

Hobbies

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A MOTOR-DRIVEN MODEL AMBULANCE

HERE is another interesting clockwork Model to make up—a Motor Ambulance of the latest type. Its size overall is, length 13ins., width 4 $\frac{3}{4}$ ins., and height 7 $\frac{1}{2}$ ins.

As in previous models of this kind there is bound to be a certain amount of preparatory work before the cutting and assembling of the various parts can be put in hand. In all but one of the diagrams included here, the dimensions of the parts are given.

In Fig. 1 a side view of the model is shown, and beneath it a scale so certain parts may be scaled off if necessary and their correct positions easily determined. The usual Meccano clockwork motor is used for driving the model, and it is therefore very necessary to build the body work, chassis, etc., quite strongly.

When winding up the motor, the key is inserted through a hole in the side of the body just above the rear mudguard, and the handle for starting and stopping it projects above the roof.

First draw out on a piece of $\frac{1}{4}$ in. wood the main floor (Fig. 1). Two strips of wood 3 $\frac{1}{2}$ ins. long and $\frac{5}{8}$ in. by $\frac{1}{4}$ in. in section are fixed to the floor, in the positions shown, for the motor to rest upon. An underside view of the floor in Fig. 2 shows the correct positions for gluing on the wheel bearings.

Body Details

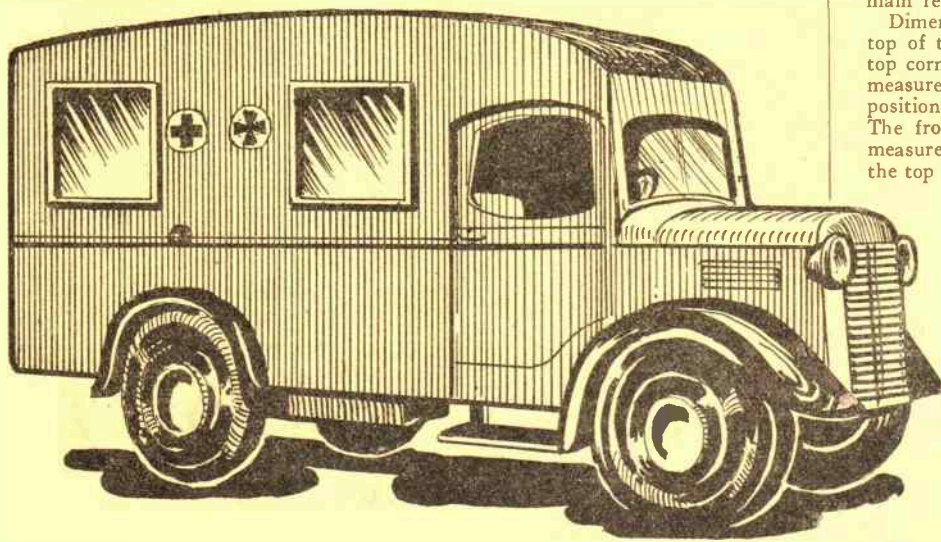
The sides of the body are made in two distinct sections, see Fig. 3 for their sizes. The front portion of the body stands at an angle with the main rear body portion.

Dimensions are included for the top of the bonnet, seen at the right top corner of Fig. 3. The front of it measures 2 $\frac{3}{4}$ ins. by 2ins., and its true position can be also seen in Fig. 3. The front of the body (see Fig. 3) measures 4 $\frac{1}{2}$ ins. high, and is 2 $\frac{1}{2}$ ins. at the top tapering to 2 $\frac{1}{2}$ ins. at the foot.

Chamfer the top and bottom edges of this piece to meet the roof and floor respectively, and cut an opening for the transparent wind screen material.

The inner front of the body is a $\frac{1}{4}$ in. piece 4 $\frac{3}{4}$ ins. high by 3 $\frac{3}{4}$ ins. wide (see Fig. 3). To the front of this piece is the driver's seat made up from $\frac{1}{4}$ in. stuff.

The back of the seat measures 2 $\frac{1}{2}$ ins. high and tapers from 3 $\frac{3}{4}$ ins. along



its top edge to $3\frac{1}{2}$ ins. at the floor. The seat itself is $3\frac{1}{2}$ ins. long and $1\frac{1}{2}$ ins. wide and glued to the back at right angles. A shaped bracket or two may be added underneath the seat if desired. The steering wheel and its pillar are added as shown.

A diagram of the rear end of the model in $\frac{1}{2}$ in. wood is shown in Fig. 4. This is cut with a slot as shown for the reversing lever of the motor.

Roof and Wheels

The roof is a piece of $\frac{3}{8}$ in. thick stuff $9\frac{1}{2}$ ins. long by $4\frac{1}{2}$ ins. wide, shaped carefully to the section shown in the side view. It is held to the sides and ends of the body by means of round-head screws for ease in removal.

Fig. 5 shows that each wheel is made up of two parts, A being the main wheel $2\frac{3}{8}$ ins. in diameter and $\frac{1}{2}$ in. thick. To this disc is glued the ring of wood B, shaped to represent the tyre of the wheel. The cap C is a disc of $\frac{1}{2}$ in. wood $\frac{1}{2}$ in. in diam. and glued on after the wheel has been glued to the axle. The inner washer D is threaded on the axle loosely during the assembly.

worked round its edge, and it must be glued firmly to the axle.

