

# HOBBIES WEEKLY

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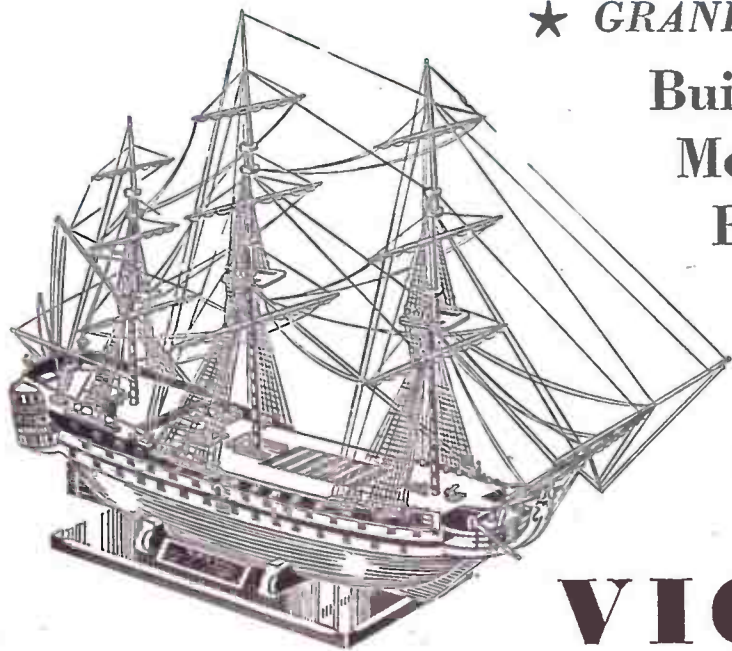
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★ **GRAND FREE DESIGN**

Build this 22 in.  
Model of Nelson's  
Famous Flagship  
at the Battle of  
Trafalgar

## THE VICTORY

**T**HE exploits of the *Victory* will always be remembered in the annals of British naval history in association with the name of Nelson. For it was, in the flagship *Victory* that the famous admiral led the British fleet to crush the might of France and

Spain at the Battle of Trafalgar — acknowledged by historians as the beginning of the end of Napoleon — and thus thwarting ambitions to conquer England and finally obtain mastery of the world.

The *Victory* now rests in peace at

Portsmouth — a glorious reminder of 'a famous victory', in the winning of which Nelson lost his life. She was a great ship of her day, and following complete restoration and reconstruction as she was at Trafalgar on that historic day of October 21st, 1805, the *Victory*

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For Modellers, Fretworkers  
and Home Craftsmen

4½<sup>D</sup>

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still remains an impressive sight.

A model of such a grand and historic ship is a "must" for all modellers. Our design of the *Victory* has been planned within scale limitations as near as possible to authenticity in order to cater for the needs of modellers who wish to construct something different from the general line of galleons. The sails have been omitted so as to give full play to the rigging, and this ensures a fine overall effect to the model's general appearance.

the positions indicated in the side view (Fig. 2). Shape both sides of the hull according to these templates applied in their correct positions. Shape with a modelling knife, rasp or wood file, giving a final smooth finish with glass-paper. Now glue the halves of the hull on either side of the keel, binding with elastic or string until completely dry.

Pieces 6 and 7 are next added at the stern and shaped off when the glue is dry to conform to the rest of the hull (Fig. 1). The filling pieces (8 and 9) are

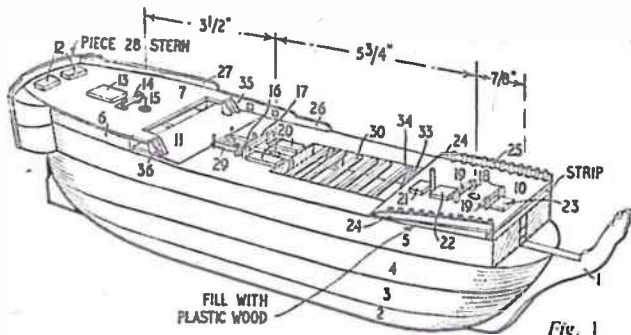


Fig. 1

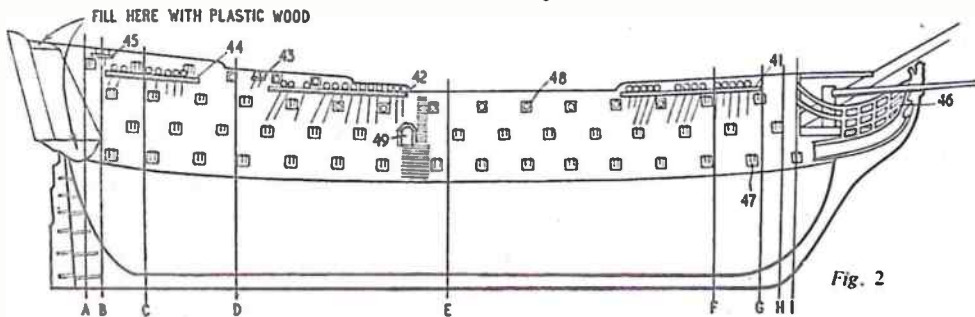


Fig. 2

Construction is on the bread and butter principle, and there is a brass nameplate which adds to the attractiveness of the model. To do justice to this 22in. model, we have enlarged the design sheet on which most parts are shown full size, and for the others, dimensions can easily be followed.

Begin by tracing the keel (piece 1) and hull (pieces 2, 3, 4, 5, and 6) on to their appropriate thicknesses of wood, and cut cleanly round the outlines with a fretsaw. Save the waste wood from which to fashion smaller parts which will be described later. Pieces 2, 3, 4 and 5 are glued one on top of the other to form separate halves of the hull. Note that when assembling these halves they are "opposites", and will be glued on either side of the keel (Fig. 1).

Before doing this, however, cut nine card templates to conform with the lines A to I shown in the bottom left-hand corner on the design sheet. These lines show the shape of the hull in

now glued in the sunken portions of the deck. Piece 11 is shaped and glued in the positions shown in Fig. 1 and a piece of 1/8 in. wood (piece 10) is fitted over the forward end of the deck and

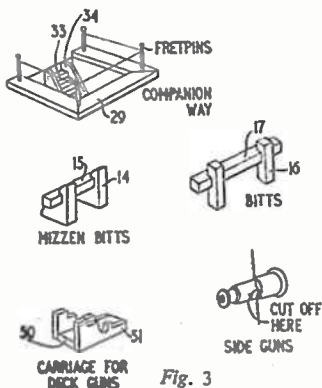


Fig. 3

### A KIT FOR 30/-

Kit No. 3198, containing all wood, materials and fittings for making the 'Victory', costs 30/-. Obtainable from branches or Hobbies Ltd., Dereham, Norfolk (post free).

raised at one end by inserting a piece of 1/4 in. square strip wood to give a slope. Piece 10 is not shown on the design sheet because this must be fashioned by trial and error. The gap formed by raising piece 10 can be suitably filled with plastic wood.

Now drill 1/8 in. holes to take the masts. Drill to a depth of 1/4 in. to 1/2 in. The positions are seen in Fig. 1 where the measurements given will ensure exact locations.

At this stage it is advisable to paint the deck buff and line up in pencil to simulate planking.

