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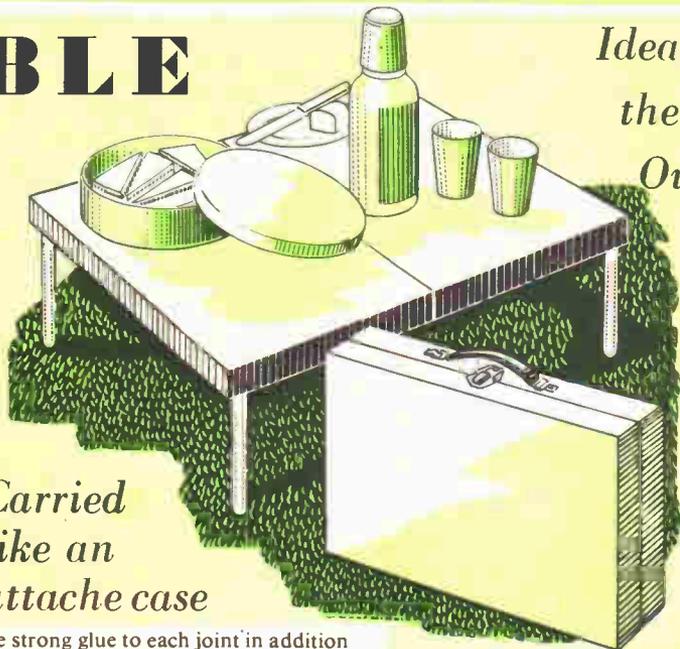
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PORTABLE PICNIC TABLE

*Ideal for
the Car
Owner*



*Carried
like an
attache case*

THIS handy little folding table is just ideal for picnics with the family. When not in use, it can be folded down and carried like an ordinary attache case, or it can be stored inside the boot of your car. The construction is very simple and requires only a few basic tools. The procedure is as follows.

Start by making the framework of the table. This should be made from planed timber 4ins. by $\frac{3}{4}$ in., and is illustrated in Fig. 1. Cut two side pieces 2ft. long and two ends 1ft. 6ins. long. These should be fitted together to form a rectangular frame 2ft. by 1ft. 6ins. Readers who are familiar with making dovetail joints should use this type of joint at the corners. If, however, you do not feel too confident about making dovetails, then use open housing joints as shown in Fig. 2. This type of joint will be strong enough for this job, for you will see later on that each corner is strengthened by a triangular blocking piece. When fixing the framework members together, apply a

little strong glue to each joint in addition to inserting a few nails.

When the frame has been constructed, obtain two pieces of $\frac{3}{4}$ in. thick plywood 2ft. by 1ft. 6ins., and fix these to the top and bottom to form a closed box. The panels should be glued in position first and then nailed with $\frac{3}{4}$ in. panel pins at intervals of about 1in. Once the glue has set, the edges of the plywood panels should be smoothed off flush with the frame.

After this, mark a line around the framework to divide it into two as shown by the dotted line in Fig. 1. Using a fine toothed tenon or dovetail saw, cut along this line, keeping your saw as flat as possible to prevent ragged edges forming on the inside edge. The sawn edges should be carefully smoothed off and glasspapered. Ensure that the two portions of the table fit accurately

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

WorldRadioHistory

4¹/₂^D

USE OF TRANSISTORS

DURING the last few years transistors have been coming into use, and they are now easily obtainable, at reasonable cost. Many of the circuits employed are complicated, requiring special parts, but this does not mean that simple transistor circuits cannot be wired up with success, as this is by no means so. Indeed, the simplest form of transistor amplifier need only employ a transistor and battery.

Transistors are of junction or contact type. With the former, thin layers of special crystal are fixed together, but with the latter, special electrodes make contact with a flat crystal base, as

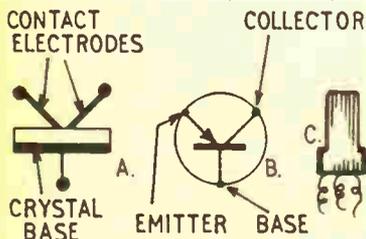


Fig. 1—The transistor

shown at (A) in Fig. 1. If a suitable circuit is being followed, the constructor need not concern himself with the kind of transistor, though such information may be wanted in experimental testing.

Current amplifier

The transistor has one very useful characteristic — if a very small current is passed from one contact electrode to the base (or from base to electrode), a very much larger current, when using a battery, will flow from the other contact electrode. This means that amplification, or an increase in signal strength, has arisen.

A valve also amplifies, but is controlled by a small change of voltage, applied to its grid. A valve also requires a H.T. supply of about 45 V upwards, and a filament or heater supply from a low tension source. The transistor has no filament or heater, and works with a battery voltage as low as 1½ V. In addition, the current it takes is only a few milliamps, so that small batteries have a long life. For example, the usual type of all-dry battery receiver valve will take 50 mA or 100 mA L.T., whereas the transistor takes only 1 mA to 5 mA, and needs no H.T. supply.

Transistors are thus very useful where economical running and small size are important. It must not, however, be

thought that they are as efficient as valves. A receiver using one or two transistors is very much less powerful than a set with a similar number of valves. They are thus most suitable for small receivers, or deaf aids, etc., where the full advantage of economical running can be realised.

(B) in Fig. 1 shows the usual transistor symbol, the emitter resembling an arrow. The signal to be amplified may be applied to either base or emitter. The amplified signal then appears in the collector circuit.

(C) is a typical transistor. They are very small, with wire ends which can be connected directly to the other components.

Battery polarity

Transistor circuits are somewhat different from valve circuits, since the transistor is current operated, instead of voltage operated. This need not concern the constructor unduly. However, it is essential to note that with transistor circuits, the battery positive goes to the earth line, exactly opposite to valve

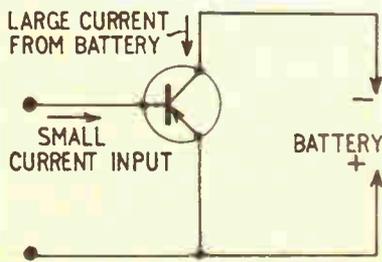


Fig. 2—Transistor amplifier

circuits. This is exceedingly important, as if the battery is connected up in the wrong polarity, the transistor will usually be damaged, so that it is of no further use at all.

Fig. 2 shows a transistor as amplifier, with battery positive to emitter, and negative to collector. In this case a small signal is being applied to the base, causing a large collector signal. This could be heard by wiring phones or a speaker in series with the battery circuit.

Any dry battery will do very well for such circuits. With the usual type of torch battery, the zinc case is negative, and the carbon rod, with brass top, is positive. With midget sets, tiny pen-torch cells can be used.

Each such dry cell is 1½ V. One cell is enough for many transistor circuits, though some use 3 V (2 cells) or 4½ V

(3 cells), or even more. The maximum voltage which can be used with any transistor is given by the maker. It is usually best to keep to 1½ V or 3 V with small circuits, as using a larger battery will not much improve results.

An on off switch is usually included

By F. G. Rayer

in one battery lead, to switch off. With proper use, the transistor is virtually everlasting. Wrong battery polarity, wrong transistor connections, excess voltage, or heavy currents can, however, damage it at once.

