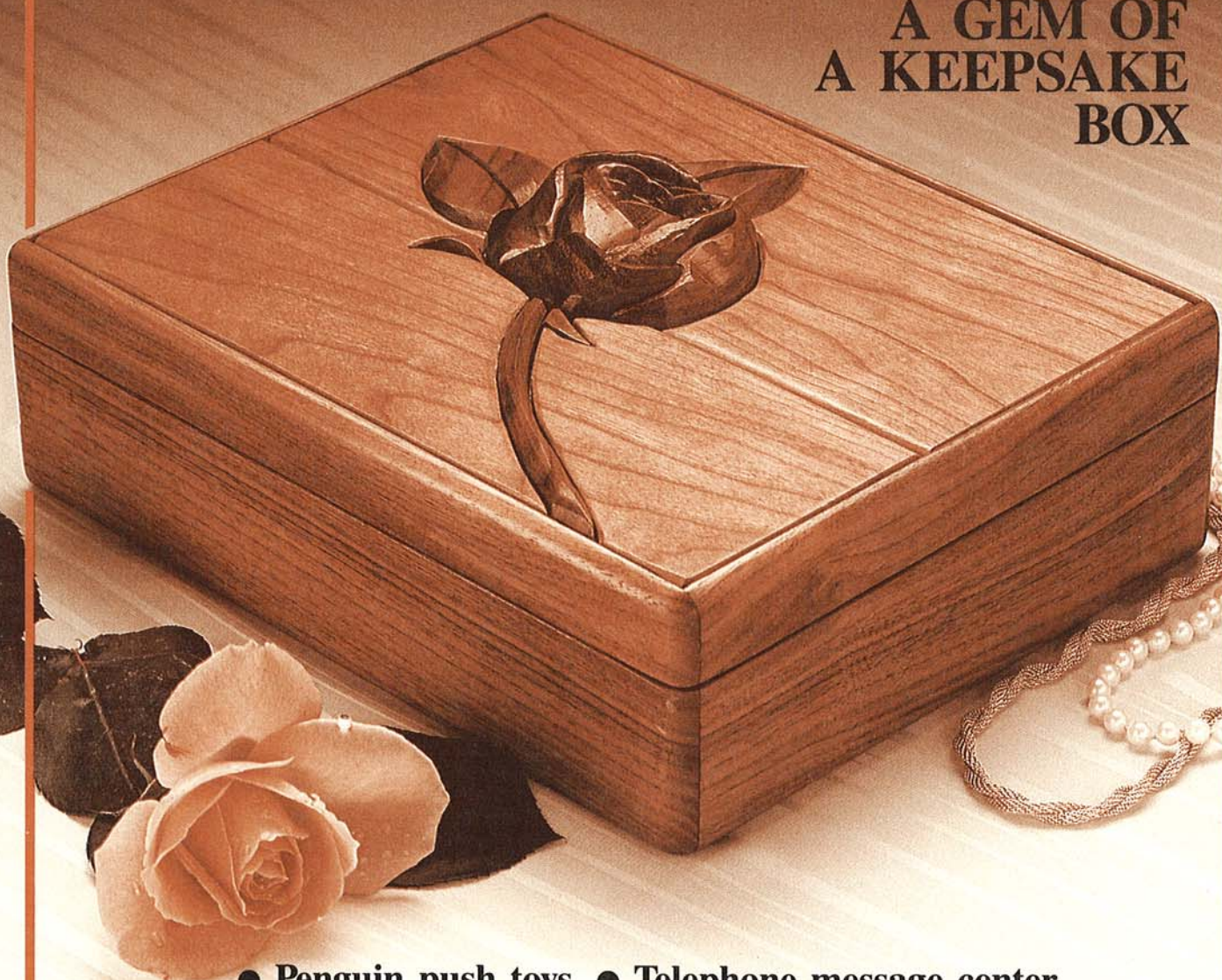


WEEKEND WOODWORKING **PROJECTS**

NEAT THINGS YOU CAN BUILD IN A HURRY

**A GEM OF
A KEEPSAKE
BOX**



- Penguin push toys
- Telephone message center
- Arched-top clock
- Laminated napkin rings
- Jelly bean machine

FROM THE EDITORS OF WOOD® MAGAZINE



4 A GEM OF KEEPSAKE BOX

Small items of value, such as jewelry and photographs, need a special keeping place. Let our rose-covered box store your treasures in style.

8 ARCHED-TOP TICKTOCK

Take time from your busy weekend to build this handsome timekeeper. Its modest detailing makes it a natural for contemporary decors.



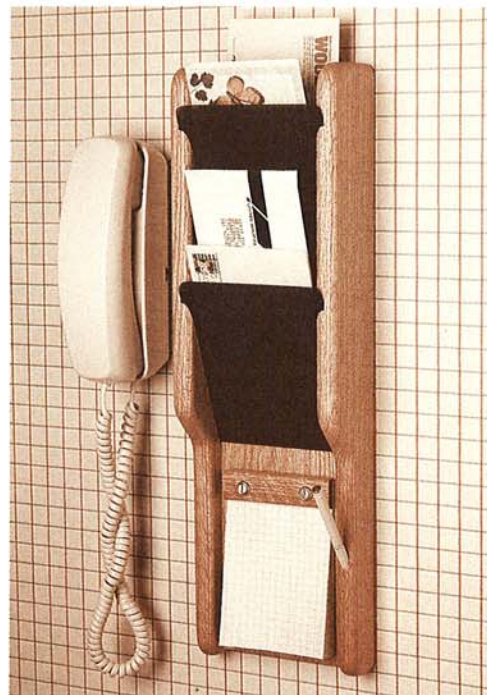
12 PLAYFUL PAIR OF PENGUINS

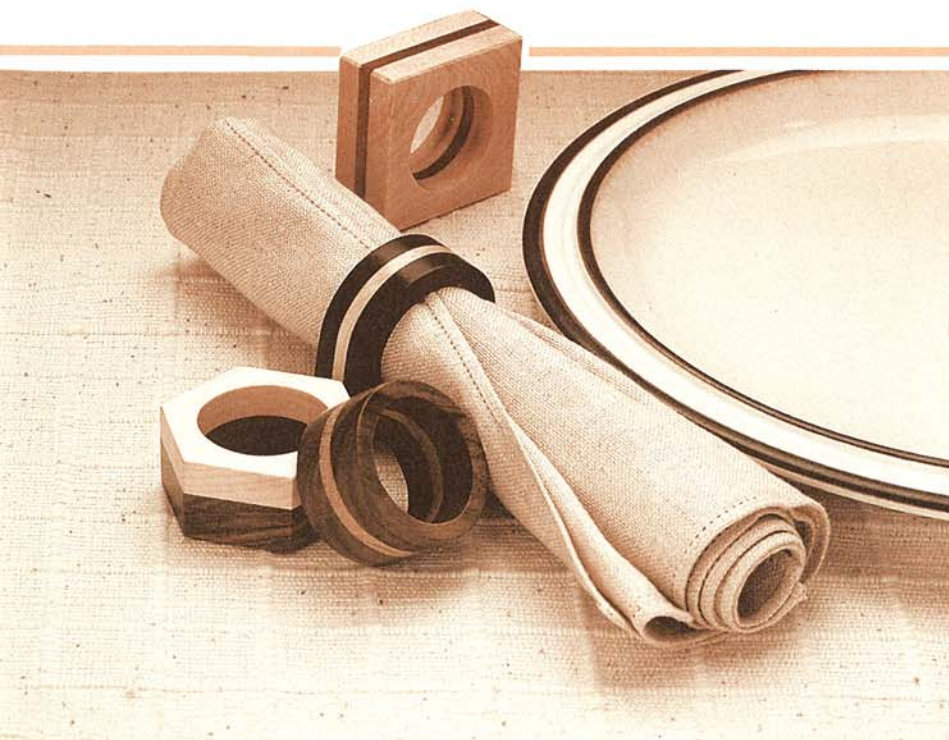
Penguin-mania just might be the next neighborhood craze once these humorous birds waddle out of your workshop. Kids of all ages can't leave them alone.

16 A NOTEWORTHY MESSAGE CENTER

The next time someone calls with an important message, jot it down on this handy wall-mounted organizer. Two plastic panels offer added storage for odds and ends.

**PROJECTS
DESIGNED WITH
YOU IN MIND**





ALL IN A NIGHT'S WORK

20 MEET THE RING-LEADERS

Simple geometric shapes coupled with attractive wood laminations make these elegant napkin holders the talk of the dinner table.

22 ONE LEAN JELLY-BEAN MACHINE

The Candyman would love this project, and you will, too. It's a crank-operated dispenser for jelly beans, gum balls, or other sweet-tooth delights. Build it in an evening; enjoy it for a lifetime.



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OUR PLEDGE TO YOU

Prior to publication, we build every project presented in WEEKEND WOODWORKING PROJECTS step-by-step in our shop. Then, a team of editors reviews each element of each project—directions, illustrations, and bill of materials—to make sure the instructions we provide you are clear, concise, and complete. In short, we do everything possible to “de-bug” each project while it’s being built in our shop so you’ll have smooth sailing (and good results) in yours. Thanks for your support!

Jim Harrold

for the staff of Weekend Woodworking Projects

A GEM OF A KEEPSAKE BOX

HERE'S HOW TO FASHION THE ROSE

1 Rip and crosscut a $\frac{3}{4}$ "-thick piece of padauk to $3 \times 3\frac{1}{4}$ " for the rose petals (A). (We made the rose bloom out of padauk to create a color contrast between the rose and the box lid.) Using black carbon paper, transfer the full-size bloom pattern to the padauk. Following the dark, continuous line, cut out the petals with a scroll saw.

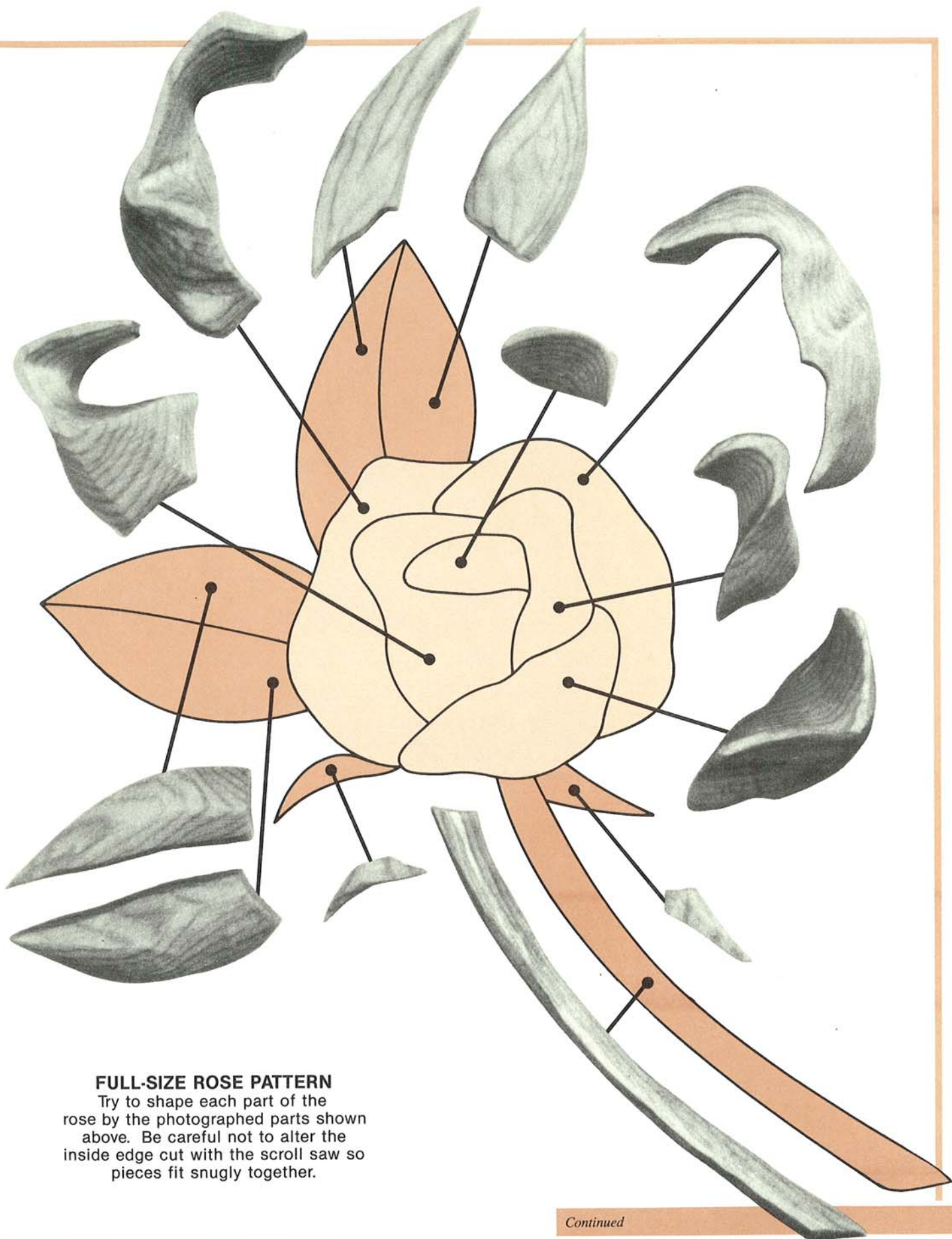
Note: *This project requires a small amount of $\frac{1}{2}$ "-thick walnut and $\frac{1}{4}$ "-thick cherry stock. You can plane or resaw (using a band saw or table saw) thicker stock to obtain wood with these dimensions.*

2 Rip and crosscut a piece of $\frac{1}{2}$ "-thick walnut to $1\frac{1}{2} \times 12$ " for the stem and leaves (B). Again, using carbon paper, transfer the full-sized stem and leaf patterns onto the walnut. Cut the parts to shape.

