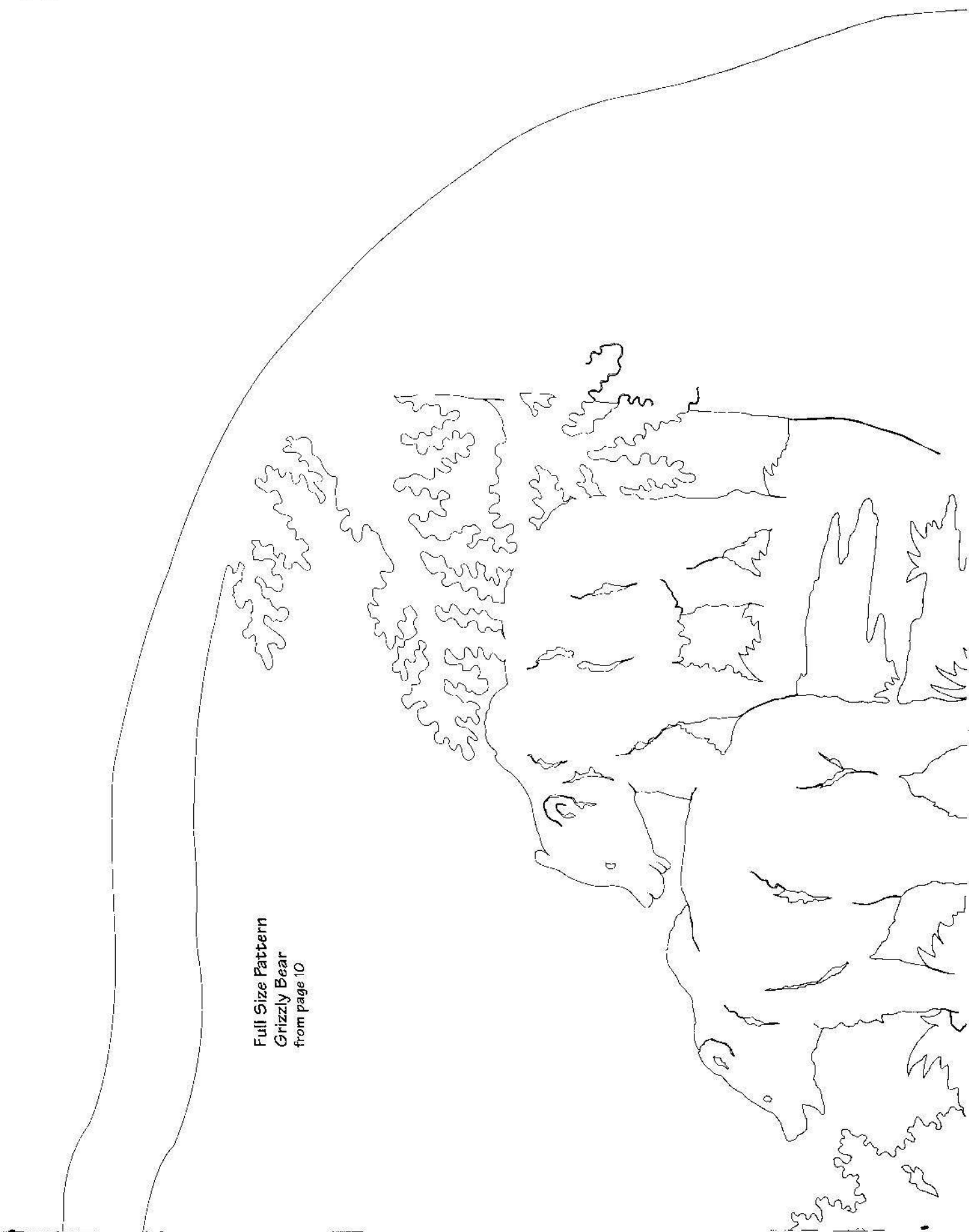
1 inch = 25.4mm = 2.54cm = 0.0254m

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1" = 2.54cm	24" = 60.96cm
2" = 5.08cm	36" = 91.44cm
3" = 7.62cm	48" = 1.14m
4" = 10.16cm	60" = 1.52m



Full Size Pattern
Grizzly Bear
from page 10



2c



3c

1/4" Outer rim piece

1/8" Rim backer

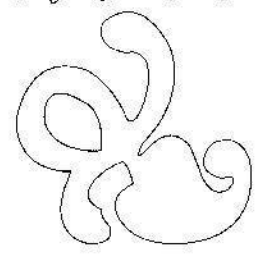
Full Size Pattern
Love Plate
from page 14

Note: glue the cut out interior pieces of
the letters in place on the backer piece.

Love

all things, believes all things,
all things, endures all things.

Love never fails.



(1 Corinthians 13: 7-8) KJV

CREATIVE Woodworks & CRAFTS

FULL SIZE PATTERN SECTION NO. 2 JUNE 2003

Side A

Grizzly Bearfrom page 10
 Love Platefrom page 14
 Building A House Door Topperfrom page 16
 Guitar CD Rackfrom page 18

Side B

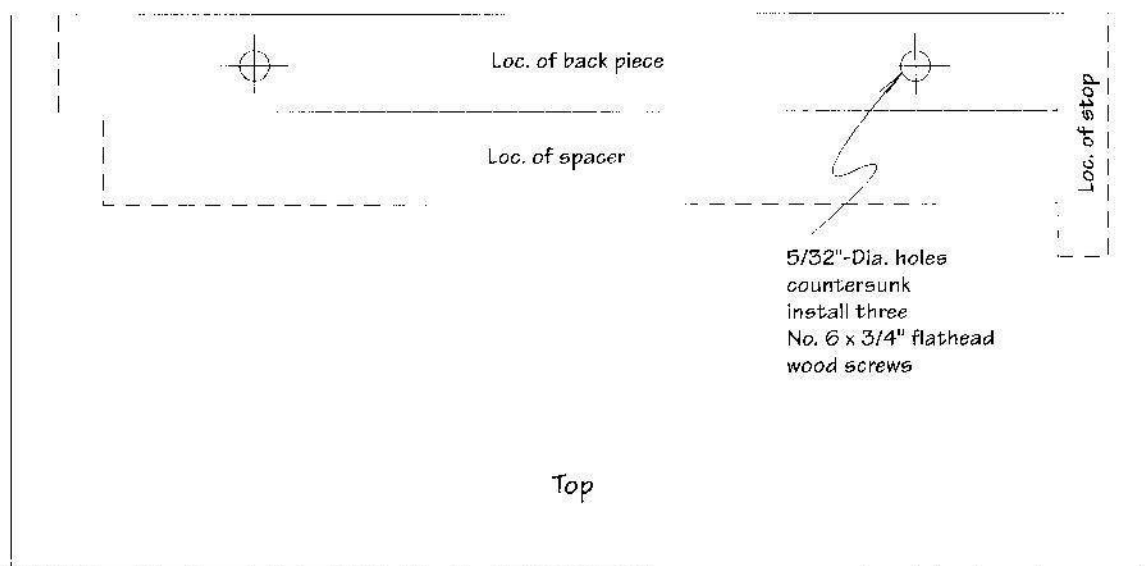
Sports Plaquefrom page 14
 Angelic Keepsake Chestfrom page 30
 The Conestoga Wagonfrom page 36
 Tortoisefrom page 46

Metric Conversions:

