Hobbies WEEKLY

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Patterns for a realistic miniature

MODEL TYPHOON

THE Typhoon fighter and fighter-bomber is very much in the news, and is certainly one of the outstanding machines which we have put into service. We have already in these pages published designs for a large model and a smaller one.

Here is a miniature which will appeal to those who like making the small replicas. It is a 1/100th scale of the famous Hawker Typhoon, and can be made quite easily from the full size drawings here, and the following constructional details.

Some points about the actual machine should be of interest although, of course, there may have been various models since the original was designed. The Mark IB is the type shown in this model. It has a span of 41ft. 7ins., length 31ft. 11ins. and height of 15ft. 3½ins.

Its 2,400 Napier Sabre engine gives a speed of over 400 m.p.h. and it is one of our largest single-engine fighters. The 1B has also been fitted with bomb racks to carry two 500 lb. bombs, one under each wing, when it assumes the role of being the fastest fighter-bomber in the world.

A study of the full size scale drawings herewith enables one to cut out the parts required quite easily.

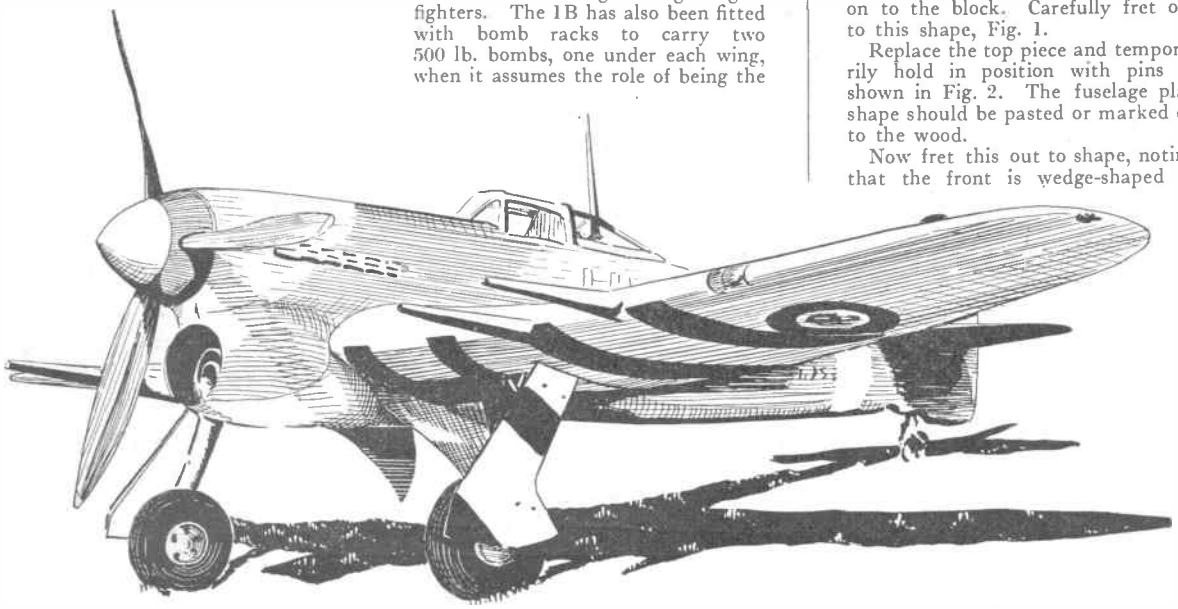
Building Instructions

Commence by taking a block of wood of the required size for the fuselage. Whitewood, pine or similar wood is advisable as this is easy to carve and work.

Cut the fuselage side from the drawing and glue on to the block; or, alternatively, trace this outline on to the block. Carefully fret out to this shape, Fig. 1.

Replace the top piece and temporarily hold in position with pins as shown in Fig. 2. The fuselage plan shape should be pasted or marked on to the wood.

Now fret this out to shape, noting that the front is wedge-shaped to



See Assembly Drawings on Page 151

give the extra width required for the radiator. Making a tilting saw cut in front of the cockpit should give this quite satisfactorily. The fuselage block should then appear as in Fig. 3, once the extraneous top piece has been removed.

The reason for replacing the first piece cut off is that it is difficult to mark any plan or elevation shape accurately on to a curved surface. Replacing it gives a flat for working and it can easily be removed when the final fretting is finished.

