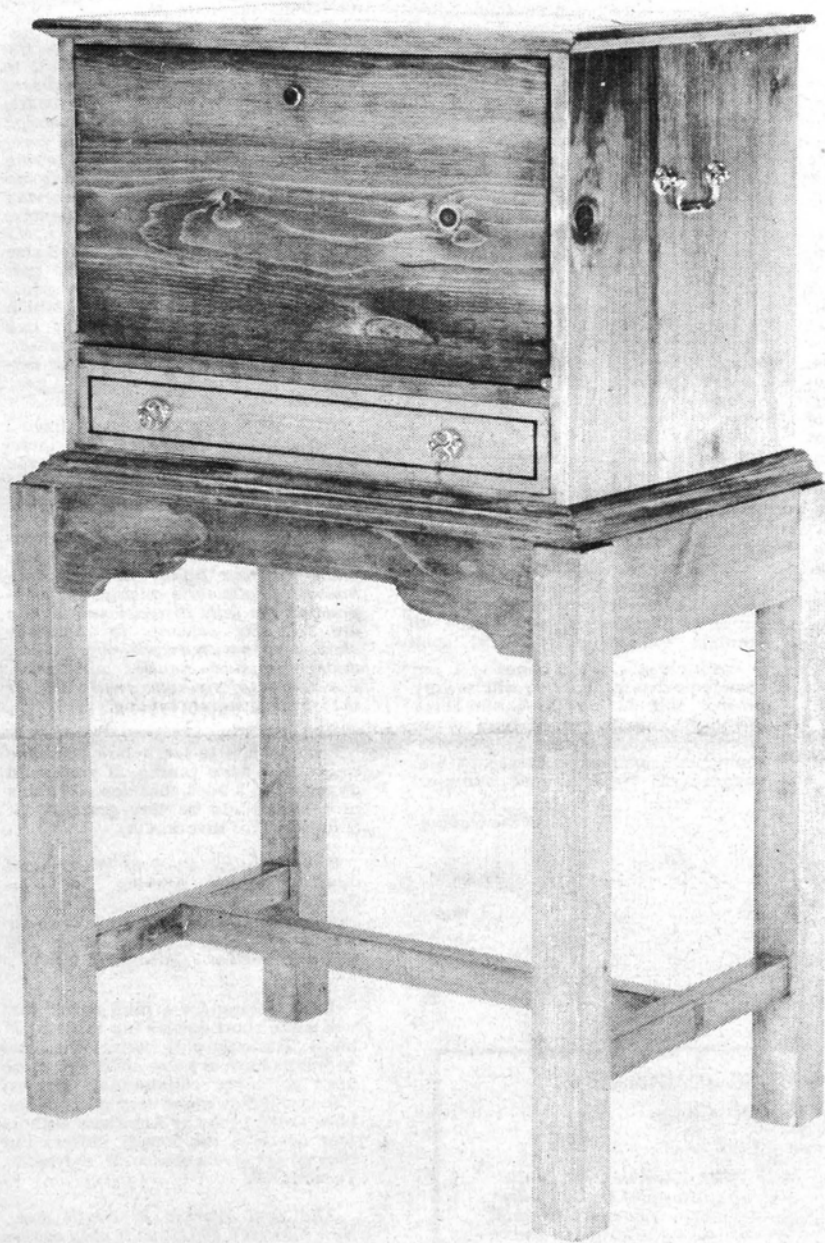


The Woodworker's Journal

Vol. 4, No. 4

July/August 1980

16 Pages \$1.50



In This Issue:

- **Easy Wall Clock**
- **Pine Cellarette**
- **Gothic Oak Stool**
- **Lap Chessboard**
- **Doll Cradle**
- **Magazine Rack**
- ... and much more

The Beginning Woodworker

A Plane Primer

During the past century, many woodworking operations previously performed with hand tools have been taken over by either portable or stationary power tools. Apart from the basic satisfaction derived from shaping wood directly with handtools, there still remains a very definite need for certain hand tools to finish off machinery marks and make those slight adjustments needed to achieve a perfect fit between parts.

The plane is one such hand tool that will always have a respected place in the cabinet shop. Even the most hopelessly addicted power-tool fan generally has several hand planes on the tool board. No hand tool gives as fine a result or as much pleasure in use as a bench plane when properly used and maintained. Conversely, if used carelessly, it can quickly ruin a workpiece.

Catalogs of woodworking tools generally have several pages of planes, both steel and wood and the novice is apt to become a bit confused as to which types and sizes are most needed. It helps to break all planes down into three major groups: bench planes, block planes and special planes. Of the three groups, we will be concerned mainly with the bench and block planes. As the name implies, special planes are for special operations, most of which consist of grooving, rabbeting, and molding. Most of these operations are now done quite easily with the tablesaw or portable router.

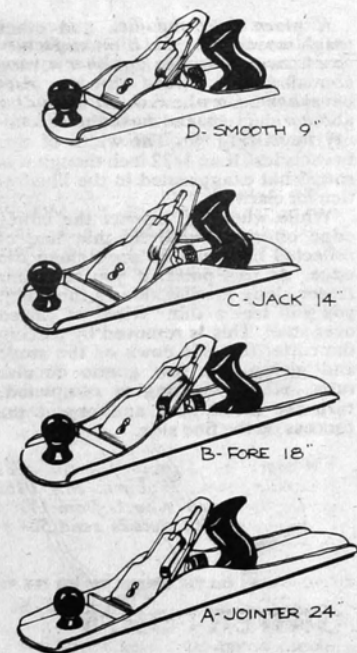


FIG. 1 BENCH PLANES

The most important group is the bench planes (Fig. 1). As can be seen from the illustration, they are all basically the same, differing only in their length which also determines their function.

The giant of the group is the jointer which ranges in length from 22 to 24 inches. Some old wooden jointers of the 18th and 19th centuries ran to nearly 3 feet in length and were mounted on legs upside-down as shown in Fig. 2.

The jointer has one purpose and that is to smooth and make level or true the

edges of boards so that they can be jointed together to make wider boards. The planed edges, when properly executed and jointed, are nearly invisible. The sole or bottom of the jointer is very

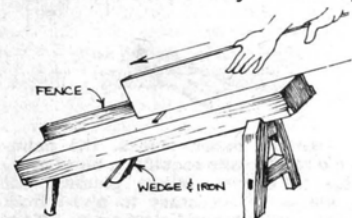


FIG. 2 EARLY JOINTER

long so that it may span low spots along the edge of a board. Thus the plane will shave down the high sections until the edge is perfectly level (Fig. 3).

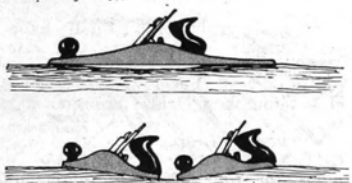


FIG. 3 THE LONG JOINTER SPANS HOLLOW & SHAVES HIGH SPOTS. SMOOTH PLANE FOLLOWS CONTOURS.

As the illustration shows, a short smoothing plane is inadequate for jointing as it will tend to follow the contours of the board's edge rather than spanning the low spots.

The jointer is a rather massive tool at 24 inches in length and in use requires considerable practice in guiding it along the edge of a 3/4 inch board. Once accustomed to its size however, you will find it a most efficient tool.

Since jointer prices range from about \$65 to \$100, the purchase of one can only be justified by the volume of jointing work you intend to do. If you are a hobbyist who truly enjoys the mastery of, and the intimacy of working wood by hand, the jointer plane is considerably less expensive than a power jointer which is a stationary machine. Two other advantages of the hand jointer plane are its safety and the fact that it makes no noise. If you intend to do a lot of jointing though, you will be better off going for the machinery.

The next plane in the bench plane group is the fore plane (Fig. 1B). The name apparently derives from the fact that this plane was used primarily for rough surfacing before other planes are used. Years ago most hardware stores carried both fore and jack planes and sometimes the names were used interchangeably.

Basically, the fore plane is intermediate between the jointer and the jack plane and depending on the way the cutting blade is ground, it can satisfactorily perform jointing or rough surfacing. Wooden versions are not common and the steel planes sell for 50 or 60 dollars. If you have a hand or power jointer you will not really need a fore plane.

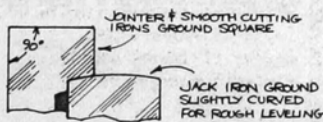


FIG. 4

The jack plane is probably the most versatile of all the bench planes. The traditional function of this plane is to quickly make rough surfaces flat. To do this, the cutter is ground with a slightly rounded edge (Fig. 4). This enables the jack to remove a lot of material quickly and with less physical effort and results in a level surface consisting of a series of slightly concave grooves.

Feel the underside of an antique chair seat or tabletop and chances are you will feel the characteristic grooves of an old jack plane. Our ancestors: wasted little effort in smoothing surfaces that didn't show.

The ridge between grooves that the jack plane produces are removed with the smooth plane. This is the tool used for final leveling of the flat surface of boards. It is also used for shaving edges of doors, drawers, etc., for a final perfect fit.

Even if you intend to buy a power

jointer, better joints can be achieved by taking a light cut with a smooth plane along the board edge to remove the very small ribs left by the revolving cutter of the machine. Also, if a board wider than the capacity of the power jointer is planed, the smoothing plane will certainly be needed to bring the surface to final flatness.

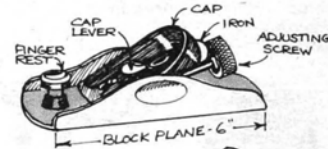


FIG. 5 UNLIKE BENCH PLANES, THE IRON IS MOUNTED WITH BEVEL FACING UP.

Continued on Page 4

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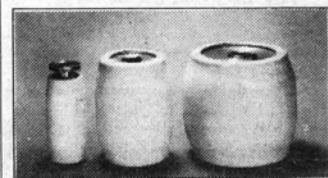
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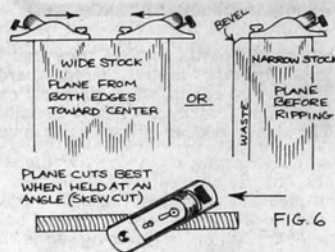
The Beginning Woodworker (Cont'd)

If your budget permits only a limited tool kit to start, the jack plane with cutter ground straight across will handle most work quite well except perhaps for the jointing of long boards. This is really no problem if a tablesaw can be used to rip the edges reasonably true. Later you can add a smooth plane for finish work and grind the jack plane cutter to a slight curve for initial rough leveling.

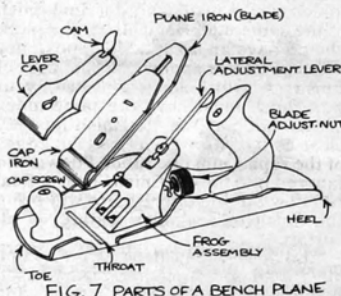
The second group of basic planes are the block planes (Fig. 5). These are rather small planes having cutters set at a lower angle than the bench planes. Unlike bench planes, which are generally used on edge and face grain, the block planes are designed to smooth the end grain on the end of a board.

It should be mentioned here that bench planes, properly sharpened and set for a fine cut will also smooth end grain, and a block plane can be used

for smoothing surfaces of boards too small to be conveniently worked with bench planes. Power sanders have, to some extent, replaced the block plane for smoothing end grain, but the little plane is still the best hand tool for this particular job.



Like the bench planes, the palm-held block plane requires a bit of practice to master. When planing end grain, it is necessary to plane from each corner toward the middle. Planing straight across the edge will invariably result in serious splintering of the far edge (Fig. 6). These little planes are indispensable in the shop and their relatively modest cost should be included in even a tight tool budget.



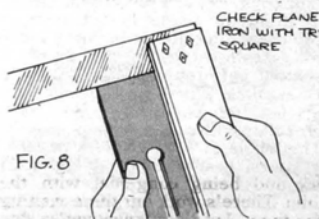
The modern bench plane has evolved from a simple iron cutter wedged into a block of wood. Figure 7 shows the basic nomenclature of a typical bench plane. The cutter or plane iron is reinforced with a cutter cap. This cap, which is locked to the cutter with a screw, breaks and curls the wood shaving. Together, cutter and cap are called a double iron.

The double iron is supported by a frog which is the sloping part of the plane located directly behind the mouth. A lateral adjusting lever on the frog retracts a projecting edge corner of the cutter by swinging the double iron from one side to the other.

To do good work, a plane cutter must be properly sharpened. Nicks in the cutter edge will leave unsightly ridges on the board's surface, while a slightly dull cutter will balk or skid and will not remove a fine continuous shaving.

Grinding a new edge on a plane cutter should only be done when the edge has been nicked or when it has been honed so many times the bevel has been reduced. Most woodworkers grind cutters using a 5 or 6 inch grinding wheel operated by a small electric motor. These high speed grinders are prone to quickly overheat and burn the cutter edge even with frequent quenching in water. The result is an edge that is too concave and quickly chips away.

A much better method is to use a hand-cranked or geared down, slow speed grinding wheel of fairly large diameter, say about 10 or more inches. The type that revolves in a water bath is best.

