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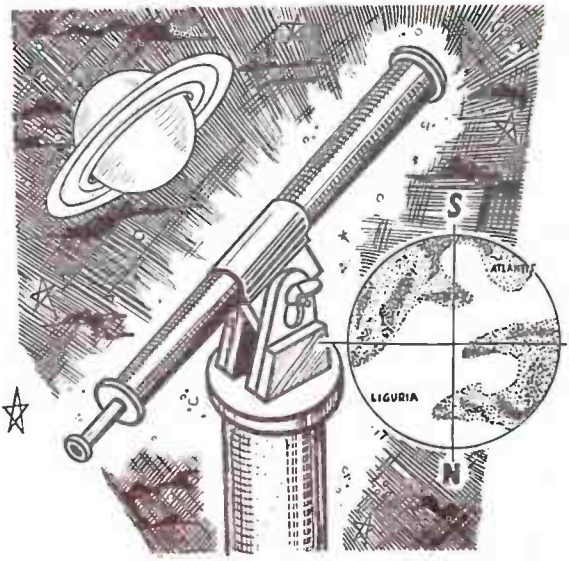
THE ORIGINAL 'DO-IT-YOURSELF' MAGAZINE

HOBBIES weekly

FOR ALL HOME CRAFTSMEN

Study the Heavens with this . . .



ASTRONOMICAL TELESCOPE

Also in this issue:

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ETC. ETC.

Hobbies

Up-to-the-minute ideas
Practical designs
Pleasing and profitable things to make

5D

JACK Turner, his wife Peg, and daughters Megan and Kim, have been regular readers of *Hobbies Weekly* for many years.

Jack, an automatic guillotine operator, has many hobbies. At the age of 16, he joined an accordion band. 'It's a grand band,' he writes, 'and is run on voluntary lines. No one has ever been paid, in fact, we all pay to be in it. I had a clock presented to me for 15 years' service. But I have now turned my hand to teaching boys and girls the accordion.' Jack and Peg have appeared in many dramatic and comedy sketches at local concerts.

'I make plaster ornaments and have made my children and their friends a crib scene for Christmas,' says Jack. 'Throughout the year, my wife and self, my mother, sister-in-law and the wife's aunt are buying and making various articles for a stall which we provide for a missionary sale which takes place in November. We usually realise over £20.'

Mr. and Mrs. Jack Turner in happy mood

Mrs Turner is a keen dressmaker. 'I make clothes for the children', she says. 'When there is time to spare we all help in the garden. Jack has built swings and a play-pen for the girls. I think all hobbies should be encouraged. We all collect stamps and beer labels.'

Jack makes his own stamp and label albums. He has written all over the world for beer labels and no brewery has ever refused.

The Turners live at 10 Chilcompton Road, Midsomer Norton, Bath, Somerset.

King Charles I took refuge at Midsomer Norton in the Manor Farm. For his deliverance he presented the church with three bells which are inscribed to that effect. The King's statue stands outside the tower, under the clock, for all to see.

J. Brompton, of 19 Salisbury Drive, Midway, Nr. Burton-on-Trent, collects stamps and labels. He would like pen friends throughout the world.

FRIENDS FOR ALL

Smiling J. Brompton

Sidney E. Irwin, of 'Tynedale', 7 Service Road, Old Pretona Road, Craighall Park, Johannesburg, South Africa, collects badges and cigarette cards.

The badges of the South African Forces and also the police, either have been or are being changed. The police badge is similar to the previous one with the exception that the crown is missing. The Air Force badge now has a small castle in place of the crown. The police forces under various names in the past (such as the Cape Mounted Police) have played a prominent part in wars in South Africa and come within the scope of military badges.

Sidney Irwin would like to exchange badges, etc., with fellow readers. Why not write to him?

Laurence W. Grauel, of 16 Rosedale Ave., Greenville, Pennsylvania, U.S.A., collects all hobby items and has many for exchange. He is particularly interested in English hotel labels.

Recently while in London, I obtained two interesting covers (below), one from the Normandie and the other from the Kingsley Hotel. (R.L.C.)

Made for a few shillings

An Astronomical Telescope

By L. A. Fantozzi

EVEN before the days of Sputniks there were many amateur astronomers. Recent events have aroused more general interest. This is confirmed by the spate of popular books on astronomy appearing in the libraries.

One can learn a lot about the constellations with the naked eye. With a pair of binoculars, or even opera glasses, much more is revealed. Yet these, compared with a simple home-made telescope show next to nothing. For a few shillings spent on lenses and with workshop scrap, an instrument can be produced which will show lunar craters and mountain ranges, sunspots, star clusters and nebulae. No photographs can give any idea of the magnificence to be seen at first hand through one's telescope.

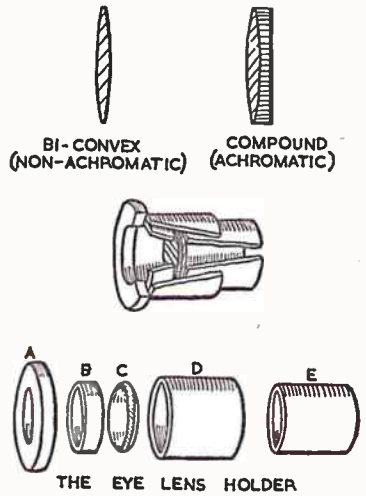


Fig. 1

The completed telescope shown in our main illustration is used on a concrete drainpipe set upright in the ground, or, if this is not available, a stout wooden post on whose top has been fixed a circle of wood with a hole cut out to accommodate the lower disc of the mounting. The telescope can thus be swung at will. By means of the wing nut, upward and downward movements are obtained.

A simple astronomical telescope consists of two lenses. Namely, an object glass at the far end of the tube, and an eye lens next the eye. Two types of lenses are shown in Fig. 1. A combination of two bi-convex lenses is the cheapest, the two being generally available secondhand at under ten shillings. Definition however, is not perfect. With bright objects, such as the moon, a thin colour fringe appears round the edge of the image and the image and the surface detail is not quite so sharp as with the compound achromatic lens. The compound lens is dearer, the object glass especially, but it funds run to it compound lenses should be bought.

Combinations in ascending order of excellence of definition are: 1. bi-convex lenses; 2. bi-convex object glass and achromatic eye lens; 3. achromatic object glass and bi-convex eye lens; 4. two achromatic lenses.

It is assumed that the average reader will wish to use the first in view of their cheapness. Many amateurs start with such an instrument, become so enthusiastic with what they have seen that they save for better lenses and either replace the old or make another telescope. The principles of construction are the same.

The magnification of the lens combination is easily arrived at by dividing the focal length of the eye lens into that of the object glass. For instance, an object glass of 40 in. focal length and an eye lens of 1 in. focal length gives a magnification of 40 diameters, the same object glass with an eye lens of $\frac{1}{4}$ in. focal length gives a magnification of 80.

A magnification somewhere between these should be aimed at. Secondhand lenses may be had from H. W. English, Rayleigh Road, Hutton, Brentwood, Essex, and from Charles Frank, 67–73 Saltmarket, Glasgow, C.1. A bi-convex object glass of 20, 30 or 40 in. focal length and about 45 millimetres diameter, and a bi-convex eye lens of $\frac{1}{4}$ in. focal length and about 18 millimetres diameter should be inquired about. The 40 in. object glass is the most desirable.

Having obtained these, check their focal lengths. This is quickly done by securely mounting one lens in a slit in a cork which is fixed on a nail passing through a narrow board about 45 in. long. Put the lens near one end of the board and bring the other end to the eye so that the line of the board points at a distant object, such as a chimney or tree top. Steady the board on a post. Bring up a postcard to the lens and gradually draw it away along the board. When a sharp inverted image of the chimney or tree top appears on the postcard, mark the spot on the board. Measure the distance between the lens and the mark. This measurement is the focal leugth.

A preliminary view through the lens system can now be made. Fix the object glass at the far end of the board and hold the eye lens at the mark. Gradually draw the latter towards you until the image is in focus. You will note that the image is inverted. There is no cause for puzzlement here, for all astronomical telescopes show inverted images. The reason for this is that to produce an erect image more lenses would have to be used. Each time light passes through a lens some light is lost and an astronomical telescope must gather as much light as possible so that faint objects may be seen. Hence the fewer lenses the better. It is true that a concave eye lens will erect the image, but the field of view is so restricted that it makes observation difficult at high magnifications, and such a combination nowadays finds use mostly in low power opera glasses. In any case, illustrations in the astronomical books show inverted views, so that to have an instrument giving an erect image would only confuse.

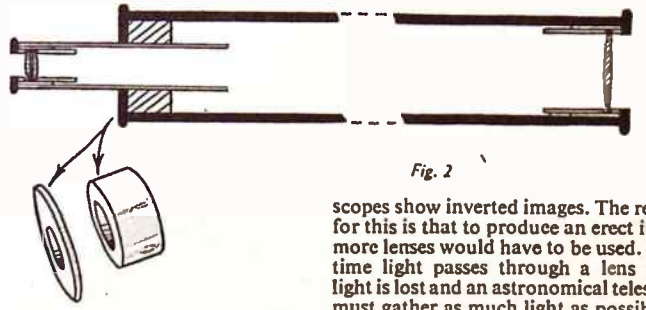


Fig. 2

Having checked the focal lengths, tubes to hold them must now be selected. Aluminium, Duralumin, brass or even steel tube can be used, though the last two are heavy in use. Strong cardboard, if available, makes a nice light tube. One may also be rolled from brown paper and gum around a suitable sized curtain pole or other rod.