This grooved wheel should revolve centrally in the floor opening, the axle continuing on and through the opposite bearing where the second wheel is glued firmly. Do not forget to insert another D washer before fixing the wheel. Finish with another outside cap C.

The front wheels of the model are assembled in somewhat the same manner, except a plain disc wheel is threaded on the axle instead of the large pulley wheel. The disc wheel just referred to is $1\frac{1}{2}$ in. in diam. and is glued to the axle so it works within the opening in the front part of the floor (see Fig. 1).

back axle pulley by a "belt" of stout elastic or a wire spring belt, a brass pulley being first attached to the driving spindle of the motor.

Painting the Model

In painting the model a really first-class finish could be made with enamels. Failing this, of course, ordinary paint would make a pleasing job. Draw in the windows on the sides of the body and flash the

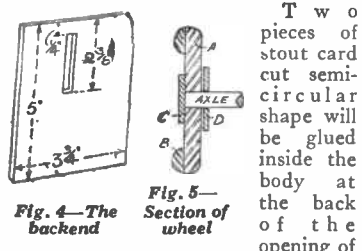
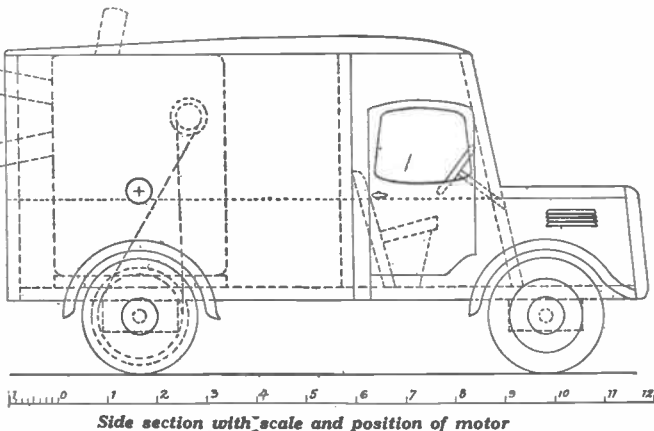
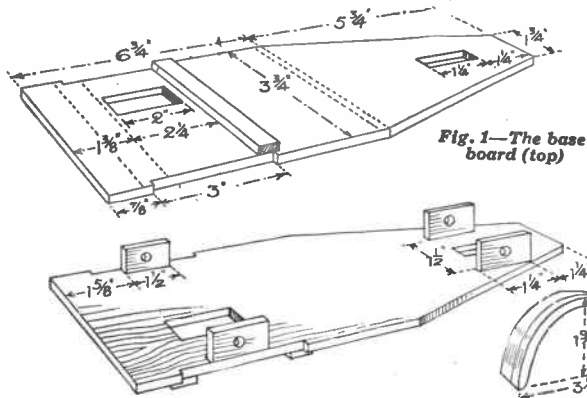
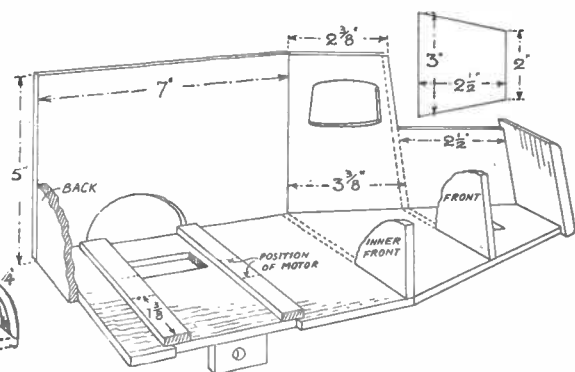


Fig. 1—The base board (top)

Fig. 2—The base board (underside)

Fig. 6—Mudguards

Fig. 4—A helpful constructional diagram showing parts



the rear wheels. The rear axle will measure $4\frac{1}{2}$ ins. long and consist of $\frac{1}{2}$ in. diam. rod.

The assembly of the rear wheels is as follows. First, having cut off the axle bar to length glue in one of the wheels and add the cap C. Next thread on washer D and push the axle through one of the bearings.

When the end of the axle reaches the opening in the floor of the body, thread on a grooved wheel to take the driving "belt" of the motor. The grooved wheel should measure about 2 ins. diam. with a vee groove

The disc wheel just mentioned eliminates the use of spacing washers which otherwise would be glued just inside the bearers.

Two rear mudguards (see Fig. 6) from two thicknesses of wood are put within the circular openings of the sides and are glued there. There is one $\frac{3}{8}$ in. thickness and one $\frac{1}{2}$ in. thickness of wood for each mudguard.

The front mudguards are somewhat similar in shape to the back ones, their true shaping can be got from the side view diagram. They are fixed to the bonnet and sides of the model by means of short lengths of wire eyeletted at one end to screw to the underside of the mudguards and let into the wood at the other end.

Fixing the Motor

The clockwork motor may be attached to its bearers by angle plates nutted on to the motor itself, and screwed down to the bearers. The motor is connected up to the

interior with dark paint to represent glass.

The whole of the sides of the car, including the bonnet, should be finished dark green, the two doors at the rear also being this colour, with two small windows indicated. The roof of the model and the top of the bonnet should be painted light grey with certain linings picked out in cream and black. The Red Cross badge will be painted up appropriately in bright colours while the St. John Ambulance badge will have a black Maltese cross on a white ground.

The louvres on the sides of the bonnet can be outlined in black, while the wheels will be black, also with the "tyres" painted grey. The door into the driver's cabin should be outlined in black and the openings fitted with transparent celluloid fitted in with glued wood slips at the back.

