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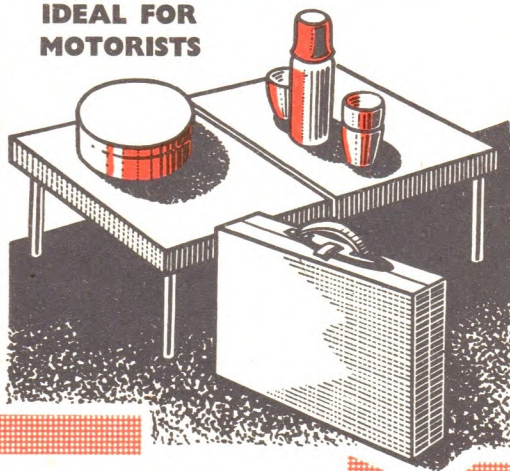
All correspondence should be addressed to the Editor, Hobbies Weekly, Dereham, Norfolk

★ FREE design inside

THIS picnic table, which when closed takes the form of a very presentable attache case, should prove quite popular with motorists. Equipment such as plates, cutlery, etc., can be packed inside the case, which is placed in the boot of the car. On arrival at your favourite spot, the case is

ATTACHE CASE PICNIC TABLE

IDEAL FOR MOTORISTS



opened and upturned and stands squarely on four legs to provide a comfortable setting for your meal.

Such a table is particularly handy where a sandy spot is chosen, as it helps to obviate contamination of food by sand. A table surface measuring 36ins. by 24ins. is provided, giving quite a good area for the accommodation of food, plates, etc.

The attache case-cum-picnic table is quite simple in construction and can

readily be completed by a handyman in a few hours. A box is constructed of wood and hardboard, simple halving joints being used, and this is sawn in two, giving identical halves, which are in turn joined by hinging. To make it even more simple, the sides of the case can be butted together instead of using halving joints, but if this method is employed, modifications will have to be made. Pieces (A) will be butted inside pieces (B) and their lengths cut to 23ins.

417

Hobbies kit of materials contains a carrying handle, streamlined fastener and three special case hinges.

Make up the box from 4in. by ½in. stripwood and hardboard to the measurements given on the design sheet, where details of the lapping joints are shown inset. The hardboard top and bottom pieces (C) are pinned and glued in position. A halving line is now drawn all round the sides of the box as indicated by the dotted line on the design

FOR ALL HOME CRAFTSMEN
Over 60 years of 'Do-it-Yourself'

4 ½^D

sheet. Cut right through the box round this line with a tenon saw. Start at one of the corners, making sure to keep exactly to the lines, and when a large enough cut has been made to take the sawblade, continue round the box in one direction, taking particular care at the corners. Accurate cutting should produce two identical halves.

KIT FOR 27/6

Kit No. 3256 contains all the wood, hardboard, hinges, handle and other materials for making the Attache Case Picnic Table.

The kit costs 27/6 from branches or Hobbies Ltd., Dereham, Norfolk (post free).

Clean up the sawn edges with a glass-paper block, but do not take off too much, so that gaps are left when the halves are placed together.

Four wooden blocks (D) to take the legs (E) are glued in the outer corners inside each section, being flush up against the hardboard. Each of these blocks is made up from three pieces of $\frac{1}{2}$ in. material cut 4 ins. square and glued together as shown on the design sheet. In the centre of these made-up blocks, bore a $\frac{3}{4}$ in. diameter hole to take the legs before fixing the blocks in the corners.

The four legs consist of $1\frac{3}{4}$ in. lengths of 1 in. diameter round rod.

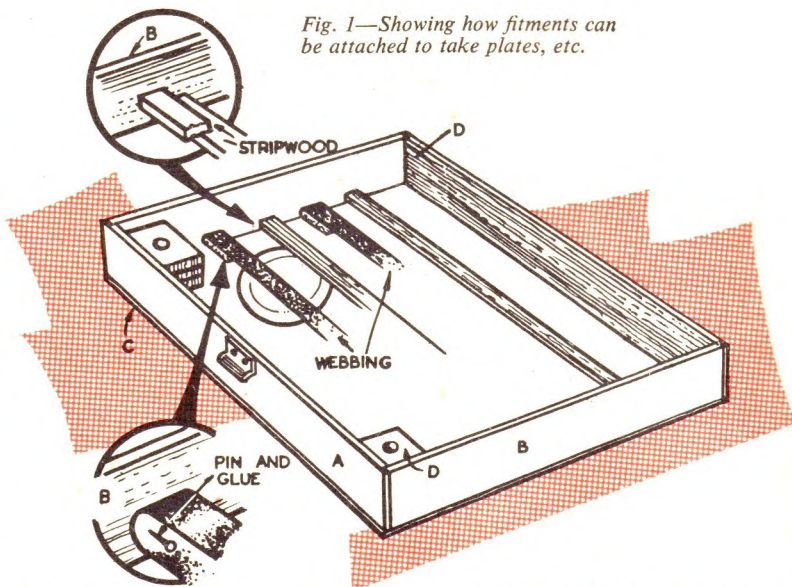


Fig. 1—Showing how fittings can be attached to take plates, etc.

Mark off $1\frac{1}{2}$ ins. at one end of each leg, and shape this end down to $\frac{3}{4}$ in. diameter with a sharp knife, thus forming a shoulder which will secure the legs when inserted in blocks (D).

Now place the two case sections squarely together and hinge in the positions indicated on the design sheet. The use of roundhead screws with the hinges is recommended, as these will form solid contacts and thus prevent sagging in the centre of the table when it

is fully opened. Finally screw on the catch and the carrying handle. When erected, the table, of course, stands on the four legs inserted in the corner blocks.

Fig. 1 shows how webbing and stripwood can be used to form racks in which to carry plates, etc. Webbing can be purchased separately from Hobbies Ltd., Dereham, Norfolk.

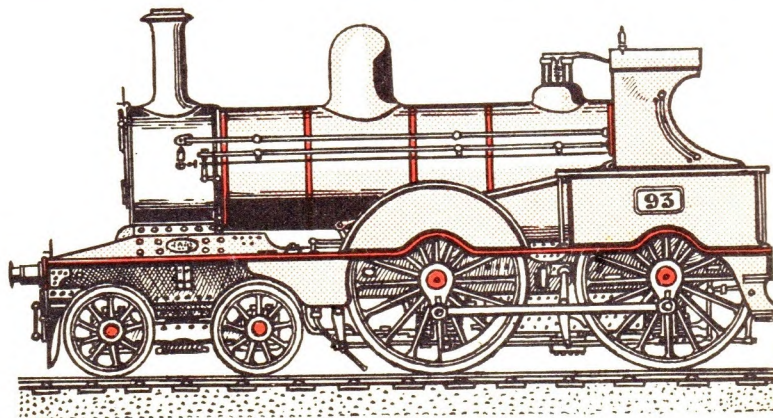
Punch down all pins, fill up the holes and finish by painting.

Interesting Locomotives - No. 8

THIS week our subject shows an interesting 2 cylinder 4-4-0 type compound express locomotive designed by Mr H. A. Ivatt for the Great Southern & Western Railways of Ireland in 1894. This engine No. 93 was originally built previously as a 2 cylinder 'Simple', and was converted on the 2 cylinder compound system with 18 in. and 26 in. by 24 in. inside cylinders during experiments carried out by Mr Ivatt in 1894. The engine had 6 ft. 7 in. diameter coupled wheels, the original boiler working pressure of 150 lb. per sq. in. being retained.

About that time the 2 cylinder compound engine was being adopted in Ireland, Mr B. Malcolm on the Belfast & Northern Counties Railway having built several examples from 1890-1908.

The Belfast & County Down Railway also had several 2 cylinder compounds



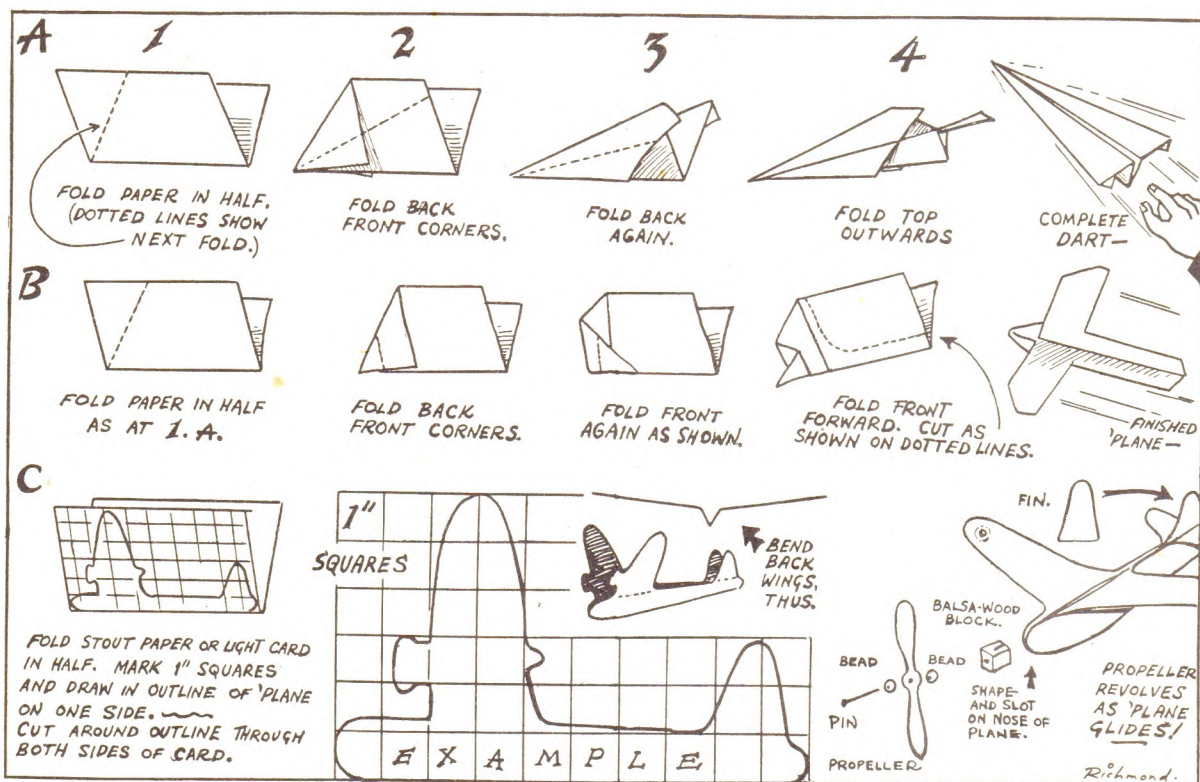
in service at that time, the design for these being made by Beyer Peacock who built the first specimens in 1890. They were of the 2-4-0 type with 6 ft. 0 in. diameter coupled wheels.

