

HOBBIES

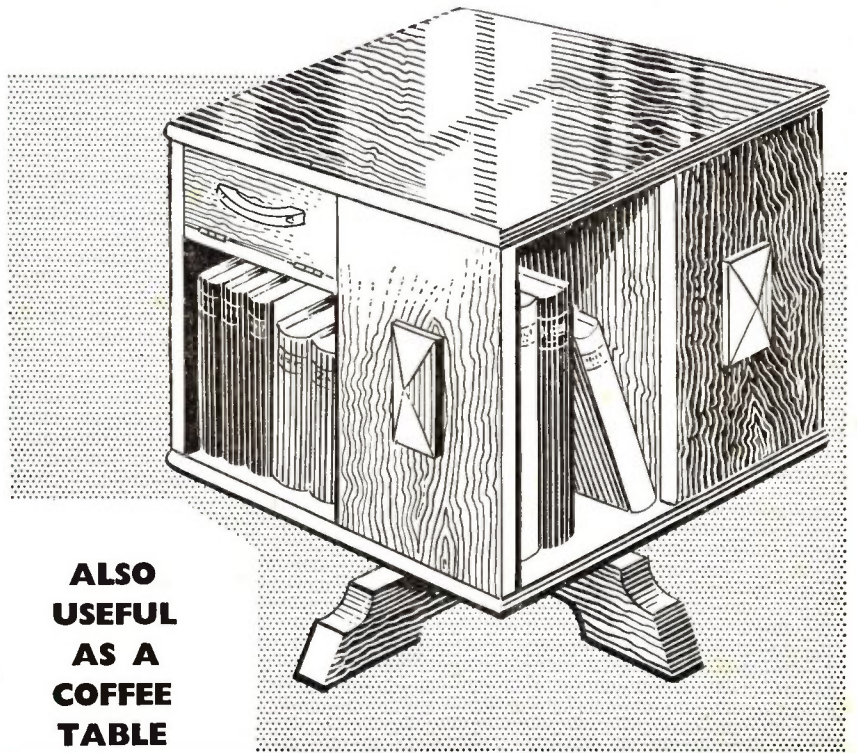
weekly

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REVOLVING BOOKCASE



**ALSO
USEFUL
AS A
COFFEE
TABLE**



FOR CRAFTSMEN OF ALL AGES

6^D



 ★ NOTE TO ★
 ★ CORRESPONDENTS ★
 ★ All correspondence on any sub- ★
 ★ ject covered in this magazine ★
 ★ must be addressed to: The Editor, ★
 ★ Hobbies Weekly, Dereham, Nor- ★
 ★ folk. If a reply is required, queries ★
 ★ should be accompanied by a ★
 ★ stamped addressed envelope and ★
 ★ reply coupon inside back cover. ★

AN elephant will work hard and long for a lump of sugar, and push aside with hardly a glance, food which other captive animals would be glad to eat.

This taste for tit-bits is not the result of captivity. Wild elephants like dainties too and will get up to all kinds of capers to get them.

Themetime:

GIANT WITH A SWEET TOOTH

By R. L. Cantwell

Ceylon, where our hotel label comes from, is an elephants' paradise — full of everything that even the most particular of these monsters could desire.

But many parts of Africa and India are not so well stocked. Those sweet bits may be hidden away under the earth or hung overhead out of the elephant's reach.

A favourite food of the African elephant is the tender, juicy roots of the mimosa-tree, which grows in scattered groups through most of the meadows and lowlands of central Africa.

When an elephant finds a young mimosa-tree, it is not difficult for him to get at the roots, especially if the surrounding soil is moist and loose, as is often the case after it has been soaked by the heavy rainfalls.

If the tree is loose, the elephant winds his trunk firmly round the tree, and plucks it from the earth, a feat which is no harder for him than the pulling up of a flower by a child.

But the elephant does not stop here. Experience has taught him the most comfortable way of enjoying his prize, so relaxing his hold, he turns the tree completely over, and stands it with its upper branches thrust down into the place where the roots were. Then the earthy roots, now replacing the branches, remain within easy reach of the strong and deft trunk.

Add these notes to your collections of animal stamps, labels and cards.

THE SAFETY LAMP

THE 'safety lamp' or miner's lamp shown on this Russian match label is of great use in mining. Before safety lamps were invented many accidents took place from the fire-damp gas taking fire from the miner's lights.



The safety lamp is an ordinary lamp set into a lantern of wire gauze. Air will pass through the wire gauze, but flame cannot. If a piece of iron wire gauze is held over a gas burner and the gas turned on, the gas will pass through so that it may be lighted on the upper side. The gauze may then be moved several inches above the burner, and the flame will be seen to pass through the gauze. This is because the gauze takes away the heat so quickly that the gas will no longer burn.

In the same way fire-damp can go through the gauze of the safety lamp and burn on the inside, but the flame cannot get to the outside; and so the miner who works by the light of such a lamp is safe from fire-damp explosions.

The Davy Lamp was invented by Sir Humphrey Davy in 1815.



Mainly for Modellers

HAVING erected the standing rigging of the model, I will now deal with the running rigging as applied to our size model. A more detailed account will be given later of some of the individual items that occur in the

Shipbuilding - No. 38 17th CENTURY RUNNING RIGGING By 'Whipstaff'

rigging of this period; modellers who wish to do so will then find the addition of finer details to their models a simple matter.

Our first piece of rigging is that of the

spritsail topmast, from which the rigging of this period takes its name. Fig. 1 shows the detail; for clearness, rigging is shown on one side only. The first rope we have is the spritsail topmast yard brace, A. Take this from the forestay to the end of the yard, down through a small block on the bowsprit to the top of the knight-head.

If your model is the smaller of the two Hobbies' kits designs of this period, you may find the knighthead too small to include. In this case, secure the rope to a small eyelet fixed on the beakhead deck at the keel of the bowsprit; the braces (both sides) can be secured to the same eyelet.

The next ropes to add are the spritsail topmast lifts B. The standing end is secured to the spritmast top or crows nest. The rope is then carried down through a small block on the end of the

spritsail yard, and then up to the point of the bowsprit.

As in C, take the outer brace from the forestay, through the small block on the end of the spritsail yard, up to the forestay, and down to belay at the foot of the bowsprit.