Practical circuit

A very useful application for a single transistor, with battery, will be found in providing amplification for a crystal set. A pictorial diagram of such a receiver, including the crystal set section, appears in Fig. 3.

It must be stressed again that the amplification does not equal that obtainable from a valve. However, a very useful increase in volume can be expected. If a crystal set gives insufficient volume, the transistor will boost this up to a level where phones may be used with comfort. On the other hand, if the crystal set were used in circumstances which gave good phone volume, then a small loudspeaker can be worked with the aid of the transistor. This is a very suitable arrangement for a bedside receiver.

The amplification obtained can easily be noted, if the phones are first wired from detector to earth, as with the usual crystal set. The transistor is then added, as in Fig. 3, and the increase in volume will be apparent.

It will be seen that the detector polarity is marked, negative going to transistor base. Many crystal diodes have red and black ends, to indicate positive and negative. If the detector has no polarity shown, it should be tried each way round, to find which is correct.

Tapped coil

The transistor amplifier can be added to a ready-made crystal set. But volume will be improved if the detector is taken to a tapping on the coil, as in Fig. 3. This tapping can be about one-quarter

the total number of turns from the earthed end of the coil, though a few trials, with different positions, will be helpful in securing best possible results.

If a coil is to be wound for medium waves (200–550 metres), then 30 S.W.G. D.S.C. wire, or a similar gauge, and a 1½ in. diameter former, will be satisfactory. With turns wound closely side by side, 70 will be required in all. The

Transistor connections

As explained, the transistor leads must never be confused, as wrong connections could cause damage, once the battery is fitted. The wires must also be soldered very quickly, to avoid heat travelling along them to the transistor.

When joints are to be soldered, the full length of the projecting wires should be left, and the lead should be held with

If heat is allowed to travel along the wires into the transistor, it will be permanently damaged. This also applies to the crystal diode type of detector.

If there is any doubt about soldering, for this reason, it is better to make small terminal connections, or even to twist the wires to longer leads, for connecting up.

Phones or speaker

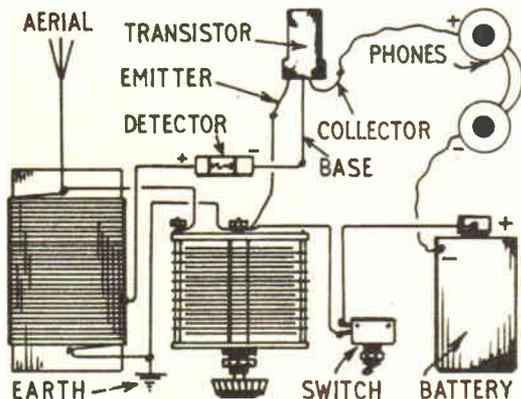
The usual type of crystal set phones will be satisfactory. Those of high impedance, but fairly low D.C. resistance, such as good balanced-armature earpieces, are best of all.

The customary warning must be given against ex-service phones of low resistance, never intended for such purposes. These will generally be quite unsatisfactory, only giving weak signals.

If a speaker is to be tried, it should be of the type which would be used with a battery set, with a matching transformer. If the transformer has various tappings, these should be tried in turn, to find which is best. Very high impedance loads are not required, so that the transformer is best when it has a fairly low ratio, or is intended for triode output valves. However, it will be found that many transformers work quite well.

Midget speakers and transformers are best avoided, if space is not important, as the actual sound output will be reduced, compared with that obtained from a good 5 in. or 6 in. speaker. The speaker should also be fitted in a cabinet, for optimum performance.

Fig. 3—
Complete
transistor
receiver



detector tapping is provided at about the 18th turn from the earth end of the coil, by making a loop when winding. If more selective tuning is required, the aerial can also go to this tapping, or to one at about the centre of the coil. This depends upon the type of aerial.

flat-nosed pliers, just clear of the transistor body. The soldering iron must be really hot, and should only be applied just long enough to solder the joint — only a second or so. Blowing, or touching the joint with a damp cloth, will cool the wire more rapidly.

UNUSUAL HOBBY

Collecting Thimbles

LIKE buttons, old thimbles are often found in Grandma's work box or among other oddments at antique shops and auction sales, where I once bought an old Victorian work box for 10/-. Besides many interesting buttons, it also contained an old thimble, which when cleaned, proved to be solid silver.

Thimbles are mentioned in writings of the 12th century. They were manufactured at Nuremberg in Germany in the 14th century. In 1534 the thimble-makers became a corporate body.

In 1572 a Nuremberg thimble-maker named Jorg Endthor invented a twisting wheel, but was forbidden by the authorities to use it, because it would have given him an advantage over other members of the craft.

15th-century thimbles, narrow and pointed, were adorned with ornaments and proverbs. Many were made of bronze and brass. Those made of gold and silver were designed by goldsmiths for the use of rich women or as presents

for the pretty bride or the good wife and 16th century goldsmiths often produced perfect costly thimbles for their sweethearts.

Double thimbles — the under one quite smooth and gilded; the upper one of silver and entirely pierced through — were made during the 17th century.

Two 18th-century thimbles at South Kensington Museum deserve mention. The first is from a set of needle-case, thimble and box. The thimble is silver gilt covered with openwork scrolls filled in with coloured enamel. The second is of silver, the body is of open filigree work with scrolls. A 17th-century thimble at the British Museum is of silver with portraits of Charles II and his queen. There are some letters and figures on the lower border. This thimble was made in England.

John Lofting who came over from Holland at the end of the 17th century established a thimble factory at Islington to introduce the thimble as an article of common use.

In October, 1884, a celebration took place in Amsterdam. It was the bicentenary of the special thimble-making of Nikolaus Von Benschoten. It was at this gathering of thimble-makers that a new thimble was introduced which seems to avoid the faults of the ordinary steel and silver thimble by being made in three parts, the inner and outer being of silver and the middle one of steel, thereby rendering it impenetrable. It is known as the Dorcas thimble.

Thimbles are made by stamping and afterwards turning in a lathe, the indentations being produced by a specially adapted instrument. Continental operatives make them with punches in as many as five different mandrils.

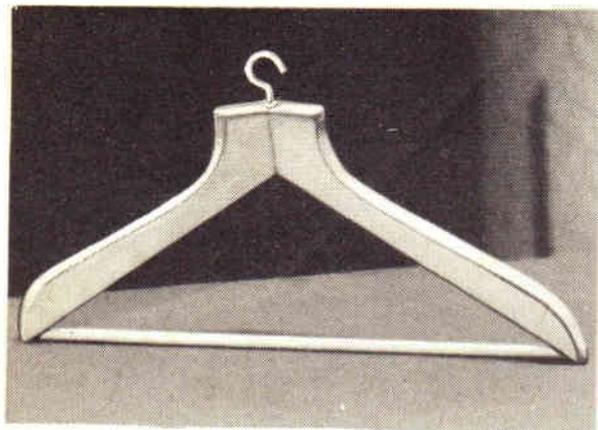
The word thimble is derived from the Scots Thummel, or Thumb-bell, a sort of shield originally worn on the thumb.

