

# HOBBIES WEEKLY

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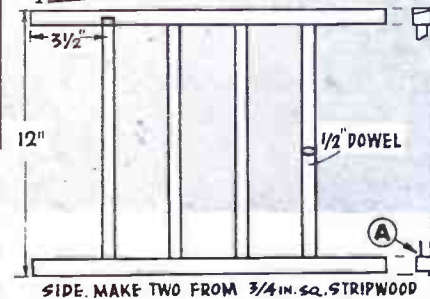
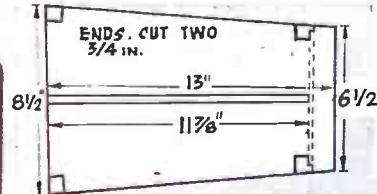
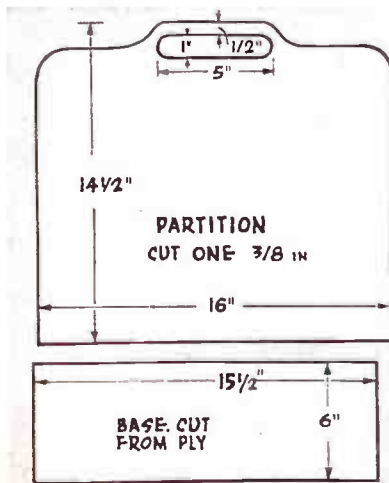
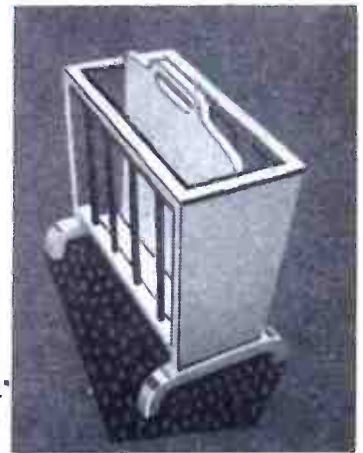


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## MAKE THIS TIDY FOR MAGAZINES



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For Modellers, Fretworkers  
and Home Craftsmen

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# A MAGAZINE TIDY

WE all know how irritating it can be to want to refer to a magazine or newspaper and then, after a search in almost every room of the house, to find it eventually hidden under a pile of old catalogues or tucked away in a cupboard drawer. The Magazine Tidy described in this article will not only save frayed tempers by neatly storing magazines and newspapers where everyone in the household can find them, but it will preserve the periodicals and prevent torn covers and loose or dog-eared pages.

The Tidy has most attractive modern lines, as will be seen from the illustration and its construction is so simple that it should present little difficulty to the average handyman. It is composed of eight parts, the two sides, the two ends, the dividing partition, the base and the two footpieces.

Commence with the construction of the two sides, which are identical. Each is made from two pieces of 3/4 in. square stripwood 16 ins. long and four dowels, 3/4 in. in diameter and 1 1/2 ins. long. As will be seen from the diagram, the dowel rods are to fit into the stripwood rails and to do this, four 3/4 in. diameter holes are drilled in one face of each rail. The holes are drilled to the depth of 3/4 in., the centre of the outer holes being 3 1/2 ins. from the end, with the two inner holes spaced 3 ins. apart. In the two strips which will form the lower rail of each side cut a recess 3/4 in. wide and 3/4 in. deep along the inner underside of each strip, as at (A) in the diagram. These recesses will receive the corresponding edges of the base when assembled. The two strips

forming the upper rails of the sides must be chamfered inwards along the top face as indicated at (B), to ensure a level top frame when the sides and ends are assembled. The sides are completed by gluing the dowels in position.

The two ends are cut from 3/4 in. wood and are 13 ins. in length. The width tapers from 8 1/2 ins. at the top to 6 1/2 ins. at the base, as in diagram. With a grooving plane make a groove 1/4 in. wide, 3/4 in. deep and 1 1/2 ins. long down the centre of the inside of each end, the length of 1 1/2 ins. being measured from the top. These grooves will take the edges of the dividing partition when assembling and care must be taken to make a good and clean fit. The top inside corners of each end must be recessed 3/4 in. deep by 3/4 in. square to take the top rail ends of the two sides. Similarly, two recesses are cut, 1 in. from the bottom of the inside face of each end to take the bottom rail-ends. They are cut 3/4 in. deep and shaped to fit the bottom rail-ends of the two sides (see detail at A).

At this stage it is advisable to make a test assembly of the sides and ends to check the joint fittings and to ensure the alignment and squaring of the frames. Any projections should be planed off.

The next piece to be made is the base, and construction of this is quite straightforward, as will be seen from the diagram. Cut from 3/4 in. plywood, it measures 15 1/2 ins. by 6 ins.

The shape of the partition can be seen from the diagram. It is cut from 3/4 in. plywood from a piece measuring 14 1/2 ins. by 16 ins. Use a fretsaw for the curved lines of the top and for the 5 ins. by 1 in.

elliptical cut-out. When completed, make a test assembly into the grooves of the two ends and check for rigid fitting.

Finally the two feet are cut from two pieces of wood measuring 1 1/2 ins. by 2 1/2 ins. and 1 1/2 ins. thick. The shape of the outline is shown in the diagram. Drill two holes in each foot to take screws for screwing through to the bottom edge of each end when finally assembling. Make provision for countersinking.

Before final assembly all parts must be cleaned and rubbed down with glass-paper.

## ILLUSTRATIONS ON FRONT PAGE

Assembling is quite simple. The sides, ends, and base are glued together and panel pinned to further strengthen. Run glue into the grooves in the end pieces and insert the partition. Fix the base by gluing and further strengthen by panel pinning along the line of the partition underside. Finally screw on the two feet and cover the screwheads with plastic wood. Care should be taken to ensure that the ends are centralised on the top of the feet.

Remove all traces of surplus glue before it dries and then leave until the glued joints have had time to dry and harden. When completely set, rub down with fine glasspaper, and the Magazine Tidy is now ready for its final painting or polishing, according to personal requirements. If it is intended to paint or enamel finish, a most pleasing effect is produced by using contrasting colours for the dowels and feet.

## Priming Walls

ABOUT six years ago I had a bathroom built and one of the existing walls has since been treated with distemper and P.E. paint, neither of which was suitable as different parts of the wall started to peel. Last August, however, I scraped and cleaned the walls down, sized them, gave them two undercoats and one coat of finish paint, all to no avail as these certain parts of the wall still continue to peel. Can you advise how to overcome this trouble? (F.W.—Frome.)

A PRELIMINARY coat of metallic primer should cure the trouble complained of, whether the brick walls are plastered or not. This may be obtainable locally, but if not, it can be bought direct from Devon Paints Co., Church Lane, Barnstaple, Devon. You can paint or distemper over it as you please.

# MAKING-UP A FLY CAST

THE angler's casting line — the cast as this item of tackle is commonly called — may be of natural silk-worm gut or of such material as nylon, which has its valuable points. Nylon has better qualities of strength and uniformity over natural gut, plus the fact that it can be tied without preliminary soaking, but many anglers have tried it out and then gone back to the old. They say that knots tied in nylon have a propensity for pulling apart and maintain also that the latter material is elastic, and that though easy to use while new, once a length has been well stretched, it is apt to break easily. Personally, I use it quite a lot, and like it. My experience is that it has no more faults than natural gut.

