



COLLECTORS CLUB

FLAG DESIGNS

Formerly, flags were often of only one colour. But now all national flags are either made up of several colours, or have something on them, such as a cross, a shield, an eagle, or stars, to mark them so that they can be distinguished easily. Flags of only one colour are, however, used by nearly all nations. A white flag, for example, means peace, and is used for a flag of truce. A red flag means

danger. A yellow flag means sickness. The large red cross in the naval flag of Great Britain is called the Cross of St. George. The same cross, but smaller, is seen in the union in the corner of the flag, where it is shown with a white edge, because the cross of St. George is properly a red cross on a white ground. The other cross on the union, running diagonally, is made up of two crosses — the cross of St. Andrew (for Scotland), which is white on a blue ground, and the cross of St. Patrick (for Ireland) which is red on a white ground. With the two being put together, the cross looks like a double red cross with white edges.

The Royal Standard of Great Britain is made up of four quarters, red, yellow, blue, and red, with the arms of England, Ireland, and Scotland on them. The merchant flag of Denmark is like the naval flag, but oblong instead of swallow-tailed.

The flag of the United States of America is made up of thirteen stripes, seven red and six white, so that a red



stripe comes at both the top and bottom, and a blue union, containing as many stars as there are States in the Union, in the upper corner next to the staff.

door to door. Almost every Burman spends some part of his life in one of these institutions, which are also the schools of the country, where boys learn from the priests to read and write.

Burma, formerly part of the Indian Empire, was separated from it on 1st April 1937. Japanese forces were in occupation from 1942 to 1945, and independence was established in 1948.

In 1937 the currency was 12 pies = 1 anna, 16 annas = 1 rupee, and in 1953 100 pyas = 1 kyat (rupee).

Indian stamps overprinted Burma were introduced in 1937. The 15 rupee value is now listed at £6 mint, 80/- used, and the 25 rupee at £10 mint, £9 used.

Pictorials of 1938 include three interesting items: 3 annas—Burma Teak—3/- used, 3 annas 6 pies—Burma Rice—10/- mint, 8 annas—The Irrawaddy—3/6 used.

Burma Teak is hard and durable, and is much used for shipbuilding and general carpentry. Rice has for ages formed the main article of food.

The name Irrawaddy means Elephant River. Elephants are quite a feature of Burma. Their intelligent usefulness is wonderful. The Irrawaddy is navigable as far as Bhamo, 840 miles from the sea. Towns on its banks include Rangoon, Mandalay, and Bhamo.

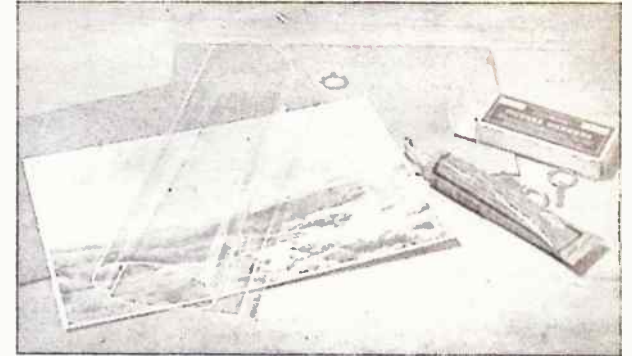
Try this new way

FRAMING YOUR PICTURES

HERE is a new method of framing small pictures with sheet acetate replacing the glass. The picture is fully protected by the acetate which is very easy to cut and manipulate. You will also require some cardboard, Sellotape, and an adhesive.

You may fix the picture on a mounting board to produce a nice border if required, but small pictures look quite well without such a mount. If a mount is used we only require an additional piece of cardboard of identical size for the backing, but where there is no mount at all, we require two pieces of the same size.

Measure the picture, cutting the cardboard to the appropriate size, ensuring that the corners are perfectly square. Now cut out a piece of sheet acetate 1 in. larger in both dimensions, so that



it will allow a 1/4 in. turning. Lay the acetate on the table, the picture on top face down, and a piece of cardboard on top of these, so there is an even surplus all round the acetate. Trim away the waste at the four corners, as shown by the shaded portion in Fig. 1.

Fold over one end of the acetate on to the back of the card, creasing at the edge, and fixing in position with a strip of Sellotape. Next fix the end directly opposite, pulling the acetate as tightly as possible before fastening down. The two remaining sides are similarly fixed. Crease the folds quite flat for a neat appearance at the edges.

The second piece of cardboard is now

attached to the framed picture, but before doing this, insert a hanger of the 'ring' type. They are composed of a brass ring bearing two prongs which fold over when pushed through a hole made in the card. Glue the second piece of card to the back, thus covering the turnings of the acetate. You will find that a plastic adhesive or a china fixative is the best for this purpose.

Alternatives to the ring hanger are stick-on hangers, or a short length of ribbon passed through a slot in the backing, and glued down on the inside. The sheet acetate is comparable with thin clear celluloid, and can be bought at most stationer's or crafts shops. (S.H.L.)

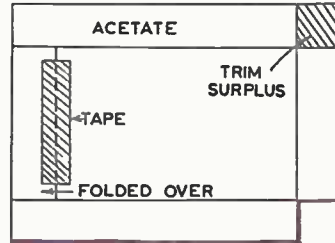


Fig. 1

TWO-MINUTE QUIZ by Ed. Capper

| | | |
|--|-----------------------------------|--|
| <p>1</p> <p>WHAT IS THIS UNUSUAL VIEW OF A COMMON WORKSHOP PRACTICE?</p> | <p>2</p> <p>WHAT JOINT?</p> | <p>4</p> <p>IDENTIFY THE ROOF SUPPORTS</p> |
| <p>3</p> <p>GIVE DIMENSIONS OF STOCK BRICK</p> | <p>5</p> <p>WHAT IS AN ARRIS?</p> | |

SEE ANSWERS ON PAGE 446



For greater accuracy

MODELLING WITH TEMPLATES

IN making solid models, many people find it difficult to transfer outlines from a plan accurately on to wood. In fact, using carbon or tracing paper you cannot hope to be accurate, especially if the wood is soft or 'grainy', causing the pencil to 'run' off the required line. Further inaccuracies are frequently introduced at the carving stage, so altogether the average 'solid'

to side elevation (or profile shape) and plan shape. It is then carved to the correct cross sections, producing the final three-dimensional model. The subject may be a model race car, the fuselage of a scale-model aeroplane (wings and tail surfaces are marked out and formed in a similar manner), the hull for a galleon, etc.

Basic requirements are a scale plan or

accurate tracings of the profile and plan outlines on to stiff paper, cutting these out with scissors or a razor blade (Fig. 1). Mark a centre line on the plan template. The bottom is the datum line for the profile template in this particular case, otherwise we would have had to mark a suitable datum line on this also.

