The Woodworker's Journal

Vol. 13, No. 3 $3.50

Included in this issue: **Oval Extension Table • Storage Seats • Back Massager Jewelry Chest • Nessie Pull Toy • Table Saw Gauge Country Wall Shelf • Decorative Wall Key**

05
73361 64856 3

May/June 1989

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Heavy duty cast iron construction, 3 blade all ball-bearing cutter-head, precision ground cast iron beds with gib adjustment on dovetail ways. 1 H.P. single phase motor, weighs 260 lbs.

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This is the most popular planer on the market. 15"x6" capacity, 3 blade cutterhead, all ball-bearing construction, 2 H.P. motor, weighs 500 lbs.

MODEL G1021 **$695.00**

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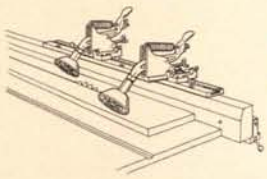

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G1028/29

G1030

We are waging a war on our competitors and in the process, making you the ultimate winner.

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G1553 3" Gate $12.95
G1571 4" Gate $15.95
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We also have a complete range of hoses, clamps and fittings all at excellent prices. Call for a free catalog.

Large parts inventory to back up our machines, highly qualified service departments with an in-house motor rewinding shop, courteous phone operators and fast shipping are just some of the things that make dealing with us a pleasant experience. We buy direct from the factories and sell direct to the user at low prices. 2 large warehouses on the East and West coasts enable us to serve you better. Try us once and you'll be our customer for life!

CALL TOLL FREE (FOR ORDERS AND CATALOG REQUESTS ONLY)

EAST OF THE MISSISSIPPI: 1-800-523-GRRR
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(717) 326-3806
← (For Inquiries & Customer Service) →

WEST OF THE MISSISSIPPI 1-800-541-5537
(206) 647-0801

The Woodworker's Journal

MAY/JUNE 1989 VOLUME 13, NUMBER 3

CONTENTS

The Woodworker's Journal (ISSN 0199-1892) is published bi-monthly in January, March, May, July, September and November by The Madrigal Publishing Co., Inc., P.O. Box 1629, New Milford, CT 06776. Telephone: (203) 355-2694.

Second class postage paid at New Milford, CT 06776 and additional offices.

Subscription Rates: In the United States and its possessions — One year (6 issues) $15.00, Two years (12 issues) $26.00. Canada — One year $24.95 (CAD), Two years $42.95 (CAD). Foreign countries — One year $20.00 (USD), Two years $35.00 (USD).

To Subscribe, Renew or Change Address: Write to **The Woodworker's Journal,** P.O. Box 1629, New Milford, CT 06776, including mailing label for renewals and changes. For gift subscriptions, include your own name and address as well as those of gift recipients.

Postmaster: Send Change of Address to **The Woodworker's Journal,** P.O. Box 1629, New Milford, CT 06776.

Contributions: We welcome contributions in the form of manuscripts, drawings and photographs and will be glad to consider such for possible publication. Contributors should include a stamped, self-addressed envelope of suitable size with each submission. While we cannot assume responsibility for loss or damage, all materials will be treated with care while in our possession. Payment for the use of unsolicited material will be made upon acceptance. Address all contributions to: *Editor,* **The Woodworker's Journal,** P.O. Box 1629, New Milford, CT 06776.

U.S.A. Newsstand Distribution by Eastern News Distributors, Inc., 1130 Cleveland Rd., Sandusky, OH 44870.

DEPARTMENTS

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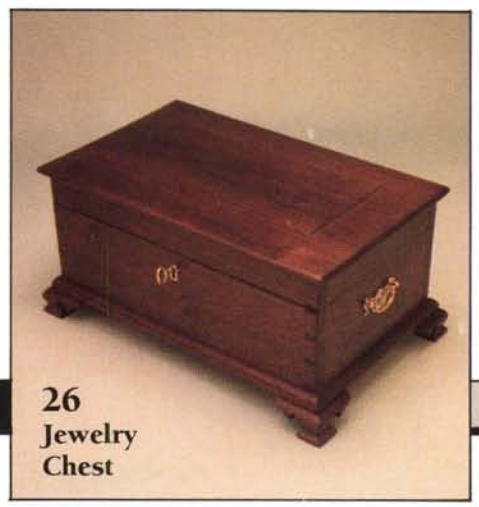

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About Woodcarving

Readers who ordered our latest book, *Woodcarving With Rick Butz,* have by now discovered why Rick's new television series on woodcarving has been so well received by woodworkers across the country. The key to the popularity of both the book and the TV series is to be found in the fascinating selection of projects that can be successfully completed, even if you've never tried your hand at woodcarving before.

Nationwide, over one hundred Public Broadcasting affiliate stations have already signed on to carry Rick's carving series in 1989. But as many as two hundred stations are expected to ultimately carry it. If you'd like to see the series in your area, call your local Public Broadcasting station and ask them to contact either the producer, Steven Honeybill, or Ellis Bromberg at WMHT-TV in Schenectedy, New York. The telephone number is (518) 356-1700. The program is distributed by the Inter-Regional Program Service of the Eastern Educational Network.

Incidentally, if you're new to woodcarving and would like another good source of tips, techniques and projects as well as lots of information on what other carvers are doing, you might consider joining the National Wood Carvers Association. Annual membership dues are just $8 and entitle you to receive the bi-monthly magazine *Chip Chats.* The Association's address is P.O. Box 43218, Cincinnati, OH 45243; telephone (513) 561-0627.

Another Auction Record

The value of Arts and Crafts furniture, particularly the so-called Mission style of Gustav Stickley, took a quantum leap upwards in December 1988. According to an article in *The Litchfield County Times,* a telephone bid of $363,000 won Stickley's sideboard, an outstanding example of his work and built for his own dining room in the early 1900's. The proud new owner is Barbra Streisand.

Antique Mission furniture has become a hot collector's item and it follows that the reproduction of this style is bound to increase. I guess we had better start lining up a steady source for the quartersawn oak which is one of the distinguishing features of Mission furniture. Unfortunately, this lumber is not generally found in the usual retail outlets.

Jim McQuillan

Grizzly IMPORTS, INC.

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2 spindle speeds, precision ground table, magnetic switch and weighs a husky 500 lbs. Comes with 3 spindles - 1", ¾" and ½".

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Clean castings & high quality workmanship! 15⅞" cutting width, 10½" cutting height, 3 blade speeds, 1½ H.P. motor, with magnetic switch. Takes up to 1" blades. Weighs 280 lbs..

Model G1538
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8 x 65" Jointer

Another winner! All ball bearing, 3-blade cutterhead, magnetic switch 1½ HP single phase motor and precision ground cast-iron beds. Weighs 500 lbs.

Model G1018
Regularly $665
SALE PRICE $625

20" Planer

20" x 8" capacity, 2 automatic feed rates, 3 HP single phase motor, 4-blade all ball-bearing cutterhead, built in stand, extension rollers and dust chute. Weighs 950 lbs.

Model G1033
Regularly $1295
SALE PRICE $1175

All above prices are F.O.B. Williamsport, PA or Bellingham, WA

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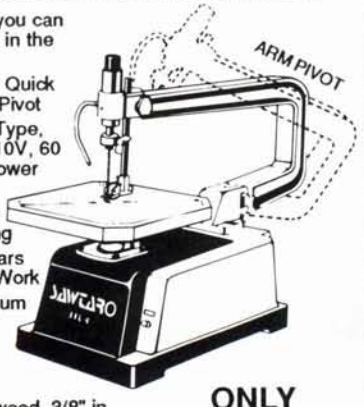
89-104

Best Japanese Scroll Saw Available

COMPARE FEATURES AND PRICE WITH ANY OTHER MAKE



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ELIMINATES TEAROUT OR SPLINTERING: Large bevel angles (30°) produce lower cutting pressures—virtually eliminating tearout.

SANDED-LIKE SIDES: Shallow side clearance angles enable the *WIZARD* to cut with the entire side of the carbide tip (not just the top), creating a planing action which leaves the wood with a smooth, sanded-like finish.

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Letters

I'm making the Shop-Built Disk Sander project featured in your January/February 1989 issue. According to your instructions, the sanding disk is available from Sears Roebuck and Co. However. when I called Sears they said the part had been discontinued and is no longer available. Can you tell me where to get a disk?

John B. Carrow, Pt. Pleasant, N.J.

We checked with Sears and learned that the disk is temporarily out of stock but that it has not been discontinued. Since this is a replacement part, it's not in all catalogs. When ordering, it will help Sears if you specify that it is available from Division 9, Source 009, and that the part number is 25135.

We've also learned that a similar disk is available from Craftsman Wood Service Co., 1735 West Cortland Ct., Addison, IL 60101. For a disk with a ½ in. diameter bore order part number HO731; for one with a ⅜ in. diameter bore, order part number HO733. The price for either is $9.95 plus $3.15 for shipping and handling.

One other point. For readers who wanted to use an old or salvaged motor for this project, we listed the Garrett-Wade Company as a source for a universal mount. We have since learned that they will no longer carry this part. However, you can order one from Lee Valley Tools, 1080 Morrison Drive, Ottawa, Ontario, Canada K2H 8K7. Write to them for price and shipping information.

Ryobi sells a replacement back panel for their AP-10 thickness planer that enables you to collect chips using a shop vacuum. However, the back panel has a 2 in. outside diameter nozzle, so it doesn't fit a standard 2½ in. diameter shop vacuum hose. When the local Ryobi representative didn't have a solution to the problem, I took the panel and my shop vacuum to a muffler shop. Using a 5 in. length of 2 in. pipe, they expanded one end to fit over the panel and the other end to fit the vacuum hose. In five minutes I had a convenient adapator at a nominal cost.

Gordon G. Ruecker
South St. Paul, Minn.

Can you provide a mail-order source for dollhouse supplies such as siding, shingles, flooring, hardware and other accessories?

Robert Watts, Cincinnati, Ohio

You can get dollhouse parts and supplies from Happy House Miniatures, 130 North Main Street, Mocksville, N.C. 27028. Send $3.00 for a copy of their current catalog.

Thanks for including Pittsburg State University in the March/April 1989 listing of Schools and Crafts Centers. I would like, however, to point out that there need to be several changes. The first change is the spelling of our Pittsburg. You will note we spell Pittsburg without an "h". The next change, and probably the most significant, is that we are not located in Pennsylvania but in Kansas. This is a common assumption, but please remember that wood technology and Pittsburg without an "h" are synonymous. Thirdly, our phone number is (316) 232-5500.

As an additional request I would like to ask that we be listed not only under college courses, but also in the Workshops and Seminars Section. Because we have one of the most comprehensive Wood Technology programs in the nation, we also offer a very large number of workshops and seminars.

We would also like to indicate that we are the only university which is recommended by the four major trade associations in our industry. They include the Architectural Woodwork Institute, the National Association of Store Fixture Manufacturers, the National Kitchen Cabinet Association, and the Decorative Laminate Products Association. We feel that this is reflective of the caliber of the curriculum that is available at Pittsburg State University. It is because of this that there is a huge demand for our graduates. All of our graduates have been exposed to over twenty Wood Technology classes which range from Wood Science through Industrial Coatings.

L. Duane Griffiths
Professor in Charge,
Wood Technology

The Eastern Michigan Woodworkers Club started about a year ago and has already grown to 41 members. Anyone with an interest to join can get more information by writing to John A. O'Brien, 3718 Beechwood Avenue, Flint, MI 48506.

Readers in Anchorage, Alaska will be interested to learn that the Alaska Creative Woodworker's Association welcomes new members. For information call John Magee (telephone 346-1958) or write to the Association at P.O. Box 201796, Anchorage, AK 99520-1796.

Readers who are making the Colonial Wall Sconce project from your November/December 1988 issue may be interested to learn that K-Mart stocks 2½ in. diameter by 10 in. long glass chimneys. I paid $1.87 each, considerably less than the $6 price from your mail-order source.

Doug Young, Clearville, Pa.

I'm looking for information on how to build a clavichord. Do you know if a plan or kit is available?

Mary Lu Norland
Stilwell, Kans.

The clavichord is a small keyboard instrument that was used primarily during the 16th, 17th and 18th centuries. The parts (including all wood) needed to make a clavichord are available from Carl Dudash, Box 200, Maple Avenue, Norfolk, CT 06058, telephone (203) 542-5753. They also sell parts for a harpsichord. Write or call for more information.

You listed my request in the Readers' Information Exchange column of your March/April 1989 issue. In less than ten days I received three telephone calls and nine letters from all over the United States. Your readers really take an interest in their fellow woodworkers. Great job and thanks.

J.N. Hileman, Irmo, S.C.

Readers' Information Exchange

Looking for an owner's manual for an old band saw? Need a bearing for a hand-me-down table saw? Can't find a source of supply for an odd piece of hardware? Maybe someone can help. Send along your request and we'll try to list it here — perhaps one of our readers will have an answer for you. Due to space limitations, we'll be unable to list all requests, but we'll include as many as we can.

I own and use a Prybil wood lathe, probably dated around 1900. Any information on the company, which was located in New York City, will be greatly appreciated.

Samuel Davis, 74 Greenhaven Road, Rye, NY 10580

I'm trying to duplicate a toy that was made of wood in the 1920's and 30's, and later made of plastic. It was a small hollowed-out figure about 3 in. high. The legs, pivoted in the center, swung back and forth in such a way that it would walk down an incline. I need directions on how to make this, or a source for the toy itself.

Margy Coates, 2516 Laurelbrook Road, Fallston, MD 21047

I am in bad need of a source for parts for a Shopcraft 10 in. band saw. My understanding is that the company has recently gone out of business. I'd appreciate any help I can get.

James T. Sheffield, Rt. 4 Box 12, Jasper, TX 75951

I would like to know if anyone has a copy of the book "Spinning Wheel Building and Restoration," by Bud Kronenberg, for sale?

Richard Smith, Box 29, Waterman, IL 60556

Owner's Manuals and Parts Lists Needed

Craftsman 6 in. jointer, model no. 113.20680; Craftsman 6 in. combination belt and disk sander, model no. 113.22521; Craftsman 10 in. table saw, model no. 113.299142 ..... *Dennis E. Richardson, 443 S. Elm Street, Waconia, MN 55387*

Craftsman 10 in. table saw, model no. 113.27521 ..... *G. William LeWorthy, 540 Lakewood Drive, Lincoln, NE 68510*

Sears jig saw, model no. 103.0407; Sears lathe, model no. 534.06260 and a tool rest and faceplates ..... *Gregory Hunter, P.O. Box 291-A, Snug Harbor Station, Duxbury, MA 02331*

Sears scroll saw, model no. 103.0402 ..... *Anthony J. Marano, 371 Depew Avenue, Buffalo, NY 14214*

Mastercraft saber saw, model no. 910 ..... *Neil A. Mohler, RR 2 Box 115, Claypool, IN 46510*

Craftsman "100" 10 in. table saw, model no. 113.29992; Craftsman 6 in. jointer, model no. 103.20620 ..... *Charles C. Commander, Star Route Box 170, Gaston, NC 27832*

Durocraft drill press, model no. DP-1214, serial no. 10856; Montgomery Ward Powr-Kraft table saw, model no. TRF-3486, serial no. 1702 ..... *Jack Jayet, 1890 Lotman Drive, Santa Cruz, CA 95062*

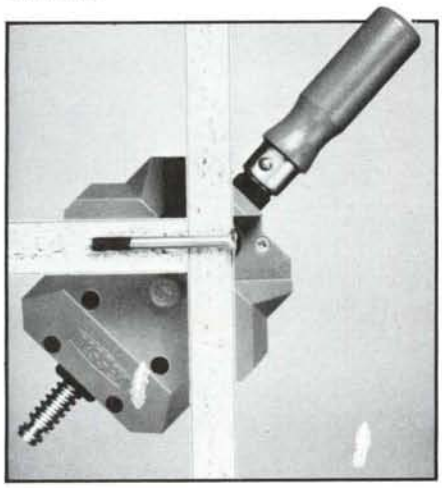
Montgomery Ward Powr-Kraft 14 in. band saw, model no. TSV2328A, serial no. M7169BSN ..... *David Anderson, 145 S. Florida Street, Laurium, MI 49913*

Sears 6 in. planer, model no. 103.1801 ..... *John A. O'Brien, 3718 Beechwood Avenue, Flint, MI 48506*

Craftsman drill press, model 150, model no. 113.24511 ..... *Albert J. Smith, 8 Hickory Drive, Doylestown, PA 18901*

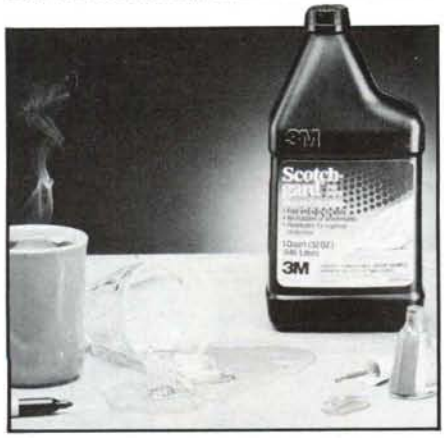
Product News

To keep our readers up-to-date, we use this column to feature brief descriptions of new tools and supplies on the market. The product descriptions are provided by the manufacturer and are not a result of tests or reviews by the editors of The Woodworker's Journal.



Bessey WS-3 Angle Clamp

This die-cast clamp from American Clamping Corporation is ideal for picture frame, bookshelf, and box construction. It is designed to always hold material at right angles, regardless of the material thickness, while joining is completed. Able to accommodate material up to 2 in. thickness when used for butt or miter joining, it will also handle screw joints up to 1 in. thickness. It comes with two hold-down clamps for using the tool free-hand or mounting it to a workbench. For information, call 1-800-828-1004.



3M's Safest Paint Stripper and Wipe On Poly

Among the products in the new 3M Wood Refinishing System are Safest Stripper brand Paint & Varnish Remover and Scotchgard Wipe On Poly Finish.

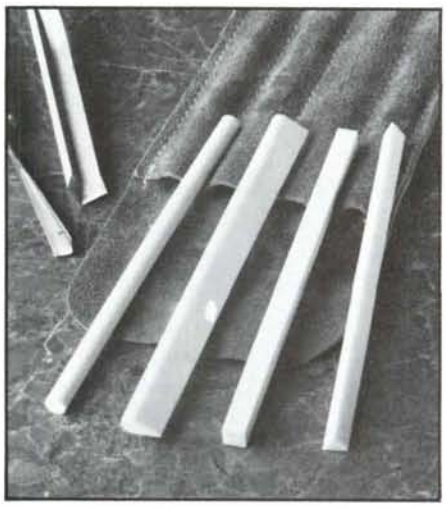
The Stripper doesn't contain methylene chloride, doesn't emit harmful or unpleasant odors, and is non-flammable, so paint stripping can be done indoors. As a semi-paste, it adheres to vertical surfaces. Tools and hands are cleaned with water.

Scotchgard Wipe On Poly Finish, available in gloss or satin, seals and protects against liquids, chemicals and heat. The wiping action permits full control of the application and eliminates the bubbles and brush marks of brush-on finishes.

For more information on these and other products in 3M's Wood Refinishing System, contact Longine Beck, Customer Service, 3M Center, Building 223-4S-01, St. Paul, MN 55101-9924.

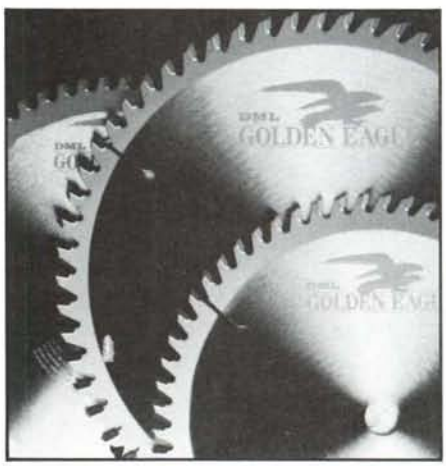
SqueezeDriver

New from WorkTools, Inc. is the SqueezeDriver, a manually powered rotary driving tool designed to replace a variety of screwdrivers and nut drivers. For prolonged high-torque driving, the SqueezeDriver can also be used as a ratchet driver. Standard ¼ in. power driver bits snap lock into the chuck. A reversible mechanism can be set to install or remove. The housing is formed of high-impact ABS plastic. For information, contact WorkTools, Inc., 1748 Westwood Blvd., Los Angeles, CA 90024; (213) 475-1761.



Ceramic File Set

The superhard bonded aluminum oxide abrasives in this versatile set will shape and hone your hardest tempered steel tools. They can be used dry or with an oil or water wash. They will not glaze, and they won't wear with excessive use. Round, square, oval and tear-drop files are approximately ¼ in. by 5 in. in ultra-fine white grit. For information, contact Woodcraft Supply, P.O. Box 4000, Woburn, MA 01888.



Golden Eagle Dyanite Saw Blades

DML's Golden Eagle saw blades cut faster and last longer than other carbide-tipped blades. The Golden Eagle blade is equipped with cutting tips made of *Dyanite*® and has been field-test-proven to have a cutting life up to 11 times greater than standard carbide-tipped blades. Golden Eagle blades are available in 37 popular sizes and tooth configurations for every type of cutting application, including non-ferrous metals.

Cabinetmakers' Supplies

General Woodworking Suppliers

As a service to our readers, ***The Woodworker's Journal*** *periodically lists sources for various woodworking products. In this issue we are listing companies that specialize in mail-order sales of woodworking supplies, along with a code to indicate some of the products they carry. Code: hand tools (HT), power tools (PT), stationary equipment (SE), hardwoods (HW), veneers (V), hardware (H), clock parts (C), lamp parts (L), books (B), finishing products (F).*

Bridge City Tool Works ..... HT, F, B
1104 N.E. 28th Ave. — 22 page catalog, $1.00
Portland, OR 97232

Constantine ..... HT, PT, SE, HW, V, H, C, L, B, F
Dept. 2044SM — 116 page catalog, $1.00
2050 Eastchester Rd., Bronx, NY 10461

Craftsman Wood Service ..... HT, PT, HW, V, H, C, L, B, F
Dept. WJ9 — 144 page catalog, $1.00
1735 West Cortland Ct.
Addison, IL 60101

Frog Tool Co., Ltd. ..... HT, PT, H, B, F
Dept. WJ1, 700 W. Jackson Blvd. — 89 page catalog, $3.00
P.O. Box 8325
Chicago, IL 60606

Garrett Wade ..... HT, PT, SE, B, F
Dept. MP12-3, 161 Ave. of the Americas — 208 page catalog, $4.00
New York, NY 10013

Highland Hardware ..... HT, PT, SE, B, F
1045 N. Highland Ave. — 90 page catalog, $1.00
Atlanta, GA 30306

W.S. Jenks & Son ..... HT, PT, SE, B, F
1933 Montana Ave. N.E. — 128 page catalog, $2.00
Washington, DC 20002

Lee Valley Tools, Ltd. ..... HT, PT, B, F, SE, H
Dept. WJ89, 1080 Morrison Dr. — 236 page catalog, $5.00
Ottawa, Ontario, Canada K2H 8K7

Seven Corners Ace Hardware ..... HT, PT
216 West 7th St., St. Paul, MN 55102 — 350 page catalog, Free

Shopsmith, Inc. ..... HT, PT, SE, B
6640 Poe Ave., Dayton, OH 45414 — Catalog $4.00

The Source ..... HT, PT, SE, F
7305 Boudinot Dr. — Catalog $2.00
Springfield, VA 22150

Trend-Lines ..... HT, PT, SE, H, B, F
375 Beacham St. — 71 page catalog, $2.00
Chelsea, MA 02150-0999

Woodcraft Supply Corp. ..... HT, PT, SE, H, C, B, F
Dept. WJ, 41 Atlantic Ave. — 119 page catalog, $3.00
P.O. Box 4000, Woburn, MA 01888

Woodline/The Japan Woodworker ..... HT, PT, SE, HW, V, B, F
Dept. WJ89, 1731 Clement Ave. — 63 page catalog, $1.50
Alameda, CA 94501

Woodworker's Supply of New Mexico ..... HT, PT, SE, V, H, C, B, F
Dept. WJ8, 5604 Alameda Place N.E. — 63 page catalog, free
Albuquerque, NM 87113

Events

We will gladly list as many events of interest to woodworkers as space permits. Listings are free and may include shows, fairs, competitions, workshops and demonstrations. The deadline is 6 weeks before publication, May 15 for the July/August issue. Please address announcements to the Events Department.

California:

Summer classes at The College of the Redwoods include Basic Woodcarving, June 5-16; Tools & Techniques, June 26 - July 14. For information, write or call C/R Woodworking Program, 440 Alger St., Ft. Bragg, CA 95437; (707) 964-7056.

Traditional Japanese Woodworking Classes in Shoji Screen, Tansu Chest, joinery and hand sharpening. Hida Tool, 1333 San Pablo Ave., Berkeley, CA 94702; (415) 524-3700.

Connecticut:

The Brookfield Craft Center's Spring Program includes: Turning Plates, Bowls and Platters, May 6-7; Elements of Design in Woodturning, June 3; Advanced European Cabinetmaking, June 3-4; Lamination Techniques, June 10-11; Evening Woodworking, June 14 -August 3. For info, contact the center at P.O. Box 122, Brookfield, CT 06804; (203) 775-4526.

The Creative Arts Workshop's 21st Annual Celebration of American Crafts. Invitational, juried exhibition/sale to be held in November 1989. All media. Preliminary review from slides; final jurying from actual works. Slide deadline: June 15. SASE and resume for information: The Celebration, Creative Arts Workshop, 80 Audubon St., New Haven, CT 06510.

Kentucky:

Symposia: Woodturning/Sharpening, May 26-28; Joinery/Finishing, June 9-11. Instructors: Jim Hall, Sanford Hill, Ersal Kindel. Contact Adventure in Woods, 415 Center St., Berea, KY 40403; (606) 986-8083.

New Jersey:

The South Jersey Woodcarvers' 10th Annual Woodcarving Show will be held June 3-4 at the Wheaton Village Glass Museum, Millville. For information, write or call Jack or Connie Raleigh at 716 Wood Lane, Cinnaminson, NJ 08077; (609) 829-8731.

North Carolina:

Summer wood workshops at Arrowmont include Woodturning — Artistic and Functional (intermediate to advanced), June 5-9 with Ray Key, and June 12-16 with Liam O'Neill (beginning to advanced); Woodturning — Scuptural Vessels with Bruce Mitchell, June 19-23; Woodturning and Design with Meryll Saylan, June 26 -July 7. For information, write Arrowmont School of Arts and Crafts, P.O. Box 567, Gatlinburg, TN 37738; (615) 436-5860.

Ohio:

Spray Finishing Technology Workshop, sponsored by Bowling Green State University and the DeVilbiss Co., Toledo, May 8-12. Contact Ms. Judy Jennings at (419) 372-2439.

The 12th Great Lakes Woodworking Arts Exhibition, sponsored by The Parma Wood Carvers Guild, the North Coast Wood Turners, and the Ohio Marquetry Society, will be held May 20-21 at the Brooklyn Recreation Center, Brooklyn.

Oregon:

Summer workshops in Wood Finishing, Woodbending, Cabinetmaking, and Turning will be held from June 13 - Aug. 22. Contact: The Oregon School of Arts and Crafts, 8245 S.W. Barnes Rd., Portland, OR 97225; (503) 297-5544.

Pennsylvania:

The Olde Mill Cabinet Shoppe is sponsoring two hands-on seminars with John Wilson: The Shaker Band Boxes, May 19-20, and Planes and Making Planes, May 20-21; also slated are Wood Finishing with George Frank, June 10-11; Joinery and Sharpening — Japanese Style with Toshio Odate, June 23-25. For information, contact the Olde Mill Cabinet Shoppe, 1660 Camp Betty Washington Rd., York, PA 17402; (717) 755-8884.

Symposium '89 — A National Exposition of Stringed Instrument Making and Repair including exhibits, lectures, workshops, and demonstrations will be held on the campus of Layfayette College, Easton, June 22-25. Deadline for registration is June 10. For information, contact Symposium '89, 14 South Broad St., Nazareth, PA 18064; (215) 759-7100.

Tennessee:

The Tennessee Association of Woodturners' Second Annual Symposium, June 10-11, with Del Stubbs, covers tools, end grain turning, faceplate bowl turning and basic design. For information, write to the Association at 5428 San Marcos Dr., Nashville, TN 37220.

Wisconsin:

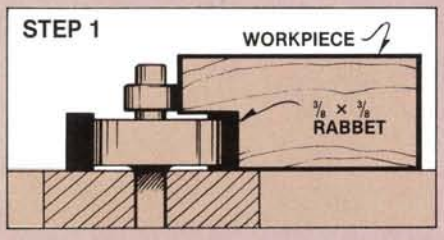
7th Annual Festival of Crafts, June 16-25, sponsored by the Center for Craftsmanship at the Univ. of Wisconsin. Wood workshops include Boat Building with Michael Keifer, Woodturning with Rus Hurt, Wood Carving, and the Business of Crafts. Call Nancy Blake or Jim Bjornerud at (715) 232-2213 for information.

Panel Retainer Disk System

Many mirrors look great on the wall, but take them down and you often find that on the backside they have unsightly screws, brads, glazier's points or plastic knobs holding the glass and backing board in place. While these devices all do the job, they don't look very attractive.

