

HOBBIES WEEKLY

JULY 16th 1958

VOL. 126

NUMBER 3272

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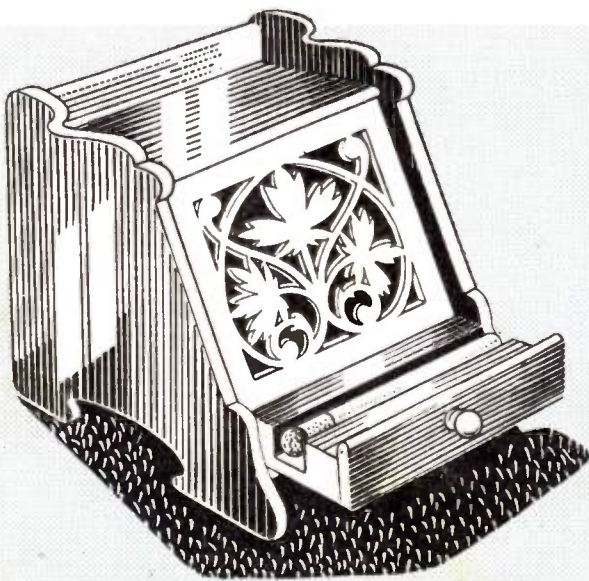
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*Make this
automatic delivery*

CIGARETTE BOX



225

★★★★★★★★★★★★★
★ A Hobbies kit for making ★
★ this novelty costs only 5/6 ★
★ ★★★★★★★★★★★★★★

*from FREE
design inside*

CIGARETTES are delivered one at a time from this Automatic Cigarette Box. You pull out a drawer at the bottom and a single cigarette is there ready to light up. This happens each time the drawer is opened, and will provide a distinct novelty for people who smoke.

All parts are shown full size on the design sheet, and construction is quite simple. Given a nice finish, this cigarette box would make an ideal gift.

Trace the various pieces from the design sheet and transfer them to the wood by means of carbon paper. Cut them out with a fretsaw and clean up all the parts well with glasspaper.

Fig. 1 which is a cutaway view of the box, shows how the main parts are put together. In the back (B) it will be noted

FOR ALL HOME CRAFTSMEN
Over 60 years of 'Do-it-Yourself'

4 1/2^D

from the design sheet that a door is cut and later hinged back again in position. This door and its fittings can be fixed on before the back is put in place. The top (H), back (B) and floor (C) are glued between the two sides.

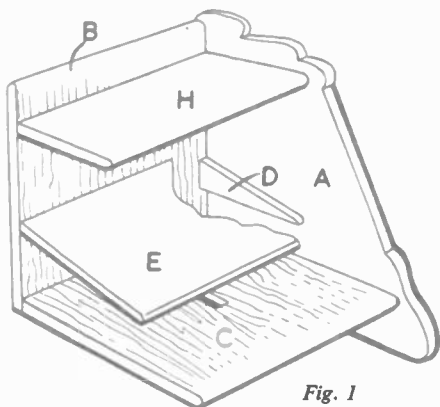


Fig. 1

The drawer into which the single cigarette drops is made with a recess built up of four pieces, as shown in the details (A) and (B) on the design sheet. Two narrow strips (K) are glued together and two wider pieces (J) are likewise

glued together. The larger piece is then glued to the floor (I) which is cut just the right size to fit on to the main floor of the box.

The narrower strips (K) are glued to the front edge of (I) so that a space $\frac{1}{16}$ in. wide is left between the front and back. The top edge of the piece at the back of the recess is rounded slightly. The front of the drawer (L) is simply a narrow strip, the top edge of which is rounded. It is fitted with a small knob (Hobbies No. 49) glued in the centre at the front. This complete drawer rests on the floor (C) and is held in place by a guide (D) glued to the sides just above it. The straight edge of the guide allows room for the drawer and the sloping edge provides the platform on which the sloping floor (E) has to rest. This sloping floor provides the impetus for the cigarettes to drop down into the recess in the drawer, and the top edge comes level with the bottom edge of the door aperture.

The front edge of this door is rounded, and is indicated by the dotted lines on the design sheet. To prevent the drawer

Kit No. 3272 for making this novel Automatic Cigarette Box costs only 5/6 from Hobbies branches or by post from Hobbies Ltd, Dereham, Norfolk.

being pulled right out, a slot has been cut in the bottom of the box (C) and a round headed screw must now be fitted to the underside of the floor (I) through the slot (see Fig. A. on the design sheet). When the drawer is pulled out, the screw prevents it going too far and should be put at the back end of the slot when the drawer is shut.

After gluing these parts in place and ensuring that the drawer slides in and out easily, fit on the front (G). Two edges will have to be chamfered to get them to lie flush with the underside of the top, and to the top edge of the front of the drawer. Piece (F) is glued level with the bottom front edge to bring the cigarettes into the recess of the drawer.

The front has an open fretted design which can be backed by a piece of coloured paper, silk or some similar material. The box will be 'loaded' with cigarettes through the hinged door.

● Continued from page 227

Seaside Fossils

England and Scotland is perhaps less fortunate from the fossil hunter's point of view, since many of the rocks are of a volcanic nature, and fossils are only likely to be found in sedimentary rocks. There are, however, a number of outcrops of sandstone rocks around the Scottish coast and in Wales, and these are well worthwhile examining. It is not possible to name in this article all the spots where suitable rocks may be found but whenever the collector comes across what is obviously a sedimentary rock, he can at least expect the possibility of fossils.

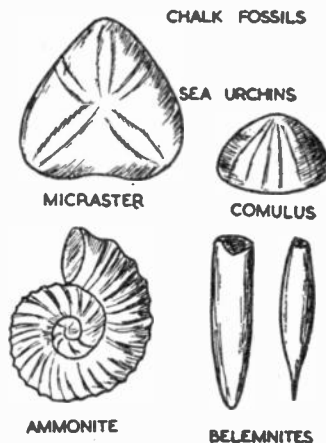
There are also many limestone rocks in the British Isles, but these are mostly inland. Should the collector come across any, however, he will find another rich source of fossils. Incidentally fossil remains may often be seen in limestone slabs used in city buildings. Limestone is a hard form of chalk and is extensively used in building; in some specimens fossils occur in vast numbers.

Although the holiday collector is unlikely to make a sensational geological discovery, such as a dinosaur, (there must, however, be many as yet not found!) he will get to know something about life in the past and it may well be the foundation of a lifelong hobby. In

this short article we can only touch upon the vast subject, but if sufficient enthusiasm is stimulated the amateur will soon discover for himself that there are many books catering for those with just a casual interest and for those who wish to study it in the greatest detail.

Little need be said about the methods of collecting. As for rocks, it is necessary

to wrap each specimen separately, with details of where the specimen was discovered, if it is to be of any value in a collection. A small hammer with a flat end and perhaps a small chisel are useful for removing fossils from hard rocks, and of course, a penknife for softer ones. Most fossils are strong enough to be stored without further attention, but very soft chalky ones may need to be varnished to preserve them. The modern clear lacquer varnishes now on the market are suitable for this and can be obtained in small tins.



★★★★★★★★★★★★★★★★
★ Next week's issue will contain de- ★
★ tails for making a hobby horse for ★
★ a child. Also 'Amateur Transmit- ★
★ ting' by F. G. Rayer and other ★
★ regular features. ★
★ **MAKE SURE OF YOUR COPY** ★
★★★★★★★★★★★★★★★★

FOSSILS

By
P. R.
Chapman



Chalk cliffs at Eastbourne in which fossils may be found.

IF anything, fossil hunting and collecting is even more fascinating than the collection of shells and pebbles, taking us back as it does to the life of millions of years ago. It is however a rather more difficult hobby to indulge in than the others, since fossils are by no means so widespread as shells and pebbles. But the fact that they are rarer adds considerably to the joy of discovery. Nevertheless, the collector will need to be fortunate in his holiday location in order to have much success, but if fortunate, he will be able to pass many absorbing hours searching for the remains of creatures of long ago.

Perhaps a few words about the formation of fossils may not be out of place. When an animal or plant dies, and the remains are able to fall into a sandy or chalky mud, they are rapidly covered by more of the mud and gradually compressed before they have time to decay. The actual remains are then usually slowly replaced by mineral matter which takes the exact form of the original animal or plant. Most fossils are thus natural casts, and the former organic material has entirely disappeared.

