

HOBBIES

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FREE Plan to make model of an
OLD-TIME CANNON



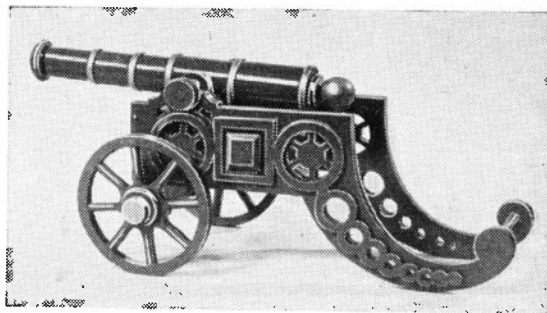
**WILL HOLD
CIGARETTES
AND JEWELS**

FOR CRAFTSMEN OF ALL AGES

6^D



OLD-TIME CANNON



A HANDSOMELY DECORATED MODEL

LOVERS of model projects, particularly those which have an old time theme, will welcome this design for an ancient cannon which also serves a functional purpose as a cigarette or jewel box.

As can be seen by the photographs, this makes up into a very attractive and unusual model in which the gun barrel pivots to reveal a compartment for

cigarettes or jewellery. It is an authentic model of an old-time weapon, the intricate metal castings on which have been simulated in wood by means of decorative overlays.

The model is 12 in. long by 5½ in. wide and stands 4½ in. high with the barrel in the firing position. It forms a very pleasant decorative feature in the modern home and would also serve as an excellent

subject for entry into modelling competitions or exhibitions.

Hobbies kit consists of all the wood required ready planed in the various thicknesses, also round rod, flock paper etc. The finish to the model by painting will be suggested later in this article.

All parts to be prepared for assembly are shown full size on the design sheet. They should be traced on to the appropriate thicknesses of wood by means of carbon paper. Then cut out all parts neatly with a fretsaw, taking particular care in the shaping of the decorative overlays and the wheels. Incidentally, this is quite a good test of fretcutting ability, particularly on the rounded circles and interior cuts, which of course should be made first before cutting the outlines of the various pieces.

Fig. 1 shows the first stage in assembly. To piece 1 glue the overlays 7, 8, 9 and 10, their exact positions being shown by dotted lines on the design sheet. Note that there is of course a right hand and left hand side, with the overlays on the outside.

Now glue together pieces 2, 3, 4 and 5, to form the cigarette compartment or jewel container. The axle is formed by gluing the two pieces 6 together to give a ½ in. width and the washers (12) are then glued to the ends of the axle. Note that these washers are shaped as shown by the section on the design sheet and will be fixed to the axle so as to give the wheels a slightly outward splay at the top.

Now round off the spokes of the wheels (13) with a sharp modelling knife, finishing off with glasspaper, then adding the rounded washers 14.

To form the outline of the gun barrel glue together pieces 16 and 17. After shaping the circular pieces 18, 19, 20, 21 and 22 as necessary, they are next added to the gun barrel in the positions shown by the sketch of the gun barrel on the design sheet. The Hobbies No. 15 knob of ¾ in. diameter forms the ball on the breach end of the gun barrel. This has a dowel 'leg' which should be trimmed to ½ in. so as to form a neat fit into piece 22.

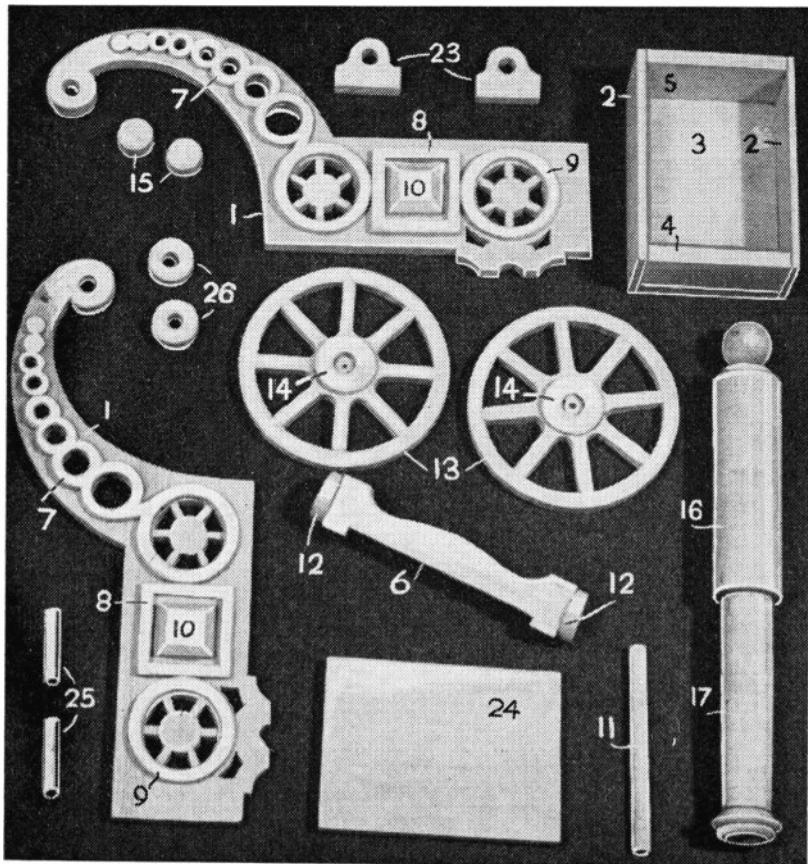


Fig. 1—The various parts prepared for assembly

The sketch on the design sheet shows how the barrel is now completed and given shape by adding strips of card, which are wrapped and glued round the barrel to give a series of steps. Note how the tapering of the barrel is formed by added strips of card in the indicated places to give varying thicknesses. Finish off by adding narrow strips of card about $\frac{1}{4}$ in. wide to form 'rings'. This completes the initial stages of assembly.

The various parts are now glued together as shown in Fig. 2. Glue the cigarette compartment between the sides 1 at the same time adding piece 11, which is the spacer rod, at the back. The cigarette compartment goes flush with the front edges of pieces 1.

 ★ **A KIT FOR 7/11** ★
 ★ **Hobbies kit No. 3604 contains all** ★
 ★ **the materials required for making** ★
 ★ **the Old-time Cannon, including** ★
 ★ **planed wood, round rod, flock paper** ★
 ★ **etc. Kits price 7/11 from branches** ★
 ★ **or by post (1s. 9d. extra), Hobbies** ★
 ★ **Limited, Dereham, Norfolk.** ★
 ★ *****

The axle is now glued with the square edge going on the underside of the compartment. The exact positioning of the axle is shown by dotted lines on piece 1 on the design sheet.

The wheels can now be tried in position, being pivoted with $\frac{1}{2}$ in. screws on which they should work freely. The hub caps 15 should not be added until later. The wheels can now be removed and laid aside ready for painting.

Now glue pieces 23 and 26 to the short lengths of dowel 25 as shown in Fig. 2. Round off the front edge of piece 24 and then add the gun barrel, which is secured by 2 countersunk screws from underneath. Place piece 24 in position on the container, for which it will act as a lid, and pivot it on to the sides 1 by means of a pin through each end. The front edge of piece 24 is rounded in order to enable it to move easily on the pin pivots, which can be seen in Fig. 2 and in the main illustration. Now glue the assemblies, consisting of pieces 23, 25 and 26, on either side of the barrel so that pieces 25 nestle in the notches provided in pieces 1.

At this stage clean up the model thoroughly, filling the grain where necessary and giving all parts a white undercoat. Rub this down lightly when dry and finish with an olive green gloss top coat. The hub caps can be finished

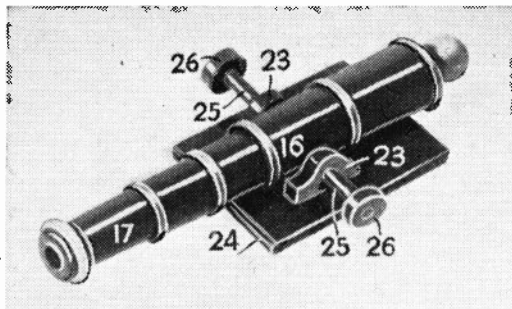
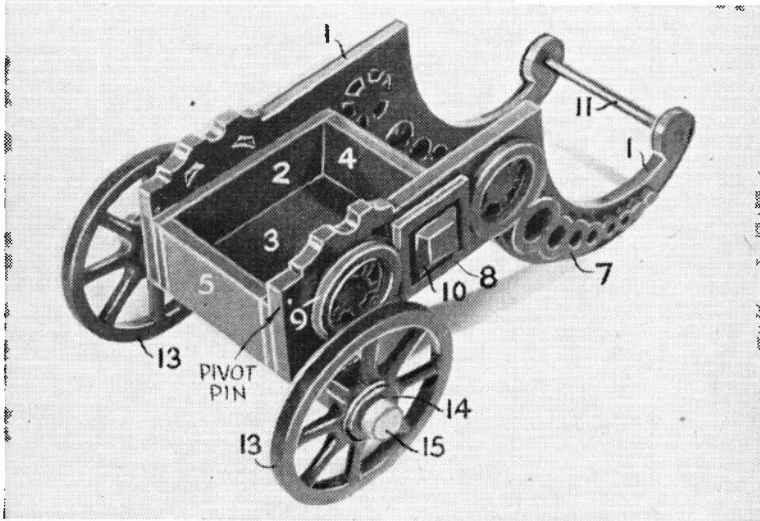


Fig. 2—How the parts are assembled together to form the carriage with cigarette container and (top) the lid section holding gun barrel.



in gold and then glued in position after the wheels have been finally screwed in place to the axles. The 'rings' and knob on the barrel will also be finished in gold

and the wheel rims should be black.

Finally line the interior of the box container with green flock paper and your model is ready for exhibition and use.

How a 'Boomerang Hoop' works

MAKE a toy hoop behave like a boomerang and return to you after being skittled along the ground. The trick is impressive, though not difficult.