Mr Ivatt's engine was given an extensive trial on all types of work on the Great Southern & Western Railways,

but it appears that no outstanding results were obtained, and in 1901 it was re-converted back to its original form of 2 cylinder simple with 18 in. by 24 in. inside cylinders. It was, nevertheless, a bold experiment and the engine remained in service as a compound for some seven years.

Look-out, teacher!

DARTS AND PLANES



MOST of us inherited a paper-modelling disposition. There are few who cannot call to mind many happy hours spent fashioning things from paper and card, with the aid of glue and a pair of scissors.

Older readers will remember making and flying paper darts. Today the Delta-shape form of these paper darts is much used in the design of aircraft.

To guide junior readers in the making of 'Delta Darts' and simple card 'planes', we give sketches showing step-by-step stages of folding and cutting.

To make the paper dart, follow diagrams 1, 2, 3 and 4 at (A). Take a piece of paper about 6ins. by 5ins., and fold as shown. The size of finished darts depends, of course, on the size of paper used. Water colour paints can be used to decorate, and strips of transparent adhesive will hold your dart firmly together. A simple winged aeroplane is suggested at (B), and here again adhesive tape may be applied for strengthening.

At (C) we have a plane of more elaborate design. Thin card is best used for this. The card is folded in the same way as at (A) and (B), but this time an outline of one half of a 'plane' is cut out. Bend back the wings and add a cardboard fin to the rear. Hold the fin and body of plane with tape. Colour the toy with water-colours as before. Aircraft transfers make a finished job.

Make a card or balsa-wood propeller for your model, fixing in place as shown with balsa wood block, glass beads and a pin. Twist the propeller slightly at blade tips. The propeller will revolve as plane glides. Weight the nose of all planes if necessary with paper clips or modelling clay, and adjust this to get a gradual glide when launched. (T.S.R.)

Sense with Keys

KEYS of outhouses, etc., are less liable to be mislaid if tied on to a large wooden label, painted a bright red, which will show up on the ground or grass. A bulky piece of wood attached will prevent a key being pocketed and forgotten.

Where several large keys are kept on a bunch, it is useful to paint the shank of each a distinctive colour, which is also

applied to the keyhole plate of the lock to which it belongs.

Barrel keys — those with hollow shanks — give trouble if the barrel becomes partly filled with pocket-fluff or other rubbish. This is quickly removed by a red-hot wire or a twist drill.

When suitcases, etc., are stored away, their keys should be tied to them with a loop of string, not left in lock. (R.L.C.)

A MODERN SINK UNIT

IN this 'do-it-yourself' age a modern sink unit is a top priority for the housewife. The reasons for this are obvious, for in the kitchen one wants everything clean, neat and hygienic-looking.

The old-fashioned sink, with all its naked plumbing and supports is a positive eyesore. One can easily remove this eyesore, from sight at any rate, and provide instead a modern spick and span kitchen unit of which every housewife will be proud.

By A. Fraser

The main requirements are a few battens and some hardboard and only a modicum of handicraft skill. No special tools are necessary. The task is well within the capacity of anyone who can use a saw.

No dimensions are given because these will depend on each individual sink and its particular placing in the kitchen.

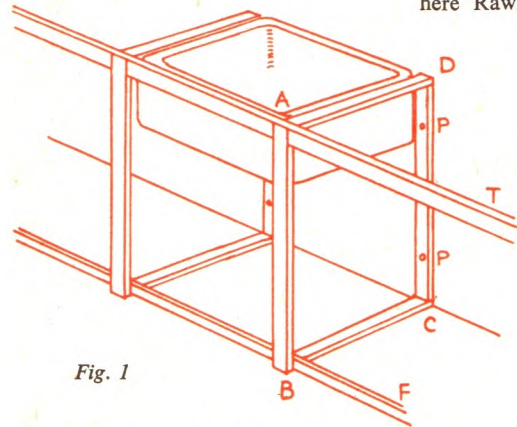


Fig. 1

Some sinks are placed with one side very close to a wall and others are far distant from either wall. The reader must decide the extension of the unit. He may prefer a unit of only short extension. Or he may extend it completely from one wall to the other, right across, as in many modern kitchens.

In either case, the principles of construction remain the same. The basis is the framework which forms the skeleton of the unit. This is seen in Fig. 1. It

is made of batten, the size of which is not very important so long as it is strong enough; 1½ ins. to 2 ins. by ½ ins. to 1 in. will do quite well.

The first thing to do is to set up the frame (A, B, C, D), seen in Fig. 1, for it is on this, and the companion one on the other side of the basin, that the front, top and bottom rails are fixed.

The top batten (A, D) is adjacent to the sink side and level with its top. The batten (D, C) is fixed on the wall and here Rawlplugs are recommended for

There is no need to fix it to the floor, as it is held by the vertical battens.

The batten (A, B) should be prepared first. This should reach from floor to the top of the basin. As can be seen from Fig. 2A, the top is sawn out, in the manner of a halved joint, to allow the top front rail to sit in. At the bottom, the floor rail (F) is attached as shown.

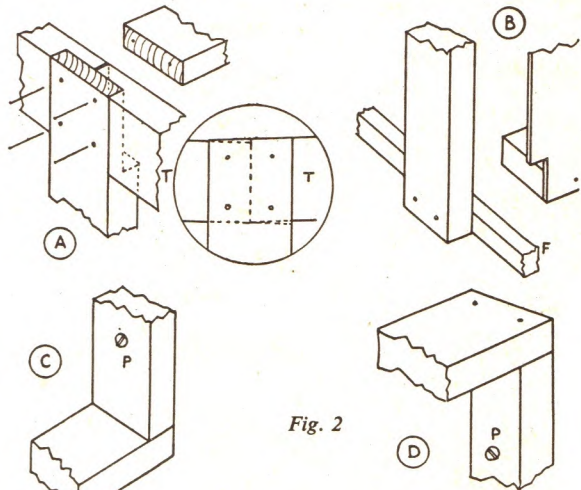


Fig. 2

(This can be ½ ins. square or thereabouts.) See Fig. 2b.

The batten (B, C) is attached to the bottom of the wall batten as shown at Fig. 2c, and provided the height of (D, C) is correct, both (B, C) and (D, C)

proper fixing, especially if the plaster of the wall is in bad condition. Where the wall is extremely bad it must be replastered.

The batten (B, C) lies on the floor.

can be attached by fixing to the wall with the screws (P, P).

The other side of the basin should be treated similarly, and also the far ends of the unit whether they come up against a wall or not. However, take note that these frames at the extreme ends of the unit should be slightly higher than the inside ones to produce an incline for the bench tops so that the water drains towards the basin. Only a slight inclination is necessary. Note Fig. 2A circle inset.

When the battens have been tried out experimentally for correct size and fitting, then the whole framework can be assembled permanently, using thin nails

made. Details of these are given in Figs. 4 to 6.

Hardboard of $\frac{1}{4}$ in. thickness is used as the base. Along the long sides of this are nailed strips of plywood (or hardboard) about $1\frac{1}{4}$ ins. by $\frac{3}{8}$ in. thick. (A, B and C, D in Fig. 4.) These are to prevent water swilling over the front or back. The edges should be chamfered off as seen in the circle inset sectional view.

We now need a method of shedding off the water cleanly into the basin. This is seen in Fig. 5. A strip of $\frac{1}{4}$ in. thick plywood, $\frac{7}{8}$ in. wide, is sawn out and attached by glue and pins to the under side of the bench top which overlaps the basin (see M, Fig. 5), leaving about $\frac{3}{4}$ in. projecting.

On to this ledge is glued a length of stripwood, coming somewhat lower than

ping the centre down first and smoothing it down along the middle (A, A) of the draining board. Then gradually work to right and left, smoothing firmly and carefully. Special care must be taken when the ridge (S) is encountered. The material must be pressed in precisely to make a neat job. It is then smoothed over and turned over the edge on to the under surface of the board. When the two long sides have been so treated the front (drip) edge and back edge should have the covering smoothed over them and tucked in to the under surface. With the aluminium drip edge, the covering is turned over the edge carefully and smoothed up on to the convex surface of the metal.

The completed draining board can next be fixed to the unit top by means of angle pieces or brackets attached to the

Fig. 3

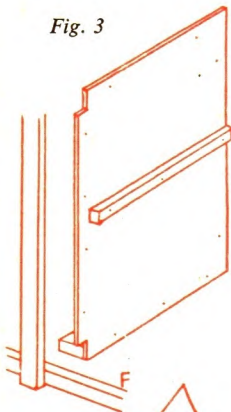


Fig. 4

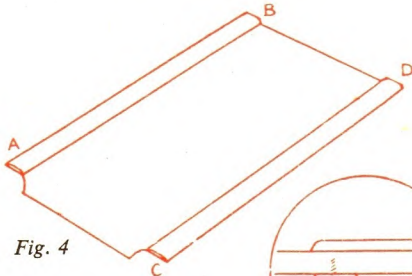


Fig. 6

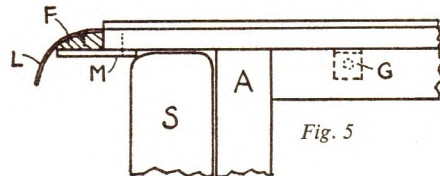
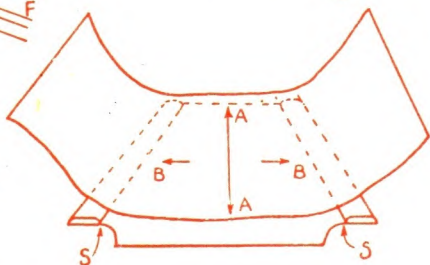


Fig. 5

Fig. 7

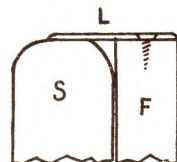


Fig. 8

and glue as well, if desired, for firmer construction.

A piece of hardboard, say $\frac{1}{4}$ in. thick is next sawn out to cover the inside frame (A, B, C, D). This is seen in Fig. 3 and Fig. 2B. Don't forget to saw out the shoulders at top and bottom front. Half-way up the hardboard nail on a length of stripwood $\frac{1}{4}$ in. by $\frac{1}{2}$ in. for the shelf to sit on.

