HOBBIES WEEKLY

MAY 16th 1956 VOL. 122 NUMBER 3159

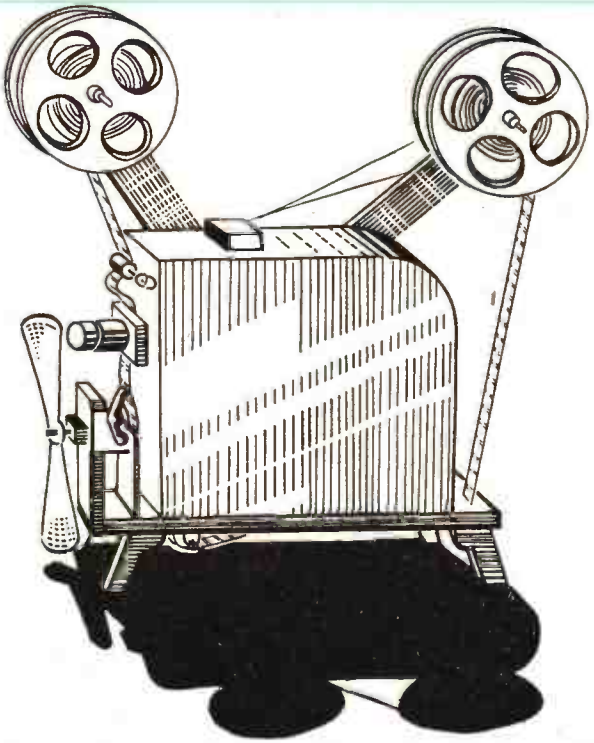
IN THIS ISSUE

Entertain your friends at home — with this

16mm. MOVIE PROJECTOR

Make it yourself

Says F. G. Rayer



THIS projector can be made without any particular difficulty, and will give very good results. Quite a number of different mechanisms for transporting the film are found in ready-made projectors, but some are very difficult indeed to build at home, due to the complicated nature of the parts required.

For a steady picture, the transport mechanism is very important, while undue noise is undesirable, and very likely to arise with some home-built mechanisms, especially those of the Maltese Cross type. Because of these points, a claw transport system is used, and this is quite silent, even when running rapidly. Provided the important dimensions are measured correctly, the mechanism will work satisfactorily, and it has the great advantage of very few moving parts.

Though the projector is intended for 16mm. film, it would be possible to use 35mm., 8mm., or 9·5mm. films, by modifying the dimensions of movement and gate (the aperture where the film is illuminated).

Details of alternative illumination systems will be given, so that this aspect of the projector can be adopted to the

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For Modellers, Fretworkers and Home Craftsmen

4½D

purpose in view. A small, battery-operated lamp can be used, and will give a reasonable picture, similar to that from 'toy' projectors. For a larger, more brilliant picture, a mains-operated illumination system can be used, and very good results can be had from this.

Parts for Movement

Since the smooth running of the projector depends so greatly on these items, they should be made with care. Some dimensions are not important. Others are, however. and these should be marked off with a ruler and fine pointed tool.

The necessary items are shown in Fig. 1, and are cut from brass or aluminium at least $\frac{1}{16}$in. thick. The two large holes (A) are drilled just large enough to clear the axle used, as it rotates in them. The other holes which are used for 8 B.A. pivot bolts are drilled just large enough to clear the bolts. (The size and exact position of the other small holes, used to screw the bearing pieces in place, is unimportant.) The really important dimensions are those of 24mm. between bearing holes and claw, and of 7½mm. between the holes in the link. All the parts can be cut with saw and filed to shape.

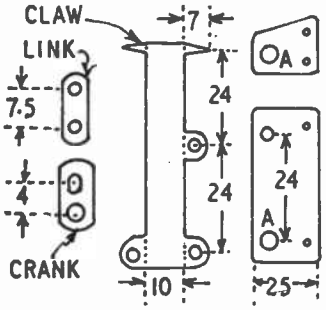


Fig. 1—Parts for movement; mm. dimensions

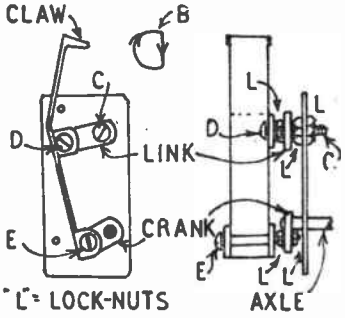


Fig. 2—Assembled movement

The crank is a tight push-fit on the end of the axle. If this fit is really tight, soldering will not be necessary. The smaller hole in the crank is first drilled with its centre 4mm. from the centre of the axle hole, and then elongated a trifle each way, with a small file, so that the motion of the claw can be adjusted.

Assembling the Mechauism

It will be seen that bevel gearing, is required between the crank axle and the axle carrying the shutter. These gears and the two axles are the only parts which will need to be purchased, and they can be obtained very cheaply from stockists of constructional toy sets. No form of belt drive is suitable, because a definite ratio is required. However, a belt drive is satisfactory from operating handle to axle, as the ratio does not influence working.

The points of the claw, and projections with pivot holes, are bent at right angles. Fig. 2 shows the assembled movement, and when made up, and the axle turned, the points of the claw will move in the manner shown at (B). When the points are moving straight down, they are engaged in the holes in the film, and transporting it for the space of one frame. They then withdraw out of the holes, making a circular movement (during which the film rests in the gate). They then engage with the next pair of holes, drawing the film down a further frame and so on.

Three 8 B.A. bolts are required. (C) pivots the link to the larger bearing piece, lock-nuts holding the bolt solid. (D) passes through the centre hole of the claw, and is fixed by a locknut each side the link. This bolt will need to be sawn off very short. The last bolt (E) passes through the two pivot holes at the end, and is secured in the slotted hole of the crank, by a locknut each side.

When the mechanism has been made, a short piece of 16mm. film should be engaged with the claw points, and the axle rotated, to see if the movement is correct. If the points move a trifle too far when transporting the film, the lock-nuts of bolt (E) are loosened, and the bolt moved a little nearer the axle. If the movement is insufficient, so that the points do not quite reach up into the next pair of holes in the film, then (E) is moved out from the axle a little. When correctly set, the nuts are locked up tight. The points of the claw will then engage exactly with the holes in the film, each time it is transported, even when running very rapidly.

Rotating Shutter

The projector will work without this, but a more satisfactory picture results when it is fitted. It can be of card or thin metal, and turns in front of the lens, so that the latter is obscured while the film is moving. Though a two-bladed shutter, driven through a 2:1 reduction gear, is shown, this can be modified to suit gears to hand. For a 1:1 ratio, the shutter should have one blade, while three blades are necessary for a 3:1 ratio. These gears can be purchased for a few pence, and run together as shown in Fig. 3. The spindle passes through two bearings, cut from strong metal screwed to the wooden strip which holds the two crank axle bearing brackets.

Fig. 3 also shows the belt drive. The ratio here is not important. Wheels can be cut from wood, if necessary. The most suitable step-up ratio is about 1:8, but the handle may easily be turned to suit other ratios. Running will be more smooth if a small flywheel is mounted on the crank axle, near the small pulley.

Body and Guides

Fig. 4 shows one side of the projector, and each side is made of ¼in. wood, 5ins. by 5ins. To gain access to the lamp, etc., the whole lamphouse, with top and back, lifts off, leaving the front, with lens support, etc., in position. A single piece of thin metal forms both top and back, being 4ins. wide and just under 10ins. long. No ventilation is required for battery operation, but this will be necessary if a mains bulb is used, as will be explained.