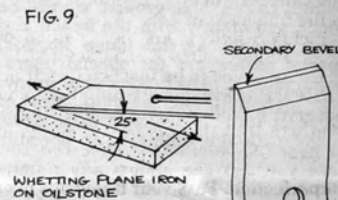


To remove nicks and square the edge, point the cutter toward the center of the wheel and move the edge back and forth, avoiding heavy pressure. Use a try square to check squareness of edge (Fig. 8). Using a tool rest, grind a bevel of 25 degrees. The grindstone should turn toward the cutter which is moved back and forth across the wheel. Quench the blade often as you use a dry grinder and don't forget to wear protective glasses or goggles.

When a good bevel has been ground, the cutter must then be whetted on a stone to remove raggedness and the slightly curled edge left by grinding. A good quality combination oilstone with fine and medium grit in a 2" x 6" size is best for general sharpening. Soak the stone with light oil when new and in use apply a few squirts of kerosene or light oil to carry away particles of grit and steel and reduce friction. Start whetting on the medium side of the stone.

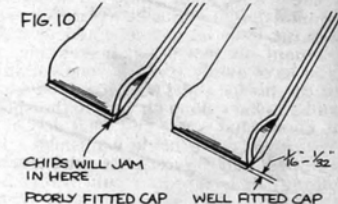
For freehand whetting, one hand holds the blade at the correct angle of 25 degrees while the other applies pressure. It's important to maintain the correct angle while moving the blade back and forth along the stone. Avoid the tendency to rock the blade or dip it at the far end of the stroke.

There are jigs that can be purchased which hold plane cutters and chisels at the proper angle. These devices also have a roller which helps in moving the blade back and forth. Try it freehand though and you'll soon develop the proper technique.



A plane used for oak and other tough woods will give a bit more service between sharpenings by whetting a small double bevel. After the main bevel has been whetted, lift the cutter about 5 degrees and form the secondary bevel (Fig. 9). The width of this bevel is less than 1/32 inch though it is somewhat exaggerated in the illustration for clarity.

While whetting, inspect the cutter edge often, or until no thin line of reflected light can be seen along the edge. At this point, if you run your finger along the flat side of the edge, you will feel a thin "wire" of curled over steel. This is removed by placing the cutter flat side down on the stone and giving it a few gentle circular rubs. When whetting is completed, turn the stone over and repeat the process on the fine side.

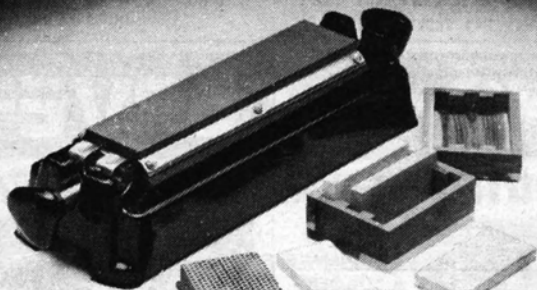


The final step is to strop the edge on a piece of thick leather or against a cloth wheel mounted on a grinder.

Now that the cutter has been sharpened, check the cap iron to make sure that it's smooth and clean and has the proper bevel to insure tight contact with the cutter (Fig. 10). To assemble cutter and cap, lay the cap on the cutter and take care that you do not drag the cap across the cutting edge. The tip of the cap should be set back 1/16 inch from the cutting edge for most work. For cross or curly grained wood set it closer. Tighten screw when cap edge has been positioned.

Continued on Page 16

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Restoring Antiques

By John W. Olson

Nothing detracts more from the good appearance and, more especially, the value of a fine antique piece of furniture than a poorly executed and finished repair job. Fitting, filling, and replacement of missing pieces is but a part of the total job. I have encountered many a repair job in which the woodworking and similar phases of the job were more than acceptable, but unfortunately the repairman didn't realize the importance of matching texture as well as color when applying the final finish. Consequently, the repair was immediately apparent.

It is often difficult to match a bit of new finish to an old one, but coming very close is possible and with practice can be attained almost every time. The general approach is to hazard a guess as to what methods were used on the rest of the piece and then attempt to duplicate these procedures on the repair piece.

The first and possibly the most important step is to match textures. The tips of your fingers are wonderfully sensitive. When passed over a surface with a very light sweeping motion all unevenness and almost imperceptible roughness can be felt. It is a good rule of thumb, or in this case shall we say fingertips, that anything you can feel will be apparent to the eye in the finished surface.

Incident light is another method of determining surface characteristics. Place the piece to be inspected in front of a window with good strong light and observe it from every possible angle. You will find that when you eye is at or near the level of the observed surface you can see almost any minute imperfection. Pass your fingertips over the same spot and you will find that it is tactually as well as visually apparent. Our problem is how to make the surface of our repair job have these same patterns of minute imperfections.

At this point, it is well to make up some sample pieces from the same species of wood as the piece being repaired and through experimentation attempt to reproduce the texture of the surface being matched. Bring the surface of each sample to a comparative smoothness using different methods.

Scraping, sandpaper, steel wool and combinations thereof are all possibilities. Some of the old timers didn't make any great effort to get the surface of the wood very smooth. Rather, they used a combination of putties and fillers to prepare the surface for finish. This method becomes most apparent when stripping a piece of furniture of its old finish. All of a sudden an unpleasant surprise - rough surface and even previously filled holes appear. When refinishing an entire piece this is no problem, but with only one side or a part of a surface, it makes for a difficult time. Experimentation with various fillers and smoothing methods will eventually make an acceptable surface. While preparing the surface, continually use your fingertips and visual inspection, using incident light to attain, but not pass, the desired surface. A surface that's too smooth is as apparent in the finished piece as one that is too rough.

If a reasonable color and texture match can be made and if a final finish of the same material is used, the piece should have an acceptable appearance when you have applied the last coat of finish. A word about finishes, your new finish must have the same index of refraction as the old finish (or very close to it). After each coat the edges of the repair must be rubbed down and tapered into the old finish. Then a final rub down of the entire piece will bring the finish to a similar texture on all surfaces.

Rub down can be done with very fine steel wool and a good carnauba based furniture wax to obtain a soft glowing surface. A highly polished surface is obtainable by making sure that your final textures match those of the piece under repair and then finishing up with rubbing compound. I use those normally sold in automobile supply stores as rubbing compound and polishing compound. Apply the rubbing compound with plenty of elbow grease to obtain an equal reflecting surface over the entire piece. Follow this with an application of polishing compound, again making sure to use plenty of elbow grease. A final coat of wax will complete the repair job.

Workshop Income

by John Sillick

The time may come in the life of a home woodworker when he wonders about using the skills he has developed and the tools he has collected to supplement his income. It makes sense. You have avidly studied woodworking in the books and magazines you get, and you have done enough in the shop to know what works and what doesn't. When you have made a mistake you stopped and figured out what went wrong. Besides, you would rather be in the shop than anywhere else. What is better than to be paid for doing something you love? The question is how to get into doing it.

I drifted into custom work and repair work gradually; a neighbor lady had some broken chairs. I turned new spindles and reglued the loose rails and she paid me. It then struck me that a lot of people had problem chairs. Dowels just dry out; kids lean back and it wrenches the poor chairs apart. Folks usually dab some glue into the joint but it doesn't hold. So eventually the chair gets sent to the attic to catch dust.

So how could I let other people know I could make their chairs useful again? I went to a printer and had some cards made up. This was the best investment I ever made. I proceeded then to stick

them up any place where people would see them: supermarket bulletin boards, laundromats, lumber yards, home-improvement centers and best of all, furniture stripping outfits. The phone began to ring and I got busy. Then I met antique dealers. They told me that they would see a piece of furniture at an auction with a broken or missing spindle and they wouldn't even bid on it, because they didn't know anyone who could fix it. Then the best advertising got into gear—word of mouth, and I had all the work I could handle.

The overwhelming growth of mass-produced furniture is a boon to the repairman—nobody knows a cabinet-maker anymore, or a repairman. As far as I can see the market is wide open.

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A slanted easel for convenient magazine display and a small upper shelf for ashtray, reading glasses, etc., make this pine rack a useful chairside companion.

Start by enlarging grid patterns for uprights (A) and transferring curves to two pieces of 3/4" x 10" x 25" stock. Shape with a saber saw and lay out and cut upper mortises and notches for sides.

Cut sides (B) and rabbet both ends to fit notches in uprights. Measure up 3 1/2 inches from bottom of (A) and (B) parts and cut 1/4" x 1/4" grooves to hold bottom (C).

The easel assembly consists of strips (D) which are grooved to receive plywood panel (E). Lay out the slant of the easel on one upright (A) to determine the location of blind dowel pins and the location of, and amount of bevel to be planed off the lower edging strip. The angle of slant isn't critical so long as it approximates that shown in Fig. 2 which is about 18 degrees off vertical.

After locating dowel center in one upright, drive a small brad into center and clip off the head. By aligning

edges of parts (A) and pressing them together, the brad will punch the center for the corresponding dowel socket in the other upright.

Cut shelf (F) to finish size and shape carrying handle (G) from 1/4" x 3" x 22 1/2" stock, which allows for cutting tenons slightly long so they can later be sanded flush. After carefully sanding all parts, it's a good idea to temporarily assemble parts to make sure they fit properly.

Insert bottom (C) into the dado of upright (A) and glue the lower beveled strip (D) to the plywood and butted against (A). Clamp this strip until dry, then lay the upright flat on its face side and attach sides (B) with glue and clamps. Do not glue the plywood into the grooves. Add panel (E), upper strip (D), shelf and handle and finally the other upright (A).

Allow glue to dry before beginning the final finishing process. Go over the entire piece, looking carefully for areas of glue squeeze-out or smudges. If allowed to remain they will spoil the staining job, so remove any you find with a sharp chisel and some sanding. Now give all the parts a thorough sanding, making sure to round off sharp corners and edges, and sanding the handle tenons flush with sides.

Remove sanding dust and stain to suit. When stain dries, apply a final finish with several coats of shellac or varnish, rubbing down the last coat with 4/0 steel wool.

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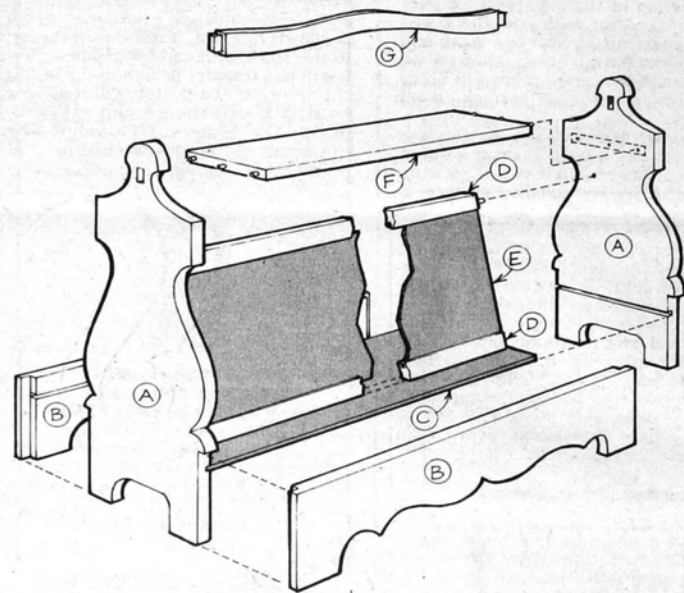
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C	1/4" x 8 1/4" x 21"	1
D	3/4" x 1 1/4" x 20 1/2"	2
E	1/4" x 10 1/4" x 20 1/2"	1
F	3/4" x 6" x 20 1/2"	1
G	3/4" x 3" x 22 1/2"	1

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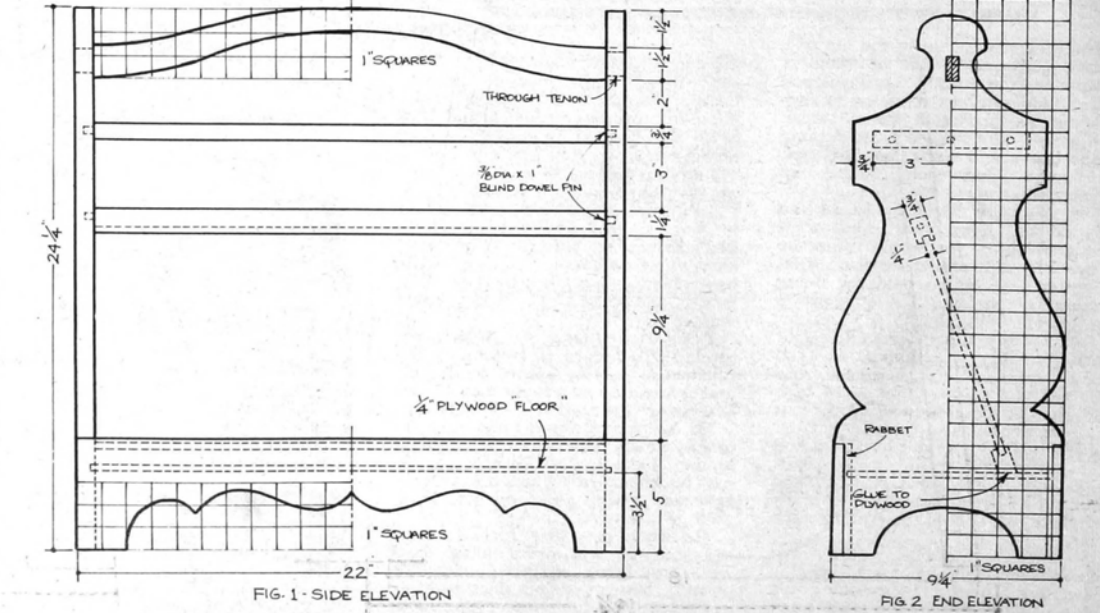
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Gothic Oak Stool



Photo: John Kane

Based on English designs of the 16th century, this fine oak stool in the Gothic style employs the wedged joinery typical of the period. An outstanding feature is the stretcher which is decorated either by hand carving or with a jigsawed overlay.