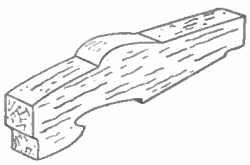


Fig. 1—Cut-out fuselage

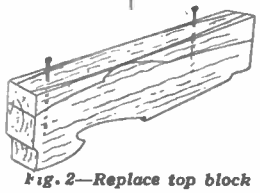


Fig. 2—Replace top block

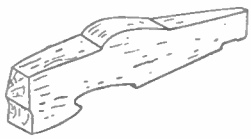


Fig. 3—Cut sides to shape

Fig. 4—The shaped fuselage

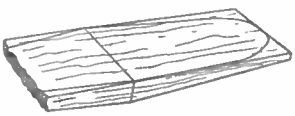


Fig. 5—Wing marked out

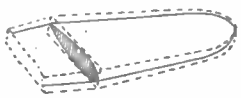


Fig. 6—Shaped wing

The fuselage block is then carefully carved fown to its correct cross sectional shape. First cuts can be made with a 1in. chisel, or smaller, and then a penknife. Many modellers prefer to use the latter throughout.

The templates should be cut out and offered up to the work to check. Cut along the black lines and cut out the black portions. This will give two fuselage templates, a wing section template and one for the tail surfaces.

Fuselage Finish

Final finishing of the fuselage should be done with glasspaper, starting with coarse to remove the knife cuts, medium to smooth, and finally fine to finish.

The wing block is first tapered on each side from the centre line as shown. Mark or paste on wing plan outline and fret out to shape (Fig. 5). The wing must then be cambered by carving and glasspapering down to the correct aerofoil section as shown, taking care to smooth off any ridges or bumps.

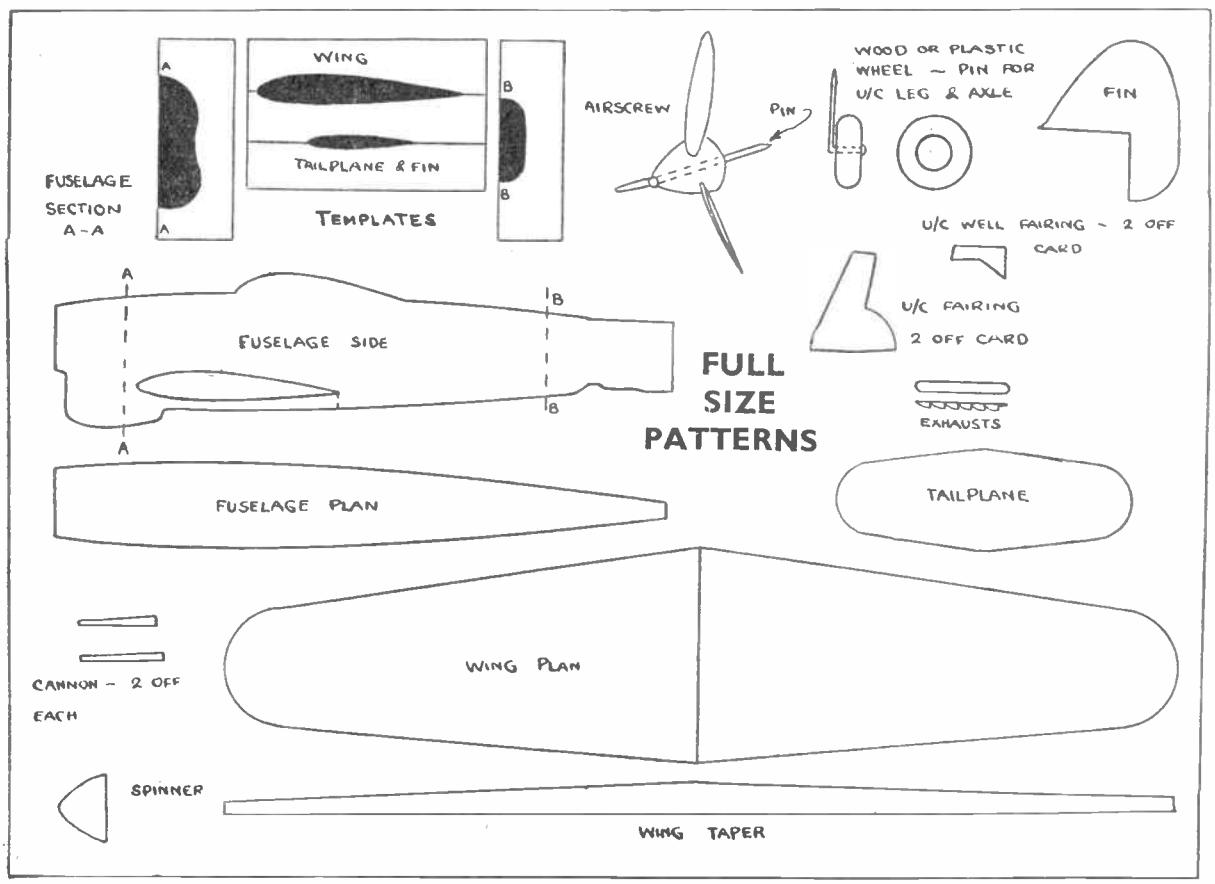
The finished wing is then partially sawn through at the centre line and the dihedral joints—the position of these may be found from the front elevation. Crack the wing at these points, force glue into the cracks and set up with the correct dihedral incorporated and leave to set. The actual dihedral is shown on the front elevation and care should be taken to ensure that this exactly matches.