Prepare a similar piece of hardboard for the other side of the sink; in reverse, of course.

Where the sink unit extends to a wall, then the stripwood for the shelf support should be fixed to the wall. Otherwise another piece of hardboard is necessary with the stripwood fixed on the inside of it.

The shelves and doors are left for the time being, while the bench tops are

the top of the hardboard. This is rounded off with a glasspaper block. A strip of thin aluminium sheeting (L) is then bent to a rounded form and fitted in over the rounded stripwood (F). It is fixed with small screws, later filed down flush with the top surface of the headboard. The drip edge of the aluminium is rounded off with a fine file.

The whole board is now covered with a waterproof and good wearing material such as 'Fablon', or 'Con-tact'. These are plastics materials obtainable in various shades. They already have adhesive on the under surface and so application is easy.

Cut the covering material much bigger all round than the board to be covered, to allow for turn-overs on all sides. Apply the material as shown in Fig. 6. The outer edges are held far up, drop-

ping the centre down first and smoothing it down along the middle (A, A) of the draining board. Then gradually work to right and left, smoothing firmly and carefully. Special care must be taken when the ridge (S) is encountered. The material must be pressed in precisely to make a neat job. It is then smoothed over and turned over the edge on to the under surface of the board. When the two long sides have been so treated the front (drip) edge and back edge should have the covering smoothed over them and tucked in to the under surface. With the aluminium drip edge, the covering is turned over the edge carefully and smoothed up on to the convex surface of the metal.

The doors of the unit are easily made from hardboard, strengthened with stripwood round the edges. See Fig. 7. Small brass hinges are used to hang the doors and the handles should be of the vertical bar type of some attractive plastics material.

The shelves, if they are not to support very heavy items, can be merely hardboard. For heavier things, some stripwood to strengthen the hardboard should be used.

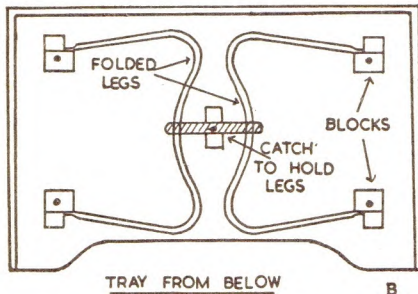
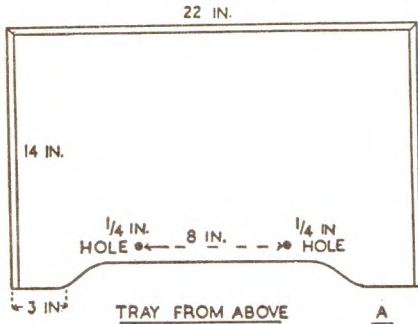
Two last improvements remain. First, the appearance of the unit is enhanced if

● Continued on page 423

A Bed Table and Book-Rest

WHETHER one is ill or just plain lazy, a table on which meals in bed can be served is useful. By means of a small attachment the one described can be converted into a book-rest so that even heavy books may be enjoyed in bed without discomfort.

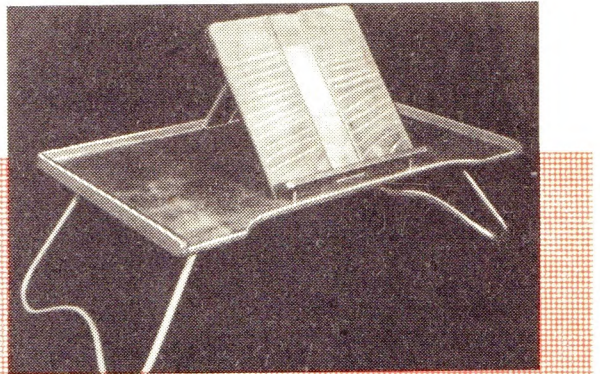
A piece of $\frac{3}{4}$ in. plywood about 22 ins. by 14 ins. is shaped as shown in Fig. A,



using a fretsaw for the recessed portion. The front edge is suitably rounded and smoothed and a $\frac{3}{4}$ in. edging glued and pinned to the back and sides. Four hardwood blocks are glued and screwed to the underside to hold the supports (Fig. B) after shaping as shown in Fig. C.

Each support consists of 2 $\frac{1}{2}$ feet of aluminium tubing, $\frac{3}{8}$ in. diameter, shaped as shown and flattened and drilled at the ends. The shape may be obtained by bending around a large round object, if available, or by carefully bending a little at a time over the edge of an old table or work bench. The ends of the supports are best flattened and adjusted to length after bending and fitting to the blocks so that they almost meet at the centre when folded. They can then be screwed to the blocks. The shape of the hardwood blocks fixes the extent to which the

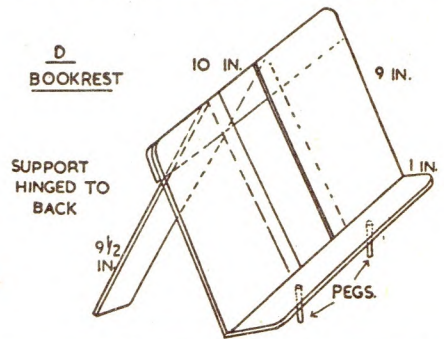
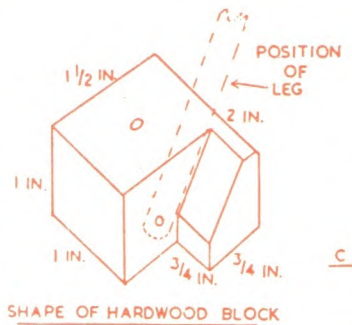
By
P.R.C.



supports will open.

The book-rest is shown in Fig. D. The one illustrated was made from two pieces of plywood fastened to a strip of 2 in. by $\frac{3}{4}$ in. wood at the back, leaving a 2 in. gap between them. This was then covered from behind by another strip of plywood and a rest fitted to the lower edge. The

middle recess so formed accommodates the back of the book, but it is not essential and the rest may be made from one piece of wood. Two wooden pegs from a piece of doweling are fitted to the lower strip as shown, and these fit into the top of the book-rest, of such a height to stop against the edging of the tray.



● Continued from page 422

Modern Sink Unit

the wall section above the basin (where the taps are), is covered with a rectangle of hardboard treated with the waterproof material as used on the draining boards. The fitting of this depends on the particular way the taps and pipes are fitted. In some cases it is possible to fit the board directly behind the taps, concealing the pipes. The water is run off and the taps removed. The board (with holes sawn out), is then fitted, and then the taps replaced.

The other improvement is to screw a strip of aluminium along the front of the unit immediately over the front edge of the basin. The edges of the metal are rounded off, and the screws are countersunk. Fig. 8 shows a sectional view of the

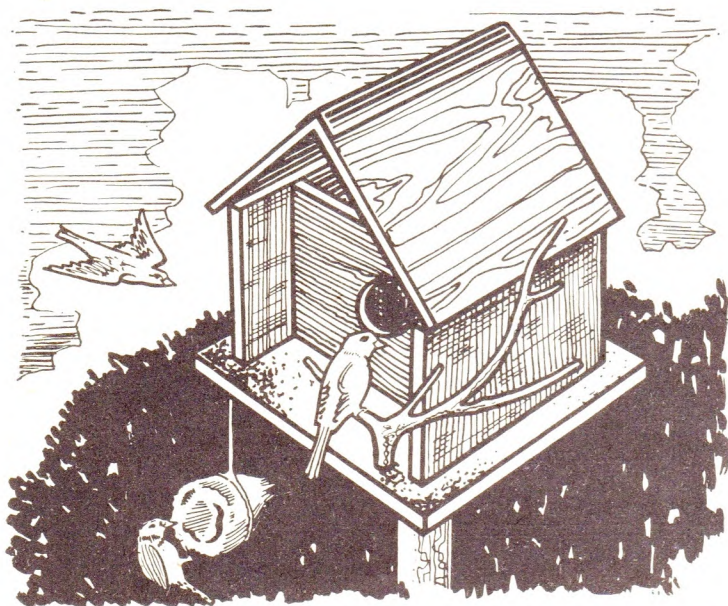
method. (S) is the basin wall, (F) is the front batten above the centre door of the unit, and (L) is the aluminium strip. This improvement is desirable, otherwise any liquid will slop down in between the basin and the first batten (F), and a filthy trench will rapidly result.

The completion of the unit consists of painting it in the modern kitchen style. Use flat paint followed by one or two coats of gloss or enamel paint. Remove the draining boards while this is being done, also the door handles. Two-colour schemes are popular, such as bright red for the doors and white surrounds, but one must use one's own taste in this matter. Light cheerful colours are best.