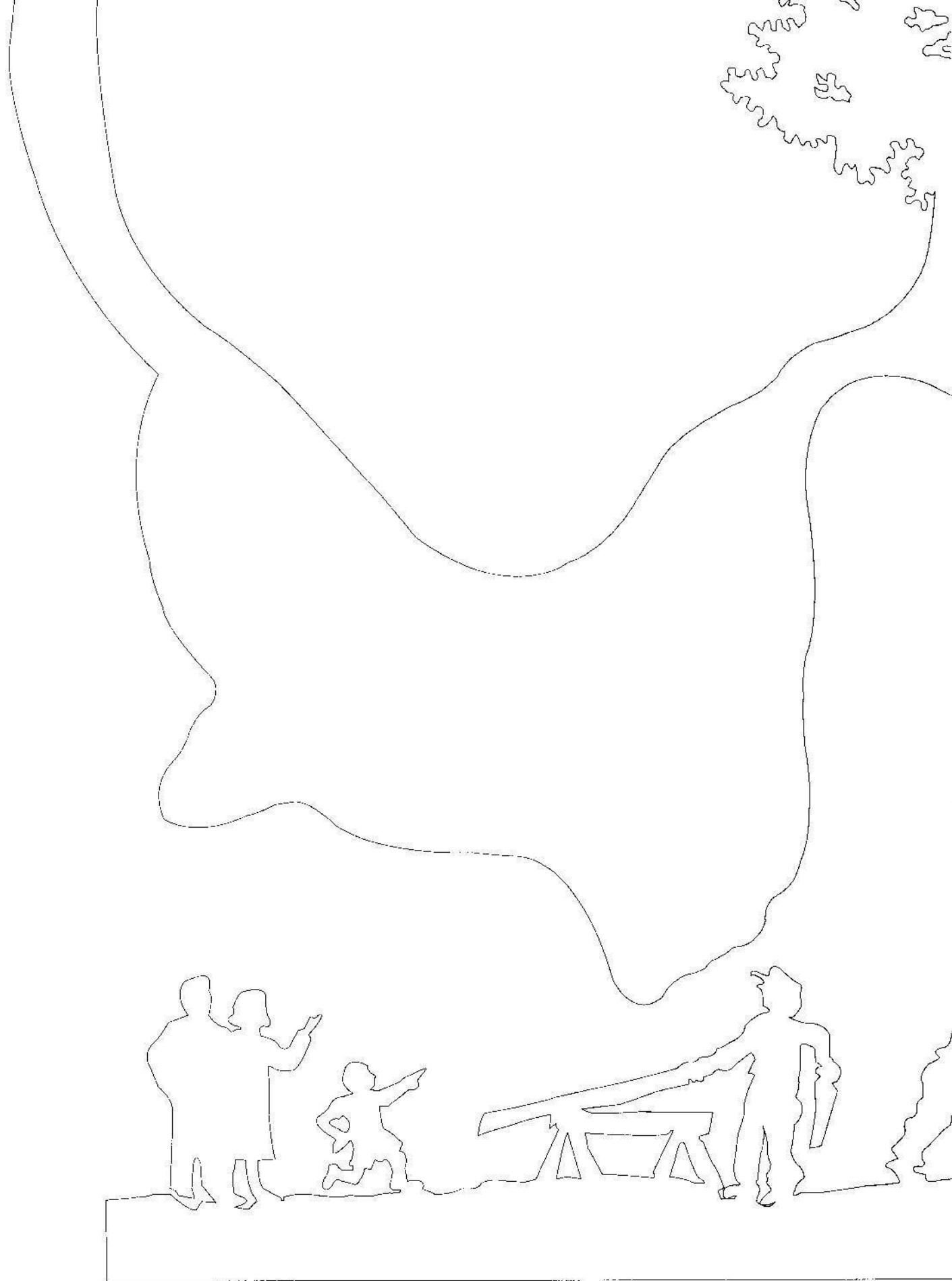
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3/4" = 1.91cm	11" = 27.94cm
7/8" = 2.22cm	12" = 30.48cm
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2" = 5.08cm	36" = 91.44cm
3" = 7.62cm	45" = 1.14m
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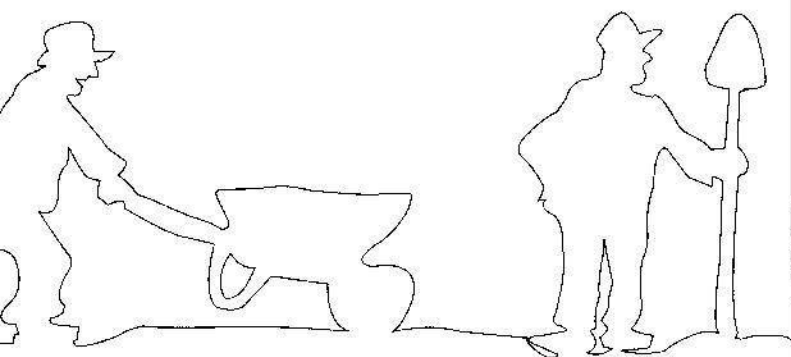
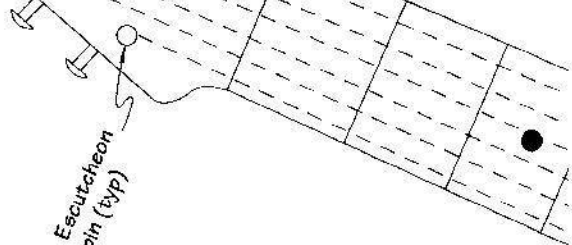
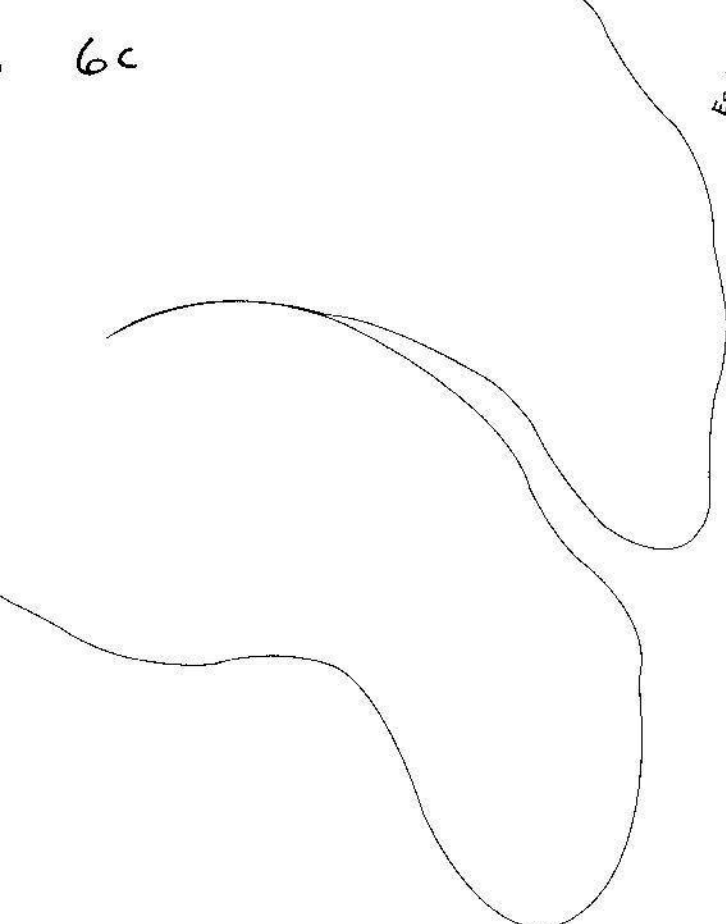
5c



6c

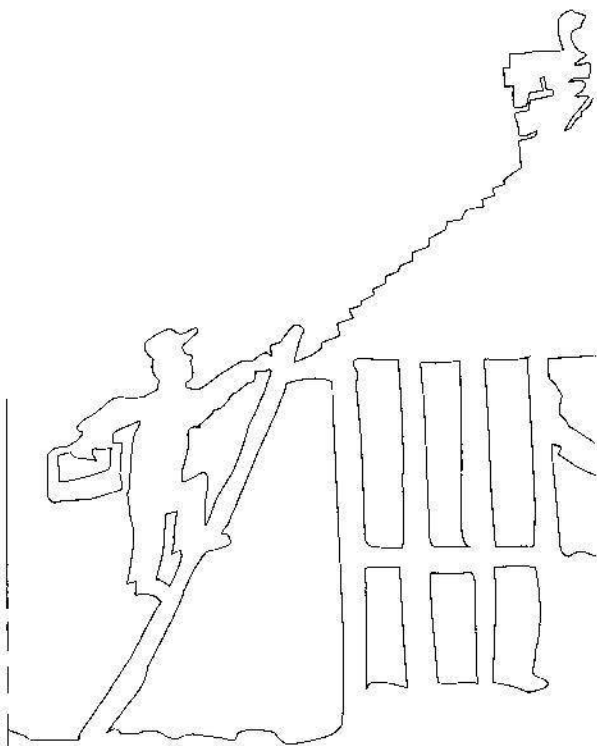
Escutcheon
pin for page (

Escutcheon
pin (typ)

