

Hobbies

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A Simple Model

FLAK TOWER

WE think that the model described and illustrated here should prove an interesting piece to make. For those who perhaps have not seen the illustrations and description of one of these Flak Towers given in the newspapers, we think a brief survey might be given here.

These towers are built on the south coast to deal with German raiders who endeavour to sneak over, drop their load of bombs and then sneak back home again. The towers, it may be added, have proved so successful that these raids have now practically ceased.

About the Building

They are built of reinforced concrete throughout and present a very sturdy appearance. As far as can be gathered from the scanty detail available there appear to be two buildings built close to each other as our sketch suggests.

The building in the foreground forms an ammunition store, and on two sides of it there is constructed, also in concrete, a broad stairway leading to the roofs above.

The second building, shown on the left in the sketch, forms an instrument store, and on its roof there is fixed a Bofors gun, while on the adjoining roof there is built a kind of

bullet-proof stockade encircling a light machine-gun. In our sketch a suggestion for the guns, etc., is given and the air sentry within the stockade.

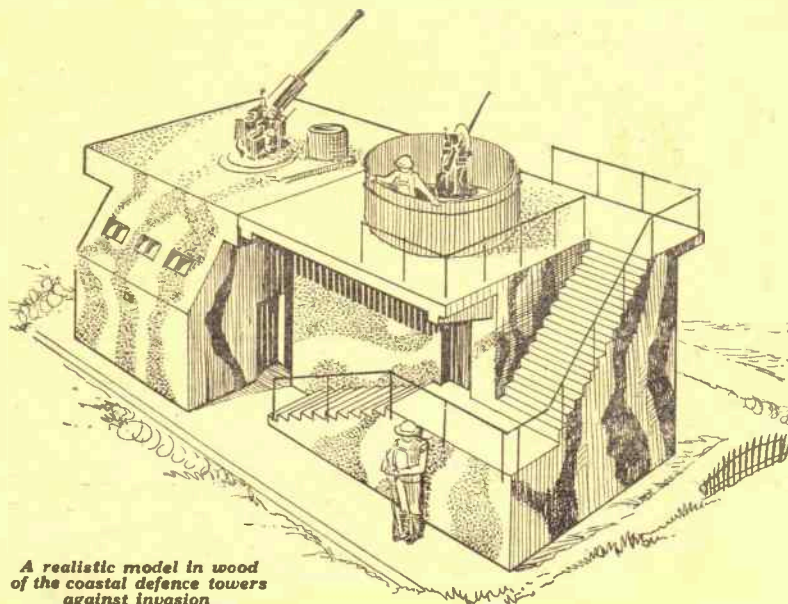
So much for the brief description of the tower, and it now remains to tell how the model is to be made.

From the details in Fig. 1 a general

idea of the lay-out or plan of the buildings can be obtained. It will be noticed that the roofs have been raised off the walls in the details so the interior may be seen and how the various walls are butted to each other. A full list of sizes of all the parts which go to make up the model is also given. All that will be necessary therefore in commencing work, will be to set out these sizes on the wood and proceed with the cutting with the fretsaw.

Entrance Option

The front wall A of the near building will have a doorway cut in it as shown, at a distance of $1\frac{1}{2}$ in. up from the ground level. The size of opening is $1\frac{1}{2}$ ins. high by $\frac{3}{4}$ in. wide. A similar door opening will be cut in



A realistic model in wood of the coastal defence towers against invasion

one of the walls G of the farther building, seen again in Fig. 1.

If it is desired to have these doors to open realistically, then they can be hinged with tape hinges glued across inside the building. The doors in this case would be made to open inwards.

It will be seen that a floor must be added to the foremost building and glued in level with the threshold of the door.

Wood Required

If, however, the doors are not required to open, then an oblong shaped piece of stout card may be cut rather larger than the door opening and glued round inside it. Wood $\frac{3}{16}$ in. thick is used throughout except for pieces H and M and there are $\frac{1}{2}$ in. thick. Be sure and get all the angles square when marking out the parts.

of $\frac{1}{2}$ in. wood simply glued on to the walls.

Some careful marking out will need to be done in setting out the two walls I and J. The side view of the building (Fig. 2) is helpful in this respect. The wall I will be butted on to wall B and on to wall J. A distance of $\frac{13}{16}$ in. is kept between the walls C and I. The landing, piece K, will be glued between the front wall A and wall J as shown clearly in Fig. 1.

The Steps

In setting out the steps in each of the walls I and J all the "treads" measure $\frac{1}{2}$ in. and the "rise" $\frac{3}{16}$ in. Then in making the actual steps cut twenty-one pieces $\frac{1}{2}$ in. wide from $\frac{3}{16}$ in. wood and glue them between the walls. Three steps are indicated as fixed in wall I Fig. 1.

The small shaped bracket pieces N

If soldering cannot be done, the next best fixing will be glue, which, after hardening, can be filed neatly to shape and finally painted.

CUTTING LIST

- A—one $4\frac{1}{2}$ ins. by $4\frac{1}{2}$ ins.
- B—one $5\frac{1}{2}$ ins. by $4\frac{1}{2}$ ins.
- C—one $3\frac{1}{2}$ ins. by $4\frac{1}{2}$ ins.
- D—one $3\frac{1}{2}$ ins. by $4\frac{1}{2}$ ins.
- E—one $2\frac{1}{2}$ ins. by $3\frac{1}{2}$ ins.
- F—one $2\frac{1}{2}$ ins. by $3\frac{1}{2}$ ins.
- G—two $4\frac{1}{2}$ ins. by $3\frac{1}{2}$ ins.
- H—one $3\frac{1}{2}$ ins. by $3\frac{1}{2}$ ins. by $\frac{1}{2}$ in.
- I—one $4\frac{1}{2}$ ins. by $4\frac{1}{2}$ ins.
- J—one $4\frac{1}{2}$ ins. by $1\frac{1}{2}$ ins.
- K—one $2\frac{1}{2}$ ins. by $1\frac{1}{2}$ ins.
- L—one $5\frac{1}{2}$ ins. by $5\frac{1}{2}$ ins.
- M—one $5\frac{1}{2}$ ins. by $4\frac{1}{2}$ ins. by $\frac{1}{2}$ in.