Most gut is liable to deterioration, and should be kept from strong light. It should be carefully stored in chamois-leather or in a book with wash-leather leaves. Where fraying is near a knot, cutting out the frayed bits and retying may give a cast a new lease of life.

For fly-fishing for trout, the lasting-line — the leader as it is called in some parts — may be level or tapered. The tapered casts are preferable, especially for dry-fly work, as they allow the fly or flies to fall much more quietly and accurately on the water. Some anglers make up their own 'leaders' from a length of stout level gut, a strand of 2x undrawn, and a piece of fine 3x or 4x. Such a made-up cast forms an excellent tapered cast then joined together. Flies are usually attached to fine gut points, and then tied to the cast.

## How to Hook

The matter of 'striking' a rising trout at the exact second is ever an intriguing one. There are trout anglers who, in order to give themselves confidence, have a rule they invariably apply — and that is to 'count five' before driving the barb home by a twist of the hand holding the rod.

Occasional trout or sea-trout are lost by the angler striking too hastily. Again, one may be a trifle too late. There seems to be a kind of intuition in the art of hitting at the critical half-second. For so many of us, even of experience, the movement of the strike is a movement of 'partial unconsciousness' that comes from a fractional 'black-out' and if we fail to hook the fish we haven't the faintest idea how it was missed.

To lose contact with a lively fish after hooking and playing it for a time is nothing new — it does happen frequently enough to the best angler. Often it seems just inevitable and something of a mystery!

When determined to avoid the risks of failure in striking and playing a fish as much as possible, there are a few simple rules to observe that will tend to lessen the chances of a fish getting free after grabbing your bait or artificial lure — see that your tackle is of the best; leave nothing to chance; test gut points and casts before use; keep your eye on the hook itself, and make sure the barb has not become dulled or barb snapped off by catching in a snag or bough of overhanging tree. Faulty tackle may bring about a catastrophe; make sure you have everything in good order. When playing a 'best ever' trout or sea-trout keep cool — if you can!

## How to Handle

To release a fish without injuring it — set your hands so that they do not remove the protective slime from the fish's body. Use as little pressure as possible; don't squeeze it round the middle. Take the captive firmly but gently between thumb and forefinger on opposite sides of the body just under the gills, avoiding contact with these delicate organs; the fish is not quite so slippery there. If fish is hooked in the mouth, get

hook out carefully. If the hook has been swallowed don't tear it out, but cut off the cast. In time the fish will recover with little ill-effects.

Never throw or 'sling' your catch back into the water. Quietly release all caught fish you desire to replace, in a sheltered pool, then you won't be so liable to injure them. If treated as above fish soon recover.

Trout that you wish to retain for the table should be handled carefully to avoid bruising. For keeping the fish in good condition, so that on arrival home they retain their pristine beauty, nothing beats the wicker creel. Some anglers include in the basket a linen bag to slip the catch in before consigning to the former. Others remove gills and stomach and wipe the insides clean as soon as the captured fish is killed; then it is wrapped loosely in dock leaves, grass or ferns, and placed in the creel.

Those fishermen preferring a bag for carrying fish home may take pieces of greaseproof paper or similar material. Place and wrap the fish in same and cover loosely with grasses, slightly damped. Such a bag should have an inner detachable rubber lining. (A.S.)

## Here's Magic Ghostly Smoke for you!

THIS pretty trick is a good item for the amateur who performs at 'smokers', and yet it is showy enough for the concert and variety stage.

A glass jar, previously shown quite empty, stands on the performer's table. There is a glass lid to fit the jar. This lid having been shown to be quite innocent of trickery is placed on the jar. The whole is covered with a large silk handkerchief or flag.

The performer now lights a cigarette and begins to blow the smoke towards the covered jar. After a few puffs he pulls away the covering and the jar is seen to be full of smoke. On lifting the lid the smoke rises gracefully upward.

This effect depends entirely on the use of two common chemicals — hydrochloric acid and ammonia. Within the jar are a few drops of acid, while the inside of the lid is moistened with ammonia. Immediately the lid is in position a chemical reaction takes place, causing dense white fumes.

In introducing the trick the jar and the lid are kept well apart, but immediately the lid is in position the covering must be put on, for the fumes begin to form at once. The business of



lighting the cigarette and blowing the smoke towards the jar allows ample time for the formation of a good show of ghostly smoke.

A suitable jar for this trick can be bought at any department store. Such jars are sold for pickles and preserves. Great care must be taken when handling the acid, for, of course, it may cause injury to hands or clothes. The performer who travels to give his shows should take just sufficient for his act, and this is best kept in a bottle with a well-fitted glass stopper. (R.W.W.)

## Replies to Readers

# Is this YOUR Problem?

### Satin Matt Finish

I WOULD like to know how the satin matt finish is formed on the new contemporary furniture. (B.N.—Wordsley).

TO obtain the satin finish on polished work, dust on a small quantity of fine grade pumice powder on a felt pad, saturated with linseed oil, and go over the polished surface with it. Afterwards wipe off the oil with a clean rag, and should any still linger on the surface, wipe lightly over with common brown vinegar. It would be wise to first experiment on a spare piece of polished work, as a little knack is necessary to get the best results.

### Concrete and Mortar Mixes

PLEASE advise me of the correct composition of the following, using as the components 'mixed sand and gravel' and ordinary cement — concrete kerbings (15 ins. by 5 ins. by 2 ins.) for lawn edging. Also the correct proportions using sand and cement for the usual mortar between the bricks — house bricks. (R.H.—Kingstanding).

FOR the concrete edging you should mix 1 part cement with 2 1/2 parts mixed ballast, or 1 part cement, 1 1/2 parts damp sand and 2 parts shingle. For the mortar, 1 part cement to 2 parts sand. Do not forget, if you employ ballast, to remove all stones over 3/4 in. in size.

## Converting the 3 gn. set

# 'FROM T.R.F. TO SUPERHET

AS was stated in the article dealing with the construction of the five-valve T.R.F. mains set in a previous issue, it is quite easy to convert this set into a superhet.

In most conversions great difficulty is experienced in finding space for, and fitting, the necessary extra parts. In this case, nothing of this kind will trouble the constructor. For instance, ample space was left in the T.R.F. design

By A. Fraser

between valves one and two, and between valves two and three. This was a convenient arrangement to provide space for Intermediate Frequency Transformers in case the reader decided later on to attempt the conversion to superhet.

Consequently the conversion becomes one of adding extra wiring, and making various minor alterations. A new valve is needed, but no new valveholder is necessary, as one only has to remove an

surplus type listed.) Alternatively, a service man will align the set for a small fee. However, instructions are given later about the general alignment of the superhet.

When undertaking the conversion, the first thing to do is to remove all the valves, making sure that they are in a safe place. The valves are liable to be damaged if they are left in while the set is under reconstruction.

The loudspeaker, of course, is disconnected from the chassis when removing this from the cabinet.

At the start, all the necessary extra parts are laid ready, not forgetting to clean the ends of resistors, condensers, I.F.T. leads, etc.