Cut out pieces 12, 13, 14 and 15, assembling where necessary and gluing to the deck in their positions shown in Fig. 1. Continue with bits (16 and 17), hatches (20, 21 and 22), bits (18 and 19) and hatch (23). Note also the stove-pipe,

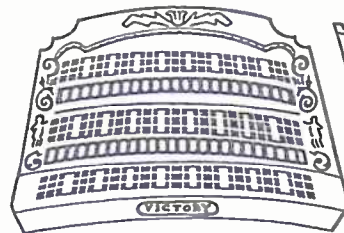
which consists of a piece of 1/4 in. round rod 1in. long and situated between hatches 21 and 22. The assembling of these various deck fittings is shown in detail in Fig. 3.

The bulwarks (24) are glued on either side of piece 10, and pieces 25, of which there are 22, are glued inside pieces 24 and to the deck (10) as supports. They project slightly beyond the top of pieces 24 and are approximately 1/8 in. long, cut from 1/4 in. square strip-wood. Continue by adding bulwarks 26 and 27.

A piece of card (28) is now fitted to the stern and should be shaped as near as possible in proportion to the outline which is given in Fig. 4A. This is a direct view of the stern showing the windows and decorations, which should be painted on before or after gluing to the hull. Fig. 4B shows the side galleries, the shapes of which have been partly allowed for in the cutting of pieces 5 and 6. They are completed by adding plastic

wood to the top and bottom as shown in Fig. 2. When this is completely dry, shape as shown in Fig. 4B and in the illustration of the finished model. These, of course, will also be painted.

Next to assemble and fix is the companion-way shown in detail in Fig. 3.



A Fig. 4

The two hatches (31 and 32) are glued on piece 8 in positions indicated by dotted lines, and then the cross beams (30) are equally spaced and glued across the deck opening.

Make up five sets of steps from pieces 33 and 34, gluing four in the hold on piece 8, and one in the companion-way. Steps 35 and 36 leading to the poop deck can now be assembled and added, (Fig. 1).

Lanterns (37 and 38) may be shaped from waste wood. In Hobbies kit three shaped lanterns are supplied, but two of them must be glasspapered down to

make them smaller. These are fixed to the stern by wire or household pins through their heads cut off. The large one is situated in the centre.

Piece 39 is next glued in the position shown in Fig. 5. The cat heads (40) must be shaped to conform with the

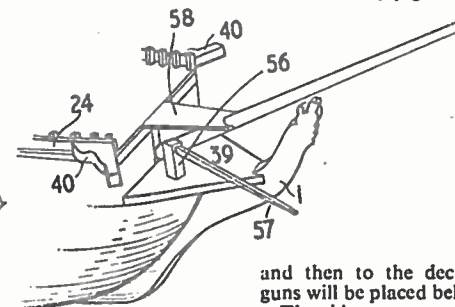


Fig. 5

curve of pieces 24 before gluing them in position.

Channels 41 and 45 are cut from 1/4 in. wood drilled ready to take the shrouds, and then glued to the sides (Fig. 2).

Pieces 46 are cut from thin card and glued in the positions indicated in Fig. 2. Note that a bit of waste has been allowed at the ends for trimming.

Gun-ports (47) are cut from thin card and glued to the sides (Fig. 2). Note that six of these, three on each side, will be glued over the open position in the

bulwarks (26). Next make the remaining lids (48) bending them as shown on the design sheet and gluing in position (Fig. 2), and then piece 49 can be added.

The carriages for deck guns are made from pieces 50 and 51, as seen in Fig. 3. Guns are simply glued to their carriages

and then to the deck. Note that two guns will be placed behind the steps (36).

The side guns are cut off as shown in Fig. 3 and glued in the appropriate positions to pieces 48. In Hobbies kit 22 guns are supplied, but if the model-maker wishes to add more, these can be obtained from Hobbies Ltd., Dereham.

Next cut out pieces 56, 57 and 58 and glue to piece 39 (Fig. 5). The crows' nests (52 and 53) and pieces 54 and 55 are next in the order of cutting.

Next week instructions will be given for adding masts and rigging to complete the 'Victory'.

## HERE'S MAGIC FOR YOU!

IN this arresting magical effect it appears that a silk handkerchief passes clean through a solid glass tumbler right before the eyes of the spectators.



## A Perfect Penetration

On the performer's table are three small silk handkerchiefs of different colours, also a plain half-pint tumbler. The glass is shown from all sides and proved to be quite unprepared. One of the handkerchiefs is next displayed and openly placed into the glass. A second handkerchief is placed on top of the first, both being tucked snugly down. The third handkerchief is draped over the glass and held in place with a rubber band that passes round the top of the glass just below the rim.

By R. W. Wood

The performer now reaches under the draped handkerchief and presently the audience are amazed to see one of the concealed handkerchiefs being slowly pulled through the bottom of the tumbler. When the cover is removed it is seen that only one handkerchief remains in the glass.

Now for the simple secret. One of the handkerchiefs is prepared by having a length of strong black thread attached to one corner. This should be about one and a half times in length the height of

the glass. At the end of the thread a small black bead is tied. It is this prepared handkerchief that goes into the glass first, but the thread hangs down outside and behind the glass. The next handkerchief is placed on top, and lastly the covering handkerchief and rubber band.

By pulling the thread, a corner of the lower handkerchief is drawn over the edge of the glass and past the rubber band. When this corner is clear it is taken in the fingers and gently pulled down. The appearance of the handkerchief below the drape is very bewildering, indeed, and it certainly does seem that it is passing through the bottom of the tumbler.

At the conclusion of the trick the handkerchiefs are shown by holding them by the corners in a bunch while the glass is again proved to be unprepared.

Full details for making a Trellis Screen for the garden will be given in our next issue. Also 'Make your own Door Chimes', fretwork pattern, etc.

# For close-up photography USING A PORTRAIT LENS

ALL you require for taking close-up portraits, pictures of small objects, or still-life subjects, is a supplementary lens, more often termed a portrait lens, and costing only a few shillings. There are a few limitations to the use of these lenses, but observation of these few precautions will ensure perfect pictures.

With the camera focusing scaled to infinity, the focal length of the lens is modified to that of the supplementary lens, allowing a nearer approach to the subject. The lenses are supplied in different magnifying strengths and for normal purposes, the one described as 1 dioptré will be sufficient for most close-up pictures. Many of the camera makers supply mounted lenses ready for attaching to the camera, but the price varies a little as will be appreciated.

By S. H. Longbottom

Fitted with a lens of this particular power, the camera may approach the subject from 39 inches to 25 inches, the accompanying scale giving full details. All measurements must be exact to produce sharp definition, and the important point to remember is that the measurement must be from the subject to the supplementary lens.

For test purposes some dominoes were set in. apart, the camera scale focused on infinity and the lens 39ins. from the central domino double-five. This is shown in Fig. 1 and it will be



This shows the average type of photograph that may be taken without a close-up lens.

seen that the double-five is quite sharp in definition. It will also be noticed that definition fails gradually on both sides of this central domino. This area is called the depth of field, the test proving that the depth is extremely shallow when the portrait lens is used and emphasizing the necessity for correct measurements. We can overcome this difficulty slightly as will be shown later.

A graduated stick

It is a sound plan to prepare a length of dowel rod exactly 39ins. long for portrait work. In the close-up of the portrait shown, and with the co-operation of the sitter, of course — one end of the rod was placed on the lens mount, and the other end just touching the tip of the nose. This requires some adjustment of the camera, but a little practice is helpful. The stick is also graduated to other lengths, notched with a saw, and the measure marked in ink, allowing it to be used for other close work. A reliable two-foot was used for making the stick. This may seem inconvenient if you wish to do any outdoor work, but a steel spring-tape is ideal. Alternatively, is it a good plan to prepare a piece of string, knotted at one end and with another knot exactly 39ins. away.

