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THE DELTAGRAM

VOL. 9, No. 1 OCTOBER - 1939 TEN CENTS

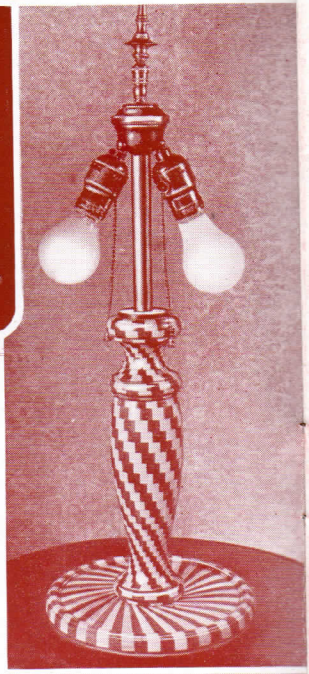
WHIMSTER'S HARDWARE

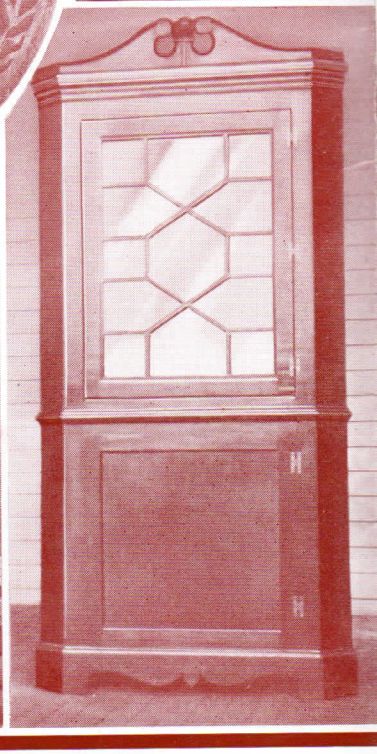
Occasional TABLE • *SHOP Lighting* • *Table LAMP*

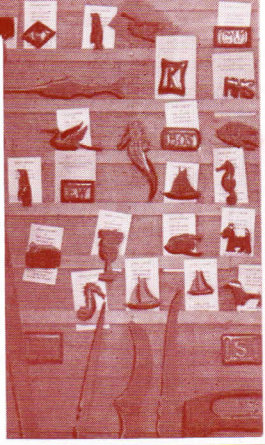
CRAFTSHEET • *One Evening Projects* • SHOP TIPS • *Saw Gumming*

WHIMSTER'S HARDWARE

LOOK!

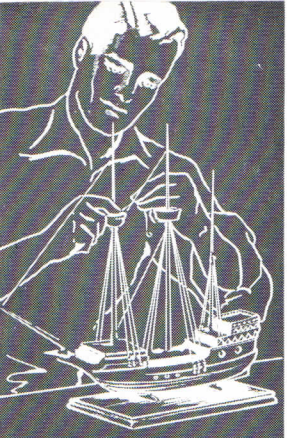






● Arthur Dixon, Vancouver, B. C., is the builder of the beautiful *grandfather clock*. It was five months in the making. ● *Model houses* in a price range from twenty-five to two hundred dollars is the business of James W. Butcher, Washington, D. C. All are electrically lighted and built to exact scale. ● Over seven hundred pieces of maple and walnut went into the making of the built-up *lamp*, an excellent bit of lathe work by C. Bradford, Toronto, Canada. ● The *inlay* showing the seal of the San Francisco fire department is the work of Henry Waxstock, San Francisco, Calif. Twenty-five different kinds of wood were used in making the design. ● The *corner cupboard* is from the shop of George W. Shimp, Boyce, Va. It is made from black walnut, some of the pieces being over fifty years old. ● John E. M. Davis is the owner of The Country Souvenier and Antique Shop, Somerset, Bermuda, where the song of the saw produces numerous *novelty products*.

What Other Crafters are Doing

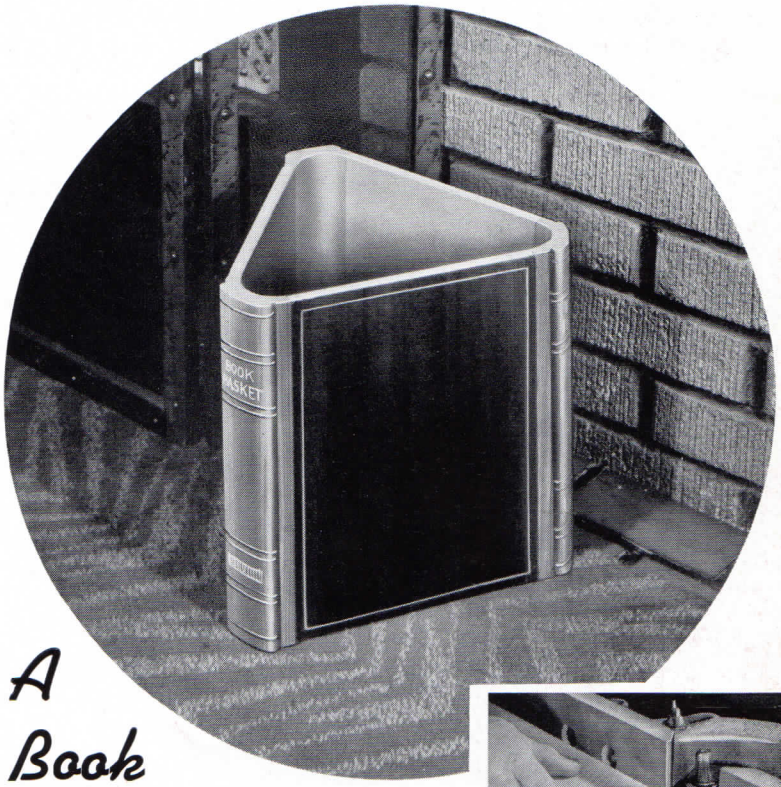


THE DELTAGRAM

A Magazine for
CRAFTSMEN
★
Edited by
SAM BROWN

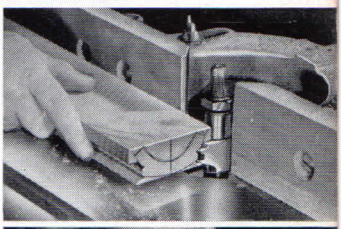
Vol. 9 OCT., 1939 No. 1

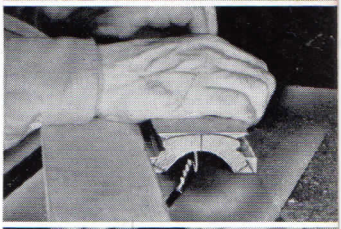
● *Published by The Delta Mfg. Co., Milwaukee. Sold only by Subscription—50c the Year.*

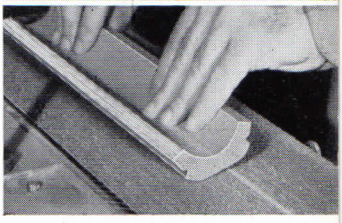


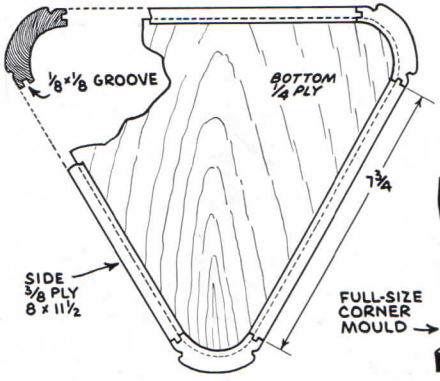
A Book WASTE BASKET

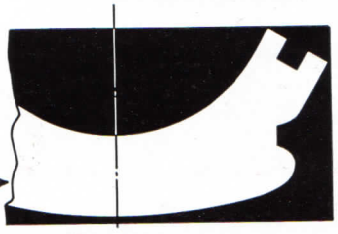
RESEMBLING an open book, this basket is both novel and practical. The corner pieces go through a cycle of operations including shaping, cove cutting, sawing and sanding, as shown in the photos at right, to arrive at the final shape. One, 36 inch length will make the three pieces required. Plain panels of plywood are fitted to the corner pieces, using a tongue-and-groove joint. Carving can be carried out to suit to get a realistic "book" effect. The bottom is set in a rabbet all around, and the whole unit is glued together in one operation by winding it with several turns of strong twine.