Red or white oak of 5/4 inch thickness (actually about 1 1/16" thickness) is used for all parts. Unless very wide boards can be obtained, you will have to edge-join two boards together to achieve the width of seat and legs. Edge-joined boards should be carefully jointed and held together with glue and 1/2" x 1 1/2" dowel pins.

Start with the legs by enlarging the grid pattern shown on the end view on heavy paper or cardboard and trans-

ferring the shape to the stock, which should be at least 18 1/2" long. This extra length permits cutting the two tenons at the top of each leg long enough to protrude through the seat. These are later trimmed flush with the seat top. The legs are shaped with either a saber or bandsaw. The scrolled edges can be rounded off in an irregular fashion to simulate wear.

Next, cut the seat to 11" x 18". The molded edge can be formed by running a 1/8" deep by 1/4" wide kerf around the perimeter of the seat, one inch in from the edge. This is easily done with a tablesaw and dado cutter or router. A hand plane can then be used to shape the edges, finishing up with sandpaper. Use a chisel or gouge

of the proper radius to round the corners of the raised portion of the seat. Remember that this is a representation of a very old piece and the slight irregularities of hand tool work tend to enhance the final appearance.

Mortises for the leg tenons are cut in at an angle of about 7 degrees. If you lack a drill press, a creditable job of removing most of the waste can be done by aligning the drill bit with a bevel gauge as shown in the detail drawing. Back up the underside with a clamped board to prevent splintering where the drill emerges, and keep the mortise considerably undersize. Use a chisel to gradually enlarge the mortise until tenon fits snugly.

Another good method is simply to cut an undersized mortise straight through the top, then use chisel and cabinet file to shape the sloping ends of the mortise.

After cutting mortises, temporarily assemble legs and seat and set a bevel gauge to the exact angle at which the legs and seat join. Use the gauge to scribe the stretcher stock at the point where the tenon shoulders are cut. The tenons may be cut by hand with a backsaw or with a dado setup on the table saw, using the miter gauge to feed stock over the cutter.

Sand tenons but before rounding off the corners, use tenons to scribe for mortises in each leg which are bored and chiseled for a snug fit of the tenons.

Use tracing paper to duplicate the stylized vine design, a portion of which is shown full size. Tape traced design to the stock with carbon paper underneath and transfer design to the wood.

Carving of the design will require a good deal of patience and skill. Although the design can be routed into the wood, the most attractive method is to outline the vine and carve away

the background so that the design is raised 1/8 - 3/16 inch.

The alternative method is to jigsaw the design from oak resawed to 3/16" thickness after first drilling out circular portions with a 1/2" bit. This jigsawed overlay is then glued to the stretcher and later sanded to simulate carving.

A full length overlay is rather fragile so plan on doing each overlay in two pieces joined at the mid-point of the stretcher. Spread glue sparingly on the back of the overlay to prevent glue from squeezing out and clamp in place with a board until dry. Chamfer the stretcher edges as shown.

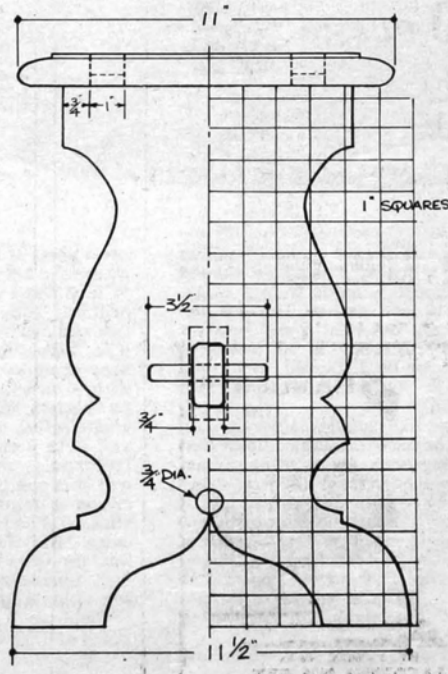
Fit completed stretcher to legs and locate and cut square mortises for the wedges which are slightly tapered on inside faces so they tighten when driven in. Cut wedges over-long and after fitting them, they can be trimmed to protrude an equal amount on each side of tenon. The outside edge of wedges are also chamfered.

The leg tenons can now be notched for wedges and after spreading glue on wedges and in mortises, the seat is joined to the legs and the tenons are trimmed and sanded flush.

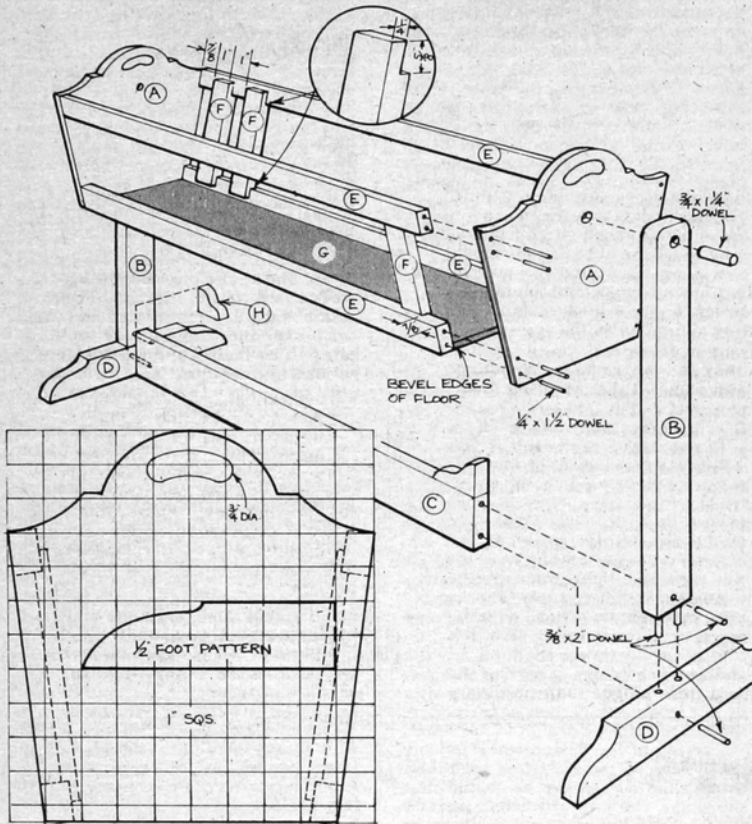
The decision on whether or not to stain depends on your personal preferences. The stool shown in the photo was stained with one coat of Minwax Jacobean oil stain. Hard, glossy surface finishes such as lacquers or varnishes are best avoided for pieces of this period. A more appropriate finish can be obtained by applying two coats of a penetrating oil such as Watco Danish oil or by sealing the stain with a coat of white shellac thinned 50/50 with alcohol. When dry this is lightly sanded and a coat of a good grade of furniture wax is rubbed on and buffed to a soft luster.



FULL SIZE PATTERN FOR CARVING OR OVERLAY.



The Gift Shop



Part	Description	Size	No. Req'd
A	Side	1/2 x 10 x 11 1/2	2
B	Post	3/4 x 2 x 17 3/4	2
C	Stretcher	3/4 x 3 x 20	1
D	Foot	3/4 x 2 x 14	2
E	Rail	3/4 x 1 1/4 x 18 3/4	4
F	Slats	1/2 x 1 x 7 1/2	18
G	Bottom	1/2 x 6 1/2 x 18 3/4	1
H	Brace	3/4 x 2 x 2	2



Photo: John Kane

Doll Cradle

If your favorite little girl's doll needs a warm and comfortable place to sleep, you may want to consider this for your next project. Except for the ends (which are birch plywood) and bottom (which is fir plywood), we used birch stock throughout. Certainly though, pine is also a very satisfactory choice.

Begin by referring to the grid pattern and cutting the sides (A) to shape. To form the lifting handle, drill two 3/4" holes cutting out the excess with a coping or saber saw. Cut four rails (E) to size, then join to sides (A) with 1/4" x 1 1/2" dowel pins as shown.

The slats (F) are made from 1/2" thick stock. A 1/4" deep x 3/4" wide rabbet is cut on each end before joining to the rails. Cut the floor (G) to size, bevelling the side edges to fit side rails. Fasten floor by driving finishing nails through lower rails and sides.

Two support posts (B) are cut from

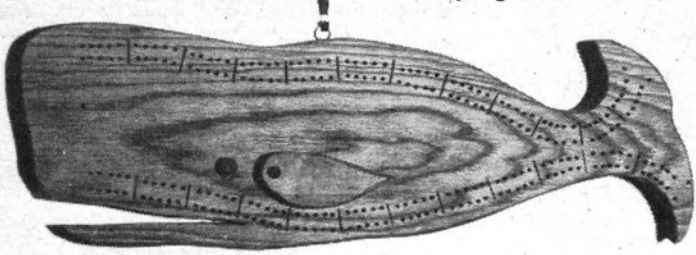
1" (3/4" actual) stock to dimensions specified. The foot (D) is also made from 1" stock. Layout the foot profile as shown, then cut out with band or saber saw. Join post to foot with glue and 3/8" x 2" dowel pins.

The stretcher (C) is cut to size and joined to the post-foot assembly with glue and 3/8" x 2" long dowel pins as shown. After glue dries, remove clamps, then cut and glue braces (H) in each corner as shown. Locate, mark, and drill a 3/4" dia. hole in both posts (B) and the ends (A) for a 3/4" x 1 1/4" dowel pin. The cradle "swings" on these pins so the fit can be a little sloppy. Don't glue pins if you want to be able to remove cradle from the base.

Sand all surfaces, making sure to remove sharp corners and edges. We applied several coats of tung oil to the base, and two coats of yellow latex spray enamel to the cradle.

Cribbage Board

by Roger E. Schroeder



Cribbage is a card game of points played on a board. This whale-shaped cribbage board is made from a single piece of 1 1/4 inch lumber. The one pictured is oak, but nearly any hard or soft wood will result in an attractive piece that can be displayed either on a tabletop or as an interesting wall decoration.

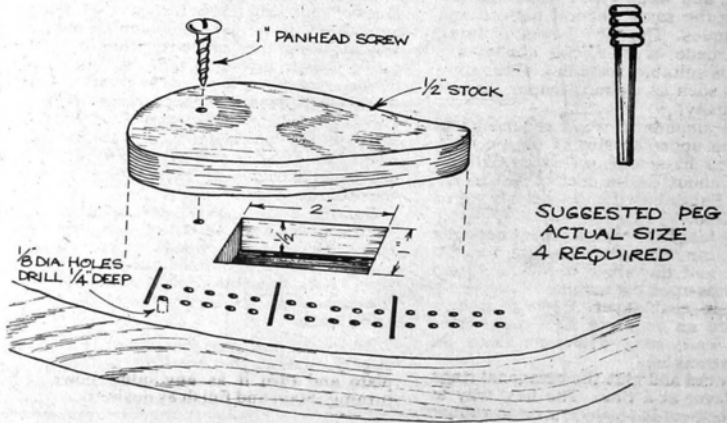
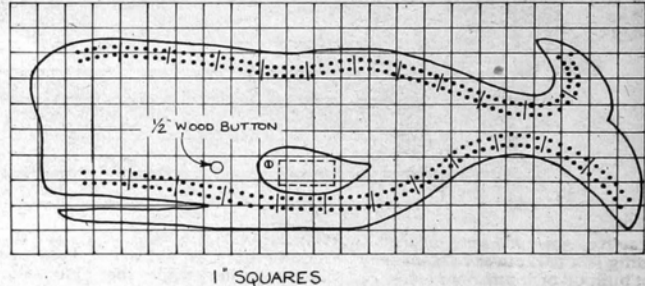
Cribbage is usually laid out into "streets" or rows of 30 to 60 holes that hold the pegs used for counting points. The first player to reach 120 wins.

Referring to the grid pattern, layout and mark the whale profile as shown. If you plan to make several boards, it will save time in the long run if you make a template from 1/4" plywood or hardboard. Cut the whale to shape, then sand thoroughly to remove all saw blade marks.

Parallel lines along the upper and

lower parts of the board will determine where the holes are located. These are 1/4 inch deep and made with a 1/8 inch drill bit. They are set off in groups of five and can be laid out by walking dividers along the lines. The dark lines separating each set of holes are done with a chisel and highlighted with a fine-tipped felt pen. Underneath the whale's fin, made of 1/2 inch lumber and held with a panhead screw, is a rectangular recess 1/2 inch deep that will hold the pegs. These can be turned on a miniature lathe, but match sticks will do just as well. Note that the extra pairs of holes on the whale's tail hold the pegs before play begins. A 1/2 inch tenoned wood button serves as the whale's eye.

