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THE ORIGINAL
'DO-IT-YOURSELF'
MAGAZINE

HOBBIES *weekly*

FOR ALL
HOME CRAFTSMEN

Also in this issue:

A HANDYMAN'S
TOOL CASE

COLLECTORS' CLUB

MAKE DAINTY
NAPKIN RINGS

PRINT YOUR OWN
BOOK-PLATES

SCIENCE EXPERIMENT
AND QUIZ

MODEL AIRCRAFT
LANDING STRIP

FRETWORK PATTERN

ETC. ETC.



*FREE Plan
in this issue*

**HANDSOME
PIECE OF
FURNITURE**

LADY'S WORKBOX



Up-to-the-minute ideas

Practical designs

Pleasant and profitable things to make

5^D



THE following covers have recently arrived from Czechoslovakia.

'Days of Friendship between Czechoslovak and African Peoples'. This cover depicts the face of an African woman on a background of the African continent and the Czechoslovak flag. It was issued on June 26th.

'Czechoslovak Puppets and Marionettes.' This is an interesting cover because the Czechoslovak puppet and marionette plays which began in the 17th century are still very popular throughout the country.

Designs, some of which are illustrated, are as follows:

30 h. red and yellow — a puppet.

40 h. brown and green — Faust and Punch.

60 h. blue and pink — Spejbl and Hurvinek — a popular couple of father and son whose fame has already crossed the frontier of Czechoslovakia.

1 Kcs. green and blue — a scene from a puppet show.

1-60 Kcs. Jasanek from Brno — in original colours — green and blue.

The covers were issued on June 20th.



Československá pošta

Mr. Raymond L. Cantwell
16 Grange Road, Minchery Farm
Littlemore - Oxford
England

NUCLEAR RESEARCH ISSUES

WITH the inauguration of the 'Democritus' Nuclear Research Centre at Aghia Paraskevi, Greece takes her place among the countries which have the means to exploit the possibilities that atomic energy offers for peacetime projects.

This event was marked on July 31st, by the issue of two special stamps. One pictures Democritus, the Greek philosopher, who first conceived the atomic theory, 2,500 years ago. The other presents a view of the reactor building.

The 1,000th anniversary of the Liberation of Crete was celebrated on September 22nd, with the issue of a special stamp depicting Nikiforos Phokas, the Byzantine Emperor.



'Democritus' research centre commemorative

THE Hungarian 'Folk-lore' set of colourful match labels has just arrived. Two are illustrated here.

Many readers have asked where to write for labels. Dr. Takacs Tamas of Gyor, Revai v.5. Hungary, will exchange Hungarian labels for those of England.



HUNGARIAN 'HORSE SET'

ANIMAL-LOVERS will like the Hungarian 'Horse' set of stamps issued on July 23rd. It includes the following designs:

30 fillér green, brown, violet and black — close fight of three race-horses.

40 fillér green, brown, yellow, and black — three horses in hurdle-jump.

60 fillér brown, green and black — trotting race.

1 forint orange, black, grey and green — trotting race.

1 70 forints green, brown, and black — horses of breeding stock with foals.

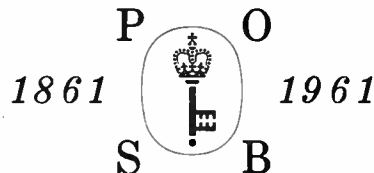
2 forints brown, black, and blue — the best Hungarian racehorse — 'Baka'.

3 forints blue, brown, yellow, and white — 'Kincsem' — famous racehorse of the last century.

POST OFFICE SAVINGS DEPARTMENT SYMBOLS

THE Post Office Savings Department has adopted a new symbol. It takes the form of a key incorporating a representation of the 'Edward' crown, and has been produced by the Design Research Unit.

This new symbol has been widely used in connection with the Centenary celebrations of the Post Office Savings Bank on September 16th, and for this purpose was amplified by the letters 'P.O.S.B.' and printed between the dates '1861-1961'.

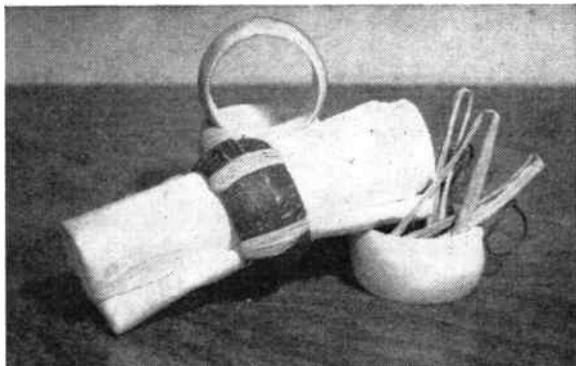


MAKE DAINTY NAPKIN RINGS

NAPKIN rings covered with raffia look most attractive and are easy-to-make gifts. The basis is a wooden ring specially prepared for the purpose, as shown in our illustration, and obtainable at most arts and crafts shops. You will also require small quantities of raffia in different colours, the idea being to make distinctive patterns which are easily recognisable when these gifts are intended for children.

The method of decoration is quite easy but before starting it is best to dampen the raffia by placing a few strands between the folds of a damp

By
*Anne
Bradford*



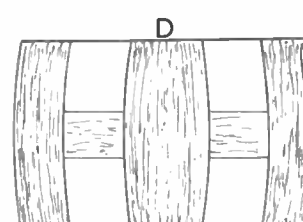
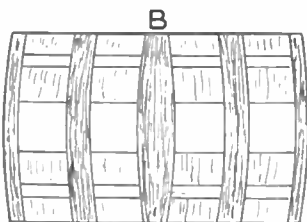
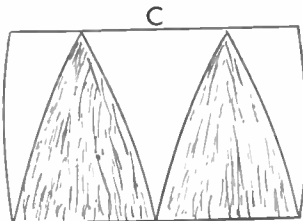
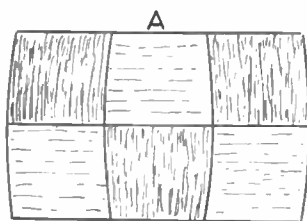
towel. Note that the raffia must not be saturated and if treated as mentioned it will be quite sufficient.

The chosen design will determine the method of wrapping but in most instances the whole ring should be wrapped

in a basic colour, finishing off by knotting on the inside and pushing underneath the remainder. This will give a neat finish. Take a long strand of raffia, winding through the centre of the ring until the outside is completely covered and remembering to make any joins on the inside. A contrasting colour can then be woven in the opposite direction if a bodkin is employed for this purpose.

Variations in the designs can be made by modifications in the original wrapping and some of these are shown in our diagrams but no doubt you will be able to invent many more, weaving in an initial if desired. Another modification is a rosette, bow or tiny flower made by a few loops of raffia.

Figure A shows a check pattern first wholly wrapped in one colour. The check is made by weaving in another colour horizontally with a bodkin. B has a basic covering, three horizontal bands woven in and further bands may be added in the basic or another colour. C again has a basic wrapping with alternating triangles while D is made in a similar fashion to B.



THE HISTORY OF AVIATION SHOWN BY 1,300 MODELS

MORE than 1,300 different model aircraft, which tell the story of the history of aviation in miniature, are in the collection of Mr Peter Farrar, of Barton Road, Torquay, who has assembled each model.

One of the most significant features of Mr Farrar's collection is that all the models are made to a constant scale of 1:72. This means that any one model, when viewed in comparison with another, gives the same impression of relative proportion as does the full-size aircraft.

Although Mr Farrar has made many from his own materials, his collection includes some 500 models assembled from Airfix plastic construction kits.

Mr Farrar has not been satisfied with making, say, one Spitfire to record its place in aviation. But he has built a new model to record the most detailed change in specification. That meant making 24 models of the Spitfire for the British services alone! In addition, there are models of the Spitfire as used by other countries.

Mr Farrar who began making models

in 1933 (at the age of 11), served during the war in the R.A.F. as an aircraft recognition instructor, and his models have been shown at many exhibitions up and down the country. He himself confesses to a preference for old biplanes, and has made a Vulcan bomber from part of an old stable door and the fuselage of a Beverley transport from part of a neighbour's discarded piano. Storage (each model has its own box) and transportation are quite an undertaking and a bedroom and attic in his Torquay home are necessary to provide space for an office, storage and a workshop.

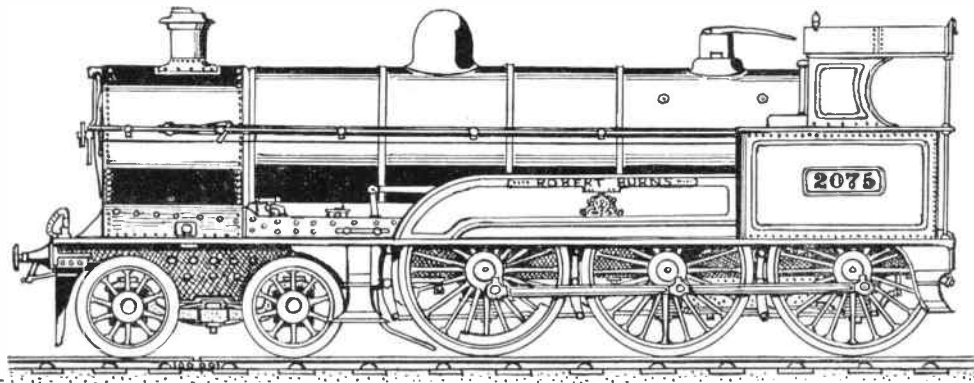
Oldest models in the collection are of 1918 aircraft. The smallest is a Comper Swift (a pre-war single-seater light aircraft) and the largest an American Martin Mars flying boat. (E)

THE 'PRINCE OF WALES' CLASS

MR C. J. Bowen-Cooke's first 4-6-0 type express locomotive for the London & North Western Railway was the popular 'Prince of Wales' class. They were in reality a development of Mr Whale's earlier 'Experiment' class of 1905, the only marked difference being the provision of 20½ in. diameter cylinders (the 'Experiments' had 19 in. cylinders), and the Schmidt superheater.

occasion was provided with a Belpaire boiler and outside Walschaerts valve gear, and was the joint exhibit of William Beardmore and the L.M. & S.R. She was Beardmore's 304th product, and was finished in the L.M.S. red livery, with the 12 in. numerals on the tender, and the coat of arms on the cab panels. After the exhibition, and on being put into regular service, the name plates were removed.

