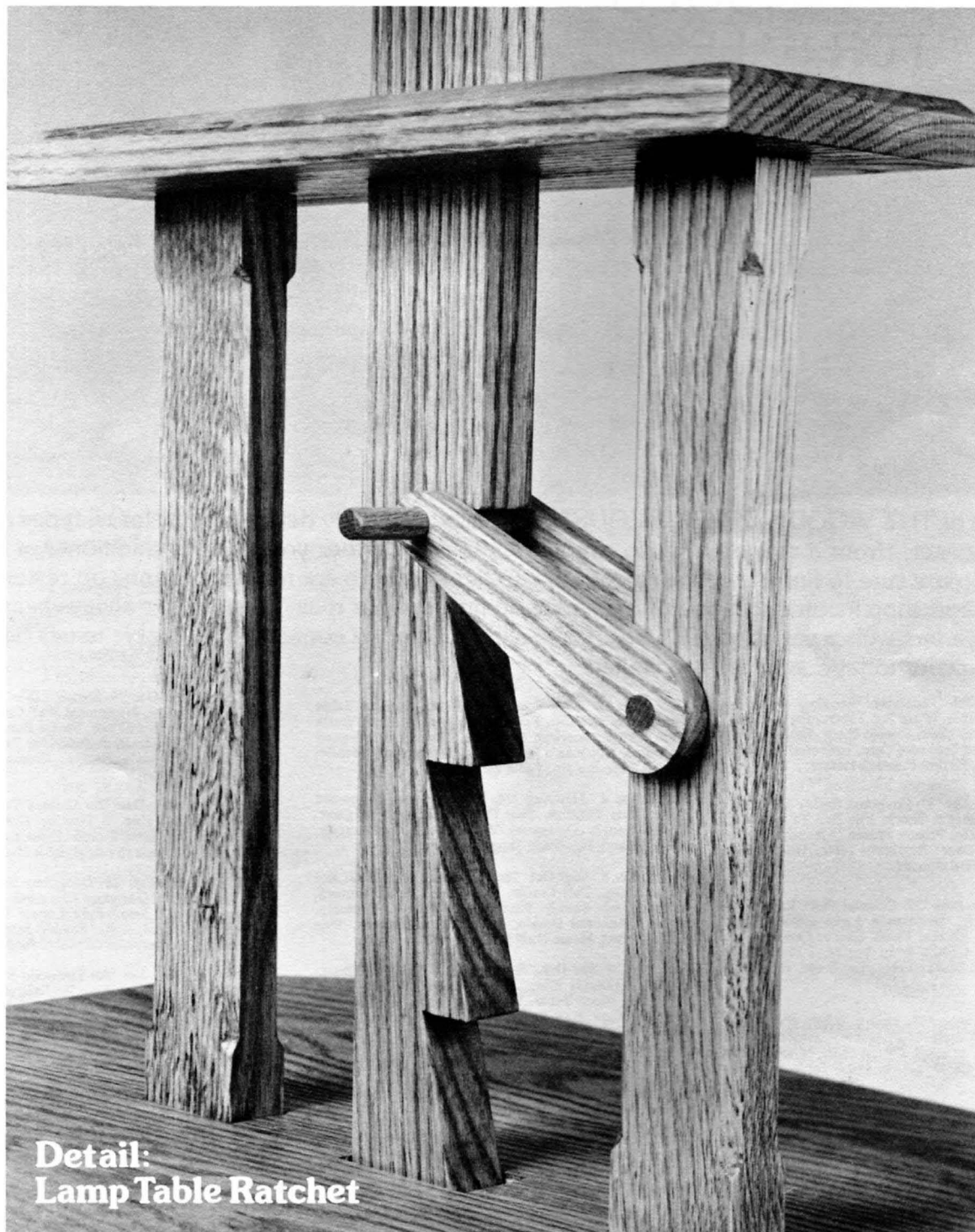


The Woodworker's Journal

Vol. 4, No. 6

Nov./Dec. 1980

\$2.25



Detail:
Lamp Table Ratchet

In This Issue:

6 Great Holiday Gifts

18th Cent. Trestle Table

Quilt Rack

Rugged Toy Truck

17th Cent. Mantle Clock

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Each issue of THE WOODWORKER'S JOURNAL is filled with fully detailed plans for all types of woodworking projects, from a roll-top desk to simple pull toys. Whether your taste is traditional or contemporary, you are sure to find interesting ideas in every issue. There are regular columns on restoring antiques and workshop income plus useful jigs and shop tips, but our main purpose has always been to provide our readers with a variety of PROJECT PLANS. Check the contents of available issues below and send your order today...supplies are limited.

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Vol. 1 No. 2 Mar-Apr '77: Contemp. Coffee Table, Little Red Wagon, Shaker Bench, Fire-Rail Table Lamp, Shaker Wall Cabinet, Picture Frame, 3 Handy Kitchen Items, Bookcase Desk, Butcher's Table, Home-Made Clamp, Practical Bird Houses.

Vol. 1 No. 3 May-June '77: Colonial Plate Rack, 17th Cent. Hutch Table, Adirondack Lawn Chair, Picnic Table, 18th Cent. Blanket Chest, Shaker Candlestand, English Tea Box, Child's Swan Rocker, 3 Projects for Scrap Ends, Small Shaker Table, Toy Train, Table Saw Cove Cutting.

Vol. 1 No. 4 July-Aug '77: Shaker Rack, Pine Trestle Table, 2 Candle Shelf Clock, 18th Cent. Shelf Clock, Wheelbarrow Planter, Bench, Cube Table, Parson's Table.

Vol. 1 No. 5 Sept-Oct '77: Taper Jig, Counting-House Desk, Dancing Man Folk Toy, Shaker Step-Chest, Duck Decoys, 3 Wall Decorations, Hutch Cupboard, Collector's Pier Cabinet, Box Joint Jig, Picture Frame.

Vol. 1 No. 6 Nov-Dec '77: Firewood Box, Valet Stand, Miniature Victorian Sleigh, 6 Holiday Gifts, Wine Rack, Pencil-Post Bed, Shaker Settee, Shelving System, Swinging Cradle, Ox Yoke.

Vol. 2 No. 1 Jan-Feb '78: Edge Sander, Colonial Dry Sink, Gossip Bench, Bookcase Night Table, Shaker Portable Chest, Victorian Washstand & Mirror, Vanity Mirror, Rustic Wall Plaque, Aquarium Stand.

Vol. 2 No. 2 Mar-Apr '78: Apothecary Chest, Cutting Cabriole Legs, Pine Chair, Colonial Wall Shelf, 3 Lathe Projects, Balancing Toy, Shaker Set of Steps, Walnut Serving Tray, Queen Anne Stool.

Vol. 2 No. 3 May-June '78: Shaker Lantern Table Lamp, Aeolian Harp, Two Cutting Boards, Pine Trestle Desk, Early American Bookcase, Novelty Windspeed Indicator, Notes on a Louis XV Table, Nursery Mobile, Round Tapering Jig, Tudor Birdhouse.

Vol. 2 No. 4 July-Aug '78: Hobby Horse, Magazine Rack, Pipe Cabinet, Two Pine Projects, 18th Cent. Water Bench, Octagonal Wall Clock, Boomerangs, Bowl-Making Jig, Giant Shop Compass.

Vol. 2 No. 5 Sept-Oct '78: Pine Wall Shelf, Nail Box Table Lamp, Doll Cradle, Contemp. Candle Lantern, Plant Stand, Shaker Wool-Wheel Part I, Contemp. Table, Veneered Puzzle, Easy Picture Frames, Pine Gun Cabinet, Home-Built Planer for Radial Saw.

Vol. 2 No. 6 Nov-Dec '78: Stereo End Table, Contemp. Lamp, 6 Holiday Gifts, Shaker Wool Wheel Part II, Chopping Block Table, Improved Table Saw Tapering Jig, 18th Cent. Half-Round Table, Bird Feeder.

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Vol. 3 No. 2 Mar-Apr '79: Wood Weathervanes, Cranberry Scoop Magazine Rack, Roll-Top Desk Part II, Table Saw Jigs, Music Stand, Corner Shelves, Pine Blanket Chest, Shaker Style Bed, Magic Money Printer

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Vol. 3 No. 5 Sept-Oct '79: Shaker Table, Contemp. Tier Table, Porch Swing, Traditional Wall Clock, Wall Cabinet, Record & Tape Cabinet, Steam Bending, Bandsaw Resawing Jig, Home-Built Fence for Table and Bandsaws, Clam Digger's Basket, Crocodile Pull Toy, Galleried Wall Shelf.

Vol. 3 No. 6 Nov-Dec '79: Clothes Tree, Pine Floor Lamp, Harvest Table, 5 Holiday Gifts, 19th Cent. Washstand, Tablesaw Round Tapering Jig, Quilting Frame, Tot's Tricycle, Swedish Door Harp.

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Vol. 4 No. 2 Mar-Apr '80: Firewood Rack & Carrier, Red Baron Triplane Toy, Pine Pie Safe with Pierced Tin Panels, Contemp. Glass Top Coffee Table and Matching End Table, 19th Cent. Pine Commode, Corner Cupboard Part II, Butcher Block Toy Box, Mahogany Corner Shelf, Jig for Wooden Trivets, Radial Arm Crosscut Table.

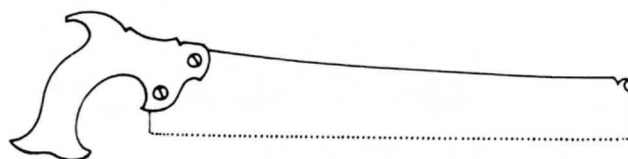
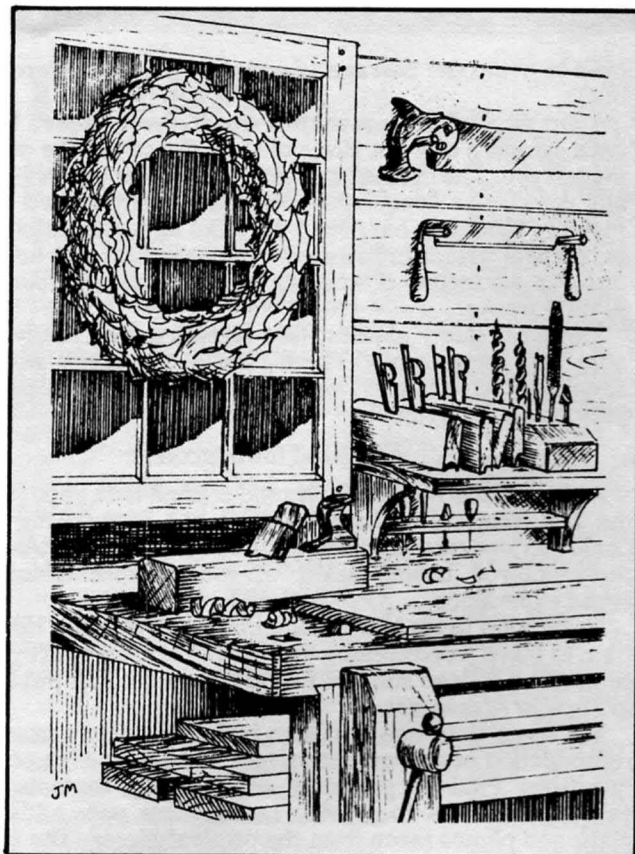
Vol. 4 No. 3 May-June '80: Miniature Campaign Chest, 19th Cent. Sawbuck Table, Decorative Frog, Violin Sconce, Shaker Cutlery Tray, Swinging Bracket & Planter, Club Chair & Ottoman, Oak Cottage Chair, Wooden Lock.

Vol. 4 No. 4 July-Aug '80: Magazine Rack, Gothic Oak Stool, Whale Cribbage Board, Doll Cradle, Nut & Bolt Toy, Basketweave Planters, Easy Wall Clock, Router Bit Box, Pine Cellarette, Lap Chessboard, Pine Wall Box.

Vol. 4, No. 5: Cabinetmaker's Workbench, Cobbler's Bench Coffee Table, 19th Cent. Cherry Table, Kitchen Utensils, Book Rack, Nuts & Bolts, Nutcracker, Walnut & Glass Bank, Schoolhouse Desk, Booster Seat.

Please Note

Vol. I, No. 1 through Vol. IV, No. 4 are newsprint issues for \$1.50 each. From Vol. IV, No. 5 on, they are magazines for \$2.25 each. CT residents only please add 7½% sales tax.



The Woodworker's Journal

VOLUME 4, NUMBER 6

NOVEMBER/DECEMBER 1980

DEPARTMENTS

- 4 Shoptalk
- 5 Letters
- 8 Workshop Income
- 9 Restoring Antiques
- 10 Beginning Woodworker
- 16 Gift Shop
- 26 Shop Tips

Editor and Publisher
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PROJECTS

- 12 17th Cent. Mantle Clock *by Roger E. Schroeder*
- 14 Toy Truck *by Donald F. Stearns*
- 16 Bud Vase *by Donald F. Stearns*
- 16 Grain Scoop
- 17 Letter Rack
- 18 Telephone Memo Caddy
- 19 Toy Circus Wagons - Animal Puzzles
- 20 Library Stool
- 21 Quilt Rack *by Larry Miller*
- 22 Ratchet Table Lamp
- 24 18th Cent. Trestle Table *by Paul Levine*

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)-355-2697.

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Application to mail at controlled circulation rates is pending at Brookfield, Ct. and additional offices.

Subscription Rates

In the United States and its possessions:

One year (6 issues) \$12.00
Two years (12 issues) \$22.00

Canada and other foreign:

One year - \$14.00
Two years - \$26.00

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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.

Shoptalk

The Non-Delivery Problem

A few weeks after each issue is mailed, we start getting postcards from subscribers complaining that they did not receive the latest issue. In some cases the reason for non-delivery is an incorrect name or address due to our error in key-punching the original order. We take considerable care to insure that new orders are accurately entered but being human, mistakes are sometimes made.

But most of the non-delivery problems are a mystery to us. An issue goes out properly addressed and simply vanishes into what I sometimes imagine is a Great Postal Void...some sort of time and space warp with its vortex near Chicago, where they join countless millions of other lost pieces of mail in an endless orbit.

Actually, the number of issues that go astray in the mails is a very small percentage of our total mailing...but there are always some and even a few dozen are a considerable nuisance for us and our subscribers.

If you do miss an issue, or have any other problem with your subscription, please don't suffer in silence. A postcard to us almost always brings relief. In chronic non-delivery cases, we usually contact your post office and advise them of the problem.

Eye Injuries

How many times have you pushed a piece of plywood through the table saw blade and, without the protection of safety goggles, had to turn your head away, or squint your

eyes to avoid the barrage of splinters that fly up from the blade.

I am particularly squeamish about eye injuries, having once caught a tiny hot sliver of steel directly in the pupil of my left eye. The episode and the pain, which doctors generally refer to as "exquisite", remains clearly etched in my memory though it happened 29 years ago. Fortunately, no permanent visual impairment resulted and I did have the dubious distinction of wearing a pirate-style eye patch for several weeks.

Goggles, safety glasses, face shields are all easily available and inexpensive. There's no sane reason why you should not have one or two pairs in a convenient place near your power equipment.

A Belated Introduction

Although his Workshop Income column first appeared in the last issue, I somehow overlooked introducing Paul Levine as our new contributing editor. Paul is a full-time, self-employed cabinetmaker of considerable talent and broad experience.

In addition to his busy cabinetmaking business, he finds time to teach woodworking and veneering at a nearby craft center and college and has had articles regularly published in *Popular Mechanics*.

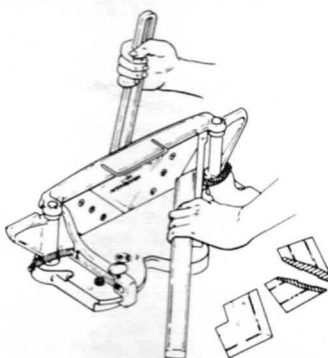
For some time now we have included in each issue the reproduction of one good example of 18th or 19th century furniture. Paul is presently establishing contacts with various museums to provide our readers with additional plans and photos taken from the original pieces. The trestle table in this issue is one such project and we hope there will be many more in the future.

Jim Mc Quillan

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Letters

I would like to ask if you could give a tip to keep sawdust from building up on the backside of a bandsaw blade. I have a Sears 80" bandsaw, and I work with nothing but pine since pine is the most readily available lumber here in the South. The sawdust and resin builds up on the blade causing it to run irregularly, and I have to stop and scrape it off. J.C. Massengale, Union, MS.

You can clean off the resinous deposit with gum and pitch remover, or lacquer thinner, both available at Sears. Sawing with a dirty blade will heat it up, and dull it. You might try spraying the blade with a silicone compound, also from Sears, and wiping off the excess before remounting.

We have a walnut secretary that has a very dark varnish on it and we would like to restore it to its natural finish. The secretary is tall and bulky. Please advise if you know of a varnish remover that can be safely used indoors. O.L. Fundersol, Ironton, OH.

The finish you see may be the "natural" finish. Black walnut becomes very dark when wetted, and varnish has a wetting action. Many varnishes darken with age, and additional waxing over the years will further darken a finish. This is usually considered acceptable, if not desirable.