The internal diameter of the main tube

should be at least ¼ in. larger than the diameter of the object glass and 1½ in. shorter than the focal length. The tube to hold the eye lens should be about 3½ in. and of internal diameter at least $\frac{3}{16}$ in. less than the diameter of the lens.

The lens holders are rolled from brown paper and slipped into the tubes, as shown sectionally in Fig. 2. The cut away diagram of the eye lens holder shown in Fig. 1 indicates the principle and the exploded view of the components. A, is a wooden ring ¼ in. or more larger than the external diameter of the tube into which the holder will be slipped, and the hole ⅛ in. less in diameter than that of the eye lens.

B, is a roll of paper which is gummed into another roll of paper D, and the two glued to A. The lens C, is slipped in and held in place by a push-in roll of paper, E. By slipping out E the lens can be removed and cleaned at any time.

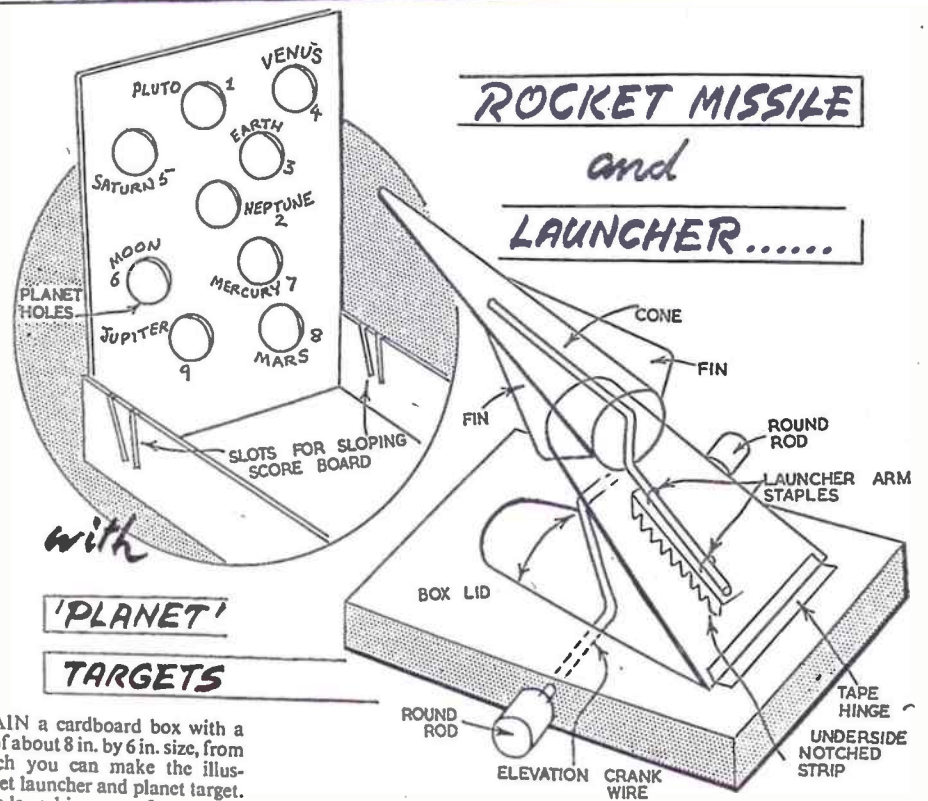
Roll B is made from a long strip of stout brown paper ½ in. wide. Choose a rod or glass tube ¼ in. less in external diameter than the lens. Roll the strip around this until enough has been built up to give an external diameter the same as that of the lens C. Unroll the paper, wrap it one turn around the former tube or rod, gum the entire strip remaining and wind evenly on by turning the former tube. When quite dry and firm (usually overnight), make E on the same former from a ½ in. wide strip of brown paper. When this, too, is dry, push B and E close together on the former and roll D in the same way on B and E using brown paper ½ in. wide and building up enough to afford a snug slip-in fit into the eye-piece tube. When dry dismantle and gum B flush into D, finally fixing A into position by means of tube glue.

The object glass holder is made similarly, except that D is made from paper strip 1 in. wide and E 1¼ in. wide.

The arrows in Fig. 2 show the components of the unit in which the eye-piece tube slides for focusing. Both are of wood and drilled to the same external diameter as the eye-piece tube or a shade less and carefully enlarged with fine glasspaper until an easy movement of the tube is attained. The thicker ring is made from ⅜ in. or 1 in. wood and should slide tightly into the main tube. The two components are glued together.

Instructions for finishing the telescope will be concluded next week.

ROCKET MISSILE and LAUNCHER..... with 'PLANET' TARGETS



OBTAIN a cardboard box with a lid of about 8 in. by 6 in. size, from which you can make the illustrated rocket launcher and planet target. Cut out the launching ramp from the lid and bend upwards as shown. Glue a strip of wood to the underside. Bend the elevating wire to shape and insert it through holes punched in the sides of the lid. Fix round rod control knobs to both ends of the protruding wire. The centre crank portion fits into adjustable notches cut in the wood strip under the launcher platform.

The launcher arm is bent to shape and stapled to the platform so that the rocket missile may be slotted in position ready for launching. The rocket consists of a paper cone with fins and is powered from the launcher by blowing a jet of air through a plastic, metal or cardboard tube directly into the open end of the rocket cone.

The cardboard box is used for catching the flying rockets, and can have slots for fixing in an upright 'planets' target scoreboard. This board has a series of holes cut in it to accept the correctly aimed ends of rocket cones. The scoreboard fits inside the box with the rockets, and the launcher lid is replaced onto the box for compact storage when the game is not in use.

(T.S.R.)

WIRING INSTRUCTIONS

USE ordinary insulated single conductor type of wire, and wire in the heater chain first, starting from tag 7 on tagboard 2, and going from there to tags 1 and 7 on V4 holder, then on to tag 7 of V3, to tag 7 of V2, to tag 7 of V1. Complete L.T.+ by joining an insulated lead of stranded wire (brown colour) to the original tag 7 on the tagboard. This should be about 9 in. long and left to hang loose until dealt with later.

Now wire the L.T.-chain. Join the centre spigot of V4 valveholder to tag 5, thence to chassis solder tag nearby. With V3 holder, join up the centre spigot, and tag 1 and adjacent chassis tag. The same is done with V2 and V1.

Now join, with bare wire, tags 1, 2 and 3 on tagboard 2, and tags 1, 2 and 3 on tagboard 1. Join the two sections with insulated wire, and finally attach a 9 in. lead of stranded insulated wire (red colour) to tag 3 of tagboard 2, and let it hang free until needed. This is the H.T.+ rail.

Next, join a 5½ in. long lead of brown insulated stranded wire to tag 3 on the V1 valveholder and pass through the grommet near tagboard 4, and leave it for the time being.

Join C7 to the chassis tag, and R2 to tag 1 on tagboard 1. Join the free ends of both these (C7 and R2) to the tag on tag-board 4 in the corner of the chassis. To the same point, solder a 4 in. lead of black insulated stranded wire and pass this through the adjacent grommet and leave until needed.

This completes the V1 section, and the reader can move on to I.F.T.1, V2 and I.F.T.2. The wiring here is simple and one need only follow the layout drawing of Fig. 3, which is clear enough and explains itself.

R4 resistor, which is joined to I.F.T.2 (tag 4), must have its other end snipped off short and a lead soldered to it, the other end being joined to tag 6 on V1 holder and pass through the grommet seen on the drawing, and solder to the tag on TC1.

On V4 holder, tags 6 and 2 are joined and taken to the tag on tagboard 3, to which point is also attached a 9 in. long lead of orange insulated stranded wire. This will eventually go to the output transformer, but leave it to hang until needed.

Further 9 in. lengths of insulated wire (stranded type) are attached to tagboard 2. A red one goes to tag 3, a black one to tag 5, a green one to tag 6, and a brown one to tag 7. Let these hang loose until needed.

A yellow lead of insulated stranded wire is soldered to tag 4 (where R8 is attached). This is 3½ in. long and is passed through grommet G2 and left there until needed.

A similar lead, but black in colour and 4 in. long, is soldered to tag 5 on tagboard 2, and this is also passed through grommet G2.

A green-coloured lead, 3½ in. long, is soldered to tag 6, and then passed through the grommet as well.

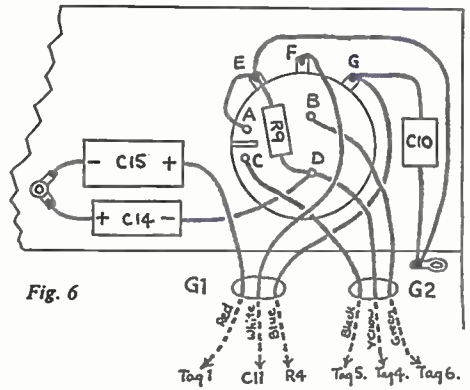


Fig. 6

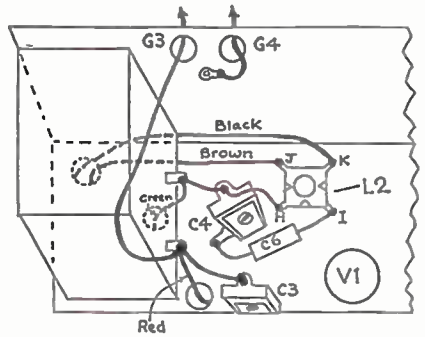


Fig. 7

The remainder of the wiring can now be tackled, and it is best to deal with each valve-holder one at a time, starting with V1.