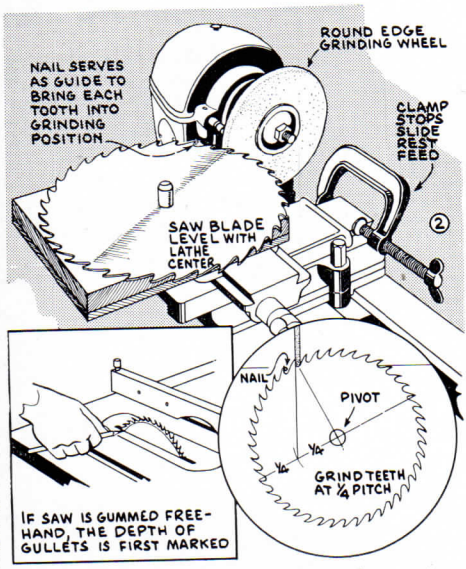












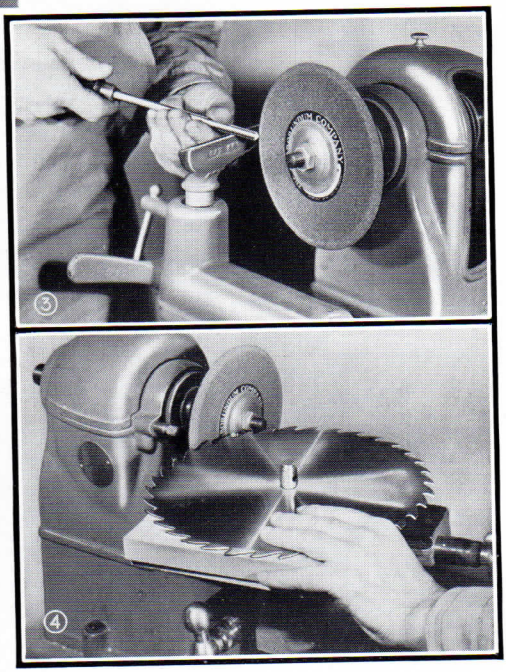
Above, simple automatic method of gumming and grinding circular saw blades. Below, dressing wheel and grinding backs of teeth.

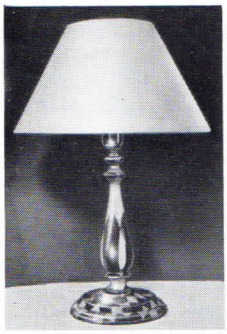
SAW GUMMING
with a GRINDING WHEEL • •

MANY workers gum the circular saw blade freehand, holding the blade on a flat surface and projecting each gullet in turn into the round-edge grinding wheel which is used. The only guide required for this form of grinding is a pencil line to show the depth of the gullet. This can be run in while the saw is mounted on the saw arbor, as shown in the inset, Fig. 2.

An automatic set-up for grinding and gumming can be made on the lathe with the use of the slide rest, as shown in Fig. 1. The inset in Fig. 1 shows how the grinding jig is mounted on the slide rest. The diamond dresser or silicon carbide stick dresser is used to dress the grinding wheel to the required gullet shape, as shown in Fig. 3. The shape of the wheel should fit the face of the tooth and as much of the gullet as the width of the wheel will grind. The tooth shape for combination and ripping blades will generally be one-quarter pitch, and the set-up should be made to carry out this pitch, as shown in the circle inset, Fig. 2.

Grinding is done by feeding the saw into the wheel by means of the slide rest feed. A nail in the work table provides a stop so that each tooth is accurately aligned for grinding. A clamp fitted across the slide rest base provides a stop for depth. Each tooth is ground in turn. The saw should be free from gum which might clog the grinding wheel or cause an inaccurate setting against the guide pin. After the gullets and tooth faces are ground, the position of the slide rest can be changed to grind the backs of the teeth, as shown in Fig. 4. A bevel, if required, can be obtained by fitting a wedge below the slide rest base. Throughout the whole operation of sharpening the circular saw by grinding, caution must be used to prevent burning. This is important. It is very easy to spoil the saw by hurried work.





LIGHT UP!

MAKE a base and stem and top it with a glass bowl and shade—*presto*—you have a smart table lamp. The two above are built to I. E. S. specifications; the one in circle is slightly shorter. Plans for the plastic lamp are given below. This makes use of standard cylinders in French blue and Castilian red, obtainable from Trafford.

★

LAMP Kits

A kit containing reflector bowl, adapter, socket, pipe, lamp cord, etc., can be obtained from Wheeling Equipment Co., 1227 Main St., Wheeling, W. Va.

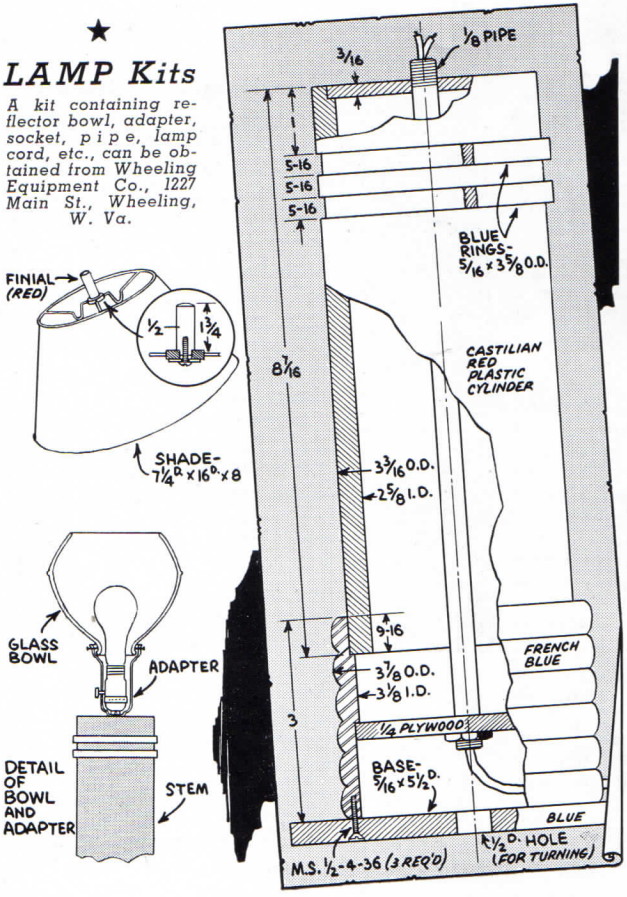
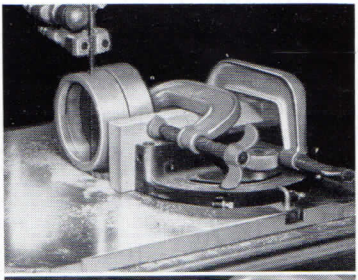
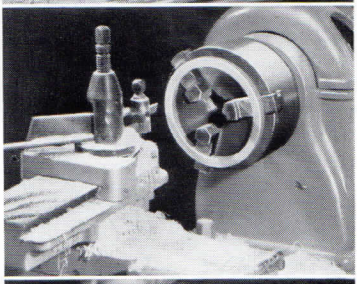
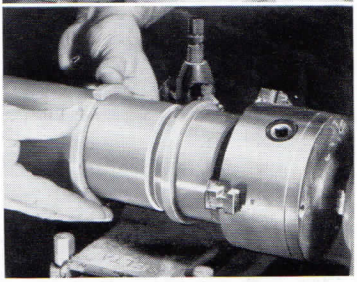


Table Lamps Are Easy-to-Make







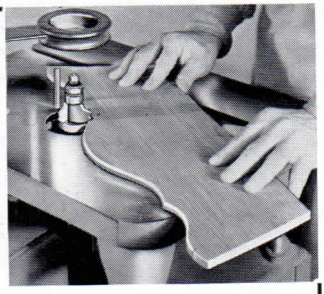
Top, cutting the French blue cylinder on the band saw to make the rings for upper part of stem. Center, dressing one of the rings on the lathe. Bottom, the ring is snapped over the stem and pushed into position.

MAGAZINE RACK *in Maple*

STYLED in the best Colonial manner, this simple chairside piece provides plenty of room for books or magazines. Start the construction by making the basket. This has a bottom of ¾ inch stock, the ends of which are beveled at twenty degrees. The two side pieces can be bradded together and cut in one operation on the band saw and scroll saw, after which they are separated for shaping. The mould used is a simple round, stopped slightly short of the ends. Similar shaping of the cutouts in the side is best done by hand with sandpaper. The ends are housed in the side pieces, the groove being run in with a ¼ inch straight shaper cutter. Joints at the bottom are simply butted and nailed.

The top is oval in shape. Any pleasing curve based on the major and minor axis dimensions given will work out satisfactorily. All turnings are conventional and should offer no particular difficulty. The legs are set in about 1 inch from the corners of the bottom and are tilted diagonally from the corner to an inclination of about 1¾ inch. Leg tenons can be housed or extended right through the bottom. If extended through they can be wedged for a strong joint. The two main turnings can also be fitted with wedged tenons if desired.