Everyone will want to build this realistic but simple-to-make INVASION BARGE

WITH the present shortage of wood we cannot make many boats of the floating type but this invasion barge will appeal to the worker who can combine the use of wood with oddments of stiff cardboard. By adding small rollers in the base of this model any child would get endless hours of enjoyment playing with this most original piece of work.

Small Bren gun carriers, tanks or other miniature war vehicles will fit into the hold and roll out down the ramp when opened.

The Hull

The main section is the base of the barge which should be 12ins. long and 3ins. wide and about $\frac{1}{4}$ in. thick. This is cut to represent the shape of the hold of the barge and in Fig. 1 you will note the way this is shaped according to the measurements indicated.

From this same type of wood you should make the ramp which is 2ins. square, and shaped off wedge-fashion at each end. When the body is fitted up, this part must be hinged to the front of the boat. Add strips of thin wood or spills crossways at intervals of $\frac{1}{4}$ in. apart.

Upper Deck Works

Another wooden section on the same lines as the base should be made to represent the upper rear deck. This should correspond exactly with the rear end of the base and extend for $3\frac{1}{2}$ ins. in length as in Fig. 2. This completes the larger wooden sections, and now to make the sides of the hull.

For this you will need some good stiff cardboard which must be $2\frac{1}{2}$ ins. deep, cut as shown in Fig. 3. Be sure that you have enough cardboard in the one strip to go along the sides and bend into shape round the rear and also shaped to slope as you will see in the detail.

In making this part get the right

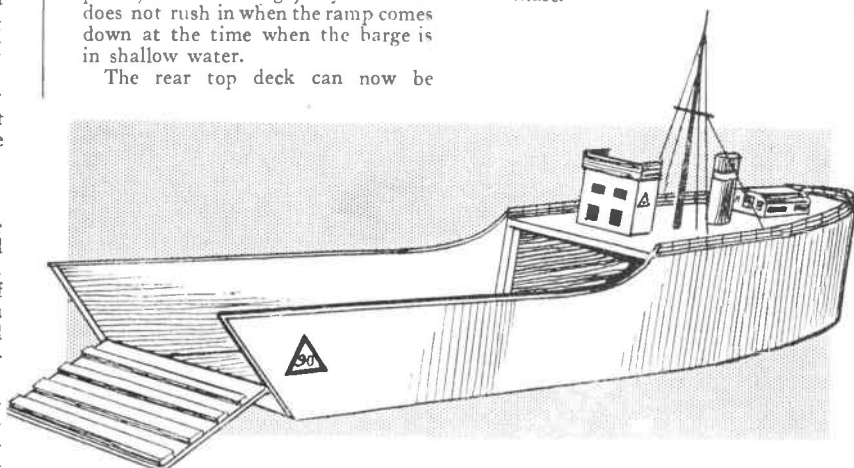
sweep into the top of the sides and also the slope up of $\frac{1}{4}$ in. at the back.

The ramp and base of the barge should now be glued and tacked $\frac{1}{2}$ in. from the base of cardboard. This will allow the ramp to drop down to the table and let the vehicles run out.

In theory this is correct and explains, in the real barge, why the water does not rush in when the ramp comes down at the time when the barge is in shallow water.

The rear top deck can now be

A thin mast with cross-bars and stays should be fitted just at the rear of the tower, followed by the funnel. This should be only $1\frac{1}{4}$ ins. high as these barges have rather a stunted funnel. A small deck cabin is shown in Fig. 6 which, with the windows painted in, should be fitted behind the mast.



fitted level with the top of the cardboard sides. Struts of $\frac{1}{4}$ in. flat stripwood could be fixed up the sides of the pointed front and also inside the cardboard section. They fit from the lower floor to the upper deck just where the upper deck starts to take off the weight of the parts on the deck.

Control Tower

Control tower, steps, funnel, mast and engine house are all shown in position in Fig. 4.

The control tower should be $1\frac{1}{2}$ ins. high and shaped to the measurements as shown in Fig. 5. A piece of cardboard $\frac{1}{2}$ in. deep should be fitted round the front and two sides of this and extend $\frac{1}{4}$ in. above the top of tower to form a balcony. A wooden set of stairs with a hand-rail could be made to run up the back of the tower.

Other improvements and details will come to the mind of the worker with imagination and might include a searchlight, guardrails and small rafts or boats.

A Running Model

To make the barge mobile add some strips of thin wood about 6ins. long on the centre of the two cardboard sides under the floor. Now cut short lengths of $\frac{1}{4}$ in. dowel rod and fit these through the sides on thin panel pins so they rotate freely.

The wheels are small and should not be obtrusive in use. The idea is to keep the barge very low to the ground to make it as nearly as possible like a ship floating on water.

Paint the hull in slate grey and mark the number in a diamond on the front. Add a couple of distinctive small flags on the mast.