3 Using the individual parts photographs on page 5 as a guide, sculpt the petals, stem, and leaves to achieve a three-dimensional rose. Sand or carve each petal piece, working away from the ridges. Do not remove material at the base of the individual parts or they will not fit back together properly. Duplicate the scallops, curves, and flat sloping surfaces where shown. (We shaped the outside curves and flat surfaces of each piece on a stationary belt sander, and sanded the inside curves and scallops with a $\frac{1}{2}$ "-diameter drum sander. [See the drawings on page 6.] We also experimented with a rotary power carver that was equipped with a $\frac{1}{2}$ -inch diameter drum sander and



Great for jewelry or precious momentos, here's a rose-adorned box begging to be used. And, you'll have to look for a long time before you find one with a more attractive lid. But don't let the sculptured rose frighten you—power tools simplify its carving.



FULL-SIZE ROSE PATTERN

Try to shape each part of the rose by the photographed parts shown above. Be careful not to alter the inside edge cut with the scroll saw so pieces fit snugly together.

Continued

found it equally effective for all surfaces.) In shaping the leaves and stem, taper away from the center ridges to the edges, again varying the angle of the slopes. Finish-sand all of the parts by hand.

NOW LET'S BUILD THE LID INSERT

1 Rip and crosscut one piece of $\frac{1}{4}$ "-thick cherry stock to $3\frac{1}{2} \times 9\frac{1}{2}$ " (C) and one to $4 \times 9\frac{1}{2}$ " (D). To accent the joint between the cherry pieces, sand a slight roundover along the top mating edges on both pieces.

2 Tape the cherry pieces together side-by-side. Then, arrange the assembled petals, stem, and leaves on the panel where shown on the Box Assembly Drawing. Trace the rose and stem outline onto the cherry, then remove the tape and scroll-saw the outline.

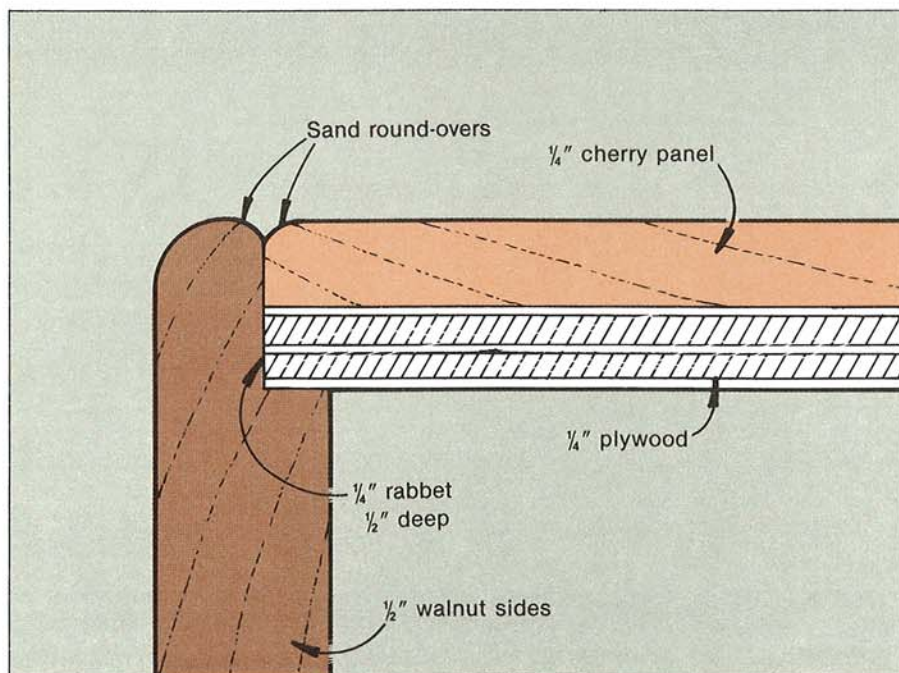
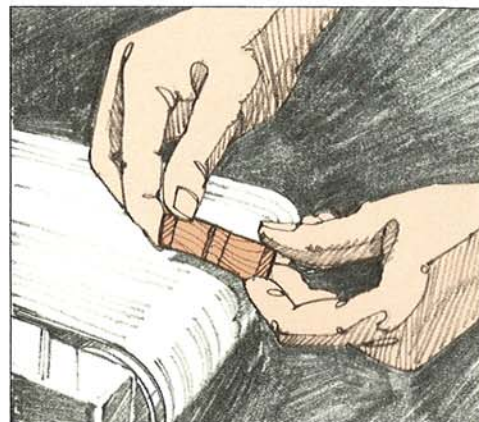
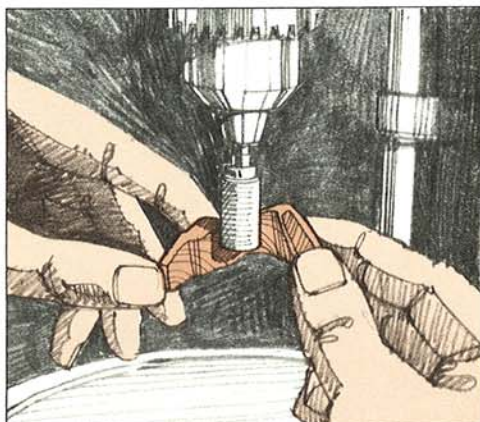
3 Cut the two plywood panels (E) to the size listed in the Bill of Materials. (We used $\frac{1}{4}$ " cherry plywood.) Now, glue the rose parts and the cherry panels to one of the plywood panels to form the lid insert. (You want the plywood's best side facing inside the box.) Set the lid insert aside for now.

AND NOW FOR THE BOX

Note: We assembled the box as a unit, then cut it in two on the table saw to form the lid and box.

1 To make the box, first rip enough $\frac{1}{2}$ "-thick walnut to $3\frac{1}{8}$ " width for the front, back, and ends (F, G). Then, crosscut the walnut pieces to the lengths listed in the Bill of Materials.

2 Using a dado blade or a rabbetting router bit, cut a $\frac{1}{4}$ " rabbet $\frac{1}{2}$ " deep along the top edges and a $\frac{1}{4}$ " rabbet $\frac{1}{4}$ " deep along the bottom edge of all four pieces (F, G) where shown on the Box Assembly Drawing. Also cut a $\frac{1}{2}$ " rabbet $\frac{1}{4}$ " deep along the ends (inside edges) of the front and back pieces. Sand all surfaces until smooth.



3 Glue and clamp the box sides and ends together, then check the corners for square.

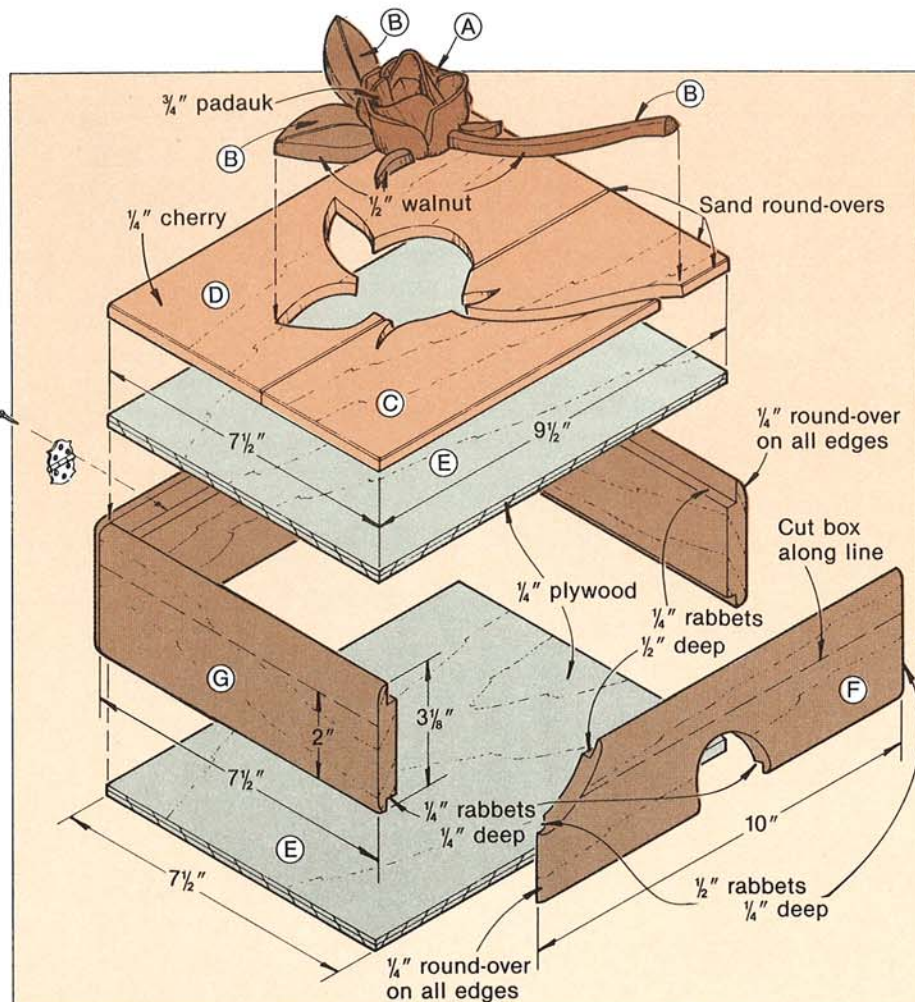
4 Secure the box frame to a sturdy work surface and rout a $\frac{1}{4}$ " round-over on all corners and outside edges.

5 Fit the lid insert and bottom plywood panel into their respective rabbets. Trim the pieces if necessary. (Make sure the best side of the bottom panel faces the inside of the box where it will be seen each time you open the lid.)

6 Sand a slight round-over along the top outside edge of the cherry panel and the top inside edge of the rabbet where shown in the drawing above.

7 Glue and clamp the lid insert and the bottom panel into the appropriate rabbets. To avoid squeeze-out, apply only a thin line of glue along the rabbets. Let the glue dry.

8 To separate the box into its two parts, raise the saw blade $\frac{5}{8}$ " above the table surface, and position the rip fence 2" away from the inside face of



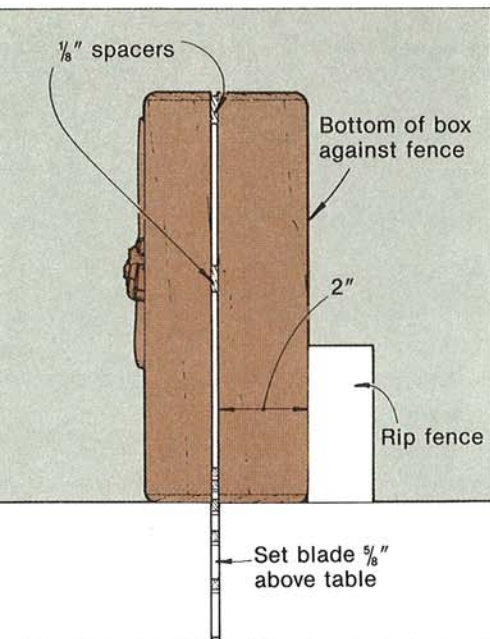
Bill of Materials

Part	Finished Size*			Material	Qty.
	T	W	L		
A	See text			padauk	1
B	See text			walnut	1
C*	1/4"	3 1/2"	9 1/2"	cherry	1
D*	1/4"	4"	9 1/2"	cherry	1
E*	1/4"	7 1/2"	9 1/2"	plywood	2
F	1/2"	3 1/8"	10"	walnut	2
G	1/2"	3 1/8"	7 1/2"	walnut	2

*Parts marked with an * are cut larger initially, and then trimmed to finished size. Please read the instructions before cutting.

Supplies: black carbon paper, two decorative brass box hinges with #2 roundhead screws, #0000 steel wool, sanding sealer, varnish.

BOX ASSEMBLY



the blade. (See the drawing left). Start the saw and cut the two ends and one side of the box. Then, tape 1/8"-thick spacers in the saw kerfs and make the final cut on the remaining uncut side to separate the box and lid.

9 Sand all surfaces smooth and finish the box's interior and exterior as desired. (We applied two coats of sanding sealer, rubbed with steel wool between coats, removed any remaining particles after rubbing with a cloth, and finished with two coats of satin varnish.)