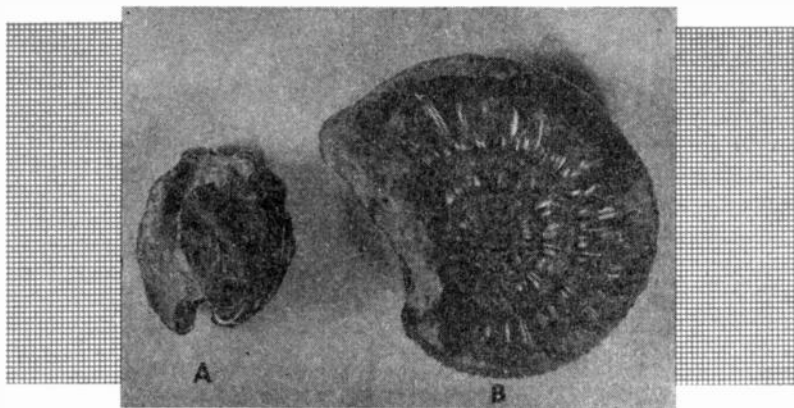
Extinct sea urchins of various forms are one of the commonest groups of fossils to be found in the chalk, and although any spines they may have had will have disappeared, they are easy to recognise by their globular form, often with characteristic markings. Specimens may sometimes be seen in a cliff face and

can be removed carefully with a knife, although they may not always be found whole. A species known as *Micraster* is quite common around Eastbourne and elsewhere. Small cylindrical fossils, usually with a pointed end may often be discovered in the chalk. These are *Belemnites*, related to the cuttlefish.

described above. Unchanged fish teeth may occasionally be found also.

At one point on the South coast, near Folkestone, there is an outcrop of a greyish clay, known as Gault. Although a clay, geologically speaking it is a sedimentary rock, and many interesting fossils may be found in it. Together with the chalk fossils they are often washed out of the cliff face and can sometimes be picked up on the beach. Since around the Folkestone area there are chalk cliffs and sandstone as well as the gault clay, this is a particularly favourable spot for the fossil hunter. The fossils found will probably mostly be types of bivalve shells.

A type of sandstone, known as Greensand, occurs in the Isle of Wight from Blackgang to Ventnor and in Compton Bay. Portions of sponges may be found in this, as well as ammonites, and a type of scallop shell.



A. A fossil bivalve from Folkestone Gault.
(*Inoceramus sulcatus*)

B. An ammonite from the chalk

The diligent seacher will almost certainly come across an occasional Ammonite, recognised since they resemble a flat snail shell with radiating ribs. The former occupants were similar to our present-day octopus. They lived about 70-100 million years ago, which was the approximate time that the chalk deposits were laid down. The Ammonites existed in a great variety of sizes, from tiny creatures to gigantic specimens measuring one or two feet across. The amateur collector is not likely to discover any of this size, fortunately perhaps!

A lot of the chalk fossils are actually cast in flint, due to the percolation of silica bearing waters into the mould formed by the original creature, as

Anyone who visits Lyme Regis in Dorset will find himself in another fossil-hunter's paradise. The chief rock here is known as Blue Lias, a shale. Shales are highly compressed muds or clays and are of a somewhat slate-like appearance. Many remains of extinct giant reptiles have been discovered here. Although the amateur can scarcely expect such luck, he will almost certainly come across smaller fossils. There are many Ammonites, often with a coating of iron pyrites, giving a brass-like appearance. Occasionally, small portions of reptile skeletons, such as vertebrae, may be found.

The holidaymaker to the North of
● Continued on page 226

GAULT FOSSILS



AMMONITE



BELEMNITE



BIVALVE
(*INOCERAMUS
SULCATUS*)

RECEIVER BUILDING

INFORMATION on constructing and wiring up should prove helpful, so that neat, sound work is possible. Very few tools are required, and when a little skill has been gained, a receiver or amplifier can be built quite quickly.

Very simple receivers often use wooden baseboards, and terminal or screw connections. With these, there is little that can go wrong. Components are secured to the baseboard by means of wood screws of suitable size. Counter-sunk type screws are best avoided with bakelite components as they are likely to cause breakages, if done up very tightly.

For terminal connections, it is only

For a metal chassis, sheet aluminium can be purchased and bent up. Only two bends are necessary, to form front and back runners, and 18 S.W.G. or 20 S.W.G. aluminium is strong enough for average receivers. If the chassis is to be

By F. G. Rayer

5ins. from back to front, with runners 2ins. high, and 10ins. wide, then the sheet required would be 9ins. by 10ins. The bending position for the runners should be marked with a ruler, 2ins. from the

cutting bars, which can be set at any required radius. The chassis should be firmly supported, and a fairly large brace or breast-drill is required. It is easier to cut about half-way through from each side, rather than cutting from one side only. If the small central drill passes right through the chassis into a scrap piece of hardwood firmly held in the vice, this will give extra support and simplify cutting.

It is also possible to make large holes by drilling a complete ring of small holes close together. A $\frac{1}{8}$ in. drill can be used for this, the circle being marked off first with compasses. A few blows with a hammer will dislodge the central portion

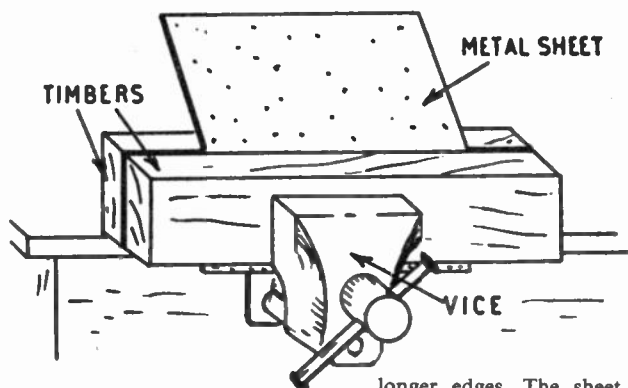


Fig. 1—Bending up a chassis

necessary to scrape off the insulation for about $\frac{1}{8}$ in. and loop the wire to fit round the terminal. With flexible leads, a little over $\frac{1}{8}$ in. can be made bare, and the strands twisted tightly together. A complete eyelet loop is then made to fit over the screw or terminal.

Chassis construction

Larger receivers employ a chassis, usually metal. Wood can be used for smaller receivers, such as two- or three-valve sets. No metal-working tools are required, as valveholder holes can be cut with a fretsaw. Wood about $\frac{1}{8}$ in. thick is suitable for the sides of the chassis, with back, front and top of 3-ply. All components which would be earthed if bolted to a metal chassis now have to be joined together with connecting wire, or the receiver cannot work. A wooden chassis is not recommended for a large receiver, because the metal chassis affords screening, and an earth return circuit for all earthed leads and components.

longer edges. The sheet can then be clamped between two strong boards, as in Fig. 1, and bent over by hand pressure and tapping with a mallet. Careful tapping will give a sharp, accurate corner.

When sides are also required, one timber must be cut short enough to fit inside the chassis. Small flanges are bent upon the front and back runners, so that they can be bolted to the side runners. Sides will give a stronger chassis, when the metal is rather thin, or many heavy components have to be carried.

A receiver can also be built upon a ready-made chassis. These can be obtained in many sizes, either undrilled, or with various holes. The undrilled chassis will be more neat, but the drilled type is handy if no objection is made against various unused holes. An undrilled chassis is best of aluminium, because a steel chassis, though very strong, is difficult to drill.

Valveholder holes

These usually present most difficulty, because they have to be quite large. They may be cut with special tools, like those in Fig. 2. Such tools have adjustable

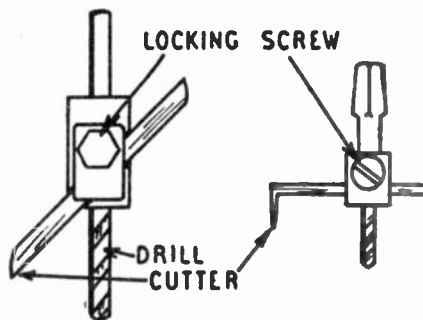


Fig. 2—Valveholder hole cutters

and a half-round file is used to smooth the edges of the hole. The valve-holders themselves will hide any inaccuracy.

Soft metals can also be cut with a metal-cutting fretsaw. Work must not be rushed, and if deep runners will be present, the holes should be made before bending.

Valveholder holes must always be large enough to give proper clearance for the socket tags. Holders vary a little in design, but the following diameters will usually be satisfactory:

B7G miniature valves $1\frac{1}{8}$ in.

4 and 5 pin British valves — $1\frac{1}{2}$ ins.

Moulded octal holders — $1\frac{1}{2}$ ins.

Paxolin tagged octal holders — $1\frac{1}{2}$ ins.

Many types of holder can be bolted on the underside of the chassis, and the holes can then be a trifle smaller, as only the valve pins have to be cleared.

