

# HOBBIES WEEKLY

MARCH 12th 1958

VOL. 125

NUMBER 3254

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**T**HIS grand model of Japonica, a sailing cruiser with auxiliary motor, will give endless enjoyment on the water to its proud owner, and it also provides an excellent project for the keen modeller.

It is based on a fleet of holiday vessels in use as pleasure craft on the Norfolk Broads, and we are indebted to the Norfolk firm of Martham Boat, Building & Development Co. Ltd. for the loan of plans, photographs and building details which were essential for the designing of this authentic 20in. model. It has been designed completely to scale, but the rigging has been modified for the purposes of model sailing.

## JAPONICA

(Sailing Cruiser with  
Auxiliary Motor)

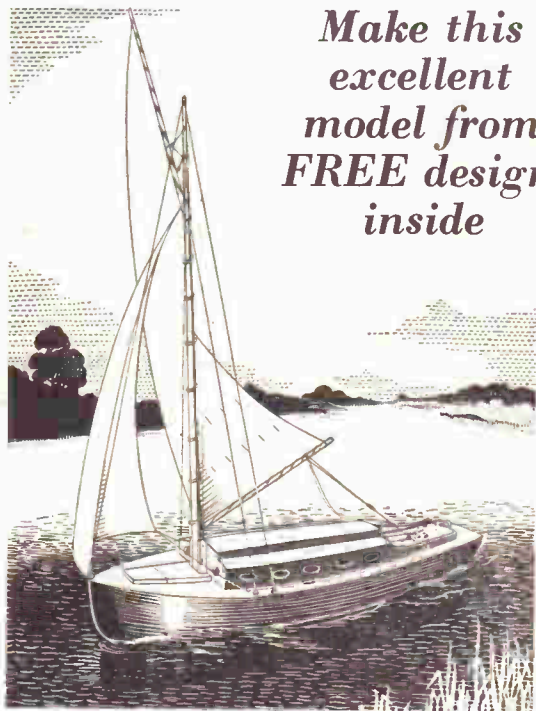
This type of craft is sloop-rigged with loose-footed jib. It has four berths and a 4 h.p. engine. For the auxiliary power in our model we have incorporated a Mighty Midget motor and propeller unit. There is ample space for the incorporation of radio control, but this of course will involve modifications to the keel in order to counterbalance the extra weight of components.

Japonica has been designed as an exhibition model or as a practical sailing

craft. If intended purely for pleasure, the depth of the keel (piece 2) should be increased by 1½ ins. to give greater stability. Details of a suitable stand for the model are also given, and the mast can be lowered to facilitate ease of transportat-

ion. Provision is also made for reefing the sails when the model is being used in rough weather.

Japonica is built on the bread and butter principle, that is, one layer glued on top of another, and the hull is in two



Make this  
excellent  
model from  
**FREE** design  
inside

halves (left and righthand) with the keel coming in between. On the design sheet, all the vital pieces are shown full size and it will be noted that some parts such as 6 and 6A are rejoined to form one complete piece. This is for the sake of economy in wood.

A system of rubber band adjustments gives facility for semi-automatic steering. The prototype model gave excellent performances both as a yacht and with

assistance from the auxiliary motor.

Trace the various pieces from the design sheet and transfer them to their appropriate thicknesses of wood by means of carbon paper. Make sure that all parts have been accounted for on the wood before cutting them out with a fretsaw.

The side view should be studied carefully in conjunction with accompanying photographs and diagrams, in order to

get a clear picture of how the model is built up. The side view has been simplified in order to show the building of the hull by the bread and butter principle. It should also be stated that the glue used on this model should be of the waterproof type.

As already mentioned, the hull is built up from two sides and the underside view in Fig. 1 shows the assembly of a lefthand section which is built up by

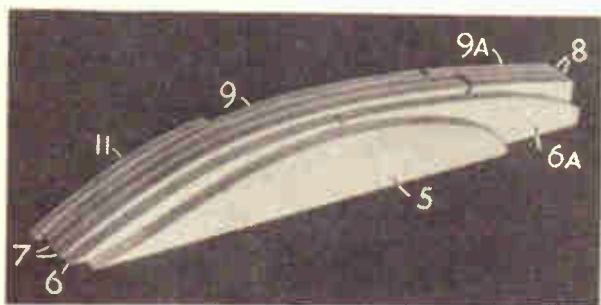
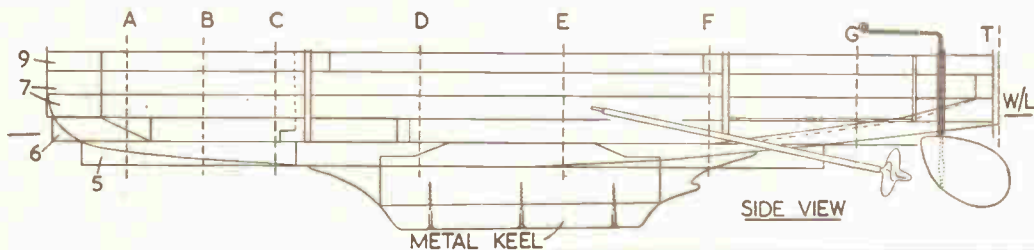


FIG. 1



FIG. 2

gluing piece upon piece. Pieces 6A, 8 and 9A are level at the stern, and the dotted lines on the various pieces on the design sheet will assist in their exact positioning. Note that piece 11 overlaps piece 7 by  $\frac{1}{4}$  in. and this overlap rests on top of the keel piece. The righthand side of the hull

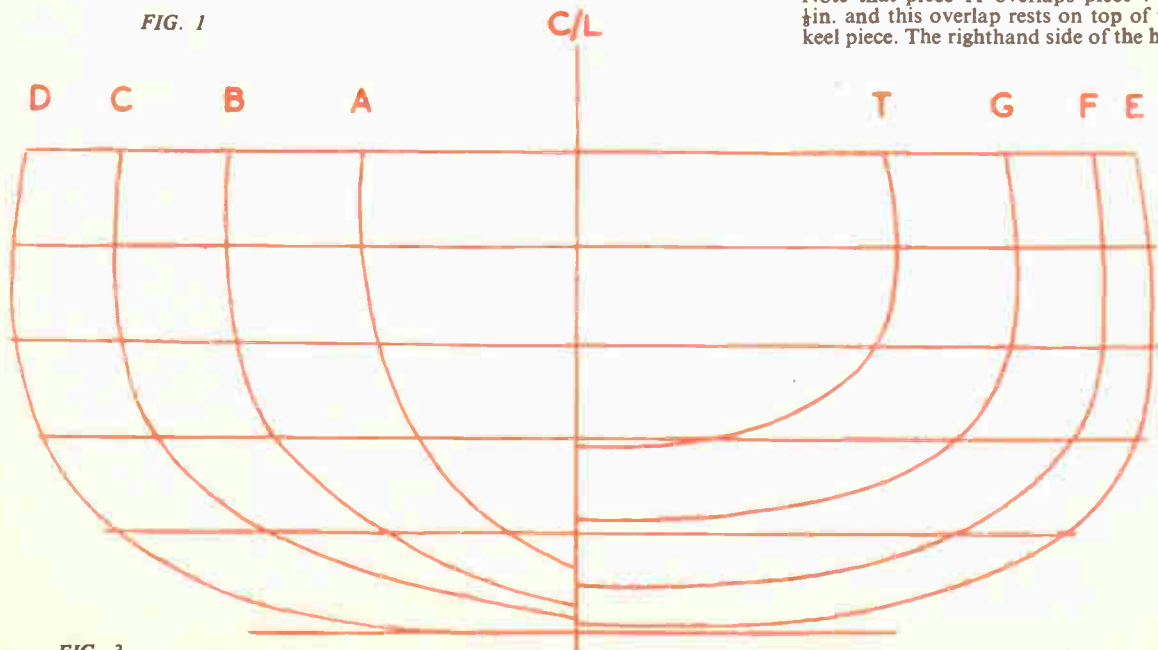


FIG. 3

will, of course, be built up correspondingly opposite.

The next stage is to take out the steps on the outsides of the hull portions, in order to achieve the final shape as shown in Fig. 2. The lengthwise shape is shown on the side view, and to get the exact curve, lay pieces 1, 2, 3 and 4 (the keel) on a flat surface and take a tracing of the curve required. Transfer this to the inner sides of the hull and shape to this line. By cutting card templates of the sections as they appear in various positions, in Fig. 3, the outline of the finished hull can be checked when used in conjunction with the side view. A Surform file, rasp and modelling knife will facilitate shaping.



FIG. 4



FIG. 6

now be added by gluing. Fig. 7 shows the deck pieces (10) added in place, and how piece 11 is shaped down from the bow to come level with piece 10.

The next stage is to add the forward, centre and stern bulkheads (12, 13 and 14) and the well sides (15), as seen in Fig. 8. Cover the stern of the boat (transom) with  $\frac{1}{4}$ in. wood and fill in the well and seats with  $\frac{1}{8}$ in. wood thus covering the joins in the hull. These parts are not shown on the design sheet, but should be cut to fit (see also Fig. 9).