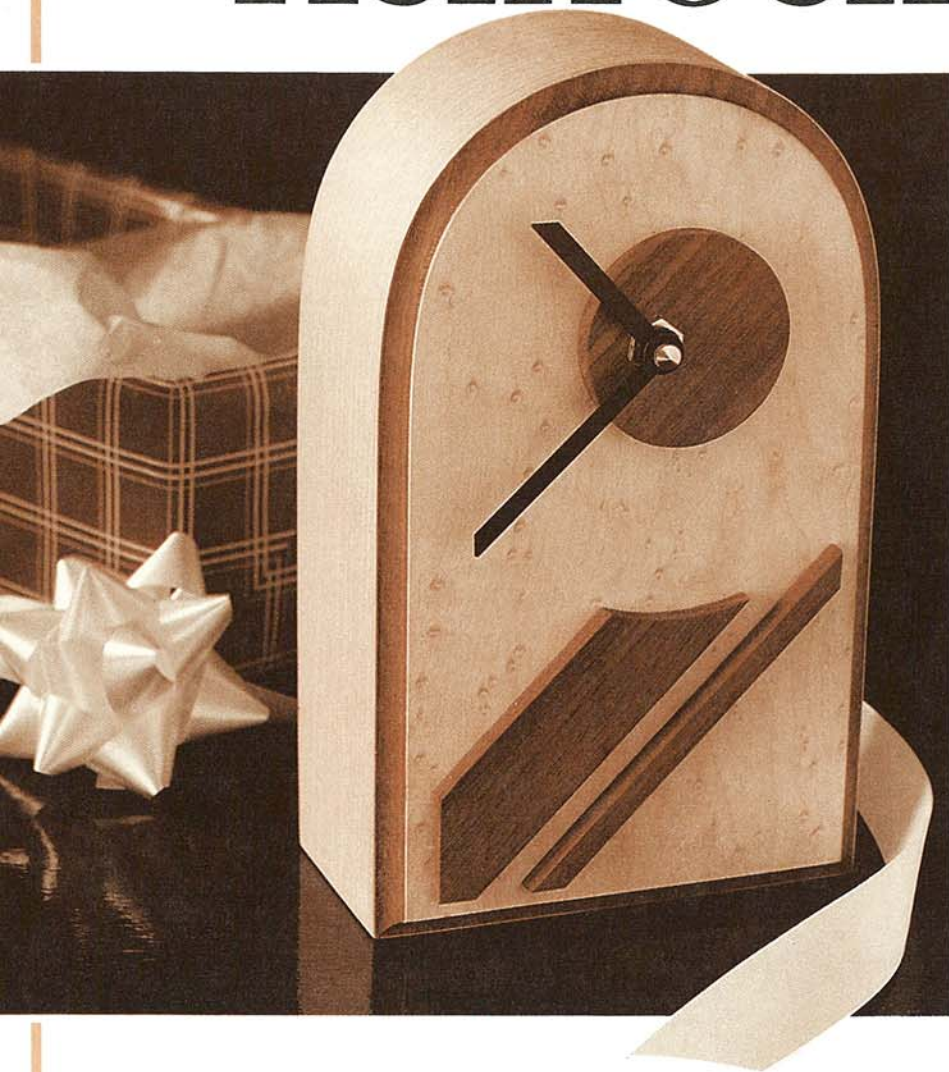
10 Clamp the box and lid together. Rest the box on the front side and position the hinges on the back side of the box 1 1/2" in from each end. (We used 1 1/4 x 1 1/8" decorative box hinges. See

the Buying Guide for our source.) Mark the screw hole locations and remove the hinges in order to drill the pilot holes. Reposition the hinges, and drive the screws. If desired, line the interior of the box or just the bottom with velveteen or felt, using woodworker's glue or spray adhesive to hold the material in place.

BUYING GUIDE

• **Decorative hinges and screws.** Brass-plated box hinge, catalog no. 228, mounts with #2 roundhead woodscrews (not included), \$1.77 each plus \$3.50 shipping (\$25 minimum order). Brass-plated #2 x 3/8" roundhead screws, catalog no. R382, \$3.50 per 100. Meisel Hardware Specialties, P.O. Box 70, Mound, MN 55364, or call 1-800-441-9870 (612-471-8550 for Minnesota residents).

ARCHED-TOP TICKTOCK



Everyone can use another clock, right? Our well-rounded model aims to please with its minimum of details and decorative contrasting hardwoods. Standing 8½" tall, it can add the right touch to your fireplace mantel or built-in bookshelves while satisfying your need for the time of day.

FIRST, MAKE THE CLOCK

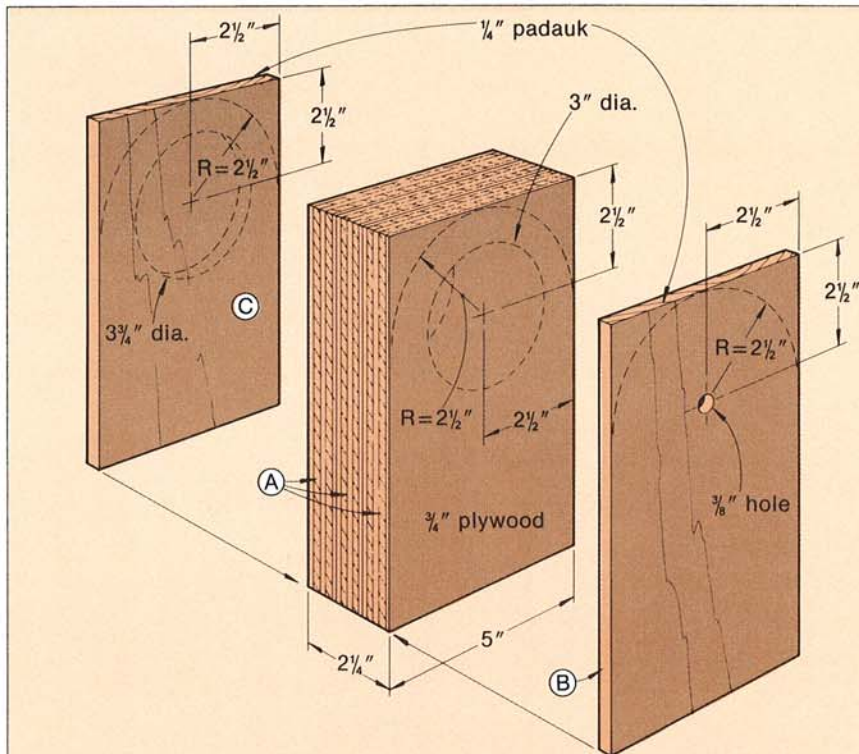
1 Rip and crosscut three pieces of ¾" plywood (A) to 5×8½" for the clock body. For the clock front and back (B, C), cover plate (D), and trim pieces (E, F, G), resaw or plane hardwood stock to ¼", or purchase stock of that thickness from a supplier. See the Buying Guide on page 11 for our source. (We used padauk for the project's front and back to contrast with the maple veneer.) Now, rip and crosscut two pieces from the resawn hardwood to 5×8½".

2 Mark a 2½" radius for the arched top on all five pieces (A, B, C) where shown on the Shaping and Laminating the Body Drawing *opposite*. Also, mark center points for the 3" diameter openings for the clock movement in the body (A), the 3¾" cover plate opening in the back (C), and ⅜" hole for the clock stem in the front (B).

3 Using a band saw or scroll saw, cut the arch profile of the clock body parts, sawing outside the marked line.

4 With a circle cutter mounted in a drill press, cut the 3"-diameter circles for the movement in the clock body parts (A). Check to ensure the movement fits the opening. (See the Buying Guide for our clock movement source.) Now, adjust the circle cutter and cut the 3¾"-diameter opening in the clock back (C). Change to a twist bit and drill the ⅜" hole through the front piece (B).

5 Apply glue to the body parts where needed and assemble in the order shown on the Shaping and Laminating the Body Drawing. Align the bottom and edges, then clamp the stack. Let the glue dry. Now, using a disk or belt sander, sand the oversized arch to size. (We did this on the disk

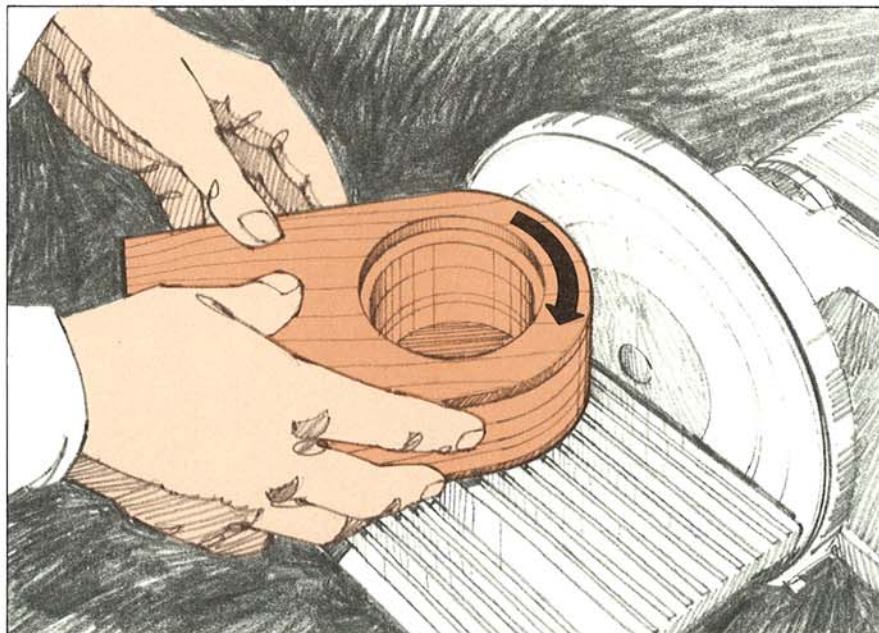


SHAPING AND LAMINATING THE BODY

Bill of Materials					
Part	Finished Size*			Material	Qty.
	T	W	L		
A	3/4"	5"	8 1/2"	plywood	3
B	1/4"	5"	8 1/2"	paduk	1
C	1/4"	5"	8 1/2"	paduk	1
D	1/4"	3 3/4" dia.		paduk	1
E	1/4"	2" dia.		paduk	1
F*	1/4"	1"	4 1/8"	paduk	1
G*	1/4"	1/4"	4 3/8"	paduk	1

*Parts marked with an * are cut larger initially, and then trimmed to finished size. Please read the instructions before cutting.

Supplies: carbon paper, flexible veneer, clock movement, AA battery, #3 x 1/2" brass roundhead wood screws.



sander, as shown at *left*). Begin sanding one side of the clock body and work around the arch top toward the opposite side. When sanding the arch, keep the clock body in constant rotation to avoid making flat spots on the arch.

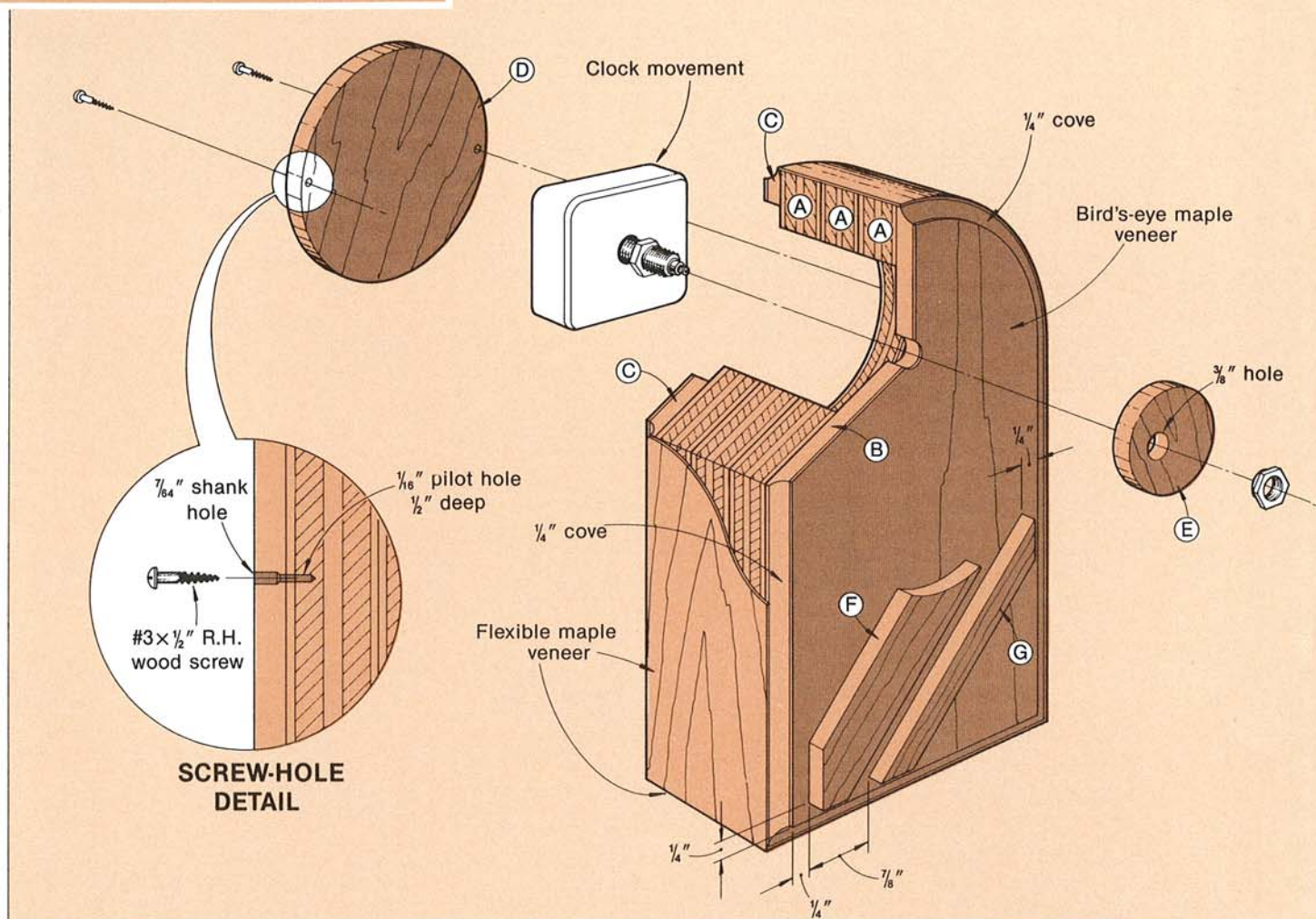
NOW, APPLY THE VENEER

1 Trace the outline of the clock body onto a piece of veneer twice for the clock front and back. (We used bird's-eye maple flexible paper-backed veneer with pressure-sensitive adhesive.) Cut the veneer pieces to shape with scissors, a sharp knife, or a razor.