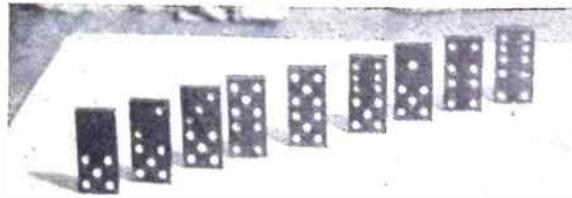
The narrow depth of field also makes it essential that so far as possible, our subject is within a narrow plane. For example, our field may have a depth



Here we have a picture taken with the aid of the close-up lens. Not that the eyes are in accurate focus, but the hair and background are diffused.

Summarizing the foregoing, it will be appreciated that the two important factors are accurate measurements (from lens to subject) and the avoidance of distortion.

The camera aperture must never be



This shows the results of the test. The double-five is in sharp focus, but definition fails gradually on each side of this domino. A bigger enlargement would reveal this point to a greater degree.

of f/8 to f/16, and we cannot expect any other object beyond these limits to be in sharp focus. This is, however, quite an asset where portraits are concerned, for it produces a diffused background, concentrating interest on the subject.

We must also avoid the possibility of distortion. If the girl in the picture had placed a hand near her face, it would have been all out of proportion. In fact, the camera is never helpful with different planes and you may have seen pictures of people lying on the beach, with extremely large feet, but very small heads!

larger than f/8 or the depth of field may be so far reduced as to be impracticable. On the other hand, we can reduce the aperture to f/11, f/16, or f/22, when the depth will be increased, but we must remember that for each stop of reduction we must double the exposure. This does not create any difficulties when taking still-life pictures but could be annoying for taking portraits. Use f/8 or f/11 for portrait work. Moreover we must use the smaller stops for the closer work, since here the depth of field is even shallower.

The only other important feature we

Continued on page 327



MANY animals pictured in the stamp album not only earn their keep, but also provide sustenance for their masters. For example, during the journey to port loaded with exports of salt and tobacco, Adenese camels supply their Arab drivers with milk and — in the event of a sandstorm — shelter.

They can go for long periods without water and carry loads varying from 400 to 800lbs. Pack camels move at a leisurely pace. Those bred for speed can travel 100 miles a day and are used by the Arab police and postal authorities. Camel flesh is an important article of food in desert districts.

Aden's current 10 cent stamp pictures a camel transport. The 1/2 anna of 1939 shows an Arab policeman mounted on a camel.

In 1948 Sudan's Camel Post Jubilee was celebrated with special stamps depicting an Arab postman. General Gordon is featured seated on a camel, on air-mail stamps of 1931; a native leading a loaded camel appears on Somaliland's present 5 cent stamp, and on Pakistan's official stamps is shown a charming picture of a camel with calf.

In North Borneo and other countries the buffalo has been domesticated and now performs all the duties of the ox. A good description of its appearance and daily work is shown on the 1 cent stamp of North Borneo issued in 1939.

Indian and African elephants have for ages been beasts of burden, both in war and peace. When fully grown they weigh about 7,000lbs., and are the only animals possessing trunks. Their skins as well as their ivory tusks, are of great commercial value. A fully grown elephant is pictured in natural surroundings on the present 5/- stamp of Kenya, Uganda and Tanganyika.

Although modern machinery has considerably eased his toil, the horse is still generally employed on the farm and for various other transport purposes.

Austria has issued several fine horse stamps: 1914 cavalry, 1946 (a) mare and foal, (b) two horses' heads, (c) racehorse jumping hurdle, (d) three horses racing, (e) three horses' heads. 1947 racehorse and jockey, 'winners of the Vienna prize race'.

Many of our feathered friends need no

introduction. The following stamps depicting them will heighten the interest of any animal collection: Algeria 1944-45, gallic cock, 6 values. Angola 1951, various birds, 24 values. Bulgaria 1938, chickens and eggs, 4 values. Canada



1950, goose in flight, 7 cent. China 1951, doves, 3 triangular.

The donkey or ass, is especially adapted for work in dry and com-

paratively barren countries. It is particularly useful during droughts. Hundreds are employed in Western Australia to transport supplies from the coast to the gold fields. The finest domestic asses are those of Arabia, the best found in Europe are those of Spain and Malta. The smallest are bred in England.

A donkey caravan is shown on the

1947 1 franc stamp of French West Africa, but there are hundreds of animals in the stamp album, the majority of which work for a living.

## Hobbies Crossword No. 2

Note: Figures in parentheses after the clues denote the number of letters in the words required.

ACROSS:

- Style (4).
- Tear-up satin (5).
- All this is at an end (4).
- Dull (4).
- Certainly not one-sided (7).
- A few perhaps (4).
- Devastation (5).
- Festival (4).
- The last among some gatherings (5).

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

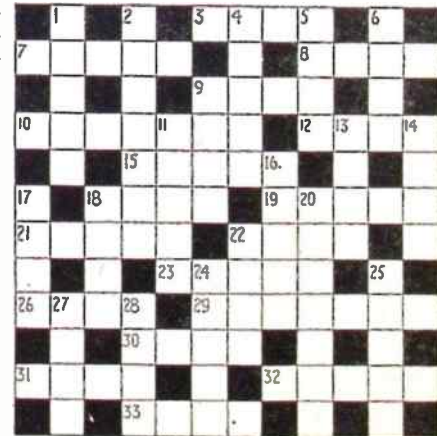
★ Here is another in the series of ★  
★ crosswords to be published each ★  
★ month for amusement only. The ★  
★ solution will be given next week. ★

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

DOWN:

- It supplies news to the average man in the street (5).
- No heart (Anag.) (7).
- It simply attracts other people's attention (5).
- Animals (4).
- Consider just about sufficient reward (4).
- Turn pennies into pounds (4).
- Valued highly in the trade we're told (5).
- Frank (4).
- Impetuosity (4).
- This is a funny thing to read! (5)
- Remind of some fault (4).
- It requires extraordinary qualities (4).
- Systems (7).
- Border upon (4).
- You'll find this cloth very rough (5).
- Grown (5).
- Gem (4).
- Time for a change (4).

- From which direction? (5).
- The last word in name only (4).
- I'd bet it's not to anyone's credit (5).
- Carry as a personal burden (4).
- It was all about nothing according to Shakespeare (4, 3).
- Encounter (4).
- The Wise Men of the East (4).
- Strange (5).
- Playthings (4).



# THREE HOUSEHOLD ITEMS

HERE are three things which the average household will find extremely useful. Moreover they are all quite easily made and the ordinary person will have no difficulty in making them with the minimum of labour and expense.

## Stool

The first item is a small stool. A stool is always useful, whether for sitting beside the fire, televiewing or for resting mother's-poor old feet.