First, unsolder or disconnect all those connections in the T.R.F. circuit which are unnecessary for the superhet. Proceed as follows:—

Unsolder all the connections to valve number one. (Consult the diagrams for both T.R.F. and the superhet when dealing with the conversion.) Then unbolt the valveholder from the chassis and turn it round and rebolt it, so that the tag 6 is facing towards the front of the

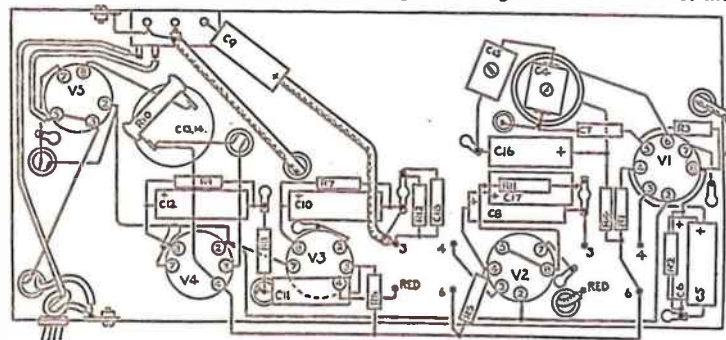


Fig. 1—Under chassis wiring

existing valve and replace it with the new one.

As far as cost is concerned, this should appeal to the reader, for as the list appended to this article shows, it amounts to a mere 17/9. Thus, for this comparatively small outlay and a minimum of labour, one can acquire the distinct advantages of the superhet — extra selectivity and sensitivity.

Should the reader be deterred by difficulties of alignment, let it be said that the lack of a signal generator does not prevent the building of a superhet. Pre-aligned I.F. transformers can be bought which solve this problem. (These, of course, will cost a little more than the

chassis (see Fig. 1). This is the only valveholder whose position is altered. Now consult T.R.F. diagram 2:—

Turn to V2 valveholder, and disconnect tag 8 from the earth tag, and cut out the lead altogether.

Unsolder the two connections to tag 3, and remove R4 completely, as it is no longer needed.

Remove also R5 from tag 4 and H.T.+ line.

Still working from T.R.F. diagram 2, proceed to remove completely R3 and C7.

Then disconnect remaining three leads of the coil (this H.F. coil now becomes the oscillator coil of the superhet).

| List of Extra Parts for the Superhet     |             |
|--|-------------|
| 1 pair of 465 kc/s. I.F. Transformers .. | 7 0         |
| R3 and R5 (47K), R4 (22K), R11 (220)     | 1 0         |
| (Above obtainable from:— T.R.S.,         |             |
| 70 Brigstock Rd., Thornton Heath,        |             |
| Surrey.)                                 |             |
| ECH35 or 6K8, etc. ....                  | 7 6         |
| (S. Willetts, 43 Spon Lane, West         |             |
| Bromwich, Staffs.)                       |             |
| Condensers 1 mfd. 350 V (two) ..         | 1 0         |
| 0001 (Mica) ..                           | 5           |
| 750 pfd. Padder ..                       | 10          |
| (Radio Supply, 32 The Calls, Leeds       |             |
| 2.)                                      |             |
| <b>Total</b>                             | <b>17 9</b> |

Note that Postage is not included in the above.

The coil should now be altered as follows:—

Remove a quarter of the turns from the top of the large winding, and connect the end to C4 again.

Now add another soldering tag to the one to which C8 is earthed. Do the same for the tag to which C10 is earthed. (Compare T.R.F. diagram 2 with superhet diagram 1.)

Next, bore a hole and insert a rubber grommet in the chassis to the bottom right of V2. Keep it close to the valveholder.

The I.F. transformers should now be mounted. The exact chassis drilling will depend on the type of transformer bought. Cylindrical types, like the Pye I.F.T., can easily be accommodated by an international octal cut-out similar to the valveholder cut-outs. Rectangular types need five holes bored. In this case, see that the red tag is placed as in the diagram. Consult diagram 1 (superhet).

### Re-wiring

Re-wiring can now commence.

First, fix the padder condenser C15 between C4 (on the coil) and the earthing tag. The padder will be bolted to chassis, so a hole will have to be made.

Next, join the lead through chassis grommet to the other side of C4 on coil. To the same point on C4, join C7 and connect the other end to tag 5 on V1.

To the same tag 5 (V1), join R3, and take the other end to tag 8.

To tag 8, join the lead from C6 and R2.

Now join tag 6 to the bottom of the small winding on the coil.

Join the top of the small winding on the coil to one end of C16, and earth the negative end of this condenser to the soldering tag.

The junction of the coil and positive end of C16 is linked, through R4, to tag 6 of I.F.T. number one. From this end

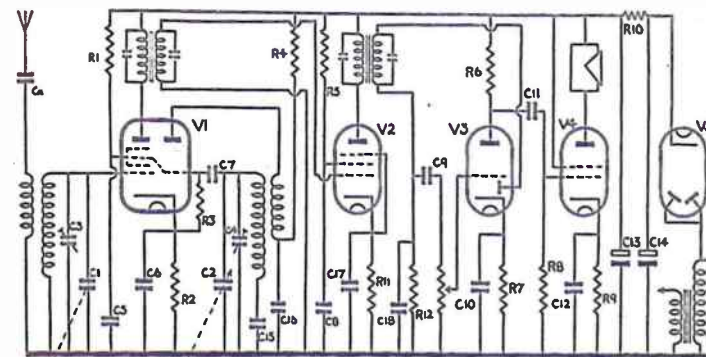


Fig. 2—Theoretical diagram

R1 goes to tag 4 (V1). From the same tag 4 a lead goes to positive end of C5 at the corner of the chassis. —

Join tag 7 (V1) to earthing tag nearby. Then connect tag 3 (V1) to tag 4 (I.F.T.).

Join tag 2 (V1) to the heater line coming from tag 2 (V2). Keep this lead close to the chassis and away from other wiring.

Connect tag 6 (I.F.T.) to the H.T.+ line. Join the red tag of I.F.T. via a screened lead through the grommet to the grid top cap of V2.

Earth tag 3 of I.F.T. to the soldering tag nearby.

To this same earth tag connect R11 and negative end of C17. Join the free end of R11 to that of C17 and connect to tag 8 of V2.

Join tag 3 (V2) to tag 4 of I.F.T. number two.

Connect the new R5 to tag 4 (V2) and the other end to H.T.+ line. To the same high tension point join tag 6 (I.F.T.2).

Join the red tag of I.F.T.2 to tag 4 of V3, as shown in the diagram 1. The condenser C11 might have to be pulled aside somewhat to allow this to be done.

Connect R12 and C18 to earthing tag, and join the free ends to tag 3 of I.F.T.2.

Shorten the screened lead (coming from C9 on the volume control) and join to tag 3 of I.F.T.2. The outer metal braid of this lead is earthed to the soldering tag.

This completes the re-wiring for the superhet circuit. The rest of the set is exactly as in the T.R.F. circuit.

Check and re-check the wiring connections, working from diagram 1.

Turn the set over and plug in the valves, as follows. V5 is 6X5, V4 is EL32, V3 is EBC33. These are as in the T.R.F. version. But V2 and V1 are different. V2 takes EF39 (not EF36, as in the T.R.F.), while V1 takes the new valve ECH35 or equivalent like 6K8. Take care to get this valve line-up correct.

Connect up the loudspeaker, etc., and set about the alignment.

Remember the warning, given in the article on the T.R.F., about not touching any metal part of the set when it is plugged into the mains. (The chassis is connected directly to one side of the mains.)

If pre-aligned I.F.T.'s are used, these should be left untouched. But if the I.F.T.'s are to be aligned at home, proceed as follows.