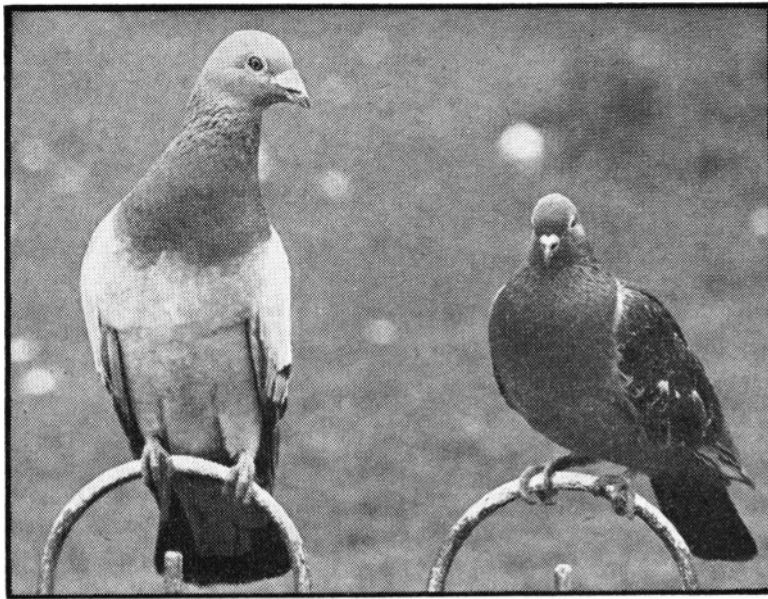
Take the hoop in your right hand and hold it comfortably by your side. Give yourself plenty of room — so stand in a large hall or outside on a pavement.

You must fling the hoop lightly along the ground and, at the same time, give the wooden wheel a rapid back-spin. With a little practice you can do this neatly every time. The hoop will skim forwards, then it will skid as its full weight settles upon the ground; and finally begin to roll straight back to you. You can catch the rim of the hoop in

your hand.

When you cast the hoop away from you, as described, you apply two separate motive forces which, as you will realise, act in opposite directions to each other. The forward impetus of the hoop will carry it outwards, until the rim rubs heavily upon the ground and friction absorbs this motion. But the hoop does not stop still for longer than an instant; nor does it fall over, because the backward spin of the rim becomes effective and the hoop returns.

Throughout the performance of the trick, the steadying influence of the spinning rim of the hoop — which behaves like a gyroscope — keeps the hoop upright. (A.E.W.)



use my camera in the hand a great deal for live subjects such as children, people, etc, and not on a tripod, I decided that 200 mm. and above was much too long. A tripod is desirable for such lenses. In between there was the 135 mm. This is the one I chose, and have found that it fits the bill admirably *for my purposes.*

Now to using it. The two major snags to be on your guard against are camera shake and not using a small enough stop

City Pigeons, Nottingham. Animals or birds can easily be taken with a telephoto lens.

to give you sufficient depth of field to enable you to have a sharp definition of all you require in your picture. .

On fitting the lenses it becomes immediately noticeable that the balance in handling the camera is different. When using the telephoto, it is best to support the camera body with one hand, using the other hand around the lens barrel to facilitate easy focusing, this also gives

USE A TELEPHOTO LENS

For perfect close-ups . . .

SINCE the introduction of the 35 mm. single lens reflex camera and the large imports of telephoto lenses at moderate prices, the possession of such a refinement is not now the luxury it was a few years ago and more and more amateur photographers are turning to them as a means of improving their photography.

If you are thinking of purchasing one, or have just acquired one, perhaps these tips will help you to obtain the best from it.

Choosing one's equipment is of course, a very individual, personal matter, depending a great deal on the type of photography which you do most of, but if you are still trying to decide from the

Candid, natural pictures of people can be taken easily with the telephoto lens from such a distance that they remain completely unaware of the camera.

many available focal lengths just which is the one for you, this is how I made my choice.

My standard camera lens is 50 mm focal length, and by using extra fine

grain film, taking great care with my exposures and processing I find that by enlarging, to a greater degree, a small portion of my negative (say about 50%) I can obtain similar results to those obtained with a medium telephoto of 80/90 mm. So this ruled out those particular focal lengths for me.

On the other extreme, as I prefer to

further support. Also, use a higher shutter speed than usual for normal subjects when on the standard lens and this will help considerably in avoiding camera shake.

Focusing will, of course, be carried out at full aperture, and your depth of field will be readily visible on the screen.

● **Continued on page 213**





A SIMPLE process of poker work can be used for decorating many kinds of plywood novelties and no elaborate equipment is needed.

In practice all we have to do is to apply a hot steel rod at regular spaces around the perimeter of the wood to make scorch marks. These make a decorative effect in the same way as more elaborate poker-work designs. We should mention that there is a distinction between burn marks and scorch marks, the latter being a light brown tone.

All you need is a length of steel rod about $\frac{1}{4}$ in. in diameter and about 12 in. long. For quick working it is best to have a few of these rods so that one or two are heating while one is being used.

Perhaps the best way of heating the rods is by means of a gas ring although a simple spirit lamp will be very convenient. The latter need only be a small jar with a metal screw-top lid. Bore a small hole in the centre of the lid for the insertion of a piece of wick — or thick string. Methylated spirit is poured into the jar, the lid replaced and your lamp is ready for lighting.

It may also be an advantage to fit a cork to the holding end of the rod as it will become quite warm. You may use old steel knitting needles of suitable gauge if you are unable to obtain steel rods.

We suggest that you make a trial on some scrap wood to discover the best heat to use. The rods must not be red hot or they will char the wood; all we require is sufficient heat to scorch the wood to a nice brown tint, not unlike toast.

In addition, we have to ensure that all the scorch marks are equally spaced and at an equal angle. This is achieved by

first marking the edge of the plywood at $\frac{1}{4}$ in. or $\frac{3}{8}$ in. spaces around the perimeter. We then take a small iron bar or spare piece of wood which is laid about 1 in. from the edge and on the surface of the piece being treated. If the heated rod is now applied to the guide bar and the edge of the plywood where marked, every scorch mark will be correctly angled and positioned. Note that it is advisable to treat the corners separately by pointing the rod to the centre. The use of a guide bar is shown in Fig. 2.

In our top illustration you will see two novelties to which this process can be applied. There is a key board which is easily prepared from a piece of $\frac{1}{4}$ in. plywood measuring $7\frac{1}{2}$ in. by 10 in. plus a further strip $1\frac{1}{2}$ in. by $5\frac{1}{2}$ in. Prepare the two pieces of plywood, cleaning with glass paper, smoothing the edges and treating the larger with poker work all round the edges. You may also apply the poker work to the smaller piece but this is not essential.

A coloured picture postcard may then be glued to the upper part of the wood, leaving a 1 in. margin at the top and sides. Below the picture glue the smaller strip and add a few cup hooks to hold the keys. A hanger attached to the back completes the novelty.

We also show a novelty matchbox holder you can make, using the same decorative process for the top piece of plywood. Here you will need two 4 in. squares of $\frac{1}{4}$ in. plywood which allows a small margin for the matchboxes. After preparing the two pieces of wood take four small sized matchboxes and glue to one portion so that they are alternate with ends and abrasive sides facing outwards.

We shall require something to open

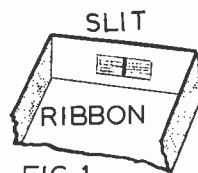


FIG 1

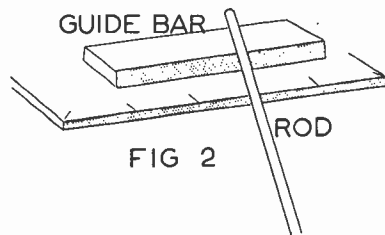


FIG 2

the tiny drawers. This can be done by emptying the matches, cutting a slit in one end of the tray and inserting a short length of narrow ribbon. Reference to Fig. 1 will show how the ribbon ends have been threaded through the slit and glued on the inside of the tray end. You may also reinforce with a small piece of paper gumstrip. The tray and matches may now be replaced and the top piece of poker-decorated plywood glued on top of the boxes. It may be advisable to add small pieces of baize at the four bottom corners to avoid scratching furniture.

A further decoration may be added by means of a picture or photograph but this should be trimmed square and have an equal margin all the way round.

(S.H.L.)

● Continued from page 212

Use a Telephoto Lens

After getting your main subject sharp take a look and see if there is anything further in the picture area which you also wish to be absolutely sharp and stop your lens down until this can be seen. It is not essential, of course, for everything to be sharp. In fact, a certain amount of differential focusing can help to get rid of a distracting background and place emphasis on the main subject. But just how much is desirable can easily be judged from looking at the focusing screen.

To do these two things I have suggested, using a high shutter speed and stopping the lens down adequately, necessitates a film of sufficient speed to enable one to do this comfortably. I find that in good light films in the speed group 125–200 ASA are quite suitable; in

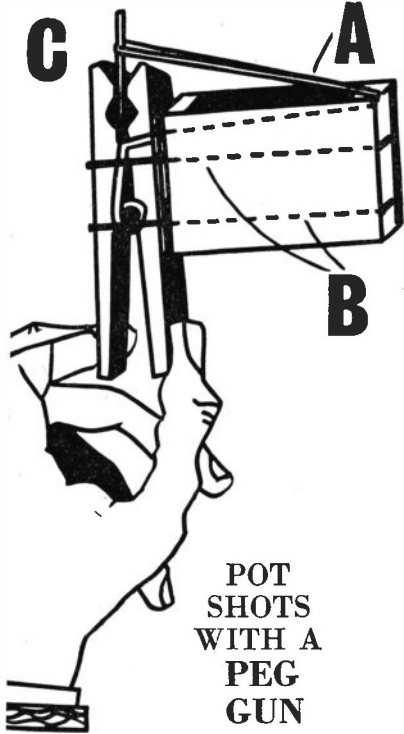
duller weather films 400–800 ASA are preferable.

If good results are desired another essential is an efficient lens hood, which must be designed for the focal length of the lens used and not the one used for the standard lens.

I am sure that once having got used to using it you will find the telephoto lens quite a useful piece of equipment. It will enable you to 'reach out' to a subject when you are restricted physically from approaching any nearer and to capture children, people, animals, etc, from a comfortable distance, thereby obtaining natural, unposed results.

