# HOBBIES *weekly*

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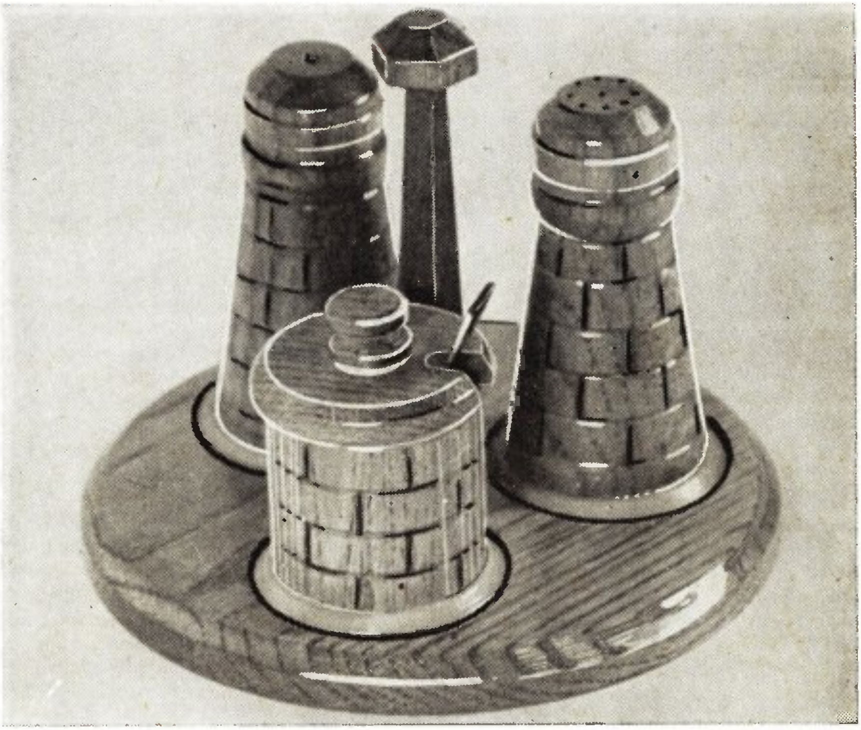
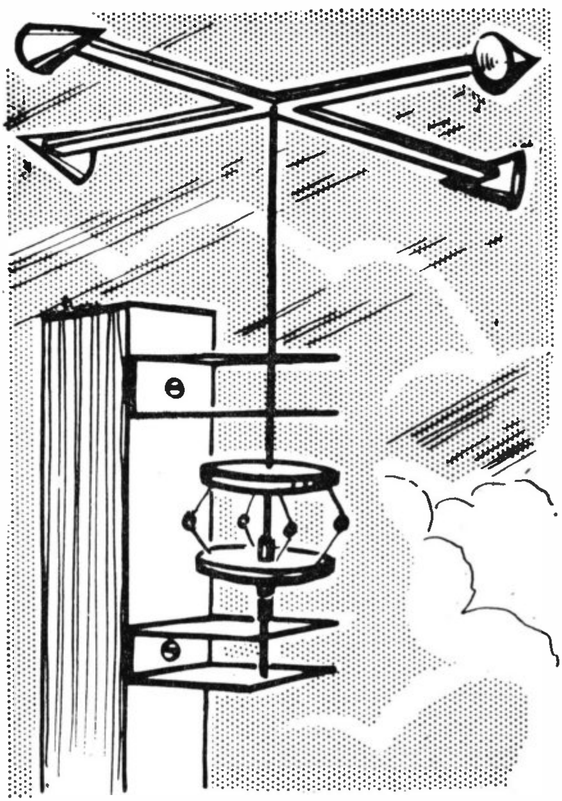


## OAK CRUET SET

Hobbies

**FOR CRAFTSMEN OF ALL AGES**

6D



A MODEL anemometer, a gauge which will indicate the force of the wind, is a simple instrument to make, using easily-obtained materials.

The four wind-collecting cups A, are made from 6 in. circles of tinplate, which may be cut from empty food tins. Two radii are drawn at right angles to each other, on each circle B. A cut is made along one of these, then the area between them overlapped to give a cone shape.

The arms on which the cones revolve are two 12 in. lengths of $\frac{3}{4}$ in. square stripwood. They are joined as shown at C, and their ends are cut at an angle of 45 degrees.

A hole is punched in the side of each cone, which is then screwed to the end of its arm. A hole is drilled through the centre of the crosspiece and a steel shaft, such as a long knitting needle, is inserted. The top of the shaft is bent over D, and pressed into the cross-piece to give a positive anchorage, for the shaft must revolve along with the arms.

The shaft is supported on two wooden or tinplate brackets E, which are screwed to an upright firmly positioned in the ground, or fixed to the side of a garden hut or fence post. The length of the brackets should be sufficient to hold the shaft about 4 in. away from the upright, to allow enough room for the wind-speed measuring device to operate.

After ensuring that the arms rotate freely in the wind, the lower bracket is removed so that the wind measuring device can be fitted, or the whole assembly can be removed and taken indoors for this purpose.

# MODEL ANEMOMETER

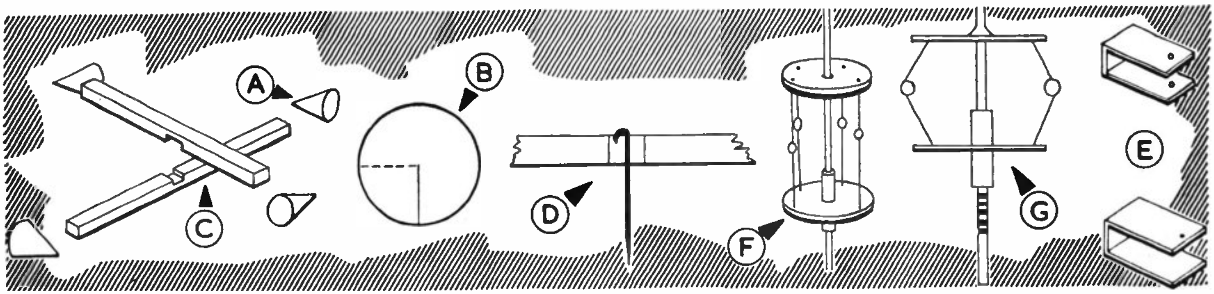
The wind-speed measuring part of the anemometer consists of two 3 in. diameter metal discs, which can be made from tin lids. The upper disc has four holes punched in its rim and a hole in its centre. It is soldered to the shaft just below the upper bracket, so that it rotates with the shaft. The lower disc also has four holes punched in its rim, and one hole in the centre. A 1 in. long tube, wide enough for the shaft to slide inside it, is made from a strip of tinplate and soldered to the disc. The lower disc must be able to slide freely up and down the shaft.

Four lengths of thin cord are tied to the holes in the upper disc and four small weights, such as beads, are threaded on to the cords and held in place by knots. The weights should hang approximately 2 in. below the disc, F.

The lower disc is fitted on to the shaft and the ends of the four cords tied to the holes in the rim of the disc. The two disc should be about 4 in. apart.

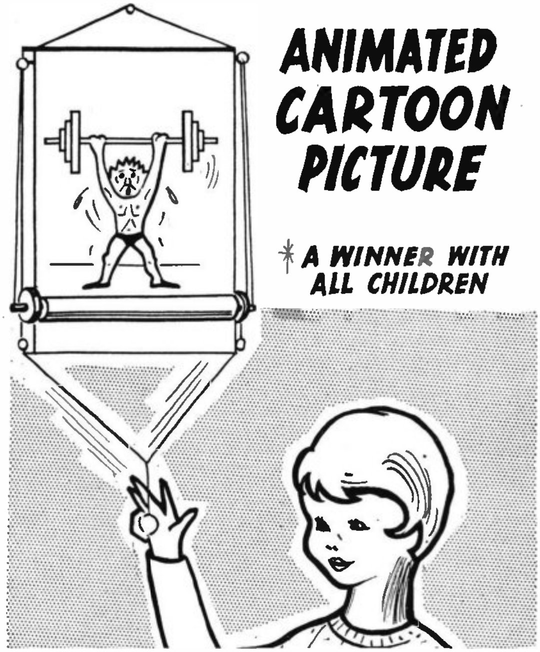
The complete instrument is replaced in position, and when the arms rotate, centrifugal force drives the weights outwards, causing the lower disc to slide up the shaft to a greater or lesser degree, according to the force of the wind. Thin lines painted on the shaft for a scale from which a record of the wind force may be kept G. The more lines there are visible, the greater the wind force will be. It is best not to paint the lines on the shaft until the best size of weight has been found, for it may be necessary to experiment with these to achieve the maximum sensitivity of the device.