The sides of the cabin (17) are glued in place between bulkheads 12 and 13. They will conform to the curvature of piece 10 and may be further strengthened by squared strips of spare wood glued in the

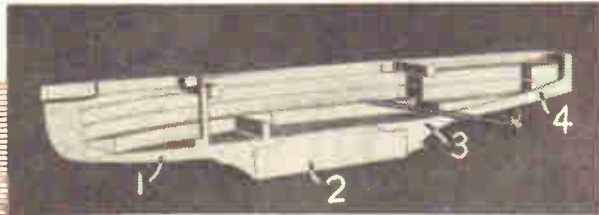


FIG. 5



FIG. 7

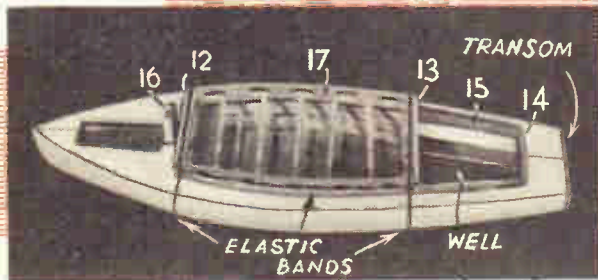


FIG. 8

Fig. 4. shows the two hull sections, that on the top being the completed job after shaping has taken place. The bottom view shows a section before shaping.

Now glue the keel pieces 1, 2, 3 and 4 on one section of the hull (Fig. 5). Lay the stern tube and propeller shaft in the opening provided, and fix it in place with plenty of glue, which should also be sufficient to prevent the ingress of water. Ensure, of course, that the propeller shaft is situated so that the propeller itself does not foul the bottom of the boat.

The other half of the hull (Fig. 6) can

corners. To maintain the curvature of pieces 17 while the glue is drying, insert odd strips of wood across as shown in Fig. 8. Elastic bands will also help in this operation.

Instructions for fixing the motor, making the sails and finishing the model will be given next week.

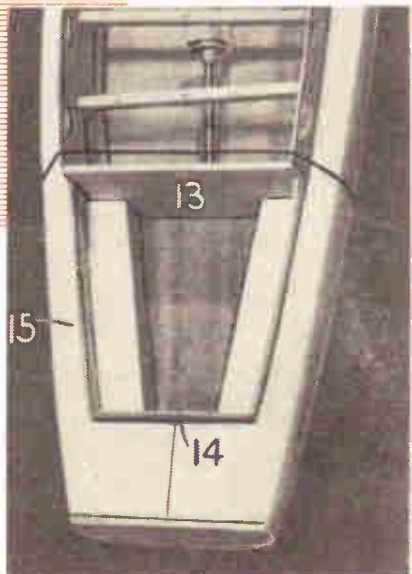


FIG. 9

## BUILD IT WITH A HOBBIES KIT

All the planed panels of wood and materials for making Japanese are contained in Kit No. 3254, price 65/-. An electric motor and propeller unit are also included and kits can be obtained from branches or Hobbies Ltd., Dereham, Norfolk (post free)

# SAFELIGHTS AND MATERIALS

A GOOD photographic safelight will prove very helpful when enlarging. The wrong type of light may be much too dim, or may fog the paper, resulting in awkward working, and poor results. On the other hand, the correct type gives ample illumination to work by, without fogging.

A very simple method exists of discovering whether the light is 'safe'. All lights except the safelight are put out, and a piece of enlarging paper is placed on the enlarger baseboard, or near the developing dish. A coin or other opaque object is placed on the paper at once, and left untouched for two to three minutes. The piece of sensitive paper is then developed. If the safelight is satisfactory, the paper will remain perfectly white. But if it is unsafe, a slight darkening will arise on all portions which were not covered by the coin. As a similar darkening effect will be caused with proper enlargements, good, bright results will never be possible with such a safelight.

Any type of home constructed safelight should certainly be tested in this way. It is also wise to test a purchased safelight. With the latter, fogging will indicate that the safelight is too near the

can be purchased, and used with an ordinary 15 or 25 watt bulb, with 200/250 v. mains. The top section is fitted to the bulb holder. The bulb is then inserted, and the globe screwed on.

For enlarging papers, an amber colour is often used. A red globe is perfectly satisfactory from the point of view of providing ample safety from fogging, but is trying to the eyes, and only gives a dim illumination. For contact papers, a fairly bright yellow light is permissible. Both amber and red are also safe with such paper. For general enlarging and contact printing, an amber globe is thus suitable.

Such globes can be fitted to the usual room light, when a separate darkroom is not available, or they can be obtained with a small stand, to rest on the table, current being drawn from an adaptor or wall plug.

## Home-made safelights

Perfectly satisfactory safety lighting can easily be devised. A battery type cycle lamp, with red glass, will be suitable, though it will not give such good general illumination as a proper safelight. An ordinary torch can be pressed

A 15 or 25 watt bulb is amply powerful. High wattage bulbs should not be used, because they generate so much heat, and are likely to cause fogging of the paper.

If only a small or circular piece of coloured glass is to hand, it can be fitted into a window in the front of the box, which is covered with a panel of wood.

For contact papers, fairly subdued indirect light, of a yellow nature, will be safe. An ordinary table lamp, fitted with 25 watt bulb, and placed under the working table, or in a far corner of the room, will suffice. Or a door into a lighted room can be left open. Such methods cannot be used with bromide paper, as employed for enlarging, because this is much more sensitive to light.

## Types of paper

It is best to use one type of paper only, until a little experience has been gained. Other kinds of paper can then be chosen, to suit the kind of negative, and type of print wanted. Papers can be classified according to the degree of contrast they give, and the surface.

*Soft Papers* do not give much contrast between the black and white parts. They are thus best for very contrasty negatives, which have such extremes of density that they would not give very good results on ordinary paper. The soft paper reduces, or softens, these contrasts. Very soft papers are also made, to deal with negatives which have been developed too long, or are for any other reason very contrasty indeed.

*Normal Papers* give normal results with any ordinary negative, and should always be used by the beginner. They will usually be best with at least two out of three negatives.

*Hard Papers* are exactly the opposite of the soft papers described, and give contrasty results from weak negatives. Very hard papers can also be obtained, and are useful for extremely poor, dull negatives, such as those resulting from insufficient development, or from taking photographs during dull weather.

All the papers are available with a range of surface textures. Glossy papers are nearly always used for contact printing, and for small enlargements, or enlargements intended for reproduction in newspapers and magazines. Various matt and satin finishes are often preferred for portraits, and general prints for the album, or for framing. For big enlargements, papers with rough surfaces are sometimes used. These give a

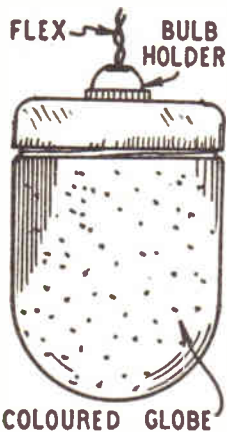


Fig. 1—A hanging safelight

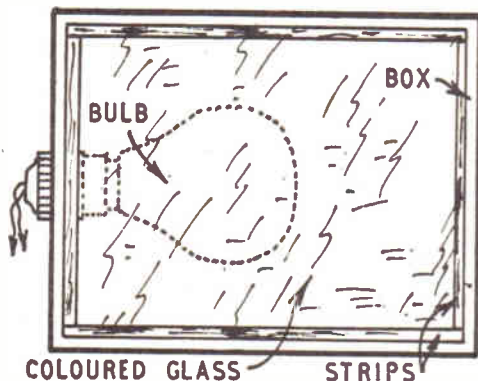


Fig. 2—Easily made box safelight

into service by fitting red or amber cellophane inside the glass.

A box type safelight can be made as shown in Fig. 2. Coloured safelight glass is available from photographic dealers, and the box can be made to suit the dimensions of the glass. A sheet about 4ins. by 5ins. would be average, and any thin wood is suitable for construction. A number of small sprigs prevent the glass falling inwards. After the glass has been inserted, strips are screwed on to hold it in place, and to prevent white light straying between glass and box.

paper and dishes, or that the bulb in it is too powerful. Even an expensive safelight of the best type will fog bromide paper in these circumstances. When this happens, the cure is to move the safelight much farther from the working position, and to use a lamp of lower wattage.

## Hanging safelight

Fig. 1 shows a simple safelight which

more artistic effect. The beginner will do well to use a fairly glossy paper, or one with a satin finish, for his earlier work, because any defects in processing or focusing will show up more readily, thus making him more critical of his own work.

### Chemicals

Many experienced photographers use two chemicals only, one for developing,

water. The developing solution should thus be thrown away after use.

Two dishes will be convenient for developer and fixer, as shown in Fig. 3. It is worth having fairly large dishes, as they are less liable to spill liquid, and will allow bigger prints to be made. Dishes about 5 ins. by 7 ins. will allow any papers up to half-plate size to be processed.

For occasional use, especially with

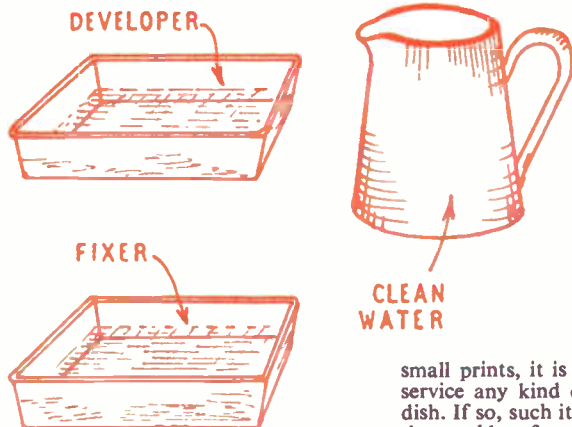


Fig. 3—Chemicals for processing

and one for fixing. This is recommended also for anyone making a start at enlarging or printing.

Developers can be obtained in the form of liquid, powder, or tablets. Each contains all the ingredients necessary, so that the addition of water gives the working solution. Liquids mix easily, but when only a little of the concentrated solution is left in the bottle, this tends to deteriorate. About one part of concentrated developer to six parts of water would be a normal solution.