Final sand, then finish with several coats of tung or linseed oil.



Nut & Bolt Toy

by Paul Levine

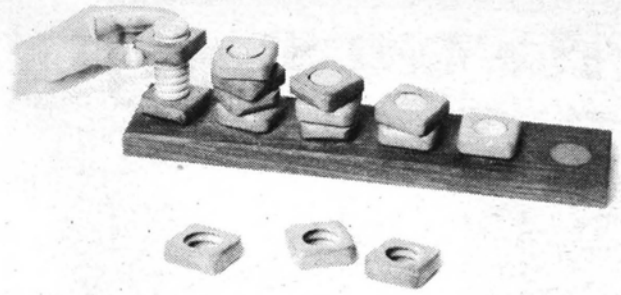
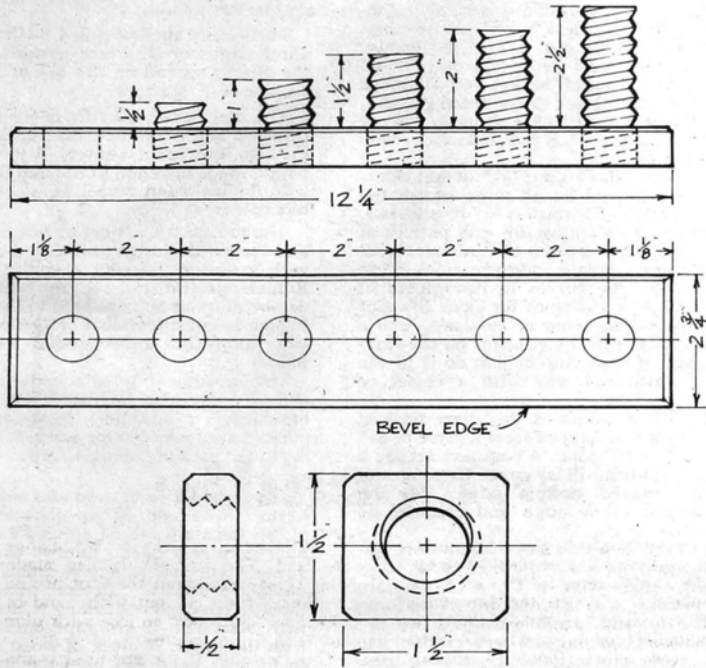


Photo: John Kane

Educational toys are very popular and always in demand. Here's a toy that not only has excellent educational value, but it's easy to build and should prove to be an ideal item to make for resale. It does an excellent job helping to develop a pre-schoolers (age 2-6) counting and motor skills.

To cut a 1" thread you'll need a threadbox and tap. Conover Woodcraft Specialties, Inc., 18125 Madison Road, Parkman, OH 44080 sells a 1" set for \$65.00. This may seem like a lot of money to put out at once, but if you plan to build and sell a lot of these, it should pay for itself within a short period of time.

Cut the base to size from 3/4" (actual) hardwood stock, bevelling the edge as shown. Select a wood that will contrast with the light color of the birch spindles, or else apply a dark stain. The first spindle is flush with the base and is used for counting zero. It's made by gluing a short length of 1" birch dowel into a 1" dia. hole. Cut the spindle a little longer than necessary

so that it can be sanded flush. Now, lay out and mark the location of the other five threaded spindles, then drill and tap all the way through.

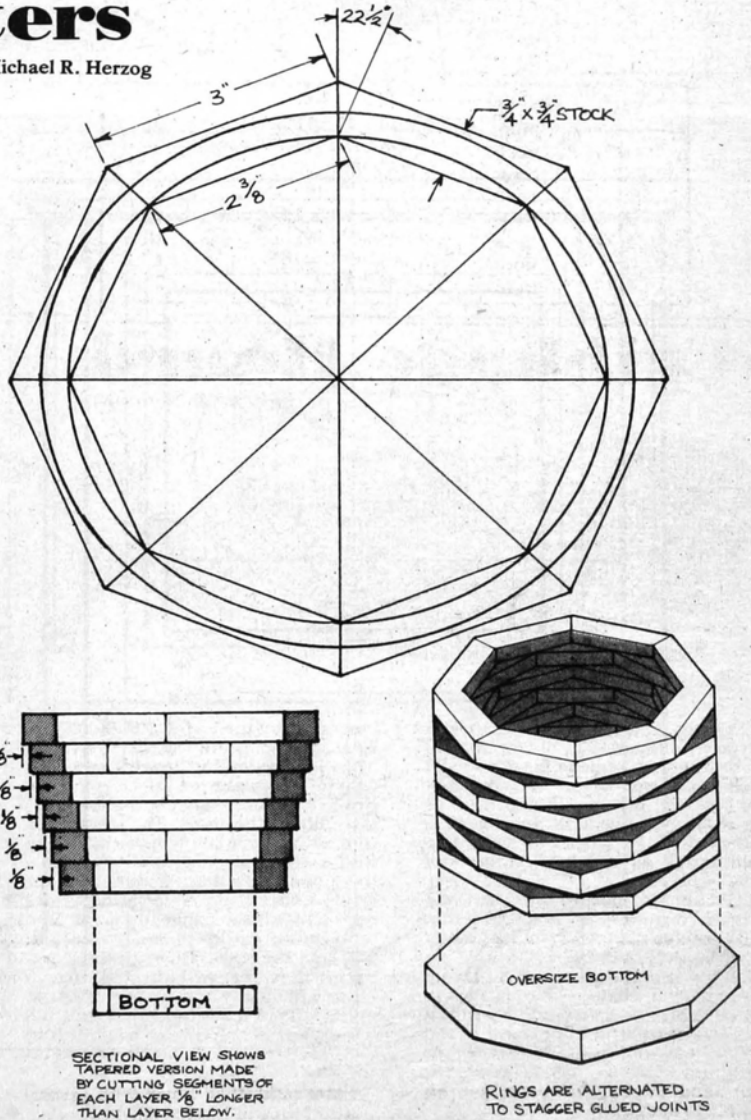
To make nuts, cut a piece of 1/2" hardwood stock to 2 3/4" x 25". The extra width is needed to prevent splitting when tapping holes. Lay out location of 15 nuts, drill and tap holes, then cut into 1 1/2" square nuts.

You'll need about a 15" length of 1" birch dowel to make the spindles. Most dowelstock carried by lumber yards is out-of-round, and this sometimes can cause threading problems. You may want to lathe-turn your own, or you can purchase high quality dowelstock for threading from Conover. After threading, cut each spindle to length, then glue and screw to the base as shown.

When the glue dries, sand the ends of the spindle and oil or wax the entire piece. A piece of felt glued to the bottom will add to the appearance and protect other surfaces.

Basketweave Planters

by Michael R. Herzog



An attractive lathe project for faceplate turning is a basketweave bowl or flower pot built up of segmented layers of 3/4 inch wood. The basic design allows almost infinite variation in size, shape, and wood types while still following the same general pattern and techniques. The two bowls pictured were made of pine, but almost any wood is suitable, including alternating colors such as walnut, maple, and/or mahogany.

The amount of wood required will depend upon the size of the bowl. A six-inch diameter bowl six layers high takes about twelve feet of 3/4" x 3/4" pine. Either buy the wood ready cut or rip it into 3/4" strips.

The length of each segment depends upon the diameter desired for the bowl, and the angle of the end cuts depends upon the number of segments used in each layer. Eight segments require an angle of 22 1/2 degrees at each end; nine segments need 20 degree angles.

Lay out and glue the octagonal rings one layer at a time. The best way to clamp them is to place a large rubber

band around the ring. The inward pressure from all sides will hold the joints together while the glue sets.

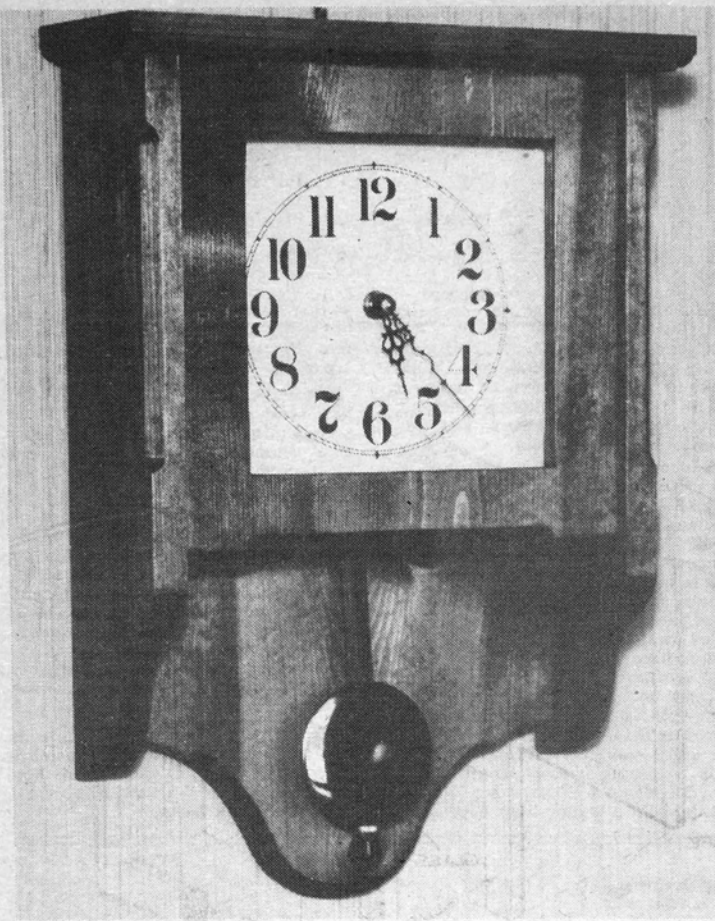
When enough rings have been glued to attain the height desired for the bowl, sand the upper and lower surfaces of each ring flat so they will stack smoothly with no gaps between them. When gluing the layers together, rotate alternate layers so that the joints of one layer lie on the segment centers of the layer below it. This produces the checkerboard or basketweave effect seen in the photograph. A tapered effect can be achieved by making the segments of each layer 1/8" longer than those of the layer below.

For the bottom of the bowl, either set the entire bowl on top of a slightly larger piece of 3/4" wood, or cut an octagonal piece to fit inside the bottom layer. Glue the bottom to the bowl at the same time the layers are stacked and glued.

When all the glue has dried thoroughly, mount the bowl to a faceplate and turn it as any other bowl turning. Stain and finish as desired.

Pine Wall Clock

by Don Cox



A woodworker with modest skill and equipment can build this lovely colonial-style wall clock in just one evening. Including the cost of the movement, the total cost will run only about \$20.00. Clocks always command a good price at gift shops and craft fairs, and because of its extremely simple construction, this one can be easily mass produced.

One inch #2 pine ($\frac{3}{4}$ " actual thickness) is used for all parts except the dial board (E) which is $\frac{1}{4}$ " fir plywood. Start by enlarging the grid pattern of Fig. 2 on to a piece of cardboard. Cut out the template and trace around it to transfer the curves to two pieces of $\frac{3}{4}$ " x 4" x 15" stock for sides (B). Cut curves with saber or bandsaw. Use a router to run the chamfer on the front edge of each side or just do it in the old-fashioned way with a chisel or spokeshave.

Part A, which is the lower back of the case, is shaped from a piece of $\frac{3}{4}$ " x 10" x 10" pine. A compass set for a $1\frac{1}{4}$ " radius will lay out all three arcs of the shaped bottom edge. Cut the shaped lower edge and chamfer as shown in Fig. 1.

Part D, which looks like a door but doesn't open, is a piece of $\frac{3}{4}$ " x 10" x 10" pine with a 7 x 7 square opening. Cut this opening by scribing the cut and carefully drilling two $\frac{3}{8}$ " holes at two diagonal corners; then use a saber saw to follow the layout lines. A clamped straight edge or ripping attachment will guide the saw and insure straight cuts. Try to make the corners as clean as possible.

Clamp D to a worksurface and chisel or rout a $\frac{3}{8}$ " x $\frac{3}{8}$ " rabbet around the opening to serve as a rabbet to hold

the glass which is fastened with ordinary glaziers points.

Parts F are cut and glued flush with outer edges of D. Make certain that the glue is spread on the $\frac{3}{4}$ " or wide surface of (F) spacers.

The dial board, part E, is cut from plywood and a $\frac{3}{8}$ " dia. hole is bored through the exact center. A 6 inch paper dial is fastened to the dial board with double-sided carpet tape or contact cement.

The top, part C, is cut to finish size and the molded edge as detailed is cut with a router. Lacking a router and Roman ogee bit, pre-cut pine molding can be mitered and bradded to the top (which is cut undersize) or the edges can simply be well rounded with a plane.

The movement is attached to (E) with the threaded handshaft bushing provided. In addition, most movements have provision for screw-fastening to the back of the dial board.

It's a good idea to sand and stain all parts at this time. When done at this stage, the stain can be applied easier, and there will be no danger of glue squeeze-out and smudges causing an unsightly mess. Before staining though, a complete sanding is mandatory. Start with 80 grit paper and sand with the grain. A block of wood sized to fit your hand will help the job go easier. Also, a felt blackboard eraser makes an excellent low cost sanding block. Generally, they can be purchased at the toy department of variety or department stores. Sand using firm even pressure, working to remove planer marks or any scratches that may be on the surface. These planer marks come from the lumbermill surface planers. These heavy machines reduce the rough-sawn boards to their finished thickness. Unless removed by sanding, these planer marks will show as crossgrain lines when stain is applied...and planer marks are a sure sign of an incomplete sanding job.