The body block is then prepared (Fig. 2). Any wood suitable for carving can be used. Balsa is a logical choice for small models, since it is so easy to carve. The block is cut to rectangular shape the same length as the model, but slightly deeper, and at least $\frac{1}{4}$ in. wider. In the case of the car model, axle slots are marked in position and then cut out. A centre line is drawn on top and bottom faces of the block.

The plan template is then glued or cemented down to the top of the block, aligning on the centre line. Similarly, the profile template is attached to one of the side faces, aligned with the bottom of the block. Using a fretsaw or coping saw, cut around the plan outline, separating the two side pieces from the main block. Each side piece should be removed as one and preserved, not thrown away (Fig. 3).

If you are aiming to produce an accurate model, these cuts must be truly vertical. If you have any doubts as to your ability to saw 'square', duplicate the templates so that you have cutting guides on each face of the block, enabling you to check up as work proceeds (Fig. 3). The extra pair of templates can be made direct from the originals, and similarly cemented in place.

The two side pieces removed in the previous operation are pinned back in place in their original positions (Fig. 4). The block is now cut out to the profile template shape, again using a coping saw or fretsaw, although in this case you can carve, if you prefer. Having completed this job to your satisfaction, unpin the 'spare' pieces on each side and discard. You are left with a shaped body blank, ready for carving. If you have done the job properly, this will be accurate in outline, and truly 'square' throughout its length.

The final stage consists of carving and glasspapering this blank down to the required cross-sections. Most of the wood is removed by carving, using a very sharp knife and removing only small chips at a time. Avoid carving against the grain, and stop carving whilst the body is still slightly oversize. Finish smooth with glasspaper, which should remove all traces of knife marks, and

drawing giving profile and plan outlines to the correct scale. For the purpose of illustration we will assume that a 'solid' model racing car is being made. Model aircraft, etc., will differ in detail, but the technique is the same.

The first thing to do is to make very

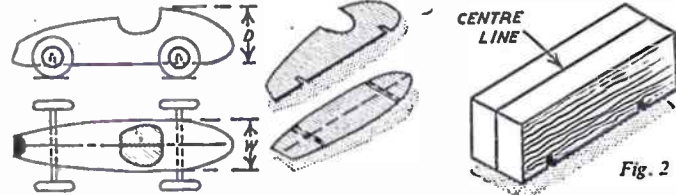


Fig. 1—Profile template (top) and plan template

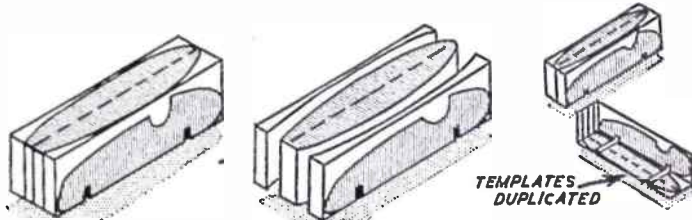


Fig. 3—Cutting round the plan outline

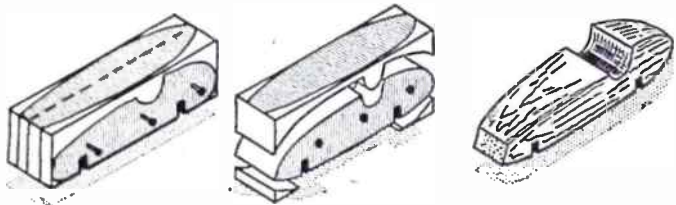


Fig. 4—Stages in cutting the profile shape

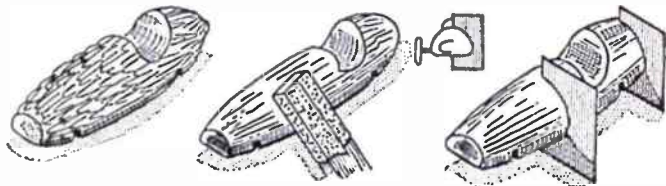


Fig. 5—Finish off and check with card templates

model becomes something of a hit-or-miss effort. Yet there is a simple technique which can be applied to this type of modelling which obviates both these major faults.

Nearly every 'solid' model has to be shaped in two directions, corresponding

Making the Occasional Table

THIS attractive occasional table is of an unusual design, in that it incorporates an unusual assembly for the legs. It has been designed thus as an economy in wood, but, as will be seen from the finished illustration, it gives essentially the same standing as with four normal legs, one at each corner.

The table is intended for use such as standing in the window, for light meals, as a setting for plants, a place for the telephone, etc. It has an attractive oak veneered top with matching legs, and stands 24 in. high.



KIT FOR 27/6

Planned wood of the correct thickness for cutting out the legs and supports is contained in Hobbies Kit No. 3354 for making the Occasional Table, and there is a special oak-veneered table top. Kits, price 27/6, from branches, stockists, etc., or direct from Hobbies Ltd., Dereham, Norfolk (post 3/- extra).

The top is 20 in. square. It comes already veneered, and the legs are cut out from $\frac{3}{4}$ in. oak or spanish chestnut. All joints and fixings are shown in detail on the design sheet, and the cutting out of the various parts for the legs, and the assembly, should present no difficulty to the handyman.

On the design sheet, various stages in the construction are shown, with appropriate measurements. In order to get correct angles, it is a simple matter to draw out the side view and front view in

full on a large sheet of paper. The full size parts can then be transferred to the wood. For those using a Hobbies kit, the parts which go to make the legs and supports are shown in Fig. 7, laid out for economical cutting from one panel of wood.

After cutting out the parts and com-

pleting the joints, the assembly is made by gluing and screwing.

Finish for a veneered top is french polish or a white wax, and the same finish can also be applied to the legs. Alternatively the whole table can be varnished or clear lacquered.



Fig. 7

Continued from page 440

Modelling with Templates

work down to the final shape with further glasspapering, if necessary.

If you want to be sure that you have got the cross-sections correct, you can use card templates prepared from body sections on the original plan. These should be half-section templates, as shown in Fig. 5, cut from a postcard. A centre line is marked on the carved body, and also the position of the various 'stations', and the correct templates offered up to their respective stations from either side of the block. It needs a

little practice to get used to working with section templates in this manner, but once familiar with the method, it is easy and accurate.

The templates, of course, are not destroyed like the plan and profile templates, and so can be used for further models. If you do contemplate other models of the same design, then make the plan and profile templates in thick card also, and pin in place on the block. They can then be removed before carving and used over and over again. (E.)

 *
 * Next week Gordon Allen will
 * show how to make a kitchen
 * cabinet unit to add to the
 * corner unit featured in our
 * last issue. Also patterns for
 * doll's house fireplaces and
 * many other exciting projects.
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 * MAKE SURE OF
 * YOUR COPY
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THE FOUNTAIN SPECTACLE

A DISPLAY of table tennis balls, which continually dance up and down upon a fountain of water, beneath a domed glass cover, makes a spectacular demonstration of one of the many phenomena which can be produced by the low pressure inside a fluid in motion. A simpler version of the same intriguing effect can usually be seen at a fairground, where balls, caught up by little jets of water, provide tantalizing targets on the rifle range.