MATERIAL LIST

Fuselage block—3¾in. by ¾in. by ¾in.
Wing block—5ins. by 1 7/16ins. by ¾in.
Tailplane—1½ins. by ⅜in. by 1/16in.
Fin and Rudder—¾in. by ¾in. by 1/16in.
Spinner—short length of ¾in. diam. dowelling.
Sundries—thin bamboo or match sticks for cannon, aerial mast, and airscrew blades; thin card for wheel fairings and well doors; pins for undercarriage legs and airscrew shaft. Coloured dopes or matt paint and insignias as required. Pair ¾in. diameter hardwood wheels.

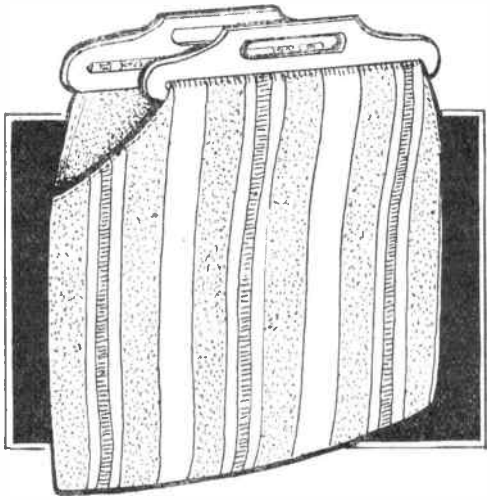
The tailplane and fin and rudder are fretted out from small scraps of sheet wood and then cambered as for the wings. The only difference in cambering is that the actual section is symmetrical this time.

There only remains a few constructional details, such as exhausts, aerial, wheels, etc., and these will be given next week.



The handyman can make a useful gift with

A KNITTING BAG



AS women, and in some cases men too, are doing a lot of knitting nowadays—as much as coupons and supplies admit!—a bag as illustrated to hold the work should prove most useful. It can also be used as an ordinary household work-bag, or even a shopping bag. Bags of this description are just the things to make for sale, too, being quickly snapped up at Bazaars and Sales of Works.

A small quantity of fretwood is needed for the handles, a panel of ¼in. wood, 7ins. by 14ins. being enough. Plywood is really the most suitable wood to employ if it can be got by readers who are lucky enough to pick up odd pieces of such wood.

Materials to Use

Materials for the bag itself can be almost anything, provided it is strong enough. Art canvas is specially useful, also that rather gaudily striped stuff sold as deck chair canvas.

Fig. 1 is a pattern for the handles, drawn over 1in. squares. If the wood is light in colour the required number of squares could be pencilled on the wood itself and the shape carefully copied.

Alternatively, the squares could be drawn on thin paper and the shape traced through carbon paper on to the wood. Both handles could be cut at one go to save time and repetition. The long slots should be about ¾in. wide. All sharp edges, inside and out, should be well glass-papered smooth.

As regards the long slots the best way to smooth the edges of these is to pass a strip of glasspaper through, grip the handle in a vice, and work the glasspaper backwards and forwards over the edges of the slots. This will quickly smooth its sharp edges.

The handles can be left plain, but soon coil, especially when the wood is a light colour. Better to apply a coat of clear varnish to them, both as protection and finish. The handles could also be enamelled if some coloured art enamel is handy. A nice, attractive finish will result, especially if the colour matches that of the bag, or harmonises with it.

Having chosen the material for the bag, a pattern (Fig. 2) should be drawn on paper. Newspaper would serve and if a soft lead pencil is used it should show up enough. One half only of the pattern is given, for economy in space, but this is enough. Cut it out, fold the material double, and pin the pattern to it.

Stitching

Cut the two thicknesses of material together, ¼in. away from the pattern (the extra ¼in. being for the hem) and open out. Sewing is a simple job, though some readers may prefer to give this part of the work to a lady.

Fold the material double on centre line A-A, right-side inside, and stitch together the sides A to B. Then turn the stuff right side out, fold the hems over, and stitch the remainder of the sides (hems only) from B to C, as in detail, Fig. 3.