The main film guide is shown in Fig. 5, and forms the front of the lamp-

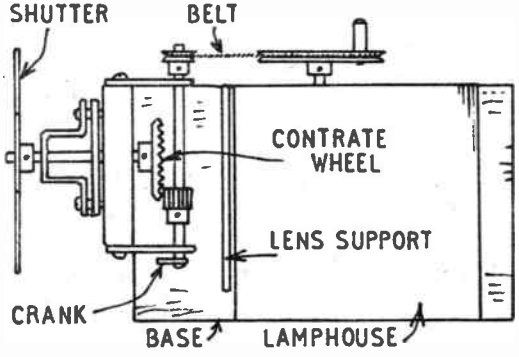


Fig. 3—Top plan of projector

house. If the narrow groove is cut correctly, the film should be in contact with the wood only along the edges, where the perforations lie. There should be no sideways play in the film, especially at the gate aperture and where the claws engage. The wood is removed to a depth of about $\frac{1}{16}$in., so that the latter can pass through the film perforations.

A little adjustment may be necessary to get the working parts correctly placed, and the piece holding the transport movement may be slanted in a little, as in Fig. 4, so that the film is properly engaged. The top screw can then be driven in.

The gate aperture is best cut with a fretsaw, as accurately as possible. No rough edges must be left where the film passes. When the mechanism is operated,

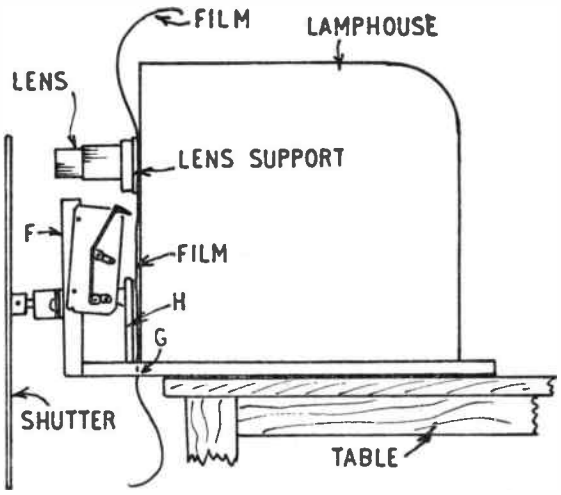


Fig. 4—Side view of projector

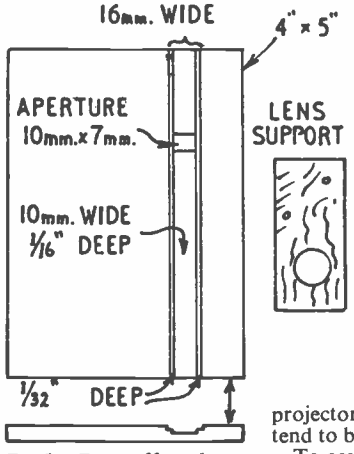


Fig. 5—Front of lamphouse

it may be found that the film does not come to rest with each picture squarely in the aperture, but the bottom of one frame is seen with the top of the next. If so, then the piece (F) in Fig. 4 is unscrewed, and moved slightly downwards. Once the correct position is found any projecting wood can be sawn off, and this piece screwed securely to the base, as no further alteration will be required, even with other films.

Cartoon or other movie film strips can be used, and these do not really require winding spools. The length of film can be fed in from above, passed down between lens-support and lamphouse, past the claw movement, and out through a slot cut in the base, at (G) in Fig. 4. A thin strip of wood (H) prevents the film forming a loop forwards, where the crank might foul it. This strip is screwed to the front of the lamphouse, a piece of thick card or thin wood spacing it out slightly, so that the film can pass. The lens support strip is similarly fixed.

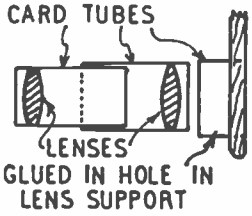


Fig. 6—Lens assembly

Lens

A suitable arrangement which can be made up fairly easily is shown in Fig. 6. If two lenses of about 3ins. focal length are used, the assembly will have a combined focal length of about ½in. from the back lens, if the two lenses are 2½ins. apart. The projector can then be focused by moving the two lenses bodily in or out. Beginning with the back lens about 1in. from the film, a small picture will be obtained, and can be brought into sharp focus by moving the whole projector bodily to vary the distance between it and the screen. As the lens is moved slightly back, nearer the film, it will be necessary to increase the distance between screen and projector, to bring the image into sharp focus. However, the picture will be larger in size, though lower in brilliance. By adjusting in this way, a sharp picture of almost any desired size is obtained. The limit is really set by the power of the projector illumination, as large images tend to become too dim.

To cover the film mentioned, the back lens needs to be at least ⅞in. in diameter. The front one may be a trifle less, so that two sliding tubes can be used, as in Fig. 6. It is then possible to vary the focal length of the lens (thereby changing the size of the picture thrown) by adjusting the distance between the lenses.

It is also possible to use a single lens, of fairly short focal length — around 1in. or so. Various projector lenses can also be obtained from ex-service photographic equipment stores, and these will give very excellent results. Being of larger aperture (diameter) they pass more light, giving a brighter picture, while definition is also improved, especially towards the edges of the picture.

For illumination in the 'toy' type, a torch bulb with reflector and bullseye lens, exactly as used in a torch, will be satisfactory. Details of more powerful means of illumination, and winding spool mechanism, will be given in a following article.

The Dove on Stamps

ROUMANIA has issued a stamp depicting two children fondling a white dove to commemorate the International Children's Day. In many countries the dove is intimately connected with the superstitions of the people. Carrying an olive or palm branch in its beak, this bird is a common emblem on ancient tombs.

Many people believe the soul quits the body in the form of a dove. Some, that it hovers near the dying awaiting the spirit's departure.

This belief owes its origin to the Duke of Thuringia who on his death-bed said, "Do you see those doves more white than snow?" His wife, St. Elizabeth of Hungary, considering him only half conscious, ignored the question. Later he said, "I must fly away with those brilliant doves." Then he died.

According to legend, when St. Polycarp was burned alive, his blood extinguished the flames. From the ashes a white dove arose and flew towards heaven. A dove was seen issuing from Joan of Arc's funeral pyre.

The Russians believe the departed haunt their old homes for six weeks after death. During this time they eat, drink and watch the sorrowing mourners. It is common practice to place breadcrumbs at the window on a white cloth during these weeks. The soul in pigeon form is supposed to come and feed on them, then fly away to Heaven.

Siberians never kill or eat pigeons. They consider them to be living pictures of the Holy Spirit. When Charles I was on his way to be crowned, a falcon attacked a dove directly above him. A drop of the dove's blood fell on his coronation robe. After Charles was executed the superstition arose. "He who is sprinkled with pigeon's blood will never die a natural death."

In Egypt pigeon houses are considered an important part of a man's estate. It is a proverb in that country that "a man possessed of dovecots need not be careful about the disposal of his daughter". Some may tend to ridicule these beliefs. Nevertheless, many people feel very uneasy if a white dove settles on the chimney pot.

You may wonder whether there is any difference between a dove and a pigeon. Actually they are one and the same, the name of 'dove' having derived from the Anglo-Saxons and pigeons from the Normans. (R.L.C.)

Preparing for Summer

Check Over Camping Equipment

By H. A. Robinson

CAMPING days will soon be here again, so now is the time to give a thorough overhaul to all your gear.