An alternative method of checking wind velocity on this piece of apparatus is to dispense with the lower disc, cords, and weights, and to substitute an attachment similar to a cycle mileometer or speedometer fixed to the main upright so that a pin fitted to the disc actuates the speedometer rotator with each revolution of the wind vane. By this method a direct reading of revolutions per minute could be made. (E)



# ANIMATED CARTOON PICTURE

**A WINNER WITH ALL CHILDREN**



THIS novel wall picture for a child's room has amusing play value. By pulling down a blind (which is automatically returned for the next pull) the child can make the funny man in the picture perform some highly-amusing antics like the characters in a cartoon film!

Cut a piece of plywood (or thick cardboard) 9¼ in. by 14 in. A. Cut two pieces of ¾ in. square wood, 14 in. long, B. Glue these to the back of piece A as in Fig. 1.

Screw-eyes are screwed into pieces B, one at each corner as shown. Paste a sheet of white drawing paper to the front of the board. Cut a second sheet of paper 9¼ in. wide by 18 in. long. Place it over the first sheet but glue it in place along the top edge of A only.

Before proceeding with the actual mechanism, we must draw a funny picture of a man in the middle of the paper flap. The example given in Fig. 2 may be copied, but once you have got the idea you may be able to make your own animated characters.

Make the sketch about 7 in. high and press on your pencil to make an impression of your drawing on the paper underneath as a guide for the second drawing. Go over the finished sketch with black ballpen ink.

Now, guided by the impression made on the paper pasted to the board, make a similar comic man, but with the action changed, as the drawing in Fig. 3 shows.

Outline this also with the ballpen, then colour both drawings exactly the same with crayons or watercolour paints.

To the overhanging end of the paper flap glue a 11½ in. length of ⅜ in. dowel D. Roll the paper around the rod to the top of the board. Cut two discs of ¼ in. plywood, 1½ in. diameter E. Bore a hole through the centre of each. Glue the discs to the rod ends. They should slide against the side strips, B when the roll is uncoiled.

Pass a suitably-sized rubber-band over each end of the rod and secure them to the top screw-eyes. Fig. 3. Now make a loop on the end of a piece of string to fit on to one end of the rod. Bring the string down and thread it through the lower screw-eye. Do the same at the other side.

Join the strings at the bottom, and tie on a small ring or bead for the control knob, Fig. 3. Pull the strings to bring down the roller. This operation covers the drawing on the board and exposes the one on the flap. Without leaving hold of the string, allow the flap to recoil by the elastic-band action.

Fasten a piece of cord to the screws for hanging the picture on a nail in the wall. By varying the movement of the roller action, either parts of, or the complete figure, can be animated. (T.S.R.)

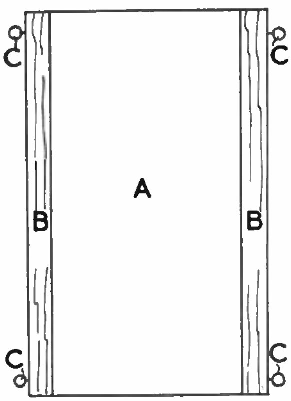



*Fig. 1*

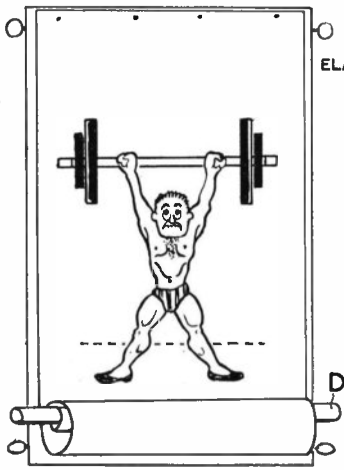



*Fig. 2*

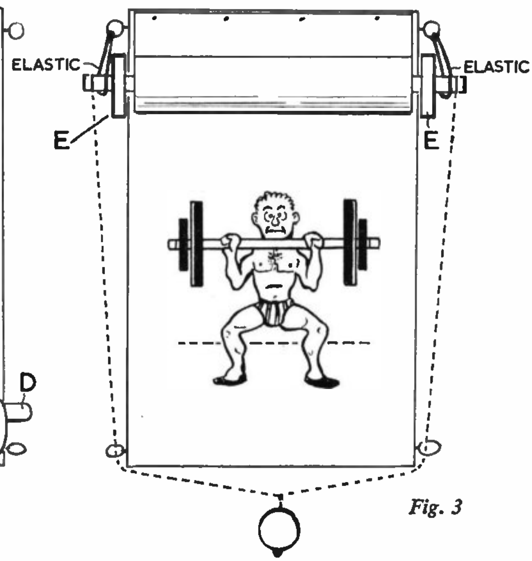



*Fig. 3*

# A SPECTACLE LENS TELESCOPE

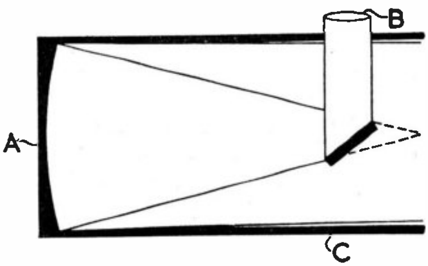
HAVE you ever gazed up at the myriads of stars visible in the night sky, and wished that they could be brought a little nearer to you? This can be far easier and less costly than one might think, as for a few shillings spent on making a telescope you are able to afford yourself wonderful views of many of the thousands of celestial objects, ranging from beautiful star-clusters to picturesque nebulae visible every evening.

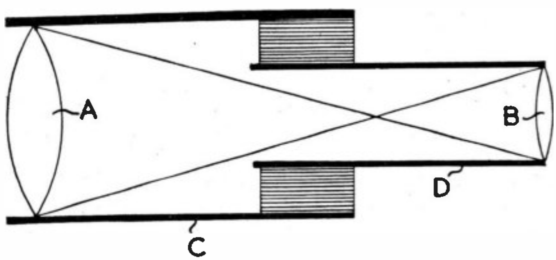
## *By K. Maclennan*

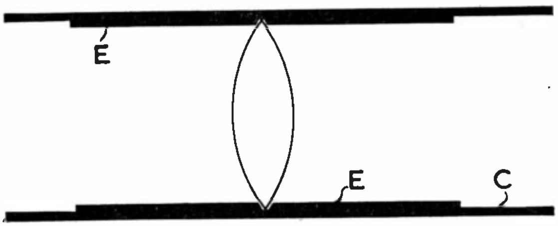
There are two types of telescope in use — the refracting and reflecting. The refracting type works on the principle of lenses, while the reflecting type operates with either mirrors, or just a mirror and a prism. These arrangements are simply explained by means of the diagrams.

Our telescope will be of the refracting type because to build a reflector, *of the size we require*, would be rather more costly.

First we require a spectacle lens with a diameter of approximately 2 in. and a focal length of about 3 ft. The focal length of an objective is equal to the distance between the face A, and the point where the light waves transmitted from it converge. The objective is the term applied to the object glass or main mirror. This rule applies to all optical surfaces, including secondary lenses B, or eyepieces.




We also require a smaller lens for the eyepiece of the telescope, with a diameter of about 1 in. and a focal length equalling anything from $1\frac{1}{2}$ in. to 4 in.