This hobby is fairly popular and many collectors combine it with button collecting.

(R.L.C)

A Set of Coat Hangers

Kind to
your
clothes says
K. B.



THE shape of your clothes is built into the coat hanger illustrated, so that they will not lose their shape when hanging in the wardrobe. A set of hangers is quite easy to make if a simple jig is constructed first to enable the compound angles on the two arms to be sawn.

right angles to the sides. Make the drawing shown in Fig. 3 by using a piece of card divided into $\frac{1}{4}$ in. squares. Cut round the outline, and draw round this shape on to the wood (Fig. 4). Saw along the straight lines with a tenon saw, and along the curved lines with a fret-saw. No attempt should be made at this

saw-cut down the joint between the two arms.

To fix the arms together, apply glue to both pieces, and fix them in the vice, leaving overnight to dry (Fig. 5). It may be necessary to true up the top flat surface of the hanger after gluing. This can be done with a finely-set smoothing plane. When the hanger must be held in the vice for working, the arm which is not supported by the vice should not be subjected to any great pressure, as the joint at this stage does not possess great strength.

To provide extra strength, a piece of plywood is glued and pinned with 1 in. panel pins to the flat top surface. Cut the plywood rather bigger than this surface, and when it has been fixed in position,

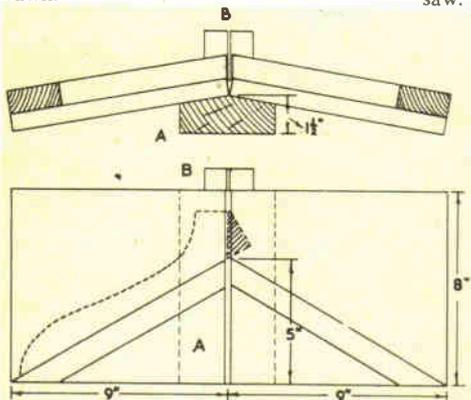


Fig. 1

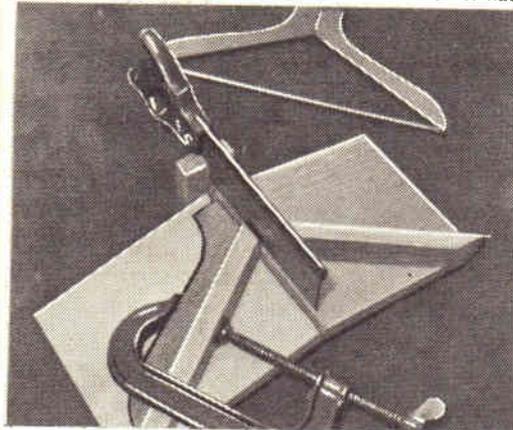


Fig. 2

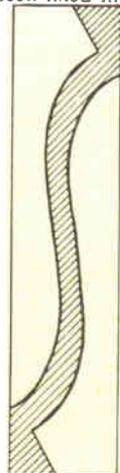


Fig. 4

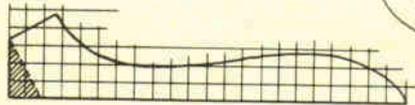


Fig. 3

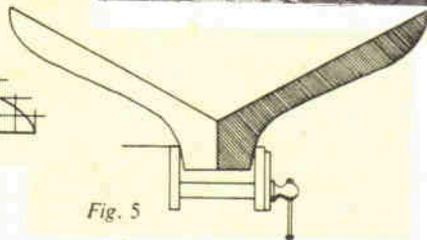


Fig. 5

The construction of the jig is shown in Fig. 1. Screws or stout nails can be used for assembling the parts. The piece (A) should be made as wide as possible, so that a firm base is provided. The upright piece (B) down which a vertical saw-cut is made, will act as a guide for the tenon saw when the jig is in use (Fig. 2).

For each coat hanger you will need a piece of wood 13 ins. long and 3 ins. wide. The thickness must be at least $\frac{3}{4}$ in., but the joint will be stronger if a $\frac{7}{8}$ in. or 1 in. thickness is used. Plane the wood smooth, and make the two edges at

stage to round off the top edges of the arms.

Cramp one of the arms on the jig, and saw off that part which is shown shaded in Fig. 3, keeping the saw at right angles to the front of the jig. Cramp the second arm on the other side of the jig, and saw the angle in the same way. Finally, to make a perfect joint, cramp both arms in position on the jig, so that the sawn surfaces are in close contact, and make a

trim it level with a chisel. Round off the top surfaces of the arms with a spokeshave, and finish off with glasspaper. If a convex spokeshave is not available, the top portion of the curve can be completed with a chisel, using it with the sharpened side downwards.

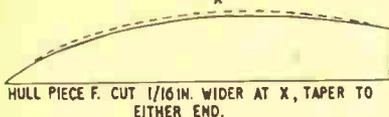
Place a length of $\frac{3}{8}$ in. dowel rod in position underneath the hanger, and mark the required slopes on to the rod as accurately as possible. Saw the angles, and try it in position. Any alterations can be made with a chisel while the dowel is held in the vice. Glue and pin the dowel into place, using $\frac{1}{4}$ in. pins. In the top of the hanger, drill a hole as wide as the core of the threaded part of a cup-hook, and screw in the hook.

A few coats of French polish provide a suitable finish.

MAINLY *for* MODELLERS

WHEN the full-size replica of the 'Mayflower' recently sailed from the shores of Britain she was reliving the times and repeating the voyage of those known to history as the Pilgrim Fathers, the 74 men and 28 women of independent thought who colonized the eastern seaboard of North America and founded New Plymouth.

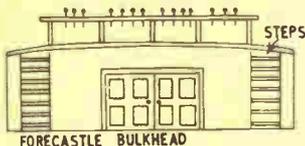
actual ship these are in the form of gratings, and if we can add this detail, it will add to the appearance and interest of our model. For those modellers who have not the skill for tiny miniature work here is a simple method of obtaining the effect of gratings. Take the filling pieces when cut to shape and glasspaper down the thickness to allow



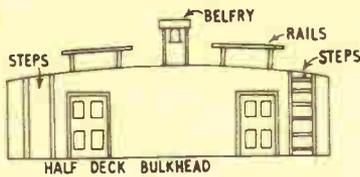
HULL PIECE F. CUT 1/16 IN. WIDER AT X, TAPER TO EITHER END.



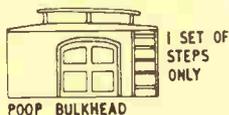
FILLING PIECE AT BOW MAKE AS GRATING



FORECASTLE BULKHEAD

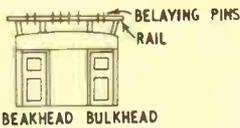


HALF DECK BULKHEAD



POOP BULKHEAD

1 SET OF STEPS ONLY

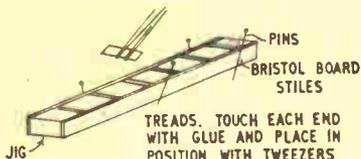


BEAKHEAD BULKHEAD

THESE SKETCHES ARE NOT TO SCALE. CUT BRISTOL BOARD TO FIT BULKHEADS ON MODEL AND THEN PAINT IN THE DETAILS.