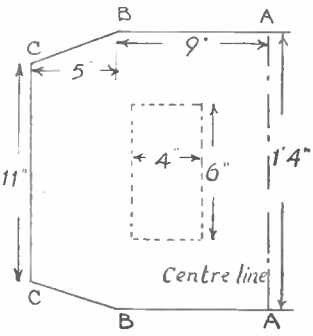


Fig. 2.—Shape of one side

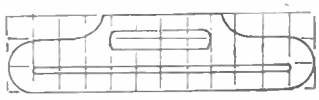


Fig. 1.—Shape of handle

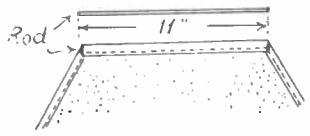


Fig. 4.—Lapped tap of bag

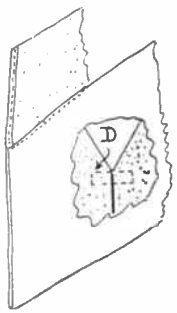


Fig. 3.—Stitching details

At B, where the stitching together of the sides ends, a short piece of tape should be sewed across, as at D, to strengthen this part. Some strain comes on it when the bag is opened.

If rather thin material is used, a lining to the bag would be advisable. If added, cut the lining material just the same as the bag and stitch the sides A to B together. Then place it in the bag, and when stitching the hems over from B to C, fold the edges of the lining under the hems and stitch them both together.

Top Fixing

The top ends of the bag should now be folded over to enclose a length of dowel rod, as in Fig .4 Rod, ¼in. diameter should be used, or if a piece of rod is not available, strips of wood can be planed and filed to round section for the same purpose.

Stitch the material down over the rod and sew the ends together to prevent the rod working out endways. The addition of an interior pocket is optional.

If the bag is used to hold knitting work only, perhaps the pocket would not be considered necessary, but as an ordinary household work bag such a pocket would be useful to hold small articles used in needlework.

The pocket could be cut from lining material, or from similar stuff to the bag. It should not be too large, about the size shown by dotted lines in Fig. 2 would perhaps be large enough. If fitted, cut to dimensions, hem the top edge over, turn in hems at sides and bottom and stitch through the bag inside in about the position shown.

The Handles

The bag is quite easily fixed to the handles. Push one end of the rod through the slot, from outside, then work it sideways until the other end can also be pushed through.

Fix to the second handle similarly and draw the bag down until both rods are flat against the handles. This method of fixing allows the bag to be released whenever a washing may be necessary.

Having completed one bag you will find it much in demand by lady friends, and the making of further supplies will prove more simple and straightforward.

Twin earphones are used to make this efficient MINIATURE SPEAKER

READERS who made the single earphone type of loud speaker described in Hobbies Weekly (dated July 5th) will be interested in these details of a double earphone design, a picture of the finished model being shown at Fig. 1. This, like the one dealt with, also serves as a microphone, but is a much more sensitive combination.

It does, at least, look better than a pair of earphones hanging up on a nail, as we suggested. Moreover, owing to the special-shaped horn, audible sounds are amplified somewhat, whether one is broadcasting through a wireless set) or receiving wireless transmissions (from a local station) on a crystal set or valve set.

Radio fans, therefore, desiring a cheap, efficient, miniature extension loud speaker, will find the model under discussion excellent in every way. Best results will, of course, only be obtained through large battery-operated valve sets or all-main sets.

Construction of Horn

The horn could be made first. The various sizes will make a horn suitable for most earphone pieces, but be wise and measure your own 'phones and build the horn accordingly. The earphone covers will decide the size which, in the writer's case, measured 2½ins. in diam.

You need two side pieces cut to the size and shape shown at Fig. 7. A centre piece, or division, is cut out similar, but is less ⅛in. down the sides and tapers off short at the top (see Fig. 4). It should be provided with tenons so it fits into the back and front pieces (Fig. 5).

As shown at Fig. 2, the back and front pieces go between the side pieces. Fix the centre division between the former pieces first, then add the sides. The ends of the back and front pieces need to be bevelled with a small plane to suit the shape of the sides.

The top piece is added, including a small frontal strip. As ⅛in. thick wood is suggested, care must be taken not to split the wood when gluing and pinning the parts together. It is advisable to drill pin holes down the edges of the sides ; simply remove the head from a panel pin and use the pointed shank as a drill bit.

The Base Pieces

A base for the horn is detailed at Fig. 7. The ½in. diam. sound holes cut in it must correspond with the ⅜in. diam. sound holes in the covers, or caps, of the earphone pieces when placed side by side.

You will also see four smaller holes made in the base. These are for fixing the base to the earphone caps and suitable corresponding holes must be drilled in the latter, as you will see, the distance apart being about 1½ins.

Glue the base to the horn and set the work aside to dry. A holder base for the earphone pieces is cut to the shape at Fig. 7 from ⅝in. wood. In order to get the exact position of the 2in. diam. holes (which take the bottom end of the 'phone pieces), scribe the diameters of the caps close to each other, then scribe the bottom aperture holes, after you have measured the required diameter.

In scribing the latter with the compasses, you use the same central points made in scribing the cap diameters, of course, This keeps you dead accurate and, in order to provide space for the leads (wires running from the earphones), small semi-circular cut-outs are made, as shown.