Quite apart from the tent itself there is a lot of other equipment that should be well cleaned and in general brought up to scratch. Take the cooking utensils first of all. No matter how clean these seemed to be when put away they always seem to get a trifle musty by spring, perhaps, because it is really hard to get every bit of food away from ridges and corners.

Cleaning methods differ according to whether the utensils are made of aluminium or not. If they are not aluminium, give a good boiling in water to which soda or powdered borax has been added. Rinse in cold water and after drying, and a general wiping round, set each item out in the air to freshen up and get that complete degree of dryness that is needed to keep metal ware perfectly pure.

If your utensils are made of aluminium on no account should they be put into a soda solution. Soda in any form attacks the surface. In this case boil all canteens, cups, plates and frying pans in a bucket that contains plain water only.

Cleaning Aluminium

Soda blackens aluminium. Should any item have gone this way through an indiscreet use of the alkali it can be brightened again in a weak solution of nitric acid, washing thoroughly afterwards.

In the past have you made a practice of taking a small muslin bag for tea brewing? The tea is put into this and it is dipped into the boiling water. This gives full value as far as the drink is concerned, not a lot being wasted at the end in a mass of swollen leaves. It also helps in easy cleaning up. A tea bag has its edges hemmed over a length of string which when pulled tight encloses the leaves. If long enough the string can be used for lowering the bag into the water.

Have a look at the stove if you have one. The writer has always favoured the traditional wood fire, but stoves have their points and many campers like to use them. On the whole, the ½ pint 'roarer' Primus is the most handy. It weighs 1lb. 2ozs. and is compact, but there are on the market several lightweight outfits. Give any removable parts (including the nipple) a good boiling to take away every suggestion of grease. See that all parts are present and correct and that there are two prickers (in case one breaks). If there are doubts about the efficiency of the pump, unscrew the plunger and check the washer for pliability. Look, too, at the non-return valve below.

Any leak round the burner can be detected by blowing up and putting the whole stove in a bucket of water. Bubbles show where the looseness is — a little tightening is all that is needed.

Have you got a wind screen to go with the stove? If not, make one and take it with you this season. All that is necessary is some very thin material of the silk type about 40ins. long and 18ins. wide. To this are sewn four umbrella ribs — one at either end and the other two equally spaced between. By pushing the ends of the ribs in the ground this arrangement can be fitted round the stove as a hollow square and in gusty weather is worth its weight in gold. For transit the screen rolls round the ribs to a negligible size.

Possibly there is a canvas bucket in the equipment. If not travelling 'light' one can be very handy — but they leak after being laid by for a time. They go stiff, too. Put your hand inside and press out to as near the complete cylinder as possible and place the article in a sink. Let the tap run in and out will come the water through the side, but keep on filling. Eventually it will be found that the canvas 'takes up' and becomes once more water-tight. Empty now, dry and collapse, and stow the bucket away. It will be all right when you want it in a few weeks time.

Next, have out the most important camping item of all — the groundsheet. For safe camping the rubberised sheet you use must be perfectly sound. A faulty sheet can be a menace to health and old hands will tell you better anything than damp coming up from below.

Repairing Groundsheet

Small tears can be repaired by drawing the edges together with a series of fine stitches and then covering with a strip of prepared cycle patching stuck on in the usual way with rubber solution. Tiny holes can be covered with the small round patches, but scrap the sheet and get another if there are signs that it has perished.

Should you use a sleeping bag — and they cannot be beaten for warmth at night — give it a good overhaul. Look out for small square tears and mend each individually. Should the wadding have become lumpy, spread it again to thin places and secure with a stitch through from side to side. If the lumping has become very bad, a new bag is really indicated, but clever hands can do a lot.

Examine your lamps

Any lamp in the gear should be examined. Some sort of tent lamp should be provided for the illumination from torches and cycle lamps is unsatisfactory, as the light, though bright in parts, is uneven and a strain on the eyes. Much better a candle lamp which, though not so strong, gives a soft, all-round illumination.

The tent should be erected and examined for places where stitches have given. Run in some new stitching to a little way either side of the break. Check all tapes and peg loops, replacing if necessary. See that the 'crown' (where the pole comes through) is sound and sew in a new collar of cord if there is any weakness.

Test for water-proofness by letting someone play on the garden syringe while you are inside. If 'spray' comes through treat with one of the commercial water-proofers or apply alternate coats of solutions made up of alum and soap. The alum is made into one solution and the soap into another. Application is made with a whitewash brush.

EDUCATING CHILDREN

Children of the New Earswick Primary School, York, will soon be having a model of the 'Mayflower', the ship in which the Pilgrim Fathers sailed to America, for use in their history and geography lessons. The model, which is being made from Hobbies Kit No. 2147, price 23/- is 15ins. long and all lovers of these delightful old sailing ships should have this famous example in their collection.

No. 2 in our series

LET'S MAKE LINO CUTS

Fig. 1—Suggestion for design

IN the first article of this series I gave a list of the materials required and showed how to prepare the lino by coating with white poster colour. I will assume that you now have a 6ins. by 4ins. block ready for working.

But before you begin cutting you must think about your drawing. To demonstrate the general procedure I will take you through the stages of cutting and printing a simple floral design. The method for producing a pictorial print

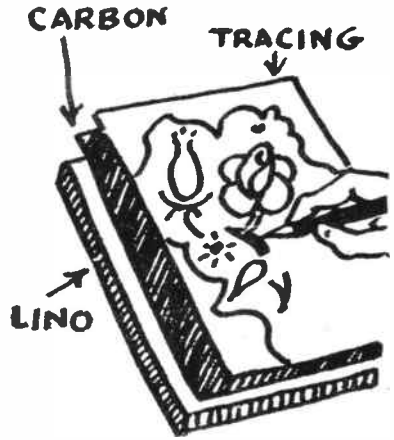


Fig. 2—Transferring the design

is, of course, the same, except that many aesthetic considerations arise which cannot be dealt with here. I would emphasise that you should make your own pattern or work out a pictorial design for yourself.

A few tips about designing. You cannot reproduce a drawing made up of scratchy or very delicate lines. Let your design be bold. Concentrate on broad masses and strong contrasts of black and white and reduce single thin black lines to a minimum. Try to use the whole area of the block to the greatest advantage. In other words, get the maximum effect with as little cutting as is absolutely necessary. Observe how in Fig. 1 I have carried the pattern to the edges of the rectangle. By so doing I have utilised the whole surface area and kept my design bold, simple yet effective.

Having made your design on plain paper in a 6ins. by 4ins. rectangle you may now transfer it to the block. If you wish your design to come out the right way round, you will need to use tracing paper. First, trace the drawing on the tracing paper. Set your carbon paper on top of the block. Turn over the tracing and set it over the carbon (Fig. 2). With a firm pencil go over the back of the tracing, following the lines which show through.

We now come to the cutting. The tool is held in the right hand while the left steadies the lino, which should rest flat on the table. You might like to place a newspaper beneath it to catch the fragments of lino by which means they

Fig. 3—The gravers

can speedily be removed from time to time.

The V tool (Fig. 3) is generally manipulated at an angle of about 30 degrees to the horizontal. Maintaining steady pressure, lines of uniform width may be cut. By reducing the angle slightly you may produce a finer line. If, while cutting you alternately raise and depress your hand, you may produce a sweet undulating line. The U tool is more in the nature of a gouge. It can, therefore, be used at a steeper angle as required. It is a good idea to cut around areas to be cleared with the V tool first of all. Afterwards when gouging there is less likelihood of part of the design being broken off.

One other piece of advice I give by way of warning—contrive, where possible, to work away from your left hand.