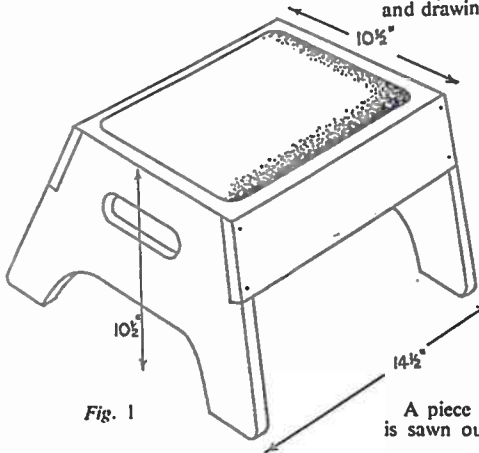


Fig. 1

The construction of this stool is very simple and will be found to be quite firm. No particular wood is necessary. Scraps or cut-offs are obtainable cheaply at the dealers. In the writer's case cut-offs of 'Weyroc' were used successfully. Ordinary board can be used, but plywood is stronger and wears better.

In making the stool, first saw out the two end pieces. These should be identical. The thickness should be anything from 1/2 in. to 3/4 in. It could be thicker, but there is no point in making the stool too heavy.

Use a fretsaw to cut out the inside shapes. Round off the bottoms of each leg, and smooth out the edges of the hand-holes. The outside slope of the legs is 70° or 80°.

When these two end pieces are finished one can saw out the front and back boards (or rails) which hold the two sides together. The greater in depth these two boards are, the stronger will be the stool, but for a stool of the size shown, 4 ins. to 5 ins. will be found quite adequate.

Cut the boards off squarely and remember to plane the top edge to produce a

chamfer so as to bring it level with the top edges of the sides.

The boards should then be glued and nailed (or screwed) to the cut-out portions of the side pieces.

Care should be taken to see the stool stands correctly. It should be tested on a level surface, and also by sighting along the top edges held level with the eyes, to ascertain if it is true.

The top is next sawn out. Again, plywood is best, and 1/2 in. thickness is suggested. Measure the shape off by placing the stool top on the plywood and drawing round with a pencil.

When sawn out, chamfer the longer edges to continue the slope of the side boards. Attach the stool top by means of glue and nails through the top edges of the side and end pieces.

Some glasspapering will be needed to clean up, and then the wood can be either plainly varnished or painted as desired.

When dry, a little upholstery is advisable to make the stool more comfortable. Various methods could be used, but the reader might try the following.

A piece of plywood about 1/4 in. thick is sawn out about 1/4 in. less all round



Fig. 2

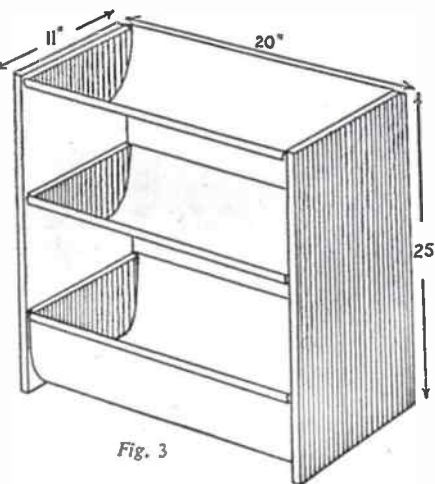


Fig. 3

than the top of the stool. The corners should be rounded off, and layers of felt (or any other soft material) built up on the plywood, each layer being slightly less in area than the preceding one. Dabs of glue here and there will hold the layers temporarily.

Next, cover the top of the whole with some chosen plastic cloth or leatherette, folding over and gluing to the underside of the plywood (about an inch all round). Finally, glue the plywood (complete with upholstery) to the top of the stool, placing it centrally. Fig. 2 shows a section through the stool top, illustrating the above.

## Vegetable Rack

The second item for the household is a vegetable rack. This will certainly be appreciated by the housewife. A vegetable rack is a 'must' for any kitchen.

The dimensions given in the drawings are suitable for the average kitchen, but can be altered as desired to fit one's special needs, so long as the same method of construction is followed.

The actual racks on which the vegetables and fruit are stored are of aluminium sheeting. Iron sheeting (later painted) would do, but is not as pleasant as aluminium. The thickness can be anything from 18 to 24 gauge. Three sheets will have to be cut out. The exact measurement of the sheets from back to front is best ascertained by measuring the wooden cheeks (see later) with a tape measure round the bottom curve. To each measurement add at least 1 in. This is to allow extra for the turned-over lip at back and front which strengthens the rack.

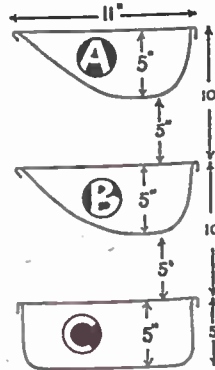


Fig. 4

This lip is easily made by clamping a length of 1/2 in. thick wood along the edge of the sheet, leaving about 1/2 in. full, then turning over this overlap either by force of hand or a mallet. This task of forming the lips can be done before attachment to the wooden cheeks (A, B, C).

While the metal sheet is still flat, bore holes through it to allow circulation of the air amongst the vegetables, etc. (This applies only to the parts (A) and (B). (C) has no holes in it, as it holds potatoes etc., the dirt from which must not be allowed to drop through on to the floor).

Make the cheeks (A, B, C) next. These consist of 1/2 in. or 3/4 in. plywood preferably and are cut in the shapes shown in Fig. 4. Make the shapes for each end as identical as possible.

When cut out, take two (A) shapes and nail or screw round them the appropriate metal sheet. See that the sheet edge is flush with the wood edge, if not, file down correctly.

Do the same with the (B) and (C) cheeks.

Next, saw out the side walls on which the trays are fixed. These should be as indicated — 25 ins. high by 11 ins. or so wide. The thickness can be 1/2 in. or 3/4 in. Plywood is best.

The trays, already made, are then fixed to these side walls by the use of nails or screws. Glue can also be used.

The rack is now finished, but it may be pointed out that its appearance will be improved if the wood parts are painted with some attractive colour. Gloss paint is best. Painting is better carried out before the assembly of the parts.

Dirty vegetables such as potatoes, turnips etc. are placed in the bottom rack while apples etc., which are clean, are kept to the upper compartments.

## Coal Box

Another useful household item is a coal box for the fireside.

The exact size of the box will be decided perhaps by the width of the hearth the reader has, but the dimensions given should suit most people.

The box is made of wood lined with metal sheet. The wood should be plywood about 1/2 in. thick. Fig. 5 shows the general idea, and from this the reader will be able to work out the parts needed.

Figs. 6 and 7 illustrate how the parts join together. Note that the edges of the bottom and front sections must be chamfered at their join in order to fit properly together.

Begin by sawing out the two sides and make them identical in shape and size. Then attach the bottom and top pieces. Use glue and strong screws to fix, boring preparatory holes for the screws so as not to split the wood.

Next attach the back, again using

glue and screws. After that, fix the front, similarly.

The inside of the box should be lined with metal sheet for hard wear.

The inside of the front, bottom and back are the most important, but one could also apply metal sheeting to the sides as well, if desired.