Other components

Valveholders, and most other parts, can be secured with 6BA bolts and nuts. Holes should be drilled a trifle large, to compensate for any error in marking their exact position. An $\frac{1}{8}$ in. drill will do for 6BA bolts, with a $5/32$ nd drill for 4BA. Large transformers or components

mounted with 2BA bolts will require a 7/32nd. drill.

It is wise to make all holes before fitting any parts, to avoid possible damage. Metal fragments can also cause much trouble with variable condensers and other components.

Volume controls and other items mounted by a spindle bush usually need a $\frac{1}{8}$ in. hole. With aluminium, somewhat smaller holes can easily be enlarged with a round file, if necessary.

Soldered joints

Bad joints cause crackling and other troubles, and usually arise from dirty parts, or an insufficiently hot iron. Any

joint is made, as prolonged heating may cause damage.

Tinned copper wire solders most readily, and 22 S.W.G. or 20 S.W.G. is satisfactory. The ability to solder well is easily acquired. The main points are, well-cleaned surfaces, not too much solder, and a well-tinned, really hot iron.

An electric iron is also shown in Fig. 3. This has a 3-pin plug for a wall or bench socket, and keeps hot all the time work is in progress. Many such irons are made, some with small bits for radio construction. These small bits are handy for connecting up in limited spaces, but

the bolts may hold other parts, such as valveholders. In wiring plans, such joints are usually marked 'MC' to indicate that they are taken to the metal chassis.

The wire ends of parts such as resistors and condensers can often be taken directly to the various valveholder tags and other components. If not, a lead should be twisted on, as in Fig. 4, and soldered. Insulated sleeving is then slipped over the lead, to prevent it shorting to other parts or wiring.

Bolts, nuts, and tags can be purchased by the dozen or gross from radio com-

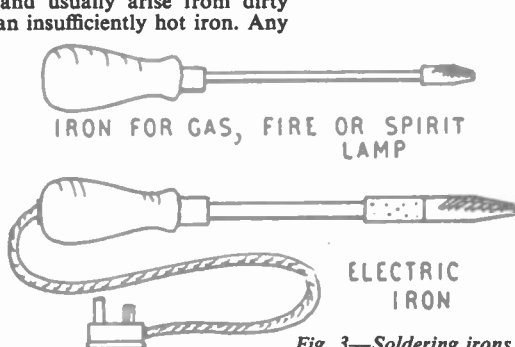


Fig. 3—Soldering irons

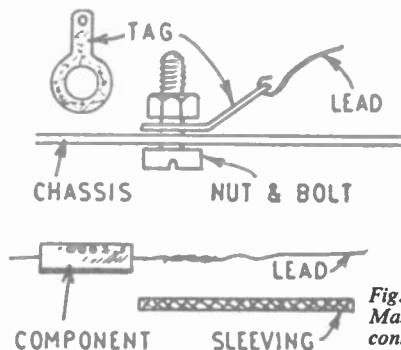


Fig. 4—Making connections

leads or tags to be soldered should be bright and clean. Dull tags can be brightened with a small file, or by scraping with a knife.

A small soldering iron such as that in Fig. 3 can be heated by resting it with the bit just outside the flame of a gas ring. It may also be inserted between the bars of a fire, resting in the hot coals. A small lamp burning methylated spirit is also satisfactory, with the iron placed on a rest so that the bit is above the flame.

The iron should not be so hot that the flame or fire takes on a purple colour. Nor should it ever be red-hot. Excess temperatures will cause the bit to become pitted so that the end has to be cleaned up by filing.

Resin-cored solder is very satisfactory for radio work. To tin the iron (or make solder adhere to the bit) the heated bit should be scraped or filed, and a little solder melted directly on to it. Subsequently, cored solder should not be applied to the bit, but to the joint being made.

To make a joint, the clean wire is placed through the hole in the tag, or looped round the tag. Cored solder is then melted directly on to the joint, with the tinned iron. In a few seconds the solder should spread over lead and tag, giving a perfect joint. Some components, such as valveholders, will not suffer greatly if the tags are much heated. But with condensers and coils, the iron should be removed immediately the

are not suitable for soldering together large pieces of metal, etc.

Chassis connections

Earth return points are often taken to a metal chassis, and cannot be soldered readily to aluminium. It is usual to solder such leads to a tag, as in Fig. 4, and to bolt this tag to the chassis. Small 6BA tags and bolts are satisfactory, and

component suppliers. Sleeving is usually sold in 1 yd. lengths, in various colours. Different colours are sometimes handy to distinguish various circuits; for example, red for L.T. positive wiring throughout. Tinned-copper wire is sold in 2 oz. and larger reels. Insulated connecting wire is also used sometimes, but joints take longer to prepare than with bare wire and sleeving.

The next article in this series will describe R.F. Amplifiers.

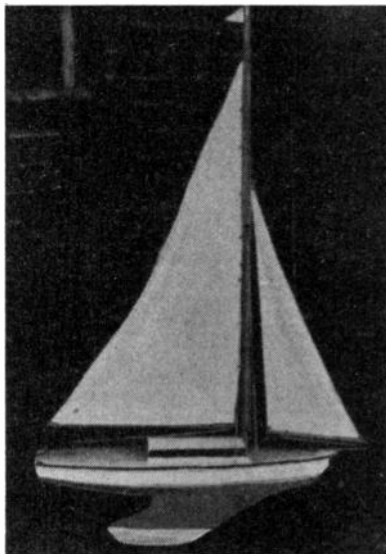
A FINE 'DOUBLE'

WE frequently hear from readers describing their success with the making up of the various Hobbies Designs, but, whereas the majority adhere to the measurements provided in the design, Mr. W. Lincoln of 50 Alderson Road, Great Yarmouth, has gone one better.

Having made up model No. 3104, the cabin yacht 'Venturesome' according to the given scale, he decided to try his hand at a model twice the size — and the result is a handsome vessel, as can be seen from the photograph.

She manoeuvres well, has a most pleasing turn of speed, and, the stronger the wind, the better she sails.

Mr. Lincoln is now thinking of trying his hand at doubling up on Design No. 3254, the model of the sailing cruiser 'Japonica'. His efforts may well induce other readers to try their hand at enlarging!



CHEMISTRY IN THE HOME

AN AUTOMATIC GAS GENERATOR

AN ordinary gas generating bottle suffers from the disadvantage that gas generation cannot be stopped without emptying the bottle. The well-known variation known as the Kipp's apparatus rectifies this, but it is exceedingly expensive to buy and, as large quantities of reacting chemicals are used in it, dear to use. Gas evolution in a

is, of course, unnecessary when collecting a gas as distinct from passing it through a liquid, an ordinary delivery tube being then satisfactory.

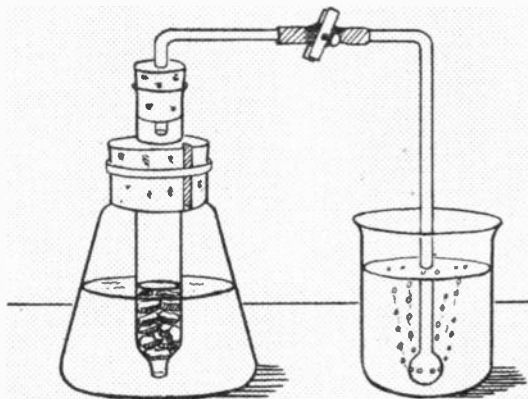
An examination of Fig. 1 will show that the inner tube contains the reacting solid (say, ferrous sulphide for hydrogen sulphide generation), that the acid comes in contact with it by entering the

Having decided on a suitable bottle and provided it with a cork, the inner tube should be made. Take two broken test tubes, one of which must have a sound unbroken mouth. Soften the ends of both in a bunsen flame, touch them so that they unite, and revolve them slowly in the flame to make a firm union. The purpose of fusing the two tubes together is to provide a handle in the subsequent operations. Fig. 2 shows the scheme.

A short distance from the union of the two test tubes a thickening of the wall must be produced. This is effected by slowly revolving the tube in the flame, taking care to keep it straight and not to distort it.

Next draw out the tube as shown and let it cool. Make a file mark and snap off the reaction tube, which will now have the appearance of that shown to the right of Fig. 2. The lower end should be fire polished to remove the sharpness left by the cutting. To do this hold it in

Fig. 1
The apparatus
in use.



Kipp's apparatus is halted by closing a stopcock, internal gas pressure then forcing the acid away from the solid into a separate chamber. This principle is easily and cheaply adapted in the apparatus shown.

A Gloy or other wide-mouthed bottle, two corks, two broken test tubes, two short lengths of glass tubing, a piece of rubber tubing and a screw clip or a pinch clip are all that are needed. The broad base of the Gloy bottle gives even greater stability than an ordinary squat wide bottle.