If you wish to lighten the finish, you may have to strip the old finish and bleach the wood before refinishing. To get good results, there's no shortcut to the stripping and refinishing job. Stripping is messy and should be thoroughly washed off the piece when the process is complete. This usually means that the piece must be moved to a work area, preferably outdoors, or at least to an area with plenty of ventilation. Many times these tall pieces are built in two or more sections to facilitate moving. Look for a break or a step in the design, usually just above the drawers and try to find screws on the inside just under this level.

The woodworking I do is unusual and not touched upon in most books and magazines. I was wondering if someone on your staff could help me out in some way. For the past five years my woodworking hobby has been narrowed down to making strip laminated boomerangs. Most of these boomerangs are lead weighted to give them an outward range of 60 to 100 yards. You can imagine that they have to withstand quite a bit of stress and shock.

The glue I'm using now is an epoxy

called T-88 made by Chem-Tech. Within the last 18 months I have been experiencing delamination complaints from my customers. Separation seems to occur after several throws. The reason I'm using epoxy is that the boomerang is exposed to the elements, and in tuning I adjust the set on the wings by heating them over steam.

I'm looking for another type of glue that performs better than the epoxy, one that is non-toxic, slow curing, water resistant, remains pliable and can withstand heavy clamping pressure. Hope I'm not asking for the impossible. A. Gerhards, Downingtown, PA.

The only truly non-toxic glues that we know of are the white glues, such as Elmer's Glue-all. Relatively speaking, they do not have good moisture resistance. This glue remains somewhat pliable, and steaming will soften it so that you can reshape the boomerang, clamp it, and let the glue re-harden. There will be some spring-back, and the curve will flatten with this glue in time.

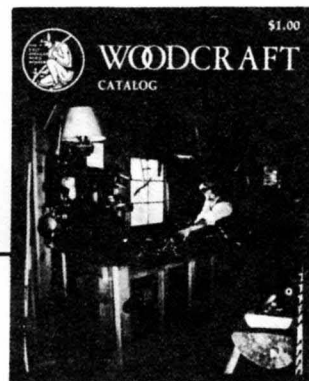
Plastic resin offers excellent resistance to moisture while Resorcinol glue is completely waterproof, although rather expensive. Both these glues should be left to set completely. Any reshaping, or tuning should be accomplished by laminating thicker pieces and then shaving them down to final shape.

Other possible problem areas may be: too much clamping pressure making a glue starved joint, not completely cleaning the surfaces before gluing, and moving the parts of partially set glue.

The wood finish used many years ago on pianos and pump organs was a hard dark finish that could be polished to a high gloss. This process was used prior to modern plastic finishes. I would appreciate any information you could give me on these finishes. J. J. Schmeller, Petaluma, CA.

The color of a finish is only partially determined by the actual finishing agents. For the most part color is determined by the wetting action of the finish, and the stain or bleach used just before applying the finish.

The composition of a finish such as varnish is a very complex subject. Formulas for finishes were often secret and never standard. There are still rubbing varnishes on the market in plenty. A good satin finish is hard and silky to the touch, and there's only one way to get it - lots of elbow grease. Good filling, building up a level coat, and rubbing are the basics. Any good book on finishes such as "The Complete Book of Wood Finishing" by Robert Scharff, (McGraw Hill publisher), can guide you on a complete schedule.



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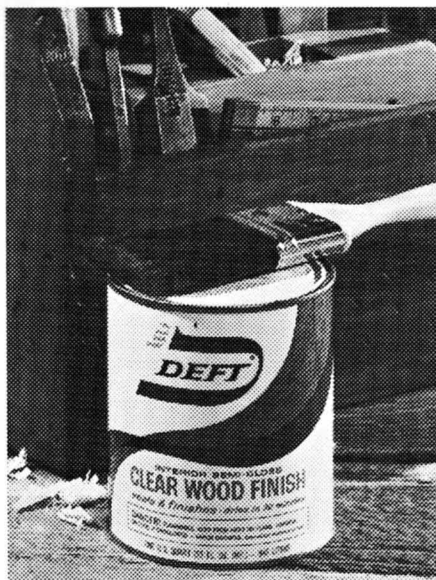
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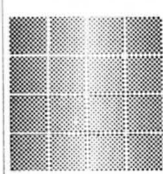
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Letters (cont'd)

Could you please furnish me with the information as to where I could purchase the nose and cove moulding described on page 13 of the July/August 1980 issue? In the text you refer to this moulding as "standard lumberyard nose and cove moulding." However, no lumberyard in this part of Wisconsin carries this type of moulding. R. J. Turner, Neenah, WI.

Armour Products, Box 290, Deer Park, NY 11729, carries 3/4" x 5/8" nose and cove moulding made from poplar. It's sold in three foot lengths and costs 40¢ per foot.

I've been trying to get 2" diameter dowel stock without success. Any advice? W. Ramsey, Wilmington, DE.

Jointi-Craft, Division of Rapids Sash and Millwork, Inc., 416 Summit Ave., Sauk Rapids, MN 56379, has informed us they make 1/2" dia. to 2" dia. dowel stock from oak, elm, ash, basswood, fir and birch. It's available in lengths up to 20 feet. Direct inquiries to Donald Schway.

I'd like to find a source for cork sheet, about 1/8" thickness. R. Holmes, Houston, TX.

The Frog Tool Co., Ltd., 700 W. Jackson Blvd., Chicago, IL 60606 carries 1/8" thick sheet cork with a self sticking adhesive backing. They also offer a 3/16" thickness without any adhesive. Cost of their catalog is \$1.00.

I have an old Sears Craftsman 24" jig saw and 12" band saw which were probably sold during the late 1940's. They are both in basically good condition but I am unable to buy replacement parts from Sears. I would like to know what company manufactured these tools for Sears and would like to hear from anyone who knows. I hope that if I contact the original manufacturer, I can obtain some replacement

parts. Gary F. Walden, 706 Aztec Dr., Independence, MO 64056.

Probably your best bet is to write directly to Sears, Roebuck and Co., Sears Tower, Chicago, IL 60684. Give them as much information as possible. List part numbers, models numbers, part description, etc. They should be able to give you some information.

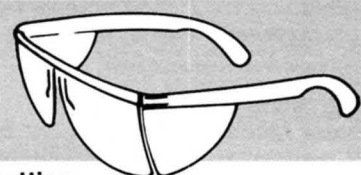
On page 2 of your January/February 1980 (Vol. 4, No. 1) issue of *The Woodworker's Journal*, in the section "Letters", you request information on glass inserts for bread boxes, medicine cabinets, etc.

National Insulating Windows, Inc., 286 Cherry Ave., Meadville, PA 16335, is a specialty manufacturer of custom glass glazing products. One of our products is applied ceramic patterns (of any design), kiln fired to either clear or colored float glass. Single item orders start at about \$12/sq. ft., there is a significant quantity discount, and we'll ship anywhere in the United States. Send art work of your design for quote. W.S. Bender, Vice President, National Insulating Windows, Inc.

I need air drying information on hardwoods, native to South Carolina, in 2, 3 and 4 inch thickness to be dried to 20% moisture content. The information on drying time for both outside and shed stacking would be greatly appreciated. T.W. Taylor, Anderson, S.C.

A government publication titled "Wood Handbook: Wood as an Engineering Material" (USDA Agricultural Handbook 72 Rev.) provides some information on the subject. It also contains a considerable amount of technical information relating to such wood properties as strength, machining characteristics, decay resistance, etc. The price is \$10.00 and it may be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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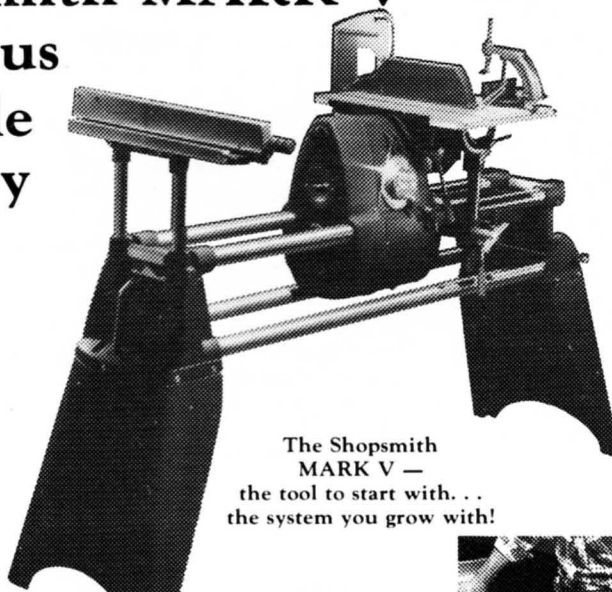
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Workshop Income

by Paul Levine

"How much should I charge?" It's probably the question most often asked when a woodworker decides to start selling his work. Thinking up an idea and rushing down to the shop to whip up a sample is quite exciting, yet in the afterglow of the big bang, there are few of us who will view the product with a price tag in mind. Yet it's a most important question and one that deserves a lot of thought. If priced too high the product won't sell. If priced too low it doesn't make any profit. So the woodworker/businessman is faced with finding a price level that strikes a balance, one that will be attractive to buyers yet still provide him with a fair profit.

A professional will start thinking about price in the very beginning, even before the idea leaves the comfort of his drawing board. He considers price as he designs the product. But since most woodworkers are not professionals, this approach isn't practical. So what is the best approach?

Price is directly related to cost, so first of all you must find out how much it is going to cost you to make the item. A good way to do this is to actually make a small quantity. I usually build between ten and twenty small size items. If the piece is large, I'll only make one. Keep a detailed time sheet, listing not only starting time and finishing time, but exactly what you did to make each piece. This will be helpful later in trying to find where you wasted time, or where you can trim down a bit.

After completing the work, add up all the time it took (and don't cheat), then divide by the number of pieces made. This gives you the time required to produce one piece. From experience, I've found this is usually two to

three times longer than I first estimated. To calculate the cost of labor per piece, multiply the number of hours per piece by the hourly rate you will pay yourself. Of course, you alone will have to decide what you think your time is worth, but keep in mind that anyone who produces good quality woodworking has a special skill and deserves to be paid accordingly. Many woodworking craftsmen use a rate of \$10.00 per hour.

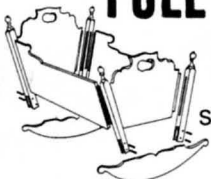
Next in figuring a price comes the materials. Total up the cost of all the wood, glue, hardware and finish it took to make the pieces, plus all scrap and wasted pieces. If you use a sheet of plywood to make an item, and have half the wood left after cutting it out, but the remaining pieces are too small to use, then figure the whole sheet in the cost of the item. Divide the total cost by the number of pieces made to get the cost of materials per piece.

Now you have the cost of both materials and labor. Make sure you've included all the costs. If you cheat on the amount of time you put in, or materials wasted in the process of making the item, you're only cheating yourself. To this total, most craftsmen add 15% overhead to cover wear and tear on machines, belts, etc., and 10% for profit margin.

The figure you arrive at should be the price you charge. If the item is well received, but there is resistance to the price, then find a way to reduce your costs - don't just lower the price. Eliminate an expensive piece of hardware, or revise the design a little. Maybe you can get two pieces out of one sheet of plywood. Make jigs to reduce your labor time. See if you can get lumber at a better price. There is always some way of reducing the cost.

These are some of the basic guidelines for formulating a price. Like anything else they are not absolute, but form a framework around which you can build your own method. Learn to do it well. In the end good pricing pays off - with worthwhile profits and satisfied buyers.

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Restoring Antiques

by John W. Olson

A butcher block maple table top required some special treatment to correct a convex downwarp that had developed near the center and ran lengthwise almost to the ends. Close inspection showed that the depression was $\frac{1}{2}$ " to $\frac{3}{4}$ " deep. The underside of the table top was bare wood that had received no finish at all. On top, the finish was clear, low luster and water resistant, probably consisting of an acrylic base.

An increase in humidity between the place the table was sold and the environment in which it was put after purchase brought about a natural change as the wood in the top attempted to acclimate itself to the new conditions. Since the uppermost surface was sealed by the finish, moisture could only enter each block from its lower surface. As each fiber in each block of the top absorbed just enough moisture to meet ambient conditions, it swelled proportionately in two directions, each perhaps an immeasurable amount, but sufficient to cause the lower surface of the table top to have greater area than the upper surface, resulting in the downwarp.

To correct the downwarp required that the moisture content of the upper and lower surfaces be equalized. Since the upper surface was sealed by the finish, it was necessary to strip the finish from this surface. This was done with a paint remover followed by a wash of lacquer thinner to remove any trace of paint remover and old finish. To further assure that the pores of the wood would be open and clean, the top was sanded with 100 grit paper and the dust removed with

compressed air.

The next step was to saturate clean cloths with water which were then laid on the table in the area of the downwarp. These cloths were resaturated as needed over the next 24 hours. As the upper surface absorbed moisture from the wet cloths, the consequent expansion increased the upper area of the table top and equalized the strains that had caused the downwarp. When a straight edge laid across the table indicated that the center was just slightly higher than the edges, the wet cloths were removed and the table allowed to dry. When retested after drying it was found that the center was still slightly high. The table was then set in a sunny shop window and retested at intervals of an hour or so. Inside 3 hours the top was absolutely flat and dry.

Preparation for finishing consisted of sanding with 100 grit paper followed by 120 and 150 grit aluminum oxide paper. The rails were sanded at the same time as were the legs. A final touch up with 150 grit paper and hand block left the surfaces clean and smooth. The underside of the table was cleaned up with 100 grit paper at this time.

Watco Danish Oil finish was used to seal the upper and the lower surfaces of the table top as well as the rails and legs. This finish is applied with brush and rag. The surface must be kept visibly wet for at least an hour, at which time the surplus is removed and the surface allowed to dry. This finish enters the pores of the first layer of wood cells where it polymerizes to form a solid. This not only seals the surface but also serves to harden it. A rub down with fine steel wool and carnauba wax completed the finish.

There is a moral in this tale. Good furniture is always sealed on all surfaces to minimize changes in moisture content. For a more detailed discussion of warping and its cures, refer to this column in the July/August 1978 issue.

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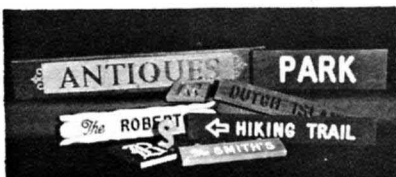
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The Beginning Woodworker

LAP JOINTS

The use of lap joints in woodworking probably coincided with the use of copper as these joints could not be easily fashioned with stone tools. By 700 B.C. the Egyptians had developed all the tools needed to cut the joints with which we are now familiar, including lap joints which comprise a large and useful group. Most of them are easy to execute with hand tools, offer large gluing surfaces and present a neat, workmanlike appearance.

The corner or end lap (Fig. 1) is the basic form of lap joint and probably the most often used member of the family. It's a good no-nonsense joint that offers a large surface area for glue and can also be locked with screws or pegs entered from either side.

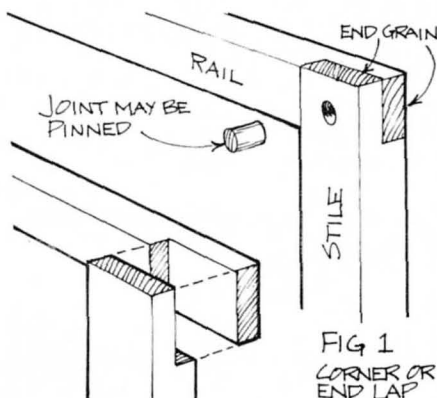


FIG 1
CORNER OR
END LAP

Note that this joint exposes the end grain of the two mating parts. In sophisticated traditional furniture such as Queen Anne style, exposure of end grain was generally avoided. Eighteenth century cabinetmakers usually tried to hide all joinery, thus the blind mortise and tenon were usually used to join frames.

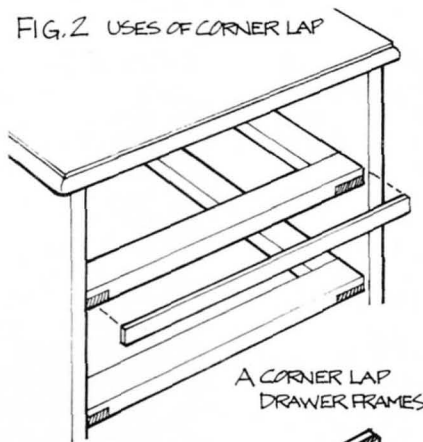
The Scandinavian influence in modern furniture design has helped to bring end grain exposure back in style and this is fortunate for carefully executed joints are, in themselves, things of beauty and often enhance the overall design.

Typical applications of the end or corner lap would include drawer support frames where a strip or outer frame may or may not be used to hide the end grain (Fig. 2A), and door frames for cupboards or cabinets (Fig. 2B).

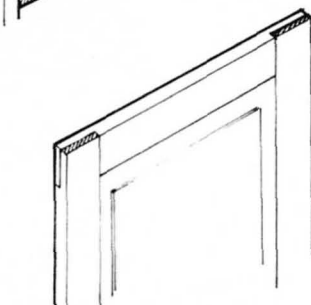
Careful layout and a few simple tricks will help you to turn out good-looking lap joints. The obvious first step is to plane mating parts to equal thickness and finish width. Mark the face sides and edges of mating parts and work from these marked surfaces in laying out.

Plan on making the tenons a bit

FIG. 2 USES OF CORNER LAP



A CORNER LAP
DRAWER FRAMES



B SIMPLE PANELED DOOR

longer than required, usually about 1/16 inch. Later, when the joint is assembled, these protruding tenons can be trimmed off exactly flush (Fig. 3).