GUIDE TO MAKING

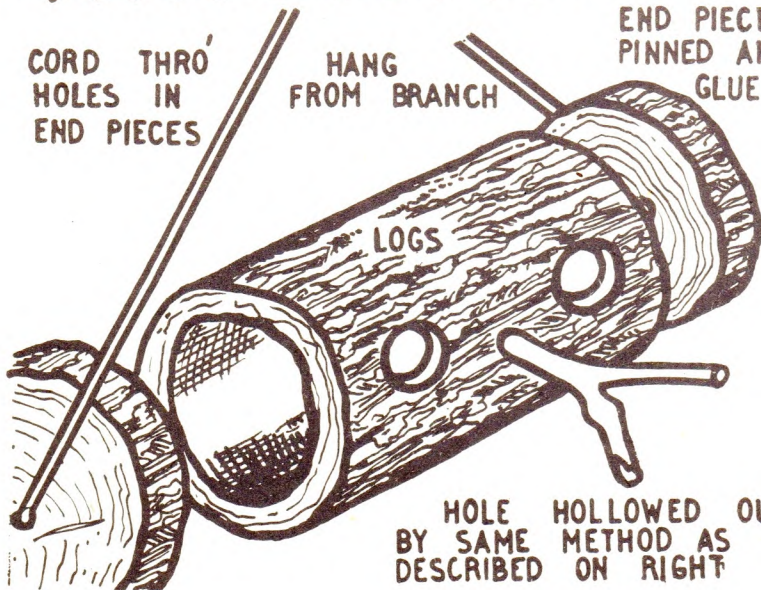
NESTING



CORD THRO' HOLES IN END PIECES

HANG FROM BRANCH

END PIECES PINNED AND GLUED



LOGS

HOLE HOLLOWED OUT BY SAME METHOD AS DESCRIBED ON RIGHT

MAKE THE BOX TO YOUR OWN DIMENSIONS

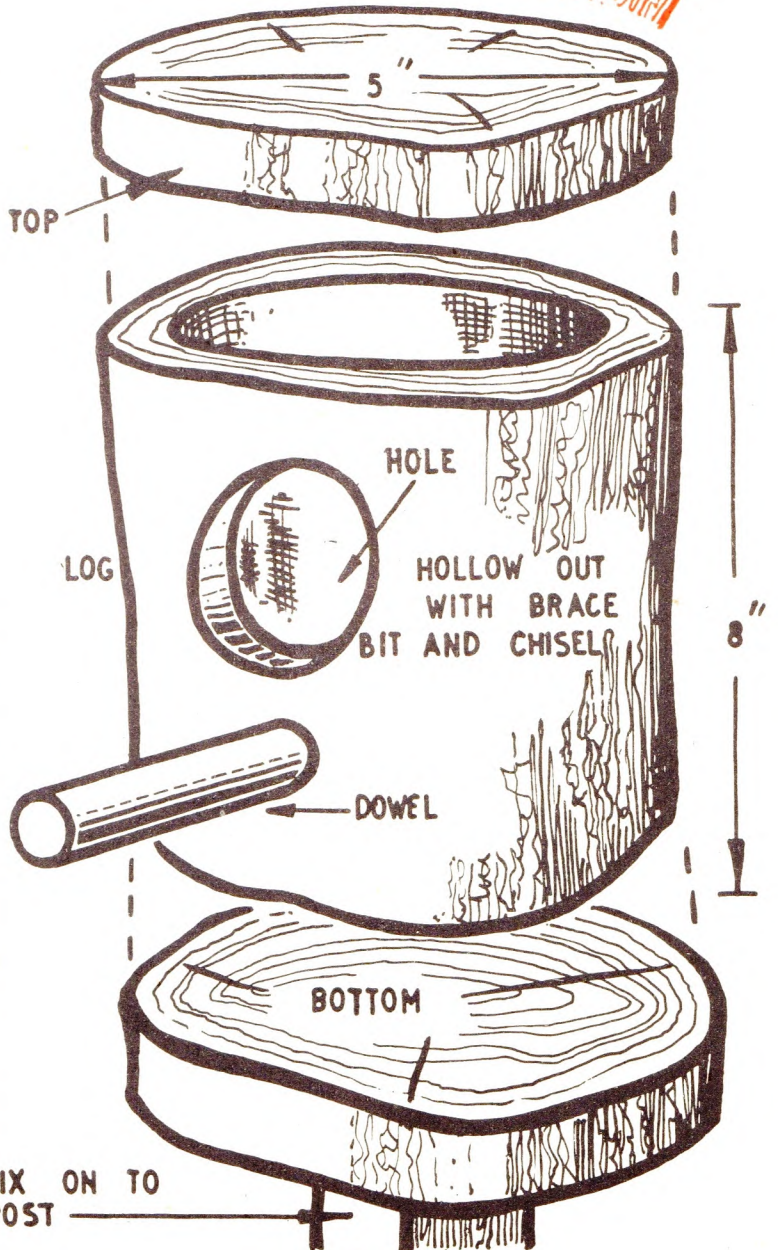


ING BOXES



TIN CAP

SMALL BRANCH
TO ACT AS A
PERCH



CHEMISTRY IN THE HOME

EXPERIMENTS WITH COPPER

WITH scrap copper sheets and wire, interesting experiments can be carried out, including the preparation of copper compounds, which will be useful for your laboratory stock.

Let us start by watching the action of heat on copper. Bend a thick copper wire. You will note it is reasonably stiff. Straighten it and plunge it into a glowing fire. Withdraw it when it is red hot and quench it at once in cold water. Now bend the wire. It is very soft and pliable.

Heat up the wire again and let it cool slowly. You will now find it has regained its stiffness. These properties are the opposite of those of iron. Red hot iron

raise the metal just to the surface and that the cloth should trail. This ensures that the air essential to the process reaches the metal and that the acid rises by capillary attraction to keep the copper always wet. Let the whole stand a few weeks and make small additions of dilute acid to replace any lost by evaporation. A blue solid forms on the copper, part crystalline, part powdery. This is verdigris. When a good quantity has formed, remove it from the metal and

remove the copper, first rinsing off any adhering pigment into the liquid by means of a jet of water from your wash bottle. Filter off the copper oxychloride and wash it well on the filter until the wash waters are no longer coloured blue. Dry the substance in a warm room.

You will be left with light blue-green copper oxychloride. This is genuine Brunswick Green. The Brunswick Green now sold is usually a mixture of Prussian Blue, Chrome Yellow and barytes.

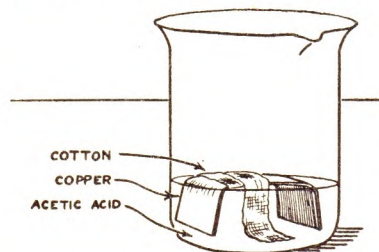


Fig. 1—Preparing verdigris

hardens on quenching and softens on slow cooling. This behaviour of copper is worth remembering in case you should at some time wish to bend thick copper. By softening it in the above manner bending will be easy and the metal can be made to resume its former stiffness by slow cooling.

The corrosion of copper is interesting. Moist air contains three substances which affect the metal — oxygen, water vapour and carbon dioxide. These three are responsible for the green coating which copper acquires over a period of time. This is common verdigris, or basic copper carbonate. The striking green appearance of the roofs of some Continental buildings is due to their having been sheathed in copper sheet.

There is another lesser known verdigris which is produced for use as a colouring matter by the action of acetic acid on copper. Partially wrap a sheet of copper in white cotton cloth and place it in dilute acetic acid (one volume of the strong acid to one volume of water) in a beaker as shown in Fig. 1. Note that the ends of the copper are bent so as to

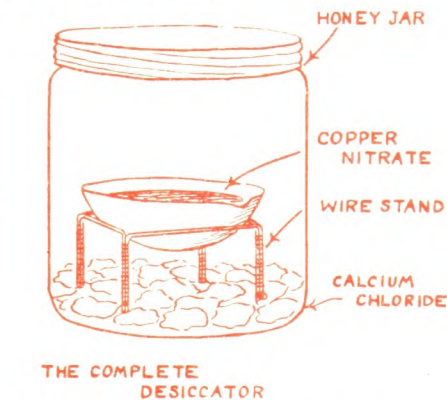
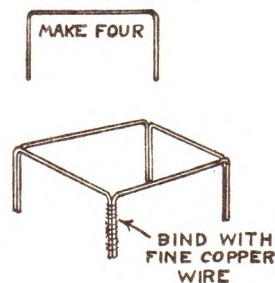


Fig. 2—A home-made desiccator

dry it on a porous brick. It is chemically different from common or corrosion verdigris in that it is composed of basic copper acetate. It has found considerable use in oil bound paints.

A fine green pigment is also obtained from copper by letting ammonium chloride (sal ammoniac), water and air act on the metal. This pigment is known as Brunswick Green. Chemically, it is copper oxychloride. This, too, is easy to prepare. Make a solution of 10 grams of ammonium chloride in 100 c.c. of water. Put a bundle of thin copper wire into a beaker and pour in enough ammonium chloride solution partially to immerse the metal. Leave the whole exposed to the air for about a fortnight.

The ammonium chloride solution slowly becomes blue and a blue-green solid forms, usually crystalline. When this changes to a bright blue, carefully pour away the clear solution from it and replace it with fresh ammonium chloride solution and leave the whole until the solid again becomes blue-green. Now



THE STAND

Despite its apparent commonness, copper is not a cheap metal. At a laboratory furnisher's you will pay about eight shillings per pound for it. Because of its being relatively dear it follows that its salts, which are so much used in the laboratory, are rather dear, too. Therefore it pays to prepare your own from scrap copper. Two of these we have already made. More useful are soluble copper salts.

The best solvent for copper is nitric acid. With this we can make up a stock solution of copper nitrate for the preparation of other copper compounds, or for use in particular reactions. Make some dilute nitric acid by stirring it into an equal volume of water, contained in a beaker or a jam jar.

Set the vessel in a safe place in the open air and add some copper. Effervescence starts at once. Red-brown vapours of nitrogen dioxide are given off. These are harmful if breathed in any quantity. This

● Continued on page 429

WHEELS (Hardwood and Rubber Tyred Metal), Cot, Pram and Doll's House Fittings and Papers, Beads, Transfers, Prints and other accessories. Stamp for new lists. (Trade supplied.) New address — **JOYDEN CO.**, 91 Peplins Way, Brookmans Park, Herts.

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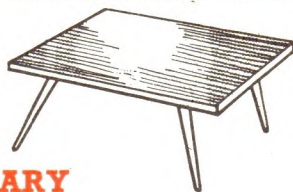
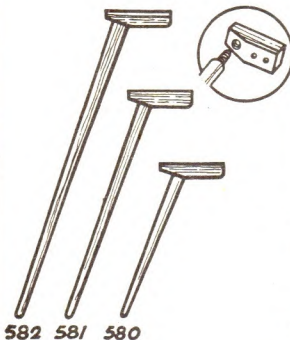
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A plastic shaving bowl used for a garden

WHEN looking in florists' windows, I have often been amazed at the prices charged for miniature cactus gardens. Having a collection of succulent plants of my own, I decided to try my hand at making bowl gardens.

Initially, I used bulb bowls, plastic shaving-soap dishes, and other fancy containers I found in the house. Since then, I have found that earthenware seed pans and half-pots make excellent containers for miniature gardens. These can be obtained quite cheaply, and have the advantage of drainage holes. Before using plastic containers, two or three drainage holes should be drilled in the bottom.

● Continued from page 426

Experiments with Copper

is why we carry out the experiment in the open air. The acid turns blue as the copper dissolves. If all the metal disappears, add more until there is some left when effervescence stops. Remove the copper, filter the liquid and bottle the solution of copper nitrate so obtained.

If you would like to have a specimen of the solid salt, evaporate a portion on the water-bath to very low bulk and then place the evaporating dish in a desiccator to remove the last traces of water. Splendid blue crystals of copper nitrate remain.

If you have no desiccator, you can easily make one from a honey or other wide mouthed jar, as shown in Fig. 2. Put some calcium chloride in the bottom (this absorbs water vapour given off by the copper nitrate), and support the dish on a copper wire stand. After a few days in this your salt will be dry.