2 Lay the clock body flat, with the back facing up. Place one veneer panel on the back and align along the bottom and one edge of the body.

Continued

ARCHED-TOP TICKTOCK



Working from one end, lift the veneer and start peeling back the protective paper. Place the uncovered veneer in contact with the clock body, checking alignment of the veneer sheet with the clock sides. Then continue to unroll the protective paper, working toward the opposite end. Press on the veneer as you progress to ensure a tight bond. Work carefully, because once the adhesive contacts the wood surface, it adheres tightly and can't be lifted. Turn the clock body over and apply the second sheet of veneer to the face. If your veneer does not have the pressure-sensitive adhesive, use contact or veneer cement recommended for the veneer you're using. Follow application instructions on the container.

3 Cut a $3 \times 5\frac{1}{4}$ " piece of veneer for the bottom. (We used flexible maple veneer for the bottom and sides.) Apply it as you did the front and back panels. (Refer to step 2.) Trim the excess with a razor blade. For the clock sides, cut a piece of maple veneer to $2\frac{3}{4} \times 20$ ". Start at the bottom on one side, bend it over the arch and work toward the bottom of the second side.

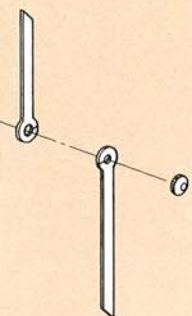
4 Clamp the clock body to a sturdy work surface. Then, rout a $\frac{1}{4}$ " cove along the front and back edges of the clock where shown on the Cove Detail Drawing. (We made several cuts, increasing the cutting depth each time to make the $\frac{1}{4}$ " cove.) Lightly sand the routed edge.

5 Lay the clock body facedown. Insert a razor blade through the veneer in the center of the cover plate area. Draw the blade to the perimeter of the opening and carefully trim away the waste veneer from inside the cover plate opening.

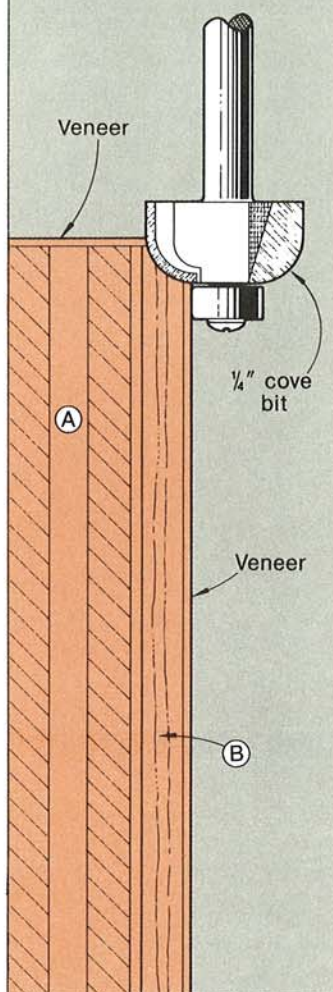
ADD THE DECORATIVE DETAILS

1 Measure the diameter of the cover plate opening and draw a circle having the same diameter on $\frac{1}{4}$ "-thick padauk stock. (We used padauk to match the other clock trim.) Now cut out the cover plate (D) for the opening on a band saw or scroll saw. Finish-sand the periphery of the cover plate to fit snugly in the back's opening.

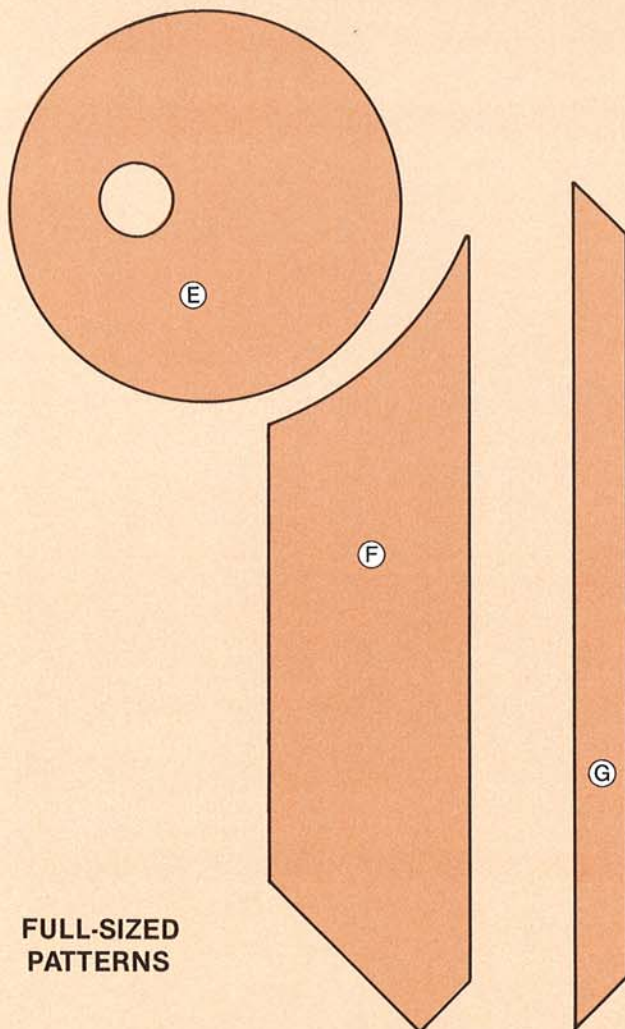
CLOCK ASSEMBLY



COVE DETAIL



FULL-SIZED PATTERNS



2 Position the cover plate in the opening, then locate and drill two holes where shown in the Screw-Hole Detail accompanying the Clock Assembly Drawing above left. (The removable cover plate lets you easily change batteries.)

3 Trace the full-sized patterns for the three decorative pieces (E, F, G) on $\frac{1}{4}$ "-thick padauk stock. Drill the off-centered $\frac{3}{8}$ " hole where marked on part E. Cut all three pieces oversize with a band saw or scroll saw. Finish-sand to the proper size. Glue the three pieces to the clock face where shown on the Clock Assembly Drawing, aligning the hole in E over the hole in the clock face. (We applied a thin

line of glue to avoid squeeze-out.) Use masking tape to secure the pieces until the glue dries.

4 Finish the clock as desired. (We applied two coats of clear polyurethane.) Avoid using penetrating oil finishes or products with strong solvents that may pass through the veneer and attack the adhesives, causing the veneer to let loose.

5 Install the works and hands according to the manufacturer's instructions. (Depending on the clock movement, you may have to enlarge the shaft hole.) Now, insert the battery in the movement. Add the cover plate and secure it with brass screws.

BUYING GUIDE

- **Clock movement.** Catalog no. 71623, includes movement and hands. \$10.80 ppd. from Time Crafters, 118 Honing Rd., Fox Lake, IL 60020, or call 312/587-1001.
- **Flexible veneer.** 24×24" paper-backed veneer. Maple, catalog no. X7308, \$8.56; bird's-eye maple, catalog no. X7309, \$12.24. Add \$2.95 shipping and handling for orders under \$15 or \$4 for orders \$15.01 to \$50. Craftsman Wood Service Co., 1735 W. Cortland Ct., Addison, IL 60601, or call 312/629-3100.
- **Padauk (Vermilion).** $\frac{1}{4}$ "-thick stock in random lengths and widths. Catalog no. W9351, \$4.95 per square foot plus shipping and handling as above. Craftsman Wood Service Co., address above.





Like birds of a feather, this father and son penguin pair looks and acts much like their distant relatives at the South Pole. Let a child escort the large bird across the floor, and watch him or her giggle as the lovable toy wobbles from side to side, flapping its broad feet. Take the pocket-sized penguin to work, and you'll find instant success as the friendly fowl breaks the ice in social gatherings with a single push forward. Fill an evening building one, or an entire flock.