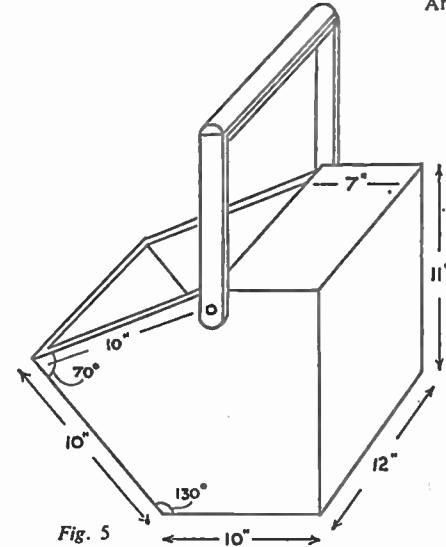


Fig. 5

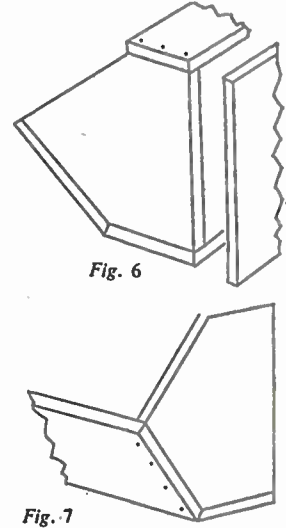


Fig. 6

Fig. 7

To deal with the bottom etc., first get the exact shape and size by cutting stout paper to fit, right from the front lip down to the bottom and up to the top of the box. Then use this as a template to mark off the sheeting required. Thick 18 gauge aluminium is suitable, or thinner iron sheet.

Fix the sheeting into the wood with

screws. These should be countersunk.

The handle could be formed from 1/2 in. diameter iron bar, bending to shape by heating the particular part red-hot. The ends are heated red-hot and hammered flat, and later drilled to allow passage for the screws on which the handle swings.

Another way is to use flat strip about

Continued from page 324

## Using a Portrait Lens

have to keep in mind when working at close quarters is termed parallex error. It will be appreciated that the view-finder in every camera can only be fitted in a convenient place and there is a slight difference between the scene through the view-finder and the scene picked up by the lens. The view-finder must be above, or to the side of the lens, and this slight difference is much greater at close quarters. We have to allow for this margin of error by seeing that the lens is correctly centred, once again demonstrating the usefulness of our prepared dowel rod. When taking portraits it is advisable to allow plenty of room above the head. You may also realise the value of taking

a few test pictures, like the dominoes, to determine the depth of field with your own camera and lens, and how the result compares with the scene in the view-finder.

Only a little practice and experiment will enable you to take some clear portrait or close-up pictures of all manner of subjects. The main points to watch have been mentioned and with care all your pictures will be really sharp and clear. You may be able to obtain a spectacle lens of 1 dioptre from a friendly optician, cut to the size of your lens and mounted as described in a previous article by making a shallow tube of cardboard to fit over the camera lens.

### FOCUSING DISTANCES FOR 1 DIOPTRÉ PORTRAIT LENS

Distance scale on camera	6ft.	8ft.	10ft.	15ft.	25ft.	Infinity
Distance of subject from the portrait lens	25 1/2 ins.	28 ins.	29 1/2 ins.	32 ins.	35 ins.	39 1/2 ins.

Simple, cheap, efficient

# TRANSISTOR HEADPHONE RECEIVER

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The transistor receiver described here is a considerable improvement on a crystal set, yet the actual cost of the separate components would be less than the cost of many ready-made crystal sets.

The circuit is shown in Fig. 1, and readers who have made up crystal sets will see that this circuit arrangement is almost as simple. Before considering the actual construction, it is worthwhile noting how this circuit operates, and what kind of results are to be expected from it.

Volume is not as great as with a 1-valver, nor can distant stations be received, as is the case with a valve set. On the other hand, no filament and H.T. supply is required, but only a single 1½ volt dry cell, which will last several months.

In the transistor receiver, base and emitter elements are wired to point 4 and Earth. When a station is tuned in, a

Described by  
**F. G. Rayer**

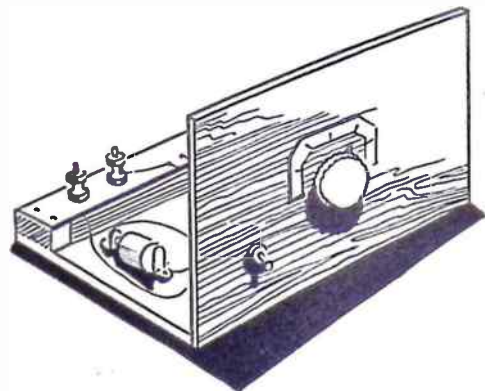
small current flows through the base element, due to rectification. As a transistor is so made that a small current flowing from emitter to base allows a large current (from the battery) to flow from base to collector, amplification takes place. The phones are wired to the collector element, and thus reproduce the amplified signal.

With this circuit there is no need for initial adjustments with the aid of meters or other test instruments. It is, however, essential to notice the polarity of the battery, and fit the battery correctly. Here, a single cell from a torch battery is used, zinc case being negative, and brass cap positive.

### Tuning Coil

This requires special mention because it is necessary to have a small coupled winding, as in Fig. 1, for best results. With a ready-made coil, quite good reception is possible by using the reaction winding on the coil for this purpose. With a home-wound coil, a suitable section can, of course, be provided.

This winding has fewer turns than are present on the tuned part of the coil.



This reduces voltage, but increases current, giving louder results because a transistor is operated by current changes, not voltage changes.

If a crystal set is being modified, it may be possible to add a further winding, for this function. A somewhat similar result is achieved by forming a tapping on the tuned winding.

This form of coupling also allows the coil to tune more sharply, and the very flat tuning found on crystal sets is avoided.

### Normal Size Receiver

As the transistor is being employed to secure more volume, and not so that a miniature set can be made, it is best to allow a fair amount of space for parts and wiring. The layout in Fig. 2 is particularly easy to follow, and requires a baseboard about 4ins. by 6ins. by ½in. thick, with a panel of similar size. If wiring is correct, dimensions will in no way influence results.

A strip of paxolin is fitted at the back of the baseboard, and has five terminals, for Phone, Aerial and Earth connections. At the centre, three small bolts are also used to make connections to the transistor leads, to avoid soldering.

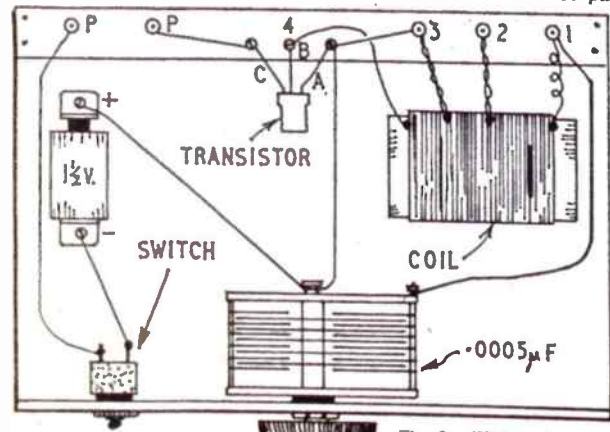
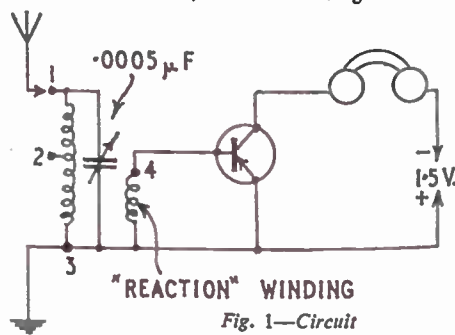


Fig. 2—Wiring plan

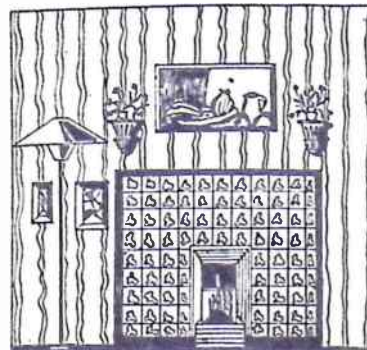


The tuning condenser is best air-spaced, but a solid-dielectric type can be used. Any small switch is satisfactory.