Also, of course, we must have something to hold the lenses in place, and this can take the form of two cardboard tubes, C, and D. These can be obtained from most drapers, and any good optician should be able to supply suitable lenses. The tubes can be sprayed internally with matt black paint, as this reduces unwanted glare to a minimum. The length of one of the cardboard tubes should be about equal to the focal length of the objective, plus about 6 in. with an inside diameter of $\frac{1}{8}$ in. or so greater than that of the objective. This should enable the lens to slip freely through the tube, but it should not be too great, or the objective will become loose when fitted. The other tube should be about half the length of the first.

The next operation is to fix the lenses squarely into the tubes. This is accomplished with the help of cardboard stops, E, against which rest the lenses. For the objective, the stops can be made by cutting short pieces off the end of your small tube, and it is best to have them about 2 in. long.

Select the stop which is to be fitted into the tube first, and dab a little glue on the outside of it. Slowly push it into one end of the tube, ensuring, before leaving the glue to dry, that the nearer end is 6 or 7 in. from the tube. Next place the objective carefully on to the stop, after checking previously that the glue is dry. On top of this, place gently the other stop. Do not glue this, or it will be impossible to remove the lens for the purpose of cleaning when the occasion arises. Now fit the eye-lens into its tube in the same manner, the distance from the end of the tube being equal to its focal length, plus about $\frac{1}{8}$ in. Again, do not glue in the latter stop, as it will occasionally be necessary to clean the lens.

The reason for having the objective situated at such a distance from the end of the tube C, is to guard against 'dewing'. It would surprise many to discover the amount of dew that can collect on a smooth, glassy surface in the course of a few hours.

It is a simple matter to remove the annoyance; simply wipe very carefully with a camel-hair brush. But it is so much easier to take precautions. If the telescope tube housing the objective extends 6 or 7 in. from the lens, dew should be practically negligible with a telescope of the aperture described. This estension of the tube is known as the 'dew-cap'.

One more point worth noting. It may be that your smaller tube D, has an outside diameter too little to enable it to fit snugly into the main tube, thus causing unsteadiness of image. The remedy for this is either to build up the smaller tube by rolling lengths of paper around it and gluing it at frequent intervals. The other remedy is to build 'in' the larger tube from the inside. Although the first method is probably the easiest to carry out, it makes for greater stability to employ the second.

Now all that is required is to fit the smaller tube into the larger and your telescope is ready to be used. To calculate the magnification of the telescope, divide the focal length of the objective by the focal length of the eyepiece. This means that if you have an objective with a focal length of 36 in. and an eyepiece with a focal length of 3 in. then your magnification will equal 36 divided by 3, or 12 diameters; and if the focal lengths were 36 in. and $\frac{1}{2}$ in. respectively, then your magnification would be 72 times —6 times the first figure.

With your completed telescope magnifying, let us suppose 15 diameters, it will be possible to identify with the aid of a lunar map, the seas, or maria, and a few of the larger craters on the moon. You will be able to take sweeping views of the Milky Way in all its glory. Magnificent views of such well-known star clusters as the Pleiades, or the Hyades will be within your range.

A word of caution is, however, necessary here. NEVER focus your telescope, no matter how low the magnification may be, on the sun when your eye is at the eyepiece. If you do so, then all the light and heat from the sun will be focused on to your eye, resulting in, perhaps, total blindness. Place little or no reliance on such accessories as smoked glass filters, to be fitted on to the eyepiece of your telescope. These have a dangerous habit of cracking, falling off the eyepiece, or, under high magnifications, simply melting at the wrong moment.

Apart from this, you and your telescope can have many enjoyable evenings, together — well worth the seven or or eight shillings spent on its construction.

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# Make a 'Matchbox Diver' Game

EACH player in turn manipulates the diving-board, which plunges the matchbox 'diver' into the 'swimming-pool' with its score-board. The points gained from each dive are indicated by the numbered section in which the diver lands.

Make the 'pool' board from a panel of hardboard about 24 in. by 10 in. Paint the smooth side blue. Mark the board off into seven $2\frac{1}{2}$ in. sections. The numbers of the sections are from 4–10 and added, as indicated in Fig. 1., by hand-painting or by sticking on figures cut from an old calendar.

Next erect the upright support, which is 7 in. by $2\frac{1}{2}$ in. by $\frac{3}{4}$ in. wood, screwing it a little way in from the end of the board and facing the score sections, as shown.

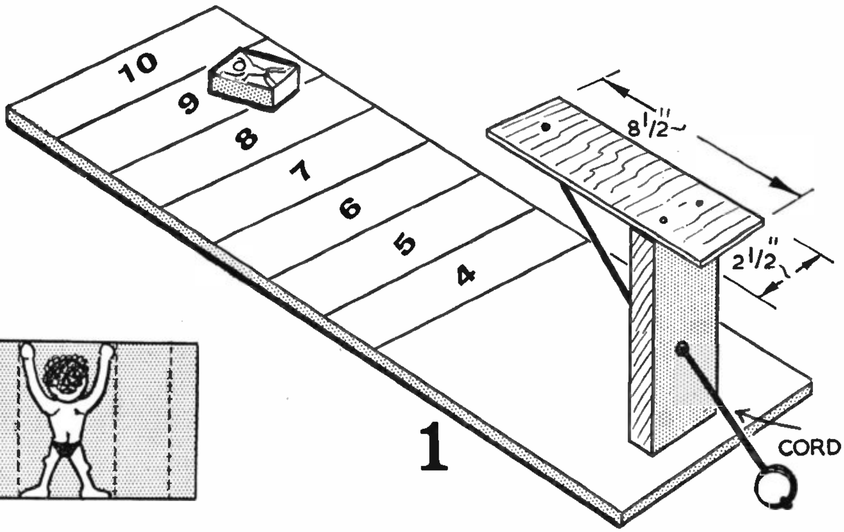
Cut the diving-board of $\frac{1}{8}$ in. plywood to the size given in Fig. 1. Note that the outside grain of the wood must go across the width to provide the necessary spring to the board. Screw it to the top of the support as shown.

The support piece may be brightly-painted, but the spring-board is best left unpainted. Fasten a piece of picture-cord or strong string to the underside of the diving-board, and thread it through a hole bored in the support block. Attach a small wood bead for the operator to pull the cord.

Prepare a strip of white paper and draw and paint on the little diver figure as in Fig. 2. Paste this around an empty matchbox. Place the matchbox diver on the spring-board, pull the string, then release quickly, to make the diver 'plunge into the pool' and score points.

(T.S.R.)

*How to assemble the board and diver*

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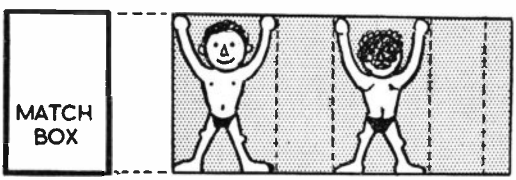


# A 'NATURAL' WALL PICTURE

THERE are many possibilities open to the collector of moths and butterflies when mounting his specimens. The usual method, of course, is to fix them in neat rows in glass-topped cases and these in turn can become drawers to form a cabinet.

This is the scientific approach to the study of Lepidoptera, each specimen being neatly labelled with all information concerning its species. There is a time, however, when a variation of this lay-out would be appreciated and here is just the thing.

One or more carefully selected specimens neatly arranged with natural surroundings and mounted to form a picture is the idea we have in mind. This not only shows off your choice specimens but also forms a fascinating picture to adorn your wall and interest your friends.

A fairly substantial board is needed for the backboard and this forms the foundation on which to mount your specimens and their appropriate surroundings. In order to preserve this lay-out it is covered with a sheet of glass held in place just clear of the specimens by a suitable moulding.