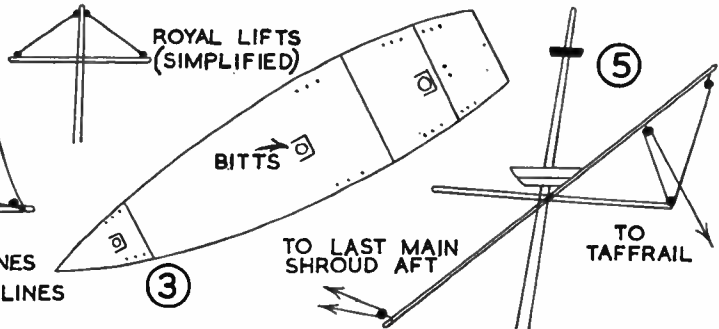
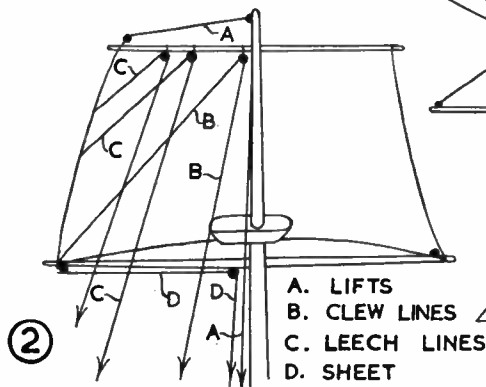
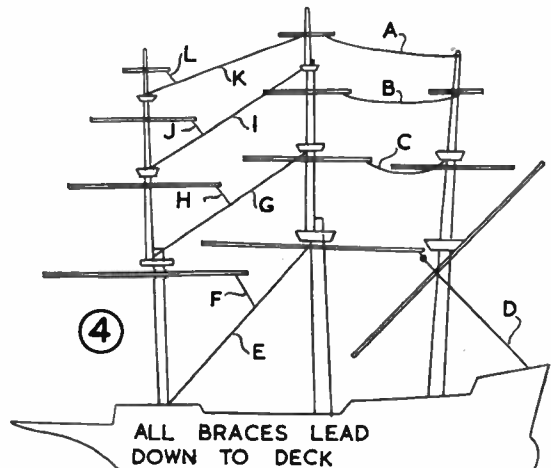
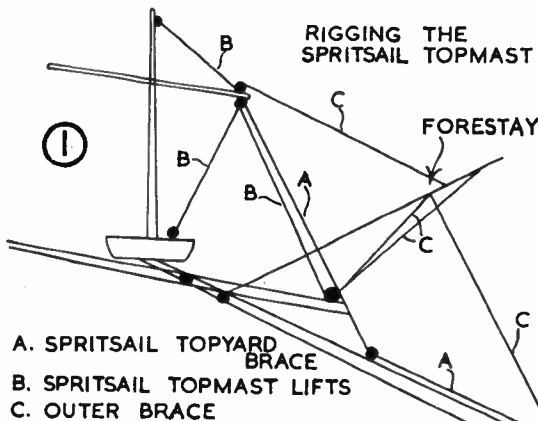
The spritsail sheets go from each lower corner of the sail to belay to the outside of the hull. In actual practice, they usually go through a small hawse-hole in the hull to belay on deck inside the bulwarks; in a model they can be secured to a small eyelet let into the hull.

Let us now take the rigging of the foremast. On the larger Hobbies' model

● Continued on page 53

KEY TO FIG. 4

- A. Main Royal Brace
- B. Main Top Gallant Brace
- C. Top Gallant Brace
- D. Main Brace
- E. Mainstay
- F. Fore Brace
- G. Maintop Stay
- H. Fore Topmast Brace
- I. Main Topgallant Stay
- J. Fore Topgallant Brace
- K. Main Royal Stay
- L. Fore Royal Brace



CHEMISTRY AT HOME

ORGANIC chemistry is the study of carbon compounds. It is the science of paints and pigments, of drugs and dyestuffs, of plastics and perfumes. Although many preparations can be safely attempted only in a laboratory under carefully controlled conditions, there are very many others well within the scope of the home chemist. What is more, in the field of perfumes and cosmetics, of paints and colours, genuine discoveries can be made at home.

MAKE A LIEBIG CONDENSER

By C. Norman

The average home chemist already has a bunsen burner and most of the glass ware he is likely to need, but there are one or two extra items that can either be bought at a fairly high cost, or made for practically nothing at home.

Very many of the experiments involve purification or separation by distillation, so one essential is a proper set-up for this. The first item on the agenda must therefore be a Liebig condenser. The commercial form and a home-made version are shown in Fig. 1. If you are really good at glass working, there is no difficulty about making an exact copy of the commercial condenser, but it is a long and tedious job resulting in a product which looks nicer but works no

better than the one thrown together from a couple of corks and a few pieces of glass tubing. To make it, simply use tubing of roughly the sizes indicated, bore the corks where shown, making the holes small enough to ensure a tight fit, and assemble the condenser.

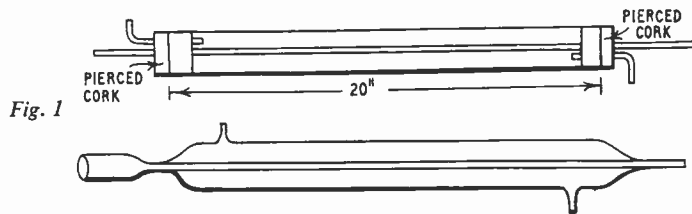
The other important item will take a little longer to make, but should not present any real difficulty. This is a fractionation column. Take a piece of soft glass tubing about $\frac{1}{2}$ in. in diameter and 1 ft. long. Seal one end with a cork. Now heat it carefully in a bunsen flame

burst, leaving a small hole in the tip of the bump. Brush away the thin glass and clean up the edge of the hole by careful heating.

Next take a 6 in. length of $\frac{1}{4}$ in. bore tubing and heat one end. Push the soft end over the corner of a piece of charcoal and rotate the tube till it opens out into a smooth funnel shape that will just fit the bump on the other tube. If necessary you can shape the charcoal with a knife so that it gives the right shape. First cork the open end of the large tube, then heat both the bump on this and the funnel opening of the smaller tube. When they are thoroughly soft, fit the funnel over the bump and press them carefully together.

Continue the heating till the two pieces of glass fuse together, blowing very gently into the end of the small tube to shape the joint. The whole operation is shown in Fig. 2b.

Lastly, make a file scratch on the



at about 2 in. from the corked end. When the glass is soft enough, pull the two ends carefully apart till the bore contracts to a little less than $\frac{1}{4}$ in. Be careful to keep the two ends in line while you do this. As soon as the glass has hardened, heat it again 1 in., further towards the open end, pull the two ends apart again, and then push them nearly back together. This will give you a very sharp contraction in the bore instead of the taper produced by your first effort. Continue to do this all along the tube to within about 3 in. of the end. You should

finish with a piece of glass shaped as in Fig. 2a.

Now use a mouth blowpipe to heat a spot half-way between the open end of the tube and the first contraction. Blow gently into the tube until the hot spot rises up into a little bump. Let this cool, then again use the mouth blowpipe to heat the very tip of the bump as strongly as possible. Blow strongly into the tube. The glass will expand into a bubble and

tapered contraction, and break the glass cleanly at its narrowest part. Open up the mouth of another piece of $\frac{1}{4}$ in. tubing as you did before, and seal it to the taper in exactly the same way. Cut off this tube to give a tail about 3 in. long and your fractionation column is complete.

As a home chemist, you will already possess such items of glassware as flasks, beakers and test tubes, and probably a burette. One thing you will need to buy, if you do not already possess one, is a centigrade thermometer. Once you have this, you are ready to start work.

A good way to start is by preparing some pure alcohol. Not only is this a simple and interesting experiment, but you will need the alcohol for later work. Dissolve 150 grammes of sugar in 500 cc of hot water and add to this about one gramme each of ammonium phosphate and potassium nitrate. Pour the solution into any large open vessel and add another 1,500 cc of cold water.

Now mix 1 oz. of yeast with enough cold water to make a thin cream and pour this into the vessel. Put it in a warm place and leave it for two days. During this time the liquid will give off bubbles of carbon dioxide and a froth will form. This shows that the yeast is breaking down the sugar. At the end of this time

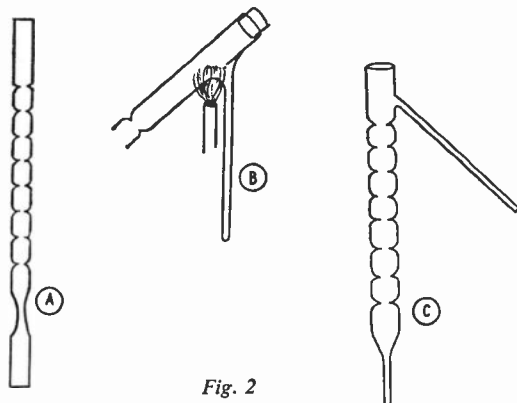


Fig. 2

you will have a vessel full of dirty, evil-smelling fluid of which about a fifth is alcohol and the rest is water and other unwanted materials. The problem now is to separate the pure alcohol from this mess. This is where the new apparatus is used for the first time.