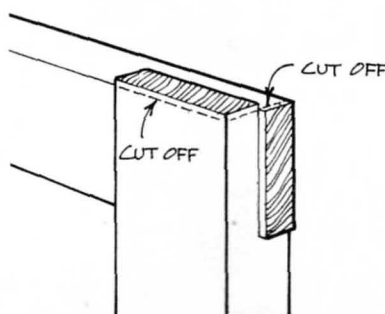


FIG 3
AFTER ASSEMBLY SAW OFF
PROTRUDING TENON STUBS

Use a try square to mark shoulders on the face sides of both workpieces, and score the wood with a sharp pen-knife (Fig. 4). This will cut the fibers of the wood and help prevent chipping when sawing. Accurate layout marks cannot be made with a worn pencil point.

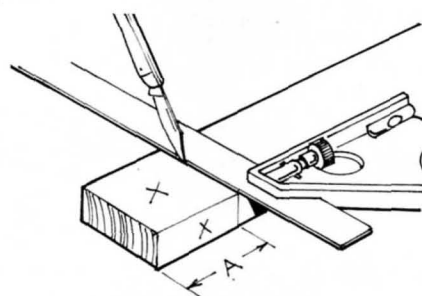


FIG. 4 SCRIBING SHOULDERS
A = TENON LENGTH + 1/16"

Next, set a marking gauge for half the thickness of the stock and mark edges and ends of tenons, resting the stock of the gauge against the face side of each piece (Fig. 5). To compensate for slight inaccuracy in marking an exact centerline along the edges, it's important to work from the face sides only. Thus if one tenon is cut a bit thin, the mating tenon will be correspondingly thicker.

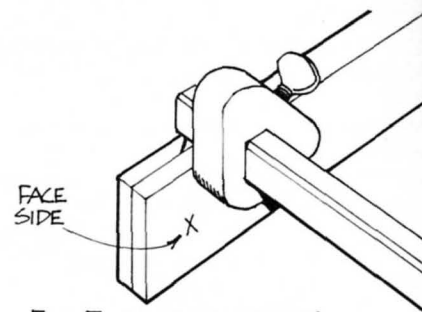


FIG. 5 MARKING TENONS

The cheeks of the tenons should be ripped first, rather than the shoulders, to provide better support for the blade and lessen the chance of cutting into the tenons when severing waste. A small notch cut along the knife-scored line with a chisel will aid in starting the saw blade which is rested along the thumb joint as the cut is begun. Always use a fine tooth backsaw for this type of work.

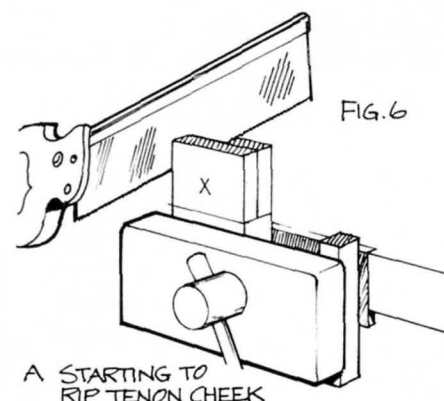
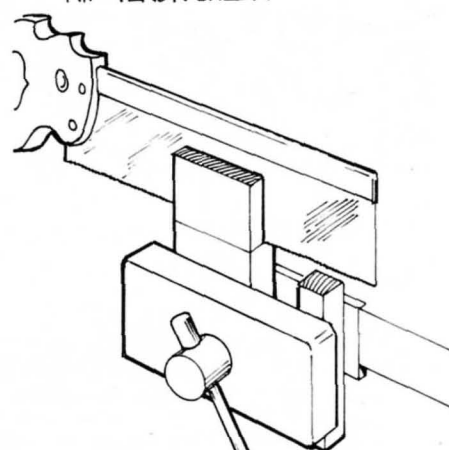


FIG. 6

A STARTING TO
RIP TENON CHEEK



B FINISHING CHEEK CUT

Clamp the workpiece in the bench vise (use an equalizer block if the jaws are wide), and saw diagonally on the

waste side of the line until the blade reaches the shoulder line, then reverse the piece and cut the other edge in the same way. Finish the cut with the saw working horizontally (Fig. 6 A & B).

Rest the workpiece across a pair of bench hooks and crosscut the shoulder beginning at the far edge and lowering the saw handle as the cut progresses (Fig. 7). Many cabinetmakers may incline the saw blade slightly to under-cut the shoulder. This trick will insure a tight joint on the face side but should be used if only the face side of the joint will be exposed.

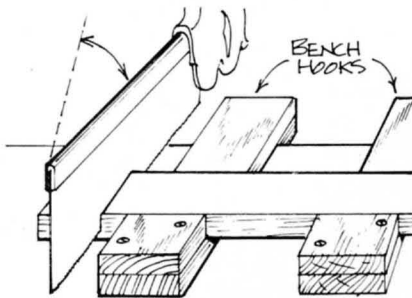
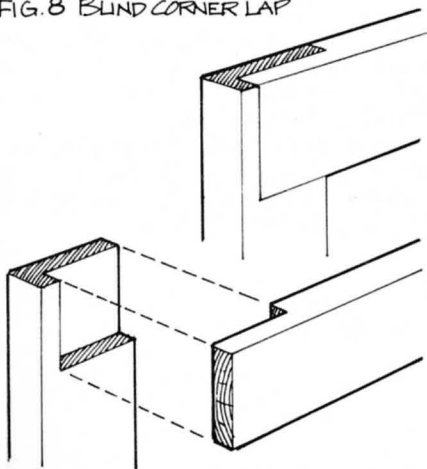


FIG. 7 CROSSCUTTING SHOULDER

After making the shoulder cut, the corner between tenon side and shoulder should be clean, but if it's not, pare it with a chisel. When the joints have been cut, assemble by applying glue to mating tenon faces and clamp together using pads under the clamp jaws to prevent marring the work.

Check all sides for squareness and a good fit and if all is well, wipe off excess glue with a damp cloth. After the glue has dried, the slightly long tenon ends can be dressed flush with a block plane or stationary sander.

FIG. 8 BLIND CORNER LAP



Now let's suppose you'd like to construct a frame using a lap joint, but for one reason or another do not want the end grain to show. The blind corner lap is a nice variation that will handle this problem (Fig. 8). The basic lay out procedures are the same as for the simple corner lap; however one tenon is marked $\frac{1}{4}$ inch short and this length is scribed on the mating piece.

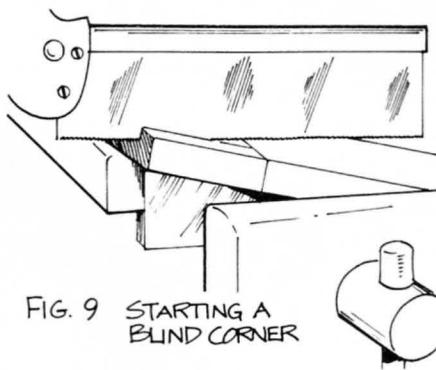


FIG. 9 STARTING A BLIND CORNER

The side of the mortise can be partially ripped while holding the workpiece at an angle in the vise (Fig. 9). Saw the shoulder in a similar manner, from the inside corner to the side of the mortise, and score the waste with a chisel (Fig. 10). Finish by paring the bottom flat, working with the chisel with the bevel up.

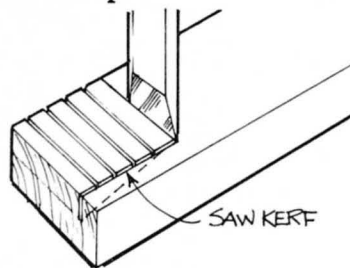
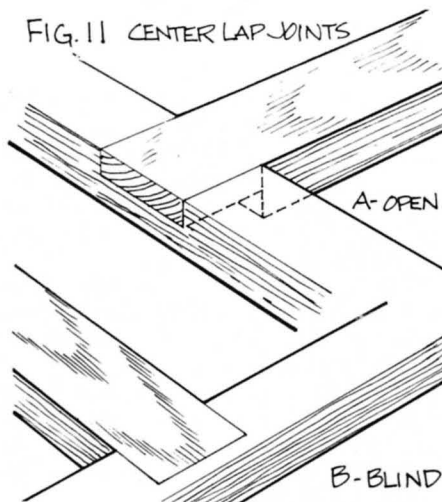


FIG. 10 SCORING WASTE WITH CHISEL

A center lap joint (Fig. 11A & B), like the corner lap, can be either open or blind and is a good way to join a center rail to a frame.

FIG. 11 CENTER LAP JOINTS



Cross lap joints (Fig. 12) are satisfying joints to make and are very useful for joining rails or stretchers between table legs. The joint is accomplished by merely cutting a dado across each piece. The problem here is to get the combined depth of the dados equal to the thickness of the stock and to avoid having the joint too loose or tight.

Before tapping the joint together, lightly chamfer the inner corners, as shown, to prevent tearing the edges.

Occasionally, it becomes necessary to cross lap pieces that meet at angles other than 90 degrees, such as the leg stretchers of rectangular tables. In such cases, establish the meeting angle from the plan and mark the shoulders on one piece with a bevel square. Then clamp pieces together using the marks as a guide to scribe each mating part upon the other.

FIG. 12 CROSS LAP JOINT

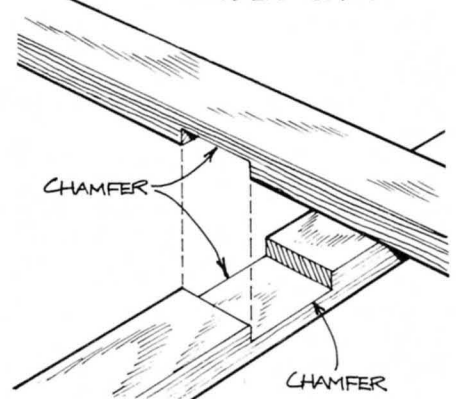
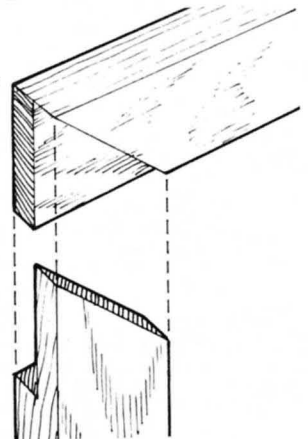


Fig. 13 shows a mitered corner lap joint which cleverly combines the strength of a lap joint with the neat appearance of a mitered joint. If the mating pieces are of equal width, a 45 degree angle is used. If a lower door rail (which is generally wider than stiles) is to be joined to a stile, determine the angle by drawing a rectangle which has a height equal to the width of the rail and a width equal to the width of the stile. The angle required to miter the pieces will be the diagonal of the rectangle.

FIG. 13 MITERED CORNER LAP



Lay out the mortise miter with a bevel square. If the joint does not meet properly, clamp it together and run a fine backsaw along the length of the joint. This should remove sufficient wood from both edges so that they meet perfectly. Like the plain corner lap and center lap joints, the mitered corner lap can also be cut in a blind version.

Practice these joints with both hard and soft woods, and use them instead of butt joints called for in plans. Your work will be enhanced and you will grow as a craftsman.

17th Century Mantle Clock

by Roger E. Schroeder

Clocks are achieving a growing popularity among amateur and professional woodworkers. This handsome clock can be completed in a weekend and will give a lifetime of satisfaction. Based on a late 17th century design, the one pictured is of oak, though almost any cabinet grade hardwood will give beautiful results.

I designed the clock so that little glue is used in its construction. Carefully placed wood screws keep the parts together, while glue holds only the mitered corners of the door and feet.

The project should be started by cutting to size the sides, parts A. A rabbet will have to be cut for the back panel, part I, also grooves for the movement board, part H and mortises cut for the hinges. Once these operations are completed, parts B, C, D and E are made. Parts B, C and E are molded with a router and 5/32 inch Roman ogee bit while D is shaped with a 3/4 inch rounding bit. For all pieces I screw a scrap block to their undersides to be held in a vise. This allows for easier routing, especially on the half-inch pieces.

Secure the sides to the base, part B, with woodscrews. Insert the movement board into its grooves and temporarily attach part C. Before parts D and E are screwed together, holes will have to be drilled into part E for the bail handle. These handles usually have large-headed screws, so holes may have to be drilled into the top of D to accommodate the screw heads. It is not advisable to countersink them into the 1/2 inch thick part E.

Next, remove part C, clamp C, D and E together, and drill for two long wood screws that will hold all three parts together. Then reattach C to the sides, screw D and E together with four countersunk screws and attach them to C with the two screws countersunk into the bottom of C.

The feet can now be cut to size and shape, mitered and glued. I find corner clamps very useful for this operation. The assembled feet are then attached to the bottom of part B with wood screws that are countersunk 1/4 inch. Care must be taken so that the screws do not go through the ogee curve. The back board can now be cut to size and secured with back locks or turnbuttons.

To make the door, route the edge of a long 3/4 inch board with the Roman ogee bit, then rip to size. When making the miters, I overcut each side, parts J, of the door by 1/16 inch. This allows for any error in the case construction. Extra wood is then removed with a handplane or the jointer.

The glass for the door is not set into a recess but is instead held with a mitered retainer that has its own



rabbet. I use a wide and long board, cut the rabbet and then rip the board. It would be wise to experiment with the depth of the rabbet so that the glass for the door does not rattle but is snug. The retainer is held with countersunk brass screws.

Attach the door to the case. Note that the 1 1/2 inch hinges are mortised into the case sides and screwed flat on the inside face of the door.

The 8 inch square dial with a 7 inch time ring plus a battery movement were purchased from Armor Products, Box 290, Deer Park, NY 11729. A catalog costs \$1.00.

A number of movements are available but I used a Model TR-4 with an LH-88 dial face and 803 hands.

The dial mounts to H with 1/2" rh brass screws very near the corners so they will not be seen through the door opening. A 3/4" dia. hole through the center of H will accept the threaded handshaft of the movement. A nut on the outside holds the movement tight.

If the door glass touches the end of the handshaft, a piece of cardboard between movement and the back of H should correct the problem.

The flat door hook, the knob, hinges, turnbuttons and a solid brass bail pull can all be purchased from The Woodworker's Store, 21801 Industrial Blvd., Rogers, MN 55374. Their catalog also costs \$1.00.

I finished the clock with McCloskeys dark oak stain, taking it apart to treat each piece separately. Several coats of tung oil were then applied.

Bill of Materials (All Dims. Actual)

Part	Size in Inches	No. Req'd
A	3/4 x 4 x 10 1/4	2
B	1/2 x 5 1/2 x 11 1/4	1
C	1 1/8 x 5 1/2 x 11 1/4	1
D	3/4 x 5 x 10	1
E	1/2 x 4 1/4 x 8 3/4	1
F	3/4 x 1 1/2 x 11 1/4	1
G	3/4 x 1 1/2 x 5 3/4	2
H	1/4 x 9 1/4 x 10 1/4	1
I	1/4 x 9 1/4 x 10 1/4	1
J	3/4 x 1 1/2 x 10 1/4	4
K	3/4 x 1/2 x 8 1/2	4

Toy Truck

by Donald F. Stearns

You'll have to search pretty hard to find a toy store that has a truck equal to the size and durability of this one. It measures 7" wide and almost 30" long, big enough to haul those many things that only a small fry can think of. Made from pine scraps, it has been tested for nearly four years by my two grandsons...and has passed all tests.

Start work on the body (C) first. Using 4/4 stock (3/4" actual) cut to a width of 5 1/4" and length of 12". Referring to the detail, lay out dimensions as shown, then cut out with band or saber saw.

The four posts (G) are next. Rip 4/4 stock to 3/4" widths, then cut to 8 3/8" lengths. The doors (I) and panels (Q) are made as shown, resulting in a horizontal grain direction for the door and vertical grain for the panel. This small detail makes the door stand out from the panel and posts. If you're looking to save time though, make doors and panels from one piece (grain running vertically) then chisel a "V" cut around the perimeter of the door.

The hood (K) is fully dimensioned in the detail. Cut to shape and give rounded top a good sanding. Locate and drill 1/4" deep x 3/4" dia. headlight holes and 1/4" deep x 3/8" dia. tail light holes. Later headlights (N) and tail lights (O) will be glued in these holes.

Dimensions for the back (J) and dash (L) are given in the bill of materials. Bumper (P) is shown in the detail drawing. If you want to avoid rabbeting, cut one piece 3/8 x 3/4 x 5, one piece 3/8 x 3/4 x 6 1/4, then glue together. The fender (M) can be cut next. For added strength, run the grain in direction of arrow.

Axle boxes (parts R & S) are made from about a 14" length of 1 1/8" square stock. Set the table saw blade to a depth of 1/2" and form the 3/8" wide groove by making repeated passes. Be sure to use a push stick to keep hands away from the blade.

The bed (D) and sides (E) are cut from 4/4 stock. To make the end (H) refer to detail, using a band or saber saw to cut the curve. Also detailed is the spring (V) and coupling (U). Note that the coupling has a hole drilled through it to accept a 1/2" dia. x 2 1/2" long dowel pin. A chamfer helps reduce friction. Glue the dowel so that 1/2" protrudes through both top and bottom of coupling.

Six wheels are next. The two front wheels (A), are made from 3/4" thick stock cut to 3 1/2" diameter. The four rear wheels are 1 1/2" stock and cut to same diameter.

