

HOBBIES WEEKLY

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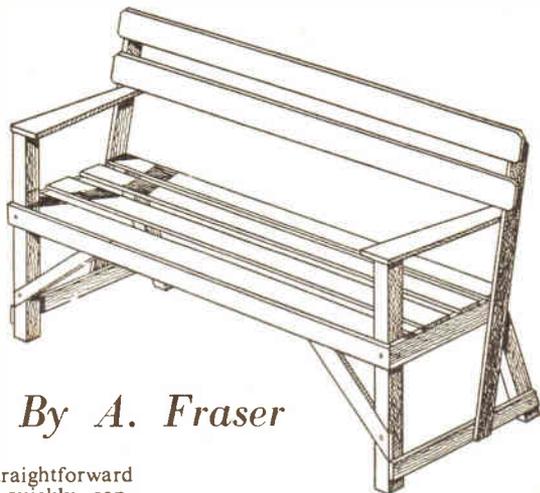
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*Simple to make
— and cheap*

A SEAT FOR THE GARDEN



By A. Fraser

NO real garden is complete without a garden seat. The gardener can use it to rest himself from his labours while he surveys his work and ponders on the next tasks, or one can merely sit and sun oneself and acquire that peace of mind which comes from the contemplation of growing nature.

Cheapness combined with ease and quickness of construction are decisive factors in a piece of furniture like this, for one does not want to expend too much money and labour on something that is only used in the warmer months and probably must stay out in the open throughout the winter.

In these respects, the garden seat described here will be found most satisfactory. The method of construction has

been kept as simple and straightforward as possible. It can be quickly constructed and yet will be strong and serviceable. There is no fancy jointing which might put off those who are not particularly skilful at woodwork. Anybody could build it.

For the garden, oak or similar wood is recommended, but not indispensable. Any wood that is in good condition can be used, and probably the reader has some old wood lying about which can be pressed into service.

Although dimensions are given, it must be understood that these can and should be altered to suit one's own requirements. The dimensions can be altered in all directions. By reducing the length, for instance, one can make a single seat instead of a double one.

Some people might prefer this, due to circumstances or shortage of wood.

In building the seat, start first with the end sections. These are easily made, consisting of two legs and two cross battens. (P-Q and R-S in Fig. 1.)

(P) and (Q) can be of 2in. by 2in. sectional wood, or even thicker than this. The height of (P) (the front post) should be roughly 28ins. At the bottom front a section is taken out to accommodate the bracing stay which goes to the back of the front edge of the seat, and so helps to keep the structure stable and firm. This is seen in the illustration of the completed seat. The section is taken out by sawing down on either side of it and then chopping out the intervening

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*For Modellers, Fretworkers
and Home Craftsmen*

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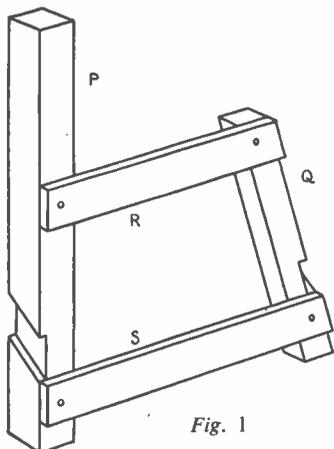


Fig. 1

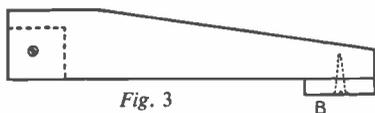


Fig. 3

wood with a chisel. The depth should correspond with the thickness of the brace which should be $\frac{1}{2}$ in. or so. The angle should be 45° . The width of the section and the brace should be $1\frac{1}{2}$ ins. or 2 ins.

Marking the cross-pieces

As will be seen from the drawings, the cross-pieces (R) and (S) are at right angles to the front leg (P), but at a slight angle to back leg (Q), owing to the fact that this latter is splayed backwards. The best way to mark out the pieces, therefore, is to lay the legs on the ground, placing the cross-pieces in the correct positions and then marking off the back leg and cross-pieces with a pencil. These can then be sawn. In laying out the woods, remember (R) and (S) must be at right angles to (P). As seen in the drawing (Fig. 1), the top of (R) is 17 ins. and the top edge of (S) is 4 ins. from the bottom of (P). The length of (R) can be 16 ins. with the bottom rail (S) 19 ins.

When the members have been marked and sawn, fix them together firmly with screws (these are better than nails) as shown in the drawing. Waterproof glue can also be used in conjunction with screw fixing.

The other end of the seat can now be made, making sure the dimensions and angles correspond exactly with those of the side already made. Remember, however, that the rails will be on the other side of the legs this time, and the section taken out for the bracing strut will point in the other direction. Refer to the drawing of the finished seat. The section

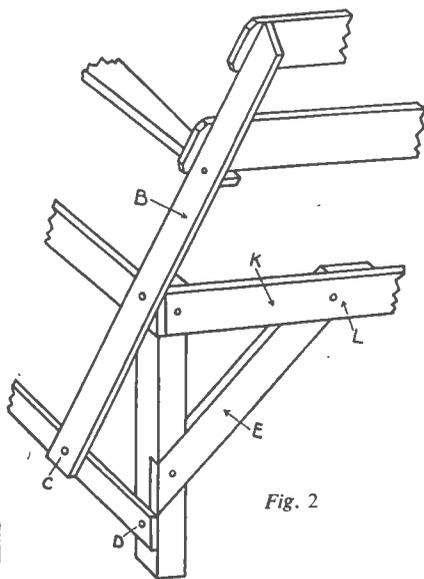


Fig. 2

in-the back leg, for the back strut, will also point in the other direction.

The spar (B) (Fig. 2) can now be sawn. This is for the back-rest, but it also acts as a stabilising stay, keeping the legs and rails firm and free from movement.

The length of (B) will depend on what height one wants the back-rest. This must be decided for personal convenience, but one will not go far wrong to make the total length of (B) about 32 ins. The tilt of the back-rest is again one of personal taste, but it is suggested that the distance from screw (C) to screw (D) should be about 6 ins. The batten (B) should be placed experimentally over the end section and the inclination of it approved or altered to taste.

(B) can be about 2 ins. by $\frac{1}{2}$ in. in section. The top is sawn off at an angle to improve appearance. The piece is finally screwed securely to the end section as shown in Fig. 2.

A similar piece is made and screwed to the other end section. See that it is in line with the first one, placing the two sections together to test this.

The leg stays

Next, deal with the leg stays (E, Fig. 2). There is one of these to each leg, and, as stated before, will be $1\frac{1}{2}$ ins. to 2 ins. wide by $\frac{1}{2}$ in. thick. Saw the end to fit at the bottom of the leg, but do not yet saw the top. The top is left projecting and is sawn off flush with the seat edge later when this is in position.

Each stay is screwed (and glued as well if desired) to each leg.

The back and front rail of the seat top should now be dealt with (K, Fig. 2). These should be of the same section as (R) and (S), namely about 2 ins. by $\frac{1}{2}$ in. To seat two normal persons, a length of 42 ins. for (K) should be quite sufficient. Of course, if you are making a single seat, 22 ins. should suffice.