The size will depend to a certain extent on the number of specimens to be shown but measurements given in the diagrams can be considered a fair average. Alterations can be made to suit individual requirements or where the picture is to fit into a specified position:

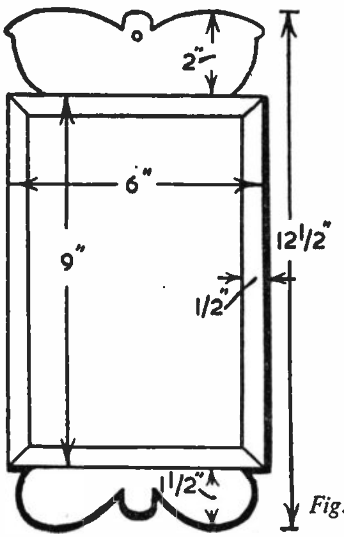


*Fig. 1*

A piece of ¼ in. hardboard or plywood is right for the backboard. The overall size of 12½ in. long and 6 in. wide will make a well-proportioned picture. Fig. 1 shows how to cut the board — the top takes the form of the fore part of a butterfly or moth while the bottom shows the two rear wings and body.

The rectangular centre portion will need careful preparation in readiness for mounting the specimens. The ideal background for most types is a pale green or blue, although for some of the lighter moths it is advisable to adopt a much darker colour so as to form greater contrast.

Background colour can be painted on, or a sheet of paper stuck down. A matt surface is better for this purpose than a shiny one, as this is liable to create unnatural reflections. Decide first the kind of specimens you are going to mount, together with their appropriate surroundings; then you can choose a background to harmonize.

**A grass setting**

Grasses form one of the most artistic and natural objects for moth or butterfly dictures and when dried these are ideal for our purpose. We must not forget however that there are certain plants which can also be used. The teasel is an excellent example, and when carefully dried and mounted can be very attractive.

They may be fixed flat on to the background but a much better appearance is achieved by letting them stand out, even if it is only by a small amount. A small strip of wood at the base drilled to take the stalks is quite suitable for this purpose, or for a more natural rugged appearance try shaping a piece of modelling clay or similar material.

Short pins are used when mounting the moths or butterflies so that the distance between back and glass can be kept to a minimum. When mounting your specimens set them out as naturally as you can.

Having got a nicely arranged picture it is necessary to preserve it by covering with a glass held at the correct distance with an appropriate moulding.

The framing can be made up as a unit and then added to the backboard or each of the four sides fixed separately.

The shape of the moulding is given in Fig. 2. It is ¾ in. deep and ½ in. wide and the rebate to take the glass is cut ⅛ in. each way. A thin capping to hold the glass in place is ½ in. wide and about ⅛ in. thick, and the pieces are cut to the same lengths as the moulding, i.e. two pieces 9 in. for the sides and two pieces 6 in. for the top and bottom. Mitre the corners and glue in position.

The moulding can be finished off by painting, or if it is an attractive hardwood then french polish or varnish is suitable. A hole for hanging will complete the job.

(E)

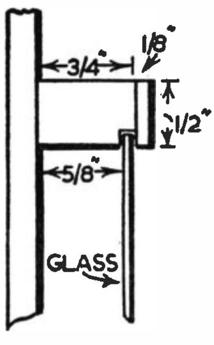
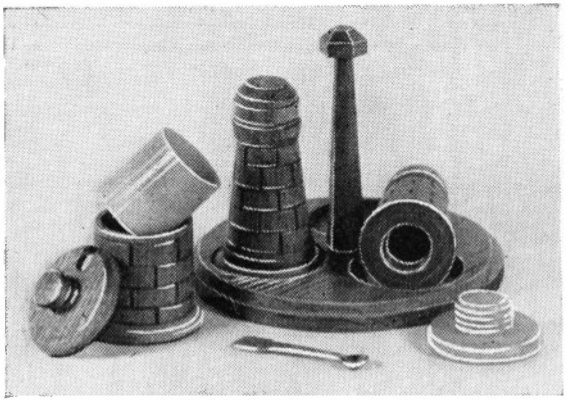


*Fig. 2*

# MAKING A CRUET SET IN OAK



*By L. Elmer*

HAVING some odd pieces of oak, the necessary tools, and the need for a diversion from the normal model engineering projects, I designed and made a very attractive 'lighthouse' condiment set as a useful addition to the sideboard, or table.

As will be seen by the photographs and diagrams on the centre pages the salt pot and the pepper pot are identical, apart from the holes in the top; 1/8 in. dia. central hole for the salt and a circle of eight 1/16 in. dia. holes on a 1/4 in. P.C.D. and one central hole, same size, for the pepper pot.

Both the salt and pepper pot have P.V.C. (Polyvinylchloride) 1 in.. B.S.W. tapped inserts and a P.V.C. threaded base. This is, of course, to obviate the sticking of threads. As readers will know, if the threads are in wood, tightness will result very quickly in the salt pot. The insert was not really necessary for the pepper pot but was done to keep them identical.

The mustard pot also has a P.V.C. base for the same reason. This is counterbored 1/8 in. deep and a light press fit on the oak. The tapped P.V.C. inserts are also a light press in the counterbores.

The blanks for the salt and pepper pots were cut off approximately 1 in. too long, held in the chuck, drilled and reamed .875 in. dia. and counterbored 1 1/4 in. dia. by 1/2 in. deep to receive the P.V.C. inserts. The external dimensions were rough machined before removing from the chuck. They were then held on a normal tapered mandrel. Many readers may not have access to a 7/8 in. reamer and mandrel, but a drilled hole and a wooden stub mandrel turned to suit would do just as well.

The outside was then finish turned, using the compound slide set over 7°. The circular grooves were put in on the lathe. The vertical lines were put in on the bench, and here again I was glad of the reamed hole and mandrel, the latter being held by the soft jaws of the vice.

After considerable thought I made a small chisel 3/8 in. wide about 2 in. long out of a piece of 'all hard' hacksaw blade and with judicious tapping it did the job very well. Two bands were made out of Perspex, to represent the light and are a push fit on top of the salt and pepper pot, to add to the lighthouse effect.

The mustard pot was turned all in one operation from a blank, also about 1 in. too long. It was sawn off to length whilst revolving in the lathe, a practice of mine which leaves a very true surface, calling for no further attention, as it fits into its P.V.C. base.

The brickwork effect was done in the same manner as before, this time using a stub wooden mandrel when doing the vertical lines. The lid was made out of one of the pieces I had used for chucking purposes, turning the top and lid knob first and then reversing and holding the knob in a collet to finish and counterbore so as to be a nice snug fit on the mustard pot.

The slot for the spoon was put in by a 1/4 in. round file. The inner pot to hold the mustard is made out of P.V.C. and has a clearance fit of .006 in. to .010 in., alternatively a proprietary container could be purchased, as P.V.C. offcuts are difficult to obtain. The spoon I made out of 16g. stainless steel, the 'cup' being formed with the aid of a 3/8 in. dia. ball-bearing and a 1/2 in. dia. semi-spherical hole, machined with the aid of a bull nosed slot drill, in the end of a short piece of 1 in. dia. mild steel. This was done under a small press, but a vice will also handle the job.

The base plate was marked out and counterbored 2 in. dia. by 1/4 in. deep on the face-plate, and also tapped centrally 1/4 in. B.S.W.