The class totalled 246 engines, and carried the following details. Wheel diameters, bogie 3 ft. 9 in., coupled 6 ft. 3 in. Cylinders, 20½ in. by 26 in. stroke. Total heating surface, including superheater tubes 1,816 sq. ft. Grate area 25 sq. ft. Boiler pressure 175 lb per sq. in. Weight engine in working order, on bogie 19 tons 10 cwt., on driving wheels 18 tons 5 cwt., on intermediate wheels 15 tons 5 cwt., and on trailing coupled wheels 13 tons 5 cwt. Total equals 66 tons 5 cwt. Coupled wheelbase, 13 ft. 7 in., total engine base 26 ft. 8½ in. The centre line of the boiler was 8 ft. 7 in. from rails, and height to top of chimney 13 ft. 4½ in. The tenders ran on six wheels of 3 ft. 9 in. diameter, and had a tank capacity of 3,000 gallons, coal space of 6 tons, and weighed full 39 tons 5 cwt. Total weight



The first two engines, Nos. 819 *Prince of Wales*, and 1388 *Andromeda*, left the Crewe erecting shop in October 1911, followed in November by Nos. 1452 *Bonaventure*, 1454 *Coquette*, 1537 *Enchantress*, 1691 *Pathfinder*, 1704 *Conqueror*, 1721 *Defiance*, and in December by Nos. 2021 *Wolverine* and 2359 *Hermione*. These first ten engines which carried Crewe Works numbers 5030-5039 in the same order were immediately put into main line express work, where they replaced the 'Experiments' on the Euston-Scotch expresses. In 1923 they became L.M.S. Nos. 5600-5609 in the same order.

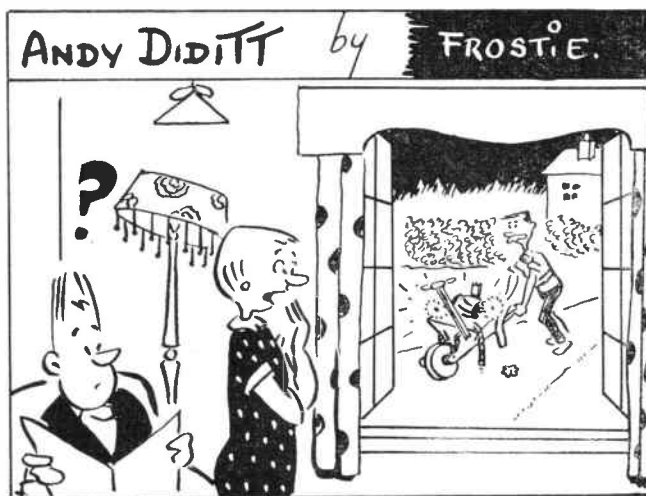
The next batch came out in October 1913, and between that date and November 1919 a total of 145 'Princes' were built to Mr Bowen-Cooke's design, and these were renumbered in the L.M.S. list, 5610-5754. In 1921-22 Capt. H. P. M. Beames, who became chief mechanical engineer in 1920, ordered a further ninety from the firm of William Beardmore & Co. Ltd of Glasgow, these carrying L.M.S. Nos. 5755-5844.

For the British Empire Exhibition at Wembley in 1924 William Beardmore & Co. Ltd built a further one, L.M.S. No. 5845. This engine which was specially named *Prince of Wales* for the

In 1924, four of the earlier 'Princes' had also been fitted with outside Walschaert's valve gear, these being Nos. 964 *Bret Harte*, 867 *Condor*, 2340 *Tara*, and No. 56 (unnamed).

engine and tender in working order, 105½ tons. The piston valves were driven by rocking shafts.

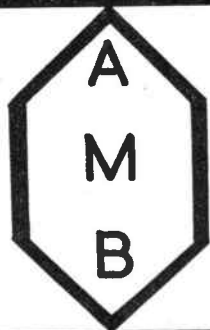
(A.J.R.)



"HE'S BRINGING YOUR LAWNMOWER BACK AT LAST ANDY — ONLY THIS TIME IN A WHEELBARROW."

SIMPLE PRINTED BOOK-PLATES

EX LIBRIS



A.M. BRIGHT

BOOKS on loan have an unfortunate habit of becoming lost. The usual excuse is that it was not known to whom they belonged. There is far less excuse for their non-return if the owner has his private book-mark inside each cover.

Printed book-plates are not cheap. An expert lino-cutter can produce his own plates, but this calls for a fair amount of skill, expense, and time in cutting and printing. The method described here is quick, cheap, and simple to operate, and is entirely 'home-made' throughout.

A suitable design for the book-plate must be drawn out to full size on a piece of thin tracing paper measuring some 6 in. long by 4 in. wide. This design need not be very elaborate and is in the form of three panels surrounded by a plain or fancy border. One panel should carry the words 'Ex Libris', another the owner's name (and perhaps address) while the main panel carries a simple design or monogram.

A simple book-plate is shown in the illustration. To judge the finished effect of the plate all the lettering and design should be blacked in.

From this tracing a glass negative is prepared. A piece of thin glass of the same size as the pattern is taken, and one side of it is given two good coats of black oil paint. The glass must be perfectly opaque when dry. The paper pattern must be laid on it ('wrong' side upwards) and the outlines only traced through on to the paint. The lines can then be scratched through with a finely pointed nail so as to show clear glass.

A damp chamois leather is laid in contact with the paint overnight. Next morning the unwanted paint (i.e. the areas to be printed black) bounded by the various lines can be peeled off. The negatives should be left for a while to let the remaining paint harden, when the clear glass can be cleaned up.

The printing frame is a piece of plywood $8\frac{1}{2}$ in. long by $6\frac{1}{2}$ in. wide, with a rectangular opening 6 in. long by 4 in. wide sawn out of its centre. Four strips of 1 in. by $\frac{3}{4}$ in. wood are glued and pinned round the edges of the plywood, and a plywood 'drop in' back is prepared. The back can be kept in close contact with the glass by a thin strip of springy brass, the ends of which fit into staples on the long side of the frame.

This frame and negative can be used for making contact prints for use as the finished book-plates, but an even cheaper method is to make one's own printing-out paper.

A simple way of doing this is to coat

good quality paper with a strong solution of nitrate of silver. This must be done in a dark room, and the drying paper shielded from the light.

Alternatively, blue-print paper can be used. The two solutions needed for making this are (a), an ounce of ammoniac citrate of iron dissolved in 6 oz. of water and (b) one ounce of potassium ferri-cyanide in 6 oz. of water.

The two solutions must be kept in the dark in separate bottles. When required for making blue-print paper they are mixed in the dark-room in equal quantities, and swabbed on to a good quality paper with a soft sponge. Again, the drying paper must be shielded from the light.

After exposure to sunlight behind the negative for five minutes or so, the exposed areas will take on a yellowish shade. Developing and fixing is done by plunging the exposed sheet into clean cold water for a short while, and then allowing it to dry. (F.H.T.)

THE LORD'S PRAYER TABLET

READERS may recall that when we published a design for making a 'Lord's Prayer Tablet' in our issue of March 22nd, it was suggested that instead of using a printed version of the wording, experienced fretworkers might execute this in the form of a cut-out overlay.

Our photograph shows such an application by Mr G. Beardwell, of Dagenham, Essex. The panel of cut-out lettering was placed over a green flock paper background and surrounded with half-round $\frac{1}{4}$ in. beading, to quite good effect. Another reader has replaced the cross in the top of the design with a figure of Our Lord, and no doubt other amendments have been made according to individual taste.

Included in Hobbies Kit No. 3406 for making this 19 in. by 9 in. tablet is a panel of acetate sheet on which the words of the prayer are printed. This can be used quite successfully by workers who do not feel capable of cutting out the intricate shapes in wood, as Mr Beardwell has done so well.

The kit costs only 12s. 9d. from branches, or direct from Hobbies Ltd, Dereham, Norfolk (post 2s. 3d. extra).



IS THIS THE CAUSE OF DRIP?

REWASHERING a tap is just kid-stuff and old hands at house repairs won't need to be told how to do it. However there are occasions when putting on a new washer doesn't seem to do the trick; or if it does, the cure doesn't last long and it is only a matter of weeks before it again needs a pretty firm twist of the tap to stop that incessant drip . . . drip . . . drip . . .

This, as like as not, is because the brass seating, on which the washer fits, has become corroded or furred up with the calcium deposits from hard water. A lot of folk (and many plumbers among them) just shrug their shoulders and fit a new tap. At 15/- a time this isn't too extravagant and is good business for the brass-foundry trade!

But it is a very simple and entirely costless job to reface the old tap seating. A power tool helps, but is by no means essential. All you need is a hand drill, a clout headed nail (or an old No. 12 or larger countersunk screw), a bit of emery paper, and an adhesive such as Bostik.