After all parts have been sanded with 80 grit paper, dust off all surfaces and resand with 150 grit paper. When sanding use your fingertips to judge smoothness. For the final sanding use 220 grit paper. This will result in a very smooth surface that will take a stain nicely. Generally speaking, a coarse sandpaper will result in a rough surface, causing the stain to take darker. Fine sandpaper produces a fine surface and a lighter stain.

The back (A) and assembly consisting of parts (D), (F) and (E) are glued in place between sides (B). To prevent these parts from sliding under clamp pressure, drive a few small brads into edges of door and back and clip off the heads so only $\frac{1}{16}$ " of the brads protrude.

Spread glue on edges of (D) and (A) and press side in place making sure that lower corners of (A) are $\frac{3}{4}$ " up from bottom edges of sides and (D) is inset $\frac{1}{4}$ " in from front edges. Clamp assembly (making sure it remains square) and allow to dry. Finally, glue and clamp top (C) in place.

Finish case with several coats of white shellac thinned 50/50 with alcohol, sanding lightly between coats. Fasten a small brass hanger to back edge of top. This should be mortised and centered so that the clock hangs perfectly level and plumb; otherwise the pendulum movement will not operate properly.

A suitable quartz pendulum movement can be obtained for \$15.00 from Newport Enterprises, 2313 W. Burbank Blvd., Burbank, CA 91506 (catalog # 20501-P-4). This movement has a rear setting knob for easy time setting. A paper dial can also be obtained from the same source at a cost of about 60¢ (catalog #DP-36A).

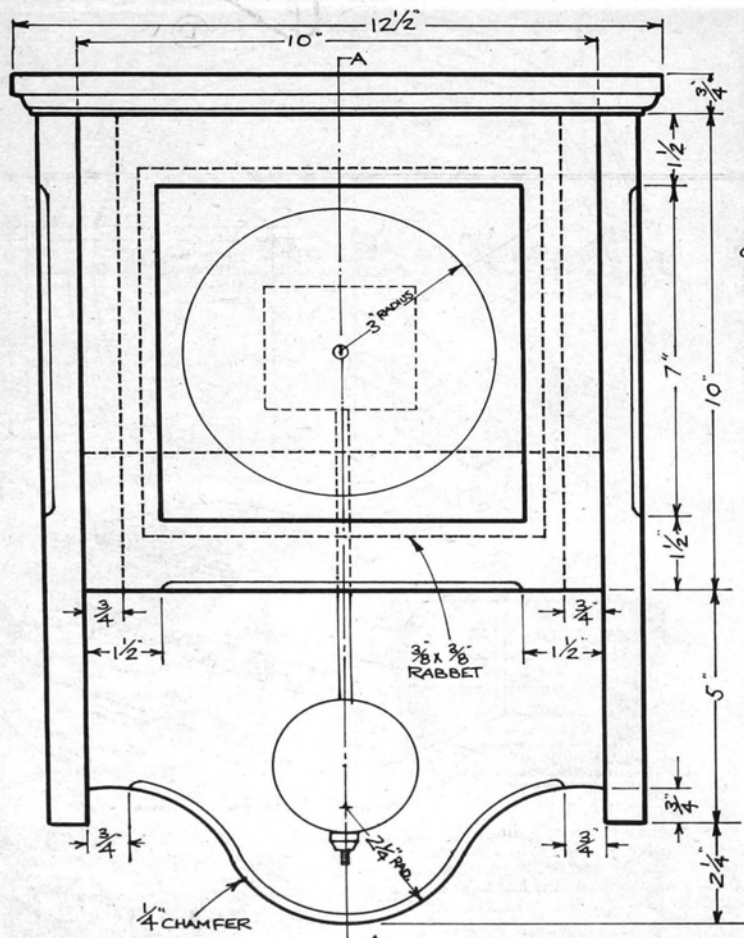


FIG. 1 FRONT ELEVATION

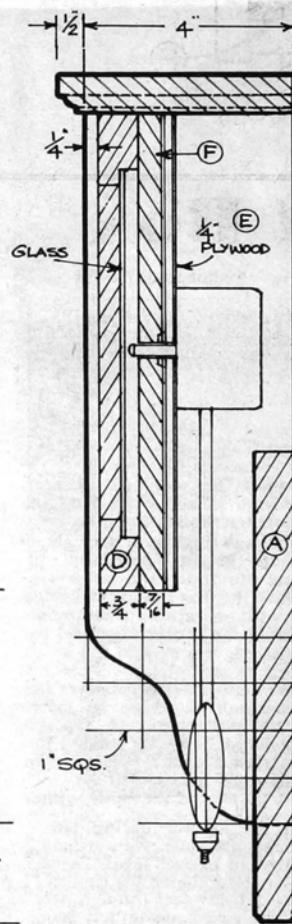


FIG. 2 SECTION A-A

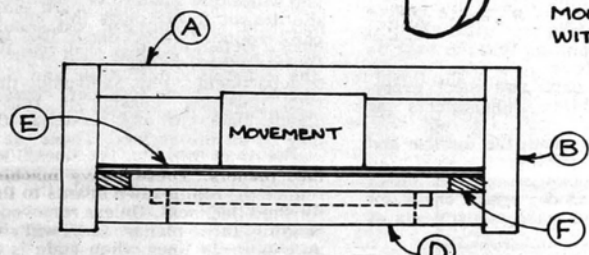
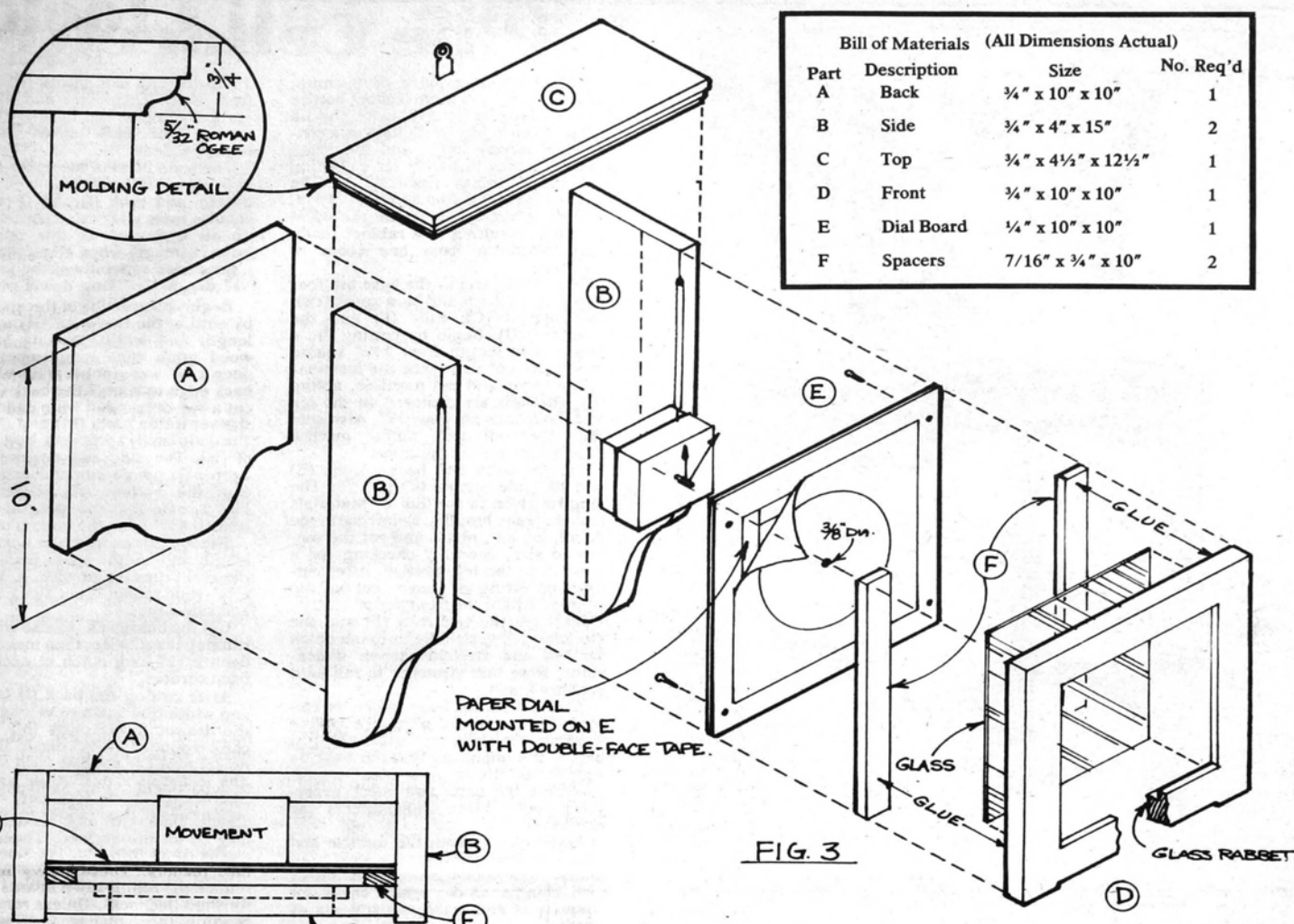
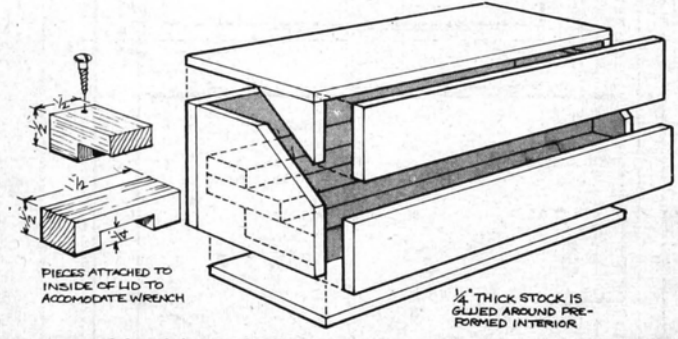
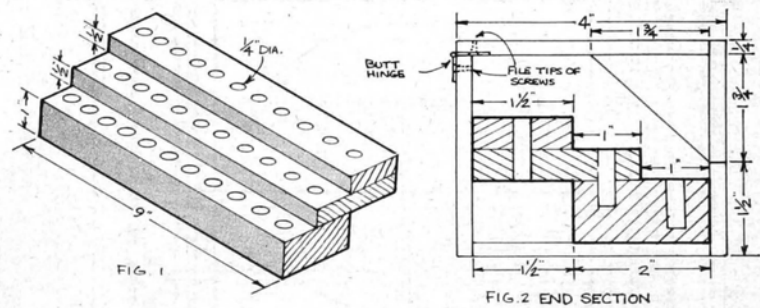
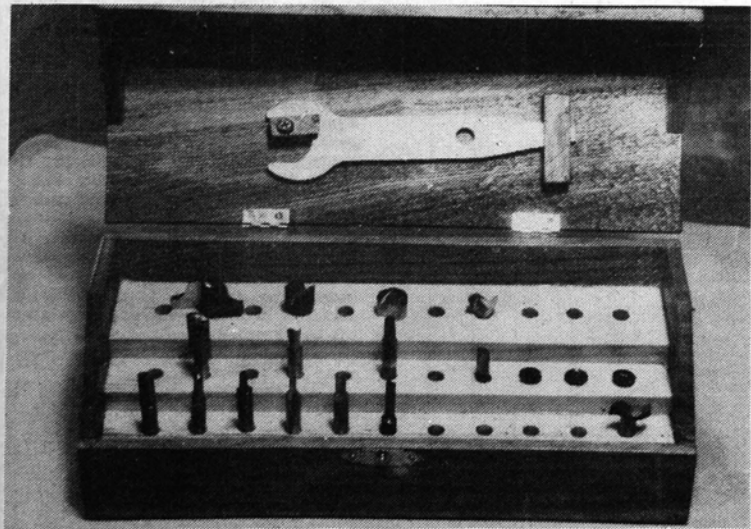


FIG. 4 TOP VIEW (PART C REMOVED)

Router Bit Box

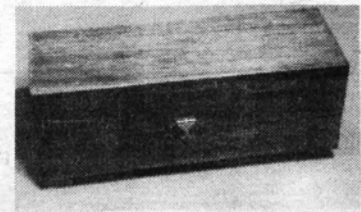
by Robert J. Hewitt



It became obvious that my supply of router bits was beginning to surpass the capacity of the plastic box supplied to hold them. Being somewhat adverse to keeping woodworking devices in plastic containers, I decided to try to design a nice wooden box for these bits. The results of my efforts were a bit more than I had anticipated. My method was to glue up three

2 to form the interior of the box. Eleven 1/4 inch dia. holes were drilled at equal intervals in each level. These hold the standard router bit shanks. The top row of holes goes through two layers into the void beneath and thus can accept longer shanks. The box itself is then glued around the preformed interior. I happened to have some scrap 1/4" butternut which was used. A holder was fashioned for

the router wrench by gluing to the lid a small piece of wood with a dado cut in it to hold the handle. A small wooden hasp screwed to the lid serves as a holder for the business end of the wrench. The box was finished with a few coats of polyurethane, then small brass butt hinges and catch were added to complete the job.