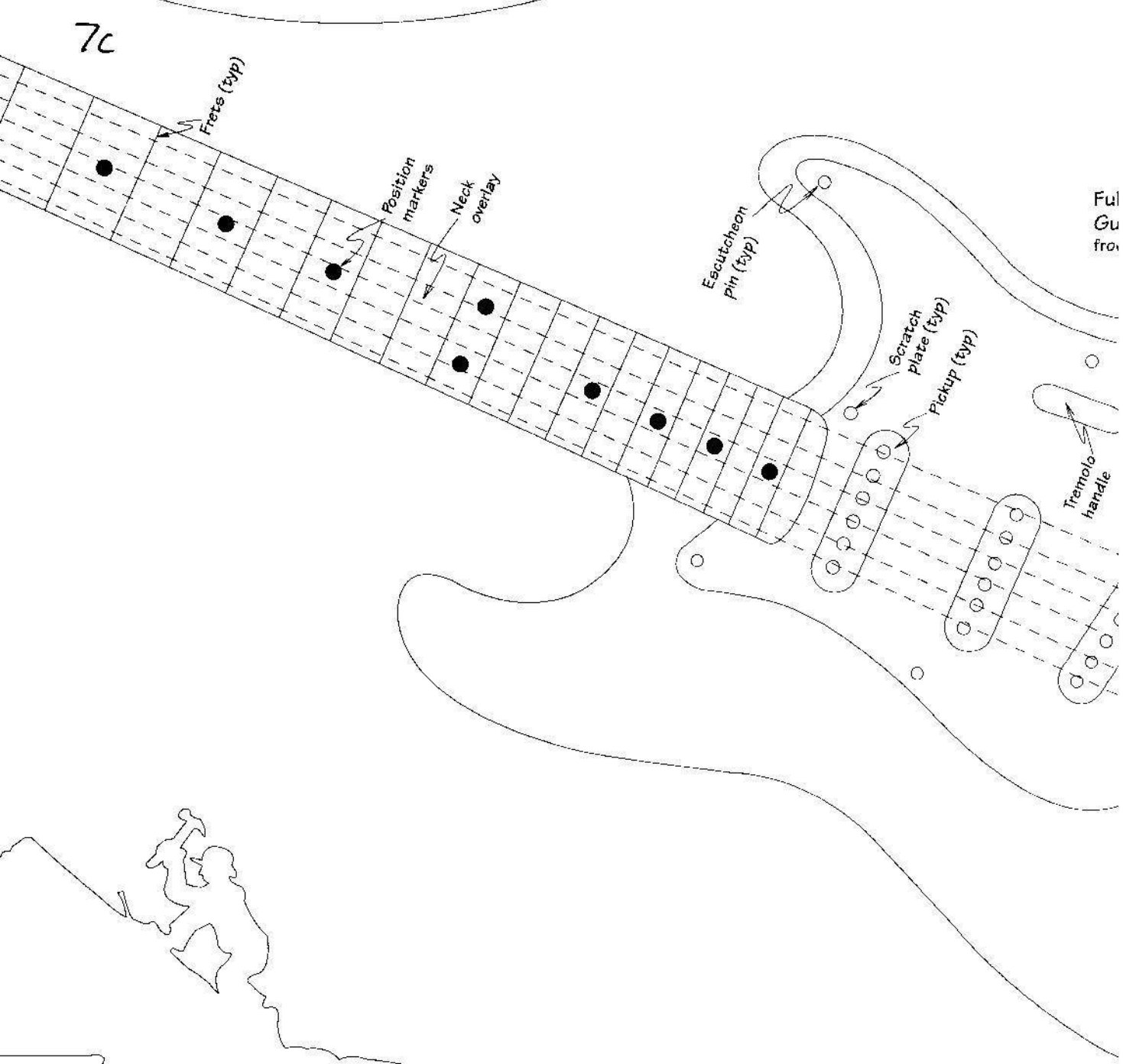


Match line "A"

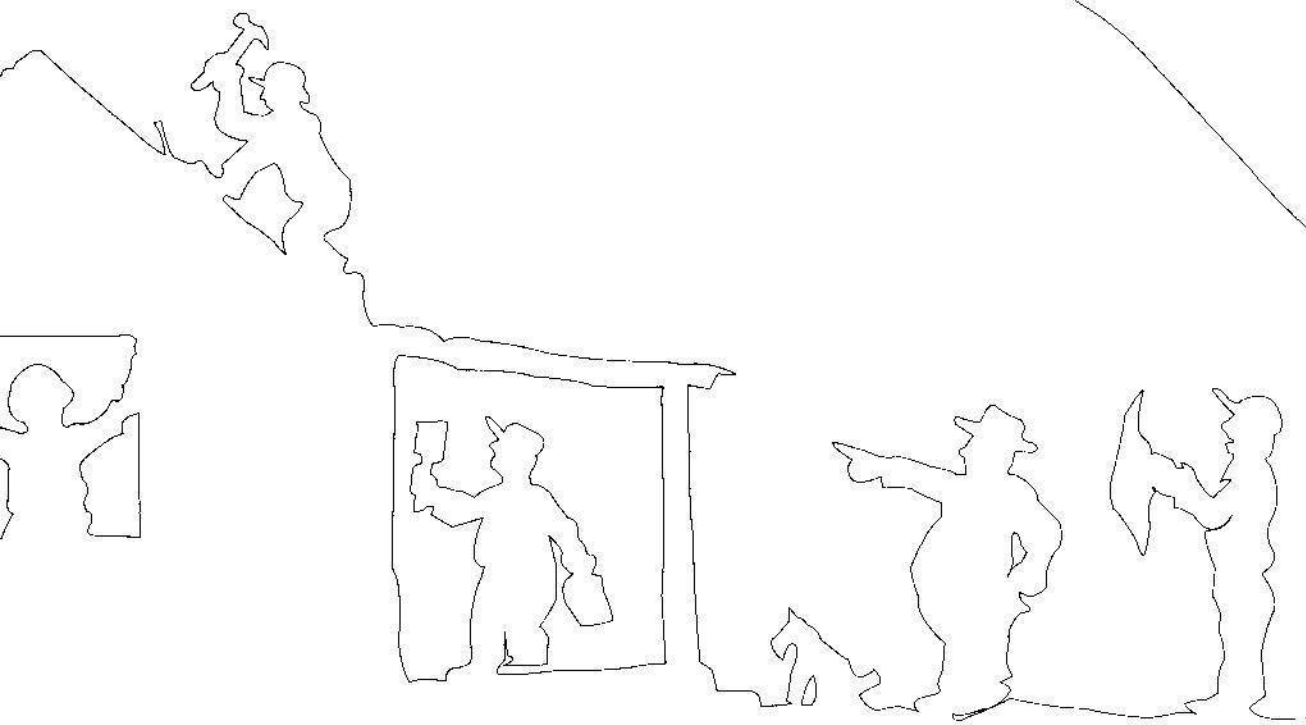
Match line "A"