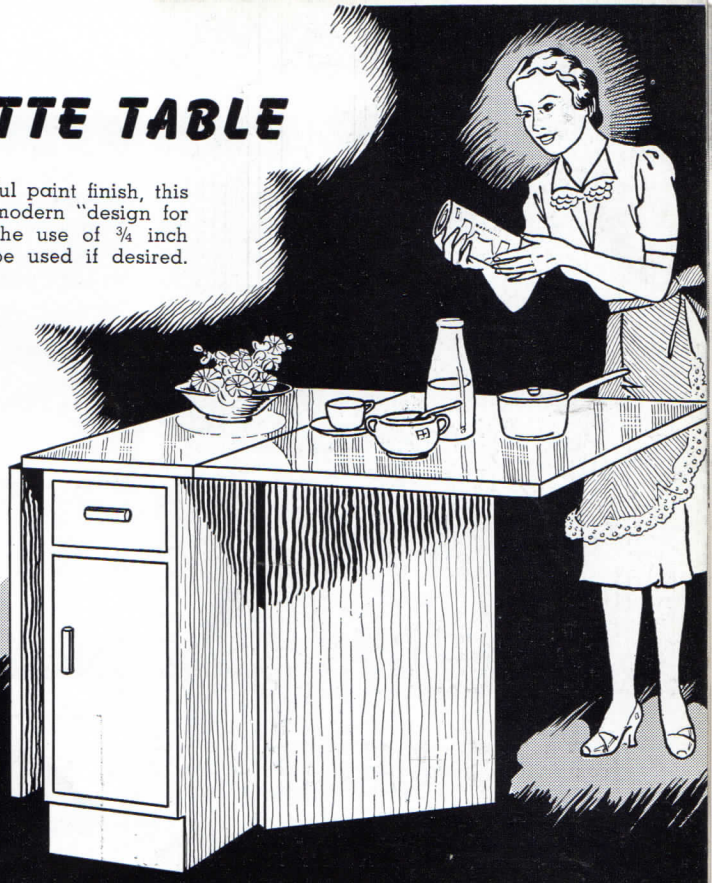
Shellac, varnish or lacquer can be used for the finish. In any case, the wood, if maple, will require no filling. A coat of maple stain can be used if desired to uniform the wood and give a slightly deeper tone than the natural wood color. For a shellac finish, thin a 4-lb. cut orange shellac about half-and-half with alcohol for the first and second coats, increasing to a 4-lb. cut for succeeding coats. Four or five coats should be applied, rubbing each when dry with No. 3-0 garnet or No. 0 steel wool. The final coat should be sanded with No. 6-0 paper and rubbed down with pumice and oil, after which the piece can be given a coat of wax. The wax should preferably be colored with a small amount of burnt umber to give it a tone approximating the color of the finish.



Attractive in a simple shellac finish, this rack is typical of small Colonial pieces so popular today. The construction is quite obvious and should offer no difficulties to even the beginner in woodworking.

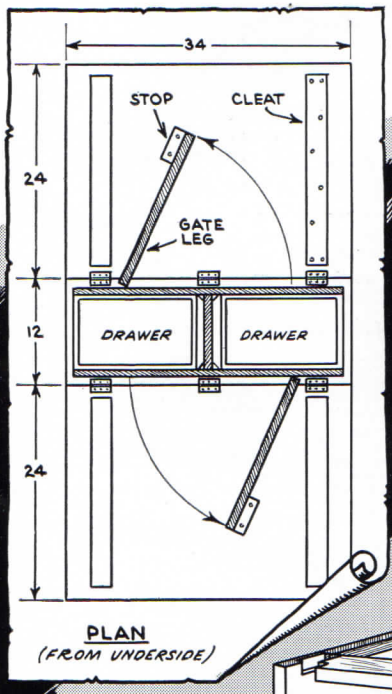
Gateleg DINETTE TABLE

SMART in blond maple or a colorful paint finish, this gateleg dining table is a practical, modern "design for eating." The construction features the use of ¾ inch plywood, although solid stock can be used if desired. Gates can be either solid plywood or panel frame construction. Ten, 2½ inch hinges are required for fitting the leaves and gates. The gate hinges should be let in so that the gate will come flat against the side when closed. A rule joint can be used between the top and leaves if desired.

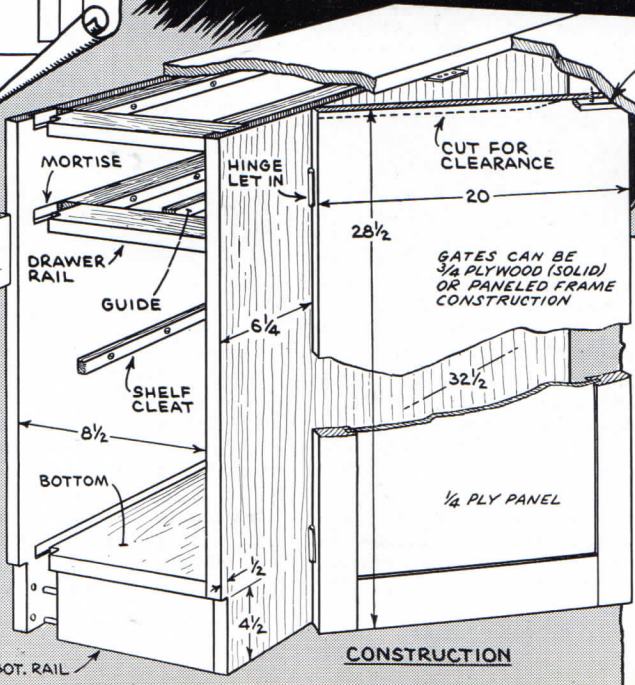


A SPACE-SAVING UNIT

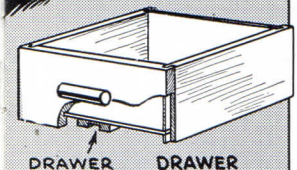
• *With Both Leaves Down, Top Measures 12x34. With Leaves Up, Top is 34x60*

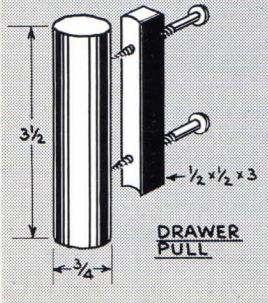


PLAN
(FROM UNDERSIDE)



CONSTRUCTION

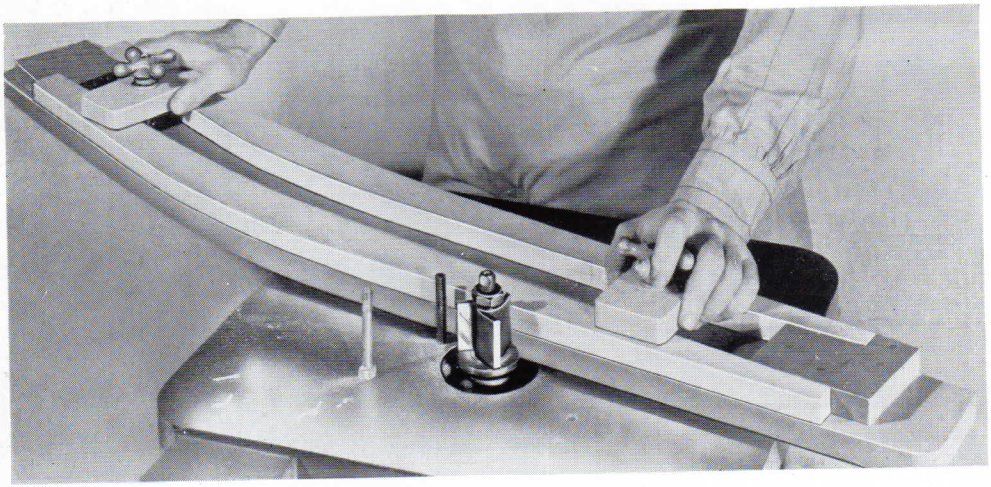




DRAWER PULL

LUMBER LIST OF MAIN PARTS

TOP (1)	¾ × 12 × 34
LEAF (2)	¾ × 24 × 34
SIDE (2)	¾ × 32½ × 28½
GATE (2)	¾ × 20 × 28½
TOP RAIL (3)	¾ × 3 × 9½
BOT. RAIL (2)	¾ × 4½ × 8½
DOOR (2)	¾ × 8½ × 17¾
DR. FRONT (2)	¾ × 4 × 8½
BOTTOM (1)	¾ × 9 × 32½
LEAF CLEAT (4)	¾ × 2½ × 20

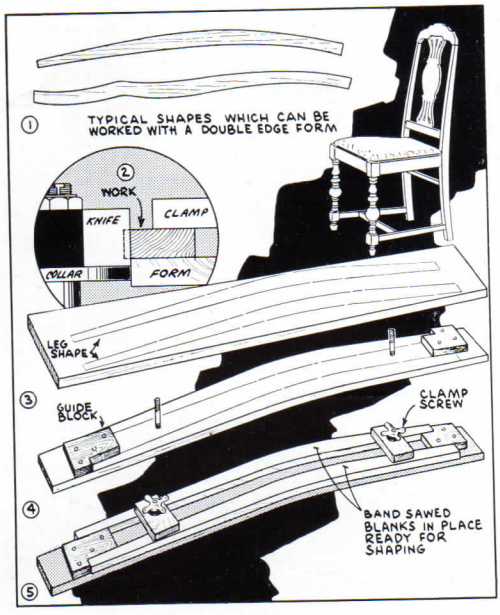


SHAPING with a Double-Edge FORM

WHERE long, narrow shapes are to be planed to size on the shaper, the use of a conventional form becomes more or less unsatisfactory. The main drawback to the use of a regular form for such work is the safety factor—it can be seen that such shapes as those shown in Fig. 1, offer little room for anchor points and must necessarily pass the feed hand very close to the knife.

