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THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

★ *FREE Design Supplement*

Also in this issue:

COLLECTOR'S CLUB

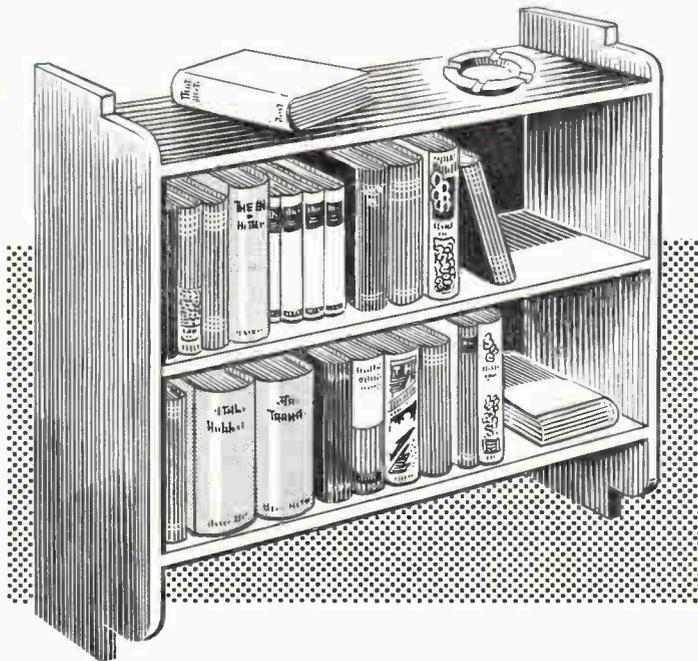
AN ILLUSION
BY 'MYSTIFIER'

OBTAINING HIGH
QUALITY PRINTS

AWARDS FOR
1959 COMPETITION

MODELLING AND
HOME PROJECTS

ETC ETC



HANGING BOOKCASE
FOR THE MODERN HOME



Up-to-the-minute ideas

Practical designs

Pleasant and profitable things to make

World Radio History

5^D

AUGUST is named after Emperor Augustus, a grand-nephew of Julius Caesar; his original name was Octavius. His flatterers called him 'Augustus' meaning 'the noble one'. After the thirty-one days in July one would expect August to be a short month. The Romans, however, did not want Augustus to be jealous of Julius Caesar's extra day, so taking a day from September, they tacked it on to the end of August.

The Saxon name for it was Armonat, or barn-month, because about this time the barns begin to be filled with the produce of the harvest. The ancient name for it was Sextilis, so called because, according to the old reckoning it was the sixth month of the year.

'Stamps: Italy 1937—Bimillennium of Birth of Augustus the Great — set of 10, 6s. used'.

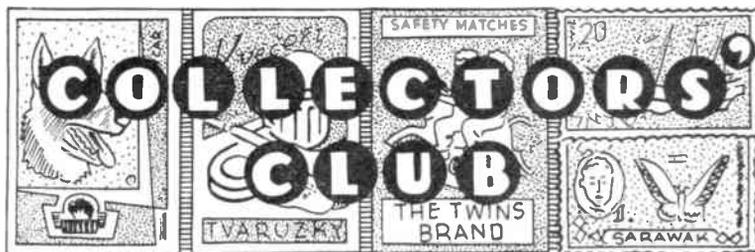
It used to be customary for people to give money to their servants on the first of August. This gift was called 'glove silver', as it was originally intended to buy gloves with. Another annual custom on the same day was for every family to subscribe one penny to the Pope, and this went by the name of 'Peter's Penny'.

'Stamps: Vatican City, 1949, 10 lire blue and green — The Pope opening Holy Door — 4d. mint'.

Some August anniversaries which may be depicted in stamps.

2nd 1934, Von Hindenburg died — Germany 1932, 4p. blue — President Hindenburg — 1d. used.

'Stamps: Iceland, 1939, 3 aur red — Herring — 6d. used. Match Labels:



Czechoslovakia 1957 — Various Fish — 2s. 6d. set of 12'.

Among the sporting events during August are the yachting races during Cowes Week, Test Matches, international athletics, opening of the Grouse Shooting Season and the commencement of the Football Season.

'Stamps: New Zealand, 1951, Health,

THE fixing of dates in the calendar has been subject to change in various parts of the world and at different periods in history. The Latin derivation of the word 'September', for instance, shows it to have been at one time the *seventh* month of the year (Septem: seven).

Harvest Home has been an old English

AUGUST AND SEPTEMBER

1½d. + ½d. red and yellow — Yachts — 3d. mint. Czechoslovakian Match Labels: 1956 — 24 designs depicting football — 3s. mint'.

The Italians say:

A wet August never brings dearth'.

And the Portuguese:

'August rain gives honey, wine, and saffron'.

'Stamps: Bulgaria 1941, 30 stotinki green — Bee-Keeping — 2d. mint. Brazil 1954, 40 cent lake — Grapes and Wine-jar — 3d. mint'.

custom from time immemorial. It took place at the close of the harvest, when the last load of grain was carried from the field amid general rejoicing.

'Stamps: New Zealand 1936-42, 6d. red — Harvesting — 2d. used. Eire 1946, 2½d. red — Country and Homestead — 1d. used. Argentina 1911, 1 cent blue — Ceres — 1d. mint. Ditto: 1943, Postage Due stamps, 10 cent brown — Wheat Sheaves — 1d. mint. Match Labels: Czechoslovakia 1958 — set of 12 depicting harvest designs — 2s. 6d. mint. Many English beer, wine and spirit labels depict harvest scenery'.

Other September anniversaries, etc., which may be depicted in stamps:

5th, 1800, Malta captured — Malta 1938, ¼d. brown — Grand Harbour, Valletta — 1d. mint.

14th, 1321, Dante died — Italy 1921, 40 cent brown — Dante — 5d. mint.

16th, 1821, Mexican Independence Day — Mexico 1921, 10 cent brown and blue — Meeting of Iturbide and Guerrero — 6d. used.

29th, Michaelmas Day: The custom of eating goose on this day originated, it is supposed, from this being quarter-day. Tenants made presents in kind to their landlords when they paid their rent—the majority, gave a fat stubble-fed goose.

'Stamps: Canada 1952, 7 cent blue — Goose — 6d. used'.

Old sayings:

'So many days old the Moon is on Michaelmas day, so many floods after.'

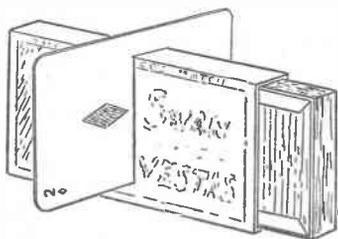
'September blow soft

Till the fruit's in the loft'.

'Stamps: Chile 1955, 500 pesos blue — Crescent Moon. Hungary 1954, 60 filler — salmon: Girl with basket of Fruit — 5d. used. Match Labels: Sweden 1956 — Girl and Moon — 4d. mint.'



Sawing a Matchbox in half



THE illusion of sawing a woman in half requires some elaborate equipment, a little beyond your resources, but here we reveal how you can saw a matchbox in half with an ordinary playing card. While you may use an ordinary matchbox, it is suggested that you obtain a Swan Vestas box which is not only longer, allowing the drawer to push out further, but also allows the matches to be packed upright instead of horizontally.

A box of matches is taken from the pocket, the ends held between finger and thumb of the right hand while being shown to the audience. The box is opened, a match withdrawn and struck on the abrasive edge to show that it is quite an ordinary box. A playing card is now taken at random from a pack, the box having been placed on the table, and 'stopped' on the palm of the left hand like a razor or knife to give it an edge. The edge is tested for 'sharpness' with the thumb just as we might do with a chisel after sharpening. All this business is mainly for effect, and it should be explained to the audience that a good, keen edge is absolutely vital to the performance of this trick.

The matchbox is firmly held by the left hand while the card 'saws' its way through the centre to a point about $\frac{1}{4}$ in. from the lower edge, and as shown in our illustration. At this point the box and penetrating card can be held up for the audience to see that the card actually passes right through the box. When this has been realized we make a further startling revelation that the drawer can be pushed through the card, and this is done by pushing the drawer about $\frac{3}{4}$ in. one way and then the other finally returning it to the normal position.

Finally, the card is withdrawn from the box and handed round for inspection if necessary, the box being returned to the jacket pocket. If an inspection of the box is requested, this may be allowed — but only providing that you have taken the precaution of having a duplicate one in the same pocket.

We must now explain the simple preparation of the box if you are to perform this cunning trick. Obtain a matchbox as suggested — and you will, perhaps, now see why the longer variety is more suitable — remove the drawer and lay aside the matches. Take a razor blade and carefully cut the outer case of the box down the centre, making a fine slot for the card to about $\frac{1}{4}$ in. from the bottom edge, as shown in Fig. 1. It is essential that you make a clean, fine cut, noting that a penknife is much too thick in the blade for the slot will be too obvious. When the box is originally

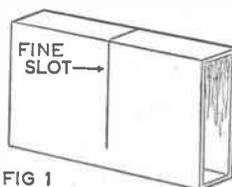


FIG 1

brought from the pocket and held between finger and thumb, a little inward pressure at both ends by the two fingers is sufficient to close this little piece of deception.

We now turn our attention to the drawer, cutting away an aperture from

the bottom and one edge 1 in. wide, as shown in Fig. 2. Glue one or two pieces of card to the remaining portions at the sides of this slot, finishing off with a few matches firmly glued to the packing. One or two loose matches may be added when dry, and if they do drop out during the presentation, it will only assist in making the illusion look much more real. Note that when the drawer is 'pushed' through the card, it is best to apply the pressure to the lower edge which has not been cut, and the movement should be quite slow and not too far.

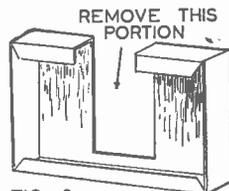


FIG 2

You will be able to prepare this trick very quickly indeed, it is handy for the pocket and will completely mystify your friends. A postcard may be used instead of a playing card if desired, but don't forget to make the sawing action when cutting your way through the matchbox.

A Hanging Bookcase

A BOOKCASE for hanging on the wall is needed in every home, and our design, illustrated on the front page, shows a neat example which could comfortably be fitted out of the way into an alcove, possibly over a writing desk where it would be handy for quick reference to any book.

The bookcase, which is 36 in. wide and 35 in. high, has two shelves and a top. It is backed with plywood for neatness and cleanliness.

All the measurements needed are given on the design sheet. It will be noted that the shelves are shown as fitted with housing joints, but for those not conversant with this type of joint, the shelves can be added by butting, pinning and gluing. In this case slight adjustment will have to be made to the lengths of the shelves.