The apparatus also has the refinement of a novel gas distributor (shown dipping into the beaker). With an ordinary delivery tube large bubbles are passed out; their passage through a liquid is of too brief duration for all the gas to react. Consequently, much is lost and a larger quantity than necessary has to be generated to compensate, thus increasing the cost and lengthiness of an experiment. Using the gas distributor the bubbles are very much smaller and a much more intimate contact of gas and liquid is attainable. The result is vastly increased efficiency. The gas distributor

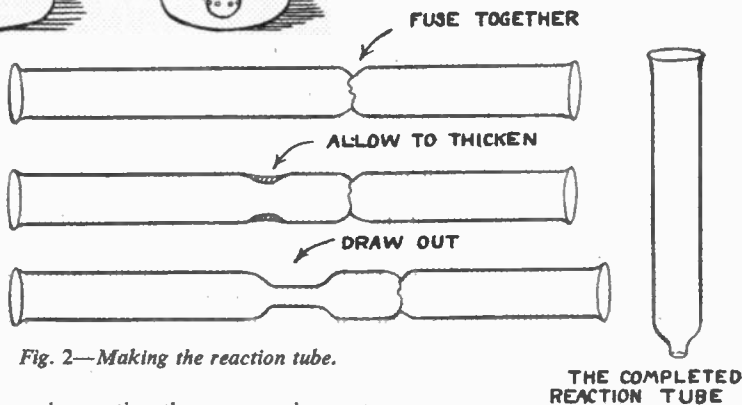


Fig. 2—Making the reaction tube.

open lower tip, the gas passing out through the glass tubes until such time as one wishes to halt the generation by closing the screw clip. On closing the clip, back pressure in the inner tube pushes the acid out and into the main bulk in the outer bottle. The generation is, of course, restarted by opening the clip, thus allowing the acid to rise into the inner tube once more. In the outer bottle no pressure arises which could blow out the cork, for a nick is made in the side of the cork.

the flame until the sharp edge gives place to a smooth one.

It only remains now to fit this tube with a bored cork and an elbow bend of glass tubing. Rubber stoppers are best, of course, as these are unaffected by acid vapours, but by immersing ordinary corks in melted wax for a few minutes, lifting and draining, they will become resistant to acid fumes.

The large cork demands a large borer. If you have only the small range set of

cork borers there is no need for despair. Draw a circle of the same diameter as the inner tube on the cork. You may either fretsaw the hole slightly smaller than the circle, or bore holes all round the inside of the circle with a small borer until an irregular shaped circle may be removed.

In both cases the hole is brought to a good fit by gently enlarging and smoothing by means of a strip of glasspaper glued to a dowel rod of diameter not too much smaller than that of the tube. A perfect gas-tight fit is not necessary with this large outer cork, it being only necessary to hold the inner tube firmly. Hence, it will not matter if you inadvertently make the hole slightly oval. The most efficient way of making the nick is to use a triangular file.

Push the reaction tube into the large cork and fit this section to the bottle. By putting a little water in the bottle you may test out the apparatus. The water rises into the inner tube. Now blow down the elbow tube. The water is, of course, easily pushed back into the bottle.

Now to make the gas distributor. As will have been noted, it consists of glass tubing on whose end a bulb is blown, the bulb itself being pierced with small holes from which the streams of tiny gas bubbles will emerge.

One end of a length of glass tubing must first be closed. Fig. 3 indicates that this is effected by drawing out one end of the tube in a flame. It is now necessary to thicken this closed end so as to

provide enough glass to yield a reasonably thick walled bulb when it is expanded by blowing. Hold the end of the tube in the flame, revolving it all the time, until the glass thickens as shown.

Now blow a small bulb and immediately pierce a number of small holes with a needle while the glass is

container and a large boiling tube, size 1½ ins. by 8 ins., for the inner reaction tube.

The boiling tube should be of ordinary soft soda glass and a hole may be produced in the bottom by corking the tube, heating the lower end in a bunsen flame

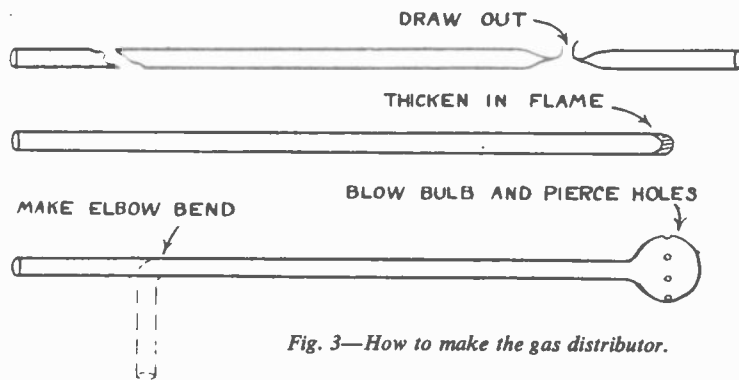


Fig. 3—How to make the gas distributor.

still soft. Allow to cool and then make the elbow bend at the other end. The apparatus is now ready for assembly and use.

The apparatus described will serve for quite lengthy gas evolution and is suitable for all ordinary purposes. Should you wish the apparatus to run continuously for many hours and produce large volumes of gas, then a larger apparatus should be constructed. Use a large wide-mouthed bottle for the acid

and then directing a fine flame on to the lower end by means of an ordinary mouth blowpipe. Expansion of the air inside the corked tube causes the end to blow out in a small hole, which serves for the entry and exit of the acid.

The use of two gas distributors connected to the rubber tubing by means of a 'Y' or 'T' tube is recommended with this larger apparatus, so as to make efficient use of the larger volume of evolved gas. (L.A.F.)

Here is the Card you WANT

FOR this baffling trick we need any twenty-one cards taken from a pack, divided into three piles of seven, each placed face downwards. Ask one of your friends to select any heap and any one card from that heap, making a note of it and showing it to the rest of the audience.

Now take the selected pile from your friend, placing it between the other two piles and dealing out again into three more piles of seven, again face downwards. Start from the left, working to the right, one card at a time. This is most important, and you must *not* count out three separate piles of seven cards.

Now ask your friend to guess where his card has gone. He may be wrong with the first guess, so give him another try, and, on finding the correct pile, place it in the middle of the other two, then dealing out another three piles. The entire process is repeated a second time.

On the third dealing again ask your

friend for the correct pile, but this time take up the seven pile in your left hand, for you are ready to produce the chosen card.

So far, the trick is very similar to one already described in these pages, but here we find the card by an entirely different method, and you will appreciate that the cards have been face downwards all the time.

Spell them out

You now spell out aloud the following five words, one letter at a time, H-E-R-E I-S T-H-E C-A-R-D Y-O-U W-A-N-T

and with each letter spoken the top card of the pile of seven is transferred to the bottom. At the end of each word the top card of the pile is discarded by laying on the table. For example, with H the top card goes to the bottom, and similarly with E, R and E, then discard a card.

The number of the cards is decreasing at the end of each word, for after HERE you have 6, after IS you have 5, and so

on until you arrive at the word WANT when you have only two remaining. When you discard one of these after spelling out WANT only one card remains, and believe it or not, that is the chosen card which you present to your baffled audience.

There is nothing whatever to go wrong with this trick, providing you follow the correct routine as stated. Briefly, you have three deals. With the first two, sandwich the pile holding the selected card in the middle of the other two piles, but the third time you take the pile for the spelling operation.

It is important for the cards to remain in the same order and it is better to keep control by picking up a pile, fanning out and asking whether it contains the chosen card — although you need not see the faces.

Finally, do not forget to transfer the top card to the bottom of the pile with each letter, and, of course, it is sound practice to try it on yourself until the routine is perfected. (S.H.L.)

MODEL PAPER ANIMALS

MODEL animals can be easily and quickly made by preparing the outlines on folded paper, and cutting them out with scissors. When opened a little the animals have two sides and will stand erect. Needless to say, the best effects are obtained by using appropriate colours of paper although it is possible to use white paper only, adding features with water colours or ink.

You will find the elephant quite easy to make, using a piece of paper approximately 7ins. by 8ins., folded in half to make a piece measuring 7ins. by

portion of the cut-out. Use a similar size of paper, copying out the shape shown in Fig. 3. Here you will have to adjust the angle of the head by folding and

~~~~~  
*By S. H. Longbottom*  
~~~~~

slightly creasing the neck. The horns may be curved by application of the scissors as already mentioned for the elephant's

of the body and two outer circles for making the rockers. All this preparatory work should be first done in pencil.