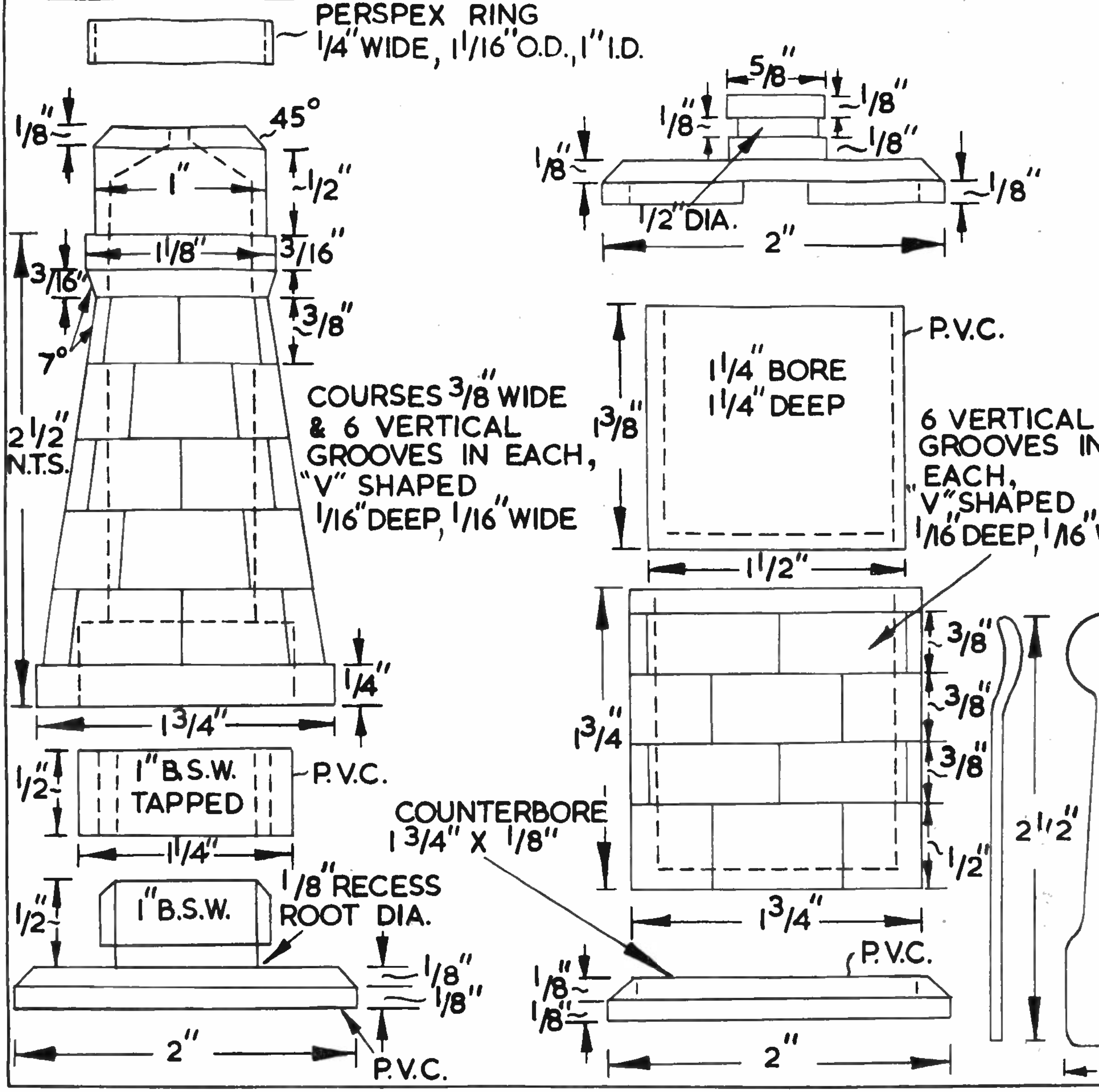
The handle is a tapered hexagon and capped with a hexagon knob. The blank is first turned to .750 in. dia. about 5 1/2 in. long. One end is turned down to .025 in. dia. for 3/8 in. and the other end to .375 in. dia. to leave 3 1/2 in. long at .075 in.

My method of forming the hexagon needs a centre hole in the small end, as I was fortunate enough to have the use of a milling machine and dividing head. The cutter used was a 3/8 in. end mill and the D/H was set to 3°. After machining the hexagon, the 3/8 in. spigot is neatly cut off, is held in the lathe by the 1/4 in. spigot and with care can be drilled 3/16 in. dia. by 5/16 in. deep. A steel stud is then made 1/2 in. long and is screwed in the handle, which is then ready to be screwed into the base. The knob was machined by the same method, again leaving a chucking piece. The chucking piece was then cut off and the knob held in the lathe and drilled 3/16 in. dia. by 5/16 in. deep.

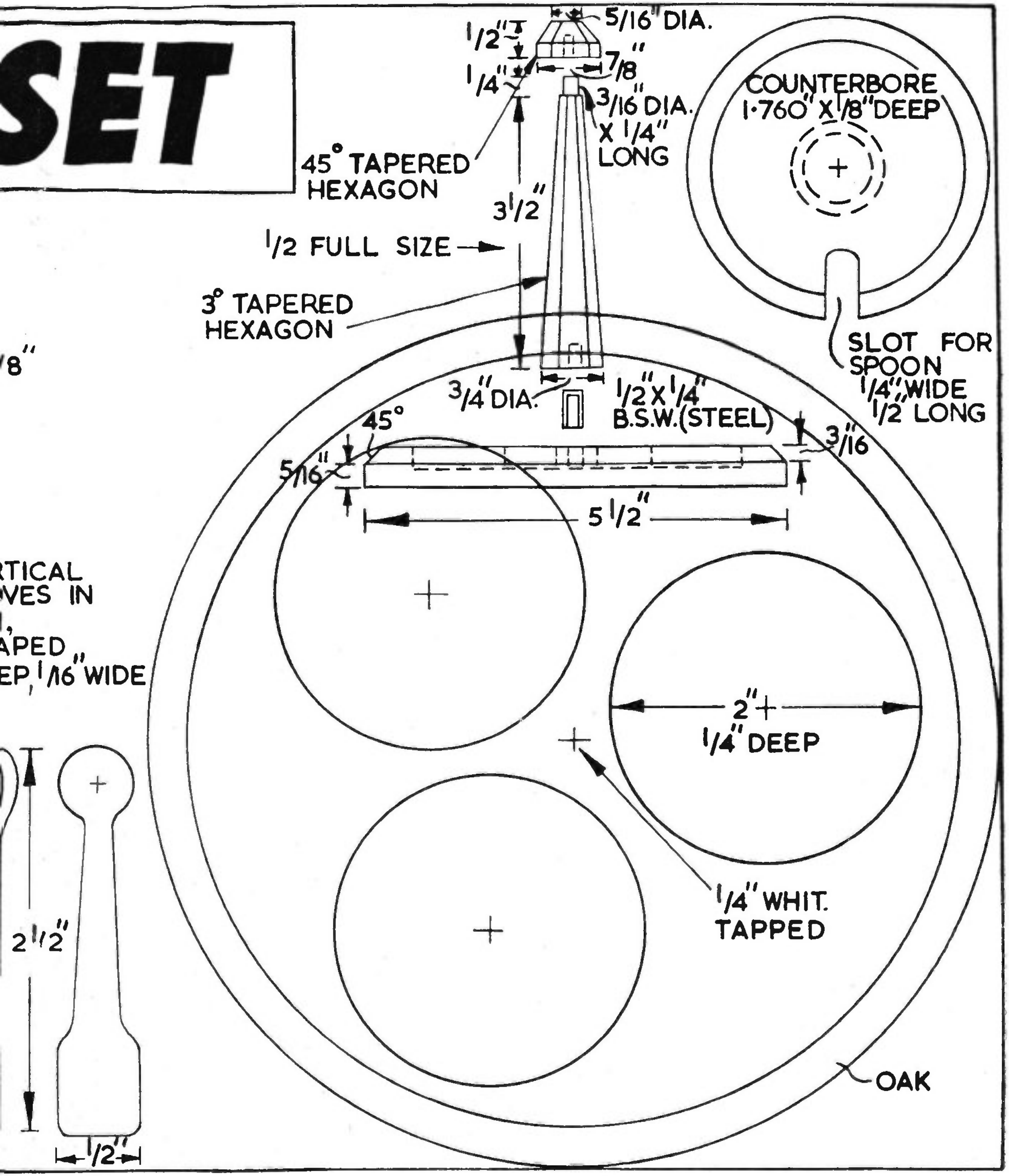
The small 3/16 in. dia. end of the handle is reduced to 1/4 in. in length and fitted to the knob.

The finished job was thoroughly glasspapered (the mandrel was very useful again) and finally given two coats of polyurethane clear varnish.