First (having turned off the water) unscrew the tap and remove the jumper. Taking a pattern from the washer cut a circle of fairly coarse emery paper, just a shade smaller than the washer. If it is fairly stout emery paper and only a $\frac{1}{2}$ in. tap this will be strong enough by itself. If it is a $\frac{3}{4}$ in. tap you want to reface, or if the emery paper is thin, it is wise to

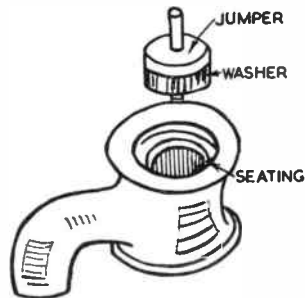
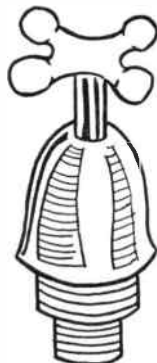
Where a new washer on the tap does not solve the problem this probably will . . .

says
Michael F. Tilley

strengthen the paper by mounting it on a similar sized circle of thin cardboard. Now stick this to the head of the nail or screw and give the adhesive time to set firm. Then fix the point of the nail or screw in the chuck of the drill.

It is as well to push your little finger down into the tap, where the water is probably still standing level with the tap washer seating. This pushes the water out of the tap, lowers the water level, and so prevents the drill from spraying it all over the place. It also keeps the emery paper drier and so cuts the washer seating surface more readily.

If you are going to use a power tool you will need a pretty steady hand and only very little sanding is needed to reface the seating. You must also be careful to keep the tool upright and so face the seating square and level — otherwise the tap will drip worse than before. A look at the face of the seating each time you remove the drill is advised. If it is cleaning up and getting bright evenly all round you are doing well. If one side is be-



coming brighter than the other you are leaning the drill over on that side and so must straighten up to get the seating face level. Frequent inspections are necessary to make sure you are keeping the seating true. Once the whole surface is bright and shiny the job is done.

Now flush away the debris, clean round the top of the jumper and its seating in the top of the tap, reassemble — and good-bye drips . . .

The Carving 'Bug'

IT all started years ago when a local carpenter made a wooden curb for my sitting-room fireplace. There was a fat chunk of wood left over, and he handed it to me, remarking: 'Maybe one of these days you will take to carving, Miss'. I replied that it would most likely be chopped up for firewood, which obviously shocked him. 'Not a nice piece like that', he chided me.

So I put the chunk in a cupboard and forgot about it for at least ten years, until one day I went to an auction sale looking for chairs. There were not any at my price, but 'Lot 217' was a set of wood carving tools, and suddenly I remembered that comfortable lump of wood lurking among the gumboots and junk under my stairs. I broke into the rather languid bidding and secured the box for a pound.

When I got home I routed out the

wood block and set it on the kitchen table. Smooth and pale, it challenged my ability to fashion it into something. But what? I picked out a sharp chisel and wooden mallet from the box. My fingers tingled with excitement as I started to cut away at the block. Slowly a squatting figure, huge of head and heavy of limb began to emerge, and I worked carefully, afraid the chisel would slip and gouge away some vital part.

At last I had carved a shape which was reminiscent of Easter Island, and also of more modern sculpture! I spent days filing and glass papering my creation, finishing off by colouring it with strong permanganate solution and polishing with boot-polish. A caller, spying it on the bookcase, asked me where I'd got 'that Aztec god'!

By now the carving bug had bitten me

severely, and I got hold of a piece of well seasoned oak. A fat little girl and an angel duly came into being, while the odds and ends were turned into a couple of hares and a grinning cat. By now my hands were showing evidence of the sharpness of 'Lot 217' — chisels slip easily when one is concentrating on creation! I added to my tools, buying sharp penknives, a whet-stone and a hacksaw. The latter provided a quicker method of cutting off waste wood than the gouging process I had used for my Sitting Woman.

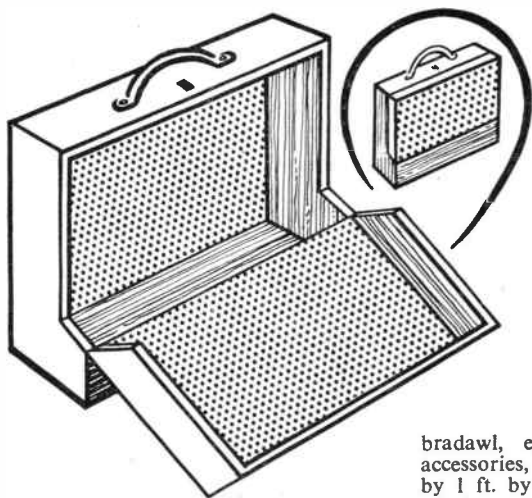
Of course, I am still very amateurish in my carving, but I have found that it is great fun and that even a beginner can whittle away and make something, however crude. Next winter I am going to take lessons at the local art school, for I want to know how to use my tools properly, how to smooth and polish; how to make rippling muscles and the secret of fashioning a smiling mouth.

Yes, wood carving is a creative and fascinating hobby, albeit a messy one.

(B.V.H.)

A HANDYMAN'S TOOL CASE

By
Finlay Kerr



IF you require a handy tool box just large enough to keep a few basic tools in for taking on small jobs then you will find the one illustrated to be ideal for your needs. The case folds up like an ordinary attaché case, and if desired, a small tray with separate compartments can be included to keep useful accessories such as nails, screws, Rawlplugs, washers, nuts, bolts, panel pins, tacks, etc.

The design of this tool case is similar to those used by carpenters for carrying their tools around from job to job. The construction is very simple and does not call for the making of any intricate joints.

The size of the case will, of course, depend on how many tools you will want to carry. If you want to include a hand-saw, then, obviously, the length of the case must be made to suit. For carrying a few basic tools like a chisel, screw-driver, light hammer, small saw, small block plane or shaper, sharp knife, rule,

bradawl, etc, together with a few accessories, a case measuring 1 ft. 8 in. by 1 ft. by 7 in. will be found to be ample.

Construct the basic framework from $\frac{1}{2}$ in. thick, planed timber. When ordering your timber it is best to get it ready planed on all sides, as this will save you a lot of work. Cut two sides and two ends to the required lengths, and make sure that the ends are perfectly square. Assemble these four members together to form a rectangular frame using open housing joints at the corners. Secure each joint with a little strong glue in addition to nailing. When inserting the nails they should be driven in at an angle, as this produces a stronger fixing.

Then glue and nail on the side panels, which can be cut from either hardboard or plywood. Before fixing these panels, however, it is essential to ensure that the framework is perfectly square. This can be easily done by checking the diagonals as shown in Fig. 1. They should measure the same.

Fig. 1

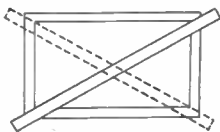


Fig. 2

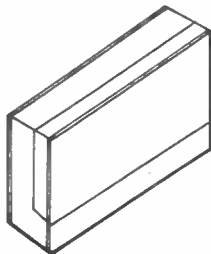
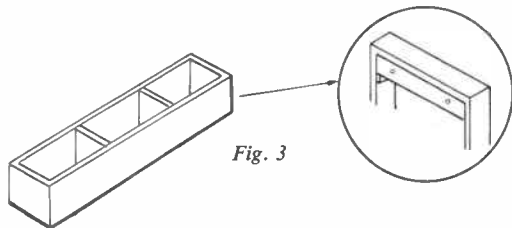


Fig. 3



The next job is to cut out the lid, and this is shown in Fig. 2. A suitable width for the lid is 2 in. When cutting the lid remember to use a fine toothed saw, and keep it as flat as possible to prevent ragged edges being formed inside the case. Once this is done, glass-paper the sawn edges very lightly to remove any roughness. Two hinging strips should now be attached to the case and lid. Use $1\frac{1}{2}$ in. brass butts.

If a handy accessories drawer is required then this can be easily assembled from $\frac{3}{8}$ in. thick planed timber, using either butt joints or open housing joints at the corners. A strip of hardboard or plywood can be used for the base. To keep the drawer in its position two wooden bearers should be attached to the sides of the case as shown in Fig. 3. Two small knobs can be screwed to the front of the drawer or finger holes made.

Finally, fix on a carrying handle and a suitable catch or lock.

Complete by giving the case a good rub over with fine glasspaper, and apply necessary coats of paint or stain and varnish. Transfer initials may also be added.

Tackle Model Railways this way

By E. F. Carter

DURING recent years there has been an increasing trend towards the purchase of ready-made model railway components, particularly by those entering the field for the first time. Gone are the days when almost everything had to be handmade — the days of true railway modelling. But in place of tedious hand-work, today the enthusiast can purchase his track and rolling stock, and thus is able to devote more time to the actual running of his model line.

This book is written with this new angle on model railwaying well in mind — the accent being rather on arrangement and operation than on constructional work. Servicing and repair also find a place in its pages.

Among some of the contents are: Layout Designing — Tracklaying — Making and painting Scenery — Building Bridges — Tunnels, etc. — Servicing Electric Locomotives — Operating — Signalling — etc.

Published by Stanley Paul & Co.,
178-202 Great Portland Street, London,
W.1. Price 12/6d.

Instructions for making

EXTENDING WORKBOX

THIS handsome piece of furniture consists of an extending workbox for use by the lady of the house which stands on contemporary legs. It is 21 in. high, and is thus at a convenient working height from a sitting position.

The comprehensive workbox consists of one large and four smaller containers, which are cleverly jointed to give an extension effect. The sides are opened by individual handles, thus exposing the contents of all the trays to give an immediate selection of the article or material required. The box is 11½ in. long and 6 in. wide.