Powder and tablet developers are very convenient for occasional working, as they keep well. Each has to be mixed with a certain quantity of water, according to the directions on the packet.

For measuring purposes, a measuring beaker will be useful, and will not be at all expensive. One taking up to about 15 fluid ozs. will be satisfactory for most purposes. Alternatively, it can be remembered that half a pint of water will be about 9 fluid ozs., or a quarter pint will be 4½ fluid ozs. This will be quite accurate enough for mixing developers and fixers.

The most popular fixer is 'acid hypo' which both fixes and hardens the print. This is a powder, available in tins, and is made up by mixing with water, as described on the container. A pint or so of mixed fixer can be kept stored in a corked bottle, as it can be used several times. Developers, however, will not keep, when they have been mixed with

small prints, it is possible to press into service any kind of bowl or household dish. If so, such items should be washed thoroughly after use. Metal bowls or dishes, or anything employed directly in food preparation, are best avoided.

Another dish, or a jug of clean water, will be required for washing. A thermometer is also extremely useful, as if the solutions are too cold, they will be very slow in action, and not give good results.

### Making a print

After making the printing exposure, with the enlarger or printing box or frame, the paper is transferred to the developer. It should be completely immersed in the liquid at once, so that all parts of the surface are wetted immediately. The dish should then be rocked quite vigorously, to keep the solution in motion. After some 60 to 120 seconds, development will be complete, and the print is then removed from the dish, and placed in the clean water.

If the print has several test exposures on it, the best can now be seen, and a new print made. A pale, weakly result indicates insufficient exposure. A very dark, black result shows that the exposure was too long.

After the print has been moved about for a few seconds in the clean water, to wash away the developer, it is transferred to the fixing solution. Here, it is best to leave the print face downwards, moving it for the first few seconds, and occasionally thereafter, so that fresh fixing solution can reach all parts of its surface.

A number of prints can be fixed at once. After about ten minutes in the fixer, they are given 30 to 60 minutes washing in clean running water, to remove all traces of chemical.

The next article in this series will deal with masking, or choosing the best part of the picture area. This is very important when enlarging, because any part of the negative can be made to fill the completed print.

## COLLECTORS' CLUB

**T**HE hobby of collecting all kinds of items pertaining to the circus is called *Circusana*.

My first suggestion to anyone just starting a circus collection is to concentrate and specialize your line. Here are a few of the best items to start with.

Circus pictures, including illustrated posters, hand-bills, photos, lithographs,

### CIRCUSANA

— By R.L.C.

newspaper clippings, etc. Circus wagons (including pictures, photos and models). Circus animals (pictures, photos and models). Circus books — good ones.

Most collectors of circus items collect everything that they can find pertaining to the circus. There are many items to be

found on the old time circus as there were then a great many more than to-day. A good circus collection will become valuable in years to come as many of the great shows are passing out of the picture.

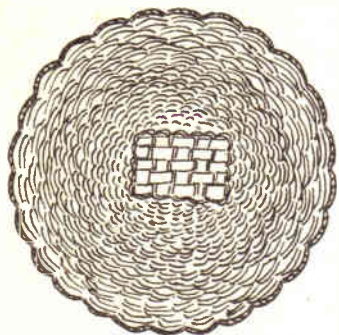
One of the most interesting items to collect is circus letterheads. Many were printed in full colour and are works of art.

The circus season lasts from May to September. The small shows close during winter, but the large menageries usually accept pantomime or similar engagements.

All circus folk, from ringmaster to groom, are proud of their profession. Many are the exciting stories they have to tell.

When the circus comes to town you will find the men of the 'Big Top' a friendly crowd, ever willing to help. So why not visit them and obtain interesting facts and probably some rare items for your album?

# ELEMENTARY RUSHWORK



**A**MONG the several different kinds of material used for basketry and its allied crafts, rushes are probably one of the easiest for the beginner to tackle. They have the added advantages that they are not hard on the hands, as is inclined to be the case when stiffer materials are used, and that no big outlay in tools is necessary.

Rushwork is a very ancient craft, and the methods followed today are probably exactly the same as those in use in Biblical times. We in Great Britain are fortunate in being able to obtain home grown rushes of excellent quality and attractive colouring for this purpose.

Rushes are sold by the 'bolt' and are obtainable either direct from the growers or through the bigger handicraft dealers. A bolt costs approximately 10/-; this may sound rather a lot, but to give a rough idea of the quantity it represents it would make at least four oblong picnic baskets large enough to hold two thermos flasks and a sandwich tin. Rushes are sold ungraded, some being much thicker than others. The thick ones are used for the stakes, or uprights in canework, and the thinner ones for weaving.

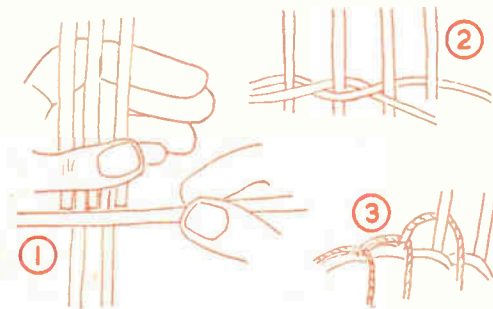
The only tools required are an old pair of scissors, a large packing needle with a cork, or some other form of protection on its point, a ball of fine twine, and moulds to shape the baskets. A large cake tin will make a nice work-basket, tall toffee tins or 7 lb. paint tins are suitable for wastepaper baskets (provided there is no projecting rim at the base), and a simple wooden mould is needed for the rectangular baskets.

Rushes are a very versatile material; in addition to weaving them into various kinds of articles, they can be made into thick plaits which are coiled and stitched together to make floor mats, and log baskets, etc. and they can also be used for seating chairs and stools. In whatever

way the rushes are going to be worked, however, they must be prepared in the same manner, i.e., they should be put to soak in cold water not less than six hours before using them, then taken out and wrapped in a piece of clean sacking or an old rough towel. Care should be taken not to bend the rushes, and not to soak more than are likely to be used up at a time.

With the exception of check weaving, the methods of weaving are the same as for canework, but for the benefit of readers who have done no basket making previously, brief instructions for the various weaves are given.

**CHECK WEAVE.**—This is used generally for the foundation of an article and is carried out in thick rushes. For an example, cut ten pieces of thick rush 8 ins. long. lay five of these on the table as close together as possible. place the side of the left hand firmly across the



centre of the row. With the right hand, lift the two outside and the centre rushes and place one of the remaining five underneath, and close up to the left hand. Let the three rushes drop, lift the other two and slip another one under them, as close as possible to its neighbour (Fig. 1). Reverse work left to right, and continue from the other side of the centre to match, with the remaining three pieces. There will now be a cross of rushes with a check pattern in the centre, which should have no gaps in it. Check weaving can also be worked on a mould for the main fabric of an article; in this case it consists of passing a single rush alternatively in front of and behind the stakes, and is the equivalent of randing in canework.

**PAIRING.**—Two lengths of rush are used and project forwards from adjacent spaces between the stakes. \*Working always from left to right, take the rush on the left, pass it in front of one stake,

behind the next, and bring it out in front again. Repeat from \* with the other rush (now lying on the left) and continue thus all round, keeping the work very firm (Fig. 2).

**THREE ROD WALING.**—This is worked like pairing, except that three lengths of rush are in use and the stroke is made by passing the rush on the left in front of two stakes, behind the next and forward again.

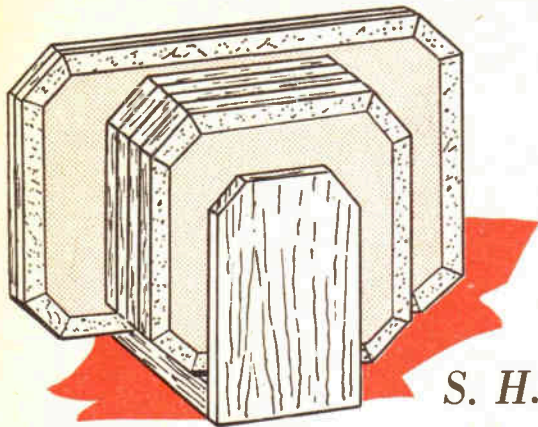
**JOINING.**—This is done by twisting the ends of the old and the new weavers together for about 2 inches and working the two together. Always place a thick end to a thin one.

As an introduction to rush basketry, here are the instructions for making a small mat on which to stand a bowl of flowers, or it could be one of a set of table mats. Cut ten thick pieces of rush 8 ins. long and take twenty-four thin rushes, full length. Soak and prepare as described above.

Make the centre of the mat in check weave as already described. Now take a weaver, bend it two thirds of the way down, and slip it over any one of the corner stakes projecting from the centre. Work round in pairing, keeping the lines of work firm, and as close together as possible, and gradually drawing the uprights in each group out fanwise, so that they eventually form a circle. Continue until the mat measures about 5 ins. in diameter, joining in new weavers as required.

To make the border, start with any of the stakes, twist it tightly and pass it behind the next one to the right, then bring it forward and bend it down. (Fig. 3). Continue like this all the way round until only one stake is left; twist this and thread it through the back of the first loop of the border.

Starting with this last piece worked, finish off by drawing each projecting end down through a few rows of weaving. This is done with the packing needle; push the eye up through the top five to six rows of weaving, thread with the end of the stake and draw down again. Cut all remaining ends off as short as possible. Finish off ends of weavers and short pieces left where joins have been made, in exactly the same way. Complete work by pressing flat and to shape with a rolling pin. (T.K.W.F.)