With practice (Fig. 4) you will find out what the tools are capable of doing. As you approach the completion of the job of cutting out the main areas of your design, you may want to add to and embellish it. You must use your own judgment in this respect, bearing in mind that the more you cut away the lighter the final effect will be. However, the judicious use of dots, stars, scrolls, flourishes and any other units of ornament which you care to invent will help to enliven otherwise uninteresting parts of the design.

It is a good idea at this stage to take a preliminary proof, the better to see how you are progressing. Before doing so, wipe away all loose particles of lino that may be adhering to the block or on your work table. These slivers have a nasty

Fig. 4—Suggested cuts

habit of insinuating themselves between paper and block just when you thought you had at last brought off that rare thing, a perfect print. You may also wash off the poster colour from the face of the lino with a wet cloth. Dry with a clean rag, apply a few drops of petrol and again wipe perfectly clean.

The Wise Old Owl

Novelty Bedside Lamp

THIS novelty bedside lamp is sure to appeal to young and old alike especially as there is an element of mystery attached to it. Only those in the know can switch on the light and put it out again.

Few people would think of pressing down one of the feet to light up the eyes or pressing the other one to put it out again. Provided the work has been carefully done and the parts fitted together exactly there should be nothing to give the game away, and disclose this secret switch. The feet do not stay down when pressed but return to their normal positions immediately the finger is taken off which further adds to the mystery.

Of pleasing appearance it can be carved in a wood to match the existing furniture and is fit to adorn any bedside table or cabinet. Any good hardwood is suitable and it can be left in its natural state with a coat of varnish or polish to preserve it or enamelled in gay colours. If you happen to be an artist and enjoy painting in oils a very realistic owl in its proper colours could be made.

Good Carving Practice

The lamp is not at all difficult to construct and is excellent practice in wood carving. Choose a piece of straight grained wood for the bird 6in. long, 4in. wide and 3in. deep and cut roughly to shape with a saw. Carving can be commenced with chisels and gouges or if you are a pen-knife whittler then that tool can be used effectively.

Try to get the texture of the feathers by leaving the surface somewhat rough. Wood carving should show the tool marks and not be glasspapered.

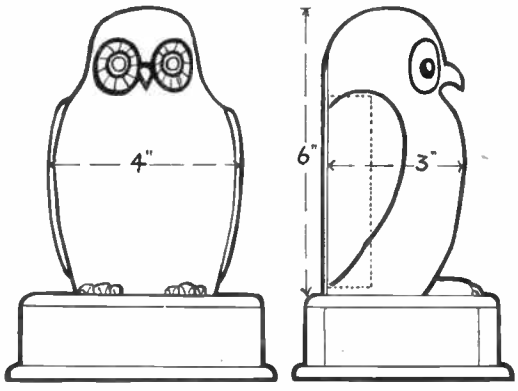


Fig. 1

The head is improved if the eyes are set back from the beak at a slight angle. Do not make it too great, however, as you may have trouble with the electrical connections on the inside. Make the eye sockets concave so that the bulbs do not appear to stand out too much.

Small screw holders for the bulbs can be obtained at an electric or cycle store or you may use that part from an old flash lamp case. Drill holes to take these, and with care they can be screwed in fairly tightly.

Scoop out the back of the head just enough to make the necessary contacts and electrical connections. The screw holders must each have a piece of wire soldered on and connected together, leaving it long enough to reach the switch in the base.

A strip of springy brass or copper is screwed between the two eyes to make contact with the centre blob of the bulbs. Another wire is soldered to this and led to one side of the battery. The space for the battery is best cut out before fitting up the eyes and the size to make this is 4in. high, 2½in. wide and ⅞in. deep which will hold an ordinary 4½ volt flat battery.

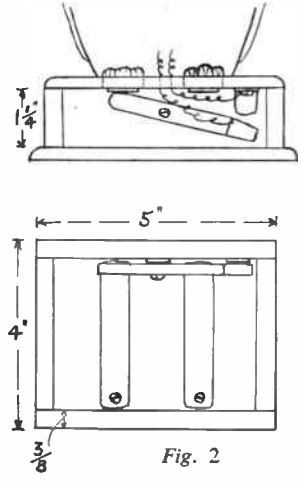


Fig. 2

A Larger Battery

If you prefer a larger battery that will last longer you can accommodate a cycle 2 cell 3 volt type battery, but this will need a larger and deeper opening and it may be necessary to make the bird slightly taller to fit it all in.

Glue and screw the bird firmly on to a baseboard 5in. long 4in. wide and ¼in. thick after carefully cutting the holes for the feet switches. You can either make the feet first and then cut the holes for them to slide into or you may work the other way round.

The feet, carved from the same kind of wood as the bird, are screwed on to strips of springy brass 3in. long and ¾in. wide, and these in turn are fastened to the baseboard as shown in Fig 2.

By A. F. Taylor

Next stick the four sides to the baseboard with glue — two pieces 5in. long and two pieces 3¼in. long, all being 1¼in. wide and ⅜in. thick. The switch is housed in this base and the lever is screwed on to the front piece. Make this 3⅜in. long, ½in. wide and about ¼in. thick. Drill a hole 1⅜in. from one end and fix to the base with a round head screw placing a washer between the lever and the side and between the screw and the lever

The Wiring

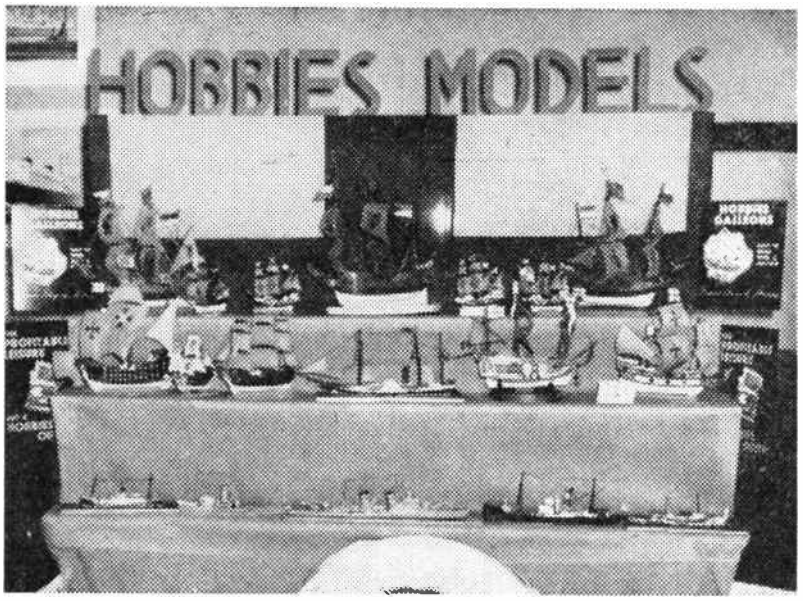
On the end of the switch arm is fixed a piece of copper or brass sheet and this makes contact when the arm is depressed with the angle piece shown in Fig 2 screwed to the baseboard. Wires are soldered to these and led up through small holes in the base and connected to one side of the battery and the eyes respectively.

A piece of wood 5½in. long, 4½in. wide and ¼in. thick will cover up the switch gear and put a finishing touch to the lamp. By screwing it on, it can be easily removed should any adjustments be needed to the switch.

The back of the bird also needs a covering for the battery and bulb cavity and quite thin wood or plywood can be used here, again screwing it in position so that a new battery can be slipped in easily. Lay the bird on the wood and mark round, cutting just a little smaller and bevelling the edges. Wires to the battery can be clipped on or split plugs used to make contact.