JIG, MADE FROM STRIPWOOD



TREADS. TOUCH EACH END WITH GLUE AND PLACE IN POSITION WITH TWEEZERS

MAKING BRISTOL BOARD LADDERS

At this time, therefore, I feel that those readers who, so far, have not made up Hobbies 'Mayflower' Kit No. 2147, will be contemplating doing so, also there may be those of our readers who having previously done so, may welcome the opportunity of building a more detailed model.

To commence building the model, follow the kit instructions as usual. In this case the tumble home is obtained by cutting the hull pieces (F) just $\frac{1}{16}$ in. wider at the centre as described in earlier articles on various kit models. In this case only $\frac{1}{16}$ in. extra is needed to allow that little extra when carving the hull, the tumble home being not as extreme in this as in some previous models.

For the first improved detail, note the two filling pieces at the bow. In the

for the thickness of the paper used, then cover with small graph paper, with squares no larger than $\frac{1}{10}$ in., or slightly smaller if possible. As an alternative you can rule a piece of paper in squares, in which case they should be $\frac{3}{32}$ in. square.

After doing this, take a mapping pen and indian ink and blot out the alternate squares by filling in with ink as shown in diagram, finishing with a coat of shellac, to colour and protect the surface.

The main hatch and foreccastle hatch were also gratings and can be treated in the same manner.

For the actual gratings there are two methods. The first is to cut the filling pieces in boxwood or holly. I specify these two woods because of the method by which we produce the gratings. An old boxwood ruler will provide wood

for several models. After cutting out, rule off the squares, and with a $\frac{3}{32}$ in. drill, drill a hole in the centre of each of the blacked out squares, file a small nail to $\frac{3}{32}$ in. square to form a punch and punch each hole square. Again finish with a coat of shellac.

The actual grating can be built up in this manner. On a piece of thin paper (it must be thin, as we have to gently glasspaper it off afterwards), draw or trace the outline of the bow pieces. Now take some $\frac{3}{32}$ in. stripwood. This is obtainable from model aeroplane stores. Do not use balsa — it is not strong enough. Most model shops stock small stripwood in a tougher wood. Mark off the length of stripwood in $\frac{3}{32}$ in., and with a toolmaker's needle file each alternate

HAIL! MAYFLOWER By 'Whipstaff'

space half way through the strip. The strip is now cut in suitable lengths and assembled egg box fashion on the paper pattern, which has been given a thin coat of adhesive. When set, give a coat of shellac and trim to shape. Gently remove the paper.

Illustrated are bulkheads of this type of vessel. They should be painted on thin bristol board and the actual bulkheads covered with the painted design. Do not forget to glasspaper down the faces of the bulkheads sufficiently to allow for the thickness of the bristol board. It adds to the interest of the model if one or two of the doors in the bulkhead are shown standing ajar. This effect is obtained by cutting around the two sides of the door with a razor blade. When sticking the overlay on the bulkhead the door is bent outwards slightly to appear ajar.

The steps shown against the bulkheads can be made in the usual manner of Hobbies kits, by fretting out as in sketch. For more realism we can make a jig as in the sketch. Cut out the stretchers of bristol board and hold in position against the sides of the jig with pins. The treads are cut to length and cemented between the sides, placing in position with tweezers.

The rails on the bulkheads can be assembled by cutting the stanchions from $\frac{3}{32}$ in. square stripwood and the top rail cut from thin wood and rounded on the edges.

In the same manner the fretted rails on the bulwark pieces, marked upper sides, can be cut off and actual rails and stanchions fitted, as in the sketch.

Jobs about the house

HANDYMAN HINTS

MANY handymen like to keep a file of useful hints which they can apply to the scores of jobs which they are called upon to tackle about the house. Here are a few practical tips well worth remembering.

Workshop files require to be cleaned regularly in order to keep them in good condition. This can be effectively done by first boiling them in water, to which a little soda is added, and then giving them a good rub over with a stiff wire brush.

Broken glass in doors and windows should be removed as soon as possible. If this is not done, then any vibration from nearby traffic may cause the remaining jagged pieces of glass to loosen unexpectedly and cause injury to someone.

It is useful to remember that ordinary cement begins to set about half an hour after being mixed with water. Therefore, when carrying out repairs requiring the use of concrete or cement mortar, always ensure that the mixed material is placed in its final position within half an hour after mixing.

The pulleys on sliding sash windows should be oiled frequently to keep them functioning freely. If they are allowed to become stiff, the sash cords will slide over the pulleys and the friction set up will cause the cords to wear much sooner.

If you should purchase some paint in quart tins for a particular job, then do not attempt to apply the paint from the tins. Always use a proper paint kettle. Accidents sometimes happen, so if you should overturn the kettle accidentally you will only lose the small amount of paint in the kettle instead of a whole quart.

It is a good plan to carry out an inspection of the ball valve on the cold water supply cistern at frequent intervals. Very often the valve becomes sluggish and stiff, with the result that it does not function properly. A wipe over with a cloth and a smear of oil on the moving parts is all that is required.

Nowadays, there are many different types of varnishes on the market, such as heat resisting varnish, out-door varnish, indoor varnish, etc. When varnishing, always complete each job with one type of varnish. Never mix different qualities or brands of varnishes, as this will reduce the quality of the finished work.

When doing a soldering job never heat the soldering iron by plunging it into a coal fire. This is often done, but the bit becomes excessively dirty and

requires a lot of filing to make it clean for tinning. Remember, the more filing you have to do for tinning, the less service you will get from your iron. The best heating mediums for heating a soldering iron are gas rings and blow-lamps.

A common reason why many wooden boundary fences fall into a state of disrepair is because the nails holding the various members together have rusted and have ultimately broken loose. To prevent this happening, always use galvanised nails, so that they will be protected from oxidation.

When ordering glass for window repairs it is necessary to be accurate when taking off the measurements to prevent additional cutting later on. Always order your panes $\frac{1}{4}$ in. shorter and $\frac{1}{4}$ in. narrower than the actual sizes, so that they will slip easily into the rebates. When ordering figured glass which can only be inserted one way, always state clearly which measurement is the breadth and which is the length.

Plastic surfaced hardboard is a material which is becoming very popular nowadays for panelling jobs about the home. When cutting this material the

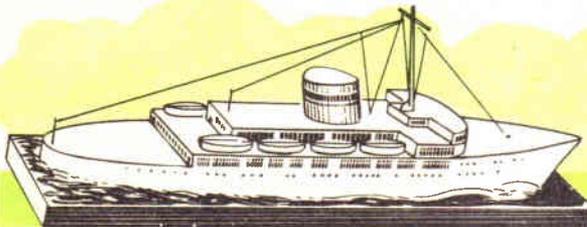
best method is to scratch the surface first with the corner of an old wood chisel and then cut through the remaining thickness with a fine toothed saw, keeping the saw as flat as possible. Never saw from the back, as this will, undoubtedly, chip the plastic surface.

If you desire to paint a set of stairs without putting the stairs out of use until the paint dries, then deal with the problem in two stages. Paint alternate steps one day and the remaining steps the next.