The "stockade" for the light gun can be made from a narrow strip of plain or corrugated cardboard. Bend round and glue with a ring of wire finally put round just below the top edge and glued on. A coating of grey paint will make this part look smart and realistic.

The guns for the roofs will consist

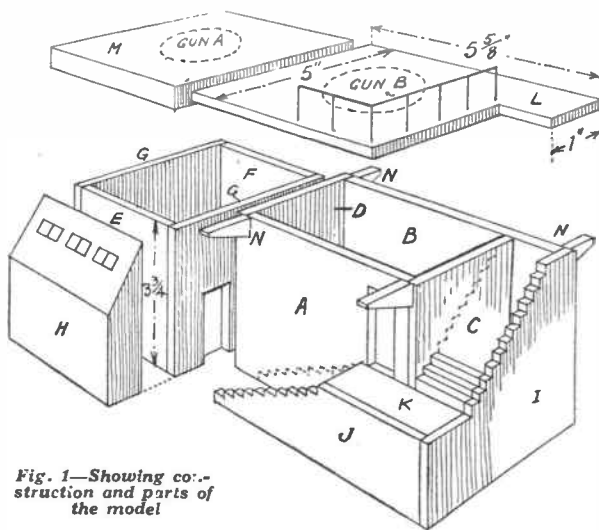


Fig. 1—Showing construction and parts of the model

In making the foremost building glue and block together the four walls, A, B, C and D, and for the smaller building the walls E, F and G. Note that one building is $4\frac{1}{2}$ ins. high, and one $3\frac{1}{2}$ ins. high. The difference is that the roofs are both of one level, being made up in the $\frac{1}{2}$ in. thickness of the roof M of the smaller building.

The piece H which is glued to the wall E is $\frac{1}{2}$ in. thick, or two pieces of $\frac{1}{4}$ in. glued together. Taper off the upper part of this piece to an acute angle as shown, this work being preferably done before it is glued on. The roof M is a plain oblong piece

may be cut from odd $\frac{3}{16}$ in. wood and glued on in the positions shown.

The roof L is cut to the dimensions and shape shown in Fig. 1 and glued and pinned to the walls. A feature of the model is in the making and fitting of the railings to the steps and landings.

Stout pliable wire should be used for these, and the arrangement of the handrails. Their uprights can be gauged from Fig. 2 and from the sketch. Cut off the various lengths of the wire, testing for correct angle etc. from the model itself. Solder on the uprights to the rails, the lower ends being pointed.

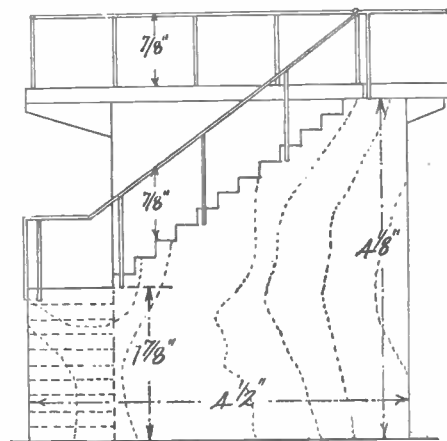


Fig. 2—Side view showing steps and rails

of small models obtainable from the makers of leaden soldiers and made to standard sizes to suit.

The whole model can be placed upon a base of stout card or preferably a piece of plywood measuring 11ins. by 6ins. The camouflage markings are indicated in the sketch and are obtained by using green and earth-brown paint.

The window lights of the instrument store may be painted on in white or yellow for the frames with dark blue for the interior shutters. The railings and standards should be blue-grey as also should the "stockade" on the roof.

Games Box—(Continued from opposite page)

guide bore the peg holes through the lid.

From the remainder of the fretwood panel cut three $\frac{1}{2}$ in. wide strips. Two of these strips are cut $\frac{1}{2}$ in. longer than the box. Place the lid in position and fix a strip each side of it with glue and nails to the box sides, as at C and D, Fig. 5, a cross section through the box.

From the remaining strip cut two

pieces to fit between the ends of the long strips, at each end of the box. One will be glued to the box end and the other to the end of the lid, as will be plain when doing the job. Now slide the lid off in case any stray glue causes it to stick. The completed box is then ready for finishing.

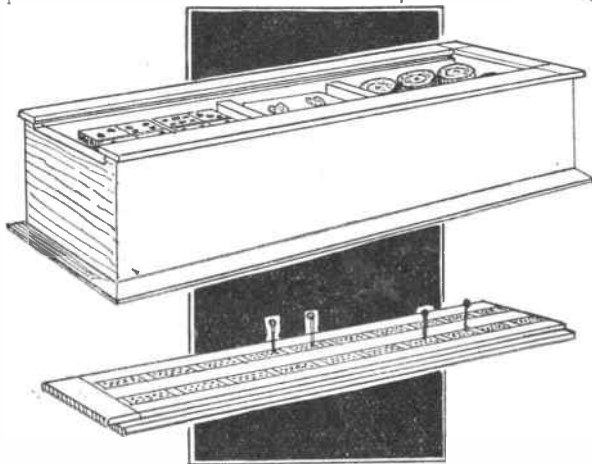
The whole should receive a good rubbing with fine glasspaper first to

make all smooth. The deal parts should then be stained to match the fretwood, as far as possible, unless the fretwood is a light colour. The lines, marking the scoring divisions on the lid, will be improved if inked in, red or black.