The rockers will be found longer than actually required and to overcome this, a portion, as indicated by the shaded part, is cut away as waste. The rocker is next folded at point (B), shown by the dotted lines, and halfway between this point and the end a 'half-joint' is made by cutting the rocker halfway through the width from the outside circle at point (A). It must be made quite clear that these directions apply only to the upper half of the folded sheet of paper,

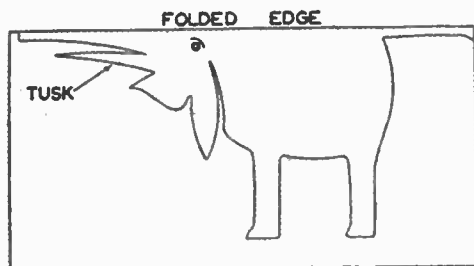


FIG 1

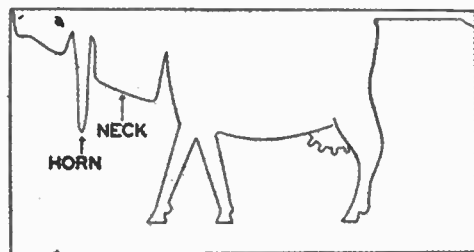


FIG 3



FIG 2

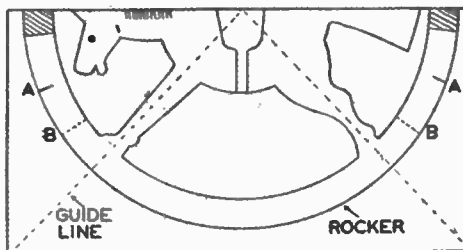


FIG 4

4ins. Prepare a drawing as shown in Fig. 1, cutting out with scissors and slashing the tail at the end a little to make it fringed. If the trunk is held between finger and thumb while the scissors blade is drawn over the top, you will find the paper will curl realistically. The ears may also be folded at a suitable angle, and similarly with the tusks. The eyes and feet may be drawn in with ink.

Reference to Fig. 2 will show how the elephant and a cow appear after completion, but the latter calls for a little more explanation. You will see that the beast appears to be grazing, an effect obtained by making a cut in the neck

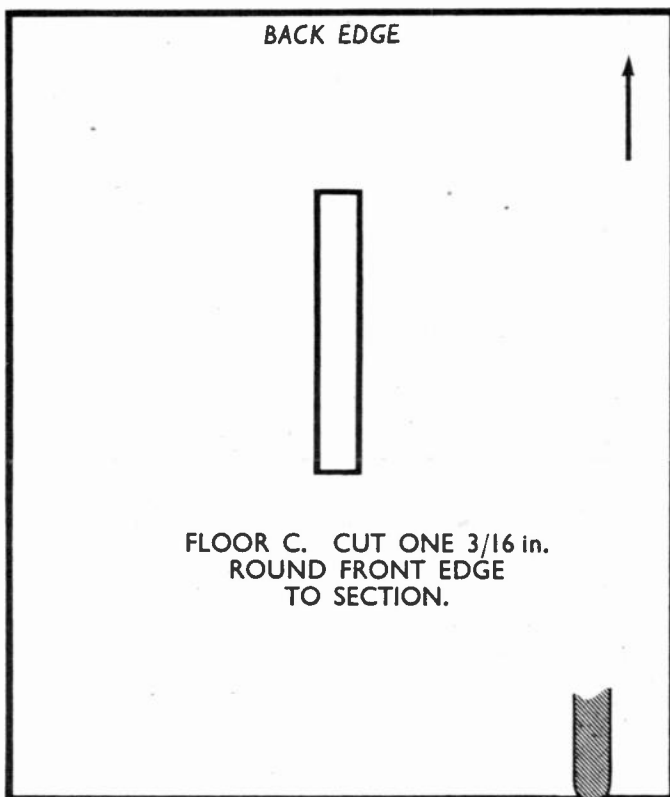
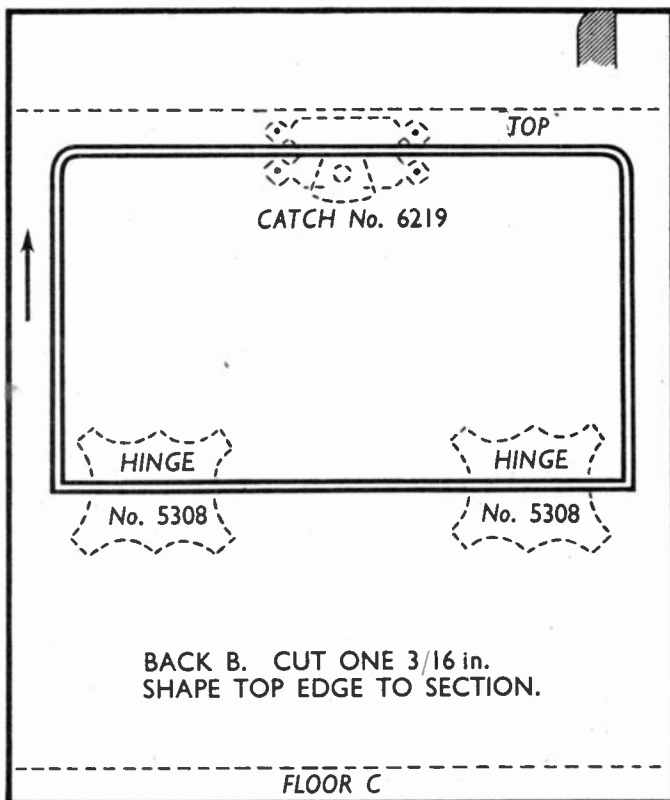
trunk. Again you should also fringe the end of the tail with scissors, marking in the eye with ink.

After making these two simple models we may turn to a miniature rocking horse, which is a little more involved.

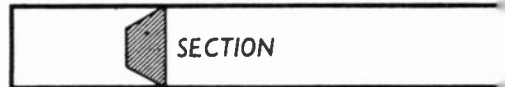
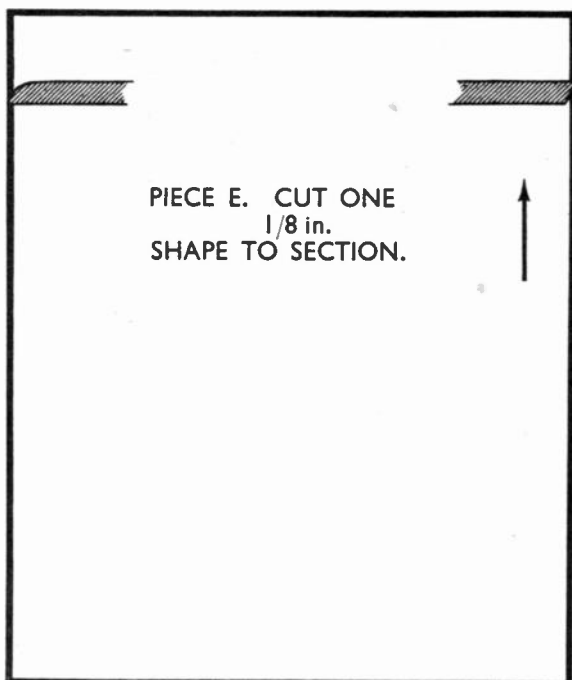
Fig. 4 shows how to sketch out the shape for the horse to which rockers are attached. Measure out an oblong of paper as before with the folded edge at the top, where a centre is marked for constructional purposes. Produce guide lines from the centre to each bottom corner and which indicate the correct position for the legs. The next step is to describe a small circle showing the range

and since we wish to make a half-joint as used in woodwork, the corresponding cut on the other half must be made from the inner circle of the rocker. When the two halves, folded at point (B), are fitted together they will lock in position holding the rockers firm with the legs of the horse opened out.

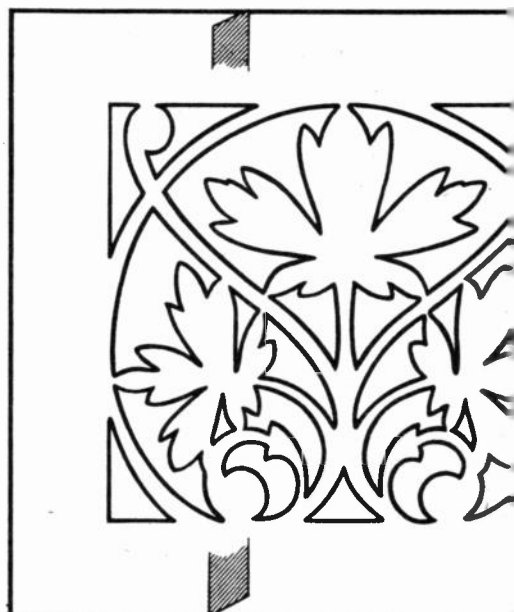
Additional decorations to the horse are perhaps best made before cutting out and comprise the mane, a saddle with girth drawn in by ink or added in another colour of paper, while the tail is finally fringed with scissors. The ears should also be separated, any further colouring being optional.