By A. E. Ward

The pressure of the atmosphere keeps the balls in place, against the comparatively lower pressure in the swiftly rising jets. Thus, as a ball is shot away from its watery perch, it falls into a wire cup and is once more held by air pressure against the fountain, and borne aloft again.

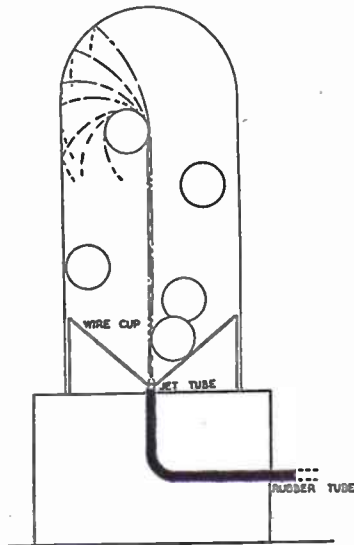
If you can obtain one of those tall, old fashioned display cases, in which stuffed animals and birds were frequently exhibited, you will be able to set up an apparatus in which the frantic behaviour of several ping-pong balls tossed upwards by a single water jet can be observed and which will occasion a great deal of amusement.

The glass cover should stand at least two feet high and have a diameter of eight or nine inches. Cut out a 16 in. diameter circle of small mesh chicken wire and make a single cut to the centre of the circle. Take care and patience to mould the circle into a conical cup, 3 in. deep, with a turned down rim, and having a diameter slightly less than that of the glass cover. Trim around the base of the rim, where necessary, so that the cup will stand evenly on its own.

Obtain a large round tin, about one foot in diameter, from which a pedestal for the apparatus can be constructed. Remove the lid and bore holes to take a length of rubber tubing halfway down the side and in the centre of the tin's bottom.

Make a jet tube from a 2 in. length of $\frac{1}{8}$ in. diameter glass tubing, by heating one end in a hot bunsen flame, until the glass has almost sealed over, leaving a neat $\frac{1}{4}$ in. diameter hole in the centre. You will also need five ping-pong balls.

Turn the tin upside down and put it in the kitchen sink. Pass one end of a length of rubber tubing through the hole in the side of the tin and let it project a little way through the hole in the upturned bottom. Insert the jet tube



into the projecting tubing, allowing only the jet opening to project. Secure the glass tube tightly in place, by binding around the rubber with wire or strong

cord. Connect the free end of the rubber tubing to the cold water tap.

Stand the wire cup upon the pedestal, with the apex of its interior exactly over the jet tube, and nestle the five balls in the cup. Now lower the glass cover over the cup of balls and the apparatus will be finished.

Turn on the water tap gently. A jet of water will rise inside the cover and you will be amazed to see how the balls are tossed upwards by the little fountain. You may have to adjust the jet tube to ensure that the water rises vertically. A ball will remain suspended for a few seconds, and then will be knocked down, as the others are hurled upwards by the water. The light balls will be forced against the glass dome amidst showers of silver spray, and, as soon as they fall to the base of the wire cup, they will be thrown upwards again, by the fountain.

If you are unable to obtain a suitable glass cover, you may adapt the idea, using a much wider and deeper wire cup, and set up the arrangement in the garden, where the splashing water can do no harm. You may also like to try directing a blast of air from an electric vacuum cleaner vertically upwards and let a single ping-pong ball dance upon the invisible air current.

Home-made Wine Dipper

HOME-MADE wine needs sampling from time to time during the process of manufacture and in most cases there will be a heavy deposit at the bottom of the bottle. On no account must this sediment be disturbed, otherwise it will give a very nasty flavour to the wine and probably make it undrinkable.

This rather complicates the task of testing, and we must find a way of getting some of the liquid out of the bottle without tipping it even slightly. By using a small dipper, we are able to extract sufficient for testing purposes.

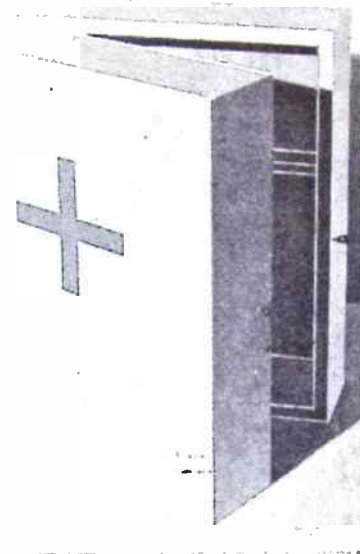
The neck of the average wine bottle has an internal diameter of slightly over $\frac{3}{4}$ in. A dipper made from an old thimble would be ideal for our purpose, and would enter the bottle easily.

Silver is the best metal to use and is less liable to affect the flavour of the wine, but if you cannot obtain one of this type then you must be content with brass or some other metal.

(A.F.T.)



A STRONG FIRST-AID CABINET



THE SUBSTANTIALLY
CONSTRUCTED
FIRST-AID CABINET
DESCRIBED HERE
WILL SERVE A
USEFUL PURPOSE
IN EVERY HOME

CUTTING LIST

Finished sizes
Softwood

- 2 at 14½ in. by 6 in. by ¾ in.
- 2 at 9½ in. by 6 in. by ¾ in.
- 2 at 14½ in. by 10½ in. (½ in. Ply).
- 1 pair solid brass 1½ in. butt hinges.

type of grip catch should now be fitted. The cabinet should be secured to a plugged wall by means of a pair of metal car-plates, as shown in Fig. 4. Screw the plates on to the back, using $\frac{3}{8}$ in. by 6 steel countersink screws. Bore through the remaining hole into the box, then screw from the inside of the box into two plugs. By holding the box against the wall in the required position, the centres of these plugs are easily marked. This method of fixing eliminates unsightly screws and plates, since all are hidden inside the box.

OPEN housing joints are made at the ends of the long sides. Allow $\frac{1}{4}$ in. to project on the ends for cleaning off after gluing. The insides of all four pieces are cleaned up and glass-papered, then each end is glued, and nailed with four 1 in. ovals.

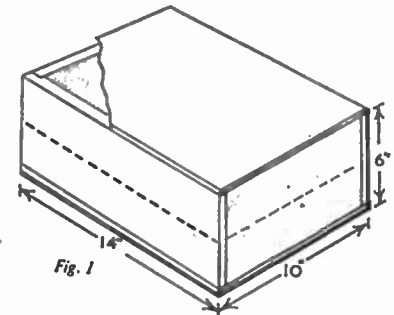


Fig. 2



Fig. 4

By Keith John

When the glue is dry, remove any surplus, and true up if any of the edges are not level. Nail on both pieces of ply, using $\frac{3}{8}$ in. ovals, after glasspapering the inside surfaces. Clean off any overhanging edges with a smoothing-plane, then gauge a line right round the box, as shown in Fig. 1.