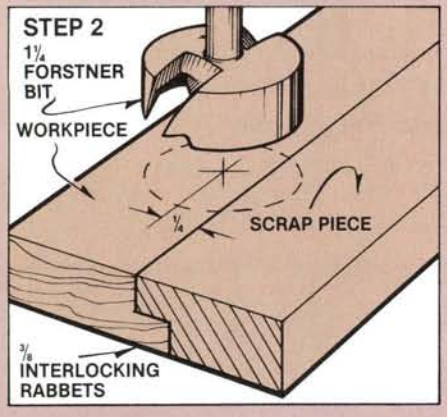
We think that this panel retainer system is just unique enough to make you as proud of the backside of the mirror as the front. It's featured on the Contemporary Mirror project on page 50. There's not much work to making the panel retainer disks or the counterbore into which they fit. Simply follow the step-by-step technique.

By varying the size of the disks, you can adapt this system to other projects where glass or panels must be secured within a frame in such a way that they can be easily removed or replaced. We used a cherry disk on the mirror, which contrasted nicely with the ebony stiles of the frame. The technique is also useful for an application where it's best to mount the glass or panel from the front. In these cases, the retainer disks become an integral part of the overall design.

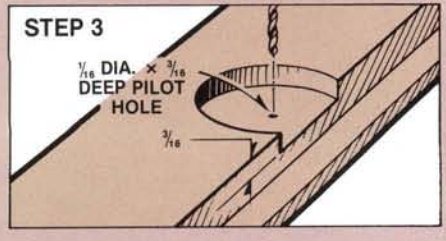


The first step is to rout the rabbet for the glass and backing board. In our mirror, the glass measured ⅛ in. thick and the cardboard backing board was about 1/16 in., so the rabbet depth is 3/16 in. plus the 3/16 in. thickness of the retainer disks, for a total of ⅜ in. (Step 1). If you want to use a thicker backing board, then increase the thickness of the frame stock and the depth of the rabbet to allow for the heavier backing board. Using the same router table setup, also make a rabbeted scrap piece, which will be used in Step 2.

Next, drill the holes for the retainer disks. Use a Forstner bit in the drill press, and clamp the rabbeted piece of scrap stock along the edge, as shown, so the bit doesn't wander (Step 2). The

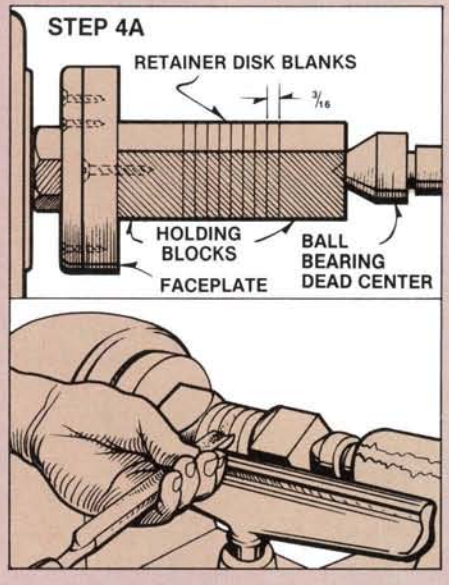


depth of the counterbore you'll make with the Forstner bit is calculated to stop short of the rabbet depth by the thickness of the glass and backing board. In our mirror the depth is 3/16 in.



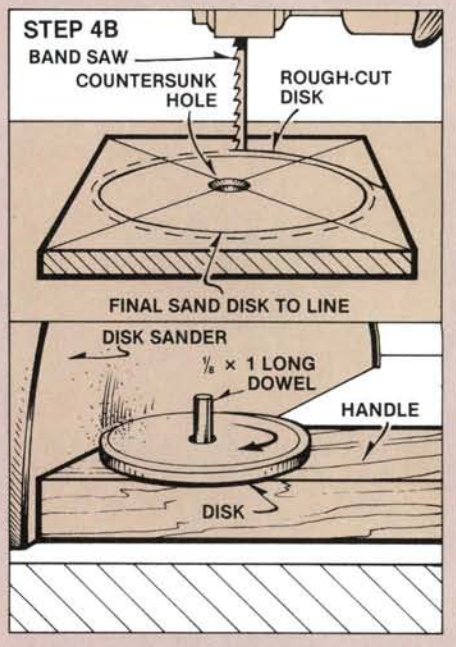
Next, drill the 1/16 in. diameter by 3/16 in. deep pilot hole for the screw that will fasten the disk in place (Step 3). The Forstner bit leaves a center point that will serve as a guide for the pilot hole.

Now make the disks. There are two ways to make these disks — either in quantity or individually. To make them in quantity, sandwich a number of blanks between centers and turn the disks on the lathe, as shown in Step 4A. You'll need blocks on either end, screwed to the faceplate on the head end and sandwiched on the tail end. Don't try to sandwich too many disks together. Also, don't try to remove too much stock at a time or you might pull a disk out of the stack. On our mirror,



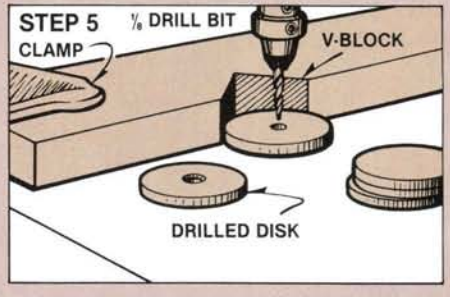
we found that several extra disks were needed because a few did chip out while being turned. To make the disks one at a time, drill and countersink the centers, lay out and rough cut the blanks, and then disk sand the blanks round, as shown in Step 4B.

Finally, to drill and countersink the disks, use a V-block clamped to the drill press table, as shown in Step 5. (Note that the disks will have been drilled and countersunk already if you used the disk sander method to shape them round.) Once the V-block is correctly positioned, simply slide each disk into the V to drill through. By using a combination bit and countersink, the hole and countersink can be com-

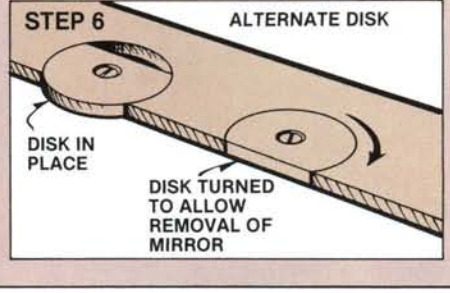


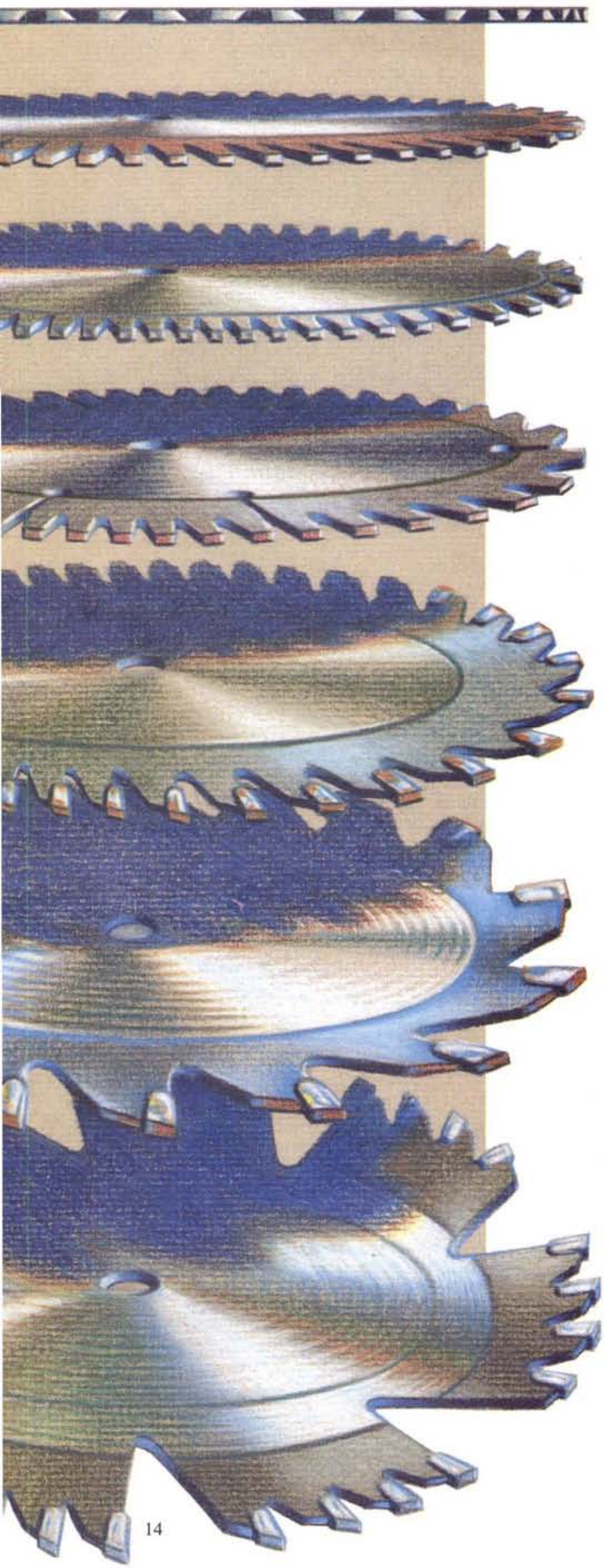
pleted in the same operation.

A brass flathead screw fastens each disk in place. Don't tighten the screw too tightly, or you'll risk splitting the disk. A snug fit is all that's needed.



An alternate version of the retainer disk is shown below. By nipping an edge off the disks, they can be rotated to a position that allows the glass and backing board to be easily removed without unscrewing and removing the disks. A half turn with the screwdriver should be all that's needed to allow the disks to be rotated.





Understanding Circular Saw Blades

Circular saw blades are so basic an element of woodworking that it's hard to imagine a shop without one. Nearly everyone has a table saw, a radial- arm saw or a portable circular saw. But there are often erroneous assumptions made about circular saw blades. Beginners may assume, for example, that buying an expensive carbide blade with a lot of teeth will solve all their sawing problems.

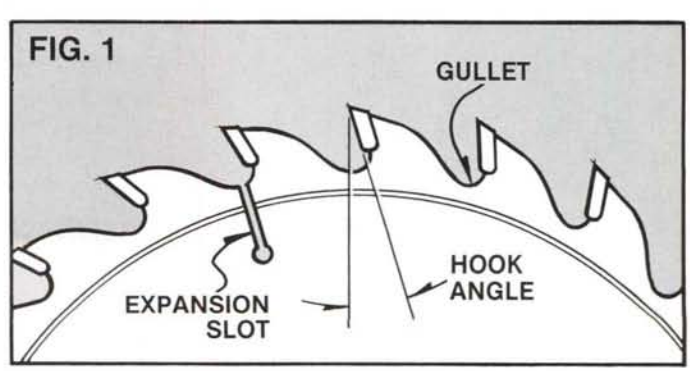
Blade Basics

Fortunately, a few basic pointers on how circular saws work will help you decide what type of blade you need for a particular job. There are essentially two kinds of cutting done with a circular saw blade, ripping and crosscutting. A third cut, the miter, combines elements of both cuts. The strategies are different for each type of cut, so best results are obtained with different styles of blades. For crosscutting you need a blade that's best at severing wood fibers at right angles to the saw blade. For ripping, you need a saw blade most efficient at severing fibers running in the same direction as the cut.

The ripping action is best accomplished with fewer rather than more teeth. The teeth cut largely with the grain, which produces a lot of friction and heat. Fewer teeth help by cutting down on the surface area dragged through each cut, and by providing roomier gullets for chip removal.

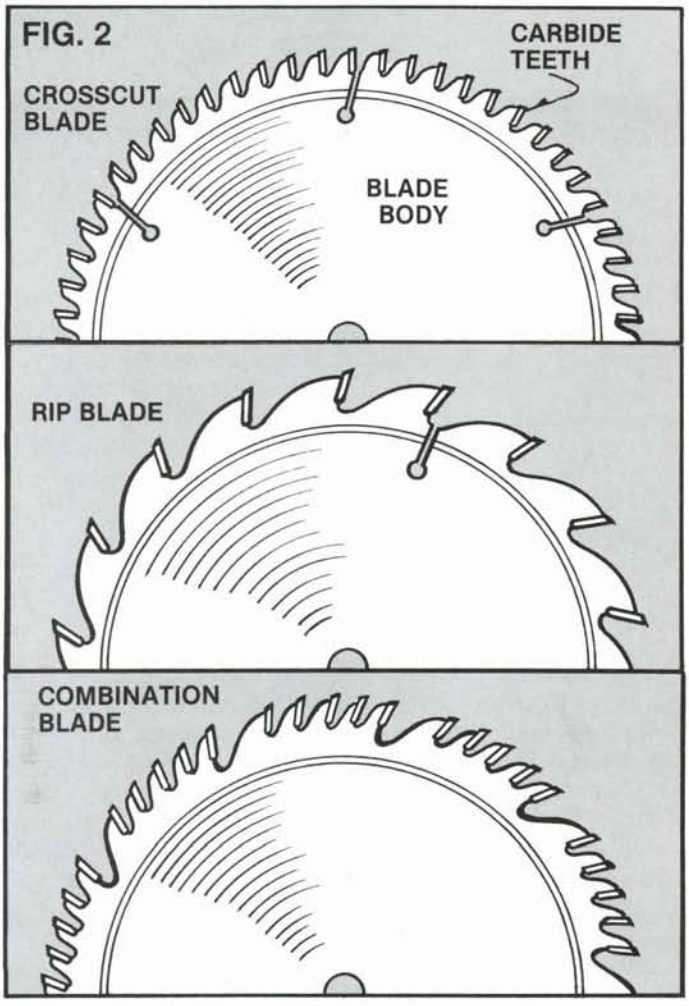
Blade Nomenclature

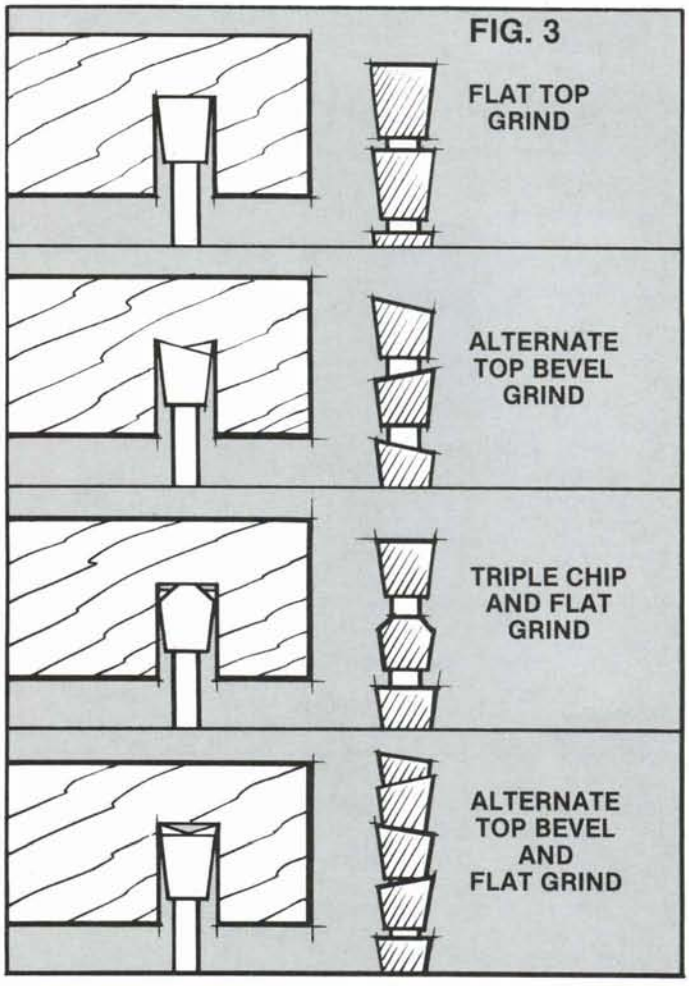
The hook angle (Fig. 1) varies between rip and crosscut saw blades. A common hook angle for the rip blade is 20 degrees, while some crosscut blades have as little as 6 degrees

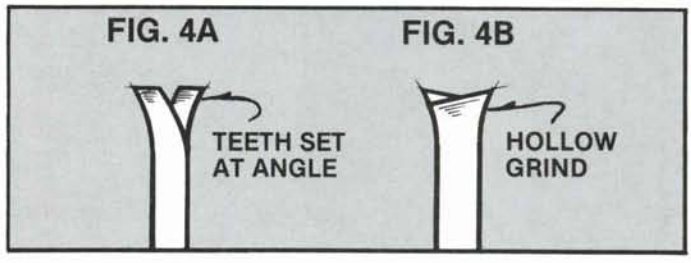


of hook. The smaller hook angle makes the blade take less of a bite for each tooth pass, helping to give a smooth cut. The higher hook angle allows the blade to tear out more wood at each pass, cutting down on friction.

The gullets, or space between teeth, of circular saw blades also vary depending on the use (Fig. 2). Deep gullets are found on rip blades because they allow plenty of room for chips to collect. Smaller gullets are found on crosscut saws







where each tooth removes a small amount of wood. Combination blades provide both features.

The profile of the teeth also varies between rip and crosscut blades (Fig. 3). Flat-top grind teeth leave a square kerf and are used for ripping. The flat-top helps remove the chips. Alternate top bevel grind teeth are used for crosscutting where the shape of the kerf doesn't matter and chip removal isn't as important. Triple chip blades are used for rough materials like particleboard. They employ two types of teeth, the triple chip and the flat-top, with the triple chip ground to cut a groove before the flat-top cuts the sides of the kerf. (The system cuts down on chip-out in particleboard and plastic laminates.) The last type of blade profile is also a combination of profiles, the alternate top grind and the flat grind. The blades are called combination blades. Usually there are four or five alternate top bevel teeth followed by a flat-top to remove chips. This system allows the blade to be used both for crosscuts and rips.

Another obvious feature of saw blades is the expansion slots (Fig. 1). They allow the blade to heat up without deforming. The metal can expand without warping the blade.

Saw blades also usually have a "set" to the teeth (Fig. 4A). The set is the distance between the cutting edge and the saw disk. That clearance distance allows the saw blade to cut without the additional friction between the disk and the workpiece. Some blades achieve that clearance without a set. Instead the disk itself is hollow ground (Fig. 4B).

Steel or Carbide Steel

Most blades come in either steel or carbide steel. Carbide steel blades cost more but are worth the money because they last 20 to 30 times longer than a steel blade. In a way, they are also safer. Since they tend to stay sharp for extended periods, they cut down on kickback, often the result of a dull blade. We recommend using carbide blades exclusively.

Carbide blades consist of small pieces of carbide steel welded, or actually brazed, onto a disk of more flexible steel. The arrangement allows the saw blade to flex without breaking, while the teeth provide the durability of carbide.

(continued on next page)

In The Shop
Continued

Thin Kerf Blades

Thin kerf blades are a variety of carbide blade designed to create less waste. They are especially useful if you're working with expensive exotic woods where the size of the kerf can have a significant impact on the cost of a project. Thin kerf blades also require less power.

How Many Teeth?

The number of teeth is important for many reasons, not the least being the cost. The more teeth, the more the blade generally costs. The crosscut blades come with anywhere from 40 to 80 teeth, with the more expensive blades having more teeth. The industry standard for a fine crosscut blade is 60 teeth for a 10 in. blade. For smaller blades, the number of teeth required to give an equivalent cut is reduced.

The rip blade has 24 to 30 teeth with deep gullets. A combination blade both rips and crosscuts, so it has about 30 teeth with several deep gullets spaced around the blade. The tooth directly in front of the deeper gullet is a flat-top tooth.

Blade Names

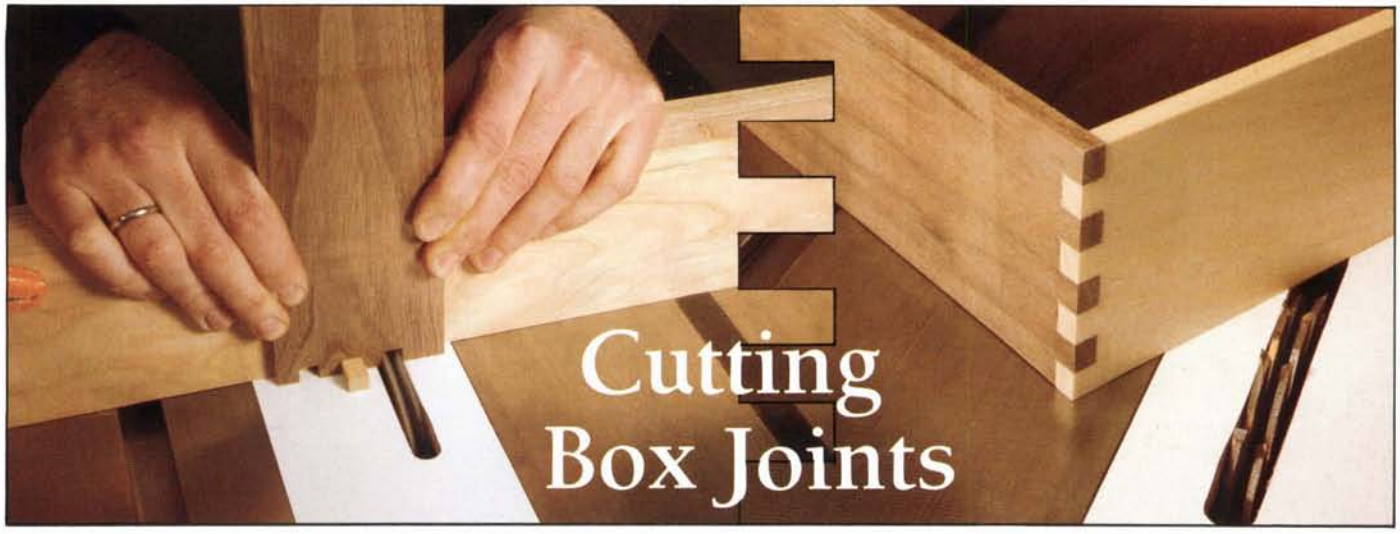
The blades used on circular saws get their names from their use. The crosscut, rip and combination blades are the most obvious. There are also a number of blades for specialized applications. They include the plywood blade, the planer blade, the easy-cut blade, and the nail cutting blade. The plywood blade has numerous teeth with very small gullets to help minimize tearout. The planer blade has very little or no set to the teeth, and is hollow ground. The blade makes a very smooth cut with the grain, but won't cut very fast. The easy cut blade has very few teeth, making it a very fast cutting blade that leaves a rough surface. The design also helps cut down on kickback. The nail cutting blade has carbide teeth designed to withstand an occasional impact of a nail. It's useful if you do a lot of remodeling.

When choosing a blade, it's important to decide what you're going to use it for. If you don't generally need the smoothest cut and don't rip thick hardwoods, you can probably get away with a combination blade. If, however, you plan on cutting 2 in. thick oak, you'll want to also have a rip blade on hand. If you want an extremely fine cut along the end grain, you may want a special crosscut blade as well.

For all of the blades, it's also important to keep in mind the nature of the steel. Rip blades are under greater stress, so it's good to have a more flexible but less durable steel. Carbide grades run from C1, which is most flexible but least durable, to C4, which is most brittle and also most durable. For a rip blade it's best to have a blade made from C2 carbide. For a crosscut blade it's best to have C4 carbide.

Also make sure that the brazed joints between tooth and disk on a new blade look well made. They should be smooth and without pin-prick size indentations. Also find out what speed the blade is rated for.

After choosing a blade, it's best to consider an accessory that will improve the performance: a blade stabilizer. The stabilizers fit over the arbor on either side of the blade and stiffen it during use. Blades are under a great deal of stress during cutting, and they tend to deflect and wobble.



Cutting Box Joints

The box joint, also called the finger joint, is a strong and effective method to join drawer parts and make boxes. It's cut on the table saw using a simple jig and the dado head.

Layout

The first step in making a box joint is to determine what the thickness of the boards is, and what their final width will be. Next, you need to figure out how to best lay out the joint so it will both look good and be as strong as possible. Pins usually look best when they are narrower than the thickness of the stock, as shown in Fig. 1A. More pins mean a greater glue area and therefore a stronger joint. Making the pins equal to the thickness of the stock (Fig. 1B) results in a plainer looking joint with less strength. As a rule of thumb, pins that are one-half the stock thickness have an attractive proportion. For example, ⅜ in. thick pins usually look good with ¾ in. stock, and ¼ in. pins look good with ½ in. stock. For ½ in. thick stock, substitute a ripping blade with an ⅛ in. kerf for the dado head. This is not to say that pins equal to stock thickness aren't acceptable, though. In making a choice, you need to balance strength with looks and the amount of work required.

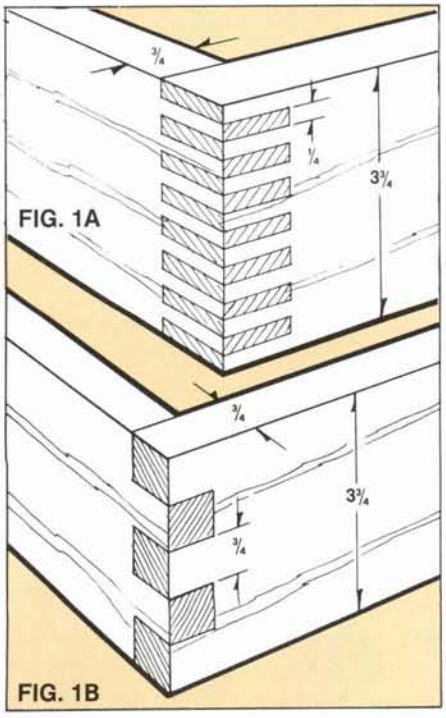


FIG. 1A

FIG. 1B

The ideal pin layout will work out so that you'll have the width of the board divisible by a whole number, resulting in a standard size pin. In Fig. 1A, a 3¾ in. board divided by 15 pins results in ¼ in. thick pins. In Fig. 1B, the same board will also accept five ¾ in. thick pins. More often than not, though, you'll find that the required final board width doesn't allow for a simple pin layout. For example, Fig. 2 shows that a whole number of ⅜ in. pins will not fit on a board 2½ in. wide; you would end up with six ⅜ in. thick pins, plus a ¼ in. pin on the bottom, leaving the joint with an unbalanced look.

Even when you can work out a pin size that results in a whole number of pins, as shown in Fig. 3A, there's another point to consider. You often end up with an even total number of pins (Fig. 3A), which yields end grain on the top and side grain on the bottom, again giving the joint a slightly unbalanced look. A better choice is to lay out the pins so there is an odd total number, which yields an unequal number of pins on each mating piece. Then you can rip a little off each edge, creating a narrower pin both top and bottom, as shown in Fig. 3B. This presents a more resolved and visually satisfying effect. Admittedly, the difference between the joint in Figs. 3A and 3B is a subtle one. On drawers or other constructions where the box joint itself is not a focal point, such distinctions are not critical.

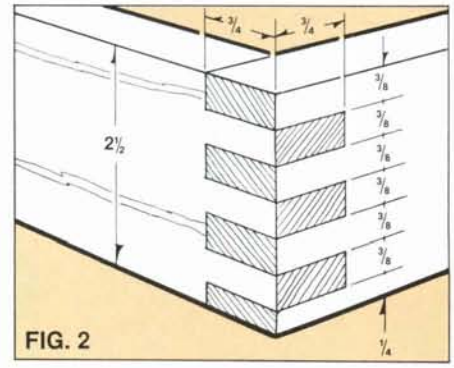


FIG. 2

The Easy Way

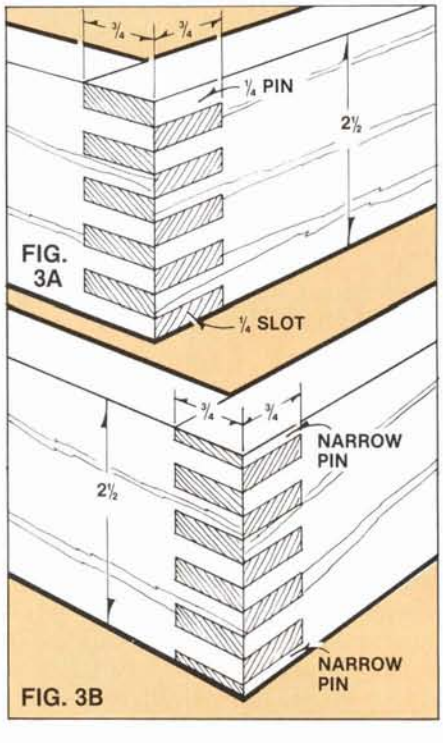
Although you could start with the final board width, lay out a whole number of pins, and then set the dado head to whatever the pin width works

(continued on next page)

out to (even if it's fractional), an easier approach is to start with a board that's a little wider than needed. Figs. 4A and 4B show two options. In Fig. 4A, you simply rip one edge as needed to get your final desired width. Fig. 4B shows a better approach, ripping both edges equally to create a balanced joint.