On this the heater tags 1 and 7 have already been dealt with. So join tag 2 to tag 1 of I.F.T.1. Join R1 between tag 4 and chassis tag. To tag 4 join also C5. Snip off short the other end of C5 and solder on a lead of green insulated stranded wire. Bind the joint with insulating tape if there is danger of the joint touching the chassis. This green lead should be 4 in. long and it passes through the chassis grommet to be soldered to tuning condenser (TC2) tag. Returning to the under-chassis, join a 3 in. length of red insulated stranded

C11, is treated in the same way, but this time the lead passing through the grommet must be white insulated wire, 3½ in. long.

A further red lead goes through the same grommet from tag 1 on tagboard 2. This lead is 2½ in. long. We will return to these red, white and blue leads later.

In the meantime, complete the wiring of V3 and V4 valveholders. Note that R5 and C12 are earthed to chassis soldering tags.

This finishes the under-chassis wiring, and we can now turn to the top side.

Start with the Volume Control Switch. An enlarged drawing is shown of this to clarify the operation of wiring.

Care must be taken with the wiring here as it is easy to go wrong. The tags on the switch are lettered to help the reader (Fig. 6).

Start with tag A. Join this to tag E, then tag E should be earthed to solder tag near the grommet on the right and below the switch. Between the same chassis tag and tag G on the control, join C10.

Solder R9 across tags E and D. Take the black lead from grommet G2, and solder it to tag C on the switch. Take the yellow lead from the same grommet and

solder to tag D, together with one end of C14 (the negative end, you will notice). The positive (+) end of C14 is earthed to the chassis tag on the extreme left of the drawing. Take the green lead from grommet G2 and solder to tag B on switch.

Now, from the other grommet G1, on the left, take the blue lead and solder to tag G (to which C10 is attached). From the same grommet, take the white lead to tag F.

The red lead from the grommet is joined to C15 (to the plus end, notice). Insulate the joint with tape, and join the negative end of C15 to chassis tag.

This completes the switch and we can

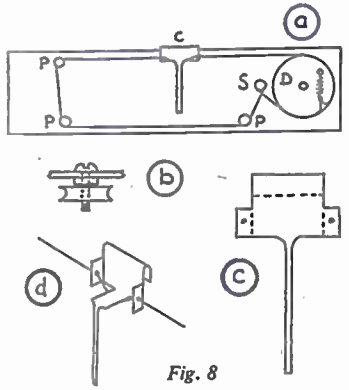


Fig. 8

turn to the other end of the chassis.

Fig. 7 shows a close-up of the tuning section.

First, deal with the oscillator section, consisting of L2, etc. L2 is the medium wave oscillator coil. There are various makes on the market, and most of them have different systems of tag connections. The first thing to do is to examine your coil and leaflet and compare it with the theoretical circuit diagram of the circuit given here, with reference to L2. You will then be able to identify which tags on your coil correspond to H, I, J, K in our circuit.

The coil shown here is an Osmar Q08 and the connections should only be copied if your coil is of this type.

First, earth the padder condenser C6 to the chassis soldering tag bolted down with the trimmer C4. The other end of C6 should be taken to I tag on the coil (i.e. the bottom end of the long winding, as seen in the circuit diagram).

Now join the tag of TC2 (to which the green lead is already soldered) to the top tag of C4 and carry this on to the coil tag which corresponds to H (i.e. the top end of the long winding, as seen in the circuit diagram).

From the grommet hole beneath TC2 we now have only the brown and black leads to deal with. The brown lead is the J lead and should be joined to the tag which corresponds to the top of the short winding as seen in the circuit diagram.

The black lead is the K lead and should go to the tag which corresponds to the bottom of the short winding as seen in the circuit diagram. This completes the oscillator section.

For the aerial section, join the tag on TC1 (to which the red lead is already soldered) to the top tag of C3 trimmer. To the same point, solder a 5 in. lead of stranded insulated wire and pass it up

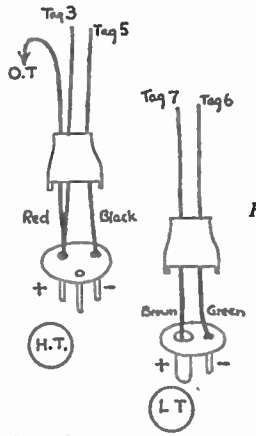


Fig. 10

through grommet G3 on the front of the chassis.

Another similar lead goes through grommet G4 from the adjacent chassis tag. These leads are for the frame aerial.

The tuning or station indicator drive arrangement is shown in Fig. 8a. The drive spindle is S, the pulley wheels are P, the drive drum is D and the cursor pointer is C. First attach the drive drum D. If any of the tuning condenser spindle projects beyond the drum bush, then saw it off flush.

Fix in the drive spindle. Note that both this and the spindle of the volume control/switch should project 1 in. from the face of the chassis, so should be sawn off to attain this.

The pulleys are mounted on 6B.A. bolts ⅜ in. long, secured to the chassis by a thin locking nut. (See Fig. 8b.)

The cursor pointer should be made out of thin aluminium sheet, cut out as in 8c and bent into the form shown in 8d where the nylon drive cord is also shown threaded in. The cursor slides on the

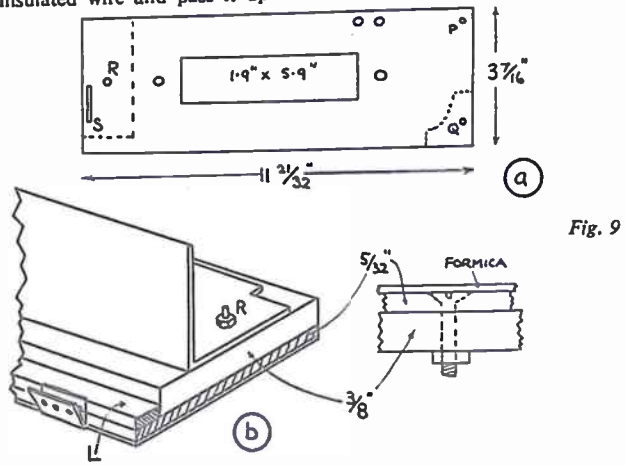


Fig. 9

top edge of the front chassis face. When the vanes of the tuning condenser are fully enmeshed, the pointer should be stationed over the last point on the dial. The adjustment must be made when the dial is fitted on the chassis.

In preparation for this, the front panel of the set should be made. It consists of 1/16 in. plywood, glued to Formica sheet of some suitable colour and effect. The dial cut-out in the Formica is smaller than that in the plywood, thus forming a recess for the dial to sit in. The dimensions for the plywood are seen in Fig. 9. The Formica is the same, except that the dial cut-out is 5⅛ in. by 1⅜ in.

The holes P, Q and R are drilled in the plywood only and are countersunk. 4B.A. bolts are inserted and secured with nuts on the back side. The bolts are ¼ in. or 1 in. long.

At bolts Q and R, ⅜ in. plywood is used to stand off the panel from the chassis front and so allow space for the dial drum etc. The particular shape of these two pieces of plywood is seen by the dotted line in Fig. 9a. They can be glued to the plywood panel.

The Formica front panel is then glued to the plywood and when dry, the dial is put into the recess and fixed there with glue also.

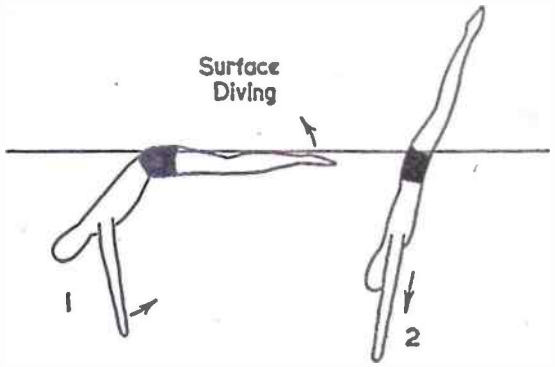
● Continued on page 275

Life-saving — 3

Surface diving for an object

IF a non-swimmer, by throwing up his hands into the air and gasping when under water, inhales water into his lungs, he will most probably lose consciousness and sink. The belief that he will rise three times is untrue; he may never rise again.

In this case, provided you know where he went down, and if the water is not too deep, a surface dive is usually necessary to recover him. For the Life Saving Society's tests a brick, usually of weighted wood or plastic and weighing about 6 lb., is used. This has to be recovered from a depth of 6 ft. by means of a surface dive, and without swimming down.



Do a handstand

A handstand at the shallow end is a useful introduction to surface-diving. To perform this, bend down until your face is nearly at the water surface, with your hands outstretched. Then jump up and reach for the bottom, remembering to tuck your head in and bend your back. As you reach for the bottom, throw your legs up into the air, and try to balance on your hands. When you feel fairly confident in this position, and are able to throw your legs up quickly, it is time to practise the complete dive.

Swim along, using the breast stroke until you are ready to dive, then make a downwards and backwards pull with your arms, at the same time dropping your head and bending at the hips. Reposition your arms to point towards the bottom, and at once throw your legs up into the air, keeping them straight and together. The weight of the legs, together with the strong arm pull, if the movements are correctly timed, should propel you easily to at least 6 ft., when you will feel your hands touch the bottom.

In practice, of course, it is not nearly so easy! The usual difficulty is slowness in throwing the legs into the air, resulting in a shallow dive. This can only be overcome by practice, remembering to bend the head and body, and throw the legs up sharply. If at first you find it impossible to touch the bottom at 6 ft., try in shallower water until you get the hang of it. You will have to keep at it until you can do it easily, and touch the bottom at 6 ft. every time.