Saw along this line with the greatest care, so that the box falls away in two halves. Clean up the two sawn edges, removing as little wood as possible. Hinge the two halves together. The knuckle of the hinge should protrude from the centre of the pin (Fig. 2). Ply shelves can now be fitted with a small front ledge to prevent bandages, etc., rolling off. Fig. 3 shows one treatment, the right hand door having a 2 in. deep apron piece fitted to hold bottles.

A wooden or plastic handle, and some

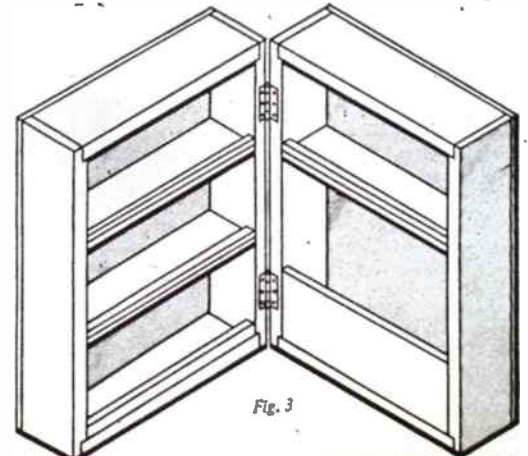
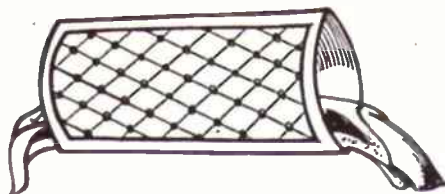


Fig. 3

THE SECRET OF A MIRACULOUS TUBE



At some time or other you may have seen this particular conjuring trick performed, but may not have realized that the secret is in the special tube. But first let us describe how the illusion is presented.

The magician picks up a small flat tube from his table, pressing it a little on the two outer edges between fingers and

need two pieces of cardboard each measuring 10 in. square, as shown in Fig. 1. This card must be thin and flexible. Each square is folded down the centre, as shown by the dotted line, and the two long sides sealed together by means of a length of paper gumstrip. We now seal the top end of one, as in A, and the bottom end of the other, as in B,

matches in width yet permits access to the secret pockets at either end.

Before presenting this little trick we neatly fold and pack the yellow handkerchief into one of the secret pockets. Perhaps we should mention that it is best to use silk handkerchiefs for this purpose, since this material takes very little space, and will not reveal a bulge in

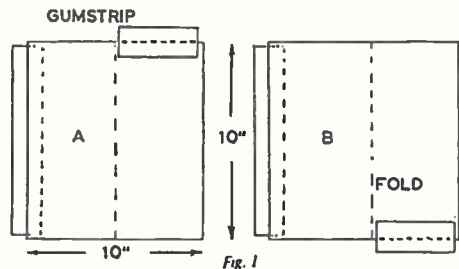


Fig. 1

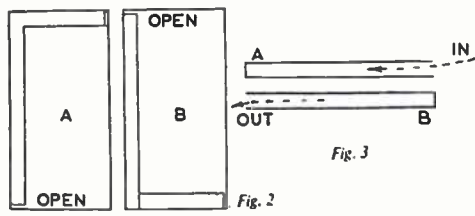


Fig. 2

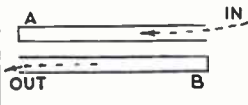


Fig. 3

thumb so that it can be shown as empty. To demonstrate the emptiness even further, it is sometimes customary to push a wand through the centre. A red silk handkerchief is pushed in at one end, but changes colour to a yellow one as it emerges from the other.

But let us examine this technique a little more closely. The tube is shown to the audience, and the wand pushed through the centre, although you can use an ordinary ruler if preferred. The wand is laid down, pressure being relaxed on the tube, which flattens again. The red handkerchief is taken up in the hand and pushed into the tube, poking it through to the other side with the wand to show that nothing else is hidden.

The handkerchief is drawn out and again returned to the tube, but this time pushed into a secret compartment previously prepared, and then pulling out the yellow one from the other end. The effect is better if you push the first handkerchief in a little way, and then pull out the second one a little. Now push all of the first handkerchief into the secret compartment, when the whole of the second one can be withdrawn. Press the tube again at the edges to reveal that there is nothing hidden in the centre. Where did the yellow handkerchief come from?

Actually, we made two secret compartments in the tube, so it will now be best to explain the construction. We

producing two separate wallets (Fig. 2).

The two wallets are now bound together by strips of passe-partout, binding down the sides, so that we have a secret opening at each end as shown in the sectional diagram (Fig. 3). The tube itself is finished by applying strips of passe-partout at the ends, so that it

the tube. Moreover, you must be sure to push all of the first handkerchief into the pocket before withdrawing the second. If you leave only a little portion visible, your trickery will be revealed!

For decorative purposes you may cover the outside of the wallet with a piece of wallpaper. 'Mystifier'

TWO BOOKS TO READ

Home Photography
by A. R. Pippard, B.Sc.,
and Kevin Macdonnell

THE name Johnsons of Hendon is, of course, well known in the world of photography, particularly in the field of chemicals, and apparatus. It is small wonder, therefore, that *Home Photography*, published by such an established authority, should have sold to the extent of 300,000 copies.

A completely revised edition, consisting of 104 pages, and costing only 3/-, which is now available, has a wide appeal both to the beginner, and to the more experienced photographer. Besides valuable instruction on the best way to take all kinds of pictures, there is all the information required for the natural follow-on — that of developing, and printing them yourself.

Published by Johnsons of Hendon Ltd, London, N.W.4.—Price 3/-.

Woodwork for the Lower Stream
by Harry Evans

WE should explain that 'the lower stream' mentioned in this title applies to boys of lower ability and therefore presumed to be 'backward'. The master in charge of such a class will find in Mr Evans's book some interesting and original ideas on teaching woodwork to his pupils. The author aims to concentrate more on the development of the individual than on the technical merits of the work which is turned out, and he outlines some of the methods which he has found to give good results in this respect. The projects described are therefore not necessarily of too ambitious a nature, but they will nevertheless give every satisfaction to the pupil.

Published by The Technical Press, Ltd, 1 Justice Walk, Chelsea, London, S.W.3.—Price 18/-.