# MAKE LINO TABLE MATS

Says

*S. H. Longbottom*

**T**ABLE mats are always acceptable gifts and required in every household, yet quite easy to make. The main thing to remember is that the material used must be heatproof and washable, making it impracticable to use varnish or polish for finishing.

A most reliable medium to use is linoleum and quite often it is possible to buy small remnants for a shilling or so from a carpet shop if you do not happen to have any surplus. There are various colours in all patterns, such as mottled, jasper, or in the form of tiles, so you will find something to suit your purpose.

### Any shape

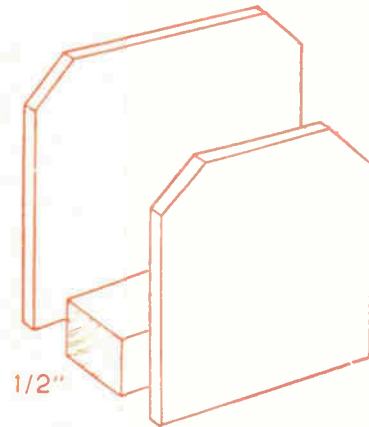
The mats may be cut to any desired shape, the simplest being a square, but they may be octagonal or neatly trimmed at the corners as shown in the sketch. Again, you may make small sets of four small mats, or sets which include two larger mats for dinner plates. In either case a small stand is desirable to hold the mats when not in use, but this item will be dealt with later.

Having decided on the particular shape, you will find it more convenient to make a template, not only to produce mats of equal size, but for speed in cutting. Note that a handy size for small mats is 5ins. square, while the larger mats should be 6ins. by 7ins. Using a sharp knife, score the linoleum fairly deeply, lay on a straight edge, apply a little downward pressure, when the material will break away. Any remaining rough edges can be easily trimmed with a pair of scissors, otherwise you may find it a tough proposition to cut right through the linoleum. Here you should also consider the direction of the "grain" especially in the jasper pattern, for some mats look more attractive with this on the diagonal.

We next require some white cardboard for backing the mats, prepared to exactly the same size with the aid of the template, finally binding the two parts

together with passe partout in a matching or tasteful contrasting colour.

You will find it easier to fix a bulldog clip on two opposite edges of the two parts while the other two sides are bound.



HOLDER

The clips are then removed to bind the remaining two sides. You are advised to use one of the waterproof adhesives, such as casein glue powder, for this work instead of merely damping the binding with water. It must be remembered that the mats will be washed from time to time and firm adhesion of the binding is essential.

### Neat Mitres

Apply the binding to the linoleum side first, about half the width of the strip, folding over on to the back and rubbing down on both sides with a clean duster. Do not apply excessive adhesive or it may soil the card. All corners should be neatly mitred and it is best to use a set square for this purpose. On no account should you attempt to take the binding round the corners for it will result in an untidy and clumsy job.

Reference to the diagram will reveal the construction of the holder, although the shape may be modified to match the shape of the mats. A piece of plywood is required for the back and one for the front, both glued to a 1/4in. piece of batten. The back may also be pinned but similar treatment to the front may spoil the appearance, hence the necessity for gluing.

### Various decorations

The width of the block between the two pieces of plywood depends on the number of mats in the set and their measurement when stacked. The fit should be good, but not too tight. You will also notice that it is not essential for the holder to be of the same dimensions as the mats, but from a practical point of view, while it may be an inch less in width than the small mats it is better to provide for a reasonable depth, giving adequate support.

Perhaps it should be mentioned that the front part of the holder is best made from nicely grained wood, stained and polished, and maybe, a decorative transfer. Alternatively, you may use plain plywood or hardboard, finishing in gloss paint. If a transfer is used, or a fretted design glued on, it must be applied after staining or painting and then protected with a coat of varnish. It is also advisable to attach a strip of felt, baize, or thick cloth to the underside of the block to prevent scratching or slipping.

Next week marquetry enthusiasts will be shown how to utilise their veneer oddments to make useful articles. Also patterns for a toy and 'Collectors' Club' news among the usual features.

MAKE SURE OF  
YOUR COPY

# FIRE EXTINGUISHERS

**R**UB vaseline round the rim of a jam jar. Place a piece of cotton wool in a tin lid on a piece of wood. Ignite the cotton wool, and when it is burning freely place the jar over it as shown (Fig. 1). The fire will die out because its air supply has been cut off. The various types of fire extinguishers put out fires by cutting off in varying ways the air supply from the fires. This is most often done by directing water on to the fire; this wets the burning materials and air cannot pass through the layer of water. Petrol and oil fires cannot be extinguished in this way since these liquids are lighter than water, float on its surface, and continue to burn.

## Soda-acid (break-bottle)

Fill a strong wide necked jar (A) in Fig. 2 about three quarters full of water. Add sodium bicarbonate (baking powder) to the water until no more will dissolve on stirring with a glass rod. Fix two pieces of wire, a nail and a glass tube (C), into a cork which fits tightly into the neck of the bottle as shown.

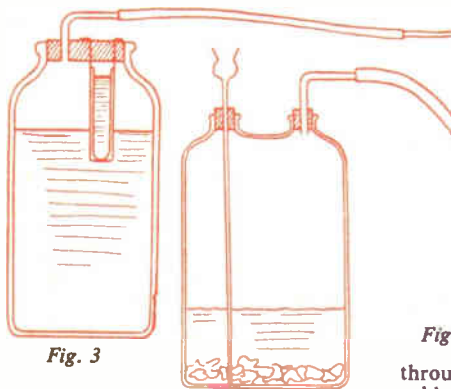


Fig. 3

The nail should fit tightly, and the hole in which it fits should have a little vaseline placed in it, so that the nail can be pushed downwards. Fill the small test tube with dilute sulphuric acid, seal it up with a small cork and place it in position as shown. Push the cork firmly into the neck of the bottle and fit a short length of rubber tubing (E) into the glass tube (C). Fit a short length of glass tubing (F) to the end of the rubber tube.

To operate the extinguisher hit the nail so that it breaks the test tube and turn the tube (F) towards a sink.

The acid mixes with the sodium bicarbonate solution, and this produces carbon dioxide gas which collects in the

space (H), above the liquid. This presses down on the liquid and forces it up the tube (C) and from the nozzle at the end of (F) whence it can be directed on to the seat of the fire.

## Soda acid (turn-over)

Fill a wide-necked strong glass bottle three quarters full of water and add sodium bicarbonate, a little at a time, to the water, stirring with a glass rod until no more will dissolve. Using two pieces of wire fix to the cork a support for a test tube as in Fig. 3.

Push a short piece of glass tube

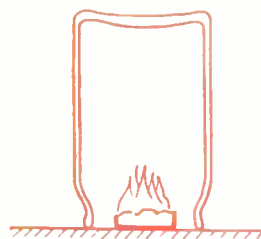


Fig. 1

Fig. 4

through the cork and fix a length of rubber tubing to the glass tube in the cork at one end and to a short glass nozzle at the other end.

Fill the test tube with dilute sulphuric acid and fix it in position in the wire supports making sure the cork fits tightly.

To operate the extinguisher, invert the bottle, when carbon dioxide collecting in the upper part pushes the liquid out through the glass tube. The great advantage of this type of extinguisher is that it can be stopped when desired.

## Carbon dioxide

With the apparatus shown in Fig. 4 you can investigate the action of fire extinguishers using carbon dioxide gas.

This gas is heavier than air and can be poured on to a fire.

To prepare the gas, pour dilute hydrochloric acid over marble chips in a Woulff's bottle. (A) is a length of rubber tubing to which is attached a short length of wider glass tubing (B). Allow the gas to fall from (B) on to a lighted candle or a piece of smouldering cotton wool in an evaporating dish.

## Foam extinguishers

You can obtain samples of the foam-producing powders from the Pyrene Co. Ltd. Dissolve a little of the brown powder in water in a test tube and a little of the white powder in water in another test tube. Mix these two solutions together and large quantities of froth or foam are produced. If this is

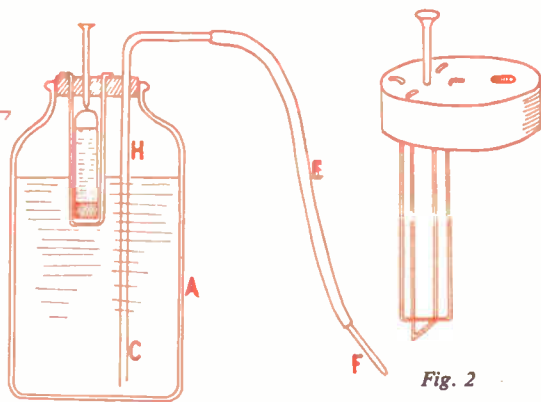


Fig. 2

poured on to a fire it completely blankets it and cuts off the air supply.

## Carbon tetrachloride

Take a tall beaker and pour in a very small quantity of carbon tetrachloride. Place the beaker on a wire gauze on a tripod and heat the liquid very gently with a very small Bunsen flame. You will see a heavy vapour rising up the tall beaker. When it is full of vapour, remove the flame and pour some of the vapour on to a piece of burning cotton wool in an evaporating dish and then on to a small quantity of burning turpentine. The small fires are immediately extinguished.

The gas generated when carbon tetrachloride is in contact with flame is dangerous to inhale, and it should therefore only be used when there is free access to the open air. (T.A.T.)



# AN INDIVIDUAL UNIT



By E. Capper

**T**O many children the possession of this individual unit will prove an exciting experience, imparting as it does, a satisfying sense of real ownership, increased scope for individual behaviour and a refreshing opportunity for exercising self imposed obligations.

This is, of course, psychologically most sound. Tidy habits are formed, a sense of values is created and even the night's 'prep' can be made to assume much less tiresome proportions.