Continued on page 329

Charming in the home

# Miniature Display Brackets



**T**HAT blank space of wall over the fireplace is just the spot for a pair of miniature wall brackets to hold a small vase of flowers. These miniature flower arrangements are becoming increasingly popular and a carefully designed display adds charm and dignity to any room.

A bracket need not be confined solely to the chimney piece and there are many other places around the house where it might be used with considerable advantage. One on either side of a picture on a long wall for instance, or if the room is lit with wall brackets, then a pair here would be quite attractive, especially when illuminated by the soft glow of a suitable lamp.

In the hall or on the stairs where there is not room for a larger floral display are further suggestions, or you could use the same idea and design a bracket to fit in the corner of a room with equal success.

Your choice of wood plays an important part in its attractiveness and you need to consider the furniture in the room as well as the wall covering. Of the hardwoods, mahogany and walnut are good when left in the natural state, while oak can be stained over a wide range of shades. For more modern treatment any type of wood can be used when it is to be finished by painting or enamelling in appropriate colours.

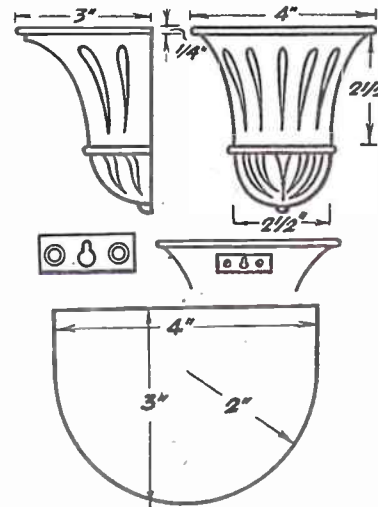
Each bracket is shaped and carved from a single block of wood with a thin facing added to form a smooth top. The design can be modified if it does not harmonize with the furniture in the room and the gentle curves may give way to straight lines and sharp angles. Size, too, will vary. A tiny bracket, for instance, would look out of proportion in a very large room.

The bracket illustrated is made from a block 4ins. long, 4ins. wide and 3ins. deep, but you may find it easier to make

the pair from one piece and cut them in half afterwards. By adopting this method you have something to hold or secure to the bench while cutting and working on the other side.

The majority of the work of shaping will have to be done with a saw and chisels, and it is best to remove the surplus wood gradually and not in large chunks. It is so easy to cut off big pieces thinking you will get done quicker, and it is also easy to cut off too much, but this wood cannot be replaced.

Filing will remove the chisel marks, finishing off with fine grade glasspaper. Some people, however, prefer to leave the tool marks, as it gives character to the carving, and you must decide which you prefer. One or two different sized gouges and a V tool are sufficient for cutting the pattern and any further



ornamentation you may decide to add, but remember not to overdo it.

The brackets are capped with wood ¼in. thick or slightly less, so as to project about ¼in. and with a rounded edge. The grain can go from side to side or from back to front. It should be sufficient to well glue the cap to the bracket, but a few fine panel pins can be used as well for extra security if necessary.

Fixing the bracket to the wall is achieved with a small brass plate as shown screwed on to the back and having an 'inverted keyhole' cut in the centre. This plate slips over a round-headed screw fixed in the wall and projecting just enough to hold the bracket close to the wall. A hole must be cut in

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Finishing may be varied according to the wood used, hardwoods in their natural state or stained may receive a coat of varnish or either french or wax polish. Other woods are painted or enamelled in a variety of colours to harmonize or contrast with the room furniture or wall covering.

By A. F. Taylor

Painting in the hollowed out carved pattern or gilding this will produce a very attractive bracket, especially if carried out with a natural hardwood. Gold or silver patterns on an enobized background are also quite good.

When arranging the miniature bowls of flowers for these brackets the following tip will enable you to obtain a much better result. Fill the bowl with horticultural vermiculite which has previously been damped with water and then arrange your display in this.

Vermiculite, which is made from mica in powder form will absorb a large amount of water and will keep your flowers fresh for quite a long time. It can be obtained from most horticultural shops or Boots Chemists, and you only need a small amount, as it can be used over and over again.

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## Transistor Receiver

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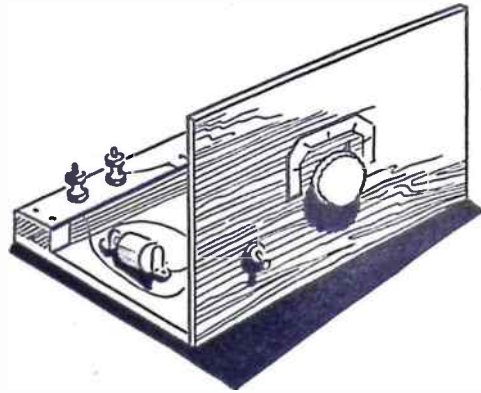
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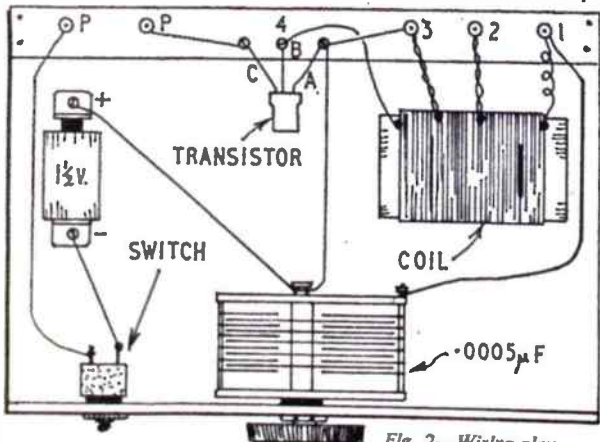


Fig. 2—Wiring plan

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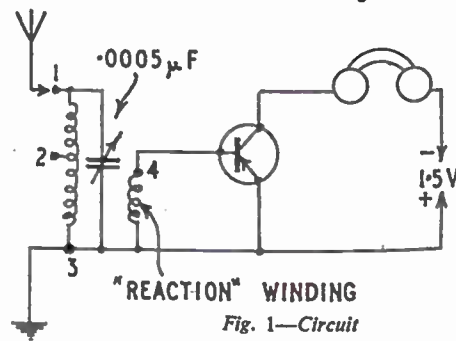


Fig. 1—Circuit

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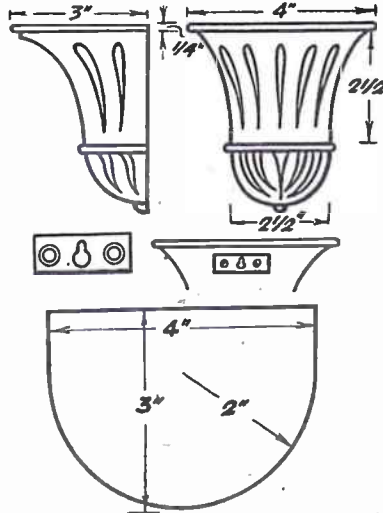
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# Replies to Readers Is this YOUR Problem?