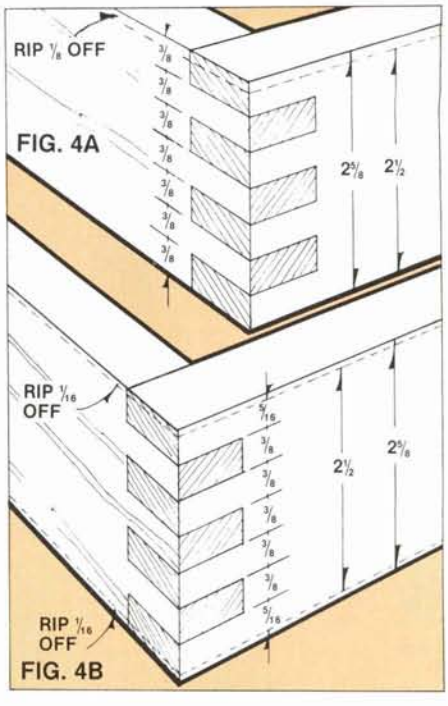
The Jig

The box joint jig is simply a length of ¾ in. thick stock mounted to the miter gauge, with two slots of equal size cut through it. The size of the slots is equivalent to the size of the pins you want to cut. The two slots are separated by a distance equal to the



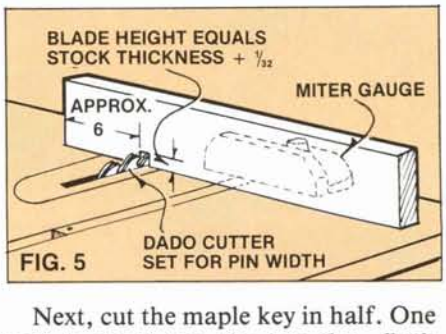
slot width. One of the slots accepts a small piece of wood (called the key), also equal to the size of the pins you want to cut. As shown in Fig. 5, the jig should be high enough and wide enough to provide adequate support for the workpiece. Our jig extends 6 in. past the key slot, but if you are cutting box joints on a piece wider than 6 in., then extend the jig as needed to provide the added support.

To make the jig, first set the dado head to a width equal to the size pin you want to cut. Then raise the dado head so that its height is equal to the stock thickness plus about 1/32 in. This



extra 1/32 in. will mean that the pins can be sanded flush after assembly. If you haven't used a dado head before, you'll need to either make or purchase a table saw insert to fit the dado head.

To establish the key slot, set your miter gauge at exactly 90 degrees, and pass the jig through the dado head (Fig. 5). Next, cut a hardwood key, about 5 in. long, to fit the slot. Rip the key from a longer and wider board, since it's dangerous to work with small pieces on the table saw. The key should be cut for an exact fit from a hardwood such as maple, which will resist wear.



Next, cut the maple key in half. One half is glued into the key slot, flush with the back of the jig. The remaining half is used as a spacer to locate the key the proper distance from the dado head. As shown in Fig. 6, with the saw turned off and unplugged, fit the spacer key between the key and the

dado head so the teeth are just touching it. Now clamp the jig securely to the miter gauge in that position. Note that our illustrations show a stack dado as opposed to a wobble dado. The stack dado provides a more accurate cut, can be set up repeatedly for a consistent cut, and it establishes a perfectly flat bottom that makes for a clean looking joint. The wobble dado leaves a slightly rounded bottom. If you are using a wobble type dado, rotate the head until the blade is at its closest to the key, and clamp the jig in place so that the closest tooth of the dado just touches the spacer block.

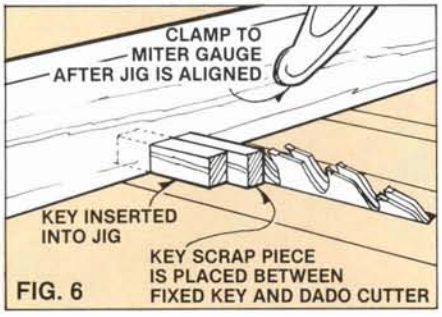


FIG. 6

The Technique

Now test the setup on some scrap that's the same thickness as your workpiece. As shown in Fig. 7A, butt the stock tight against the key and cut the first slot. Now reposition the piece so that the slot you just cut fits over the key, and cut the second slot (7B). Move the workpiece again and make the third slot, and then the fourth. We're using a ⅜ in. dado width on a 3⅜ in. wide board, so there will be four slots. Now flip the workpiece so the first

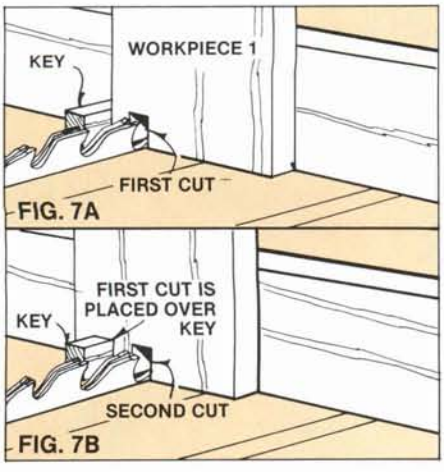


FIG. 7A
FIG. 7B

dado cut is over the key, and butt the mating piece (workpiece 2) against the first piece (Fig. 8). The mating piece will have a slot on each end instead of a pin. This setup enables you to cut the first slot in the mating piece. To cut the second slot, remove workpiece 1 and position the slot that you just cut in workpiece 2 over the key, repeating the procedure for each successive slot until all five slots are cut.

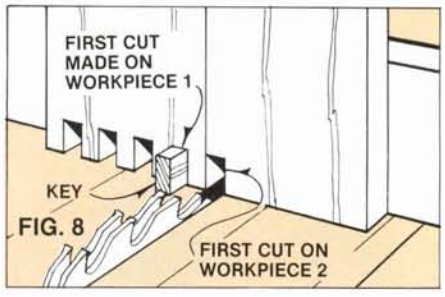


FIG. 8

Your test joint should fit together easily. If you have to force the pieces together, then you need to reposition the jig so the key is a little closer to the dado head, thereby resulting in a narrower pin. A joint that is too tight will be impossible to assemble, especially after glue is added. If the joint is sloppy, reposition the jig so there's a little more space between the key and dado head, resulting in a slightly thicker pin.

Once you've found the setup that results in a well-fitting joint, screw the jig securely to the miter gauge. Most miter gauges have prebored holes to accept screws. Try not to let the jig slip out of alignment while it's being screwed in place. Even the slightest movement will result in a box joint that doesn't fit properly. Don't release the clamps until the screws are tight.

When you have occasion to re-use a jig you made earlier, don't assume that simply by screwing it in place it will be properly positioned. You'll probably need to make several fine adjustments before it's just right.

On most drawers and boxes, you'll need to cut identical box joints on both ends of the same piece. Flip the piece end-for-end to cut the joint on the opposite end. As a time saver, if you have four sides, you can gang the two opposing sides together. Just make sure the key is long enough to accept the double thickness.

Non-Toxic Finishes

A lot of books on wood finishing have a safe way of handling the subject of non-toxic finishes. They ignore it. Although the topic seems straightforward — and has a healthful sound to it — there are some slithery twists and turns. That's partly because even drinking water often contains toxic substances, and partly because the issue is clouded with government regulations and definitions about what is hazardous. The issue is also clouded because what's considered toxic on a salad bowl is a lot different than what's considered toxic on a kitchen cabinet.

Defining Toxic

And what is toxic? Common table salt, sodium chloride, is a poison taken in large quantities. It's also a health threat for some people if taken in smaller quantities over an extended period of time. For many substances, the government decides whether they should be considered toxic. The Food and Drug Administration (FDA), for example, has a list of chemicals allowed as preservatives on wood that will come in contact with food. While some of the chemicals seem innocuous enough — wax is one — others have long chemical names and are surely toxic in large doses. But, of course, the FDA does define the allowable concentrations for the chemicals. For example, concentrations of the preservative pentachlorophenol can't exceed 50 parts per million in treated wood.

Another complication is that the federal Occupational Safety and Health Administration (OSHA) defines toxicity for finishes as applied in the workplace. That involves such things as setting standards for how much of the dissolved vapors of a chemical it's safe to have in the air. The vapors are usually the solvents for the finishes and they can be explosive as well as toxic.

Still another complication is that finishes for commercially made toys and children's furniture are subject to the control of the U.S. Consumer Products Safety Commission.

These various regulatory agencies can easily confuse the situation. For example, if a product is non-toxic as determined by OSHA, does that mean you can use it on woodenware

(continued on page 22)

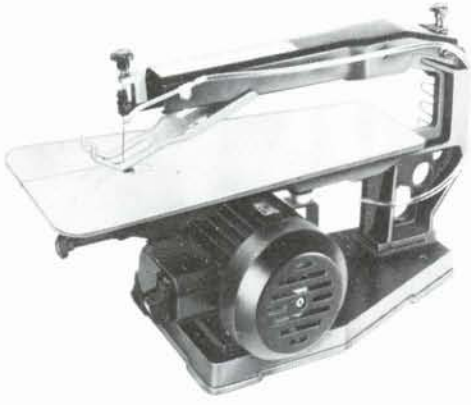
From Penn State Industries...

Professional Quality Woodworking Machines At Affordable Prices

Super 15" Scroll Saw

Comparable value over $500 • Shipped complete & ready to run • **Includes $37 Free accessory package ! ! !**

On Sale..... **$129.95**



This versatile machine makes cutting intricate wood patterns easy - **Its great for making toys, jewelry, puzzles, fretwork**, etc. The blade is driven on both up and down stroke with a smooth cutting parallel rocker arm system that avoids blade breakage and **creates a smooth finish that eliminates sanding.** The Super 15" Scroll Saw is easy to set-up and use and is made with a **cast construction that insures durability.**

SPECIFICATIONS:

- **Construction** ..... Cast Iron
- **Throat depth** ..... 15"
- **Max depth of cut** ..... 2"
- **Machine weight** ..... 43 lbs
- **Motor** - Heavy duty totally enclosed fan cooled 110-120V, UL listed, ball bearing induction motor
- **Blades** - uses 5" standard & pinend
- **Stroke length** ..... 3/4"
- **Table tilt** .....0 - 45º to left

OPTIONS:

- **Dust Blower** • **37" Saw Stand**

Free with Purchase of Saw

12 Blade Assortment	**$ 3.50 value**
Extra Blade Holder set	**8.50 value**
Plastic Lettering guide set & patterns.....	**25.00 value**

FREE ... $37.00 VALUE

Saw & Accessories Price List

	PRICE	(UPS)
Super 15" Scroll Saw	**$129.95**	**(10.00)**
Dust Blower	**15.00**	**(*)**
Saw Stand - 37" high	39.00	(4.00)
4 dz blades (2dz pin, 2dz #9)	14.00	(*)
2 dz Spiral blades (size #2)..	10.00	(*)

(*) No freight charge if ordered with Saw; $3 for any combination of these accessones ordered separately

Super 125 Planer

Portable with "Power Feed" • Shipped assembled • Retail value over $600.00

On Sale **$349.95**

This machine will pay for itself time and again by planing your own lumber. At 65 lbs, you can carry this Planer to a job site or mount it permenantly in your workshop like any stationary machine. **You'll spend hundreds of dollars less** for this 12-1/2" power feed Planer than for a traditional stationary model of a similar capacity - with comparable results.

SPECIFICATIONS:

- **Knives**.... 2ea, 12-1/2" wide, HSS
- **Motor** - 16 Amp, 115V, 8000 RPM
- **Auto Feed rate** ..... 26.2 FPM
- **Cutting speed** ..... 16000 Cuts/min
- **Thickness of stock** ..... 3/16" to 6"
- **Size** ..... 15-1/2"H X 22"W X 21" Bed
- **Max Depth of cut** ..... 3/16"
- **Machine Weight** ..... 65 Lbs

Planer & Accessories Price List

	PRICE	(UPS)
Super 125 Planer.....	**$349.95**	**(15.00)**
Extra Set of 2 Knives	**25.00**	**(*)**
Dust Chute for vacuum	24.00	(4.00)
Planer Stand ..... Heavy Duty, 27-1/2"high	44.00	(6.00)
Roller Stand - variable ht..... Hvy duty, ball bearing, ht 25-45"	35.00	(5.00)

(*) No frt chg if ordered w/Planer, otherwise add $3.00 UPS

Dust Collector

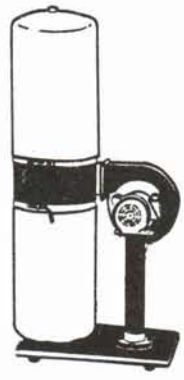
Keep your shop clean and safe from sawdust with our large capacity, commercial style system. This collector has up **to 10 times more air flow** than most Industrial Vacuums. We include over $15.00 of free hose and adapters with your purchase.

SPECIFICATIONS:

- **4" inlet • 1hp, 110/220V (pre wired 110V)**
- **610 CFM air flow • 2 Bags 15"dia X 22"**
- **Casters on base for maneuverability**
- **Weight 75lbs • Size - 26"X15"x57"H**

On Sale ... **$189.95**

Add $17.00 UPS Freight



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that will come in contact with food? Although the answer to the question is no, that doesn't necessarily help the consumer very much. A label may say a product is non-toxic, but not say according to whom.

The subject becomes somewhat easier if strictly limited to what's safe to use on eating utensils and children's furniture and toys. With other kinds of finishing jobs, you're concerned with whether the finish is inert after it dries and its toxicity as it affects the person applying the finish. There it's the solvents escaping into the air that do most of the damage.

What's Safe to Eat

So what is safe on eating utensils and children's furniture and toys? The problem with finishes on objects you eat from is that they come in contact with acids in foods and are subject to frequent mechanical abrasions. A salad bowl, for example, must be able to withstand acidic dressings and the scraping of forks and knives. For that reason, you really don't want any finish that sits on top of the wood. Some polyurethane varnishes, for example, are advertised as being non-toxic because the plastics are inert and won't hurt you. But do we recommend eating flakes of polyurethane varnish? No, of course not. It just doesn't make sense, especially in an age when research constantly comes up with new things hazardous to your health.

For eating utensils you really want a non-toxic finish that satisfies FDA guidelines and won't come off. Or failing that, a "non-toxic" finish that you'd also feel comfortable eating or drinking. So far, we've only found a few commercial products we feel safe recommending (see sources of supply). The products contain only ingredients approved by the FDA or ingredients that are themselves foods. The products are penetrating finishes. That is they soak into the wood and form a moisture barrier beneath the surface. Penetrating finishes don't generally give as much protection against moisture as a surface coating like polyurethane varnish. But you have to make some trade-off if you want a non-toxic finish.

There are two other non-toxic finishes that deserve a mention for use with eating utensils. Both are non-toxic in the sense that they are commonly taken internally, one as food and the other as medicine. The two are walnut oil and mineral oil. Most oils aren't used as finishes for various reasons. Most vegetable oils, for example, don't harden and will turn rancid in a short period. Walnut oil, on the other hand, does harden and it doesn't turn rancid. It's available at many health food stores. One of the finishes listed in the sources of supply, Preserve Woodenware Oil, is made from nut oils. Mineral oil doesn't turn rancid either, but unfortunately it won't harden. You have to keep oiling the piece to retain the moisture protection.

Children's Furniture and Toys

For furniture and toys, the U.S. Consumer Products Safety Commission recommends using a high quality household enamel paint manufactured after February 1978. The main objective here is to be sure the wood finish doesn't contain much lead, less than 0.06 percent. We'd go a little further and recommend that you use only finishes that specifically state they're non-toxic or safe for children's toys. If the com-

pany makes a claim, then it's required to be able to back it up with test results. Some stores carry finishes and paints for toys and children's furniture. We've also provided some mail-order sources.

One reason for extra caution is that some finishes can take up to 30 days to become inert. It takes that long for the various solvents and driers to evaporate and disperse. It's generally the driers and solvents that pose the greatest risk to children. Driers can contain toxic metals and the solvents usually contain hydrocarbons. The solid portion of the finish is generally an inert plastic, a polyurethane or acrylic, that won't dissolve or otherwise react with saliva. Even latex paints should be considered a potential hazard unless the label specifically states they're safe for use on toys or children's furniture.

One new finish for toys and children's furniture is non-toxic water-based lacquer marketed under the name of Hydrocote. Hydrocote shouldn't be used for eating utensils because it does form a film on top of the wood. Its makers claim it's non-toxic in liquid form as well as when dry.

Another finish for children's furniture and toys is shellac that you mix yourself. Pure shellac flakes are non-toxic. The problem with commerical pre-mixed shellac is that it can contain metal driers or solvents that take time to dissipate. They also often contain methanol, the poisonous form of alcohol, which takes time to evaporate. But you can solve those problems by mixing the shellac yourself, using anhydrous ethyl alcohol (see sources of supply) as the solvent. WWJ

Sources of Supply

Finishes for Eating Utensils

Behlen's Salad Bowl Finish	**Woodcraft Supply** 41 Atlantic Ave. P.O. Box 4000 Woburn, MA 01888
Preserve Woodenware Oil	**Constantine's** 2050 Eastchester Road Bronx, NY 10461
Craftsman Salad Bowl Finish	**Craftsman Wood Service Co.** 1735 W. Cortland Ct. Addison, IL 60101

Finishes for Toys and Children's Furniture

Shellac flakes and ethyl alcohol solvent	**Garrett Wade** 161 Ave. of the Americas New York, NY 10013
Hydrocote lacquer	**Highland Hardware** 1045 N. Highland Ave. N.E. Atlanta, GA 30306
Paints for children's furniture	**Meisel Hardware Specialties** P.O. Box 70 Mound, MN 55364-0070
Craft and Tole Paint and Woodenware Oil	**Cherry Tree Toys** P.O. Box 369 Belmont, OH 43718

PROFILE

MASSACHUSETTS WOODWORKER
Paula Garbarino

Paula Garbarino's shop is in one of those massive concrete factory buildings. It's on the banks of the Mystic River in Charlestown, Massachusetts, in a neighborhood dotted with similar structures. Concrete and steel seem a permanent part of the landscape here, even after the departure of the heavy industry that once filled the buildings.

Inside, on the landing of the second floor, are signs that other kinds of industry now fill the building. One sign is an object resembling a decapitated carousel horse. It's really something left over from a long-ago display at a nearby department store. The store uses the third floor of the building as a warehouse, and the headless horse now guards the stairway.

Another sign is the curious combination of musty and woody smells in the long hallway. Then, down the hallway, you find the wood storage bins. And, opening one of the massive double doors, you find the table saw, drill press, jointer and band saw. Next to the band saw is Paula and her workbench.

She's considering whether a particular crown molding works on a Shaker style hutch made of cherry. Paula's fingers center the loose molding assembly on top of the nearly completed cabinet and she steps back for a good look.

The door panels gleam against the background of their frames and the case, which glow with the softer texture of unfinished but well-sanded wood. Paula explains that she finishes the door panels before assembling the doors, because seasonal moisture variations make the panels move slightly in relation to their frames. If she'd finished the doors as one piece, the shrinking of the panel would expose unfinished wood along the edges.

Paula's about 6 feet tall, with long brown hair and light brown eyes. Although she's slim, she works with the authority of someone used to making large objects obey her will. Her fingers grasp tools with an easy familiarity. The thump of her mallet against the chisel makes a solid sound.

When Paula talks about her work, it's obvious she sees it as much more than a way to make a living. "This desire to make things, I feel like it really comes from inside," she said.

It's a whimsical, warm appeal that enlivens Paula's work. She uses delicate decorative touches such as holly inlay curving gently into berries on the front of a Bible box; she carves sections of relief on a highboy with a flawless accuracy that makes here pieces seem just right.

Paula and her work are part of a woodworking cooperative that provides space and machinery for an eclectic group of self-employed woodworkers and artisans. Paula is one of three women using the space in the musty old building. She's in what could be called the traditional wing of the cooperative's space. She and two other woodworkers on her side of a partition specialize in period furniture. Right next to her is Irv Gerber, who also makes period pieces but is semi-retired. On the other side of the partition are three people who specialize in contemporary furniture designs. One, Peter Dean, will soon have one of his striking coffee tables touring Europe.

In another section of the cooperative, Bill Woodhead and two other artisans work on antiques, spending as much as several months restoring a fine piece to its former glory.

Paula has been in business for herself for about a year and a half. She moved into the cooperative shortly after completing two years in the Cabinet and Furniture Making program of the North Bennet Street School in Boston. There she studied traditional joinery, carving, inlay, veneering and woodturning. She's also studied drafting at the Boston Architectural Center and taught woodworking classes for children. Actually, her stint at the North Bennet Street School was her second time there. About eight years ago she completed another course there in general carpentry.

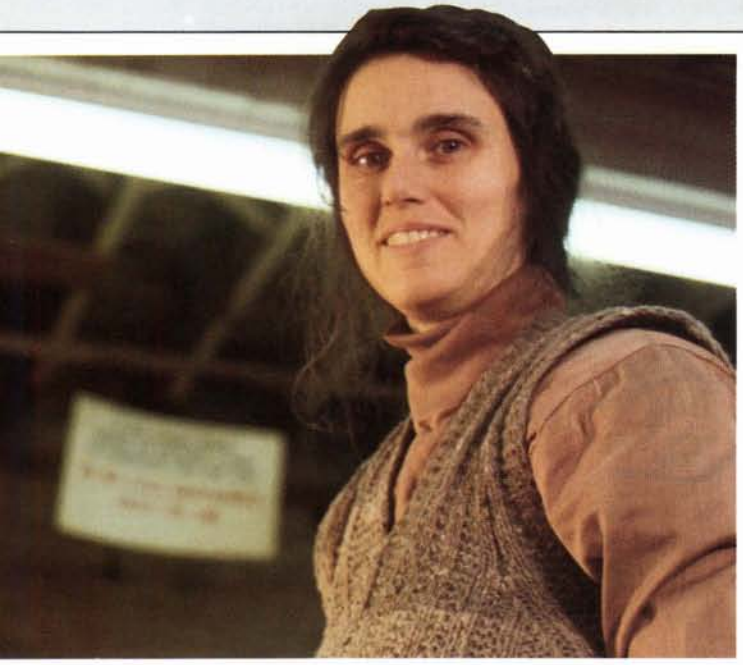
Between stints at school she worked for a custom cabinet shop making built-in wall units, kitchen cabinets and commercial fixtures. She also worked for a time in general carpentry.

But Paula says she enjoys working for herself and making custom period pieces much more than working for others. For one thing, she doesn't have to worry about pleasing a boss. The bosses she had were only interested in seeing her function flawlessly as a part of their business, she said. "They didn't see me as a person, they just saw me as a source of anxiety."

Nevertheless, Paula said she's very much aware that her continued life as a self-employed artisan depends heavily on making the right business decisions and making money. Too many people set up a shop without really knowing how to proceed once the tools are in place. "They sort of wait for the orders to start flowing in," she said.

"I think it's a romantic dream for many people . . . the next step isn't planned that well," she said. But Paula has a plan. She concentrates on commission work, but also does occasional repair and restoration. She says she'll even take part-time work for someone else, if she has to in order to keep the business going.

One thing she has going for her, she said, is her price structure. She said she hates to lose a commission because of a high price. And luckily, her living expenses and business overhead are fairly low. Because of the cooperative shop arrangement she doesn't have a lot of money sunk into stationary power tools. She pays a monthly rent that covers both her space, which is about 12 feet by 24 feet, and the use of the shared machinery, which includes a jointer, planer,



The Woodworker's Journal *featured a Philadelphia style tilt-top table by Paula Garbarino in the March/April 1989 issue. Below Paula lays out a hinge mortise for a Shaker style hutch. The base unit is in the background.*

two wood lathes, a slot mortising machine, a table saw, band saw, drill press, veneer press and dust collection system.

Paula says she needs to make about $15 an hour to cover her expenses and live. The low overhead allows her to beat the prices of the museum quality factory-made antique reproductions. "I can compete with their prices any old day because there are so many middlemen," she said.

Still, she said she sometimes underestimates the amount of time her work should take. "I think it's still a struggle to convince myself that it should take so long."

Her biggest obstacle now is meeting enough clients to keep her going. "If you can somehow meet the clientele, then you can do O.K.," she said. Fortunately, one good commission for a major case piece can keep Paula going for a month or more.

All the concentration on making her time pay off does have its drawbacks. "I'm disturbed because I can't make things for my friends. I have to find wealthy people to make things for," she said.

But she does get to do what she most likes, make beautiful wooden things with her own hands. Paula said she credits the women's movement for that chance. "I'm grateful to the women's movement that struck down the barriers at just the right time for me to develop the skills that I already had an interest in," she said. "I see women five to ten years older than me and they didn't have the same chance."

Paula said that she was especially lucky because she didn't have to break new ground at the North Bennet Street School. There were several women ahead of her, so the school was already used to the idea.

It wasn't only the women's movement that helped Paula along. Both her mother and grandmother were "good fix-it people," so Paula was used to the idea of using tools and just getting things done. And Paula said the experience of learning manual skills traditionally associated with women does have a carryover to woodworking. Men, she said, sometimes take longer to learn fine work, which of course is often required in woodworking. Women have fine motor skills honed by sewing and needlework.

Paula admits that men have an advantage in some areas. Just their familiarity with machines is a great help, she said. Many men seem to have an almost instinctive appreciation for how machines work and what to do when something goes wrong. "It's not just knowing how to use machines; it's also knowing how they go together," she said.

Paula said that women from other generations could have developed similar interests, but they were thwarted by the strictly defined sex roles. If they did develop their skills, it was hard to become accomplished because they were essentially working in a vacuum. She feels her grandmother had similar interests and would be very proud of her accomplishments.

"If my grandmother could only see what I have done, she would be in heaven," Paula said.

Jewelry Chest

This classic jewelry box, designed and built by Connecticut woodworker Dennis Preston, features ogee bracket feet, dovetailed corners and delicate Chippendale hardware. For the distinctive feet, Preston used a router technique that eliminates most of the hassle of working with small pieces. This box is made from walnut, but any hardwood will work.

Start by preparing the stock. You'll need ⅝ in. thick stock for the top (A), and ½ in. thick stock for the bottom (B), front/back (C), and sides (D). The tray is made with ⅛ in. thick stock for the front and back (H), the sides (I), and the partitions (J, K). The tray bottom (G) is ¼ in. thick plywood.

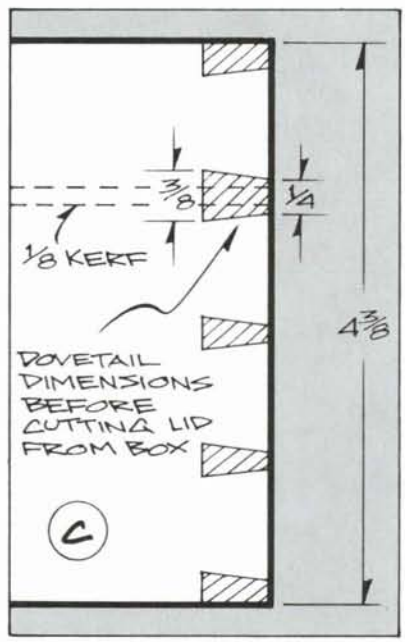
Cut the box front, back and sides so they're ⅛ in. wider than the dimensions shown in the Bill of Materials. The extra width allows for the ⅛ in. you'll lose when you cut the lid off the box. Then label the parts and lay out the dovetails as shown. First scribe the depth of cut for both tails and pins with a marking gauge. The tails, on the front and back, are the portion that resemble a dove's tail. The pins are the parts cut on the sides that fit between the tails. Set the gauge a bit over ½ in., which is the thickness of the sides. Scribe lines on the inside and outside on the end of each workpiece. When marking the sides run the lines on all four surfaces.

After scribing the depths, mark the tails on the front and back as shown in the dovetail layout. Extend those lines across the end grain. Use a sharp knife or similar implement for marking. Mark the waste sections with an *X*.

Use a dovetail saw to cut the tails to depth. Stay on the waste side of the line. Use a chisel to cut along the depth line. But, for the first chisel cut, stay just off the line. The chisel creeps a bit toward the line when you first hit it with a mallet.

Next, trace the tail profiles onto the end grain of the sides. Use a try square to run lines from the end grain to the depth marks. Also use the dovetail saw and chisel to cut out the pins. You may need some final chisel work to get the dovetails to fit correctly. They should go together snugly. If you have to bang on them, they'll split after gluing because the glue swells the wood.

Note that before gluing up the box, you'll need to mark the line where



Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.
A	Top	5/8 × 7 3/4 × 12 5/8	1
B	Bottom	1/2 × 7 3/4 × 12 5/8	1
C	Front/Back	1/2 × 4 3/8 × 12*	2
D	Side	1/2 × 4 3/8 × 7 1/8*	2
E	Foot	as shown	4
F	Cleat	3/16 × 3/4 × 6 1/8	2
G	Tray Bottom	1/4 × 5 3/4 × 10 5/8**	1
H	Tray Front/Back	1/8 × 1 1/4 × 10 7/8	2
I	Tray Side	1/8 × 1 1/4 × 6	2
J	Tray Partition	1/8 × 1 × 5 7/8	2
K	Tray Partition (small)	1/8 × 1 × 2 9/16	1
L	Hinge	1 × 1 as shown***	2
M	Lock	as shown****	1
N	Escutcheon	as shown****	1
O	Handle	as shown****	2

*Parts C and D start ⅛ in. wider than final size to allow for cut separating the lid from the box.

**The walnut plywood for the bottom is available from Craftsman Wood Service Co., 1735 W. Cortland Ct., Addison, IL 60101. They also sell the solid walnut in both ⅛ in. and ½ in. thicknesses.

***The brass hinges are available at most hardware stores.

****Parts available from Ball and Ball, 463 W. Lincoln Highway, Exton, PA 19341; (215) 363-7330. The catalog numbers and prices are: lock, TJB-055, $9.00; handle, S24-044, $8.00 each; escutcheon, L67-008, $3.15. The prices don't include postage and handling.