The illustrations accompanying this article will, I think, prove the points mentioned and will I hope help you in your search for pictures. (C.R.)

HAVE FUN WITH THESE



POT SHOTS WITH A PEG GUN

FROM a clothes peg, a matchbox and three 2½ in. thin rubber bands, you can make an ingenious toy gun that shoots matchstick bullets.

Remove the matchbox tray and connect it to the peg, using two rubber bands (B). These can be twisted double and stretched tightly to strengthen the fixture.

Fix the third rubber band around the tray only, but do not twist this one. The third band is A, which can later be stretched out a lot. Slide the cover on the tray, as illustrated.

To load the gun, fix a used matchstick between the peg prongs. Then stretch out band A and catch its loop upon the matchstick bullet (C).

Point the gun away from you and fire it by squeezing the peg bottom. Released tension in the band propels the missile in a curved path across the room. If a thin rubber band is used, the toy is not dangerous, but don't point the gun at anybody when you shoot.

Set up some cups and small basins ten feet away, and try to shoot the bullets into them. Score ten for a cup hit and five for a basin. (A.E.W.)

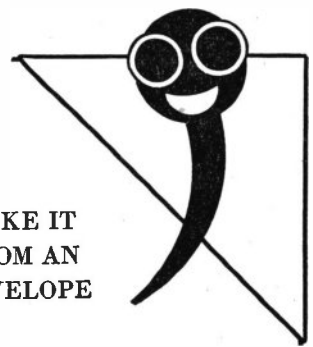


A BOOKWORM NAMED 'MARK'

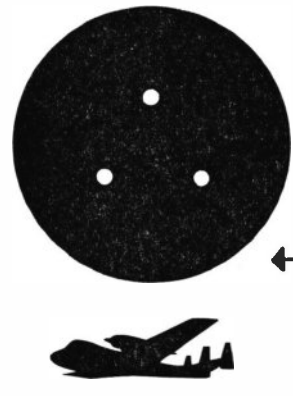
'MARK Bookworm,' drawn in black ink and cut out of stiff paper, will keep your place in your favourite novel. Glue 'Mark Bookworm' upon a large corner cut off an envelope — as illustrated.

Fit the hollow piece of envelope over the corner of your page whenever you finish reading. Then, after the book is closed, 'Mark Bookworm's' big intelligent eyes will appear just a little way beyond the pages.

Make 'Mark Bookworm' with brightly coloured felt scraps, if you prefer. Put one of these novel home-made book-markers inside the next book you give as a present.



MAKE IT FROM AN ENVELOPE



CUT out a 3 in. diameter disc in light cardboard. Pin the disc to one end of a wooden cotton reel with three long pins arranged like the

BLOW

Hover Plane

A MODEL SHOWS HOW THE REAL THING WORKS

corners of an equal-sided triangle. Remove the cardboard and enlarge the holes sufficiently to let the pin heads pass through easily. Replace the disc and pins.

Support the disc upon the 'underside of the cotton reel while you blow vigorously down through the hole in the wood. You can remove your hand from the disc and the cardboard will 'hover' against the wood and will not fall down. But you must keep blowing hard!

Your unusual 'air craft' works because the air moving down the hole and outwards across the disc A is at very low pressure. Atmospheric pressure B is much greater than the pressure in the airstream, so the disc is pushed upwards against the wood.

An aeroplane's wing-sections are outwardly-curved on top and comparatively flat underneath. Thus, air, in travelling between the wings' leading (front) and trailing (back) edges, must flow faster over the wings than it does underneath them. Atmospheric pressure acts upwards and pushes the wings up into the low pressure airstream, thus providing most of the lifting force that keeps the aeroplane airborne.

THIS flower box is simple to make and yet very attractive. A number of them can be constructed and placed at strategic points around the garden or along the wall of a house.

The 'fan' may be considered as a purely decorative attachment or used to support an appropriate species of plant. A combination, of course, can be arranged where a climber is trained over the fan as a background to contrast with a more formal display in front.

Those constructed by the author were painted all white with the exception of the legs and battens at the front of the box, which are picked out in a dark shade of green.

The timber used was $\frac{3}{4}$ in. thick excepting for the 'fan' which can be made up from suitable lathes or stripwood about $\frac{3}{8}$ in. by $\frac{3}{8}$ in.

The construction is straightforward and may be carried out as follows. The basic box is built in five pieces — bottom, two sides and two ends. Suggested dimensions are given but these can be altered to suit and depending on material available.

The bottom is provided with holes for drainage. This member is chamfered along the long edges to take the sides at the correct angle. The ends are screwed direct on to the sides and bottom; there are no fancy joints or gluing operations as all fitting is done with screws alone.

The four legs are identical and



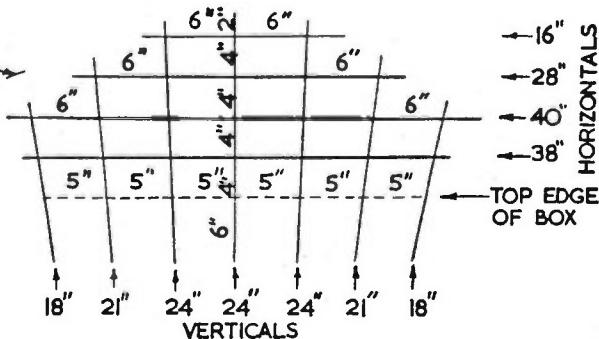
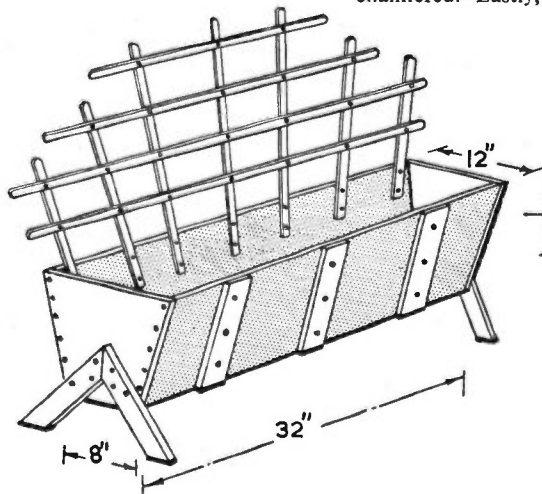
CHARMING FLOWER BOXES TO BRIGHTEN ANY DULL CORNER

are each secured with three screws as shown. The three battens, used purely as ornamentation, are cut to length, screwed to the front surface of the box and the ends chamfered. Lastly, the fan is made up,

screwed together at the intersections and screwed inside the box at the rear.

A rub down with glasspaper, priming and painting to taste completes construction.

(G.E.D.)



BONE CARVING PROJECTS

ATTRACTIVE novelties are easy to make from bone, which is, moreover, an inexpensive material to work with. First, the bones are cleaned by immersing them in boiling water until any meat adhering can be scraped off. It is important to have the bones in the boiling water for as short a time as possible, for it removes the natural oils, and prolonged immersion will make the bone hard and brittle.

Napkin rings

The shape of the bone will decide what it can ultimately be carved into. Hollow long bones, for example, can be cut in rings A, or on the slant to give an oval shape B; these shapes can be used for napkin rings, small pictures frames and other similar articles. The surface can be decorated with a pattern cut with a fine file C, or where the bone is thicker, a circular notch can be cut to give an hour-glass shape D with small radial grooves.

Various holders

Rings of bone can also be used in conjunction with round wooden bases to make candle, match or spill holders with a modern look E. Where wood is used, it is best painted in a dark colour, to contrast with the ivory-like colour of the bone.

Brooches and paper knives

Brooches, too, can be carved from flat or convex sections of bone F. A fretsaw is used to cut the outline, which is then filed smooth and glasspapered. Details are added with the point of a small chisel or are drilled, and the surface is finally finished off with olive oil and chalk applied with a rag.

Flat bones can be carved into articles such as paper-knives G, and decorative tags for key rings, incorporating the initials of the owner or his car number.

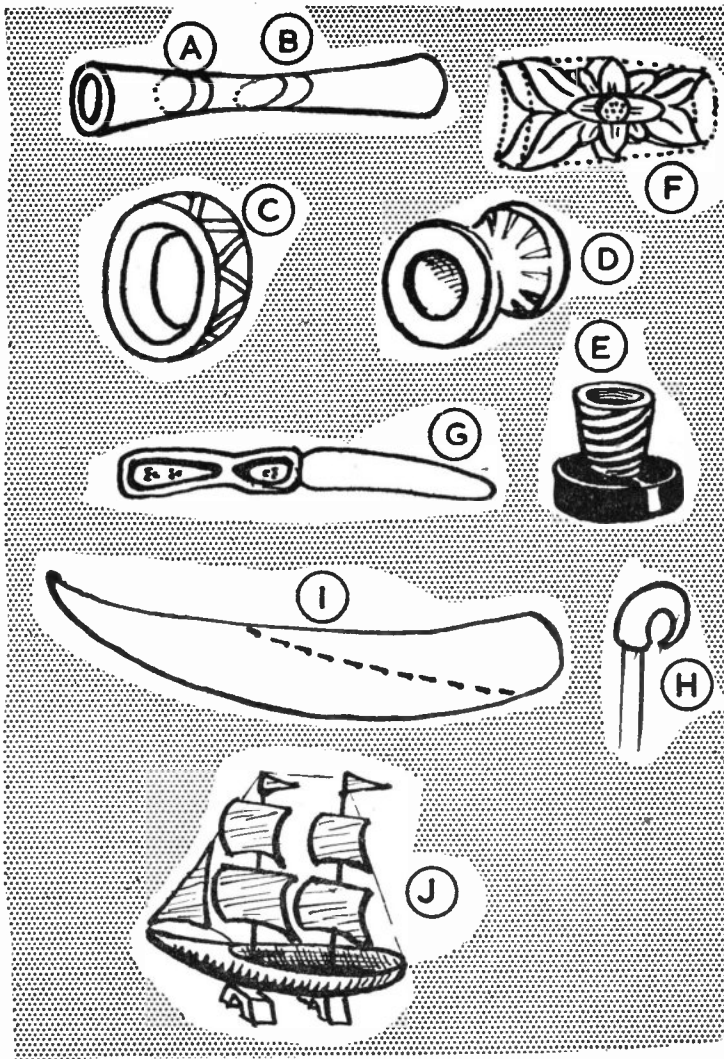
Walking stick and Galleon

Included in the term bone are the various kinds of horn, which can be carved in the same way. The simplest use for horn is as a decorative handle for a walking-stick H, a novelty which requires only the drilling of the horn to take the end of the stick, which is glued in place.