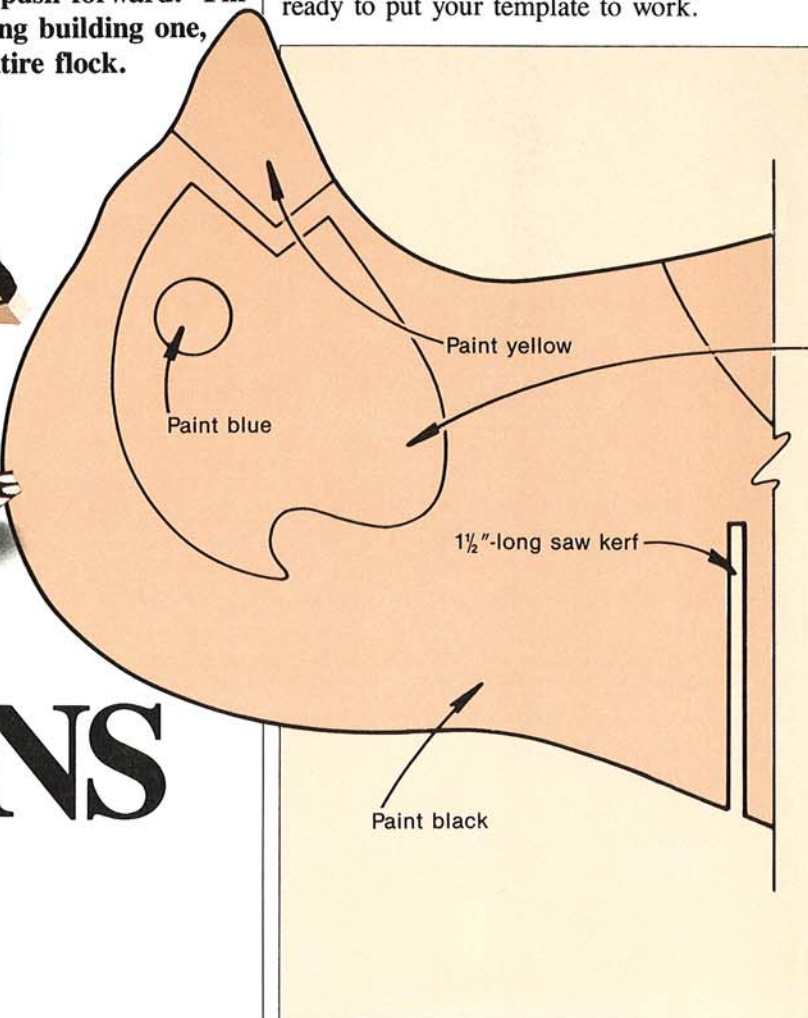
A PLAYFUL PAIR OF PUSH PENGUINS



FIRST, MAKE THE LARGE PENGUIN

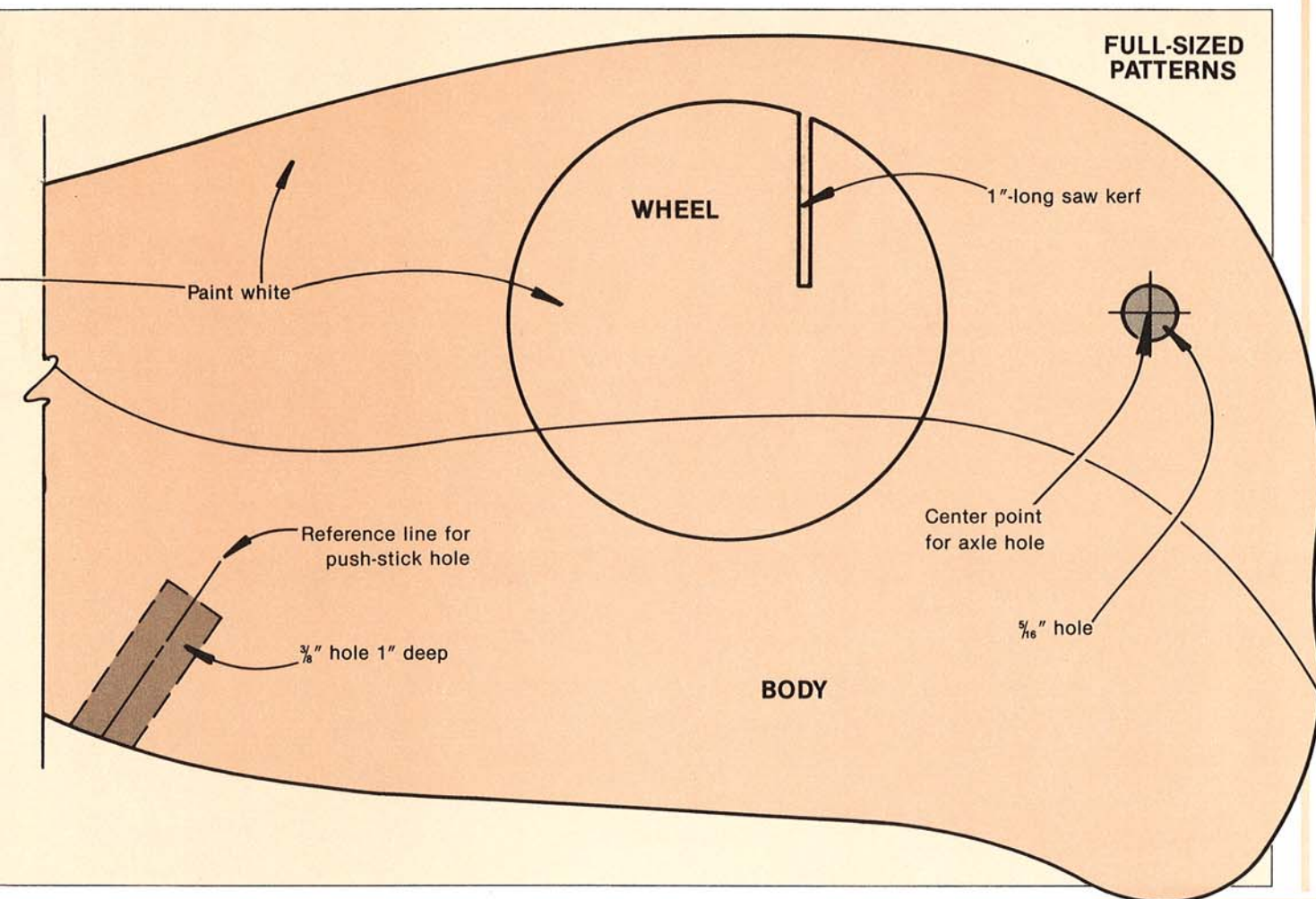
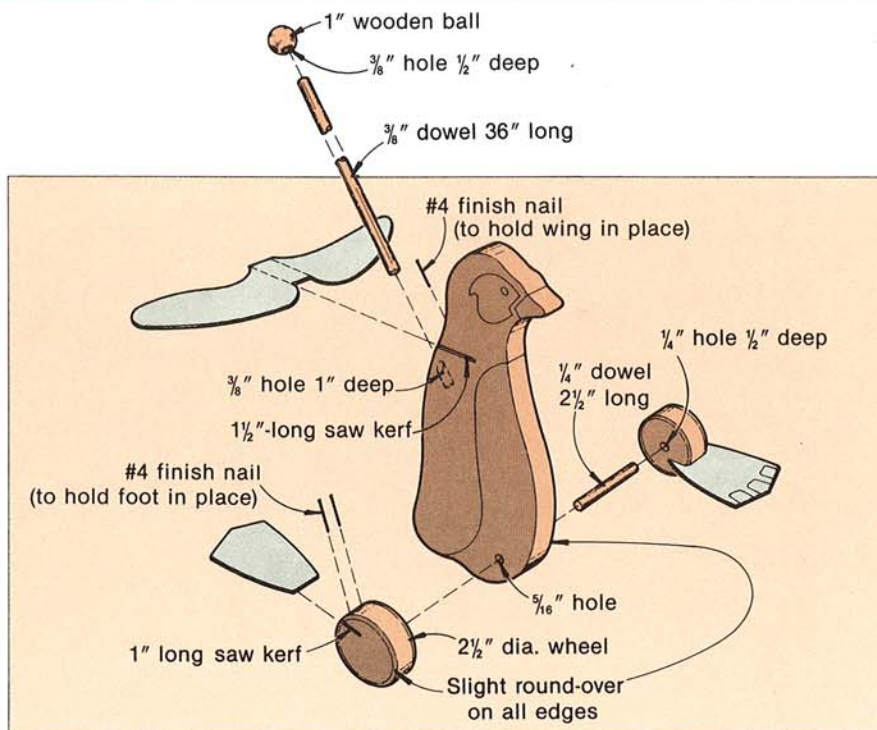
1 Cut a piece of $\frac{3}{4}$ "-thick stock (we used clear pine) to 6×12 " long.

2 Using carbon paper, trace the full-size penguin body outline shown *below* onto a 6×12 " piece of poster cardboard. Trace the beak, face, eye, and belly outlines. Mark the $1\frac{1}{2}$ "-long saw kerf for the wings, the reference line for the push-stick hole, and the center point for the $\frac{5}{16}$ " axle hole. With scissors, cut the poster cardboard to the exact penguin shape and notch out the saw kerf for the wings. Remove the thin slice of cardboard occupied by the reference line. You're now ready to put your template to work.



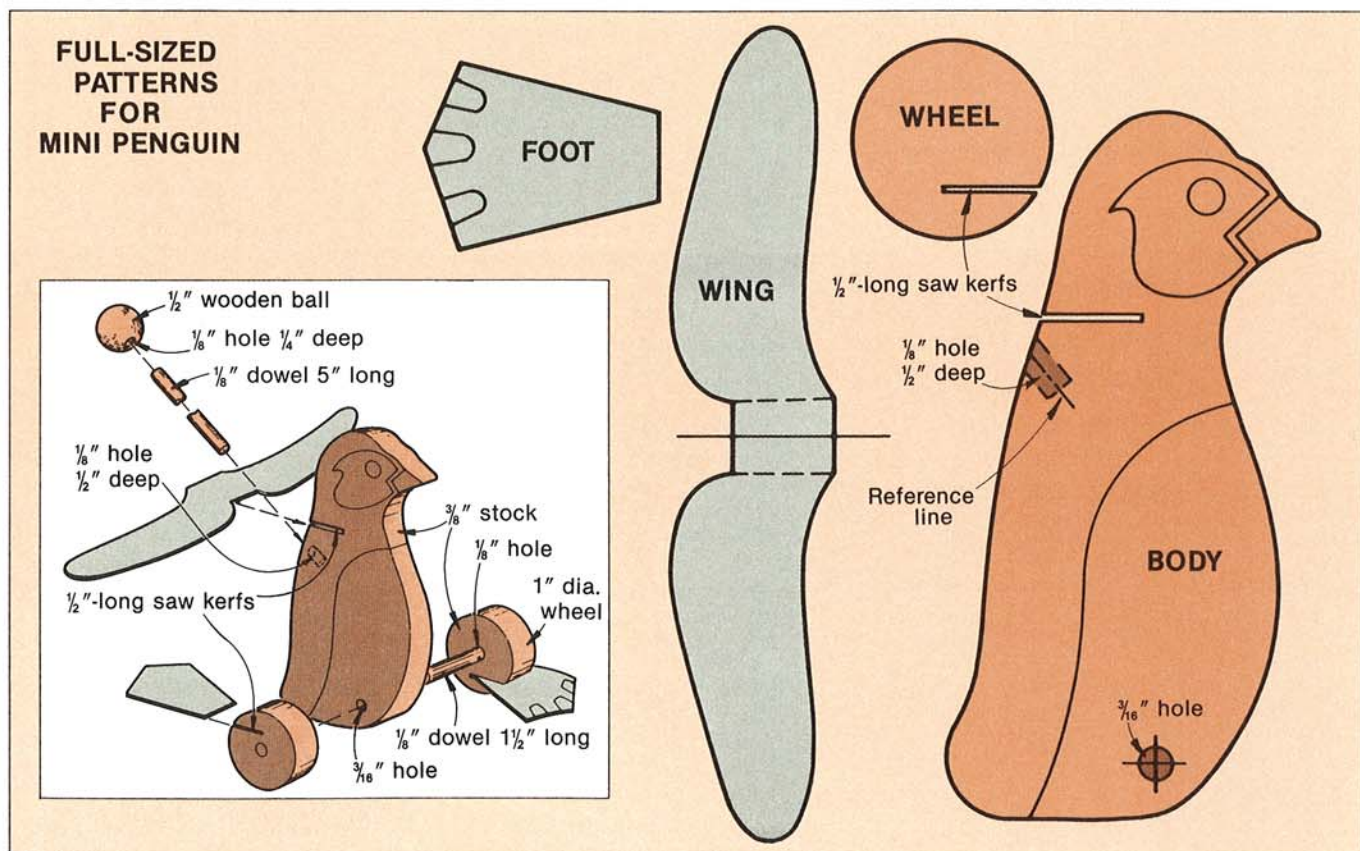
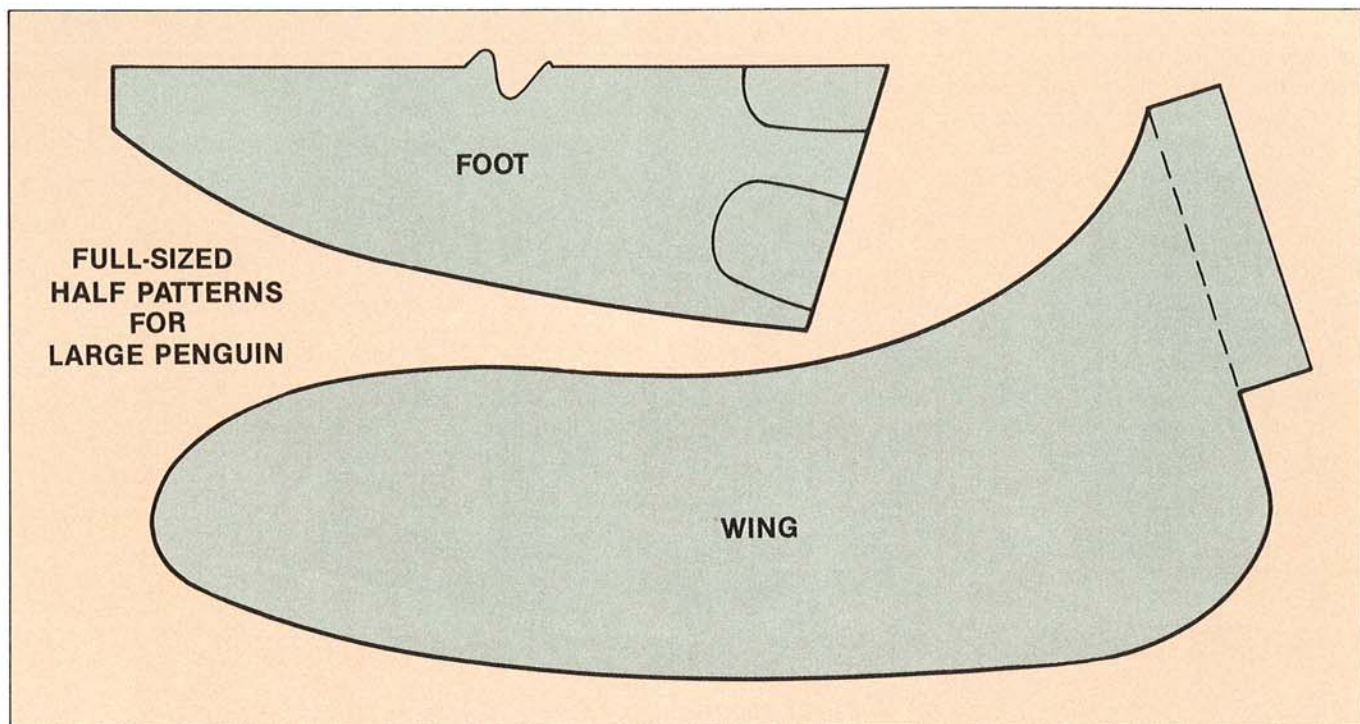
3 Place the cardboard template atop the 6×12"-long stock and mark the penguin outline, saw kerf for the wings, push-stick reference line, and axle center point. (We poked a compass point through the cardboard to mark the center point.) Now, cut the penguin body to shape on a band saw or scroll saw. For better results you may want to cut just outside the line, then sand to the line for the final shape. If you plan to make several penguins, stack the boards together using double-sided tape, and then cut out the stack in one operation. With the saw still running, cut the saw kerf for the wings.