HANDY TROLLEY FOR A DUST BIN

THIS trolley provides an easy means of moving your dust bin single-handed. In many rural districts it is essential to place the dust bin near the gate for emptying. Often it is forgotten until there is no one handy to help in carrying, and the bin is overflowing before the next collection. With this handy trolley the housewife may

will see that the construction is quite simple, and there are no difficult joints to make. Fig. 1 shows how to make a start by constructing the front frame and the back frame. The cross bar of 1 in. by 3/4 in. wood is let into the uprights as indicated. The uprights are of 1 1/2 in. square wood, and the bars 2 in. by 3/4 in. The bars extend 3/4 in. beyond the posts, to take the remaining bars.

It will be seen in Fig. 2 that these bars fit in neatly to complete the main assembly.

The bottom consists of 3/4 in. boards nailed underneath, as shown in Fig. 3.

The axle is of 2 in. square wood, and may be cut off flush or extend about 1/2 in. Fix the axle off centre, nearer the back, to obtain a steady balance. Add a strut of 3/4 in. wood at the front to hold

handle is of 3/4 in. round rod.

Wheels should be of metal, preferably rubber tyred. They should be about 6 in. diameter. Suitable rubber-tyred wheels, 6 in. diameter, may be obtained from

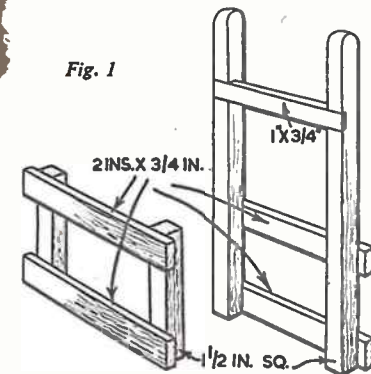
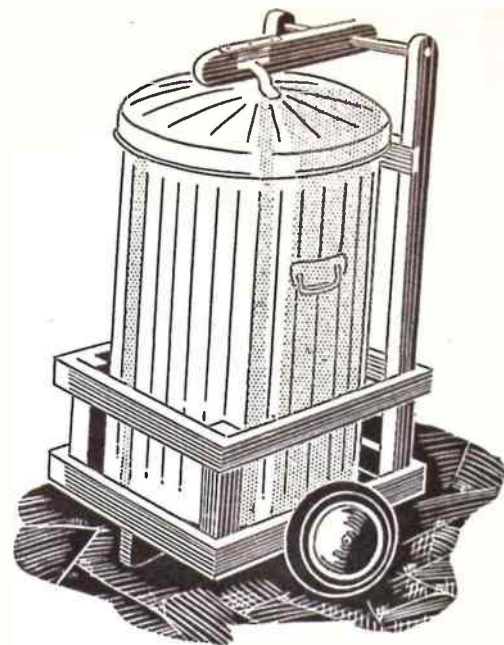


Fig. 1

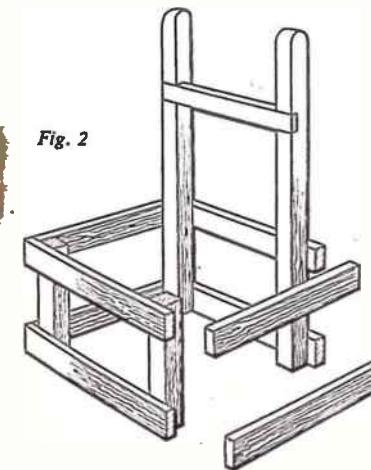


Fig. 2

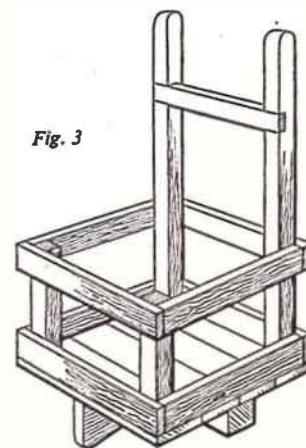


Fig. 3

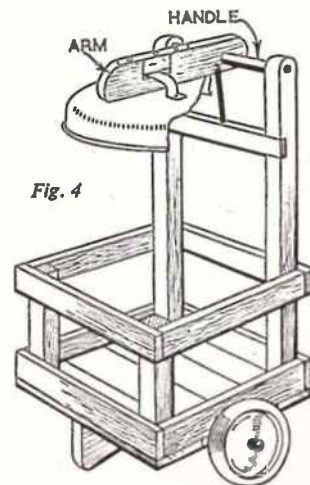


Fig. 4

move the dust bin with ease, and it can be wheeled out at a moment's notice, ready for emptying.

Obviously it is not possible to give actual overall sizes, because this will depend upon the size of the bin. The sizes of wood, however, will be constant, and the construction will be identical.

If you study the various diagrams you

the whole assembly level.

The lid of the bin is attached to a movable arm which pivots on the handle, as indicated in Fig. 4. The arm is cut from 3/4 in. wood about 3 in. wide. A piece is cut out to take the handle on the dust bin lid, and is replaced and secured by a metal strip and screws. A tension spring may be added if required. The

Hobbies Ltd, Dereham, Norfolk, price 3/6 each (postage 1/6 per pair).

Since the trolley will spend all its time outside, it should be coated with a wood preservative, specially recommended for outside use. Even if the trolley is to be painted, a preservative should be used.

(M.h.)

CHEMISTRY AT HOME

IT is surprising how often we need chemistry in everyday problems. The home laboratory can save much money by making needful products. An indexed collection of the formulas which are a regular feature in *Hobbies Weekly* will solve many difficulties, and prove a source of personal satisfaction on frequent occasions.

SMELLING SALTS. These are always a good thing to keep in the first aid cupboard. Nearly fill a small glass-stoppered bottle with lump ammonium carbonate, and cover with eau de Cologne or lavender water.

BAKING POWDER. Mix well together two measures of cream of tartar, and one of sodium bicarbonate. Store this in a well-closed jar or wide-mouthed bottle. For use, allow three teaspoonfuls to one quart of flour.

COLOURING ZINC. Zinc, owing to its ready accessibility from melted-down battery casings, is sometimes used by the handyman to make small castings. This metal, as is well known, oxidizes to a soft grey in time. By the use of a special chemical dip, bath shades ranging from black through brown to gold can be imparted according to duration of immersion. To make the bath, dissolve 10 grams of nickel sulphate, 15 grams of sodium sulphate (Glauber's salt), 1.75 grams of ammonium chloride (sal ammoniac), and 2 grams of boric acid (boracic powder) in 160 c.c. of water. Immerse until the desired shade has been obtained, lift out, rinse, and allow to dry. A thin coat of clear lacquer preserves the colouring.

GLASS ETCHING INK. Since this preparation attacks the laboratory porcelain vessels as well as glass, it should be prepared in a lead basin. A lead basin is easily made by beating out a circle of sheet lead on hard packed earth by means of a mallet, and a piece of wood rounded at one end.