Before assembly, give all parts a thorough sanding. If you plan to stain,



Photo: John Kane

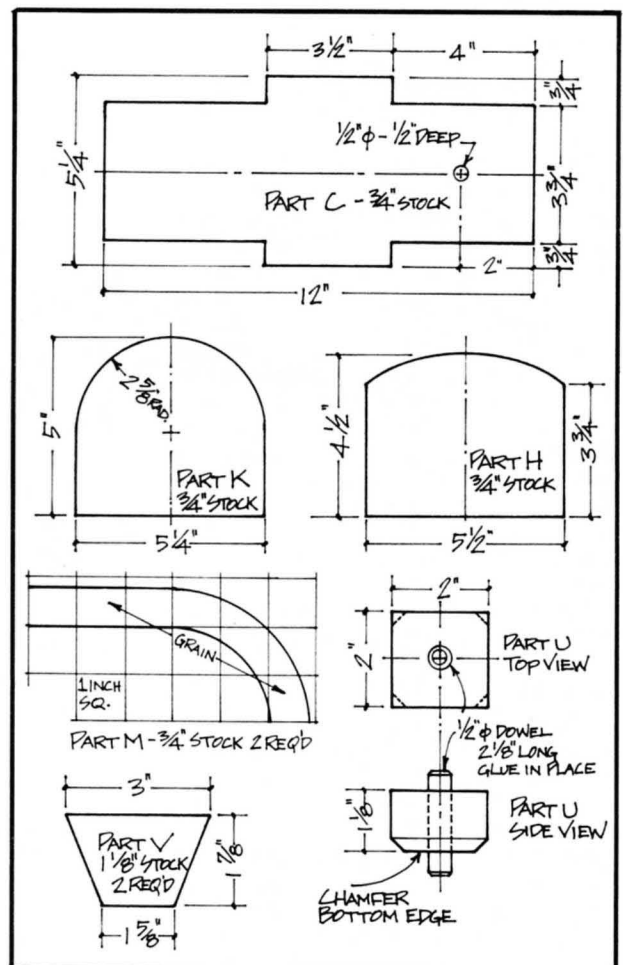
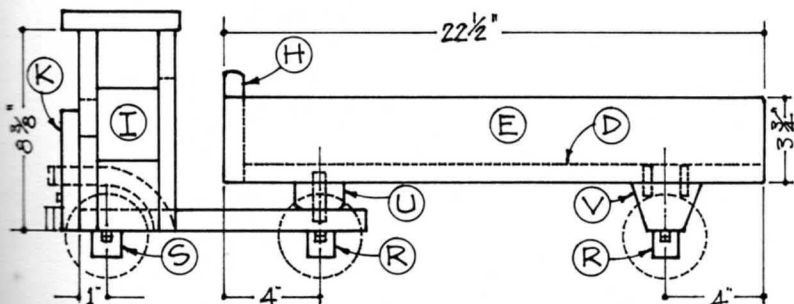
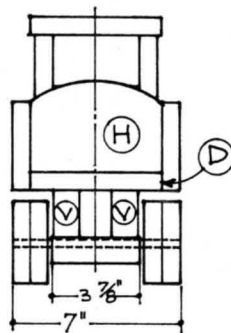
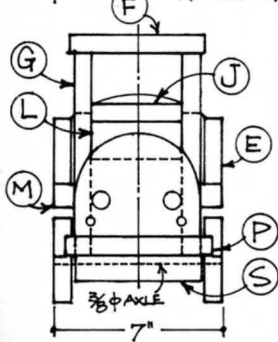
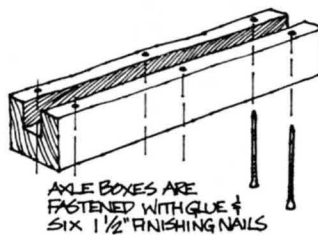
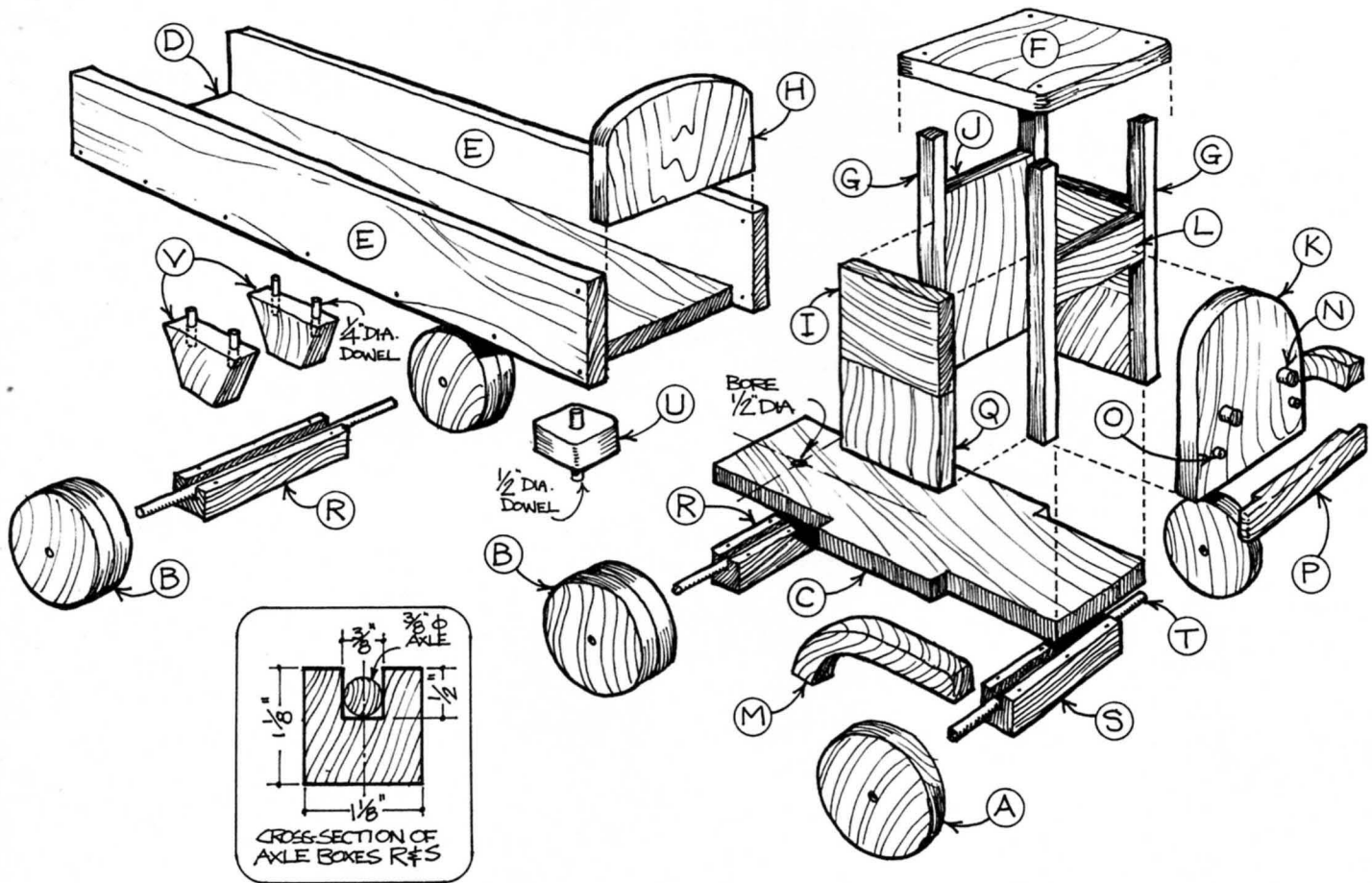
this is a good time to do it. If it's done after assembly, you'll have to watch for glue squeeze out and smudges.

All parts are assembled using glue and countersunk finishing nails. Fill all countersunk holes. Note the springs (V) are attached to (D) with 1/4" blind dowel pins. Part U is doweled and glued to part (D). The other end of the

dowel is left free to pivot in the 1/2" dia. hole bored in the body (C). Do not use glue here.

Before final finish be sure to round off sharp corners and edges, then give all surfaces one more sanding. Two coats of polyurethane varnish followed by a rubdown with 4/0 steel wool completes the project.

Bill of Materials		(All Dims. Actual)	No. Req'd
Part	Description	Size in Inches	
A	Wheels	3/4 x 3 1/2 dia.	2
B	Wheels	1 1/2 x 3 1/2 dia.	4
C	Body	See Detail	1
D	Bed	3/4 x 5 1/2 x 21 3/4	1
E	Side	3/4 x 3 3/4 x 22 1/2	2
F	Roof	3/4 x 5 x 5 1/2	1
G	Post	3/4 x 3/4 x 8 3/8	4
H	End	See Detail	1
I	Door	3/4 x 3 x 2 1/2	2
J	Back	3/4 x 3 3/4 x 5 1/2	1
K	Hood	See Detail	1
L	Dash	3/4 x 1 1/2 x 3 3/4	1
M	Fender	See Detail	2
N	Headlight	3/4 dia. x 1/2 long	2
O	Signal Light	3/8 dia. x 1/2 long	2
P	Bumper	See Detail	1
Q	Panel	3/4 x 2 1/2 x 3	2
R	Axle Box	1 1/8 x 1 1/8 x 3 3/8	2
S	Axle Box	1 1/8 x 1 1/8 x 5 3/8	1
T	Axle	3/8 dia. x 7" long	3
U	Coupling	1 1/8 x 2 x 2	1
V	Spring	See Detail	2



The Gift Shop

Bud Vase

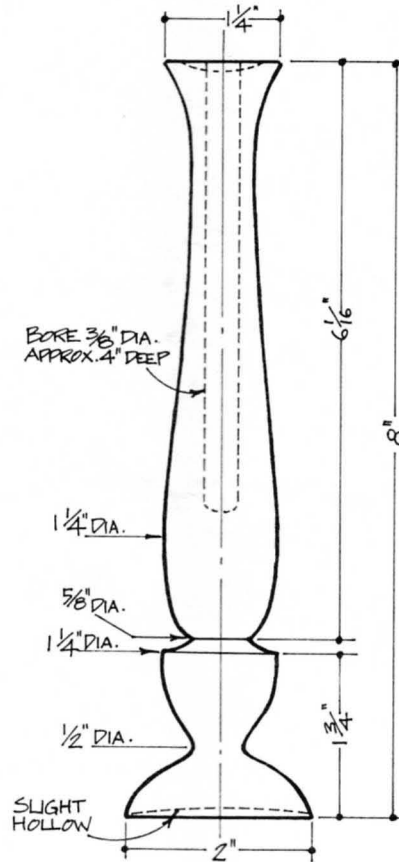
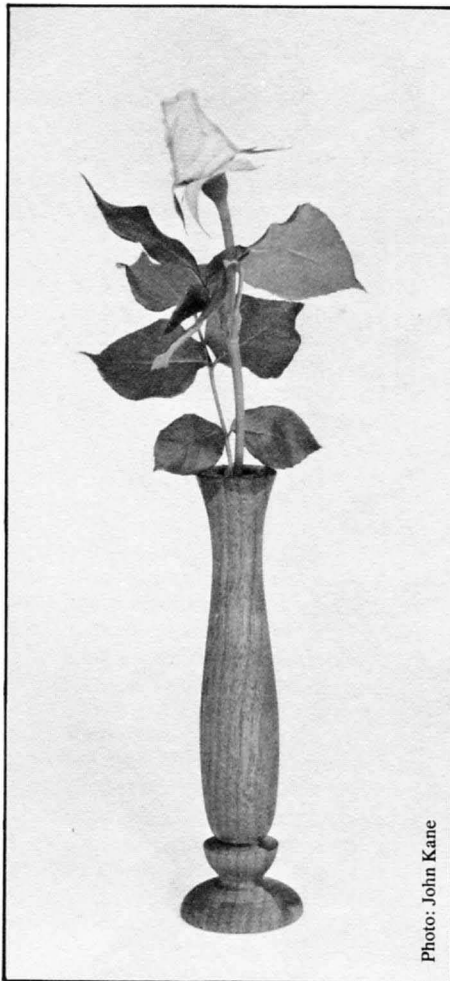
by Donald F. Stearns

Add a single red rose to the rich look of dark walnut, gracefully shaped, and the result is this elegant little vase. It makes a beautiful gift, perhaps one that will be treasured for years to come.

For those with some turning experience, it will not be hard to make. Start with walnut stock, about $2\frac{1}{4}$ " square x 12" long. Mount in the lathe, keeping in mind that when turned, the top end of vase will face the head stock and the vase bottom will face the tail stock.

Reduce the square to a cylinder, then use the parting tool to establish each end of the vase. Use the skew to shape the flared base. Note that the base necks down to $\frac{1}{2}$ " dia., then expands to $1\frac{1}{4}$ " dia. at a point $1\frac{1}{4}$ " from the bottom.

Reduce the remainder of vase to $1\frac{1}{4}$ " dia., then shape the elongated curve with a gouge. Turn waste stock on both ends to about $\frac{1}{4}$ " dia. before giving the piece a thorough sanding. Now a skew or round nose scraper can be used to form a slight hollow at the base and top. Continue the hollowing of the base until the piece breaks free. Trim the $\frac{1}{4}$ " dia. stub from the top and drill a $\frac{3}{8}$ " dia. hole 4-5 inches deep as shown. Final sand the vase before finishing with several coats of tung oil.



Grain Scoop

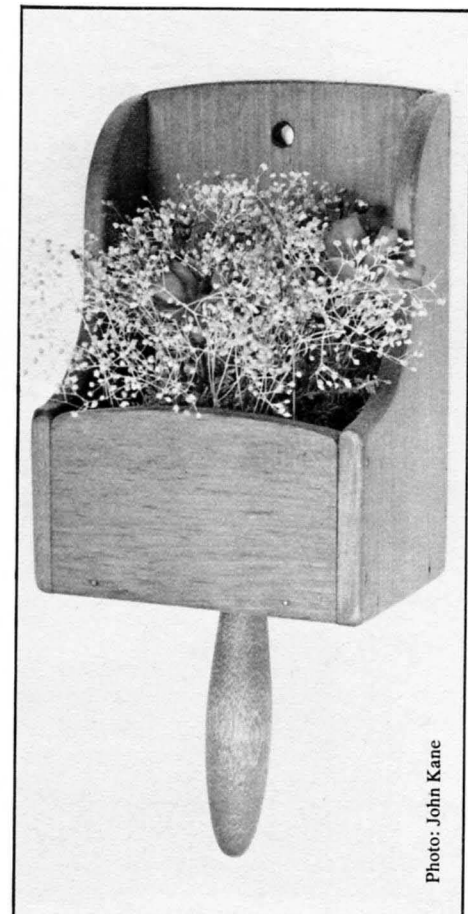
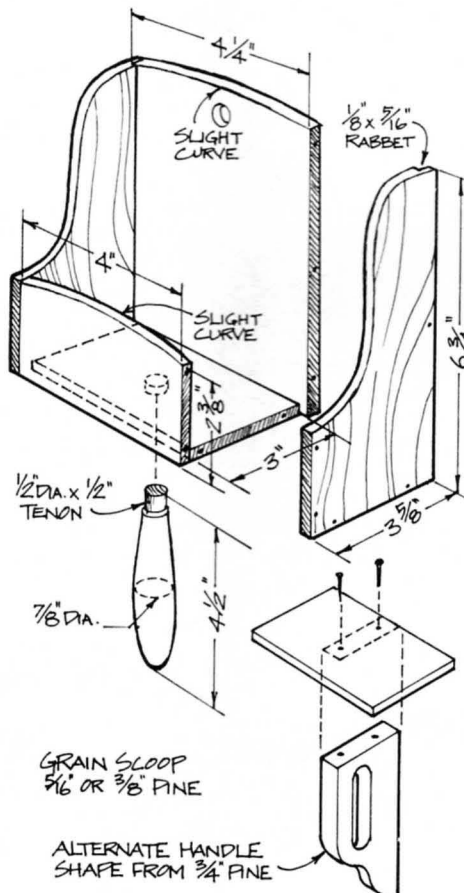
Wall decorations always make popular gift items. Using pine stock, this one is made in the form of a grain scoop and looks especially nice with a small arrangement of dried flowers.

A small piece like this often looks best with a light appearance, so we used $\frac{5}{16}$ " stock for all parts except the handles, but $\frac{1}{4}$ " or $\frac{3}{8}$ " stock can also be substituted without any problem. If you don't have a power planer, sharpen up your hand planes and go to work on a piece of $\frac{3}{4}$ " stock. A board about 8" wide and 7" long will take care of the side stock, and one $4\frac{1}{2}$ " wide x $12\frac{1}{2}$ " long will suffice for the back, bottom, and front.

Cut all parts to dimensions shown, noting that each side leg has a $\frac{1}{8}$ " x $\frac{5}{16}$ " rabbet. If you use $\frac{1}{4}$ " or $\frac{3}{8}$ " stock, adjust the rabbet to fit.

The handle is either lathe turned or handcarved to the dimensions shown. If you don't have a lathe, or prefer another style handle, we've included an alternate shape.

Sand all parts, then assemble with glue and countersunk finishing nails. After filling the nail holes, resand all surfaces before staining and finishing to suit.



Letter Rack

Jigsaw addicts are going to enjoy this project. It's a nicely designed letter rack, with a pair of intricately shaped holders, making it quite a bit fancier than most you'll find.