Fit up the Liebig condenser and fractionation column as shown in Fig. 3, placing it close to a sink so that a steady stream of water can be sent through the condenser. If your largest flask is not big enough to hold all the liquid it can be treated in two or three successive portions.

For the first distillation, stand the flask on a gauze and heat it direct with a bunsen burner. The liquid will evaporate and pass up the fractionation column to the condenser, where it will be condensed to a clearer liquid which will run down into the receiving flask. Continue to heat until nearly all the contents of the flask have boiled away, leaving all the solid impurities behind. If you have any of the original liquid left, let the distillation flask cool down and then pour this in. Continue this till all of the liquid has been distilled. The new liquid is called the distillate.

Wash out the distilling flask, reconnect the apparatus and fill it with the distillate. This time, watch the thermometer as the liquid boils, and change the receiving flask as soon as the temperature goes up to 78° centigrade. Throw away any liquid that has passed over into the first flask. Continue the distillation till the temperature goes up to 83°. The liquid in your second receiving flask is called the fraction boiling between 78° and 83° C. This contains all the alcohol worth bothering about, so the liquid left in the distillation flask can be thrown away.

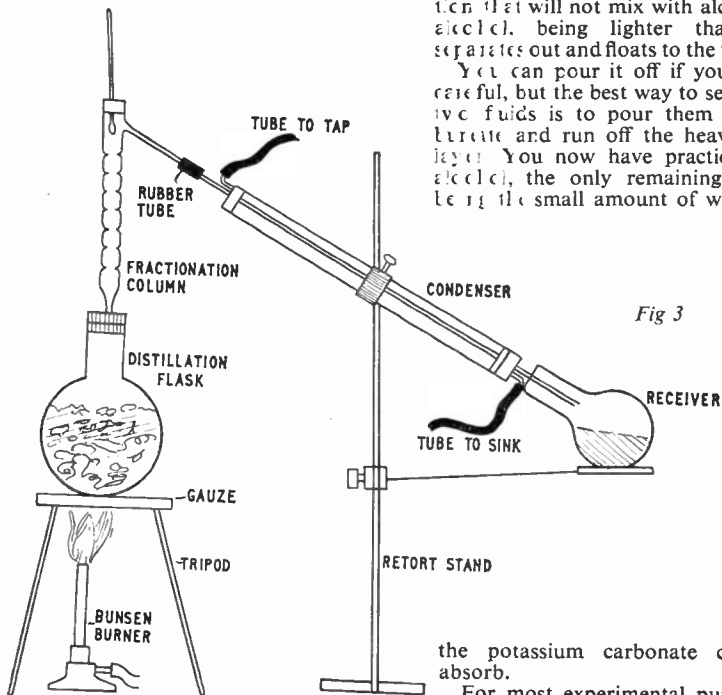


Fig 3

To the distillate boiling between 78° and 83° C, add about one quarter of its volume of solid potassium carbonate. Shake this mixture thoroughly and allow it to settle. You will find that the liquid separates out into two clearly defined layers. Potassium carbonate has so strong an affinity for water that it dissolves in the water that was mixed with the alcohol, forming a strong solu-

tion that will not mix with alcohol. The alcohol, being lighter than water, separates out and floats to the top.

You can pour it off if you are very careful, but the best way to separate the two fluids is to pour them into your burette and run off the heavy bottom layer. You now have practically pure alcohol, the only remaining impurity being the small amount of water which the potassium carbonate could not absorb. For most experimental purposes the alcohol as you have prepared it will be pure enough, but if you wish to remove the last traces of water, add two or three lumps of quicklime, leave it for two days, and distill again. The thermometer should stand at just over 78° C during the whole process this time and you should be left with a little under 400 cc of very pure alcohol. Put this into a stoppered bottle and keep it. You will need it for later experiments.

● Continued from page 51

17th Cent. Running Rigging

you will, of course, add the sails known as royals; these are rigged, as are the other square sails. In the smaller of the two models you can, if you wish, just show the royal yard lifts.

Lifts are taken from the ends of the yards to the top of the mast for the royal yards, and for the other yards, as shown in Fig. 2. In actual practice they lead through the various blocks and tackle to the deck. For our models we will take them down through a small block on the mast top and down to the foot of the mast; in the smaller model secure to eyelets in the deck, in the larger model to the bits at the foot of

the mast. In Fig. 3 are shown the belaying points which apply to both models.

Next fit the clew lines (Fig. 2) on the sails, taking them from the lower corners of the sail through the block on the end of the yard, up to the small block pendant from the yard, and down to the deck inside the bulwarks. In using parchment for the sails reinforce the corners, but if possible always use fine fabric.

The leech lines are next to follow, from the edge of the sail, up through the small block on the yard, and down to the deck next to the point where the clew line is belayed.

Follow with the sheet. This is the line from the lower corner of the sail, through the small block on the end of the yard along the yard, through a small block down to belay on the deck next the point where we have belayed the leech line.

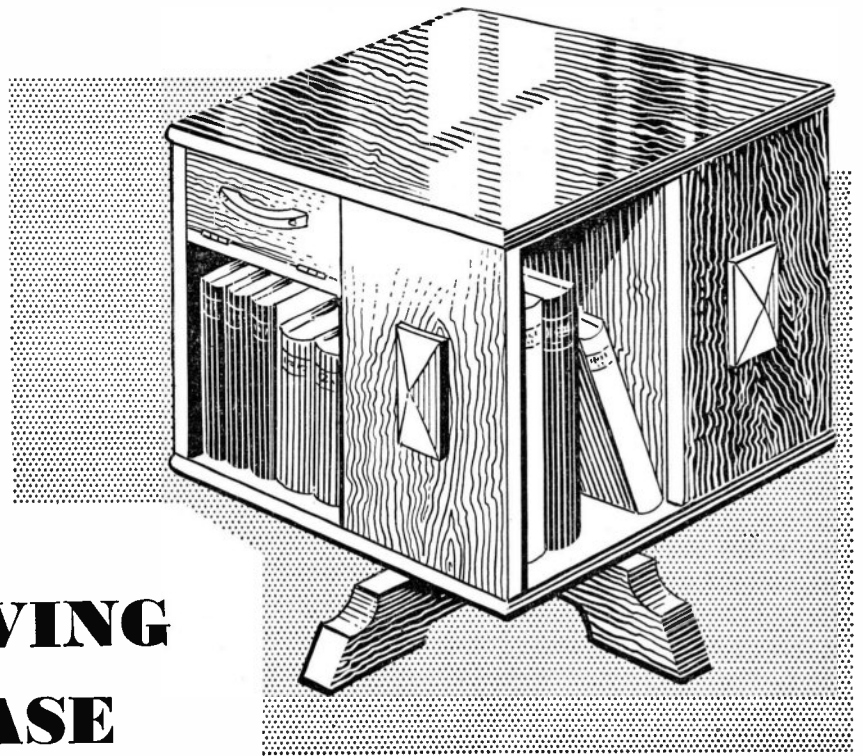
This rigging is on both sides of the model, and must be repeated on each square sail with the exception of the sheets on foresail and mainsail. These go from the lower corners of the sails to belay on the outside of the hull.

Next come the braces (Fig. 4). Again these appear on both sides of the model, and are easy to follow from the sketch.

Fig. 5 shows the rigging for mizzen mast.

In our next article we will deal in length with the finer details in the rigging of this period for the benefit of the more advanced modeller.

THE handyman will enjoy making this modern revolving bookcase. It is ideal for use beside the armchair or in the corner of the room. It can be placed upon a table or stood on the floor where it can serve as a coffee table. Two small compartments for cigarettes, tobacco, playing cards, etc. are also provided.