4 Chuck a $\frac{3}{8}$ " bit (we used a brad point) into your drill press. Place the



Continued

PUSH PENGUINS

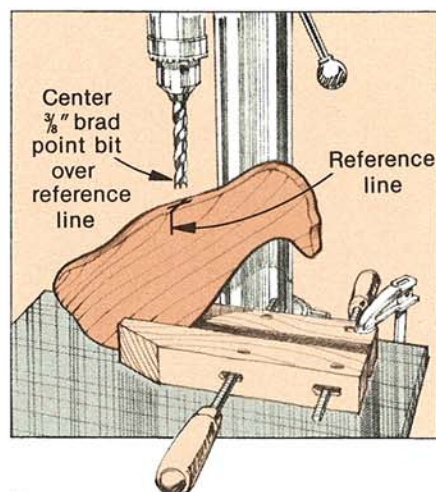


Project Design: Steve and Kathy Moore

Photograph: William Hopkins

Illustrations: Kim Downing, Bill Zaun, Lippisch Design Inc.

penguin body in a handscrew clamp as shown on the drawing *below*, and clamp this assembly to the drill press table. Align the push stick reference line with the drill bit by temporarily loosening the handscrew and adjusting the body. Drill a $\frac{3}{8}$ " hole 1" deep centered in the back edge of the body where shown on the Exploded-View Drawing on page 13.



5 Drill a $\frac{5}{16}$ " axle hole where marked on the penguin body, backing the body part with scrap to prevent chip-out.

NEXT, FORM THE WHEELS

1 To make the first wheel, clamp a piece of $\frac{3}{4}$ "-thick stock to the drill press table. Set the pilot bit in a $2\frac{1}{2}$ " hole saw $\frac{1}{4}$ " above the cutting edge so the hole saw will cut through the $\frac{3}{4}$ " stock *before* the pilot bit does. Back the part with scrap to prevent chip-out; then cut through the stock but do not allow the pilot bit to penetrate entirely through the wheel. Repeat the process to make the second wheel. (You can also use a circle cutter to make the wheels or cut them out individually on a band saw.)

2 Using the full-sized wheel pattern on the penguin pattern on page 13 as a guide, mark the position of the saw kerf on each wheel for the flapping rubber feet. Cut the kerfs for the feet on a band saw.

PAINTING THE PARTS

1 Sand the wheels and penguin body smooth, and form a slight round-over on all edges.

2 Paint the wheels and the entire penguin body with a coat of white primer or sanding sealer. After the primer dries, apply a coat of white enamel to all parts. Cut off the belly portion from the cardboard template made earlier. Trace the belly outline onto both sides of the penguin body. Repeat this process to mark the face outline and beak. Now, paint the beak yellow, and the back and head portions black. (See the photo on page 12 for reference). After the paint dries, paint the eyes blue.

ADDING THE FEET AND WINGS

1 Using carbon paper, make cardboard templates of the wing and foot from the full-sized patterns on page 14. Trace the full-size template for the wings and the foot patterns onto a sheet of black rubber. (We cut up a used truck inner tube, and then washed it with soap and water). The pattern actually forms one-half of the wings so flip the pattern over and trace the other half. Cut the wings and the two feet to shape with a pair of scissors or sharp knife blade. Paint white toenails on the feet with the same white enamel used earlier.

2 Insert the rubber wings into the kerf you cut in the body for the wings. If the rubber fits too tightly, widen the kerf on the band saw. Insert the narrow tapered ends of the feet into the wheel kerfs. Angle the rubber feet slightly away from the inside edge of the wheel to prevent the feet from rubbing against the sides of the penguin body when in motion. Snip the head off a #4 finish nail, and use it as a bit to drill pilot holes in the wheels and back. Use a finish nail to hold the wings and two nails for each foot.

Position the nails as shown on the Exploded-View Drawing on page 13.

3 Cut a piece of $\frac{1}{4}$ " dowel to $2\frac{1}{2}$ " long for the feet axle and a piece of $\frac{3}{8}$ " dowel 36" long for the push stick. Insert the $\frac{1}{4}$ " dowel through the axle hole in the body and glue a wheel on each end of it. (Leaving the axle this long increases the penguin's waddle.)

4 Clamp a 1"-diameter wooden ball (available through wooden-toy part catalogs) in a handscrew clamp, and drill a $\frac{3}{8}$ " hole $\frac{1}{2}$ " deep into the ball. Remove the ball from the clamp, and paint it black. After the paint dries, glue the ball to one end of the 36"-long push stick dowel. Glue the other end of the push stick into the $\frac{3}{8}$ " hole in the back edge of the penguin body.

NOW, MAKE THE MINI PENGUIN

To make the mini penguin use the drawings shown, *opposite bottom*, $\frac{3}{8}$ "-thick stock, and the same building and painting procedures for the large penguin. To make the small wheels, cut two $\frac{3}{8}$ "-thick slices off the end of a 1"-diameter dowel. (You could use a 1" plug cutter to cut the wheels from $\frac{3}{8}$ " stock.) Drill a $\frac{1}{8}$ " hole through the center of each wheel for the axle. Also, use bicycle inner tube rubber for the wings and feet. Rather than using finish nails as we did with the large penguin, epoxy the wings and feet in their respective kerfs. The $\frac{3}{8}$ " stock may split if nailed.

● **Large Penguin Supplies:** $\frac{1}{4} \times 2\frac{1}{2}$ " dowel (wheel axle), $\frac{3}{8} \times 36$ " dowel (push stick), 1"-diameter wooden ball, rubber (like that from a truck inner tube), #4 finish nails, white primer, white enamel, black enamel, yellow enamel, blue enamel.

● **Mini Penguin Supplies:** $\frac{3}{8} \times 1\frac{1}{4}$ " dowel (wheel axle), $\frac{3}{8} \times 5$ " dowel (push stick), $\frac{1}{2}$ " wooden ball, epoxy, rubber (like that from a bicycle inner tube), same primer and paints as above.

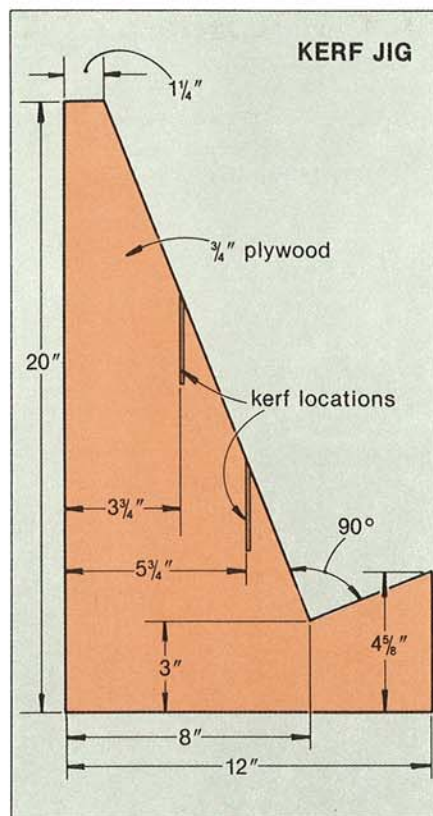
TAKE NOTE OF OUR OAK MESSAGE CENTER

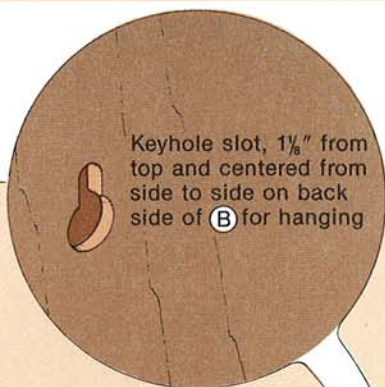
No more lost letters or forgotten notes. Our two-slot oak message center has room for loads of correspondence. And the attached memo pad works perfectly for jotting down those notes you just can't afford to forget. There's even a place for your pencil.

FIRST, MAKE THE SIDES

1 Cut the two sidepieces (A) to the size listed in the Bill of Materials from $\frac{3}{4}$ "-thick oak stock.

2 To cut the angled kerfs in the sidepieces, make the kerf jig shown *below* from $\frac{3}{4}$ " plywood. Mark the kerf locations on the jig. Place the jig on the saw table and align one of the marked-kerf locations on the jig with the saw blade. Cut a 1"-long kerf into the jig. Reset the rip fence and cut the second kerf where marked on the jig.





KEYHOLE DETAIL

Bill of Materials

Part	Finished Size			Material	Qty.
	T	W	L		
A	3/4"	2 3/4"	20"	oak	2
B	3/4"	4 3/4"	19 3/8"	oak	1
C	1/4"	1"	4 1/4"	oak	1

Supplies: 2—1/4" T-nuts, 2—#8 finish washers, 2—1/4 x 1 1/4" flathead machine screws, 2—1/8 x 5 1/4 x 6" pieces of smoked acrylic, 4 1/4 x 6" notepad, 3/4 x 12 x 20" plywood for kerf jig.

Stop round-overs here

1/4" round-overs

1/8 x 5 1/4 x 6" smoked acrylic

R=3/8"