It is now time to start using a diving brick. An ordinary brick can be tied in an old sock, or tightly wrapped in a soft cloth. It is first necessary to know how to swim when carrying the brick. It should be held high upon the chest, using both hands with the elbows tucked in, much as in the first method of rescue. The stroke used is the life-saving back stroke already learnt, and, incidentally, this is an excellent method of strengthening your kick, since it takes more effort to swim with the brick than without it.

To recover the brick from the bottom at a depth of 6 ft., swim to a position just over it, using the breast stroke, and then make your surface dive. If you have judged the position correctly, your outstretched hands should touch the brick or the bottom of the bath just in front of it, so that you can grab it easily with both hands. Then raise your head and assume a crouching position, when a good kick off with both legs will easily propel you to the surface, with the brick clutched to your chest. Remember to throw your head back when surfacing, so that you arrive on your back ready to carry the brick to the side. If you are working with a friend, it is best to take it in turns for one to throw the brick in from the side, whilst the other recovers it. It must be taken to the side and 'landed'.

In the case of the actual rescue of a person who has sunk in a pond or river, consideration must be given to the condition of the bottom. If it is stony or otherwise hard and firm, a kick off should be made from the bottom, as when using the brick, the victim being gripped by the head or armpits. If, however, it is soft and muddy, it is important not to contact it for fear of being trapped. The victim should be grasped as before and a powerful leg stroke made to carry him to the surface, when he should be carried by one of the rescue methods, probably the first if he is unconscious. (P.R.C.)

Next: Artificial Respiration.

● Continued from page 274

Portable Wiring Instructions

A strip of 5/32 in. plywood is glued along the bottom of the back of the panel. (L in Fig. 9b.) This is for the hinges to hold on to.

The Formica/plywood panel can next be bolted to the metal chassis. A bolt, a spacer (⅜ in. deep) of metal or paxolin tube is used. Fix on the control knobs and turn the tuning knob to engage the condenser vanes full mesh. See if the pointer corresponds to the last point on the dial scale. If not, then adjust the cursor along the cord until it does.

The hinges can now be fixed to the bottom edge of the front panel. These should be ¾ in. by ¼ in. brass hinges, and should be let in.

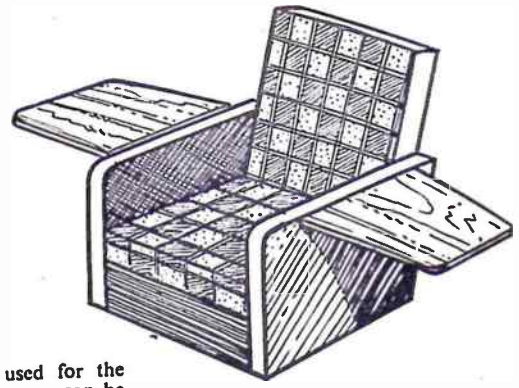
Next, attach the battery plugs to the leads from the set. Pick out first the L.T.+ and L.T.— leads (brown and green). Thread them through a plug cap (cover) and solder the ends of the leads into the two point plug. L.T.+ (brown) goes into the thick pin, the L.T.— (green) into the thin pin. Then bring down the plug cap and bend over the holding flaps.

Do the same for the H.T. plug, only in this case add another 6 in. insulated lead to the H.T.+ pin. (This will later go to the output transformer.) Fig. 10 shows how the plugs should be fixed, (the plug covers waiting to be brought down). (A.F.)

Next week's concluding article will deal with the loudspeaker panel and the frame aerial.

EASY CHAIR TO WORK IN

Described by A. Fraser



MANY of us have to do a certain amount of clerical or book work or drawing of some kind at home. Usually a table has to be used to hold all the papers, etc., and the hard chair which often goes with it does not help towards comfort.

The chair, the construction of which is described here, is basically an easy chair, but it has hinged flaps attached to each arm which can be swung up into position to hold any papers or books needed for one's work. In addition, a board can be put in position across the arms, used flat or tilted, as desired. Writing, typing or drawing is thus facilitated.

The chair is very easily built, requiring no fancy joints and anyone who can use a saw can make it.

The spars or battens used for the frame are eventually hidden, so can be of cheap wood of any kind. Ordinary plywood can be used, later to be veneered or painted, or it can be plywood already veneered — which will be somewhat more expensive. This matter is touched on again later in this article.

The sides of the chair should be tackled first. From $\frac{5}{32}$in. ordinary plywood, saw out the shape shown in Fig. 1. When drawing out the shape, note that angles BAC and ABD are right angles. The radius of the curve is 3$\frac{1}{2}$ins. This should be cut out last with a fretsaw, and then smoothed.

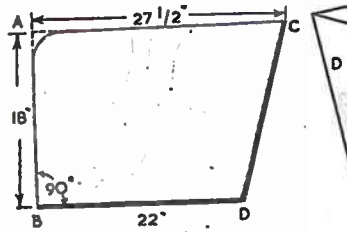


Fig. 1

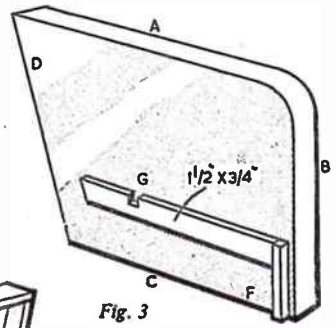
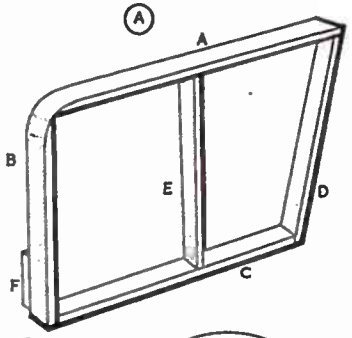


Fig. 3



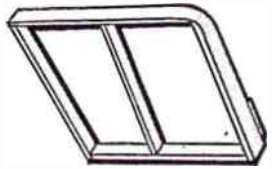


Fig. 4

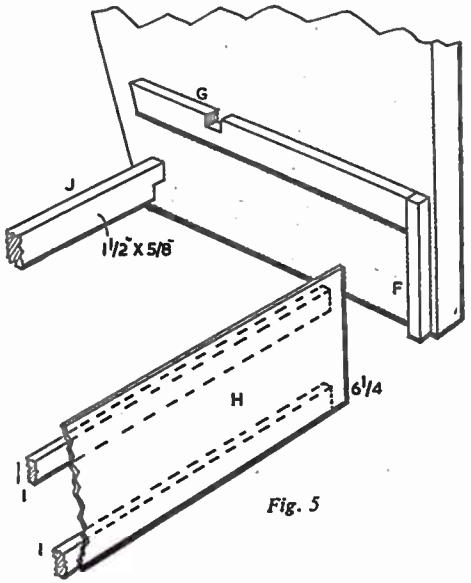


Fig. 5

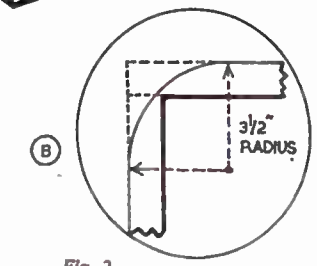


Fig. 2

Using this sawn-out shape as a template, make three others exactly the same. This makes a total of four, two for each chair side.

Now take one of the shapes and fix lengths of batten (of any ordinary soft wood) to it, to produce the effect as seen in Figure 2a. Use glue and panel pins to fix the plywood to the battens, and glue and oval nail where batten meets batten (e.g.E to A and C, A to D, etc.).

(A) and (C) and (E) are 2ins. by $\frac{1}{4}$in. stuff, while (B) and (D) are 2ins. by 1in.

When set, the corner made by (A) and (B) should be sawn off roughly with a tenon saw and finished off to coincide with the curve of the plywood (Fig. 2b).

Another sheet of plywood will have to cover and complete the side, but this must be left till later. Turn over the side as it is and fix on (F) and (G). Use glue and nails for (G) and glue and screws for (F). Notice that (F) is set back $\frac{5}{32}$in. from the front (to allow room for the plywood front of the chair base; to be fitted later). Also, (G) has a slot made in it, $\frac{1}{4}$in. wide and $\frac{1}{4}$in. deep. Make two saw cuts and chop out with the chisel, to produce the slot. Notice that (G) stops short of (D) edge and the back end of (G) is sawn on the slant to make it parallel to (D) back edge. The distance is 2$\frac{1}{16}$ins. (see Fig. 3). The piece (F) is 1in. square by 6ins. long.

The left-hand side of the chair can now be made, similar to that of Figs. 2 and 3, but in reverse. That is to say, if the curved corner of the plywood shape is facing us, then the battens (A, B, C and D) should be fixed on the left-hand side of the plywood, as seen in Fig. 4.

Next saw out the front of the base (H), using $\frac{5}{32}$in. plywood, and see that it is precisely rectangular. To this glue and pin two battens (I, I). The plywood is

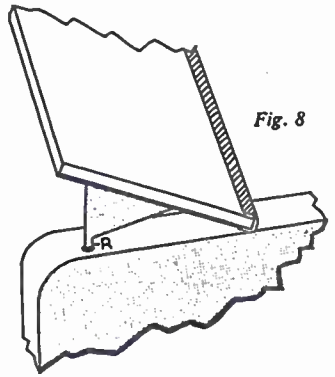


Fig. 8

18ins. by 6$\frac{1}{4}$ins. and the battens 1$\frac{1}{4}$ins. by $\frac{1}{4}$in. by 16ins., which means they stop short 1in. either end of the plywood, to allow it to fit over the pieces (F, F) in Figs. 2, 3 and 4. The top batten (I) comes $\frac{1}{4}$in. below the top edge of the plywood, in order to conceal the edge of the plywood which will be fitted later in the seat.