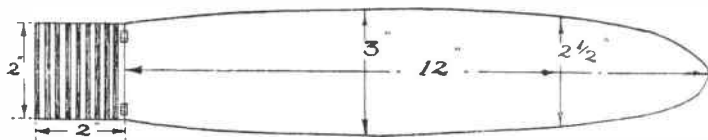


Fig. 1—The outline and dimensions of the hull bottom

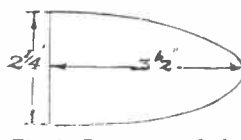


Fig. 2—Rear upper deck shape

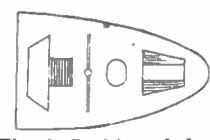


Fig. 4—Position of deck parts



Fig. 3—The hull sides (shown broken) to fit from stern to stern

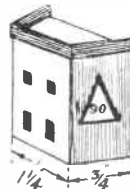


Fig. 5—Control tower

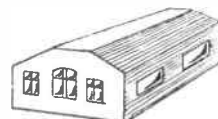


Fig. 6—The engine house

Practical instruction and formula on how you can IMPROVE YOUR PRINTS

HAVE you noticed when looking through collections of photographic prints that there is, in most, an entire absence of any attempt to get away from the black and white? The amateur's knowledge of photographic processes seems to end when the print has been fixed.

This was brought home specially at a recent meeting of people, many of whom had been asked to bring some specimens of their own work. While these were being discussed the question of colour came up—Why are prints invariably black and white? It seemed to be the general opinion that the process known as sepia toning was either not known by the younger amateurs and forgotten by older ones.

Colour Effects

Black and white has become so general that most of us can almost imagine how the subject appeared originally. We can read colour into it simply because of our everyday contact with green trees and grass, brown stacks of hay, red farmhouses and grey stone churches, etc., etc. But it is wrong to assume that these two contrasts should have the monopoly or that they cannot be improved.

When passing through a field of corn ready for cutting the predominant tints are a choice range of brown. The same applies to most woodland scenes in the autumn when the leaves have turned from green and the bracken has begun to take on its winter tint of brown. Such subjects almost shout to be reproduced in sepia.

On Bromide or Gaslight

Presuming that many are finding difficulty in obtaining printing papers now, there is still the opportunity for each to learn this simple and extremely interesting process. It can be practised on any bromide or gaslight prints which you may have in your possession, and further, if you have any photographic postcards sent to you by friends these will also do for your experimenting.

Picture Postcards

Note, however, that they must be photographic and not the ordinary printed ones. If you have any doubt as to whether the card is photographic just moisten your finger and press it on the corner of the card. Should you find the card stick then it rather indicates that it is coated with a photographic emulsion because it has gelatine as its base.

Now it is very important that the prints or postcards should be thorough-

ly soaked in clean water before starting to tone them. There are two reasons for this.

Reasons for Washing

The first is that all prints must be free from hypo, for if there happens to be any of this fixing salt left in the emulsion it will combine with one of the chemicals used in the bleaching process (to be explained later), and will cause the image to be reduced.

The second reason is that the emulsion on old prints and especially on postcards has hardened considerably and, if the preliminary washing is omitted it will not respond to the action of the chemical solutions uniformly. The result in that case will be patchy.

To those who have very little storage room or no facilities for weighing and making their own solutions, the necessary chemicals can be obtained in "Scaloid" (tablet) form, but as only three chemicals are required it is suggested that a small quantity of these be purchased.

One ounce of each will do for a very large number of prints, seeing that once the toning is known it is certain to be used many times in the future. The chemicals keep indefinitely in their original state but freshly made solutions always give the best results. It will be found convenient to have these in the concentrated strength as suggested and to retain them as stock solutions.

Bleaching Solution

Potassium Bromide $\frac{1}{2}$ ounce.
Potassium Ferricyanide 1 ounce.

Water to make up to 20 ounces. It is recommended to keep this solution in a cupboard or to protect it from strong light. When using, take 1 ounce and add 9 ounces of water.

Toning Solution

Sodium sulphide pure white 2 ounces.

Water to make up to 10 ounces. When using take $1\frac{1}{2}$ ounces and add $8\frac{1}{2}$ ounces of water.

After the prints or postcards have been well soaked they are immersed in a bath of the bleaching solution and in two to three minutes the black image will disappear leaving a faint picture in a brownish tint. Do not remove the print until all the black has changed. If there are traces unbleached it is an indication that the bath is becoming exhausted and a fresh one should be prepared.

The print should now be washed in clean water for a minute and then transferred to the toning solution where it should immediately change and the image reappear in a beautiful rich brown or sepia colour in from $\frac{1}{2}$ to 1 minute. When you are satisfied the change is complete, wash the print for about 30 minutes and hang it to dry as usual.

It is possible to bleach and tone many prints at a time in the same solutions but care is needed not to overdo the baths. When the toner gets weak the colour of the resulting prints is poor. It lacks the richness which is so much admired in a well toned bromide print.

Now is the time to take some Photographs.

Your photography will become much more interesting if you do it all yourself. To help you, we will send, for 3d. in stamps, these three publications. A 32-page booklet, called Home-Photography, which tells you how to develop your own negatives, how to make Gaslight and Bromide prints, how to do Flashlight Photography and how to make Enlargements. A folder about Azol, the concentrated one-solution developer, with full Time and Temperature tables for tank or dish development. There is also a fully illustrated list of Chemicals, useful sundries and accessories to help you in the work.

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Prints—(continued from previous page)

After the toning solution has been used, even for two or three prints only, it should not be retained for another evening's work. It should be thrown down an outside drain in order to prevent the odour—which is not very pleasant—floating round the room or house.

The Best Developer

Some readers will desire to try this very pleasing toning on new prints, after they have seen the effect of their experimenting on old ones, and a word or two of advice will not be out of place.

It is safe to say that practically all grades and makes of bromide papers will give really good tones, but it is generally agreed that Amidol is the best developer for these and development must be carried to finality. It follows then that the perfect result is obtained by correctly exposing and fully developing.