Before using a distemper brush it should be soaked well in cold water for at least half an hour. This will soften the bristles and make them more supple. After use, the brush should be thoroughly rinsed and then hung up on a wall with the bristles hanging downwards.

When staining the floor of a room always start at one of the far away corners and work towards the doorway. This may appear to be an elementary tip, but it is surprising how many people start this job without giving it much thought and have later found themselves 'marooned'. (F.K.)

A Small Model Liner



**FULL-SIZE
PATTERNS
ON
PAGE 191**

IF you like making small models, this liner is sure to appeal. It is particularly suitable for the young model maker, and will be good practice for building larger and more intricate models.

The hull (A) is cut from $\frac{3}{8}$ in. wood, and to this is glued the deck (B), cut from $\frac{1}{8}$ in. wood. Next comes deck (C), $\frac{1}{8}$ in. thick and finally the bridge (D), $\frac{1}{8}$ in. The positions for gluing are shown by the dotted lines. The funnel (E) is shaped from a waste piece of $\frac{3}{8}$ in. wood and glued to deck (C).

The boats are shaped from $\frac{1}{8}$ in. wood and glued to deck (B). There are eight boats, four each side, and the positions are shown in the picture of the finished model.

The mast is shaped from wire and wood, pushing it well into the bridge. The rigging, which is thin cord or cotton, runs to pieces of wire and to the deck as indicated. Fix to the deck by means of fretpins bent over to form tiny staples. Fix the model to the base-board (G) and clean up ready for painting.

The base should be green and blue, with white flecks to represent waves and the wake of the boat. The hull, superstructure and funnel is white, and the latter banded with red and black. The decks are buff and the windows and portholes black. There is no need to stick rigidly to the design in painting; use your own discretion with colours and markings. (M.P.)

COMFORT IN THE TENT

A LIGHT inside a tent is really a necessity after dark, even in the height of summer, but to illuminate a tent well is not too easy. Cycle lamps are bright, but the light is usually interwoven with shadows, which are a strain on the eyes.

Oil lamps in a small tent are not healthy, and if in the form of a lantern, there is again the trouble of shadows.

Candles are the best all-round illuminators for even quite large patrol tents. The light they give is uniform and restful, but to get the most satisfactory

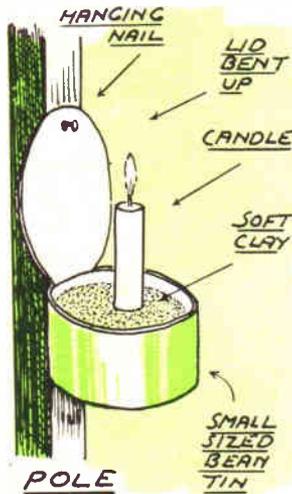


Fig. 1

results they should be set off the ground and provided with something to prevent trouble from falling grease.

These conditions are met by the holder shown in Fig. 1.

To make, get a discarded bean (or similar) tin of the 'flat' type, in which the lid had been left fairly securely attached. Turn this up at right angles, and then, if possible, smooth all the edges with a file. Pierce a hole at the top to go over a nail, and fill the body with soft clay. Press the candle into this, hang at a suitable height on the pole, and the holder is complete.

The candle is well held while the clay surround catches any grease that may run down, and the upturned lid acts in a small way as a reflector, also as a shield between the flame and the wood of the pole.

For reading, a holder can be hung to a short stake pushed into the ground, so as not to be very high up, the actual height being adjusted to suit.

Warmth at night is very important both for health and comfort. More spartan conditions are to be expected under canvas, but it is only the tender-foot who puts up with unnecessary hardships.

How to keep warm

To keep warm is a question of not letting the body heat escape, and should you be bothered with cold feet when

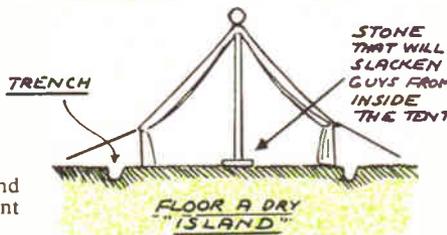
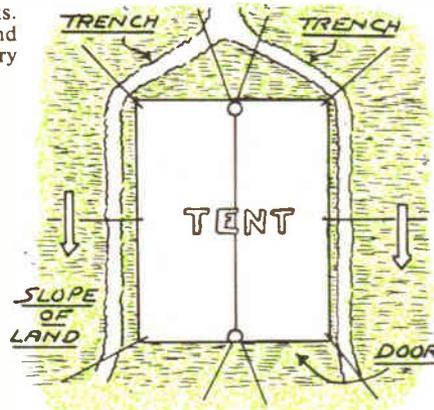


Fig. 2

bedded down, it is a good idea to empty a kit bag, roll the blankets well round the ankles and push your feet, thus wrapped, into the bag, drawing it as far up as possible. This keeps the covering well wrapped round and the canvas helps to conserve your own natural warmth.

Even summer nights can get 'parky' and if for some reason you have become rather unduly cold about the feet, it is not a bad scheme to warm a stone in the fire, wrap it up and put it in the bottom of the bag.

Thick sward can be quite springy and soft to lie on, but if the grass covering under the tent is thin and the ground below compacted clay, it can seem very hard, especially to the hip bone.

The old campaigner has two tricks

here to give greater comfort. One is to make a coat into a roll and lie on this, so that it comes in the hollow just above the hip bone. The other is to actually make a small depression in the ground just where the hip will come.

When camping light one does not want to carry too much gear, but a palliasse that can be filled on the site is an excellent item to have. If camping on a farmer's land he will always let you have a little hay for filling. The main thing is not to leave a mess when

By H. A. Robinson

breaking camp later, either burning the used hay or putting it back near the rick.

A palliasse, if only partially filled, quite does away with all hard ground problems. When using a bed of this kind over any length of time care must be taken to keep it dry by putting it out for a good airing each day when the sun is well up.

Tents tighten up very quickly in rain, and it is a nuisance to have to go out at night to slacken off the guys. It is a good plan, therefore, to set each pole on a flat stone which can be removed from inside the tent should there be a sharp night shower. Taking away the stones automatically slackens the guys all round.

A second idea, if the ground is firm, is to cut a small hole near each pole that will just take the wood. In sudden rain the pole is shifted sideways slightly and dropped into the hole, which again automatically slackens all the guys. The holes need only be about 2ins. deep.

If you do not want to be bothered during a night storm with water seeping in under the walls from higher up the slope, make sure that you have cut two shallow trenches, one down each side of the tent and connecting at the higher end. If well cut, it is only a matter of turning back a line of turf, you can stay snug through the worst rain, secure in the knowledge that these channels will carry off all surface water and leave the floor of the tent as a dry little island (Fig. 2).

The side trenches are a daylight precaution as well as night, so the channels should always be dug as a routine matter when setting up the tent.

Of course, you may have hot, rainless days during your stay under canvas. Let us hope so, but the old hand is always prepared for all eventualities.



THE FIRST 50 . . .



THIS year the Boy Scout Movement celebrates its Golden Jubilee, for it was in August 1907 that Lord (then Sir Robert) Baden-Powell ran his experimental group of boys on Brownsea Island in Poole Harbour.