The cross-piece (J) is 18ins. by 1$\frac{1}{4}$ins. by $\frac{1}{4}$in. and has shoulders ($\frac{1}{4}$in. by $\frac{1}{4}$in.) sawn out at each end, so that it forms neat half-lap joints with the slots in the side battens (G). Fig. 5 shows (H) and (J) ready to be fixed to (F) and (G), using glue and pins.

The plywood for the seat bottom should be $\frac{1}{4}$in. thick and 18ins. wide. The distance from front to back should be measured by trying it in the chair and marking it off at the end of (G). Note that the back edge should be chamfered at the same angle as the (G) back end, to accord with the slope of the seat back soon to be fitted. The plywood seat is then glued and pinned to (G, G, J and I). The laminated edge, as stated previously, will be concealed by that projection of (H) which comes above (I) batten.

The back of the seat should be made now. This, again, is made of $\frac{5}{32}$in. plywood and battens (see Fig. 6). The plywood piece (K) should be 18ins. wide by 24ins. deep, while the battens (M, N and L, L) are butt jointed. (M) is 18ins. wide and is of 2in. by $\frac{1}{4}$in. stuff. (N) is of the same section, but only 16$\frac{1}{4}$ins. wide. (L) is 31ins.

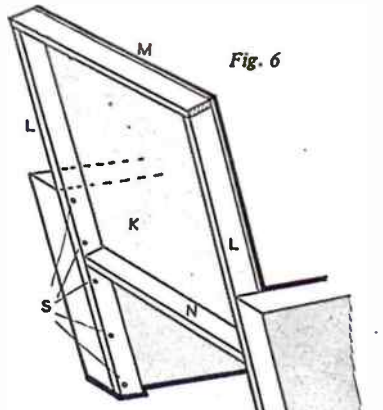
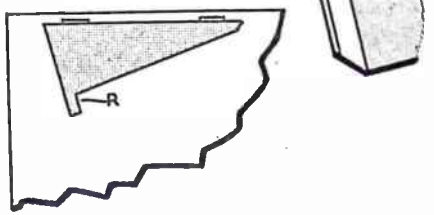


Fig. 6



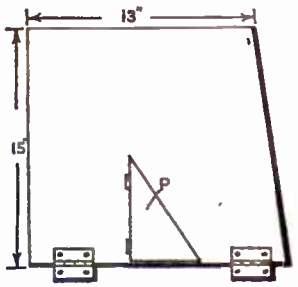


Fig. 7

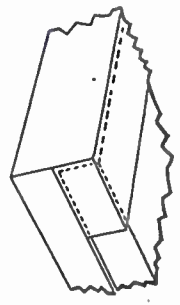


Fig. 9

The frame is glued and nailed together and the plywood glued and pinned.

When set, fit it to the chair with glue and screws into the sides of the chair (see Fig. 6). Then saw off the bottoms of the (L) battens flush with the underparts of the sides. Next, apply plywood sheet ($\frac{5}{32}$in. thick) to the back, stretching from (L) to (L) and from (M) down to the bottoms of (L). Use glue and pins.

After this, cover the outer sides of the chair with $\frac{5}{32}$in. plywood, again using glue and pins.

Before dealing with the side flaps, etc., we would like to say a word here about the final finish of the woodwork of the chair.

It has been said already that the plywood can be ordinary plywood which could be veneered later by the reader when the chair is made. Or the chair can be made with plywood already veneered by the manufacturer.

Some, of course, are partial to painted furniture. In this case, the wood of the chair can be painted to one's preference and the expense of veneer avoided. In either case, one will need some strips of veneer or thin one-ply wood to cover the tops and fronts of the arms (sides) and also the sides of the chair back. This is merely to hide the laminated edge of the plywood and make a better looking job. The veneer for the front and top of each arm should be in one strip.

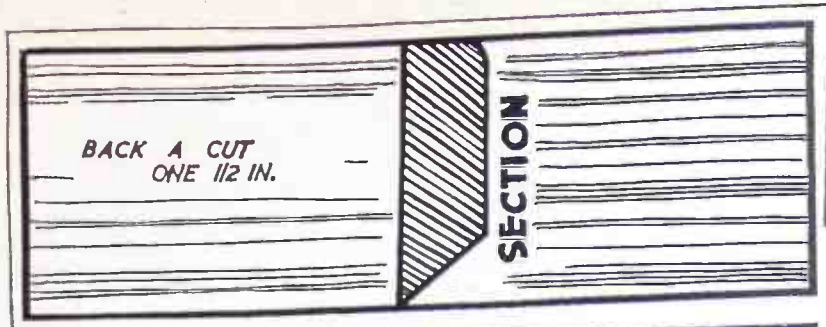
Incidentally, there is no need to veneer the plywood seat of the chair, as this will be covered by the cushion.

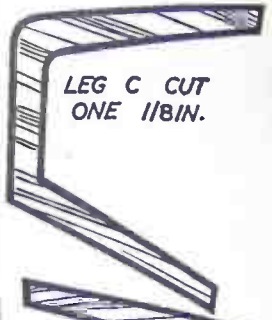
The side flaps on the chair are made from $\frac{1}{4}$in. plywood (ready veneered if desired), cut to the dimensions and shape as shown in Fig. 7. The two outer corners should be rounded off. Each flap is fixed to the chair with 1$\frac{1}{2}$in. hinges (brass) and when raised in position for use, is held there by the stay (P) (Fig. 7). This is roughly 6ins. by 4ins. and is of $\frac{5}{32}$in. plywood, or it could be of aluminium sheet. Two $\frac{3}{4}$in. thin brass hinges hold the stay, which folds flat to the flap or leaf, when this latter is swung down out of use.

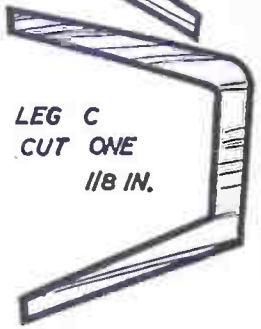
The laminated edges of the flap can be veneered or painted to conceal them.

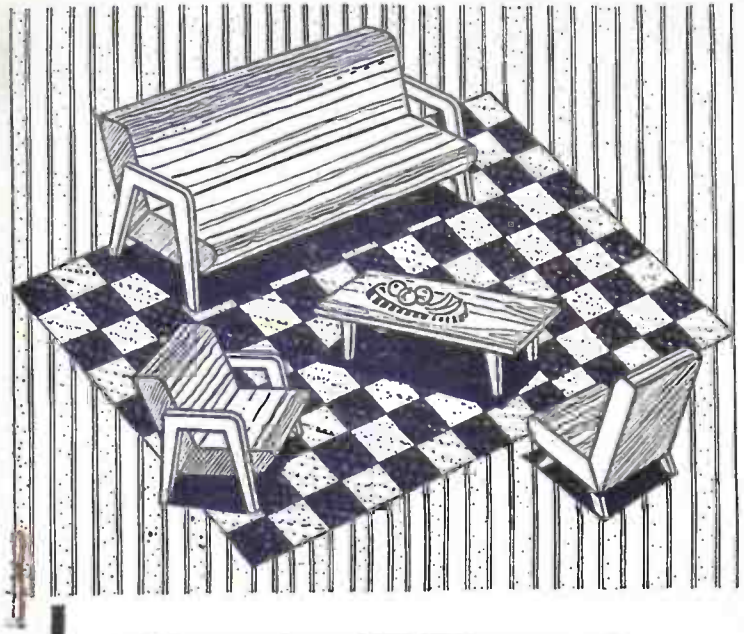
The board used across the arms of the chair can be an adapted drawing board you may have, or it can be made by oneself. Where the board is needed to be raised in a slanted position, as for drawing, two stays are hinged to the board to achieve this, and to prevent the board slipping, the stays ($\frac{1}{4}$in. plywood) are sawn out to the shape seen in Fig. 8. The little piece (R) left projecting, need only be about $\frac{1}{4}$in. long, and it pegs into a

● Continued on page 280





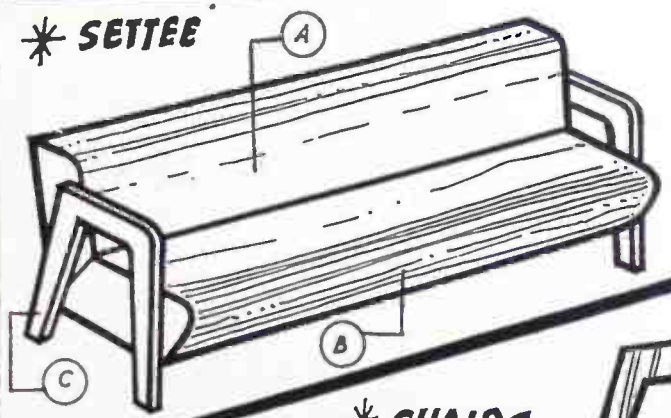




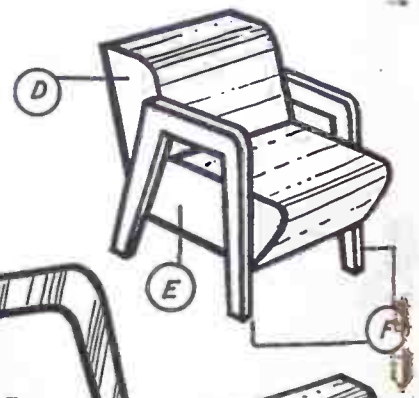
DOLL'S HOUSE FURNITURE PATTERN

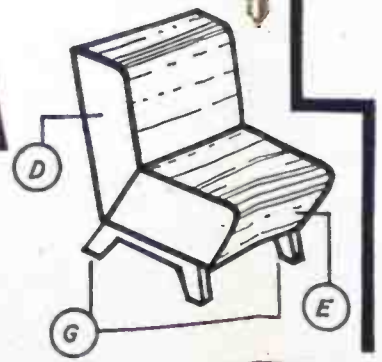
SITTING ROOM GROUP

* SETTEE



* CHAIRS





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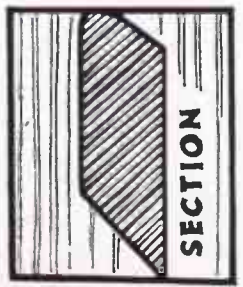