Screw the two pieces into position, but not too tightly yet. Adjust the members until the seat is standing straight and true, with the legs perfectly vertical. Then tighten the screws. (Again, glue can also be utilised.)

The seat boards

Now, fix the corner stay (E) to (K) by means of a screw (L) (Fig. 2). Do this for each corner of the seat. After this is done, take the saw and saw off the stay (E) flush with the top of (K). Repeat the operation for each stay.

Next, cut the boards that go to form the top of the seat. The number and width of these is unimportant, so long as they are strong enough to support the weight of two people. $\frac{1}{2}$ in. board will do, and this should be the same length as (K).

The board nearest the front sits on top of (K) (front rail), and a square will have to be sawn out of the two front corners to make way for the posts of the hand-rests.

The boards can best be fixed by nails. If your seat is extra long, it is advisable to fix a cross-batten underneath the boards half-way along the seat. This will support the boards in the middle and prevent them bending under weight.

The arm rests are easily made from any board that is to hand. The shape should be as in Fig. 3. The length should be as is necessary and can be measured from the seat. At the front, it is screwed down to the top of the post. (The dotted lines (Fig. 3) show the position of the post beneath the rest.) The back end of the rest is secured by a screw to the spar (B) Figs. 2 and 3.

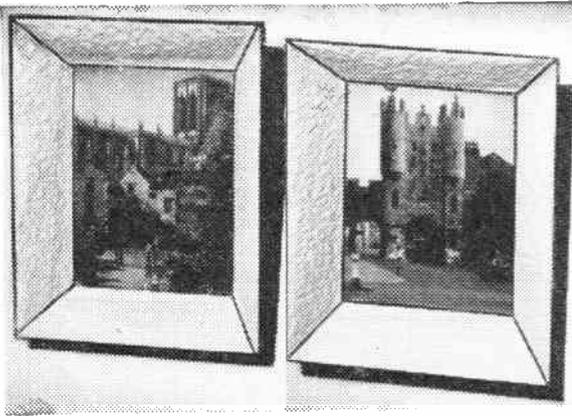
Weather protection

After both arm rests have been fixed, the boards of the back-rest should be sawn and then secured in position. These can be of any available board that is strong enough to withstand leaning against. The width is not important so long as they are comfortable to the back. They should project, for the sake of appearance, beyond (B) for an inch or two, and can be nailed or screwed into position.

The actual building of the garden seat is now finished. But as it is of wood and must stand in the garden and be exposed to the wet, then it ought to have protection. Some seats are creosoted, but two or three good coats of weather-resisting paint are, perhaps, as good as anything. In this case, deposits of soot, etc., can easily be wiped off.

Attractive and cheap

FRAME YOUR PICTURES IN CARDBOARD



By
S. H. Longbottom

ATTRACTIVE picture frames can easily be made at small cost from such common materials as paper and cardboard.

The size described will accept pictures $3\frac{1}{4}$ ins. by $4\frac{1}{2}$ ins., but with slight modifications the idea is adaptable for any size, provided the same border dimension, i.e., $1\frac{1}{2}$ ins. is used.

First requirements are some cardboard and wallpaper. The card must measure $5\frac{1}{2}$ ins. by $6\frac{1}{4}$ ins., and is shaped as in Fig. 1, scoring the card on the dotted lines. The angles at each corner are 30° . Make certain that they are equal at each corner, for this gives the slope to the frame. When the shape has been cut out, the sides are folded so that the corners meet. A small strip of gummed paper is attached to the outside and folded over on to the inside as shown in Fig. 2. We now have a tray, ready for attaching the cover paper.

Any suitable wallpaper will do the job if light in shade. If you have any wood-grained paper so much the better. Fig. 3 shows the shape of the paper which is attached to the sides. Dimensions are given for the depth only in case it is decided to make larger frames, but here again the angles are 30° . It will be noticed that the lower half is slightly deeper to allow for covering the outside and wrapping slightly on to the back of the frame. Two pieces each for the sides and ends will be required and in addition prepare four small rolls of wallpaper to form the padding and give a camber to the inside face of the frame. Folding is shown in Fig. 4.

Fig. 5 shows the inside of a frame where the wallpaper has been attached to the outside and is ready for fixing to the inside. Note that the piece of padding should be flattened a little and

placed so that it is nearer to the outside edge. When the paper is brought over it is glued to the base so that it just overlaps the fold in the cardboard. All sides should be similarly treated and the frame is ready for a final piece at the back.

Reference to Fig. 6 will show that a small tab, for hanging, has been made of paper and a hole punched in. A piece of tape may be used for the same purpose. Cut a slit in the backing paper, passing the tab through, before gluing on this final backing paper.

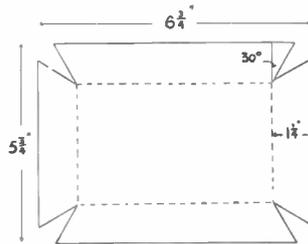


FIG 1

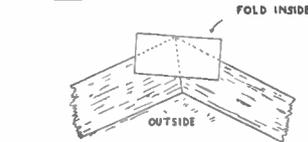


FIG 2

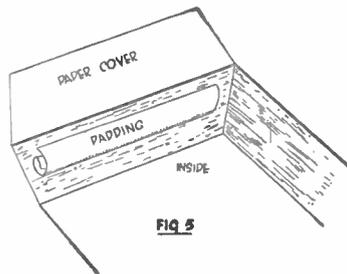


FIG 5

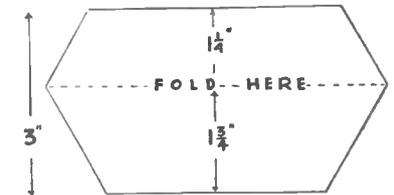


FIG 3



FIG 4

SLIT CUT IN
BACKING
PAPER AND
TAB FOR THE
HANGER PUSHED
THROUGH

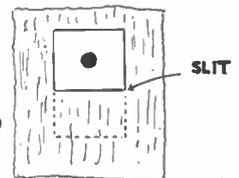


FIG 6

Explore a New World with this

ULTRA SHORT-WAVE RECEIVER

THE average listener is familiar with the ordinary broadcast short waves which range from about 15 to 50 metres, but there is a vast field of short waves stretching beyond this, which is practically a new world still being explored.

The ordinary ultra short waves or V.H.F., constitute a field practically possible to the average radio hobbyist. Whether the transmissions (consisting of amateurs, police, ambulance, taxis, TV, etc.) are interesting is purely a matter of personal taste.

The little set described here will enable the reader to explore V.H.F. and form his own opinions. It is inexpensive to make, so should appeal to the experimenter.

It is a super-regenerative 'self-quenched' receiver. This is basically similar to the simple T.R.F. detector with reaction, only it is adjusted to

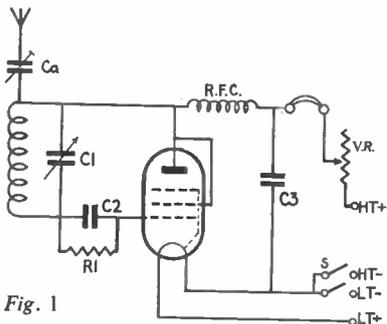


Fig. 1

operate on the threshold of oscillation (thus giving very great sensitivity). A local 'quench' arrangement damps out the oscillation, which the incoming signal would cause to occur, and so the receiver operates continuously at maximum sensitivity.