1/4" hole

1/4" T-nut

1/4" round-overs

No round-over on back edge

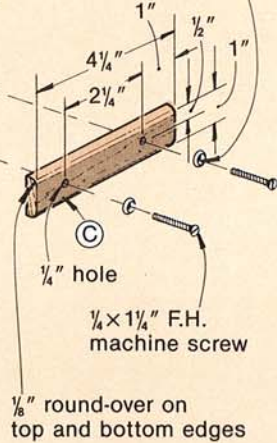
1/8" kerfs 1/4" deep

3/8" hole 1 1/2" deep for pen

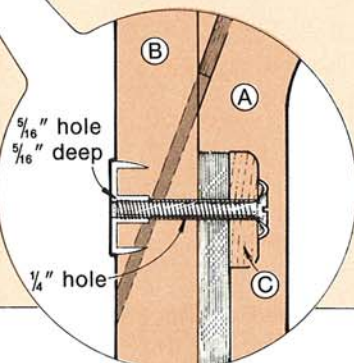
#8 finish washer

1/4" hole

4 1/4 x 6" notepad

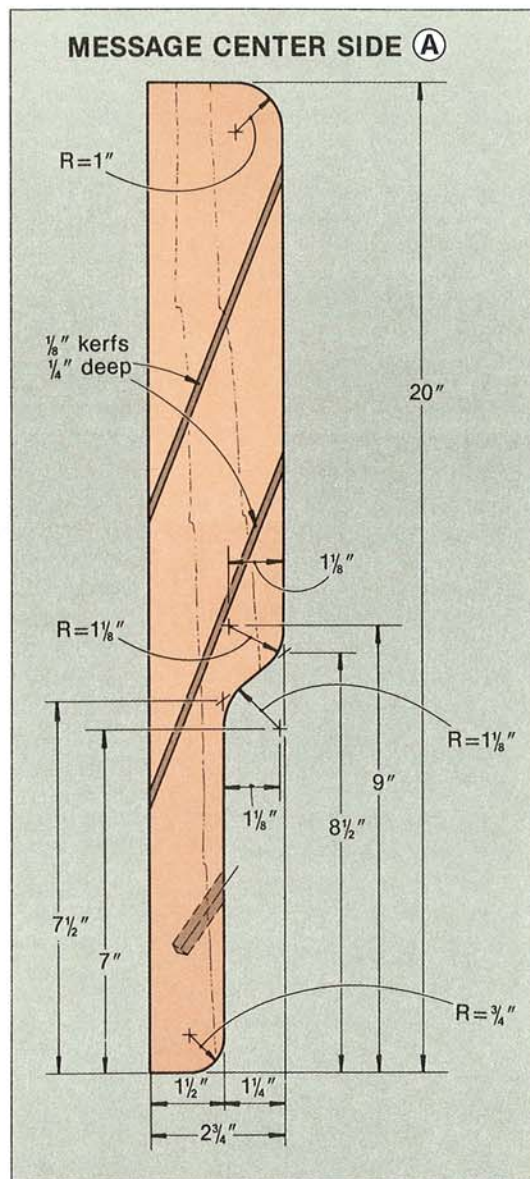


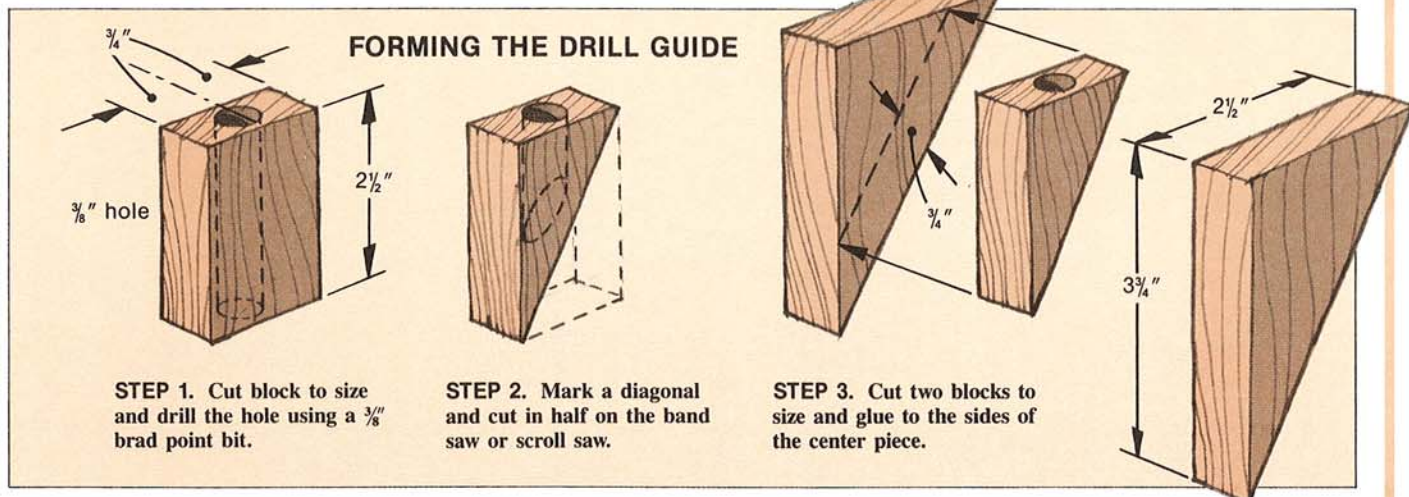
T-NUT DETAIL



Continued

1 Cut the back (B) and notepad holder (C) to the sizes listed in the Bill of Materials from $\frac{3}{4}$ "-thick oak. (To form the notepad holder, we first ripped a 12" length of $\frac{3}{4}$ "-thick oak to 1" wide, and resawed the strip to obtain a $\frac{1}{4}$ "-thick piece 1×12" long. Next, we crosscut the piece to final length from the 12" strip. Finally, we sanded a $\frac{1}{8}$ " round-over along the top and bottom front edges.)





2 Locate, mark, and drill two $\frac{1}{4}$ " holes through the notepad holder (see the Exploded-View Drawing on page 17 for dimensions). Use the notepad holder as a guide to drill two $\frac{1}{4}$ " holes through the back (B). On the back-side of the back, drill a $\frac{5}{16}$ " hole $\frac{5}{16}$ " deep centered over each $\frac{1}{4}$ " hole to accept the T-nuts.

3 Chuck a key slot cutter (see the Buying Guide for our source) into your router. Rout a keyhole slot in the back of the backpiece $1\frac{1}{8}$ " from the top and centered from side to side.

4 Glue and clamp the sides to the back. (We aligned the back so it was centered between both rounded-over ends of the project's sides.)

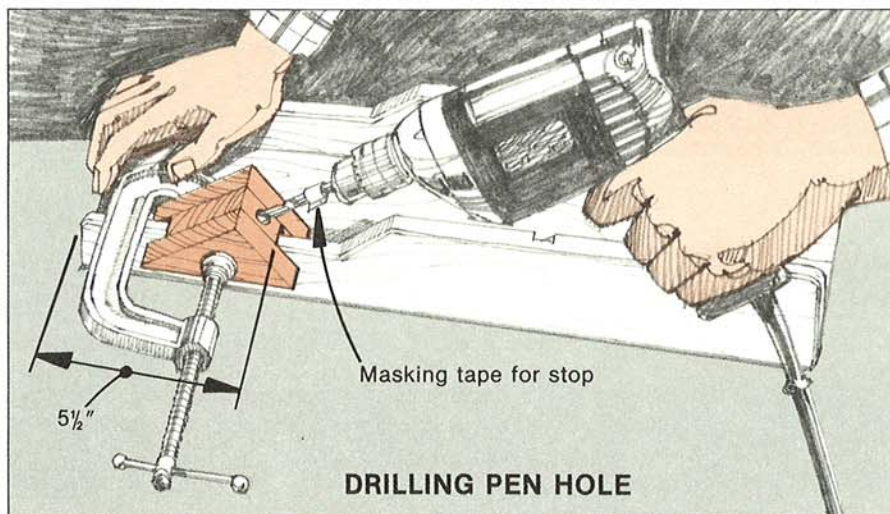
DRILLING THE PEN HOLE

1 Construct a drill guide from $\frac{3}{4}$ " stock as shown in the three-step drawing above.

2 Place the guide over the right side piece and clamp in place, positioning the drill guide as shown in the Drilling Pen Hole Drawing. Using a brad point bit, drill a $\frac{3}{8}$ " hole $1\frac{1}{2}$ " deep into the sidepiece for your favorite pen.

FINAL ASSEMBLY

1 Carefully cut the two acrylic dividers to shape on the band saw.



Check the fit of the dividers in the slots and trim if necessary. Sand the cut edges smooth. (When cutting acrylic, we leave the protective cover—usually thin vinyl or paper—on the workpiece until we're ready to install it to avoid scratching the surfaces.)

2 Finish-sand the oak parts. Apply the stain and finish of your choice. (We used polyurethane.)

3 Using a $\frac{1}{4}$ " brad point bit in a drill press, drill holes in the paper pad to match those in the memo pad holder. Install the $\frac{1}{4}$ " T-nuts in the previously drilled holes in the back (see the T-nut Detail accompanying the Exploded-

View Drawing). Now, screw the memo pad holder and paper pad to the message center. Slide the acrylic dividers in place. Hang the project near a wall phone for convenience. Provide adequate support for the message center by driving a nail into a wall stud. If the desired location is not over a stud, install a hollow-wall anchor.

BUYING GUIDE

- **Key slot cutter.** $\frac{3}{8}$ " high-speed steel router bit, catalog no. 9HT25548, \$4.99. Available from Sears.

Project Design: Ralph Hutchinson
Illustrations: Kim Downing, Bill Zaun,
Lippisch Design Inc.
Photograph: Bob Calmer

MEET THE RINGLEADERS FOUR NOVEL NAPKIN RINGS



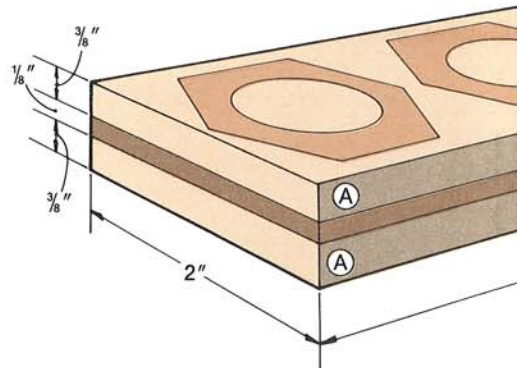
You'll be amazed how little effort—and even less material—goes into each set of our distinctive napkin rings. Whether you stick with just one of the patterns or mix and match several, your workmanship will surely stimulate dinnertime conversation. Start now and you can have a set made and ready to use by the next meal.

Note: *This project requires thin stock. You can resaw or plane thicker stock to the correct thicknesses, or special order it. See the Buying Guide on the next page for our source.*

1 Rip and crosscut two $\frac{3}{8}$ "-thick outside pieces (A) to 2×9 ". For the $\frac{1}{8}$ "-thick laminate center (B), purchase or resaw stock of a contrasting color. Rip and crosscut the $\frac{1}{8}$ "-thick stock to 2×9 ". (We used five different kinds of wood and made up a variety of contrasting laminations, but feel free to design your own.) One 9"-long lamination makes four rings.

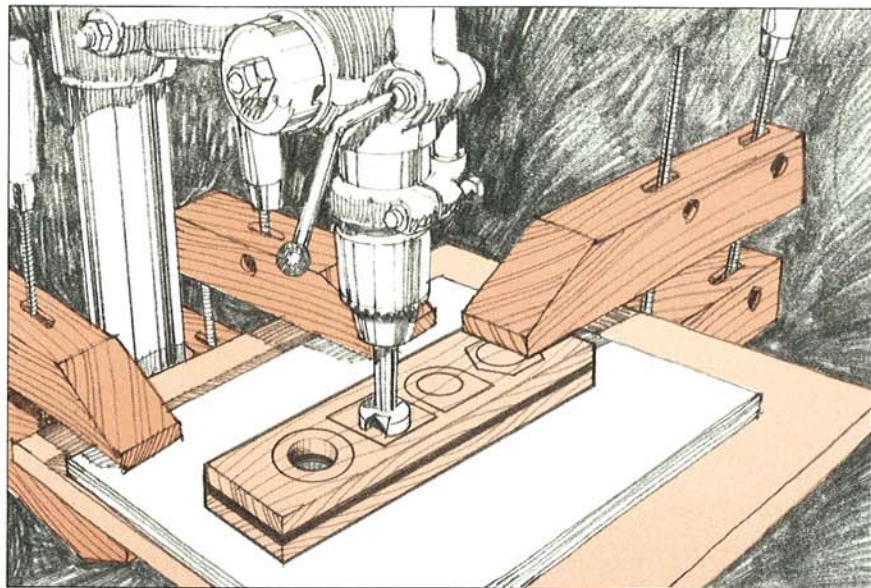
2 Glue and clamp the three pieces face-to-face in the arrangement shown on the Laminating and Patterns Layout Drawing below. (We used woodworkers' glue to make up our laminations.)

3 Using carbon paper and the full-sized ring patterns *opposite*, transfer the patterns you want to the top surface



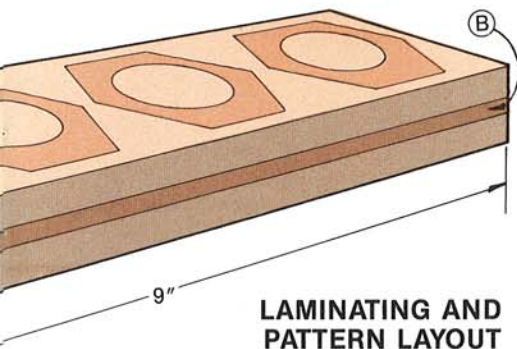
of the lamination. Be sure to mark the center point of the inner circle for each ring at the same time.

4 Using the marked center points as guides, bore the center hole of each ring with a $1\frac{1}{4}$ " bit chucked on a drill press. (We used a Forstner bit to ensure a smooth inside cut and minimize the amount of sanding needed. A hole saw would also work if you don't have the correct-size bit.) Back the lamination with a wood scrap as shown in the drawing below. This prevents chip-out on the bottom of the hole. (We also clamped the lamination firmly to the drill press table.)



5 Cut the individual rings to shape with a band saw or scroll saw. (We first cut outside the line, then sanded to the line using a belt sander fitted with a 180-grit paper.) If you make just one style of ring and want a perfect match, clamp them together and sand all of them simultaneously.

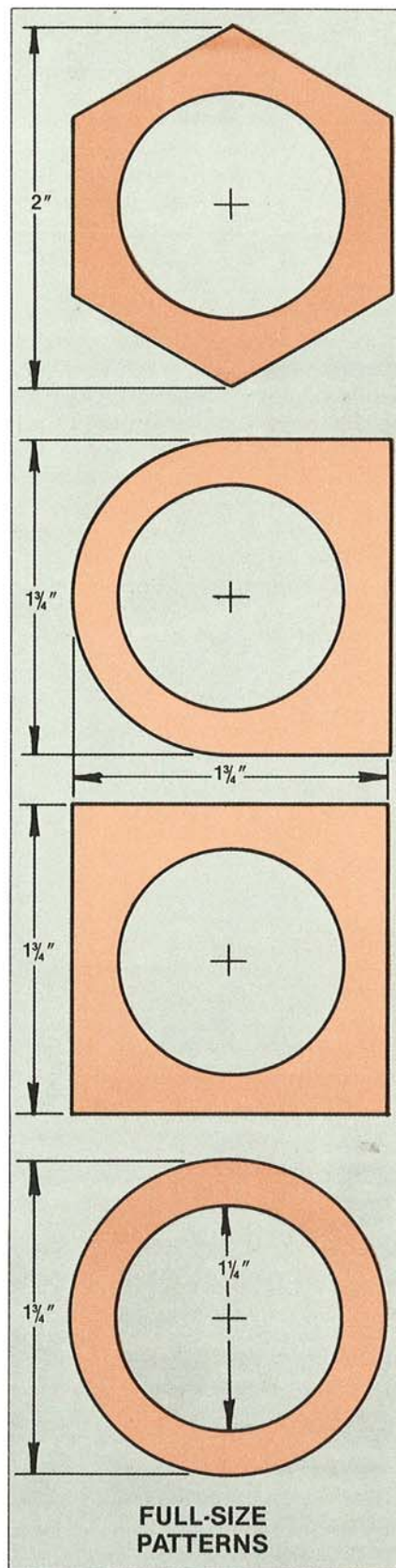
6 Sand smooth and round-over the edges, if you wish. (We chucked a 1" drum sander in a drill press to sand the inside of the rings.) Finish as desired. (We strung the rings on a horizontal wire to eliminate handling of them, then applied several thin coats of Deft spray-on lacquer.)