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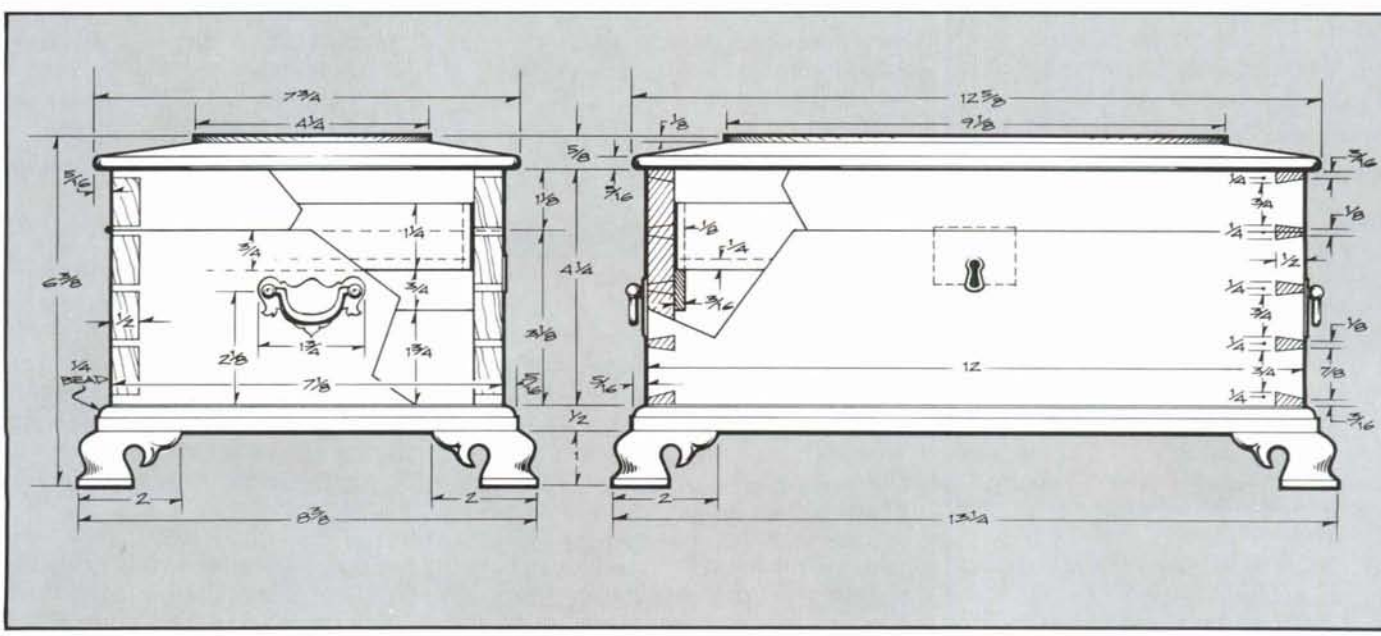
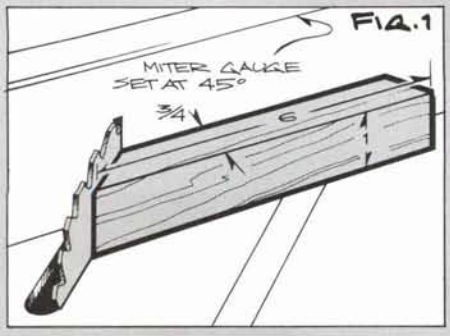
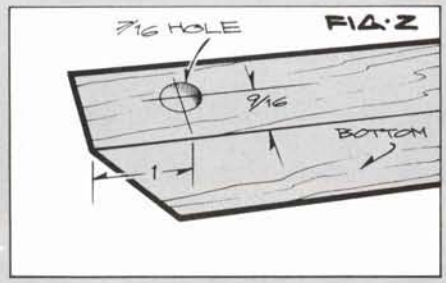
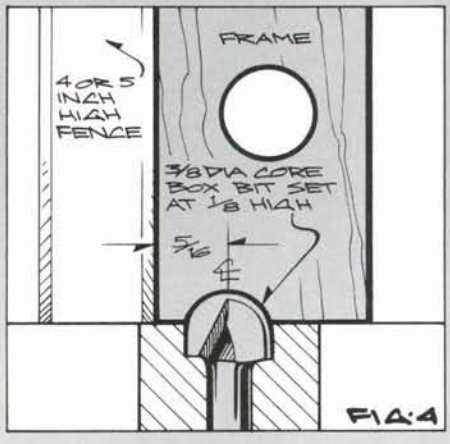
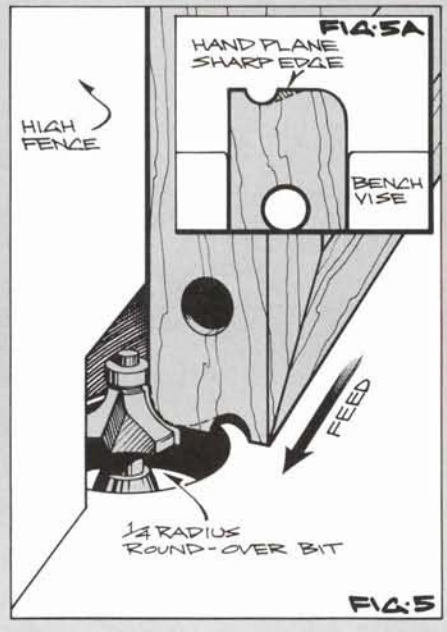


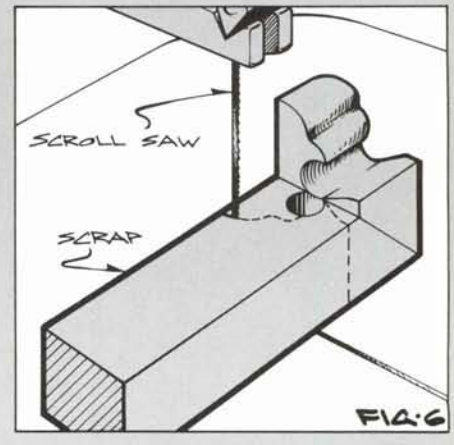
Making the Bracket Foot

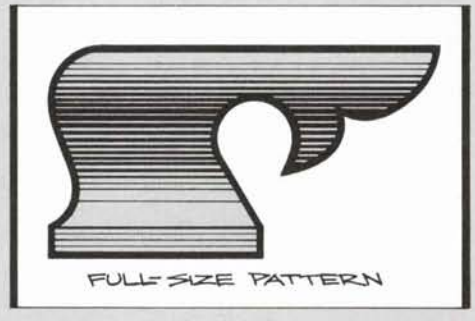












This bracket foot technique eliminates a lot of the handling of small pieces, which is usually a problem with making small feet. Most of the shaping is done with the pieces glued into a simple frame. Only for the last step do you saw the individual feet apart.

To begin, rip out four pieces of walnut ¾ in. thick by 1 in. wide by 6 in. long. The length needn't be exact as long as they're all the same; the idea is to make the pieces long enough to handle easily. Next, miter the ends at 45 degrees (Fig. 1), and locate and drill the 7/16 in. diameter holes (Fig. 2). The holes later become part of the side profile. Now glue up the frame using a band clamp and corner blocks as shown (Fig. 3).

After the glue sets, shape the outside of the frame with a router mounted in a router table (Figs. 4 and 5). For safety and stability, make sure you use a high fence for this operation. The profile is a combination of a ⅜ in. diameter core box bit and a ¼ in. diameter round-over bit. The bits are available from MLCS, P.O. Box 4053J, Rydal, PA 19046. Remove the small area of transition between the router cuts with a hand plane or wood file (Fig. 5A).

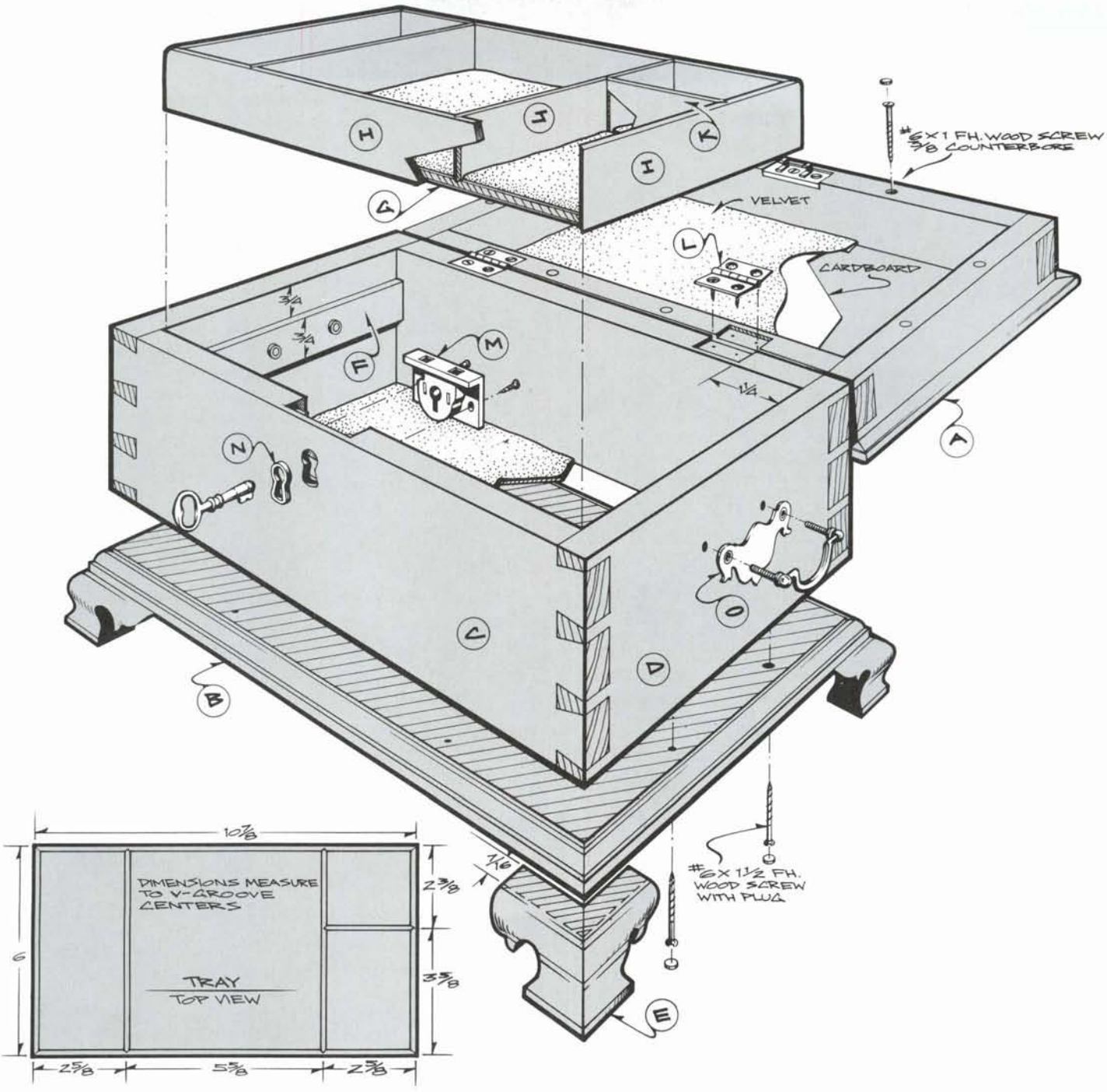
Next, cut apart the feet and shape the remainder of the profile with a scroll saw (Fig. 6). Smooth the profiles with files and sandpaper.

you'll separate the box from the lid. This is also a good time to rout out the lock mortise. The mortise is cut at two router settings, with a deeper cut for the thicker part of the lock mechanism. You'll need to square up the router cuts with a chisel, but it's a good idea to wait until cutting off the top of the box for that operation.

Next, glue up the box and, when dry, separate the lid with a table saw cut. Then fit the lock, using the chisel to pare away the corners of the router mortise. Cut the top from a single piece of walnut. To establish the raised field, first make ⅛ in. deep cuts along the edges of the raised portion. Then, with the workpiece on edge, use a table saw set 1¾ in. high to form the slight bevel, about 8 degrees. Use a high rip fence so there's plenty of support for the workpiece. To round the edge you can use a round-over bit or a block plane and sandpaper.

Next, cut the bottom to size and shape the edge with a router, using a ¼ in. radius beading bit. Note that when routing the edges, it's best to shape the ends first and then the front and back. That way if the router tears out a chip from the end grain — which it tends to do — the subsequent passes with the grain will remove the damage. After finishing the bottom, make the bracket feet (E) as shown above.

To assemble, glue the feet to the bottom and then screw the top and bottom to the case. In both cases, use "sloppy" or enlarged screw holes to allow for seasonal wood movement. On the bottom you can drill up through the workpiece into the case, countersinking the holes. For the top, you'll need to drill up through the case into the top. Drill and counterbore



those holes and hide them with plugs. Make the counterbore about ¼ in. deep. Establish the sloppy screw holes by elongating the shank holes in the direction you want to allow movement, which is across the grain of the wood. The cleats (F) are glued and clamped to the insides of the case.

With the case complete, make the tray to fit the actual dimensions of the inside, allowing about ⅛ in. for play. Cut the 1/16 in. deep V-grooves for the partitions with a router and V-groove cutter.

The tray front and back (H) and the tray sides (I) are mitered at the ends. The partitions (J and K) have beveled ends and fit into the V-grooves. They are held with glue along the bottom edges. You'll save time later if you sand the parts before assembling. The tray parts are glued up around and on the plywood tray bottom (G). The bottom ties the assembly together.

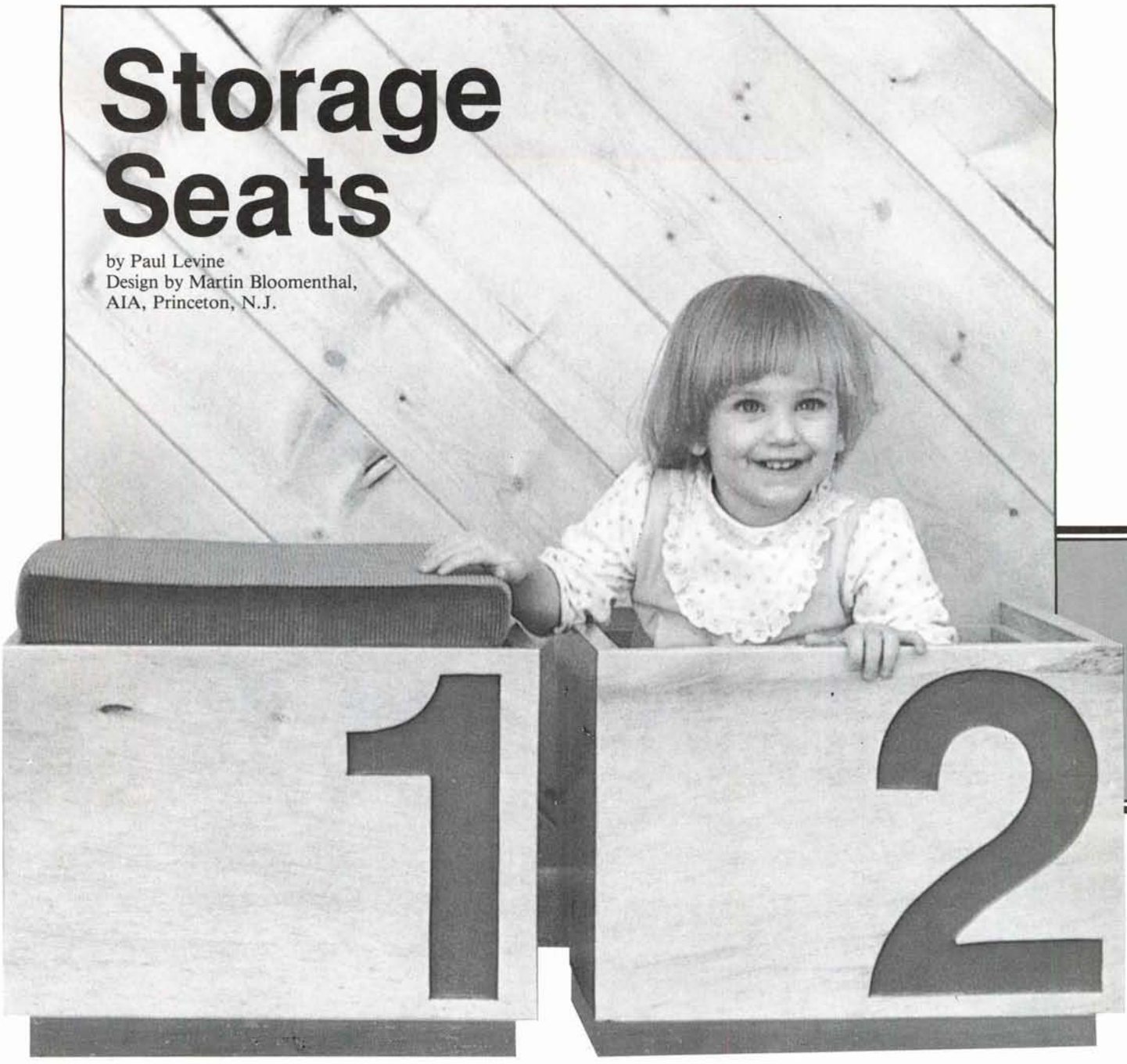
Next, locate the handles (O) on the sides, and mortise in the hinges (L). Also mortise in the escutcheon (N). Use a sharp carving knife to establish the profile, cutting straight down to sever the top wood fibers. Once you have a clean line all around, you can remove the waste with a small chisel. After fitting all the hardware, temporarily remove it so you can sand and finish the box.

The jewelry box is finished with several coats of shellac, which is rubbed out with pumice and rottenstone. A final coat of wax will help preserve the finish.

Finally, wrap the velvet around cardboard and glue it inside the compartment and into the lid and the bottom of the box. Also glue velvet to the bottoms of the feet.

Storage Seats

by Paul Levine
Design by Martin Bloomenthal, AIA, Princeton, N.J.



Editor's Note: This project is excerpted from the book Contemporary Woodworking Projects *by Paul Levine. For further information on the book, see page 59 of this issue.*

Storage has always been a problem for me. All the closets in our house are bulging, and only one car fits in our two-car garage. Whatever the cause of this plague, these storage seats will offer extra storage space anywhere you decide to locate them. They are especially handy for children's toys, to which my two daughters can well attest. Make at least one for each child.

The basic box is constructed of 1 by 12 clear pine, which measures ¾ in. thick by 11¼ in. wide. Miter the sides (A) to establish their length, then use the dado-head to cut the ¼ in. deep by ½ in. wide groove to accept the ½ in. thick plywood bottom (B), and the ¼ in. deep by ¾ in. wide groove to accept the ¾ in. thick seat support cleats (C). Next, use the router, guide, and a ¼ straight cutter to cut the ¼ in. thick by ¼ in. deep spline grooves. As shown in the spline groove cutting detail, the sides (A) are clamped back-to-back with a router support piece in place to help support the router. You will need to make two ⅛ in. deep passes to achieve the full ¼ in. spline groove depth. Note from the spline detail that these grooves are located ⅛ in. from the inside face of the sides. Next, make the ¼ in. by ½ in. by 11¼ in. long splines (D) from ¼ in. thick plywood. Also cut the four base pieces (E) from ¾ in. by 2 in. pine, mitering the ends to achieve the 14½ in. length. As shown in the side section, the base is sized to fit flush inside the box.

Now make the ¼ in. thick hardboard template that is used to rout the incised numerals. Transfer the numerals from the grid pattern to the template material, then cut out with the jig or saber

saw and smooth to the line. I used a ¼ in. straight bit for the routing, and made the template 3/32 in. larger than the finished numeral for use with a 7/16 in. guide bushing (Figs. 1 and 2). The grid pattern numerals are sized for the 7/16 in. guide bushing. The template can be temporarily secured with brads. As shown in the front elevation, the finished numerals will be 9¾ in. high. The numeral 1 is located 1⅛ in. from the edge, while numerals 2 through 9 are located ⅞ in. at their closest points from the edge. Set the bit depth at ⅝ in., which when taking the ¼ in. thick hardboard into account, will result in a ⅜ in. numeral depth. After the routing is complete, use a chisel to square any rounded corners and to scrape the numeral bottom flat. Unless you prefer otherwise, the numeral is only routed into one side of the box.

Next, make the ½ in. by 15 in. plywood bottom and the ¾ in. by ¾ in. by 15 in. mitered seat support cleats. Note that both these cleats and the bottom must be cut back ¼ in. at the four corners, so they do not interfere with the splines. Assemble the box around the bottom with the cleats and splines in place, then add the base, using white or yellow glue throughout.

After final sanding, paint the numerals and the base. I chose black for the base and a rust color for the numerals. Varnish all the remaining unpainted surfaces.

The seat is a covered cushion which sits on a ½ in. thick by 14¼ in. by 14¼ in. plywood bottom (F). Drill a ¾ in. finger hole through the seat bottom to facilitate lifting out. The seat bottom should also be sanded and varnished. The seat cushion (G) is 2 in. thick by 14¼ in. square foam rubber with a removable zippered fabric slip cover (H). Foam rubber is available at upholstery shops and suppliers. I recommend an easy-care, washable slip cover material that will simplify cleanup of spills, stains, and dirt.

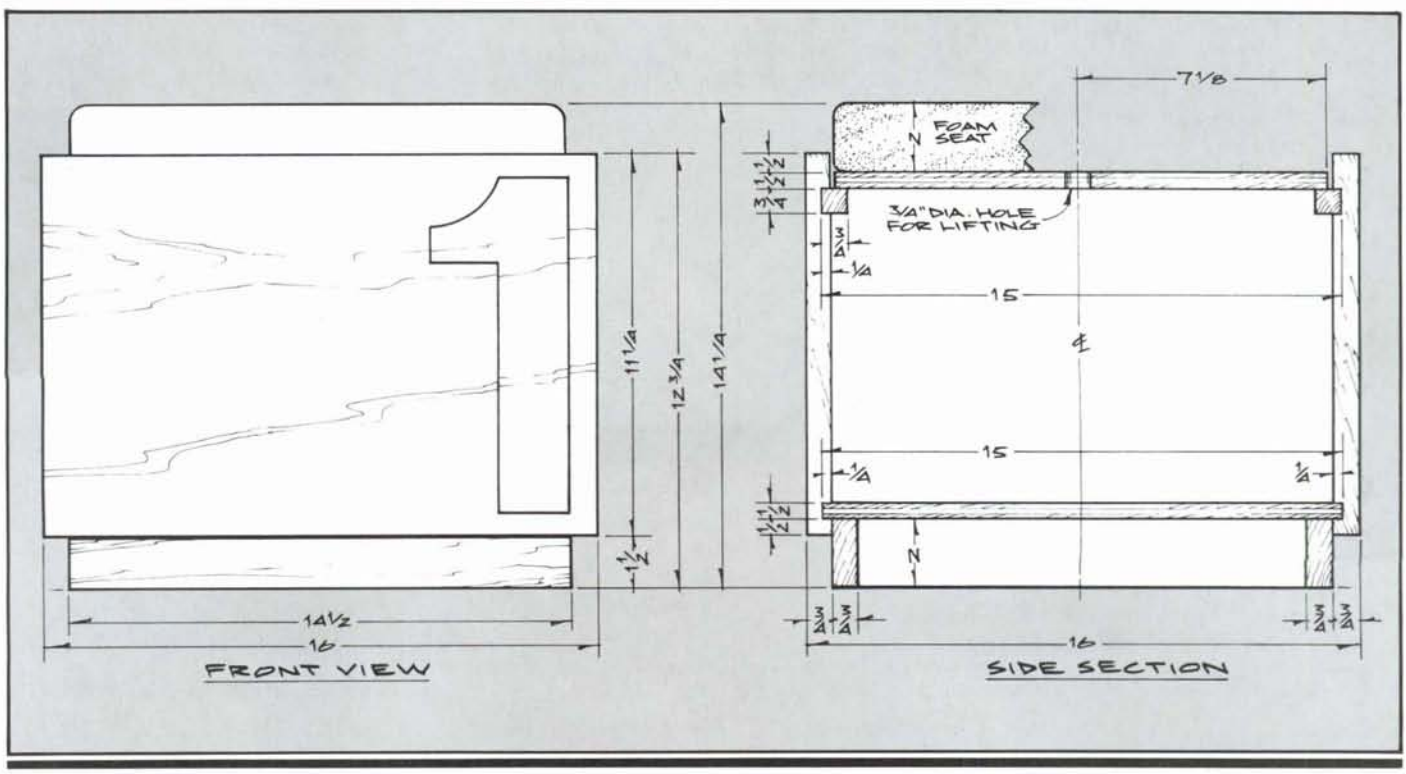
In addition to providing useful and quickly accessible storage, groupings of these storage seats make great extra seating, especially for parties and large gatherings.

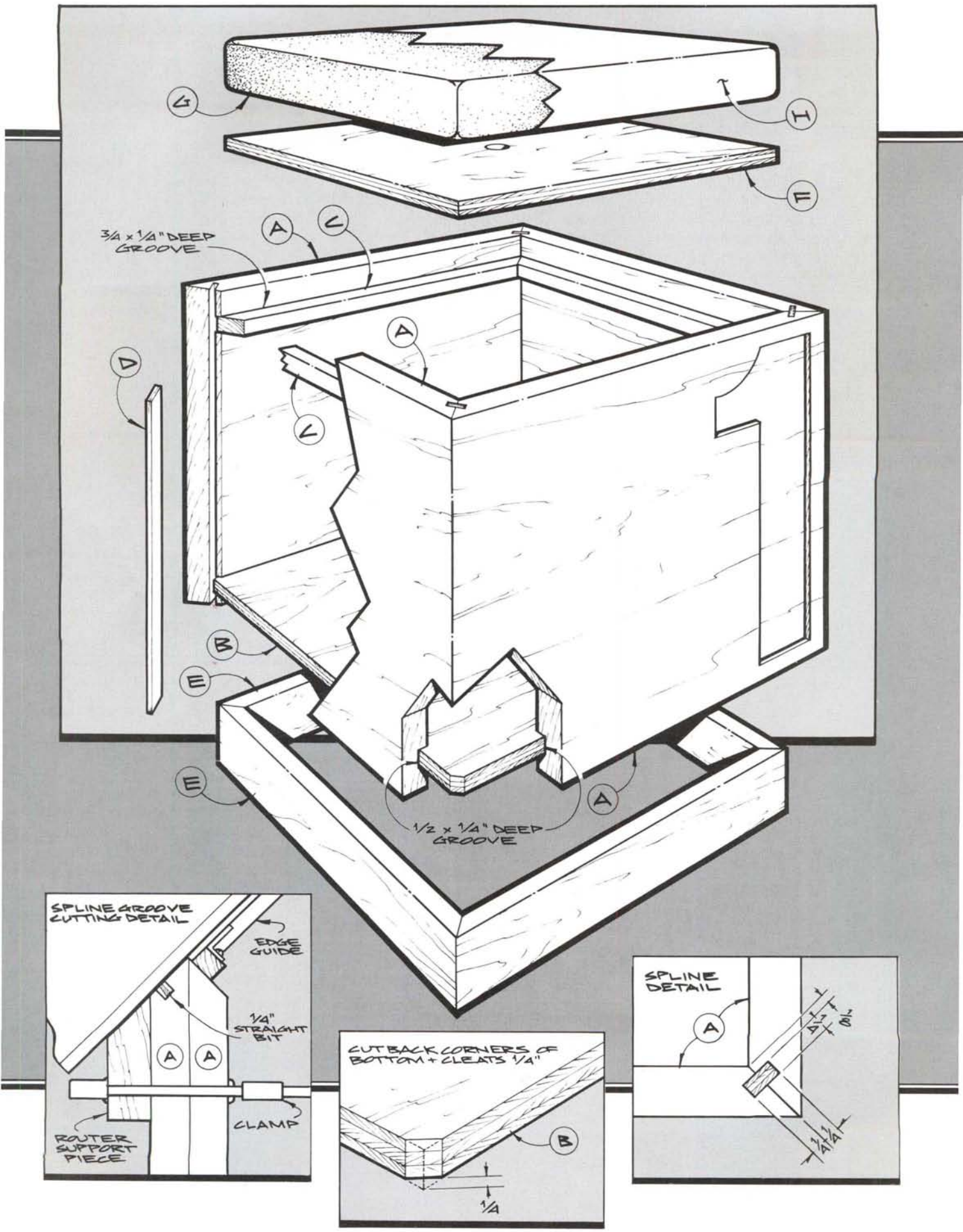
(continued on next page)

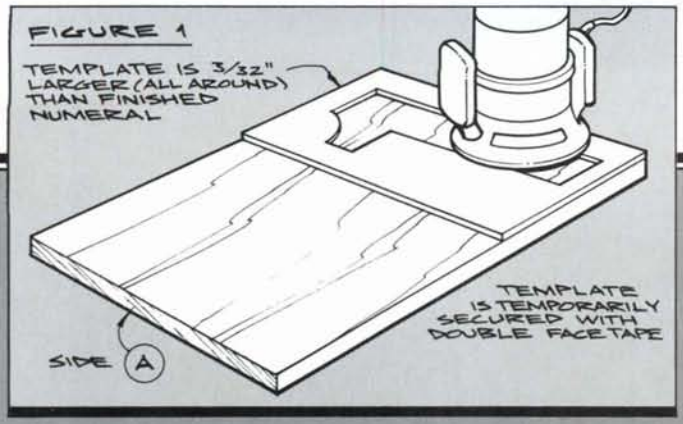
Bill of Materials
(all dimensions actual)

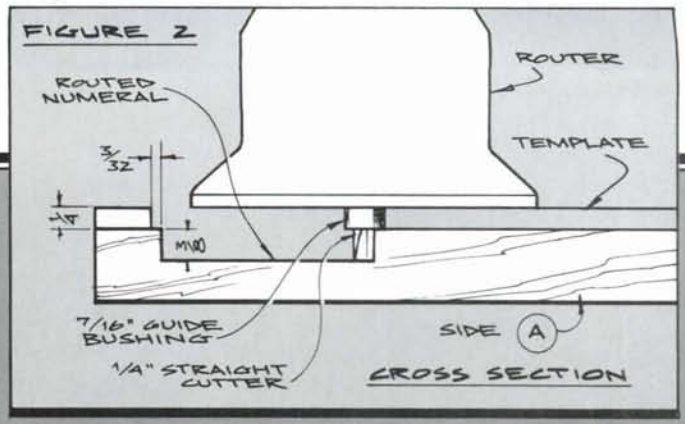
Part	Description	Size	No. Req'd.
A	Side	¾ × 11¼ × 16	4
B	Bottom	½ × 15 × 15	1
C	Seat Support Cleat	¾ × ¾ × 15*	4
D	Spline	¼ × ½ × 11¼	4
E	Base	¾ × 2 × 14½	4
F	Seat Bottom	½ × 14¼ × 14¼	1
G	Foam Cushion	2 × 14¼ × 14¼	1
H	Slip Cover	To fit cushion	1

*Length before trimming to prevent interference with splines.