Hobbies kit consists of furniture panels, in the cutting of which there is very little waste, and two panels of plywood which are butted in the centre and glued and screwed to the shelves. Note that shelves

Make it with a Kit

Hobbies Kit No. 3326 contains furniture panels and plywood for making the Hanging Bookcase. Kits from branches or by post from Hobbies Ltd, Dereham, Norfolk, price 56/-

B, have rebates cut into them to take the plywood so that it fits flush. The shaped sides, the markings for which are shown on the design sheet, should be cut out with a fretsaw.

For hanging, bore two holes in the plywood back underneath the top shelf, Rawplug the wall and fix with screws.

A popular finish will be by staining and polishing or varnishing, or some may chose to paint.

FINISHING THE PORTABLE

THE loudspeaker panel can now be made, using $\frac{5}{32}$ in. plywood glued to Formica sheet. The design is shown in Fig. 11. A $\frac{1}{2}$ in. strip of the same plywood is glued to the top back edge for the hinges to hold on to. The position of these is found from the dial panel.) The bolts to hold the speaker could be countersunk into the plywood before gluing to the Formica. Then glue on the speaker fabric.

Bolt on the speaker, preferably a 5 in. Elac. Then, with short bolts attach the output transformer to the speaker. The two thick leads from the transformer should then be joined to the two tags on the speaker which lead to the cone.

Join together the speaker and dial panels by means of the hinges. Then solder the orange (O.T.) lead from the set to one tag of the output transformer

primary winding (this is of thin wire). The other tag of the same winding is soldered to the free lead from the H.T.+ plug. Then across the same two tags solder C16 (.005). Always remember the O. T. primary is of thin wire.

(See A, B, C, D.) Two holes (countersunk on the outside) are drilled through AD, about an inch apart, and grooves cut to them (see Fig. 12b). A further hole is drilled at the far end of the left groove. The former, grooves and holes are varnished, to insulate them further, and then 6B.A. bolts are fixed in with nuts. 24 gauge enamelled wire is used for the winding. The start of the wire is threaded through and looped round the adjacent bolt. 12 turns (close-wound) are put on round the former, and the end brought up via the groove to the second bolt. The winding is then covered with $\frac{1}{2}$ in. by $\frac{5}{32}$ in. stripwood all round (pinned and glued) which will come up

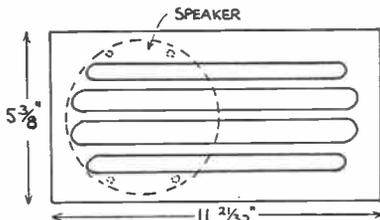


Fig. 11

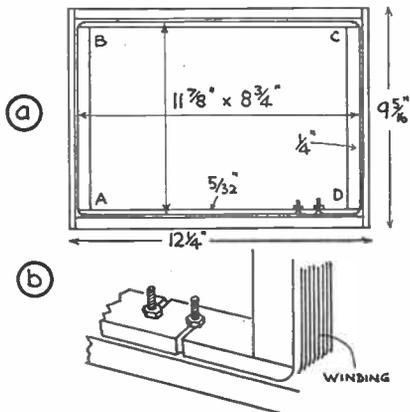


Fig. 12

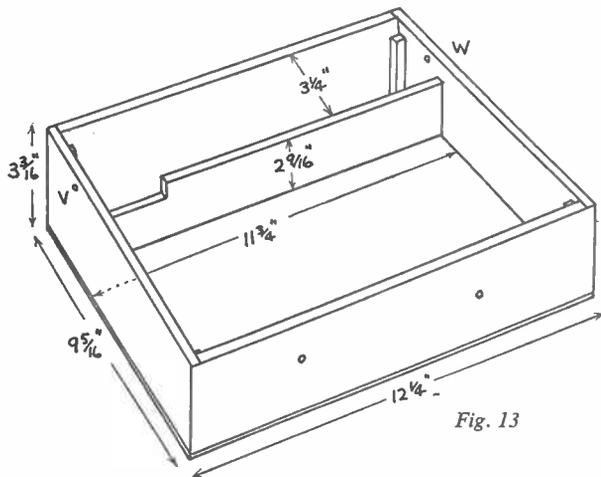


Fig. 13

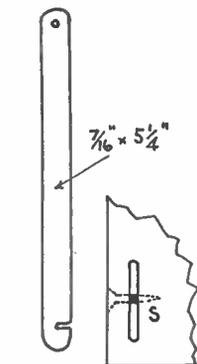


Fig. 14

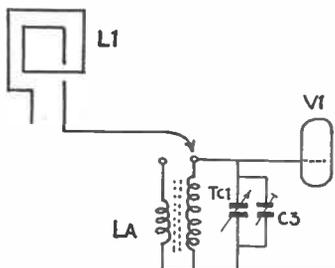


Fig. 15

The set now only needs the frame aerial attached. This can be bought (e.f. Osmor F.A.2) or can be made at home quite cheaply. Fig. 12 shows how. The former consists of $\frac{1}{2}$ in. by $\frac{1}{2}$ in. stripwood glued and pinned to the $\frac{5}{32}$ in. plywood lid of the case. These two pieces are joined by $\frac{1}{2}$ in. by $\frac{5}{32}$ in. strip

flush with the outside limits of the plywood lid. Thin veneer strips are then glued over the stripwoods to hide the gap in which the winding lies.

The leads from the set are joined to the bolts on the frame aerial (which is stood up on end) and the batteries are plugged in. Plug in the valves in their correct holders. Now we are ready to align the set.

Set the pointer to the Third Programme on 464 m. Switch on and turn up the volume. Then adjust the oscillator slug (L2) until the programme is heard at maximum. Then turn the pointer to the Light Programme (247 m.) and adjust the trimmer C4 until the Light is heard at its loudest.

Set the pointer to Third again and again adjust the slug of L2. Then turn the pointer to Light again and again adjust the trimmer C4. Repeat these operations until no further improvement

is possible. Finally, turn to Light and adjust trimmer C3 for maximum output.

The set is now aligned and can be switched off, and the construction of the case started. This is easily made and the details are seen in Fig. 13. $\frac{1}{4}$ in. plywood is used for the sides and partition and $\frac{5}{32}$ in. ply for the bottom. Simple butt joints are used and the parts are glued and pinned. $\frac{1}{4}$ in. fillets in each corner strengthen the case and also serve as resting points for the set panels.

When assembled, the case should have the set tried in position to see if all fits correctly. If satisfied, the covering of the case can be undertaken. There are many plastic-faced cloths to choose from, also pure plastics such as Fablon, which is self-adhesive. The material should cover the outside of the case and lap over into the interior by about $\frac{1}{2}$ in. or so. The lid (with frame aerial) should be detached from the set and covered over, both outside and in, then hinged to the case with brass hinges ($\frac{1}{4}$ in. by $\frac{3}{4}$ in.).

The set is fixed into the case securely by drilling holes through the sides of the case at V and W and driving chromium-headed screws in the plywood filling be-

tween the metal chassis and front panel, taking care not to hit bolts Q and R.

The rubber feet and strap-handle are easily fitted to the case.

A stay will be needed to hold open the lid and this is fashioned from strip brass or aluminium as in Fig. 14. It is $\frac{7}{16}$ in. by $5\frac{1}{4}$ in. The top (lid) end is fixed by a screw. The bottom slot is held by a nail or thin screw driven through the plywood panel below the Formica, at right angles to the slot S sawn in the front panel (S. Figs. 9a and 14).

In this circuit the frame aerial is the aerial tuning coil. This is the conventional method with portables. But the reader may like to try another method, which was used by the writer with results superior to those obtained by the conventional method.

First, the frame aerial leads are disconnected from the set. The G4 lead to the chassis tag is removed entirely and the lead from C3 through G3 is cut off just before the grommet.

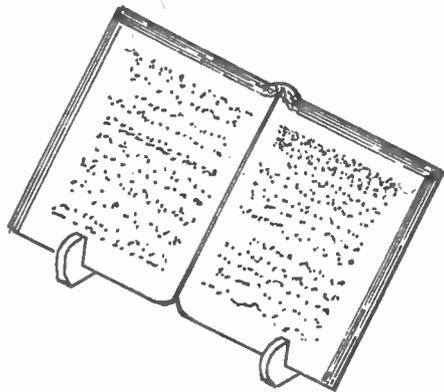
A medium-wave aerial coil (dust-covered) is fixed on the chassis near G4 grommet, well away from and at right angles to the axis of L2.

The bottoms of the primary and secondary windings of the coil are joined and taken to the chassis tag near G4 grommet. The lead from C3 trimmer is taken to the top of the main (secondary) winding on the new aerial coil (LA).

Of the two ends of the frame aerial in the lid, ignore one end, and attach a lead to the other terminal and take it through the grommet G3. It can be joined either to the top of the primary or the top of the main (secondary) winding on the new coil (LA). The second will be more effective.

Turn the pointer on the dial to the Third Programme and switch on. Adjust the slug of the new coil (LA) for maximum signal. Then set the pointer to the Light Programme and adjust trimmer C3 for maximum volume. Repeat these operations. Fig. 15 shows the theoretical circuit of the new arrangement. LA is the tuned aerial coil and the original frame aerial is now operating purely as an external aerial. The pick-up power of the set is increased by this arrangement and it is well worth trying.

STAND FOR A COOKERY BOOK



*A simple
fretwork project
which will
please the lady
of the house*

HERE is a simple gadget which is sure to please the womenfolk when they have to make reference to a cookery book whilst baking. Instead of propping the book against a packet of flour, etc., this handbook stand keeps it open at a readable angle. The stand is very simple to make and does not take very long to complete.

The upright members are made to slide along the two horizontal bars so

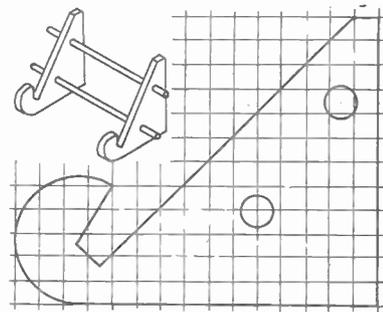
that the stand can be adjusted to suit different sizes of books. These uprights are made from $\frac{1}{2}$ in. thick plywood and are cut to the shape shown. Use your fretsaw to cut out these two members. Once cut, bore two $\frac{5}{16}$ in. diameter holes in the positions indicated to receive the horizontal rails. Use a sharp bit for this job and bore from both sides to prevent spoiling.

The two rails are obtained from $\frac{5}{16}$ in. diameter dowelling rod. The length of these rails can be made to suit your own

books, but 12ins. will be found to be quite adequate in most cases. Round off the ends of the rails to give a neater finish.

After this, glasspaper the rails very lightly to make a 'sliding' fit in the holes previously made in the uprights. Be careful not to make them too slack otherwise the stand will be wobbly.

To complete, apply a coat of lacquer in any desired colour. (F.K.)



Enlarge to $\frac{1}{2}$ in. squares

HIGH QUALITY PRINTS

IN a previous issue we suggested a plan for taking perfect pictures and we then indicated the method of exposing for ideal negatives. We now examine the problem of making high quality prints, whether they be contact or enlargements.