Short the oscillator section by joining a wire between stator and rotor sections of C2. Connect the signal generator lead to the top cap of V1, the remaining lead to the chassis. Set the generator to 465 kc/s. and switch on both set and generator.

Adjust the bottom slug, then the top

slug of I.F.T.2 for maximum signal, then do the same for I.F.T.1. Repeat this until no improvement is forthcoming.

Switch off and disconnect generator top cap lead, also the short across C2. Connect the generator lead to the aerial socket.

Set the oscillator trimmer (C4) and the padder (C15) to half-way position.

Turn the generator and set dial to 500 metres. If you have no generator, plug in the aerial and set the dial pointer to a known station high up on the dial, such as the Third Programme 464 metres.

Switch on and adjust padder C15 until the signal comes through as loud as possible.

Now set the generator to 200 metres, also the set dial. If no generator, then choose a station low down on the dial such as Luxembourg 208 metres or Light 247 metres.

Adjust the trimmer C4 until the signal is at its loudest.

Repeat the above operations until no improvement ensues.

Finally, turn generator and receiver dials to 200 metres (or Luxembourg) and give a final trim to the aerial coil above the chassis (trimmer C3) for maximum output.

Should the above alignment procedure yield no results, then reverse the leads to the small winding on the oscillator coil (under chassis) and start again.

In conclusion, note that the resistor R12 in the superhet (which is .5 meg.) need not be bought, as the discarded R5 (470 K) from the T.R.F. can be used instead.

## A Posy of Carrot Leaves

DO you collect wild flowers? It is well to remember if you do, that when carried in the hand they usually become bruised and lose much of their beauty. Try using a tin to collect them in.

Cigarette ash in the water will help to keep cut flowers fresh.

Use the water in which eggs have been boiled for sprinkling flowers and plants. This treatment stimulates leaf growth and is an additional safeguard against pests and diseases. Some gardeners spray rose bushes with soap-suds. They say it's a good remedy for greenfly.

The crowns of carrots, beet, turnips and other similar root plants, if cut about 1/2 in. in thickness and placed in a saucer of water and exposed to the light, will in a few days send out young leaves, green or coloured, which will grow into pretty sprays 6 or 8 ins. in height. In the case of turnips, flower buds are produced.

In the time of Charles II the young

leaves of the carrot so produced were used as personal ornaments by ladies.

A simple way of destroying coarse weeds (dandelion, thistle and plantain) is to dip a wooden skewer in weed-killer and pierce the centre of the weed. Do not allow the solution to fall on nearby plants or these will also be killed. (R.C.)

### Re-soldering a Kettle Spout

TO re-solder the kettle spout of a 'tinned' wrought-iron or copper kettle, the spout and the surrounding area must first of all be carefully filed until the surface is quite clean and bright.

When this has been done, place the spout into position, apply killed spirits, and then hold it over a bunsen flame or other heat until enough of the strip solder is melted to flow round and to sweat through so as to make a really strong joint. (E.M.R.)

## An absorbing hobby

# MODELS IN PAPER CRAFT

PAPER is a very common material. In fact, it is so common we take it for granted, without pausing to consider what a wonderful thing it is, and how indispensable. There is hardly any department of life in which it is not needed.

For the craftsman it is immensely useful. No material could be cheaper. In addition it has its own particular advantages over other materials — it is very easy to work. A pair of scissors or a knife will cut the material with complete ease. It can be folded, bent and rolled without effort. It can be glued or pasted easily.

For a long time now some of the first efforts of children in the craft class have

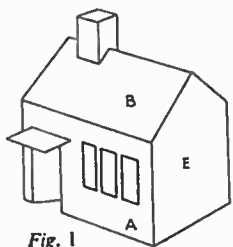


Fig. 1

been devoted to making models out of paper. But it is only in recent years that the possibilities and merits of paper work have been fully realized, and paper craft is now coming into its own.

In this short article it is not possible to deal with all the various ways in which paper can be used creatively. The making of paper flowers is a subject on its own, but it is mentioned because the reader might find in it the very medium he has been wanting through which to express his originality and skill. There is money to be made from paper flowers, and the gypsies know all about that.

Allied to paper flowers is the making of paper decoration or ornament. Paper chains for parties, etc., are familiar. There is room here for originality.

Paper can be had in various colours, either plain or gummy on the back. These are excellent for making patterns and even pictures. Large surfaces are best treated by using plain unglued paper and pasting on with paste.

A first-rate paste can be made most cheaply from starch. Crush up a little starch in a basin, add a little cold water to make a smooth paste, then fill the basin with boiling water, stirring the while. A clear jelly-like substance results. The consistency should be fairly fluid to allow easy brush work. There is

no better adhesive than this for paper work.

Cutting out the various shapes in different colours for the pattern-pictures and trying them one against the other can be an absorbing and exciting occupa-

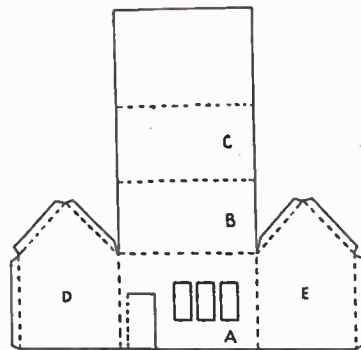


Fig. 2

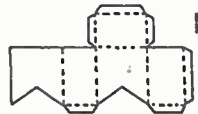


Fig. 3

tion. When pasting shapes one on top of or against another, use a minimum of paste and above all use a clean dry duster or cloth to pat down the paper. Don't rub with the cloth or the paper will be dirtied.

Those interested in interior decoration can add distinctive improvements to the walls and so on of their rooms by the tasteful use of paper patterns cut out and pasted on chosen spots, as for example friezes below the picture rail. On the walls themselves pictorial or abstract shapes open up a field for the imaginative. Flat silhouette type figures are effective, especially those giving colour and shape opportunities, such as pirates or pierrots. The bedrooms of younger people are the very thing for this sort of work. Large figures, even full size, would be more effective than small insignificant ones.

Undoubtedly, however, the main attraction of paper work will be in the possibilities it has for making models. Concrete things having volume and substance always have a strong appeal to craftsmen.

Simple models should be attempted first. These will be made up of flat surfaces. Curved surfaces will need care and ingenuity, and can be treated in two ways. Either built up with small patches

or strips of paper overlapping each other, or a mould can be made of Plasticine, and paste-soaked tissue paper laid on in layers, pressing each layer down to the mould. Curved surfaces take longer to make and need more care, but one well worth the effort,

By A. Fraser

especially where ships' hulls and aeroplane fuselages and so on are concerned. However, it is astonishing what one

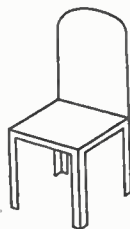


Fig. 4a

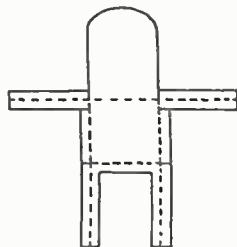


Fig. 4b

can make using only paper and scissors, and leaving out curved forms, such as those mentioned above.

There is a fascination in building model houses, and these are easily and quickly made using paper. Often these can be made from hardly more than one piece of paper, by using folding in the right places. Thus, in Fig. 1, the main structure of the house is formed from one piece of paper cut as shown in Fig. 2. The dotted lines indicate where the paper is folded. In assembling the model, (D) and (E), which are the sides of the house, are turned back from the front (A), the flaps on the gable ends being turned down. Parts (B) and (C) fold over to form the ridge, being pasted to the flaps on the gable ends.