The distinctive characteristic (apart from its high sensitivity) of the super-regenerative set is its peculiar hissing noise caused by the oscillatory arrangement. This, however, disappears as a strong station is tuned in.

An ultra short-wave set requires even more care in its construction than an ordinary short-wave set. The same precautions must be taken. All wires must be kept as short and direct as possible, and separated to avoid interaction. The lay-out of the parts can make or mar a set.

Hand capacity effects (as in ordinary short waves), can upset everything, and that is why tuning-drive spindles should

Says
A. Fraser

PARTS LIST

- C1. 40 pF. Tuning condenser.
- C2. .0001 mF. Silver-mica.
- C3. .005-.01 mF. Mica.
- Ca. 30 pfd. Trimmer.
- R1. 1-5 megohms. $\frac{1}{2}$ watt.
- V.R. .25 megohms variable resistor.
- S. D.P.S.T. on-off switch.
- 1 IT4 valve and valveholder.
- 1 flexible spindle coupler.
- 1 extension spindle.
- Aerial, H.T. and L.T. socket panels.
- 45 V-67 $\frac{1}{2}$ V battery. 1.5 V battery.

be long, and insulated from the tuning condenser, which is placed well back from the front panel.

It will be noticed from Fig. 1 that the tuning condenser is not earthed to the chassis as is usually the case. Consequently, it has to be mounted on an insulating bracket above the chassis. This can be bought, but can also be made by using Paxolin or Bakelite sheet fixed to angle pieces or angle bar of metal. The correct hole must be bored or sawn out of this, to take the condenser shaft. The height of the insulating bracket and hole in it will depend on the height of the control knob on the front panel.

The flexible spindle coupler (F) which isolates the condenser, costs only 10d. from Radio Supply, 32 The Calls, Leeds, 2, while the extension spindle, $\frac{1}{4}$ in. thick, costs 5d.

The base and front panel of the chassis can be made from one piece of aluminium (about 20 gauge). The base can be about 5 $\frac{1}{2}$ ins. square.

A suitable tuning condenser can be obtained for a shilling or two from W. Benson, 308 Rathbone Road, Liverpool, 13. Although 40pF. is specified, other valves can be utilised.

Valve, switch, etc.,

can be obtained from either of the two firms mentioned.

The first thing to do when building the set (after making the chassis), is to prepare the tuning condenser to receive the coil or coils. One may have to use one's own ingenuity in this matter, depending on the type of condenser.

In the writer's case, a soldering strip projected from the rotor section, and this was bent round as in (A) Fig. 3. For the stator section, a piece of aluminium sheet was cut out as in (B) (enlarged) and bent to shape. This, with a soldering tag (T) was fixed to the condenser by the nut provided on the condenser. Small holes to provide sockets for the coil will be seen in both (A) and (B).

If only a single fixed coil is to be used, then a soldering tag can suffice instead of (B). The advantage of the arrangement previously described is that different plug-in coils can be used and experimented with.

If plug-in coils are used, then these should be mounted on polystyrene or Paxolin strips to keep them rigid and prevent damage. The ends of the coil should project about $\frac{1}{2}$ in. A blob of solder should first be put on the ends, then the strip (already bored) put in position, and another touch of solder used to secure the two ends. See (P) in Fig. 3.

The winding of the coils will be dealt with later.

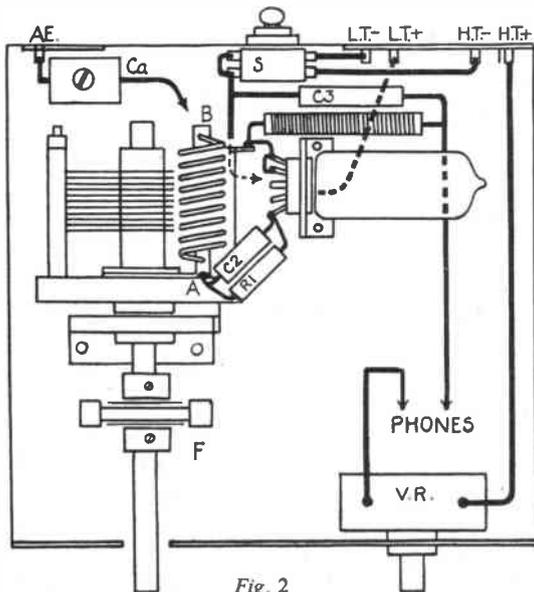


Fig. 2

The condenser, coupler and spindle can now be mounted. Then the bracket which holds the valve can be made. The hole for the valvholder will have to be $\frac{3}{8}$ in. Before fixing the bracket, attach the valvholder and solder on the connections that are necessary. These are shown diagrammatically in Fig. 4. When these connections are completed, the whole can be fixed in position. In this respect, the valvholder should be on a level with the coil and close to it. (See Fig. 2.) The valve need not be plugged in yet.

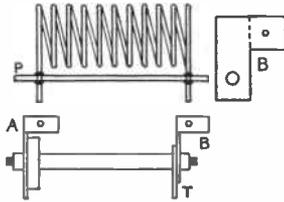


Fig. 3—The coil fitting

Solder the free ends of C2 and R1, coming from the valvholder, to the side of (A) on the condenser.

Mount the H.T. and L.T. socket panel and join the lead from tag 7 on the valvholder to proper tag as seen in Fig. 2. (This is the dotted line passing under the components to L.T.+.)

Now fix the switch, and join the free lead from tag 1 on valvholder to the switch as seen in Fig. 2. The two tags on this end of the switch are also joined.

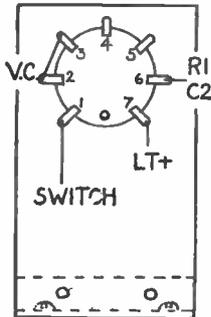


Fig. 4—Valve tag connections

Turn to the other end of the switch and join one tag to L.T. -, and the other tag to H.T. -.

The phones panel socket and the variable resistor (V.R.) should now be fixed on the front panel.

Join H.T.+ to middle tag of V.R. and the other end tag to one socket of the phones.

The other socket of the phones should be joined, through C3, to the far end of the switch, as seen in diagram 2.

Now join tags 2 and 3 on valv-

holder to soldering tag on (B) on the condenser (tuning). Also the choke (details of this given later). The other end of the choke goes to the phones end of C3. (See diagram 2.)

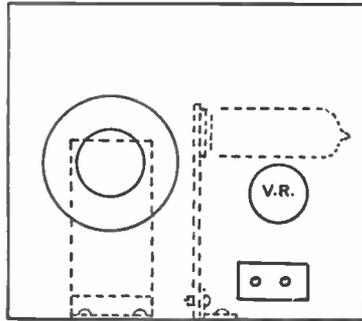


Fig. 5—Front Panel layout

Next, mount the aerial socket panel, and join the aerial trimmer (Ca) directly between this and point (B) on the tuning condenser. If this condenser is not firm enough to allow screw adjustment, then it should be fixed to a Paxolin bracket.