No matter how carefully one operates the camera and processes the film, our negatives will vary according to the subject involved. We may take pictures of brilliant subjects in brilliant light and we can only expect a negative of the same

By S. H. Longbottom

calibre; while the woodland scene may be just the reverse and a little flat. The answer is in the selection of a suitable printing paper to match the negative and here we should mention that we are not only confronted with the correct grade but also the base tint and surface texture. Each of these three factors makes its contribution in correcting the brightness range of the resultant print and it will perhaps be better to discuss these before one can exercise judgment.

Personal taste plays a large part in the selection of a paper but it must be emphasized that you cannot entirely ignore the picture subject itself, no matter what is your personal preference, and we must always aim at a harmonious relationship. You will recognize the importance of this in a moment but first let us explain the various base tints. Most printing papers are made with white, ivory or cream base tints. While a cream base would be unsuitable for a snow scene it would be ideal for the sunny woodland picture. Generally, the three tints are used as follows: *White* based paper is used for technical purposes and for pictorial subjects de-

manding intense white with cool image tones, e.g. snow and sea pictures.

Ivory tinted papers yield slightly warmer tones than white and are favoured for portrait work.

Cream based papers are excellent for all prints involving sunlight or even weak artificial light. They are also used for character portraits and low key studies, producing nice effects when sepia toned.

The foregoing will assist you in selecting the correct base tint but another factor, also often a matter of personal taste, is the texture of the paper surface. The majority of papers in each base tint are made in different surface textures, smooth, velvet, fine grain, silk and rough while the resultant sheen is glossy, lustre or matt. Of all these different surfaces only the glossy produces prints with a maximum brightness range and consequently it is always used for reproduction purposes. Semi-matt, or lustre surfaces bear a sheen and improve the aesthetic appearance. The grained textures do not

produce the detailed image of the smooth papers but they do suppress any graininess in the negative. The latter are widely used for large, exhibition prints where special effects are desirable. The rougher textured papers scatter the light falling on their surface and this explains why they often appear to lack brilliance, although looking brighter when wet.

Correct matching

The next important step in producing a quality print is correct matching of the negative with a suitable contrast grade of paper. Here it is necessary to explain the difference between our negatives. A 'hard' negative is one with a limited range of grey tones between the high-lights and the shadows. A 'soft' negative is rather flat looking and has a large number of steps, but the 'normal' negative lies just between these two extremes.

You must learn to judge these different types of negatives and it is better to lay them on a sheet of white paper rather

A hard negative —



— and the resultant print correctly made on soft paper.



than hold them up to the light, noting that the paper contrast to choose is the direct opposite of the description. The object of this is to select a paper which will print as many tones as those of the negative and obviously this paper must have an exposure scale corresponding to the difference in density between the lightest and darkest areas of our negative.

This may be all very well from the theoretical point of view, but, unfortunately it is not always possible to produce the range of tones in the negative, for in practice it is found that the range of tone scales for paper is less than for film. Consequently, we say that a paper has a high or low exposure scale, but we mean that it will produce a large number of tones of grey, a medium number, or only a few. The paper with the full range is

termed the 'soft grade, that with the lowest range is termed 'hard' and the medium ranged paper is the 'normal' grade. In other words, the terms soft, normal or hard tell us how many different tones of grey will print out between black and white.

If all your negatives were normal you would only need to buy a normal grade of paper. In practice we meet another obstacle. The subject may have had either flat or brilliant lighting — as mentioned earlier — or it may have been strongly lighted from one side only, and for these reasons you may have either a hard or soft negative instead of the normal type.

The normal grade of paper is best for general use wherever possible but if you have a soft negative that would print out

A soft negative —



— demands a hard grade paper.

with a flat result on normal paper you will obtain a more brilliant picture on a hard grade of paper. If your negative is of the hard type it would only produce a soot-and-whitewash effect on the normal paper so we have to turn to the soft grade.

It should, however, be understood that there are no hard and fast rules about this choice of paper grade. Some workers deliberately select a grade to produce a singular effect, falsifying tones for novelty, but if you are not yet so advanced in processing it is wiser to stick to normal printing until the necessary experience has been gained.

While the practice varies with different manufacturers it is not unusual to find the following contrast grades available:

- | | |
|--------------|------------------|
| 0 Extra Soft | 3 Vigorous, or |
| 1 Soft | Hard |
| 2 Normal | 4 Extra Vigorous |

From this it will be seen that there is a wide variety of papers ranging from the long exposure scale in the case of extra soft to the shorter of the extra vigorous.

It is very difficult, if not impossible, to make a hard paper produce soft effects owing to this short range, but it is true

to say that brilliance is lost if a hard paper is stored for a considerable time. On the other hand we can often brighten a normal grade by adjusting the developer.

It is interesting to note that there is a printing paper now on sale which has a variable contrast, but printing is done through yellow screens of different strengths. This is known under the trade name of Multigrade and is made by Ilford Ltd.

Having explained the grades of contrast it becomes possible to give the following principles:

If the negative is —	Select paper grade of —
Flat	Extra hard
Soft	Hard
Normal	Normal
Hard	Soft
Very Hard	Extra Soft

You should also remember that as the surface sheen of the texture departs from glossy to rough the brilliance diminishes proportionately.

All illustrations in this feature are by courtesy of Ilford Ltd.

Brass Rubbings with Heelball

FOLLOWING the publication of our article in the issue of May 20th, on taking brass rubbings, we have received an interesting letter on this subject from G. S. W. Harding of 9 Briton St, Leicester, who was apprenticed to masonry, and one of his early hobbies was taking rubbings from old slate headstones in churchyards around Leicester.

His equipment consisted of a small nail brush, piece of clean cloth, pencil, cobbler's heelball of various colours and greaseproof paper, and he sent me some good examples of the success to be enjoyed by this method. If the article to be copied is covered with algae or similar growths, it should be scrubbed clean, using water, says Mr. Harding. When

the stone is quite dry, apply the paper and rub the heelball sharply and firmly across the design.

Mr. Harding does not advocate the use of a coarse, stiff wire brush, particularly on brass, which may be soft, and he points out that unless a fixative is applied to a charcoal rubbing it will quickly become blurred. There was no evidence of any blurring in the samples sent by Mr. Harding, which were taken by the heelball method.

Next week we shall start a series of articles on making model aircraft, describing a Catapult Glider. Make sure of your copy.

1959 COMPETITION AWARDS

THE design for a Viking Thermometer Plaque was obviously particularly attractive to our readers, as was instanced by the big increase in entries for the 1959 Fretwork Competition.

This entailed considerable work for the judges, whose main awards are detailed on page 297. The title of 'Champion Fretcutter' has passed to Mr D. H. Goddard of Ealing, London, who now holds the Silver Challenge Cup for a year, and with which award goes a replica for permanent keeping, and a voucher for 15 guineas enabling him to obtain Hobbies goods to that value.

Congratulations, Mr Goddard, in running so true to form and following up your last year's second with an outright win. This follows a tenth award in 1957, and a sixth in 1955, and speaks well for the winner's remarkable consistency.

First attempt

As a direct contrast, the second prize-winner, Mr W. J. Hart (also of London), was successful in his first attempt in this competition and obviously can be well satisfied with his high placing. In fact, he was sandwiched between two well-known exponents of the art of fretcutting, for the third award was gained by Sherrard Hamilton, of Bristol, who in recent years has been placed ninth, third, twelfth and second. Incidentally, Mr Hamilton has been a competitor for many years and his latest success speaks well for his maintained ability and skill.

Other main award winners included C. Southwell, R. H. Watts and R. Wines, whose names have also appeared in previous lists, the latter incidentally being champion in 1957, but we were pleased to see that newcomers are challenging for the main places and the quality of their work augurs well for future keen competition.

In fact, the new names which appeared among the increased entries for this year's competition emphasises that many more of our readers have decided to have a go at obtaining one of these valuable awards. Included in the senior entry were several pieces from 16-year-old lads whose work compared very favourably with others of more mature age. In this connection we were particularly pleased to record the award of a special voucher to R. Phillips of Matlock, Derbys, who is only 16 and his success was emulated by Neil Tiller of Wisbech, Cambs., who is 18, while at the same age J. Cheyne entered the main prize list.

At the other end of the age scale we had Mr F. W. Howes of Huntingdon

who, although aged 71, yet submitted work of such meritorious standard as to win for him a special prize voucher.

Talking of ages, the 'Daddy' of all entrants was Mr Joseph White of Heaton, Newcastle-on-Tyne, who meticulously stated his age as 74½. Also competing was another Mr White, this time from Doncaster, who is 73, and Mr J. C. Laws of Penarth, S. Wales, who is 72. A comparative 'youngster' was Mr J. Thorndyke of Edmonton, London, who at the age of 64 gained a special award.

As was to be expected, the majority of entries in the Junior section were submitted by lads of 14 and 15, the youngest being nine-year-old Brian Nyé of Sharnbrook, Nr. Bedford, but it is worthy of note that one of the entrants aged only 10, Ian Strugnell of Loughton, Essex, was placed tenth in his section — very commendable for one so young and inevitably lacking the experience of the older boys.

As for the models themselves, it was the general view of the judges that the standard achieved was the highest since the contest was instituted. Generally, the cutting was quite good and in some cases reached perfection. Many of the entries showed evidence of a great deal of thought and enterprise in the finishing, and some very effective results were obtained. In particular we liked the care evidenced in the entry of Mr D. Wood of Carshalton, Surrey, especially in the delightful coloured effects obtained on the shields surrounding the Viking ship. Mr Wood was another winner of one of the many additional special prize vouchers.

Points to note

In general, the design was followed faithfully, although one or two competitors had avoided some of the more intricate cutting around the shields and endeavoured to overcome this by painting in. In other instances provision had not been made for the inseting of the thermometer into the sail of the vessel, as was clearly indicated on the design sheet. The thermometer thus stood 'proud' where it was intended that it should be protected from damage by being inset.

There were one or two minor mishaps to entries, chiefly resulting from the worker not ensuring that the overlay was firmly glued in position to the background. The background had been finished in either paint or polish but sufficient of the finish had not been scraped away before the addition of the overlay, which would have ensured a

good 'key' for the adhesive. One or two entries were also submitted in marquetry, but although this was suggested as an alternative finish it was not intended to be used for competition purposes, and this fact was again clearly indicated in the instructions.

In view of the high standard achieved, we would like to comment individually on some of the main winning entries. Mr Goddard's plaque was really outstanding. It was cut to perfection, all outlines being perfectly clean, and it was a real test through which he came with flying colours. It was impossible to find fault with any feature. Using a blue background with the overlay in natural wood, Mr Goddard had polished his entry until it had a glass-like surface.

Mr Hart had chosen a painted finish, of which he had made intelligent use. It was, of course, a subject which lent itself admirably to colour. C. Southwell, R. Wines and G. Gibbins had also used a paint finish to quite good effect.