The completion of the house is straightforward. The chimney stack is made from one piece as can be seen from

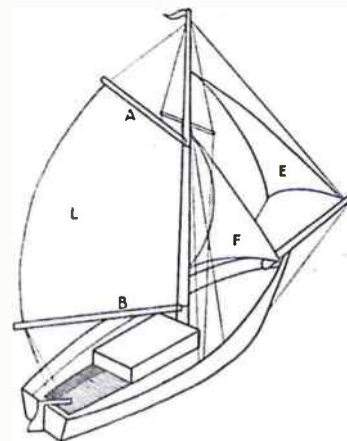


Fig. 5

Fig. 3. The chimney pot and canopy over the door need no explanation.

Before assembling, the paper cut-out can be painted with poster paint to simulate a real house.

Several houses like this could be made, and more pretentious ones also. A school, a church and various other buildings could be made, including a bridge. A whole village could be built up in this manner to provide amusement for both young and old.

Alternatively one could devote oneself to interiors. These could be either theatrical stage settings or simply domestic interiors. All that is needed is a thick cardboard carton of suitable size, obtainable free from the grocer. Remove the top flaps of this carton and lay it on its side, and the stage or room is ready to be fitted out. As far as the stage is concerned, the back-cloth will provide opportunity for stuck-on paper work. The figures can be cut out of cardboard and painted, or can be small solid puppets of wood. However, the ingenious craftsman could make limbs out of rolled paper, torsos the same way, with tissue paper dipped in paste and kneaded into the shape of a head. The assembled figure could then be dressed, using bits of cloth scraps and glue.

Domestic interiors are equally full of possibilities. The inside walls of the carton can be pasted with wall-paper. An imitation fireplace can be set in. Tables and chairs, etc., can be made from card or thick paper. The television must not be forgotten or the vase of flowers. A hole can be made in the top of the carton and a torch bulb suspended therefrom. The battery can rest on the carton top. A paper lamp shade can be made to fit the bulb.

Children find setting up these interiors extremely fascinating and grown-ups cannot resist the temptation to join in the fun. Figs. 4a and 4b show how a

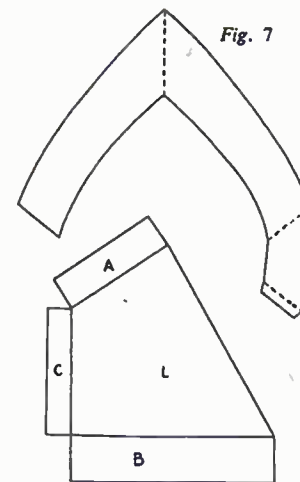


Fig. 6

simple chair can be made from one piece of paper or card.

There is plenty of scope for ingenuity in this sort of work.

It is quite possible to make ships from paper. These will fall into two classes —

those which are merely static models and those which are intended to float in real water. In the case of the latter, best results in forming the hull are obtained from the Plasticine mould method (mentioned before). Naturally, the hull must be waterproofed with varnish or wax after painting and all 'pasting' made with waterproof glue.

The deck can be cut from thick paper, or cardboard, and glued into place in the hull. The cabin is easily shaped. The masts are made by rolling up paper to form a thin cylinder and fixing with glue. The illustration (Fig. 5) shows the model of a cutter. This can be made as described. The mainsail (L) is made from one piece of paper. The flaps (A) and (B) are rolled up to form thin cylinders which become the gaff and the boom respectively. The flap (C) is glued round the mast and so holds the sail in position. (See Fig. 6).

The bowsprit is rolled up paper again, glued to the bow, and the jib (E) and fore (F) sails are obviously cut out of paper. The rudder is of cardboard. The cutter is completed by using cotton thread for rigging, and glue for fixing.

Fig. 7 shows how the hull for Fig. 5 can be cut out in one piece, this being a static non-sailing model.

## Sealing Wax 'Enamel'

IF you have an old wooden backed mirror, an odd hair brush with a plain back and one or two wooden toilet articles such as pin bowls and powder boxes too shabby for display, then you may convert them into a rich looking and really charming set by covering with sealing wax enamel.

The materials required are: Sticks of sealing wax in the following colours: (which should be pure and bright): green, white, bronze and silver.

Small jars fitted with airtight covers. Clean methylated spirit. Hair paint brushes (little finger thickness) for each colour.

Fine glasspaper. Finest glasspaper, pumice flour.

First, the sealing wax must be converted into enamel. This is done by breaking the sticks into very small pieces. Each colour must then be put into a separate jar and covered with methylated spirit. Put on the airtight cover and leave for twenty-four hours when it should be dissolved.

Now stir the wax and if too thick add a little more spirit and if too thin take the cover off and leave for a few hours in order to allow the spirit to evaporate.

The enamel is now ready for use and may be kept indefinitely.

The article to be decorated must have a perfectly clean surface. This may be accomplished by washing in soda water

and any paint or varnish removed by rubbing down with glasspaper. Allow the article to become completely dry before proceeding further.

Paint a thin coat of light green enamel (green and white enamel mixed well together) and allow to dry.

Next rub down slightly with glasspaper before adding a second coat.

Use pale green again for the second coat and while it is still wet take generous brushfuls of yellow, bronze and silver and add onto the surface allowing the colours to run into each other and form patterns. When completely dry the surfaces will not be even but the roughness may be eliminated by rubbing down with fine glasspaper and finally polishing with pumice flour.

Do not use heat or spirit near any article decorated with sealing wax as it is liable to become damaged.

Should the wax enamel become chipped or worn it may be easily restored by adding a brushful or so of methylated spirit over the parts causing the enamel to re-dissolve immediately and spread out. Leave to become thoroughly hard again before using.

Just a word of warning. Do not put wax enamel on thick. If you pile it on it may never completely dry as enamel dries immediately on the surface, sealing out all air from underneath which causes the under layer to remain pulpy. (D.M.D.)



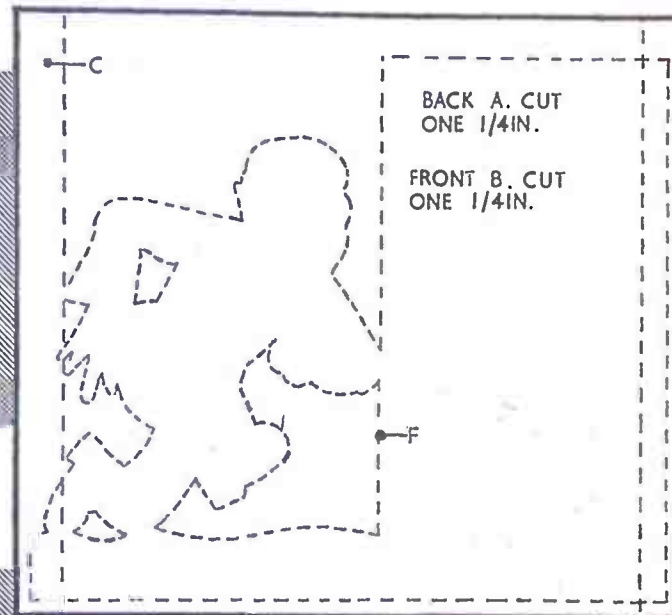
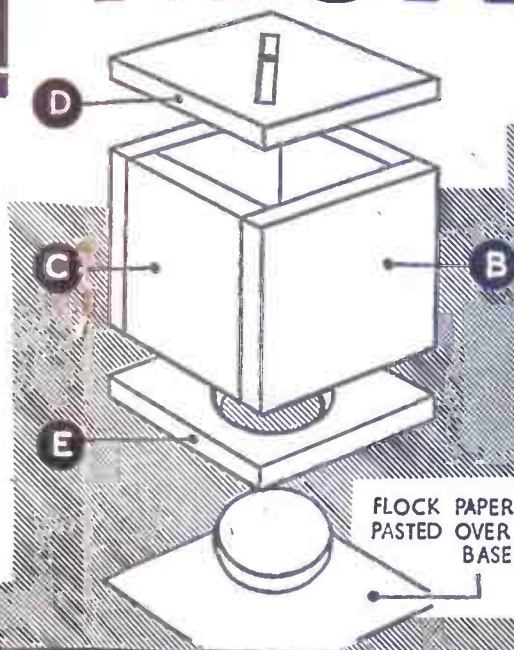
# FRETWORK PATTERN