Use 1in. prepared deal for the wall cupboard sides, top and shelves. A useful finished size is 3ft. high by 20ins. wide. Glue and screw all the joints strongly together. You can make the side pieces and the top front piece fanciful if you wish, by cutting out semi-circular 'waves' as shown.

The sliding doors to the lower compartment are not so difficult to construct as they appear. Make their height an easy slide fit between the two lower shelves, using hardboard or three-ply wood. For the guide rails to form the channels in which the doors run, use quartering moulding for the front and rear pieces and  $\frac{1}{2}$ in. square pieces for the intermediate rails. Tack them in place with panel pins and remember to fit the door handles at the far opposite ends.

Hang the completed cupboard to the wall with mirror wall plates, screwing them firmly into Rawplugged holes.

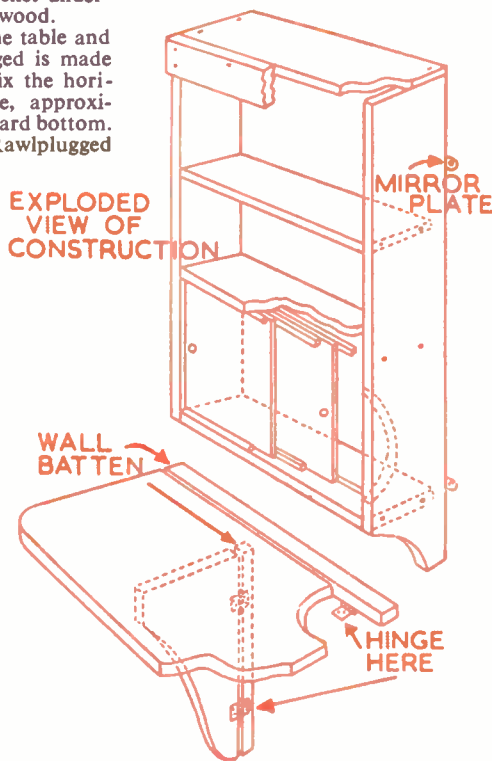
The folding table underneath, with its drop-flap, is made of  $\frac{1}{2}$ in. plywood. Round off the front corners. Similarly,

the swinging supporting bracket underneath is made from  $\frac{1}{2}$ in. plywood.

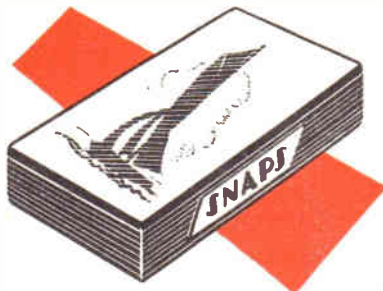
The battening to which the table and supporting bracket are hinged is made of 1in. square deal. First, fix the horizontal length for the table, approximately 6ins. below the cupboard bottom. Screw it again firmly, to Rawplugged holes in the wall, then fix the length for the underneath bracket, centrally and at right angles to the horizontal table piece. Finally, hinge the fittings as shown.

Enamel the finished job in gay colours and if you prefer, set it in an individual panel of contemporary wall-paper.

Allow the young owner his or her own 'crocks' to arrange at will on the shelves or in the locker. The top shelf can accommodate books, stamp albums and such personal belongings with a dark corner in the locker for that strictly personal diary, perhaps.



## Containers for 'Snaps'



The parts are shown full size on the pattern page and should be traced and transferred to wood by means of carbon paper. Piece (A) is the bottom and pieces (B) and (C) the sides and ends. Cut two each of these. The lid is of course the same size as piece (A) the bottom. All these pieces are cut from  $\frac{1}{2}$ in. wood.

### PATTERNS ON PAGE 399

The lid is hinged in place as shown by the small diagram. Recess the hinges to give a perfect fit. Cut two of the overlay 'snaps' from  $\frac{1}{2}$ in. or  $\frac{3}{4}$ in. wood and glue them to the sides (B). A small catch or fastener may be fitted if desired, but this is not essential.

Finish off by painting with enamel or by polishing. The final touch is to cut out a suitable snap to denote the nature of the contents and glue or paste it to the lid of the case as shown. (M.p)

**B**E prepared for your programme of photography this year by making small cases such as shown in the illustration. They are made from odd pieces of  $\frac{1}{2}$ in. fretwood and will cost very little. Why not construct two or three and keep them for special purposes such as nature studies, holiday snaps etc?

# Care and Use of Chisels

If you want to get good service from your chisels then they must be used correctly and cared for properly. A sharp chisel in good condition is always a joy to use; a blunt chisel only causes frayed nerves and accidents. To help you to get the most from your chisels here are a few points well worth remembering.

There are many different types of chisels to be found in the woodworker's tool kit, each type designed particularly for a specific use or job. For the general handyman and home craftsman, however, only two types of chisels are required for general use and these are illustrated in Fig. 1. The type shown at (A)

## By Finlay Kerr

is called a firmer chisel and is used for general work. The chisel shown at (B) has its edges bevelled off and is known as a bevelled-edge chisel. The latter type of chisel is lighter and weaker than the former and requires to be used with greater care. It is much easier to obtain a keener edge on a bevelled-edge chisel and so it is used chiefly for finer and more accurate work.

Chisels are made in various sizes ranging from  $\frac{1}{8}$  in. to 2 ins.; the most popular sizes for home use being  $\frac{1}{4}$  in.,  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in., 1 in. and 2 in.

When purchasing a chisel do try and get the best quality you can possibly afford. Shoddy tools may be cheaper but you won't get good service from them. Remember, it is better to buy a few good quality chisels than to get a full set of cheap ones. Inspect each chisel thoroughly before you buy. Ensure that the blade is made from good quality steel free from any cracks or suspicious marks. The tang of the blade should be fitted squarely in the centre of the handle and a shoulder should be provided at the base of the tang to prevent the blade being inserted too far. The chisel handle should be made from a good hardwood such as ash, beech or boxwood (the last is the best). To prevent the handle splitting when the tang is inserted, a brass ferrule is usually provided to the base. When a chisel is bought it should be properly ground ready for sharpening.

Having purchased your chisels it will be necessary to store them properly when not in use. Don't throw them into a drawer or tool chest along with other tools as this is a sure way of damaging the cutting edges. If your chisels are to be used frequently then the best way of

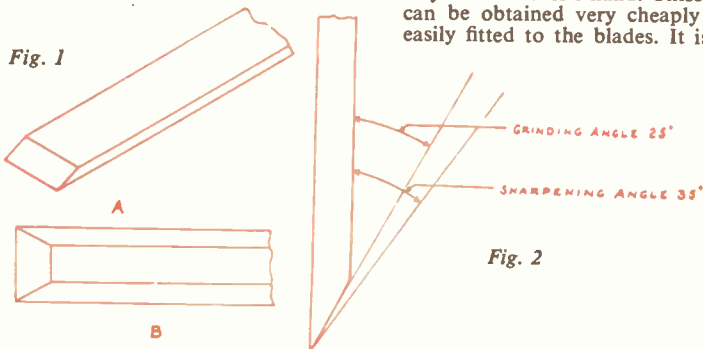
storing them is to use spring tool clips screwed above your work-bench or on the inside of the lid of your tool chest. If, however, they are only used occasionally then make a chisel bag similar to the type used for storing bits. The pockets should be made large enough to accommodate the various sizes of chisels. No matter which method is used, remember to protect the cutting edges from damage. Unnecessary wear results from unnecessary sharpening.

Another enemy of tools in general is rust. To keep your chisels free from unsightly rust marks, keep them smeared with a thin film of oil at all times when not in use. If this is done regularly your tools will look much better too.

When working with a chisel always use both hands; one for holding the

Never strike the handle of a chisel with a hammer because this is a sure way of splitting the handle. If a little force is needed then use a wood mallet. Don't be too eager, however, to use a mallet on your chisels, particularly your bevelled-edge chisels. Sometimes a little bump on the end of the handle with the palm of the hand is all that is required. For heavy work where a mallet is necessary, the chisel handles should be provided with a strong iron ferrule at the top to prevent the handles 'mushrooming out' and splitting.

If a chisel handle should split then discard it and fit on a new one right away. A chisel with a damaged handle is a source of danger. The handle may give way unexpectedly when the chisel is being used and the tang could find its way into the user's hand. Chisel handles can be obtained very cheaply and are easily fitted to the blades. It is a good



chisel firmly at the handle and the other for guiding the blade. *Both hands should be kept behind the cutting edge at all times.* Many nasty accidents have resulted when a chisel has slipped simply because this important piece of advice had not been observed. Never leave chisels lying on shelves or on tops of stepladders above your head. They may fall unexpectedly on top of someone. *If a chisel should accidentally fall from a height, don't attempt to catch it.* A damaged cutting edge can be easily repaired — a gash in the hand is not so easy.

Many people like to use bevelled-edge chisels both for rough and fine work because they are more pleasant to handle. This is bad practice and is not to be recommended. Bevelled-edge chisels are more delicate than firmer chisels and so if they are used as 'all-round-jobbers' they will become blunt more quickly and this will necessitate unnecessary sharpening. Do be fair to your chisels; use the bevelled-edge ones only for fine work and keep the firmer chisels for the rough work.

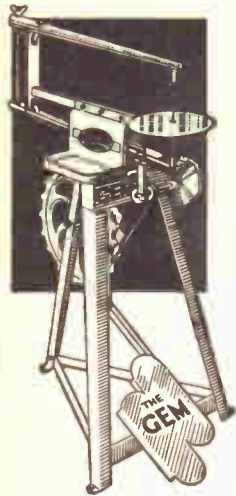
plan to keep a couple of spare handles handy in the workshops for replacements.