Neat and accurate

As was to be expected from such an experienced campaigner, the entry from Mr Hamilton also showed excellent cutting, with the receding lines tapering off to knife-like edges. Although satisfied with quite a simple finish, he gained many points for neatness. N. E. Jenkinson and R. H. Watts also revealed nice cutting and their finish was in two shades of brown, a colour scheme which was also used most effectively by A. D. Phillips and F. W. Willoughby.

S. W. Thomas and J. Cheyne who gained eighth and ninth prizes respectively, submitted excellent work which emphasised the importance of care in finish, and although there were minor cutting mistakes the overall presentation was very effective.

The First and Second winners in the Junior section were way out in front in all respects. J. Ratcliffe only gained the premier award after a careful and minute study of his cutting compared with that of Nicholas Verrall. The winner's entry was neatly finished in colour and he will obviously give serious threat to the seniors when he enters their competitive ranks next year. For finish the work of the runner-up was highly meritorious. In fact, in this respect there was nothing better in the whole of the competition — senior or junior. Nicholas, who incidentally was placed first in this section last year, displays an artistic talent of which he can well be proud.

ARTIFICIAL RESPIRATION

GETTING an unconscious person out of the water will, of course, depend upon the circumstances, and whether or not you have somebody to help you.

If the water shallows as in the sea, or a lake, there is little difficulty, but in the case of a landing stage or a public baths, it will be necessary to pull him out. If you have no help, you must place one of his hands on the edge and hold it down whilst you yourself clamber out. Then by grasping his wrists and 'bouncing' him up and down a few times, you should be able to pull him either to a sitting or lying position on the edge. If climbing into a small boat, remember always to do so at the stern; if attempted at the side it will probably capsize.

However skilfully you may do this after an excellent rescue, it is of little avail if the victim is not breathing, for he will soon die. If he has swallowed water, it is very likely that he will be in this condition, and artificial respiration must be carried out at once. There are several methods of doing this, each of which has at one time or another held popularity. The one now taught by the Life Saving Society is the Holger Nielsen method, which has recently replaced the Schafer method. It is of great value to know how to administer it, for quite apart from cases of drowning, artificial respiration may easily save life after coal gas poisoning or electric shock. It is no use waiting for a doctor or other qualified person, for unless performed immediately the person is discovered, it may well be in vain. In all cases artificial respiration should be continued until recovery, or until a doctor has certified that the person is dead.

For the Holger Nielsen method, the

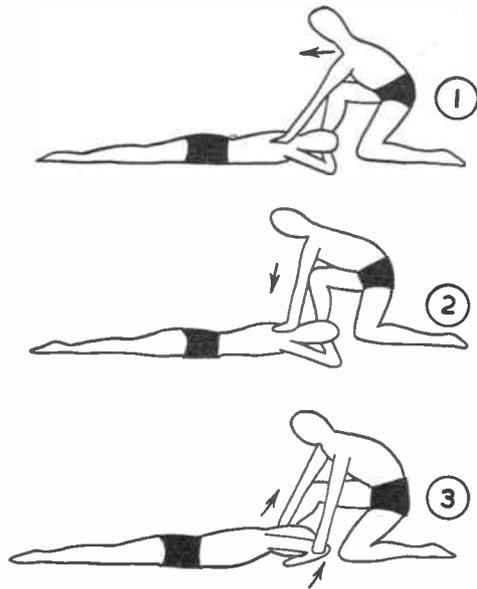
person is laid face downwards with the side of his forehead resting on his hands, placed together as shown. The operator should have one knee on the ground just in front of the victim's head, and the other to one side of his elbow. The hands are then placed on his back with the palms over his shoulder blades. By leaning forward, keeping the arms straight, a gentle pressure can be applied to the victim's back, forcing air and any water out of his lungs.

This pressure, of about twenty-five pounds for an adult man, less for a youth or girl, should be applied for two seconds. The hands are then slid along his upper arms to his elbows; this movement should take one second. The operator then raises the victim's elbows by leaning back and lifting. This expands the chest and causes a forced inspiration of air (the great advantage of this method). This also takes one second, as does the lowering which follows, after which the hands are gently slid to the original position on the victim's back, when the whole cycle starts again. The complete operation can be summarized thus:

Counting in seconds. 1, 2, press. 3, slide hands to elbows. 4, lift arms. 5, lower arms. 6, slide to back again.

If this is performed on a partner, he will be able to tell whether or not you are doing it effectively, for if so, he will find that you are doing his breathing for him!

We have now been through most of the operations necessary for the Society's Bronze Medallion test, and if you have



practised them carefully, you will have quite a good knowledge of life-saving which should stand you in good stead should ever you need it. If you have become sufficiently interested to wish to take the test, you will need to have an elementary knowledge of the anatomy and physiology of the circulation and respiration, and should obtain the Society's booklet of instruction, 4/-, post free, from

The Royal Life Saving Society
14 Devonshire Street,
Portland Place,
London W.1.

The Speed of Birds

THE distances covered by some of the migrant birds is remarkable, when we consider the frailty of most birds of migration. The Arctic tern, for instance, travels from pole to pole, and it is estimated that its summer and winter haunts are something like ten thousand miles apart.

Migrating birds often travel at top speed.

In autumn, when they go south, their pace is more leisurely; they do not need to hasten unduly, but in spring, matters are different, for mating and mating instincts urge the birds on, and they make the best of their wing-powers. The speed of birds is often exaggerated,

but it is known that certain bird travellers can put up a wonderful pace and keep it up for hours at a stretch.

When crossing a stretch of ocean migrants seldom dally, but hurry along at top speed until in sight of land again. Golden plover on migration will cover as much as 50 to 60 miles an hour, and many other birds maintain a speed of 30 to 40 miles for long distances. A peregrine hawk, for example, will fly at 60 to 70 miles an hour, and when chasing its prey may surpass this pace quite easily. Wild duck on migration can cover 50 miles in the hour. This, however, can be beaten by wild geese.

On one occasion, whilst assisting a

gamekeeper in Northumberland, the speedometer of our car registered close on 50 miles an hour, over a mile of level going, as we crossed over to the fringe of Budle Bay from Bamburgh. A skein of wild pink-footed geese outstripped the car and went ahead of us. We judged their speed to be anything from 70 to 80 miles an hour.

Mallard duck have been timed to travel near the 50 m.p.h. mark, and pintails, chased by an aeroplane, covered 65 m.p.h. in their flight. The common Canada goose, now familiar in Britain's inland waters, normally flies between 40 and 45 miles an hour, but, if pressed for a rush of speed, could double that rate of travel. (A.S.)

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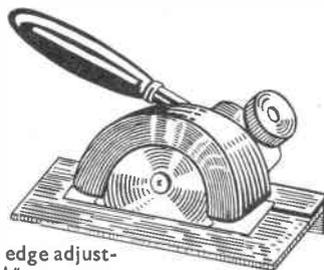
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FINISHING THE TELESCOPE

THE altitude mounting on a section of main tube is shown in Fig. 3. A sheet of aluminium, brass or copper is cut $4\frac{1}{2}$ in. wide and long enough to extend $\frac{1}{2}$ in. at each side on to the wooden lower section when the sheet is bent to the shape of the tube. This should hold the tube firmly when screwed home. The hole in the wooden unit should be of the same diameter as the bolt which will carry the wing nut for fixing the telescope at any desired altitude.

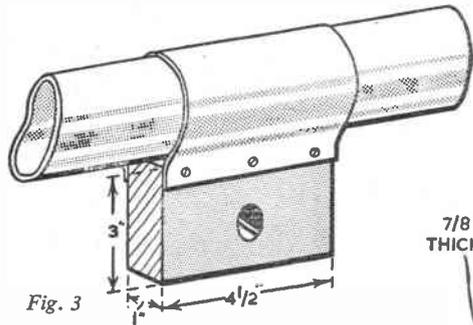


Fig. 3

Lastly we come to the lower mounting, shown in Fig. 4, which gives lateral movement. The two lower wooden discs are cut from 1 in. wood. The bottom disc is cut to a diameter that fits snugly into the drainpipe (or the hole in the wooden circle on the post). The triangular uprights are each cut from two pieces of wood, are glued together and should fit flush with the 6 in. disc and to which they are fixed by both glue and screws from beneath. The distance between the two is exactly the thickness of the wooden part of the altitude mounting. The lower disc is fixed by glue and a single central screw.

Blacken the inside

It is an advantage to blacken the instrument internally so as to cut out any reflection from the inner surfaces. The lens holders may be coated with indian ink and the tubes with dead black paint by means of a pull-through of cotton waste tied to a string.

The finish of the outside of the whole instrument is a matter of choice. If the tubes are of aluminium or aluminium alloy, no finish will be needed. If of brass, polish first and give a coat or two of shellac varnish. Steel should be painted. Aluminium paint looks imposing and bright. The mounting likewise should be painted.

Cleaning of the lenses has been mentioned. This should be done as little as possible, and that by lightly brushing

with a camel hair brush or with an old soft silk handkerchief kept especially for the purpose in a closed jar. One has only to hold up a well used and much polished pair of spectacles in the sunlight to see how many fine scores exist on them. At the high magnifications of an astronomical telescope these fine scores can play havoc with definition. By covering each end of the instrument with tied on circles of plastic film when not in use it will be found that cleaning need only be done at intervals of several months.

To start one's survey of the heavens the moon is a good subject. Good lunar observation depends on shadows thrown by the sunlight and these conditions are obtained

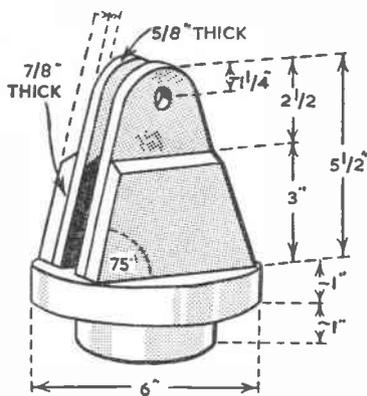


Fig. 4

when the moon is not at full. To start with the crescent and follow it through to nearly full as the nights go by is an entrancing experience. Craters and mountains show up best when they are near the line where the sunlight ends and the dark part of the moon's surface begins. The longest shadows are thrown

there. Do not miss the pin points of light showing just inside the dark area. These are mountain peaks catching the first rays of the sun before the lower ground is illuminated.

Sunspots are nearly always present on the sun. NEVER LOOK AT THE SUN THROUGH YOUR TELESCOPE — not even using a smoked glass. Permanent damage to the eyesight can result.

The correct way to see sunspots is to put on a pair of sunglasses, screw up the eyes and squint along the top of the telescope and roughly pointing it at the sun. Move the instrument until a bright flash is noticed below eye level in the eye piece. Turn your back to the sun and hold a white card a few inches away from the eye piece. The image of the sun appears as a circle. The spots will be seen on the image.