Winding the coils

The coils can now be considered. They can be made from 18 gauge copper or tinned copper wire. The diameter and length can be as desired or made necessary by the practical con-

ditions. Two coils can suffice to cover about 3 to 10 metres, with a 40 pF. tuning condenser. For instance, where the distance between the coil ends (coil length) is, say, $1\frac{1}{2}$ ins., then a coil can be wound to tune up to 6 metres, by winding 9 turns of diameter $\frac{1}{4}$ in. eighteen turns of same diameter and same coil length, will tune to 10 metres.

These coils can be wound firmly on $\frac{1}{4}$ in. dowel rod or similar, and then pulled gently out to conform to $1\frac{1}{2}$ in. length. The dowel rod is only used to form the coils, of course.

The reader can try making other coils of different diameters and turns for experiment.

Try other values

The R.F. choke can be made by winding 4ft. of 32-gauge wire closely round a $\frac{1}{4}$ in. diameter glass tube. Ebonite, etc., will do if glass is not available. A touch of Durofix will secure each end.

In using the receiver, station tuning is adjusted through C1, while the other control is the variable resistor (V.R.)—this should be set at a point where the 'quench' oscillatory hiss comes into action.

It may be advantageous to try various values of R1 up to 5 megohms. The condenser C3 can also be tried in various values from .005 to .01 mF.

An ordinary half-wave aerial should be used, adjusting trimmer Ca for best results.

For the Guest Room

Make a Sewing Tidy

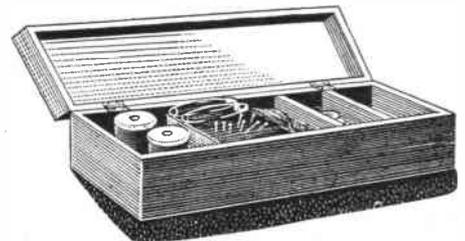
GUESTS will appreciate the kindly thought in providing for emergency mending. Placed on the dressing-table a sewing tidy such as this will be handy for many odd jobs such as darning or sewing on buttons.

No dimensions are given because these will depend upon the mending material you intend to provide. The box itself must be about 8 ins.

mending wool, safety pins, needles, etc., are made from odd wood.

Pad the pincushion with cotton wool and a suitable cloth covering as shown in the small diagram.

The box should be painted or stained and varnished. The overlay, which is cut



See page 239
for patterns

by $3\frac{1}{2}$ ins. to take the novel overlay. Construct the box, therefore, as shown on page 239. The ends (E) go between the sides (C) and (D), and the base is glued on. Construct a lid to the same measurements and hinge it in position. Let the hinges in flush to make a neat job. The compartments to accommodate cotton,

from $\frac{1}{4}$ in. wood, is painted or stained a contrasting colour and glued on the lid.

Remember to scratch away a little paint to give a key for the glue. Alternatively use small fretpins to hold the overlay in place. A small catch may be added, but this is not really essential to the usefulness of the tidy. (M.p.)



PERFORATION

Part 2

By L. P. V. Veale

NATURALLY one occasionally comes across mistakes in perforation, and two are illustrated. In one case there is the pair of stamps which escaped the attentions of the perforating machine. These are 'imperforate between' and in the other case there is a double perforation between the two. Naturally, these must be collected as shown. To cut the imperforate pair would ruin it, and to pull the doubly perforated stamps apart would spoil them. As they stand the value of the pair is at least as many shillings as the single specimen would be pence.

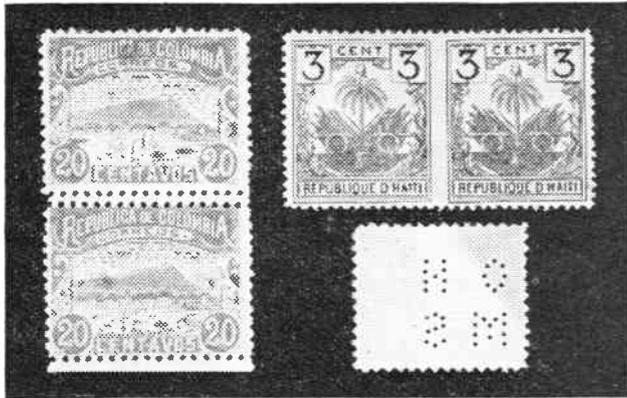
necessary piece of apparatus to enable the collector to ascertain the perforation of a stamp. This may be made of paper, card, ivory, perspex or some such transparent material. The advantage of a transparent gauge is that one can ascertain the perforation of a stamp which is mounted in the album without taking the specimen out. Some of the card variety are made so that one can do this, but even so, all four sides of the stamp cannot be tested because the mount will get in the way occasionally.

With very little practice one can become quite expert in reading the perforation of stamps, and, as has been

perforated' as it is called. Owing to the design these letters are best seen from the back. Sometimes you will find there are a different number of holes to make the letter 'H'. In the example shown the number is four. Look out for these varieties. Australia instead of using these four letters simply uses O.S. — On Service. These letters are also punch perforated, and the stamps are used for public, official service and also for the use of Australian members of Parliament. You will also often see stamps with other letters than those stated, and almost certainly these will be the initial letters of the firm using the stamps. They are thus perforated to prevent theft, or rather to make the tracing of stamps relatively simple.

A caution

It should be mentioned as a caution that the perforation which appears on some of the Spanish stamps, sometimes round and sometimes in the form of a star denote that the stamp has been used for telegrams. As such they should not really appear in a postage stamp collection.



Left — Doubly perforated. Top right — Imperforate between.
Bottom right — Canadian O.H.M.S.

Belgium at one time issued stamps which had a tab, or as it is correctly called a 'dominical label' at the bottom, and this was perforated so that it could easily be separated from the stamp. On the label appeared the instruction 'Not to be delivered on Sunday'. If the sender of the letter did not require it to be delivered on a Sunday the label was kept attached to the stamp so that the postman could see that the letter could wait until the next day. If, on the other hand, the sender wanted the letter delivered at the earliest possible moment then the label was torn off. Those dominical labels were on the early stamps from 1893 to 1914, and, naturally, the complete stamp is worth more than one from which the label has been torn.

Before we leave the subject of perforation we must say something about the perforation gauge, which is the

stated, the value of a stamp often depends on its perforation, so one should always be ready to measure. Some gauges do not have any dots — only lines drawn a certain distance apart. In this case move the stamp until the teeth exactly fit the lines, and again you will have the perforation of that side of the stamp. If you have a transparent measure and you find it difficult to read off the perforation when dealing with stamps in the album, try slipping a piece of black paper under the stamp. You will find that this enables you to find the answer much more easily.

Punch perforation

Some countries use the ordinary postage stamps suitably marked, for paying the postage on official letters and quite frequently the marking is O.H.M.S. — On Her Majesty's Service. Canada has stamps with these letters 'punch per-

To Remove Sea-Water Stains

IF your brown shoes get stained with sea-water during the holidays, remove the blemishes in the following way—

Make a solution by dissolving a small lump of washing soda in two tablespoonfuls of hot milk. Apply the solution to the stains with a rag. After it has dried thoroughly (a few minutes should suffice for this) make a second application. When this is quite dry, clean the shoes in the ordinary way with shoe polish.