By doing this you will have depth and body in the image on which the bleaching and toning chemicals can react and do their work in the most satisfactory manner.

Gaslight papers, owing to a differently constituted emulsion, do not give quite the same quality of tone. Some are better than others and all will respond to the process, but it is as well to try two or three brands and to select that one which gives a pleasing result. But bear in mind to aim for correct exposure and development, and when the prints are wet they have a richer effect than after they have dried.

A little experience will soon teach you the right amount of exposure to give to get the desired result.

Only odds and ends required to make this SIMPLE STEAM TURBINE

THE boiler of this steam turbine can be made from an empty grate polish (or brass polish) tin canister. It is a simple affair, with a steam pipe and supporting legs. The latter are three strips of stout tin bent to shape and soldered equally around the bottom, at the side.

The canister must be well cleaned before you begin. The screw-on cap plays an important part and must be properly cleaned and free of old, hard polish. The filter need not be removed from the canister neck, unless desired. It is, of course, through the top that water is added to the boiler. That explains why the cap must be clean so as to be a perfect, tight, fit.

To prevent steam escaping from the cap, the inside should be based with a disc of thin rubber or cardboard. A repair patch would be ideal to use.

Having secured the stand legs and the steam pipe, the somewhat primitive boiler is complete. The usual flat heating lamp could be made from a shallow ointment tin, with a small wick spout fixed in the centre of the lid. Paraffin oil can be burned, provided the wick just shows at the top of the spout and no more, otherwise there would be too much flame and black soot.

Substitute Piping

The steam pipe could be of copper, but owing to present difficulties, it could be a piece of valve tubing fixed on a suitable nozzle soldered at the top of the boiler. A piece of the tubing about 1ft. long is wanted, for

you will not be able to affix it against the sides of the boiler on account of the heat. A pipe could be made from tin, a suitable strip being rolled around a knitting needle (steel one) and the seam soldered.

The Fin Wheel

The fin wheel, or paddle wheel, is made from tin, a piece of wire and a cork. The trunnion support could be made first, the shape being cut out in paper or card and then scored on the tin.

Having cut it out and drilled the holes, it is bent to shape, i.e., the fork pieces are bent at right angles along the dotted lines. The fin wheel is then made, the hub being a piece of cork $\frac{1}{2}$ in. or $\frac{3}{8}$ in. in diameter by about $\frac{1}{2}$ in. thick.

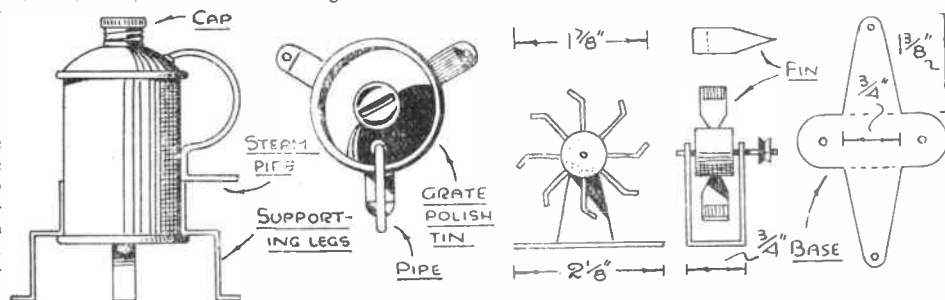
Pierce the centre of the cork truly, then cut out eight small fins from

long panel pin, is used for the axle. Put the finished fin wheel between the forks of the trunnion, then insert the axle through, allowing it to project out more at one end so a small pulley can be put on. Naturally, of course, you will not be able to drive any small, working models with the steam turbine model, for the steam pressure is not powerful enough.

Working

However, there is much fun in watching the wheel revolve, first slowly, then at a fast rate. The steam jet should be arranged to strike the fins about the centre of each. As the fins turn away, the bent tips come into line with the jet and get the full benefit of it.

By the way, the same fin wheel would serve for driving small models if actuated by a jet of water. This



Picture of the finished model and details of parts required

tin to the shape shown. Bend the tips at a slight angle, then carefully insert the pointed ends into the cork to be at equal distances.

Note, from the side view, how the bends in the fins all face the backs of their neighbours. The bends are essential in order to catch the full blast of the steam as it issues from the pipe.

A piece of thin wire, or an $1\frac{1}{2}$ in.

calls for careful arrangement so that the driving belt (perhaps a piece of thread) is not splashed with the water unduly. To save burning up paraffin oil unnecessarily, a piece of candle could be used, or again, boiling water could be poured into the boiler instead of cold water.

This will warm the unit and make it run sooner, thereby also effecting economy in the heating apparatus.

Picture Frames—(continued from back page)

different coloured paper round the outer edge. Others might have an inner gilt edge.

The whole work is perfectly simple, but at the same time is capable of endless developments. No special

skill is required, and everything depends on careful arrangement and neatness in fitting.



WHEN visiting an Arts and Crafts Exhibition, have you ever noticed how some miniature model aeroplanes are mounted on bases in a natural flying position, being supported by a thin, straight wire? Have you also noticed that, instead of a propeller, there is a disc of clear celluloid, this giving the appearance of a whizzing air-screw?

The use of a circular piece of celluloid is a good idea, but the whole effect is often spoiled if these discs are cut from cleaned, film negative, for the discs are slightly curly. How can one remedy the defect? Here is a tried method. Put the shaped disc, or curly negative film, between two sheets of new blotting paper (or ordinary thick paper, if you wish), then heat a smoothing iron and place it on top.