Attaching the Horn

When the glue has properly set, clean up the horn by using medium-grade and fine-grade glasspaper.

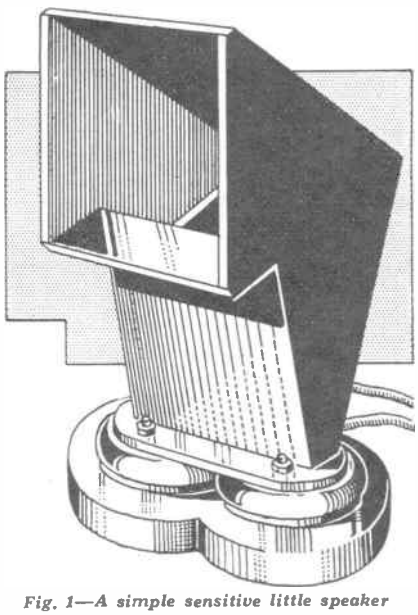


Fig. 1—A simple sensitive little speaker

Wrap the glasspaper around a flat block of wood rather than rub it over the work with the fingers only. Note how the top and bottom edges of the "mouth" of the horn are bevelled, this being done with a plane, or else you could merely round over the edges by glasspapering.

When drilling the fixing bolts in the 'phone caps, work carefully. The underside of the cap surface nearly touches the diaphragm (over the electro-magnets) when the caps are screwed on. Consequently, the bolt heads must be contersunk to take flatheaded bolts, perferably brass ones.

Iron bolts should be avoided, as they are liable to have some effect on

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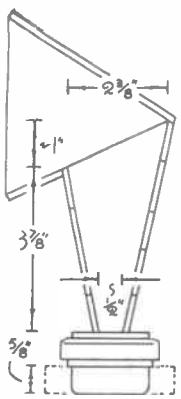


Fig. 2—Side view

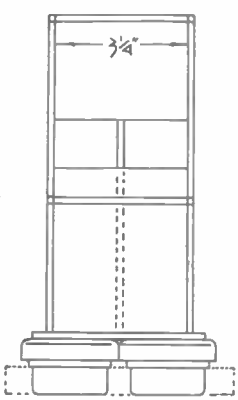


Fig. 3—Front elevation

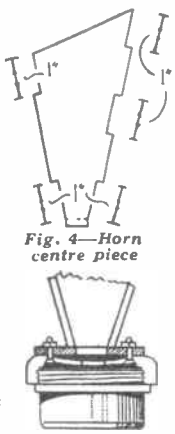


Fig. 4—Horn centre piece

Fig. 6—Earphone fixing

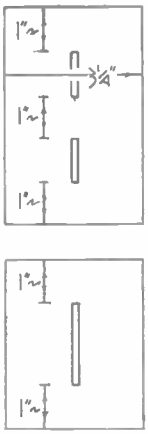


Fig. 5—Back and front of horn

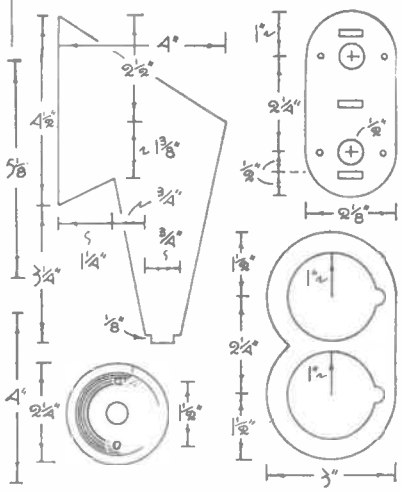


Fig. 7—Details of horn, side shape and base pieces

Only a little wood and metal needed for these
WARTIME PRESENTS

WITH a few odd pieces of fretwood and a piece or two of sheet brass or copper, or even the metal from tin containers, one can make quite attractive articles suitable for gifts. We show here two simple but useful household articles, one being a match-box holder with tray beneath, and the other a two-leaf letter rack.

Almost any kind of close-grained wood is suitable as a backing for these articles, and the thickness may be either ¼in. or ⅜in. The outline for cutting with the fretsaw is very simple, and we make the suggestion, therefore, that these articles are highly suitable for the beginner at fretwork.

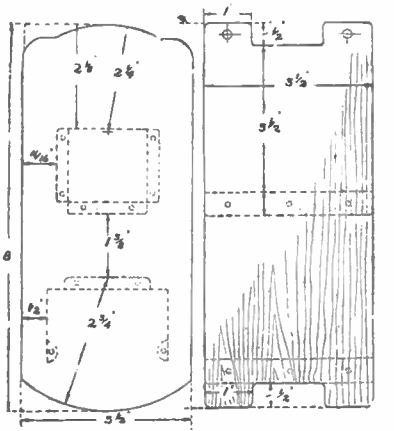


Fig. 1—Back

Fig. 2—Letter rack back

The matter of cutting and forming up the metal, too, should not be beyond the skill of the merest amateur. Figs. 1 and 2 give in detail the shapes of the backs with all necessary dimensions for setting the outlines direct onto the wood or paper.