7c



Full
Gu
fro

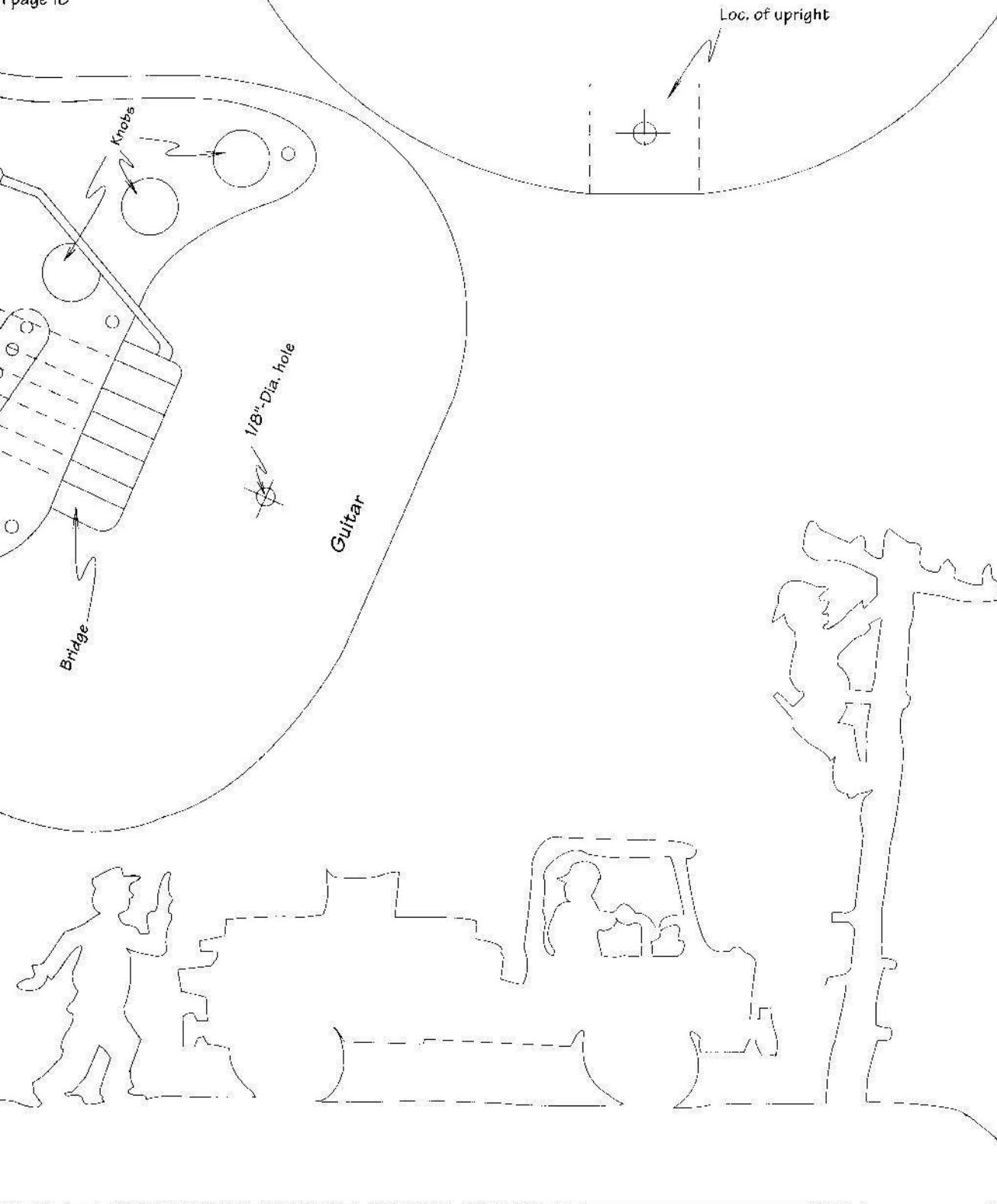


Match line "B"
Match line "B"

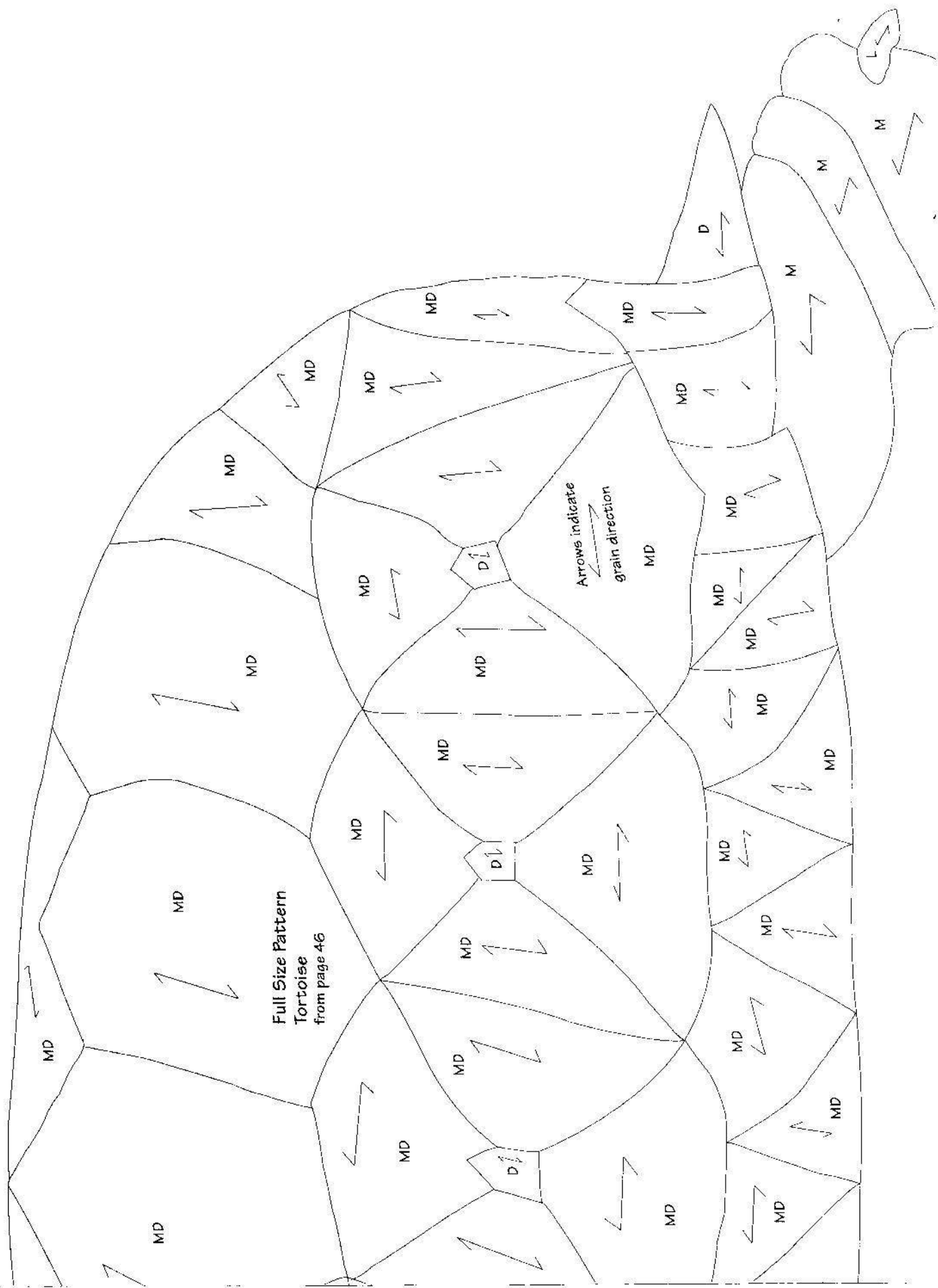
Full Size Patterns
Building A House Door Topper
from page 16