REVOLVING BOOKCASE

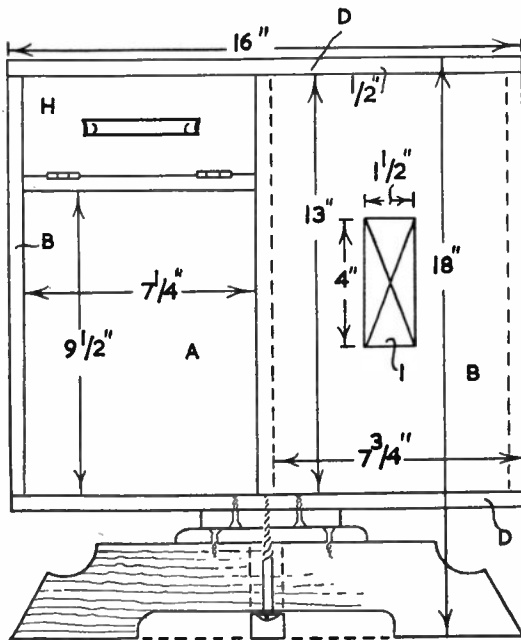


Fig. 1

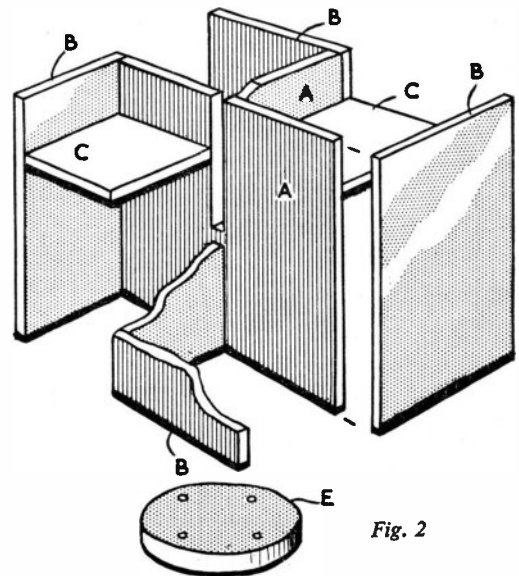


Fig. 2

It should be constructed throughout from $\frac{1}{2}$ in. and 1 in. wood, the feet G being 1 in. thick, and the rest $\frac{1}{2}$ in. The top and bottom D should be of $\frac{1}{2}$ in. plywood, faced on one side to match the rest of the wood.

The measurements are taken from Fig. 1, and the general construction from Fig. 2. It will be seen from Fig. 2 that the two pieces A are halved together, and the four wings B, and the partitions C then glued in position, cramping them securely whilst the glue is drying.

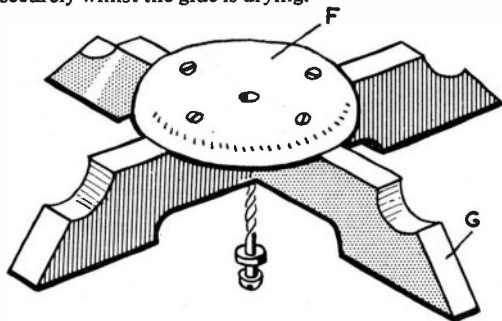


Fig. 3

Next glue the top and bottom in place, and strengthen with countersunk screws through the bottom. Screw the $\frac{1}{2}$ in. circle E centrally to the bottom. Mitre

$\frac{1}{2}$ in. half round beading around the edges of the top and bottom.

The legs are made up as shown in Fig. 3, the two pieces G being halved together, and the circle F added. The legs are drawn out according to the measurements shown on the diagram in Fig. 4. The circle F is 6 in. diameter. The legs are now pivoted to the circle E by means of a single roundhead screw and washer, as indicated in Fig. 3. An

race of some kind.

The doors H of the two small compartments are now hinged in place. If they are made to fit tight there will be no need for catches. Small handles such as Hobbies No. 711 can be added. They cost only 1s. a pair, postage 4 $\frac{1}{2}$ d., from Hobbies Ltd., Dereham, Norfolk. They can be obtained in black or white. The ornamental lozenges I on pieces B are shaped from $\frac{1}{2}$ in. wood.

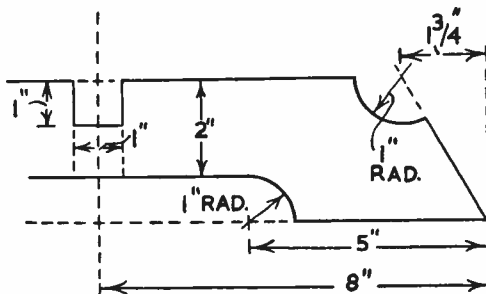


Fig. 4

application of furniture polish or candle wax will make for easy working. It would, no doubt, be possible for experienced workers to incorporate a ball

Finish off by cleaning all round with glasspaper. Fill the grain if necessary, and then stain and polish.

(M.H)



THE JOY STRINGS

THE first single in the 'pop' idiom ever to be recorded by the Salvation Army was released by EMI Records Ltd on the Regal-Zonophone label. Titles are *It's An Open Secret* and *We're Going To Set The Whole World A Singing* (RZ501), by The Joy Strings, the eight-strong group which has appeared on BBC-TV's Tonight programme.

The record follows the announcement, just before Christmas, that the Salvation Army planned to carry its message to young people by means of guitar-vocal groups playing modern rhythm to religious songs.

Said an EMI spokesman, 'Although the record carries a religious message, we feel it is sufficiently in keeping with current trends to have a wide appeal.

It's An Open Secret, a catchy and easily-remembered number, has the



melody carried by the male voices with responses from the girls, and two of the obvious trappings of commercial popularity — a driving twist beat, and a twangy guitar solo.

Says Capt. Joy Webb, attractive leader of the group, and composer of the two songs, 'I feel that *It's An Open Secret* is as near as we dare go to a commercial sound. In composing these songs there were two important points to bear in mind — that the words