# OAK CRUET S


PERSPEX RING
1/4" WIDE, 1 1/16" O.D., 1" I.D.
45°
1/8"
1"
1/2"
1 1/8"
3/16"
3/16"
3/8"
7°
2 1/2" N.T.S.
COURSES 3/8" WIDE
& 6 VERTICAL
GROOVES IN EACH,
"V" SHAPED
1/16" DEEP, 1/16" WIDE
1/4"
1 3/4"
1/2"
1" B.S.W.
TAPPED
P.V.C.
1 1/4"
1" B.S.W.
1/8" RECESS
ROOT DIA.
2"
P.V.C.
5/8"
1/2" DIA.
2"
P.V.C.
1 1/4" BORE
1 1/4" DEEP
1 3/8"
1 1/2"
6 VERTICAL
GROOVES IN
EACH,
"V" SHAPED
1/16" DEEP, 1/16"
1 3/4
COUNTERBORE
1 3/4" X 1/8"
1/2"
2 1/2"

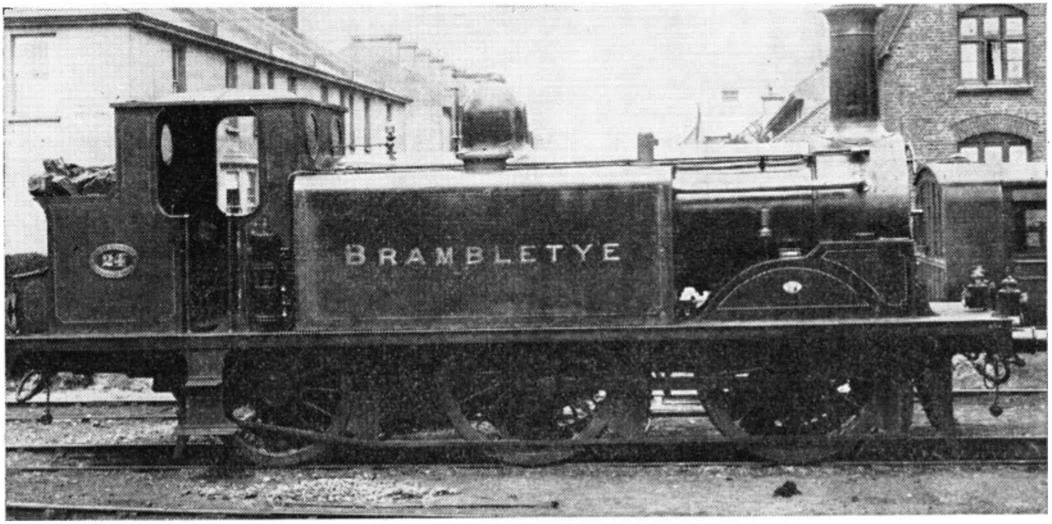
# SET



5/16" DIA.
1/2"
7/8"
1/4"
3/16" DIA. X 1/4" LONG
45° TAPERED HEXAGON
3 1/2"
1/2 FULL SIZE
3° TAPERED HEXAGON
3/4" DIA.
1/2" X 1/4" B.S.W. (STEEL)
45°
5/16"
3/16"
5 1/2"
COUNTERBORE 1·760" X 1/8" DEEP
SLOT FOR SPOON 1/4" WIDE 1/2 LONG
2"
1/4" DEEP
1/4" WHIT. TAPPED
OAK
2 1/2"
1/2"
/8"
RTICAL
OVES IN
APED
EP, 1/16" WIDE

*Interesting Locos—88*

# THE BRIGHTON 0-4-2 TANKS



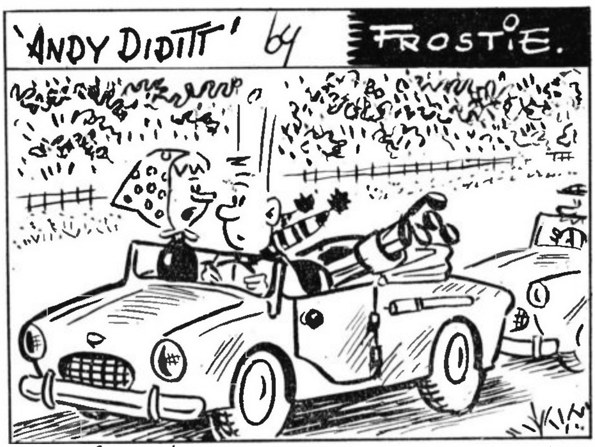

*L.B. & S.C. RLY. William Stroudley's 0-4-2 passenger side tank locomotive No. 24 'Brambletye'*

SIDE tank engines of the 0–4–2 wheel arrangement for passenger work were, in the past, greatly favoured by the Great Western and the London Brighton & South Coast railways, and these were the only two companies to adopt the type in large numbers.

The G.W. engines were all built at Wolverhampton and the 0–4–2 type were the only passenger tank engines to be built there. Similar engines, but of the 2–4–0 type were built at Swindon from 1869–1878. The Brighton engines were designed by William Stroudley and consisted of a class of 125 engines built from 1873 to 1887 being used in passenger work on all parts of the line.

The leading details were: cylinders 17 in. diameter and 24 in. stroke, wheel diameters, coupled 5 ft. 6 in., trailing 4 ft. 6 in., wheelbase, 7 ft. 7 in. + 7 ft. 5 in. = 15 ft. In the different batches of these engines, the heating surface varied but the 35 built by Neilson & Co. of Glasgow (of which the illustration shows an example) had a total heating surface of 1,029 sq. ft., the tubes providing 944 sq. ft. and the firebox 85 sq. ft. Grate area was 15 sq. ft. and boiler working pressure 140 lb. per sq. in. later increased to 150 lb. Tanks capacity were 860 gallons and bunker 2½ tons. Average weight in working order was 38½ tons of which 27 tons was carried by the coupled wheels.

These engines at the time embodied all Mr Stroudley's latest features, the arrangements of the exhaust ports being of particular interest. They were 2½ in. wide divided into two portions each 7½ in. long. The exhaust from the upper portion travelled directly to the blast pipe, but that from the lower part was taken through a passage completely round the cylinders and connected with the exhaust from the upper ports. The reasons for this was that, to permit adequate dimentions for the crank axle, the centres of the cylinders were only 2 ft. 2 in. apart, which somewhat limited the space between them. Similarly the steam ports were also divided, the two portions being moved upwards and downwards. This gave a clear space in the middle for the steam to pass freely from one end of the steam chest to the other. These cylinders were of separate castings but in his larger engines Mr Stroudley cast both in one piece. It is interesting to observe that in all his designs, both tank and tender, Mr Stroudley never adopted a bogie. He considered that this never really carried any worthwhile advantage and was an unnecessary expense. It is also of interest to note that at the time the G.W.R. did not favour a bogie, and the only engines of the Tank type to be so provided were the 4–4–2 engines by Mr G. J. Churchward in 1905. (A.J.R.)




"ANDY! – YOU'RE DRIVING TOO NEAR THE CAR BEHIND."