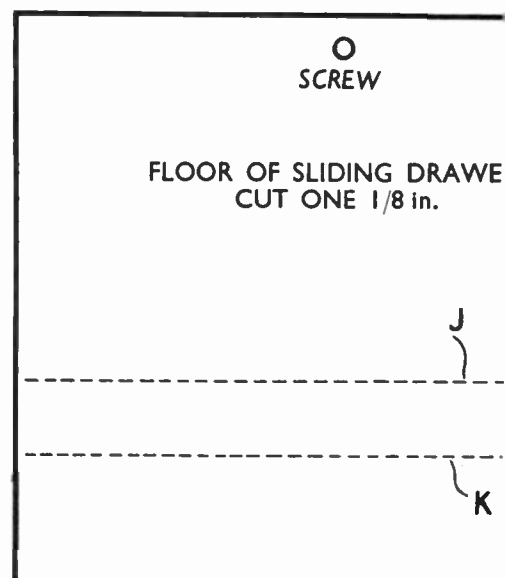
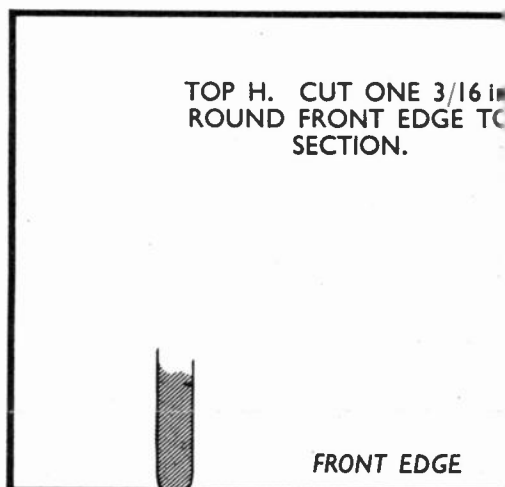
PIECES D. CUT TWO 1/8 in.



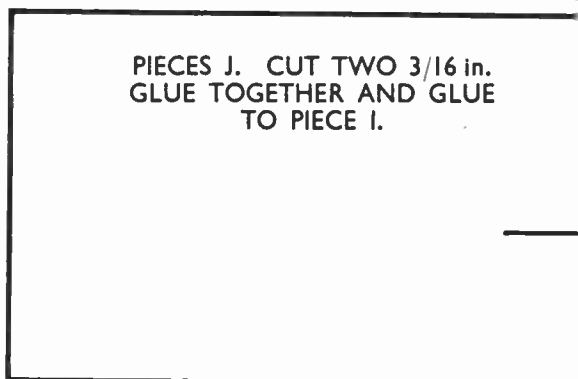
PIECE F. CUT ONE 3/16 in. SHAPE TO SECTION.



FRONT G. CUT ONE 3/16 in.



PIECES J. CUT TWO 3/16 in. GLUE TOGETHER AND GLUE TO PIECE I.



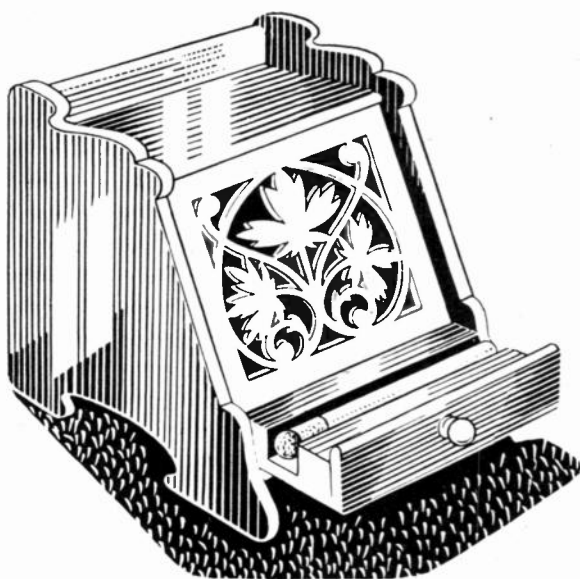
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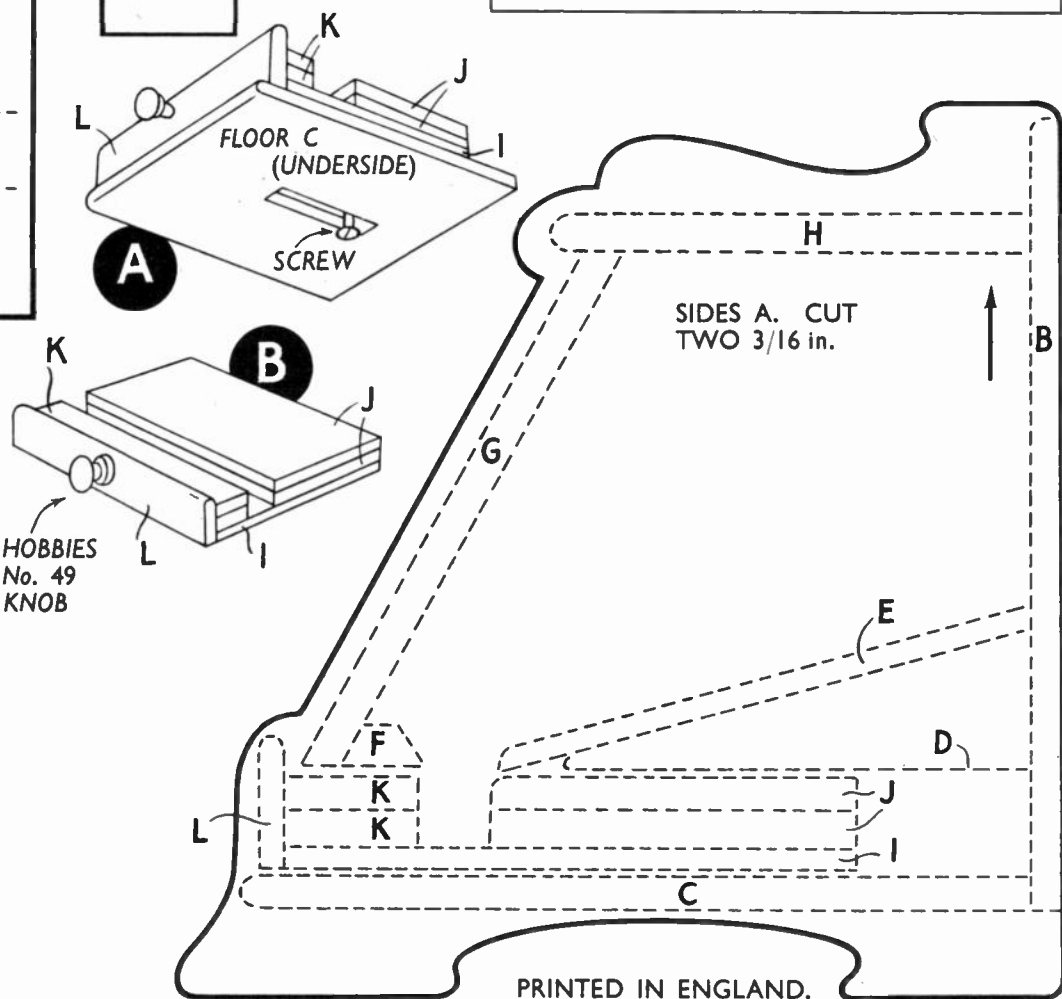
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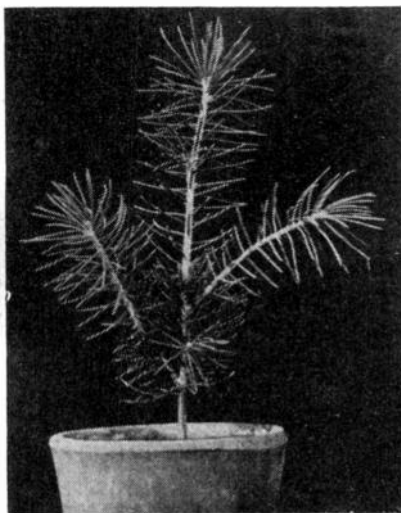
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PRINTED IN ENGLAND.



GROW TREES INDOORS



A home grown Christmas tree or spruce fir.