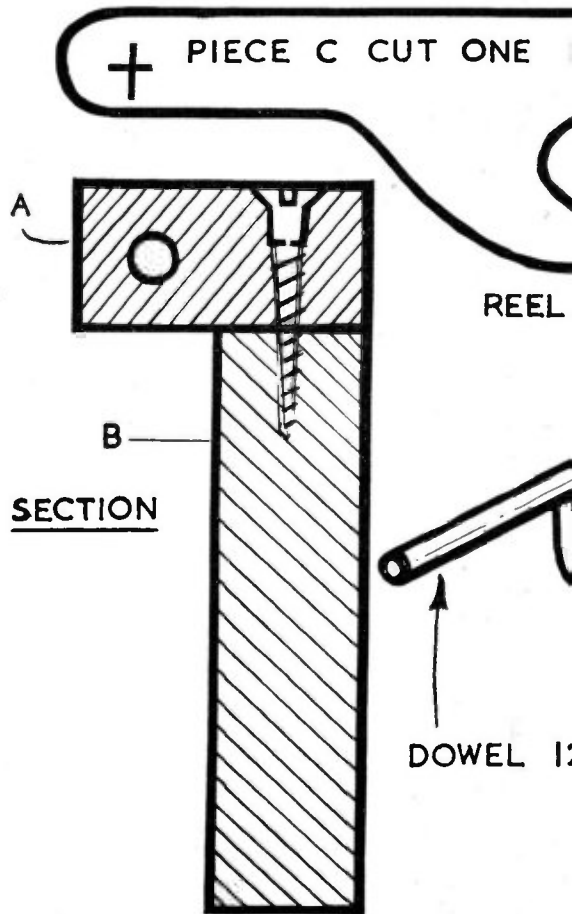
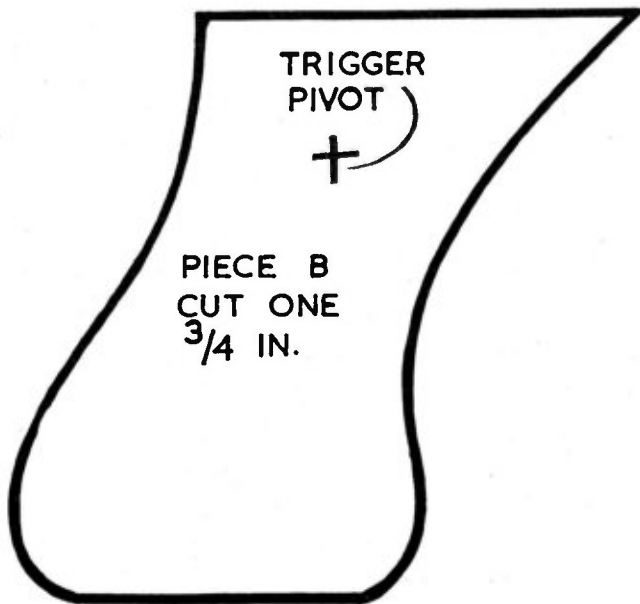
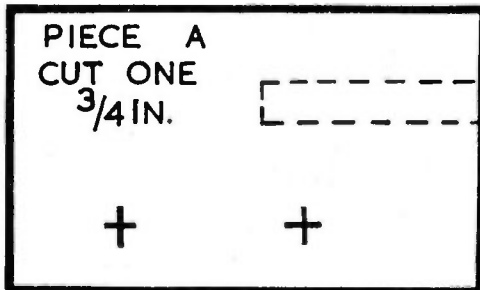
should be crystal clear, so that the message could be understood, and that a certain dignity was retained in the lyrics. It would not have done, for instance, to pepper the lyrics with yeah-yeahs and wo-wos'.

With the exception of drummer Wycliffe Noble, a Sunbury architect, the group is drawn from the staff and students at the Army Training College, and the three guitarists have had lessons from a professional teacher.



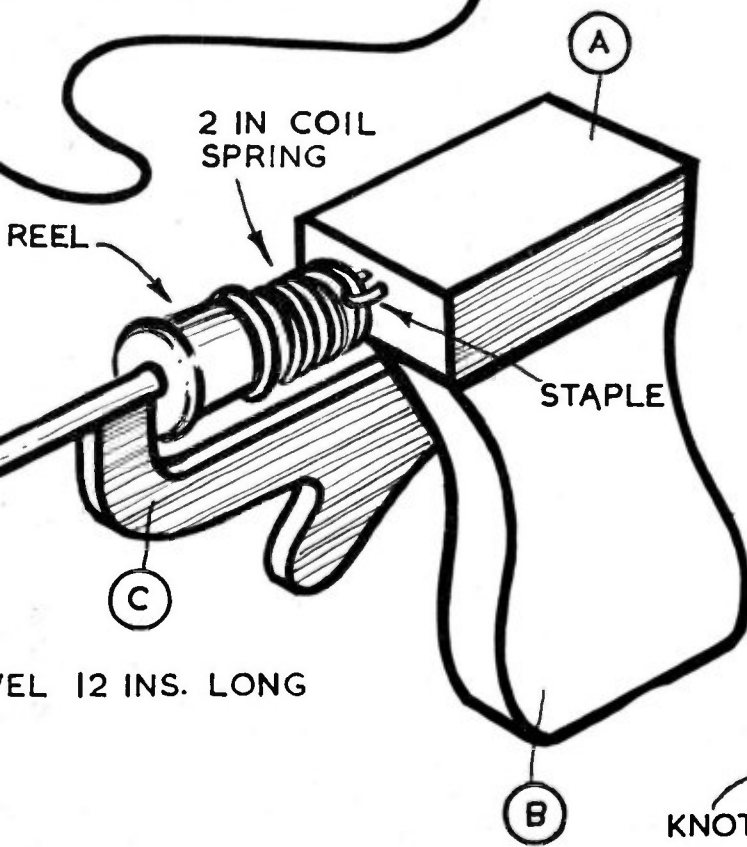
COTTON REEL

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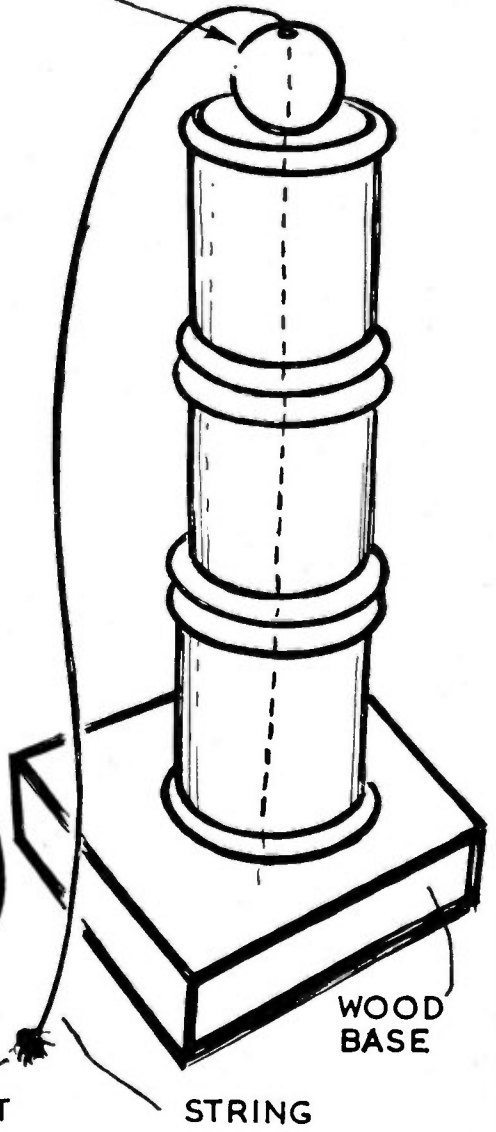


UN and ARGET

ONE PLYWOOD



BEAD STOPS REELS
FROM SCATTERING
WHEN KNOCKED
DOWN



A STUDY OF HORSE BRASSES

THE collector of any particular antique or souvenir derives much more pleasure from his hobby by making a keener study of the subject, and it is with this in view that we subscribe some interesting notes on horse brasses.

There is little doubt that horse brasses have a long history behind them in this country, and we may trace this to the times when the horse was first employed by man for either riding, hunting or fighting. The Romans may be credited with the introduction of these amulets, but in their day bronze was used for manufacture, and the pattern usually designed to represent their sun god, the guardian of the driven horse.

It was believed that such adornments would effectively counter evil spirits and attract good fortune, so they were fitted by straps on the horses' foreheads where they would catch the rays of the gleaming sun. Superstition has it that the rays were reflected by the ornament, which flashed and glittered to such an extent with every movement of the horse that it blinded and frightened away the evil eye.

We are not told what happened when the sun was obscured by clouds, and can only suppose that important battles were fought on sunny days or that the amulets still held some charm as a lucky mascot.

The wealthier knights could afford gold or gilded silver amulets, and these would adorn their horses on ceremonial events, but normally only one bedecked the forehead of the driven horse. Designs and shapes have varied during the course of history, but the usual pattern is the familiar disc with a flat rim and raised centre. The earlier amulets incorporated the sun, but later in the nineteenth century there were many variations, as will be seen.

Castings introduced

The composition of these amulets has also changed, indicating the progress in methods of brass production. The earlier specimens may have been composed of bronze or copper, but this was very expensive. In the eighteenth century horse brasses were made from latten. This is sheet brass hammered flat and

made from copper and calamine, but there is little evidence of production continuing after the middle of that century.