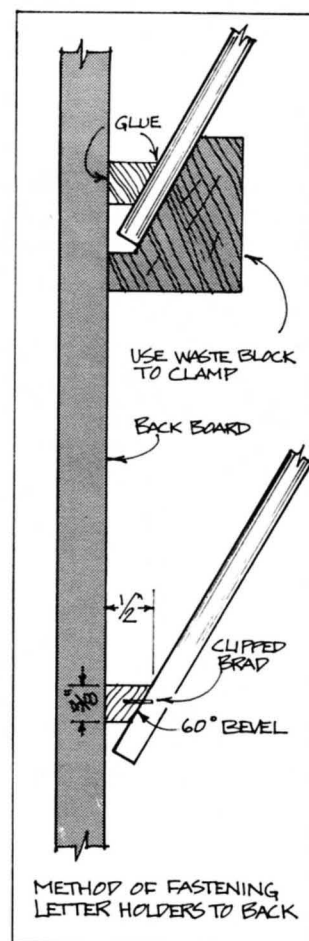
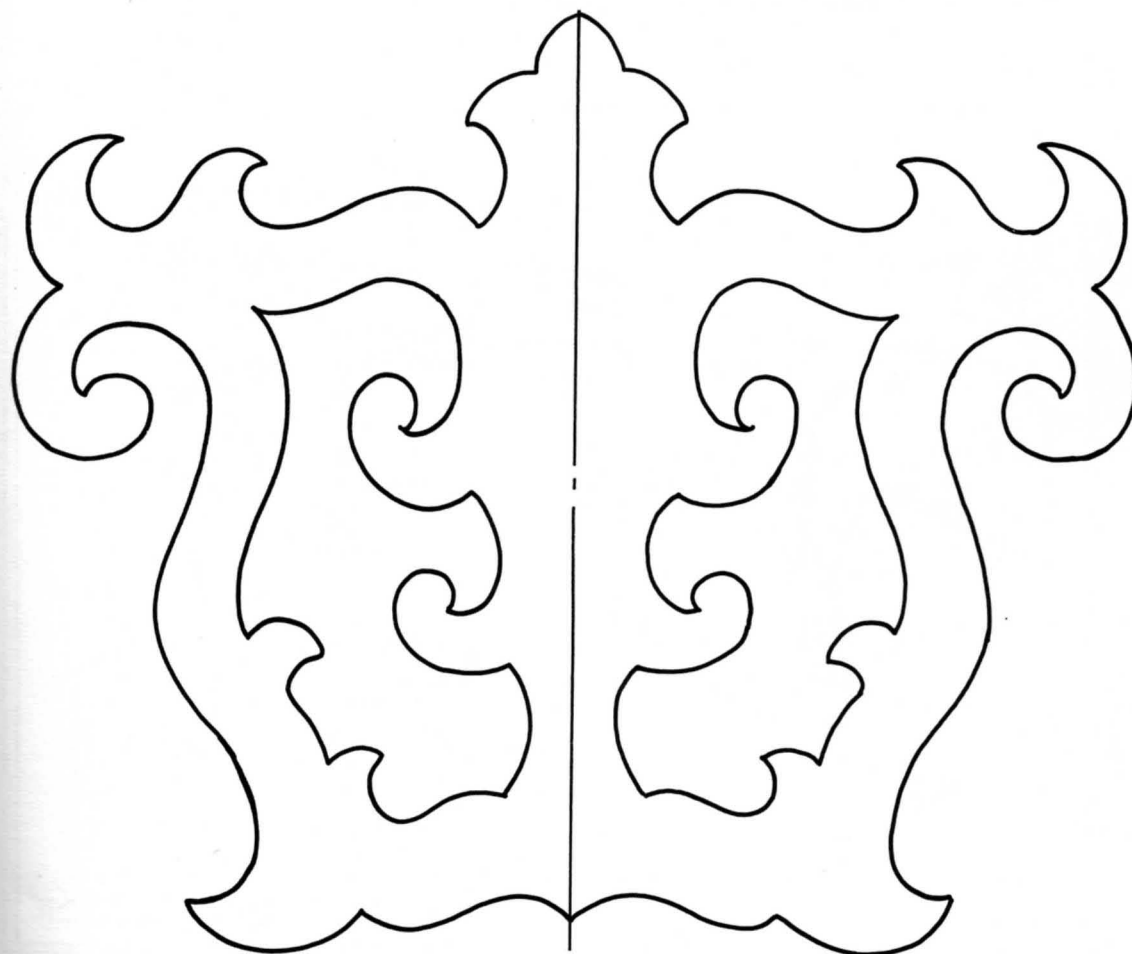
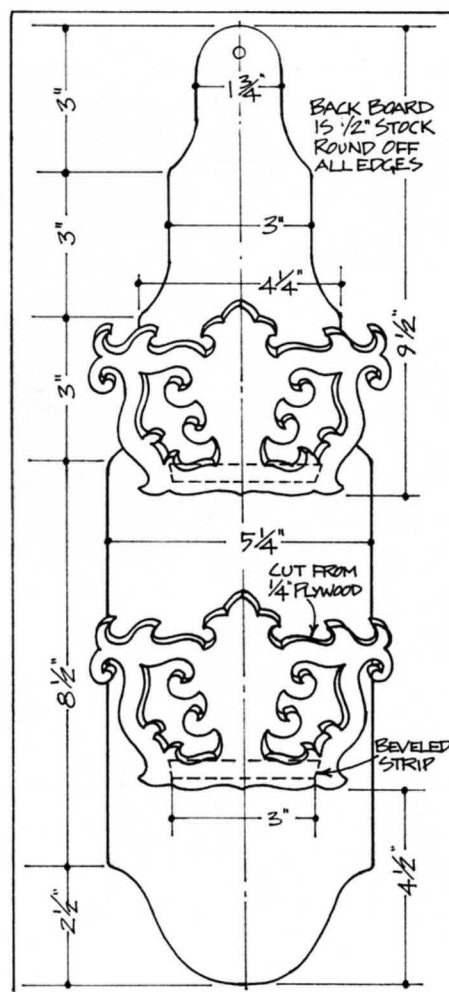
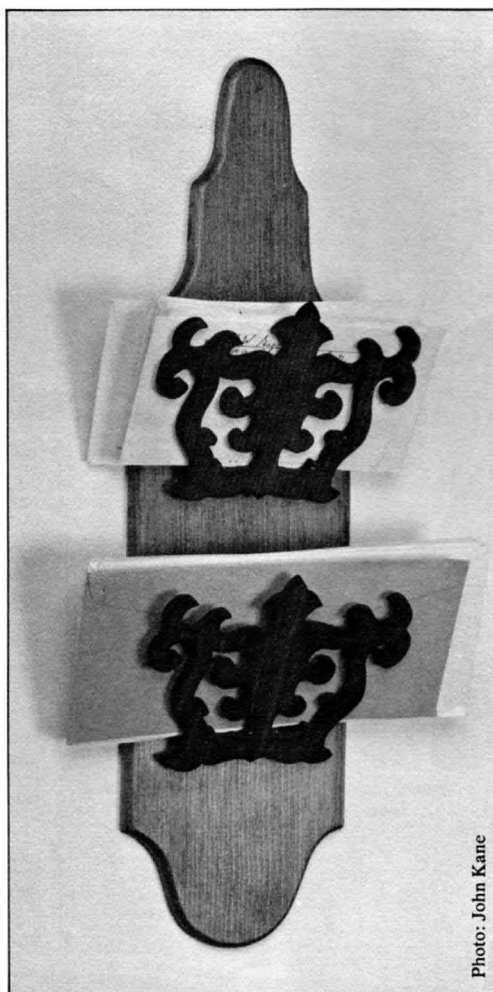
Since the holders have some narrow sections, we used $\frac{1}{4}$ " pine plywood to provide added strength. The back is $\frac{1}{2}$ " thick solid pine stock. Another good choice would be $\frac{1}{2}$ " solid mahogany for the back and mahogany plywood for the holders.

Start with the back, cutting a piece of $\frac{1}{2}$ " stock to $5\frac{1}{4}$ " x 20". Using the drawing and its dimensions as a guide, lay out the shape as shown, then cut out with the jigsaw or saber saw.

Use the full size pattern to layout the holder, using the jig saw to cut out. To make the inside cuts, drill a $\frac{1}{4}$ " dia. hole in the waste stock, then remove blade from saw. Now feed the blade through the hole and reattach it to the saw.

Before assembly give all parts a good sanding, especially the holder edges. To join the holder and back, tap two clipped brads into each beveled strip, add glue, then use hand pressure to press the holder and strip together. The brad prevents them from slipping. Now glue and clamp both strip and holder to the back using a waste block as shown.

Final sand, and stain to suit.



Note Caddy



Photo: John Kane

Natasha is her name. She's an Afghan hound and though she may look a little goofy, she does her job very well. She will faithfully stand guard by your desk telephone, holding a roll of adding machine tape and a pencil for jotting down those easily forgotten messages.

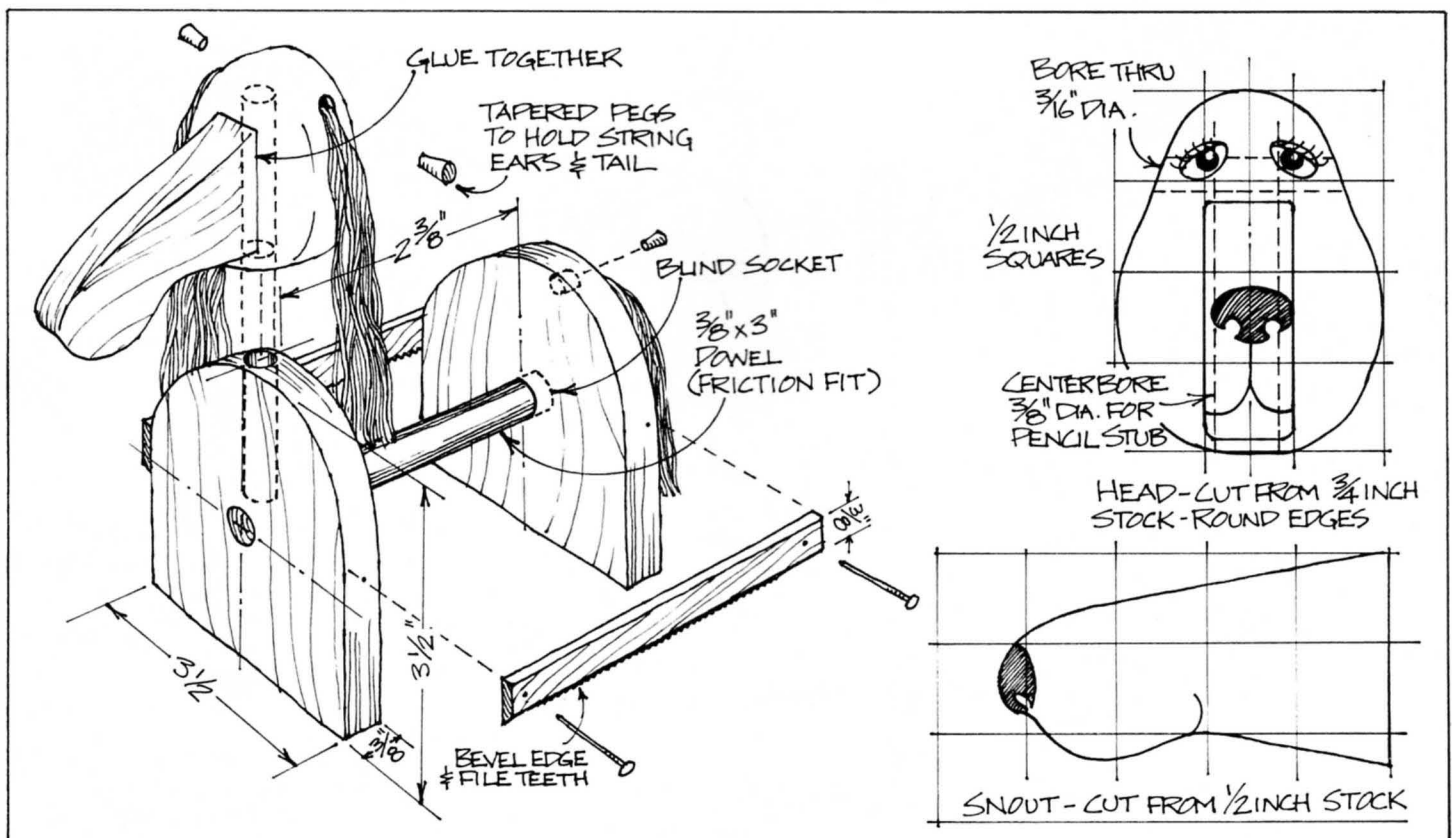
The base is shaped from $3\frac{1}{2} \times 3\frac{1}{2}$ inch squares, one of which is center-bored with a $\frac{3}{8}$ " dia. bit. The other is drilled partially through to form a socket for the dowel axle. Clamp the two parts together when drilling to insure that the holes line up.

The dowel axle should fit the hole with enough friction to stay in place when the assembly is tilted but be loose enough that a slight rap on the rear will start it out.

Small tear-off bars glued and nailed on each side will keep the base together. These should be beveled to a sharp edge and small teeth cut with a triangular file.

The head and base front are drilled for a short pencil. Also, drill through head and into rear of base to insert heavy cotton twine for the ears and tail. Secure the twine with small pegs glued in and trimmed off. The twine is then unraveled and combed out.

Draw the face with waterproof india ink or enamel and apply a couple of coats of penetrating oil or just wax for a finish.



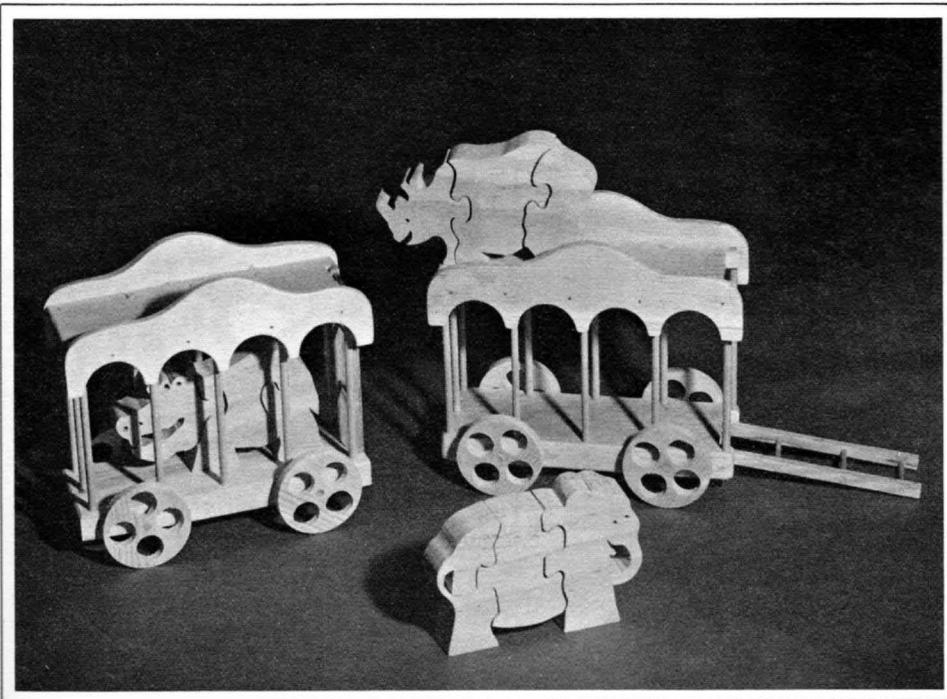


Photo: John Kane

Even though circus parades are a thing of the past, children will still enjoy playing with this delightful wooden toy.

The three animals are made from $\frac{3}{4}$ " or $1\frac{1}{8}$ " thick stock. Transfer shapes from grid patterns, then use a jig saw with narrow blade to cut out.