# MONEY-BOX

PANELS OF WOOD REQUIRED FOR THIS DESIGN  
ONE H4, ONE G2.  
PANELS CAN BE OBTAINED FROM HOBBIES LTD., DEREHAM, NORFOLK.



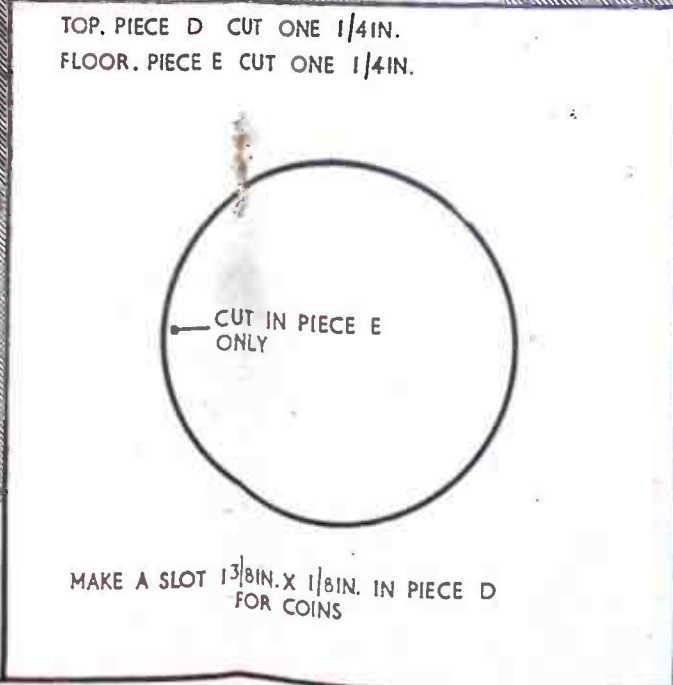
**CUT THESE SHAPES WITH A FRETSAW**



BACK A. CUT ONE 1/4IN.  
FRONT B. CUT ONE 1/4IN.



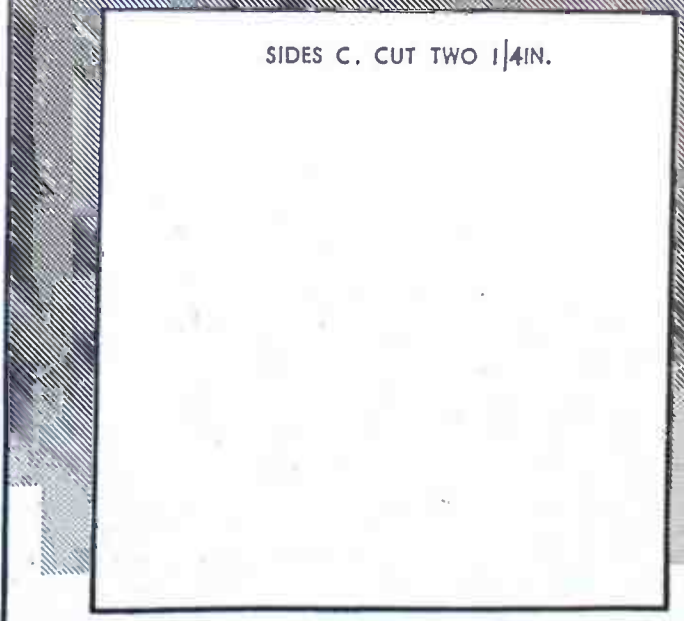
PIECE F. CUT ONE 1/8IN.



TOP. PIECE D CUT ONE 1/4IN.  
FLOOR. PIECE E CUT ONE 1/4IN.



MAKE A SLOT 1 3/8IN. X 1/8IN. IN PIECE D FOR COINS



SIDES C. CUT TWO 1/4IN.

# AN ILLUMINATION LIGHT

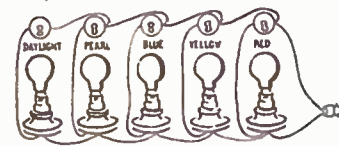
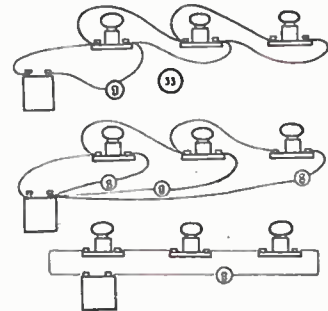
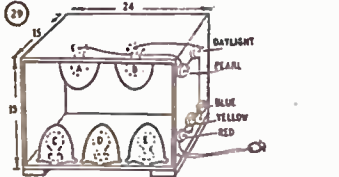
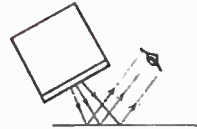
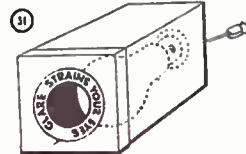
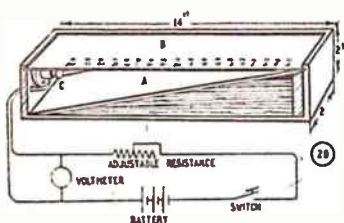
THIS model illumination meter will enable you to make rough measurements of the intensity of illumination at various places and in varying directions. When you compare these measurements with those recommended as being necessary to avoid accidents and eye strain, you will be surprised to find how often artificial illumination indoors is inadequate. The unit of intensity of illumination is the foot-candle and this is the intensity of illumination on a surface, 1ft. away

illustrated (Fig. 28) with one side removed. It consists of a wooden box with a piece of three-ply wood (A) fixed diagonally inside. At one end of the box is fixed a 3.5 volt lamp (C). The whole of the inside of the upper part of the box is painted flat white. (B) is a piece of ground glass or ordinary glass with tracing paper over it, and over this is fixed a piece of dead-white paper or card. Holes about  $\frac{3}{8}$  in. in diameter and 1 cm. apart are made in the white paper or card.

How the Colour of Walls may be Changed

Four pieces of white cardboard coloured with flat washes to match the standard distemper colours represent the walls and ceiling of the room. These pieces of cardboard are pinned inside the box. Make several sets of colours, so that the colours of the walls and ceiling can be changed.