Queen Victoria souvenirs

Later we find casting more prevalent with the use of zinc or spelter brass, and about this time there were many castings made from a mixture of copper and brass following the method of one James Emerson. The latter patented his process in 1781, and there is little doubt that it was the forerunner of the present-day processes of brass founding.

Queen Victoria's coronation in 1838 appears the excuse for the issue of all kinds of brass souvenirs, often with a portrait of the queen, and these were made in 'prince's metal', a high quality alloy composed of half copper and half zinc. The superior quality of this alloy permitted more detailed casting, while final burnishing produced brilliant flashing highlights to the sharp relief.

From this time we can trace a trend towards a wider range of designs, and the brasses were hung from the martingale, a broad leather band which extends from the noseband to the girth. We find heart-shaped brasses, shields, and serrated edges with the occasional monogram or the horse's name engraved on the amulet.

Horseshoe shapes are also a feature of this period, but in view of the fact that superstition requires that these should be upright 'to hold the luck' it is rather surprising they were mostly made with the open end downwards. Burnishing became more popular, and for a while there was a vogue for lacquering, but this was not favoured by carters and drivers, who preferred a really shiny hand-polished amulet.

The May Day processions brought forth horses wearing an increasing number of brasses, freshly polished to silky texture, and this is a particularly important factor for the collector to

note. By the end of the century the manufacture of horse brasses had become an important industry in the Midlands, the productions being cast in the finer alloys to make detailed relief patterns. After casting, the brasses were filed, drilled, and modelled as necessary with a final machine smoothing and polishing.

There were also many machine stamped brasses. These were usually made from thin sheet brass, pressed with a design, and the backs filled with lead for weighting.

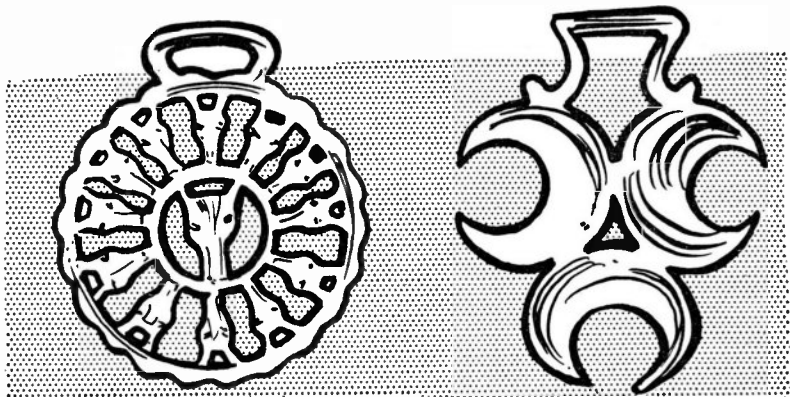
Trade marks

It is not unlikely that you will discover horse brasses of special design which indicate some personal connection of the original owner with his trade or district. A sheep may represent the wool merchant, or a whip the huntsman and hunting country, while agriculture may favour a wheatsheaf or windmill. A ploughman and horse is a popular pattern, while a barrel was the choice of the brewer.

It is also interesting to note that the horse itself has been a popular motif throughout, in particular the 'prancing horse of Kent' which decorated the Saxon banners so many centuries ago.

Distinct from the symbolic motifs are the portraits of politicians, and these include such celebrities as Disraeli, Gladstone, and Joseph Chamberlain. There are also brasses with portraits of Shakespeare, John Wesley, the jockey Fred Archer, and even Sir Winston Churchill. By the introduction of the latter name you will observe that we are emerging from the period of the true horse brasses to souvenirs — a trap which the collector will wish to avoid.

Much more could be said on the description of the many designs, but the collector must exercise some care in his acquisition. Most of the horse brasses now on sale in the shops are specially

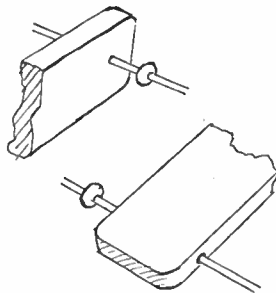
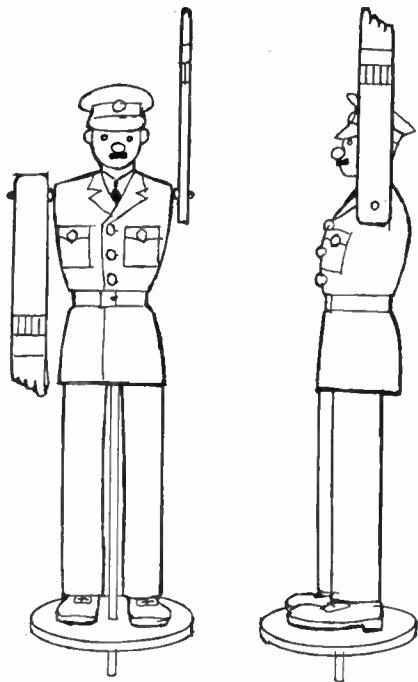


● Continued on page 59

Novelty to make

TRAFFIC CONTROLLER IN THE GARDEN

By Cyril Black



HAVE you ever seen a little figure of a policeman, mounted on a post or even a shed roof in the garden of a house or cottage in the country. If you have, you have probably wondered what it was that made him so active and busy, spending all his time directing imaginary traffic, waving his arms about, turning this way and that and never still.

The secret of his perpetual movement is, of course, the wind but he only keeps up his amusing antics because of the way he is made.

You can easily make a similar figure and this is how it is done. Carve him out of a piece of wood — balsa is easiest to work but does not stand up to weather very well. Give him a good fat body and a reasonable face and, of course, a helmet or hat but don't worry about his arms. They come later and are the reason for his perpetual motion.

Mount him on a stand of some sort so that he can turn easily and freely. The best way to do this is to make a hole in the base and also in his body and fix him on a stiff piece of wire. A steel knitting needle is excellent for this. Anyhow, be sure that he turns freely.

The arms are the important part and are made from flat strips of wood. Make them rather longer than real arms would be as this gives a better effect when he is working.

The arms, as you will see from the illustrations, are mounted on another piece of wire. Here again a knitting needle is ideal. This must be a tight fit in the arms but a good, very easy running fit in the body.

Now for the secret of why he works. As you will see, one arm is mounted on the wire with the latter going through from

side to side of the wood while the other is so fixed that the wire penetrates from edge to edge.

If you make sure that the holes in the arms are an equal distance from the end in each arm, the arms will balance properly. If they do not, shave one down slightly so that perfect balance is obtained.

Fix one arm securely to the axle, place a distance piece of some sort between it and the body — a bead does for this — put the axle through, fit another bead then glue on the second arm. Arrange them so that they are in a straight line.

Give the whole at least two coats of paint. Armlets painted on, a well painted face, pink or white hands and large black boots will give a grand effect.

Then mount him in a convenient place where he can be sure of getting any breeze there is.

If everything is correctly made and he turns and moves his arms freely he will start directing traffic and won't stop until the wind dies away to nothing. As long as there is the slightest breeze he will continue his work, twisting and turning and waving his arms about like a madman.

He will not only provide plenty of amusement but will also act as a non-paid, full time bird scarer.

● **Continued from page 58**

A Study of Horse Brasses

made as souvenirs. It would be safe to say that a large proportion of these have never been near a horse, and are only for decoration. Some of these are on sale in the large stores, and some find their way to the 'antique dealer'. Identical brasses may vary considerably in price at two different shops, while you may be lucky enough to pick up a genuine piece from an old village farrier for next to nothing.