The box can then be finished off with a coat of varnish. It is a good idea to glue a piece of baize to the bottom of the box.

A handy compact holder to make is this simple GAMES BOX AND SCORER

THIS useful article includes a scoring board for cribbage and dominoes and interior accommodation for the games of dominoes and draughts, with space for a pack or two of playing cards. It is most handy to have several games in one box, it also helps to save loss of pieces.



The lid of the box forms the scoring board, and as it is a sliding one can be withdrawn, so leaving the box and contents free for other players. One panel of $\frac{1}{4}$ in. fretwood, 7 ins. by 14 ins. only is required, plus a small piece of $\frac{3}{8}$ in. thick deal board.

Fig. 1 shows a view of the box minus lid and with one side removed, to reveal the interior arrangement. It is made of $\frac{3}{8}$ in. deal, except the lid. A word as regards the dimensions.

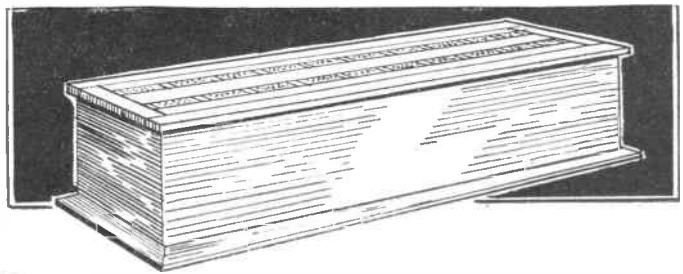
The depth of the box will accommodate 6 rows of dominoes, in layers of four and four down one side, if the dominoes are not thicker than $\frac{5}{16}$ in. If they exceed this then pile them up and measure off and increase the depth of the box as necessary to hold them.

Making the Box

A simple rebated joint is used for the corners of the box, as in Fig. 2. Cut the rebates $\frac{1}{4}$ in. deep. Also cut a $\frac{1}{4}$ in. deep and wide rebate for the lid along the top edge of the sides.

Cut out the ends of the box, making one end $\frac{1}{4}$ in. less in depth than the other to admit the lid, this shorter end being shown in Fig. 2. Cut the two divisions the same length as the ends, and at the distances given chisel out $\frac{1}{4}$ in. deep grooves in the sides of the box to receive them.

Now fit the parts together with glue and a few fine fretwork nails. The bottom of the box is then cut out, making it $\frac{1}{4}$ in. larger all round



than the box. Glue and nail it on and bevel off the edges.

The 4 in. division, which is intended to hold a set of draughts, should now be tested for depth. As the draughts are unlikely to be thick enough to fill the compartment, take up some of the space with a packing piece of deal of appropriate thickness, glued to the bottom, as at A. This will prevent

the draughts rattling about too much.

In the middle compartment, intended for playing cards, if only one pack is needed, fit in a false bottom, as at B, resting on side filets. The space below this might be handy for other things—the scoring pegs for example. Bore a hole in the false bottom to facilitate lifting it out and take care the space above is enough for the cards to lie in.

The panel of fretwood is for the lid. This is in two pieces, glued together to make a thickness of $\frac{1}{4}$ in. Both are shown, one on the top of the other, in Fig. 3. The lower one, as will be seen, is both longer and wider.

Cut it to size—it should just fit the top of the box, resting in the rebates. The upper one is then cut, and at the distances from each side given, scratch in the long lines with a marking gauge.

The space between each pair of lines should be divided by shallow cuts with a chisel into 1 in. divisions,

separated by $\frac{1}{4}$ in. spaces, except at the ends where $\frac{1}{8}$ in. spaces occur. These divisions are for the scoring holes, each holding 10 holes in two rows of 5 each.

The Scoring Board

To ensure some regularity when boring these holes a template should be made. Copy this on paper, according to Fig. 4, gum it to a piece of tinfoil, and at the spots where the holes are to be bored punch small holes through the tin.

The $\frac{1}{4}$ in. strip at the bottom should be bent over at right angles. Then wash off the paper. The template should be placed over each division in turn, and the holes pricked through with an awl.

The upper piece of the lid can now be glued to its lower piece, noting that it is level with one end but $\frac{3}{8}$ in. short of the other end, also that the lower piece extends $\frac{1}{4}$ in. each side of it. With the awl marks as a

(Continued on opposite page)

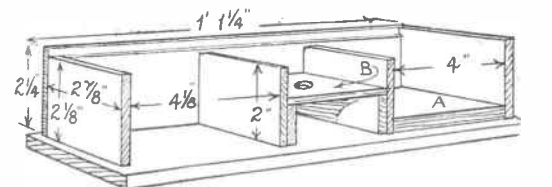


Fig. 1—One side removed showing construction

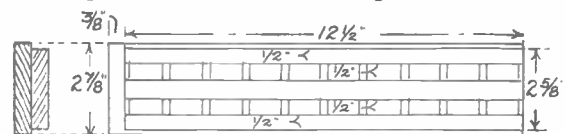


Fig. 3—The lid and scoring board marking

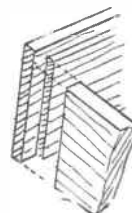


Fig. 2—The corner joint

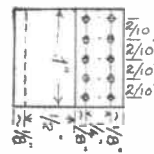


Fig. 4—Template for scoring

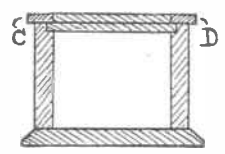


Fig. 5—Section showing sliding lid

Here are some interesting points for handy men about SCREWS AND DRIVERS

THERE are probably more sizes and styles of screws and screw-drivers than the average amateur realises, and he certainly should know something about the variety and their uses, in order to be able to handle any job better. Too often any old screw is used, and a hunt is made through the junk box to find something which will accommodate the work in hand. Then the first screwdriver picked up is usually the one put in service, and unnecessary labour, and possibly bad workmanship are the result.