A slanting cut across a curved horn I, produces a shape suitable for a shoe-horn, and this needs only trimming and

By A. Liston

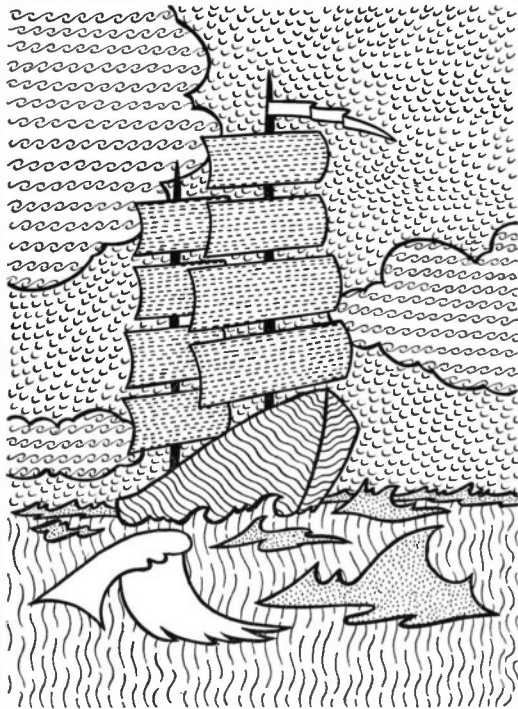
of horn, the curve of which represents the billowing of the sails. Each sail section is notched with a round file on the middle of its upper and lower rear edges so that it fits against the mast, to



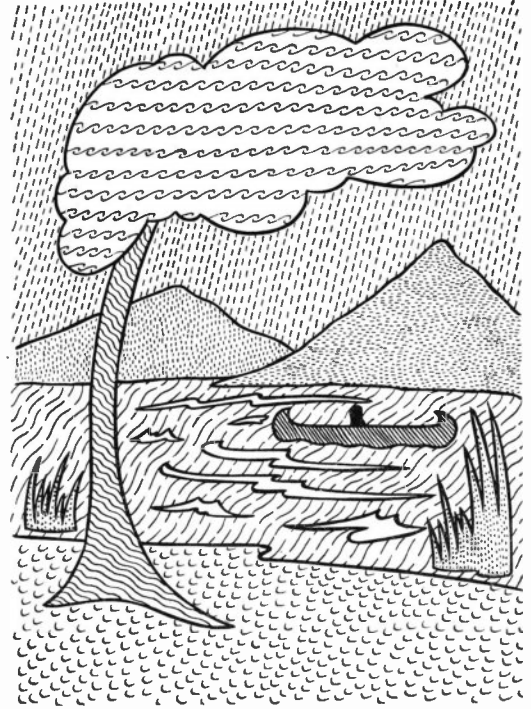
polishing. The same shape can be used for the hull of a decorative sailing ship J. Here, $\frac{1}{4}$ in. diameter dowel rod masts are glued through holes in the horn into blocks which form a stand.

The sails are also made from sections

which it is glued. Brass wire is used for the rigging, and for hanging the triangular jib sail. The finished appearance of the model depends on the care taken over the smoothing and polishing of the horn, which must be done with patience.



TWO
EXAMPLES OF
DECORATIVE
PICTURES
WHICH CAN BE
MADE WITH
SCRAPS OF
WALLPAPER



WALLPAPER PICTURES

MANY entertaining hours may be spent in creating pictures from odd pieces of wallpaper. These odd pieces can either be obtained from old wallpaper sample books or from the pieces left over when any decorating has been done. At certain times most decorating shops will have old sample books which are out of date and which they will willingly give away.

For the background to the picture, and on which the picture will be built up, you will need a stiff piece of paper or cardboard. Next you will need to design a suitable picture and such a picture should consist of fairly simple shapes with which to begin. Try to avoid any fine lines, though if these are necessary they can be painted on afterwards.

The picture can now be built up, working from the background towards the foreground.

In the two accompanying illustrations the sky would be the first to be cut out of a suitably designed and coloured wallpaper and stuck on to the cardboard. This would be followed by the clouds, or

By A. R. Watts

the hills. The clouds would obviously be cut out of white paper.

In this manner you must work forward. The choice of wallpaper should be dictated to a certain extent by the shape for which it is meant. Varying effects can be achieved by the careful choice of wallpaper. A wavy design will be the obvious type to use for water, while the sky could be plain blue for a calm day, or dotted to represent rain, and a turbulent lined one for a stormy scene.

This type of picture making could be taken a step further. After the sky has been laid on, each succeeding shape could be stuck on to a thick piece of cardboard (cut to the same shape) and then stuck on to the background. The whole of the picture is executed in a similar manner so that the finished work will give a three dimensional effect.

Even cotton wool could be stuck on when smoke is to be represented, perhaps

for a chimney, ship's funnel or train engine. Glasspaper could be used for the sea-shore.

There are several different paper surfaces and materials which could be employed to give effective results and many interesting experiments can be carried out in this type of picture making.

INSTALL YOUR OWN CENTRAL HEATING

By A. T. Collins

THIS book provides a handy guide for householders who are seeking not only information on how to install their own central heating system but also advice on the suitability of the various systems available.

All modern methods are described, with a comparison of costs.

Published by Geo. Newnes Ltd., Tower House, Southampton St., London WC2. Price 3s. 6d.

CHEMISTRY AT HOME

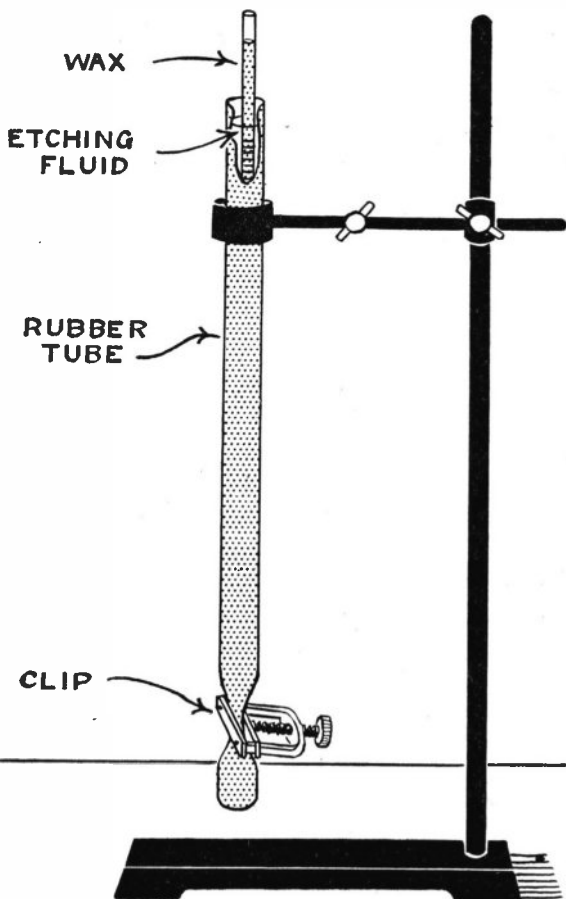
IN the laboratory the usefulness of a means of etching indelible labels and of graduating one's own glassware is self-evident. Domestically, the process can be used for decorating glassware such as vases and mirrors, frosting glass panes and so on. Even 'magic' glass ware can be produced, it appearing unetched; yet on breathing upon it a picture or design appears.

Apart from sand-blasting, which is outside the scope of the home operator, the most efficient medium is hydrofluoric acid. This may be produced as

required either in solution or as fumes from common chemicals. Its fumes are

HOW TO ETCH GLASS

By L. A. Fantozzi



**THIS
SHOWS THE
SIMPLE
TYPE OF
APPARATUS
TO SET UP
FOR THE
PURPOSE
OF ETCH
GRADUATING
A GLASS
TUBE**

harmful if breathed, so care should be taken not to inhale them. Solutions containing hydrofluoric acid are also skin corrosives and any coming in contact with the skin should be at once washed off and wet sodium bicarbonate dabbed on.

As the acid works by attacking the silica contained in glass and crockery it follows that silica-free vessels must be used when operating with it or storing it. Basins for etching may be of plastic, a hollowed-out wax cube, and, where heat is called for, a lead basin made by shaping a sheet of lead by beating it on hard turf with a hammer and a piece of broom stale with a rounded end. Stirrers can be of lead or plastic. Storage bottles should be of plastic, though at a pinch glass bottles which have been waxed internally by melted wax may be used. Stoppers should be of rubber, or as a temporary measure plastic film held in place by a rubber band.

For fume etching the lead basin will be required. The rim of this should be ground flat so that it will form a good seal with the glass and prevent escape of fumes. If the whole of the glass is not to be etched, that is, if a design only is required, then the area outside the design must be protected by a ground of wax or plastic tape. For the wax ground dissolve 1 gram of candle wax in 5 ml. of warm benzene (inflammable) and paint the glass with the warm solution. Let it dry out thoroughly until there is no smell of benzene (several hours). Bare the glass in the design area by scraping out with a broad steel pen nib or similar tool.

In the case of a plastic tape ground carefully overlap each strip, pressing down firmly. Trace the design with a ball point pen, cut round cleanly with razor blade and peel out the tape in the design area.

In the lead basin put 1 gram of powdered fluorspar and 1.5 ml. of concentrated sulphuric acid (caution, corrosive; any on the fingers should be flushed off with water and wet sodium bicarbonate dabbed on), mix with a lead or plastic stirrer and warm the whole gently, but, if a wax ground is used, not enough to melt the wax. Put the glass ground side down on the basin. In about five minutes the transparent design area will have turned opaque white. This method will also work just as well in the cold, but requires up to 24 hours to produce the full effect.