From the small beginnings of that first camp the idea which B.-P. then tried out soon grew into a strong movement. By the end of 1908 there were some 60,000 Boy Scouts, and before many years had passed scouting had spread throughout the world.

It is quite fitting that Great Britain herself should be 'host' to the Golden Jubilee International Jamboree which is being held at Sutton Coldfield from August 1st to August 12th, and over 50,000 scouts are expected to camp there apart from the many who will make daily attendance.

From the pioneer troop on Brownsea Island to the present strength of over half a million, such is the recorded statistical development of a thought which appears as fabulous as the most fascinating tale from the Arabian Nights.

Nor must we forget those who, no longer active scouts, still stand faithful to the Scout Law, ever prepared to render cheerful uncomplaining service in the unromantic daily tasks.

We salute the Movement in this its fiftieth year of grace. Truly can it be said that its influence has enriched the world.

Win a Watch!

OUR competition this month, in which wrist watches will again be awarded to the winners, is based on the Scout Jubilee. There are two sections — one for Seniors (16 and over) and one for Juniors (15 and under). A watch will be awarded to the winner of each section and ball-point pens will be awarded to the six next best entries in each section.

RULES

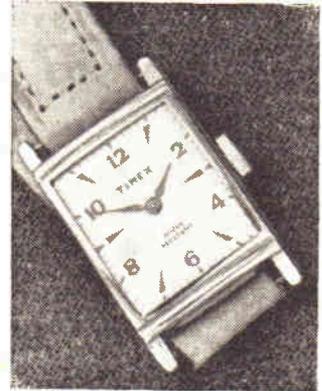
1. The competition is to design a decorative notice board suitable to be made up by Scouts for placing in their hall to commemorate the Jubilee of the movement. There should be provision for a plain baize covered centre panel on which to pin notices, and it is around this that suggestions for overlays and fretted cut-outs, etc., should be submitted. Naturally, these decorations should have bearing on aspects of the Scout movement.

2. Entries must be neatly drawn to a suitable scale on plain paper. They must be received by the Competition Editor, *Hobbies Weekly*, Dereham, Norfolk, by July 31st and cannot be returned. We reserve the right to publish details of any entry.

3. Winners will be notified and prizes despatched by August 14th. Details will be published in a subsequent issue of *Hobbies Weekly*.

4. The name, full address and age of the competitor must accompany the entry.

5. An entry must be the unaided effort of the competitor. All entries for the Junior Section must be accompanied by the certificate below, or a similar declaration on plain paper, signed by a parent, otherwise the work cannot be considered.



Senior Award

6. Because of Customs regulations and the necessity to adhere to a definite closing date, entries are confined to those from Great Britain and Northern Ireland.

7. The judges' decision is final and no correspondence can be entered into.

CERTIFICATE (for Juniors)

The entry is the unaided work of _____ aged _____

Signed _____

Relationship _____

Address _____



Made to represent a piece of 'birch bark' handcraft, the tablet shown here is of especial interest to all Scouts. It is from the hall of the Birkenhead Y.M.C.A. where the organisation was publicly launched. (H.A.R.)

It is, indeed, fortunate for the youth of many lands that B.-P. decided to relinquish his brilliant army career in order to devote the rest of his life to the Boy Scouts. Had he not done so we might never have witnessed the ultimate growth and security of the finest youth movement in history — a movement which upholds and promotes only the finest principles, which rightly stands outside the confines of colour, race, religion, class or politics; a movement which offers every young boy anywhere an experience which cannot fail by its training to leave him a happier, cleaner, and more useful citizen of the world.

Do-it-yourself Formulas

IF there are young children in the house, drawing crayons are a staple commodity. They are simple enough to make and with a few waxes and pigments you can keep pace with demand. You will, of course, need moulds. These can be made from scrapmetal tubing of about $\frac{1}{4}$ in. internal bore. Several lengths of about 4 in. each should first be cut off. Saw these lengthwise, so as to have moulds which open readily. For use, clamp these together with rubber bands and press one end of each into modelling clay stuck to a thick sheet of metal.

As quick cooling of the melted wax mixture is essential in order to prevent settling of the pigment, the moulds must be sunk almost to their tops in a dish of cold water. The set-up is shown in the diagram.

To make a green crayon, first melt in a water-bath 3.3 grams of stearic acid. Stir into this 4 grams of chrome green and 0.25 grams of precipitated chalk. Then add 33.3 grams of paraffin wax and 1.5 grams of carnauba wax. When the waxes are fluid stir thoroughly to disperse the pigments and pour quickly into the moulds. Allow an hour for the wax to harden completely and then open the moulds and remove the crayons.

For an orange crayon the wax proportions are slightly different. In this case melt 1.3 grams of stearic acid and stir into it 0.25 grams of precipitated chalk and 6 grams of chrome orange. Stir well and add 33.3 grams of paraffin wax and 1.5 grams of carnauba wax. This is then treated as for green.

Yellow crayons call for 6 grams of chrome yellow in place of chrome orange, but the other ingredients are the same as for the orange crayon.

Red crayons present an obstacle, for the best results are obtained with para red and this is obtainable only with difficulty. It is generally made only on the laboratory scale. As you may not wish to go to the trouble of a special preparation, an alternative is to buy a really bright red pigment from an oil and colour shop. Stir 7 grams of the pigment and 0.25 grams of precipitated chalk with 4 grams of stearic acid previously melted in the water-bath. Then melt with the mixture 33.3 grams of paraffin wax and 1.5 grams of carnauba wax and mould as before.

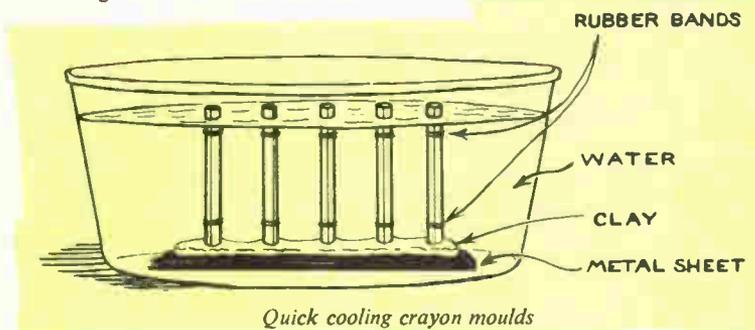
Light and dark blue crayons are made with ultramarine and Prussian blue respectively. For the light blue, melt together 33.3 grams of paraffin wax and 1.5 grams of carnauba wax. To the melt add 0.25 gram of precipitated chalk and

7 grams of ultramarine blue powder, stir well and pour into the moulds.

For dark blue, first melt 3.3 grams of stearic acid, stir in 0.25 grams of precipitated chalk and 3.3 grams of Prussian blue. Then add 33.3 grams of paraffin wax and 1.5 grams of carnauba wax. Stir well when the waxes have melted and then mould.