Length and Diameter

There are, of course, normally, screws from $\frac{1}{4}$ in. long to 3 or 4 ins., but the worker is seldom called upon to use this extreme range. The ordinary screws, too, are of two kinds—flat head and the round head variety. A screw is usually known not only by its length but also by the diameter of its shank.

These are given numbers ranging upwards—2, 4, 6, and so on, up to 24. The smallest size is the thinnest and measures just over $\frac{1}{16}$ in. across, whilst No. 24 is $\frac{3}{16}$ in. in diameter. An illustration of two or

flat head is obvious from their name, and the illustration shows the difference in the manner in which they are measured. The round head goes from the flat underside of the top, whereas the flat head screw is an over-all dimension.

Round and Flat Head

The round-head are used when it does not matter about the head being seen, or when there is no other piece of wood to cover. The flat head, on the other hand, should be countersunk into the wood so that the top is flush with the work itself.

That is one point, where in the use of larger screws, some workers fail to make a good job. Of course, a hole should always be bored before a screw is inserted, and this should be large enough to allow the screw to fit quite tightly and cut its way into the wood.

If, however, you have a large screw, the plain shank is of slightly larger diameter, than the screw portion. In consequence, if you bore a hole with gimlet or awl, to take the turned portion, then it is sometimes difficult to drive the screw home because the plain shank cannot force its way downwards.

The best way is to make a hole

that it is sufficient to allow the head to bed down flush with the top of the surface.

In boring the holes remember to bore them straight just as when you use the screwdriver this must be held in an upright position.

There are, of course, a number of other types of screws, and as a matter of interest, some of them are illustrated herewith. In the ordinary way, however, these do not come into the needs of the average worker as they are used for more specialised jobs in other work.

Notes on Driving

So far as driving the screws in, there are some points to note about screw-drivers. The blade of the driver should be the width of the screw head. If it is narrower you do not get a good "purchase" in turning, and if it is too wide it will cut into the wood when the screw is nearly home. Hold the driver upright and have one with a comfortable grip.

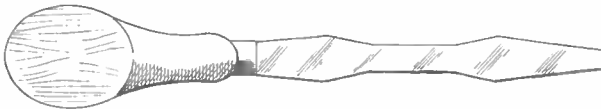
It is a false economy too, to buy cheap screwdrivers, because they are made of inferior steel and the head will turn up and so fail to hold its place in the screw slot. Obviously, in the small screws, a big screwdriver is useless because the point of it will not sink into the screw head. Use a light driver, therefore, for small screws and a larger one in the case of heavier screws.



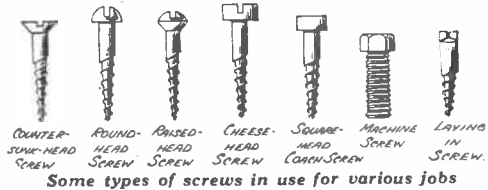
A popular useful type



The Ratchet Driver



The London Screwdriver



Some types of screws in use for various jobs

three is given herewith to indicate actual sizes.

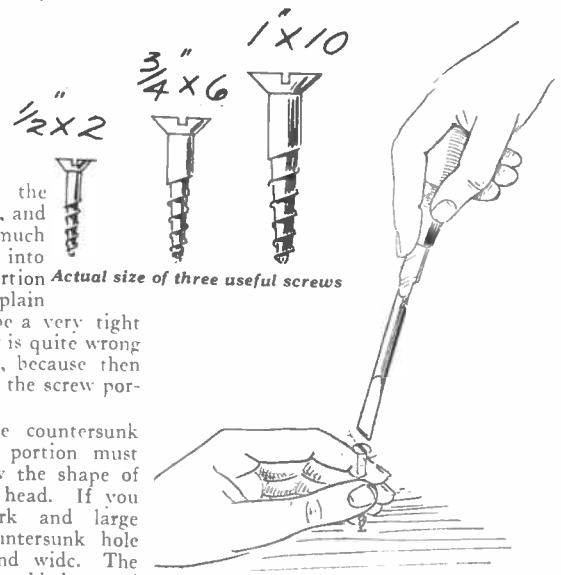
You will see, therefore, that if you ask an ironmonger for, say, a 2 $\frac{1}{2}$ in. screw, it does not really convey all he wants to know. He wants to know whether it should be flat or round head, and also the gauge of the shank. The correct way is to ask for a 2 in. No. 2 flat head screw, which then tells him all he wants to know.

Varieties in Use

Normally, too, screws are in brass and iron. The thin long screws should be used in iron if they can, because this is stronger than the brass and less likely to bend or snap. The difference of the round and

slightly smaller than the diameter of the shank, and then another hole much smaller, below this into which the screw portion will cut its way. The plain shank portion should be a very tight fit in the hole, and it is quite wrong to make it too large, because then the whole drag is on the screw portion itself.

In the case of the countersunk screws, too, the top portion must be bored out to allow the shape of the underside of the head. If you are using large work and large screws, then this countersunk hole is reasonably deep and wide. The proper countersink should be used in a brace, and a test made to ensure



Actual size of three useful screws

Guiding the screw into the hole

The end of the driver should bed snugly into the screw itself, and if held upright, will turn comfortably and without undue force. Do not attempt to push the screw home hard when you are turning. The idea is for it to cut its way into the wood, which it will do with reasonable pressure. If not, then the hole prepared for it is not large enough.