The trees grown may be divided into two classes, those native to tropical countries such as orange, grapefruit and date palm, which reach only small dimensions in our climate, and normal British trees in the seedling stage. Orange, or grapefruit pips and date stones (from the Christmas box of dates) will conveniently yield trees in the first class, and the second

By M. J. Martin

offers many opportunities, including acorns, horse chestnuts, sycamore, hazel, etc. These yield pretty little trees which can be discarded when they become too large. Children are particularly fascinated at the development of an acorn or 'conker' into the little tree, and it affords an instructive introduction to horticulture, without financial loss if it fails through the small grower's neglect.

The pips, stones or other seeds should be planted in small flowerpots, preferably using John Innes potting compost (although good garden soil will serve) and kept slightly moist. In the case of tropical trees the pots should be kept fairly warm (the warmth of an average living-room is quite sufficient). Since many of the seeds take a while to germinate some patience may be necessary.

After germination, the little plants must be kept near a window and watered

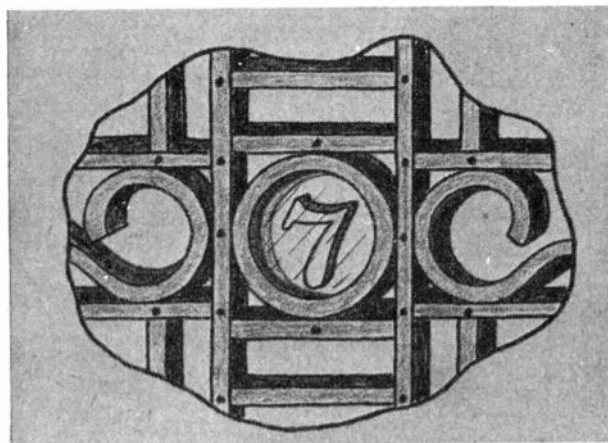


Miniature grapefruit tree.

reasonably, when they should thrive.

In addition to the many 'free' seeds, it is often possible to purchase small packets of various types of conifer seed from seed merchants and these also make attractive plants. In fact one can easily grow one's own Christmas trees in this way! One supplier even lists seed of *Sequoia gigantea*, the giant tree of California, and although it would scarcely reach 300 feet here (even allowing 2,000 years!) it would no doubt make an attractive novelty.

'Floating' House Number



IF you have wrought iron gates to your house you can fix your house number in a novel way to give an appearance that the number is floating.

There are bound to be some circles incorporated in the pattern of the gates. Select a suitable position of one of them and cut a circular piece of Perspex to fit tightly into the inside hole of the circle.

Stick your house number on to the face of the Perspex, with Bostik and the job is complete. If you have made your Perspex circle a good tight fit into the hole on the gate, it should hold there in position for years. However, if it is not a good fit, surround the perimeter of the Perspex with a tiny fillet of Bostik, in the same way as putty is applied to hold in window glass.

If you have antique numbers, which you would like to retain, you will probably find two tapped holes at their rear for fixing. Drill holes through the Perspex at the rear and hold the numbers with screws from the back. (E. C.)

PLANNING YOUR TOUR

ONE advantage of a cycling tour is that the outing may be planned to suit any kind of 'taste' in scenery, including topographical surroundings, historical associations, literary interests, or just mileage amid picturesque scenery. For instance, you can 'do' some particular county, make a round of ancient castles, or undertake a pilgrimage rendered famous by its connection with some literary person — we might mention Thomas Hardy's Wessex; the Lorna Doone Country; the land of Scott; or that Yorkshire moorland country around Haworth so familiar to the readers of the work of the Brontë sisters.

By A. Sharp

The Dales of Yorkshire, the Lake District, the Scottish borderland (including the Roman Wall and Northumberland); the Cotswolds and their pleasant byways, the Fenlands and Broads of East Anglia, not omitting the Peak Country of Derbyshire and its connection with famous houses such as Haddon Hall and Chatsworth, are all excellent suggestions for a cycling trip during the summer months.

Limit your luggage

When bent on a cycling tour it is wise to limit the amount of one's

luggage. Of course, what may meet with one individual's requirements, may not suffice for another person. And if some may claim that it is possible to undertake a tour with little more than a toothbrush besides the clothes one stands up in, it is certainly more 'comfy' to take a few extras — 'luxuries', if you like! — in case of need. In this connection we might suggest pyjamas, toilet utensils, handkerchiefs, spare socks or stockings; a sponge and a pocket comb; also several soft collars. In hot weather you can dispense with a waistcoat, but on a long tour you will need a change of shirts and underclothes.

In the event of wet weather blowing up, it is advisable to take a good waterproof. The Beacon poncho as supplied to cyclists will keep out the heaviest downpour.

Luggage is best carried on the back or rear carrier of the machine, in a bag or valise. Pannier bags which can be slung over the top bar of the cycle, are favoured by some cyclists, but others prefer the Japanese basket of the telescopic kind, which adapts itself to much luggage or little.

Do not omit to carry in your pocket a map of the district you hope to explore. Always have it ready for reference. There are various kinds of maps designed for the cyclist. Some merely show the main roads, the villages, and towns en route, and are not really helpful to those who wish to explore the

nooks and corners of the countryside. The Ordnance Survey map with a scale of 1 in. to the mile is recommended. The contours are plainly marked on these O.S. sheets, and give one a good idea of the lie of the land, whether hilly or otherwise.

Inner man and his needs

Some cyclists adopt a certain dietary when on tour. Generally speaking, it is not necessary to make any difference from your usual food, although it is advisable to avoid all classes of meals not easily digestible. Care should be taken not to indulge in too heavy a meal in the middle of a long ride! Partake of a light lunch, and do not be tempted to overdo your meals; on the other hand, do not ride too long at a stretch without taking some refreshment.

Chocolate or biscuits will serve between meals. Drink sparingly of 'fizz', and avoid alcoholic drinks when on a long ride. Fruit of some kind, apples or oranges preferred, is better for you than too much drink of any kind. Lemons, bananas, ginger nuts, or a bar of plain chocolate will be found excellent. Tea makes a sound drink, if not too strong. At many cottages and farms teas may be obtained. They are substantial meals as a rule; indeed, a Yorkshire, Derbyshire or Devonshire farmhouse tea is a meal in itself. Then, of course, there are excellent meals to be had at the Youth Hostels.

There's still time . . .

but not much, if you want to plan a hostel tour for your summer holiday. The fun and adventure of hostelling makes it very popular and some hostels are already heavily booked. But there's still room in others, and you'll find advice on where to go when you get your copy of the Handbook on joining. So if you have left it a bit late, there's still time to join the Y.H.A.

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SO far as cycling literature is concerned there is nothing quite like Kuklos and once again this unique Annual makes its welcome appearance in time to encourage, guide and inform us regarding our projected summer touring.

In one respect this year's edition is different — all reference to mopeds, scooters and powered vehicles has been omitted, thus making it, indeed, a cyclist's handbook.

All main features have been retained, and from the first section dealing with all aspects of cycling to the part outlining home and continental tours, this grand little book should prove invaluable to anyone who regards his machine as a companion in touring adventure rather than an overworked and uninspiring form of local transport. Published by Ed. J. Burrow & Co. Ltd., Imperial House, Cheltenham—Price 2/6.



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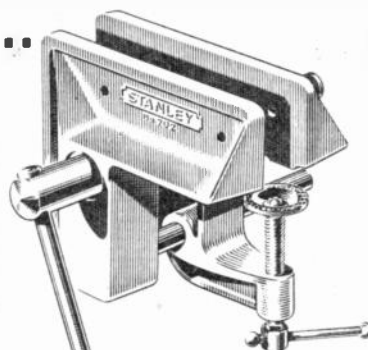
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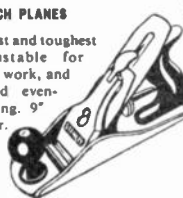
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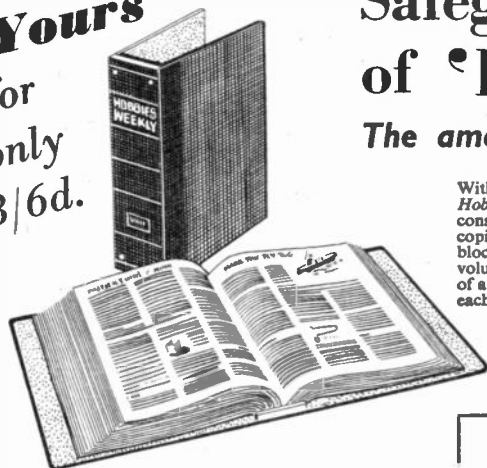
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NOBODY knows when man first began to shave. But the Egyptians were shaving in 3,400 B.C., and in the Greek civilisation shaving was considered an indication of refinement.