Dark brown crayons are made by melting 33.3 grams of paraffin wax and 1.3 grams carnauba wax and then stirring in 0.25 grams of precipitated chalk and 8.3 grams of burnt umber. By using the same proportions, but substituting burnt sienna for burnt

and 1 ounce of precipitated chalk. Next, thin down water-glass with a little warm water — enough to yield a thin, syrupy liquid. Mix enough of this with the mixed powder to form a semi-fluid paste. Rust should be abraded from the iron before using the adhesive. To harden fully, this adhesive needs some days and the time varies somewhat, according to the surrounding temperature and the exact strength of the water-glass. As a control, it is, therefore, useful to cement together pieces of scrap glass and iron and test by pressing the nail on to the cement now and again. When no



umber, a light brown crayon results.

Finally, we have the black crayon. As may be expected, carbon is the pigment used and in the form of lamp black. Simply melt together 33.3 grams of paraffin wax and 1.3 grams of carnauba wax and then stir in 0.25 grams of precipitated chalk and 4 grams of lamp black.

Special adhesives

Special adhesive problems often crop up for the handyman. Should one need to stick brass to glass, for instance, knowledge of the correct adhesive will be useful. Dissolve $\frac{1}{4}$ ounce of sodium hydroxide (caustic soda) in $1\frac{1}{4}$ fluid ounces of water and heat up in a water-bath. Stir in $\frac{3}{4}$ ounce of powdered rosin and $\frac{3}{4}$ ounce of powdered gypsum and continue heating for a few minutes, stirring constantly. If gypsum is not easily procurable, mix ordinary plaster of Paris with water, allow it to set, dry it out thoroughly in the oven, then powder it and use it in place of gypsum.

The cement should be used as soon as made, for it hardens quickly.

The cementing of iron to glass, too, requires a special adhesive. For this, first mix thoroughly together 2 ounces of Portland cement, 1 ounce of fine sand

impression is made, the main article may be judged fit for use.

Another useful iron-to-glass cement can be made by first mixing 2 ounces of litharge (lead monoxide) with 1 ounce of white lead (basic lead carbonate) and then working this up to a paste with 3 fluid ounces of boiled linseed oil and 1 fluid ounce of copal varnish.

Cheap varnish

An excellent and cheap furniture varnish can be made up for household and workshop use from easily obtainable materials. Into a large bottle pour 1 quart of methylated spirit, 1 ounce of gum benzoin and 8 ounces of shellac. A screw-topped bottle is best. Corks tend to stick fast. Having screwed on the cap, shake the bottle vigorously and set it aside. Give it an occasional shake until all has dissolved. The varnish is then ready for use. It is a quick drier and gives a high gloss.

For touching up old leather bindings, a bookbinders' varnish will make them look like new. A good old formula for the purpose calls for 1 gram of gum benzoin, 8 grams of shellac, 2 grams of gum mastic, 1.5 c.c. oil of lavender and 58 c.c. of methylated spirit. Place them

●Continued on page 188



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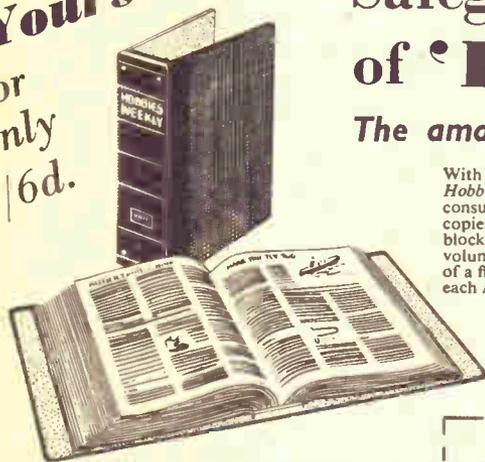
Re-heat bit until a green flame shows around it. Dip solder stick in **FLUXITE** and hold it to the tinned face of the bit until a fair sized globule is formed.

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An Album of Wild Flowers

SUMMER is the time of wild flowers, and we are tempted to gather bunches of varied blooms when we take a ramble in the woods and meadows, and by the stream. These lovely flowers, unfortunately, do not last long in the home, and most of them quickly fade and wither. But have you thought of using such as a nucleus for a collection? An album of preserved wild flowers is permanently interesting, and your nature-loving friends will appreciate your efforts when you proudly bring forth the book of specimens of local flora, all neatly arranged and labelled.

Incidentally, this hobby often leads to a wide and intimate knowledge of the flowers to be found in your own neighbourhood, and will be the means of teaching you something of the inexhaustible delights of the countryside. Beginning with flowers, you may be tempted to carry the hobby still further, and delve into the realms of the ferns, mosses, leaves, and grasses, all absorbing subjects.

In quest of flowers

No matter where you live in the country, there is much variety in the wild flowers you may gather for pressing. Roughly, there are about 750 different kinds in Britain, which can be placed, for easy reference, under headings Yellow, White, Red, Blue, Other Coloured Flowers.

Making a collection during summer — or at other periods of the year — will take you into all sorts of delightful spots. There are the flowers of the sea-shore and dunes, flowers of the marshes, boglands, and the moors, the flowers of the dells, and glens, the waste places and commons, and, more familiar, of the meadows, woods, and wayside banks, not forgetting the lovely streamside blossoms, fragrant like the fluffy meadow-sweet. All these areas have their special lines in flowers.

How to preserve

You will, of course, carry a suitable basket for your flowers, taking care not to crush them out of shape. Select the very best blooms — good specimens of the finest colourings, observing special care when rare species are discovered.

Having obtained a basketful of varied blossoms that you desire to preserve, you are ready to proceed with the task. It is important to deal with them immediately and before they have lost any of their fresh young beauty. The work may be divided into three main processes: (a) drying, (b) pressing, (c)

mounting and arranging in the album.

The usual method of drying the flowers is to place them in a suitable absorbent material, gradually increasing pressure as the drying proceeds. Remember, if you apply too much pressure at first, the specimens are liable to be 'squashed' and will not keep nice and colourful. The idea is to deprive the freshly gathered flowers of their juicy matter without delay, for as long as they are damp, the delicate tints will go on disappearing. The secret of preserving the natural colours as much as possible is by drying quickly.

One method is to use silver sand, heated. This is poured evenly over the bottom of a number of flat tins — these you will require in varied sizes. Place the specimens, one or more in each tin, according to size, on the layer of hot sand, and then pour more sand around and over the specimens until the tins are full. Shut the lids and arrange the tins in a warm oven, applying gentle heat. The flowers are thus dried quickly before the natural colours fade. After a few experiments you will soon learn to gauge the length of time needed for the drying process and amount of heat required.

Another method

When the first layer of flowers is covered with the sand, if the box is deep enough, you may place another layer of blossoms on top; but do not have more than two layers of flowers in any one box. After a few hours, test the blooms. If they feel crisp and dry to the touch, take them out. When satisfied that they are perfectly dry, press, and mount.

A common method of drying and pressing is to place the flowers between some absorbent material. An ordinary trouser press can be used effectively, or you can use two flat boards tightened by cramps or thumbscrews. Failing that, try two flat pieces of stout cardboard, with the flowers placed in the absorbent

material, and laid between the boards, placing several fairly heavy books or other weights on the top board, adding more as the drying proceeds.

When treating a number of flowers, discard all with broken stalks, bruised leaves, or disfigured petals.