Pine Cellarette



Photo: John Kane

This handsome piece of furniture provides plenty of room to store bottles of your favorite refreshment. The lid drops down in front to double as a convenient serving shelf, and the small drawer comes in handy for collecting openers, ice tongs, coasters, etc. The upper case is not attached to the base. Instead it simply fits inside the waist molding, resulting in a cabinet that's easy to move from one room to another.

The main parts of the base are four legs (A), the front and back aprons (B), side aprons (C), rails (F) and the stretcher (G). Begin by cutting the 4 legs (A) to length from 1 3/4" square stock. Lay out and mark the locations of the apron and rail mortises, noting that the rails are centered on the leg and the aprons are inset 1/8". Also note that the rail and apron mortise dimensions are not the same.

Cut the front and back aprons (B) and the side aprons (C) to size. The lengths given in the Bill of Materials include tenon lengths. Referring to the detail, lay out, mark, and cut the tenons to size, carefully checking for a good fit in the leg mortise. After cutting and fitting all tenons, cut out the scroll detail for the front apron.

Next cut the two rails (F) and the stretcher (G) to size. Refer to the detail for rail and stretcher tenon dimensions. Note that stretcher to rail joint is a thru tenon.

At this point the base can be assembled. First, give all parts a complete sanding, finishing up with 220 grit paper. It's important that the base be square, so it's a good idea to pre-assemble the parts and check everything out. Make adjustments as necessary.

Apply glue to both the mortise and tenon before joining. Assemble all joints, then clamp firmly with bar or pipe clamps. Once, again, check for squareness and make adjustments as needed.

Cut the two side cleats (E) and the front cleat (D) to size and attach to aprons with glue and 1 1/4" #8 FHWS as shown. The back apron does not require a cleat.

The main parts of the upper case are two sides (H), top (J), bottom (K), lid (L), and back (I). All these parts require extra wide stock so it's best to do all gluing-up at this point. For added strength when edge gluing, it's a good idea to reinforce the joint with 1/4" dia. x 1 1/2" long dowel pins.

Begin construction of the upper case by cutting the two sides (H) to proper length and width, making sure the wood grain runs lengthwise. A 3/8" deep x 3/4" wide rabbet is cut along the back edge to accept the back (I). Next cut a 1/4" deep x 3/4" wide dado for the drawer frame parts (M) and (N). Start the dado cut 3/4" from the bottom edge of (H). The side also requires a 1/4" deep x 3/4" wide stopped dado to accept the bottom (K). Referring to Fig. 1, note that the stopped dado is located 4 1/4" from the bottom of (H).

The top (J) can be made next. Cut to length and width, again making sure the grain runs lengthwise. A 3/8" deep x 3/4" wide rabbet is cut along the back and side edges.

Cut the bottom (K) to size with grain running lengthwise, then make the 1/4" deep x 1/2" long notch at each of the front corners.

After cutting the back (I) to length and width (the grain runs lengthwise), the drawer frame parts (M) and (N) can be done. Two 1/4" dia. x 1 1/2" long dowel pins are used at each corner of the frame as shown. Glue and clamp the drawer frame together, check for squareness, then allow to dry overnight.

Before assembling the upper case, give all parts a thorough sanding. As with the base, preassemble the parts to check for fitup and squareness and make adjustments as necessary. Disassemble the case, then add glue to the joints and clamp. Note that there is a 1/4" gap between the back of the drawer frame and the back (I). Make one last check for squareness, then allow to dry overnight.

About 5 linear feet of stock is required for the waist molding. Note that it is made up of a piece of 3/4" quarter round stock and a piece of cove 1/8" x 3/8" stock.

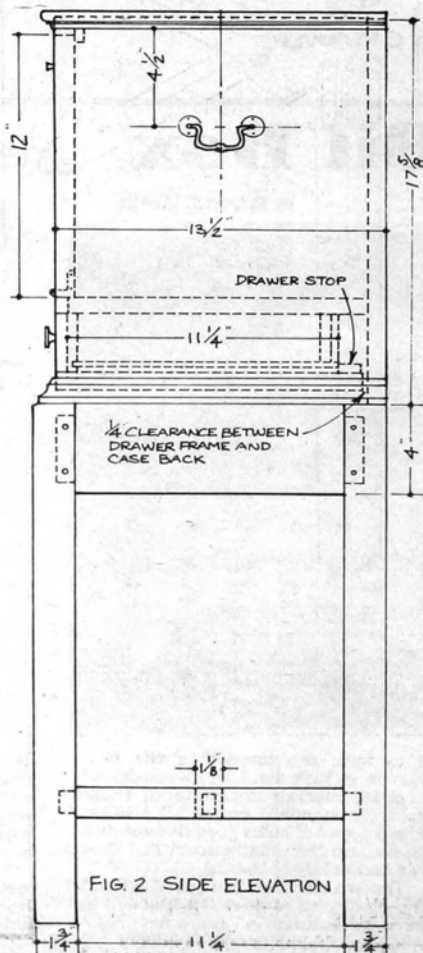
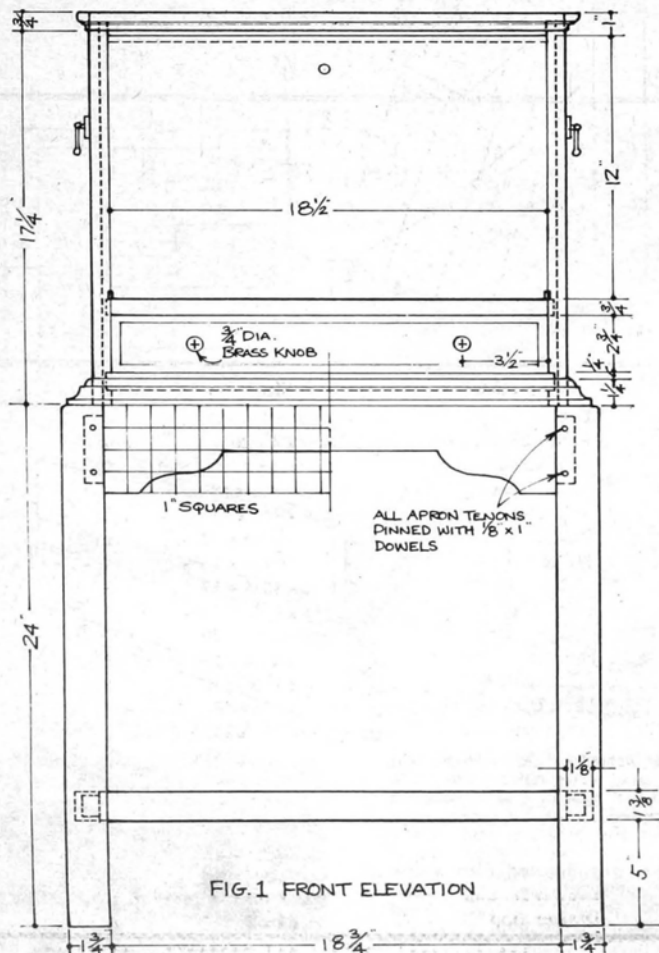
Position the upper case on the base so that it's centered when viewed from the front, and the back (I) is flush with the back apron (B). Use glue and small finishing nails to attach the molding to the base allowing about 1/16" between the molding and the upper case. Remember the upper case is not permanently attached to the base. Also, there should be a 1/8" lip between the apron and the molding (see Fig. 4).

The molding for the upper case is standard lumberyard nose and cove molding. Like the waist molding it's attached with glue and finishing nails.

Referring to the detail, cut the lid stop to the size and shape shown and attach to the case. Now the case opening can be measured and the lid cut to fit. Make sure the grain runs lengthwise (horizontal).

Cut the drawer components to dimensions specified in the Bill of Materials, then assemble as shown in the exploded view. A 1/4" wide x 3/16" deep groove is cut 1/4" from the bottom in the front and sides. The side (S) has a 3/8" wide x 3/16" deep dado cut 1/4" in from the back of the drawer for the drawer back (T). Glue drawer stops (V) flush with the back of the drawer frame (M). Fit drawer in place and make adjustments as necessary. Using a router with a 1/8" bit, cut a 1/8" deep groove around the drawer front (R). The groove is located 1/2" from the drawer edge. With a small fine point brush, apply a coat of black latex paint to the routed groove.

Lay out and cut knife-hinge mortise in both the side (H) and lid (L). Use care attaching hinges in order to

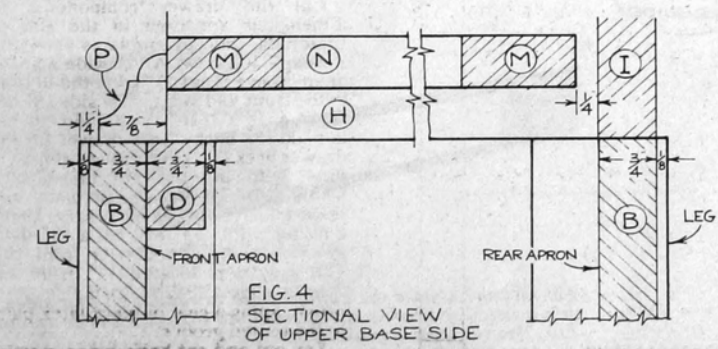
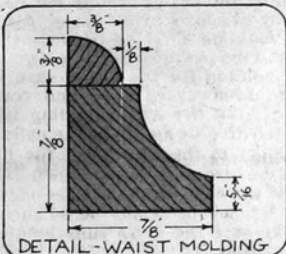
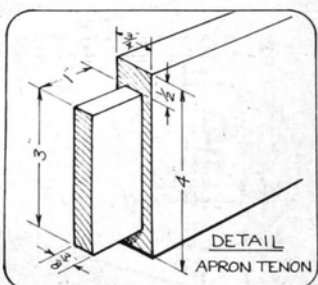
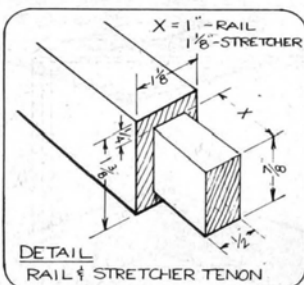
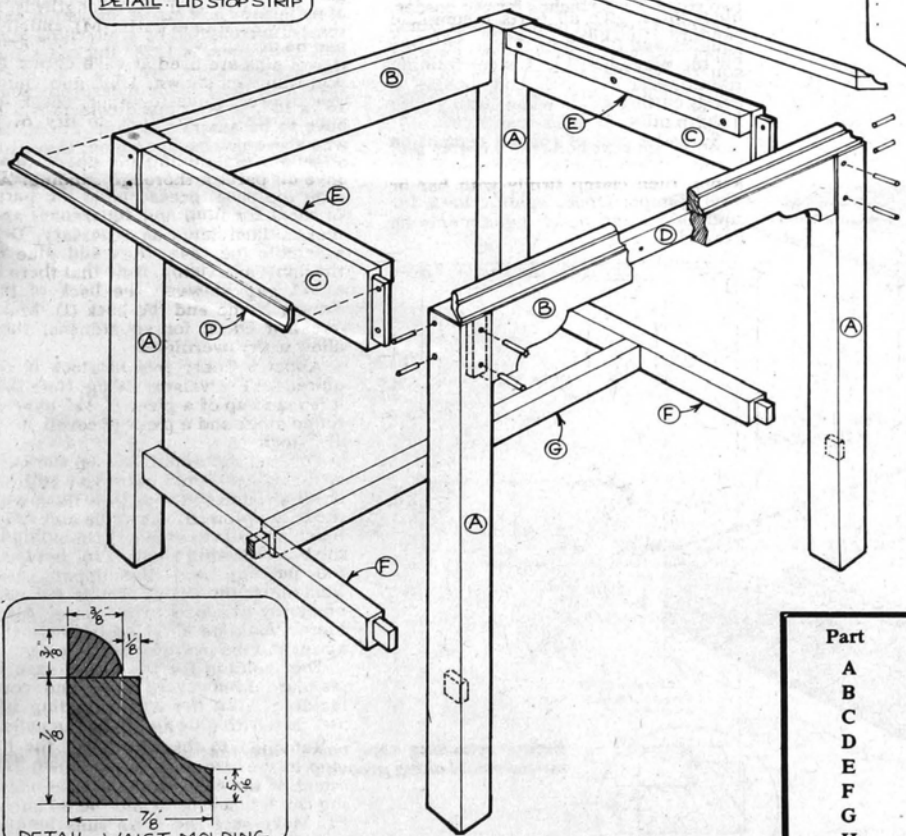
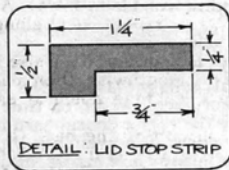
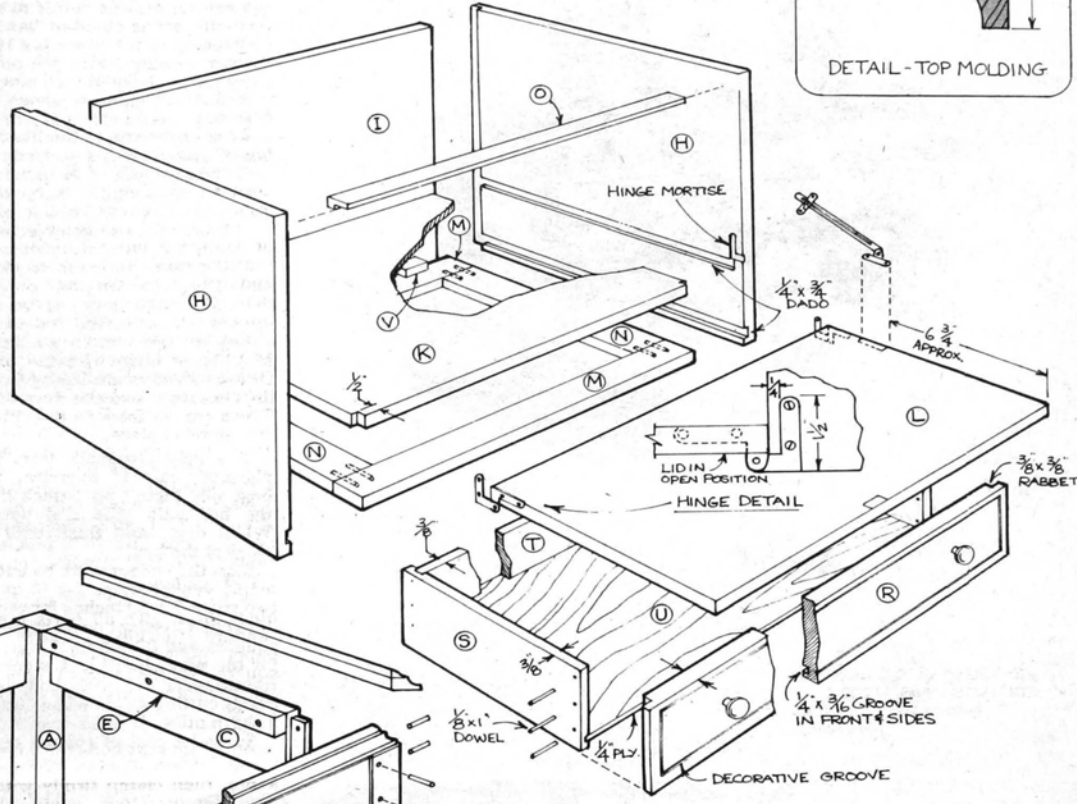
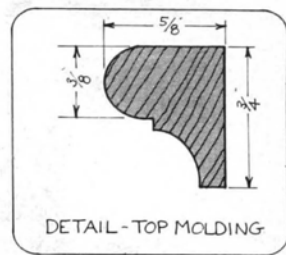
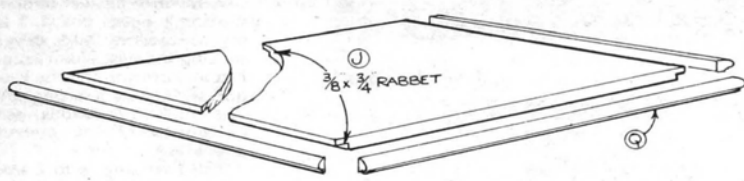