8c

Size Patterns
Guitar CD Rack
page 18



1d



2d

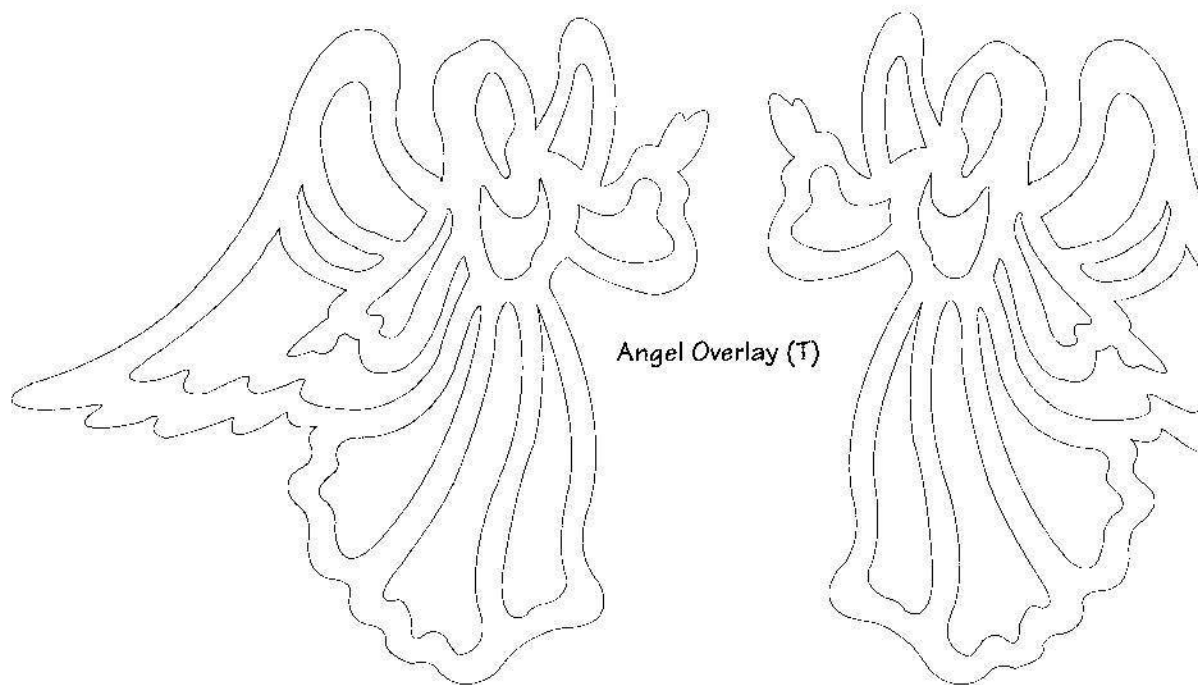


(F)

Decorative Ti



(F)

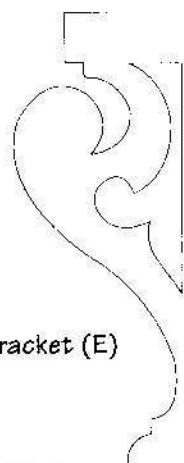


Angel Overlay (T)

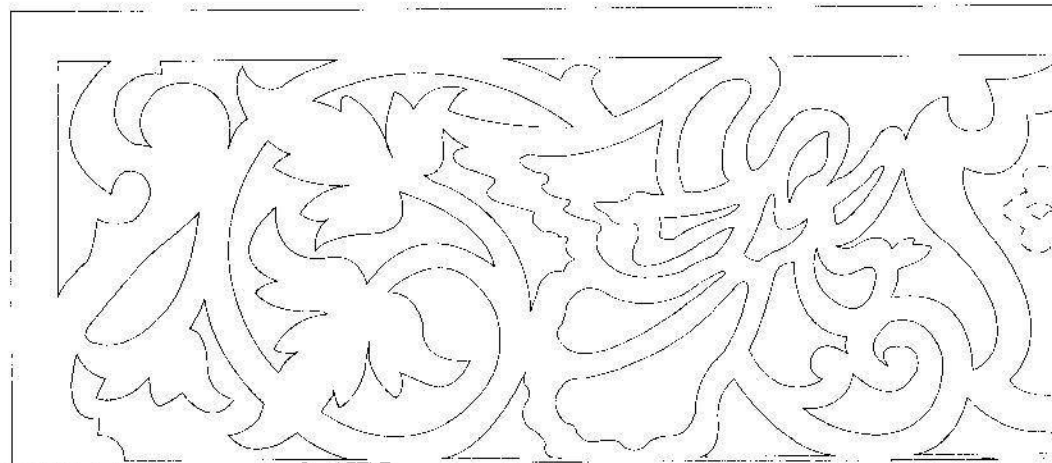


C

Fro

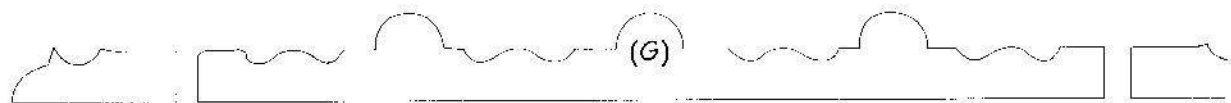


Bracket (E)

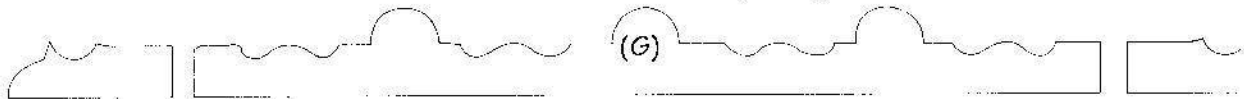


Trim (Long)

3d

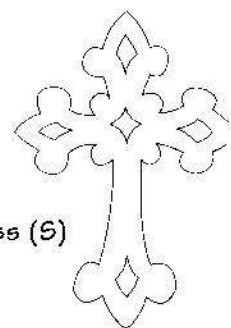


Decorative Trim (Short)



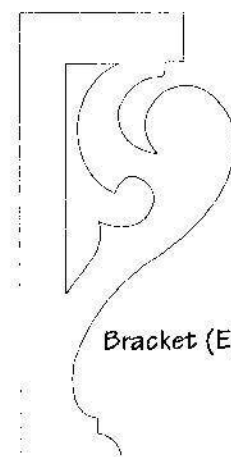
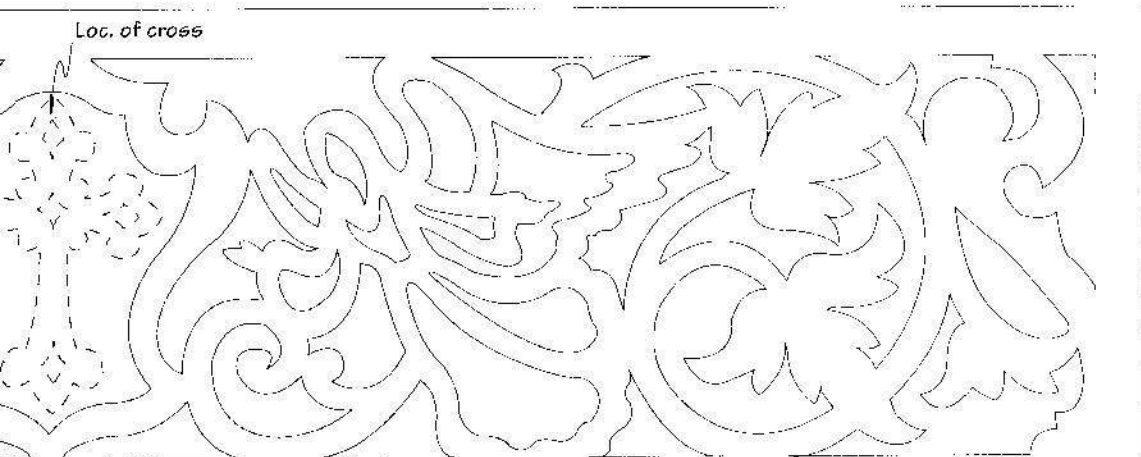
Cross (S)

Full Size Patterns
Angelic Keepsake Chest
from page 30



Cross (S)

Front/Back Panel (A)