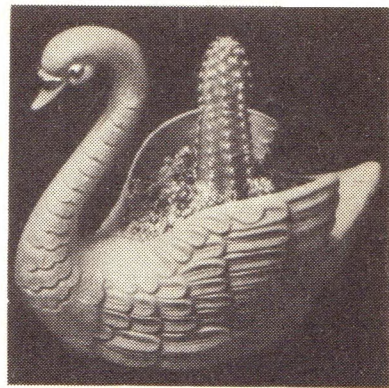
Cactus Gardens in Bowls

Before the soil is put in the bowl, a layer of crocks must be placed in position. A satisfactory compost consists of two parts John Innes potting compost and one part sand. The potting compost may be purchased by the pound from most seed merchants.

Once the bowl is filled with soil, it is necessary to decide whether the garden is to contain plants only or a small glass 'pond' and other ornaments. If the latter, the position of the ornaments should be marked. Once this is done the plants may be bedded out. A layer of coarse aquarium gravel placed on the surface gives a finished appearance.

I gave my first gardens to a bazaar, where they sold very quickly. As a result of this, I received a number of orders. Even without the aid of a bazaar, it should not be difficult to market miniature gardens. A local florist could be approached, or an advertisement placed in a local paper.

Before selling, or even making the garden, it is essential to have some plants to put in it. The types of stock plant to buy are those that produce off-sets prolifically. Fortunately these plants are also the cheapest. I would suggest for small cushion-shaped plants: *Mammillaria prolifera*, *Mammillaria erythroperma*, *Echinopsis multiplex*,



Small cacti may be grown in a decorative container such as this plastic swan in which drainage holes can easily be drilled. The plant is a *Chamaecereus sylvestrii*.

and *Chamaecereus sylvestrii*. For the 'prickly pear' type of plant, *Opuntia microdasys* has many small pads which may be removed as cuttings. *Opuntia* are very easily raised from seed; seed sown in the spring will produce useable plants by the autumn.

So far the plants mentioned have all been cacti, but many other succulents have attractive forms and will grow happily with cacti. The *Mesembryanthemum* group has many shrubby members: *Aridaria splendens*, *Lampranthus roseus*, *Oscularia deltoides*, and *Delosperma echinatum*. Cuttings from these make delightful small bushes.

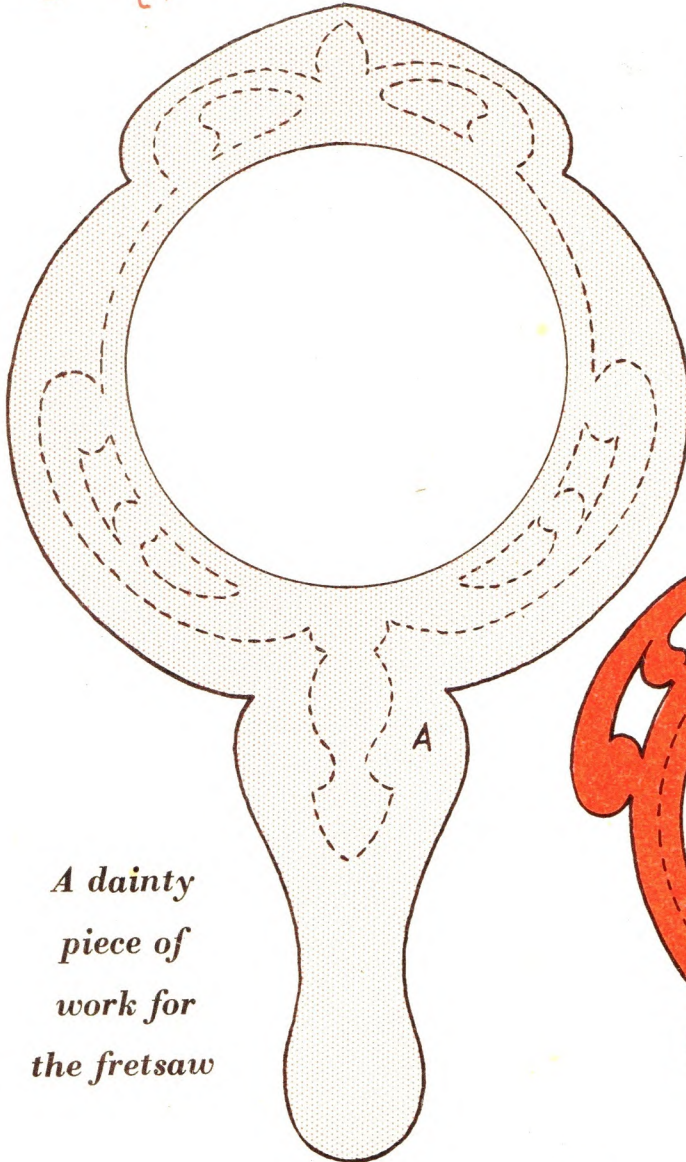
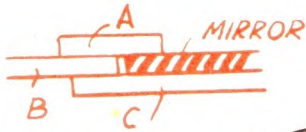
With the above plants and a couple of packets of mixed seed, there should be enough plants to stock a great variety of gardens. (P.R.C.)

about a quarter of an hour, remove it from the heat and let it cool.

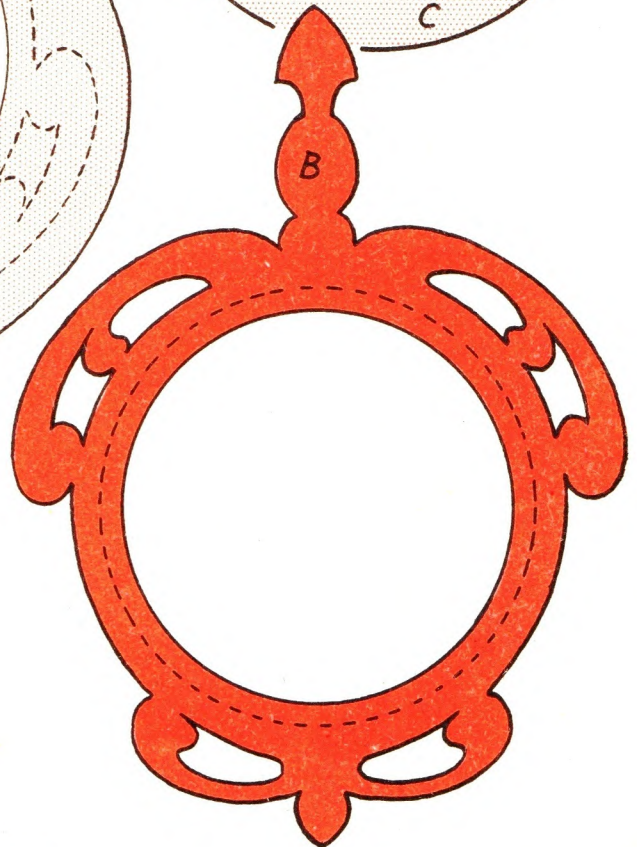
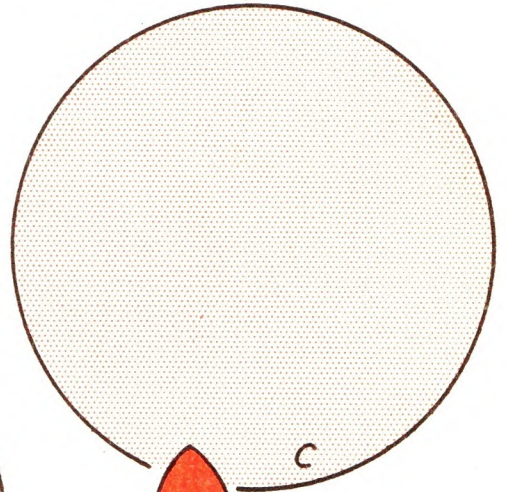
You will find the wire is covered with a black coating. If the wire was very fine it will probably have crumbled to black powder. This is copper oxide mixed with a little cuprous oxide. Detach it from the wire and heat it up again, well spread out, on a tin lid and you will obtain fairly pure copper oxide, which will come in handy for many laboratory purposes.

If you have been doing experimental chemistry for a year or two it is a sign your interest will probably be a lasting one. A tip for the future may therefore be timely. Unless big new deposits of copper ores are found, there will be a grave shortage of the metal as the years go by. This means a big rise in the price of copper compounds for the laboratory. The moral is obvious. Save all scrap copper. You may need it for producing your own copper compounds by the methods detailed in this article. (L.A.F.)