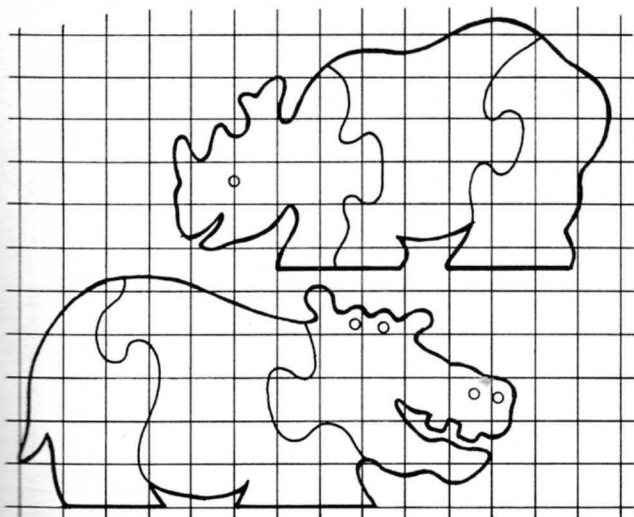
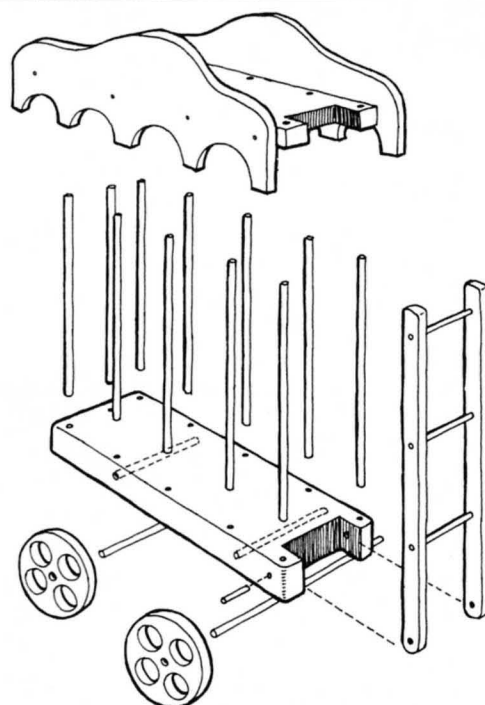
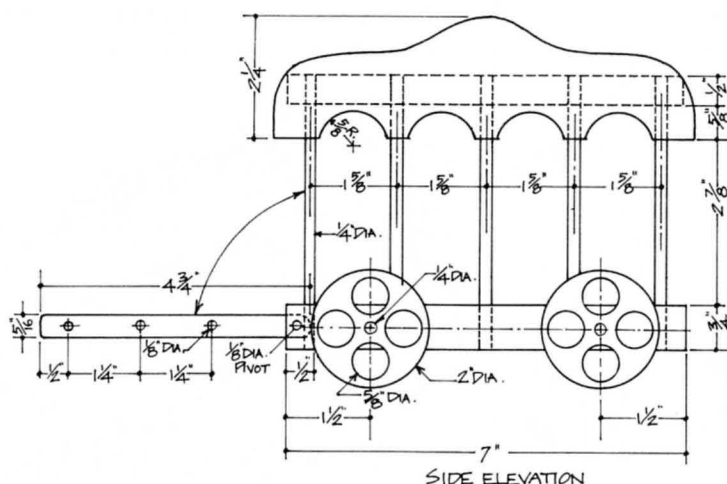
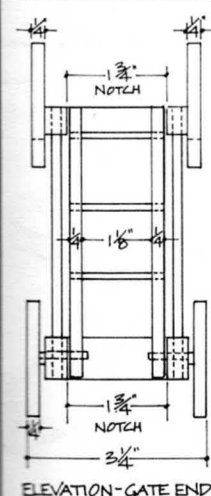
Make wagon bottom from $\frac{3}{4}$ " x $2\frac{1}{2}$ x 7, the top $\frac{1}{2}$ x $2\frac{1}{2}$ x 7. A $1\frac{3}{4}$ " wide x $\frac{3}{8}$ " deep notch is cut on both as shown. Clamp the top to bottom and drill through both for $\frac{1}{4}$ " dowels.

Make the two curved aprons from $\frac{1}{4}$ " thick x $4\frac{1}{2}$ wide x $7\frac{1}{2}$ long stock. Mark a centerline along its length, then drill four $1\frac{1}{4}$ " dia. holes on the centerline, spaced as shown. Now rip down the centerline to form two matching pieces.

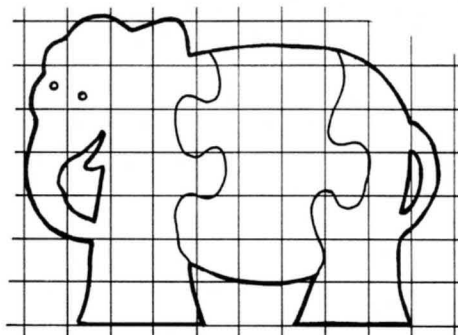
Cut wheels with a 2" dia. hole saw. Axles are $\frac{1}{4}$ " dowel stock, while door pivot and bars are $\frac{1}{8}$ " dia. The door rails are likely to split if made from pine, so use hardwood here.

Give all parts a complete sanding before assembling with glue. When completed, the cage door should fit in the notched top with an easy friction fit. Final finish with a couple of coats of polyurethane varnish.

Circus Wagons - Animal Puzzles



SQUARES ARE $\frac{1}{2}$ INCH
JIGSAW ANIMALS FROM
 $\frac{3}{4}$ OR $\frac{1}{4}$ INCH PINE



Clean lines, solid construction, and the beauty of natural oak all combine to create this handsomely styled library stool. It's a fine example of contemporary furniture design, and from it one can begin to understand why this style of furniture continues to become more and more popular.

Start construction by edge gluing enough 4/4 stock to make the two sides and top. It's a good idea to lay out all boards so that the grain runs in the same direction when viewed from the edges. This makes for easier planing and smoother sanding later on. And don't forget that when viewed from the board ends, the direction of the annular rings should be alternated to minimize warp.

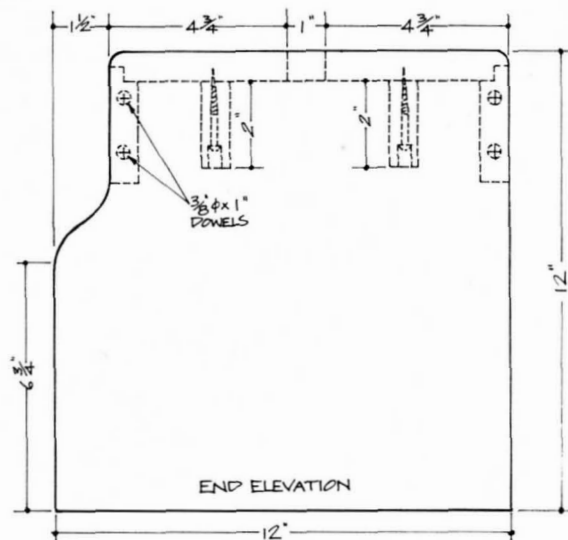
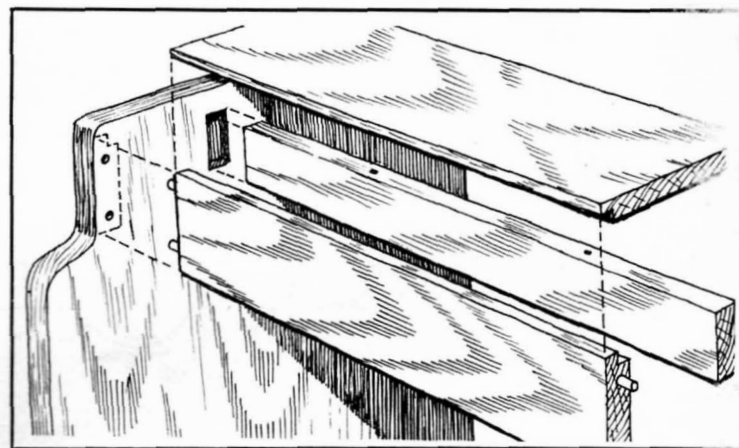
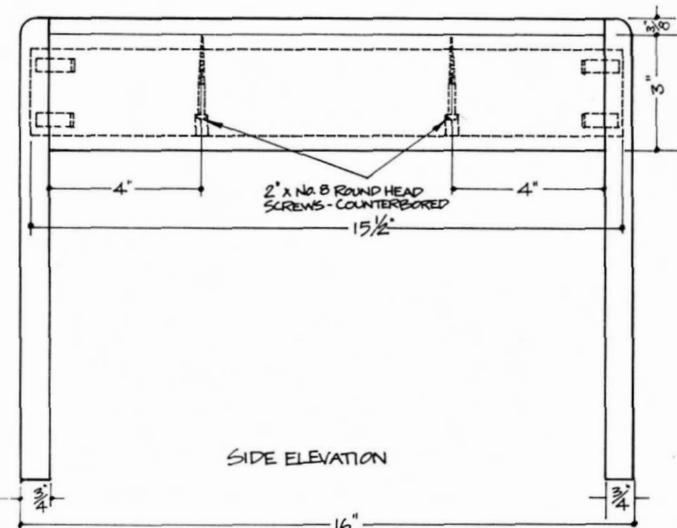
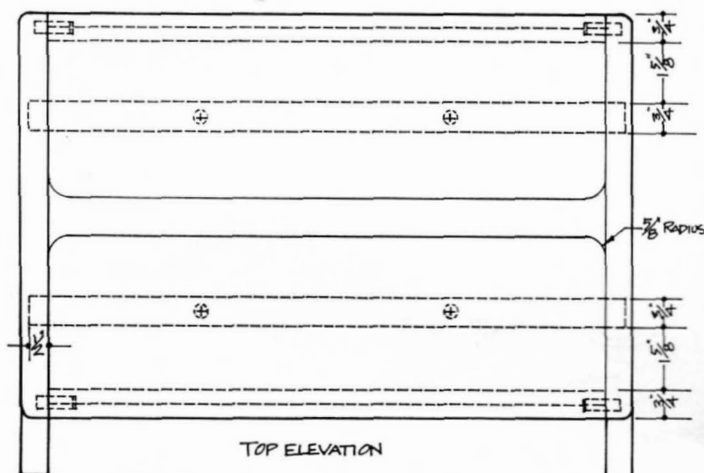
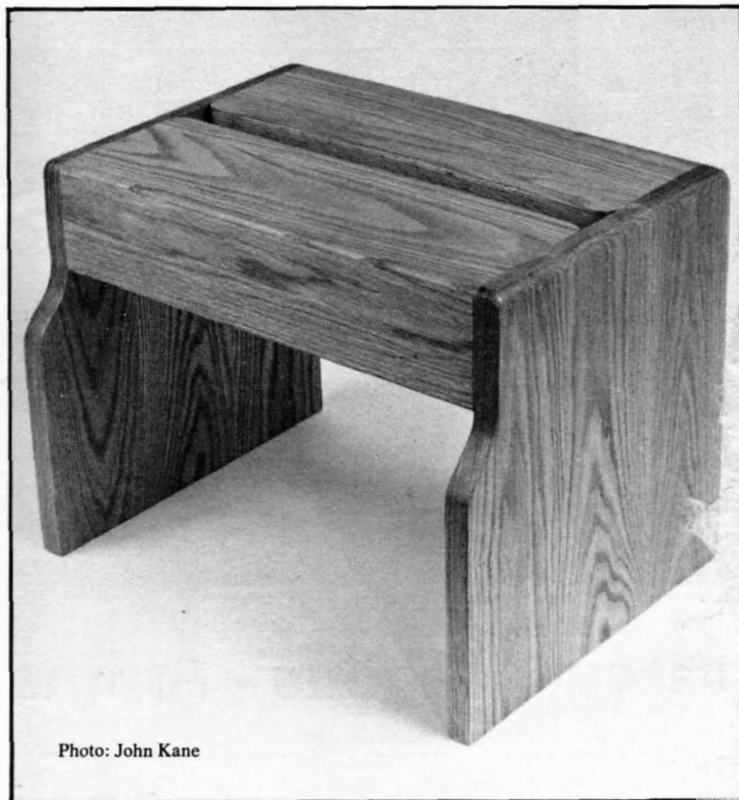
Now, the glued-up stock can be ripped to a finish width of 12". Cut the two end pieces to 12" lengths, then lay out and cut the curved front and 1/2" deep mortises.

For best appearance, the edge-joint lines on the top should match up with those of the sides, just as they did before the glued-up stock was crosscut. With this in mind, rip the top into 2 pieces, each 4 3/4" wide x 14 1/2" long, then cut a 3/8" x 3/8" rabbet and round off inside corners as shown. Two aprons can be cut 3" wide x 14 1/2" long and also rabbeted. Make this a good tight joint so it won't show.

After cutting the 2" wide x 15 1/2" long stretchers, each apron can be glued to its mating top half at the rabbet joint. Use glue and several clamps, taking special care to make sure the joint is perfectly square. When dry the apron ends and sides are drilled for dowel pins.

Sand all parts thoroughly, then assemble with glue and clamps and allow to dry overnight. Four counterbored screws fix the stretchers to the top. A router equipped with a 3/8" rounding over bit is used to round the top outside edge. Other edges are sanded to a light radius. Now all edges and surfaces are given a complete final sanding before finishing with two coats of satin polyurethane varnish.

Library Stool



Quilt Rack

by Larry Miller



With today's interest in quilting, there are many households that have several beautiful quilts sitting in storage closets and chests where no one is able to see or appreciate the time and handiwork they represent. The maple quilt rack shown here was developed after my grandmother expressed an interest in having a place to display her beautiful quilts.

From 2" square stock, turn two spindles to dimensions shown. The two lower rungs (A) are made next, each turned to 1" dia. from 1 1/8" square stock. Use the parting tool to establish the 24 7/8" length between shoulders, then finish by turning 3/8" dia. x 3/4" long tenons each end. Using a diamond point chisel, four light cuts will form the decorative bead at the center. Repeat the same techniques to make the upper rung (F), except note that shoulder to shoulder length is 24", and tenon should be made 1/2" dia. x 1" long. The stretcher (B) can now be made from 1" (3/4" actual) x 3 1/2" x 24" stock.

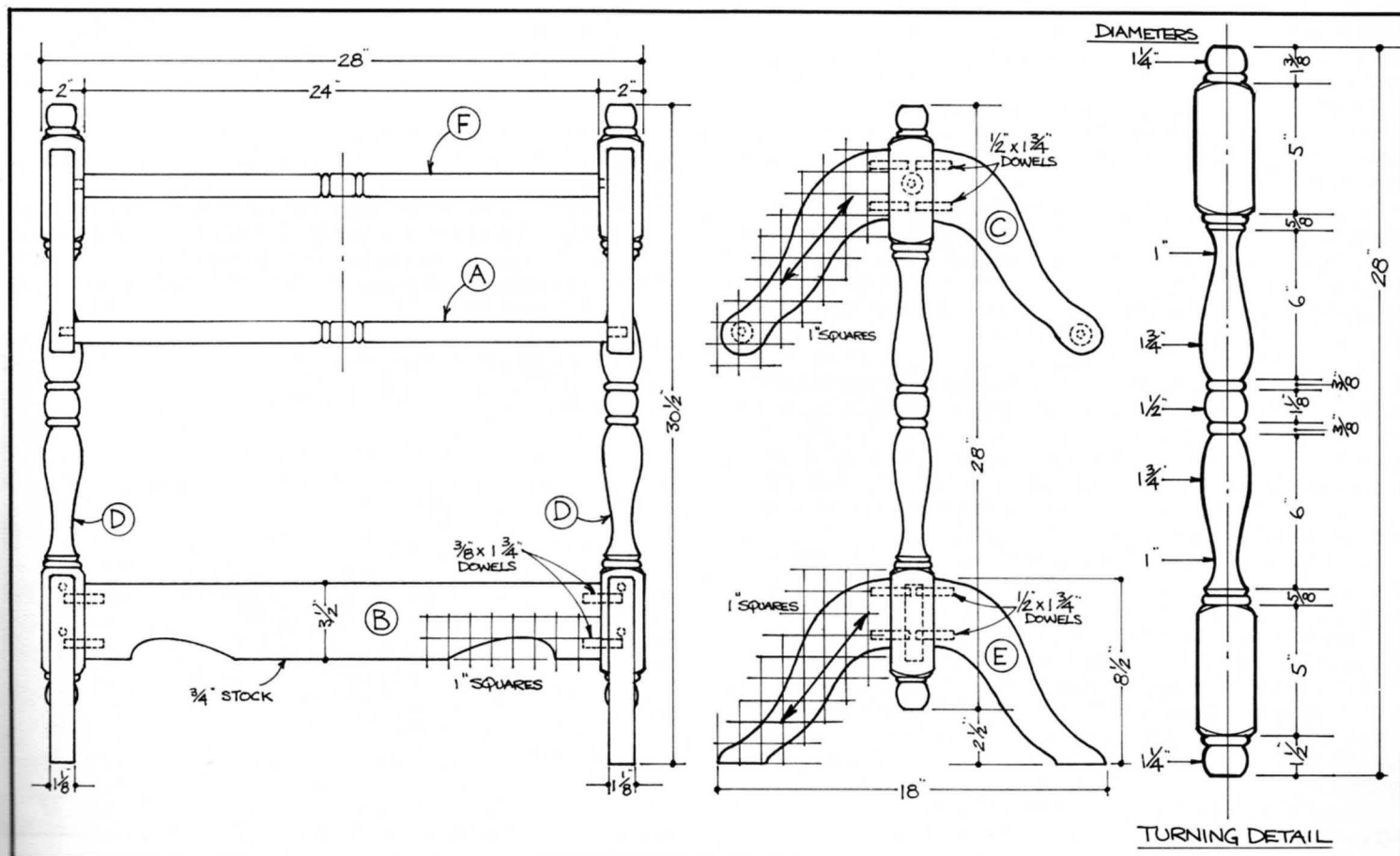
Next cut the arms (C) and legs (E) from 5/4 x 4" x 12" stock. For maximum strength, the grain direction should be the same as the arrows on the drawing. Before assembly apply a 1/4" radius to the exposed edges of arms, legs, and stretcher - then give all parts a thorough sanding. Drill 3/8" dia. holes in part (C) as shown.

The stretcher (B) is attached to (D) with 3/8" dowels. Be sure that these dowels do not interfere with dowels that join legs (E). Also, a 1/2" dia. hole is drilled in the spindle for (F).

Now attach legs (E) to part (D) with 1/2" dowels. To insure that all four legs will sit flat on the floor, take extra care and use a doweling jig when drilling holes. Clamping is difficult because of the lack of parallel flat surfaces, so a clamping jig cut to the shape of the leg should be used. If care is exercised when originally cutting out the arms and legs, the scrap can be used as the clamping jig.

Assemble part (A) to arms (C), then join this sub-assembly to the spindle (D). A clamping jig will also help here.

Final sand the entire project. The finish is your choice, but maple looks beautiful when given at least two coats of Watco Danish Oil finish, then waxed.