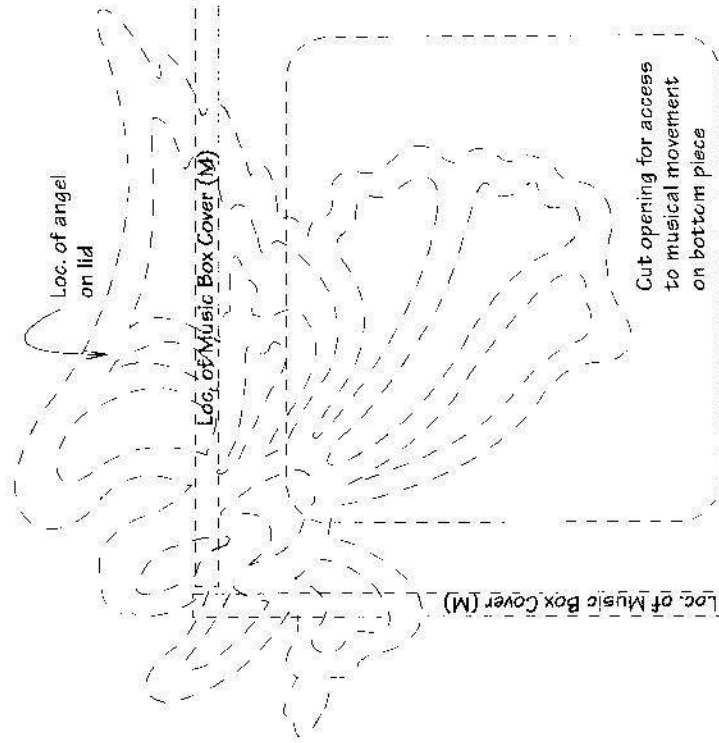
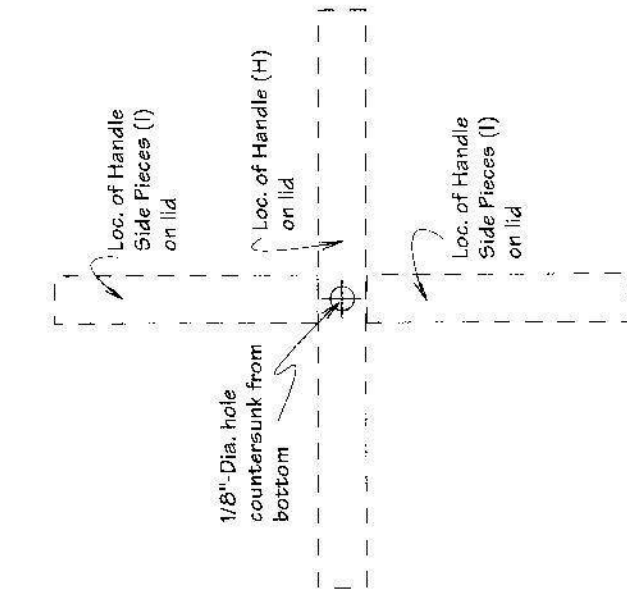
Bracket (E)

4d

Loc. of Front/Back Panel (A), Front/Back Leg Sections (B) and Decorative Trim (F)

Loc. of Long Liner Panel (K)

Lid/Bottom Panel (J)

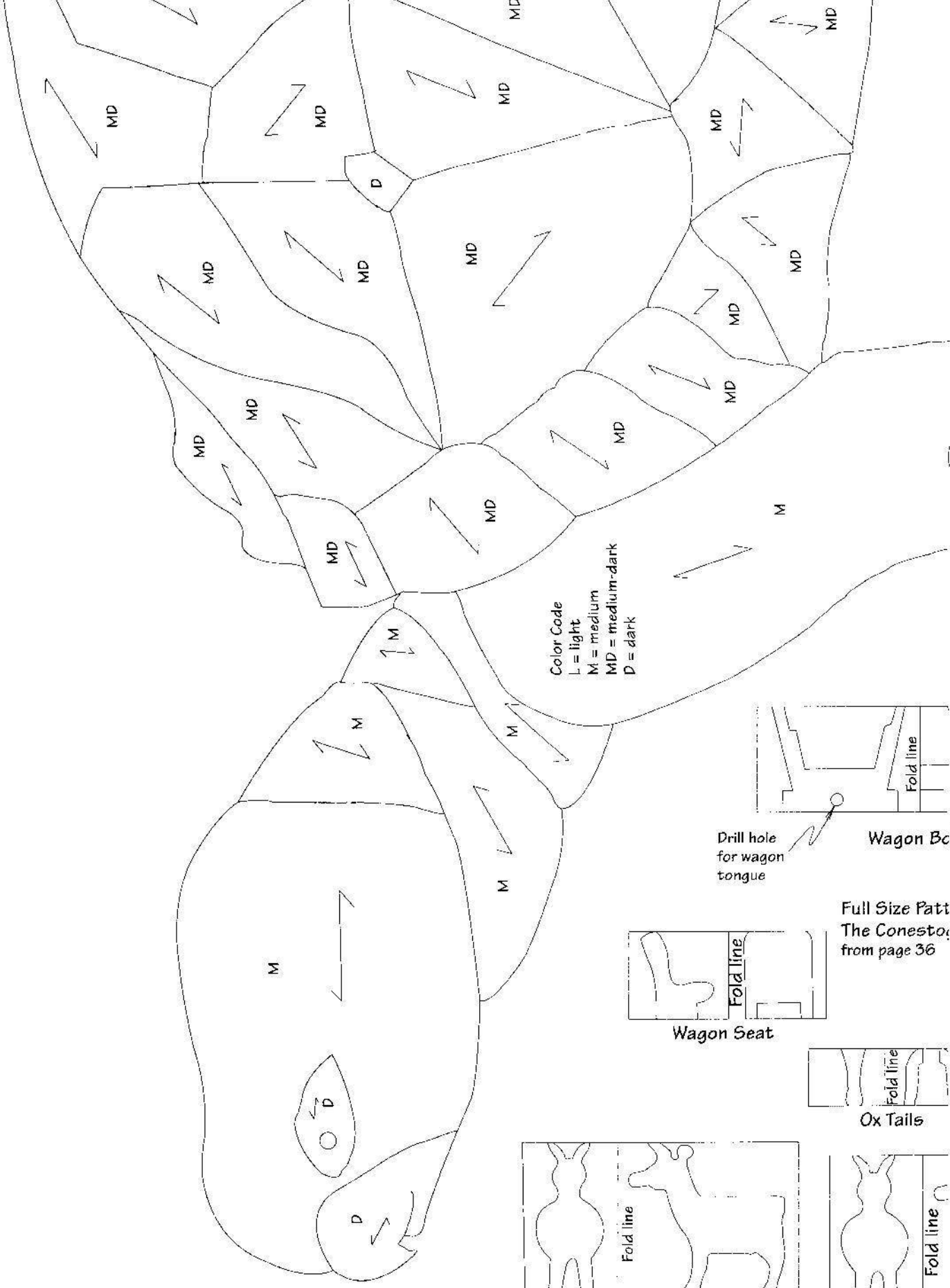


Loc. of Short Liner Panel (L)

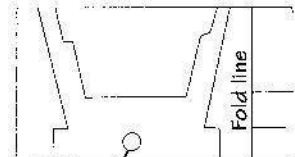
Loc. of End Panel (C), End Leg Section (D), and Decorative Trim (G)

Loc. of Long Liner Panel (K)

Loc. of Front/Back Panel (A), Front/Back Leg Sections (B) and Decorative Trim (F)

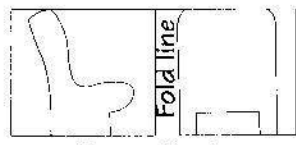


Color Code
L = light
M = medium
MD = medium-dark
D = dark



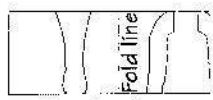
Drill hole
for wagon
tongue

Wagon Body

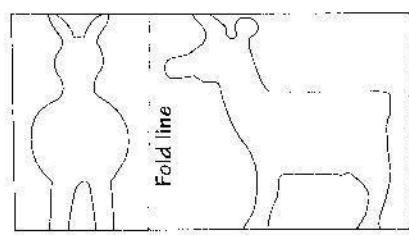


Wagon Seat

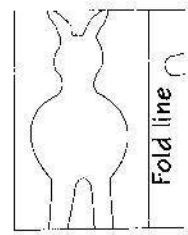
Full Size Pattern
The Conestoga
from page 36