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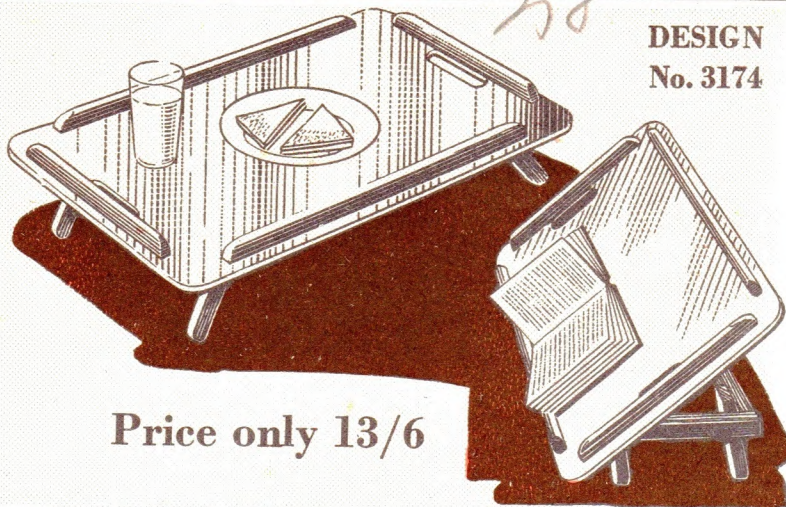
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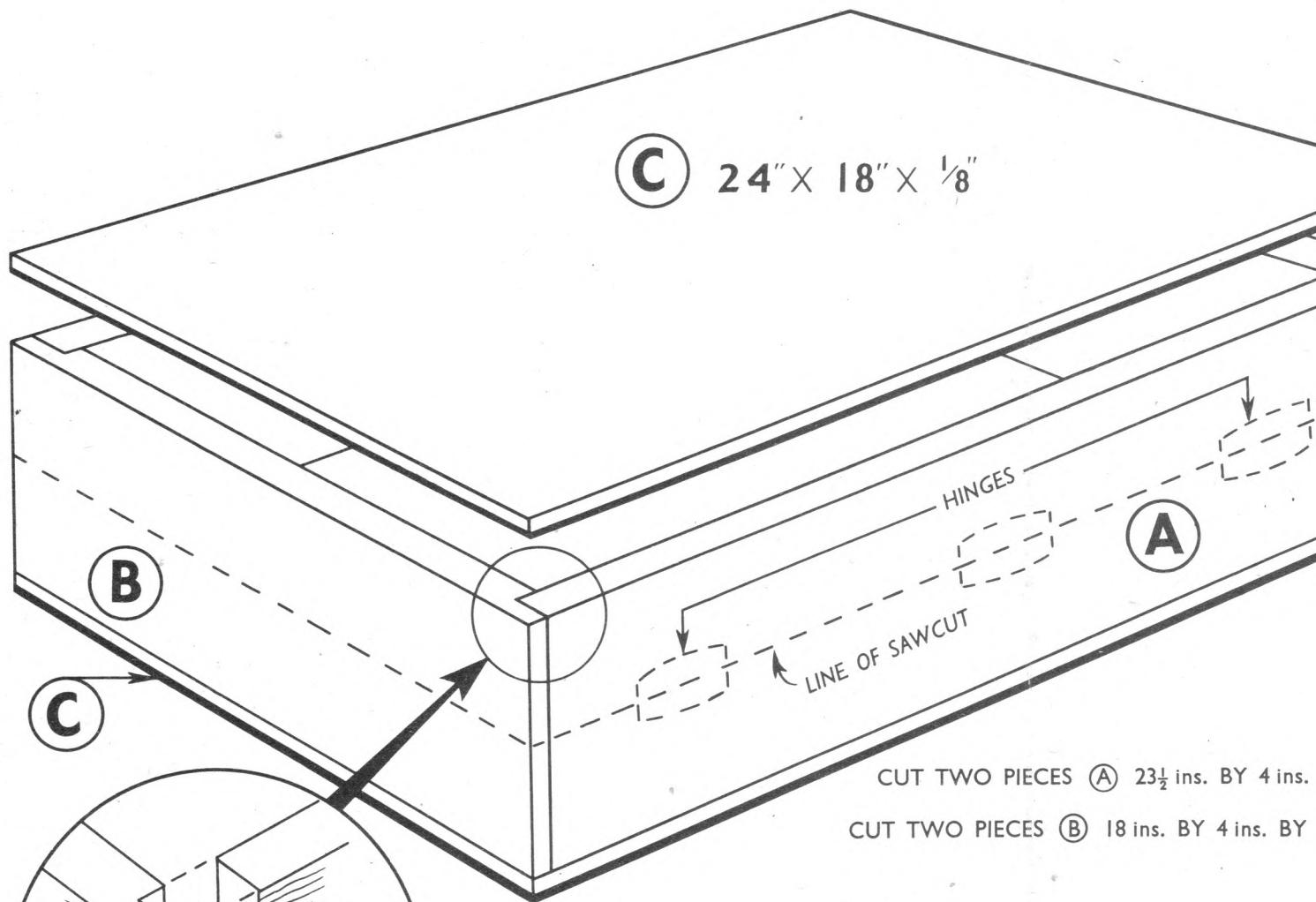
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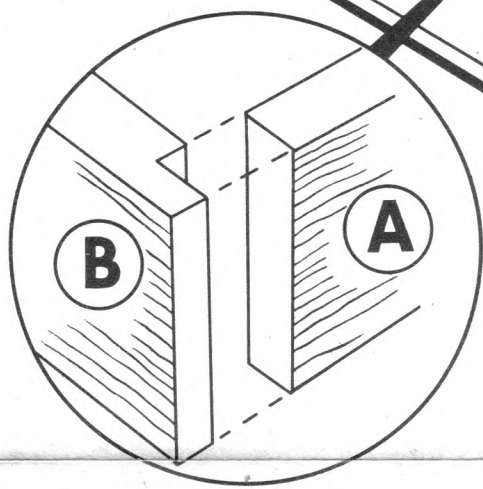
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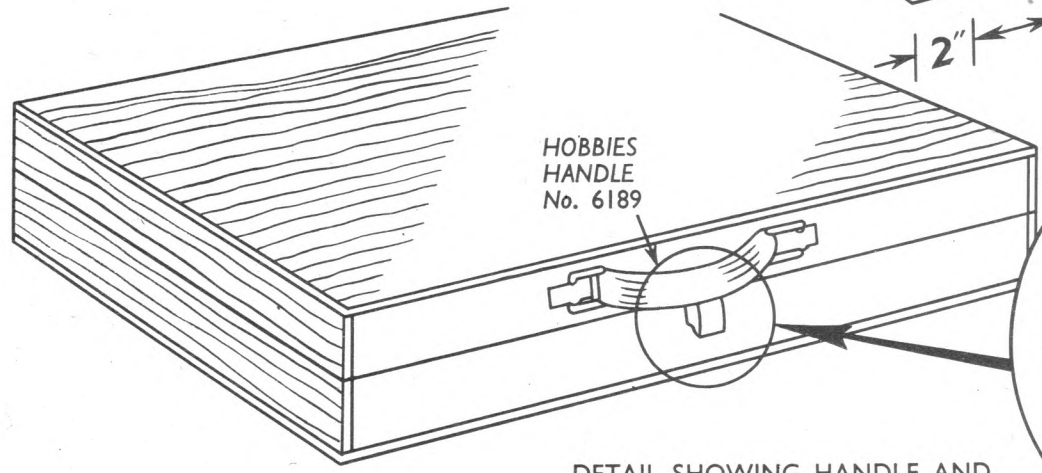
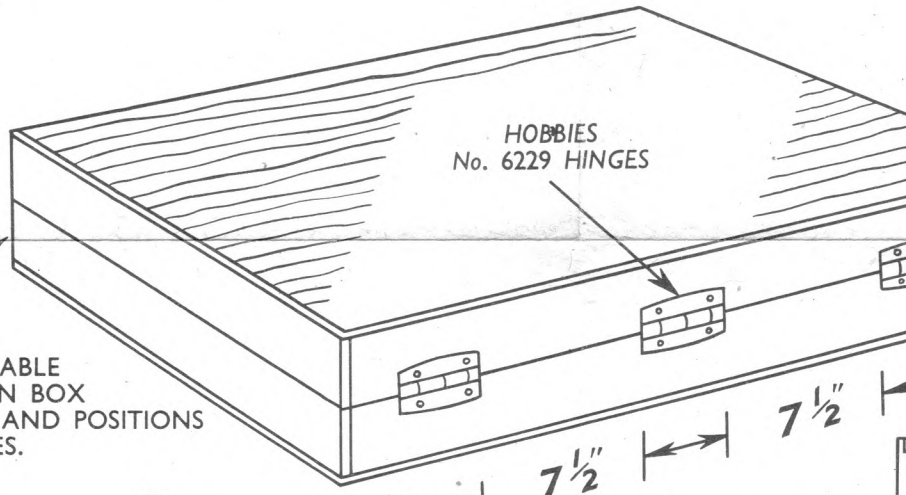
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DETAIL SHOWING HANDLE AND METHOD OF FASTENING.

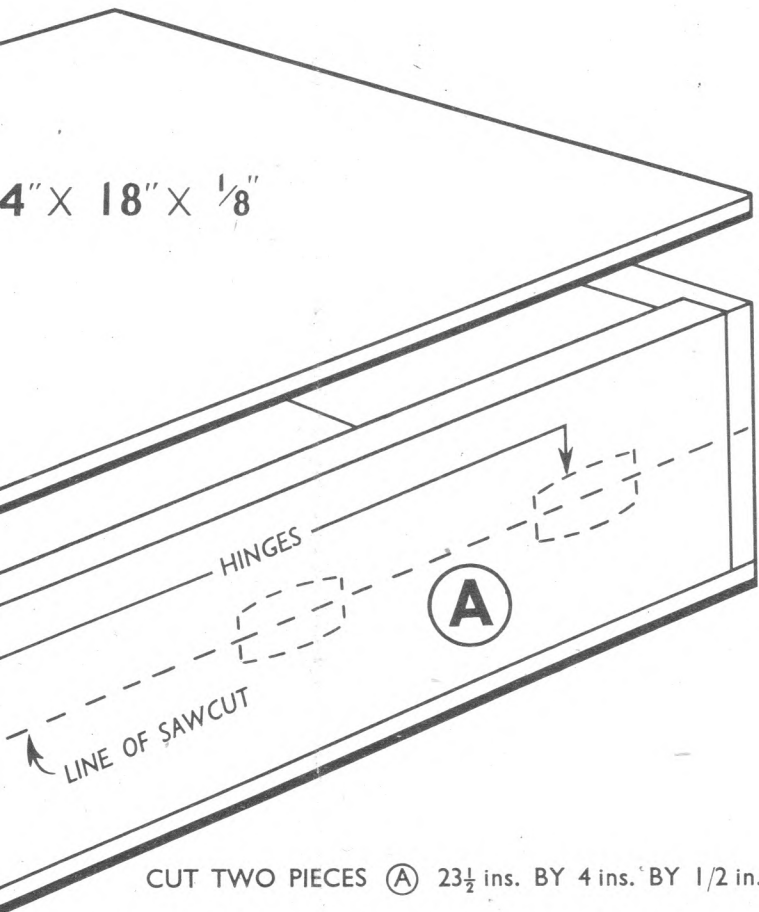


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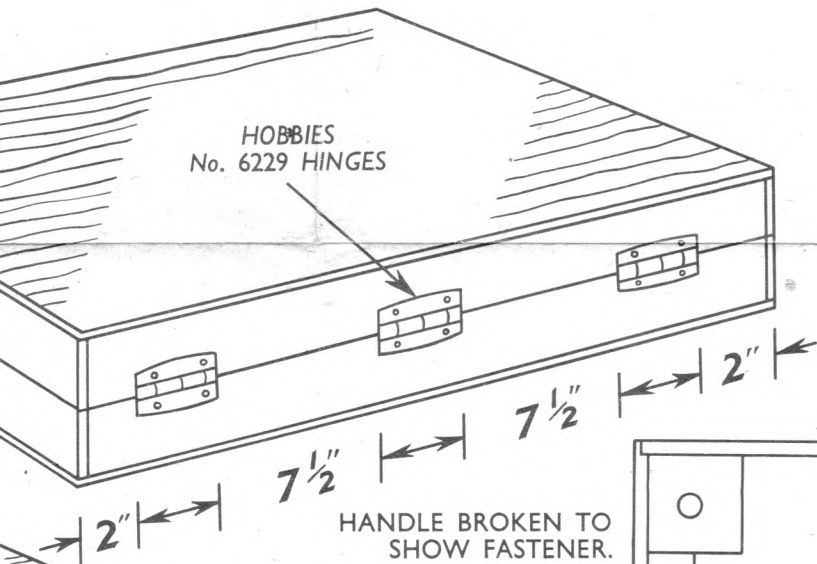
DESIGN