Most pieces which go towards the make-up of the box are shown full size on the design sheet. These should be

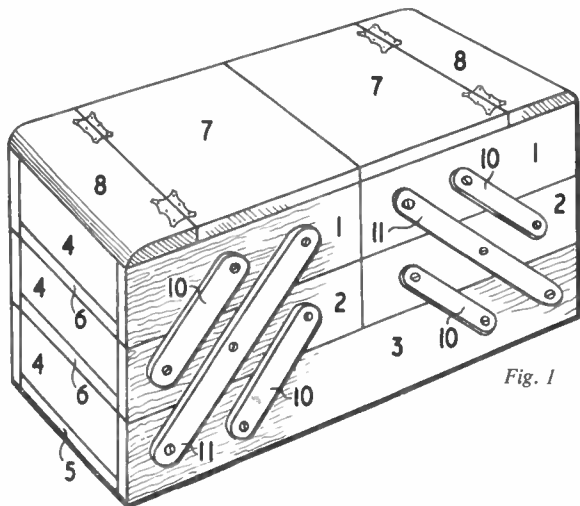
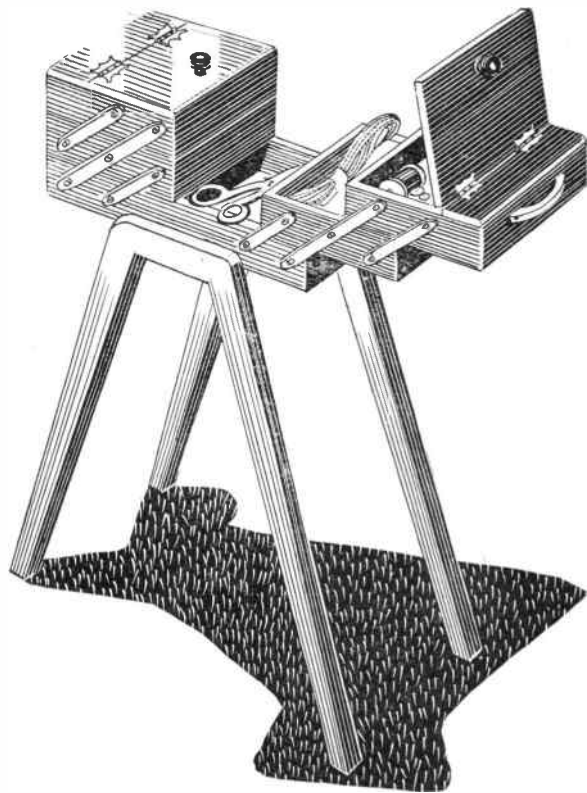


Fig. 1

traced and transferred to their appropriate thickness of wood by means of carbon paper. Similarly, mark out the dimensions of pieces 5 and 6 as given on the design sheet, on to the wood, and cut out all the pieces. Clean up well preparatory to assembly.

A clear indication of how all the pieces are assembled is shown in Fig. 2, which

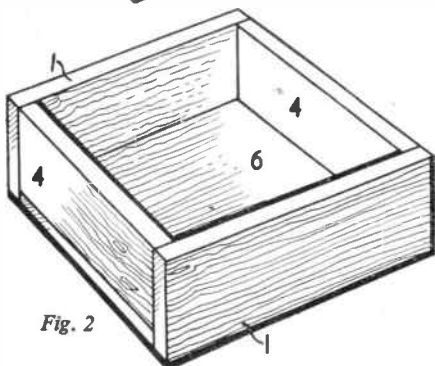


Fig. 2

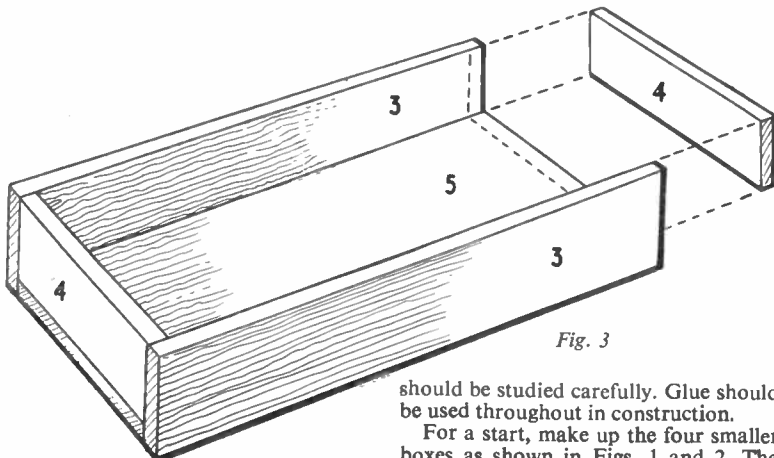


Fig. 3

should be studied carefully. Glue should be used throughout in construction.

For a start, make up the four smaller boxes as shown in Figs. 1 and 2. The

make-up for the larger box is clearly shown in Fig. 3.

Finish off the two top boxes by adding the lid portions (pieces 7 and 8) which are hinged together as seen in Fig. 1. Suitable pins for affixing the hinges are supplied in Hobbies kit of materials.

Now arrange the boxes in the final assembly order shown in Fig. 1, and screw the extending wood links (10 and 11) on each side. The positions of the holes made in these pieces are clearly indicated on the design sheet. These should be made with a $\frac{1}{8}$ in. drill to allow free movement of the screw shank. The exact positions where these links will be screwed into the sides of the boxes are shown by dotted lines on the design sheet. Before the screws are driven right home, test the opening action of the boxes to ensure that everything is free and balanced. Finally, add the knobs and side handles.

Once the box assembly has been made to your complete satisfaction, it can be dismantled in order to add the finish, which can be by painting, staining and varnishing or polishing etc. It will be found convenient to number the various links, so as to ensure their correct

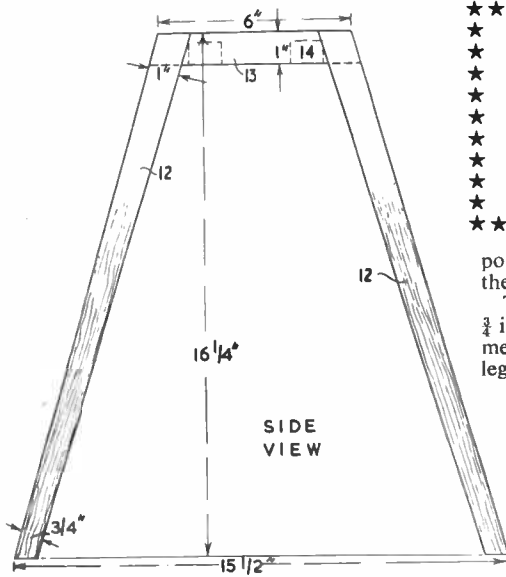


Fig. 4

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 ★ making the Extending Work- ★
 ★ box contains all wood, hinges, ★
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positions when re-assembling after the finish has thoroughly dried.

The legs are made from 1 in. by $\frac{3}{4}$ in. stripwood to the approximate measurements shown in Fig. 4. The legs should be planed to a taper, and pieces 12 and 13 halved together to form a neat joint. The details on the design sheet show how these joints are completed. Pieces 14 are also glued in position, with the addition of screws for strength. The length of pieces 14 should be sufficient to allow the box to sit squarely in position.

Finally, the box is fixed by screws through the lower tray inserted from the inside.

REPAIRING A TURNED LEG

THE repairing of a broken chair or table leg is a job which the home craftsman is sometimes called upon to tackle. If the leg is a square one or a flat-tapered type then the repair can quite easily be carried out with the use of metal strengthening plates screwed over the fracture. In some cases, however, the fracture may be in a turned leg and the method of repair is somewhat different.

Such a fracture usually occurs at the weakest section, at the point of smallest diameter. It is no use merely gluing the two parts together because this would

not produce a strong enough joint for normal use. What is needed is a wooden dowel to connect the two portions firmly together.

To bore the necessary holes to receive the dowel it is essential to locate the exact centres of the two portions. In most cases this will not be a very easy job to do with a satisfactory degree of accuracy because the surfaces of the fracture will most probably be jagged and irregular.

Once the repaired leg is all glued up it will be slightly shorter than the remaining legs (due to the saw-cut). This should be remedied by adjusting the castors.

DID YOU KNOW . . .

If you soak even thick leather in water before you cut it, it's easy.

If you want to loosen a rusted-up nut or a rusted-in screw and have no penetrating oil, try tincture of iodine, washing the job in water afterwards.

Melted down tinfoil and the metallic wrappings of sweets and tobacco make useful solder.

Spanners should have 1 in. of length per $\frac{1}{8}$ in. of the nut's diameter.

Slots can be cut in metal with two or more hacksaw blades abreast in the saw frame.

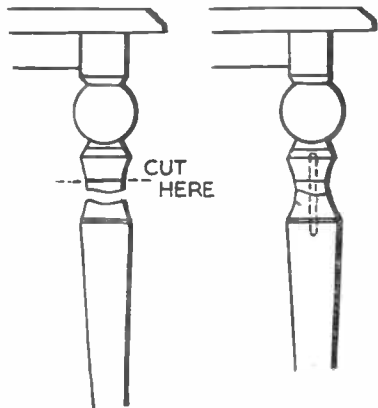
Grease is removed from aluminium with turpentine.

By Finlay Kerr

This difficulty, however, can easily be overcome by sawing off part of the leg at another convenient position as close as possible to the fracture. The small portion of leg can then be glued into its proper position, which means that two flat surfaces are now provided. It is then an easy matter to locate the centres on both parts of the leg and bore the necessary holes.

The length and diameter of the dowel will, of course, be dependent on the nature of the fracture and the diameter of the leg.

Details for making a neat box for angling tackle, which also forms a seat, will be given in next week's issue. Make sure of your copy.



An experiment to try

THE FLOATING CANDLE

IT is doubtful whether the Greek philosopher Archimedes really possessed a candle, but without doubt here is an intriguing little experiment which illustrates an aspect of his famous principle of buoyancy and flotation.