It is the better plan to make a paper drawing of the outline with the positions of the metal parts included in dotted lines just as shown.

This tracing or drawing can then be used over and over again for reproducing any number of outlines to be drawn onto the wood by means of carbon paper.

Clean up the edges of the wood with fine glass-paper and give the front surface a rubbing also before any metal parts are screwed on.

If varnish or polish and stain are to be put on the wood this work must also be done before the metal is added. The correct positions for screwing on the parts may be pricked on to the wood from the tracing after the varnish or other finish has been applied.

The two metal parts for the match-box holder are shown in Fig. 3. Here again it would be advisable to make a full-size diagram on paper from the measurements given, and then transfer this to the metal by means of carbon paper.

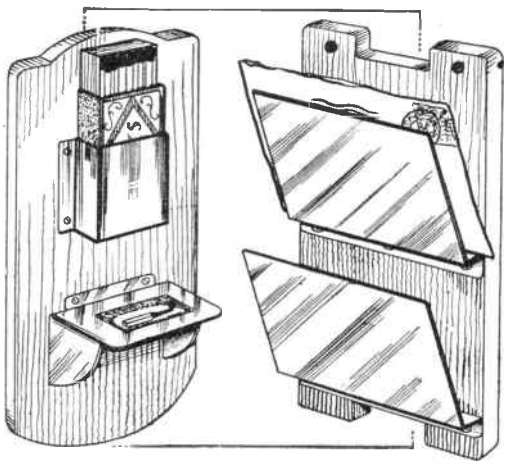
The dotted lines in the diagrams show, of course, where the metal is to be bent and angled up. Before doing this latter work however, the holes should be drilled for the fixing screws. The actual cutting of the metal may be done either with a pair of metal-cutting shears or with the metal-cutting saw. The cut edges should be afterwards filed and made smooth before the bending up of the metal is commenced.

Tray Forming

The recess in the tray in the lower diagram is made by first scratching in the oblong shape and then hammering and so stretching the material until it is formed into a recess.

Careful, even and constant hammering must be carried out and patience exercised until a good shaped " bowl " is obtained. Use round-head screws for fixing the metal parts to the backing pieces.

In the top diagram in Fig. 3 the match-box holder is shown " in the flat " and ready to be angled up. To facilitate the bending, the lines shown dotted should be gone over with a scriber or other sharp-edged tool. The bending is done



afterwards by gripping the metal in a vice and gradually bending to the cut-in line.

Letter rack Portion

Fig. 4 shows the outline for the metal part of the letter rack. Little comment need be made regarding this as the process of cutting and edge-cleaning is the same as before mentioned. A double bend is made along the dotted lines and this after the three screw holes have been drilled.

If brass or copper has been used, the surfaces should be thoroughly cleaned off and a coating of lacquer given to preserve it. If other metal has been used then it can be coated with japan black or even painted with ordinary matt black paint.

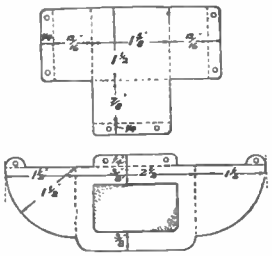


Fig. 3—Matchholder details

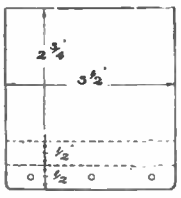


Fig. 4—Rack shape

Miniature Speaker—(*Continued from previous page*)

the diaphragm. Brass, like copper and aluminium, is immune from magnetism as provided by permanent magnets and electro-magnets ; these metals, like iron and steel, will conduct electricity and produce magnetism when in coilform, but are not, like the other two, attracted by it.

Insert the bolts through the cap hole to engage with those in the base of the horn, then screw on the nuts. The " works " are then screwed on the caps and the leads brought out at the back so they engage with the holes made in the sides of the bottom apertures cut in the thicker base piece.

Prior to the final assembly, the horn and bases must be finished off in some way. An ebonised finish looks the best, so stain the wood jet black, then polish the outside only with ebony polish. Ordinary mahogany, oak or walnut polish can be made into ebony polish by adding some lamp black powder.

If desired, the inside of the horn could be coated with gold or silver paint, a couple of coats sufficing on top of a stained surface.

Interesting notes on the variety of

SHEARS IN GENERAL USE

WE show herewith a selection of implements of everyday use, all being of a "shearing" nature. Frequently one has a certain job to do, but not knowing the proper type of tool to buy, a form of it might be bought, which usually amounts to a waste of money and time. It must be pointed out, of course, that it is not easy to obtain any sort of implement these days.