Sometimes in using a brass screw, the worker will try and force it home in a hole too small. In consequence, half the head will be snapped off, and the work will have to be done over again. Most of the trouble in driving screws in is due to the fact that the driver is not held upright, and in consequence slips out of the slot and possibly damages the wood.

A Ratchet Driver

The most useful screwdriver which

was just becoming generally popular before the war, was the ratchet type, and this was obtainable in several sizes. An illustration of it is given herewith, and if you can get hold of one it is certainly worth having. In this, a ratchet movement allows the handle of the driver to be turned back without having to take the whole thing out of the screw slot.

You turn the screw to the right in the usual way, then turn the hand backwards so that the ratchet catches again, and the forward turning movement is undertaken without trouble. These ratchet movements are usually provided with a little catch which works in three ways. In one position the ratchet is inoperative so the driver is used in the ordinary way.

In the second position—merely by sliding the stud up or down—

the driver can be used to turn the screw into the wood. By sliding the stud into the third position, the ratchet is reversed and screws can be extracted.

Grinding

The point of the screwdriver, by the way, of course, is not sharp like a chisel. On the other hand, in the larger ones it has a certain angle of grip. Being of tough steel, these things should not turn, but if they do then it will be necessary to grind them down. The tool is held to give a blunt edge to the blade which should be ground fairly well back.

In the smaller screwdrivers this can be done with a file, but in the case of the larger ones then the grindstone is necessary. With careful use, however, the amateur should find no need for this operation.

Use some of your interesting photographs to make A PICTURE TRAY

YOU will all know those trays that show a mosaic or other coloured design under a glass base. Well, why not make one of this type, but instead of having colours show some of your own snapshots

Such a tray is quite simple to construct, but to be effective should not be too big, as if too large it will have a dwarfing effect on the prints. A tray 9ins. by 15ins. is a useful size.

Material Needed

To make one of these dimensions, you will require a rectangle of plate glass $8\frac{1}{2}$ ins. by $14\frac{1}{2}$ ins., two strips of 15ins. by $1\frac{1}{2}$ in. wood, and two 9in. by 2in., all $\frac{1}{4}$ in. thick—also a rectangle of 3 16in. plywood, $8\frac{1}{2}$ ins. by $14\frac{1}{2}$ ins. for the base.

The photographs you would like to show are mounted on a sheet of suitable paper the same size as the glass. The prints, which should be on thin paper, look best if sepia toned, and in arranging them you can use artistic ability to the full. An enlargement in the centre surrounded by smaller prints looks well, or small

prints can be staggered diagonally across the sheet. Large prints cut out (such as heads etc.) give a good appearance if against a dark background.

As can be seen by the cross-section the glass is held in position by slots, and these should be cut $\frac{1}{4}$ in. from the bottom edges of the four strips and $\frac{1}{4}$ in. deep. The slots are made a little higher than the thickness of the glass.

The handles of the tray are shaped from the shorter strips as shown in the squared diagram and the ends of all four pieces are made to join with a simple dove-tail.

Having all the parts prepared they can be assembled. First thoroughly clean the glass and place round it the four sides, deepening the channel if necessary at any point to get good fitting.

Inserting Pictures

Secure the corners with two $\frac{3}{8}$ in. screws above the glass, but before putting in the last side slip in the sheet of mounted photographs (which should have been under pressure since mounting and quite flat) the edges of the sheet, as it is the same size as the glass slipping into the channels. Drill at each screw position before inserting to prevent danger of splitting.

Now invert the tray and support it on four firm blocks. The base which takes no weight, is now fitted and should slip just nicely between the four walls and hold the prints without slackness. Once in position press down hard on the rectangle with one hand and at the same time bore six holes down each side with a bradawl to take the screws; five holes should also be bored at the ends.

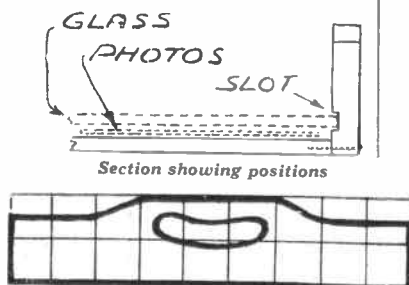
Get Flat Pictures

Again pressing down heavily insert a small-diameter $\frac{3}{8}$ in. screw in the first hole, and take it up fairly tight. Then do the same at the opposite side, and then insert the other screws in rotation and tighten all up.

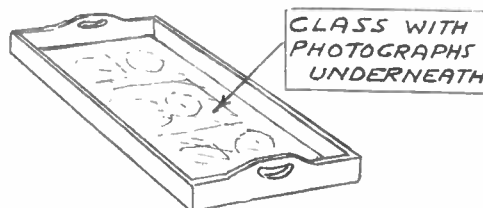
The idea is to get the sheet of photographs into absolutely tight contact with the glass. Should slackness appear when all is screwed up the base must be taken out and two or three sheets of thick paper inserted till sufficient packing is secured.

When the base is in position it may be found to be a trifle higher than the sides so smooth all off with a plane.

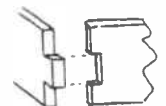
Finish by filling all the screw-head holes (the screws being counter-sunk a little) with a touch of plastic wood and staining the whole tray to any colour desired.



An end drawn into inch squares



The completed tray with pictures in place



The end dovetail



G.B. POSTMARK VARIETIES

It is only lately that the ordinary stamp collector has realised that there is almost as much variety and interest in postmarks as in stamps. Many collectors have become so interested in postmarks that they allot special albums for postmark varieties.

The most useful aspect of postmarks is that they often give considerable help in identifying a stamp by the date.

