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NUMBER 3450

THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

Also in this issue:

MODEL OF A
LIFEBOAT HOUSE

COLLECTORS' CLUB—
LATEST LABELS

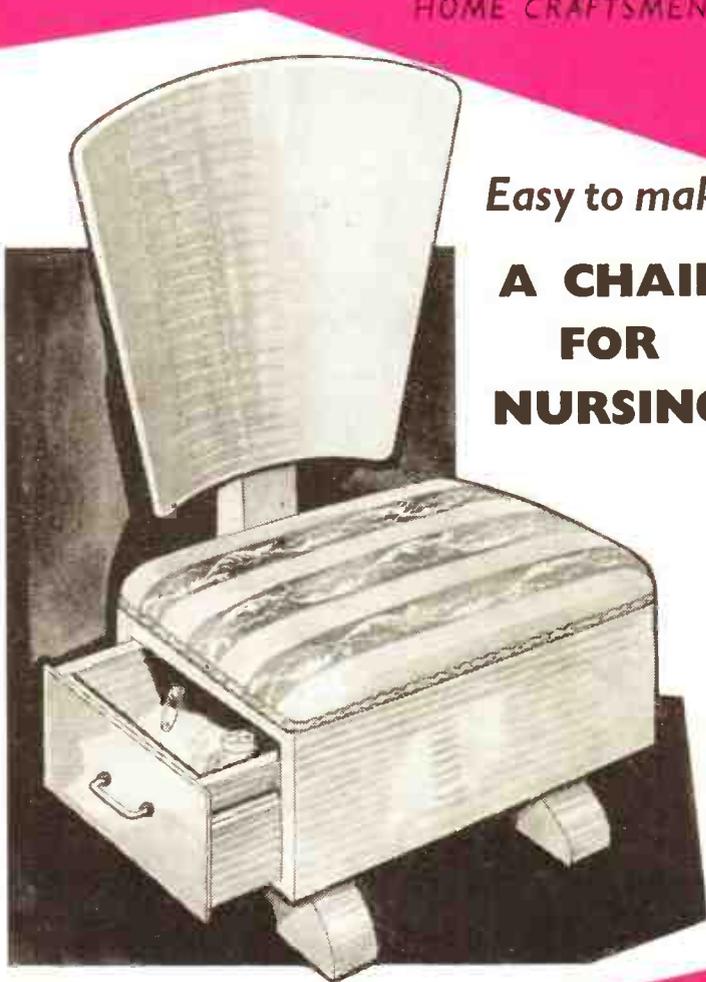
TRANSISTORS—
POWER OUTPUT

MODEL RAILWAY
FEATURE

DISC BREAK
PERSONALITIES

PATTERNS FOR
VASE HOLDER

ETC. ETC.



Easy to make

A CHAIR FOR NURSING

WITH
HANDY
DRAWER



Up-to-the-minute Ideas

Practical designs

Pleasing and profitable things to make

World Radio History

5^D



This set of stamps marking the '15th Anniversary of Nationalized Industries' was released by Austria during September. The 'World Bank Congress 1961 at Vienna' was also marked on 18th September, by the issue of a special stamp

A SET of stamps from Poland commemorating the 40th Anniversary of the 3rd Silesia's Uprising was released during September. The 60 gr. depicts the Uprising monument on the St. Anna's Mountain. The 1.55 zk. shows the Cross of Silesia's Uprisers.

POLISH SPACE SET

The Second Space Flight set from this country has just arrived. Russia's second spaceman, Titov, appears on the 40 gr. value, and the Globe and Dove of Peace is on the 60 gr. (see illustrations below).

Also included were the stamps marking the 6th European Canoe Championship. Here are details of the designs: 40 gr. Starting two one-person canoes. 60 gr. Two four-person canoes. 2.50 zk. Oar and ribbon with Polish national colours.



Advertisers' Announcements

5 STAMPS Cat. 7/3 FREE

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THE PRIORY STAMP COMPANY
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50 STAMPS FREE to applicants for fine stamps on approval. Discounts and Post Paid. — McKendrick (H), 9 Nethercourt Farm Road, Ramsgate, Kent.

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World 3670 History

LATEST FROM WEST GERMANY

FURTHER values of the permanent series of 'Famous Germans' appeared from West Germany during September. Designs include 5 pf. olive — 'Albertus Magnus'; 15 pf. blue — 'Martin Luther'; 1 Dm. violet — 'Annette von Droste-Hulshoff'.

October 7th saw the release of two more stamps in the above series, a 25 pf. orange depicting 'Balthasan Neumann', and a 30 pf. grey depicting 'Immanuel Kant'.

On October 26th a hundred years passed since since Philipp Reis first demonstrated his telephone. A stamp to mark this event showed the apparatus used by the inventor.



Reis commemorative

Following a suggestion made by the Council of the Protestant Church in Germany the Deutsche Bundespost is issuing a special stamp for the benefit of the Protestant Advent Collection under the motto 'Fight against hunger'. It shows a child suffering from malnutrition, with a bowl in his hands.

The following further values of the permanent series of postage stamps 'Famous Germans' were issued on 1st December 1961. 50 Pf, Johann Wolfgang von Goethe, russet; 80 Pf, Heinrich von Kleist, dark brown.

* * *

SWEDEN

Three new Swedish stamps appeared on December 9th to mark the sixty-year jubilee of the first distribution of the Nobel prize in 1901.

First Day Covers with a complete series of the new stamps can be obtained from the Post Office Section for Philately, PFA, Fack, Stockholm 1, Sweden.

Each week provision will be made on these pages for advertisers' offers. Classified rate 6d. per word prepaid. Display rates on application.

POWER OUTPUT STAGES

THE output stages so far described can give enough volume for many purposes. When even greater power is required, a large output transistor, or push-pull stage, will be used.

Single large output transistors require too much current for economical running from dry batteries, but are often used when an accumulator is available. They are thus very handy, indeed, for a car radio receiver, or for a power amplifier, for use in a vehicle, which can be operated in conjunction with a transistor portable.

Power stage

A powerful output stage which can be run from a 12V. vehicle accumulator is shown in Fig. 24. This kind of circuit is used in many car radio sets, and it is

capable of an output of 2W to 3W, according to the actual transistor, and other details. Similar circuits may be used with a 6V. supply, the transistor and component values being chosen to suit.

By 'Radio Mech'

The stage, with speaker, may be built up in one unit. The primary of the driver transformer is then connected to the transistor portable, or other source

of signals. In ready-made equipment with separate speaker, the output stage may also be with the speaker, the receiver section containing the earlier stages only.