Novel Race Game

Next week's issue of Hobbies Weekly will contain a free design for making a Novel Race Game. Make sure of your copy and tell your friends.



Hornsey Ship Modellers' Exhibition

HOBBIES DESIGNS GAIN 4 TROPHIES

OUT of the six challenge cups competed for at the Annual Exhibition of the Hornsey Boys' Ship Modelling Club, four were awarded for models made from *Hobbies* kits.

At this highly successful exhibition, which was opened by the Mayor of the Borough, the *Hobbies* stand, pictured here, was the centre of attraction and admiration was expressed at the fine workmanship put into these colourful models.

The *Hobbies* Challenge Cup was awarded to Neil Parkin aged 12, for his entry of the Minesweeping Trawler (Design No. 2418), The Golden Hind (2337) and Lightship (2946) were highly commended.

In the Open Club competition (Senior Section) Neil Parkin again won the chief award with his Minesweeping Trawler, and runner-up was Ann Smith with the Golden Hind. Margaret Adams won the Junior Section with her Batory and 2nd prize was awarded to John Addellsel with *Hobbies* Bonaventure (Design No. 3014). Congratulations to the two girls on competing so successfully with the boys. Incidentally, it appears that the club should drop the word 'Boys' from its title!

As these youngsters have so admirably proved, the making of ship models, both old and new, is a rewarding, fascinating and really worth-while pastime which results in an achievement which you can proudly display. *Hobbies* have many ship designs and kits which enable the modeller to make a really good job. Some are detailed in *Hobbies* Handbook (2/-) and information can be obtained from any branch or stockist or from the Editor, Hobbies Ltd., Dereham, Norfolk.

Above : Some fine models made from Hobbies Designs and (right) five smiling winners with Ann Smith (bottom left) and Neil Parkin (bottom right)

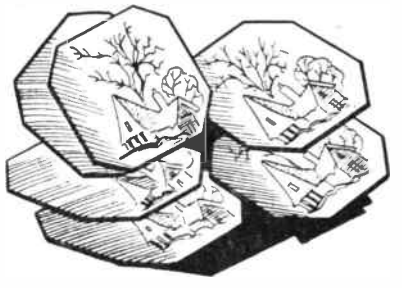
POKER WORK TABLE MATS

IF you have a few odd pieces of $\frac{3}{16}$in. or $\frac{1}{4}$in. plywood you can convert them into attractive table mats. The patterns on page 111 show full size shapes and you can alter the sizes to suit your needs.

Poker work is a fascinating art and is quickly mastered. If you intend doing many designs it would be worth while to buy a special poker tool which runs from mains electricity. They are quite reasonable in price and are easily used.

Draw the shapes on to the plywood and cut them out with a fretsaw. Keep the saw upright when cutting. Clean up the pieces with glasspaper and lightly transfer the pictures to the wood. Go over them with the poker tool until the whole design is complete.

The picture can be touched with colour to make the design even more attractive. Photo tints are suitable for

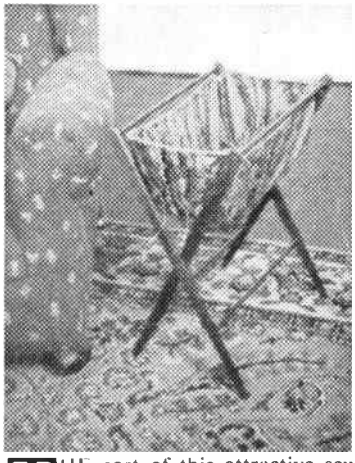


colouring and do not hide the grain of the wood. Finish off the mats with two coats of heat-resisting lacquer.

If the mats are intended as a present they should be wrapped in Cellophane paper and a matching design painted on the paper. A piece of ribbon tied round will complete the effect. **(M.p.)**

For half a crown

MAKE A PORTABLE SEWING BASKET



By R. H. Warring

THE cost of this attractive sewing basket is about half-a-crown — plus the material used for the bag. Construction time for the frame should not be more than two hours and only a few tools are required.

The four 2ft. lengths of ⅞in. by ⅜in. stock (1in. by ½in. rough size, planed to finish) should be selected from straight grain material, preferably of one of the harder materials, beech or ash. Mark out as shown in the detail drawing and then plane a taper on one side only to one end, starting 9ins. in. Check that the taper is the same on each leg. Then 'spot' the three drilling points with a punch or awl in the centre of the width of the wood and drill.

The bottom 9ins. of each leg should then have all four edges chamfered off slightly. Round off the tops and bottoms of the legs evenly with glasspaper and rub all over to finish smooth.

The legs are assembled in pairs with a stiff pivot joint. An ⅛in. diameter aluminium rivet, 1in. long, with washers each side makes a very neat permanent joint. Failing this you can use a short nut and bolt (preferably brass), or simply a woodscrew. The pivot joint should be quite tight, so that the legs will stand firm when set in any position, but can be closed or opened out without difficulty. Before marking off this joint, make sure that the legs are the right way round with the taper on the inside edges.

The four dowel lengths which join the legs are first prepared by cutting each to exactly 15ins. length. Then mark ⅜in. from each end on each dowel, cut around with a small saw to a depth of $\frac{1}{16}$in. and pare away with a sharp knife to produce a stub length at each end exactly ¼in. in diameter. Check these stubs for a tight fit in a ¼in. hole drilled in a piece of scrap wood.

To assemble, coat the stub ends of the dowels with glue and drive all four into their respective sockets in one of the leg assemblies. Then fit the second leg assembly, checking that it is the right way round (Fig. 1), start the dowels in each hole and drive home flush. Stand the finished frame on a level surface and check for rocking. If necessary, trim the bottom of the legs slightly to true up.

When the glue has set, the whole frame should be rubbed over lightly with fine glasspaper and stained with a spirit stain. Wax polishing can then be used to finish, or one of the rapid 'French polish' finishes. Alternatively the wood can be given a coat of grain filler, rubbed down when dry and painted or lacquered to finish.

Patterns for the bag are given in Fig. 2. Two sides and two ends are required, finished with a double hem on top. These pieces are then sewn together and the bottom panel attached last, gathering as necessary. This completes the bag.

To fix the bag to the frame, tie one end of a 5ft. length of tape to one corner of the frame, thread through the double hem on one side of the bag, make off to the appropriate corner of the frame, and repeat all round — Fig. 3. The tape should be drawn as taut as possible along the sides to prevent the bag from sagging. Surplus length is arranged in pleats to give the required gathered effect.