(A), (B), (C), (D) and (E) (Fig. 29) are electric lamps wired to the switches at the side of the box (see wiring diagram), so that any lamp or combination



The lamp (C) should always be joined in circuit with an adjustable resistance and a voltmeter, as shown, when the model is in use, so that the fall of potential across the lamp can always be made constant and in this way the lamp (C) will have a constant illuminating power.

To calibrate the illumination meter for future use, the lamp (C) should be lighted as already described, and the meter must be placed alongside an actual meter. A 230 volt pearl electric lamp should be placed at various distances in front of the two meters in a dark room. The reading of the intensity of illumination registered by the actual meter is noted for each position of the lamp. The holes in the white paper of the model illumination meter are then examined and a hole is found which appears exactly like the surrounding white paper. At this hole the amount of light passing into the meter is equal to the amount of light passing out. Under this hole the illumination in foot-candles as given by the actual meter is noted.

of lamps may be switched on. (A) is an ordinary pearl lamp which will enable you to examine the colour of the walls under the usual conditions of electric illumination. (B) is a daylight-blue lamp, which enables you to examine the colour of the walls under daylight conditions. (C), (D) and (E) are colour-sprayed lamps. (C) is red, (D) is yellow and (E) is blue. By combining these a variety of different colour effects can be obtained.

Tin-plate reflectors must be fitted round each lamp to reflect the light into the box, and the general effect is better observed when a sliding ground-glass screen is fitted in the front of the box.

A smaller model can be made using small decoration lamps.

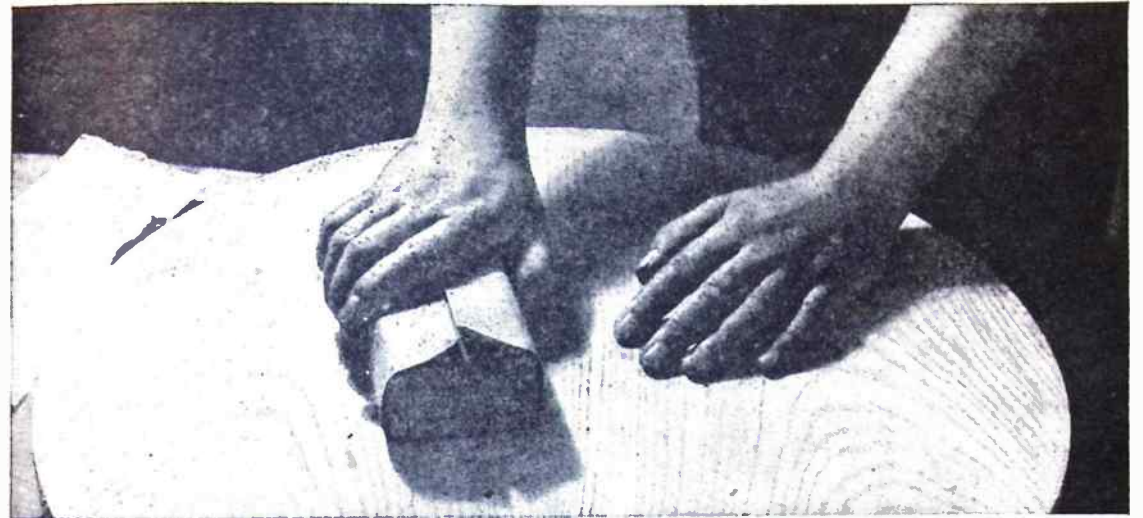
### Glare from Electric Lamps

Glare from electric lamps may be direct or reflected, and it is the most frequent and serious cause of bad lighting. It may be caused by improperly shaded electric lamps placed in the line of vision. Glare produces eye strain, which, if continued becomes injurious to the eyes and causes loss of visibility, although the objects looked at may be well illuminated.

Take a cardboard or tin box large enough to hold a 100 watt clear electric lamp. (The effects of glare are always much worse with clear lamps.) Cut a

Continued on page 364

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Lots of uses for these

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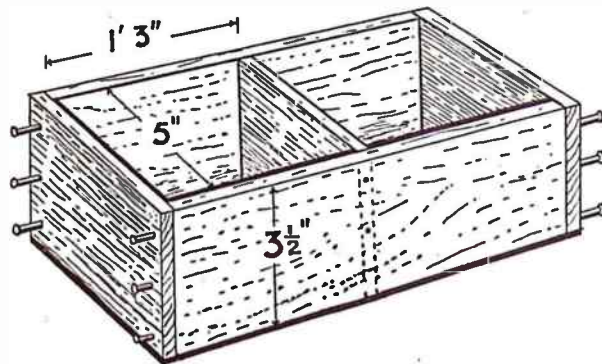
THERE are numerous uses for breeze blocks, such as the base for a garden frame, interior walls or partitions and sheds can be made from them if an outside coating of cement is applied.

The mixture for making is quite cheap, consisting of two parts sand and two parts breeze with one part cement. Alternatively, you may use three parts breeze, one part sand and one part cement. The breeze may be ordered from the Gas Board offices, who will deliver, and it is always available.

When mixing the materials use an old dry board or sheet of steel plate. Either may be cleaned and quickly moved away without leaving an unsightly patch. The materials should be mixed in the dry state, then water added from time to time in small quantities. Note that too much water will weaken the mixture and sloppiness of the mix must be avoided. When the ingredients have been thoroughly mixed in the dry state, form into a heap, applying the water by means of a watering can. Turn over continually, until the materials and water have combined into a mass of even colour and consistency. It is then ready for filling the block moulds.

The blocks are made in wooden moulds as shown in the diagram, but it is possible to make larger moulds to accommodate more blocks if speed is essential. The main advantage of the smaller mould is that a few blocks may be

made daily, little mixing is involved at one time and the blocks are maturing gradually. If the larger moulds are made, it is essential to ensure that the moulds are of equal dimensions, for faulty blocks may be difficult to use. Another factor worth noting at this stage, is that it is a wise precaution to make half



blocks, thus avoiding any wastage in trying to cut the full-sized block.

The mould itself is actually a bottomless frame with a division in the centre firmly nailed from both sides. Use half inch or three-quarter inch wood 3 1/2 ins. wide. Each block should measure 1ft. 3 ins. by 5 ins. by 3 1/2 ins. when finished and the mould made accordingly as

shown. Do not drive the nail home at the ends, since they will have to be extracted later when the mixture has set. The mould is placed on a hard baseboard with bricks at the side to hold in place, and filled with the breeze mixture. This should be rammed into the moulds,

especially at the corners, and allowed to remain for at least 24 hours, when the mould may be removed. The blocks should be left for a few days to mature, allowing the centres to set.

The size mentioned produces quite a large size of block suitable for many jobs in the garden. A smaller block of 9 ins. by 4 ins. is also a very useful size. (S.H.L.)

current switched on, remove one and then two of the lamps from their holders. Now connect three electric lamps in parallel to a battery, so that each lamp can be operated by a separate switch.

When electric lamps are connected in series, the voltage of each of the lamps multiplied by the number of lamps must equal the voltage of the current supply. Christmas-tree lights are usually connected in series to the mains. When lamps are connected in series in this way, the whole lot fail if one fails, or is removed.

### Two-way Switching

It is often necessary to arrange an electric lamp and two switches, so that the lamp can be turned on or off from either switch. This is called 'two-way' switching, and is used in passages, on stairways, and in bedrooms. The switches have three terminals to which the wires can be attached. (Fig. 34.)