Rinse the glass with water and remove the ground. A wax ground may be removed by warming the glass, wiping off and removing the last traces by swabbing with benzene. A good white opaque etch is thus produced.

If the fluorspar/sulphuric acid

mixture is used as an ink an invisible etch is produced. Draw a design on the glass (no ground is required) with the mixture using a steel pen which should be washed with water as soon as the design is completed. Leave the mixture to act for 30 minutes or more. Rinse off, dry and examine the glass. There appears to be no change. Now breathe on it. The design is clearly seen in the misting, but disappears again as the glass dries.

Very reliable all-purpose etching fluids can be based in ammonium hydrogen difluoride, also known as ammonium bifluoride and of the formula $NH_4F.HF$. A solution of this white crystalline solid in water can be modified so as to give fluids which will yield opaque or transparent etches.

For a fluid for opaque etching mix first 2.4 ml. of water with 8 ml. of glycerine. Divide this into two parts. Put one half in the lead dish, add 2 grams of ammonium sulphate and 3 grams of ammonium hydrogen difluoride and warm gently until the solids have dissolved. Warm the other half of the glycerine solution in a test tube with 1.6 grams of oxalic acid. When the acid has dissolved let the solution cool somewhat and mix it with the other solution, finally stirring in 3 grams of strontium sulphate powder. This fluid can be stored for a lengthy period if a well closed plastic bottle is used.

To mark glass with it stir well to disperse the strontium sulphate evenly and write with a steel pen, washing the latter immediately after use. In cold weather it is an advantage to warm the glass before applying the fluid. Leave the

fluid on for 5 minutes and then rinse off. A good opaque etch results.

To etch glass all over use a brush and leave as before for 5 minutes before washing off. It may also be used with a rubber stamp.

The convenience of having such a fluid ready to hand is self-evident, both to the chemist for marking and graduating and to the handyman and hobbyist for glass decoration and frosting. A further use for the chemist is in etching circular patches on test tubes, beakers and flasks on which temporary labelling can be made in pencil. Such pencil marks are easily removed with a rubber eraser when no longer required and the etched patch thus made ready for re-use.

To make these patches fill in a circle with the fluid and suspend the vessel patch downward so as to prevent its running. After 5 minutes wash off and dry the glass.

An extension of this ability to take pencil marks is in the brass and copper coating of etched glass generally. Simply rub the etched surface with a stout wire of either metal and the surface is metallised. To prevent tarnishing give a coat of clear varnish.

Backings of coloured paints can also enhance etched glass and give some striking effects.

Transparent etching for graduating scales can be done with a modification of the ammonium hydrogen difluoride formula and is useful for making pipettes and similar laboratory ware. To make up the fluid dissolve 3 grams of ammonium hydrogen difluoride in 5 ml. of warm water in the lead basin and

1.6 grams of oxalic acid in 5 ml. of hot water in a beaker or large test tube. Allow to cool and mix the two solutions in the plastic bottle in which it is to be stored.

A wax ground is used. Dip the tube to be graduated in melted candle wax, withdraw it and let it cool and solidify. Make sure that the lower open end of the tube is sealed, otherwise the fluid will enter and etch the inside also, which we do not want. Scratch the glass bare where the graduations are required and immerse the portion of the tube up to a point just short of where the wax ends.

A convenient vessel for holding the etching fluid during the operation is a length of wide rubber tubing firmly screw clipped at its lower end as shown in the diagram. Leave the glass in the fluid for 12 to 18 hours. Then rinse it, dab dry and melt off the wax. The graduations, if desired, may be filled in with black paint by running a brushful along the tube and when wiping with a cloth. The etched-in graduations hold paint, whereas the outer surface is clear.

Miscellaneous Advertisements

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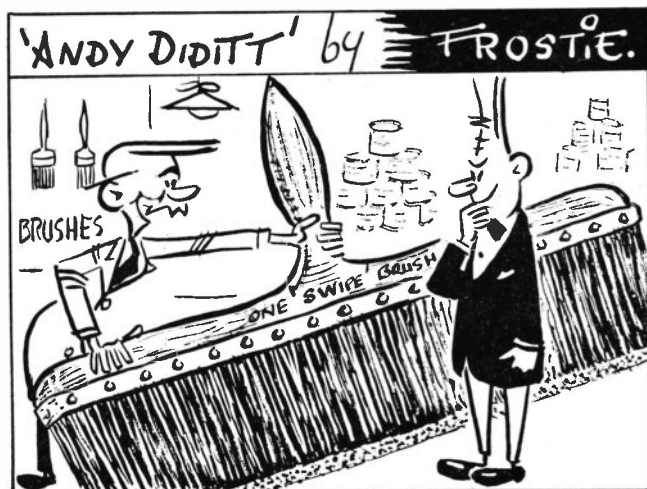
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"AND WITH OUR LARGE SIZE BRUSH - YOU CAN PAINT THE WALLS IN ANY ROOM IN FOUR STROKES."

ARE you a cartopholist—one of that ever-increasing body of children and adults who collect what were formerly classed as cigarette cards?

It used to be regarded solely for children, but today many adults are finding this an interesting and worthwhile hobby. It may also be financially rewarding, but although cigarette cards have never brought the fantastic prices some stamps do, some bring five pounds each and a whole set can make over £90.

It is believed that cigarette cards were first issued about 1888 but 'trade' cards given by other companies were in existence at the beginning of the nineteenth century. The first World War brought the issuing of cigarette cards to an end, but around the 1930's there came a revival until the outbreak of the last war.

Since then, whilst cigarette cards have decreased, 'trade' cards have increased and are supplied with tea, confectionery, cereals, bubble gum and even icecream among other goods. For those who still hanker after the old fashioned 'cigarette cards' a look around an old junk shop or market stall could prove useful.

TOPICS FOR COLLECTORS

CARD RARITIES AND HOWLERS

By P. Melvyn-Garr

most common ones are those explaining how to swim, sketch or box etc. One group of cards is a veritable mine of information. Entitled 'Do You Know?' it explained such things as why wages are sometimes referred to as 'screws'. (This dates from the nineteenth century custom of putting wages into small pieces of paper and screwing the ends

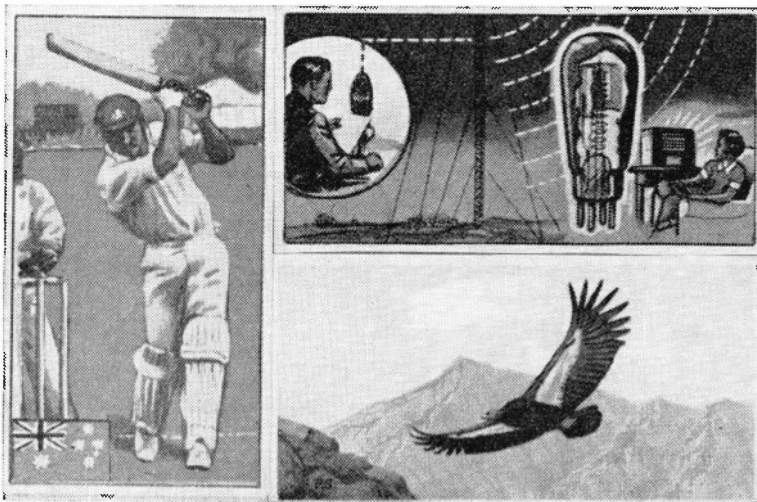
Disraeli's life. A South African coly bird was depicted perching on a tree until various letters pointed out that this creature normally hangs from a tree when resting.

'Uncle Tom', the famous negro character in the book 'Uncle Tom's Cabin', was once shown with a black face and white feet. A printer's error once caused a cigarette card manufacturer a great deal of embarrassment over a set of cards on 'British Kings and Queens'. One card had the front side containing a portrait of King Henry IV and the reverse side gave historical data on Edward IV.

Because of this highly accurate information stockists are frequently consulted for advice about details of costumes for films and plays. Even botanists from Kew have sought information from cigarette cards.

There are few rarities in the cigarette card world compared with items like stamps, coins and matchbox tops. One such rarity however is a group of eight pictures of German composers. These formed part of a series of 'Fifty Famous Composers' issued just before 1914. When war broke out the eight German cards were withdrawn immediately and eight others substituted. Both sets of eight are now rarities.

Why not have a hunt around your attic or box room and search out those old cards you collected in your younger days? You never know — you may find something valuable.



The present-day cards come with children's confectionery, cereals, tea and other goods. They are valuable sources of information and cover many interests.

During their time cigarette cards have catered for all tastes, and over ten thousand different series have been printed covering almost every imaginable subject. A few titles at random read — 'Butterflies and Moths', 'Kings and Queens of England', 'Types of Horses', 'Cars of the World', 'Famous Cricketers', 'British Locomotives', 'Smugglers and Smuggling'.

Much can be learnt from these cards. One series is almost a teach-yourself fortune telling course and amongst the

up to hold the coins safely). Or the origin of the word 'costermonger' (a costard being a large apple).

The information on cigarette cards must be absolutely accurate; if it isn't the manufacturers are inundated with protests. If any 'howlers' are found they are immediately rectified.

Amongst the errors found on cards was a picture of a young Disraeli standing in front of Big Ben, which was an impossibility considering Big Ben was not built until the latter part of

LATEST STAMPS

FRANCE

In October France issued a 25c stamp devoted to 'Friendship and co-operation with the world'. A black hand clasps white and outline maps of France and Africa are also shown.

AUSTRIA

Issues for October included the 40 Years Broadcasting in Austria stamp (1s.) and an issue devoted to the 6th Congress of the International Graphical Federation (1.50s.).

UNITED STATES

The American design of the 5c Shakespeare stamp is a three-quarter portrait of the bard in ornate ruff and doublet standing before the proscenium of an Elizabethan theatre. His right hand holds a quill pen. Beside it rests the most celebrated skull in theatredom, that of 'poor Yorick'.

'ATLAS'

Marquetry Kits

OUTDOOR SERIES



203

This series of delightful subjects have one characteristic in common — they all depict a single focus of interest set in an unobtrusive background.

Kits include border and edge veneers.

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Price 12/6 each (postage 2/-)

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The MASTER series offers the keen marquetry worker a challenge to his skill.