For example, they are particularly useful in distinguishing between the different printings and papers of Edward VII stamps. There were no Harrison or Somerset House printings before 1911, and no chalk-surfaced paper before 1905.

Maltese Cross the First

The first type of postmark to be used on adhesive stamps was the Maltese Cross. There are many varieties both in form and colour, but only the most important need be mentioned here. A red Cross is the usual obliteration on the 1d. black and a black one on the 1840 2d. blue. Black on the 1d. and red on the 2d. are somewhat scarcer.

Other colours such as orange, green and violet are rare. On the 1841 1d. red-brown and 2d. blue, black is the usual colour, and red is very scarce. Maltese Crosses with the numbers 1 to 12 in the middle were used by the London Chief Office from 1843 to 1844. They are very scarce on 1840 1d.'s and 2d.'s, but commoner on the 1841 stamps.

In 1844 a new type of postmark gradually replaced the Maltese Cross. There were five main types of 1844 postmark. The first was used at the London Chief Office and consists of a number in a diamond surrounded by an oval of horizontal bars.

The Second Type

The second was used by the London District Post and consists of a much larger number in a circle, with bars. The commonest type is the Provincial, which is a number with horizontal bars above and below it and two curved vertical lines at each side, the whole forming an oval.

The Scottish and Irish types are a number in a rectangle and in a diamond of horizontal bars respectively. The colour of these types is usually black, though blue and green are not uncommon; red and other colours, however, are rare. The 1844 type is very scarce on stamps issued in 1840, while it is the normal on the 1841 issues.

The first double postmark was introduced at the London Chief Office in 1853. This consists of a number in a diamond surrounded by a diamond of horizontal bars. On the left of this is a square with corners rounded inwards, containing the date. Incidentally this was also the first postmark to incorporate the date.

A little later, the double postmark was gradually introduced by the London District and the Provincial Posts, though with a number in a horizontal or vertical oval of bars (often very thick) instead of a diamond and including the town name with the date.

Victorian Varieties

There are many interesting varieties on the mid-Victorians, especially on the 1d. plate numbers, of which three may be mentioned: the dotted circle, the Brunswick Star and the Azemar.

The dotted (or broken) circle was used by Edinburgh, Greenock, and Dundee. The Brunswick Star was another Edinburgh cancellation in which a number of bars radiate star-like round the number.

The Azemar consists of a double



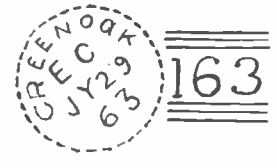
Maltese Cross with number



The Brunswick Star



Double-ringed Postmark



A Postmark with dotted circle

"A1" in diamonds surrounded by a rectangle of thick horizontal bars with a circle containing the town name and the date on the left. It was one of the first machine cancellations but was not considered a success, and so was dropped after a short time.

Circular postmarks became general about 1900. These postmarks had only one ring with the name of the town printed inside. From about 1920 double-ringed postmarks began to oust the single-ringed types.

These double-ringed cancellations are still in use in small places to-day. The most common type of current postmark is a single circle containing the name of the town and the date, with undulating bars to the right of it.

Many postmarks are used only in wartime. Both the Army and the Navy have their own postmarks. Special Army postmarks were used

in the Crimean and South African Wars. You may quite possibly come across one of the South Africans, of which there are several types.

Many letters from soldiers serving abroad in the present war have no stamps, just a postmark with the words "FIELD POST OFFICE" and the number of the office. These covers should be kept whole, as they are likely to become quite scarce in the future. Letters from the Navy are often stamped "RECEIVED FROM H.M. SHIPS" or "MARITIME MAIL."

From Ships

A postmark which is occasionally found on G.B. stamps is one containing the word "PAQUEBOT." This means that the letter was posted on board ship, and was stamped "PAQUEBOT" at the port of arrival.

Then there are slogans. The first slogan postmark was used in 1917, and bore the words "BUY NATIONAL WAR BONDS." Since then, of course, a large number of new inscriptions have been used, such as "POST EARLY IN THE DAY," "SAVE WASTE PAPER, METAL, BONES, AND RAGS," "ROAD

USERS TAKE CARE, AVOID RISKS," and so on.

Some of the slogans used in the present war were in use for only a short time and are already becoming scarce.

Used Abroad

British stamps used abroad are numerous. The collector should keep his eye open for "Used Abroad" postmarks, some of which are similar to the early G.B. types, such as the 1844 Provincial. The only difference is that instead of a number only in the middle the number is nearly always preceded by a letter. Two of the commonest are Malta (A25) and Gibraltar (A26).

A page of stamps on piece showing the complete postmark can look very attractive, so cut out and save all good clean cancellations on your home mail and, especially, save all war envelopes.

You can get some practical ideas from a reader's MODEL MAKING HINTS

SOME of our readers certainly go to a lot of trouble to see their models are realistic in almost every detail. Such work adds very largely to the excellent result, and some suggestions on it will no doubt be helpful.

Here is what D. A. Whiteside of Carshalton, Surrey, did to improve his model of the H.M.S. Exeter made from our design—which now, by the way, is out of print. He says:—As I was not keen on the waterline idea, I extended the hull down and gave it full cruiser shape. The stern is swept up and four propellers and shafts are fitted. A cruiser type rudder is also fitted.

Metal Fitments

The masts are of steel, correctly tapered, the shaped portions at the junctions being of brass, the whole lot being sweated together in a jig. All rigging wires are of copper soldered in place, and are correct as taken from a peace-time photograph of the 'Exeter.'

Handrail stanchions are fitted to the entire boat, with two lines of handrails. The stanchions are headless draper's pins projecting 2/10in. above the decks. The handrails are of copper wire, soldered on. There are 181 stanchions on the boat, so this was quite a lengthy job.