Viewing the stars

Do not expect your telescope to magnify a star to a disc. Not even the largest telescopes can do so. The stars are too far away. A star appears brighter and smaller and fainter stars around it, invisible to the unaided eye, will appear. Star clusters and nebulae may be found by systematically sweeping the heavens by moving the telescope sideways at various altitudes. Star maps will enable one to find them more easily. Your local or county library will be able to help you here.

The groups of stars, or constellations, remain fixed relative to each other and so star maps are permanently helpful. The case is different with the planets of the solar system. These move about and an easy guide to these is to be found in the monthly notes in 'Whitaker's Almanack', which most public libraries have on their reference shelves.

The many popular books on astronomy in the libraries will also be found of great value to the possessor of a telescope. (L.A.F.)

Reply to a reader on TV connections

I HAVE a portable television, the aerial of which is a Belling Lee 1 and 3 Band. I have it fixed upstairs but should like to be able to take it to a room downstairs. How can I make the connections and what kind of cable do I require? (H.W. — Stanford-le-Hope.)

YOU can take an extension from the existing plug point, or make a permanent connection to the aerial, whichever is the more convenient

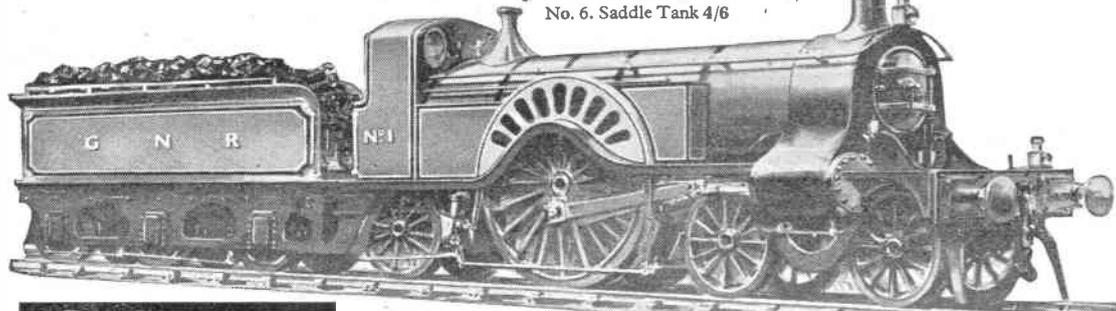
according to the layout of the rooms etc. Some loss of signal strength will usually be caused, but should not be important in average reception conditions. The lead may be co-axial (that is, one central conductor, with an outer sheath); or a twin feeder may be used (this rather resembles flat twin flex). The new lead should be of the same kind as that already fitted and can be obtained from radio and electrical shops.

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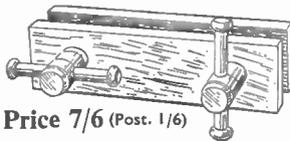
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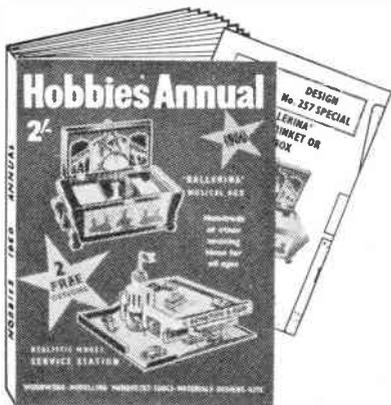
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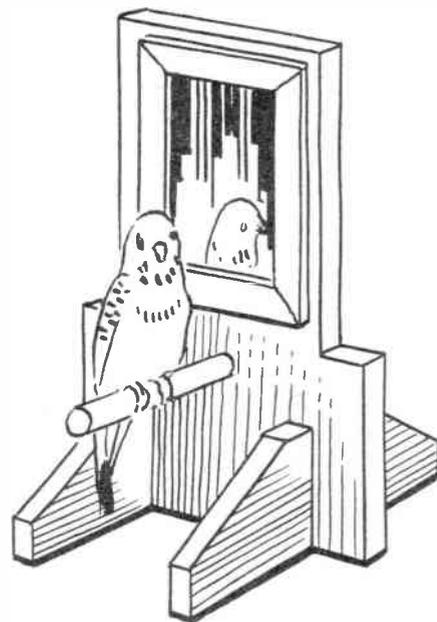
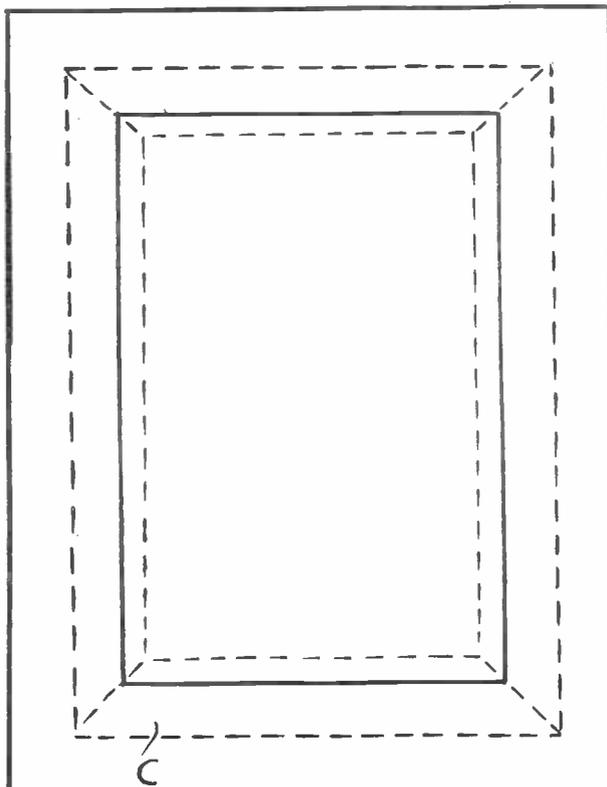
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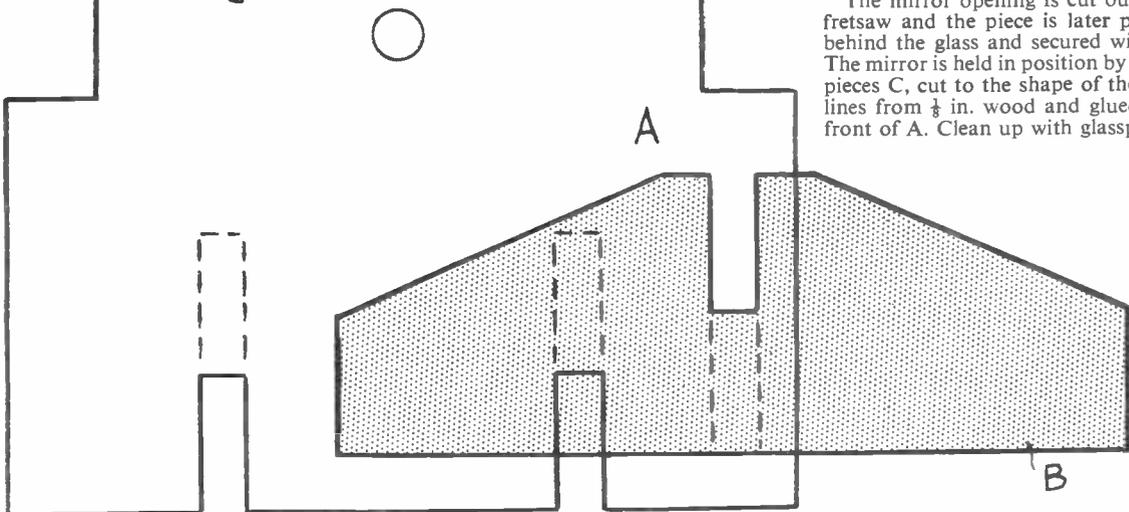
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(M.p.)



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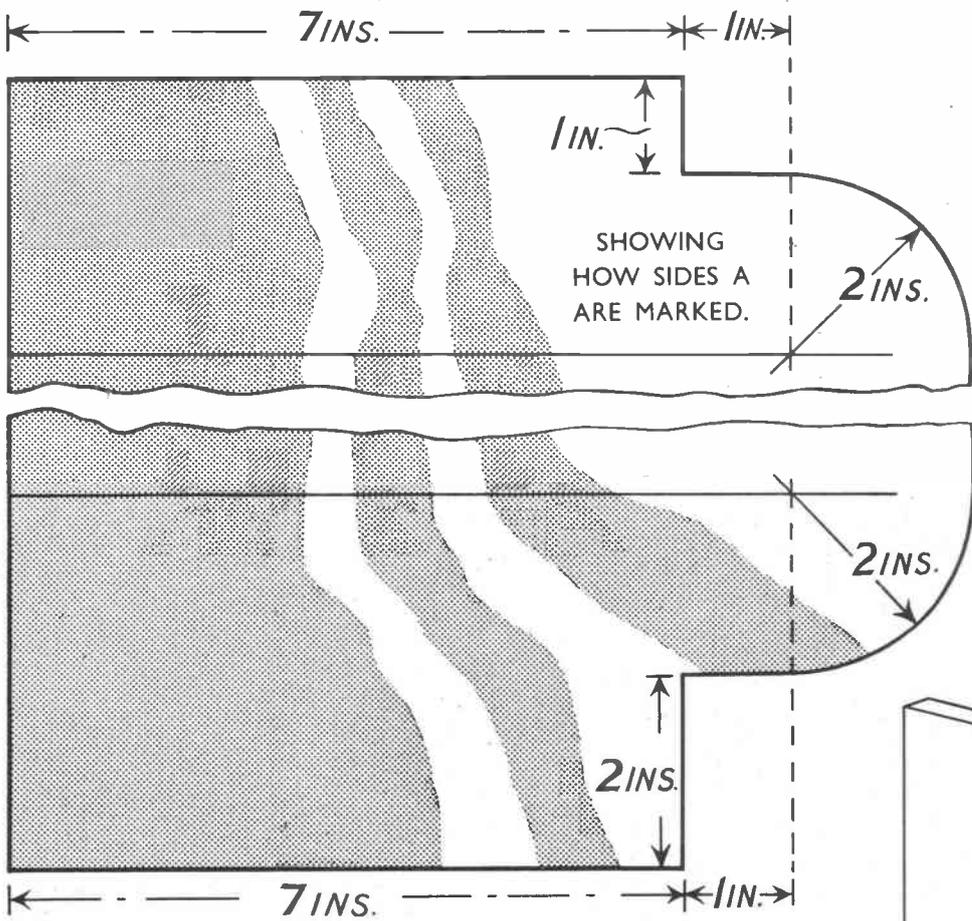
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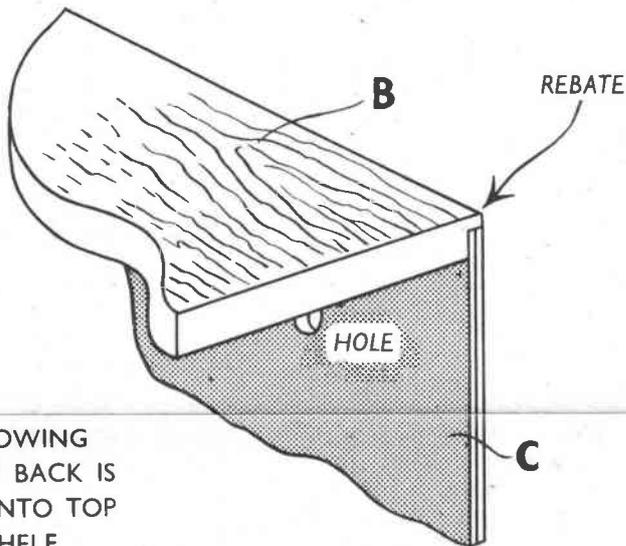