**Removing Paint from Cement**  
PLEASE tell me a way of taking paint off cement steps. (C.S.—Nairn).

TO remove paint from cement concrete, prepare a solution by dissolving one pint of caustic soda in five pints of water, and apply with an old, preferably fibre brush. Allow to remain for a few hours, then wash off with water. Continue this treatment until the paint is removed. Instead of caustic soda, a mixture of washing soda dissolved in a little water and dry slaked lime may be employed. In either case, do not let the liquid come in contact with the hands.

## Permanent Wave Oil

I SHALL be grateful for a formula for permanent wave hair oil. (C.T.—Johore Bahru).

THE following ingredients will be needed:—

- Sodium hydroxide 2½ ounces
- Borax 4 ounces
- Pure turkey red oil 8 fluid ounces
- Ammonium hydroxide of specific gravity 0.88, 15 fluid ounces

Rose water 4 pints

To make the oil, dissolve the sodium hydroxide and borax in the rose water, and then stir in the turkey red oil and ammonium hydroxide.

## Chemical Colour Changes

I AM shortly giving some sort of a science experiments exhibition with my matriculation class. I would very much like to exhibit some remarkable colour changes, but I do not know how to do it. Can you help me? (J.P.—Transvaal).

YOU do not mention the colour changes desired, and there are quite a lot of them. Perhaps the simplest and a very effective one would be to change sherry to ink. For this a solution of iodine diluted to the colour of sherry should be in the first tank. The second tank contains starch solution. On running the iodine into the starch it immediately changes to an inky blue. The trick could be made even more effective by having the ink run into a third tank which apparently contains water, but which is actually a solution of sodium thiosulphate. The ink here changes to water. An obvious alternative for a two tank system would be to change ink to water by having in the first tank the

blue liquid produced by mixing iodine and starch solution, and in the second a solution of sodium thiosulphate.

## Waxing Paper Flowers

COULD you please give me some advice on waxing paper flowers? I make these artificial flowers, but am always in doubt as to the waxing. I have tried melting down candles and dipping the flowers in, but find it is much too heavy. Is there a way of diluting the candle grease, or is there another special substance for my purpose? (O.P.—Pontypool).

ALTHOUGH candle wax could be thinned with a suitable solvent, its use for paper flowers cannot be recommended, for on exposure to light this wax darkens very considerably and would soon turn the flowers a dingy shade. White wax, otherwise known as bleached beeswax and which is obtainable from any dispensing chemist, is the material to use, since it does not darken in light. This should be shaved into petrol lighter fuel in sufficient quantity to form a thin cream. It partially dissolves giving a white slurry. Dip the flowers in this and hang in an airy place until the smell of the fuel has gone. This gives a pliable stiffening effect. Further dipping will increase it. A pleasant translucent effect can be combined with the stiffening simply by holding the flowers high above a flame until the wax deposit melts and then allowing to cool and set. Naturally, this last operation should only be done when the lighter fuel has all evaporated from the flowers. The dipping, too, and the subsequent drying should be done in absence of flames.

## Treatment for Horn

I HAVE tried to obtain a cow horn which is truly black, but have not succeeded. I have seen models made with black horn and this prompts the following questions. Is it possible to dye horns black, if so, what is the best preparation? What is the best method of joining two horns together? How best to bend horns to any desired shape, if such a thing is possible? (H.P.—Lupset).

MOST types of horn can be dyed black by first boiling or otherwise removing as much of the fleshy matter, etc., and then immersing in a good black aniline dye. Sufficient time must be allowed for the dye to penetrate the

\*\*\*\*\*

## CLEANING PEWTER

WHEN cleaning old pewter the greatest care should be taken not to scratch the surface. The article should be washed with warm soapy water and inaccessible corners scrubbed with a small soft brush. Dry thoroughly and polish briskly with a soft rag or piece of velvet.

Collectors usually prefer pewter with a dull finish. Stains are removed by rubbing with a rag dipped in oil and rottenstone.

Modern pewter may be cleaned with finely powdered whiting applied with a damp cloth; dry and polish as above. Metal polish should never be used for cleaning pewter of either type. (R.L.C.)

\*\*\*\*\*

horn. An alternative is to polish the horn (in the finished state) with french polish stained jet black. Two horns are preferably joined by a wooden or metal piece which fits within the horn, the gaps filled in with plaster of Paris. Separate pieces of horn can be joined with an animal glue. Horn can be bent fairly readily by boiling it until reasonably soft, and then bending to desired shape. Several stages in bending may be needed if the horn is very tough.

## Staining Teak

I HAVE a curb and firescreen made of teak which have been clear varnished, and I wish to darken them. Can you tell me how to do this? (A.B.—Bradworthy).

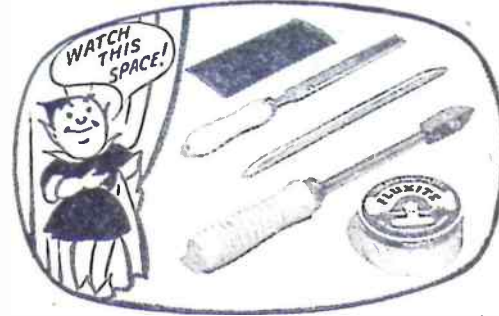
TEAK lends itself well to any stain — oak, walnut or mahogany, but no stain will obscure the grain of the wood. It will first be necessary to remove the existing polish, which can conveniently be done with the aid of Stripit or Tix, obtainable at most oil and paint stores. Glasspaper afterwards and apply any good oil or spirit stain of the desired shade, and french polish. A spirit only stain will be best if a varnished finish is desired. Any filler employed should be coloured with the stain before application.

## Hardening Plaster

I BOUGHT some plaster for the purpose of skinning a wall. I mixed the plaster to water, adding a little putty lime to slow it down. I did part of the wall but it dried rather like chalk. Could you suggest something I could add to make it dry hard? (K.C.—Stoke-on-Trent).

TRY the following — it slows down the setting of plaster for about 10 minutes or so, and helps to harden the surface. Mix white of egg with the water for the plaster. Proportions are 5 per cent. egg to 95 per cent. water.

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Signed.....  
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# With ROD & LINE

ALTHOUGH we are nearing the end of the grayling season, these lovely fish are still in good condition during February and frequently display lively activity. They do not come on to the spawning beds until the end of March and beginning of April, therefore, they continue to provide sport, and are well worth fishing for throughout February.

This month can — and often does — provide some of the best of days for grayling-fishers. There is an old north-country saying that 'A spring day in February is worth nae thing!' But this does not apply to the angler who may well find that there is no pleasanter way of spending a sunny day at this period than by the river where the grayling are rising, and the chaffinch is once more singing in the trees.

To be there, equipped with your fly-rod, seems something of a prelude to trouting, and the angler can work off the fever of anticipation. There is a snag in it, however, and that is — you are apt to catch trout not yet in season, which have to be returned, without injury.

Given a February outing on a day when the stream is 'just right', and with

a warming sun bringing to full life the nymphs seeking the surface to free their delicate wings, there will be little waiting ere you get a response to your advances. You may fish as 'seemeth you best', upstream or downstream, provided your approach is secretly accomplished and the attack subtle. Grayling are not 'too fussy' about the lure when they are in the mood to rise.

The sunken fly is frequently killing in February. If the water is slightly coloured, prospects are all the better; but you do not want a thick water. When fishing 'wet' fly, hook sizes may be No. 0 and No. 1, and the pattern of the hackled type, with a tag of red floss silk. It is generally conceded by anglers that grayling are attracted by artificials with a bit of 'flash' in their dressings — a touch of silver, a scrap of gold, or that 'bit of red'. Most grayling fishers pin their faith to flies with such a spot of colour in their make-up.