The stains will then have completely disappeared. (R.L.C.)

Banish childish fears with this

NOVEL NIGHT LIGHT

THIS little night-light is fascinating to make, and even more fascinating to watch when viewed in the dark. The camel and palm-tree are made from $\frac{1}{4}$ in. perspex, which slots into the lid of the box. The bulb housed in the box shines up through the perspex and outlines the shapes in a pleasant glow.

The switch is actuated by the palm-tree which is pivoted at the lid. Although it gives very little light, it is sufficient to comfort and reassure the nervous child before going to sleep.

By K. Blackburn

To make the box, you will need to prepare a 20in. length of hardwood to $1\frac{1}{2}$ ins. wide and $\frac{3}{4}$ in. thick. After planing, cut two sides $5\frac{1}{2}$ ins. long and two ends $3\frac{1}{2}$ ins. long. These are then dovetailed together. If you prefer to dispense with the dovetails and assemble the box with panel pins, remember that the ends must then be cut to 3ins. long in order to leave the interior dimensions unchanged.

A plywood base is cut with $\frac{1}{4}$ in. overlap, but make sure before pinning it on that the bottom edge of the box is perfectly flat. It can be trued up, if necessary, by running a plane round the edge. The edge of the plywood is then

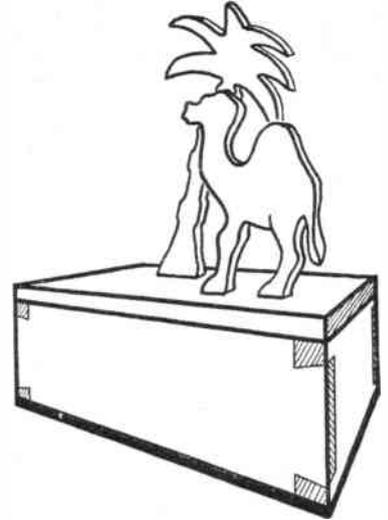
planed flush with the sides of the box. Plane towards the centre of the wood all the time, or the exposed ends of the box sides may split when they are reached with the plane.

Make the top $\frac{1}{4}$ in. thick, and a little larger than the box. The next job is to cut a piece of plywood so that it is a snug fit in the top of the box. This is secured to the centre of the lid with $\frac{1}{4}$ in. panel pins.

Put on the lid, fit the box in the vice, and plane the lid flush with the sides of the box, again planing from the ends to the centre to avoid splitting.

The perspex shapes are cut with a fretsaw quite easily. Fig. 1 will assist in obtaining the correct outline. The mortises into which these shapes fit are next marked on the lid. Mark them on both sides with the help of a try-square and gauge, and chop them from both sides with a $\frac{1}{4}$ in. chisel. The position of the camel is a matter of choice, but the centre of the mortise for the palm-tree should be about 1in. from the side and $1\frac{1}{2}$ ins. from the end of the lid.

Now you will need a flat torch battery. Lay this in the box at one end and fix in a low partition $\frac{3}{4}$ in. high to prevent it from moving about. Then two $\frac{3}{16}$ in. screws are screwed into the side of the box as shown in the diagram, so that they make contact with the battery terminals.



The next job is to screw a bulb-holder to the opposite end of the box.

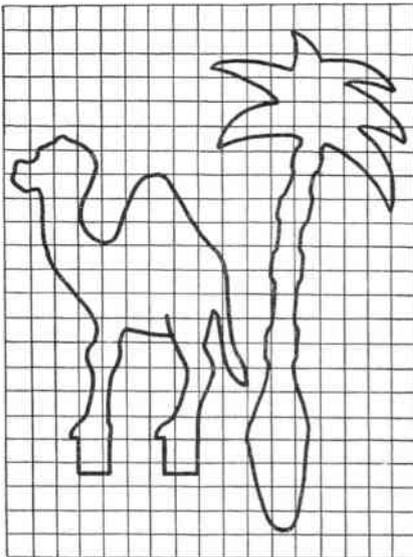
Fit the palm-tree into the mortise after rounding off the wood at the ends to allow for a little movement (see Fig. 2). Then an $\frac{1}{4}$ in. hole must be drilled from the edge of the lid, through the centre of the perspex, and carried $\frac{1}{4}$ in. or so into the wood the other side. A piece of scrap-wood may be trimmed up with a pen-knife to fit into this hole to make a pivot for the palm-tree. Leave this pivot projecting a little until the last possible moment, however, in case you need to withdraw it for any reason.

A small strip of brass (such as may be found on an old flat battery) is fixed with a small nut and bolt into the projection at the lower end of the palm-tree. This makes contact when the tree is tilted with the second part of the switch as shown in Fig. 3. This part is made with two strips of brass and is screwed to the end of the box. The correct position for this may be determined by measurement. Any later alteration may be made by bending one of the two fittings.

The system of wiring may be seen from Fig. 2. The flex connected to the two screws making contact with the battery terminals is best secured by soldering it into the slots. In order to prevent the connection from being pulled away when the lid is removed, allow 6ins. of flex joining the screw to the bottom of the palm-tree.

A colourful finish may be obtained, if desired, with a coat of poster paint and a coat of clear varnish.

Fig. 1



$\frac{1}{4}$ " SQUARES

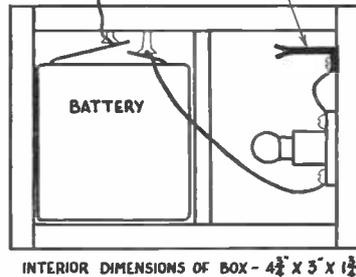
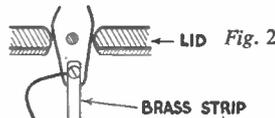
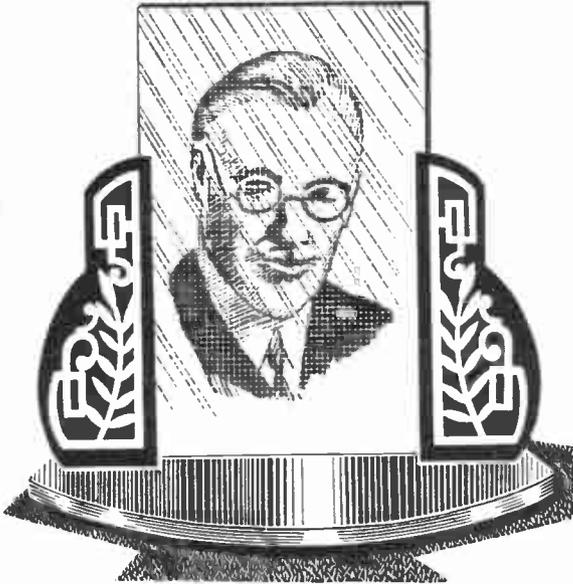


Fig. 3—Switch Detail



FRETWORK PATTERN

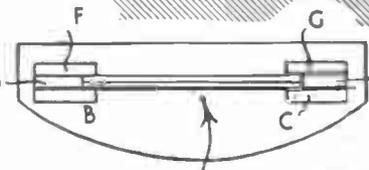
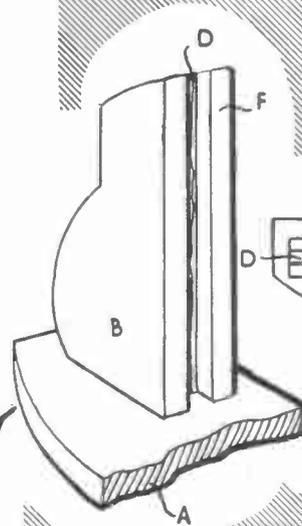
PA



WOOD REQUIRED FOR
THIS DESIGN
HOBBIES PANELS
ONE G2 ONE G4
 ONE Q3

PIECE E

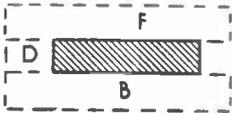
PIECE D



TWO PIECES OF
GLASS WITH
PHOTO BETWEEN

SHOWING
GENERAL
CONSTRUCTION

BASE A CUT ONE 1/4 IN.