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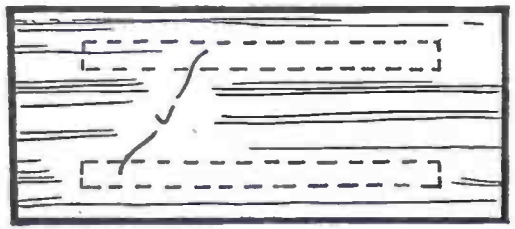

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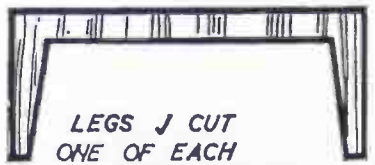

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PRINTED IN ENGLAND

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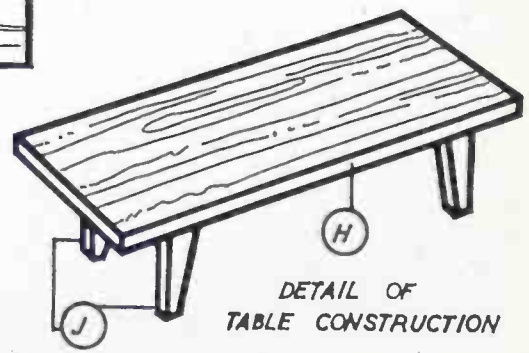


DETAIL OF TABLE CONSTRUCTION

PANELS OF WOOD REQUIRED
ONE MDB ONE G2

HINTS ON GOOD SOLDERING

By 'Radio Mech'

SOLDERED joints are often used in radio receivers, in particular, and it is sometimes felt that joints of this kind are difficult to make. In actual fact this is not so. It is quite easy to make neat, good soldered connections, and this can be useful for all sorts of jobs in addition to radio construction.

Copper, brass and tin are among the most common metals which can be joined easily with ordinary solder. Connecting tags and wires in a receiver are usually copper or tinned copper, and are thus easy to solder.

Some metals, such as iron and steel, do not solder so readily. Aluminium, and other alloys of similar type, cannot be joined at all with ordinary solder. It is thus best to start with the 'easy' metals, such as copper, brass and tin.

Clean surfaces

The leads or tags to be soldered must be clean. With new parts and wire, or wire from which the insulation has just been removed, satisfactory soldering may be possible straight away. But if the tags or wire should be dull or dirty, the points to be soldered should be brightened by scraping, or rubbing with a small file. Fine emery paper or glass-paper can be used, the dust being blown away afterwards.

It is impossible to solder to dirty surfaces, and it takes only a second or so to make a tag or the end of a lead bright and clean.

The soldering iron has a copper or similar bit, and can be the simple type which is heated with a spirit lamp, spirit stove, blue-flame paraffin stove, or gas ring. It should be kept hot enough to melt the solder quickly, but must not be red hot. The bit can be kept just at the side of the flame, so that it does not become too hot.

Electric soldering irons are also popular, and are not very expensive. Large irons of this kind are a little awkward when making joints in compact receivers, etc. Some irons have inter-changeable bits, to overcome this. Very small irons, especially for wiring, are also made. These are excellent for this kind of work, but do not usually provide enough heat for larger soldering jobs.

Electric irons should always be run from a 3-pin socket, so that a 3-pin plug may be used. The large pin is then used for earthing the metal parts of the iron, to make it safe even if internal insulation breaks down. The earthing lead provided for this purpose is normally green.

Such irons are extremely economical to run, but should not be left switched on when not in use, or they may overheat and the element be damaged.

Good joints can only be made easily when a flux is used to clean the surfaces to be joined. This may be a paste or liquid, for large work. But for small electrical connections and other small jobs, a cored solder is usually employed. This solder resembles thick wire, and has a suitable flux incorporated in it. No extra flux is then required.

If a separate flux is used, the metal is cleaned, and the flux smeared on. Ordinary sticks of solid solder can then be used. This is cheapest when a lot of solder will be used, but is not worth while for radio construction and similar jobs.

In making joints the point of the iron should be kept tinned, by cleaning it as necessary, and melting a little solder on to it. If the end of the iron is dirty it will not be able to transfer heat rapidly to the parts to be soldered, and good joints will be difficult to make.

To form a permanent joint, the tag and lead should be cleaned and the lead looped round the tag, or through its hole. The iron and cored solder are then applied simultaneously to the joint, until the solder runs and fuses the connection. With cored solder, molten solder should not be carried to the joint by the iron, or the chemical action of the flux will take place on the iron, not on the parts to be joined.

For a proper joint, the items to be soldered must temporarily be raised to the melting point of the solder. This is easy with tags, leads, and other small items. But with large surfaces or objects, more heat is needed. For this reason it may be impossible to solder large parts with a very small iron not intended for such work.

If corrosive paste or liquid flux has been used, it should be wiped away when the joint is finished. This is not necessary with any flux left by cored solder, because this is not corrosive.

With an electric iron, soldering can go ahead continuously. But if the iron is heated by means of a stove or gas ring, it must be returned from time to time, for re-heating.

Bad joints are usually caused by the iron not being hot enough, or the surfaces being dirty. Melting cored solder directly on to the iron, instead of on to the joint itself, can also be responsible.

With a little care, good soldered joints can usually be made at once, and a small carton of cored solder costing a few pence will be sufficient for a great number of electrical connections. In temporary work, where permanent joints are not wanted, cored solder can be melted upon the tag, then upon the lead, after which the two are placed together and fused with a touch of the iron. The lead can then be unsoldered at once, without having to cut or untwist the wire, if this should be necessary.

● Continued from page 277

Easy Chair to Work in

hole drilled into the top of the chair arm.

The bottom edge of the board is best covered with a strip of rubber, as otherwise the hard edge of the wood would scrape and wear the chair arm.

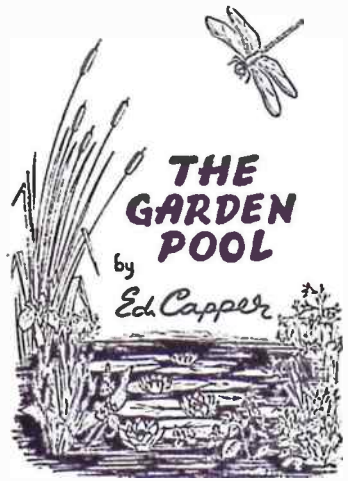
The upholstery of the chair is all that needs to be done now. For the seat and back rest, the ideal material is foam rubber. Cheaper materials could be used, but they don't compare with the rubber for comfort. The foam rubber can be got in various thicknesses. 3 or 4ins. thick is suitable for the seat, with 2ins. thick for the back.

Some material will be needed to cover the rubber and this can be textile of a fancied design, or leatherette, or plastic surfaced cotton which can be had in various attractive patterns.

For the seat cushion you will need two similar pieces for the top and underside, and a strip or strips for the sides. Allow extra for the stitching turn-over. A female member of the family will soon do the job. The rubber is inserted into the bag and the cover sealed. A length of furnishing (or upholstery) cord is stitched along the top front edge of the cushion to make it look more professional.

The cushion for the back is made in a similar fashion, only in this case an additional piece of covering material is needed to form a pocket to fit round the top edge of the chair back, in order to hold the cushion in position. This pocket should be about 3 or 4ins. deep and the width of the chair back. Fig. 9 shows the arrangement.

The chair is completed finally by fixing large flat rounded studs or castors.



Filling and Planting

IT must not be thought that as soon as a garden pool is constructed the water and fish can be introduced and plants inserted. Within a few hours everything in the pool would be dead.

A newly-made pool cannot be stocked immediately because of the toxic elements which soak into the water from the cement. The best way, although slow, is to fill the pool with water, let it stand for a week, then empty it and scrub the sides. This should be repeated four times.

Sealing cracks

If the sides and bottom of the pool were trowelled glass hard when the final coat of sand and cement were applied it should be perfectly water-tight. If, however, the water level seems to be lowering perhaps more than it should reasonably be expected to, there may be hair-thick cracks in the surface which cannot be seen with the naked eye but through which the water is seeping. A sealing compound such as 'Glasol' can be used to prevent such seepage.

If time is pressing, the process of eliminating the toxic cement elements can be hastened by adding to the water sufficient crystals of potassium permanganate to colour the water like port wine. It should be allowed to stand for a week, then drained and flushed down with clean, cold water after which it will be found perfectly safe for planting and stocking.

A continuous soil layer well rammed down on the floor of the pool provides the best rooting material for water plants. Underneath it place first a layer of well-rotted turves, turned upside down. The soil should be of a thick, loamy type and add to it, whilst laying, a handful of coarse bonemeal.

You can, of course, do the planting when the pool is full of water. However, it is much easier to do it before the water is introduced. In either case, planting consists simply of pushing the roots into the soil and possibly anchoring them with a small stone until they are established.

Do not disturb soil

The water should not be run into the pool haphazardly. A bowl or deep tray should be placed on the pool bottom and the end of the hose anchored inside it with a stone so that there is no fear of the water falling from a height and disturbing the soil layer at the bottom. By this method the water gently overflows the bowl, with hardly any disturbance of the soil. Do not run the water too fast; remember once you get the water cloudy with mud it will take days finally to clear.