G
H
F
3/4 x 1/4" DEEP GROOVE
A
C
D
B
E
1/2 x 1/4" DEEP GROOVE
SPLINE GROOVE CUTTING DETAIL
EDGE GUIDE
1/4" STRAIGHT BIT
CLAMP
ROUTER SUPPORT PIECE
CUT BACK CORNERS OF BOTTOM + CLEATS 1/4"
1/4
SPLINE DETAIL
1/4"
1/4"
1/4"





ILLUSTRATED GRID PATTERN NUMERALS ARE TO BE TRANSFERRED TO TEMPLATE. FOR USE WITH 1/4" STRAIGHT CUTTER AND 7/16" GUIDE BUSHING. THE ACTUAL ROUTED NUMERALS WILL BE 9 3/4" HIGH

1 2 3
4 5 6
7 8 9 0

1 SQUARE = 1"

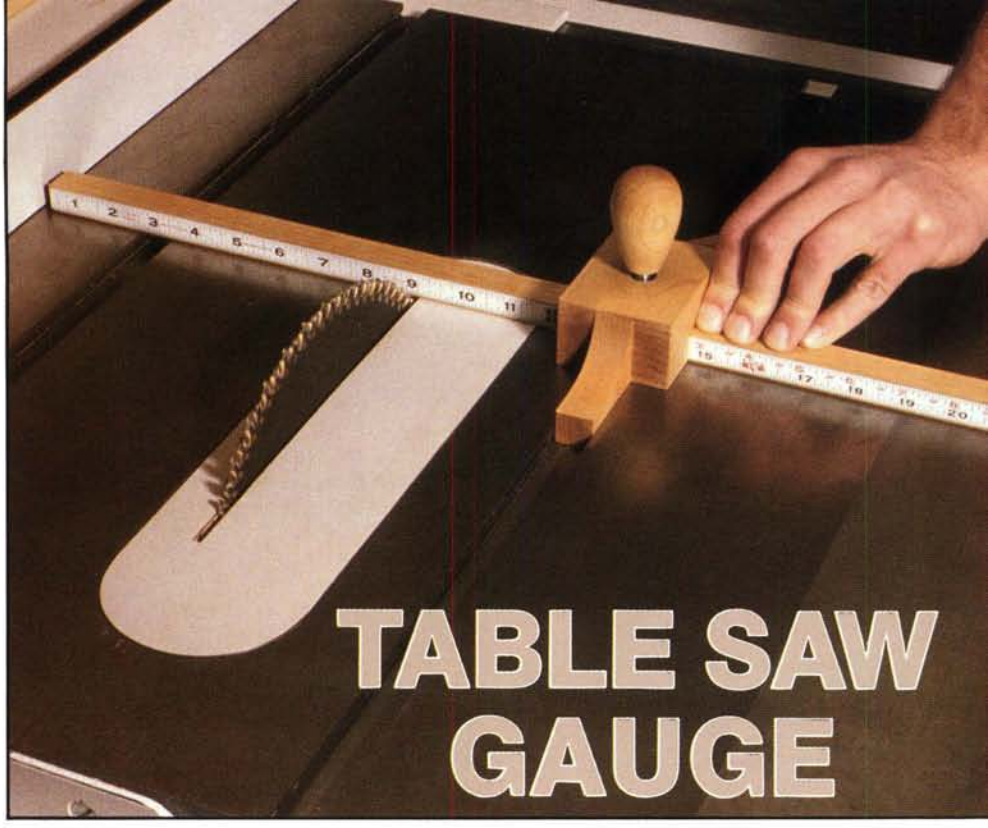


TABLE SAW GAUGE

This table saw gauge serves a purpose that we're sure many readers will appreciate: It can be used both to parallel the blade to the miter gauge slot and to parallel the fence to the blade. Any woodworker who attempts to make a straight, smooth cut with a blade or fence that is not parallel will quickly discover that it's just not possible. The jig is especially handy for setting up older saws, where the carriage holding the blade may be out of alignment, or where the fence doesn't lock down square automatically. Even saws with costly add-on fences occasionally require set up or adjustment.

To make the gauge, you'll first need to assemble the various hardware parts. We've arranged with Woodcraft Supply to offer a kit that includes all the required hardware, except the penny. See the Bill of Materials for ordering information and price.

Begin by making the base (A). While most miter gauge slots measure ¾ in. wide, check the width of your slot before thicknessing part A. Start with the blank about 12 in. long. The extra length makes it safer to handle the piece while using the dado head to establish the 2 in. wide by 1½ in. deep notch that will accept part B. After this notch is cut, crosscut to length. Then shape the 1⅛ in. radius and sand smooth with a drum sander.

Next, cut the blank for part B. Again using the dado head, cut the notches to accept part A, and the ⅝ in. deep by ¾ in. wide notch to accept the arm. As shown in the top view, the notches to accept part A will be ½ in. deep, but their width must be equal to the thickness of A, which will match your miter gauge slot. With the notches all cut, now drill a ¾ in. diameter by ⅛ in. deep counterbore as shown in the bottom view of part B. This counterbore accepts the penny, which prevents excessive wear along the length of the arm when the knob is tightened. Next, drill the ½ in. diameter by 9/16 in. deep hole to accept the large threaded insert (E). Assemble parts A and B with wood glue.

Now cut the arm (C) to size. Make the arm as long as you need. The self-stick tape measure (J) is 6 ft. long, so the arm could be that long if you like. The tape is cut back about ¼ in. at the start to allow for the machine screw (H) and locking nut (I). A ¼ in. diameter by ⅜ in. deep hole in that end of the arm accepts the small threaded insert (F). You could also eliminate the machine screw adjustment feature and start the tape at zero, if you prefer.

The knob (D) can be lathe-turned or shaped by hand (see full-size pattern). Woodcraft Supply also sells a 1½ in. diameter hardwood ball that can be used as a knob. Drill for the threaded rod (G) and then epoxy the rod in place. Two coats of penetrating oil are recommended to seal the wood, but only after the self-stick tape is in place.

To use the table saw gauge to parallel the blade to the miter gauge slot, first raise the table saw blade to its maximum height. Mount the gauge in the miter gauge slot, loosen the knob, and slide the arm as needed to contact a tooth on the back of the blade. Now, lock the knob on the gauge tight, and slide the gauge so the end of the arm will touch a tooth at the front of the blade. If the tooth binds tight against the end of the arm, or if a gap now exists between the blade and arm, then the blade is not parallel to the miter gauge slot. Note that it's important to gauge off teeth that are angled toward the miter gauge slot you are working from. You'll now need to adjust the trunnions that mount the table saw arbor and carriage to the table. Refer to the saw's manual for instructions on how to make the needed adjustment.

Once the blade is parallel, the fence can be paralleled in the same manner. With the gauge arm set to the desired distance, adjust the fence as needed until both ends of the fence touch the end of the gauge arm. The self-stick tape measure on the arm makes it easy to set exact distances, and the machine screw and nut enable you to fine tune the gauge. The head of the machine screw also provides a wear point. WWJ

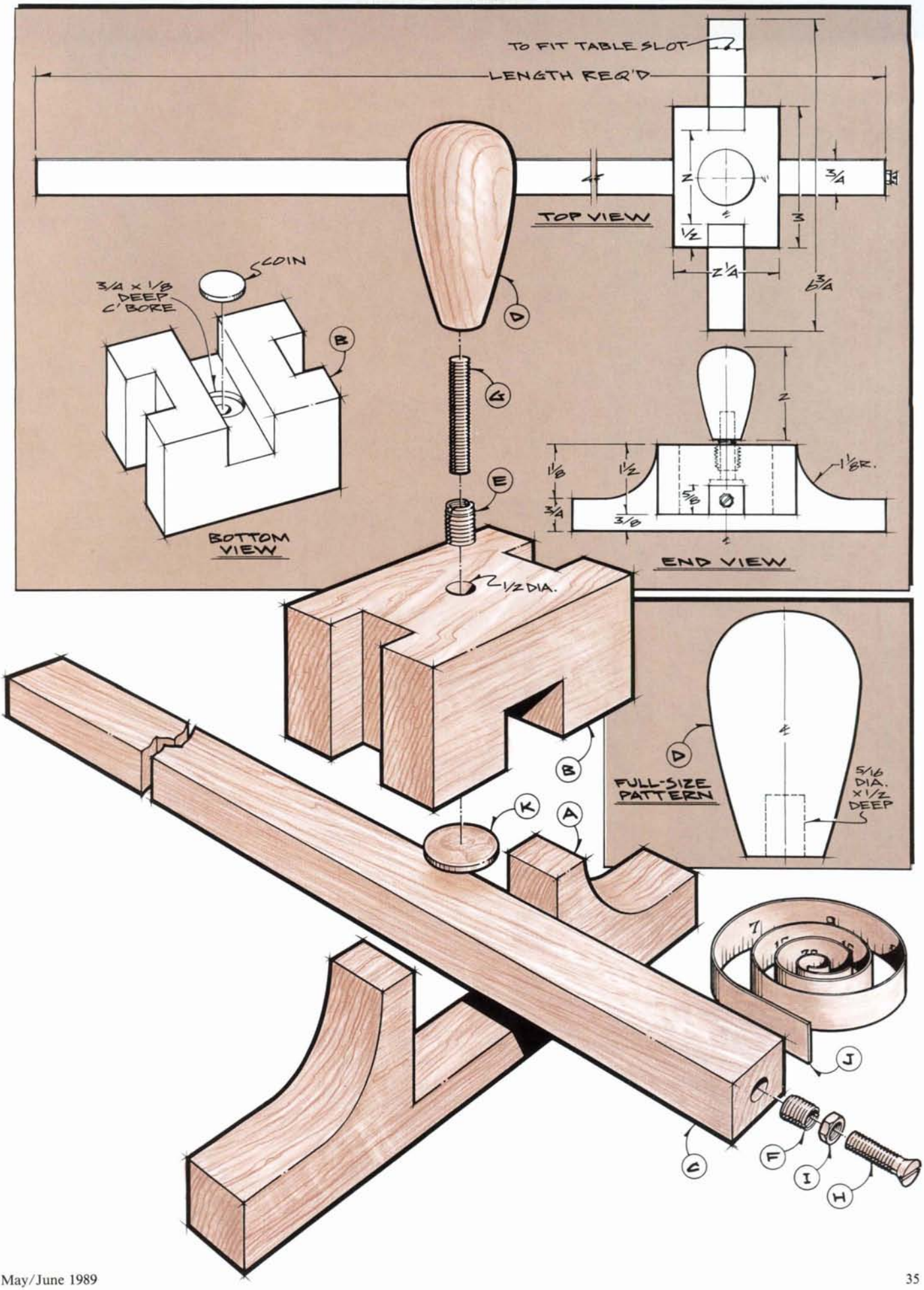
Bill of Materials
(all dimensions actual)

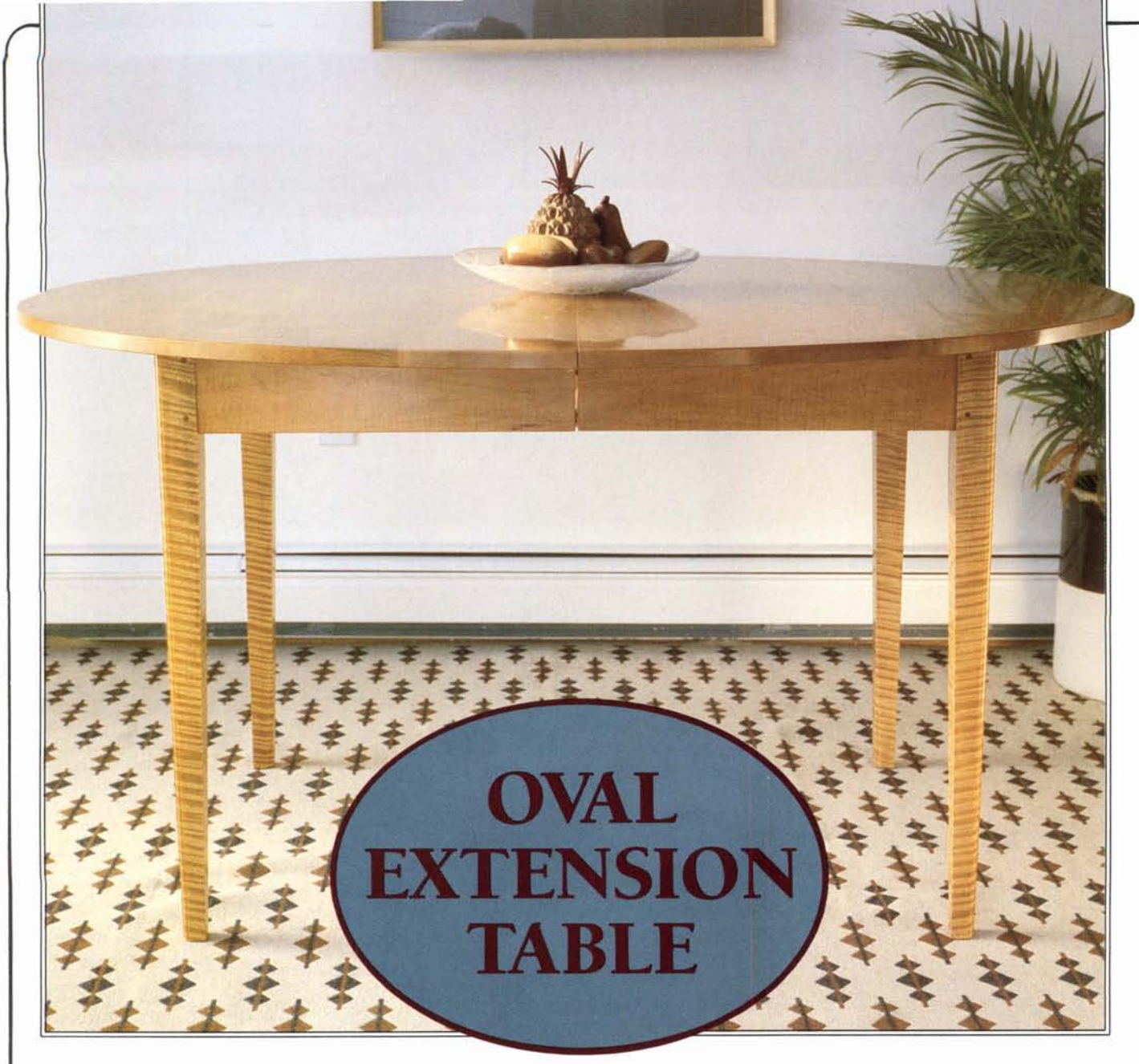
Part	Description	Size	No. Req'd.
A	Base	¾ × 1⅞ × 6¾*	1
B	Top	1½ × 2¼ × 3	1
C	Arm	⅝ × ¾ × 40**	1
D	Knob	as shown	1
E	Threaded Insert (large)	⅜-24***	1
F	Threaded Insert (small)	8-32***	1
G	Threaded Rod	⅜-24 × 2 long***	1
H	Machine Screw	8-32 × 1¼ long***	1
I	Nut	8-32***	1
J	Self-Stick Tape Measure	½ × 6 ft.***	1
K	Metal Disk (Penny)	⅛ × ¾ dia.	1

*Most table saw miter gauge slots measure ¾ in. wide, but check your saw and make the thickness of the base to fit the width of your table saw slot.

**Length of arm to suit, up to 6 ft.

***The threaded inserts, threaded rod, machine screw, nut and self-stick tape measure are available in a package from: Woodcraft Supply, 41 Atlantic Ave., P.O. Box 4000, Woburn, MA 01888. Order part no. 41A10. Cost per kit is $6.95 postpaid.


TO FIT TABLE SLOT
LENGTH REQ'D
TOP VIEW
3/4 x 1/8 DEEP C'BORE
SCOIN
BOTTOM VIEW
END VIEW
1 1/2 DIA.
FULL-SIZE PATTERN
5/16 DIA. x 1/2 DEEP
1 1/8 BR.
A
B
C
D
E
F
G
H
I
J
K



OVAL EXTENSION TABLE

Massachussetts furniture maker Gene Cosloy designed this table so that it forms a perfect oval without any extensions. Even with both extensions in place, though, the table has an elegant look and doesn't appear stretched out of proportion.

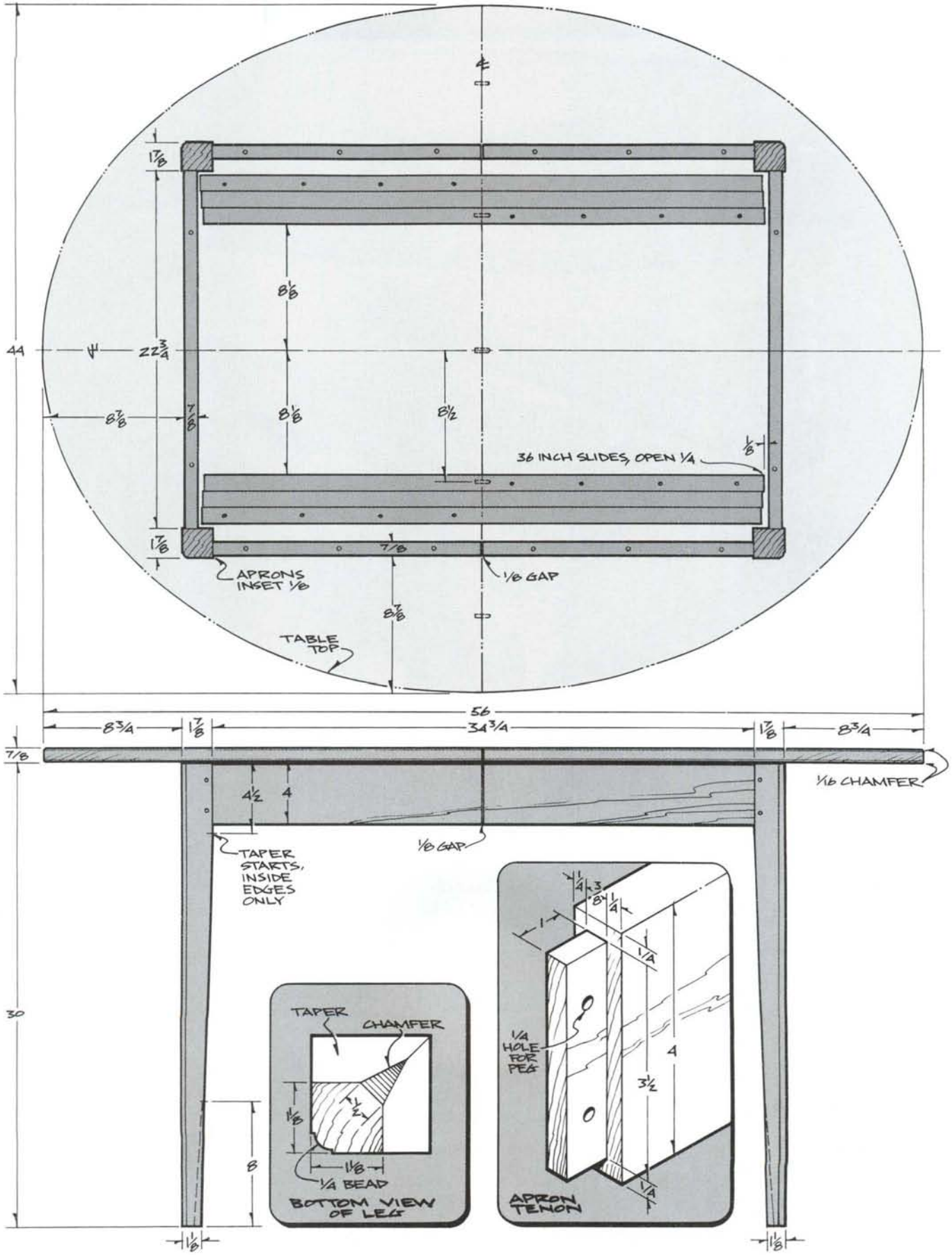
As with much of Cosloy's work, the table makes a statement not with bold colors or contrasting woods, but with *distinctive* details that enhance a well-executed design. In this case the details are a small chamfer top and bottom around the perimeter of the tabletop, and curly maple legs accented with a full-length bead.

Cosloy used maple for all the table parts. The wooden extension slides (G) are purchased, since few shops are set up to produce a working slide. As you can see from the top view, the top and frame are designed so that the oval top overhangs the frame by 8⅞ in. at the maximum point on all four sides.

A good place to start is with the top (E). The two halves of the oval top are glued up separately, as opposed to being glued up as a unit and ripped in half. This is because such a ripping cut would eliminate the width of the kerf from the top, meaning it would no longer be a true oval. Start by edge-gluing the stock for the two halves of the top. By making this the first operation, the blanks for the top will be dry by the time the frame is finished.

While you are waiting for the top to dry, go to work on the legs (A). After ripping and planing the 1⅞ in. leg blanks, lay out and cut the apron mortises. Note that the mortises are located so the aprons will be inset ⅛ in. Then establish the leg tapers, which start at a point 4½ in. down from the top end. These tapers, which are cut on the table saw using a tapering jig, are on the inside edges only of each leg. Then hand plane the 8 in. long chamfer at the bottom end of the legs. Finally, using a ¼ in. radius beading bit in the router table, establish the bead detail on the outside corner of each leg.

Next, go to work on the aprons (B, C, D). Note that the side aprons are cut to the length shown in the Bill of Materials, and then cut in half before the legs and aprons are assembled. The ⅛ in. that is lost in the apron length from the saw kerf is maintained as a space when the top is mounted. This



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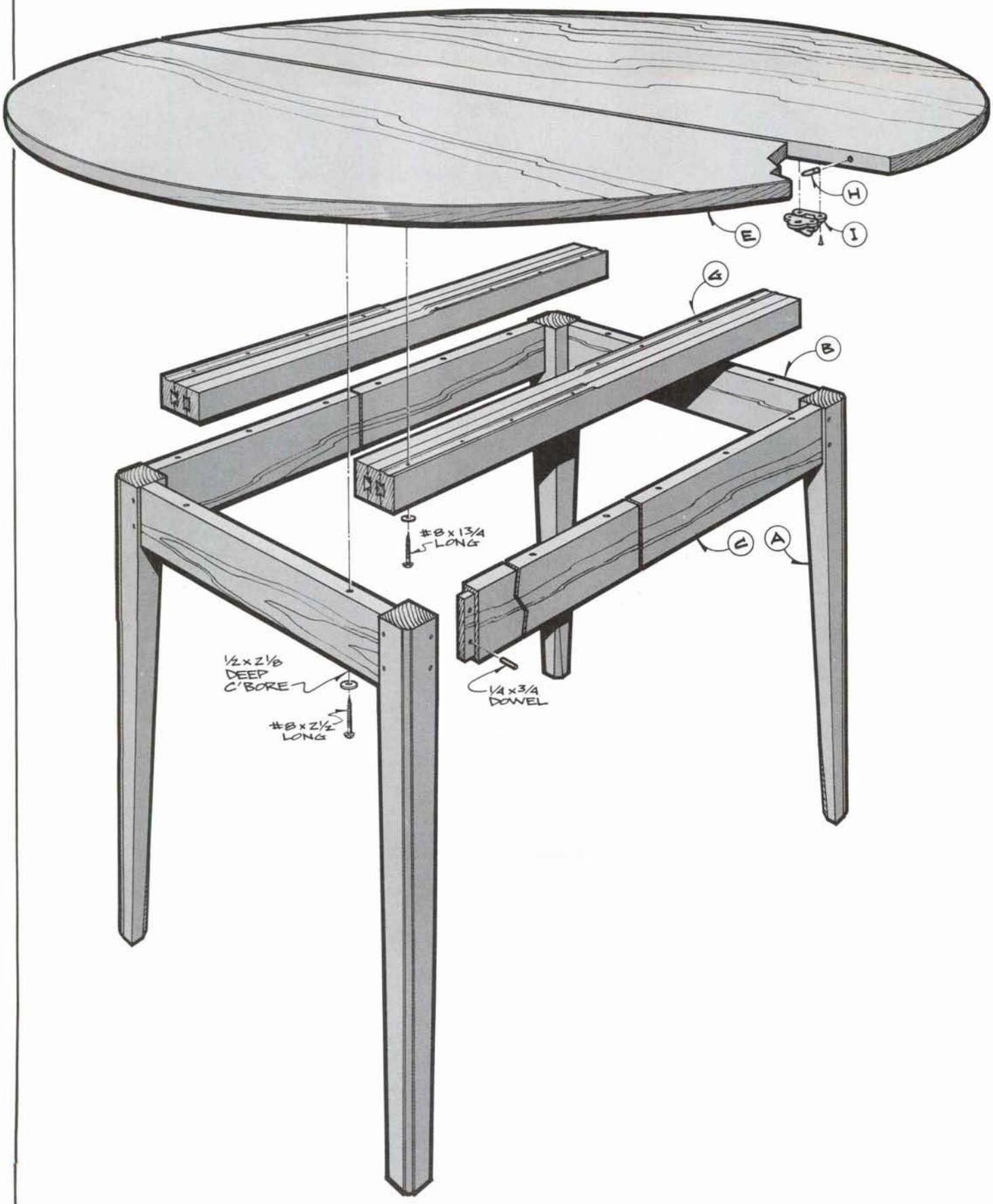
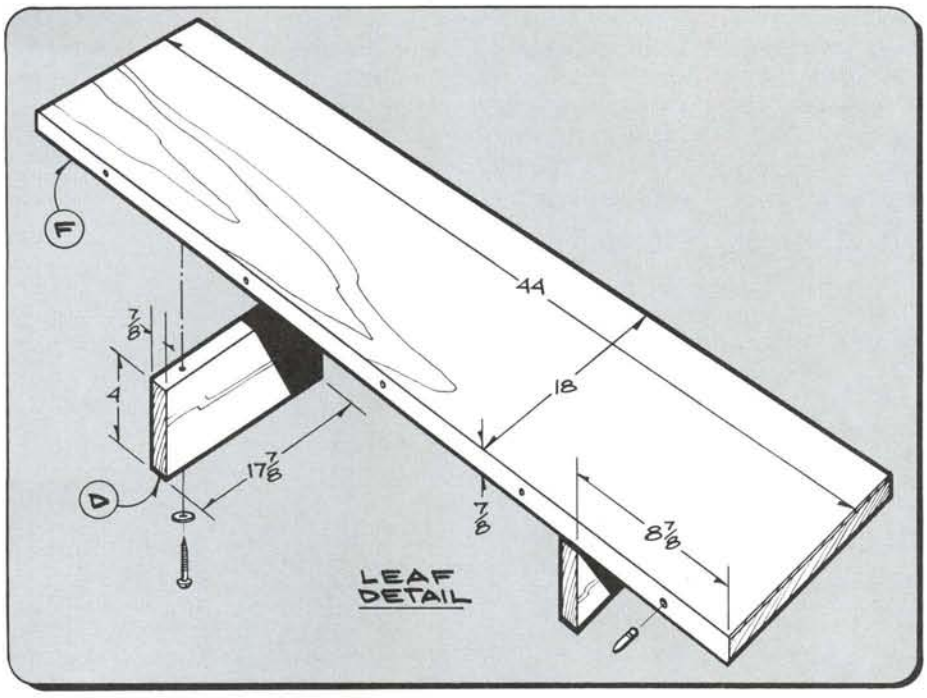

H
I
E
G
B
#8 x 13/4 LONG
C
A
1/2 x 2 1/8 DEEP C'BORE
#8 x 2 1/2 LONG
1/4 x 3/4 DOWEL



Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.
A	Leg	1⅞ × 1⅞ × 30	4
B	End Apron	⅞ × 4 × 24¾*	2
C	Side Apron	⅞ × 4 × 36¾*	2
D	Leaf Apron	⅞ × 4 × 17⅞	4**
E	Top	⅞ × 56 × 44	1
F	Leaf	⅞ × 18 × 44	2**
G	Extension Slide	36 in. long, extends to 74 in.***	1 pair
H	Table Alignment Pin	⅜ in. dia. × 1¼ in. long***	15
I	Lock	Standard double-hung window sash lock	2

*Length includes tenons. Note that the side apron length is before it is crosscut into the two halves.

**Parts shown are for two 18 in. wide leaves.

***Parts available from: Craftsman Wood Service Company, 1735 W. Cortland Ct., Addison, IL 60101. Extension slide is part no. H0253 (cost $32.95 per pair); table alignment pins are part no. H1911 (cost $4.60 per hundred).

insures that the top closes up tight with no gap. Before assembling the legs and aprons, drill the holes through the aprons to accept the tabletop mounting screws and washers.