Ox Tails

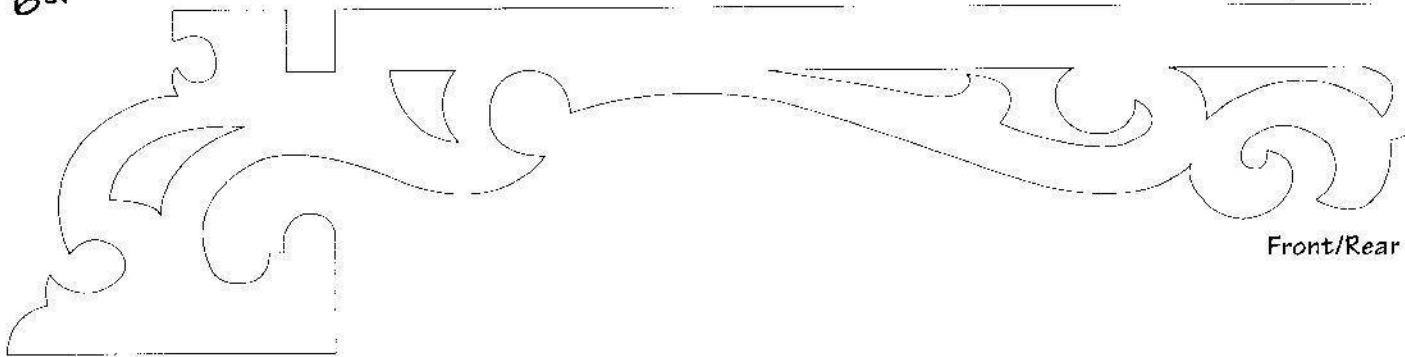


Ox Body



Ox Body

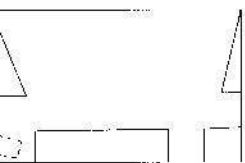
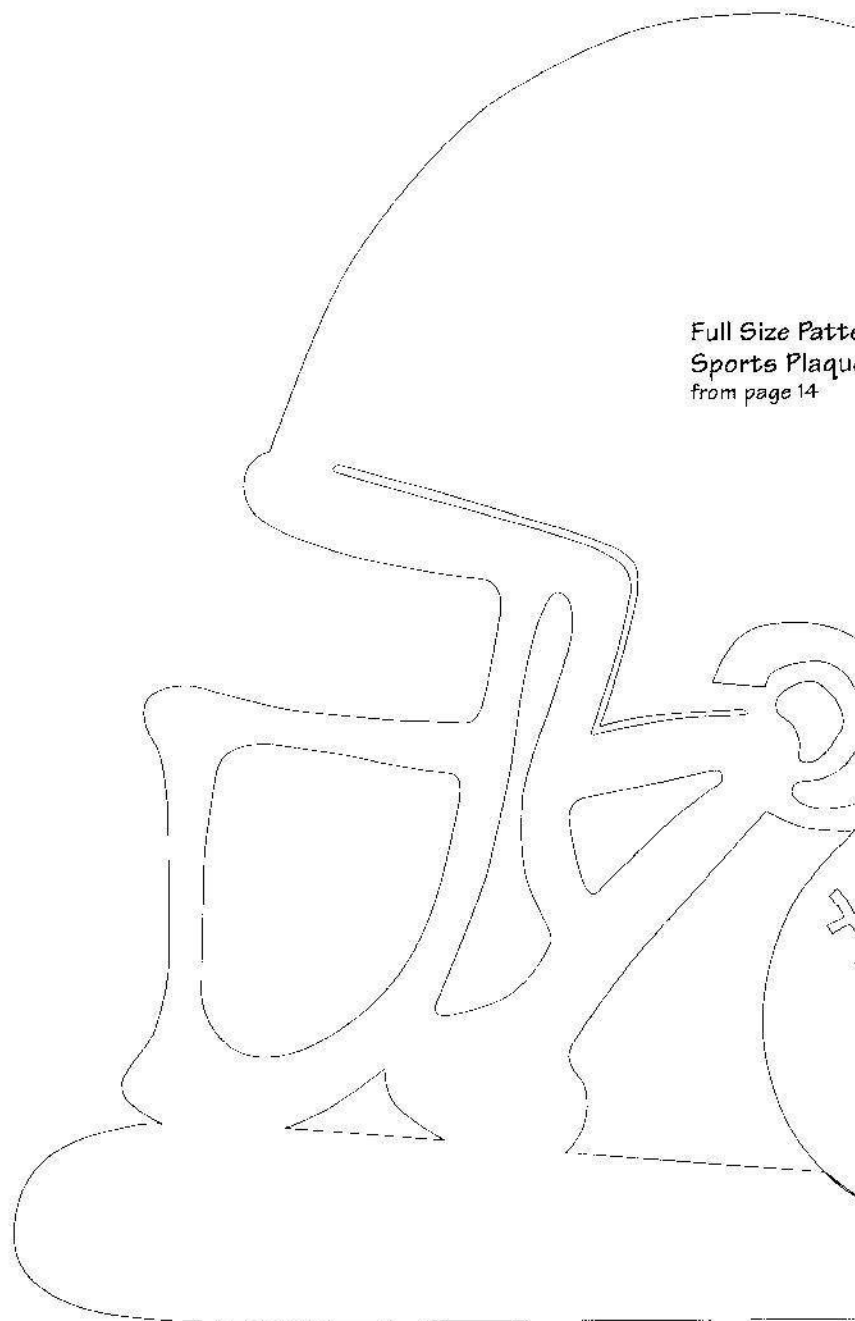
6d



Front/Rear

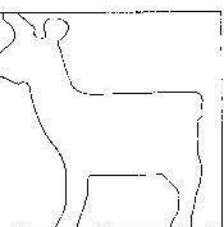
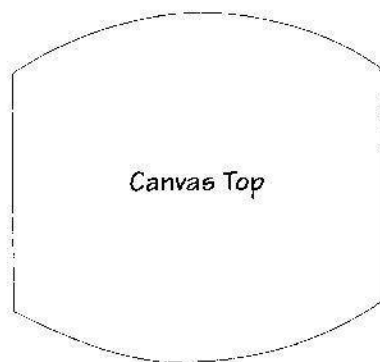