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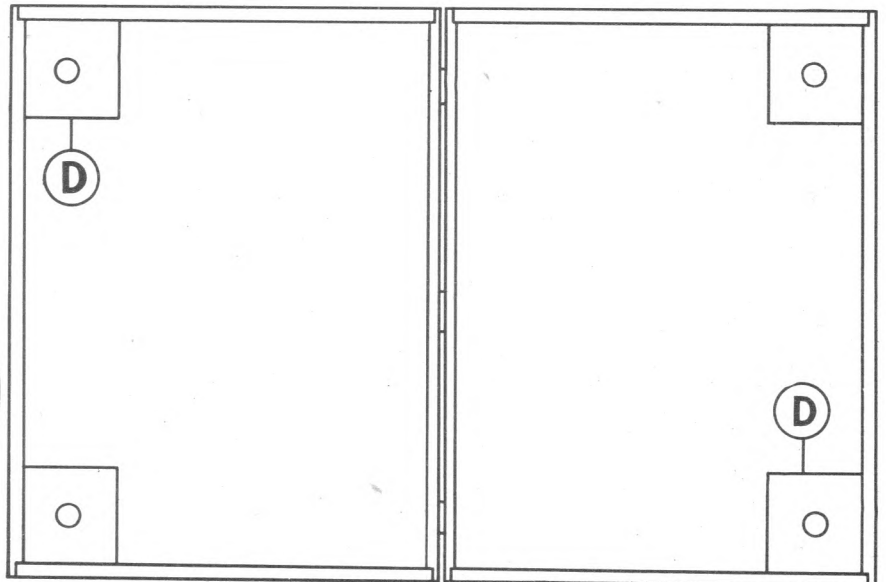
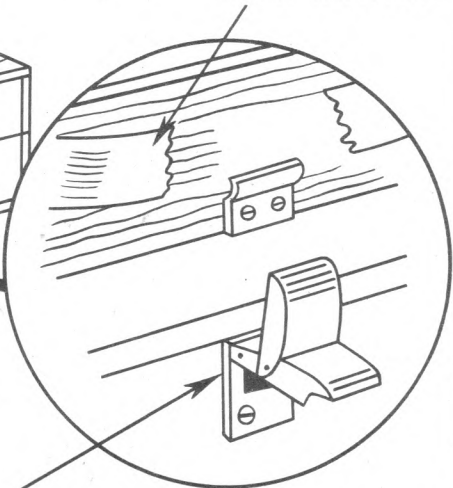
CUT TWO PIECES (B) 18 ins. BY 4 ins. BY 1/2 in.



HANDLE BROKEN TO SHOW FASTENER.

HANDLE AND G.

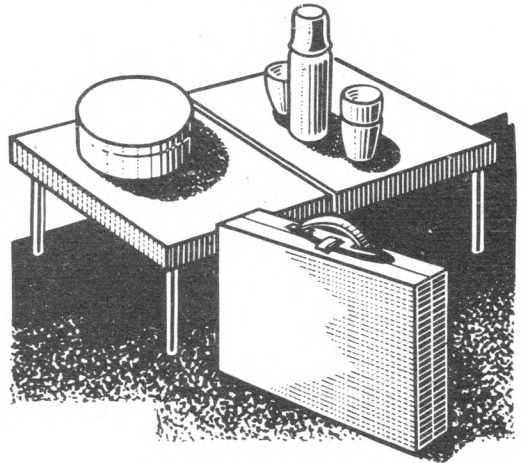
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DETAIL SHOWING UNDERSIDE OF OPEN TABLE WITH CORNER BLOCKS D IN POSITION.

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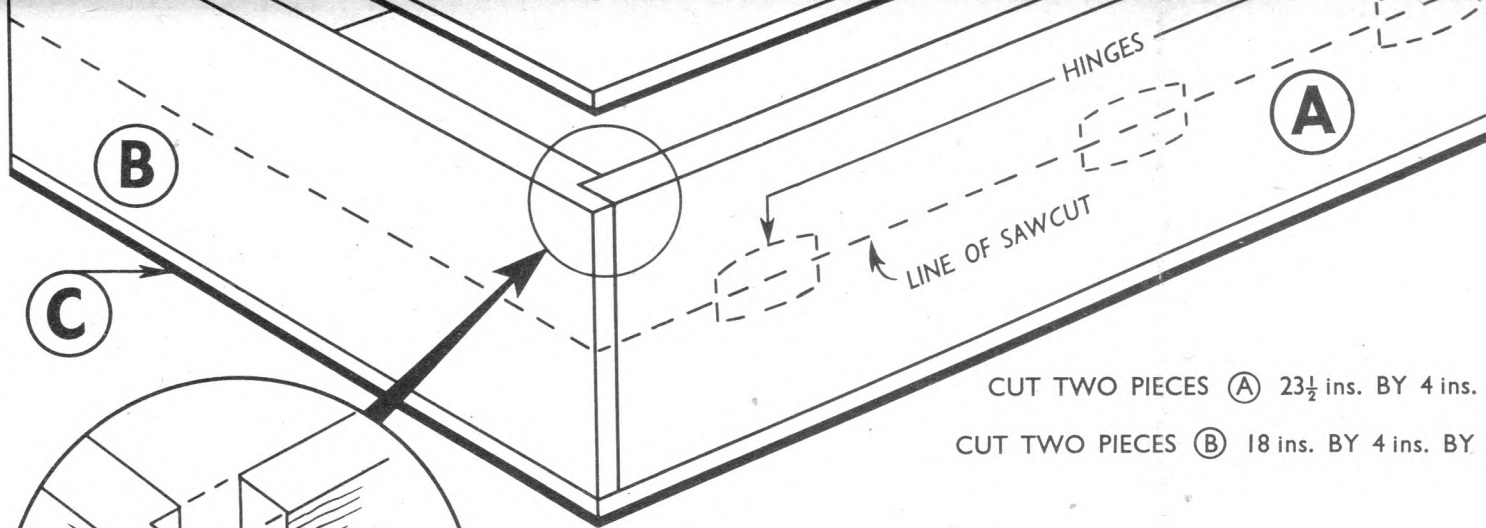
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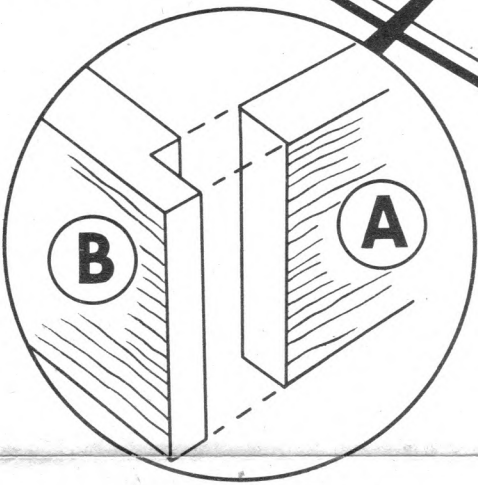
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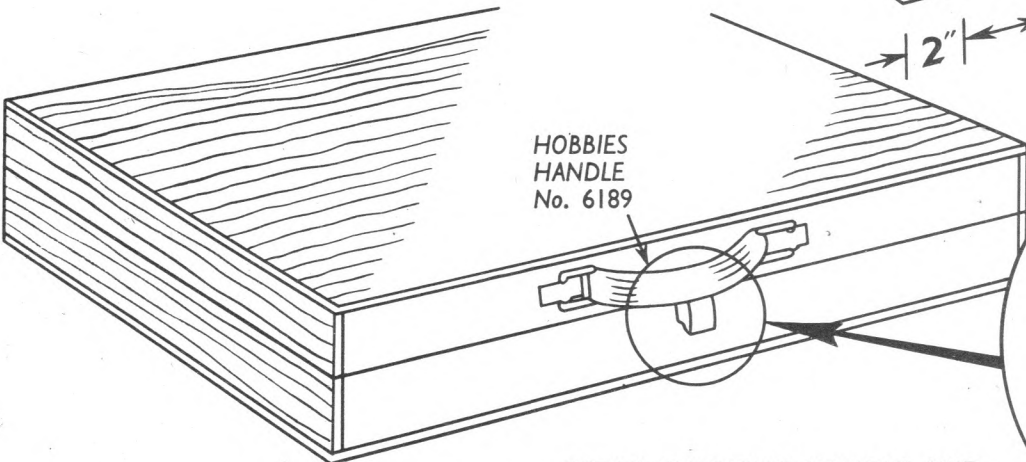
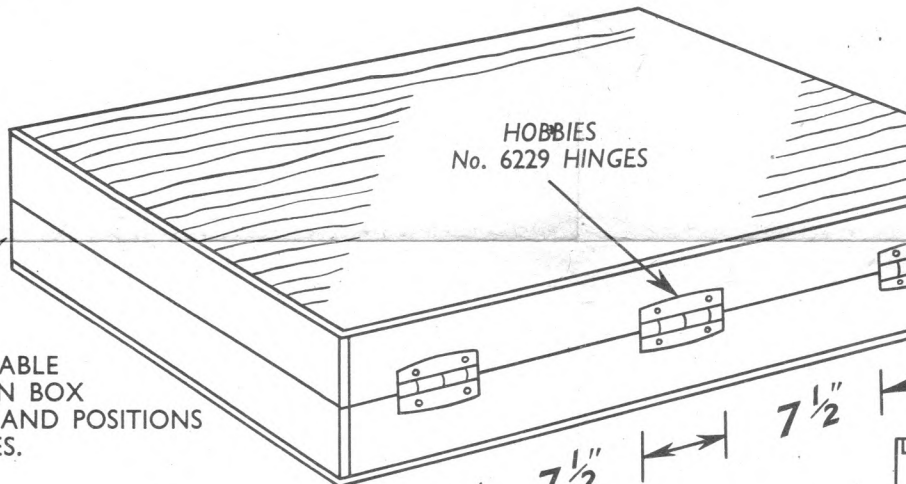
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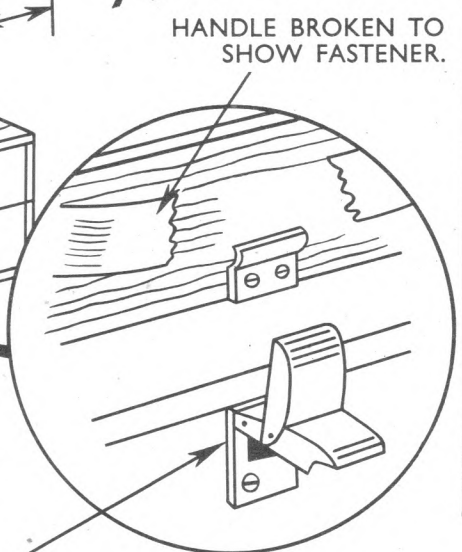
CUT TWO PIECES (A) 23½ ins. BY 4 ins.
 CUT TWO PIECES (B) 18 ins. BY 4 ins. BY