These holes are slightly oversize, with a ½ in. diameter by 2⅛ in. deep in. deep counterbore, to allow the screws to move as needed to accommodate wood movement in the top. The depth of the counterbore is designed to work with a 2½ in. long roundhead screw. The washers prevent the screw heads from biting into the wood at the bottom of the counterbore. The screws through the leaf aprons into the leaves use the same oversize holes and counterbore to allow wood movement in the leaves. The counterbore depth and screw length are calculated so the screws won't break through the top or leaves. If you decide to use a different length screw, be sure to adjust the depth of the counterbore accordingly.

Cleats clamped on either side of the side aprons hold them in position during the leg/apron assembly. That way the legs and aprons can be assembled in a single operation, insuring that the table frame is square. Pins lock each of the leg/apron tenons securely. By slightly offsetting the holes through the tenons toward the shoulder, the pins will help draw the mortise and tenon joints together.

Also cut to length the shorter apron sections for the two table extension leaves. Note that these are sized ⅛ in. less in length than the 18 in. width of the leaves. Again, this space insures that the top and leaves will have no gaps. Gaps would result if wood movement caused the top or leaves to contract past the ends of the aprons. Sizing the aprons a little short allows for some wood movement in the top without risking the formation of these gaps.

You are now ready to lay out the oval on the top. There are many different approaches to laying out ovals, but the method shown on page 40 is one of the simplest. You could make a large paper template or use our system to lay out the entire oval directly on the stock. Another easy method is to use the system to lay out a quarter section of the oval on stiff cardboard or plywood. Then, using the quarter section of the oval as a template, lay out the entire oval. The advantage of making the template is that you'll have a ready-made pattern if you'd like to make another table later.

With the oval shape drawn out on the two halves of the top, you'll now cut the top out. A band saw with a fine blade is best, since you'll minimize sanding. If you made a plywood template, you can use the band saw to cut just outside the line, and then clean up the cut by using a ball-bearing guided laminate trimmer bit, gauging off the template. Once the oval is perfect, apply a 1/16 in. chamfer top and bottom around the table perimeter. A ball-bearing guided chamfering bit will provide a smooth cut. Make the two leaves (F) and apply the same 1/16 in. chamfer.

Next, lay out and bore the holes in the top and leaves for the table alignment pins (H). The pins are spaced as shown in the top view. A dowel jig will help insure that the pins line up with their respective holes. Glue the pins in place.

To mount the top to the frame, position the frame upside down on the top, with a gap of ⅛ in. between the aprons, and with the two halves of the oval top closed up tight. Clamp securely and mark out the pilot holes for the screws into the top. Remove the leg/apron frame and drill these pilot holes. Then reposition the leg/apron frame on the top and secure with the roundhead screws and washers.

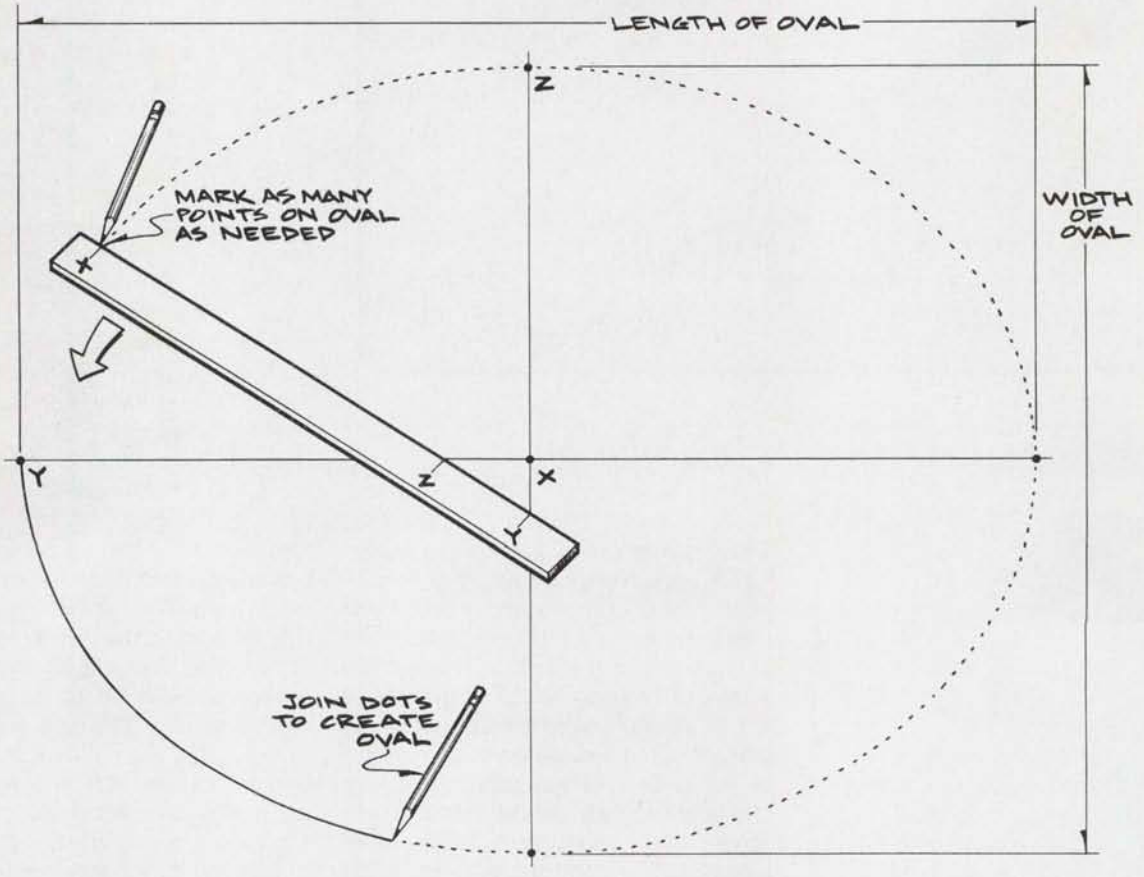
Now mount the extension slides (G). The slides are pre-bored with oversize screw holes and countersinks, just as the aprons were prepared, in order to allow wood movement in the top. With the table still upside down, and the two halves of the top closed tight, lay out

(continued on next page)

the location of the two slides. It is important that the slides be perfectly parallel to each other and perpendicular to the edge where the two halves of the oval meet to prevent binding. In order to insure that the table always closes regardless of wood movement in the top, open the slides about ¼ in. before screwing them to the top. With the slides open ¼ in., you'll still have a ⅛ in. gap on each end between the slides and end aprons, as shown in the top elevation.

Final sand and finish with four coats of tung oil to bring out the natural beauty of the wood. Next, mount a window sash lock (I) on the bottom of the tabletop on each side just outboard of the apron along the joint where the two halves of the oval top meet. These sash locks, which are available at any hardware store, serve to draw the two halves of the oval up tight and lock them in place.

OVAL LAYOUT TECHNIQUE

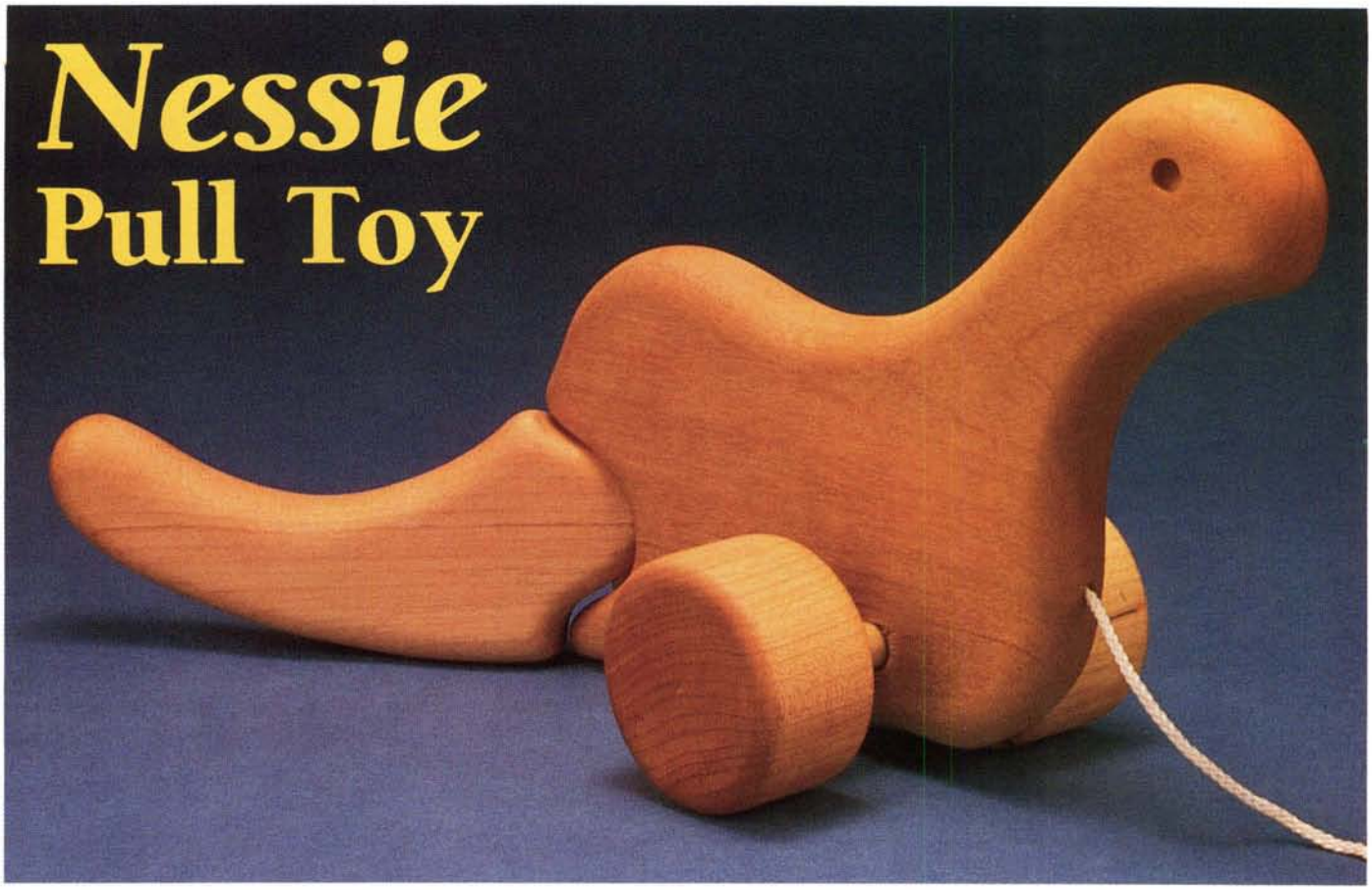


Draw two perpendicular lines along which the outermost points of the oval can be marked. The length of the horizontal line is the length of the oval, while the length of the vertical line represents the width of the oval. The center point of the oval is the intersection of the two lines. Mark the center point *X*. Mark point *Y* on the horizontal line, and point *Z* on the vertical line, as shown.

Next, cut a straight stick that is a little longer than one-half the length of the oval. Near one end of the stick mark a point and identify it as *X*. Lay the stick along the horizontal line with point *X* on the stick lined up with point *X* on the oval, and mark the stick with a *Y* where point *Y* on the oval touches it. The distance on the stick from point *X* to point *Y* will be equal to one-half the length of the oval. For the oval table, the distance between point *X* and point *Y* is 28 in., or one-half the 56 in. length of the oval. Now reposition the stick along the vertical line so point *X* on the stick is at point *X* on the oval. Mark point *Z* on the stick where point *Z* on the oval touches it. The distance on the stick will be equal to one-half the width of the oval. For the oval table the distance between point *X* and point *Z* is 22 in., which represents one-half the 44 in. width of the oval.

Now, with point *Y* on the stick intersecting the vertical line, and point *Z* on the stick intersecting the horizontal line, gradually rotate the stick to mark out the points along a one-quarter section of the oval's perimeter. Make a series of marks as shown using point *X* on the stick as your guide. The more points that you mark, the easier it will be to draw a smooth curve by connecting the dots. Continue around the entire perimeter if you like, or make a pattern of the quarter section as a template for tracing out the four quadrants of the oval.

Nessie Pull Toy



According to legend, this mythical dinosaur — affectionately called Nessie — still roams Loch Ness in Scotland. Since no one has ever gotten close enough to Nessie for actual measurements, toy designer and builder Skip Arthur used his imagination in defining Nessie's shape.

The photo can't convey Nessie's motion, but basically it's a variation of a swimming fish. As the off-center wheels rotate, Nessie wobbles from side to side, and her tail follows suit very much like a fish's tail.

As illustrated in Fig. 1, Nessie's body and tail are cut from a single board measuring ¾ in. thick by 5½ in. wide by 13½ in. long. First, lay out Nessie's profile using the full-size patterns. Simply lay a sheet of carbon paper between the page and the stock, and trace the body shape. Reposition the page to add the tail.

Next, as also shown in Fig. 1, set up a ¼ in. diameter drill bit with a stop collar to drill a 2½ in. deep hole. Position the workpiece on edge, and locate the hole so that when the tail is cut from the body, a dowel can be used to join the two parts and serve as a hinge. Also at this time, drill the 7/16 in. diameter axle hole and the ¼ in. diameter by ¼ in. deep eyeholes.

Now use the band saw to cut the parts out. First cut the entire outside profile, then make the cut separating the tail from the body, as shown in Fig. 2. You'll need to enlarge the hole through the tail, so the tail will pivot freely on the dowel. Run a 5/16 in. diameter bit through to enlarge this hole.

Next, on the router table, using a ⅜ in. radius round-over bit, radius the edges of the tail and body (Fig. 3). Since the stock is only ¾ in. thick, if you set the bit for a full ⅜ in. radius, then a small step will develop between the two radii. This is because the bearing has no flat surface to gauge off when the radius on the opposite edge is cut. To avoid this problem, set the router bit height a little lower than flush with the router table top. That way a small flat will remain for the pilot to gauge off for the opposite radius. As always, when working with small pieces on the router table, be sure to keep your fingers well clear of the cutter. Once the router work is complete, drill a ⅛ in. diameter by ½ in. deep hole in Nessie's chest to accept the pull string.

The wheels may either be turned on the lathe or cut and shaped using the band saw and disk sander. The lathe will produce a wheel that is more likely to be round. This is because the off-center axle holes provide no central pivot point when hand-shaping the wheel against the disk sander, making it difficult to create a perfect circle. Gently ease the edges of the wheel with sandpaper. Then drill the off-center ⅜ in. diameter by ½ in. deep hole in each wheel to accept the axle dowel.

Once all parts have been final sanded, assemble the tail to the body using a length of ¼ in. diameter dowel. The wheels are mounted on the axle dowel so the off-center holes are opposed, thereby creating Nessie's swimming motion. Place a drop of glue in the string hole, and force the string into the hole with a finishing nail.

We prefer to leave toys for small children unfinished, but if you feel the need to apply a finish, make certain that it's non-toxic. WWJ

(continued on next page)

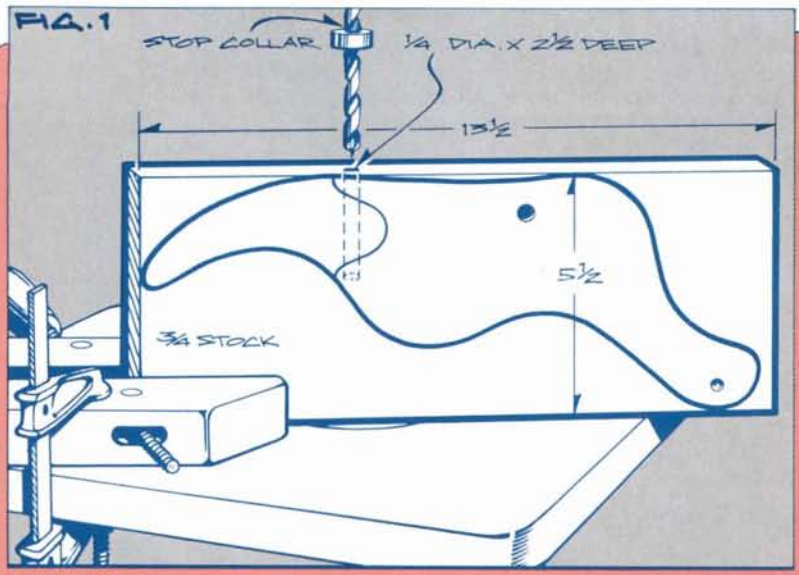


FIG.1
STOP COLLAR
¼ DIA. X 2½ DEEP
15½
5½
¾ STOCK

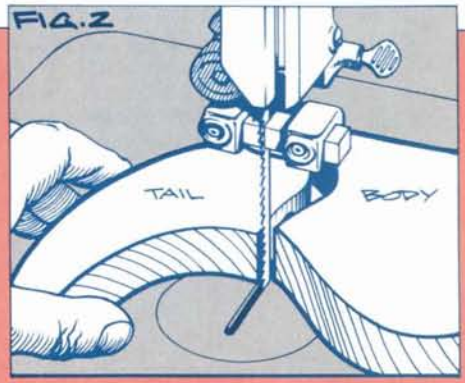


FIG.2
TAIL
BODY

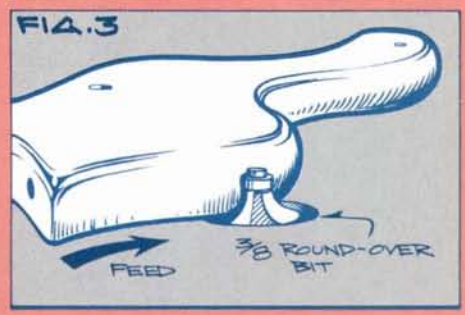
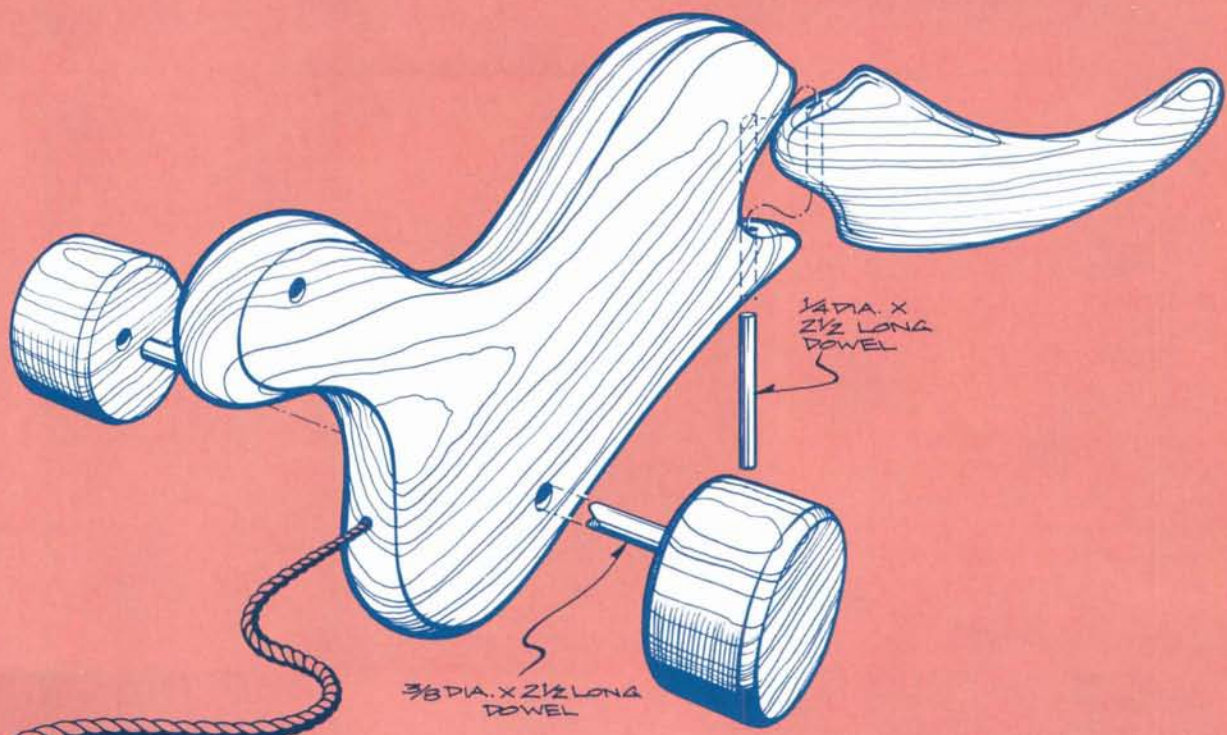
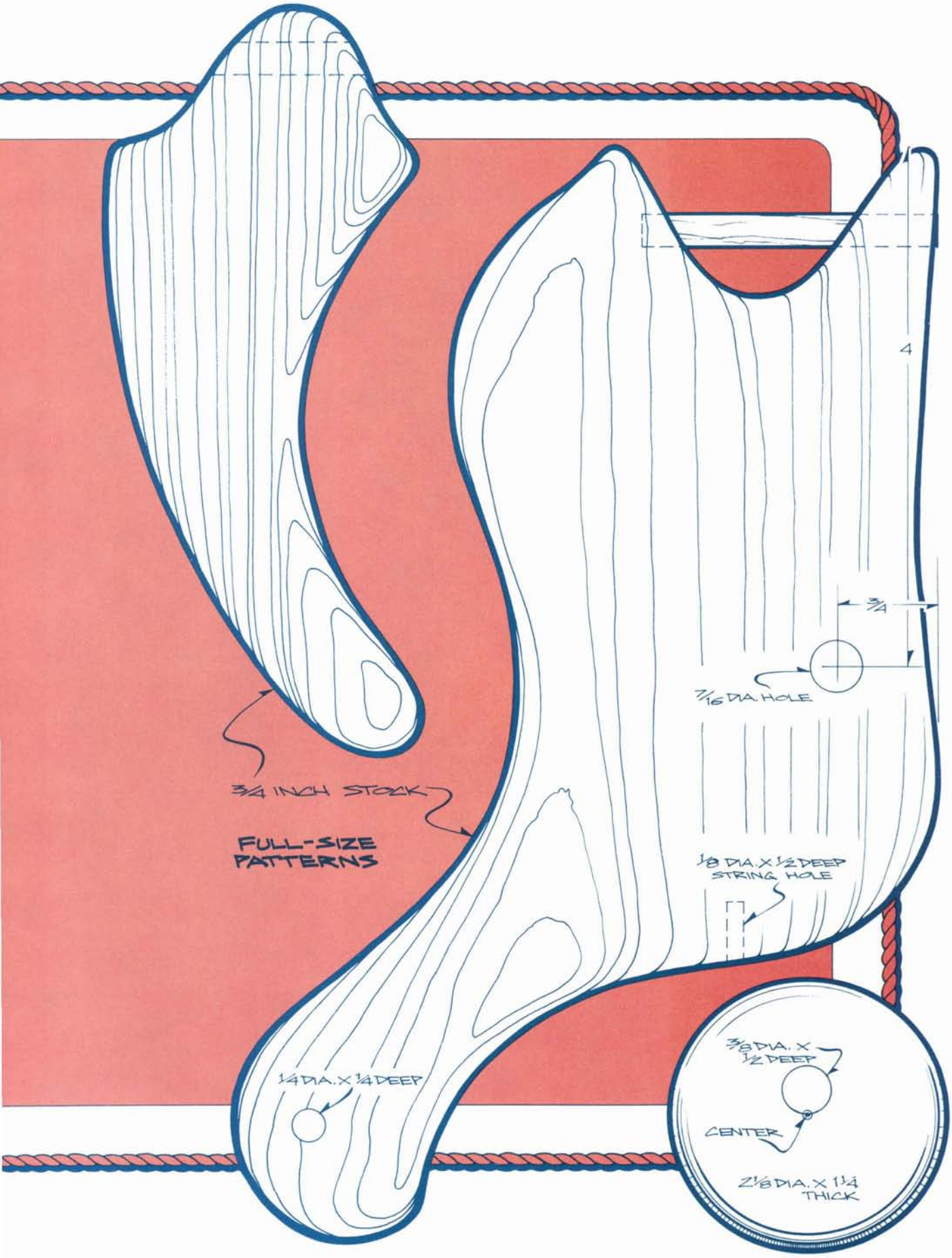
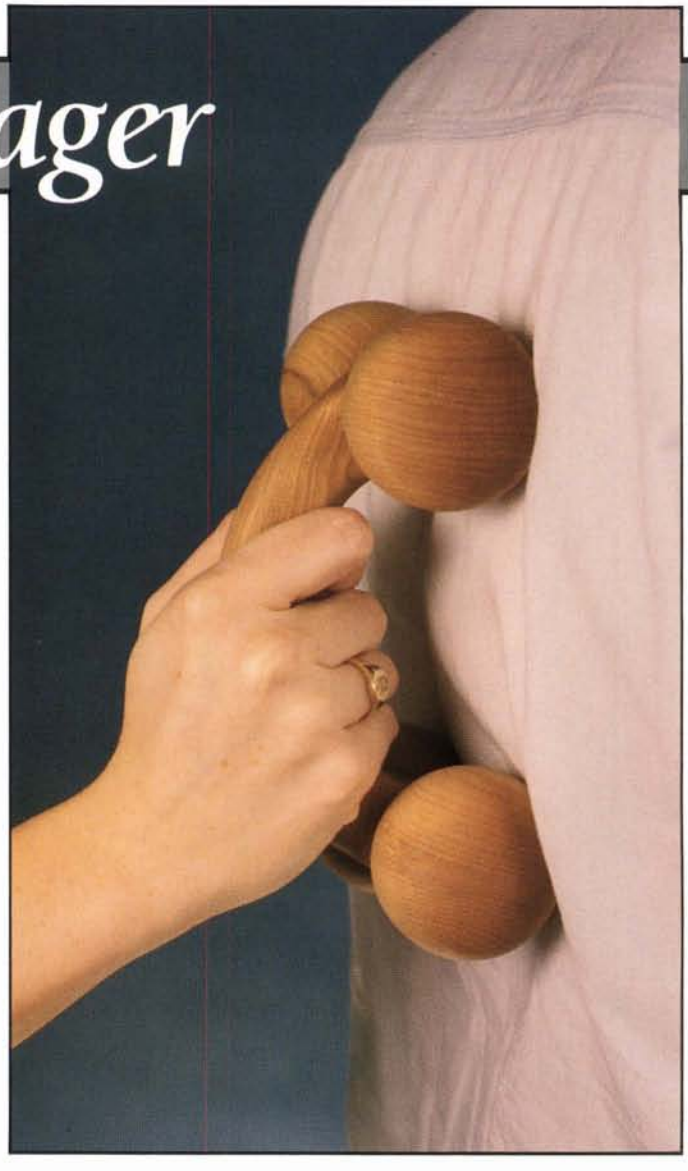


FIG.3
FEED
⅜ ROUND-OVER BIT


¼ DIA. X 2½ LONG DOWEL
⅜ DIA. X 2½ LONG DOWEL

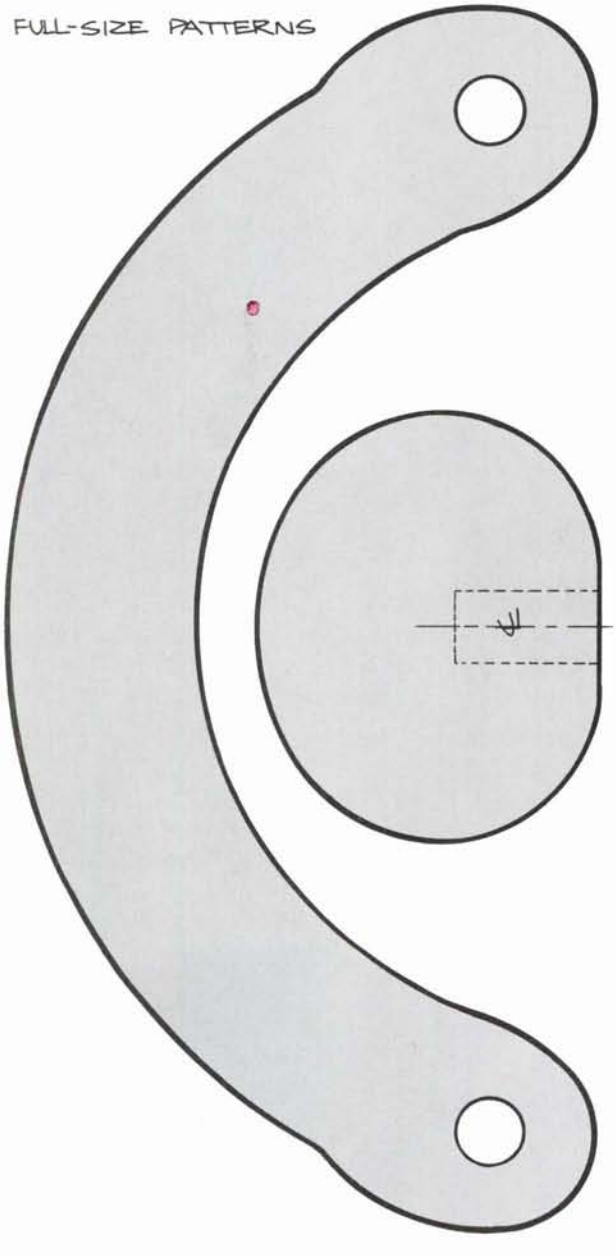

4
3/4
1/16 DIA. HOLE
3/4 INCH STOCK
FULL-SIZE PATTERNS
1/8 DIA. X 1/2 DEEP STRING HOLE
1/4 DIA. X 1/4 DEEP
3/8 DIA. X 1/2 DEEP
CENTER
2 1/8 DIA. X 1 1/4 THICK

Back Massager



When toymaker Skip Arthur showed us this back massager, we were not very enthusiastic, since we've seen back massagers in all shapes and sizes, and most are very similar. However, a brief test of Skip's massager on the backs of our editors confirmed that this project was worthy of publication.