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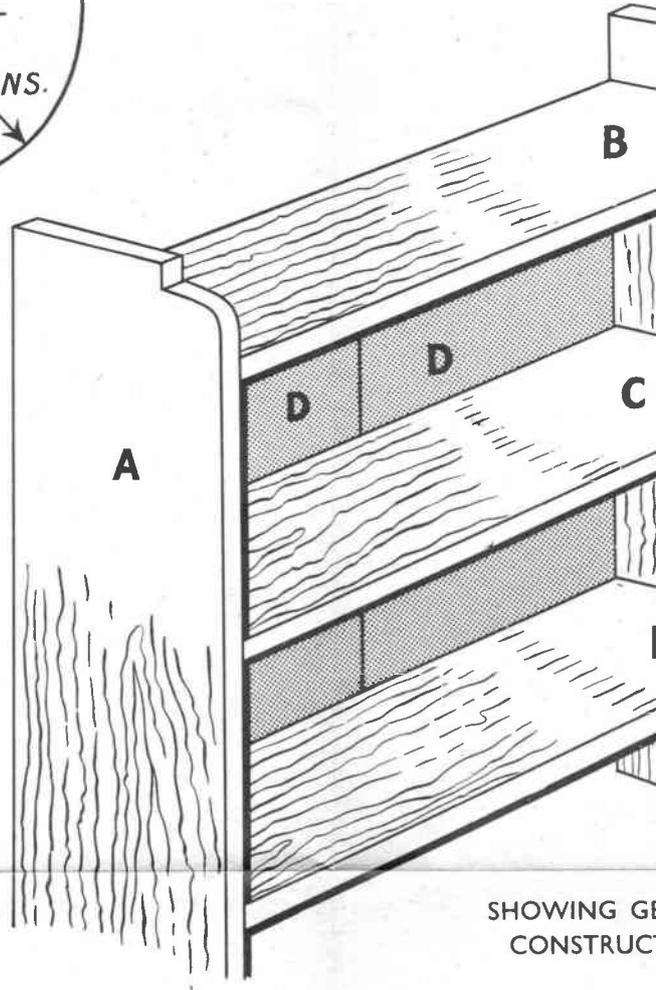
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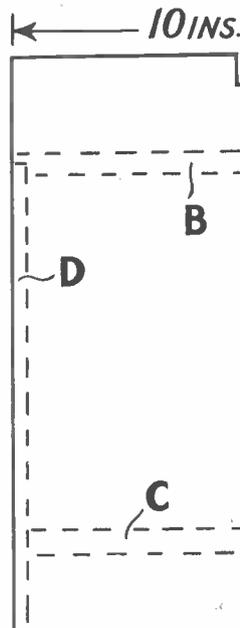
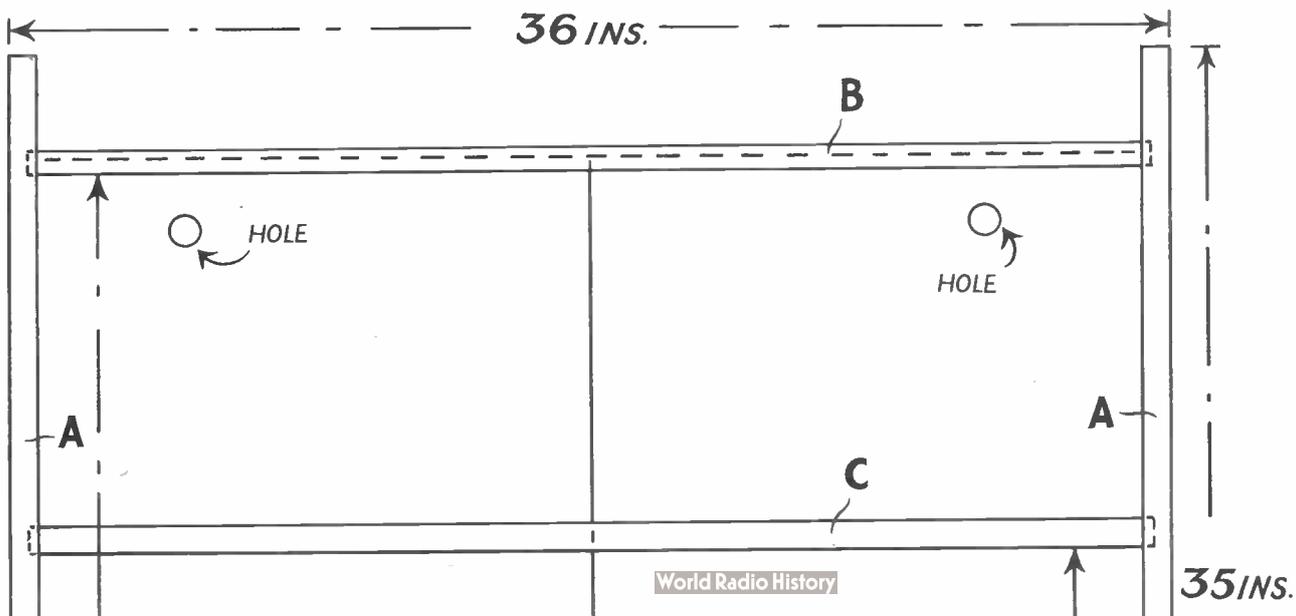
EASY TO
MAKE FOR
THE HOME

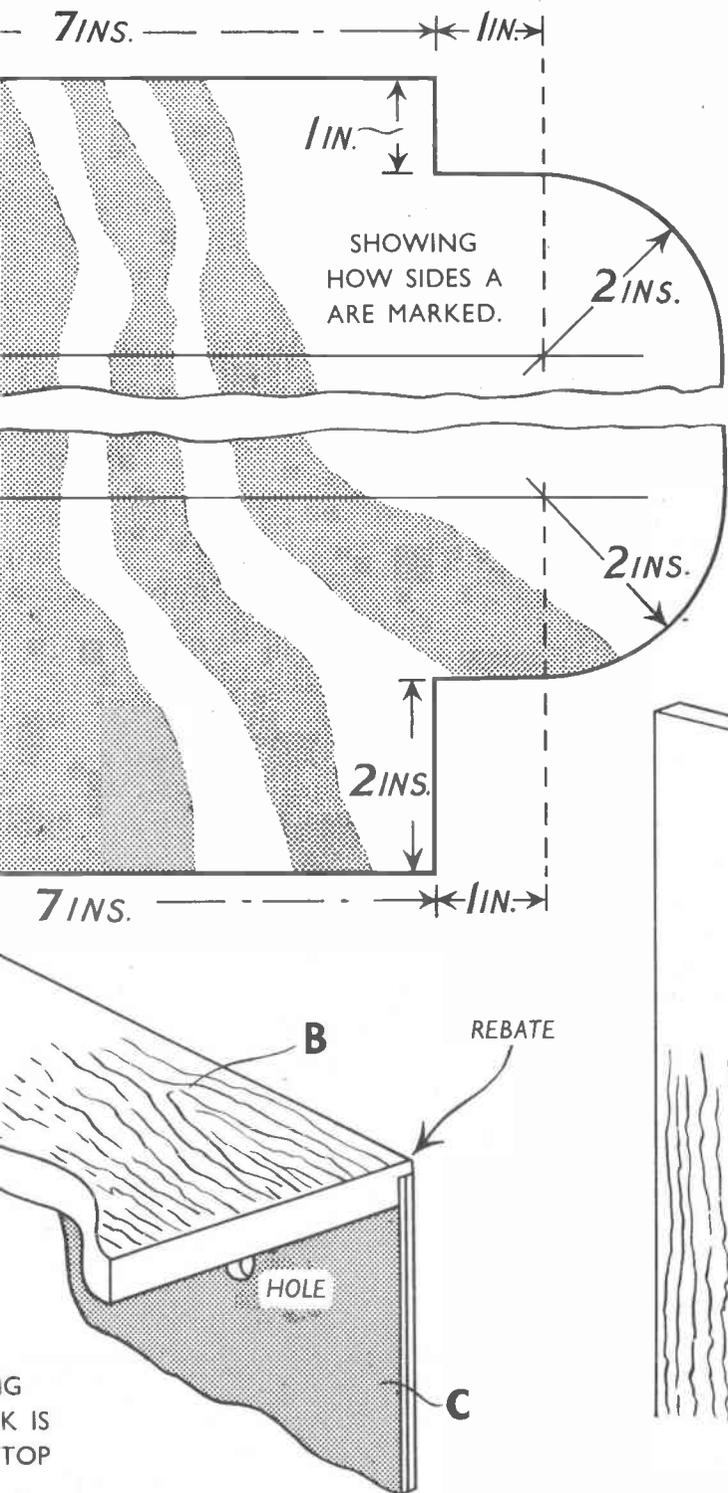


SHOWING HOW BACK IS LET INTO TOP SHELF.