Ratchet Table Lamp

An 18th century ratchet candlestand provided the inspiration for this attractive combination end table and reading lamp. The ratchet device permits the lamp height to be varied from 38 to 50 inches from the floor, thus converting the piece to a floor lamp. And it's as interesting to build as it is to look at.

Oak was used for our model but maple, birch or cherry can be substituted. Although the posts and ratchet bar are of 1½ inch stock, thinner one inch (13/16" actually) can be used. For stability, the feet should be about 2 inches thick and can be laminated from 1 inch stock.

Start by cutting feet to length, then lay out and cut the half-lap notches centered on each piece. Cut these for a snug fit. Lay out and cut two mortises to take the post tenons. Sand feet and join with glue.

The two posts are next cut slightly long and tenons formed on each end. Leave upper tenons a bit long so they can be trimmed flush later. Chamfer the posts as shown.

The ratchet bar is cut to length and width and a ¾" x ¾" deep groove is cut, centered along its length. Drill a ¾" dia. x 2" deep hole in the top in line with the groove. Connect groove and hole by drilling another ¾" hole into the back of the groove and angled up to intersect the nipple hole near its bottom.

Lay out and cut the ratchet teeth. Before starting each angled cut, chisel a small notch to help start the blade.

A ¾" x ¾" filler strip is cut to fit snugly in the long groove flush with the outer surface. Tap the strip in place temporarily and cut the tenon at the end of the bar. Remove the strip and feed lamp cord into the angled hole and out the top of the bar. Tie a loose knot in the cord so it won't slip back down while you glue the filler strip in place.

The notched spreader which is mortised to the end of the ratchet bar and keeps it centered between the posts is cut next. Notch it to fit around posts and mortise it to receive the tenon. Also cut and bevel the upper plate which is mortised to fit the post tenons and the ratchet bar. The mortise for the ratchet bar should be cut so that the bar slides easily. The cam assembly is made from ¾" dia. dowel and hardwood resawed to ¾" thickness. This is installed after assembly of the stand.

Carefully sand all parts and temporarily join posts to base with the spreader between them. Add the beveled top plate and ratchet bar to ascertain that all parts fit well and the bar moves easily.

If all looks well, cut the table support cleats and screw them to the posts. Make sure they are level and 22 inches from the floor. Glue lower post tenons into base and peg them as shown. Also glue and peg the ratchet bar to its spreader. Do not glue the upper tenons into the top plate until after the table top has been fitted.

The top consists of two boards which, after jointing, are 8½ and 7½ inches wide. Cut the boards to rough length and, using the assembled stand as a guide, carefully lay out the locations of the posts and ratchet bar on the jointed edge of the wider board. Notch this board to fit around the uprights. The post notches should be a tight fit while the ratchet bar notch is a bit oversize. Edge-join the boards with glue and ¾" dowel pins and clamp until dry.

Trim top to finished size and after removing the upper plate, drive the top down over posts and fasten it to the cleats. The beveled plate can now be glued to post tenons.

The cam is attached by drilling a 7/16" hole, centered on one post and 6 inches above the table top. Assemble the cam as shown in the exploded view. Note that one dowel is 3 inches long and protrudes to serve as a handle. The cam sides should be parallel and snug against the posts. All dowel ends except the handle are trimmed flush after gluing.

A pair of nuts on the 1½" nipple will permit you to use a wrench to screw it about ½ inch into the top of the ratchet

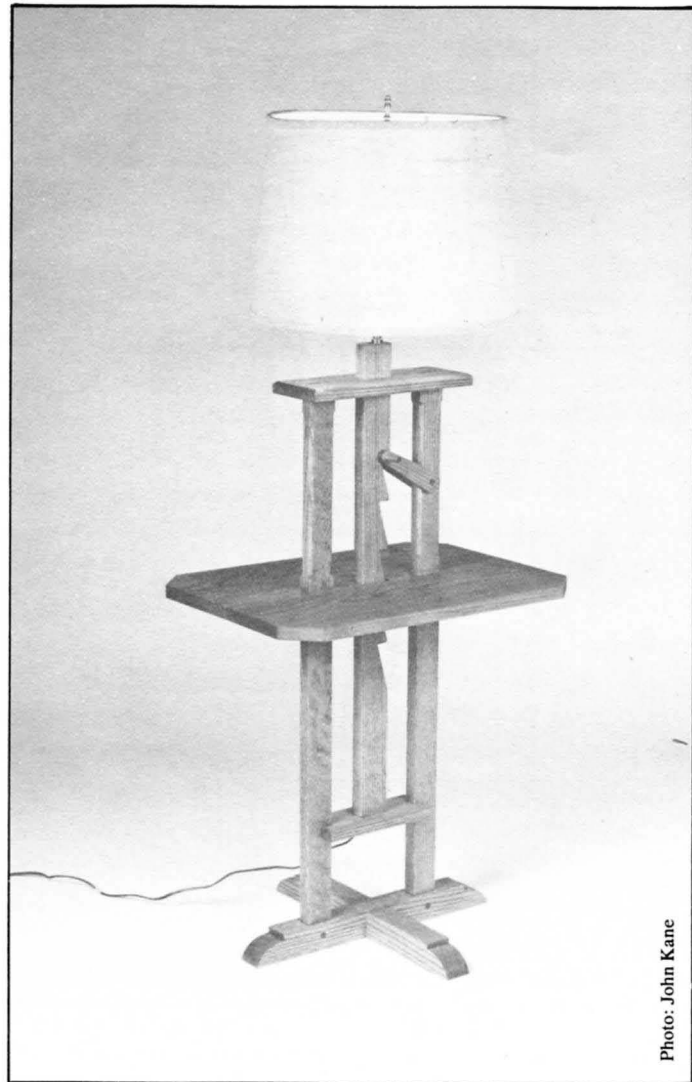
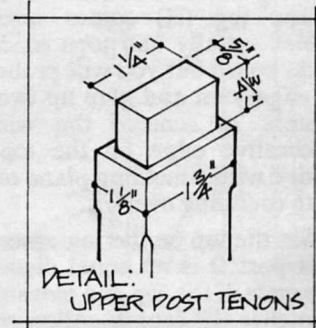
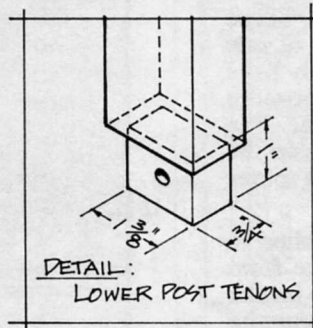
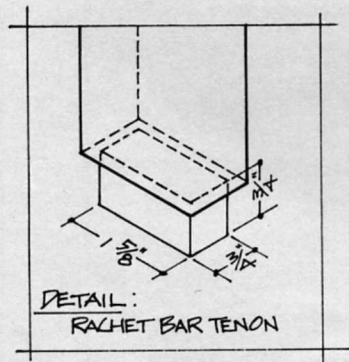
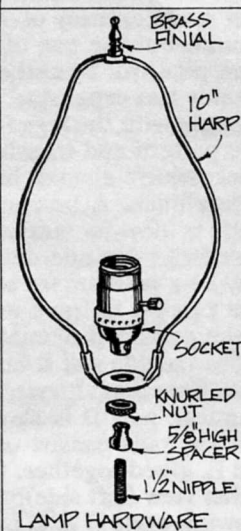
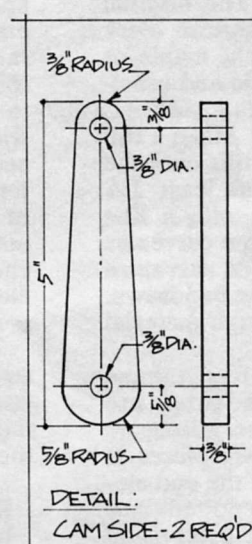
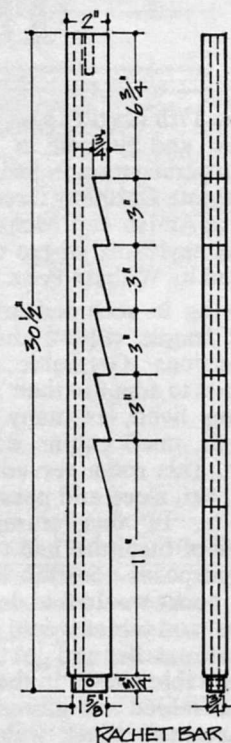


Photo: John Kane

bar. Add lamp hardware as shown. The small opening at the top of the groove can be filled with a wood plug glued in place.

After a final sanding, apply stain if desired. We used one light coat of Minwax Provincial oil stain as the natural oak was quite light. This was followed by two coats of urethane varnish applied to all parts. The final coat was rubbed down with 4/0 steel wool.

Bill of Materials		
(All Dims. Actual)		
Description	Size in Inches	No. Req'd
Foot	2 x 2 x 18	2
Post	1½ x 1¾ x 34½ (includes tenons)	2
Ratchet Bar	See Detail	1
Spreader	¾ x 3 x 8	1
Upper Plate	¾ x 4½ x 12	1
Cam	See Detail	1
Support Cleat	¾ x 1½ x 14	2
Top	¾ x 16 x 22	1



18th Century Trestle Table

by Paul Levine

The 17th century was a time of deep unrest and turmoil in Europe. Religious persecution in Swiss Alsatia and Palatinate Germany forced the emigration of Amish and Mennonite peoples to Pennsylvania where they had been invited by William Penn in 1682.

Living in secluded areas, guarding their fragile cultural heritage, these industrious Germanic people soon learned to adapt to their new country.

They lived, as many early settlers did, in small cabins with one large room. This room served as a place to cook, eat, sleep and pass the time with friends. In this cramped lifestyle, pieces of furniture had to serve multiple purposes. Settles became beds, chair backs would fold down to become tables, and tables would drop leaves to become smaller and get tucked away.

The table shown in the photo can be disassembled and stored away. Made of American black walnut sometime before 1750, its medieval character served the gentle and simple ways of the country people generally referred to as Pennsylvania Dutch.

Although the table looks massive in the photo, and indeed has a certain rugged beauty, an examination of the dimensional drawings will show that it is in fact a small table. The original was made entirely of American black walnut, but the use of oak, maple or even pine will be authentic and considerably less expensive.

Begin with the legs (B). Make a full size pattern and transfer this onto the stock which should be at least 1½ inches thick. A bow saw with a fine blade is ideal for cutting the curves as their large size and detailed curvature may be a problem for some bandsaws. Don't forget to leave enough material at the end for the tenons.

The outside rail D and feet A come next. Note that although the curves are identical, part D is shorter. Also note that the rails consist of two pieces D and E, glued together. On the end elevation view (left side), the dotted lines showing parts D & E have been made solid, making it easier to lay out their profiles. Mortises for the leg tenons are then laid out and cut into the feet and top rail assemblies.

The top (H) comes next. These tables usually had tops made of one wide board but you will probably have to edge-joint and glue up two or more boards to achieve the width. The decorative edge on the top can be added with a molding plane or a router with rounding over bit.

Set the top on the leg assemblies so that part D is an equal distance from the ends of the top and measure for the stretcher (G) length. Allowing for the two long tenons, cut the stretcher and



Photograph courtesy
The Metropolitan Museum of Art,
gift of Mrs. Robert W. deForrest, 1933

again detail the corners with a plane or router.

After making the tenons and wedges (F), temporarily assemble the table and locate the dovetail troughs at each end of the top just outboard of the D rails. These can be easily cut with a router and dovetail bit. Cleat C is cut to fit these troughs across the full width of the top. If the dovetail routine seems too difficult, cut part C flat on top, counterbore them and screw them to the top. Use three screws per rail, one in the center and one near each end. The end screw holes should be elongated to allow for seasonal movement of the top.

The top can now be set on the leg assembly and holes drilled through parts C and D for the four ¾ inch diameter pegs (I) which secure the top to the leg assembly. These pegs can be

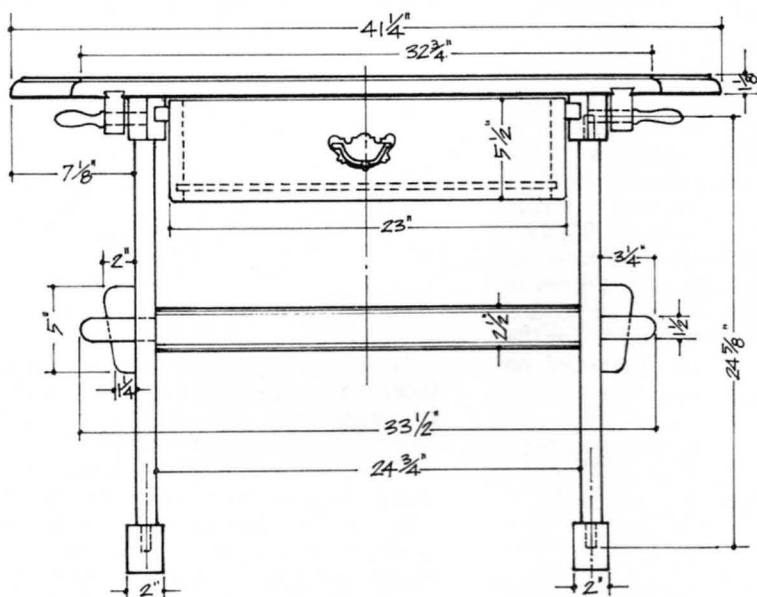
lathe turned as were the originals, or whittled.

The finishing touch is the drawer. Early drawers had large dovetails and bottoms of ¼ or ⅝ inch stock set into rabbets in front and sides. Not authentic, but far more practical is the use of ¼ inch plywood for the bottom panel as shown. The drawer runners M are glued and screwed to the sides to fit in the grooved rail assemblies.

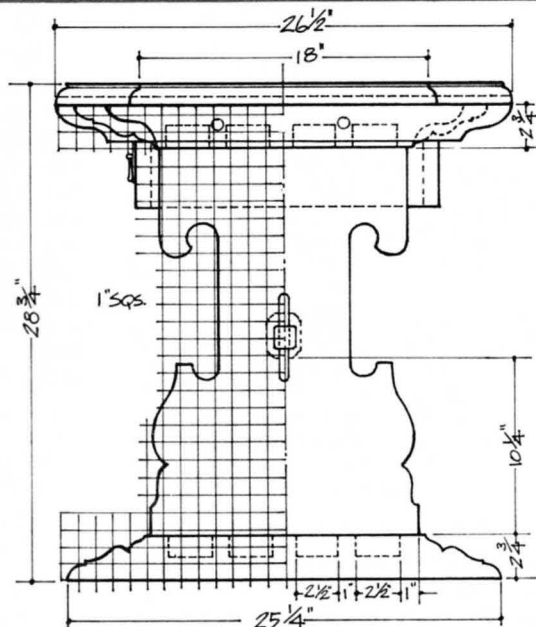
Finishing of the table will depend upon the type of wood used but in general, the finish should be of a low luster type; either well rubbed varnish or perhaps one of the penetrating oils such as Watco Danish Oil. Be sure to give the underside of the top the same treatment as the topside. A brass pull similar to the style shown completes the project.