By A. E. Ward

Fill a glass tumbler with water, and provide yourself with a 'stick' of candle about 3 in. long. Push a nail into the wax at the base of the candle, and float the arrangement in the water. The structure should float in an upright position, and will burn quite naturally if you ignite the wick. If your added ballast is just right, your candle will float so low in the water that it almost sinks and, since a well of wax will be formed around the wick, part of the flame may lie below the water level.

As the candle burns away it does not become submerged and extinguished, but actually rises, almost imperceptibly, to sustain the flame.

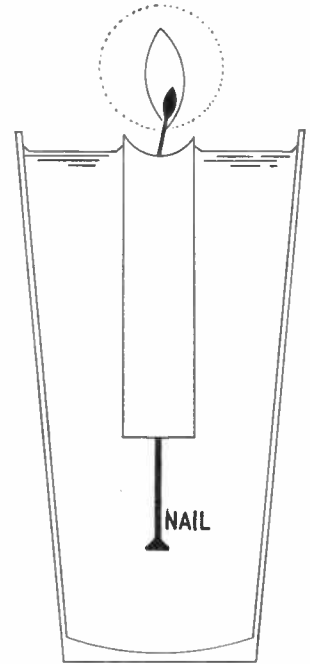
The weighted candle floats because the weight of water which it would dis-

place, if forcibly immersed, is greater than its own weight, therefore the water pushes upwards upon it with a force sufficient to prevent it from sinking.

Casual observers of the floating candle often comment that the flame cannot possibly survive more than a few moments after being lit, and that the candle will surely sink when all the wax 'above the water level' is burnt. The fallacy of this argument is that, as the candle is consumed by the flame, its weight decreases, and the upthrust of the displaced water will continue to support the candle wick above the surface.

Provided that the nail is not too heavy, the flame will continue to burn for several hours, until all that remains of the candle is a shallow shell-like 'boat' of wax. When this stage is reached, water will soon be able to flow into the well of wax through a breach in the dwindling 'hull' of the candle boat, and the flame will be extinguished.

'Archimedes' Candle' has a handy use as a safe night-light. If the 'light' is accidentally knocked over, the tumbler full of water will be spilt, thus preventing any possibility of a dangerous conflagration, and the flame will neatly extinguish itself when its vigil is ended.



TWO-MINUTE QUIZ ^{by} Ed. Capper

<p>NAME ORNAMENTAL BLOCKS CONCEALING TILE ENDS</p> <p>1.</p>	<p>2. JUST what IS meant BY Aggregate?</p>
<p>3.</p> <p>NAME BOARDS FRONTING RAFTER ENDS IN ATTIC</p>	<p>4. WHAT IS THE NAME FOR—</p> <p>(A) ONE STAIR RAIL and (B) A SERIES OF RAILS ???</p>
<p>10</p>	<p>5. 6.</p> <p>NAME THE TYPE OF DRAIN PIPE</p> <p>DECIPHERED, THIS MEANS A NARROW STRIP OF WOOD</p> <p>7. What is Cathedral Glass?</p>

Answers on page 44

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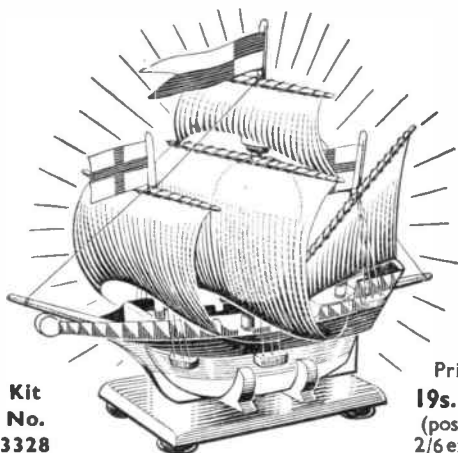
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An Aircraft Landing Strip

LANDING a plane successfully is an operation which calls for skill and judgment on the part of the pilot. A model landing strip or aircraft carrier on which solid model planes can be landed by means of a linen thread makes a game which also calls for skill in operation.

By A. Liston

All that is required is a long pole, a piece of hardboard about 2 ft. by 1 ft., and a length of linen thread. A 3 in. high wooden tower is screwed to one end of the hardboard runway, and one end of the linen thread, which can be as long as the space available, is screwed to an eye or nail on the top of the tower. The other end of the line is attached to the top of the pole, as shown in Fig. 1, or some other high object.

The planes themselves can be of the type made up from kits, or simple models can be made as shown in Fig. 2. A 4 in. length of $\frac{3}{4}$ in. by $\frac{3}{4}$ in. stripwood is rounded off for the fuselage, and 6 in. wings of $\frac{1}{2}$ in. thick wood are screwed in place. The tail plane, also of $\frac{1}{2}$ in. wood, is glued in as shown, and the rear of the fuselage is slotted to take the tail fin. The wheels are metal curtain runners on bent wire legs, which are inserted in the fuselage, and the engines are lengths of $\frac{3}{8}$ in. dowel rod, slotted into the wings. A hook is screwed into the top of the fuselage at the point of balance.

The runway can be moved to various positions, but there should always be just enough slack in the line for the plane to make its approach run and touch down at the end of the runway.

An alternative version is to make an aircraft carrier instead of a runway. This is simply a rectangle of hardboard screwed to a block of wood, which has been tapered at each end to a simple hull shape, and given upperworks of $\frac{3}{4}$ in. by $\frac{3}{4}$ in. stripwood. The lower end of the line is attached in this case to a 4 in. length of stiff wire at the forward end of the flight deck. The size of the carrier depends on the materials available, but the wing span of the plane should be less than the width of the flight deck after the upperworks are in place.

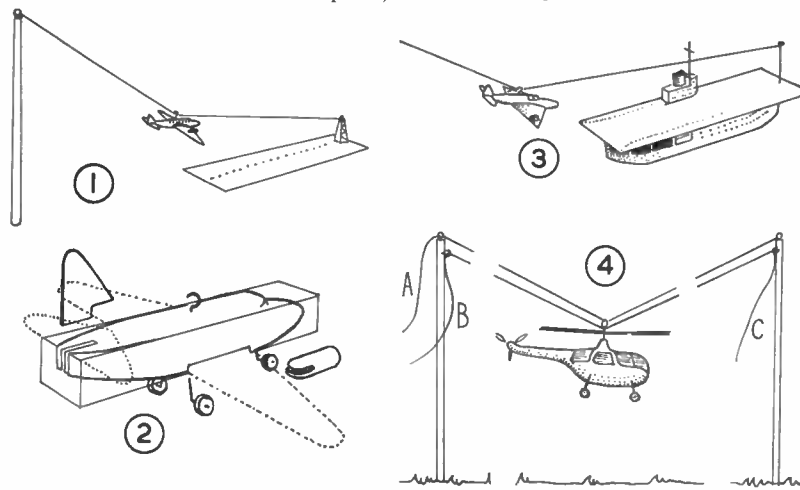
A model helicopter, made from a kit or cut from a 6 in. length of 1 in. by 2 in. wood in the shape shown in Fig. 4, can be operated in conjunction with a model

army by means of lines. The rotor is of tinplate or $\frac{1}{8}$ in. thick wood, and revolves on a shaft of stiff wire terminating in a hook.

Line A, which is tied to a pole at one end only, controls the altitude of the plane: lines B and C, which are each tied to the rotor shaft of the plane,

control movement to the left and right. Realistic 'flights' can be simulated after the knack of handling all three control lines simultaneously has been mastered.

All these models look best finished off in plastic emulsion paint, grey being the most suitable colour for the runway and aircraft carrier.



First Aid for Knives

TABLE knives having plastic or ivory handles should never be fully submerged in hot washing up water. This practice causes the cement or adhesive holding the handles in position to loosen their bond, with the result the handles eventually become loose.

Although this piece of advice is fairly well known it is surprising the large number of people who completely ignore it and later are annoyed because handles have become loose. If you have a table knife in such a state then don't discard it as being useless. A little first aid is all that is necessary to refix the handle securely again.

Remove the loose handle completely from the blade. If the handle does not come away easily by pulling then dip it into some hot water for a while.

The tang (the part of the blade which enters into the handle) and the handle should then be cleaned to remove every particle of the old adhesive or cementing compound. To clean the tang either scrape it with an old knife or dip it into hot water. For the handle, however, the best method is to push a hot steel knitting

needle (not red hot) up the hole in the handle, but take care not to scorch or mark the outer part of the handle.

To refix the tang in position use a mixture of molten resin and Plaster of Paris. Heat a little resin in a tin and shake some of the plaster into it. Stir until a creamy consistency is obtained. Pour this into the hole in the handle. Then heat the tang over a gas flame for a moment (not red hot) and immediately thrust it into the handle, which should be held secure in a vice.

Proprietary cements are also obtainable in small tins and tubes.

Sometimes knife handles become faded and stained and lose their attractiveness. A good tip is to coat them with bright Chinese lacquer and you will have gay knives for use on picnics, etc. (F.K.)

ANSWERS TO QUIZ (see page 42)

1. Antifixae; 2. That part of concrete which is bound together with a cement; matrix; 3. Ashlaring; 4. (a) Baluster; (b) Balustrade; 5. Batten; 6. Channel Pipe; 7. Translucent pebble glass.