SHOWING GENERAL CONSTRUCTION

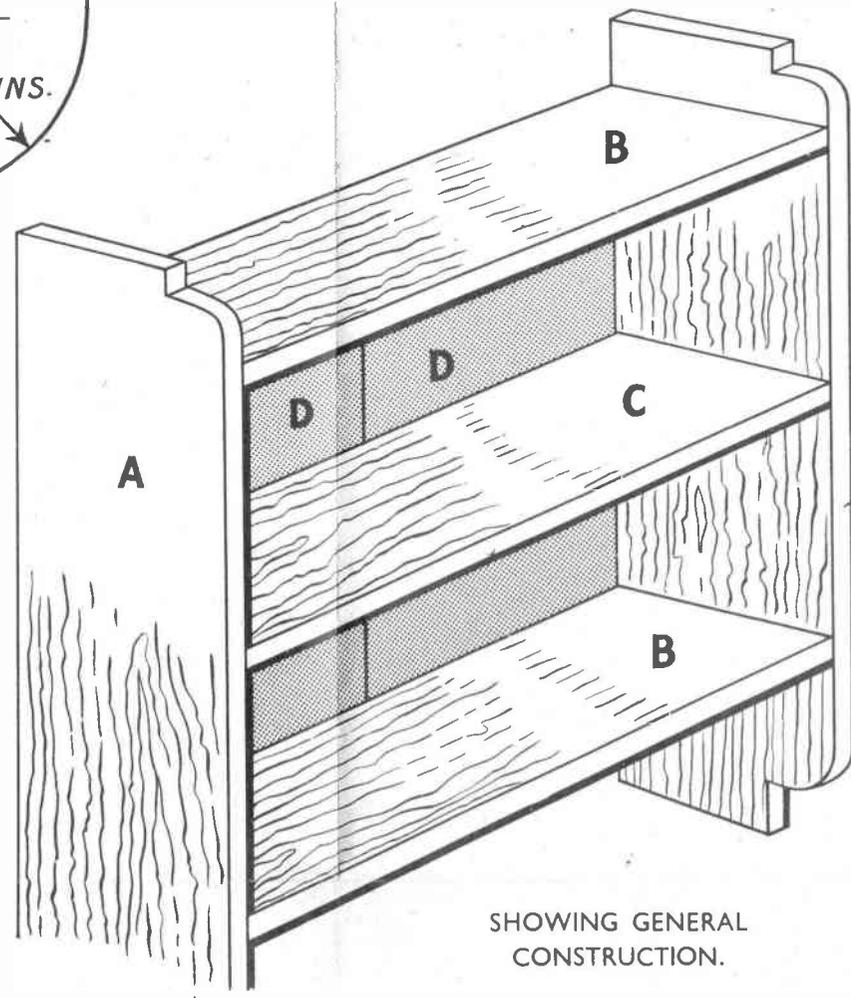
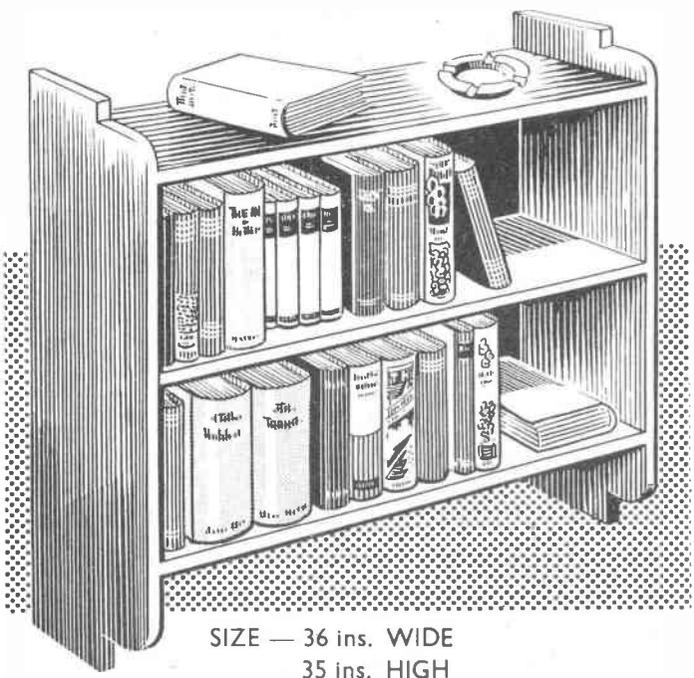




EASY TO MAKE FOR THE HOME

Hobbies DESIGN No. 3326

HANGING BOOKCASE



SHOWING GENERAL CONSTRUCTION.

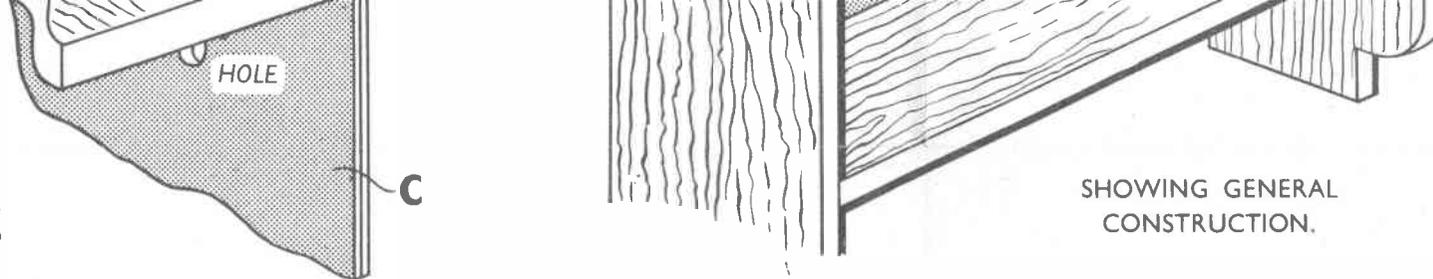
A KIT OF MATERIALS FOR MAKING THIS DESIGN IS SUPPLIED BY HOBBIES LIMITED, DEREHAM, NORFOLK. PRICE ON APPLICATION.

Use **CASCAMITE** 'One Shot' Resin Glue for all Wood Gluing

Obtainable in: 3½-oz., 7-oz., and 18-oz. tins.

Stocked by: Ironmongers, Builders' Merchants, etc.

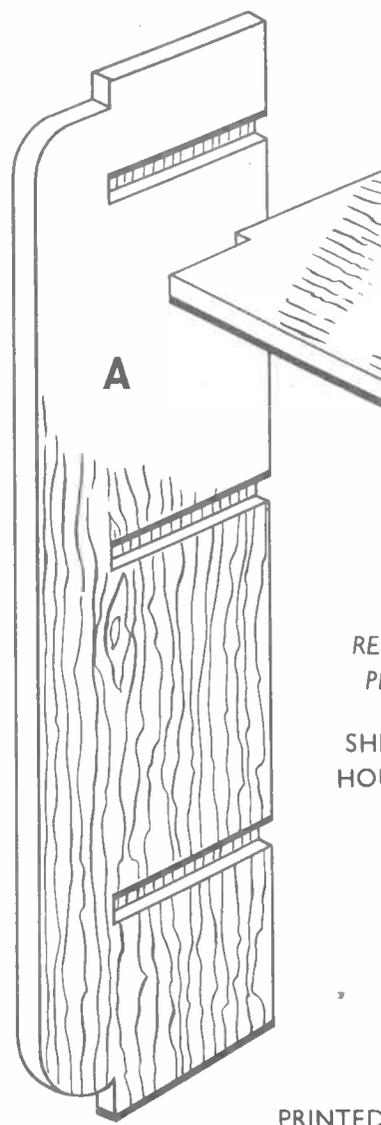
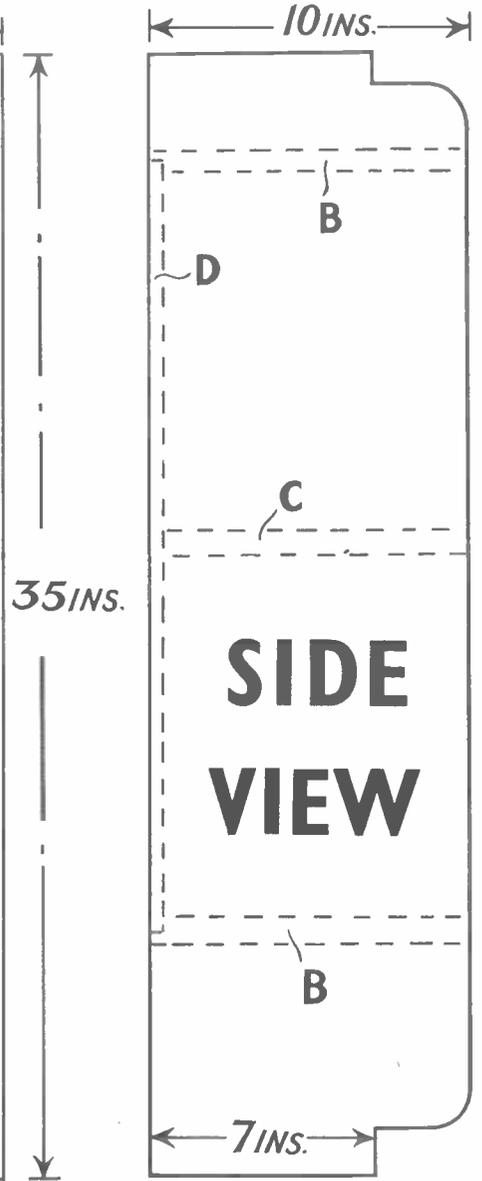
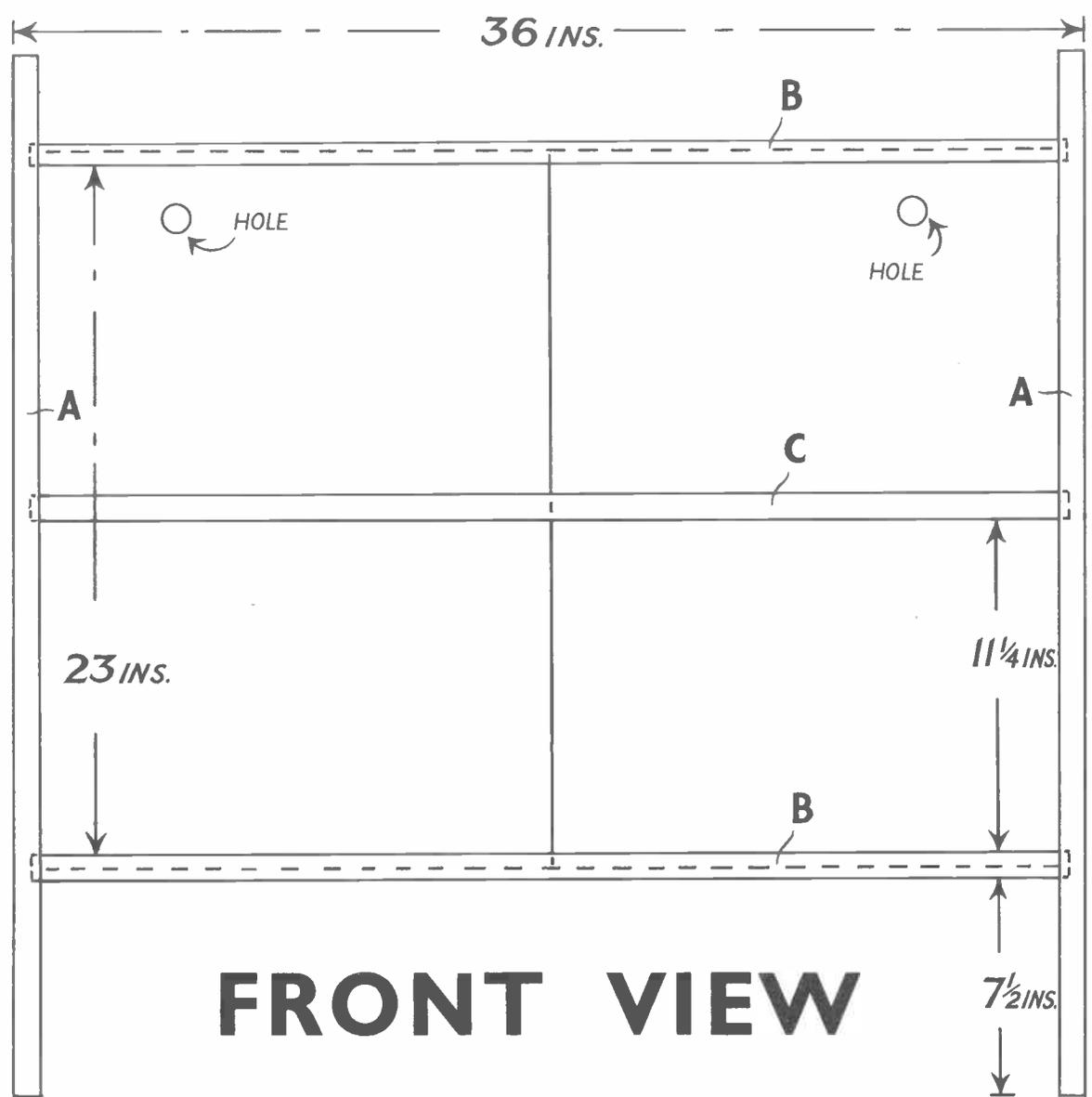
- Mixed & use cold
- Waterproof type
- Gap-filling and non-staining



SHOWING HOW BACK IS LET INTO TOP SHELF.