THE OVERLAY CAN BE
INLAID WITH A
CONTRASTING WOOD
IF DESIRED

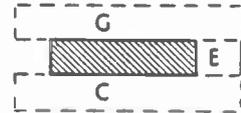
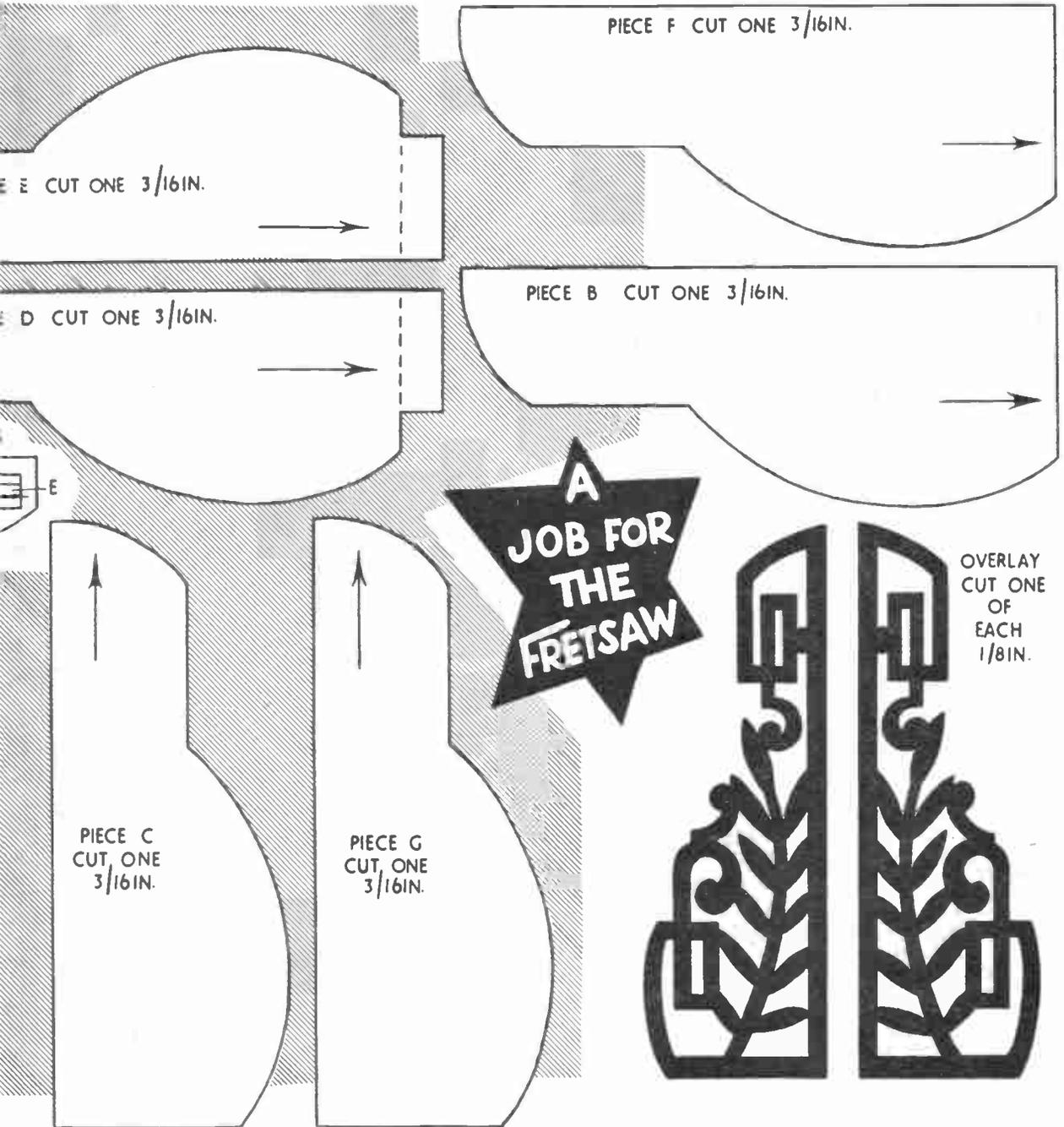
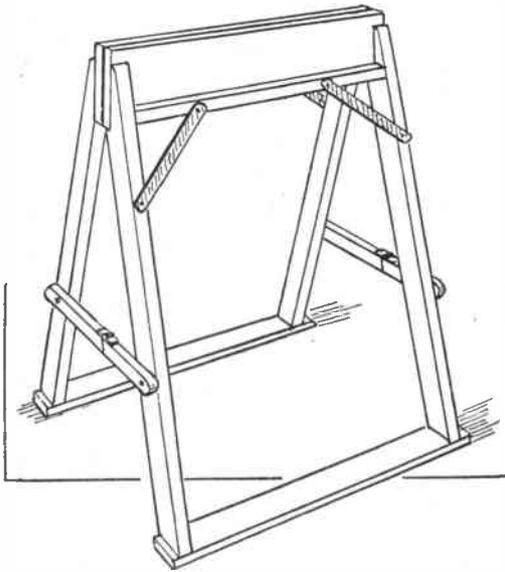


PHOTO FRAME



STAND FOR A FOLDING WRINGER



Described

by

W. J. Ellson

CUTTING LIST

Boards (A).	(2). 2ft. by 6ins. by $\frac{1}{2}$ in.
Legs.	(4). 2ft. 6ins. by 2ins. by 1in.
Bars (B).	(2). 2ft. 4ins. by $1\frac{1}{2}$ ins. by $1\frac{1}{2}$ ins.
Ground members.	(2). 2ft. 2ins. by $2\frac{1}{2}$ ins. by $\frac{1}{2}$ in.
Safety stays.	(2). 1ft. 4ins. by 1in. by $\frac{1}{2}$ in.

FITTINGS

4 iron braces, $\frac{1}{2}$ in. by 1in. by 10ins.
1 pair $\frac{1}{2}$ in. iron hinges.
1 pair $2\frac{1}{2}$ ins. iron hinges.

THE wringer stand described here folds up flat when not required and so occupies little space. As it is a simple carpentry project, it presents no difficulty to the average handyman. The width should suit any wringer with 16ins. rollers or less. Any machine exceeding this should have the width increased proportionately.

line (a) and repeat this at the bottom to allow the legs to be flush with the floor when opened. At a point on this line (a) $\frac{1}{2}$ in. in from the edge, mark a perpendicular line (b). Cut away the shaded parts.