If the power stage is used in conjunction with a portable, a twin lead is taken from the portable output stage to the driver transformer. The speaker in the portable should be disconnected. The simplest way to arrange this is to fit a jack socket in the receiver, and to wire the power stage to a plug to fit. The jack socket can have contacts which open when the plug is inserted, to disconnect

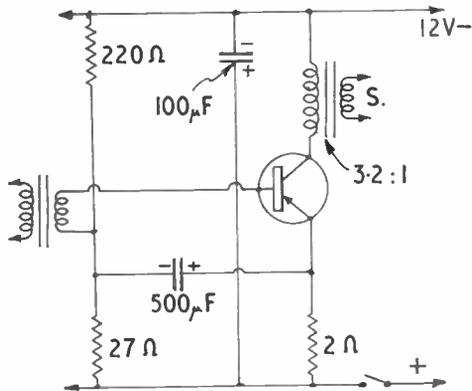


Fig. 24—Power stage for car radio, etc.

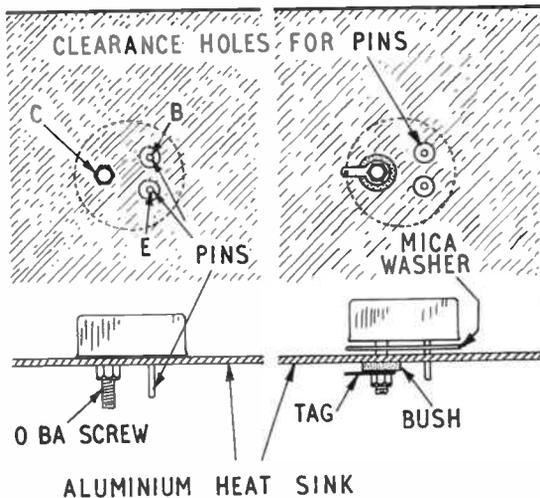


Fig. 25—Power transistors attached to heat sink

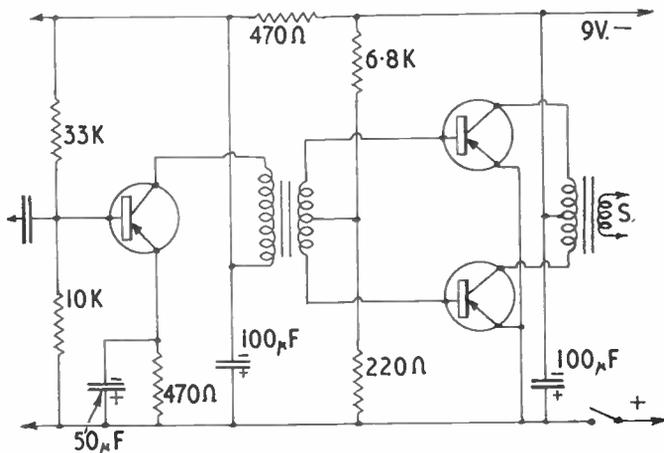


Fig. 26—Push-pull output for portable receivers

the speaker in the portable.

The circuit in Fig. 24 is suitable for a V30/20P, V15/10P, or similar transistor. The resistors should be wire-wound, and if a 6V. or other type of transistor is used, the values must be those specified for it.

Power transistors of this kind have two pins, and a large (0 BA) screw. Connections are as in Fig. 25, when looking at the transistor from below.

Heat generated in the transistor must be conducted away, and a 'heat sink' is used for this. This item is a plate of fairly thick aluminium, to which the transistor is bolted. An area of about 45 to 50 sq. in. will be sufficient. That is, the plate can be 7 in. by 7 in., or of any equivalent size, or larger. This plate will usually be shaped so that it forms a chassis for the other parts, or a mounting for the speaker. Exactly the same

result is obtained by bolting the transistor to an aluminium chassis. A free flow of air should be possible round the chassis, plate, or heat sink.

Cooling is most effective when the transistor is bolted directly to the heat sink, clearance holes being left for the Base and Emitter pins. The heat sink or chassis is then electrically in contact with the Collector. This is satisfactory if the heat sink is insulated from all other components, and the vehicle.

If the heat sink or chassis is in contact with the vehicle, or is used as a common earth circuit, the transistor must be insulated electrically. This is done by using a thin mica washer under it, with a bush for the screw, as also shown in Fig. 25. The correct washer and bush can be obtained with the transistor. All three transistor connections are then insulated from the metal.

Whatever mounting is used, the three holes should be drilled without undue pressure, and any roughness should be removed with a file. The transistor is bolted tightly down, and the heat sink under it should be absolutely flat, so that heat can easily pass.

The output transformer, used to couple the speaker, has to be a large component, intended for this purpose. The current is around $\frac{1}{2}$ ampere to 1 ampere or more (500–1,000mA), and the transformer must have windings able to carry this.

Push-pull output

Most ready-made transistor portables have some type of push-pull output stage. This will give 100mW to 500mW or more, according to the transistors, yet consumes so little current that small dry batteries may be used.

A typical circuit of this kind is shown in Fig. 26. This is intended for one OC71 and two OC72 transistors. The OC71 acts as an ordinary amplifier. The two OC72 transistors work together, and should be very similar. It is, therefore, usual to obtain two, or a 'matched pair' which have been chosen for use together. This avoids lack of balance through differences in the transistors.

Miniature components may be used throughout, with this circuit, and current for the whole receiver can be drawn from a small 9V. battery.

For best possible results, both transformers should be intended for the transistors (e.g., OC71 and two OC72's). Suitable miniature transformers are easily available.

To obtain an output of 500mW, an OC81D and pair of OC81 transistors may be used. Values in Fig. 26 are changed to those in brackets: 33K (68K), 10K (22K), 470 ohm emitter (1K), 6.8K (4.7K), and 220 ohm (82 ohm). A 4.7 ohm resistor is added

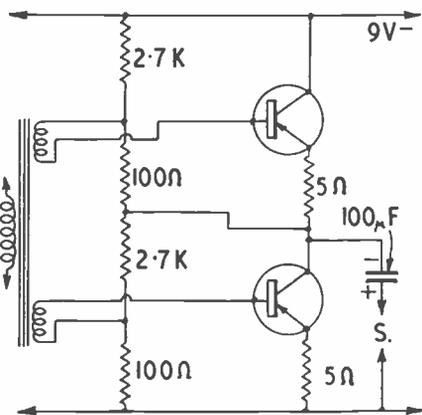


Fig. 27—Miniature output stage

between the pair of emitters and battery positive line. The two transformers intended for the OC71 and OC72's are not suitable for the OC81D and OC81's.

The circuit in Fig. 26 will give enough output for all normal purposes, with very good speech quality, and low battery drain.

Miniature stage

The circuit in Fig. 26 is often used in midget or pocket sets. It is, however, possible to eliminate the speaker transformer, by using the coupling circuit in Fig. 27. The values given are for a pair of OC72 transistors, and resistors should be within 5 per cent of the marked value (see Fig. 3).