Panel size 16½ in. by 12½ in.

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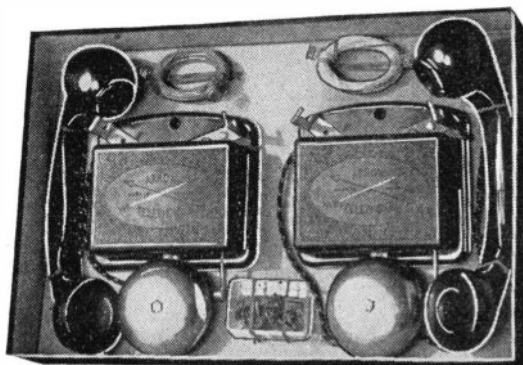
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A BARONIAL HALL FOR A BEAT GROUP

SOME ten miles from Hull, in Yorkshire's East Riding, there stands the great, centuries-old baronial hall, Burton Constable, with its 100 rooms and its history. On its 6,000-acre estate are 32 farms. Fish abound in its 17 acres of lakes, and from the woods dotted about its 230 acres of lush parkland they once cut down giant oak trees to build ships for Nelson's fleet at the Battle of Trafalgar.

Not far from the house, in the shadow of an imposing, turretted tower with its flagpole and royal blue and gold standard flying at its head, is one of the few indoor riding schools in this country. And in the riding school is a beat group!

Burton Constable's owner is 37-year-old former Rifle Brigade officer and Old Etonian, John Chichester-Constable. 'My forbears lived here for 900 years, and they had their minstrels. The boys in our beat group are our 20th-century minstrels,' he says.

Mr Chichester-Constable's minstrels



THE BLOND HULLABALLOOS

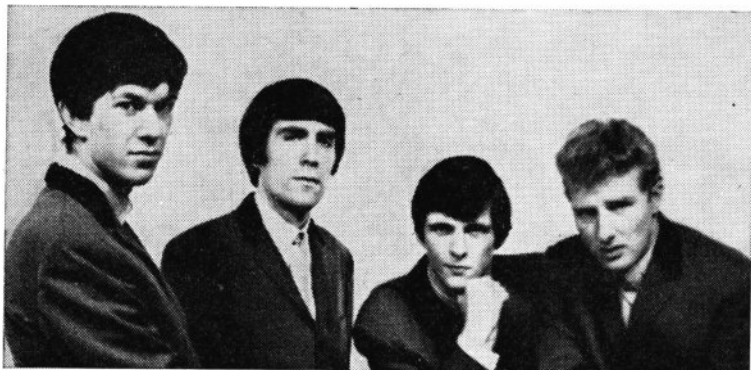
(Left to right) Ricky Knight, Andy Woonton, Geoff Mortimer and Harry Dunn — pictured at an 18th century piano at Burton Constable. Fretworkers will note with appreciation the elegant music holder.

are The Hullaballoos — four blond, long-haired young men from Hull named Andy Woonton, Ricky Knight, Harry Dunn and Geoff Mortimer. John Chichester-Constable and his wife Gay first heard them playing at a dance in a nearby village hall. It was later, when they invited them to play at a barbeque at Burton Constable that they realised The Hullaballoos were 'pop' potential.

On one of their trips to London they took the boys into the Astor Club, and proprietor Bertie Green and his wife, Olga, joined the ranks of the impressed. So much so that Mr Green signed them to play at the club — and Mrs Green became their joint manager with John and Gay Chichester-Constable.

Well-known American record producers Hugo and Luigi decided that as Great Britain seemed to be dominating the 'beat' scene, they would come here to look for new talent. They visited Burton Constable, listened to The Hullaballoos and signed them to a recording contract. Their record entitled *I'm gonna love you too*, released here on E.M.I.'s Columbia label (DB7392). Coupling is *Why do fools fall in love*.

During rehearsal breaks at Burton Constable the boys have had time to study the family portraits hanging on the walls — and discover that their long blond locks do not really set a new fashion in hair styles!



THE MOQUETTES

★ ★ ★

CHANCE meeting in a Bath dance-hall with singer Mickie Most gave the Moquettes (pictured here) the chance they were looking for. Mickie, branching out into management and independent recording, was responsible for the Moquettes' debut disc "Right string but the wrong yo-yo" (Columbia DB7315).

★ ★ ★

A QUILL BOX

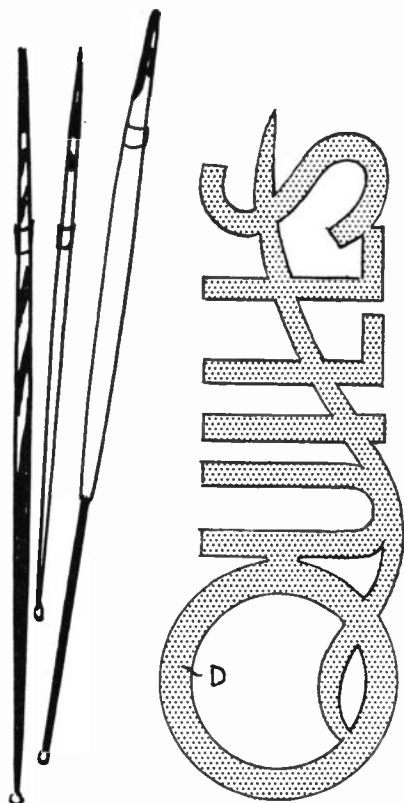
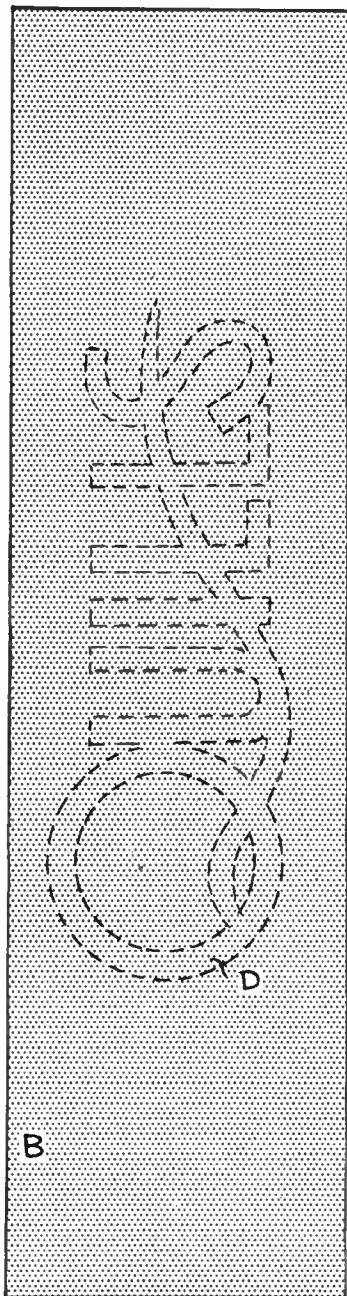
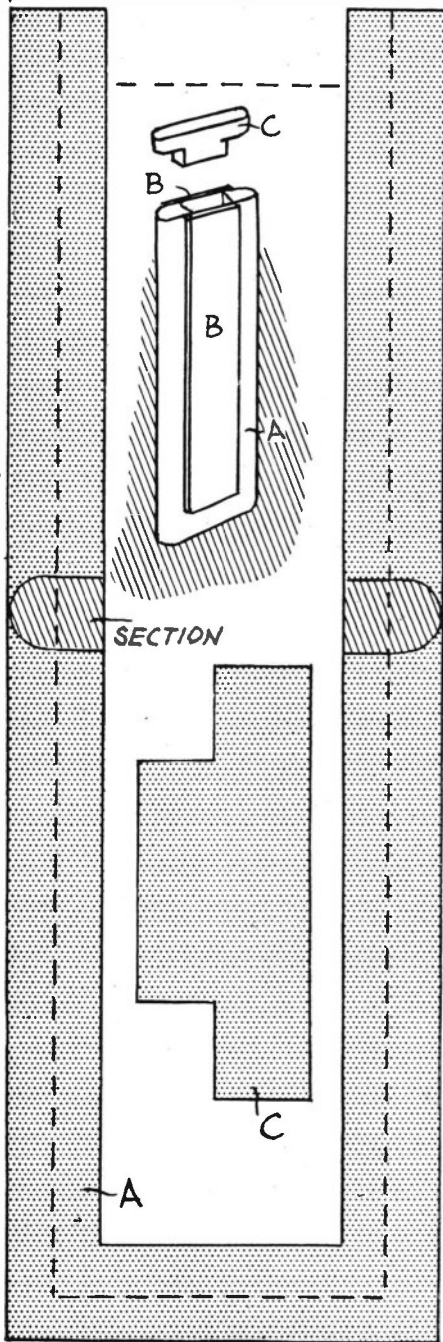
KEEP your favourite quills safe and sound in this easy-to-make box. It can be cut with a fretsaw in a few moments.

Cut one each of A and C from $\frac{3}{8}$ in. wood and two of B from $\frac{1}{8}$ in. plywood. Glue pieces B on each side of A. Piece C forms the top which is used like a cork and is made to fit tightly. Before cutting the pieces you should adjust the length to suit your longest quill.

For decoration you can cut out the word 'quills' from thin ply or metal, gluing it to B in the position shown. Alternatively the word could be painted on after applying an undercoat and top coat of high gloss paint.

(M.p.)

USE YOUR FRETSAW



BUILD YOUR OWN CRAFT

Plans for CANOES, DINGHIES, POWER BOATS

MUCH of the cost for a professionally built boat is for time, and a craftsman's wages can be a considerable item. As time costs the amateur nothing he can, solely for the price of the materials used, achieve first-class results if he is prepared to be patient and careful. The plans of the craft specified below are by the expert, P. W. Blandford and provide all the information you need to build from scratch. Shaped parts are shown full size and there are detailed instructions. A list of firms supplying materials and kits is provided with each plan.