Put the basin on a boiling water bath. Into the basin put 10 c.c. of water, 15 grams of ammonium hydrogen difluoride (ammonium bifluoride), 8 grams of oxalic acid, 10 grams of ammonium sulphate, 40 grams of glycerine or syrup, and 15 grams of barium sulphate or talc. Stir until a smooth mixture results.

Use a steel pen to write with, washing this immediately after use. If the ink does not adhere well to the glass (which should be grease-free, of course), a very small addition of warm water will

rectify this. Allow to act for two minutes, and then rinse the article. Warm glass takes the etch faster.

If it is wished to keep the ink for future use, a lead, vulcanite or polythene bottle will be needed.

By L. A. Fantozzi

HEAT-RESISTANT CEMENT. Asbestos powder ground to a cream with slightly diluted water glass makes a cement which will stand very considerable heat. If required for vessels intended to hold hot water, the cement should be brushed with a solution of calcium chloride. Allow to stand until quite firm, and then rinse well.

ACID-RESISTANT CEMENTS. A cement to resist cold acids may be made from 2 parts by weight of asbestos powder, 3 parts of barium sulphate, and 2 parts of water glass. Incorporation will be aided by a small addition of hot water.

If hot acids are being used, employ a cement of 2 parts by weight of water glass, 1 part of fine sand, and 1 part of asbestos powder. Both these cements take some days to harden completely.

STRONGER PLASTER CASTS. Brittleness can be avoided in plaster casts by using that versatile mineral, asbestos. To 9 parts by weight of dry plaster add 1 part of asbestos powder. Mix thoroughly. This is then used in the same way as straight plaster. A much stronger cast results.

WINDOW CLEANING FLUID. The powder suspension type has a very simple basis. A good product is made by putting into a bottle 1 tablespoonful each of methylated spirit and ammonium hydroxide (specific gravity 0.88), 2 tablespoonfuls of either precipitated chalk or (cheaper) gritless whiting, and half a pint of water. Shake before use, spread on the glass, and allow to dry in the usual way before polishing with a dry rag or leather.

AMBER REPAIRS. Broken amber can be rejoined by slightly warming the broken parts, and painting the fractured edges with boiled linseed oil. Press together, clamp them firmly, and leave to set and oxidize for a few days in a warm room.

TOOTH POWDER. A remarkably efficient — and probably the cheapest — tooth powder consists of an intimate mixture of equal weights of precipitated chalk and orris root. Its flavour is unusual, but for efficiency it is unrivalled. Many weeks' supply costs only a few pence. A few days' trial will convince you of its merits.

WAX POLISH. This is a good furniture polish, but it needs a little more 'elbow grease' than the newer proprietaries. The finish is worth the extra energy. Boil up a large water bath, turn out the flame, and in the water stand a vessel containing 5 fluid ounces of genuine oil of turpentine (not turpentine substitute). Add 2 ounces of ceresine wax, and 1 ounce of bleached beeswax, both shaved fine. As soon as the waxes have dissolved, remove the vessel from the bath, and when the polish is cooler, pour into tins, and leave to set. Its odour of turpentine is, naturally, pleasant, but if an even more fragrant odour is desired, add 2 fluid drachms of oil of lemongrass to the turpentine before adding the waxes.

LEATHER REVIVER. A rub-on-and-polish type is easily made by heating up 1/2 pint of castor oil in a water bath, and dissolving in this 2 drachms each of rosin (colophony) and Venetian turpentine (not oil of turpentine). It may then be poured off for use. If it is desired for black leather, incorporate 2 drachms of lampblack.

SILVERING BRONZE, BRASS OR COPPER. A reasonably durable silver coat can be given to the metal by means of an intimate mixture of 3 parts by weight of silver chloride, 3 parts of sodium chloride (table salt), 2 parts of precipitated chalk or whiting, and 6 parts of potassium carbonate. Soften a cork by wrapping it in paper, and rolling it firmly underfoot, remove the paper, and dip it into some of the moistened powder. Rub it on to the metal with considerable pressure until the silvering is well established, using more of the powder if necessary. Then rinse well, wipe dry, and polish up.

ANSWERS TO QUIZ (see page 439).

1. A spanner-head on a nut; 2. Mitre and rebate; 3. British Standard 657:1950 gives the following sizes: Type 2 — 8 1/2 in. by 4 1/4 in. by 2 1/2 in.; Type 3 — 8 1/2 in. by 4 1/4 in. by 7 1/2 in.; 4. A principal rafter; B — common rafter; C — tie beam; D — king post; E — strut; F — purlin. 5; The sharp edge formed by the meeting of two straight or curved surfaces.



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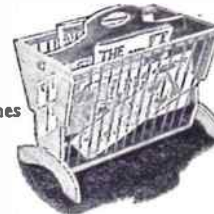


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GO HIKING AT EASTER

PERHAPS it is not easy to decide upon that grand walking tour you are hoping to enjoy this year. It is an important business — this choosing a route. So many parts of Britain are full of good things; every byway and bridle road crammed with potential joys, every road a call of its own, every district its attractions. A wide choice of good walking country is yours.

To plan is not quite as simple as it may seem. It is often difficult for the beginner, especially if he intends to go alone. If with one or more companions, then it is possible to go into 'committee' and pool ideas.

Avoid main roads

Let us briefly glance at some of the possibilities. First a few tips. Plan your trip to avoid, wherever you can, the main trunk and arterial roads. If necessary, and it often is, do the early stages by 'bus or train, which will take you to a selected starting-point. The 'bus especially is the hiker's friend, for by its aid one can get right into the heart of the country clear of built-up areas — and this cuts out a lot of monotonous foot-slogging. The railways, too, cater splendidly for walkers, and there is no difficulty in choosing a walking tour in conjunction with a train journey out and home.

Stick to the byways, bridle roads, field

paths, and moorland tracks. It is good fun to explore the old greeny by-lanes that radiate from many country hamlets; it is possible to find a way from village to village, and never have to do more than cross over a main highway. With a bit of care when plotting by the Ordnance Survey map you may discover and trace out many such routes.

Walk at a regular, steady pace; rest for a short time at intervals, or do a little sightseeing where a 'surprise' view or some interesting village calls for a little exploration. Try and arrange to include interesting things en route, such as ancient castles and churches, moated houses, and so on. Carry only the necessities in your rucksack — to reduce the load. Wear easy clothing suitable for the occasion, for it is well said that half the pleasure of rambling is lost if unsuitable clothes are worn. A little care at the outset will save a great deal of trouble later on.

Footwear for comfort

The hiker cannot be happy and enjoy every step of the route unless he or she gives more than a passing thought to footwear. Obtain a pair of stout, but not too cumbersome, well-made boots or shoes. For hill walks and mountains boots are preferable. It is quite impossible to enjoy your holiday if your feet become sore and tender. A blistered heel

can be an awful nuisance — and painful!