Do not have the iron too hot, otherwise the film will become wavy. A gentle heat is wanted, and having smoothed out one side of the film, do the other side, then put the film between the leaves of a thick book for a couple of hours to cool off. The film should be quite flat when you

finally remove it. Another—and quicker—plan is to bend the film in an opposite direction between the thumb and finger and hold it before a fire for a few minutes. When released, the film should be quite flat and remain flat, for heat is the only thing that will take curls out of thin celluloid.

WHEN clear varnish or polish is not available for use on poster-coloured models to act as a preservative, there is something else, always available in most homes, which can be used. It is floor polish—a very soft, waxy, red-tinted cream. This polish, when applied with a soft rag, is allowed to “dry” into the model surface for a few minutes, then wiped off gently. The palm of the hand is then used as a polisher.

The result is a dull sheen, protected by a thin, waterproof coating of wax. Be wise and try out this suggestion on a scrap piece of coloured wood until you get to understand its application. The finish will not be marred in any way by the polish, but

undue rubbing with the polishing rag—before the foundation has dried—may cause the paint to be rubbed off in places. Avoid *hard* rubbing at the beginning, therefore.

WOOD is a burning question in more ways than one these days, so let's try to be more saving with it. Is it not rather strange that when we are wasteful, we generally run up against our unwanted behaviour? “I wish I had those odd pieces of sycamore I destroyed last week,” is what we are apt to say, sooner or later.

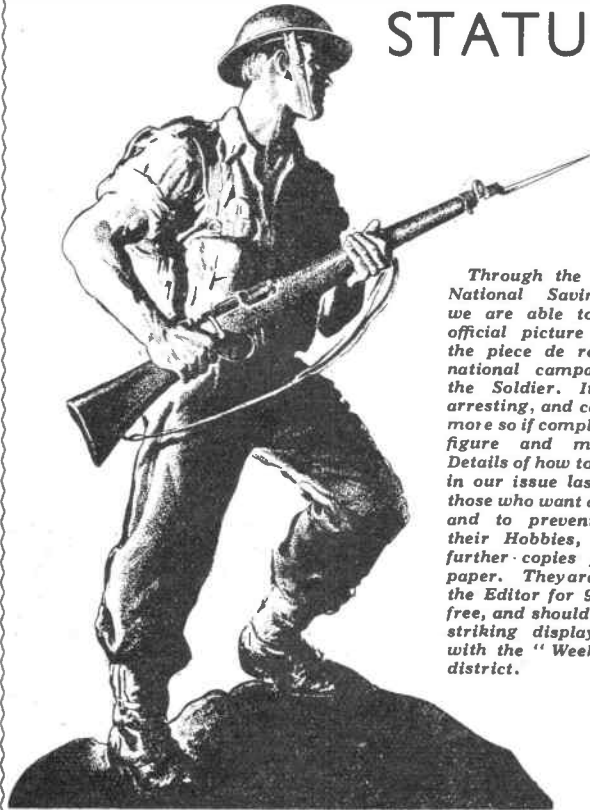
So, the moral is that if we keep a thing long enough it will come in useful one day—perhaps the very next day! Burn all the wood chips and shavings, but think twice before parting with useful-sized cuttings. Numerous little things can be cut again from the “waste” wood from fretted articles.

BICYCLE pumps should only be lubricated with a thick oil. Thin oil, including grease, should be avoided. The piston cap, being of soft leather, is rather softened by thin oil. A thickish “dry” oil is the best—a thing that will just lubricate the cap and no more.

DO you wear loops of leather on the hubs of your bicycle wheels in order to keep them clean? If so, be wise and remove them, for these loops, while keeping the hubs clean and free of dust and grit, only do so at the expense of the chromium plating. Far better to have a “protective” coating of oily dust on the hubs (or paint) than to have hubs which, in time, become rusty despite the so-called “cleaning” loops.

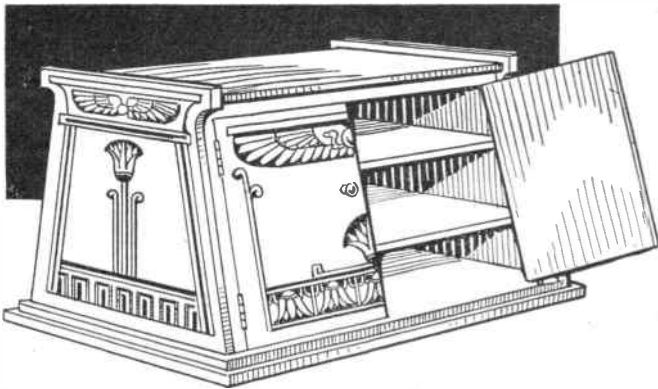
IF you own a battery receiver, always make a habit of scraping and cleaning the terminals of the accumulator as soon as you receive it back from the shop which re-charges it. When being charged, there is a gassy vapour arising from the electrolyte and this collects like steam on the top, so that, in time, the terminals become “caked” with a salty-like substance. Unless this is removed, contact is poor. Moreover, excess electrolyte on the contact terminals will, seeing that it contains acid, eat into the metal, particularly the spade-ends of the leads running to the set. Dampness, too, caused by electrolyte, which contains distilled water, will cause the brass to “rust” so that it becomes impregnated with a greenish crystallization that creates poor connection.