Aircraft

All the guns swivel, and the four A.A. guns and six turret guns elevate. The gun turrets and torpedo tubes also swivel. The aircraft catapult was built up from 1mm. ply, so that a true at-tice-work shape was produced. The catapult swivels.

The Fairey Swordfish mounted on it is a faithful reproduction of an actual aircraft, being taken from official silhouettes and is correctly camouflaged on top, the under surface of wings, floats and fuselage being sea grey. Roundels are painted on. The searchlights are drilled out to make them hollow and glasses are fitted. They can also be elevated.

Deck Fittings

The funnels are partly hollowed out to give the correct impression and wire cages are fitted. The aircraft crane raises and lowers and swings

outboard. Aluminium tubes are passed through the fore-deck to represent hawse-pipes and the anchors are hung from tiny chains which pass through the hawse-pipes to capstans on the deck.

Bollards are fitted in the correct position. The hull and superstructure are painted battleship grey, under-water surfaces matt black with a red plimsoll line dividing the two colours.

The whole model is mounted on turned brass pillars which are screwed to a mahogany base.

These details show what can be done by an enthusiastic and capable worker. It is not possible for all of

us, of course, to be able to undertake such work, but the hints should be borne in mind.

Many model makers are much too anxious to complete the work all too quickly, and endeavour to rush details in order to get the model complete. It will always repay to give some thought to the work before you actually start it, because you can frequently think of a better or quicker way of doing something.

Look ahead, too, and arrange your work so that one part can be carried on whilst another is drying, or the glue is setting. Remember to handle small parts on the point of a knife or a large pin when placing in position.

BICYCLE GEAR CABLE TIP

QUITE often the "nipple" on the end of a bicycle gear cable breaks off owing to strain. It is a most difficult little thing to fix on the wire again, unless you are good at soldering.

Most of us are not adepts at soldering, however. We generally end up by going out and buying a new gear cable. At least, we used to do that. Nowadays we have to "mend and make do" in almost everything.

Here, then, is an excellent, tested hint for cyclists who are cycling on high gear all the time on account of a "busted" cable. All you require is a large, plain pin, more commonly known as a "paw" pin.

These strong, heavy plain pins are usually to be found attached to hospital flags, shields, roses, etc. We pay a penny or more for these flags on collection days, so now the pin will come in jolly useful, saving you ninnence, in fact, which is the cost of a new gear cable wire.

All you have to do is to remove the adjustment sleeve from the adjusting screw shank at the right-hand side of the back wheel. Insert the pin, point foremost, through the sleeve.

Make a neat loop in it, as shown in the diagram, then screw the sleeve back on its screw. The free end of the cable is inserted through the loop in the pin and the end twisted to form a loop. Owing to the toughness and springiness of the cable wire strands, care will have to be taken to get the wire bound nicely.

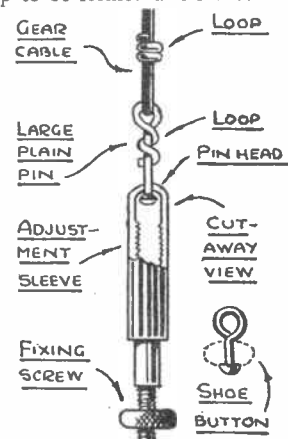
In fact, it might be better—and more convenient—to loop the cable

wire first. The pin is easier to loop to it.

The cable is then adjusted to the correct tension in the usual way. The head of the pin, of course, engages with the top end of the sleeve. It is much better than a knot tied on the cable wire itself. In any case, tying a knot is somewhat difficult, and moreover, the knot "grates" around the inside of the sleeve and often twists the cable when the sleeve is being tightened or slackened.

Adjustments

The smoothness of the pin head ensures smooth adjustments. Instead of a pin (which will rust unless given a coat of black enamel paint) one could make use of the brass "eye" in an old shoe button. Nip off the button, straighten the eye loop, insert through the sleeve, then form the eye again. Being brass, it is not so liable to rust, but make sure you make a proper job of the loop to be formed at its end.



Our Free Design for a SWING PHOTO FRAME

The patterns, No. 2522, are free with this issue. The necessary wood for making is obtainable from Hobbies Broaches for 4/1, the glass (5802) for 2d. The complete parcel by post from Hobbies Ltd., Dereham, Norfolk, for 4/10 post free.

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CHAMFER

OVERLAY ON FRONT OF FRAME

NOTE - THE FRAME IS PIVOTED TO THE UPRIGHTS BY TWO FLAT-HEAD SCREWS ONE INCH LONG.

PANELS OF WOOD

ONE H4

The price is shown in 1944, but is subject to variation of Hobbies Home Hobbies Limited, Dorchester

NOTE: This design, along with other designs of Hobbies and cut with lock number. Further copies may be obtained

NOTE: THE SQUARE OF WOOD CUT FROM THE MIDDLE OF THE FRAME, MEASURING 3/16" BY 3/16", WILL BE CHAMFERED ON ITS OUTER EDGES AND REPLACED BEHIND GLASS AND PICTURE.

FRAME CUT ONE. DOTTED LINES GIVE POSITION OF OVERLAY STRIPS FORMING REBATE FOR GLASS.

SCREWED TO FRAME

SCREWING BLOCK CUT TWO

SCREWING BLOCK CUT TWO

UPPER BASE END SECTION CUT TWO

FRAME SUPPORT CUT ONE



DESIGN

No. 2522
1E2.H

SUPPLEMENT TO HOBBIERS No. 3622.

SWING PHOTO FRAME

WOOD 1/8" THICK
USED THROUGHOUT.