A better type of form for such work is made from a wide board carrying the outline of the work on opposite edges. The typical example illustrated in the drawing shows how a double-edge form for a chair leg is made and used. A board 6 or 8-inches wide and slightly longer than the work is required. On opposite edges of this is penciled the full shape of the work, as shown in Fig. 3. This should be done from an accurate wood or metal pattern. The outer line of each leg shape is then band sawed and the edges carefully smoothed and lightly sponged with oil. These are the edges which will ride against the guide collar. Guide blocks are made to fit the ends of the inside lines, and are nailed or screwed in place, as shown in Fig. 4. Fig. 5 shows two of the band sawed blanks in place ready for shaping. One edge of each is shaped in the position shown, then the legs are reversed from side to side and the opposite edges cut to size.

In band sawing the blanks, the saw cut should be made carefully for a distance of about two inches from each end, while the rest of the cut can run up to 1/8 inch wide of the mark. It can be seen that a fairly accurate end cut is necessary in order that the blanks will be located at the proper positions when fitted against the guide blocks. Running the first cut will reduce the work to net width at the ends, so that when the pieces are reversed they should be set about 1/32 inch clear of the guide blocks. This can be done with the use of cardboard or metal shims.



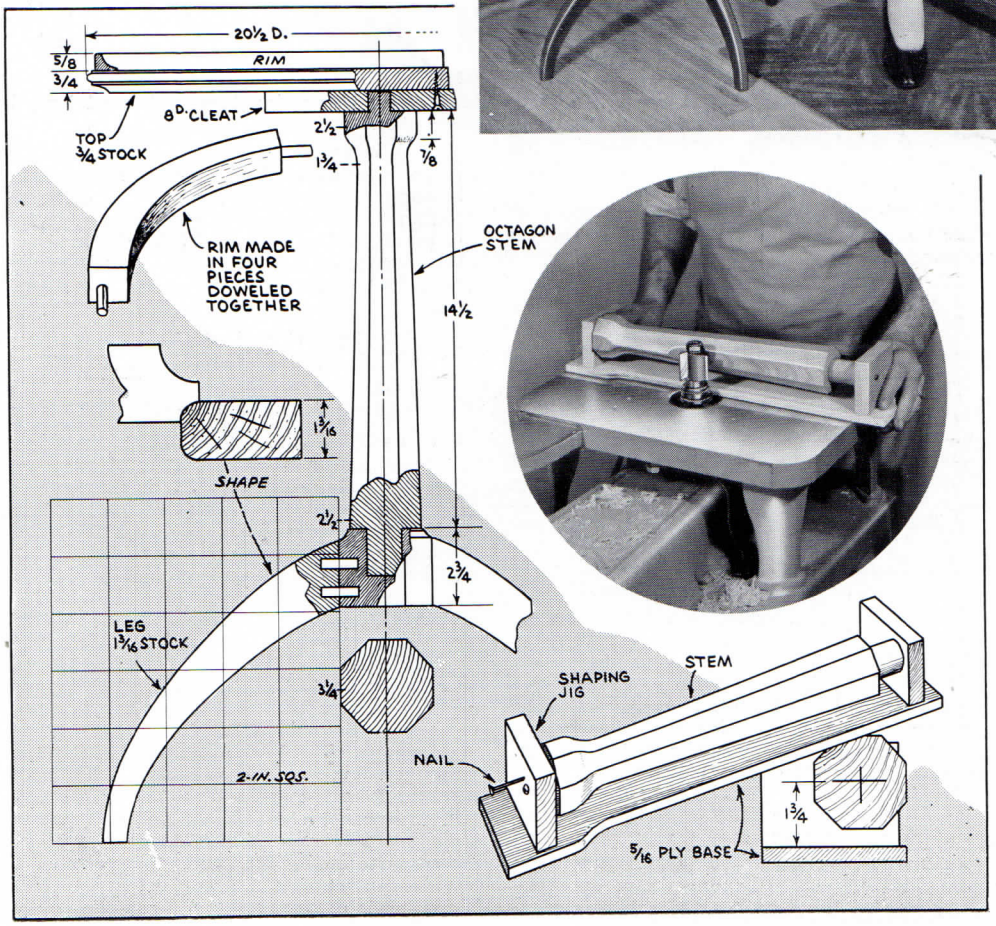
Safe, accurate work on narrow pieces is possible with the use of a double-edge form.

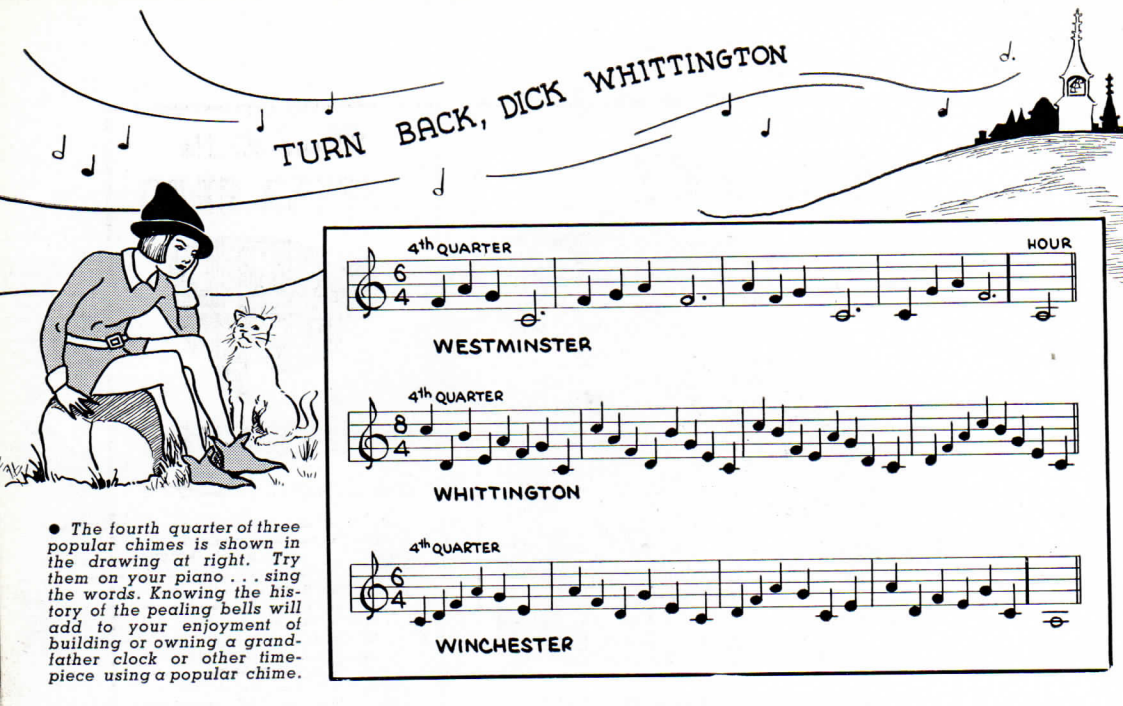
While not quite so fast as a single form, the double form has the advantage of a safe, easily-manipulated piece of work. The use of the clamping device for holding the work eliminates anchor point marks. In production runs, cam levers for locking the work in place would shorten the time required to make the change from one edge to the other.

Occasional TABLE

TWO of these tables make a neat living room group when placed at the ends of a davenport. The construction is quite simple, but requires the use of practically every tool in the shop. Start by making the top. This consists of a solid circle, 20½ inches in diameter, topped with a raised rim. The rim is made in four pieces, doweled together.

The stem is a square turning having eight sides. It should be roughly band sawed to shape and then finished by square turning on the shaper, using a 1½ inch straight cutter. The drawing below shows the jig used. The base serves as a form, and the riding edge is cut and smoothed to the same contour required for the leg. Two round head screws hold the stem in the jig. A nail, fitting loosely through a hole in one of the end pieces, is driven into the turning to set each of the eight cuts in turn. The short, straight-sided section of the stem can be worked by band sawing and sanding.





● *The fourth quarter of three popular chimes is shown in the drawing at right. Try them on your piano . . . sing the words. Knowing the history of the pealing bells will add to your enjoyment of building or owning a grandfather clock or other timepiece using a popular chime.*

What are the CHIMES Saying?