By A. Sharp

Take a specimen and lay it as neatly and artistically as possible on the absorbent material — a sheet of wadding, say, which should be placed on two or three sheets of newspaper. After arranging your specimen to your liking, put alongside any others that you have handy, until there is no room for more — do not overcrowd. Now take another sheet of wadding and several other sheets of newspaper, and place carefully on top, and after placing the upper board in position, screw together the whole, or if you have not a press, put between boards, weighting the top one.

About a week

With this method the drying will take about a week. At the end of this period undo the press, remove wadding or whatever material you have used, take out the flowers gently, and remove any bits of material that may remain sticking to the flowers. This needs care, or you may ruin the appearance of your specimens. Take away the wadding, substitute a double thickness of white blotting paper, place specimens on this, and put a similar piece on top and again screw up in the press, or weight them.

When the pressing, which takes a few days, is completed, arrange and mount the specimens in an album. Write the name of each flower neatly under the specimens.

●Continued from page 186

Do-it-yourself Formulas

all in a screw-topped bottle and shake occasionally until the solids have dissolved. Brush on thinly, depending upon several thin coats for the best effect, rather than one heavy one.

Plate Cleaner

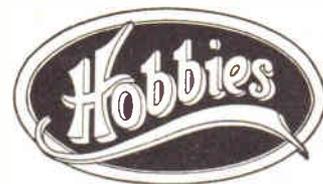
A convenient cleaner for plated ware, and also for brass and copper, can be made up in a few minutes, since it con-

sists of a mixture of powders. Weigh out 32 grams of whitening, 1.5 grams of magnesia and 4 grams of cream of tartar. Mix these thoroughly and store in a screw-topped jar. For use, damp a soft cloth or chamois leather, take up some of the powder on it and rub all over the article. Finish the polishing with a little of the powder on a soft cloth. (L.A.F.)

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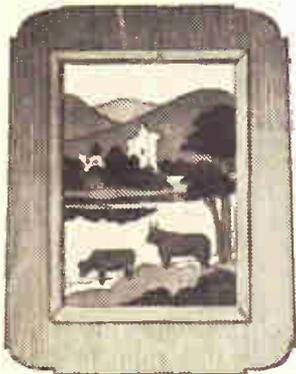
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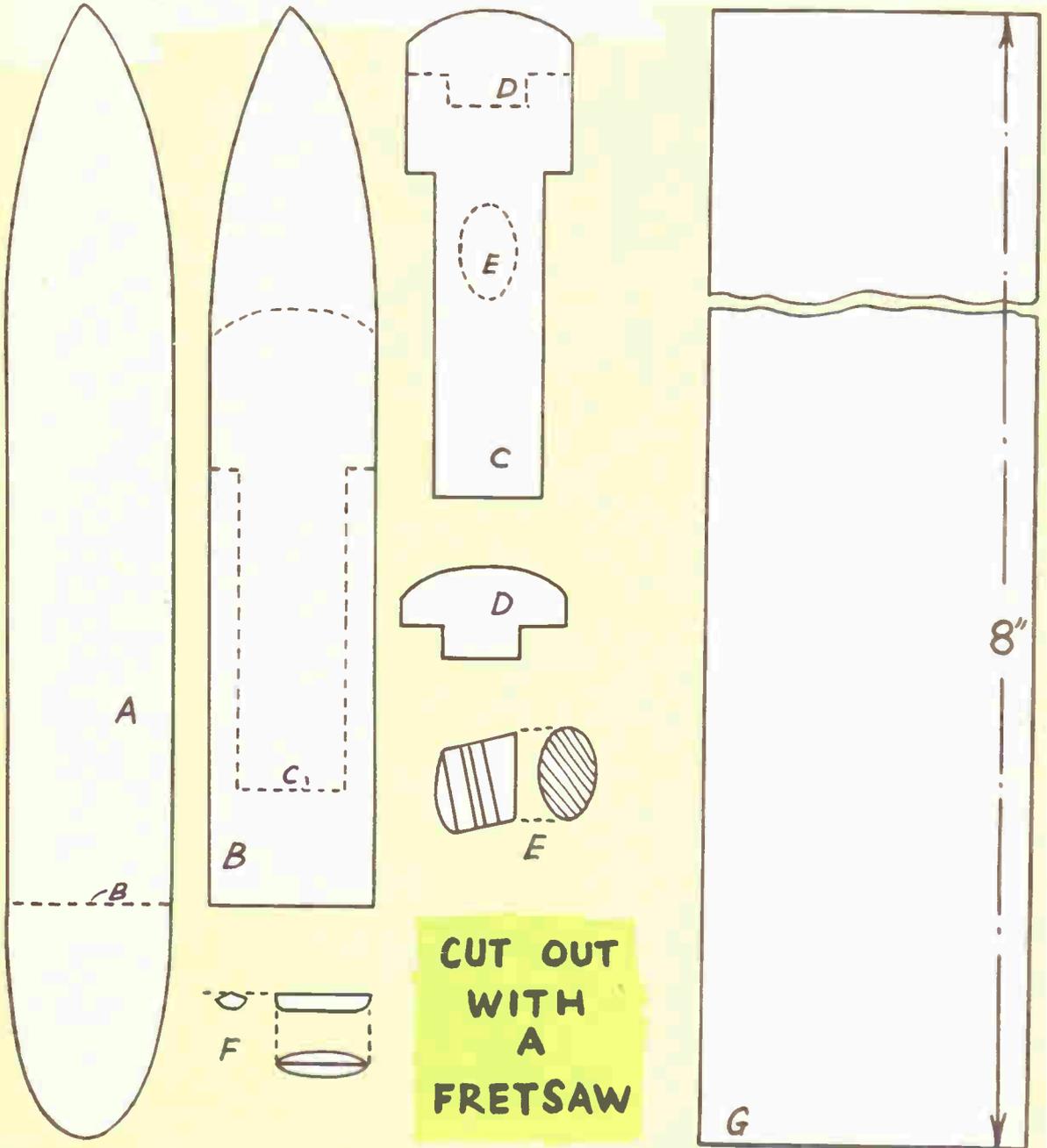
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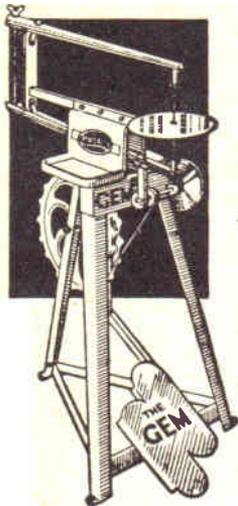
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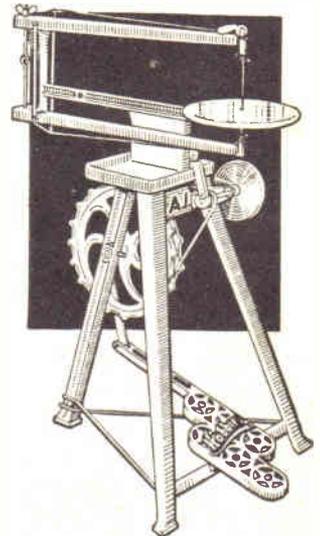
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