SALUTE THE SOLDIER STATUETTE



Through the kindness of the National Savings Committee we are able to reproduce the official picture being used as the piece de resistance in the national campaign for Salute the Soldier. It is vivid and arresting, and can be made even more so if completed as a cut-out figure and made to stand. Details of how to do it were given in our issue last week, and for those who want a larger number, and to prevent mutilation of their Hobbies, we can supply further copies printed on stiff paper. They are obtainable from the Editor for 9d. a dozen post free, and should serve to make a striking display in connection with the “Week” in your own district.

A pleasing Egyptian design is introduced into this STATIONERY CABINET



inside the ends of the cabinet. Talking of the decoration we see on the ends of the cabinet and also on the doors, the symbol of the "winged sun" and below this the most frequently-used lotus flower.

It makes a welcome change to sometimes carry out a design for a piece of work which follows out a decided style of decoration or ornament.

Although, perhaps, very little regard is paid nowadays to any particular historic style of ornament, there must be, nevertheless, a few who would welcome from time to time a "period piece." Now, the Egyptian style of decoration is particularly pleasing and attractive, and contains shapes and motifs of real beauty and simplicity of design.

We are therefore this week giving instructions and details on how to make a stationery cabinet introducing Egyptian ornament and decoration.

Egyptian Ornamentation

As will be seen from the sketch on this page, the cabinet in shape takes the form of an Egyptian pylon or entrance tower to a temple. The base is made up of square-edged members, and there are two doors opening out on hinges which are secured to upright side rails.

The top is square again and the inside may be fitted with shelves as shown, which rest upon ledges fixed

All this decoration may be carried out in flat colours direct on the wood or in art stains with a good amount of the lining-in done in ordinary indian ink.

The Base

The base will be the first item to make, and the cross section Fig. 1 gives an idea of the construction of this part. There are four rails, the dimensions of which, together with that of all the other parts, are given in a cutting list.

The rails A in the figure, are cut off to length and mitred at the ends to fit accurately together to form proper right-angles. Above these rails, and screwed from beneath to them, is the upper base B consisting of one oblong piece of wood carefully squared up with the try square or tee square.

The two ends of the cabinet are next prepared (Fig. 2). Set out the measurements carefully and see above all that the outline is symmetrical. Cut round with a fine fretsaw and use this cut-out piece as a template to form the other.

Next cut the ledges for the shelves and glue them to the inside surface and put in one or two screws to hold all secure and firm.

See the ends of the ledges are cut to the correct angle so that they give a certain amount of support to the back of the cabinet and to the front upright rails.

The two upright rails C, are next prepared and glued and screwed on, the heads of the screws being countersunk and afterwards filled in with glue and sawdust. The top horizontal rail D can next be cut and fixed, the upper edge of it being slightly bevelled to allow the top of the cabinet to lie flat and neatly bedded to it.

The top is next cut, fitted and

CUTTING LIST All 1/4 in. thick wood

- A—Two Strips 11 ins. by 1 in.
- Two Strips 7 1/2 ins. by 1 in.
- B—One Piece 10 1/2 ins. by 7 ins.
- C—Two Pieces 8 1/2 ins. by 1/2 in.
- D—One Piece 10 ins. by 1/2 in.
- Side—Two Pieces 9 ins. by 7 ins.
- Back—One Piece 10 ins. by 8 1/2 ins.
- Top—One Piece 10 ins. by 5 1/2 ins.
- Doors—Two Pieces 8 1/2 ins. by 4 1/2 ins.
- Ledges—Two Pieces 5 1/2 ins. by 1/2 in.
- Ledges—Two Pieces 5 ins. by 1/2 in.
- Shelf—One Piece 10 ins. by 5 1/2 ins.
- Shelf—One Piece 10 ins. by 4 1/2 ins.

glasspapered up and then fixed to the ends and the front horizontal rail. Take measurements for, and mark out and cut, the two shelves and put them on their ledges. The back is now cut to size and fitted and fixed; measurements being carefully checked from the cabinet direct before cutting is actually done.

The Doors

Now comes the most important part of the cabinet—the doors. Careful measurements must again be taken of the front, between the two upright rails and the base and top. Divide the width measurement into two and set out the doors accordingly. Before fitting them, glue a fillet of wood—prepared from waste and shown—at E in Fig. 1—to

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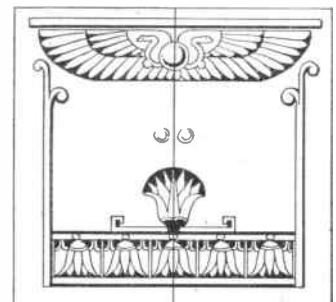
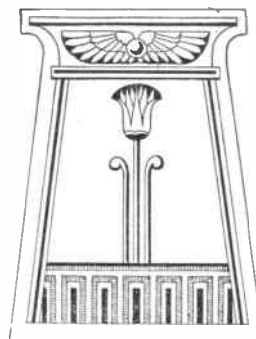
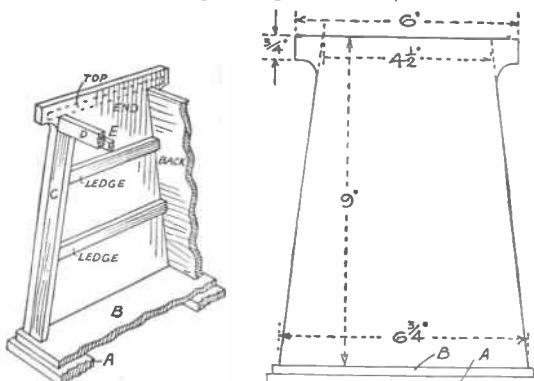