Before using a chisel, make sure that the timber is free from nails, bolts etc. that might damage or blunt the cutting edge. This is particularly important when working with second hand timber.

Never use your chisels as substitutes for other tools. Don't use them as heavy duty levers and never attempt to use a chisel as a screwdriver no matter how desperate the situation may be.

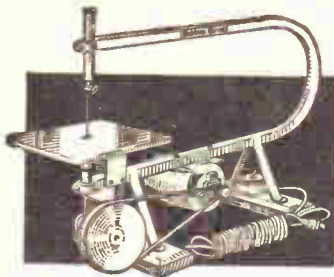
Good service cannot be expected from blunt chisels so it is essential that they are kept sharp at all times. If you examine the cutting edges of your chisels you will find that there are two distinct angles; a grinding angle and a sharpening angle. These are usually 25 degrees and 35 degrees respectively as shown in Fig. 2. The grinding of a chisel is done on a grinding wheel which can either be driven with the aid of an electric motor or be hand operated. For the sharpening process, an oilstone is required.

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HC 121

12/3/58

# Replies to Readers

## Is this YOUR Problem?

### Cleaning a Skin Rug

**I SHOULD** greatly appreciate your views on the cleaning of some long-haired sheep-skin rugs, in their natural shape and form, each with a backing of felt. They are soiled and rather tangled. (R.C.—Leighton Buzzard.)

**IN** these days of great advancement in commercial cleaning services, the most practical method would be to send the rugs to a first-class firm of cleaners, or to a regular furriers. If, however, you wish to try the cleaning process yourself, an old-fashioned but effective way is first to remove the felt backing and wash and dry it in the usual way, and afterwards to replace it. The rugs should first be well shaken and brushed with a

Black smoke will be given off. White smoke can be produced by bringing a sponge saturated with strong ammonia (specific gravity 0.88) close to a sponge saturated with strong hydrochloric acid. This will probably give the more satisfactory result, but care should be taken not to handle the sponges with the bare skin. Either of the liquids, if they come in contact with the skin, should be flushed off with plenty of water.

### Painting a Boiler

**COULD** you suggest a remedy for rust on a galvanised (electric) wash boiler? I have tried aluminium paint, but this keeps peeling off. Is there any preparation on the market I could use? (J.S.—Fochabers.)

**THE** important thing is first to remove the rust, using one of the preparations sold by ironmongers, as well as emery cloth. This should be followed immediately with a heat-resisting paint. Bath enamel or Valspar should do.

### Colouring Water

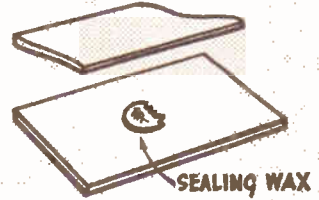
**CAN** you advise me as to what cheap and effective chemicals, or otherwise, to use in colouring water? I want to use it in decorating. I intend to colour the water and fill jars and bottles and place lights behind them. (G.P.—Bude.)

**THE** cheapest method of colouring water for your purpose, is to use red, green, blue and violet inks, or cake icing colours, suitably diluted with water. Chemicals will give a wider range if desired, and the following are very suitable for the purpose:—

Cobalt chloride	red
Potassium dichromate	orange
Potassium chromate	yellow
Nickel sulphate	green
Copper sulphate	mid-blue and pale blue
Copper sulphate and clear ammonia	deep blue
Methyl violet	violet
Potassium permanganate	purple

Strength will have to be a matter of judgment, for effectiveness depends on the thickness of solution through which the light must pass. To make up the solutions, powder the chemicals and stir them into the water, a little at a time, until the required depth of shade is

### MARKING-OUT AID



Ordinary sealing wax can be very helpful when marking out component parts, especially if they be small.

Apply a blob of softened sealing wax to a piece of sheet metal and press the component part on to the blob. The thin film of sealing wax which will spread out between the two surfaces will set hard to enable the marking out to be accomplished without fear of the part moving or twisting during the operation.

When the marking out is completed insert a penknife blade or screwdriver end between the sheet metal and the part in order, to separate. (G.H.H.)


\*\*\*\*\*  
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reached. In the case of copper sulphate and ammonia for deep blue, first dissolve the copper sulphate, and then add ammonia little by little until the solution deepens no more; this solution can then be diluted with more water if it appears too deep, of course.


### Stage Smoke

**I HAVE** to do a little effect work on the stage (amateur), and my problem is to create a cloud of smoke or vapour to hide the entrance of a person, without any accompanying noise. I would be very grateful if you could inform me of a reasonable method. (J.K.—Cumberland.)


**S**MOKE production is limited under the given circumstances not only by noise, but also by toxicity of the fumes in a confined space, and the necessity for simplicity. It is suggested that camphor be dissolved in methylated spirit and one-eighth of the final volume of oil of turpentine be mixed in. Saturate cotton wool with this solution and ignite it.

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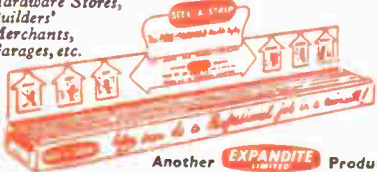


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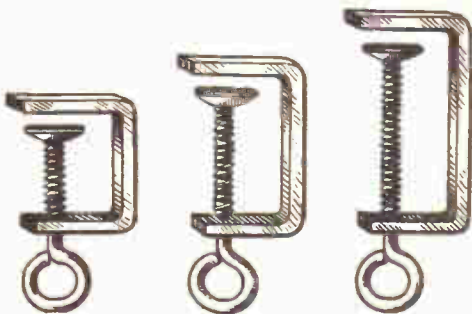
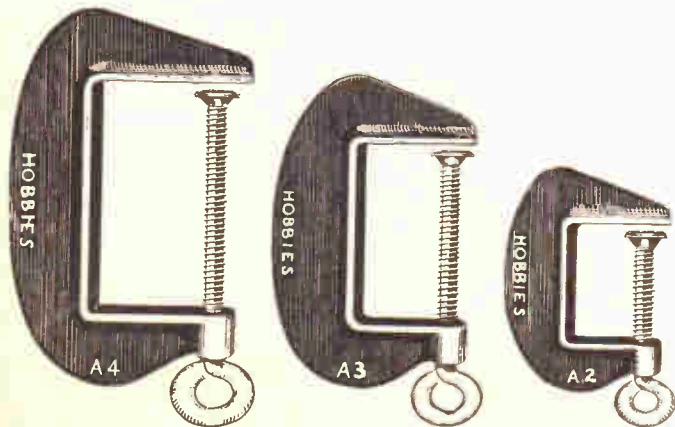
STAMPS — lots over 1000, no G.B., with 350 different each lot, price 4/6 each lot. — Box No. 34, Hobbies Weekly, Dereham, Norfolk.

MATCHBOX crystal receiver parts and instructions, 3/6. Reception guaranteed. — Write BCM/ALEXTONE, London, W.C.1.

## ALL-STEEL LIGHT CRAMPS

Every worker will have found the need for cramps such as these. Indeed, no tool kit is complete without them. For holding work together after gluing they are just the thing. Made from strong steel with thread which will not wear under normal usage.