In some areas there are favourite local dressings. In Derbyshire, for instance, the 'bumbles' are much used. This pattern is said to have been invented by the late George James Eaton, who lived at Matlock. Of these

## FEBRUARY GRAYLING

By  
A. Sharp

the Orange bumble, Honeydun bumble, Fiery bumble, and Claret bumble are likely killers. No grayling cast should be minus one of these lures at point or next to.

Whilst laying some emphasis on grayling being attracted by flies having a spot of bright hue about them, it is to be noted that they will also fall for ordinary trout flies with no bright colour in their dressings. On many occasions during my angling career I have taken grayling with the Black Spider and Black Gnat, Iron Blue, and Greenwell's Glory and Hackle March Brown, when fishing during the latter part of the grayling season. One mild sunny day in the first week of March the first-named fly did good work for me.

Fly-fishing for grayling is at all times of the season very pleasant, if you can choose your day. A spell of what Richard Jefferies termed the 'February Summer' — an interlude of soft moist airs and sun-warmed waters — to bring insect life to the pools and glides, is to be appreciated. Moreover, such a period brings a foretaste of joys ahead, when once more the Spring trout are the 'high spots' in the fly-fisher's calendar.

## A New Use for Old

### Horse Brasses

THE ornamental plaque-cum-letter-track illustrated should appeal to lovers of old horse-brasses. This method allows the orderly arrangement of brasses according to pattern and also purpose. Many will prefer to use it as an attractive and unique letter rack.

By E. E. Jones

The panel is made of ½ in. oak, 12 ins. by 4 ins., and edged with beading to give a finished appearance. The ledges on which the brasses are anchored are made from stripwood ½ in. by 1 in. The stripwood is planed to give a triangular cross section. This should be done carefully for the angle at which the stripwood is planed determines the amount of forward throw given to the brasses.

The ledges are cut to size and shaped to accommodate the base of the brass. They are now pinned and glued to this panel. The distance between the ledges will, of course, be dictated by the actual size of the brasses.

Two holes ½ in. are now drilled in the base of the brasses. These holes will accommodate ½ in. brass wood-screws (round-head). The brasses are now anchored to the ledges by means of the wood-screws.

If there are discrepancies in the amount of forward throw given to individual brasses, this can be corrected by inserting bits of padding such as cardboard between ledge and the base of the brasses.

A hole ½ in. diameter is drilled at the top of the panel to allow the panel to hang on a nail or picture-hook.



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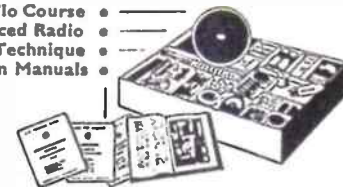
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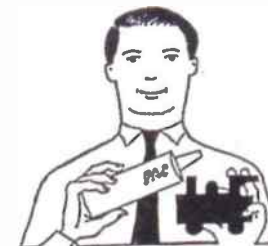
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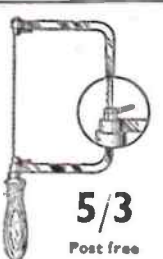
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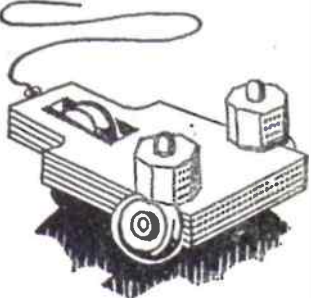
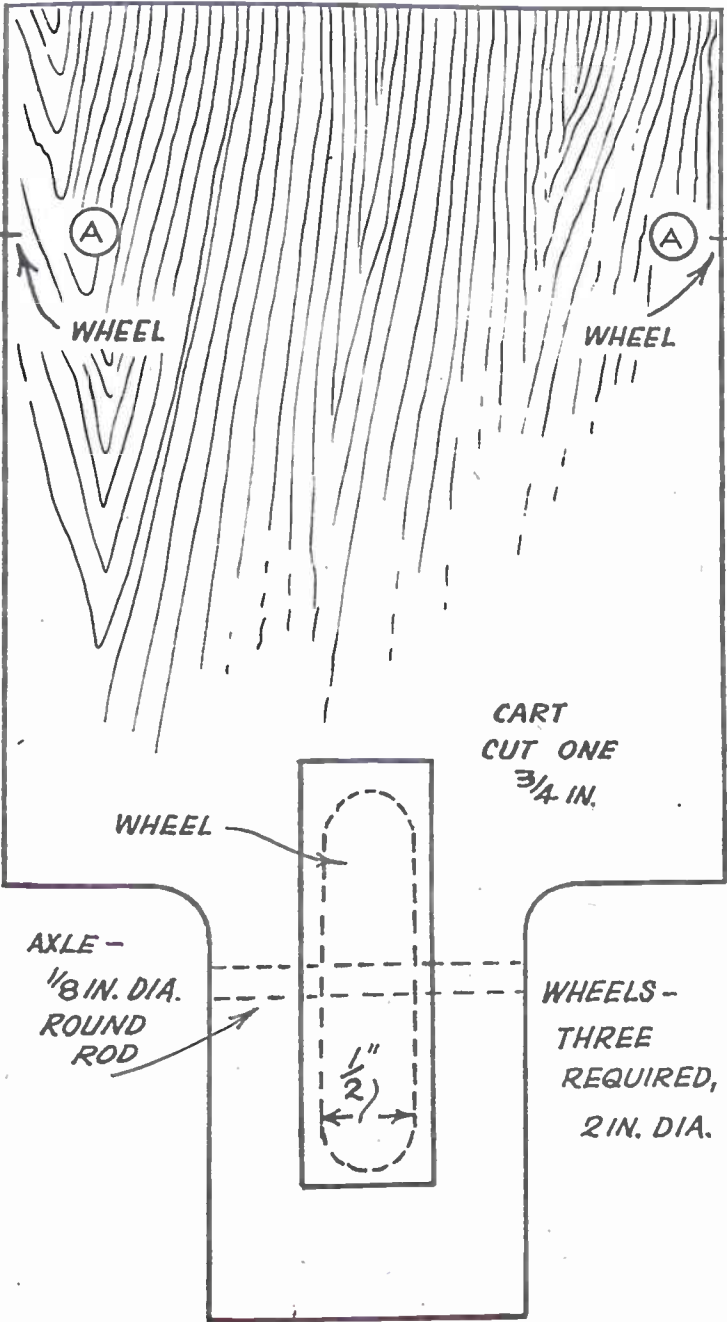
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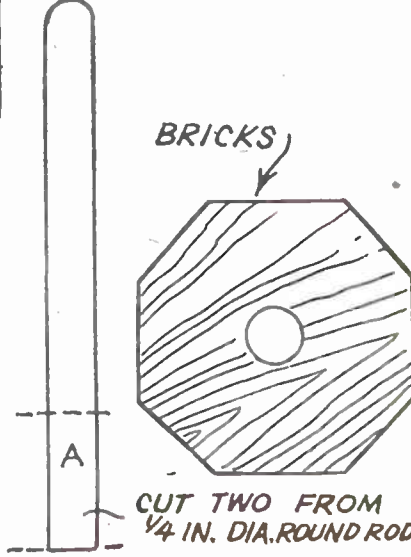
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