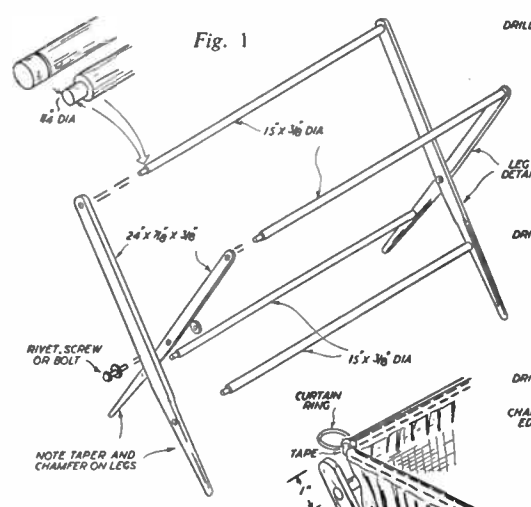


Fig. 1

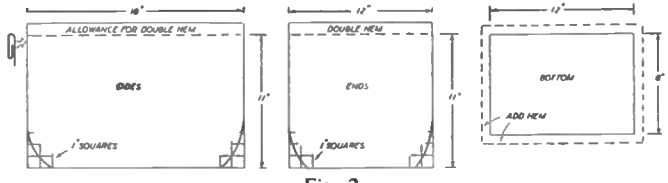


Fig. 2

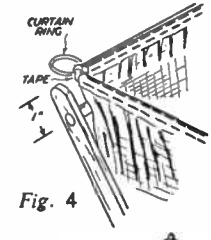


Fig. 4

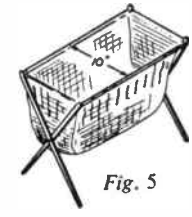


Fig. 5

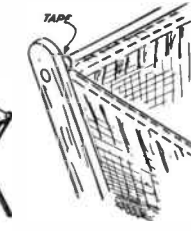


Fig. 3

● **Continued on page 105**

Useful and colourful

Marquetry Panelled Cabinet

CUTTING LIST

Sides.	(2).	1ft. 6ins. by 8ins. by ¼in.
Shelves.	(2).	1ft. 2¼ins. by 7⅞ins. by ¼in. plywood.
Back.		1ft. 6½ins. by 14ins. by ⅛in. plywood.
Door.		1ft. 2ins. by 12ins. by ⅛in. plywood.

FITTINGS

1 pair 1½ins. brass butt hinges. 1 pair brass wall plates. 1 spring ball cupboard catch. 1 door handle.

THE small wall cabinet, illustrated, incorporates a marquetry picture as its principal ornamental feature. It is of simple construction, and makes a useful article of furniture.

The dimensions of the cabinet would be suitable for many of the pictures published in *Hobbies Weekly*, as any space over can be so easily made up by the addition of a border. If the picture is too large or too small, it is no difficult matter to amend the cupboard space to suit, the other dimensions remaining the same.

An end elevation and front elevation are given in Figs. 1 and 2 respectively. As very little wood is required, it would not be an expensive matter to use a good

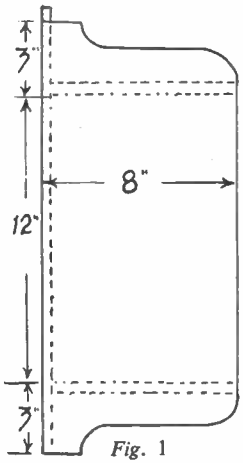


Fig. 1

quality of hardwood such as oak or mahogany for the sides, with plywood for the back, shelves and door. The edges of the shelves should be lipped with ⅛in. thick slips of the wood used for the sides.

The sides are set out as in Fig. 1. To get the curved ends alike, draw the shape on thin card or stout paper, cut out with scissors, then transfer it to each end of the sides. The shelves are to be grooved in the sides, so square lines across where they will rest and cut the grooves ⅛in. deep, as shown in Fig. 3. Note here that three grooves are cut ⅜in. short of the rear ends to allow for the back of the cabinet.

The slips of wood for facing the front edges of the shelves could possibly be cut from spare wood left after making the sides and planed to ⅛in. thickness. The back of the cabinet should be one piece of plywood, shaped at top and bottom, as in the drawing. Note that the back extends ½in. above the sides.

Everything being well fitted, glue and nail the shelves across. Use 1in. oval nails. Glue the side edges of the back and nail that in position. Give the whole a good glasspapering. Mix a little powder stain with methylated spirits and stain the white portions of the cabinet to match the rest. Test the stain beforehand on a spare piece of the wood to get, as far as possible, an even colour over the complete cabinet.

Cut the door from plywood, making due allowance for an ⅛in. edging strip to be applied all round (Fig. 4). Glue the picture to this in the usual manner, and

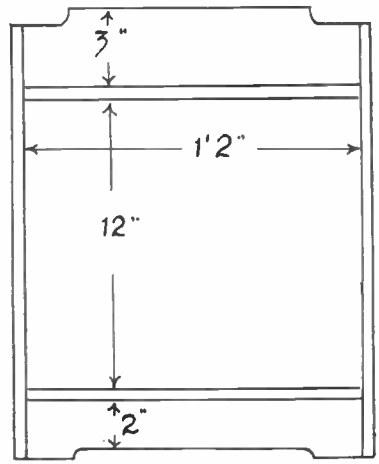


Fig. 2

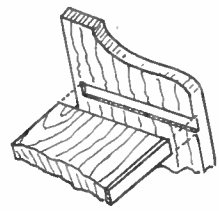


Fig. 3

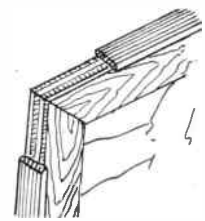
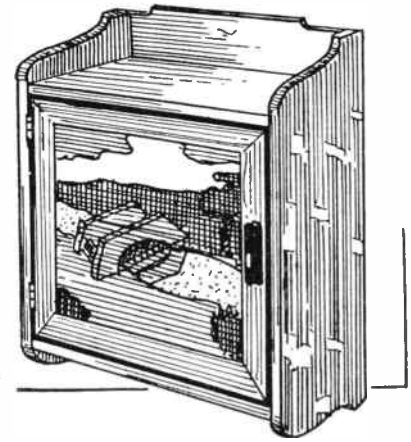


Fig. 4



if an extra border is necessary to occupy any space left over, cut the pieces from ⅛in. wood, mitre neatly at the corners, and glue round. The edging strips can be cut from spare wood (as suggested for the shelves), glued in position, and then fixed with ¾in. panel pins. Glasspaper the door, see it is a good fit, and hinge to the cabinet with 1½ins. solid brass butt-hinges.

A cabinet catch can be fitted, or a spring ball catch and a fancy handle. A slip of ⅛in. wood should be glued inside the cabinet on the left side, at the correct distance in, to make an effective door stop, and a pair of wall plates screwed to the back for fixing to the wall.

For finishing, wax polish could be chosen, or white French polish. (W.J.E.)

● **Continued from page 104**

A Portable Sewing Basket

An alternative method of fastening — shown in Fig. 4 — enables the bag to be removed completely from the frame at any time. Tape is run through the double hem at the top, but is fastened to a curtain ring at each corner. The tape length is adjusted so that the rings can just be slipped over the top of the legs with the sides drawn quite taut. Opened width, in both cases, should be 10ins. — Fig. 5.

With this method of bag fastening the top dowels should be located 1in. down (not ½in.) to give a greater projecting length of leg to hold the rings in place. Hence you must decide which type of bag fastening you want to use before marking out and drilling the legs.

Hints for Photographers

CHOOSING YOUR CAMERA

By F. G. Rayer

THE roll film type of camera may be obtained in various types, and eight different negative sizes are in regular use. Anyone about to purchase a camera may well find it difficult to decide upon the best size, but it is hoped that this can be clarified by considering the advantages and limitations of each.

Except for miniature and various special sizes, two types of roll film are in general use. One is the 20, 120, or 620 size, which is, perhaps, the most popular. The film in each case is of the same size, but the 620 type has a spool with a smaller slot for the camera winder.

The other type of film is rather smaller, and known as 27 or 127. In common with the 20 size, it may be arranged to give 8, 12 or 16 exposures to one spool.

The 120 sizes

The larger ones shown in the diagram are the 120 sizes. The 2¼×3¼ size has been popular for many years because contact prints are big enough for an album. The camera may be used to give an upright or view picture, and this is suitable for many portraits, scenes, buildings, and so on. Eight such negatives are obtained from the spool of film.