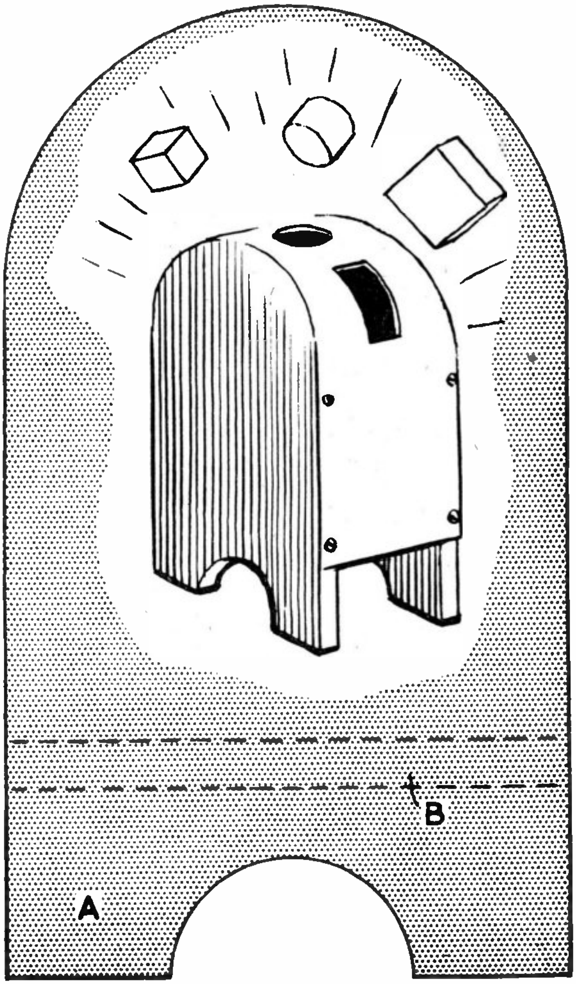
*An Educational Toy*

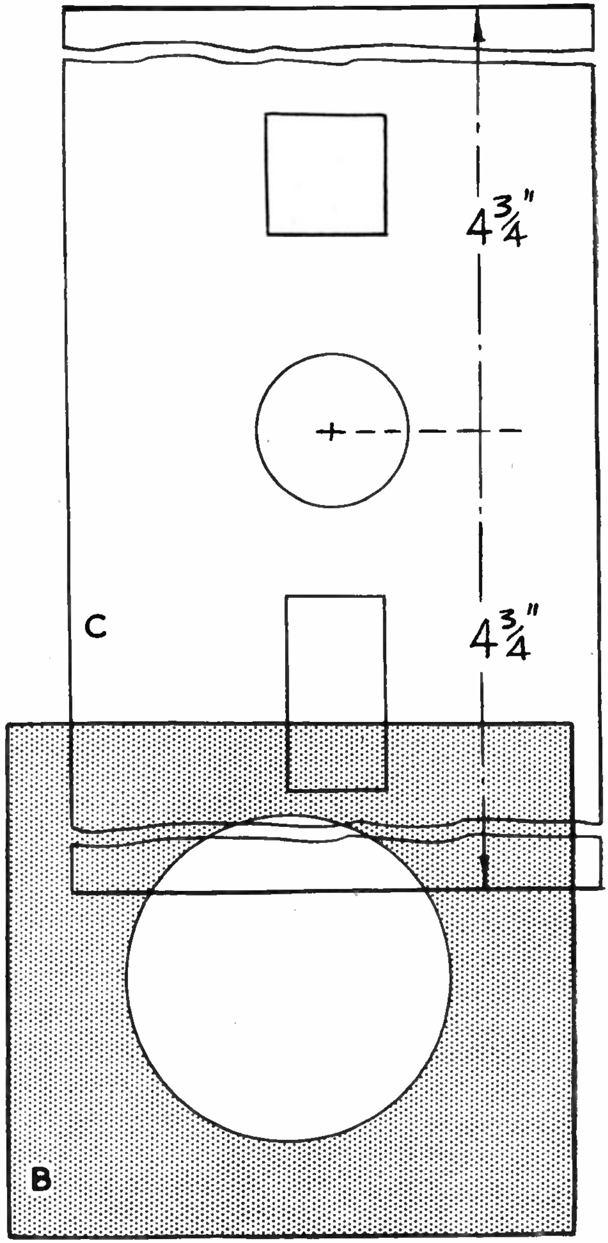
# CHILD'S POSTAL BOX

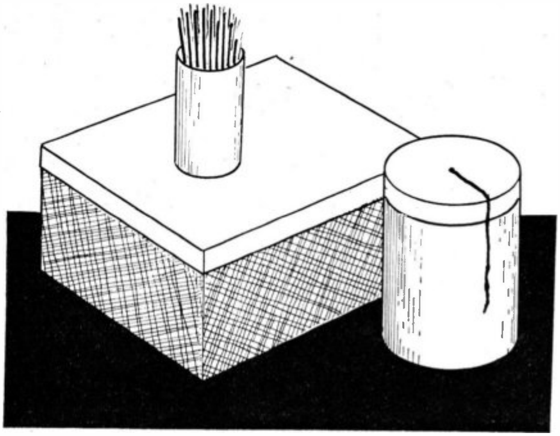
THIS educational toy is cut out with a fretsaw and assembled in one evening. It is intended for the very young, who will quickly learn to distinguish the shapes and 'post' them in the correct slots.

Cut two of A and one of B from ¼ in. wood and glue B between the sides A. Piece C is cut from 1/16 in. plywood (grain crosswise) and is wrapped around A and B, securing with glue and pins, or screws.

The postal shapes are cut from odd pieces of soft wood slightly smaller than the slots. Finish by painting with non-toxic paint such as Humbrol. (M.p.)





# DECORATIVE PROJECTS IN TINWARE

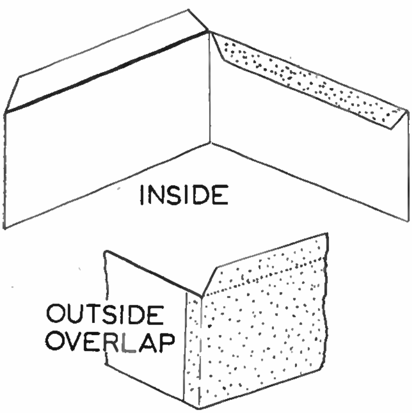
*By*

*S. H. L.*

EMPTY tins of all shapes and sizes can be quickly converted into useful containers if brightened up with a coat of paint or some self-adhesive decorative material. Cocoa, coffee and the small size biscuit tins are particularly useful and the following will give you some ideas for treatment. Decorated stringholders, spillholders, cake and pastry containers are examples of what can be made.

First of all the tins should be given a thorough cleaning and any paper labels removed. You may find that some of these are rather tenacious but they can be removed with the aid of steel wool and plenty of hot water. When soap is used be sure to give a good rinse in clear water and allow to dry. Our aim is to free the tin of grease or paper which would prevent the paint from adhering.

While we can apply self-adhesive papers quite easily we have to consider the fit of the lid. Should the latter be tight it may be advisable to apply paint although there is the possibility of enlarging the lid a little so that it will fit over the additional thickness of the cover. In any event I would recommend that the lids arepainted.




There should be no difficulty about painting empty tins once they have been cleaned. Apply a first primer of thin undercoating, give a light sandpapering after drying and you need only paint the outsides of the box along with the outside of the lid. A final application of gloss paint will finish the job. Note that if you cover the painted tins with a large carton while drying it will prevent dust from settling thus giving a really grand finish.

The self-adhesive papers are said to be steamproof, waterproof and can be kept clean by wiping over with a damp cloth. There is a wide variety of patterns ranging from kitchen designs to wood grained effects. When using this material it is merely a matter of cutting same to fit the tin and applying.

Should you be covering a small biscuit tin intended for cakes the best way is to apply the material around the tin. Measure the depth of the tin and add an extra inch. This allows for ½ in. folding under the bottom and ½ in. for folding inside thus covering the rim. It is also advisable to allow an extra ½ in. round the sides. In order to make a satisfactory job of this note that it is essential to cut mitres at the corners as shown in the diagram. When starting to apply the material test the length of the strip around the outside and then apply the first ½ in. at one corner, taking the balance round the side. This means that the first corner will be covered when the last side is covered and we can make a neat trim at the corner. Instead of trying to apply the material to the tin it will be found best to lay it on the table, stripping the backing sufficient for one side then laying the tin exactly where desired. Smooth out immediately, trim the mitres and then proceed with the next side. Similarly, when covering a round tin you may roll it over the material, again allowing for a small overlap.

The design of the paper may not always be suitable for round tins although there are plenty of 'overall' patterns, while the wood grained types are eminently suitable.

Round tins can be quickly made into spill holders, or stringholders. The latter, which prevent string from becoming tangled, should have a hole drilled in the lid. Be careful to file away the burr otherwise the string will catch and shred when it is being pulled out. Paint the lid, fill with a ball of string and you have a very serviceable stringholder.

It is possible to buy transfers bearing the words CAKES, PASTRIES, etc. and a suitable title will make all the difference. For smaller tins you may use some of the self-adhesive letters now on sale at stationers.