There must be room in your boots or shoes for the toes to move, but the heel should not slip, as this will cause blisters. It is bad economy to buy inferior hiking wear. Always endeavour to get your boots or shoes 'broken in' before starting on a long tour. Wear them on short walks, so that they get bedded, as it were, to your feet. Keep them well-dubbed, to keep the leather soft. For cross-country and hills, have footwear well studded.

Wear good, fairly thick wool stockings or socks. Thin stuff will soon wear into holes and cause blisters. Some ramblers find it a wise plan to wear two pairs at a time, one pair — the inner — being thinner than the outer. Take a spare pair when on a long trek.

You may bathe your feet in salt water to harden them, before setting off on the Easter tour. Keep toe-nails cut fairly short and square. If at the end of the first day's tramp you discover tender spots or blisters on your feet, apply Vaseline or boric ointment to the affected parts. To prevent blisters, rub a little Vaseline over and in between the toes and heels prior to putting on your socks or stockings; or smear the inside of them with plain yellow soap, wetted. Rubbing the feet with methylated spirit is said to harden the skin.

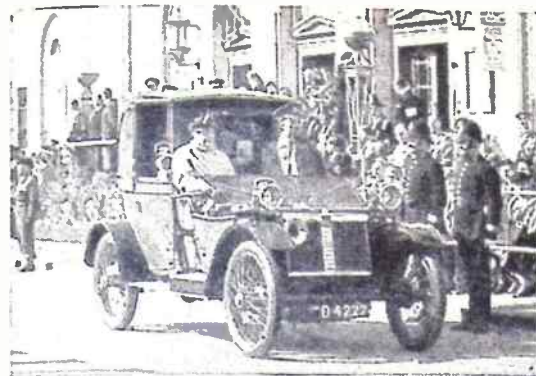
Be prepared for cold

It is wise to be prepared for a cold spell at Eastertime, while the Spring is still young. Therefore, carry a woollen sweater or pullover in case of chilly winds, and a light mackintosh which can be neatly folded. Or take a weatherproof cape, cut full to cover the rucksack or pack without tightness and fitted with straps that enable the wearer to throw back the cape to hang loosely down the back. A compact first-aid outfit may come in useful in case of accident.

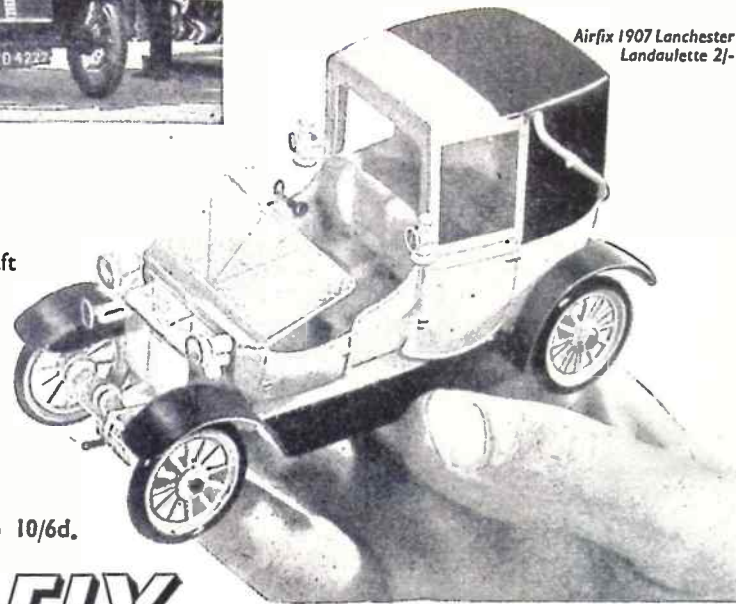
Don't clutter yourself with a lot of non-essentials. Keep your luggage down to the minimum. There's no fun in hiking loaded like a pack mule.

Remember that if you are a member of the Youth Hostels Association you need have no fear of not being able to secure accommodation at night. But, remember that it is essential, or at least much wiser, to make your arrangements in advance, if possible, especially at such holiday seasons as Easter and Whitsuntide.

Having selected the district you desire to explore, it is a good notion to procure a local Guide Book covering the region, and look through it for particulars of accommodation and refreshment available. (E).