Earlier parts of the circuit can be exactly the same as in Fig. 26. The transformer has two secondaries, typical make being the Fortiphone A443.

The speaker is not a 2/3 ohm model, but a 35 ohm or similar type, such as would be directly coupled to a single transistor, as in Fig. 16. Each transistor is only working with half the voltage, but

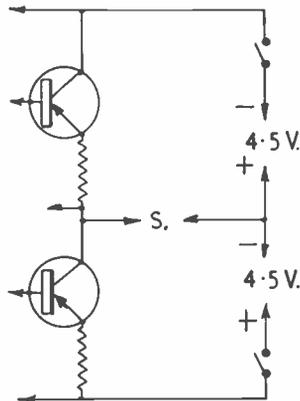


Fig. 28—Circuit for two 4.5 V batteries.

there are no losses associated with the output transformer, so very good results may be obtained. A 75 ohm speaker may be used, and the output is then about 100mW. The circuit is also suitable for receivers of other than extremely small size, and the use of a larger speaker will give more volume.

Tapped battery

If the 9V. supply is obtained from two 4.5V. batteries, in series, the speaker can be connected to the junction of the batteries. This is shown in Fig. 28, and the 100 microfarad coupling condenser is no longer required. If a 35 ohm speaker is used, an output of about 200mW may be obtained.

The on/off switch needs to have two sections, so that both battery circuits can be broken. The two 4.5V. supplies can be obtained from midget deaf-aid or pen-torch type cells. Small 9V. batteries, as sold for transistor sets, do not have a tapping, so the circuit in Fig. 27, or that in Fig. 26, should be employed, with this kind of battery.

If a receiver or amplifier is being constructed, and all parts are to be obtained, the circuit in Fig. 26 is among the most straightforward and satisfactory. But if a 35 ohm or similar speaker is to hand, the circuits in Fig. 27 or Fig. 28 will allow it to be used. Such a speaker could not be employed with Fig. 26, because the normal type of output transformer is intended for a 2/3 ohm speaker.

There is no need to use the full 9V. supply, as very good results can be obtained with a 7.5V. or even 6V. battery. More than 9V. should not be used, where this voltage is shown.

Surplus transistors

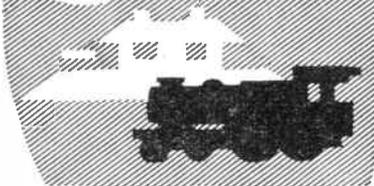
As mentioned, cheap surplus transistors may require slightly different operating conditions, for best results. If a meter is available, it can be connected in series with the centre tap of the output transformer, in Fig. 26, to read the combined collector current. This current should be around 3mA to 5mA, with no signal, and should jump up to 12mA to 15mA, or even more, on peaks of speech or music.

If the current is much too high, with no signal, reduce the value of the 220 ohm resistor slightly. If the current is much too low, and does not rise with speech or music, increase the value of this resistor. A change of 50 or 100 ohms or so either way should be worth trying, with surplus transistors which are giving distorted results. Such resistors are only a few pence each, and two or more may be connected in series or parallel, to obtain various values.

Next week's article in this series will suggest various experimental circuits for receivers and amplifiers.

NEW Thoughts on

RAILWAY MODELLING



I HAVE given details for making up your tunnels and embankments, and the like, and mentioned finishing these with flock powder, trees and bushes, etc. I now propose to give you a little help in this direction, and I am sure you will find the work interesting and rewarding.

We got up to the stage of covering our embankment with cloth and plaster, and I suggested that you give the whole thing a coat of paint. The idea of this was to help to bind the plaster together, to make it damp-proof, and also to act as a key for the subsequent work. Assuming that you have done all that, the next thing is to cover the structure with flock powder or scenic compound. We are going to cover the embankment to make it look natural, so we need either some flock powder, or compound, in a spray or otherwise, and the colours should be green, to represent grass, and brown, to simulate earth, with, perhaps, a few touches of other colours. We shall also need some paint to hold the flock down.

Use a strainer

The best paint for the job, I have found, is cellulose. This dries quicker than oil paint, and seems 'stickier' when wet. It really holds the flock powder in place. You can use a spray for putting the flock powder on, but I have found

that a better tool for the job is a wire mesh strainer, the large sort that women-folk use in the kitchen for straining soup, etc. They are quite cheap. You want to get one about 4 in. to 5 in. in diameter if possible. Choose one with a fairly open mesh. The idea is to break up any lumps of flock and spread it evenly over the surface to be treated. You could make a strainer yourself by simply making up a small box, as it were, without top or bottom, and over the bottom nail a piece of wire gauze of a suitable mesh, say, with holes about 1/32 in. square.

FINISH FOR EMBANKMENTS

By F. A. Barrett

The method of application of the flock is as follows. Paint an area of your surface about 6 in. square. Put plenty of paint on, puddle it on, then put your flock powder into the strainer, and place a piece of card or wood over the top. Hold the strainer over the painted surface, and tap the card. Move the strainer slowly over the painted area, and make sure that you get plenty of flock on the surface. You want it to be heaped up, so that you cannot see any bare patches. Then get a piece of hard-board or wood, lay it on the treated surface, and press down well, so that the

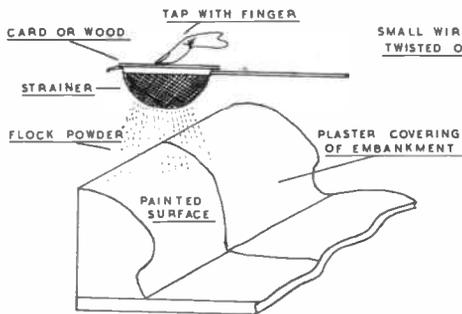
flock is pressed into the paint. Leave the flock to set. You can then treat more of the surface, but do not remove any of the excess flock until you are sure that the paint is thoroughly dry. And here is a point to remember — the paint will take longer to dry as it is covered with the flock powder. When you are certain that all is dry you can then brush off the excess flock, and this can be used again on another part of the model. I use a vacuum cleaner to remove the flock. But make sure you clean the bag of the cleaner before the operation and afterwards. Empty the bag, and keep the flock for future use. It is perfectly safe to use the vacuum cleaner in this way.

If you do not wish to mess about with flock powders and compounds you can, of course, just paint the surface in the colours of your choice. The best paints for this purpose are the Humbrol Scenic Paints. These can be had in a variety of colours, and as they provide a matt surface they look really well. But my choice has always been for flock powders — they seem to look more natural.