2 in. 1/6 2½ in. 1/7 3½ in. 1/8 4½ in. 1/9



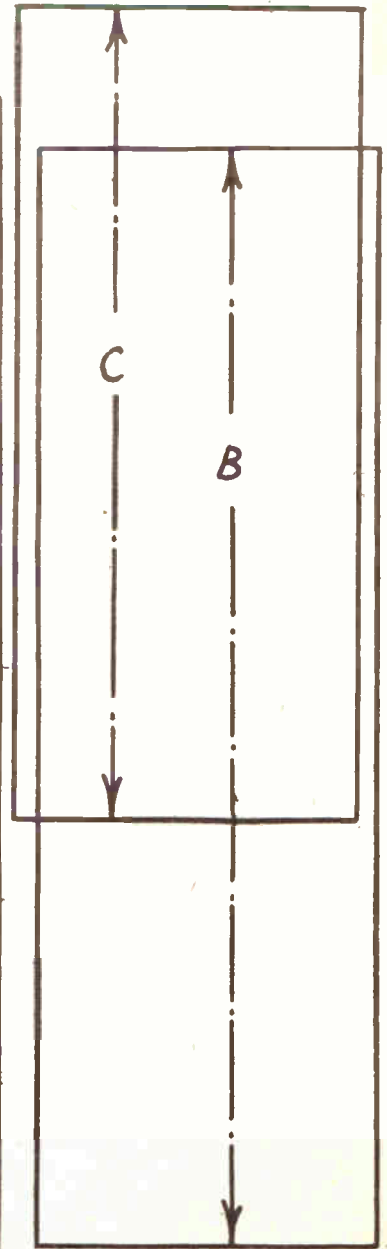
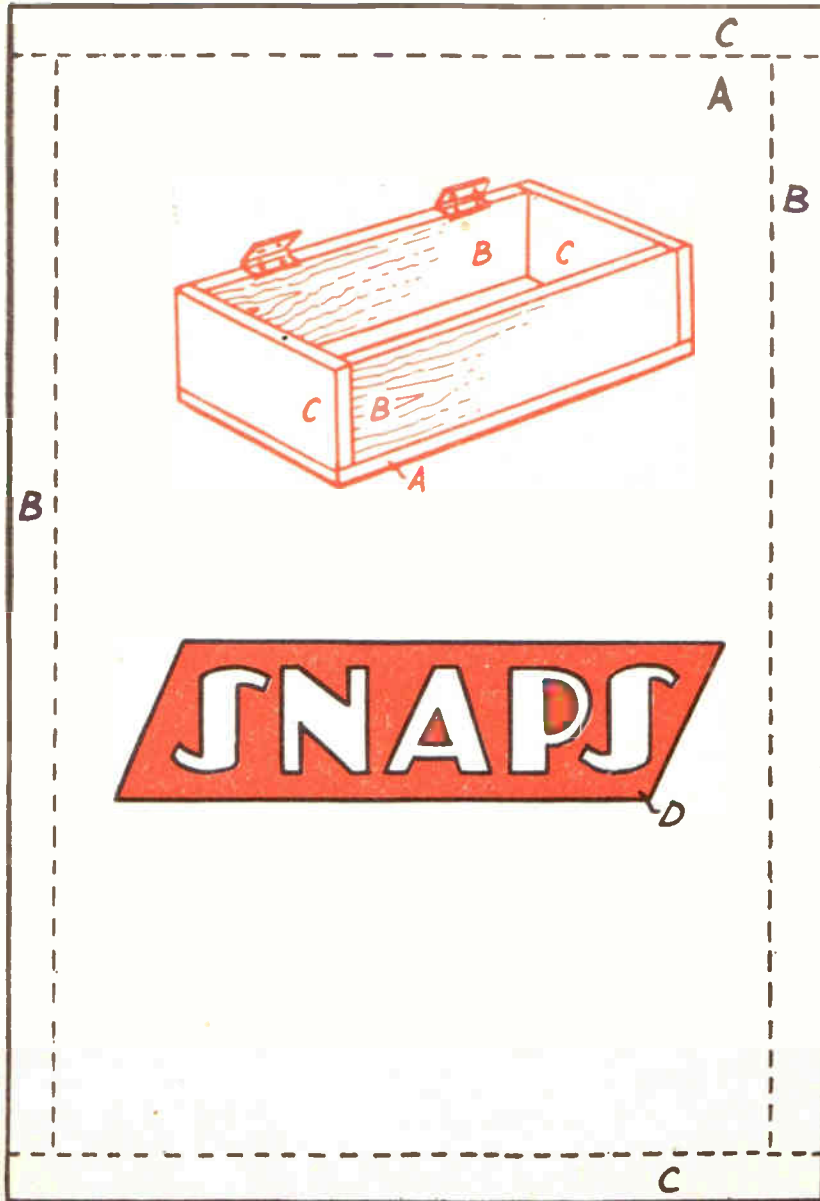
## HOBBIES 'A' CRAMPS

These are heavy cast cramps made sturdy and strong so they will not bend under any job. The space between jaws is sufficient to take any work usually undertaken by the handyman.

A2	A3	A4
2 in. 4/9	3 in. 5/6	4 in. 6/3
A5	A6	
5 in. 7/3	6 in. 8/-	

HOBBIES LTD. (Dept. 99), DEREHAM, NORFOLK

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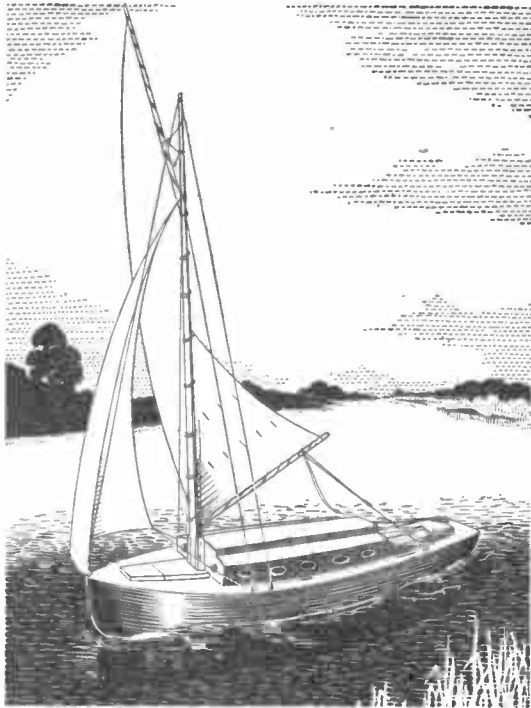
**THE HUMBER OIL COMPANY LTD., MARFLEET • HULL • ENGLAND**