**LAMINATING AND
PATTERN LAYOUT**

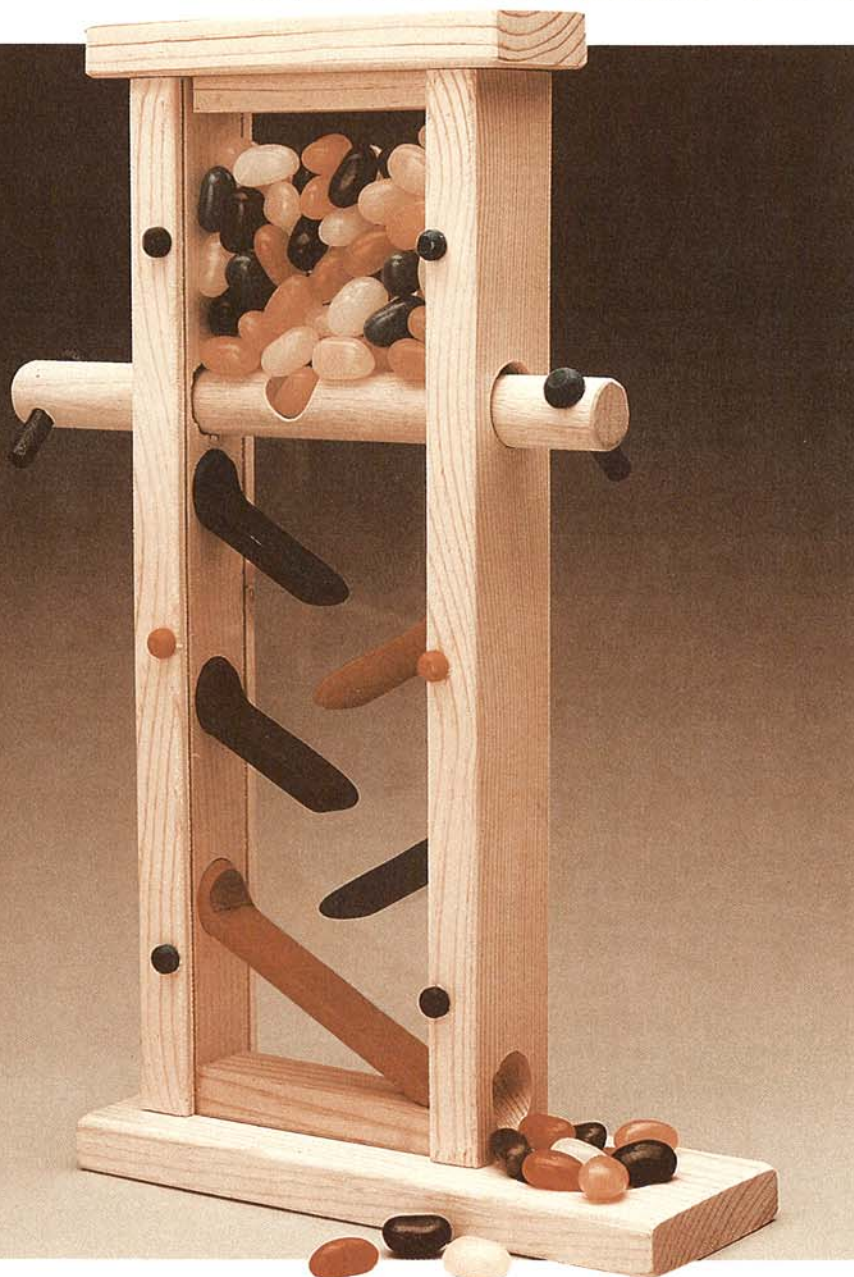
BUYING GUIDE

● **Thin stock.** $\frac{1}{8}$ "-thick oak, catalog no. A4086, one 3×24 " piece, \$3.10. $\frac{1}{8}$ "-thick walnut, catalog no. A4084, one 3×24 " piece, \$3.40. $\frac{1}{8}$ "-thick cherry, catalog no. A4082, one 3×24 " piece, \$3.40. $\frac{1}{8}$ "-thick maple, catalog no. A4080, one 3×24 " piece, \$2.65. Minimum order \$7.50 plus \$2.50 handling and insurance. The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374, or call 612/428-2199.



**FULL-SIZE
PATTERNS**

ONE LEAN JELLY BEAN MACHINE



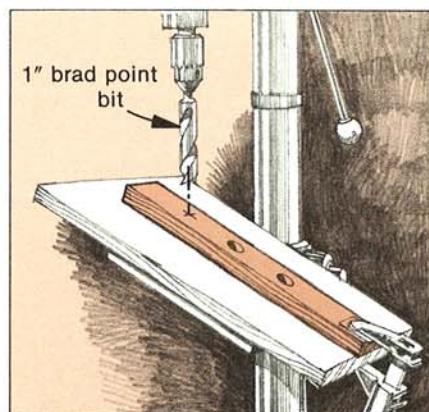
This clever, fun-to-build project not only fascinates, it also can satisfy your sweet tooth in a hurry. Just fill the top with jelly beans (or your favorite candies), turn the crank, and watch your treat tumble down the slides and into your hand. But don't tell your dentist about this one; he'll have a fit.

FIRST, LET'S CUT THE PARTS

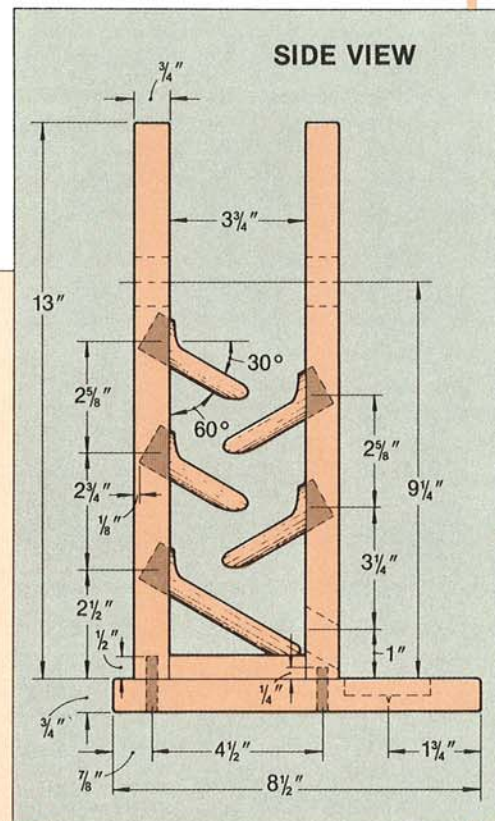
1 Rip and crosscut the sides (A), the cover pieces (B, C), and the base pieces (C, D) to the sizes listed in the Bill of Materials. (We made our jelly bean machine out of $\frac{3}{4}$ " pine but feel free to use whatever kind of wood you want.)

2 Cut a $\frac{1}{8}$ " saw kerf $\frac{3}{8}$ " deep $\frac{3}{16}$ " in from the outside edges of each sidepiece where shown on the Exploded-View Drawing *opposite*. (These kerfs hold the clear acrylic panels.)

3 Using the dimensions on the Side-View Drawing on page 23, mark the center point locations for the five dowel slides (E, F), the two 1" crank holes, and the exit hole centered from edge to edge, on the inside face of the two sidepieces. Now, as shown in the drawing, *below*, tilt the table on your drill press table 30° from center. (If your drill press table doesn't tilt, make a temporary jig to hold the sidepieces at the desired angle and clamp it in place while you drill the holes.) Using a brad point bit, carefully drill 1" holes $\frac{5}{8}$ " deep for the slides, making sure you angle each hole as shown on the Side-View Drawing *opposite*. (We set the stop on our drill press to prevent drilling completely through the side, then test-drilled holes in scrap stock to get the correct depth.) Next, drill completely through the right hand sidepiece for the angled-exit hole.



5 Cut two pieces of $\frac{1}{8}$ " clear acrylic to $4\frac{1}{2} \times 13$ " long. (We cut ours on a band saw fitted with a $\frac{1}{8}$ " fine-tooth blade but you can also cut it with a table saw.) Leave the protective cover—usually plastic or paper—on the acrylic to avoid scratching the surfaces until you're ready to install the panels.



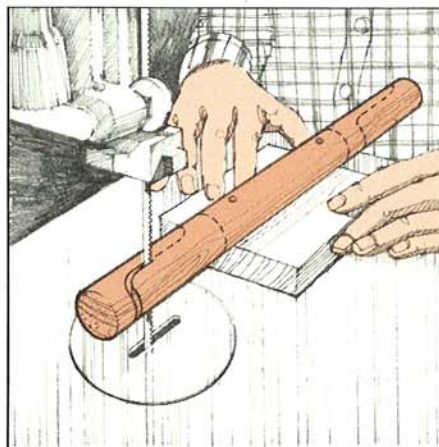
Bill of Materials

Part	Finished Size*			Material	Qty.
	T	W	L		
A	3/4"	1 3/4"	13"	pine	2
B	3/4"	2"	6"	pine	1
C	1/2"	1 1/8"	3 1/16"	pine	2
D	3/4"	3"	8 1/2"	pine	1
E*	1" diam.		3"	birch dowel	4
F*	1" diam.		4 1/2"	birch dowel	1
G	1" diam.		9"	birch dowel	1

*Parts marked with an * are cut larger initially, and then trimmed to finished size. Please read the instructions before cutting.

Supplies: 12—toy axle pegs for $\frac{1}{4}$ " holes, 2—toy axle pegs for $\frac{3}{8}$ " holes, 2 pieces of $\frac{1}{8} \times 4\frac{1}{2} \times 13$ " acrylic, $\frac{1}{4}$ " dowel stock, marking pens or aniline dyes for coloring parts.

6 To form the four short slides (E) shown in the Exploded View Drawing on page 23, first cut a piece of 1"-diameter dowel stock to 11" long. Then, cut a piece of scrap to 3×4". Position the dowel on the scrap so each end extends 3½" beyond the ends of the scrap (see the drawing below).



7 Snip off the head of a 4-penny nail, and use it as a bit to drill two holes through the dowel and into the scrap holder. Nail the dowel to the holder.

8 Using the Full-Sized Slide Drawing below as a pattern, mark cutlines on each end of the dowel where shown. (We traced two patterns on paper and adhered one to each end of the dowel with spray adhesive.) Then, using a band saw fitted with a ⅛" blade, cut the curved lines first. Then, cross-cut the slides to length where shown

with the dotted line. (You'll get two slides from each end of the dowel.)

9 To form the longer bottom slide, cut a 1"-diameter dowel to 9". Then use the full-sized drawing of F and the ¾" scrap holder, and repeat the processes in steps 7 and 8.

10 Cut the crank (G) to length from 1" dowel stock. (We sanded the dowel so it would turn easily in the 1" hole.) Drill a ¾" hole ½" deep at the center. Next, drill a ⅜" hole ½" from each end of the dowel crank. (We held the dowel crank in a handscrew when drilling the holes.)

NOW, ASSEMBLE AND FINISH THE DISPENSER

1 Use red, green, and blue felt-tipped marking pens or analine dyes to color the slides.

2 Glue the slides into their respective holes, wiping off any excess glue squeeze-out with a damp cloth.

3 Center the smaller of the cover pieces (C) on the bottom face of the larger cover piece (B). Mark the location of C on B, apply glue to the top face of C, and glue and clamp it to the area just marked.

4 Glue and clamp the base pieces (C, D) together (see the Exploded-View

Drawing for positioning). If necessary, trim part C to fit between the saw kerfs in the sidepieces.

5 Position the acrylic panels in the kerfs between the sidepieces. With the ends of the acrylic flush with the ends of the sidepieces, "clamp" the assembly together with tape or rubber bands. To hold the acrylic panels permanently in place, use a brad point bit to drill ¼" holes ⅛" deep ⅜" from the inside edge of both sidepieces (see the Exploded-View Drawing).

6 Stain or use felt-tipped marking pens to color the twelve ¼" and two ⅜" toy axle pegs. Cut the shanks of the ¼" axles down to ½" long. Apply a dab of glue to the tip and insert the toy axles to peg the acrylic panels in position. You can buy toy axle pegs from many mail-order suppliers.

7 Position the slide assembly on the base and over part C. Trace the outline of the bottom ends of the sidepieces on the top face of the base (D). Remove the slide assembly. Draw diagonals in each marked rectangular outline to find the center. Now drill a ¼" hole through the base at the center of each diagonal. Reposition the slide assembly on the base, and using the ¼" holes you just drilled in the base as guides, drill ½" deep into the end of the lefthand sidepiece and ¼" deep into the righthand sidepiece as dimensioned on the Side-View Drawing.

8 From ¼"-diameter dowel stock, cut one piece to 1¼" long and another to 1" long. Glue and dowel the slide assembly to the base. Hand-sand the wood pieces smooth, sanding a slight round-over on all edges. Finish as desired. (We applied spray lacquer.)

9 Slide the crank into position, and install a ⅜" axle peg at each end of it. Now all that you need to do is fill the hopper, turn the crank, and watch that candy come tumbling down.

SLIDES
FULL-SIZE