Implement No. 1

This is a pair of pliers, with top cutters. It is used mainly for cutting all kinds of wire, excepting steel wire. May be made of drop-forged steel, with lap joints. The size is about 7ins. There is a more improved type, made of stamped steel, working on a double-jointed principle so that a better leverage is obtained. It is about 6ins. long and is used for wire netting and general light work.

Implement No. 2

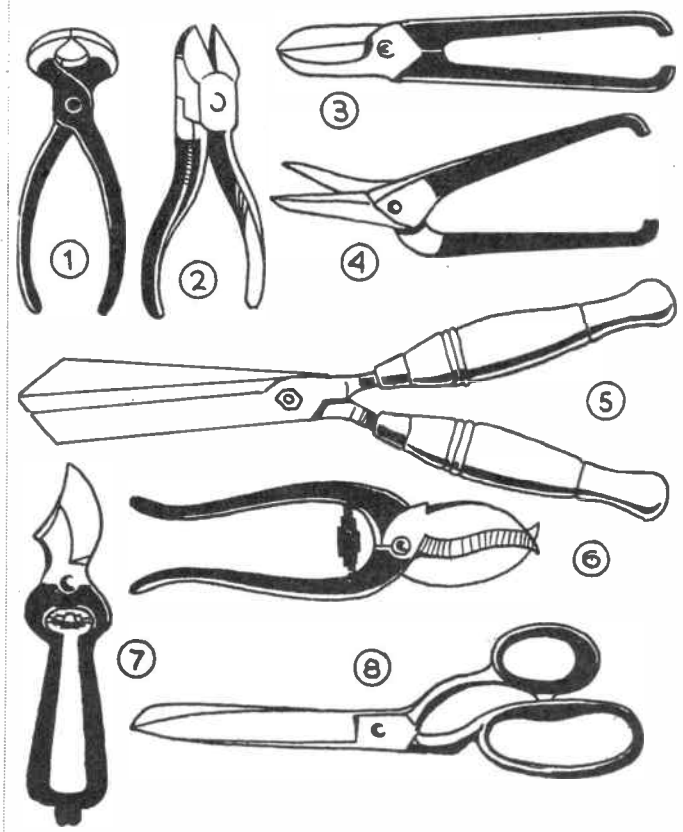
This implement is similar to the No. 1 type, with angle cutters. Made in three sizes, the 6in. type consisting of an all-bright finish, with spring between the grips; another 6in. type is minus a spring, but with vulcanised (insulated) grips. The 5in. size has a special taper nose, black polished handles, but no spring. These pliers, due to the angle of the cutters, enable one to snip wire in awkward corners.

Implement No. 3

Here we have straight-bladed, metal-cutting shears, used by tinsmiths. It is an improved shoulder pattern that cannot nip the hand. Obtainable 8ins., 10ins. and 12ins. long. Made of Sheffield forged steel, right-handed. It is also possible to obtain curved blades for cutting circular shapes and patterns in sheet metal.

Implement No. 4

This is a universal shearing tool, having right-hand forged blade, the handles being cranked. Possible to obtain straight-handled shears of the same make. These implements have such shearing quality and strength, being as thick in each blade as they are high, that curves or circles are quite easy to cut. Stainless steel sheet is cut without a burr.



The various types of cutters referred to

Implement No. 5

These are grass shears, but may be used for cutting twigs and hedging. The type shown can be obtained in two sizes, the blades in each ease being 6ins. and 8ins. Usually made of good quality steel, tanged deeply in clear polished handles.

Another variety of the same shape has heavy steel blades, all bright, with strong tangs fitted into red polished handles. Obtainable in the sizes of 8ins. and 9ins., the shear measurement, i.e., from blade top to pivot nut. The larger size may have notched shears in order to deal more effectively with twigs.

Shears, on the same lines as those described, may have extra long handles, with the blades working at an angle, or edgewise. Such are known as edging shears and lawn shears. The overal length may be 31ins. The lawn shears saves stooping when trimming grass. The grass edging is cut best with the other type.

Implement No. 6

These are parrot-beak pruning shears, forged in one piece. It is an easy cutting type and durable. There are similar types, the sizes being 6ins., 6½ins., 7½ins. and 8ins. The handles may be springed, as shown, or without a spring, with a metal end lopp to prevent the shears opening when not in use.

Implement No. 7

This is a 7in. long rose pruner, made of forged steel. It is of small, light, handy size. The blades should be kept sharp to make a clean cut to the rose stem, but never wear down enough to require grinding. Use them with a quick cutting motion not to tear the actual stem.

Implement No. 8

Here we have trimmers' shears. In the ordinary manner, we call them scissors, but this pattern belongs to the shearing class. Used for cutting heavy cloth, upholstery, etc. Blades are hollow-round. Sizes are 8ins., 9ins., 10ins. and 12ins.