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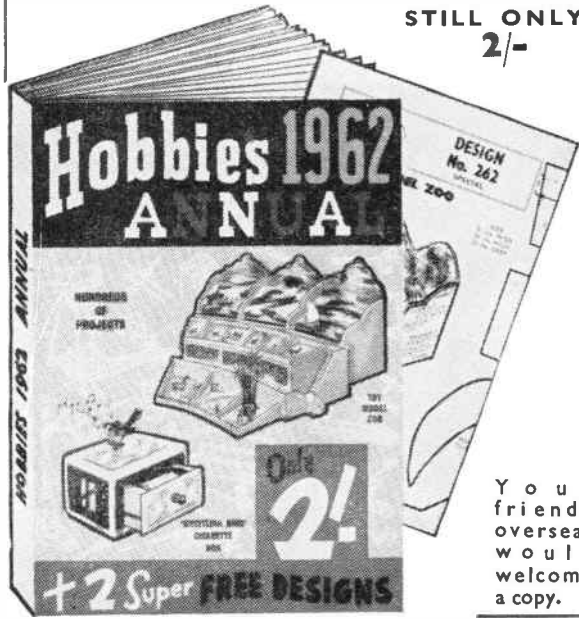
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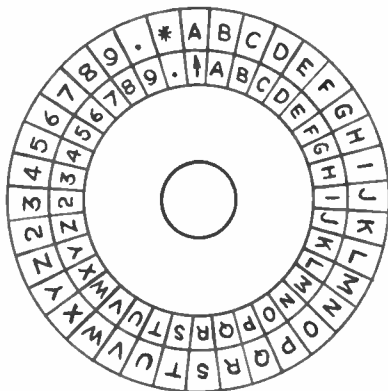
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SECRET CODE COMPUTER

MOST of us have at some time or another enjoyed the thrill of receiving a message from a friend written in code, and then in sending a reply either in the same code or else a new one.

By A. F. Taylor

The usual trouble with secret codes is in having to work out a new one and letting your friend have a copy whenever you wish to change it. With the aid of this secret code computer, however, it can be changed instantly at the touch of a finger. And this can be done 36 times, giving a different code each time. More-



over, by fitting another circle to the gadget it is possible to double the number of changes that are available.

Stout white cardboard will be the easiest and quickest material to use. It will stand up to a fair amount of use, but a more robust job can be made in either thin plywood or sheet metal, with the addition of a piece of white paper glued on to set out the code in a legible manner.

The large circle is 4 in. in diameter. The one on top of this is $3\frac{1}{2}$ in., with a small disc of 1 in. as a protection for the centre pivot wire. Marking out must be

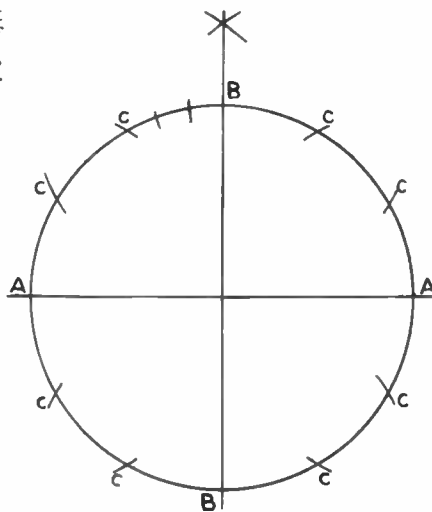
done carefully so that both circles correspond exactly when they are moved round. Each circle is divided into 36 equal parts and the illustration shows how to do it accurately. Draw a line across the centre of the large circle (AA) and bisect this to give a quarter division (BB).

Now with a compass opened to the radius of the circle, and placed in turn at A A B B make a further eight points as shown at C. The distance between each division is 1 in. so it is therefore easy to further divide these into three, making thirty-six divisions in all.

Pin the two larger circles and the small top disc together with a piece of wire at the centre. Bend the wire over, curl each end round as shown and stick a piece of cellulose tape on to hold the wire secure. Draw in the dividing lines from each point on the circumference towards the centre on both the large cards.

Making up the codes must be left to your judgment. In the sketch both circles are marked out exactly the same, but those on the larger circle may be arranged in any order. Try putting them backwards or all jumbled up.

Various symbols, such as circles, angles, crescents, etc., may be used instead of letters and figures to give variety to the code. The arrow on the top circle (inner readings) indicates the code being used. If, for instance, you start your message with an arrow followed by the letter K it means that you have set the arrow on your code computer to point K on the outer circle. Therefore when your friend receives the message he will set his computer the same and he will then be able to decipher the message.



How to Remove old Picture Rails

ALTHOUGH it is not common to have picture rails on the walls of modern houses they are frequently found in the older types of property. When moving into houses where there are picture rails most people make a point of having them removed before re-decorating the walls and this is a job which the home handyman can carry out.

When removing picture rails it is important to remember not to use a claw hammer or chisel to prise the moulding from the wall. This practice invariably results in the hammer or chisel being

squeezed into the plaster, causing it to break away and leave large holes. This only leads to excessive patching up afterwards.

One method of removing picture rails is to locate the nails and punch them deeper into the moulding, which in most cases is not very thick. If this is possible then you will find that the rails will come away quite easily, leaving the nails in the wall protruding only a short distance. It is then a simple matter to extract them with a claw hammer because the bond between the nails and the plugs will be broken. Remember, however, to lay a

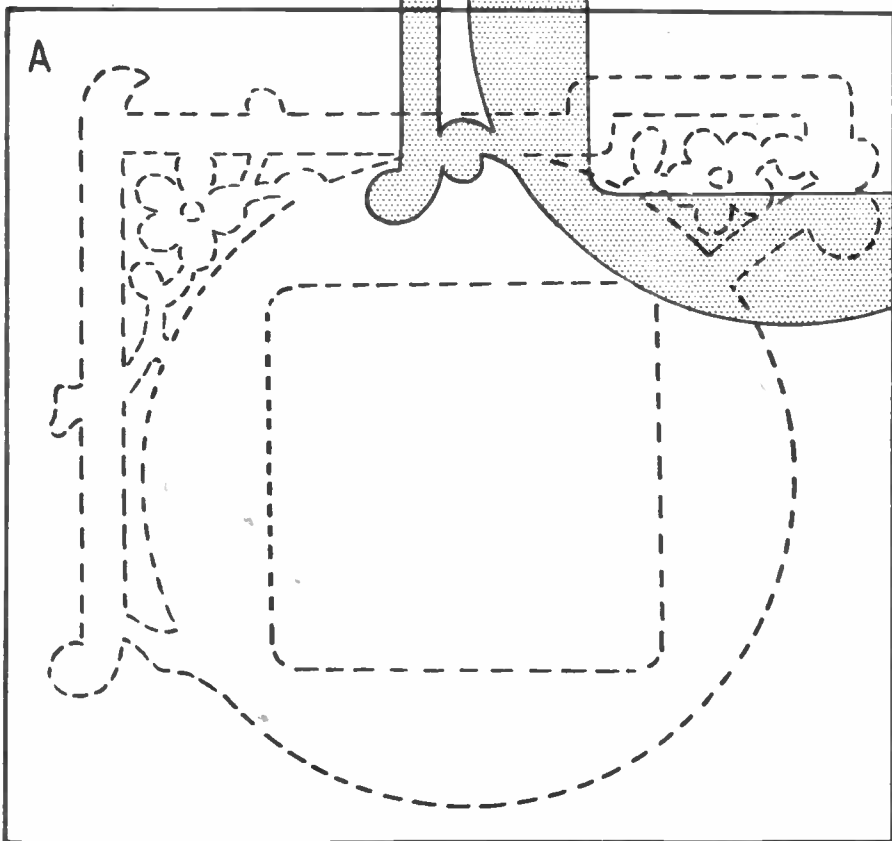
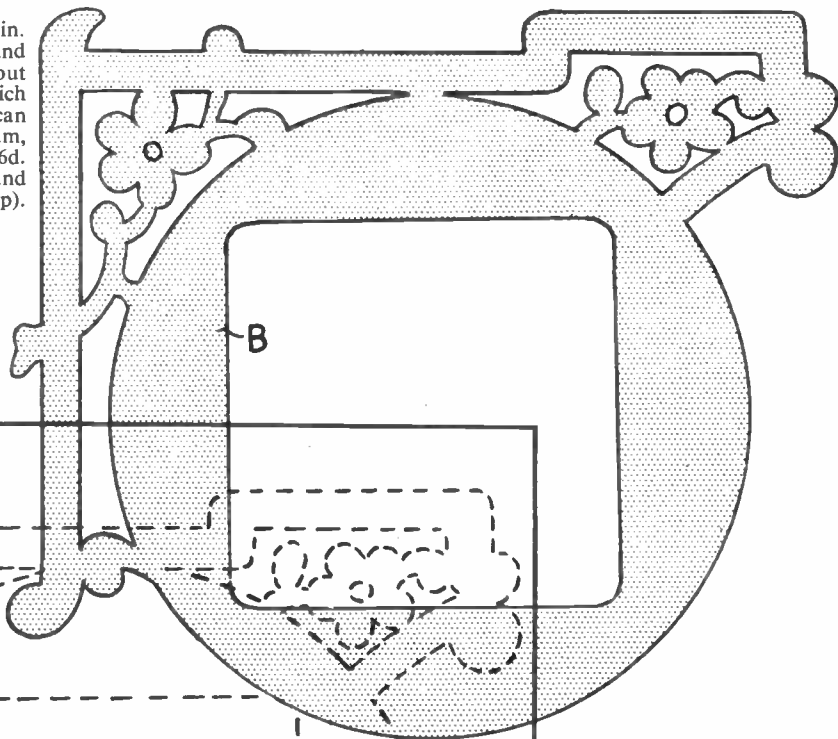
piece of sheet metal (a flat wood scraper is ideal) on the face of the wall to prevent the hammer head digging into the plaster.

If you find that only some of the nails can be located then an alternative method is to split the picture rails along the line of the fixing nails.