insure a good fit for the lid. A small magnetic catch will help hold the lid closed. Two straight friction lid supports are also required. Specify one right hand and one left hand support.

Give the cellarette a final going over with 220 grit sandpaper. Look carefully for excess glue squeeze-out at the joints and clean up any with a sharp chisel and a little sanding. Round off rough edges.

We stained our piece with two coats of Minwax Special Walnut, allowing 12 hours between coats. We followed this with 2 coats of polyurethane varnish, sanding lightly with 220 grit paper between coats. To complete the project add two 3/4" dia. brass knobs to the drawer, two brass lifting handles to the case, and a brass knob to the lid.

Editor's Note: The knife hinge is available from The Woodworker's Store, 21801 Industrial Blvd., Rogers, MN 55374. Order p/n D2560, price is \$1.00/pair. The straight friction lid support is also available from the same company. Order p/n D1205, \$.95 each. Brass hardware, including lifting handles can be purchased from The Wise Co., 6503 St. Claude Ave., Arabi, LA 70032.



Part	Description	Size	No. Req'd
A	Leg	1 1/4 x 1 1/4 x 24	4
B	Front & Back Apron	3/4 x 4 x 20 3/4	2
C	Side Apron	3/4 x 4 x 13 1/4	2
D	Front Cleat	3/4 x 1 1/4 x 18 3/4	1
E	Side Cleat	3/4 x 1 1/4 x 11 1/4	2
F	Rail	1 1/8 x 1 1/8 x 13 1/4	2
G	Stretcher	1 1/4 x 1 1/4 x 21 3/4	1
H	Side	3/4 x 13 1/2 x 17 3/4	2
I	Back	3/4 x 17 3/4 x 19 1/4	1
J	Top	3/4 x 13 1/2 x 20	1
K	Bottom	3/4 x 12 3/4 x 19	1
L	Front (Lid)	3/4 x 12 x 18 1/2	1
M	Ft. & Back Drawer Frame	3/4 x 1 1/2 x 19	2
N	Side Drawer Frame	3/4 x 1 1/2 x 9 1/2	2
O	Lid Stop	3/4 x 1 1/4 x 18 1/2	1
P	Molding		As Req'd
Q	Molding		As Req'd
R	Drawer Front	3/4 x 2 3/4 x 18 1/2	1
S	Drawer Sides	3/8 x 2 1/4 x 11 1/4	2
T	Drawer Back	3/8 x 2 3/8 x 18 1/2	1
U	Drawer Bottom	3/4 x 10 1/2 x 18 1/2	1
V	Drawer Stop	1/2 x 1 x 2	2

Lap Chessboard

by John M. Wilson

A favorite project in shop classes is making a chess board. I like this design because it helps develop skills in making the basic joints required in the box and drawer and the veneered playing surface is a straightforward job. The contrast of woods, as well as the usefulness of the project, make it appealing.

The first step is to frame the opening for the drawer out of two $\frac{1}{2}$ x $\frac{3}{4}$ inch pine strips glued to two $\frac{3}{4}$ x 2 x 5 inch blocks so that there is a 10 x 2 inch drawer opening. Next, the other three sides are cut from $\frac{3}{4}$ inch pine.

Rabbet all sides as shown and assemble box with glue and two #4 finish nails at each corner. Double-check the box to make sure it's perfectly square.

Cut the bottom of $\frac{1}{4}$ inch birch plywood so it's about $\frac{1}{8}$ inch oversize all around and glue and nail in place with wire brads; then sand projecting edges perfectly flush with box sides.

The drawer is made from $\frac{1}{2}$ inch pine. Check the length of drawer sides to match your box, or you can make the drawer a bit shorter and locate stop blocks on the bottom so the drawer front stays flush with the box front. Drawer dividers are handy for keeping the chessmen and checkers separated. These are cut from $\frac{3}{8}$ inch pine strips and glued in place.

The top is also made from $\frac{1}{4}$ inch birch plywood, cut $\frac{1}{8}$ inch oversize. With the best side facing up, attach the top to the box with glue and wire brads. When dry, sand flush with all four sides of the box.

Start the veneer work by cutting two maple veneer strips 2 x 16 inches and two strips 2 x 20 inches for the border. Also cut 32 walnut or mahogany 2 inch squares and 32 maple 2 inch squares for the playing field. A steel framing square with a 2 inch body makes a handy cutting guide when cutting with a sharp utility knife or veneer saw.

Spread a coat of contact cement on

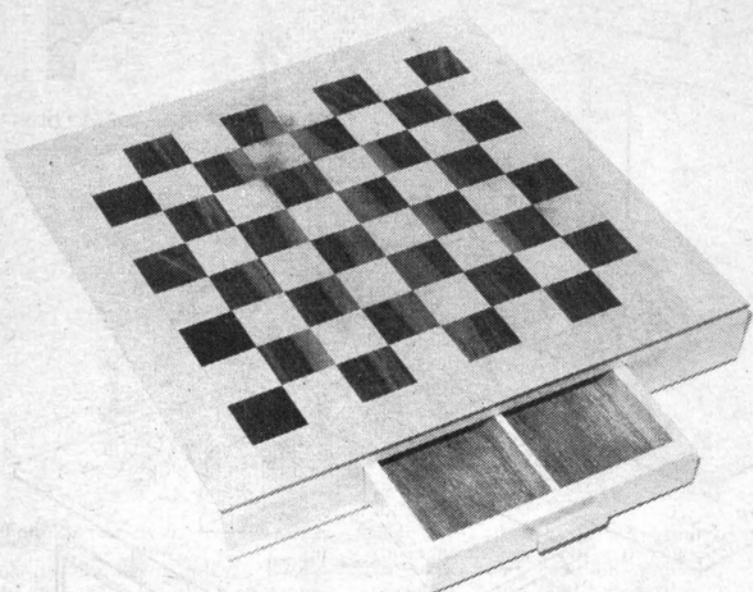
both the top and one side of veneer. First set two side borders, then the field of alternate squares, keeping grain direction of all squares in the same direction. Trim the edge of the field squares, then set the last two borders.

An alaphatic resin (yellow) glue such as Titebond can also be used. It has an advantage over contact cement in that it does not bond instantly, allowing the squares to be moved and adjusted as necessary. Cover veneered top with a piece of $\frac{1}{4}$ inch hardboard and clamp down (use wax paper under hardboard).

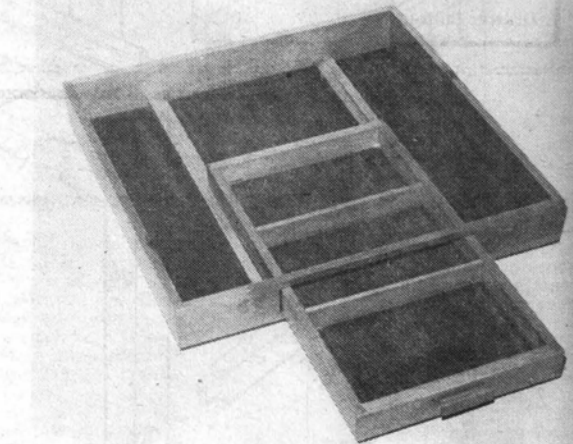
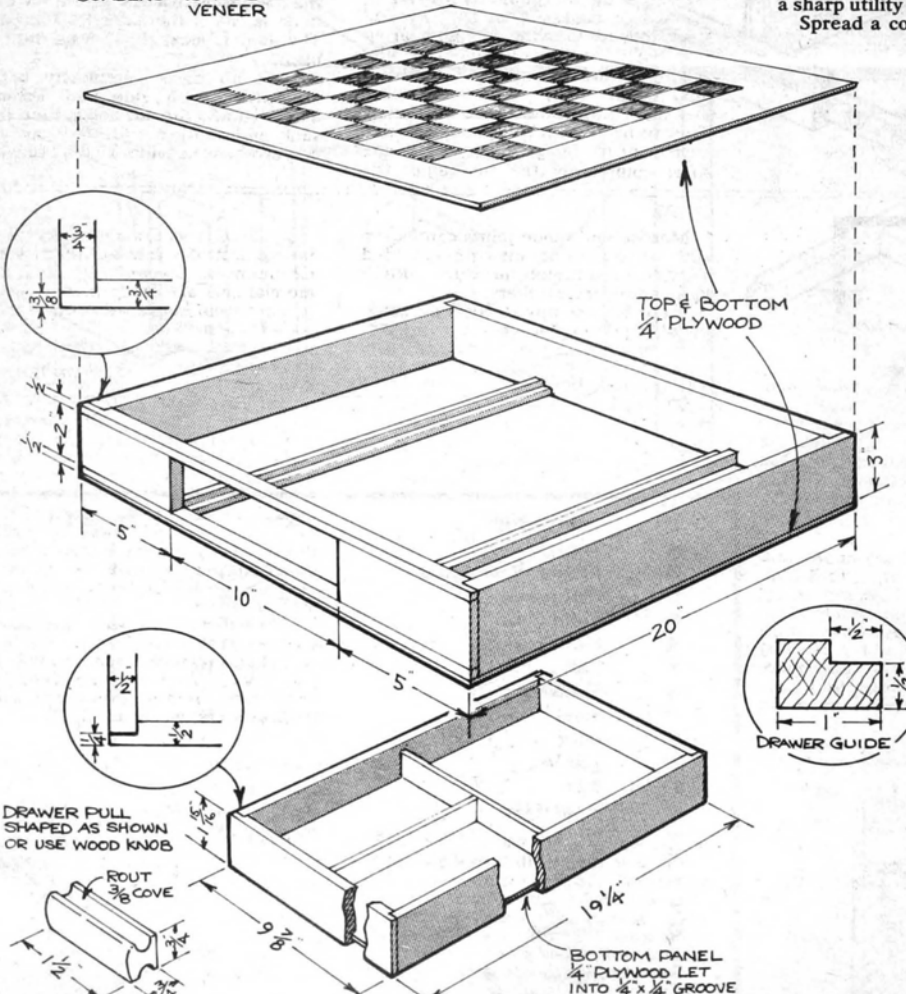
Instead of butting the borders you may want to miter the corners in which case the four border strips should be cut to slightly more than 20 inches in length. The strips are overlapped at the corners and a miter cut made through both strips at once. If desired, the four sides of the box can also be covered with an attractive veneer as shown in the bottom photo. In this case, you can veneer right over the drawer opening and cut out the opening later.