Now screw the legs at right angles to the boards (A), two to each board, as

end. It would be as well to clamp the boards together before fitting the hinges to ensure their closing tight.

At the lower part of boards (A) glue a strip of wood across, as shown by the shaded sections in Fig. 4, and plane the front edges of these level with the slope of the legs. To stiffen the stand, iron bars are screwed diagonally across between (B) and the legs (see finished drawing). These can be cut from iron of $\frac{1}{2}$ in. by 1in. Use round-headed screws for fixing.

Space for bath

Across each pair of legs wood bars are nailed at the bottom. This will leave ample space under the wringer for a bath to catch the water from the clothes. Safety stays are now provided each side to lessen any strain when working the wringer. These are lengths of hardwood, sawn across the middle, hinged together at top and screwed with each end to a leg. Bore the end holes a loose fit for the round-headed screws, and leave them loose enough for easy movement of the stays, allowing them to double up, without sticking, when the stand is folded. Fix the stays to allow the end screws to be about half-way up the legs, opening out the stand to its full extent before fixing.

As the stand will be subjected to a certain amount of water, it should be coated with green solignum, two applications of plastic paint, or water-resisting varnish, as a finish.

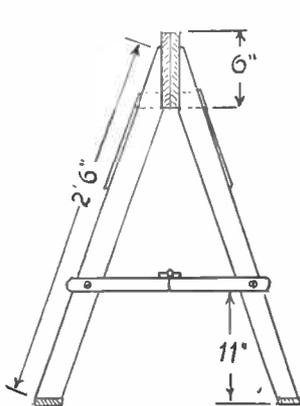


Fig. 1

End and front elevations are shown at Figs. 1 and 2, giving useful dimensions. First cut the top boards (A) (Fig. 2), to which the wringer will be clamped. Two are required. They should be quite flat to meet evenly along their whole length.

Trim top and bottom

Cut the four lengths of wood for the legs to the length given (Fig. 1). These must be trimmed at top and bottom, as shown in Fig. 3. Mark out as follows: 5ins. down from the top, with a bevel set to the angle of 70 degrees, mark a

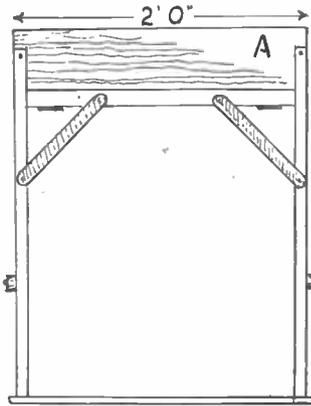


Fig. 2

in Fig. 4. The tips should be neatly rounded off.

Drive in one round-headed screw near the top on the outside and countersink one flat-headed screw, lower down, through the board and into the leg.

Turn the whole over and join the two boards (A) together at their bottom edges with a pair of $2\frac{1}{2}$ ins. iron butt hinges, spaced about 3ins. from each

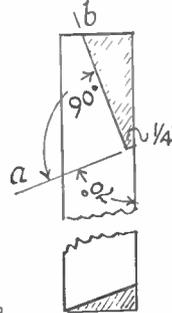


Fig. 3

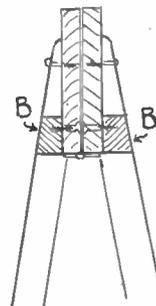


Fig. 4

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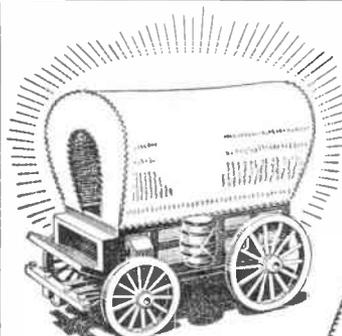
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control the movement of the train. Section 2 is rather longer and is used to operate the relay. The two poles of the relay are indicated in the figure between the contacts marked C1, C2 and C3.

The operation of the circuit is as

signal lights from green to red. At the same time C3 opens and Section 1 becomes isolated. A following train, therefore, will stop in Section 1. The circuit will not return to normal until the last carriage of the first train has passed out of Section 2.

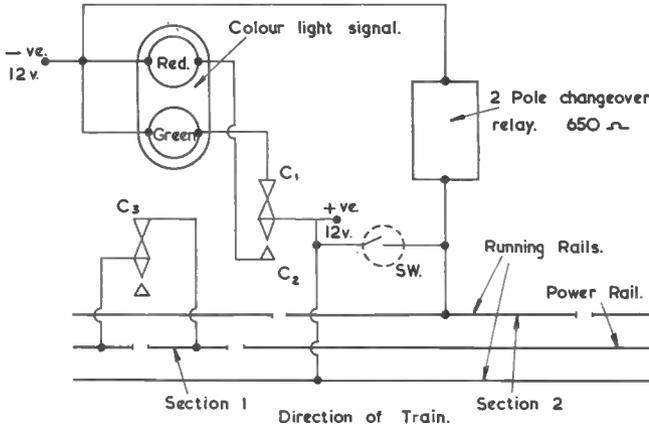
The two isolated sections should be positioned so that a reasonable length is allowed between the end of Section 1 and the start of Section 2. This allows the engine to get well clear of the isolated power section before the current to it is cut off.

The signal, of course, is placed, roughly where it appears in the diagram at the head of Section 1. The length of Section 1 should be sufficient to stop a fast moving train without danger of over-running the section. The length of Section 2 depends to some extent on the size of your layout, but should not be less than two to three average train lengths.

It is advisable to work the relay and signal lights from a power supply separate from that used to run the trains, thus making their working quite independent of fluctuations in the power of the running supply.

Additional signal circuits can be added to the layout if it is desired, and if more than two trains are to be run together at one time.

Manual operation of the signal is made possible by inserting a switch in the position marked 'S.W.' Also, if it is desired at any time to run a train past the signal at danger, an over-riding push button may be inserted across contacts C3. (H.G.F.)



Circuit of automatic block-signalling system

An automatic block-signalling system gets over this difficulty. It becomes possible to run two or more trains on the same track without any attention on the part of the operator.

Such a system of signalling is very easy to set up. The materials are inexpensive and easy to obtain.

The first and main requirement is a simple relay of the two-pole changeover type. These may be obtained from most surplus stores for a few shillings. The operating voltage of these relays is often marked at 20 to 30 volts. However, one usually finds they work very well at 12 volts. The resistance of those I have successfully used was 650 ohms. It is usually advisable to ask the dealer to test whether the relay will work at 12 volts, or whatever voltage you prefer, before you buy it.

Secondly the signal itself: a colour light signal, red and green, is preferable. Not only is this more in line with current railway practice but also makes for simpler wiring circuits.

It is possible to buy scale model double aspect colour light signals quite cheaply from most model dealers. In fact the total cost of signal, relay and the necessary wire should be no more than about 15/-.

From the circuit, it will be seen that it is necessary to have two isolated sections of track completely insulated. Section 1 is a relatively short isolated section of the power rail. This is used to

follows: Normally, there are no trains on the track, the relay is not energised and contacts C1 and C3 are closed. The green light shows and Section 1 is alive.