Full Size Pattern
Sports Plaque
from page 14



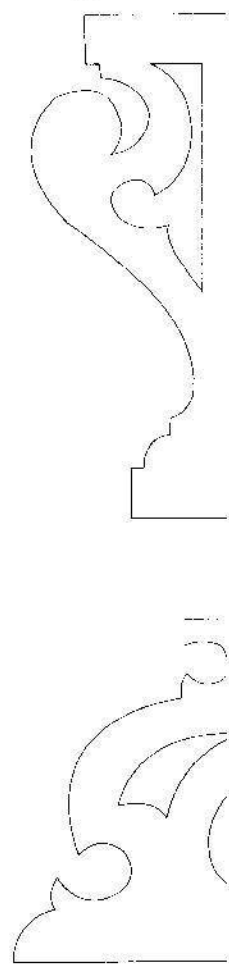
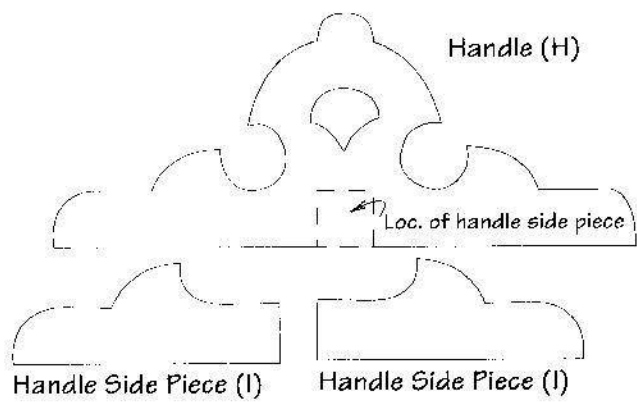
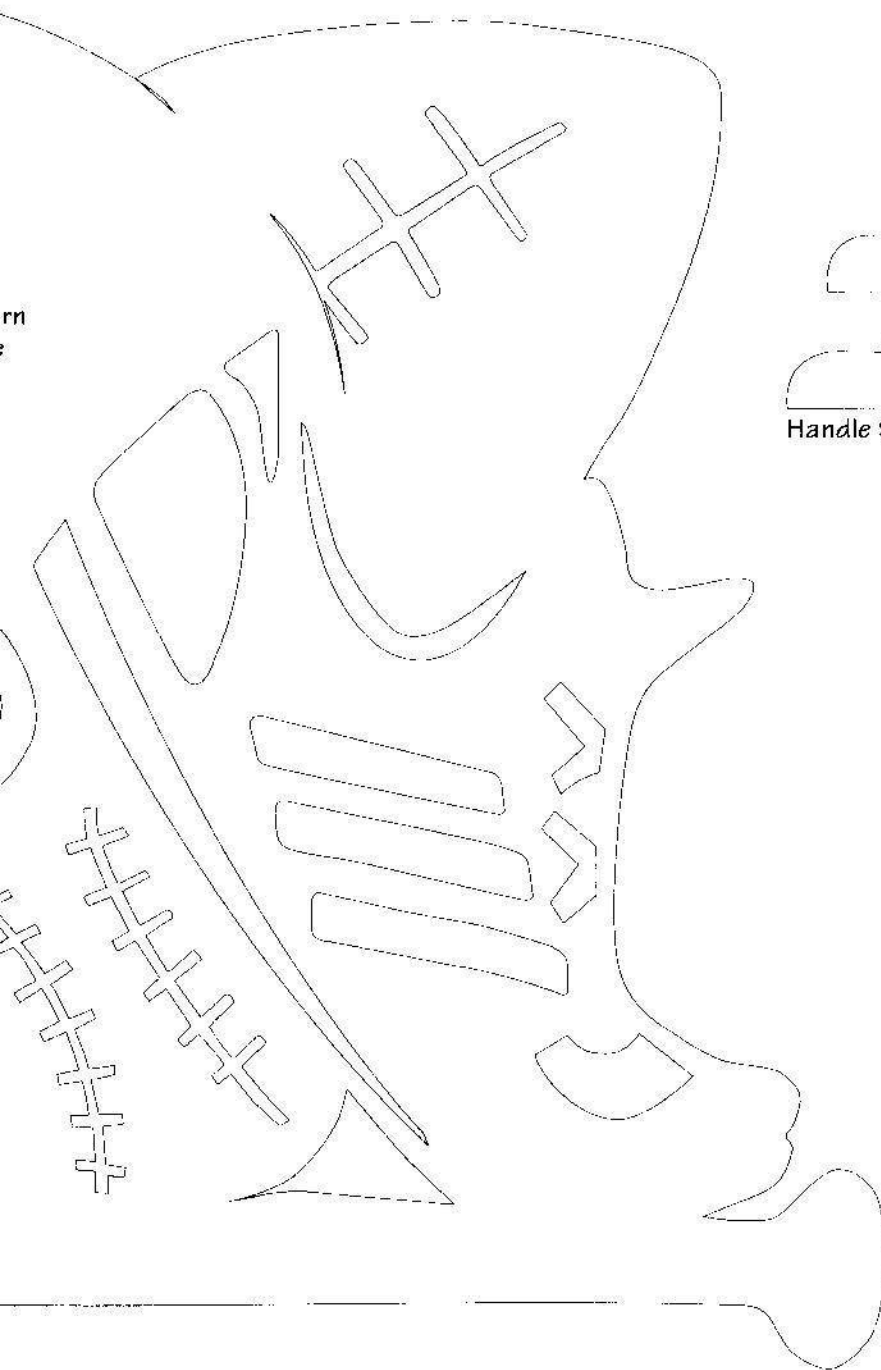
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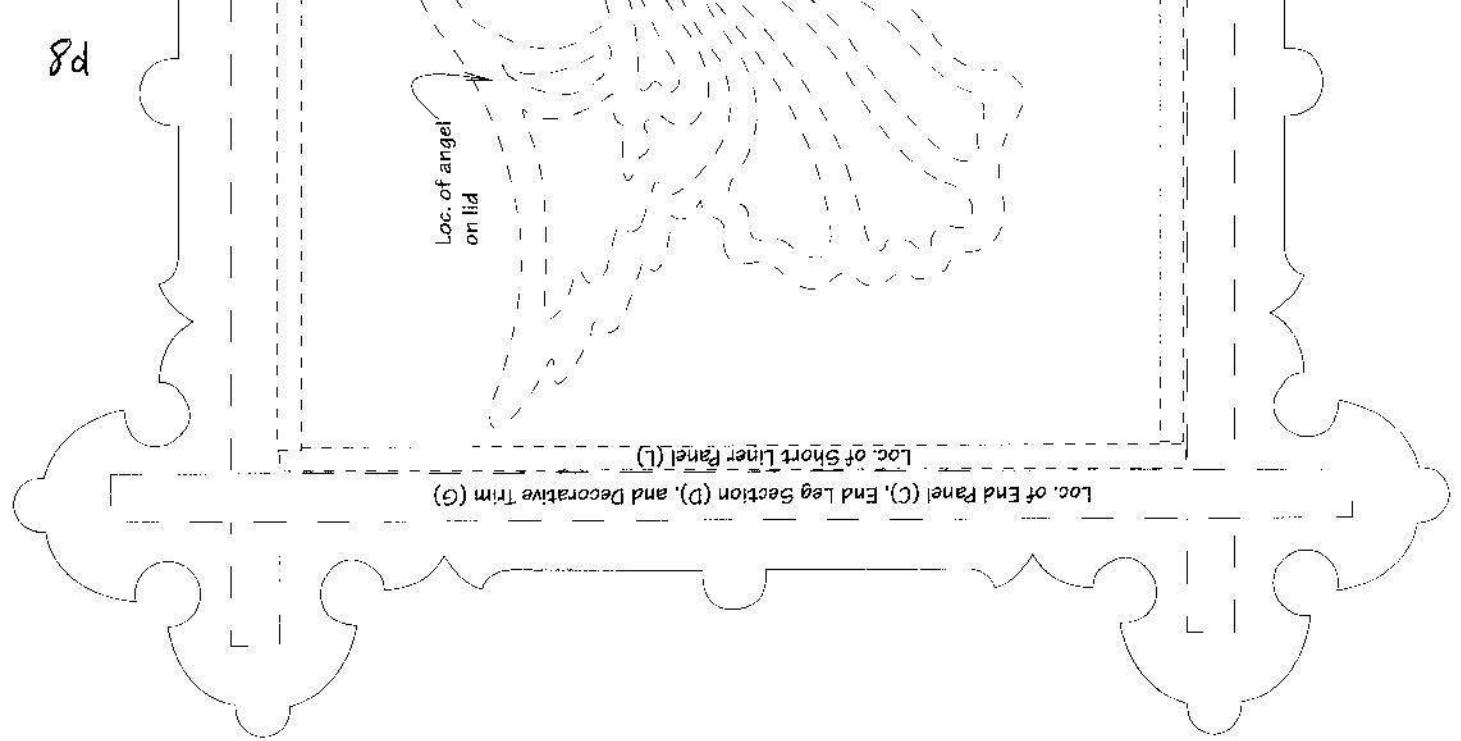
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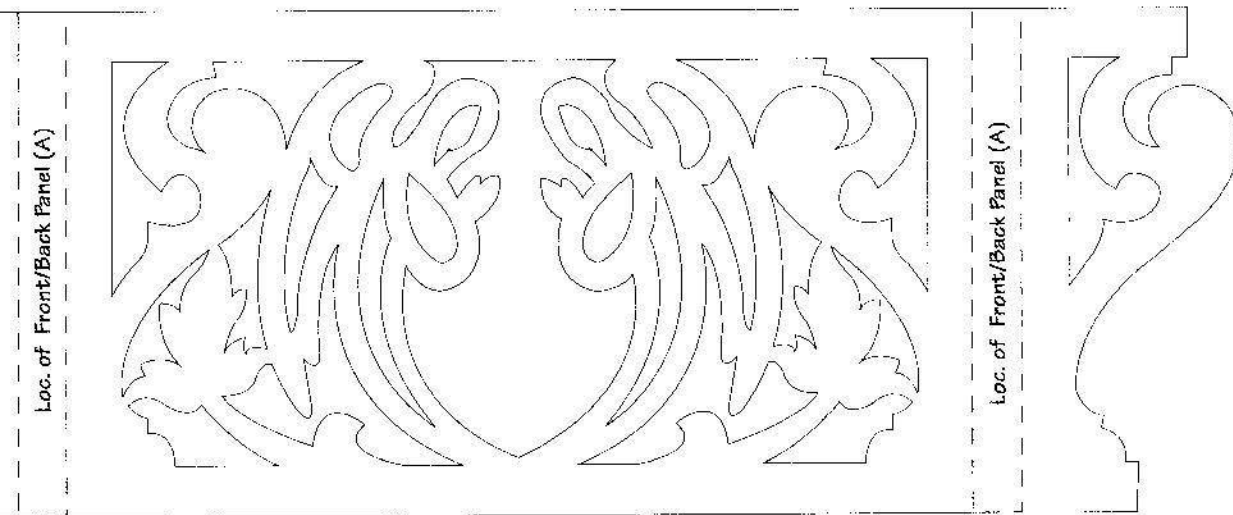
x Body

Leg Sections (B) 7d





End Panel (C)



End Leg Section (D)