CRUISER

NOMAD. 16 ft. x 6 ft. 2½ in. double-chine cabin cruiser, with full-size bunks for two and room for two more on air beds in the cockpit. Space in cabin for cooker and toilet, and ample lockers. Performs well with outboard motor of 4-10 h.p. and will plane with 18 h.p. The complete boat weighs about 6 cwt. and is easily towed and launched from a trailer. Draught 12 in. Cabin 8 ft. long and 47 in. headroom, with 34 in. over the bunks. The prototype was built single-handed in one month at a cost of £100. **Price 45/-**

DINGHIES

WENSUM. 11 ft. x 56 in. double-chine plywood sailing boat. The basic boat is an open dinghy with a gunter rig of about 66 sq. ft. Weight complete about 220 lb. Draught of hull only 6 in. and with centreboard down about 30 in. The sailing gear is easily removed to make a general-purpose dinghy for rowing or outboard use. Suitable for sailing by a crew of two or will carry four for general use. **Price 17/6**

GOBLIN. 9 ft. 10 in. x 54 in. plywood pram dinghy of special form, light enough to be easily lifted on to a car roof. Construction is easy and quick. Good foredeck and buoyancy built in under side benches. Weight complete 120 lb. Sail area 52 sq. ft. in a single lug sail. Good performance as a racer and sail numbers are issued. **Price 16/-**

GREMLIN. 7 ft. 7 in. x 46 in. plywood pram dinghy of special form. This is the longest hull that can be got out of standard 8 ft. sheets of plywood. The bottom is a single sheet, split at one end and sprung to give a V forward and a curve aft. Has been built as a rowing boat for £10 and with rudder, dagger board and sailing gear for £16. Can be carried single-handed. **Price 15/-**

PETE. 6 ft. x 44 in. flat-bottom pram dinghy. The cheapest and simplest practicable boat. Can be built from one plywood sheet and may cost less than £5. Details of simple sailing gear included. Suitable for angling. Will carry two adults or three children. **Price 11/-**

CORRIB. 10 ft. x 51 in. single-chine V-bottomed plywood, general-purpose dinghy for rowing or outboard motor (3 h.p. is adequate). Simple construction, but a very shapely craft and a fine family boat. **Price 13/6**

VENTURER. 11 ft. x 54 in. double-chine fast outboard boat. Two versions are included. The basic design is a camping cruiser, adaptable to sleep two on air beds under canvas cover. Runabout version also described. A 4 h.p. motor is adequate for general purposes and the boat will plane with upwards of 10 h.p. The basic boat has been built for about £25. Not adaptable to sailing, but can be rowed. Normally seats four. **Price 17/6**

CANOEES (Rigid fabric-covered)

PBK 10. The shortest satisfactory canoe, carrying a man and camping kit. Suitable for most waters. 11 ft. long, 28 in. beam, 48 in. cockpit, draught 5 in. Normal maximum load 300 lb. **Price 12/-**

PBK 14. Roomy single for the big man or a two-seater for an adult and child or two young people. A popular tourer. Has crossed Channel as a single-seater. 14 ft. long, 29 in. beam, 76 in. cockpit, draught 5 in. Normal maximum load 500 lb. **Price 13/6**

PBK15. Fast touring single-seater, suitable for rapid rivers and the open sea in capable hands. Safe and stable. The adult enthusiast's canoe. Many Channel crossings. 14 ft. 6 in. long, 26 in. beam, 48 in. cockpit, draught 4 in. Normal maximum load 400 lb. **Price 13/6**

PBK20. Very stable and seaworthy two-seater, with sufficient beam to carry an efficient sail plan. Very roomy and popular as a tourer on most waters. 15 ft. long, 32 in. beam, 7 ft. cockpit, draught 6 in., normal maximum load 600 lb. **Price 13/6**

PBK26. Fast and stable single-seater with a shorter cockpit and a rockered keel, making it a good boat for rapid rivers. Many successes in long-distance racing. 14 ft. long, 26 in. beam, 39 in. cockpit, draught 4 in. Normal maximum load 400 lb. **Price 13/6**

CANOEES (Folding)

PBK24. A short single-seater of similar lines to PBK10, but with a longer cockpit. Packs into one bag. 11 ft. long, 28 in. beam, 55 in. cockpit, draught 4 in. Normal maximum load 300 lb. **Price 13/6**

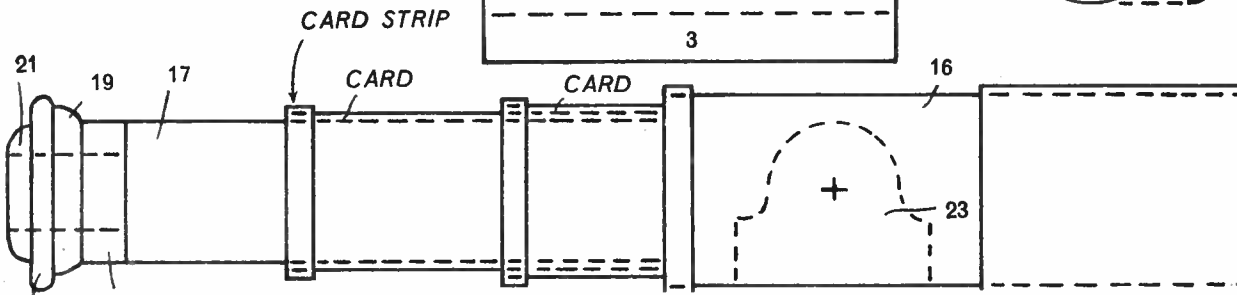
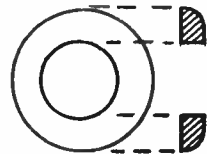
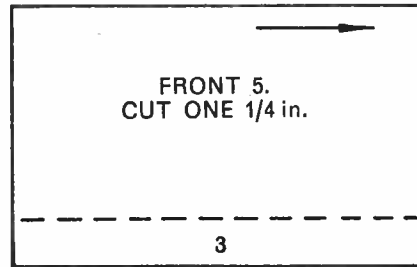
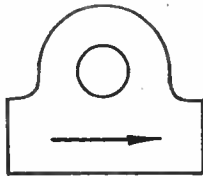
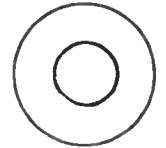
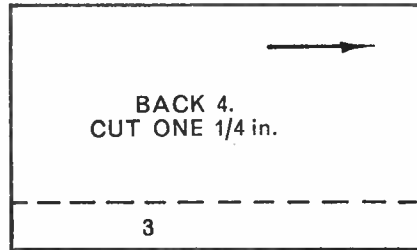
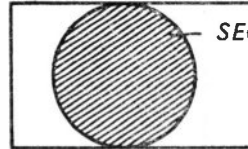
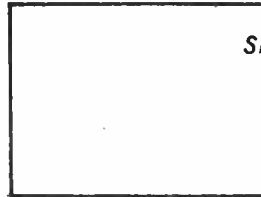
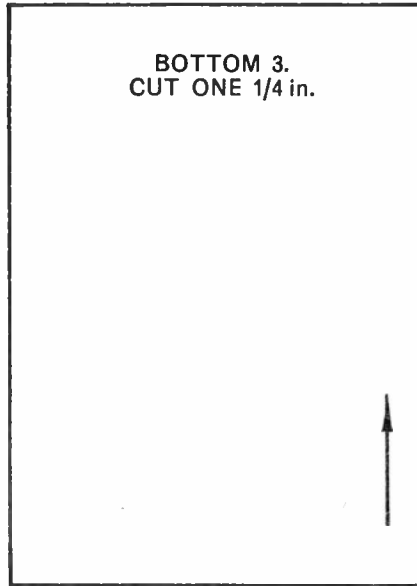
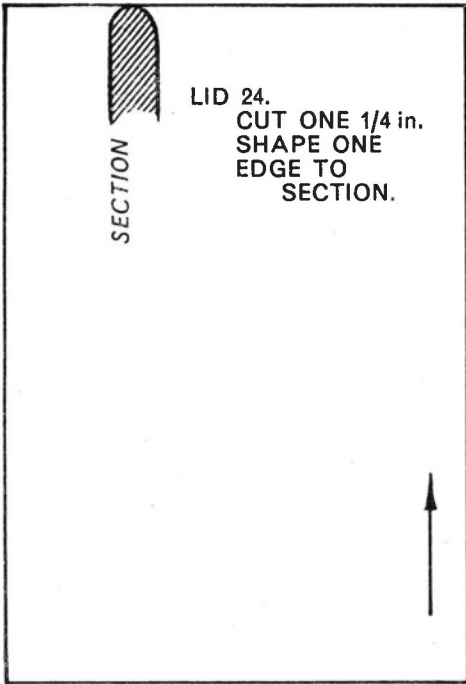
CANOEES (Rigid plywood skinned)

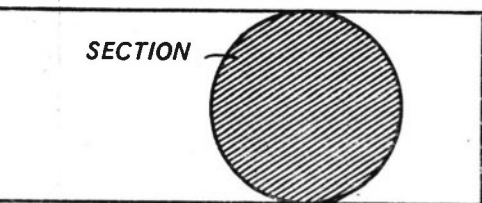
PBK16. A two-seater, flat bottomed, safe and robust. May be left afloat. 16 ft. long, 32 in. beam, 7 ft. cockpit, draught 5 in. Normal maximum load 700 lb. **Price 13/6**

PBK23. A single-seater with the same main dimensions as PBK15, but with V-bottom and hard-chine section. Rooms and stable, may be left afloat. 14 ft. 6 in. long, 26 in. beam, 48 in. cockpit, draught 4 in. Normal maximum load, 400 lb. **Price 13/6**

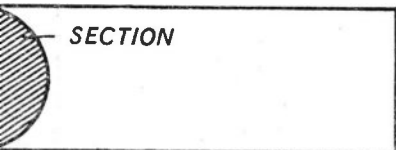
Postage 9d. extra on each plan from Dept. 99

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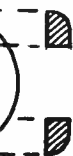
CUT ONE FROM
A. ROUND ROD.



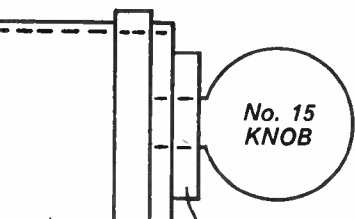
CUT ONE FROM
DIA. ROUND ROD.



CUT
ONE FROM



PIECE 21. CUT
ONE 1/8 in. AND
SHAPE TO
SECTION.