In a future article we shall be dealing with plants and the different levels in which they must be planted. At this stage however, it is essential to stress that if you have planted expensive water lilies it is best to raise the water level gradually as the plants develop, so that mature lily leaves are never submerged

A gentle filling with water

for long. The water may not reach the level of the marginal (or shallow water) plants for some time but they will not suffer if occasionally given a soak with the hose.

Water discoloration

After your pool has been planted it will almost certainly develop a pronounced colour, either rusty red or pea soup green. The same sort of thing happens in established pools in the spring or early summer. This is normal and need cause no alarm. It is caused by minute organisms which develop rapidly under the influence of warmth and light and are fed by mineral salts dissolved in the water. Given a little time to establish themselves, your oxygenating plants will soon be monopolising this food supply, while the extending foliage of water lilies and other floating plants will soon reduce the amount of light that gets past the surface. The result is that in a week or two the organisms that create the 'soupy' effect are suppressed and the discoloration disappears.

Changing the water will only serve to re-create the problem and postpones the solution. The remedy lies in plenty of oxygenating plants and a little patience. There are proprietary formulas on the market for clearing the discoloration, such as 'Clarox', but the planting of plenty of oxygenators is the only permanent solution.

Another thing that can mar your pool is the accumulation of blanketweed or silkweed. It will appear sooner or later. The attack arises from the same cause as the discoloration described above. If the attack is a bad one the worst of the weed can be lifted out on a rough stick twirled around where it is thickest. Alternatively a sack drawn over the surface of the water will remove it quickly. The effective control or complete suppression of what remains can only be achieved by the combination already recommended — plenty of the right plants.

Temporary clearance

If you have friends coming to see your pool, a temporary method of clearing the water of all discoloration is to cover over the pool completely with a framework of timber, over which is laid a tarpaulin. The cover should remain in place for at least two days before your visitors arrive.

Maintenance consists merely of emptying the pool every few years, removing any excessive accumulation of rubbish and thinning too-vigorous plants. May and June are the best months for this. Twice a year, if you have fish in the pool, drop half a lump of common salt in the pool for those of areas up to 12 square feet and a whole lump for pools of larger size.

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★ free design will be a hanging ★
★ bookcase — always useful in ★
★ the home. Make sure of your ★
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FURTHER USEFUL FORMULAS

THE flesh or inside of leather goods often becomes stained. A preparation which can improve matters consists of a solution of 3 grams of oxalic acid in 250 c.c. of water. This solution is slightly poisonous. Hence after sponging the leather rinse both hands and leather well with plain water.

Amber cements

Broken amber beads and other articles of this material are best repaired with special cements. A solution of 1 gram of potassium hydroxide in 5 c.c. of water is applied to the warmed amber, and the pieces pressed together. This gives a perfect invisible union. Another good cement may be made by putting a little methylated spirit in a screw-cap bottle and adding rosin, closing the bottle and shaking. More rosin should be added if all dissolves, until a saturated solution results, that is, until a little undissolved residue remains. Apply this solution to the amber and press together.

Acid-proof cement for stoneware and glass

This consists of ground glass and water-glass mixed to a paste. The mortar in which you grind the glass should be covered with a wet cloth to prevent glass powder getting on the hands or in the nostrils. The pestle is revolved through a hole formed by arranging the cloth around it or by cutting a hole through the cloth. Empty out the powdered glass and warm the mortar in the oven. Put in water-glass and grind in the glass powder until a paste results. If too stiff, a little warm water may be added. Apply the paste to the glass or stoneware article, bind together and leave for at least a week for the cement to harden.

Wallpaper paste

Flour is often used, but there is a right and wrong way of making the paste. The flour (1 quart) should be beaten to an even batter with cold water and then 1½ gallons of boiling water gradually added, stirring rapidly all the time. Let it stand a few hours before using, and its sticking power will be improved.

Waterproofing walls

Every home decorator knows a damp wall spoils his work. A simple solution of 1 part of size in 10 parts of hot water followed by a formalin treatment is worth trying before buying the much more expensive proprietary damp proofers. Brush the hot size solution on the wall and let it dry off. Follow up by brushing with a mixture of equal volumes of water and formalin (from your dispensing chemist). This final treatment makes the size insoluble in water and, therefore, damp-resistant. After drying out, proceed with papering or painting.

Slate polish

Though the production of a high finish on slate is seldom sought, the knowledge of how to effect this may at some time be useful. Simply make a thin paste of salad oil and rottenstone and rub this with a cloth over the slate until the desired polish is obtained. Then finish off with a dry cloth.

Keeping tools rust free

Tools which are not often used tend to rust, especially if kept in an outdoor shed. An easy way of keeping them bright is to coat them lightly with boiled linseed oil.

Mechanics' hand soap paste

Hands oil-grimed from tinkering with bicycle, motor cycle or car will soon come clean with a paste made from water, soft soap, glycerine and pumice powder. Dissolve ½ ounce of soft soap in 1 ounce of water and add 1 ounce of glycerine to 2 ounces of water. Mix the two solutions and work in enough pumice powder to make a stiff paste. Wet the hands and use the paste as soap, followed by rinsing in the usual way. If there is difficulty in buying pumice powder, the scullery scouring powder may be used as a substitute in the formula.

Marble cleaner

Dingy marble fireplaces or wash table tops are often difficult to clean, and it is worth trying a special preparation. To make it, mix thoroughly together 2½ ounces of pumice powder, 2 ounces of whiting, 4 ounces of potassium carbonate and 5 ounces of powdered white soap. Keep the product in a well-closed jar if you intend to store it. Wet the marble, sprinkle on the mixture liberally and scrub well with a brush, finally rinsing off with a very wet cloth and buffing with a soft cloth when dry.

Aluminium bronze solder

If difficulty is experienced in soldering aluminium bronze, a special solder should be prepared. Melt 66 parts by weight of tin, add 33 parts of lead, 3 parts of iron-free zinc and 3 parts of mercury and cast in moulds made by pressing a thin rod into well packed damp earth.

Another solder for the purpose is made by melting 7 parts of lead and adding 3 parts of cadmium and casting as above.

Both of these solders should be used in conjunction with a flux of zinc chloride ('killed spirits').

Invisible ink

A good ink of this type which only appears on warming the paper consists of dilute sulphuric acid. Put 20 c.c. of cold water into a glass or pot vessel and stand the latter in cold water. From a small measuring cylinder add drop by drop 1 c.c. of strong sulphuric acid, stirring constantly with a glass rod. by using these precautions it is unlikely that the acid will 'spit', but it is advisable to wear goggles just in case you add the strong acid too quickly. To use the ink make a quill pen from a feather by cutting off the thick end of the shaft diagonally and write with this. When dry the ink is invisible.

Waterproof blacking

If you go in for a good deal of hiking, an effective formula for a waterproof blacking may be welcome. In a double boiler melt together 1 pint of neatsfoot or castor oil, 2 ounces of beeswax and 8 ounces of tallow. Remove from the double boiler, stir in ½ ounce of lamp black and continue stirring until the mixture is lukewarm. Then fill into tins or jars and allow to cool. Work it well into the leather and you can defy the boggy places.

Mildew remover

Leather articles which have developed mildew during storage may be restored by rubbing in a paste of bicarbonate of soda and water, and leaving the article in the sun for a full day. Wipe off the powder, sponge with water and allow to dry. If the dye of the leather looks patchy, restain with a proprietary leather dye and polish up well. (L.A.F.)

CLEANING AN OILSTONE

An oilstone which is in constant use soon becomes clogged up with soiled oil. To remove this, boil the stone in water for about half an hour. Another method is to immerse the stone in a bath of paraffin and leave overnight.

SOME BOOKS TO READ

Instructions to Young Photographers
by Houston Rogers

ALTERNATELY illustrated with photographs and drawings, this book should be readily understandable and helpful to the beginner in photography, and it also caters for the more advanced student. The practical advice of the author, who has been seen in a television series on photography for the amateur, will prove especially invaluable to the ambitious beginner. Although fully covering the subject in all its facets, there is a strong leaning towards studio and theatre photography, on which the author is an expert.

Published by Museum Press Ltd., 26 Old Brompton Road, London, S.W.7—Price 12/6.

How to build Modern Furniture
by Mario Dal Fabbro

THIS finely produced manual completely covers the making of furniture for the home, starting off with clearly presented details of construction and describing 53 modern projects to be undertaken.

Projects covered include coffee and dining tables, armchairs, bookcases, cabinets and beds, all illustrated profusely by diagram and easy-to-follow detail. Each project has a handy list of materials needed, making it easy for the worker to decide at a glance whether and how it can be undertaken.

The author has won wide recognition in Italy and the U.S.A. as a designer of modern furniture, and despite his own advancement in the craft he has satisfactorily translated his ideas so that even the novice can put them into operation.

Published by John Murray, 50 Albemarle Street, London, W.1—Price 25/-.

The Girls' Book of Crafts
by Ruth Zechlin

DESPITE its title, there are many projects in this book which will be eagerly undertaken by father and mother and, indeed, brother. In fact, we should say that parents particularly will welcome the wide variety of projects detailed as undertakings for gifts for their own children.

The usual girls' subjects such as sewing and knitting are very well covered, and there is even a section on girls' woodwork. But other subjects we have in mind which would certainly interest the rest of the family, include exciting projects in leather, raffia and basket work. The fact that there are over 1,250 illustrations and pictures in this book emphasises its suitability as an interesting and easy-to-follow teaching manual

Published by B. T. Batsford Ltd., 4 Fitzhardinge Street, Portman Square, London, W.1—Price 37/6.