Fig. 1—Broken view showing end construction Fig. 2—How to make out the ends Fig. 3—Details of Egyptian decoration on front & ends

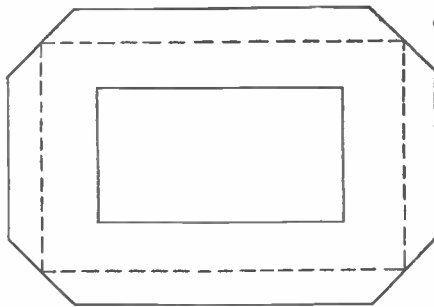
A simple, economical method of making artistic PAPER PICTURE FRAMES

IT is not the fashion nowadays to have a number of large pictures hanging on the wall. The hobby of framing pictures was certainly a very delightful one, and many of our readers of years ago will remember the joy of cutting the moulding, fixing up the frames and glass, and decorating their own homes with their own home-made pictures.

On the other hand, there are many small photographs or prints which we may consider worth having available and preserve rather than that they should be kept in a drawer amongst many other odds and ends. A simple yet pleasing way of preserving them and really making little pictures of them, is shown herewith, and a pleasing evening will be rewarded by the result.

Simple Materials

There is no actual outlay beyond the piece of glass of the required size for each, and some useful art paper which can also probably be found in a drawer or some pieces of which can be purchased from the local stationer. Such little pictures



Shape of paper and dotted line of glass

neatly executed are fit for any room.

To explain the work, let us assume that a small photo has to be framed in this way. Suppose that the size of the actual picture is 5ins. by 3ins. and that there is an ample margin of white paper. Assuming, again, that the final margin round the print is fixed at two inches on each

side, the finished size will work out at two inches on each side, the finished size will work out at 9ins. by 7ins.

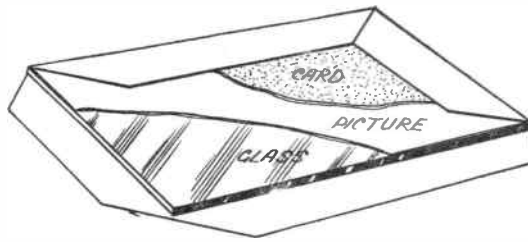
Procure a piece of glass, and also a sheet of cardboard, both cut exactly to this 9ins. by 7ins. size. Then obtain from a stationer some fairly stout art paper, rough in texture, similar to that often used for the covers of high-class magazines.

The colour may be rich brown, grey-deep green, or whatever else will best suit the picture and its surroundings. A sheet required for a 9in. by 7in. glass must be about four inches wider each way—that is, 13ins. by 11ins.

The Picture Aperture

From the centre of the paper must be cut a rectangular opening, 6ins. by 4ins. This, it will be seen, provides for a white margin of $\frac{1}{2}$ in. all round the picture. The paper should be cut with a straightedge and a sharp penknife, the cleanest cut being secured by laying the paper on a sheet of glass.

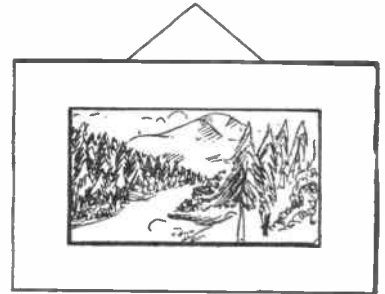
The paper should then be prepared with overlapping edges, as shown in a diagram which is self-explanatory. The dotted lines represent the position of the glass.



The different parts, in place

The picture is now ready for framing. First damp the paper on both sides. Do not soak it, but merely wet it so that it will slightly stretch. Lay it front face down on a clean sheet of paper, and lightly glue the upper (inner side). Clean the glass thoroughly, and lay it in position on the paper, as shown by the dotted lines.

Then take the print, which must previously have been trimmed to the size of the glass, or less, and lay it accurately in position, making sure that the white margin is equal all round. A little touch of glue round



The finished picture

the edges will hold it in position. If the paper on which the photo or picture is printed is very thin, it must be mounted beforehand to the card.

Next place the protecting sheet of cardboard above the print, glue the overlapping edges of the tinted paper, fold them back on the card, and press them firmly. All this should be done while the art paper is still damp, for when dry, it will tighten up and lie quite flat.

For Hanging

Two ribbon loops for hanging the picture may then be firmly glued on, and lastly, a sheet of paper should be cut neatly to size and pasted over the entire back.

This is the description of the simplest process. The margins may be wider or narrower as desired; and if preferred, leatherette paper or veneers may be used instead of the art paper if you can get them.

Larger frames are improved by the addition of narrow strips of a

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Stationery Cabinet (Continued from previous page)

the back of rail D for the doors to rest upon when closed. Slightly bevel the lower edges of the doors after they are cut to size, and then hinge in the edges of the doors and in the upright rails. Sufficient detail is given in Fig. 3 to show how

the ends and the doors are decorated.

Rule in all the straight lines, and set out the spacings of the repeat patterns by means of dividers or compasses. Draw only half of the wing design in each case and then trace this and repeat the other half

of the design carefully to complete.

The same process can be carried out with regard to the lotus flower designs. Use bright colours as fillings and tone down with indian ink.

Two ball knobs should be fitted to the doors either of metal or wood.