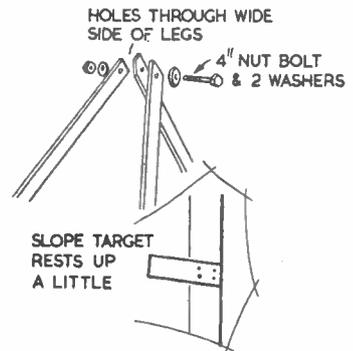
When a train enters the section it passes the signal at green and enters Section 2. Contact across the running wheels will close the relay circuit. The two poles change position: C1 will open and C2 close. This changes the

A Simple Archery Target

FOLLOWING publication in *Hobbies Weekly* of an article detailing how to make a simple archery target, these observations have been received from Mr. Kenneth O. Arton, Regional Coach, Grand National Archery Society.

The Target Stand, when not required for use, is very bulky as detailed. A pin joint using a 4ins. long bolt is most satisfactory in use, and enables the three legs to fold up together for storage.

The Target Face colours should read (from the centre), gold, red, light blue, black and white — five rings in all of



equal widths which equal the radius of the 'gold'. (They score 9, 7, 5, 3 and 1).

Incidentally the standard British target is 4ft. in diameter, and stands 4ft. high, centre to ground, and should lean back 15 degrees to the vertical.

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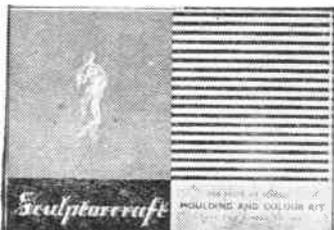
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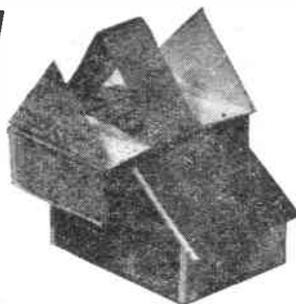
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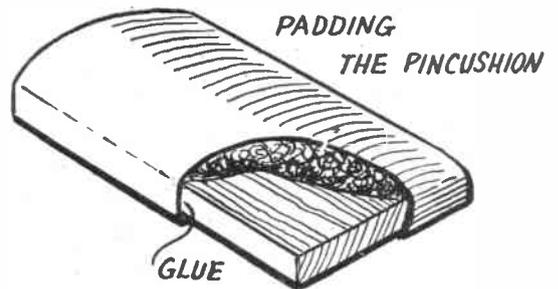
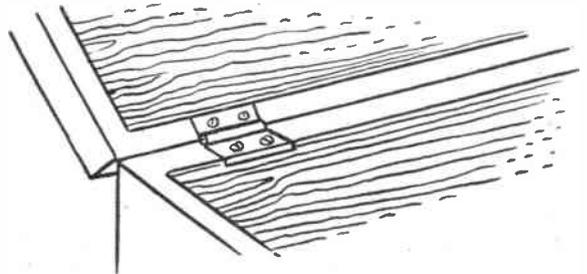
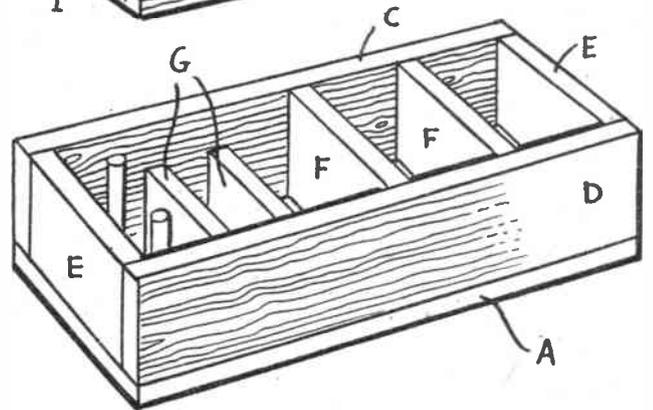
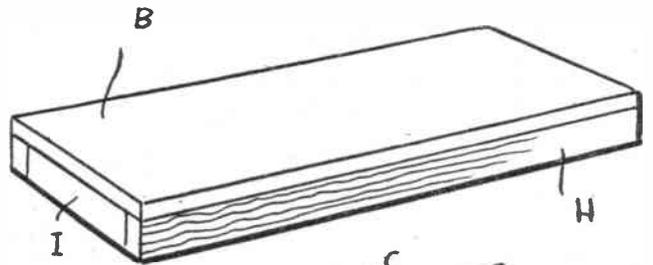
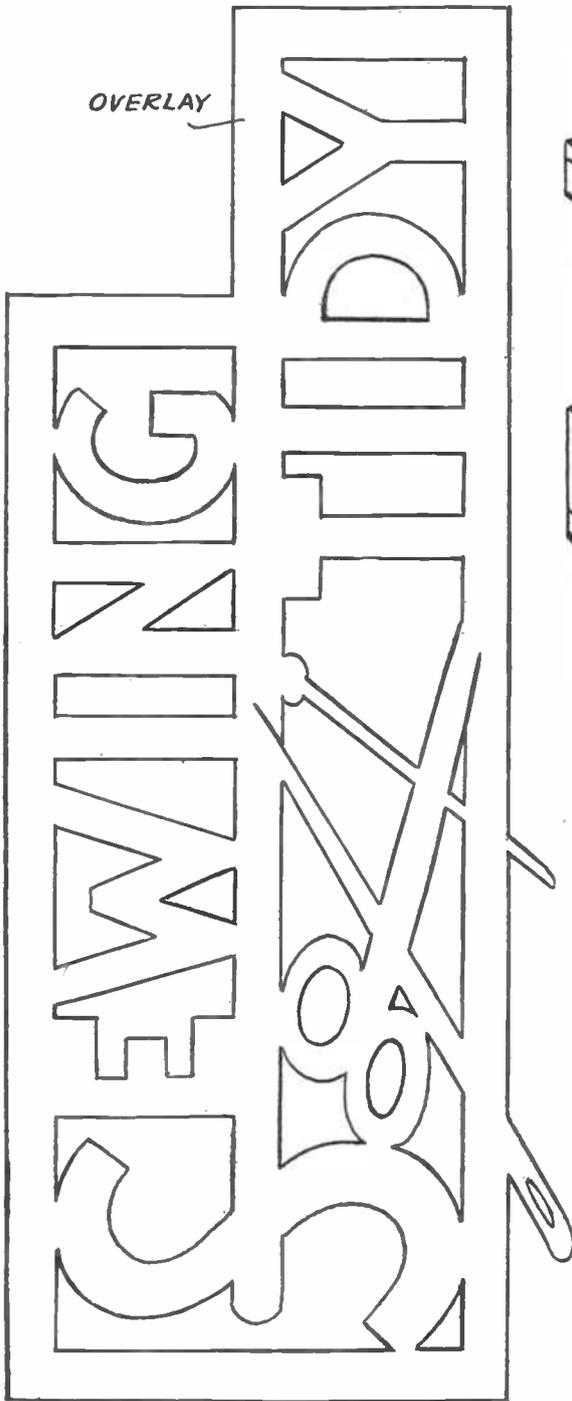
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