SOMEWHERE in the construction of a grandfather clock, most crafters pause and play over and over the simple melody of the chimes. Did you? And, did you ever wonder just how these chimes originated and what words actually go with the melody? The next time your Westminster booms out, think of this refrain:

"Lord, through this hour,
Be thou our guide
So, by Thy power,
No foot shall slide."

There is one word to each note and the melody is easily followed. Anyone living within sound of the famous bells of Westminster Abbey is familiar with this verse. The carillon is generally credited to Dr. Randall who probably conceived the idea from a movement in the fifth bar of the opening of Handel's Symphony. The chimes were first used in Cambridge, England, in the clock of the University Church, and immediately became popular.

Most elaborate of well-known chimes are the Whittington chimes, originally rung in the Boy Church, Cheapside, London, in the fourteenth century. They became famous through the popular legend of Dick Whittington, who, running away from the drudgery of his master's housekeeper and resting at the first milestone, seemed to hear the distant chimes say:

"Turn again, Whittington
Lord Mayor of Londontown."

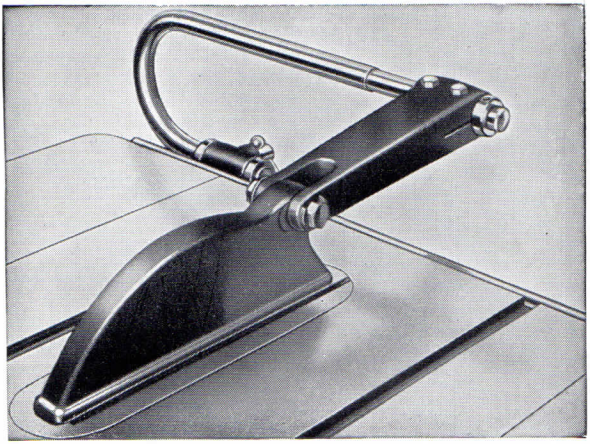
As the story goes, Whittington took new heart and returned to London where he eventually rose to the position of Lord Mayor, married his master's daughter and lived happily ever after.

The Winchester chimes were conceived by Bishop Walkilin early in the twelfth century. The original central tower of the cathedral housing them still stands and forms a part of the present cathedral which is located in Hampshire, England. Visitors from all over the world find these beautiful chimes of special interest:

"O Art Divine, exalted blessing,
Each celestial charm expressing,
Proudest gift the gods bestow,
Sweetest chimes that mortals know."

Of the three chimes described, the Westminster is by far the most popular. Undoubtedly, part of this acceptance lies in the fact that the simple melody is easily manufactured. Notwithstanding its simplicity, the four-note melody is really beautiful and is universally recognized and loved. The Whittington chimes have eight notes; the Winchester, six. In addition to the melody notes, an extra gong is always required for the hour strike. As used in grandfather clocks, the chime is played on either forged rods or tubular bells. The four-rod chime and the five-tubular bell movements are the ones commonly used, the chime being the familiar Westminster. A separate gong strikes the hour when the four-rod chime is used. Elaborate movements sounding the Westminster, Whittington and Winchester chimes on nine tubular bells are a feature of high-priced clocks, but the average crafter building a long case clock is well content with the simple beauty of the Westminster chimes.

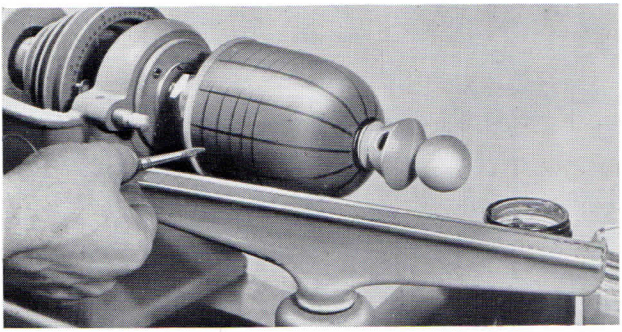
SAFETY!



ABRASIVE WHEEL GUARD IS YOUR PROTECTION

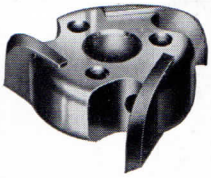
Abrasive Wheels when used on the circular saw should be covered with a special type guard to protect the operator. This type of guard has always been available for the 8-inch saw and is now available for all Delta Circular Saws. Photo above shows the guard mounted on the 10-inch Unisaw. Saws already fitted with a regular guard require only the abrasive wheel basket and arm to permit installation on any Delta 10-inch Circular Saw. Consult the new Delta catalog for complete description and prices—don't be without this protection.

TURNINGS Painted on Lathe



WHERE rings or stripes are to be painted on turned novelties, the work can be done quickly and neatly if the piece is mounted in the lathe. The lathe is not under power, but is turned by hand. The brush is supported on the tool rest, rings being run in by simply holding the brush in contact with the work as the lathe is turned by hand. The tool rest provides a guide for horizontal striping, while the indexing head divides the work into any required number of divisions.

Three-Knife CUTTER HEAD



for SHAPER

Uses Moulding Head Knives

INCREASING the scope of shaper work, this new cutterhead uses the same knives used in the circular saw Moulding Head. Each knife is mounted in the head by means of a self-locking set screw—exactly the same method used on the circular saw head. Get one of these heads today and get extra service from your set of moulding head knives.

No. 1343 Three-knife Cutter Head, ¾ inch bore with bushing to fit ½ and ¾-inch spindles. With wrench **$3.95**

Discontinued STOCK

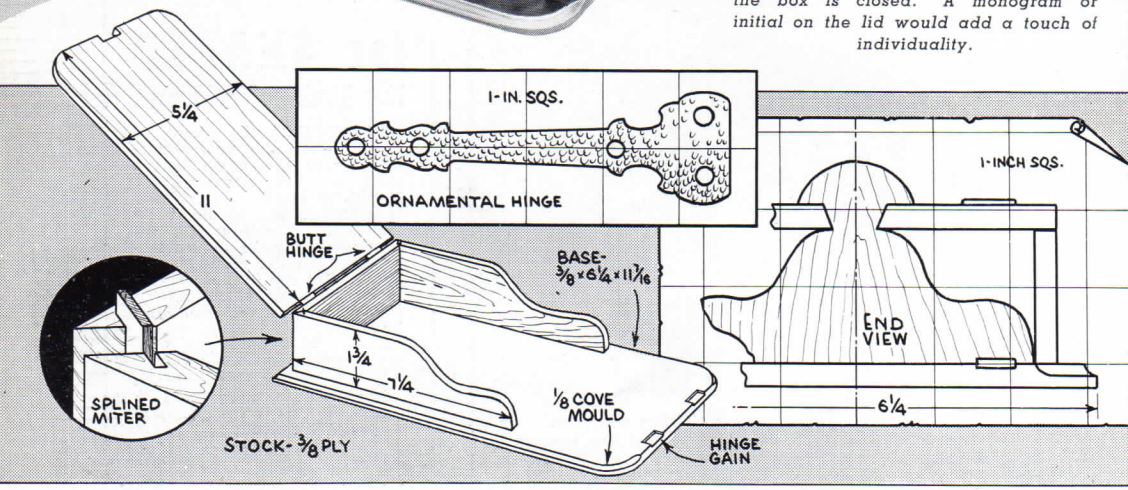
SAVE MONEY On These Fine SCROLL SAW BLADES!

● During the jig saw puzzle craze, Delta acquired a vast quantity of very narrow, thin blades then so much in demand for puzzle work. We have a good supply of these blades left. They are no longer in production, being an in-between size in the present listing of Delta scroll saw blades. These blades are .0065 inches thick by .025 inches wide, with 21 teeth to the inch. Ideal for puzzle work or fine marquetry. Order a gross today at this special price.

No. 65025-21J Special scroll saw blades. Gross lots only. Per gross **$1.65**

Correspondence BOX

● *MAKE this from either 3/8-inch plywood or solid stock. The sides of the box are screw fastened from the underside of the base. The hinged end should be a neat fit in the slot provided in the lid so that it will lock securely when the box is closed. Ornamental hinges for the lid can be purchased or made in brass, copper or lead to suit. The actual working hinges are a pair of small butt hinges in brass. Hinges for the locking end piece should be let in so that the end will be flush with the base when the box is closed. A monogram or initial on the lid would add a touch of individuality.*



Now Ready . . .

GETTING THE MOST OUT OF YOUR

ABRASIVE TOOLS

- **THE BELT SANDER**
- **THE DISK SANDER**
- **THE GRINDER**
- **THE BUFFING HEAD**

SIXTH in the series of Delta shop handbooks, this new volume covers all operations in sanding, grinding and buffing . . . how to sharpen . . . how to use cut-off abrasive wheels . . . using sanding drums . . . abrasive wheel selection, etc. Whether you work with wood, metal or plastics, you will find it valuable in everyday shop work.