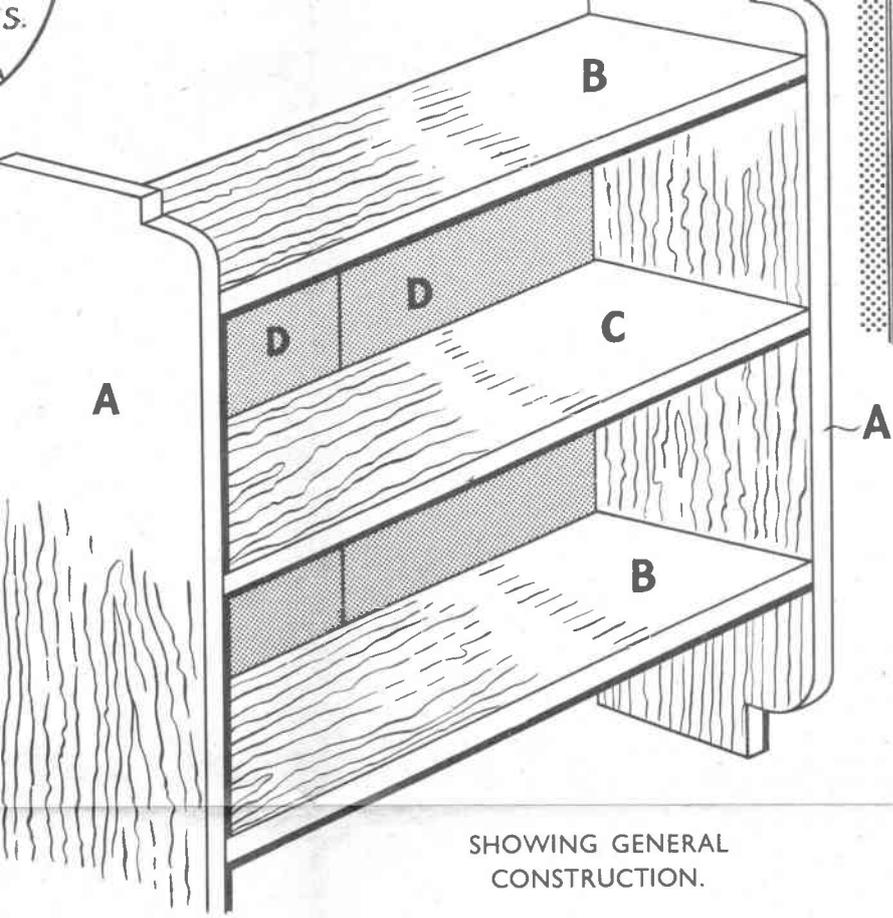
SHOWING GENERAL CONSTRUCTION.

Use **CASCAM**
 'One Shot'
 Resin Glue
 for all Wood Gl
 ● Mixed & use cold ● Water
 ● Gap-filling and non-stainin
 Stocked by: Ironmongers, B
 Manufactured by:
LEICESTER, LOVELL & CO. LTD.

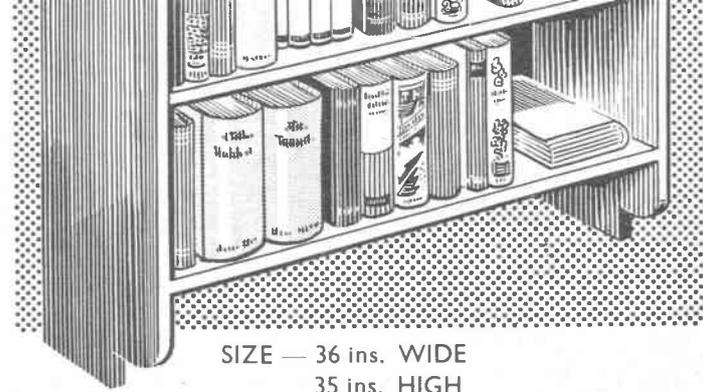


RE
 P
 SH
 HO

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SHOWING GENERAL CONSTRUCTION.



SIZE — 36 ins. WIDE
35 ins. HIGH

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Use **CASCAMITE**
'One Shot'
Resin Glue
for all Wood Gluing

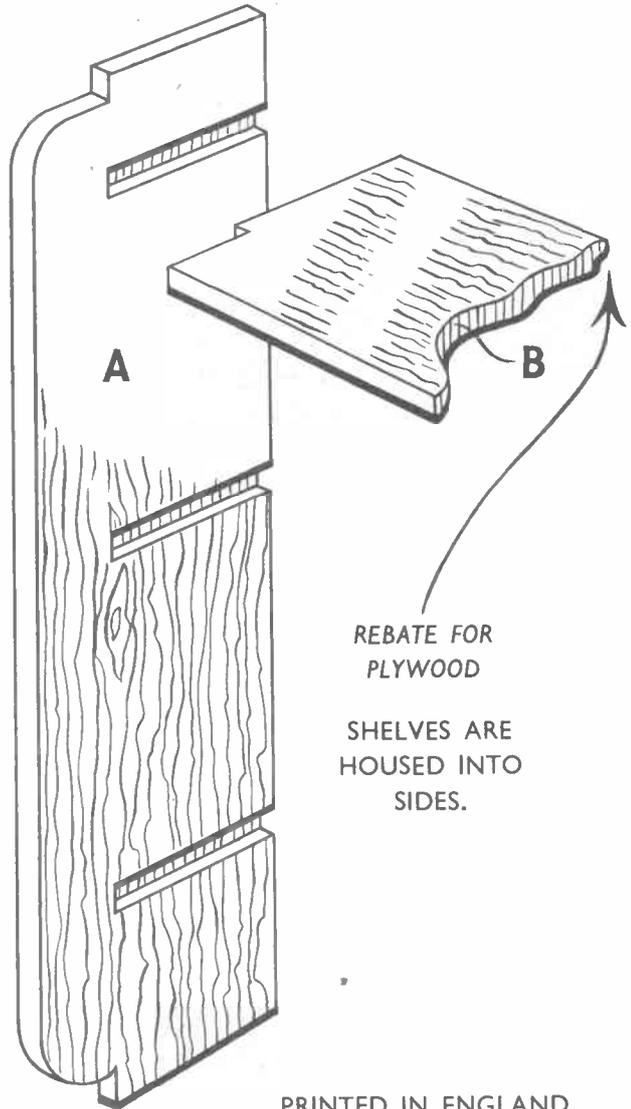
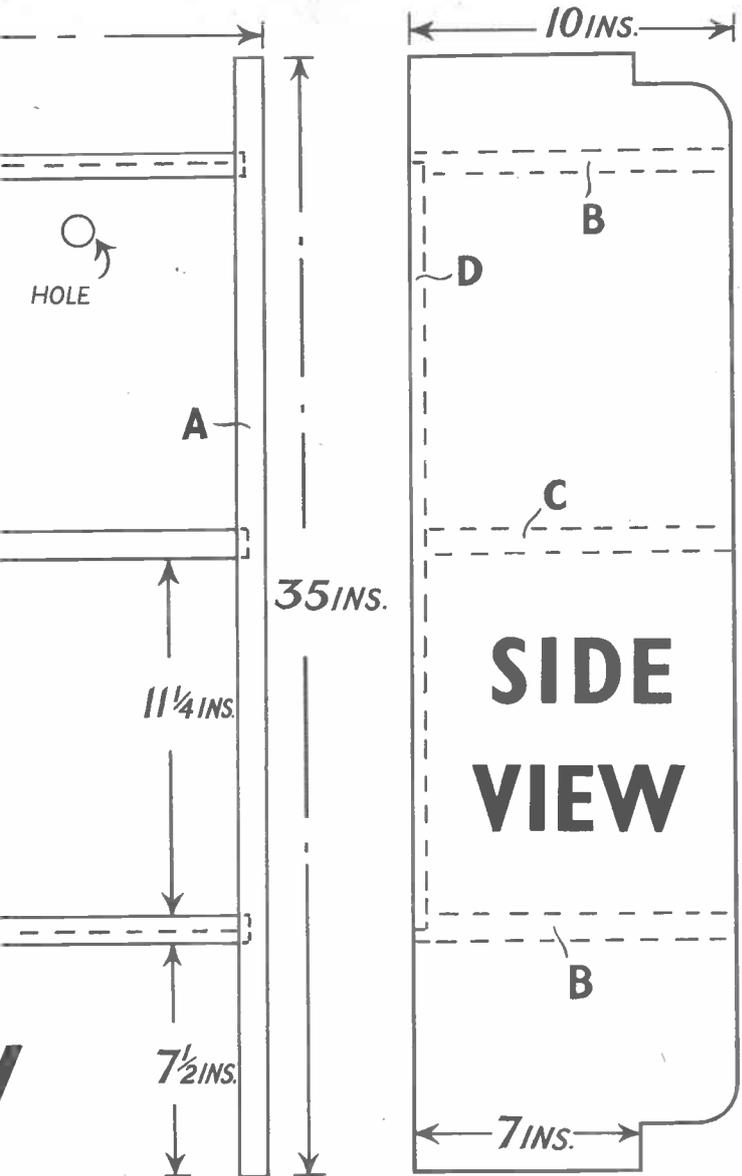


- Mixed & use cold
- Waterproof type
- Gap-filling and non-staining

Obtainable in:
3½-oz.; 7-oz.
and 18-oz. tins.

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Manufactured by:
LEICESTER, LOVELL & CO. LTD. North Baddesley, Southampton



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