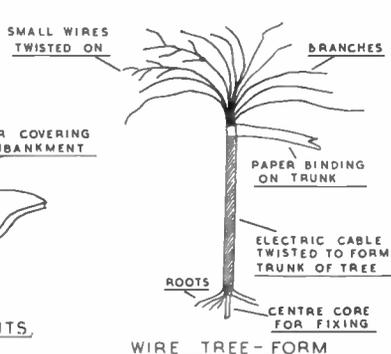
Completing the picture

Now, when you have the flocking done, and your embankment or hill looks right, the next step is to put some bushes and trees on it to complete the scenic picture. Bushes are quite easy to make. You can purchase from Hobbies branches, and most model shops, boxes of dyed lichen. This is a very useful material. Get some of this, and break it up into small pieces. These can be dotted about here and there, and they will give a perfect appearance. Another very useful material in this respect is sea grass fern. This can be obtained at most art and craft shops. It is used mainly for putting with the modern small plastic flowers. It is good for little bushes, and can be trimmed to almost any shape.

Trees you can buy ready made. There is an excellent range by Messrs. G. Slater & Sons. These are very reasonable, and there are also some kits by Merit. To quote a line from an old song 'Only God can make a tree', and this is very true. Tree making is one of the most difficult jobs, and I speak with the authority of thirty-five years of model making. One can make a reasonable facsimile of a tree, and I have seen some



APPLYING FLOCK TO EMBANKMENTS.



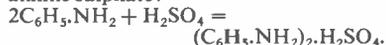
WIRE TREE-FORM

CHEMISTRY AT HOME

HAVING dealt with a few of the more interesting inorganic sulphates in the previous articles, we now come to the organic or carbon containing sulphates. There are many of these. Some are interesting in themselves, some as the raw material of further experiments.

3—EXPERIMENTS WITH SULPHATES

Aniline, $C_6H_5.NH_2$, is available in most home laboratories. As this is a base it readily forms a sulphate. To prepare aniline sulphate, $(C_6H_5.NH_2)_2.H_2SO_4$, boil up 100 c.c. of water in a beaker and stir in 10 c.c. of aniline. Now stir in dilute sulphuric acid, H_2SO_4 , little by little until the oily drops of aniline just disappear. You now have a solution of aniline sulphate:



Remove the bunsen or spirit lamp and let the solution cool down overnight. White crystals of aniline sulphate separate out. Pour off the mother liquor into an evaporating basin and evaporate further on the water bath, allowing to cool again overnight, when a further crop of crystals will be obtained. Put both crops of crystals on a clean porous brick to drain and dry.

By acting on aniline sulphate with potassium dichromate, $K_2Cr_2O_7$, the dye pseudo-mauveine, $C_{24}H_{20}N_4$, is produced as the sulphate, $(C_{24}H_{21}N_4)_2SO_4$. This is very similar to mauveine proper, $C_{27}H_{24}O_4$, which was the first synthetic dyestuff and was produced by a similar reaction on aniline containing p-toluidine, $CH_3.C_6H_4.NH_2$. Stamp collectors will unknowingly be familiar with mauveine, for it was used to colour the Great Britain 1d. lilac stamp of 1881.

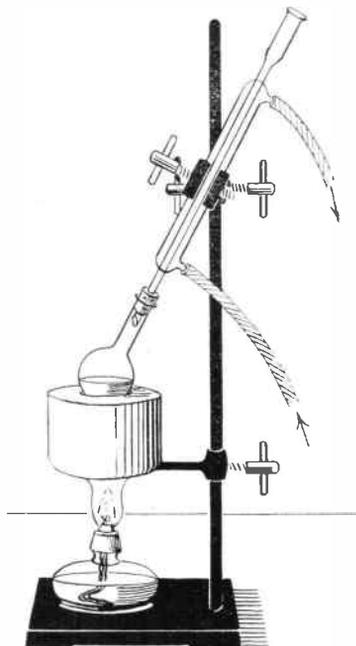
To prepare pseudo-mauveine sulphate dissolve in separate lots of 250 c.c. of hot water 6 grams of aniline sulphate and 6·6 grams of potassium dichromate. Let the solutions cool, mix them, stir well and leave the mixture to stand overnight. Crude pseudo-mauveine sulphate will have separated out as a black precipitate. Filter it off, wash it two or three times on the filter and let it dry.

To try out its dyeing properties, rig up a reflux apparatus (see diagram) on a water bath. Put 10 c.c. of methylated spirit in the flask and a small pinch of pseudo-mauveine sulphate. Let the methylated spirit boil until a deep red solution has been formed.

Wet out a small piece of white wool in about 50 c.c. of boiling water, lift out the wool, pour in the dye solution and replace the wool. Stir the wool around in the cooling solution at intervals of not longer than one minute for the next half hour. Insufficient stirring will result in a patchy dyeing.

Now wash the wool in cold water and let it dry. The wool will have been dyed dull violet.

Grey shades, too, may be obtained with this dye. Again wet out a piece of white wool in 50 c.c. of water. Dissolve a small pinch of pseudo-mauveine sulphate by warming it with 5 c.c. of dilute (about 5 per cent) hydrochloric acid, HCl, in a test tube. Lift the wool and pour in the red dye solution. Stir for half an hour and then wash in cold water. The wool will be dyed grey.



Heating under reflux

A useful test for the detection of aniline may be tried with copper sulphate, $CuSO_4.5H_2O$. Shake a drop of aniline with 50 c.c. of water. When it has dissolved, add a little copper sulphate solution. A splendid apple-green coloration appears. This is due to the formation of a double compound of aniline copper sulphate, $(C_6H_5.NH_2)_2CuSO_4$.

In the solid state this compound has a lovely metallic green appearance and makes an interesting specimen. To prepare a specimen first dissolve 6·7 grams of copper sulphate in 30 c.c. of hot water and let the solution cool. Meantime, shake 5 c.c. of aniline with 150 c.c. of cold water until it has dissolved. Stirring rapidly, pour the copper sulphate solution into the aniline solution.

The aniline copper sulphate precipitates as a glistening green semi-solid mass. Thin this by stirring in 10 c.c. of methylated spirit. Filter it off, preferably with the aid of a filter pump, wash with 10 c.c. of methylated spirit, then open out the filter paper on to a porous tile and leave to dry spontaneously. Do not attempt to hasten the drying by heat, for this causes the compound to decompose. In appearance this is one of the loveliest substances known to chemists.

Sulphuric acid combines with alcohols to form sulphates. Ethyl alcohol, C_2H_5OH , which is the principal constituent of methylated spirit, will serve to show the formation of some of these sulphates.

Into a round bottomed flask of 250 c.c. capacity pour 43·5 c.c. of methylated spirit. Measure out 13·5 c.c. of strong sulphuric acid (caution, corrosive to skin; any on the fingers should be flushed off with water and wet sodium bicarbonate applied). Little by little add this to the methylated spirit, swirling the flask and cooling it by dipping in cold water between acid additions.