GETTING THE MOST OUT OF YOUR ABRASIVE TOOLS
40 pages, 6x9, price postpaid..... **25¢**

SAW DUST

LACQUER thinner is ideal for removing grease from tools, eliminating resinous pitch on shaper cutters, and other clean-up jobs of similar nature.

PROJECT book No. 6, containing the best projects from Vol. 8, The Deltagram, is now ready. The price is ten cents.

A HINGED panel fitted between two ceiling joists makes an ideal mounting for shaper cutters. All cutters are on pegs, the panel being swung down for cutter selection.

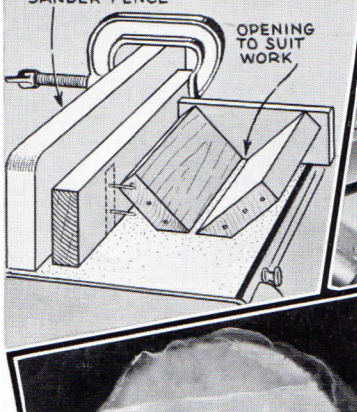
THE circular saw guard can be lined with cardboard, metal or thin wood for use with abrasive cut-off wheels when a regular abrasive wheel guard is not available.

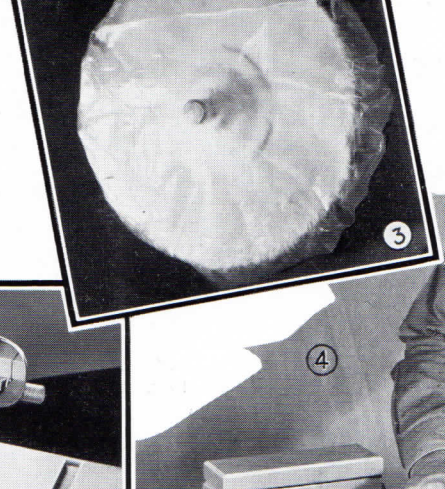
BAND saw blades heavily set for free cutting will track better if a slight side pressure is used on the work.

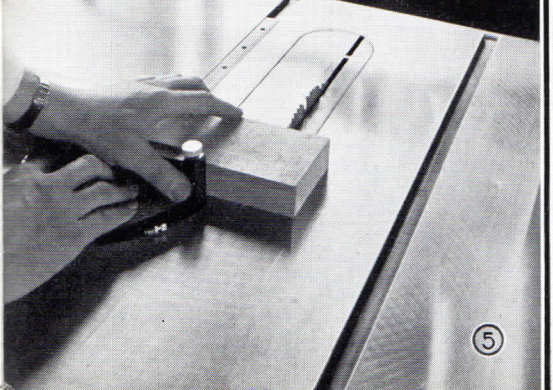
GET into the habit of spinning all power tools by hand before throwing the switch.

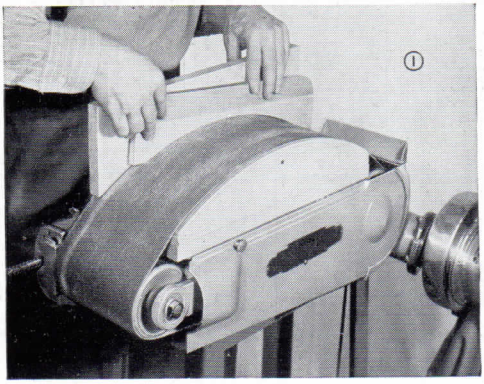
Shop TIPS

1—A board provided with anchor points and fitted with a wood or metal bar to slide in the circular saw table slot is useful in sawing where the work has no smooth edge. In use, the work is pressed down on the anchor points, and then, riding the wood table, is projected into the saw blade. 2—Bottle cap corks placed under the screws of the miter gage clamp attachment will prevent marring of fine veneer panels. 3—Oiled silk or Pliofilm pan covers make ideal dust protectors for buffing wheels. 4—A simple vee-shaped jig used on the belt sander provides one of the neatest and fastest methods for beveling edges of short work. Drawing at right shows the jig with one end removed. The work is simply placed in the jig and held in contact with the sanding belt until the cut is complete. 5—The increasing size of saw tables makes it difficult to lean over the table to observe the mark for sawing. An idea which solves this problem is to use a mirror at the end of the saw table. This should be mounted in some simple manner so that it can be pushed out of the way when not in use.







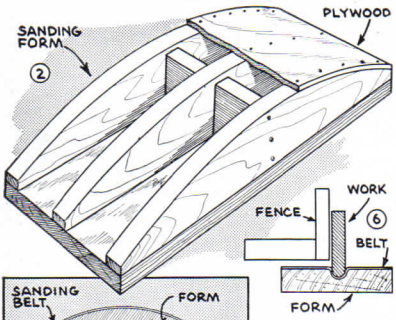


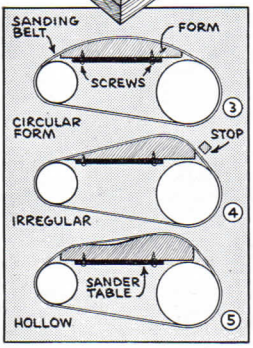
FORMS for Belt Sanding

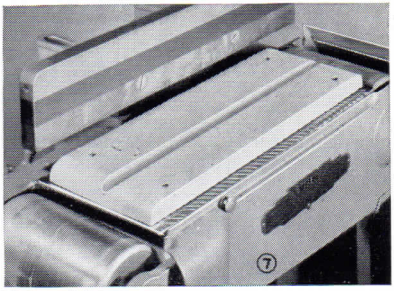
WHILE the belt sander is intended and most extensively used for sanding flat surfaces, it can be used with perfect success for finishing curved work. This is done with the use of forms. In most cases, the operation is practical only in production runs of at least ten pieces in order to justify the cost and time involved in making the required form.

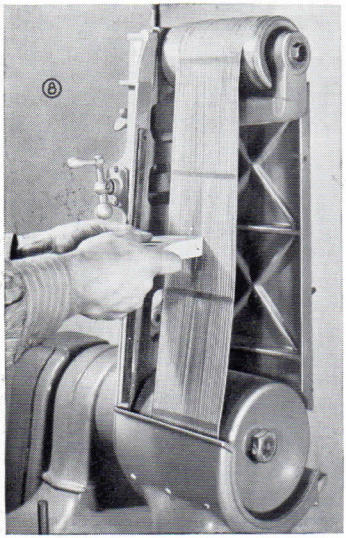
Fig. 1 illustrates a simple job set-up. In this case, the work to be finished has an edge which is a part of a true circle. The form is built to this same circular arc, and is fastened by means of machine screws to the sander table. Since the work is circular, there is no need for any stop device, the track of the sanding belt being to the same curve at any point over the surface of the jig. An irregular form, as shown in Fig. 4, has a different curve at every point. It can be seen, therefore, that a stop block must be used so that the work can be placed against the belt in the proper position. The hollow form, Fig. 5, can be used for concave curves up to about one inch deep. The belt should be run fairly slack so that pressure by the work will cause it to assume the required shape.

Certain types of moulded edges can be worked with the use of forms, a typical example being the rounded corner. The form for this mould is simply a groove down the center of a flat piece of wood, as shown in Fig. 7. The fence is adjusted so that the edge to be worked is directly over the groove, as shown in Fig. 6. Pressing down on the work will force the belt into contact with the form and thus