Small tins with hinged lids can be decorated and lined with thin foam rubber. These are then useful for studs, cufflinks, small trinkets or pins and can be labelled on the outside as already mentioned. All manner of tins can be covered and quite often surplus paint will be all that is needed to give a bright, clean finish.

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## PAPER FOLDING AND MODELLING

*By A. van Breda*

THIS is the perfect book for anyone who wants to try their hand at paper folding or origami. No equipment is needed except the paper itself.

The processes of folding are described clearly and simply, with many helpful diagrams. The book begins with easy and fairly conventional models but later the author introduces more elaborate models, of his own invention.

*Published by Faber & Faber Ltd. Price 12s. 6d.*

# Collecting Animal 'Signatures'

MUCH can be learned about the activities of animals and birds by studying the tracks which they make. It is most interesting, and a hobby that can be carried on at any time of the year.

There are several ways of tackling the job, and the easiest is to make pencil drawings on the spot which can be translated into a more permanent form with pen and ink at home. Photography can, of course, play a very important part in the collecting of tracks, and can lead to the formation of a very useful set of prints.

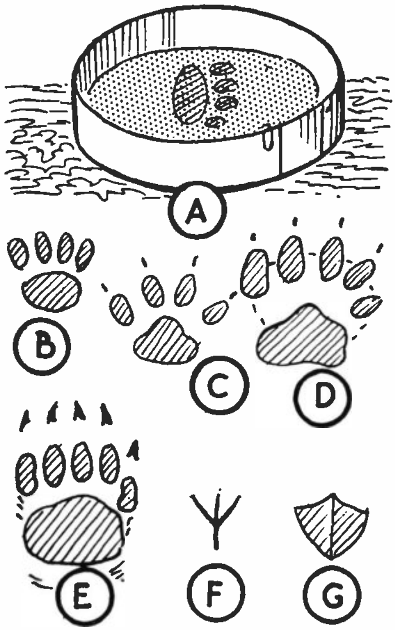
These collections can be housed in neat albums or filed in a card index cabinet. Making the permanent drawings, processing the photos and arranging them can be done on a wet day or during the winter evenings. The value of the collection is greatly increased by recording all the details concerning the track, and this will include the date, where seen, and what is most important, the exact measurements.

**Plaster reproductions**

However well you make a drawing or take a photograph, it cannot compare with the actual thing, or at least with a perfect reproduction of it. It is not often possible to take the actual track and put it in your collection, especially when found on very hard ground, but it is possible to make a plaster cast of it to keep as a permanent record.

Making plaster casts is an easy operation, and will increase your knowledge of the wild life of the countryside. Very little apparatus is necessary, and the cost can be kept extremely low. All you need is some plaster of paris and a few strips of thin card. It should not be necessary to travel long distances to find your tracks, for the garden or even back yard will provide you with at least a few to start off with. As your collection grows, however, you will need to visit other places in the surrounding countryside, such as woods, footpaths or the banks of a babbling brook.

Having found a suitable track which you want to put in your collection you must first put a neat ring of card around it to hold the plaster in place while it is setting. A strip of stout paper can be used instead of card, or if you use a piece of thin plastic sheet it may be used over and over again, and can be removed from the plaster cast much easier than card or paper. Paper clips will hold the ends of the ring together, and they can be easily removed when the plaster is set. This is clearly shown at A, where the ring has been placed round a track ready to be filled with plaster.




**Taking an impression**

In order to get a good impression the ring should be just a little larger than the track you wish to copy. The height of the ring will, of course, vary with the size of the track, and for very small ones it need not be more than ½ in. A large one, on the other hand, may need a band at least 2 in. wide, especially if it is a deep impression made by a heavy animal.

The band should be placed round the track carefully, so as not to disturb it in any way. Press it well down, so that when the plaster is poured in, none of it will escape. Make the plaster mixture so that it is like a stiffish cream that can be poured.

Adding too much water prolongs the setting or even makes the mixture difficult to set properly. On the other hand if the plaster is too stodgy it will not run into all parts of the track, and you will get an imperfect impression.

The time it takes for the plaster to set will depend on the temperature of the atmosphere, and may vary from a quarter of an hour upwards. After making a few casts you will soon determine when the plaster is set ready to move. A little care must be exercised here, especially if the ground is hard, when the cast must be slowly eased from the soil to avoid breakage.

It is a good idea to put the cast aside till next day to make sure that it has completely dried out, then any surplus soil can be removed. Carefully chip out the larger pieces, after which a quick wash will finish the job. Water will not hurt the plaster provided you do not overdo it.

**Look for the unusual**

Now for a few examples of the tracks you can hunt out and add to your collection. We are all familiar with footprints of the cat B, and the dog C, but somewhat more elusive yet most interesting are those of the otter D, and badger E.

The tracks of feathered creatures such as game birds F, and of the water birds with webbed feet G, should be included in your collection, and there are plenty of examples of these.

Written in a very legible style these 'signatures' of the animals and other creatures of the countryside teach us much about their habits, and make a most interesting study. (E.)

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# HOW TO CENTRE A BALL

TRY and float a ping pong ball exactly in the middle of a glass filled with water. You will fail because forces of attraction between water particles, which make the surface act like a thin skin, are not equally balanced all around the ball. Consequently the ball keeps being pulled to the side of the glass.

The secret is to raise the surface above the glass rim. Do this, while the ball is still floating, by adding more water until the surface 'skin' starts to bulge upwards. An 'eye dropper' will help you add the water gently. As the surface bulges, the upwards — acting force of the water keeping the ball afloat will push it to the top of the bulge — over the centre of the glass! (A.E.W.)


# NEW ISSUES OF MAURITIUS

MAURITIUS recently issued a fine new Definitive issue featuring colourful birds of the island. Details are:


*Some of the fine new stamps from Mauritius*

**2 Cents — Grey White-eye.**
Readily recognized by its prominent white rump. Very tame and inquisitive.

**3 Cents — Rodrigues Fody.**
A common yellow breasted fody.

**4 Cents — Olive White-eye.**
Now a rare bird and confined to the forest areas. Its call note is very similar to that of the sparrow.

**5 Cents — Paradise Fly-catcher.**
Their numbers have sadly diminished over the years. Extremely pleasant song and very tame.

**10 Cents — Mauritius Fody.**
About the size of a bunting with a shorter tail and longer wings. The male is red and beautiful whereas the female is dull and unattractive.

**15 Cents — Parakeet.**
Yellow and green and has a black collar with red and light blue feathers on the nape.

**20 Cents — Cuckoo-shrike.**
In former days was plentiful and as its French name denotes, was an object of attention to the fowler, who could call it to him.

**25 Cents — Kestrel.**
White underparts, black bars with rust coloured upperparts.

**35 Cents — Pink Pigeon.**
A rare bird which cannot fly very far.

**50 Cents — Merle.**
Generally white and pale brown overall. A rare type of starling.

**60 Cents — Dutch Pigeon.**
This beautiful Pigeon, which became extinct about 1830, had a triple coloration of the body.

**R 1 — Mauritius Dodo.**
Constantly being killed by passing mariners and eaten as a welcome change from ship food, it is not surprising that the Dodo is now extinct.

**Rs 2·50 — Rodrigues Solitaire**
These were large birds weighing 40–50 lb. with large heads, now extinct.

**Rs 5 — Red Rail (Extinct) .**
It had a bill twice as long as its cranium and a yellowish eye. Now extinct.

**Rs 10 — Broad-Billed Parrot.**
This was possibly one of the first Mauritian birds to become extinct, being flightless and, like all big parrots, excellent eating. (R.L.C.)





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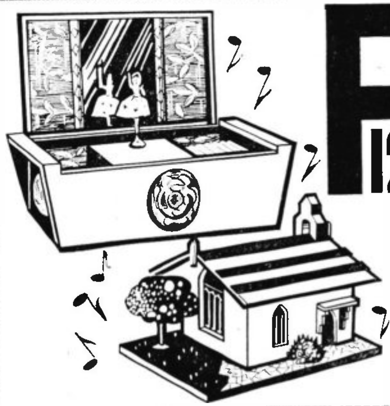

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