When all the acid has been added, fit a condenser and heat under reflux as you did when preparing the pseudo-mauveine sulphate solution. Heat for 2½ hours and then let the whole cool. Ethyl hydrogen sulphate, $C_2H_5HSO_4$, is formed in the reaction:



Stir the cold liquid into 250 c.c. of cold water and neutralize the acid liquid by gradually stirring in precipitated chalk (calcium carbonate), $CaCO_3$, which has been made into a cream with water. The liquid is neutral when a drop of it no longer reddens blue litmus paper. Heat up the mixture and filter, preferably with the aid of a filter pump. The filtrate contains ethyl calcium sulphate, $(C_2H_5SO_4)_2Ca$.

● Continued on page 273

MAP MAKING IN MARQUETRY

HITHERTO I have stressed the need to keep the saw-blade at right angles to the saw-table when cutting so that the pieces will slide easily into each other. But a deliberate variation often produces good results.

By H. Stewart

Tilt your saw-table through about five degrees to the right as shown in Fig. 8. The effect will be to cut pieces that are slightly wedge-shaped in section and will therefore enable you to raise them, on the same principle as before, until they are wedged firmly. The thickness of the saw-blade means that in any piece cut out of any other there is bound to be

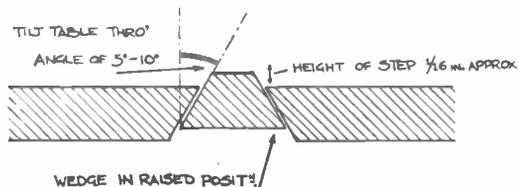


Fig. 8—The tilted table — a cross-section showing the use of the wedge-shaped cut

some sloppiness and play; the thicker the blade the less tightly the pieces fit. It is this fact that we are making use of here.

When the blade is vertical, we can slide the one piece through the other and so keep the one only partially 'slid' through (that is to say, the one raised

through the other to a height of $\frac{1}{16}$ in. as we have seen in the assembling of the map). We must also use balsa cement or some other form of glue to hold the pieces in place. This is all very well, but it is difficult to ensure that a large piece is exactly $\frac{1}{16}$ in. above the other all the way round and that the step between them is even. On the other hand, with a wedge-shaped piece, when it has been pushed into the other, you will find that the difference in height will be even all the way round and gluing is not necessary as it will hold itself.

Of course, the height which I earlier laid down as being $\frac{1}{16}$ in. will vary with the angle of the saw-table, the thickness of the wood and the gauge of the saw-blade. But I suggest that before you start cutting your block you test the angle of

your saw-table on a scrap of wood of the same thickness and alter it to suit the size of step you want.

Naturally this requires an easy way of checking the angle. Fig. 9 shows a quick check that you can make out of anything at hand — card, veneer (as in the photo), paper, etc.

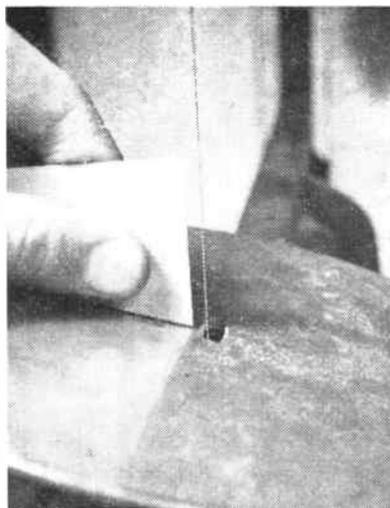
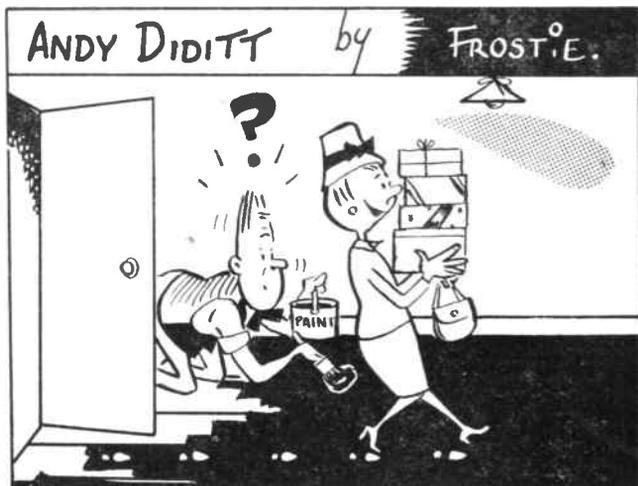


Fig. 9—Getting each piece raised above the next obviously requires the angle of the saw-table to remain constant. Check it as often as possible, and if you cut a jig as shown here, checking becomes much easier. The angle here is slightly exaggerated—it should only be between 5 and 10 degrees.

So there you are. A little care and forethought is all that is really required, and your results should be very fine indeed.

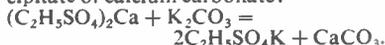


"ANDY!— CAN I SMELL PAINT ?"

● Continued from page 272

SULPHATES

On adding to this a solution of potassium carbonate, K_2CO_3 , until the liquid is slightly alkaline (that is, a drop just turns red litmus paper blue), a solution of ethyl potassium sulphate, $C_2H_5SO_4K$, is obtained, together with a white precipitate of calcium carbonate:



Filter off the calcium carbonate and evaporate the filtrate on the water bath until a drop taken up on a glass rod crystallizes at once on cooling. Then let the main solution cool down overnight. Ethyl potassium sulphate crystallizes out. Filter off the crystals and dry them on a porous tile.

So handy for mother

MAKING A NURSING CHAIR

AS a prospective father it would surely be a labour of love to make up this nursing chair in time for the 'great event'. It is so handy, too, for mother's needs; just the right height and complete with a drawer at the side for pins, powder and odds and ends as shown in the illustration on the front page. You would score full marks if you could make it in secret and present it at the psychological moment.

The seat itself is made in the form of a box into which slides the drawer. The back-rest is nicely curved for maximum comfort and the finishing touch is added by the use of suitable padding as shown in the diagrams.

Study the diagrams carefully before commencing work. Essential measurements are given on the front and side views in Fig. 1 which also gives a good idea of the general construction. The back and front (pieces A) of the box seat are of $\frac{3}{4}$ in. wood, and the top and bottom (pieces B) are $\frac{1}{2}$ in. Pieces B could conveniently be of $\frac{1}{2}$ in. plywood (see Fig. 3).

To commence construction the various pieces should be cut to size ready for assembly. Cut the back-rest C from

2 in. thick wood, the feet D from $1\frac{1}{2}$ in., and the back-rest support F from 1 in. These shapes are shown in the squared diagram in Fig. 2. Enlarge the squares and draw in the shapes square by square.

Screw and glue the back-rest C centrally to the back and similarly fix the feet at the bottom. Screws should be long enough to make a secure joint. Now assemble the seat as seen in Fig. 3.