# DESIGN No. 3254

## AUXILIARY SAILING CRUISER 'JAPONICA'

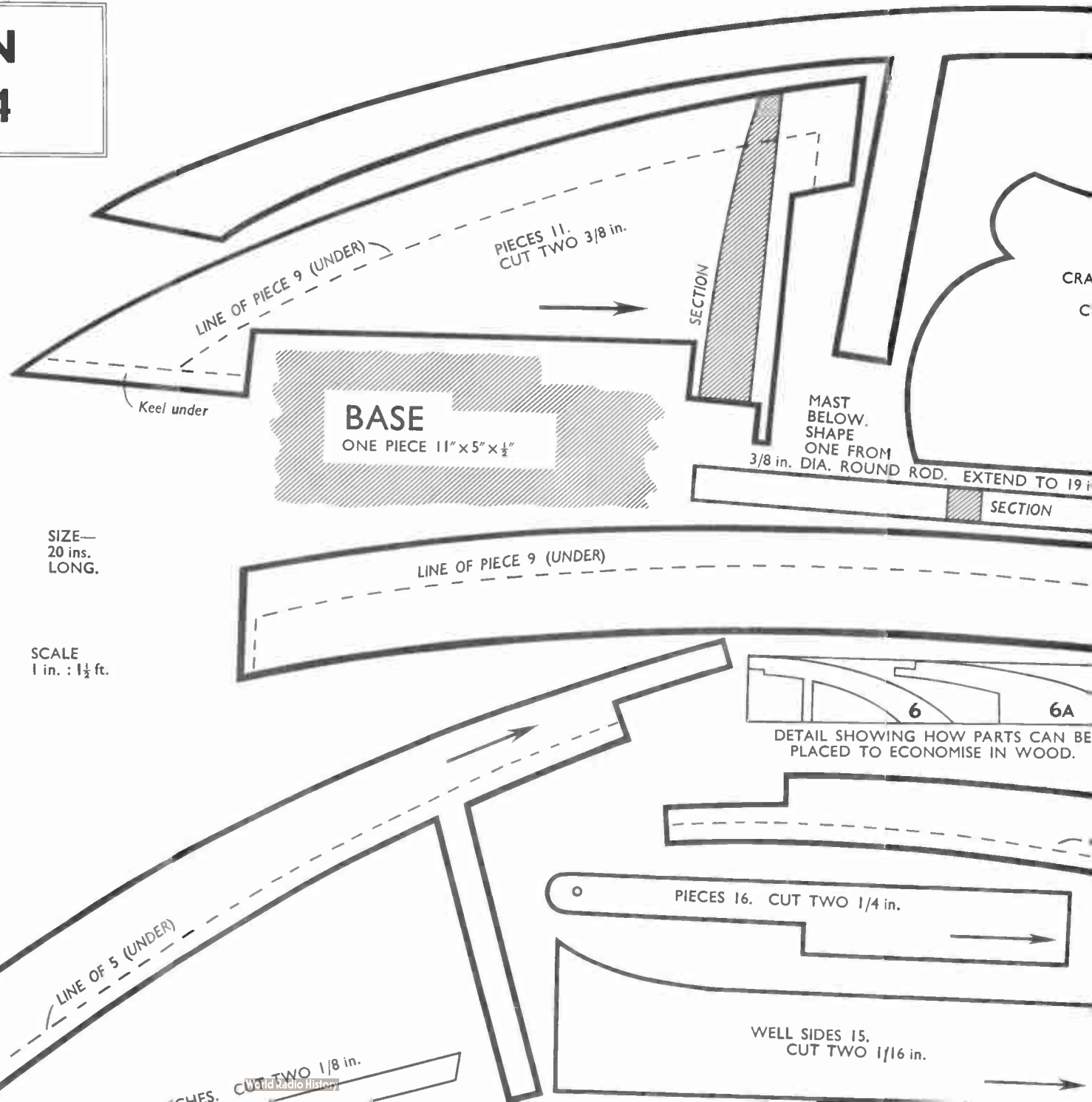


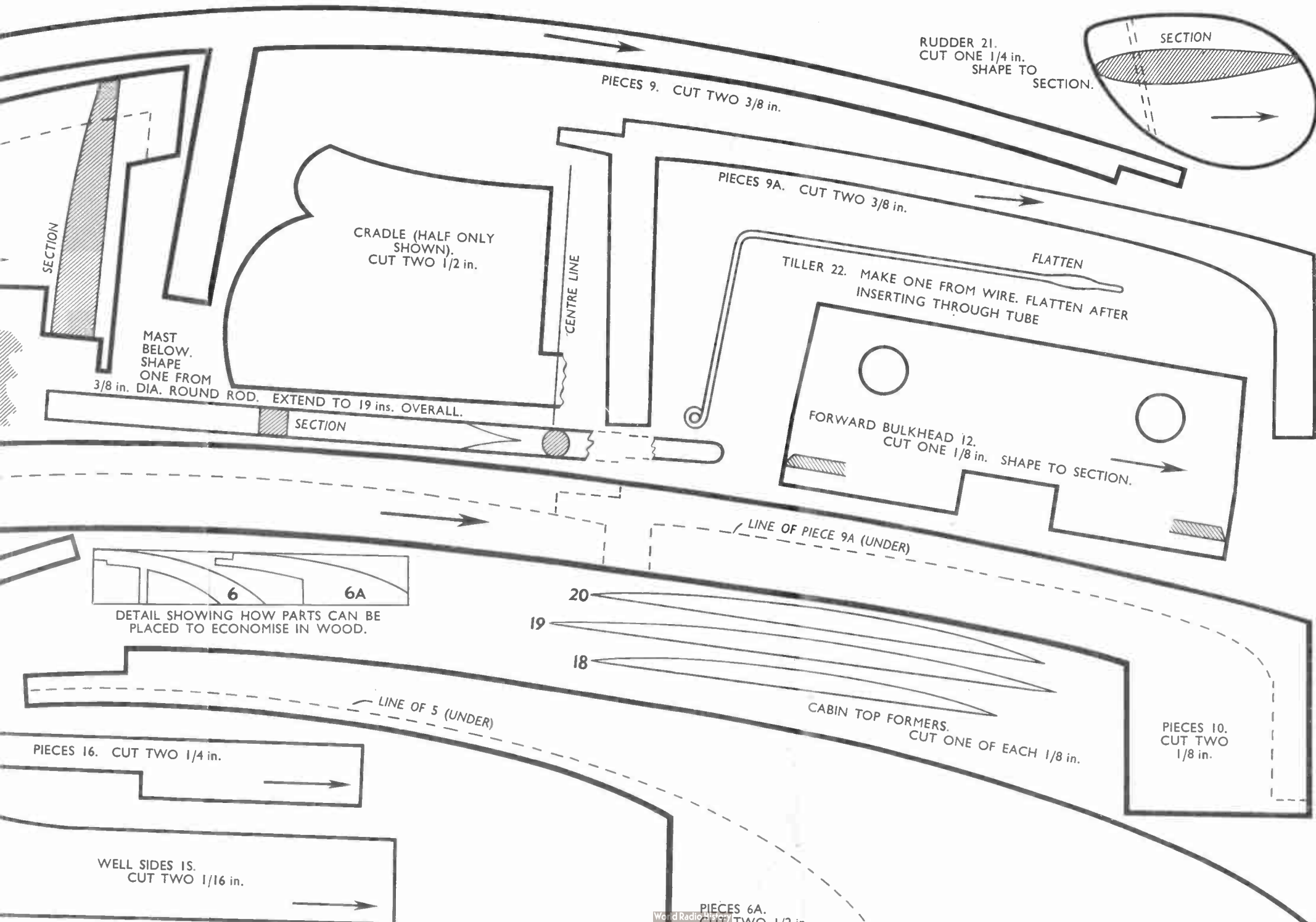
SIZE—  
20 ins.  
LONG.

SCALE  
1 in. : 1½ ft.

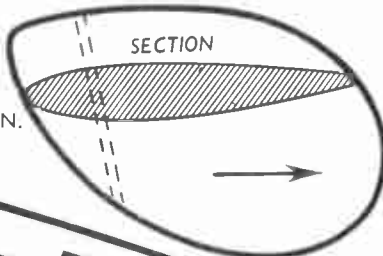
A KIT OF MATERIALS FOR MAKING THIS DESIGN  
IS SUPPLIED BY HOBBIES LIMITED  
DEREHAM, NORFOLK.  
PRICE ON APPLICATION.

THE ARROWS  
INDICATE DIRECTION  
OF GRAIN  
OF





RUDDER 21.  
CUT ONE 1/4 in.  
SHAPE TO SECTION.



PIECES 9. CUT TWO 3/8 in.

CRADLE (HALF ONLY SHOWN).  
CUT TWO 1/2 in.

PIECES 9A. CUT TWO 3/8 in.

FLATTEN

TILLER 22. MAKE ONE FROM WIRE. FLATTEN AFTER INSERTING THROUGH TUBE

MAST BELOW. SHAPE ONE FROM 3/8 in. DIA. ROUND ROD. EXTEND TO 19 ins. OVERALL.

FORWARD BULKHEAD 12. CUT ONE 1/8 in. SHAPE TO SECTION.

LINE OF PIECE 9A (UNDER)



DETAIL SHOWING HOW PARTS CAN BE PLACED TO ECONOMISE IN WOOD.

20

19

18

CABIN TOP FORMERS. CUT ONE OF EACH 1/8 in.

PIECES 10. CUT TWO 1/8 in.

PIECES 16. CUT TWO 1/4 in.

WELL SIDES 15. CUT TWO 1/16 in.

PIECES 6A. CUT TWO 1/2 in.

A KIT OF MATERIALS FOR MAKING THIS DESIGN IS SUPPLIED BY HOBBIES LIMITED DEREHAM, NORFOLK. PRICE ON APPLICATION.

THE ARROWS INDICATE DIRECTION OF GRAIN OF WOOD.

PIECES 6. CUT TWO 1/2 in.

LINE OF 5 (UNDER)

CRUTCHES. CUT TWO 1/8 in.

WELL SIDES 15. CUT TWO 1/16 in.

LINE OF 6 (UNDER)

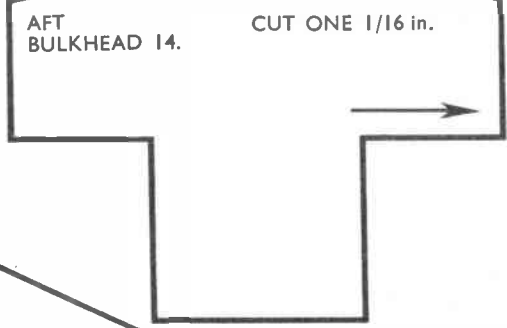
PIECE 6 (OVER)

PIECE 6A (OVER)

WASTE FOR TRIM

PIECES 17. CUT TWO 1/16 in.

9



7

7

6

CLEWS. MAKE FOUR FROM THIN PLYWOOD.

LINE OF 6A (UNDER)

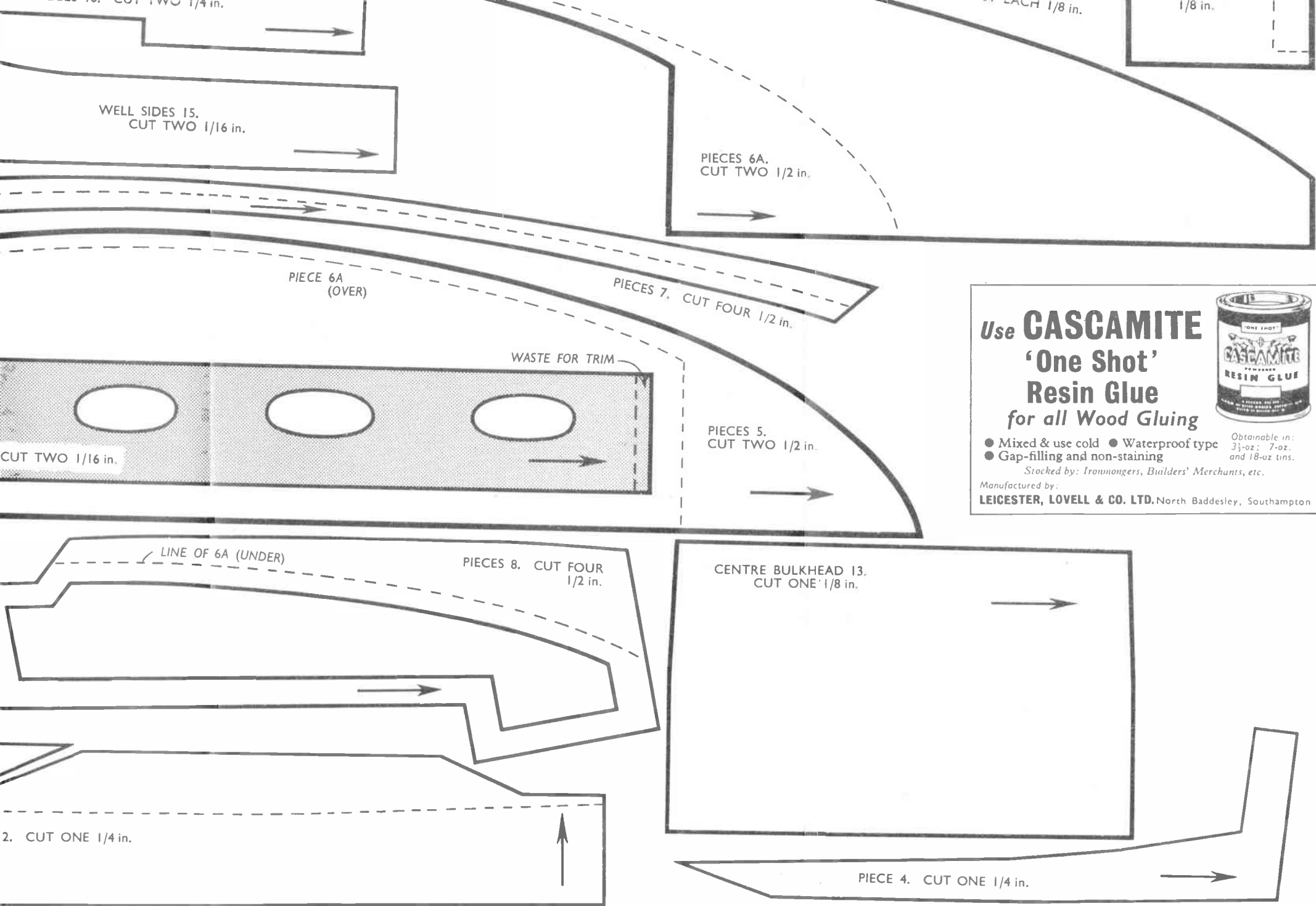
PIECE 1. CUT ONE 1/4 in.

5

PIECE 2. CUT ONE 1/4 in.

PIECE 3. CUT ONE 1/4 in.

PRINTED IN ENGLAND.



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 for all Wood Gluing



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