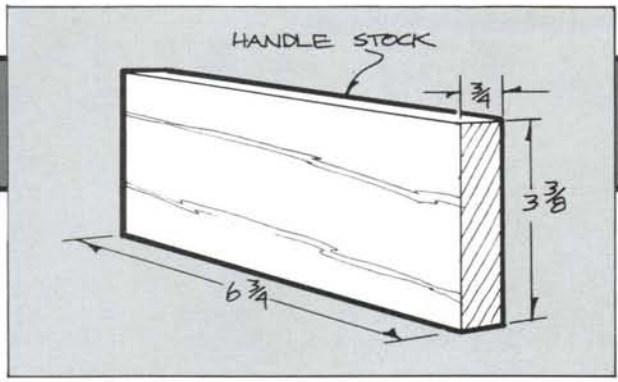
If ever there were an easy-to-build project that guarantees good feelings, this is it. All you need is a ¾ in. thick by 3⅜ in. wide by 6¾ in. long piece of hardwood (we used birch), some ⅜ in. dowel stock, and four back massage roller balls.



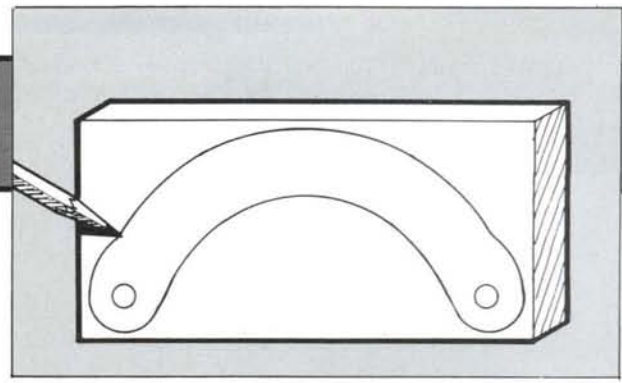
Although you could make the rollers yourself, we bought ours from Cherry Tree Toys, P.O. Box 369, Belmont, OH 43718. They are part no. 122, and their cost is $1.25 each (plus shipping) if you order fewer than 12. However, quantity discounts are available for larger orders.

Simply follow the steps as shown to make the handle. The full-size handle pattern will enable you to use carbon paper to trace the handle profile directly onto the stock. If you want to make more than one back massager, use this first handle as a template for tracing the others. When rounding the edges (Step 5), note that the roundover stops at the ends where the dowels pass through. A hand screw clamped to the handle will help keep your fingers clear of the router bit, as shown. For those who prefer handwork to the scream of the router, this roundover can also be made using a rasp and some sandpaper.

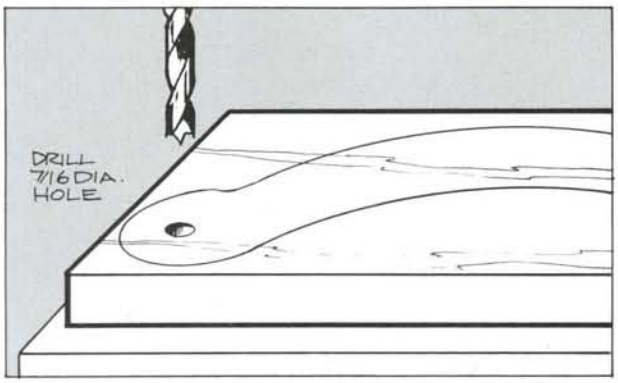
The massage roller balls are lathe-turned to the dimensions shown in Step 6, and then drilled for the axle dowels (Step 7). If you buy the massage roller balls, you can skip Steps 6 and 7, since the roller balls come pre-drilled for the ⅜ in. dowel. After final sanding and assembly, finish the back massager with two coats of penetrating oil.



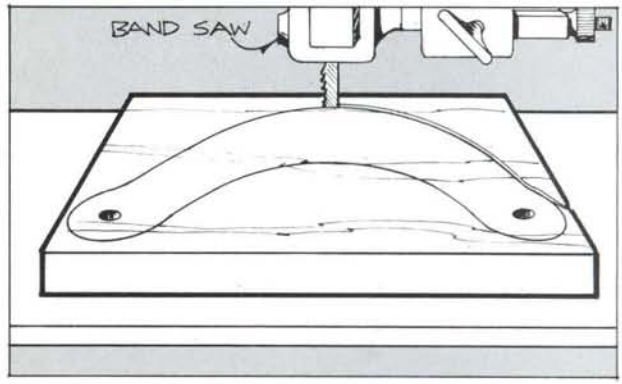
Step 1: Cut handle stock to size.



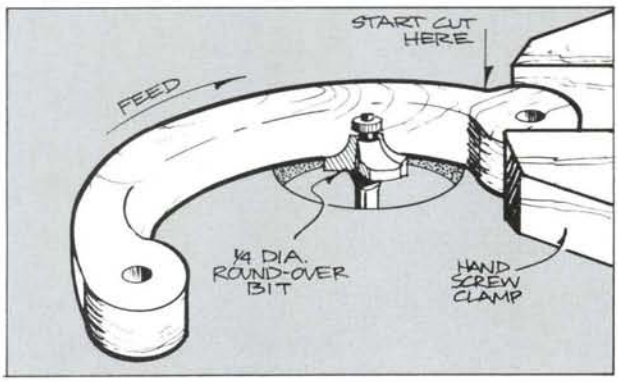
Step 2: Lay out handle profile.



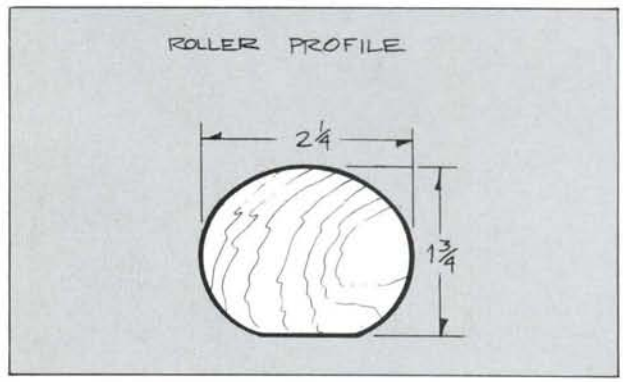
Step 3: Drill dowel holes.



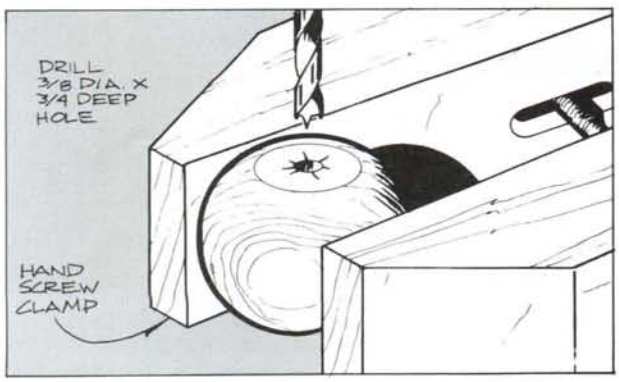
Step 4: Cut handle profile with band saw.



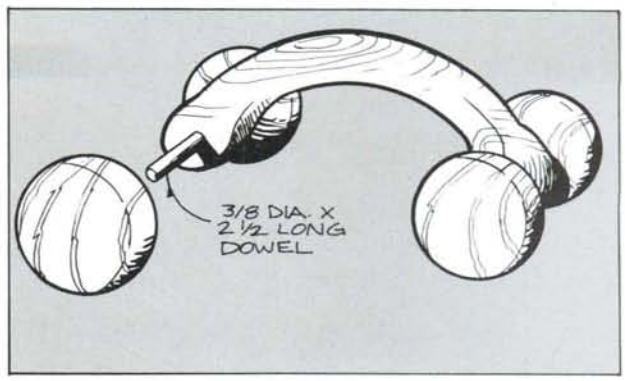
Step 5: Round over handle.



Step 6: Shape rollers.



Step 7: Drill dowel hole in rollers.



Step 8: Assemble.

Decorative WALL KEY

This oversized version of a skeleton key makes an interesting wall decoration that will look good almost anywhere in the house.

It also makes an excellent practice project on the lathe. You can work freely with the turning details because the profile needn't be exact.

Start by cutting and planing wood to the rough sizes you'll need for the three parts: the handle, shaft and lever. We used pine, but you could use a hardwood or a combination of different woods. The lever stock is ½ in. thick by 3¾ in. wide by 4 in. long. The shaft is 1¼ in. square by 17 in. long. The handle is ¾ in. thick by 8 in. wide by 8¼ in. long.

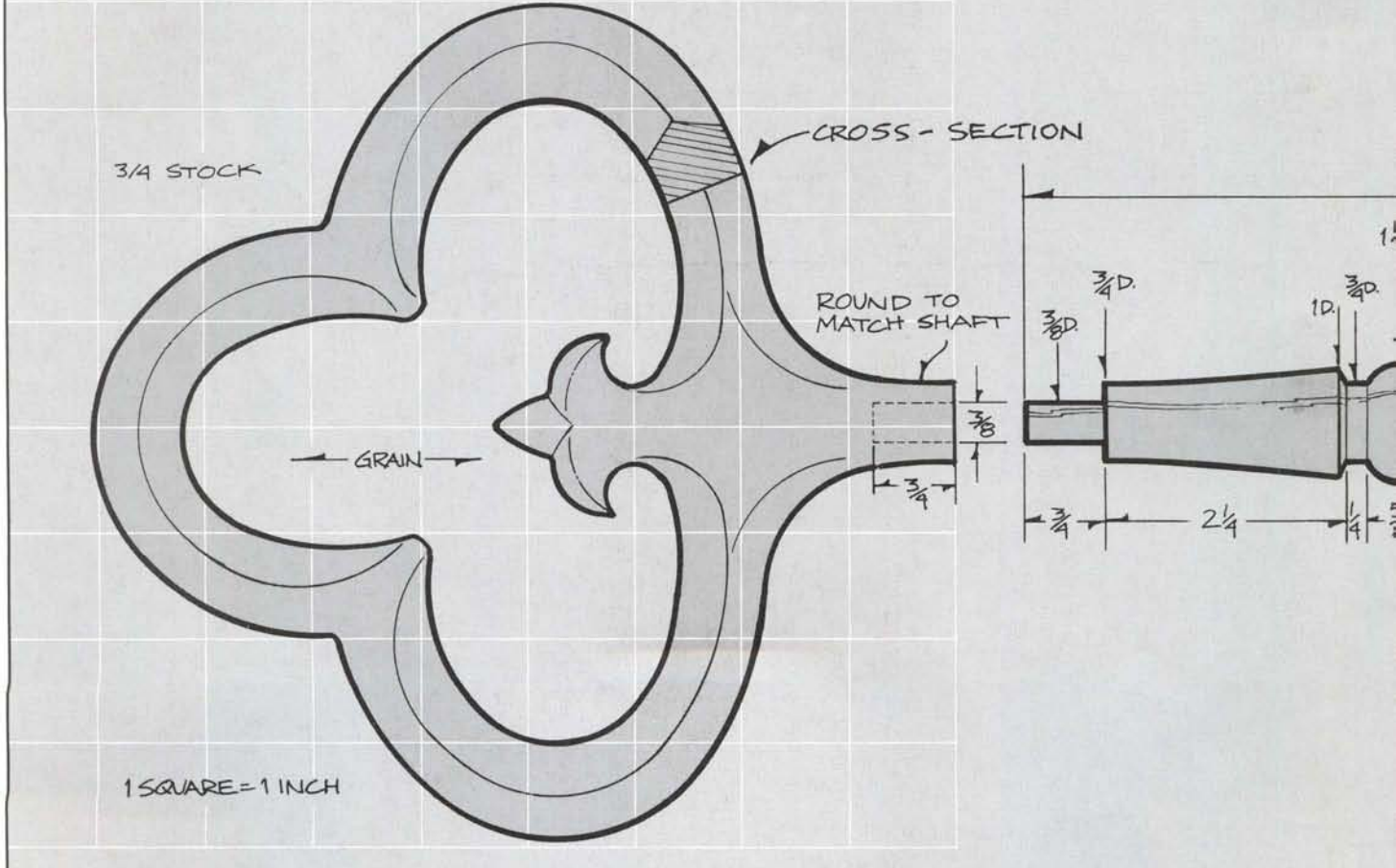
Next, turn the shaft to the dimensions shown. Mount it in the lathe so you can turn the tenon on the dead center side. Size the tenon carefully. You may want to slide the dead center out of the way and test-fit the tenon in a hole that is the same size as the handle mortise.

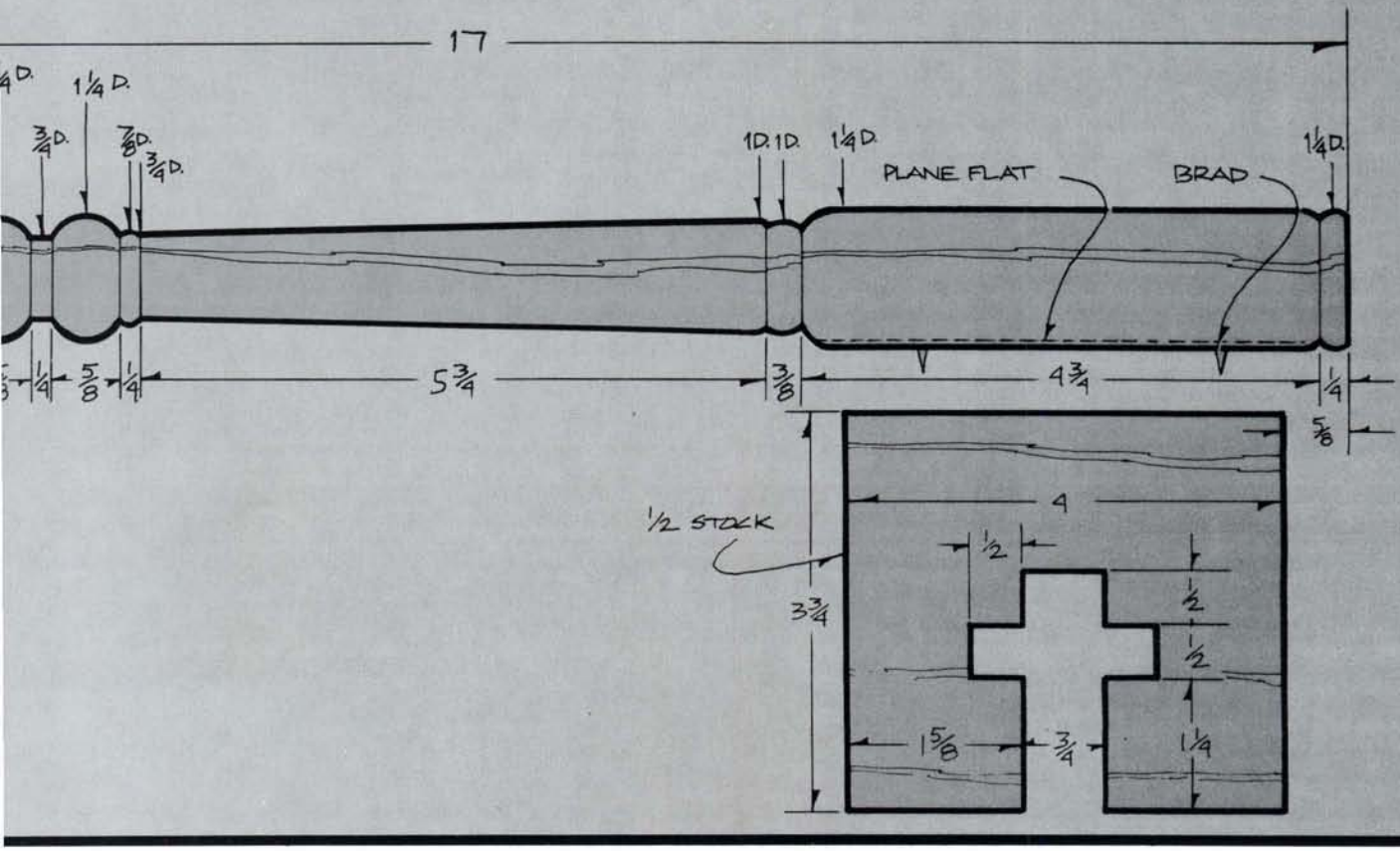
Next, move on to the handle. But before shaping it, bore the mortise hole while the piece is still square. To transfer the profile of the handle to the stock, first draw a grid with 1 in. squares on paper. Then draw in the full-size handle pattern, noting where the lines in the magazine page cross the grid lines. Use contact cement to glue the paper pattern to the piece. Then use a jigsaw or a scroll saw to cut out the profile. Smooth the curves with small drum sanders. Use sandpaper wrapped around dowels for the tighter sections.

Form the beveled profile on the handle face with wood rasps and files. The shaping and smoothing of the handle takes time and patience. Next, cut out the lever. Use a scroll saw with a straightedge for a guide so the cuts come out nice and crisp. Then sand the cuts smooth.

To assemble, first plane a small flat on the shaft and glue the lever onto the flat. You'll have a good long grain-to-long grain glue joint so you don't need to use dowels or splines. But it's a good idea to use wire brads to keep the pieces from sliding while you clamp them. Just push the brads into the shaft and clip off the heads with a wire cutter.

After the glue sets on the shaft-to-lever joint, glue the shaft to the handle, being careful to line the handle up with the lever. Then fair in the handle so there's a smooth transition to the shaft. For a finish, we used Minwax fruitwood stain and several coats of Formby's tung oil.




17
1¼ D.
¾ D.
⅞ D.
¾ D.
1D.
1D.
1¼ D.
1¼ D.
PLANE FLAT
BRAD
¼
⅝
¼
5¾
⅜
4¾
¼
⅝
½ STOCK
4
½
½
½
3¾
1⅝
¾
1¼

·COUNTRY· WALL SHELF

This simple wall shelf is ideal for a bathroom or kitchen, and it's an easy weekend project that uses up odd sized pine boards left over from bigger pieces.

Start by ripping the pine to the widths shown in the Bill of Materials. Note that the sides (B) narrow down from 4¼ in. to 3 in., so by overlapping the two sections you can get both from a single 1 by 8 board about 28 in. long.

Next, cut the ¼ in. deep by ¾ in. wide dadoes in the sides. Also locate and drill the ¼ in. deep by ¾ in. diameter holes for the towel bar (E).

Then lay out the radii as shown on the sides and shelves (C). The front (D) profile is transferred using the grid pattern. Cut the straight section first, and then the curved profile. For the straight sections on the sides you can use a circular saw, a band saw or a jigsaw. A circular saw generally gives a smoother cut and requires less sanding, but you'll have to stop the cut short and finish it with a hand saw.

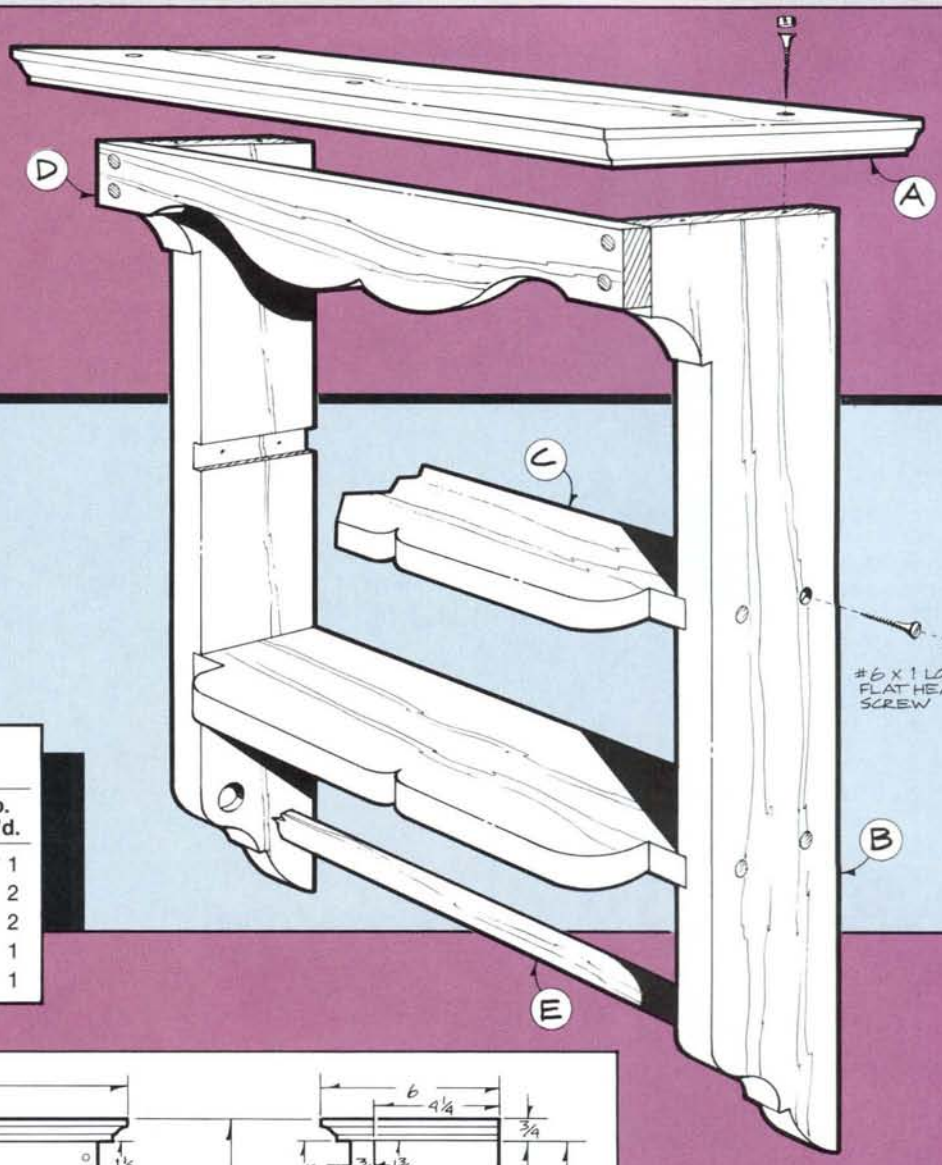
The edges of the top (A) are shaped on a router table. We used a ¼ in. ogee bit set to leave ¼ in. shoulders on the top and bottom. You could use a beading or round-over bit for a similar effect. When cutting the top, shape the ends first and then the front edge. A router tends to tear the end-grain, so making the final pass with the grain should clean up any ragged edges.

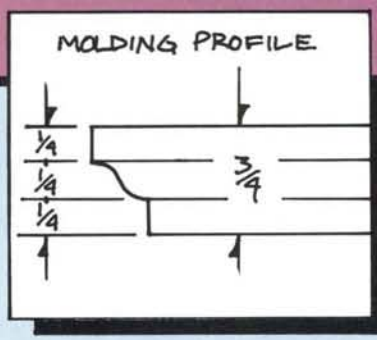
Next, sand all the parts. Use a drum sander for the profiles and a hand or powered sanding block for the flat surfaces. For the difficult areas where the curves come together in a point, use a knife-edge file to clean up the saw cuts. Finish sand those tight spots with sandpaper wrapped around a slip of wood.

To assemble, mount the towel bar, screw the sides to the shelves, square up the piece and then screw on the front and top. Drill and counterbore the holes and plug them with face-grain plugs. Use a saw to trim the plugs off close to the surface and then sand them flush.

For a finish, we stained the shelf with Minwax Puritan Pine and applied four coats of tung oil. Rub out each coat of tung oil with 0000 steel wool.

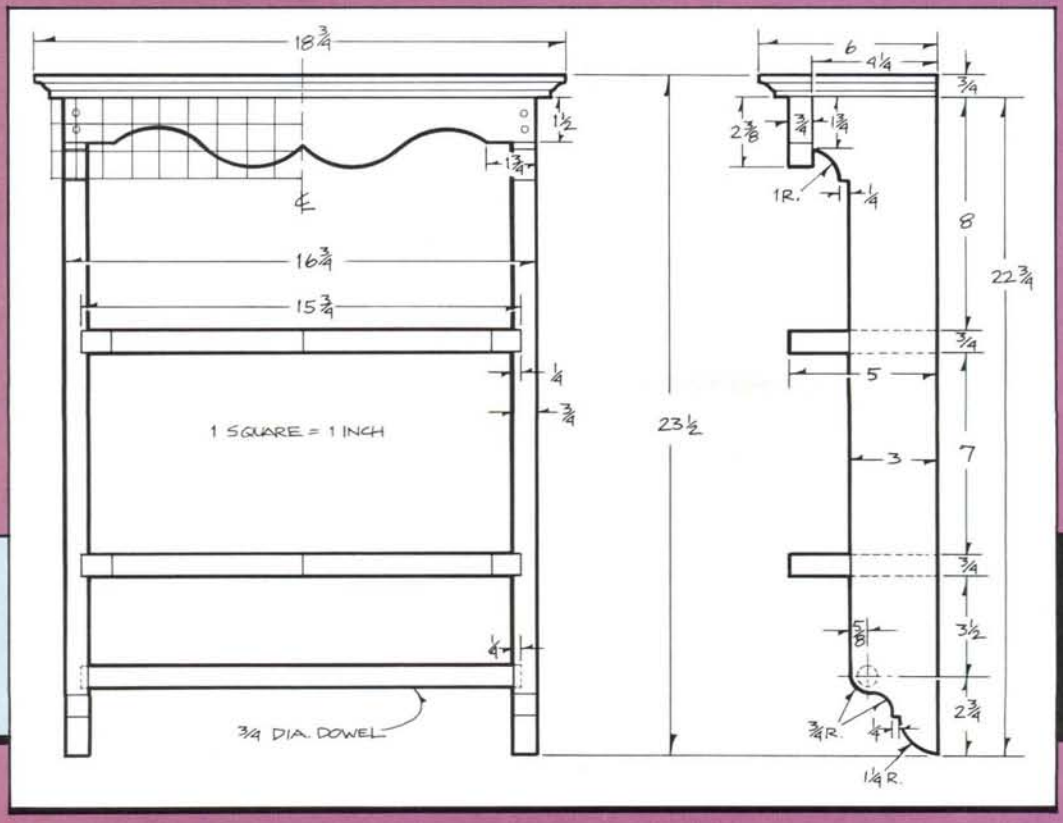
To hang the shelf, you can drill angled holes in the rear edge of the sides and fit them over nails or screws into the wall. The shelf is designed for mounting on a wall with studs 16 in. apart from center to center. WWJ

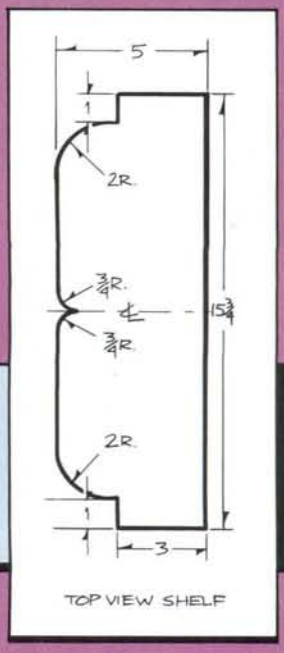




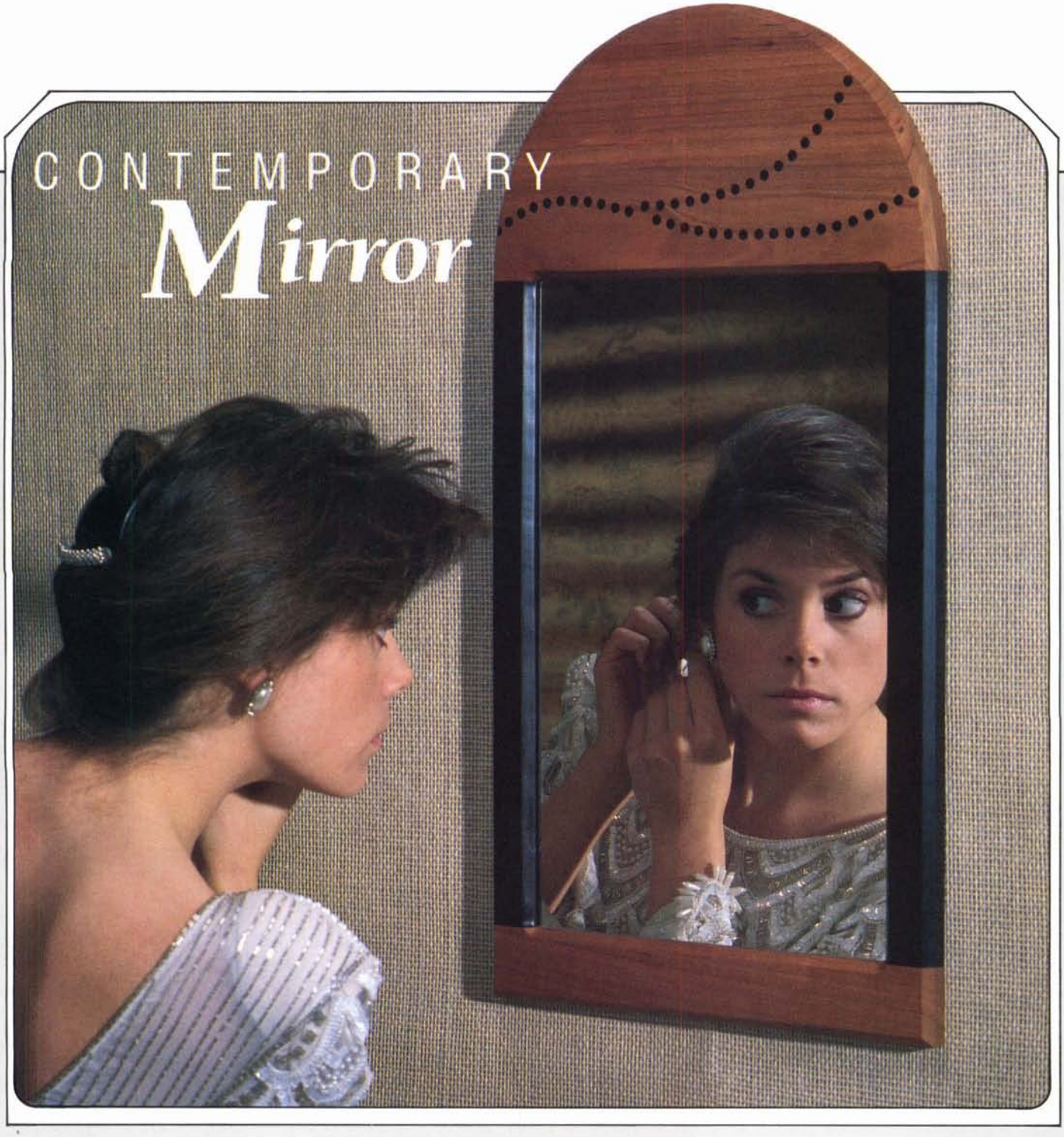
Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.
A	Top	3/4 × 6 × 18 3/4	1
B	Side	3/4 × 4 1/4 × 22 3/4	2
C	Shelf	3/4 × 5 × 15 3/4	2
D	Front	3/4 × 2 3/8 × 16 3/4	1
E	Towel Bar	3/4 dia. × 15 3/4 long	1