Notice that the piece E is at the open end and piece G at the opposite end. Pieces E and G are both $\frac{3}{4}$ in. thick.

Screw and glue the shaped support F to the upright C (Fig. 4). These pieces will be halved together as seen in the

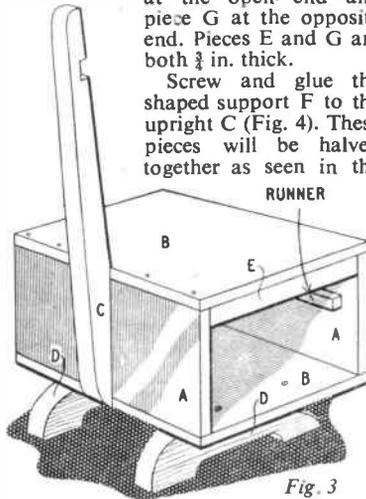


Fig. 3

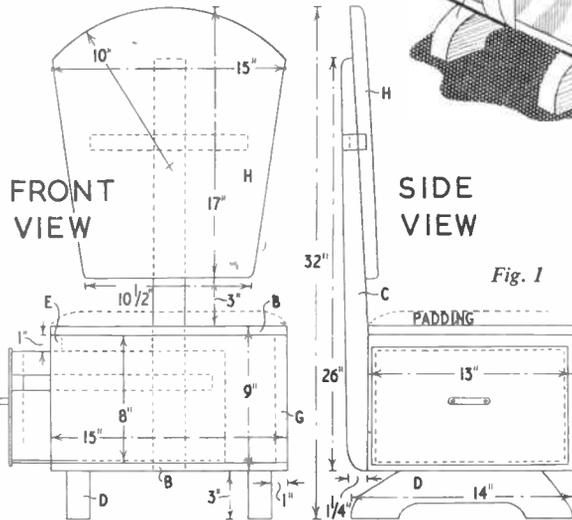


Fig. 1

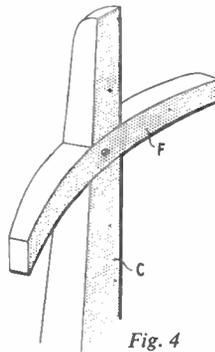


Fig. 4

diagrams. The shaped back is cut from $\frac{1}{2}$ in. hardboard or $\frac{1}{4}$ in. plywood. If the plywood is difficult to bend apply a rag soaked in hot water to the convex side. Do not oversoak or the laminations will part. The back should be screwed and glued in position. Two $\frac{3}{4}$ in. thick runners are screwed inside the box as shown in Fig. 3.

The drawer is made up from $\frac{3}{4}$ in. wood. Fig. 5 indicates how the sides I and J are butted on to the back and front (pieces K). The bottom is of $\frac{1}{2}$ in. hardboard as is the front M. The front overlaps all round. The runners will of course slide in the gaps between pieces I and J. The drawer can be lined with $\frac{1}{2}$ in. hardboard. The drawer handle is Hobbies No. 703, which is a chromium-plated half-round bar $3\frac{1}{2}$ in. long. It costs 1s. 9d. from Hobbies Ltd, Dereham, Norfolk — postage 4½d.

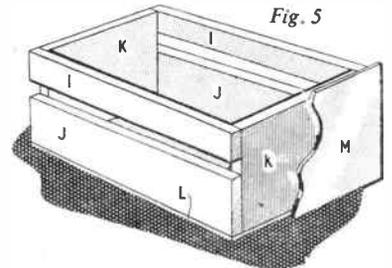


Fig. 5

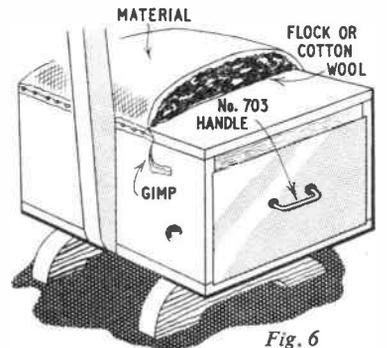


Fig. 6

Clean up all round with glasspaper and fill the grain ready for painting. Give two undercoats and rub down with silicon carbide paper used wet. Finish off with one or two finishing coats.

The seat is now padded as shown in Fig. 6. Pin the material all round and then cover with gimp to finish off. The gimp can be held in place with a suitable adhesive. (M.h.)

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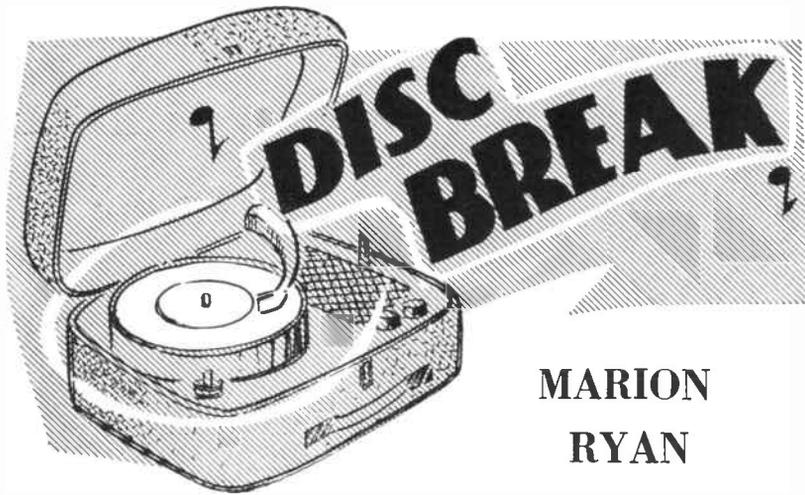
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MARION RYAN

MARION Ryan, 'Miss Hi-Vi' (High-Vitality) of showbusiness, is the singer about whom Duke Ellington once said: 'She has the most melodic contours I can recall . . . she could inspire me to write a symphony.' Rightly dubbed 'Britain's most televised girl', she has been on nearly 300 shows.

Marion hails from Leeds, Yorkshire. She started work in a departmental store — and then the Ray Ellington Quartet came to town! Marion was dared to ask if she might sing with the band. Ray was his usual charming self . . . and gave his usual charming smile and answered, 'Sure, honey, come back tomorrow'.

Marion did and sang *Embraceable You*. Fifteen hundred dancers stopped in their slow-slow-quick-quick-slow and listened. Ray Ellington cocked an eye at pianist-manager-partner Dick Katz. And then, audience and quartet applauded together.

Marion Ryan was set for singing. Concerts, one night stands (the repertory course for all would-be pop stars), broadcasts — were all the grounding for future stardom. Ray Ellington was her mentor and she is the first to pay credit to both Ray and his (and her) personal manager Dick Katz for their advice and eventual nurturing to star status.