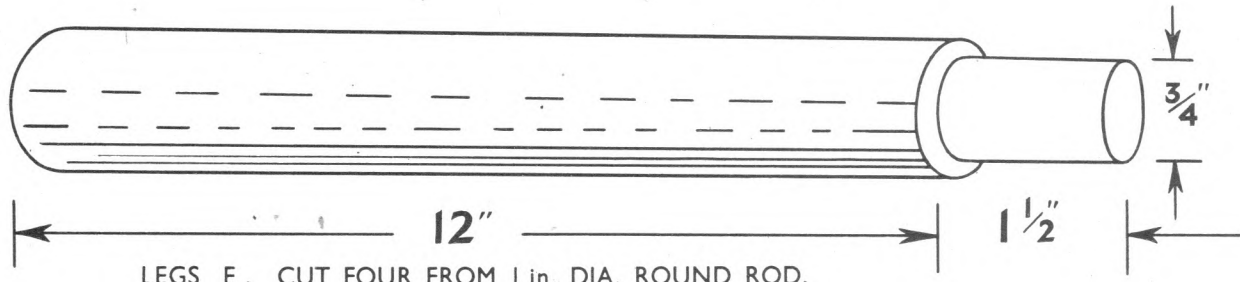
DETAIL SHOWS TABLE CLOSED IN BOX FASHION AND POSITIONS OF HINGES.



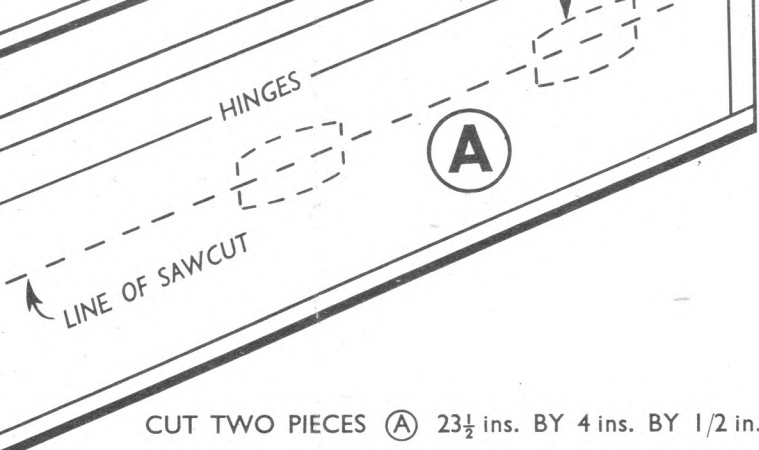
DETAIL SHOWING HANDLE AND METHOD OF FASTENING.



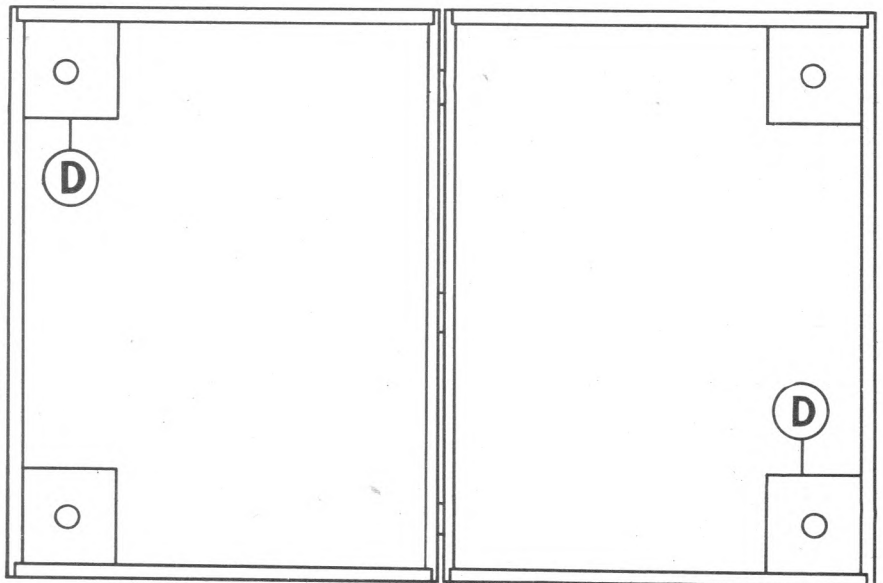
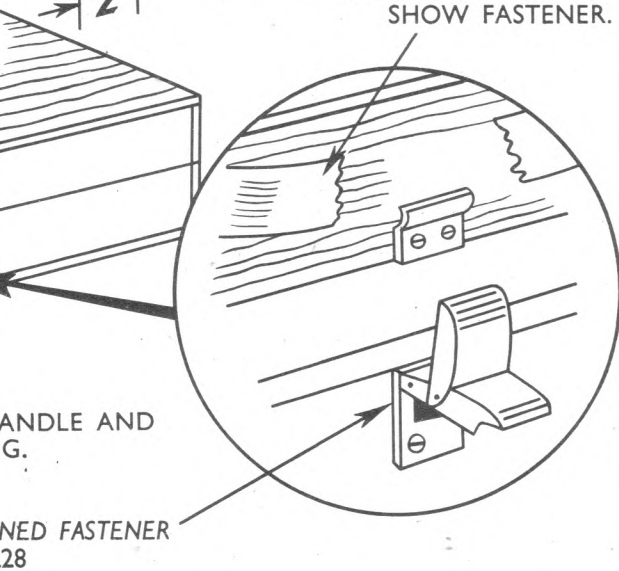
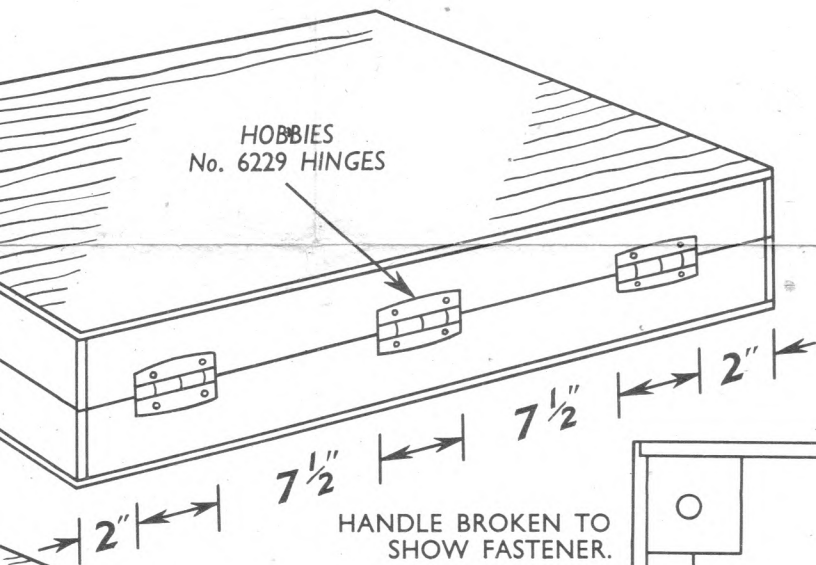
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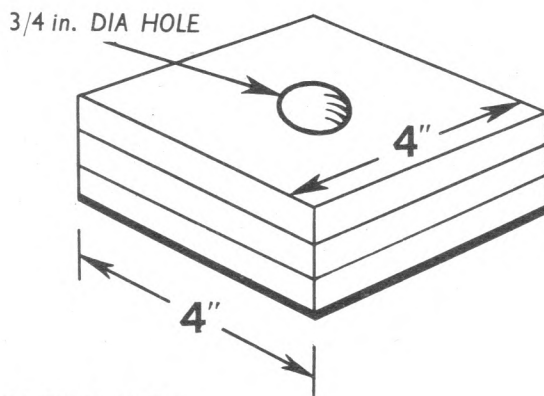
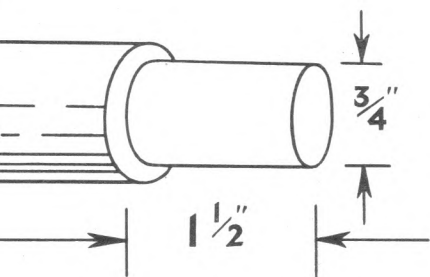
LEGS E. CUT FOUR FROM 1 in. DIA. ROUND ROD.



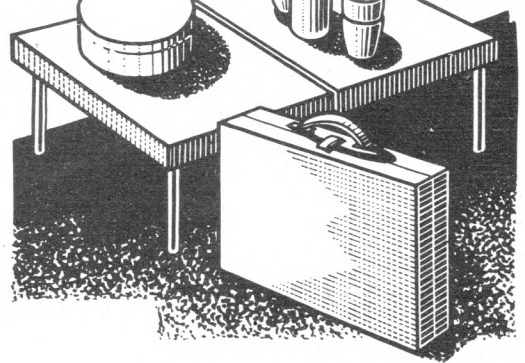
CUT TWO PIECES **A** 23½ ins. BY 4 ins. BY 1/2 in.
 CUT TWO PIECES **B** 18 ins. BY 4 ins. BY 1/2 in.



DETAIL SHOWING UNDERSIDE OF OPEN TABLE WITH CORNER BLOCKS D IN POSITION.



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