Next comes the 2¼×2¼ negative, 12 being obtained on the film. These, too, can be used for contact prints, though the square shape is rather monotonous, and the size is rather small. The latter limitation applies more severely to the 1⅝th × 2¼ in. negatives, which are obtained in cameras giving 16 exposures on 120 or 620 film.

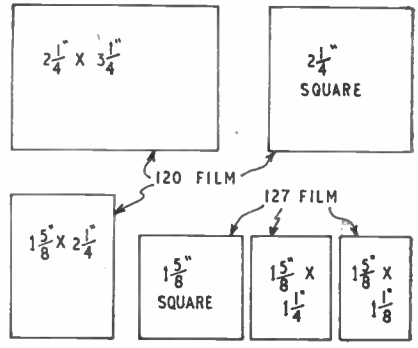
The smaller sizes are thus best when the negatives are enlarged. There is then a saving on cost of materials, since 12 or 16 pictures will be obtained for the same film outlay as 8.

Choice of Negative

The choice thus depends largely on whether contact prints are to be made at home, when the bigger negative will give a more satisfying result. The cheapest type of camera usually gives negatives of the 8 or 12-on size, because definition, though good enough for contact prints, would not be very satisfactory if the negatives were enlarged, as is necessary with the 16-on size.

Some camera manufacturers overcome the difficulty by making the camera large enough to accommodate the larger negative, and supplying thin masks which fit inside, when desired, to give 12 or 16 pictures of reduced area. This is a very good arrangement indeed, but cannot be had with the cheapest models.

Negatives about 1⅝th in. wide, are given by the 127 film as against the 2¼in. width of the 120 film, so that the camera may be smaller. The film is also slightly cheaper than the 120 size.



Different cameras provide quite a range of different negatives, on this film. The largest is 1⅝th × 2¼ or 2½in., which resembles the smallest of the 120 sizes in the diagram. This size is usually employed when contact prints are to be made from 127 film, and 8 negatives are obtained on the spool.

A popular size with this film is 1⅝th × 1⅝th in., giving 12 exposures, with the two smaller sizes illustrated also often found. These give 16 exposures on the film. All these small negatives are of very little use for contact prints, so that enlarging is practically essential. One or two cameras, due to the method of winding, give even smaller negatives, down to 1¼in. square, and enlargement of these is essential. The 127 film is not used in the highest class camera, 35 mm. film replacing it.

Various larger cameras exist, but are usually employed for professional purposes only, because of the high cost of the large negatives or plates.

Camera size

If the size of the camera is not important, one using 120 film is probably best, since the film is easily obtainable everywhere, and only slightly more expensive than the 127 film. As contact prints can be made with such ease, a model taking 8 or 12 shots on the spool is best, when this is in view.

When a very small camera is wanted, but a 35 mm. type is too expensive, then the 127 model is best. However, it will be almost essential to have enlargements made. It is interesting to see the relative cost of a negative with the various sizes, which is as follows:—

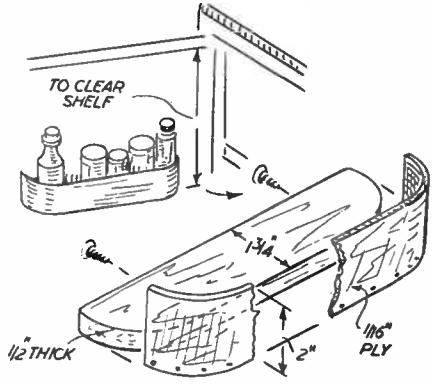
120 film.			
8-on.	4d.	approx.	(2¼×3¼in.)
12-on.	2½d.	,,	(2½in. sq.)
16-on.	2d.	,,	(2¼×1⅝th in.)
127 film.			
8-on.	3½d.	approx.	(1⅝th × 2½in.)
12-on.	2¼d.	,,	(1⅝th in. sq.)
16-on.	1¾d.	,,	(1⅝th × 1⅛in.)

From this it will be seen that the saving afforded by 127 film, for the same number of pictures, is extremely small, and 120 film cameras are best, because of the larger negatives, unless a very small camera is required.

A Handy Spice Rack

THIS handy rack for spices and flavouring bottles is attached to the inside of the kitchen cabinet door. Cut the shelf from ½in. thick material, generously rounding the ends. A 2ins. strip of ⅛in. ply is then cut long enough to wrap round the shelf. Use resin-bonded ply and if the end curves are difficult to form, soak the ply in boiling water first.

Glue and pin the ply strip in place. Then trim off ends flush with the back of the shelf. Attach the shelf with wood-screws through from the front of the door. Phillip's head screws are recommended for the neater appearance of the heads, which, of course, show from the outside with the door closed.



(R.H.W.)

Replies to Readers

MAKING A T.V. AERIAL

THE popularity of the articles by F. G. Rayer on the making of T.V. aerials, which appeared in our issues of February 29th and March 7th is proved by the great number of letters received on this subject. Below we give some of the replies furnished by our Radio Expert to individual queries from readers in the hope that they will also prove useful to others who intend making their own T.V. aerials.

Source of Materials

MAY I enquire where I can get the material or metal rods to make a T.V. aerial for receiving I.T.V. programmes for Birmingham transmitter? (J.A.—Netherton).

H. ROLLET) & CO. LTD., 36 Rosebery Avenue, London, E.C.1 can supply any size of metal tube, bar, rod, strip and angle pieces, etc., in aluminium, brass and other metals. Electronic Precision Equipment, 123 Terminus Road, Eastbourne, can supply a range of ready-cut tubes, etc. for T.V. aerials. It is suggested you obtain prices from one or both of these suppliers.

* * *

Connecting to Set

I HAVE a modern T.V. set which is capable of receiving both B.B.C. and I.T.A. programmes. It is at present only receiving B.B.C. signals with a Band I H type aerial connected to the set with a 60 to 75 ohm co-axial cable down lead. I have made a Band III aerial as instructed by Mr. Rayer. My problem is, how do I connect the aerial to the set? Do I join it to the existing co-axial cable or is it necessary to have a completely separate down lead altogether? If this is so, how do I connect it to the set as there appears to be provision for only one aerial lead? (J.S.—Kingswinford).

IF the Band III aerial requires a high-impedance feeder, to match into the input impedance of the receiver, it is usual to use a separate feeder for it. To change from one to the other programme it is then necessary to change aerial leads in the receiver socket, or to fit an external switch to connect either feeder as required. If the same feeder impedance is used for both bands, it is usually in order to connect both aerials to the same feeder, at the top, the aerials being a few feet apart. This is also done where the H elements of the small Band III aerial are mounted on the same bar as those of the larger Band I aerial. It is also possible to use a type of coil matching device between aerials. These arrangements give a reduction in signal strength, compared with using two separated aerials with two separate feeders, so that local conditions, and the type of receiver will to some extent determine whether satisfactory reception is obtained with both aerials permanently connected to the one feeder.

* * *

I.T.A. Converter

WOULD it be possible to give instructions on how to build and attach the I.T.V. converter? (L.H.—Rugby).

THOUGH an I.T.V. converter may be built, this presents some little difficulty for beginners. A type of frequency-changer circuit is used, converting the particular I.T.V. frequency to the B.B.C. frequency with which the receiver deals. Tuning and coil details thus depend on the stations; those suitable for one part of the country would not do elsewhere. A converter will not operate with some older type T.V. sets using single sideband reception. In view of these difficulties, it is best to buy a readymade converter, or a kit of parts intended for the type of set, and locality. Suppliers of these include Electronic Precision Equipment, 123 Terminus Road, Eastbourne; TRS, 70 Brigstock Road, Thornton Heath, Surrey, and most radio shops, prices being from about £2/5/0 upwards.