Without question a major factor in her career has been the effect of television. Bob Hope heard her top five recording of *Love Me For Ever* and invited her to star on his U.S. TV show. She was honoured in 1959 by being chosen to appear at the Royal Command Performance before the Queen Mother.

In January 1960, she was signed to an exclusive contract with Columbia records.

ELAINE AND DEREK



FAIRLY bursting with confidence and talent are Elaine and Derek Thompson — the teenage twins from

Belfast who have recorded their first disc for Parlophone Records.

Born on 23rd October 1948, Derek is

ten minutes older than Elaine — 'and very proud of the fact', says his mother. They both attend Belfast Modern School where everyone is very excited about their popularity and success.

'We've been singing since we were six years old', says Elaine, who always takes charge of the situation, 'at socials, parties and charity concerts so I think this is why we don't feel nervous about singing before large audiences and in recording studios — it's Mum and Dad who suffer for us while we just get very excited'.

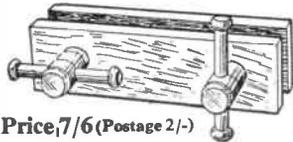
The twins were introduced to promoter Phil Raymond by a friend when they were singing at a friend's party one evening. Raymond liked their voices and within a short time he booked them to appear at the Belfast Opera House with Gene Vincent and Emil Ford.

'We don't sing rock 'n' roll', says Elaine, 'but we enjoy listening to it — it amuses us.' Recording manager Norman Newell was told about the twins and flew to Belfast to hear them . . . with the result that they travelled to London and the EMI recording studios to record *One Little Robin* and Brahms' *Lullaby* (45-R4783).

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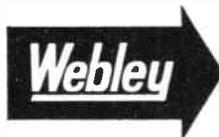


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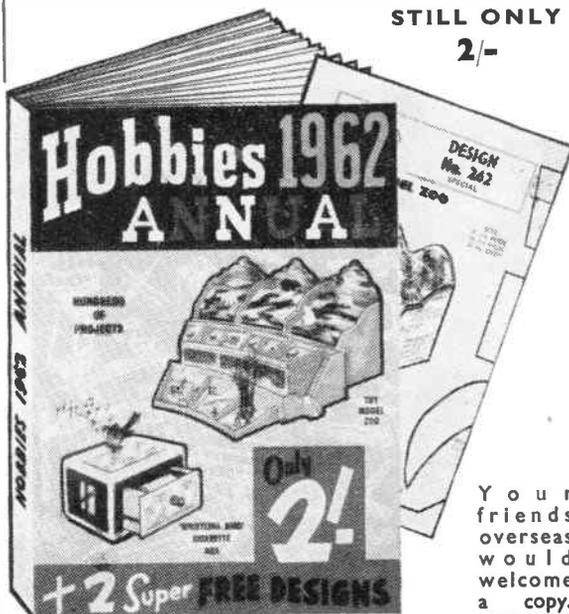
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Make this model Lifeboat Station

A WORKING model lifeboat station makes an entertaining toy. The clockwork driven lifeboat races down the slipway and enters the water with its engine running when the alarm button is pressed.

The size of the station depends, of course, on the length of the boat which is being used, and the length of the slipway also depends on the height of the station above the surface of the water. For these reasons, exact dimensions are not given, but they can easily be determined, using the method of construction given here.

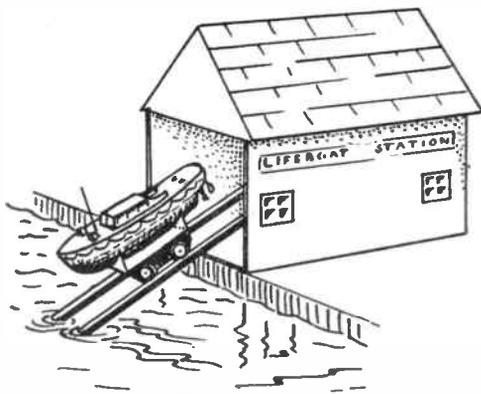
The boats

Clockwork powered boats made of plastic, which cost three or four shillings, can be used as lifeboats or larger models already owned can be pressed into service.

First, the base A and one end wall B are made of $\frac{1}{2}$ in. thick wood. The base should be $\frac{1}{2}$ or 3 in. longer than the boat, and the end wall should have a steeply pitched slope for the roof.

Next, the wheeled cradle which carries the lifeboat is made. It is cut from a piece of tinfoil to the shape shown at C and bent to the shape shown at D. It should not be longer than half the length of the boat it carries, and is fitted with plastic wheels used for model railways. Gauge O size wheels are easiest

By
A. Liston



to use with stiff wire axles, as they allow a slight variation in the width of the wooden slipway on which they run. But the smaller gauge OO wheels may be used if care is taken in making the wooden slipway.

The slipway

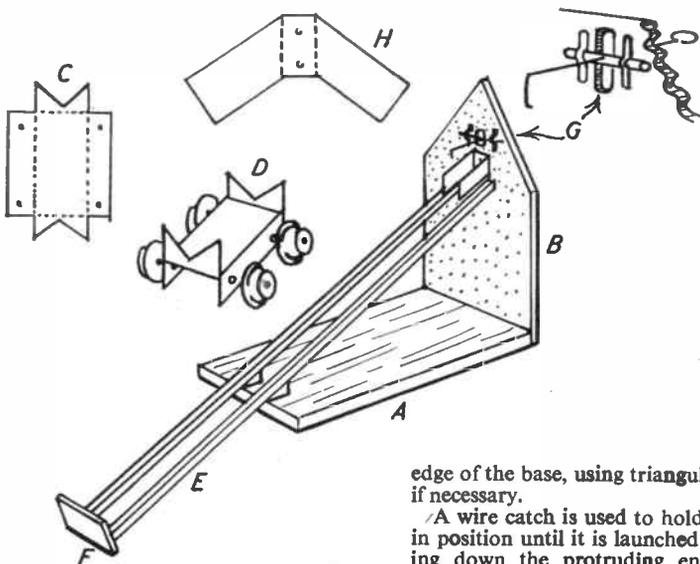
The slipway E is made from two lengths of wood strip or $\frac{1}{4}$ in. diameter dowel rod. First, the two sections are placed at the correct distance apart for the trolley to run freely on them, then they are attached at their lower end to a wooden stop F. The angle of the runway should be steep enough for the loaded trolley to run down it at a fair speed. The length of the slipway should be sufficient for the trolley to be completely submerged and the boat to float off when the station is placed in position by the edge of the water. The slipway is then screwed to the end wall and the

catch. The wire is shaped as shown at G and passed through a hole in a short length of dowelling rod which acts as a pivot. A hole is drilled in the end wall, and the catch pivots on two tinfoil brackets, as shown in the detail. The inner end of the wire is bent down so that it grips the stern of the boat. If there are no projections at the stern, a hole may be drilled in the deck for this purpose.