Make up a drawer pull as shown or attach one of your choice, sand all surfaces with care, working up to 220 grit paper and seal with a clear finish to preserve the contrast between the different woods.

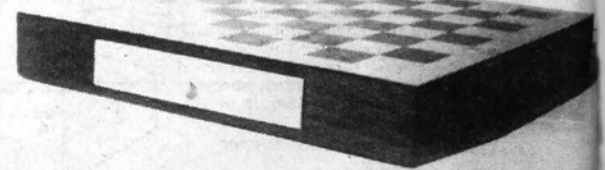
It may also be of interest to know that Albert Constantine & Son, Inc., 2050 Eastchester Rd., Bronx, NY 10461, sells pre-assembled chessboard veneer face. A lot of time is saved since the entire chessboard is ready to glue down. It's available with squares of mahogany and maple, or walnut and maple, surrounded by a matching border. The veneer is $\frac{1}{28}$ inch thickness and the square sizes are $1\frac{1}{4}$ x $1\frac{1}{4}$. However, the outside measurement is 18" x 18", so your box dimensions will have to be adapted to suit. For those who also enjoy backgammon, they also offer a pre-assembled backgammon veneer face, with outside dimensions of 20" x 20".



VENEER: 2 SQUARES OF CONTRASTING WOODS
BORDERS: 2" WIDE VENEER

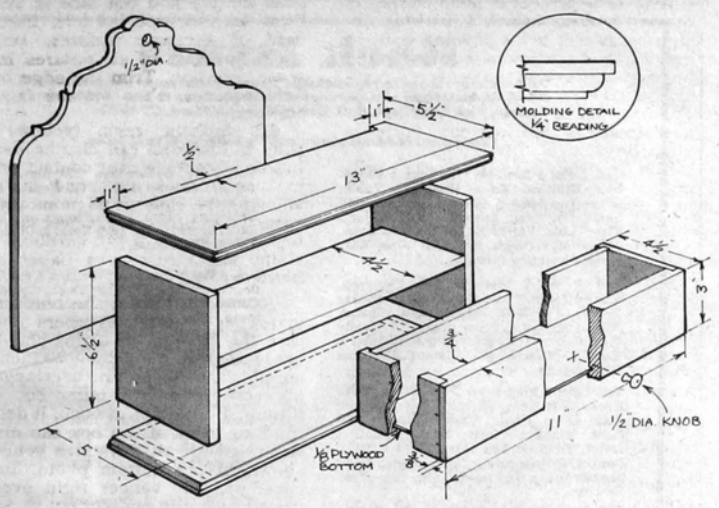


Before attaching top, make sure that drawer fits well and moves easily along grooves.



For this chessboard the author chose to veneer all four sides. It's a detail that adds considerably to the appearance of the box. Drawer front is made of pine.

Pine Wall Box



Bill of Materials	
Description	Size
Top	1/2" x 5 1/2" x 13"
Bottom	1/2" x 5 1/2" x 13"
Side	1/2" x 5" x 6 1/2"
Divider	1/2" x 4 1/4" x 11"
Back	1/2" x 11" x 13 1/4"
Drawer Front	3/4" x 3" x 11"
Drawer Side	1/2" x 3" x 4 1/4"
Drawer Back	1/2" x 2 3/4" x 10 1/2"
Drawer Bottom	1/8" x 3 1/2" x 10 1/2"

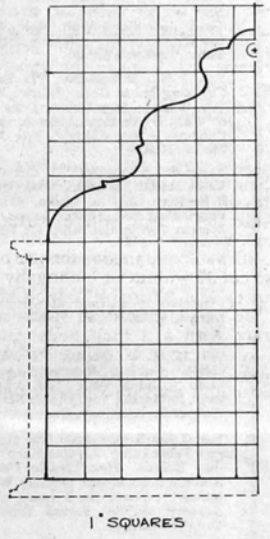


Photo: John Kane

Small pine boxes were found in many Early American homes. They probably enjoyed this popularity because they not only provided a convenient place to store small items, but they also served as very lovely wall decorations. Our wall box, made almost entirely from 1/2" pine, is a fine example of those charming designs.

Begin by cutting the top and bottom to size, then use a router with a 1/4" beading bit to cut the decorative molding on the front and sides. Adjust the cut so that the lip is slightly heavier on the outside edge (see detail). Since 1/2" stock does not provide enough bearing surface for the router bit pilot, the pilot will burn into the stock. To prevent this, clamp scrap stock underneath and flush with the edge to be routed. This provides the additional bearing surface needed to get a good clean cut. After completing the moldings, the

1/2" x 11" notch can be cut out from the top.

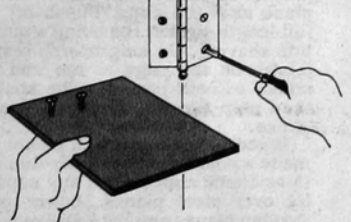
Next, cut the divider and two sides to proper length and width. The back is made up of 2 pieces of edge glued 2 x 6 stock.

Cut all drawer components to size, noting that 3/4" stock is used for the front, 1/2" for the back and sides, and 1/4" plywood for the bottom. A 1/4" wide x 1/4" deep groove is routed for the bottom in the front and two sides. The groove is located 1/4" from the bottom. Also a 1/2" wide x 1/4" deep dado is cut in the sides for the back. The dado is located 1/4" from the very back.

Sand all parts completely before assembling with glue and finishing nails. Set and fill nail holes, then final sand and stain to suit. Two coats of polyurethane provide the final finish.

Shop-Tips

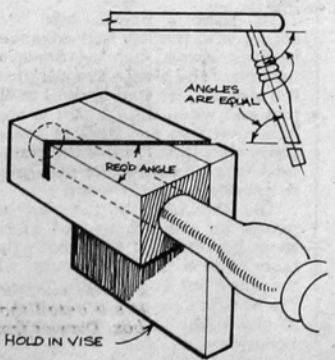
When repairing furniture and it's necessary to remove many hinge and other screws, drive them into a piece of corrugated cardboard, keeping each set of screws in its own group. They won't roll around and get lost and you'll know where each screw goes when its time to re-assemble.



A small magnet covered with a piece of cloth makes it easier to remove steel wool particles from tight corners and moldings. The cloth protects the wood from being damaged, and when the cloth is removed the particles stay on the cloth...not on the magnet. In tight corners a square magnet works best.

Philip Jordan Jr.

The jig shown below will enable you to uniformly cut off four or four hundred stool legs at the required angle. Just bore a hole big enough to take the leg, through a block. Lay out the angle required by the splay of the leg and slot block with a backsaw. A backboard screwed to the block holds the jig securely in the bench vise as you make the cut.



Bicycle spokes make good drill bits for those hard to reach spots. A spoke cut seven inches long and ground to a point, can be used to drill pilot holes for screws and 4 and 6p nails. The long bit will bend as it is turning to drill next to chair rungs or shelf sides, and the drill chuck is never in danger of touching the workpiece.

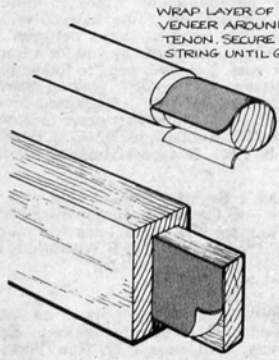
Robert S. Tupper

Drop an important project part such as a dovetailed drawer front and it invariably seems to land on a corner, crushing the wood. Floor mats will prevent this frustrating experience and are a lot easier on the feet than concrete floors.

Mortise and tenon joints can loosen with age, so it's not uncommon to find a piece of antique furniture with a loose apron or stretchers.

If the fit is sloppy it won't do much good to just reglue the joint...it will come apart all too soon. The fit must be properly restored in order to have a long-lasting joint.

First, all the old hide glue must be removed from both mortise and tenon.



THIN VENEER GLUED TO TENON (BOTH SIDES IF NECESSARY)

Apply hot water to the glue areas and within minutes it will soften enough to scrape off. Cut a piece of veneer to fit one side of the tenon, then glue it in place. If fit is tight, trim with chisel or sandpaper. If still too loose, add veneer to the other side.

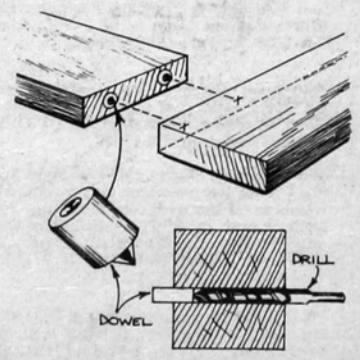
For round tenons, first dip veneer in warm water to make it flexible, add glue to tenon, then wrap veneer completely around. Use elastic bands or string to hold it tightly in place.

Thomas A. Gardner

A set of dowel center markers will insure accurate doweled joints with a minimum of layout work and commercial sets are inexpensive. Trouble is, your local hardware store probably doesn't carry them and they have to be mail-ordered. On the other hand, if you're looking for something to do some rainy evening, it's an easy job to make your own accurate set from dowels of the most used diameters.

The dowels are fitted with common nails which are driven through drilled holes so that the sharpened point protrudes about 1/16 inch. The holes should be sized for a snug fit of the nail. To center-drill dowels accurately, drill a hole, the same diameter as the dowel, through a block; tap dowel in, and run the drill bit in from the other side as shown.

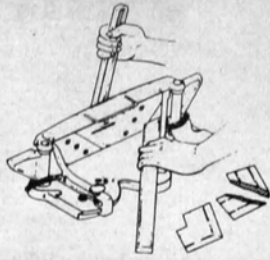
You will have to sand the dowels enough so that they can be easily inserted and removed from the holes. If you have a lathe, you can turn your own dowels from hardwood and shave them down for a perfect slip fit.



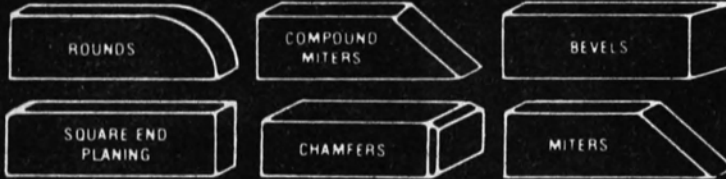
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Vol. 3 No. 6 Nov-Dec '79: Clothes Tree, Pine Floor Lamp, Harvest Table, 5 Holiday Gifts, 19th Cent. Washstand, Table Saw Round Tapering Jig, Quilting Frame, Tot's Tricycle, Swedish Door Harp.

Vol. 4 No. 1 Jan-Feb '80: Doughbox End Table, Contemporary Loveseat, Mahogany Chairside Table, Corner Cupboard Part I, Small Pine Corner Cabinet, Knife Rack-Cutting Board, Apple-Shaped Mirror, Pin-Tape Dispenser, Auxiliary Cut-Off Table for Table Saw.

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 Century 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.

The Beginning Woodworker (Cont'd)

Seat the double iron, bevel side down on the frog, slip the lever cap over the cap screw and press the cam down. If the cam is hard to move, back off on the cap screw a bit. Clamping pressure must be enough to keep the cutter from chattering on heavy cuts.

To adjust a plane for use, sight along the bottom of the plane and turn the large adjusting knob until you can just barely see the cutter protruding through the sole. Using the lateral adjusting lever, shift the blade until it protrudes evenly across the width of the bottom. At this point, the lateral adjusting lever may or may not be centered; its final position is not important.

To plane a board, take an easy stance with the left foot advanced and begin a stroke, bearing down on the toe end of the plane. Toward the end of the stroke shift your weight to the left foot and when the far end is reached, bear down on the heel of the plane. Carry the plane back to the start of the next stroke instead of dragging the cutter edge over the wood.

The thickness of the shaving depends on the amount of stock that must be removed to smooth the surface. Don't take fine cuts when a roughing cut is required. When planing boards flat, use one bottom corner of the plane as a straightedge laid crosswise of the board to check progress.

As previously discussed, the big jointer planes will initially remove the high spots along an edge. Check straightness of the edge by sighting along it. If there is a crown at the center, bring it down with a few passes. If the center has a hollow, plane near the ends. Finish off with full-length strokes removing a uniform thin shaving. On long boards rest the jointer on the edge at the end of a stroke without breaking the shaving; then step forward and continue the stroke.

In recent years, wooden planes have made a comeback, probably due more to aesthetic appeal than any superiority over steel planes. Lower priced wooden planes employ a wedge to hold the iron, are fussy to adjust and generally more expensive than high quality steel versions. Also, they may need some initial "doctoring" to cut properly. Better grade wooden planes have lignum vitae soles and plane iron adjusting screws which make them as convenient to use as steel planes. At double the price of a good steel plane, they are not for the casual woodworker. Wooden planes generally correspond in size to the steel versions.

Apart from sharpening, planes require little care. A light coat of oil or wax protects the body and other parts. When setting a plane down, always lay it on its side to protect the cutting edge. Like other fine tools, planes deserve storage in a dust-free cabinet.