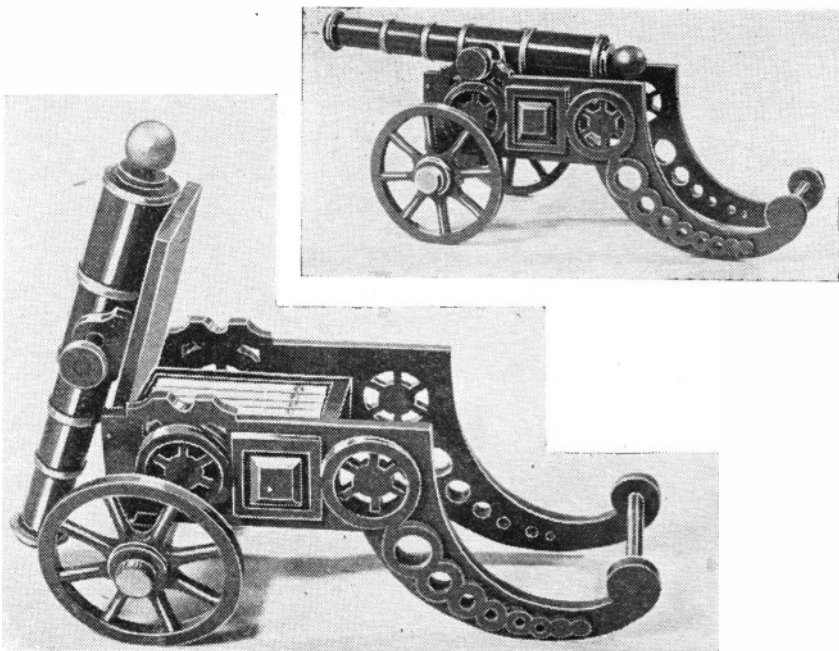


No. 15
KNOB



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OLD TIME
CANNON
CIGARETTE OR JEWEL BOX



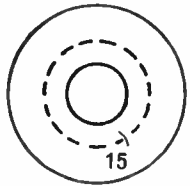
SIZE:
12 in. LONG
5 1/2 in. WIDE
4 1/2 in. HIGH

A KIT OF MATERIALS FOR MAKING THIS
DESIGN IS SUPPLIED BY HOBBIES LIMITED,
DEREHAM, NORFOLK.
PRICE ON APPLICATION.

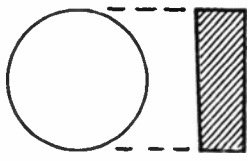
THE ARROWS
INDICATE
DIRECTION
OF GRAIN OF
WOOD.



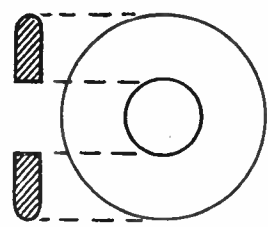
SKETCH SHOWING CONSTRUCTION OF GUN BARREL.



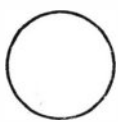
PIECES 14. CUT TWO 1/8 in.



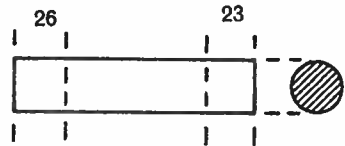
PIECES 12. CUT TWO 1/4 in. SHAPE TO SECTION AND GLUE TO AXLE 6.



PIECE 20. CUT ONE 1/8 in. SHAPE TO SECTION.

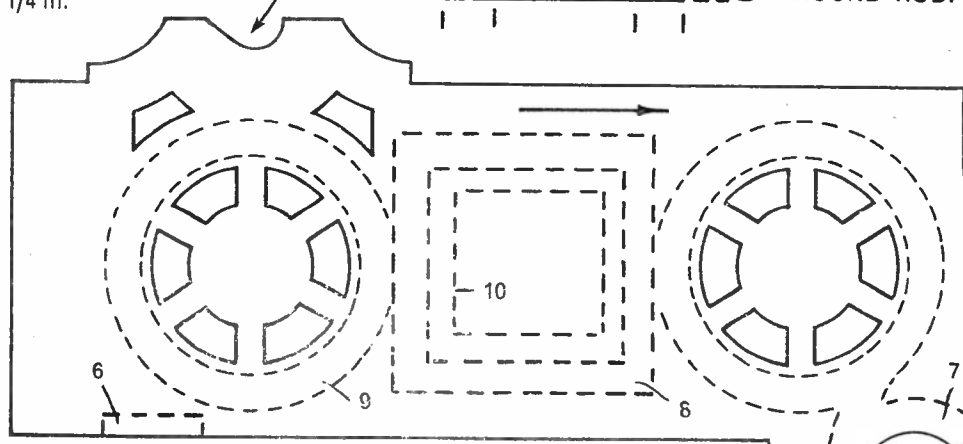


PIECES 15. CUT TWO 1/4 in.

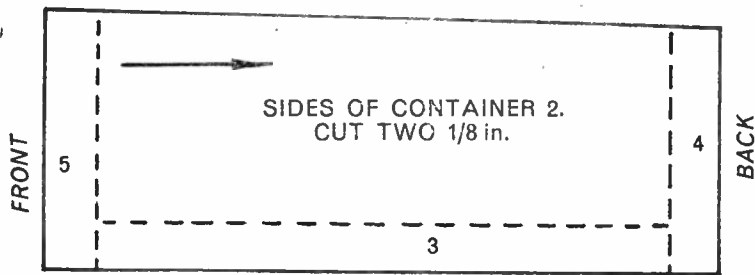


PIECES 25. CUT TWO FROM 1/4 in. DIA. ROUND ROD.

25 FITS HERE



PIECE 1. CUT TWO 1/4 in.



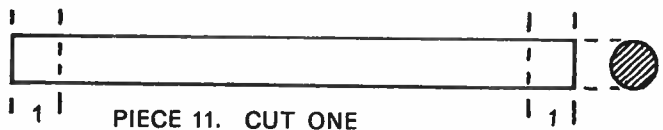
SIDES OF CONTAINER 2. CUT TWO 1/8 in.

PRINTED IN ENGLAND.

PIECE CUT TV

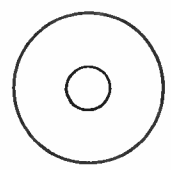
WH

application. Gap filling heat resistant, waterproof. In 3 1/2 oz., 7 oz., 18 oz. tins; from hobbies shops and ironmongers. Leicester, Lovell & Co. Ltd. Nth. Baddesley, Southampton

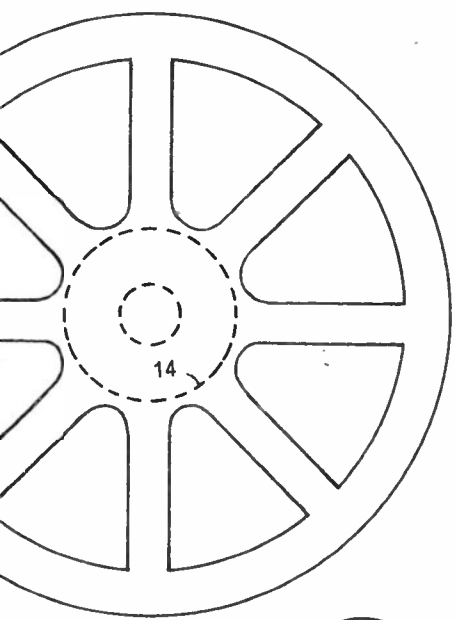


PIECE 11. CUT ONE 1/4 in. ROUND ROD.

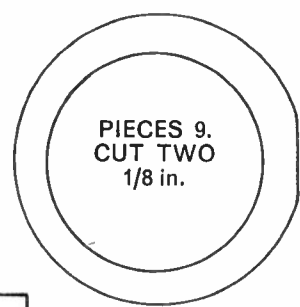
PIECES 26. CUT TWO 1/4 in.



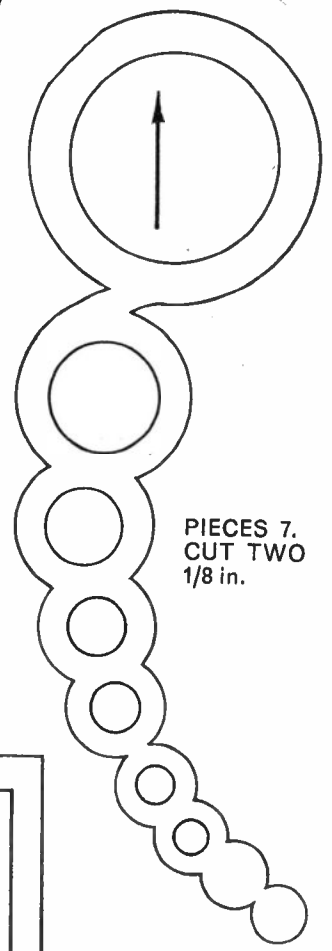
PIECE 22. CUT ONE 1/8 in.



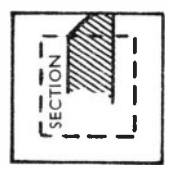
WHEELS 13. CUT TWO 1/4 in.



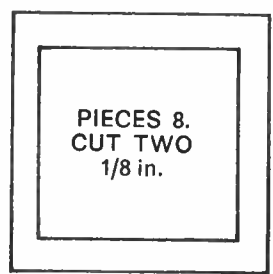
PIECES 9. CUT TWO 1/8 in.



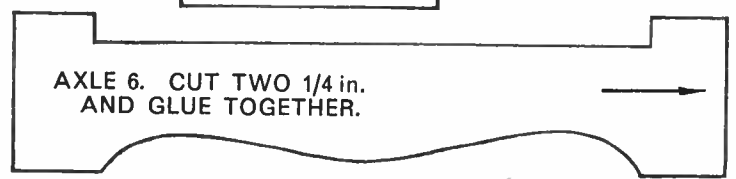
PIECES 7. CUT TWO 1/8 in.



PIECES 10. CUT TWO 1/4 in. SHAPE TO SECTION.



PIECES 8. CUT TWO 1/8 in.



AXLE 6. CUT TWO 1/4 in. AND GLUE TOGETHER.