A tinfoil shield, shaped as shown at H, is bent to shape and screwed to the end wall level with the propeller. This holds the propeller of the fully-wound boat and prevents it from turning until it begins to move down the slipway.

Check working

After checking the working of the mechanism, the two side walls and roof of hardboard or plywood are attached. The open end may be braced with wood strips on the inside for strength. The station is then painted to make it water-resistant, special attention being paid to the end of the submerged slipway, to prevent it from warping. A linen thread can be fitted, running from the trolley through the hole in the end wall, for drawing the lifeboat up to the top of the slipway, but it must not impede the lifeboat's passage to the water. To add impetus to the launching, the trolley can also be weighted with lead on the underside.



edge of the base, using triangular blocks if necessary.

A wire catch is used to hold the boat in position until it is launched by pressing down the protruding end of the

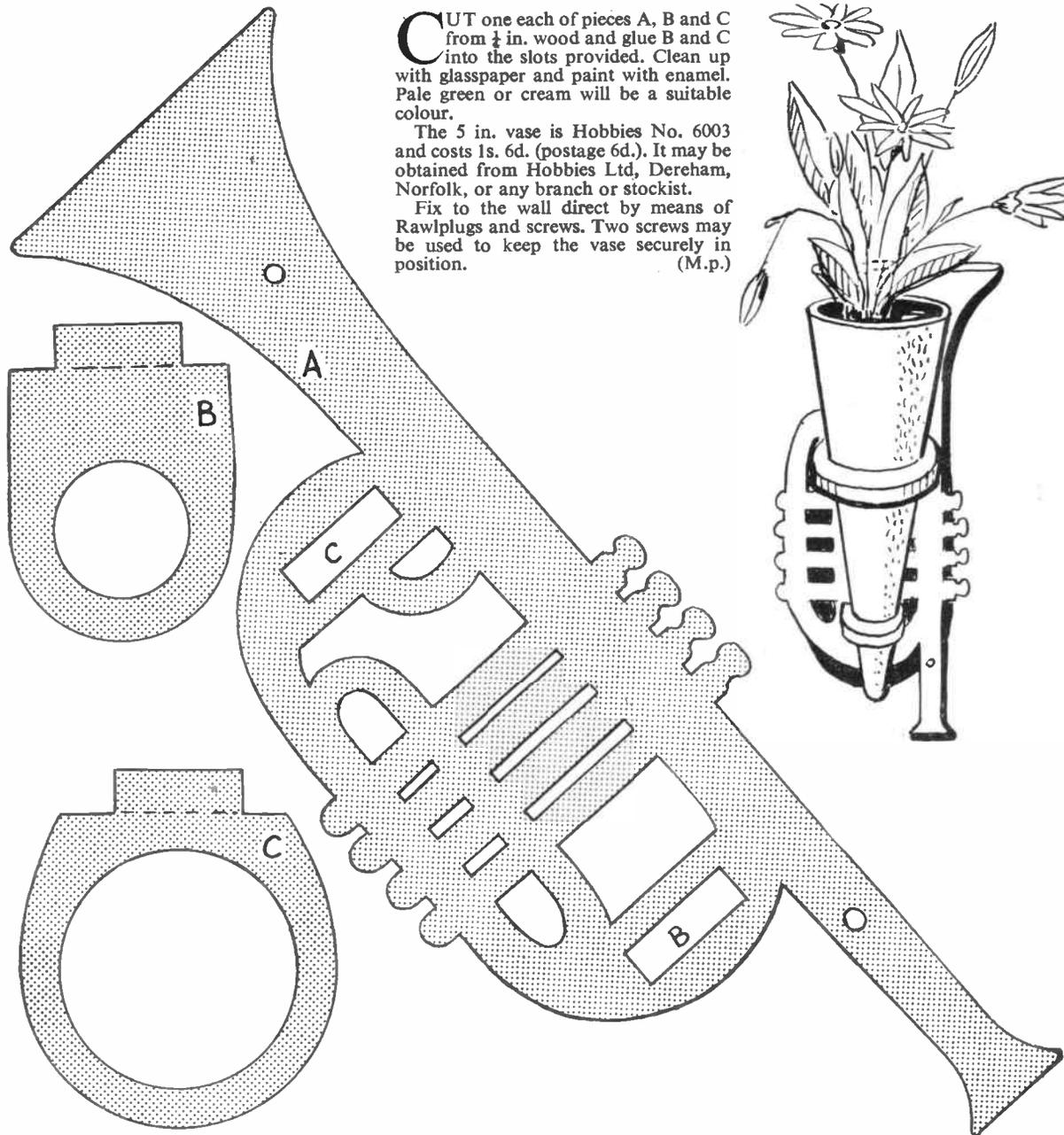
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THE 'TRUMPET' VASE HOLDER

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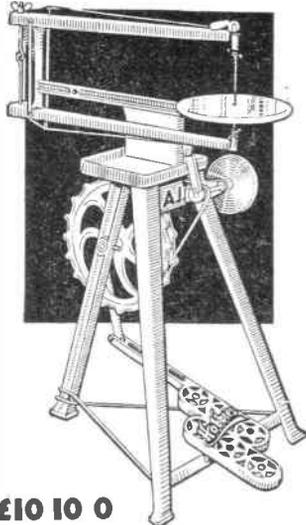
The 5 in. vase is Hobbies No. 6003 and costs 1s. 6d. (postage 6d.). It may be obtained from Hobbies Ltd, Dereham, Norfolk, or any branch or stockist.

Fix to the wall direct by means of Rawlplugs and screws. Two screws may be used to keep the vase securely in position. (M.p.)



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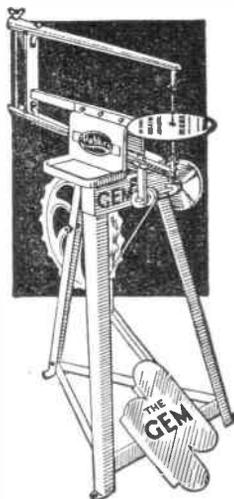
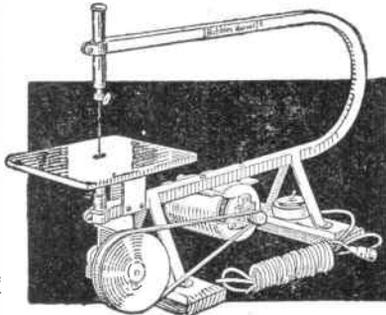
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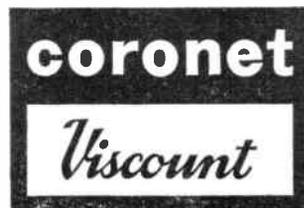
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