So, if an upholsterer should happen to ask you to hand him his shears, you will hardly think of the gardening variety. And if a gardener should happen to ask for his pruning nippers, or pruning shears, you will, if implements No. 1 and No. 2 are lying beside them, hardly hand him the wrong kind.

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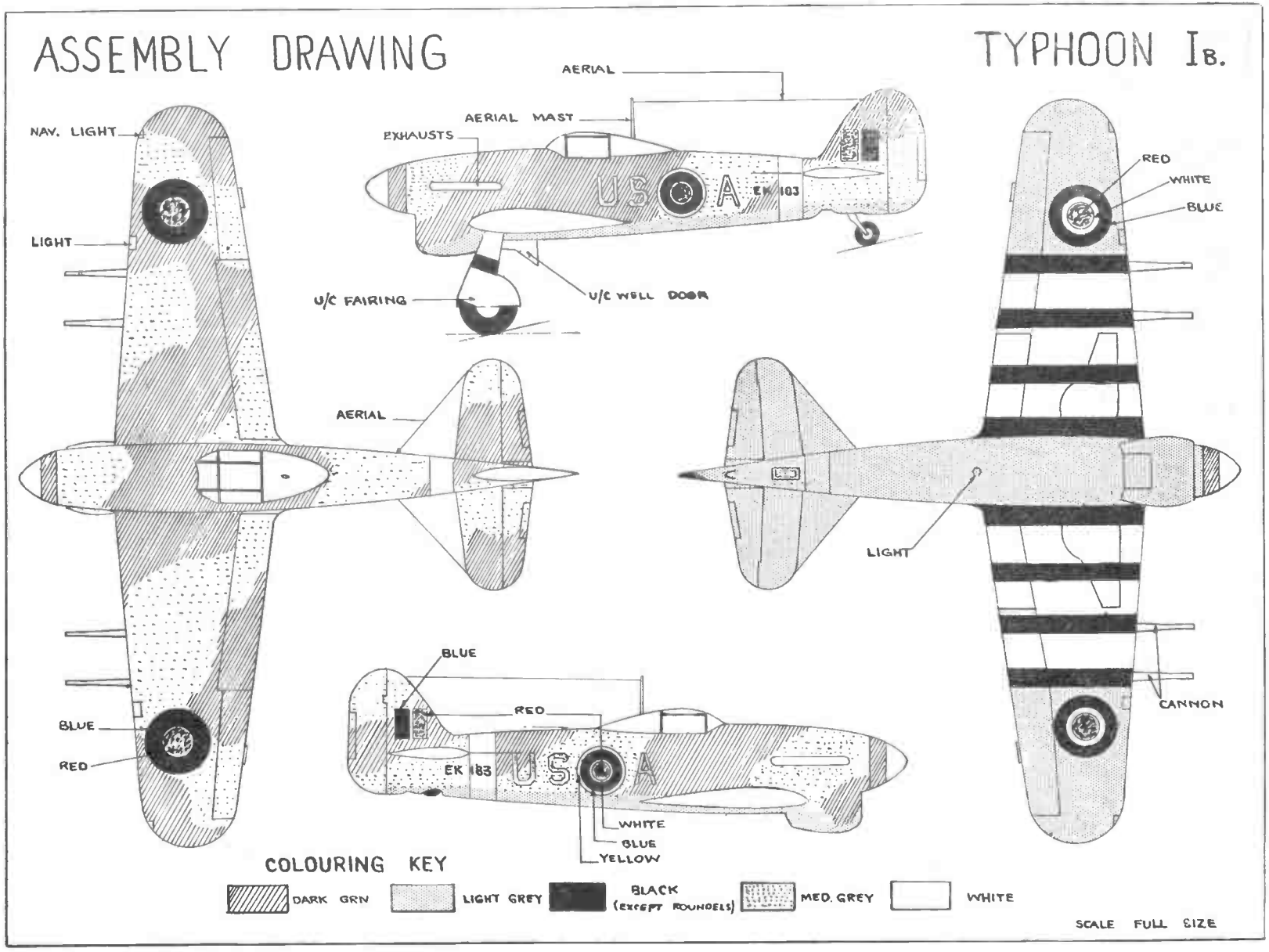


LANDGIRL


SHOP ASSIST


TYPIST


COOK


DOCTOR


FIREMAN


FARMER


NANNIE


BANKER


ARTIST


HIKER


NURSE


MOTORIST


SOLDIER


WAITRESS


CYCLIST


GOLFER


HOUSEWIFE


SCHOOLGIRL


WARWORKER


SCHOOLMASTER


POLICEMAN


ENGINEER


PAINTER


CLEANER


FOOTBALLER


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