Pattern Making for Schools
by Tom Gourdie

THE author is a teacher who has had considerable success in this type of craft. He illustrates his subject by the universally known use of potato-cut printing, and by an interesting series of exercises shows effects produced by repetition of horizontal, vertical and other arrangements to give infinite variety.

All the experiments are within the scope of school-children and are an admirable guide to development in a field which offers an expanding range of exciting possibilities.

Published by The Studio Ltd., Hulton House, Fleet Street, London, E.C.4—Price 7/6.

Modelling the Cutty Sark
by Edward Bowness

THE 'Cutty Sark', that most famous of tea clippers, was built at Dumbarton on the Clyde in 1869, and is now standing in dry berth at Greenwich. It represents the clipper ship at the finest stage in its development, and with her records and long and romantic career is worthy of preservation in model form.

Edward Bowness spent a great deal of time visiting the ship throughout the whole period of her restoration, and photographs taken at that time and particulars of details give authority to the design of his model described in this book. Authenticity is therefore the keynote and as such will be keenly welcomed by modellers.

Published by Percival Marshall & Co. Ltd., 19-20 Noel Street, London, W.1—Price 6/-.

Fundamentals of Transistors
by Leonard M. Krugman

IT is intended that this book, in its revised form as a second edition, should serve the initial needs of engineering students and engineers who are confronted with transistors for the first time. For this reason advanced physical and mathematical concepts have been purposely avoided, but all the fundamentals necessary to assure a complete understanding of basic transistor operation, performance and characteristics have been included.

This is a really practical book for those who want to know about transistors, which are coming more and more into everyday use as replacements for or supplement to electron tubes. There is no doubt that anyone who is connected with the electronic arts will have sooner or later to meet this amazing addition to the family — the transistor — and here is an excellent way to obtain that knowledge.

Published by Chapman & Hall, 37 Essex Street, London, W.C.2—Price 25/-.

The British Journal Photographic Almanac

A VALUABLE guide to the buyer will be found here in the 114 pages devoted to editorial reviews of new apparatus and materials in the world of photography.

Another valuable and popular feature is the section devoted to up-to-the-minute lists of sensitive materials for colour and black and white still photography and narrow gauge cinematography. The guide to choice of materials is again included, as is also the useful table of keeping properties of solutions.

The colour photography technique section in this centenary year publication will be found an extremely valuable source of information on the processes available in Great Britain.

Published by Henry Greenwood & Co. Ltd., 24 Wellington Street, London, W.C.2—Price 8/-.

Decorative Flower and Leaf Making
by Frederick T. Day

DECORATIVE flower and leaf making is a new handicraft based on the use of coloured paper. The final results are not just renderings of shape and colour like a design or painting; this new application of the craft, so well described by Frederick T. Day, enables the handicraft worker to produce authentic flowers and leaves in three dimensions. The book shows how life-like sprays, posies and bouquets may be made for attractive decoration in the home, and much valuable work is instanced for use in the schoolroom.

In this fascinating hobby the cost of the necessary materials is small. Besides being a valuable adjunct to the study of botany and design among school-children and students, the author shows how the craft may be carried to the professional stage for display work.

The book is very well illustrated and contains some attractive colour plates.

Published by C. Arthur Pearson Ltd., Tower House, Southampton St., London, W.C.2—Price 8/6.

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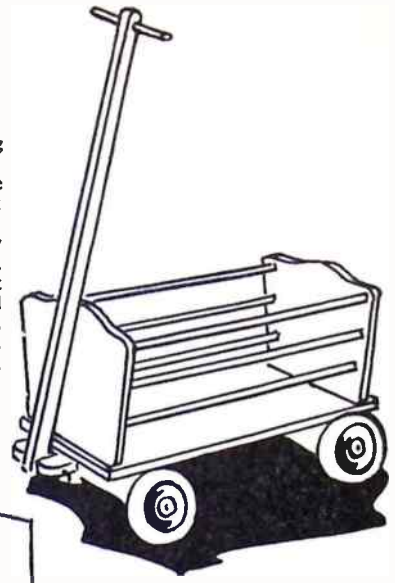
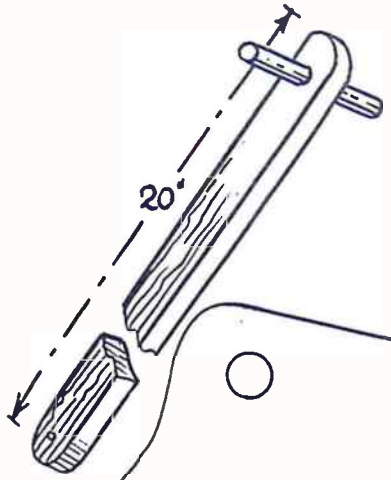
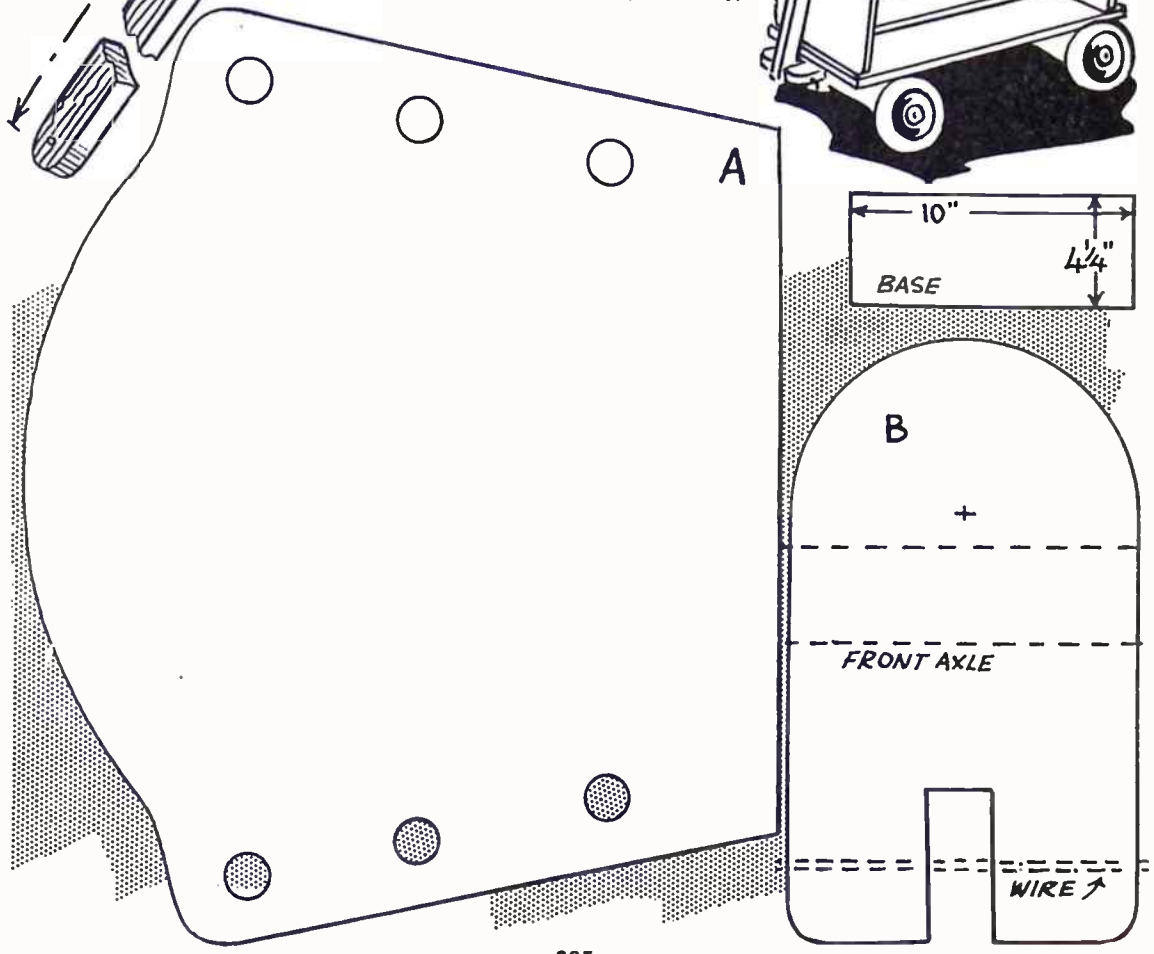


THIS toy is suitable for carrying such things as building bricks.

Cut two ends (A), one turntable (B) and one base from ½ in. wood. Insert ¼ in. round rod in the ends and glue to the base. The rear axle is 5 in. by ¾ in. by ½ in. and the front 5 in. by ½ in. by ½in. Pivot the turntable to the base and insert a long handle of ¼ in. by ¾ in. stripwood as shown in the small sketch. Four 1½ in. diameter wood wheels may be obtained from Hobbies Ltd., Dereham, Norfolk, price 1/3 per set, postage 1/3. (M.p).





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READER'S REPLY HW SEPT 1959

Paddle Your Own Canoe

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All of these canoes are of the decked kayak type and are primarily paddling craft, but sail is useful as an auxiliary and can add to the fun of canoeing. If sailing capabilities are particularly required, PBK 20 is the best selection.

A canvas canoe can be built by the novice with limited equipment, and the average handyman can complete the job in about 40 hours. The structure consists of widely-spaced laths on cross frames, covered with a fabric skin. There are no difficult joints or awkward work. Plywood skinned canoes need more skill and a larger tool kit.

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DETAILS OF PLANS AVAILABLE

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