Although this method may appear wasteful at first there is really not much use for the old picture rail moulding even if you should be able to remove it intact. Once the rail is split away the nails will be left protruding, but before extracting them it is a good idea to hammer them into the plugs a little in order to break their bond. You will find that this will enable them to be removed much more easily. (F.K.)

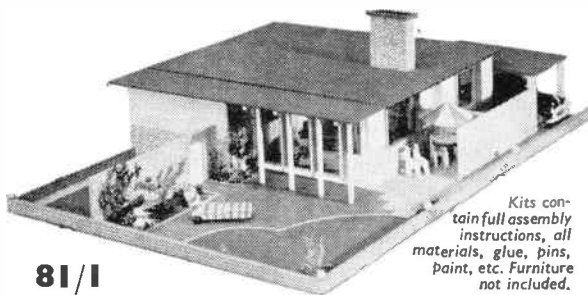
A DECORATIVE INKWELL

PIECES A and B are cut from $\frac{1}{4}$ in. wood in contrasting colours, and are glued together. The cut-out piece in piece B forms the recess which takes the inkwell. Suitable inkwells can be obtained from Hobbies Ltd, Dereham, Norfolk, price 2s. 6d. postage 6d. Finish off by filling the grain and varnishing. (M.p.)



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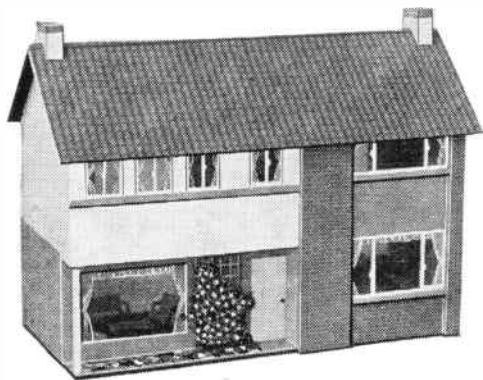
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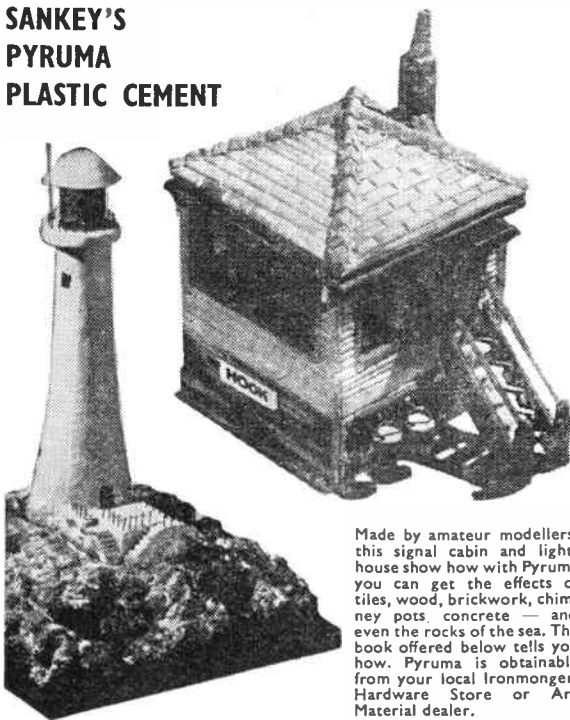
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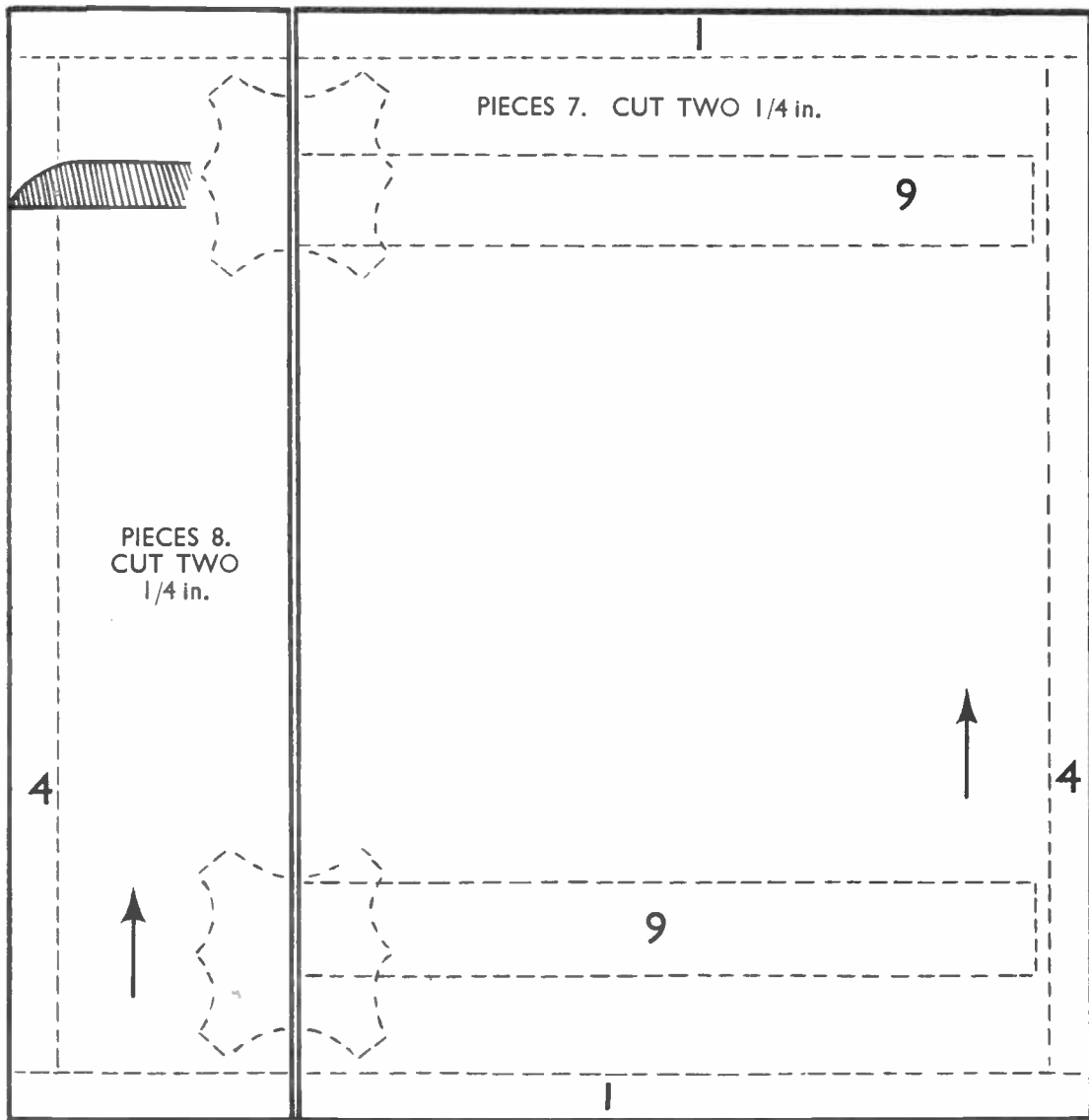
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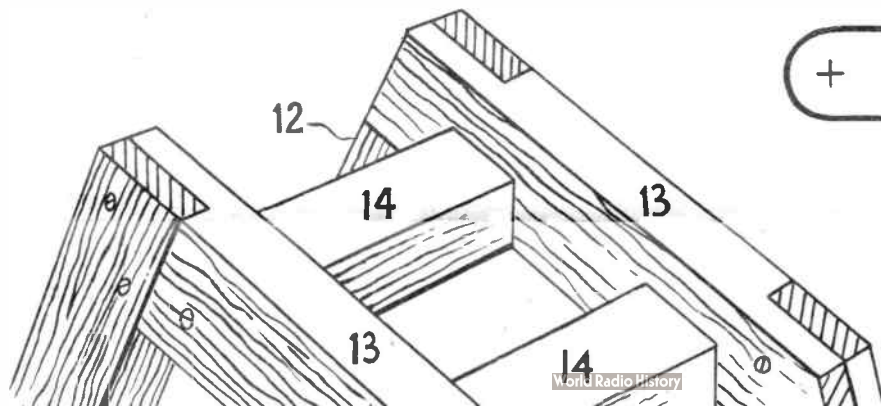
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No



PIECE .



+ PIECES 11. CUT FOUR 1/4 in.