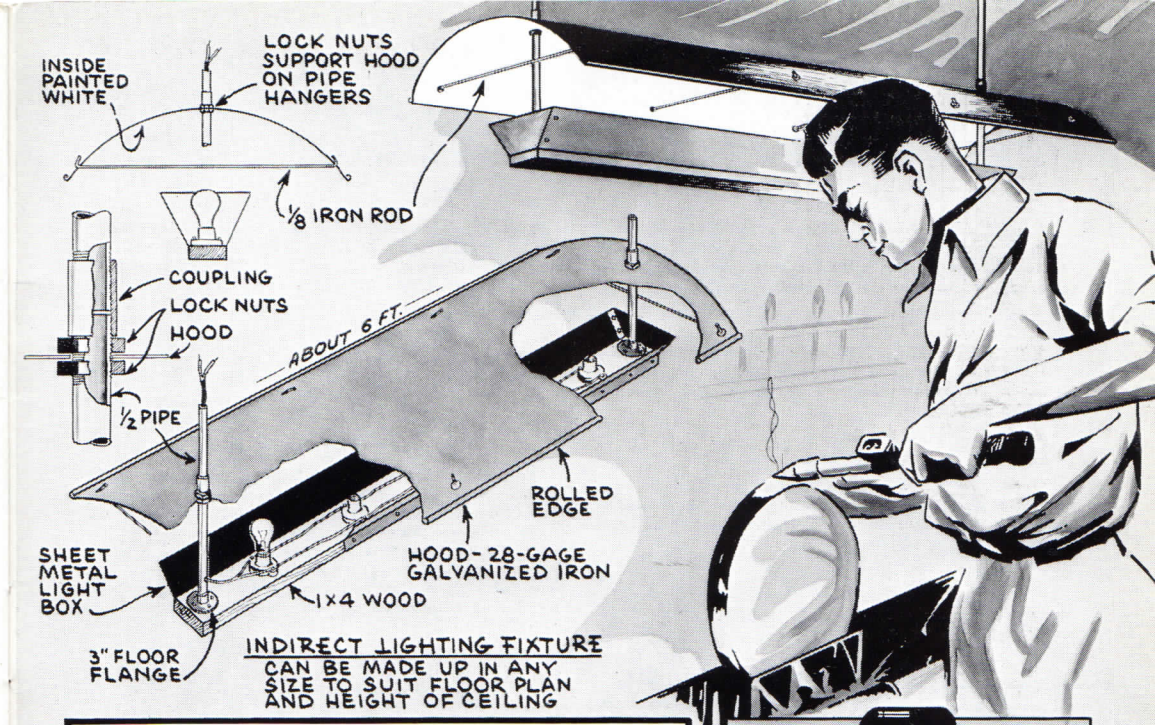




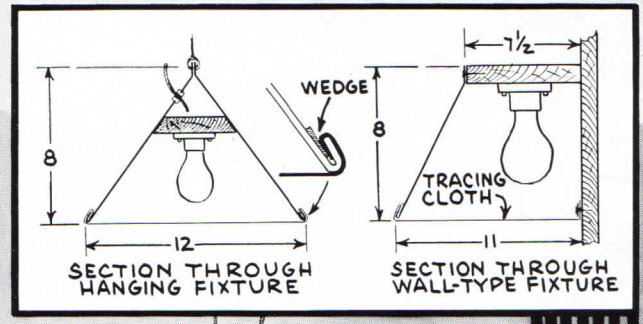
The use of regular sanding belts over forms and shredded paper without backing adds to the scope of work which can be done on the belt sander.

sand the edge to the required shape. A certain nicety of touch in knowing just when to lift the work must be acquired by experience. Ogee curves and thumb moulds can be worked in the same manner. The regular type of sanding belt can be used, but where the mould assumes a more complex shape, a special lightweight backing must be used to give the belt the required flexibility.

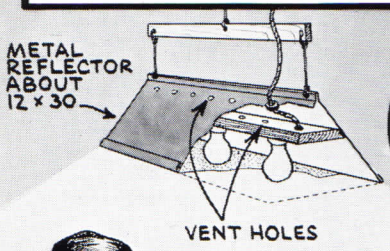
The utmost in flexibility in a sanding belt is obtained by the use of slashed or shredded cloth back belts. This abrasive belting is commonly obtained in a width of 4 inches. It is slashed into narrow ribbons about 1/8-inch wide, the ribbons being held together by means of short sections of uncut belt, as can be seen in Fig. 8. This belt can be used over a form, or, it can be run without backing, as in Fig. 8. When run without backing, it is somewhat simpler to remove the back plate of the sander rather than the sanding table. Where the tilting sanding table is to be used, however, it is necessary to remove the main sanding table. Belts of this kind are ideal for finished castings featuring all-over curved surfaces.



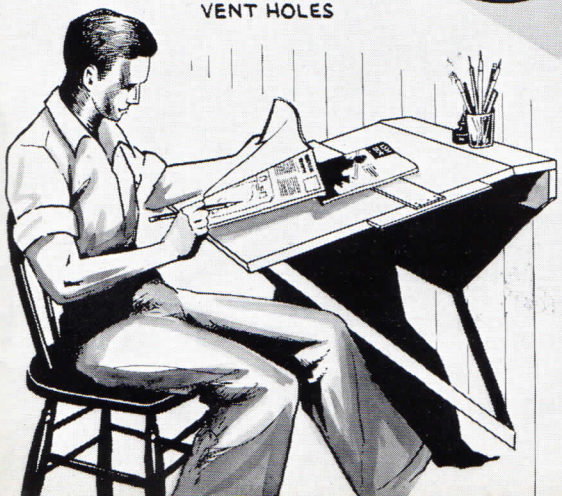
INDIRECT LIGHTING FIXTURE
CAN BE MADE UP IN ANY SIZE TO SUIT FLOOR PLAN AND HEIGHT OF CEILING

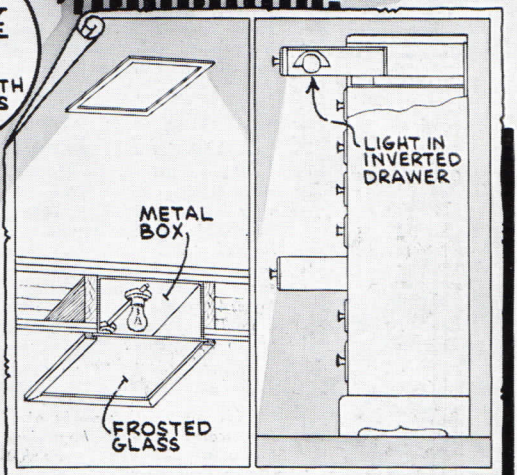


Lighting YOUR SHOP



DIRECT LIGHTING FIXTURE
TRACING CLOTH ELIMINATES GLARE





FLUSH-TYPE LIGHTING MAKES A NEAT INSTALLATION

LIGHT IN INVERTED CABINET DRAWER PROVIDES ILLUMINATION

Hangover

Everett, Mass.—I read with a great deal of interest what other crafters have to say. Now, about C. C. from Salem, Oregon, just what does he expect for ten cents —a copy of the Civil war in technicolor?

P. W. B.

Villa Cresta, Md.—I thought I had been expecting too much of the DG, but after reading Mr. C. C.'s letter in the January issue, I am thoroughly in accord with his sentiments.

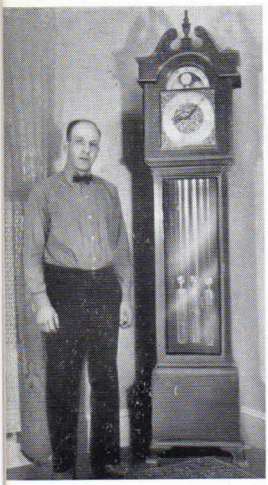
H. J. J.

Coming Up

Omaha, Neb.—I enjoy the Deltagram. Can you devote a paragraph in it giving the orthodox method of making mortises under and over chisel sizes in maple one inch or more in thickness.

W. M. R.

This seems of such general interest that a story has been planned for early publication.—Ed.



BRYAN S. ROBINSON

Period Furniture

Cedar Falls, Iowa—As I was looking through my "much thumbed" Deltagrams, I found a photo of a lyre back Duncan Phyfe chair sent in by F. G. F., New Orleans. I have recently undertaken the task of making a set of six chairs very similar to this, and think that readers would appreciate stories on this and other period furniture.

C. E. L.

Tick, Tock

Warren, Maine — Enclosed please find photo of my grandfather's clock which I built this past winter with your machinery. This clock has caused widespread comment of which I feel very proud. It is made of maple stained mahogany, and is equipped with tubular chimes made by the Kuempel company.

Byran S. Robinson

PHIL A. FLETCHER

Spray Finishing

Chicago, Ill. — In the February Deltagram I notice in your spray finishing story a four cubic feet per minute gun hooked to a 2.55 DeVilbiss compressor. I am interested in spray finishing, but had not figured I could use this gun on a small compressor. It has set me to wondering?

E. H.

This combination works okay for lacquer finishing homeshop products, although somewhat slower than normal because of the necessary dilution of the lacquer.—Ed.

Built-up Turnings

Webster, Mass.—Let's have some plans of lamps, bowls, etc., glued up from different woods and cut and turned at different angles. All the Deltagram fans I know of want this kind of material.

W. K.

Twenty-eight Boarders

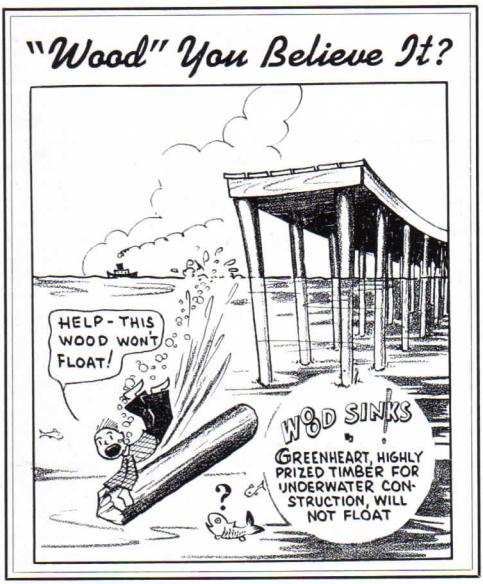
Rhinelander, Wis.—I am enclosing a photo of a 28-room Martin house built with your tools. I would enjoy seeing this picture in the Deltagram.