* * *

Length of Directors

I WOULD esteem it a favour if you would clear up for me one or two minor difficulties concerning aerials for Band III and, say, Channel 8. Are the directors all of equal lengths, or is each one shorter than the preceding one? What is the spacing between the dipole and the first director? As the spacing between the dipole elements is approximately ½in., then the actual overall length of the dipole would appear to be 30½ins., and if this is so, should the reflector and director elements all be increased by ½in. (E.R.—Worksop).

EACH director is shorter, as explained at top of column 2, page 339, which explains the reduction. See also Fig. 3. The distance between dipole and first director is normally ⅜ of a wavelength, or ⅛ greater than the spacing between dipole and reflector. The distance of ½in. between inner ends of the dipole elements does not influence the measurements, because it is allowed for, and because it is impossible to make a single aerial resonate exactly on any range of frequencies, as explained on page 323, column 1.

A Spacing Query

I FIND that the dimension (I) distance between dipole and director is not given for channels 8 and 9. As I intend to make a Band III aerial I shall be obliged if you could let me know this measurement. (A.J.—Wellington).

THE directors are spaced ⅜ of a wavelength ahead of the dipole. This spacing will thus be ⅛ greater than the spacing given between reflector and dipole, column 2, page 339. As it is impossible to suit two channels with one aerial, dimensions should be a compromise, unless conditions make it necessary for one channel to be favoured, when dimensions may be made to suit this.

Other Problems Answered

Removing Whitewash

HOW can I remove the whitewash from my ceilings, which I wish to colour? (C.S.—Stroud).

THE whitewash can be removed by well soaking with hot vinegar, but it is a tedious and messy job. An easier solution is to clear off as much as possible by washing with hot water, then when dry, smooth rough parts with glasspaper and apply a coat of raw linseed oil to which 1 oz. of driers has been added to every pint. Over this any good paint can be used with effect.

* * *

Seasoning Wood

I HAVE had a cart-load of fruit wood given to me for wood-turning; the bark is still on. What is the best way of dealing with it to keep out rot and woodworm etc? (F.B. — Crewe).

IF you store the wood in a dry place it will help to season it and also keep dry rot away. Lay the logs crosswise over each other to encourage air to circulate. Wood beetle prefers seasoned wood usually, but for protection against it later on, treat the surfaces with some non-staining deterrent, one of which can usually be bought now at most oil shops. The best time for treatment is spring.

Guinea Gold Lacquer

The manufacturers of Guinea Gold Lacquer regret the delay in correcting the price advertised, due to the recent difficulties in the printing trade. This should be 1/3 per tin. The price of Crown Silver Lacquer remains at 1/- as advertised.

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PBK14

This is the 14ft. two-seater canoe illustrated. A large drawing showing the main frames and end posts full size is available price 7/6 post free, and a drawing showing construction of paddles, sailing gear and other accessories is also obtainable price 2/- post free. Full building instructions are supplied free of charge with all orders for plans, or can be obtained separately, price 6d.

PBK10

Similar drawings are available for PBK10, an 11 ft. single-seater canoe. A drawing of the main frames and end posts costs 5/6 post free, and a drawing of the accessories is 2/- post free. Full constructional details are supplied free of charge with all orders for plans, or can be obtained separately for 6d. post free.

Details of complete kits for both canoes are available, and suppliers are listed in the plans.

All orders and correspondence should be addressed to:

THE EDITOR, HOBBIES WEEKLY, DEREHAM, NORFOLK

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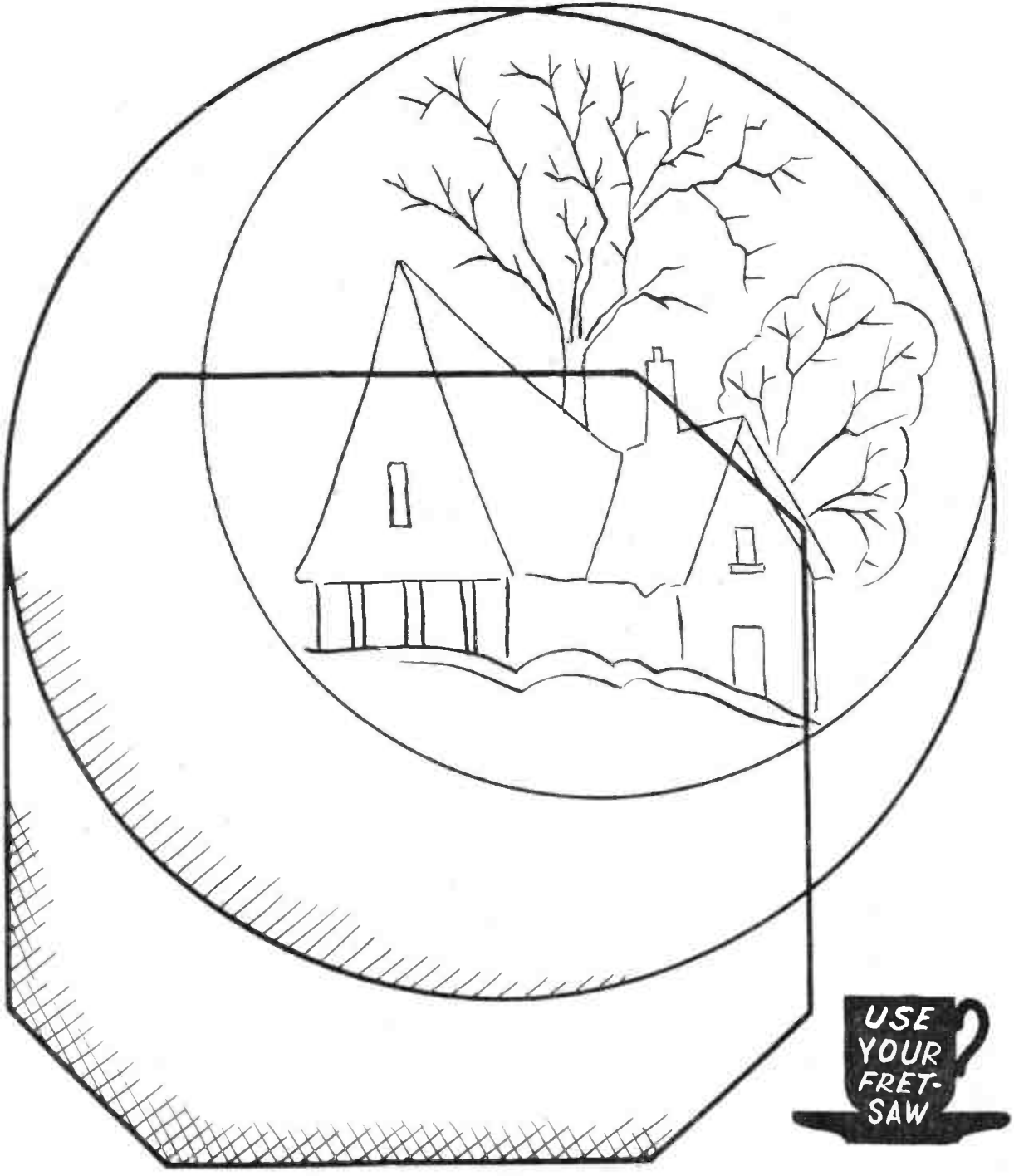

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