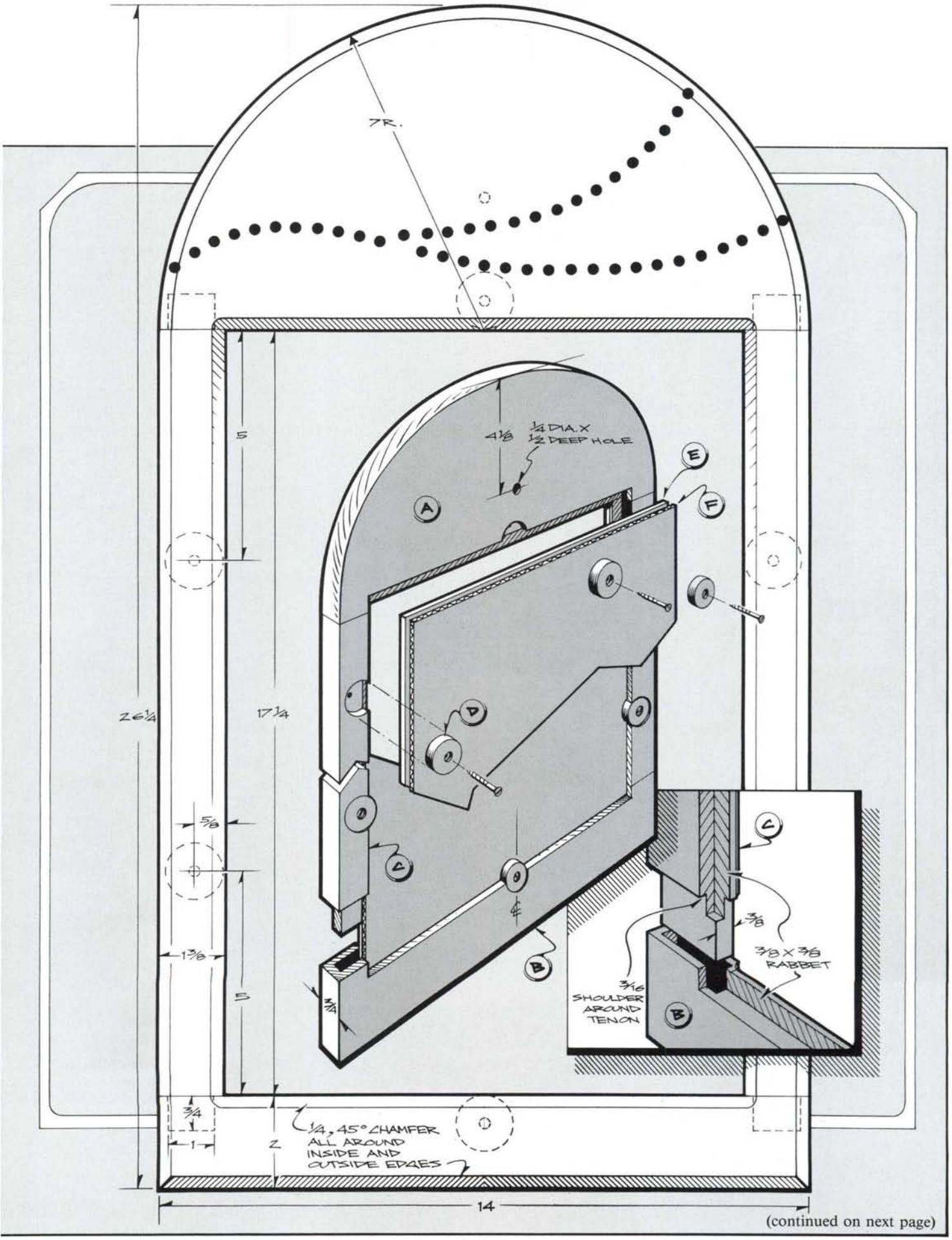
CONTEMPORARY *Mirror*



This mirror uses contrasting woods and a classic arch to achieve a clean contemporary look. We used cherry and ebony, but feel free to try other combinations. Fair warning, though — we don't suggest using only one species of wood, since the design of the mirror depends on the visual interest that different woods generate when used in the same piece.

Another detail that you can have fun with is the ebony dots patterned across the top rail of the mirror. These are purely a decorative touch, and can be arranged in an asymmetrical pattern, a balanced pattern, or they can be left off entirely. Try laying out various combinations of dots and different patterns on scrap paper to find a design that pleases you.

If you use the same combination of woods that we selected, a few brief notes on ebony will come in handy. First, don't expect it to work like other woods. Because ebony is so much harder than most common cabinet woods, your tools and cutters need to be razor sharp. Woodworkers who specialize in exotic woods resharpen blades and cutters far more frequently than those who work in common woods. Some, like California craftsman Tony Lydgate, don't bother to resharpen table saw blades, but simply switch to a new blade when a used one no longer measures up. Second, because of its density, ebony does not take glue as well as most other woods.



(continued on next page)

CONTEMPORARY *Mirror*

You may want to use an epoxy for the stile-to-rail joints in this piece. Finally, while it is very dense and hard, ebony is subject to changes in humidity that often surprise someone who is not familiar with it. Even on this piece, with a stile width of 1⅜ in., a small step developed where the rail and stile meet.

Begin by getting out the stock you'll need for the stiles and rails. Cut the top rail (A) slightly oversize in both length and width. The final length and width of the top rail are established after assembly when you cut the top radius. Also cut the bottom rail (B) and stiles (C) to length and width. Note that the length of the stiles includes the tenons.

Now cut the tenons on the ends of the stiles. As you'll note from the tenon detail, the tenons have a 3/16 in. shoulder all around. With these tenons cut, now go to work on the corresponding mortises in the top and bottom rails. Take care with the mortises, especially on the outside shoulder, where you'll only have 3/16 in. of short grain remaining. After establishing the rough depth and width of the mortise with the drill press, pare down with a sharp chisel to square the mortise walls. Don't lever against the short grain with the chisel, because this short grain is liable to break out. Since the top rail is a little longer than final size, the short grain at the outside shoulder should be less of a problem than on the bottom rail, but should still be handled with care. Test fit the rails and stiles, adjust the fit of the mortise or tenon as needed, and then glue and clamp the mirror frame. Check immediately to determine that the frame assembly is square. This step is critical, since if the frame is not square you'll have a very difficult time getting the mirror glass to fit. A carpenter's framing square is handy for checking squareness. Readjust the clamps as needed to square the mirror frame, and set aside to dry.

Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.
A	Top Rail	¾ × 7 × 14	1
B	Bottom Rail	¾ × 2 × 14	1
C	Stile	¾ × 1⅜ × 18¾*	2
D	Retainer Disk	1¼ dia. × 3/16 thick	6
E	Mirror Glass	⅛ × 11⅞ × 17⅞**	1
F	Cardboard Backing	1/16 × 12 × 18	1

*Length includes tenons.

**Size allows ⅛ in. play to prevent binding.

When dry, lay out the 7 in. radius on the top rail. Cut it out with the band saw, staying just outside the line, and sand to the final radius. If you've cut all your parts correctly, and laid out a perfect 7 in. radius, the radius should fair in evenly with the outside edges of the stiles.

Now, if you plan to include a dot design, lay out the location of the ebony dots, and use the drill press and a sharp brad-point or Forstner bit to drill the ¼ in. deep by ¼ in. diameter holes for them. The ebony plugs are cut using the drill press and a ¼ in. diameter plug cutter. The stock that you cut the plugs from should be about 5/16 in. thick. That way when you glue the plugs into the ¼ in. deep holes, the plugs will stand a little proud of the surface. Use a belt sander to sand the plugs flush.

Next, use the router to establish the rabbet for the mirror glass (E) and backing board (F). On our mirror, this rabbet measures ⅜ in. deep and ⅜ in. wide, and is cut with a ⅜ in. ball bearing guided rabbeting bit. Since the bit won't cut into the corners, you'll need to use a chisel to square the four corners. Use a sharp pencil to continue the lines of the rabbet, and then pare up to the line with the chisel.

Now, refer to the Special Techniques article on page 12 for the step-by-step instructions on how to make the panel retainer disks (D) and the counterbores into which they fit.

With the retainer disks and counterbores all cut, but before mounting the glass, now cut the ¼ in. chamfers all around the outside and inside perimeter of the frame. You'll need the router equipped with a ball bearing guided chamfering bit. Note that when guiding the ball bearing pilot off the edge along the inside perimeter, there's only a little stock remaining between the chamfer and rabbet. This leaves the pilot little if any surface to gauge off. In fact, the little stock that remains is likely to jam between the ball bearing and the cutter, causing an uneven, wavy chamfer. You can solve this problem by ripping some ⅜ in. by ⅜ in. scrap to fit into the rabbet, providing a nice surface for the bearing to ride on. Some masking tape on the back side of the mirror frame temporarily secures the ⅜ in. square rippings in place.

Our mirror glass was purchased at a local glass shop. We asked the shop to cut the mirror about ⅛ in. less in length and width than the actual rabbet-to-rabbet dimensions, which helps to insure that the glass will fit. As noted in the Special Techniques article, our rabbet depth and retainer disk thickness are based on a ⅛ in. thick mirror glass and a 1/16 in. thick backing. If you select a different thickness mirror or backing board, be sure to adjust the rabbet depth and disk thickness accordingly.

After final sanding, we used four coats of Tung oil to finish the mirror. We used a cardboard backing board to protect the silvered surface of the mirror. Hardboard (Masonite) or a wood-grained laminate are other choices you can consider. An angled hole or keyhole slot is used to hang the mirror on a nail or screw.

THE WOODWORKER'S MARKETPLACE

THE WOODWORKER'S MARKETPLACE

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The Classified Rate is $1.50 per word, payable with order. Minimum ad length is 15 words, and the deadline date is the 25th of the 3rd month preceeding the issue (6/25 for the September/October issue). Send copy (count each word and initial) and check to ***The Woodworker's Journal,*** *Classified Dept., P.O. Box 1629, New Milford, CT 06776.*

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Shaker Wall Clock J/F '88

Vol. 8 No. 1 Jan-Feb '84

Shaker End Table, Medicine Cabinet, Cassette Tape Rack, Captain's Clock, Stacking Storage Unit, Veneer Bracelets, Toy Car Carrier, Infant Bead Toy, French Bread Cutter, 19th Century Kitchen Clock, Early American Trestle Table & Benches, Table Saw Cut-Off Table, Coaster Set, General Woodworking Suppliers, *Articles:* Doweling Details; Sources of Information; Restoring Hopeless Cases; Mirror Image Panels.

Vol. 8 No. 2 Mar-Apr '84

Not Available

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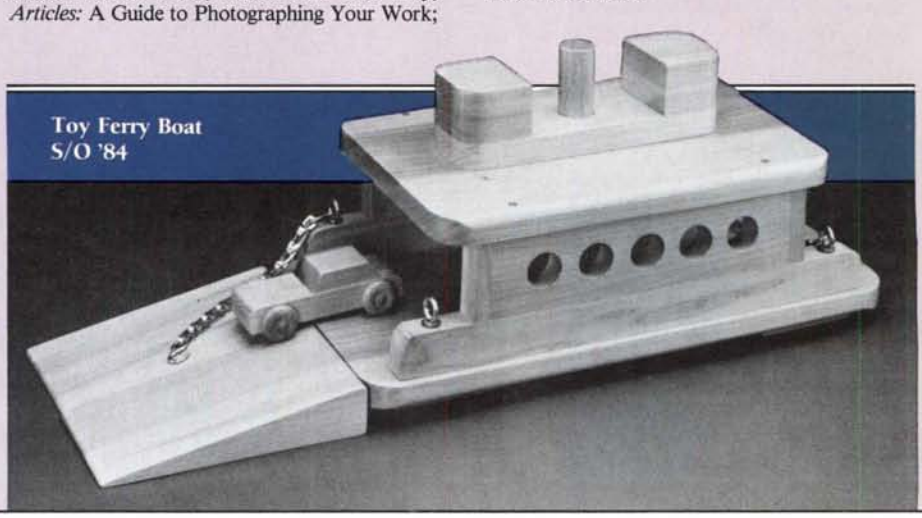
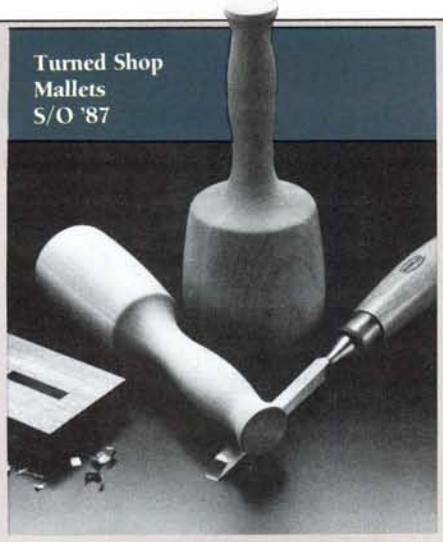


Toy Ferry Boat S/O '84



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Display Pedestal, Kitchen Canister Set, Riding Biplane, Contemporary Serving Cart, Napkin Holder, Decorative Planter, Country Vegetable Bin, Pine Medicine Cabinet, Shop Drum Sander, Vienna Regulator Clock, *Articles:* Penetrating Oils and How to Use Them; The Jointer; Veneer, Part I; Decorative Joinery: Dovetail Key Butt-Miter; Caning and Wood Finishing Suppliers.

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Curio Cabinet, Rocking Horse, Three-drawer Jewelry Chest, Tapering Jig, Rolling Toy, Folk Art Silhouette, Two Towel Racks, Early American Style Wall Shelf, Corner Cupboard, Stacking Wine Racks, *Articles:* On Glues and Gluing; Band Saw Setup; Making the Continuous Bracket Foot; Step-By-Step To A Flawless Finish On Pine (Or Any Other Wood); Hardware Suppliers.

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Early American Pierced Tin Cabinet, Contemporary Coffee Table, Puss 'n Books Bookends, Cookbook Holder, Wooden Jewelry, Child's Duck Puzzle, Shaker Wall Clock, Stereo Cabinet and Speakers, Country Occasional Table, Drill Press Jig, *Articles:* Edge-gluing; The Drill Press; Pierced Tin; Four Shopmade Finishes; General Woodworking Suppliers.

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Oak Bookcase Desk, Miter Cutting Jig, Captain's Clock, Country Coffee Table, Rooster Folk-Art Silhouette, Harvest Basket, Bird Push Toy, Pencil Post Nightstand, 18th-Century Pencil Post Bed, *Articles:* Why Worry About Wood Movement?; Joining Ring Segments; Drill Bits and Boring: The Hole Story; Filling Open-Grained Woods; Hardwood Suppliers.

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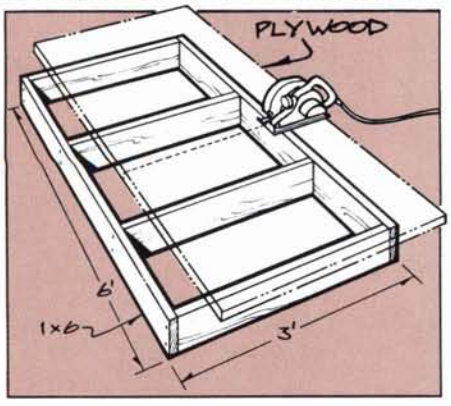
Shop Tips

Cutting a 4 by 8 sheet of plywood with a portable circular saw can be a challenge, mostly because it's difficult to fully support the sheet and the portion that gets cut off. This simple frame, made from 1 by 6 pine, can make the job a lot easier. Use nails to assemble the frame parts as shown; just be sure to keep the nails at least 1 in. from the top edge. Once assembled, the frame can be used either on the shop floor or on a pair of sawhorses. To use, place the 4 by 8 sheet on the frame. Make sure that the plywood, including the portion to be cut off, is fully supported by the frame. Set the



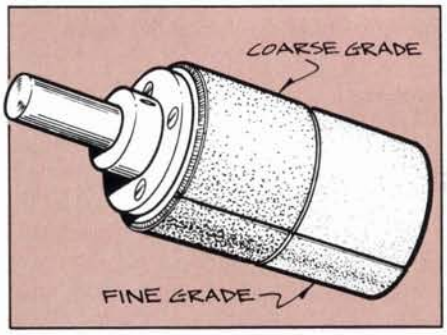
saw's depth of cut to equal the thickness of the plywood plus about ¼ in. The blade will cut into the top edge of the frame whenever a cut is made, but the frame will still work fine — even after hundreds of cuts.

J.A. Hunter, Traverse City, Mich.

It's time for spring cleanup, but don't throw away those old wooden baseball bats that are out in the garage. Instead, use them for turning stock. Wooden baseball bats are made from ash, a wood that turns well.

Leo Zahurak, West Chester, Pa.

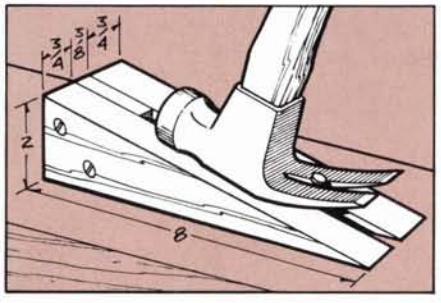
I have a 3 in. long "sleeveless" drum sander. This type of drum sander uses regular sandpaper rather than the premade sleeves. However, instead of



covering the entire 3 in. sleeve with one sandpaper grade, I use a coarse grade on the top half and a finer grade on the bottom half. Now I don't need to buy another drum or spend as much time changing sandpaper grades.

Al Razgaitis, Rolling Meadows, Ill.

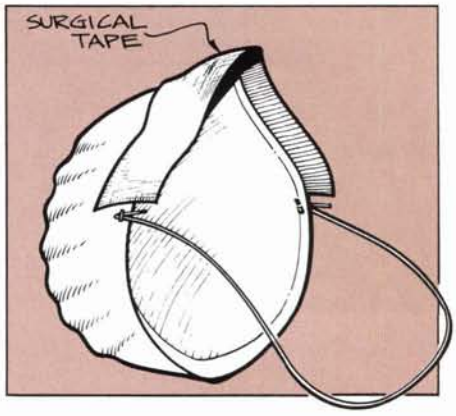
I've found this simple wedge-shaped block works nicely for pulling nails. It straddles the nail, serving to protect the stock while allowing the hammer to be



elevated as needed, a feature that's particularly useful when pulling long nails. Use maple or oak for maximum durability.

A.B. Foster, Limestone, Tenn.

Anyone who wears safety glasses (or goggles) while using a dust mask knows that the lenses often steam up because the dust mask deflects your breath upward toward the glasses. And with your vision obstructed, it's difficult to work safely and accurately. I've solved this problem by adding a short length of 2 in. wide surgical tape to the nose of the dust mask, allowing



the tape to extend about ¼ in. beyond the edge of the mask. With the upper portion of the mask covered and the mask taped to your nose, your breath is directed downward away from your glasses.

Peter Sieling, Bath, N.Y.

***The Woodworker's Journal** pays $25 for reader-submitted shop tips that are published. Send your ideas (including sketch if necessary) to: **The Woodworker's Journal**, P.O. Box 1629, New Milford, CT 06776, Attention: Shop Tip Editor. We redraw all sketches so they need only be clear and complete. If you would like the material returned, please include a self-addressed stamped envelope.*

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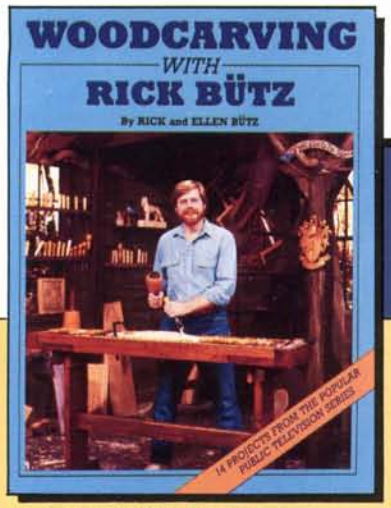
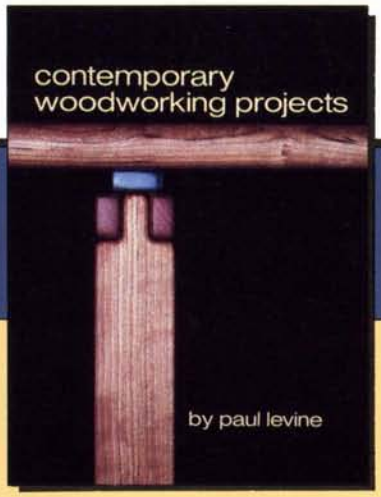


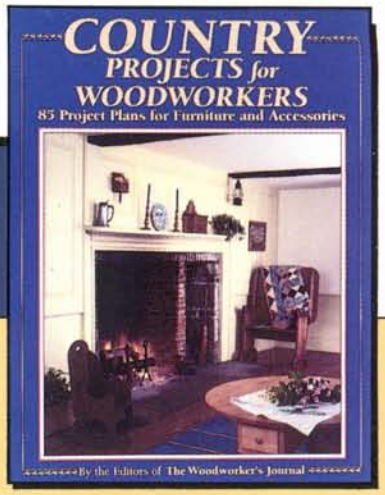
Woodcarving With Rick Bütz

Learn woodcarving! With just a few tools and a few hours to spare, you can share in the simple pleasures of carving. Wander into the Black Forest of Germany with a traditional carving of St. Nick, or into a small Russian village with a Dancing Bears folk toy. You'll enjoy a chip-carved Quilt Rack, wildlife carvings, and a Tobacconist's Indian. All 14 projects are fully detailed with step-by-step photos. There are also chapters on tool selection, sharpening, whittling, chip and relief carving.



Contemporary Woodworking Projects

Paul Levine guides woodworkers of all skill levels through room-by-room chapters of coordinated furniture and accessories. The clean angles, sturdy joinery and special techniques are made easy to master with step-by-step instructions and illustrations. Among the 40 handsome projects are a matching Love Seat, Chair and Ottoman set, an Oak Credenza, a Platform Bed, and a Japanese Shoji Lamp. Children will enjoy their own table and chair set, puzzles and a great box of dominoes.



Country Projects For Woodworkers

If building the simple, sturdy furniture of the old-time cabinetmakers appeals to you, then you'll want this collection of the best country-style projects from the 1980-84 issues of *The Woodworker's Journal*. 85 complete plans range from weekend projects like Colonial Candlesticks and Fireplace Bellows to more challenging projects such as a Shaker Chest of Drawers, a Stepped-Back Hutch, and an 18th Century Trestle Table. You'll find the instructions and illustrations easy to follow.

BOOKS FROM The Woodworker's Journal

You'll find the handy order form for these books bound in the center of this issue.

101 Projects For Woodworkers

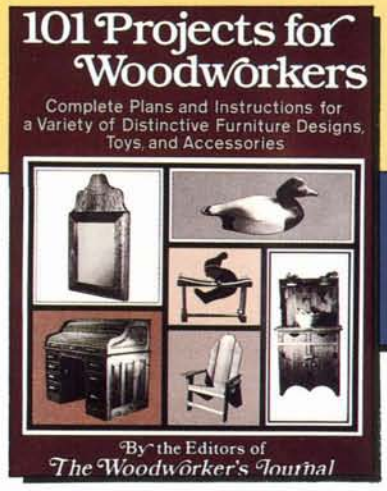
For the eager amateur just starting out or the craftsman with a shop full of tools, **101 Projects For Woodworkers** features an unparalleled variety of classic projects for everyone. Included in this collection of plans from the 1977-80 issues of *The Woodworker's Journal* are a classic Rolltop Desk, an old-fashioned Porch Swing, traditional and contemporary furniture, clocks, mirrors, home accessories, toys and novelties. Complete instructions and illustrations.

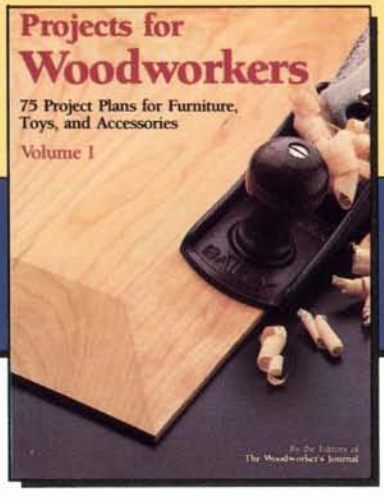
Projects For Woodworkers, Volume 1

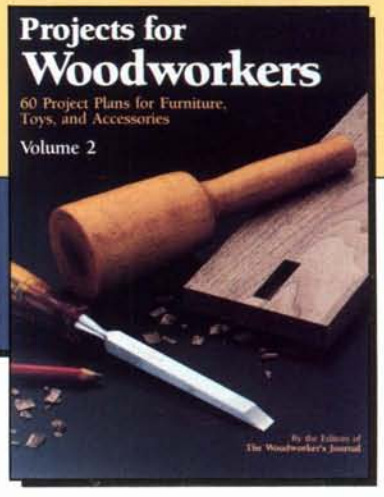
Beginning and advanced woodworkers alike will appreciate the full range of styles in furniture, accessories, lamps, clocks, toys and gifts. Of the 75 projects selected from the 1980-81 issues of *The Woodworker's Journal*, plans include a Cabinetmaker's Workbench, Pine Shaker Cupboard, Old-time Icebox, a Cobbler's Bench Coffee Table and a Child's Victorian Sled. Fully detailed instructions, illustrations, and photos.

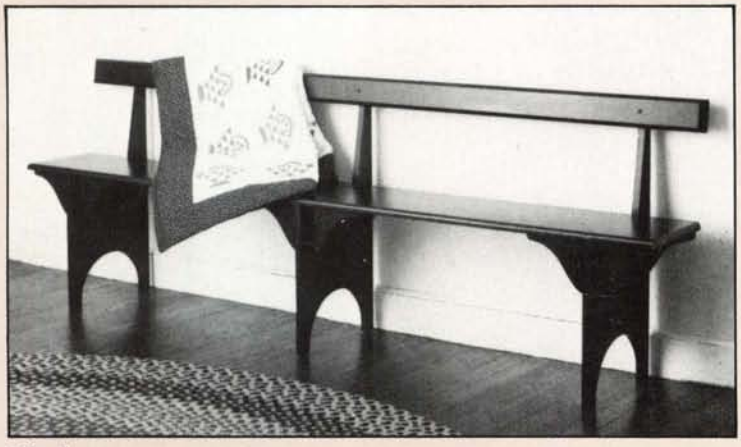
Projects For Woodworkers, Volume 2

Originally published in the 1982 issues of *The Woodworker's Journal*, all 60 projects were chosen with a wide variety of styles and skill levels in mind. Each project is presented with complete instructions and thorough illustrations. You'll find household accessories like the Desk Caddy, Casserole Dish Holder, and Breakfast Tray easy to build. And you're sure to enjoy the reward of completing more involved projects like the Tambour Desk, Old Danish Chest of Drawers and Swinging Cradle.





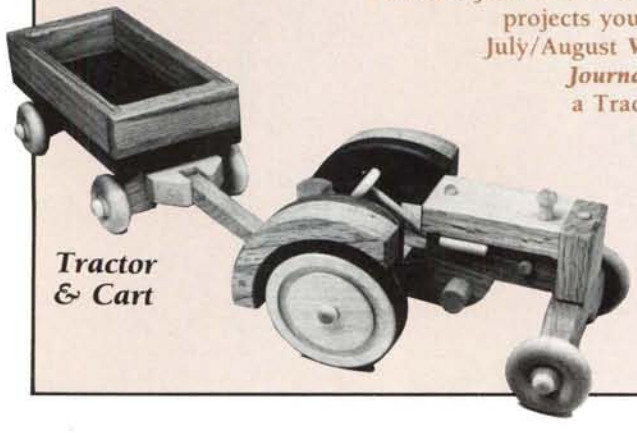




Shaker Bench

Next Issue . . .

Here are just three of the many great projects you'll find in the July/August ***Woodworker's Journal:*** A Pie Safe, a Tractor and Cart, and a Shaker Bench.



Tractor & Cart

Pie Safe