Beware of imitations

The serious collector can be deceived, for hand-made brasses are still being produced from rolled sheet brass. The spurious amulet is usually cast, and all kinds of devices are employed to produce an aged appearance. But close examina-

tion of the inner corners of the strap loop — where the brass is held to the martingale — will reveal whether it has become smooth and thin by years of wear or otherwise. Usually the fakes bear no signs of wear on the lower edges of the brass, which is noticeably thinner in the genuine article. Look also for the silky finish of the hand polishing of a proud driver as distinct from a machine polish.

Many of our museums have large collections of genuine specimens, and it is both interesting and advisable to study these for details of design, period, and type of alloy. Such a visit will prove instructive to the enthusiastic collector.

(E.)

Tile Teapot Stands



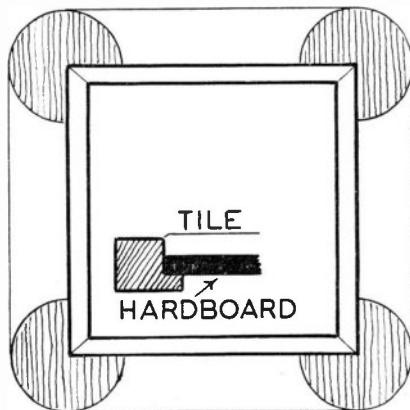
after sawing remove these by rubbing the mitred corner on fine glasspaper laid flat on a table. Do not rub the corner with the glasspaper or this would impair the angle.

Although it is the practice to glue up picture frames before glazing we advise gluing the hardboard to the moulding, placing the smooth side downwards. Apply glue to the corners and cramp until set. The positions of the parts are shown in the centre of the diagram.

When the glue has hardened the tile may be set in the space thus prepared. It will be realized that the heat from the teapot may well soften some glues and we therefore recommend the use of a tile cement. When making the example shown in the photograph Polybond was

By S. H. Longbottom

If a suitable cramp is not available it is possible to improvise one as shown in the diagram. Cut four circles of wood from a rod of large diameter each about $\frac{1}{2}$ in. thick. Then remove a quarter from each. These sections may then be fitted to the corners and a piece of string fastened around the whole. The string can be tightened by using a piece of wood as a tourniquet. The prepared discs will serve a similar purpose whatever size of picture frame you are making and will be worth preserving.



used — as well as for the bonding of the frame — with success.

If care is taken with the joints these handy teapot stands look very attractive and make ideal gifts. If desired, four rubber buffers may be attached underneath, although this is not essential.


DECORATIVE tiles may be used for table tops and the like to good effect and our illustration shows how they may also be used for making charming teapot stands.

In practice we use suitable picture moulding in reverse, backing the tile with hardboard. The tile is thus fixed face upwards and the surface lies just above the moulding.

Most of these tiles measure $5\frac{1}{2}$ in. square and you will require a piece of hardboard exactly the same size. Your picture moulding should have a rebate of $\frac{3}{8}$ in. inside and be $\frac{1}{2}$ in. on the outside.

Place the tile on the internal rebate for marking the width of one side then mitre at both corners, preparing four similar pieces. This is best done with the aid of a mitre box to ensure accuracy of the joints. Should there be any remaining burrs

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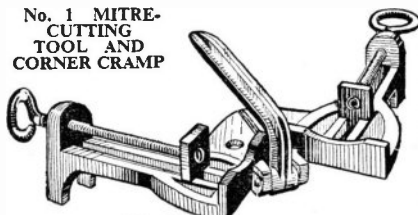


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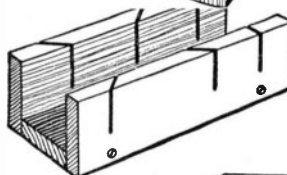
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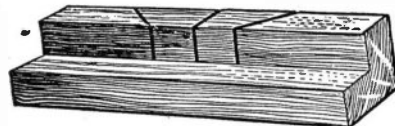
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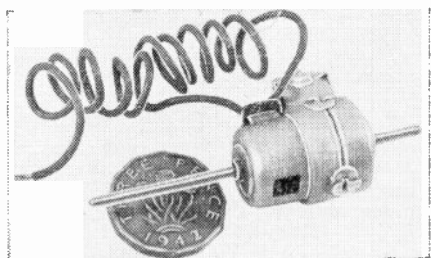
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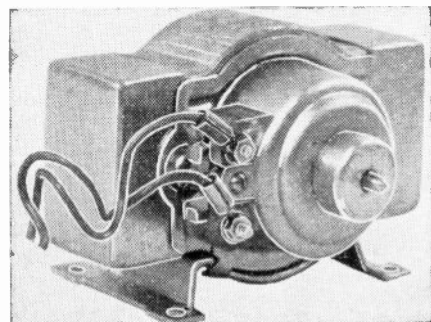
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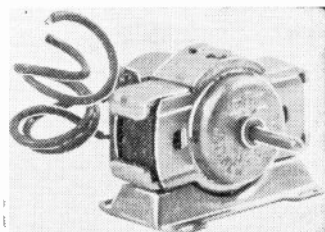
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Note: Illustrations shown here are slightly smaller than full scale.

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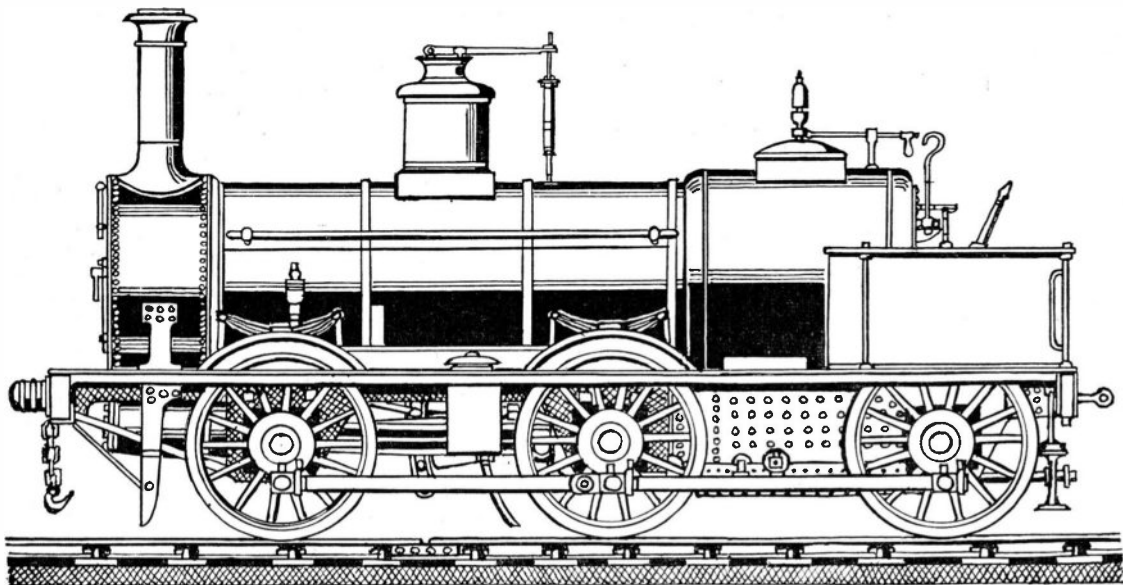
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THE KITSON 0-6-0 ENGINES



Kitson, Thompson & Hewitson's six wheels coupled goods engine. 1848 Leeds

IN the past the 0-6-0 tender engine for freight and mineral, and in many cases passenger working was always a popular design, and every railway company in this country often including the smaller lines, had the type in service.

The more numerous examples perhaps were to be found on the London and North Western and the Midland railways. The 'DX' engines by John Ramsbottom on the L. & N.W.R. totalled 943, first built in 1858, 86 of them being purchased by the Lancashire & Yorkshire Railway in 1871, whilst Mr. Webb added more examples in his 4 ft. 3 in. coal and 18 in. cylinder express goods.