Bill of Materials (All Dims. Actual)

Part	Description	Size	No. Req'd
A	Foot	2 x 2½ x 25¼	2
B	Leg	1½ x 15½ x 24¾ (includes tenons)	2
C	Cleat	1½ x 2¾ x 26½	2
D	Outside Rail	1½ x 2¾ x 24	2
E	Inside Rail	1½ x 2¾ x 21	2
F	Wedges	½ x 2 x 5	2
G	Stretcher	2 x 2½ x 33½ (includes tenons)	1
H	Top	1½ x 26½ x 41¼	1
I	Pegs	¾ dia. x 6" long	4
J	Drawer Front	¾ x 5½ x 23	1
K	Drawer Back	¾ x 4¾ x 23	1
L	Drawer Side	¾ x 5½ x 18¾	2
M	Drawer Runner	¾ x ¾ x 17	2

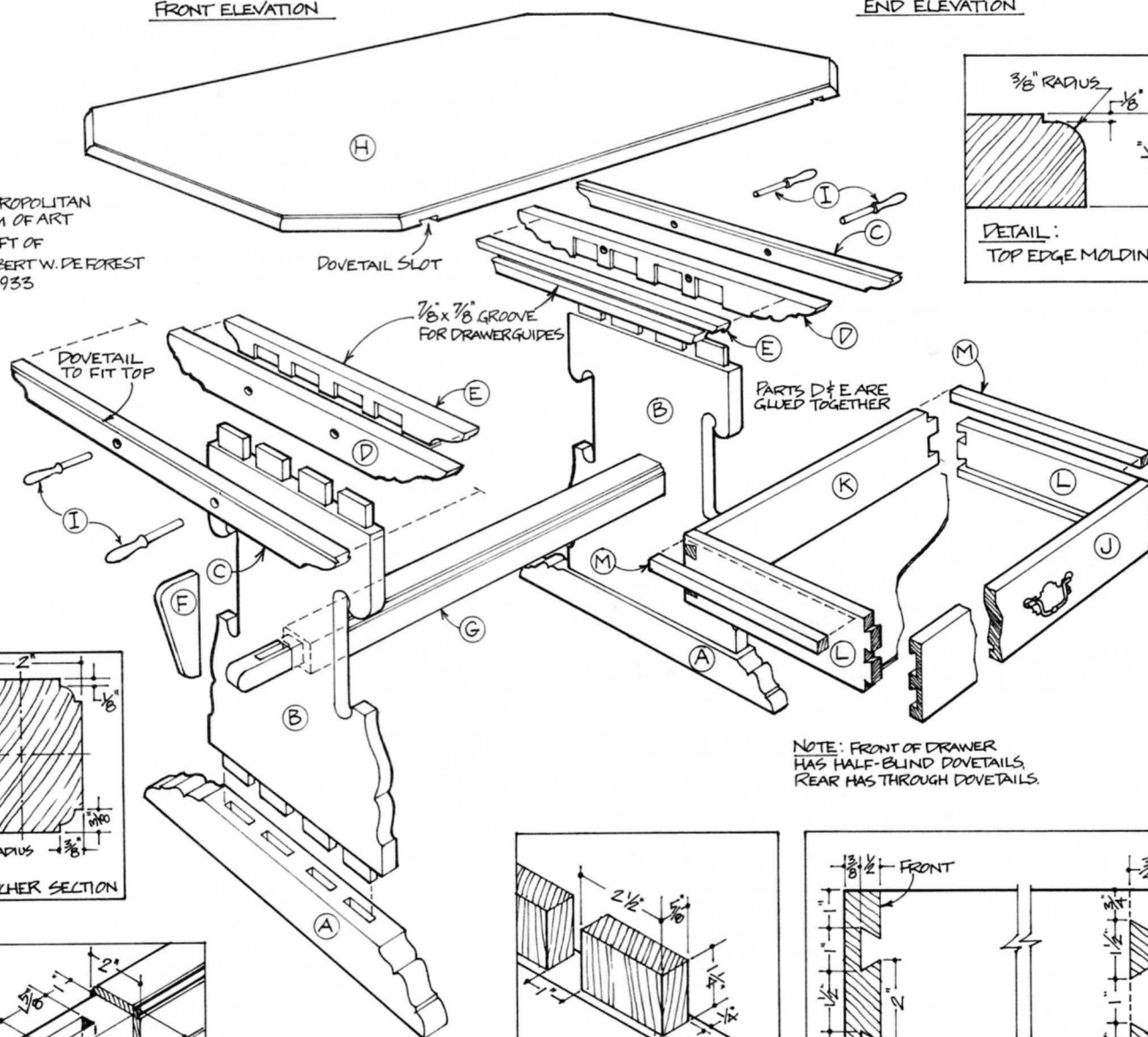


FRONT ELEVATION

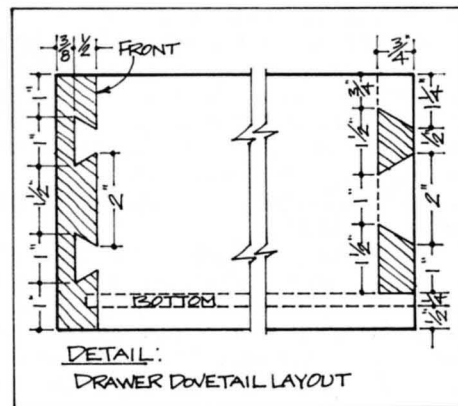
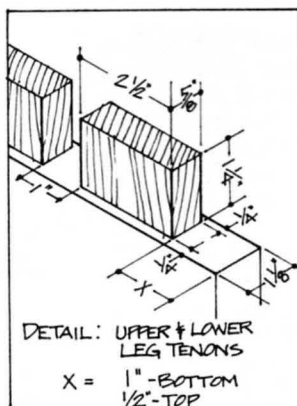


END ELEVATION

THE METROPOLITAN
MUSEUM OF ART
GIFT OF
MRS. ROBERT W. DE FOREST
1933



NOTE: FRONT OF DRAWER
HAS HALF-BLIND DOVETAILS.
REAR HAS THROUGH DOVETAILS.



A hand-drawn diagram of a '2x4 Screwdriver Tree'. It shows a vertical 2x4 wooden post with various tools hanging from it. On the left side, tools include Allen wrenches, Jacobs keys, pilot bits, plug cutters, counter sinks, and several 'ETC.' labels. On the right side, tools include screwdrivers, handled files, and awls, also followed by 'ETC.'. The bottom of the post is labeled 'WORKBENCH SURFACE'.

ALLEN WRENCHES
JACOBS KEYS
PILOT BITS
PLUG CUTTERS
COUNTER SINKS
ETC.
ETC.
ETC.

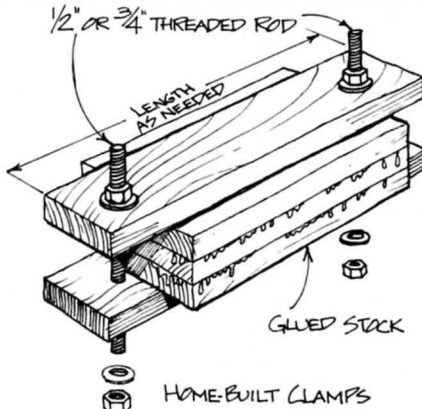
SCREW DRIVERS
HANDLED FILES
AWLS ETC.
ETC.

WORKBENCH SURFACE

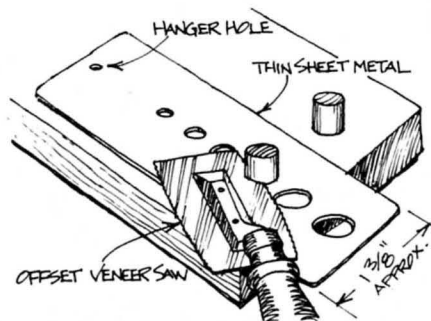
2x4 SCREWDRIVER "TREE"

Don Stearns, Toledo, OH

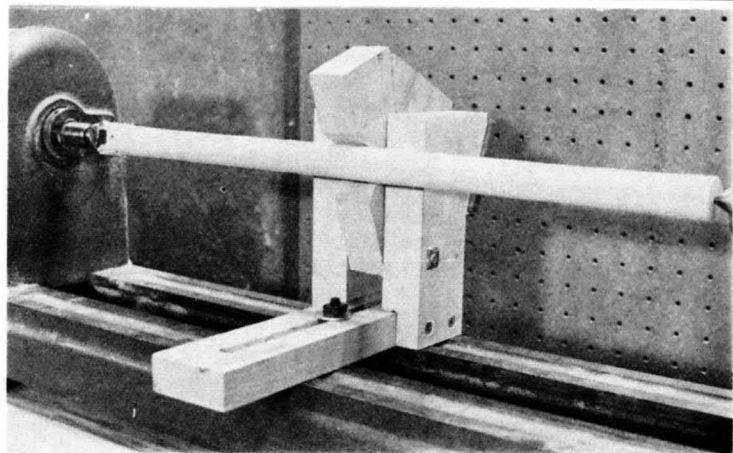
Here's a method I've used for years to clamp glued-up stock. The clamps are inexpensive, easy to make, and I've found them a useful addition to my workshop. The clamp jaws are made from 5/4" stock (maple, birch or oak) cut 2½" wide. They can be cut to any length, but I've found 6", 9", 12", and 15" lengths take care of most requirements. Drill each pair of jaws to take threaded rods. Holes are drilled large enough to allow a loose fit for the rods. A nut and washer threaded on



V.R. Stuart, Aurora, IL.

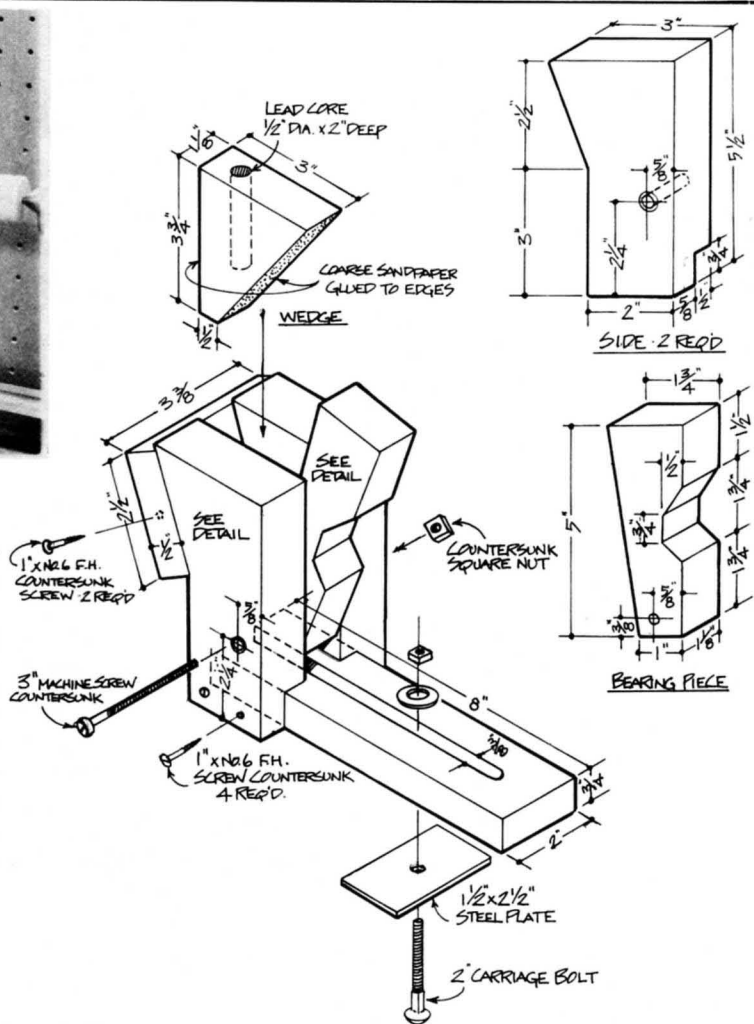


When a scratch awl is used to mark a starting hole for a drill bit, the awl point will often tend to follow the wood grain, causing it to just miss the point you want marked. Next time, use a 1/32" point nail set to punch the starting hole. It will not follow the grain, resulting in a starting hole that's right where you want it to be.



by Roger E. Schroeder

The wedge is weighted with hot lead poured into a 2" deep hole. Coarse sandpaper on front and rear edges of the wedge will guarantee that no back slipping occurs as the wedge descends. Other pieces can be hard or soft wood, though the base should be a hardwood such as maple or birch. The plate that allows the steady to slide along the ways can be a scrap of 1/4 inch steel with a carriage bolt.



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Catalog of Wooden toy patterns, wooden toykits and toymakers supplies. Send one dollar to Toy Designs, P.O. Box 441-N, Newton, IA 50208.

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Stainless Steel and Brass, screws and bolts. Small quantities, free catalog. Elwick, Dept. 395, 230 Woods Lane, Somerdale, NJ 08083.

Plant Shelf Plan - great gift for her, easy to make. 2 to 5 shelves, designed to allow light on all shelves. Unique in style and cost. Send S.A.S.E. and \$1.00 to Woodworker, P.O. Box 148, Montville, OH 44064.

Woodcrafts. Veteran craftsman has experienced \$1000 crafts shows, will provide plans for six fast selling wood items for \$5.00. Bennett Wood Products, Rt 8 Box 680-S, Pensacola, FL 32506.

Toddler's Rocking Horse, Lion and Elephant. Full size plans. Simply trace and cut out. Fun for the small ones for years to come. Plans \$5.00. B & F Woodcraft, P.O. Box 791, Pinson, AL 35126.

Must sell Dewalt 14 in. 3 phase 5 HP armsaw, top condition, built to take it, \$350.00, PO Box 723, Petersburg, WV 26847, ph (304)-257-1192.

Toy Train Pattern (steam engine, caboose, coach, baggage car). Over 24 inches long. \$3.00 postpaid. Franks (WJ-6), 1202 S. Second, Booneville, MS 38829.

Animal Puzzle Patterns for young and old. Simple to complex. 15 for \$5.00. 35 for \$10.00. The Woodsmith Shoppe, 4509 Christmas Tree Lane, Bakersfield, CA 93306.

Colonial Style Rocking Cradle, two versions \$5.00 - illustrated catalog of plans 25¢, refunded with purchase. Parker's Woodshed, 1197B N.W. Rachel, Hillsboro, OR 97123.

Psst! Hot New Item From California. Hot dish buffet cradles. Quick and easy money maker. If you enjoyed our lamp plans from the July/Aug issue we guarantee you'll enjoy making these unique dish cradles. Blueprint set of 6 plans. Engineered to fit standard baking dishes you probably already have. Order today in time for the Holidays ahead. Send \$5.00 to us at Hilltop Studios, P.O. Box 2203, Livermore, CA 94550.

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Rough Juniper Wood Slabs. Ideal for rustic clocks, plaques, etc. Resembles redwood \$3.00 ea. Free Brochure. Alpine Wood Products, Box 409, Alpine, AZ 85920.

Make 6" and longer toy vehicles from scrap wood. Nine full size drawings. Send \$2.00, Dept. WJ, Weekend Enterprises, 12342 La Barca, San Antonio, TX 78233.

Woodcarvers Patterns: Three Dimensional ducks (decoys), shorebirds, animals, fish, etc. S.A.S.E. to Long's "Easy" Patterns, Box 22155b, St. Louis, MO 63116.

Need piece old cherry, medium color, to repair table top. Size: 9/16" x 3" x 48". State price, Cleary, 5228 Bartholow Rd., Sykesville, MD 21784.

Catalog of Wooden Toy Truck Patterns. \$1.00 refundable. Franks (WJ-6), 1202 S. Second, Booneville, MS 38829.

Chair caning, rush, reed & basketry supplies; instruction books. Free price list. Country Seat, Box 24, RD #2, Kempton, PA 19529.

Make your toddlers slide action pull toys. Full size patterns (10" x 5" x 9"). Robin, Rabbit, Duck. \$2.00 each or three for \$5.00. Stan, 880 Broadway, Hanover, PA 17331.

Self-employed? Control expenses, increase profits, reduce taxes. Complete accounting method designed exclusively for woodworkers. Order now to realize maximum tax benefits! Send \$9.95 check or money order to Financial Concepts, P.O. Box 472, Aurora, CO 80010.

Secret Jewelry Box only you can open. Ready-to-finish pine \$7.95. Plans only: \$1.00. Candlepress, 1124 NW 40 Ave., Gainesville, FL 32601.

Make Wooden Toys for Christmas. Simple hand tool projects. Four complete plans - truck, bulldozer, train engine, car. Send \$2.00 to Turner Toys, Rt. 1 Box 48, Colt, AR 72326.

Craftsmen - show pride in your fine work. Personalize your pieces with engraved solid brass plates. Send \$1.00 for 2 line sample plate. VB, Dept. WJ, 807 East Dana, Mountain View, CA 94040.

Tool Handles - 10 patterns \$3.00 cash/m.o. F.W. Smith, Box 412, Crestline, OH 44827.

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Woodshop Plans. Imitation fireplace \$5.75. Stereo rack \$3.75. Lamp with built-in clock and dimmer \$5.00. Dog house \$3.00. Colonial hall mirror \$4.00. Fireplace mantel \$5.00. Mail check now or write for free catalog. Woodshop Gallery, 1716 Stonebridge Rd., Alexandria, VA 22304.

Toy Plans - 10 scaled plans \$5.00. Cedar Craft Toys, P.O. Box 22011, Knoxville, TN 37922.

Roll Top desk kits available. Five different desks in all. Send \$10.00 for photographs and more information to: Wood Revival, P.O. Box 1851, Salt Lake City, UT 84110. These kits are perfect for the home hobbyist!

Cabinetmaker's Supplies

Here is a partial list of companies that specialize in mail-order sales of woodworking supplies, along with a code to indicate some of the products they carry. In future issues we hope to include additional companies. Code: hand tools (HT), power tools (PT), stationary equipment (SE), hardwoods (HW), veneer (V), hardware (H), clock parts (C), lamp parts (L), books (B), finishing supplies (F).

Barap Specialties 835 Bellows Ave. Frankfort, MI 49635	H, C, L, F 46 page catalog 50¢
Conover 18125 Madison Rd. Parkman, OH 44080	HT, SE 20 page catalog \$1.00
Constantine 2050 Eastchester Road Bronx, NY 10461	HT, HW, V, H, C, L, B, F 104 page catalog \$1.00
Craftsman Wood Service 1735 West Cortland Ct. Addison, IL 60101	HT, HW, V, H, C, L, B, F 152 page catalog 50¢
Garrett Wade 302 Fifth Ave. New York, NY 10001	HT, SE, B 116 page catalog \$1.00
The Fine Tool Shops 1200 East Post Road Westport, CT 06880	HT, PT, B 132 page catalog \$5.00
Frog Tool Co., Ltd. 700 W. Jackson Blvd. Chicago, IL 60606	HT, B, FS 86 page catalog \$1.25
John Harra Wood & Supply 511 West 25th Street New York, NY 10001	HT, PT, SE, HW, B, F 104 page catalog \$3.00
Lee Valley Tools, LTD. 857 Boyd Ave. Ottawa, Ontario Canada K2A 2C9	HT, B, F 96 page catalog \$1.00
Leichtung, Inc. 4944 Commerce Parkway Cleveland, OH 44128	HT 84 page catalog \$1.00
The Toolworks 76 9th Ave. New York, NY 10011	HT, H 48 page catalog \$1.00
Woodcraft Supply Corp. 313 Montvale Ave. Woburn, MA 01888	HT, HW, C, B, F 128 page catalog \$1.00
The Woodworker's Store 21801 Industrial Blvd. Rogers, MN 55374	HT, PT, HW, V, H, C, B, F 114 page catalog \$1.00

Shop Notes