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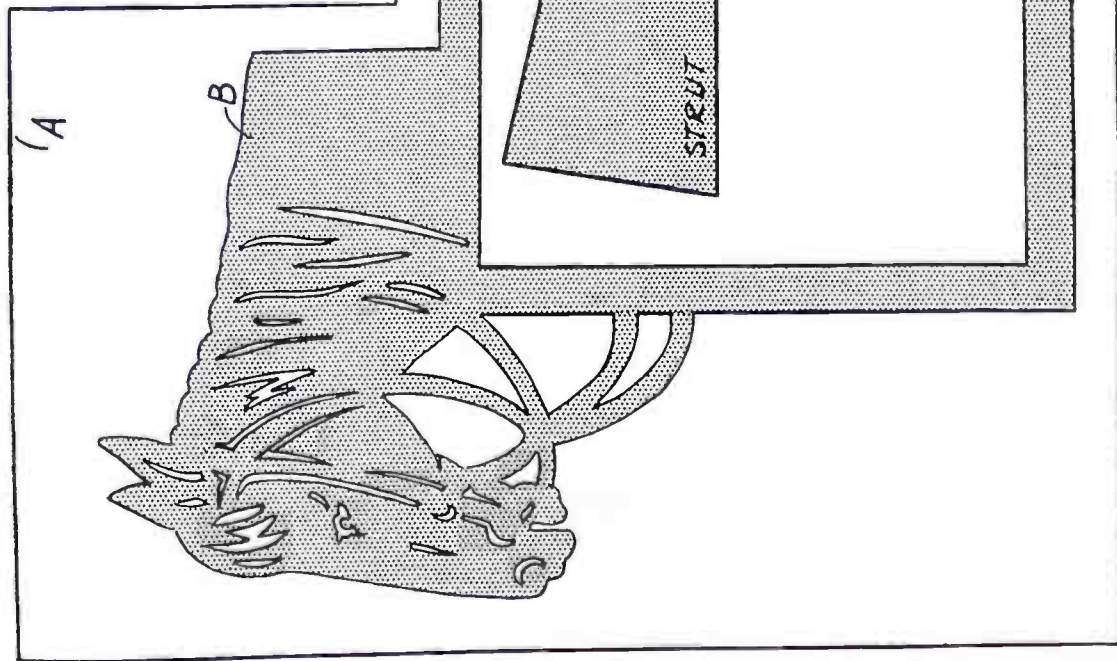
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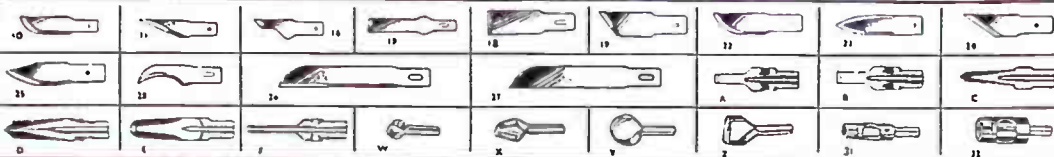
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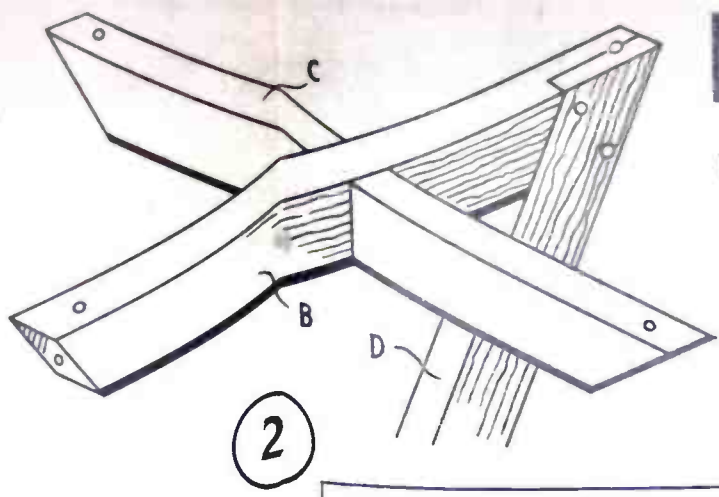
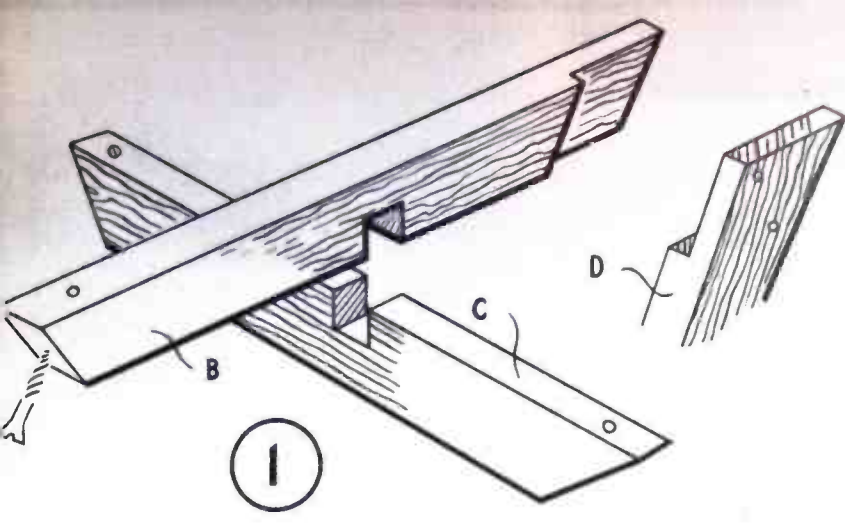
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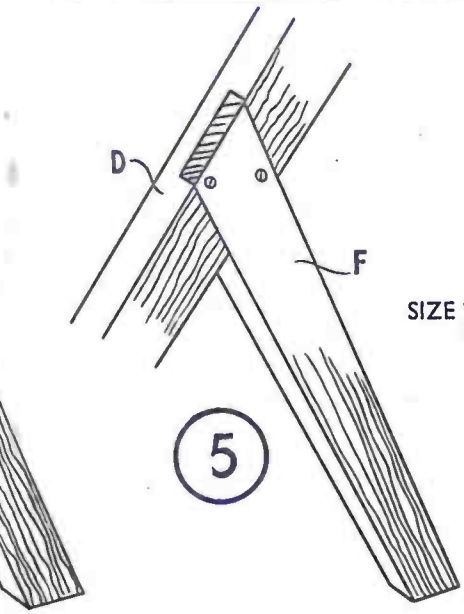
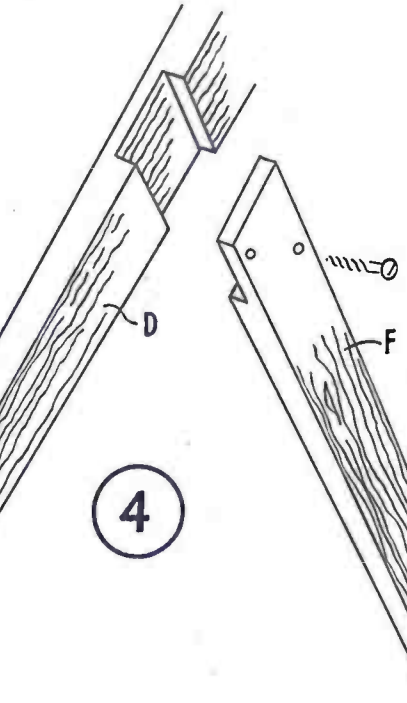
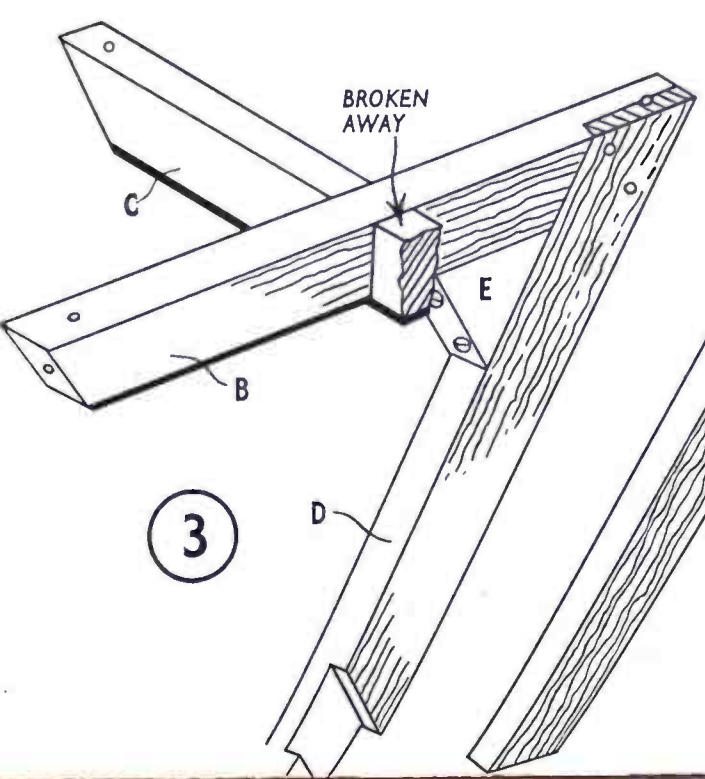
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