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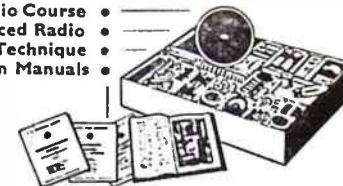
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Continued from page 362

## Electric Lighting in the Home

circular hole in the lid and round this hole stick a white paper ring on which are the words 'GLARE STRAINS YOUR EYES'.

Ask a friend to stand in front of the circular opening about 1yd. away. He will be able to read the words printed round the opening. Switch on the light and he will no longer be able to see the words. If you watch the pupils of his eyes when the light is switched on, you will see how they immediately contract until they are almost closed, in an effort to protect the eyes.

If you repeat your observations with a pearl electric lamp you will find that the effects of glare are much reduced.

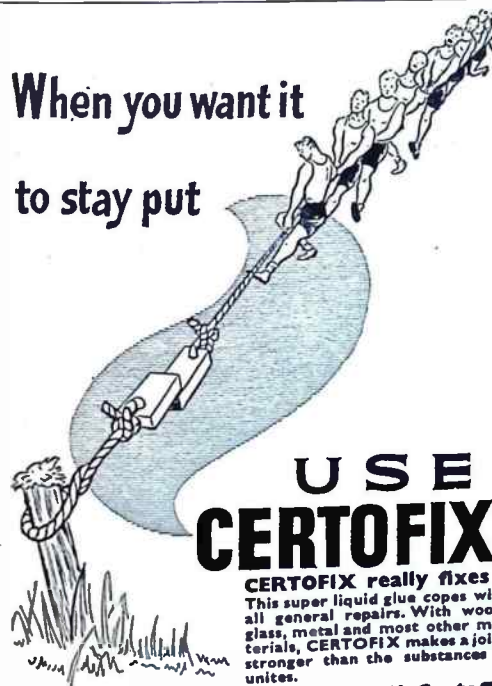
If you next support your box so that the light falls on to an open book, as illustrated, you will find that when the

eyes are in a certain position the reflected glare, which is most pronounced if the pages of the book are of highly glazed paper, makes it quite impossible to read comfortably.

### Lamps in Series and in Parallel

Electric lamps may be connected together in series or in parallel, provided the proper voltage of lamps and current supply is used. When they are to be connected in parallel, the voltages of each of the lamps should be the same as that of the source of current. When lamps are in parallel, if one of them fails the others remain lighted, and each of the lamps can be controlled by separate switches if desired. Connect up three 3-5 lamps in parallel to a switch and battery as in Fig. 33. With the

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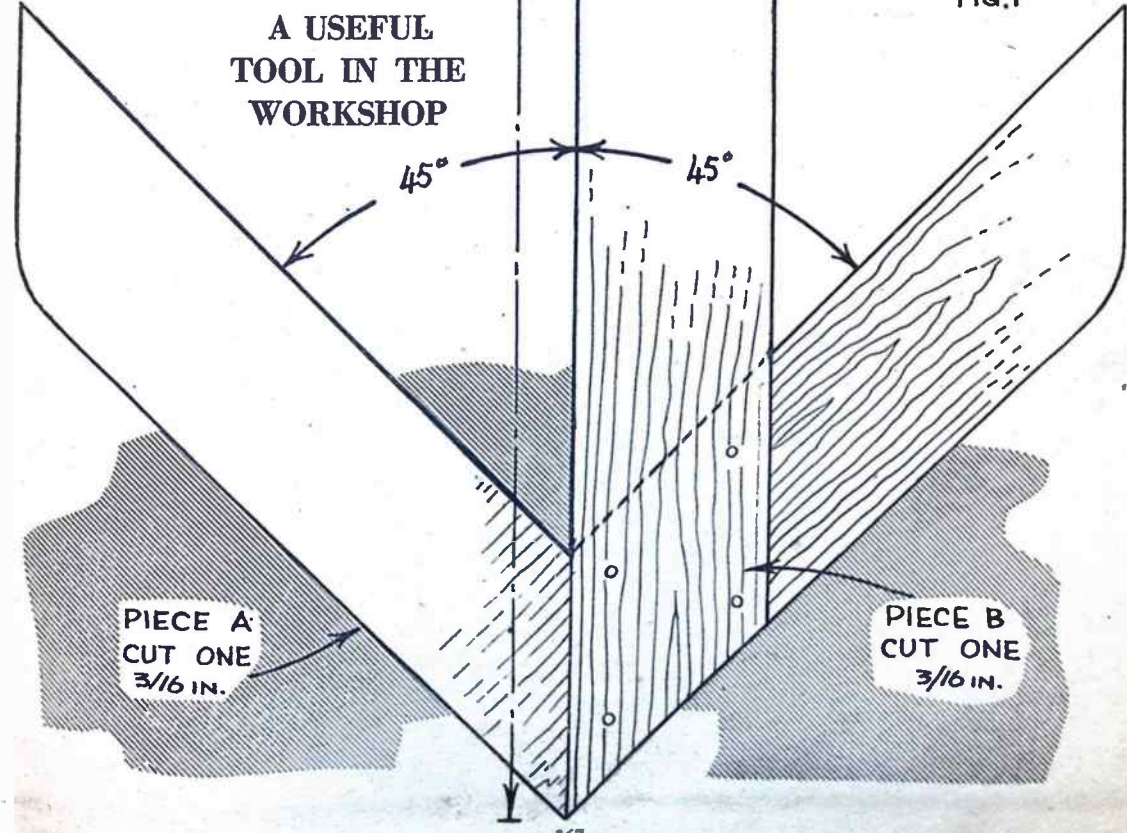
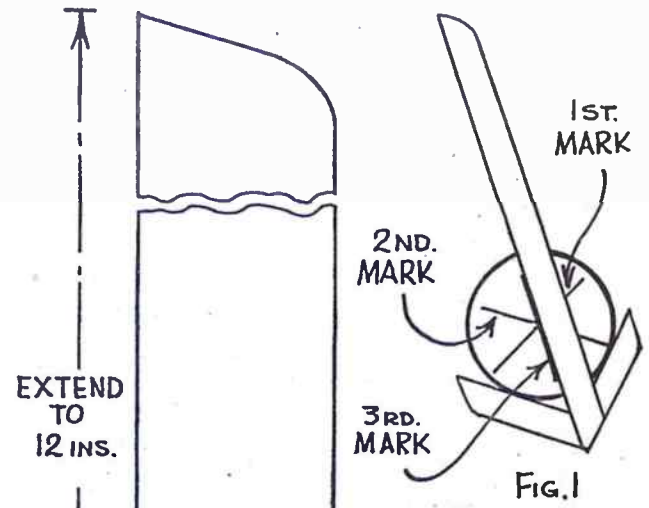
# To 'centre' a circle MAKE A 'ROUND SQUARE'

**T**HE 'round square' or centre square is useful for finding the centre of a circle. The one illustrated on this page can also be used as a T-square.

The square is based on a geometrical principle, and if made up as shown will be a useful tool in the workshop. It will help you to find the centre of true cylindrical objects such as dowel rods, turntables, tin cans, etc.

Use the square as indicated in Fig. 1, making two or three marks across the circle. Where these intersect is the centre of the circle.

Cut both pieces from 3/8 in. wood, screwing and gluing them together. Give two coats of brush polish to finish. (M.P.)





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