UNIT OF FRAME. CUT TWO

PIVOTED
BY TWO
INCH LONG.

PANELS OF WOOD REQUIRED FOR
THIS DESIGN

ONE H4 ONE J4

The price is shown in Hobbies Weekly, Feb. 19th,
1949, but is subject to revision. See the current
edition of Hobbies Handbook, or write for price to
Hobbies Limited, Detcham, Wotton.



SIZE—
11 1/2" HIGH.
8 1/2" WIDE.

ION
RING

FOOT.
CUT FOUR.

SCREWING
BLOCK

DISC TO COVER
SCREW HEADS.
CUT TWO.

SCREW
SCREWING
BLOCK

REPLACED BEHIND GLASS AND PICTURE.

FRAME. CUT ONE.
DOTTED LINES GIVE POSITION OF OVERLAY STRIPS FORMING REBATE FOR GLASS.

B.

FRAME SUPPORT. CUT ONE.

SCREWED TO FRAME

SCREWING BLOCK. CUT TWO.

UPPER BASE END SECTION. CUT TWO.

UPPER BASE MIDDLE SECTION. CUT ONE.

FOOT

UPPER BASE

UPPER BASE

UPPER BASE

BASE. CUT ONE.

FOOT

FOOT

CHAMFER

OVERLAY ON FRONT OF FRAME. CUT TWO

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DISC TO COVER
SCREW HEADS.
CUT TWO.

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OUT FOUR.

SCREW
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BLOCK

SIDE UPRIGHT.
CUT ONE.

UPPER
BASE

FOOT

FOOT

B

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C

SIDE UPRIGHT.
CUT ONE.

PRINTED IN ENGLAND.

SWING PHOTO FRAME

THE details the other side provide for the making of a photo frame to hold an ordinary postcard. The wood is provided as shown, and the parts are cut from $\frac{1}{4}$ in. wood throughout. A suitable piece of postcard size glass (No. 5302) is also obtainable from Hobbies Ltd.

The patterns should be pasted down to the wood and the parts cut out carefully with the fretsaw, then cleaned up back and front. The actual parts are held together with mortise and tenon joints, and these must be cut correctly to make the whole thing firm and rigid.

Base and Uprights

The actual construction of the parts should be followed in a definite sequence after they have been temporarily tested together to see that the joints are satisfactory.

On the main base there are three parts to form an upper base. The outer ends with their mortise CC are glued so that the cross piece with the mortise A fits tightly between. The position is shown by the dotted lines on the pattern of the lower base.

Into this base glue the cross upright, fitting at its tenon A, being careful not to damage the thin tapering top pieces in doing so. Next take the side uprights and test out that the tenons CC fit into the base, but do not glue in position.

Stiffening Block

Before finally doing this, add the parts at the top of the upright which form the block for the pivoting screw. This is a small rectangle glued on the inside as you can see by the dotted line on the patterns concerned.

Remember to get both facing each other inside and then bore a hole through them to take a countersunk screw $\frac{1}{4}$ in. or 1 in. by $\frac{1}{8}$ in. Do not, however, put the screw in place at the moment. The upright should not be fixed finally until you have been

able to test it out with the actual swing portion of the frame.

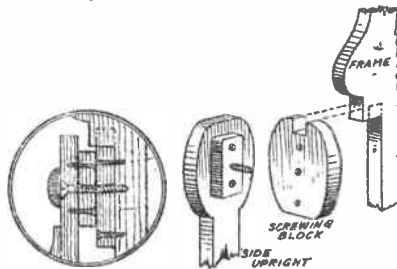
This frame is cut as a solid piece with a central opening the size of a postcard. Make the drill hole for the saw in one of the corners so that the piece cut out can be re-used as backing when the glass and picture are in place.

Backing

This backing will, of course, project slightly beyond the rest of the wood and if you prefer, you can have a thinner piece or fill up the space with card to get the whole back flush. Whatever backing is used can be held in place by pasting a piece of brown paper over on to the flat back providing it does not show through the frets.

The glass is held from the front by four strip pieces at an angle of 45 degrees at each end. These then join up to make a complete frame, the inner edge of which should be filed down to a chamfer indicated by the shaded section on the pattern of these parts.

To provide a suitable lug for the



Section and detail showing pieces and fitting for the swivel portion

pivoting screw, a screwing block must be added to the edge of the frame. This is cut with a little slot at the top which slips up into the frame and form the locking joint. Glue the lug on at right angles to the frame so that screws can be driven into the edge of the wood. Quite thin screws must be

used and a hole made so that they do not split the wood.

The frame having been completed—apart from fitting in the picture—it should be tested out with the side uprights. These are now put in the base mortises at CC and the frame held between them. If the fitting is correct, the sides of the frame lugs should come close between these pieces previously fixed to the side uprights.

Fitting the Frame

Get someone to hold the frame in its correct place and then run an awl or sharp pointed instrument through the hole made in the side uprights so it pierces the pieces on the frame itself. This will give the position of the screws, and when the frame has been taken away the hole can be made large enough to take the screw to be driven in.

The point of the screw should sink into the frame portion not more than $\frac{1}{8}$ in. When both sides are driven in, the frame can be swung slightly backwards or forwards. Obviously it will not do to push it too far because one of the screws will cause it to bind. A short swing, however, is all that is needed, and we just mention the point to prevent anybody trying to turn the frame right round, so causing damage.

The Pivot Portion

By the way, the detail herewith shows the fitting of the pivoting parts and should make the construction quite straightforward. Flat-headed screws must be used with their heads countersunk slightly below the surface of the side upright.

This head when finally placed in position is afterwards covered by a small circular disc which can have its edges rounded off to make it less obvious. When everything is finished the glass and picture can be fitted in as previously mentioned.