Phil A. Fletcher

Always Interested

Roslyn Heights, N. Y.—I have enjoyed your Deltagrams very much and would like to see them continued. It seems to me that a child's table and chair set would make an appealing project. I was in the market to buy one at Christmas time last year, but when I saw the prices and cheap construction decided to make my own, and did. If you are interested in this article, I would be glad to send snapshots and dimensions.

J. F.



Is This True ?

Chicago, Ill.—I would like to see unnecessary detail and cheap projects eliminated from the Deltagram. What craftsmen want are good general stories giving project ideas, authentic period designs, shop procedure, etc. Any worker who has had a shop full of tools for a couple years knows perfectly well how to design and make the common type of project which you show.

S. A. K.

And Our Say . . . Glad to be back on the job. In going over a batch of summer correspondence, it is a bit confusing to decide exactly what craftsmen want in the Deltagram. Anyhow, let's have your comments, snaps of your projects and shop, ideas—everything helps. On our end, we'll do our darndest to give you a good book. —The Editor.

Delta Craftsheet

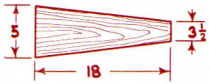
No. CS7
Taper
Ripping
The Deltagram—Oct., 1939

I-DETERMINING TAPER

IN TAPER RIPPING IT IS NECESSARY TO KNOW THE AMOUNT OF TAPER PER FOOT THE FORMULA USED FOR A TWO-SIDE TAPER IS :

$$\text{TAPER} = \frac{W-w}{L} \times 6$$

EXAMPLE : TAPER 2 (OR 4) SIDES



$$\text{TAPER} = \frac{5-3.5}{18} \times \frac{6}{1}$$

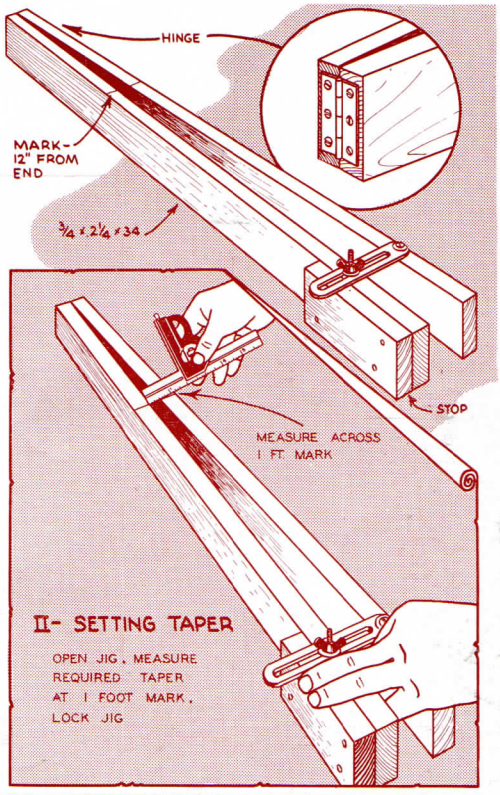
$$\text{TAPER} = \frac{1.5}{\cancel{18}_{3}} \times \frac{\cancel{6}^{1}}{1} = \frac{1.5}{3}$$

$$\text{TAPER} = \frac{1.5}{3} \text{ or } \frac{1''}{2} = \text{TAPER PER FT.}$$

EXAMPLE : TAPER ONE SIDE (MULTIPLY BY 12 INSTEAD OF 6)

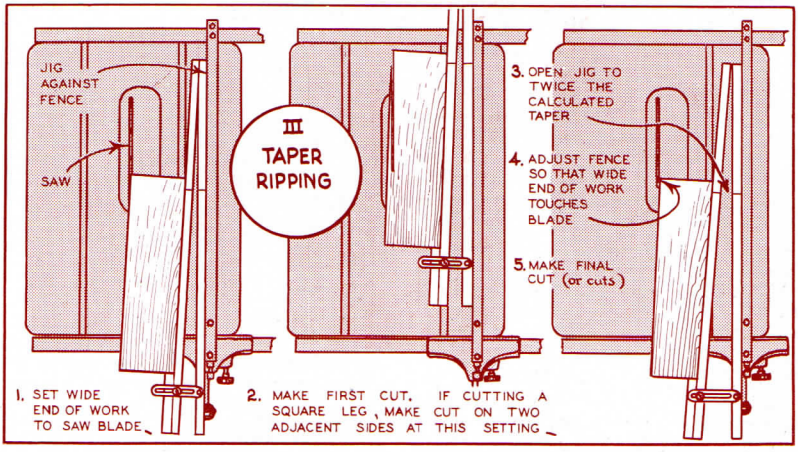
$$\text{TAPER} = \frac{5-3.5}{18} \times \frac{12}{1}$$

$$\text{TAPER} = \frac{1.5}{\cancel{18}_{3}} \times \frac{\cancel{12}^{2}}{1} = \frac{3}{3} = 1'' \text{ TAPER}$$



II- SETTING TAPER

OPEN JIG, MEASURE REQUIRED TAPER AT 1 FOOT MARK, LOCK JIG

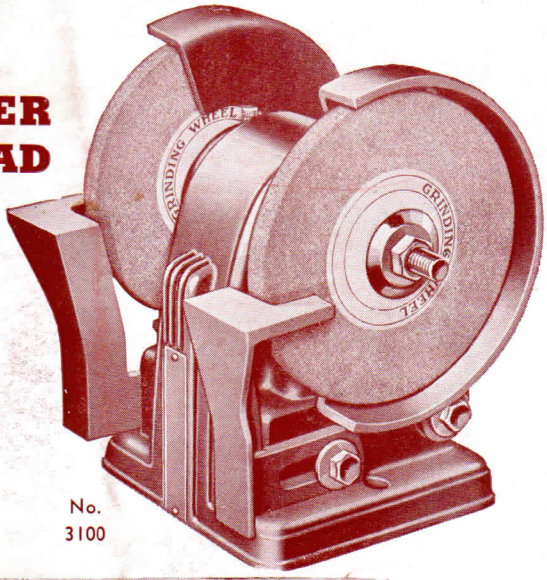


WHIMSTER'S HARDWARE

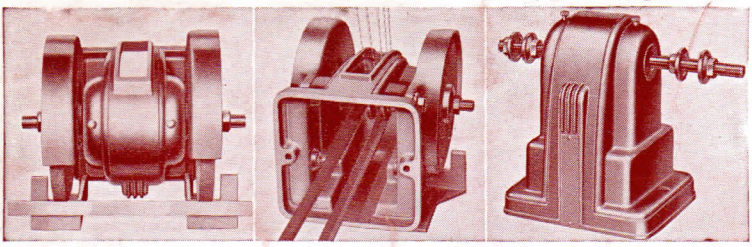
NEW!

Low-Cost GRINDER and BUFFING HEAD

BUILT for home craftsmen, these two new Delta units are sturdy, well-constructed machines good for years of accurate, dependable work. Substantial ⅝-inch diameter shafts are housed in bronze bearings, with the shaft ends reduced to ½ inch diameter to take standard grinding and buffing accessories. Both units are belt drive, and can be driven from either the bottom or back as desired. The maximum safe speed is 3500 R.P.M., which gives a surface speed of 5500 feet—just right for average buffing and grinding jobs.



No. 3100



Views at left show how units can be driven from either bottom or side. Long spindles are a convenience in making buffing wheel set-ups.

Ideal Units for the Home Shop

CRAFTSMEN who have felt the need of a good grinder or buffing head at a price consistent with limited usage will be quick to appreciate that one or two jobs a month on these handy units will quickly repay the low initial cost. Power usually can be taken from the scroll saw or other standard machine unit, so that the cost of the grinder or buffing head is the only cost. Both machines are built on the same base casting of fine-grained cast iron. The grinder guards can be quickly removed so that buffing can be done if desired. The special buffing head is not fitted with guards or tool rests. It has special long spindles so that two or more buffs can be mounted in line to make a quick, efficient set-up for any job. ★ Inspect these units at your nearest Delta dealer . . . no ball-bearings or fancy gadgets, but honest Delta quality at a price you can afford to pay.

UNIFORM DELTA QUALITY AT THESE LOW PRICES:

No. 3100	Bench Grinder, with one 50-grit and one 60-grit wheel, tool rests and guards, but without belt	$5.75
No. 3110	Buffing Head, with collars, but no wheels or belt....	3.25

GRINDING WHEELS AND BRUSHES

No. 3114	Fine Wire Brush	$1.45
No. 116	Medium Wire Brush	$1.50
No. 3113	Coarse Wire Brush	1.15
No. 3115	Tampico Fiber Brush.....	1.20
No. 113	Loose Cotton Buff.....	.65
No. 3101	50-grit, grade M Grinding Wheel	1.00
No. 3102	60-grit, grade N Grinding Wheel	1.00

All accessories ½" hole, 6" in diameter.

THE DELTA MFG. CO.

600-634 E. Vienna Ave.
MILWAUKEE, WIS.

WHIMSTER'S HARDWARE