The first book of the Bible relates that Joseph, pining in gaol after that unfortunate misunderstanding with Potiphar's wife, shaved carefully before going to see Pharaoh and perhaps his clean business-like chin impressed the Great Man as much as his dream interpretation.

RAZOR BLADE WRAPPERS

Ever since Alexander the Great, the world conqueror, shaved and made shaving a standing order for his army (so that they might not be gripped by the beard in battle) the custom has been fairly popular with soldiers. The Normans invading England shaved their faces — and the backs of the necks. The fiery Tartars fought a long war with the Persians to impress on them the necessity of shaving.

Even in Russia there was a drive against beards. Peter the Great put a tax on beards in order to force his people to shave — a habit they have resisted for centuries.

Some savage tribes still shave with pieces of shell, slivers of bamboo, broken glass and shark's teeth. But the most ancient method — still used in

Burma and China — is forcible plucking.

Bronze razors were popular in Egypt in 2,000 B.C., and in the Bronze Age of Europe razors were common. It is coincidence that almost a stone's throw from where Gillette's London factory stands on the Great West Road were discovered some of the earliest shaving implements. This collection of strangely shaped knives, now in the London Museum, dates from the latest period of the Bronze Age, 1,000 — 500 B.C.

With some of the implements shaving must have been a minor surgical opera-

'ion, but the ancients had men skilled in putting an edge on their razors.

One morning in 1895, King C. Gillette stood before his bathroom mirror and found that his razor was dull. Being an inventor it occurred to him that a razor was only a sharp edge and all behind that edge was but a support. Why spend material and time in fashioning a backing? Why forge a great piece of steel, harden and grind it and laboriously rivet a handle to it?

Afire with enthusiasm, Gillette wrote to his wife in Ohio: 'I have got it—our fortune is made': described the razor and made sketches of it for her. It was, in principle, the same Gillette as is used today — a handle, clamping plates and a double-edged blade. But the really revolutionary idea was that the blade could be used and then thrown away.

The old green Gillette wrapper which was used in the early '30's, is a must for any collection.

Enthusiasts should save all English wrappers for exchange with overseas collectors.

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Amatola Hotel, Aberdeen

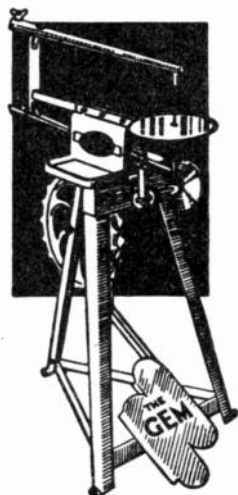


ABOUT the middle of last century the house, now known as 'Amatola', was built by a resident of Aberdeen on Deeside, two miles from its present site. The property changed hands and the new owner had the house taken down, stone by stone, and rebuilt as the previous model, on the site where it now stands.

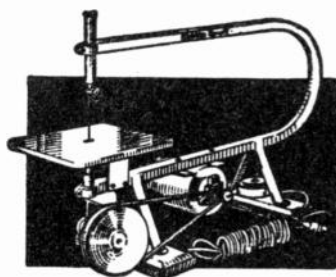
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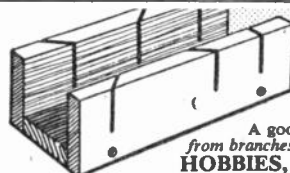
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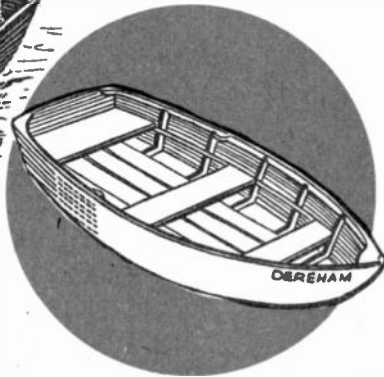
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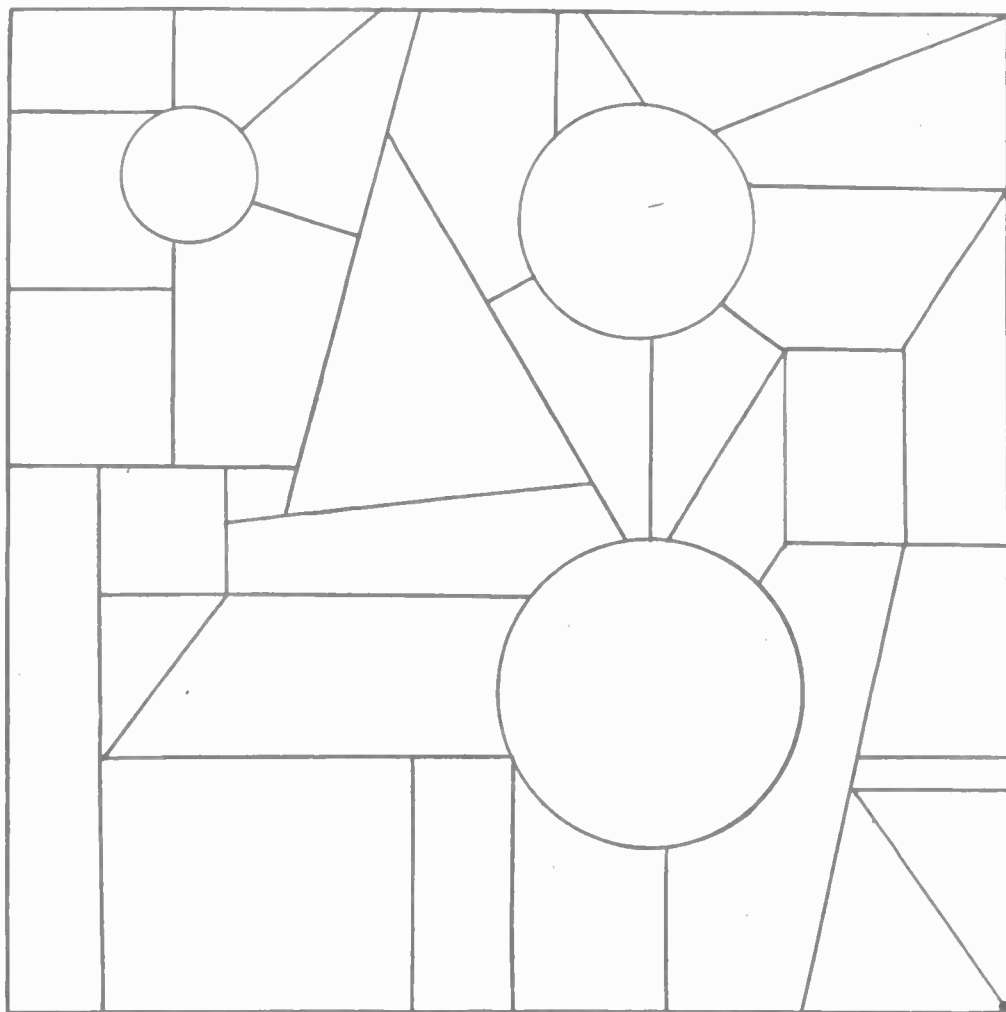


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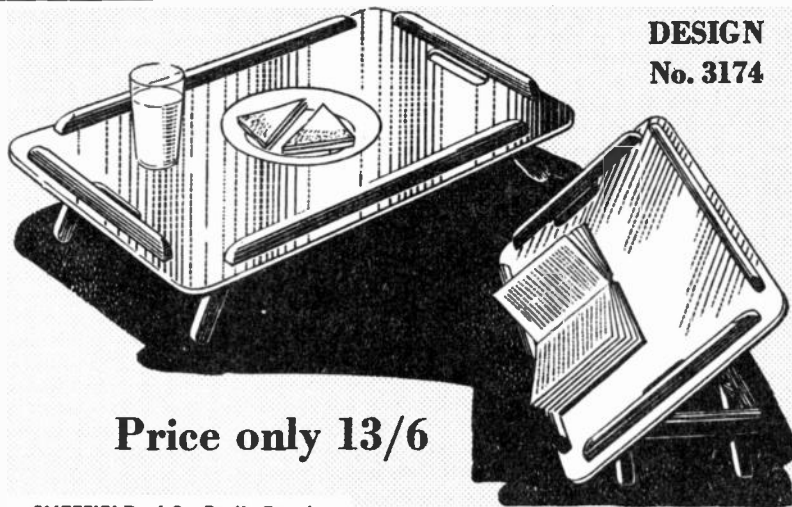
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