On the formation of the L.M. & S.R. in 1923 the Midland Railway had some 1,800 0-6-0 tender engines in service, numbered from 2300 to 4026. These were of different classes designed by Kirtley, Johnson, R. M. Deeley and Sir Henry Fowler, the M.R. relying exclusively on this type for all its freight duties. These were all of the standard British design with inside cylinders and frames (except the Kirtley engines which had outside frames) and the trailing axle behind the firebox.

The first such engines to appear in this country were made by Messrs. Kitson, Thompson & Hewitson of Leeds and B. Hick of Bolton, both in 1848. The Hick engines were however not

quite so up-to-date at the time as the Kitson examples, many of which were purchased by the Leeds & Thirsk Railway. The Hick engines had the old Gab motion and were the last engines for main service to be so fitted.

In 1850-56 the Midland Railway purchased a number of the Kitson engines one of which is shown in the drawing. These had link motion and cylinders 17 in. by 24 in. with coupled wheels of 4 ft. 9 in. diameter. The wheelbase was 15 ft. 6 in. equally divided. The boiler barrel, 11 ft. long and 3 ft. 8½ in. diameter contained 162 tubes of 1½ in. diameter having a heating surface of 908 sq. ft., the firebox providing 93 sq. ft., giving a total of 1,001 sq. ft. These Kitson engines did excellent work on the M.R., and were brought thoroughly up to date from time to time by both Mr. Kirtley and S. W. Johnson. New boilers and various other modifications were made, whilst Mr. Johnson provided his standard type of cab, and in later years R. M. Deeley fitted his design of smokebox and chimney.

They remained in service for a very long time, the last example, No. 421 being withdrawn in 1929 — and then bearing a number in the early 2300 M.R. series. At the time, this engine was the oldest on the M.R., and in 1930

Sir Henry Fowler decided to preserve it as being of historical interest. She was accordingly overhauled and repainted in M.R. Goods black and given her original number 421. A new makers plate was made, bearing — 'Kitson, Thompson & Hewitson, Makers, Leeds, 1856' which was affixed on the driving wheel splashers. The engine was housed in the paint shop at Derby Works, but unfortunately the space she occupied was required for production and Mr. Stanier finally had the engine cut up for scrap in 1940. (A.J.R.)

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by W. Wheeler and Charles H. Hayward

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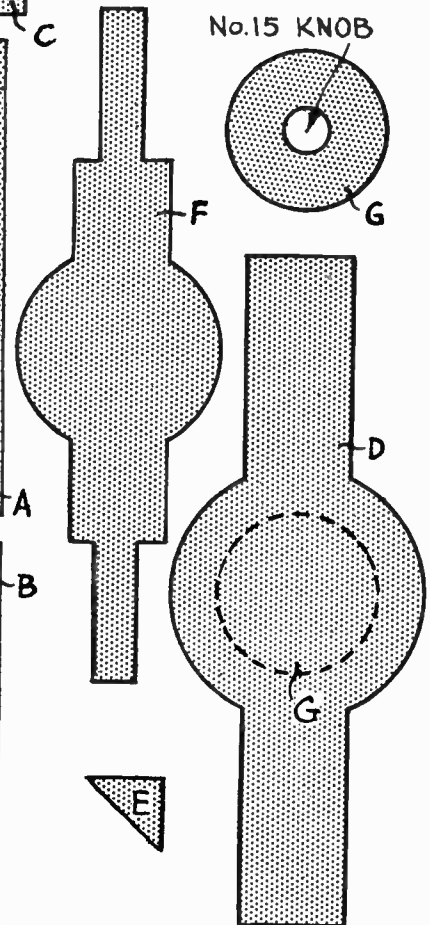
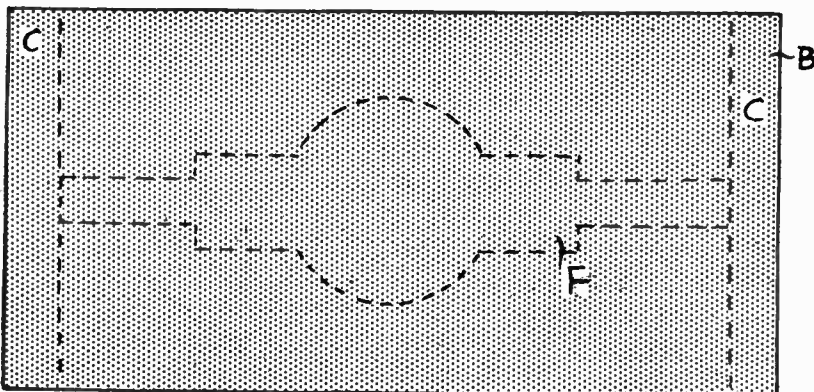
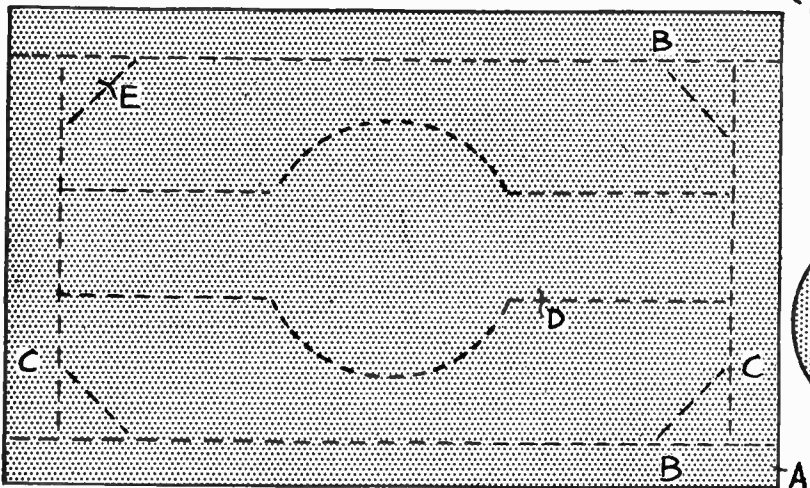
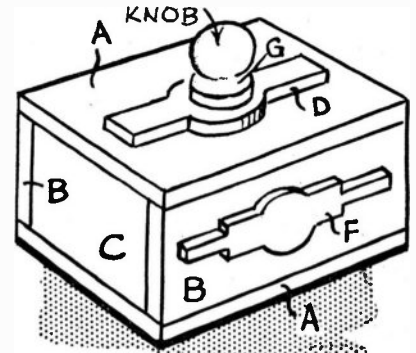
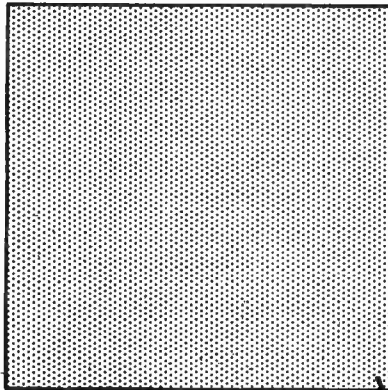
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Assemble as seen in the sketch, making reference to the figures and dotted lines. The locating pieces E are glued underneath the lid. Finish by staining and polishing. (M.p.)





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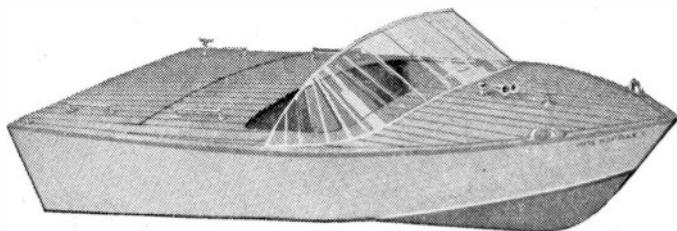
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