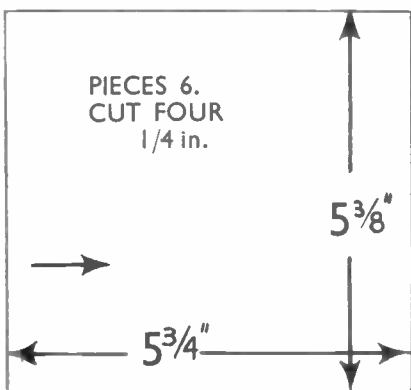




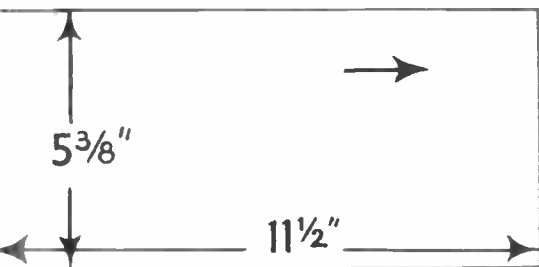
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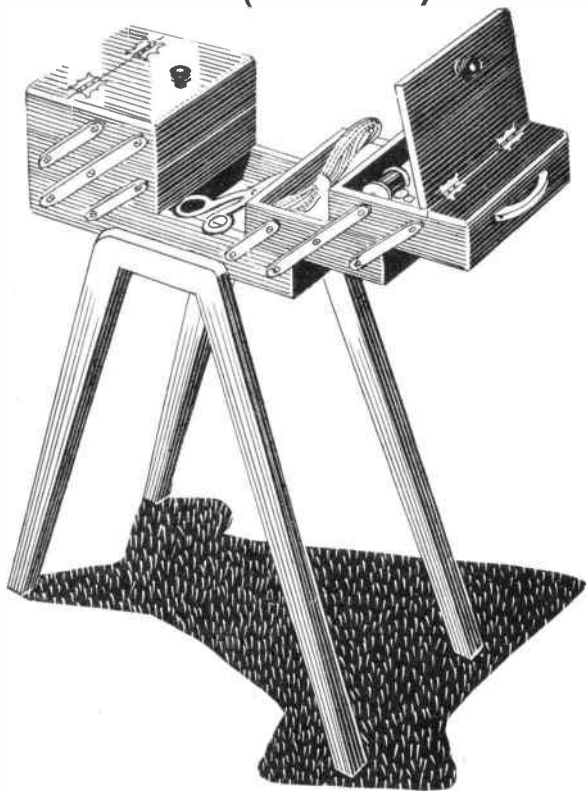
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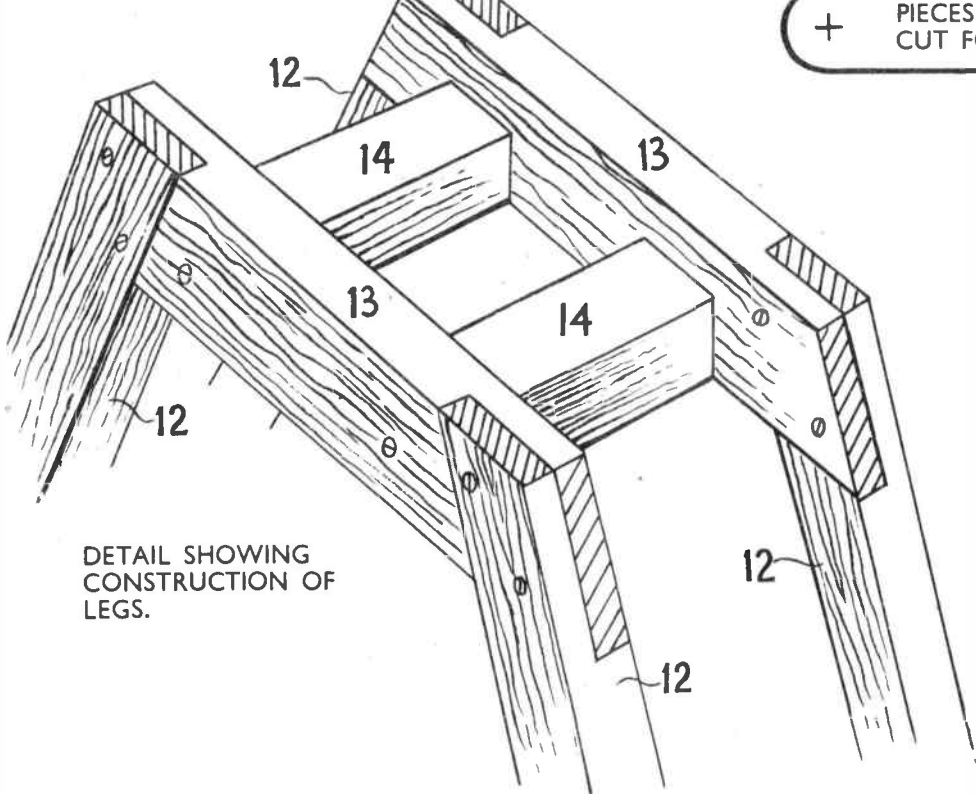


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- Waterproof type
- Gap-filling and non-staining

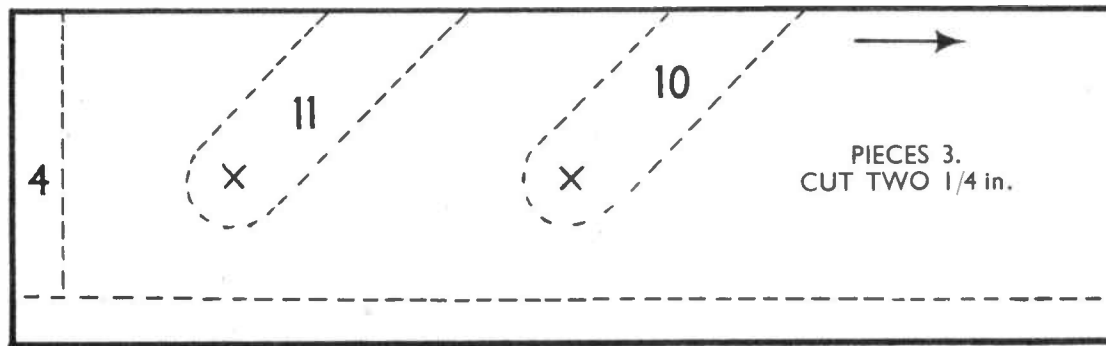
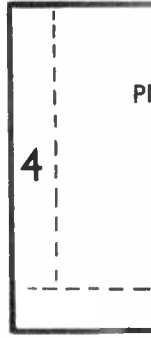
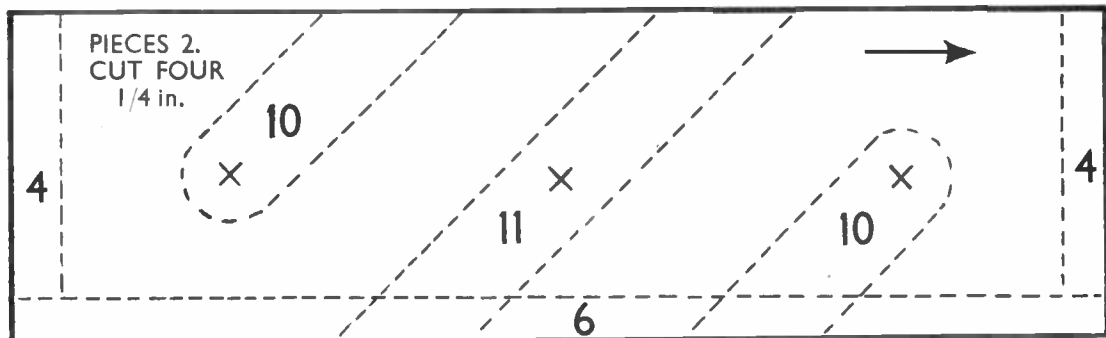
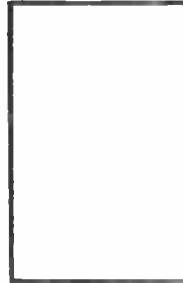
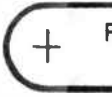
Obtainable in:
3½-oz.; 7-oz.
and 18-oz. tins.

Stocked by: Ironmongers, Builders' Merchants, etc.

+ PIECES 11.
CUT FOUR 1/4 in.



DETAIL SHOWING
CONSTRUCTION OF
LEGS.



PRICE ON APPLICATION.



PIECES 9. CUT TWO 1/4 in. →



PIECES 10. CUT EIGHT 1/4 in.

Use **CASCAMITE** ‘One Shot’ Resin Glue for all Wood Gluing



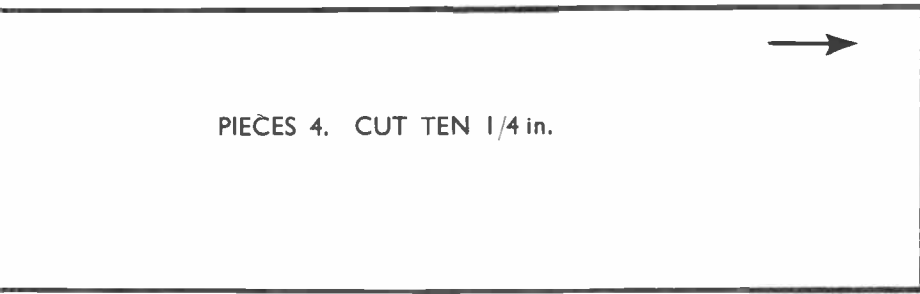
- Mixed & use cold
- Waterproof type
- Gap-filling and non-staining

Obtainable in:
3 1/2-oz.; 7-oz.
and 18-oz. tins.

Stocked by: Ironmongers, Builders' Merchants, etc.

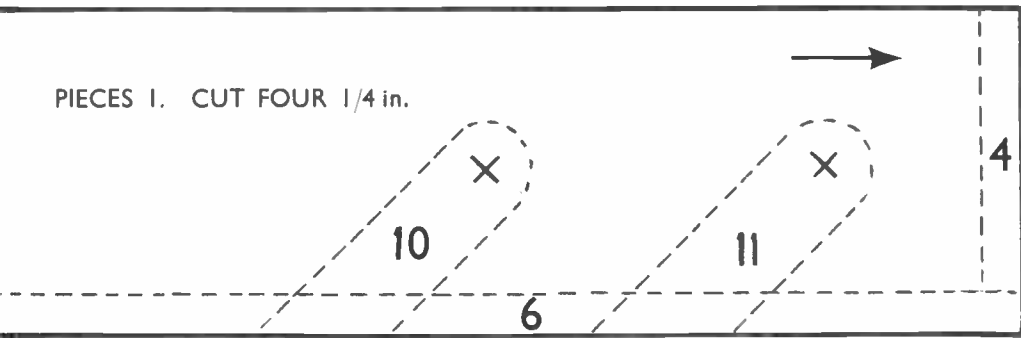
Manufactured by:

LEICESTER, LOVELL & CO. LTD. North Baddesley, Southampton

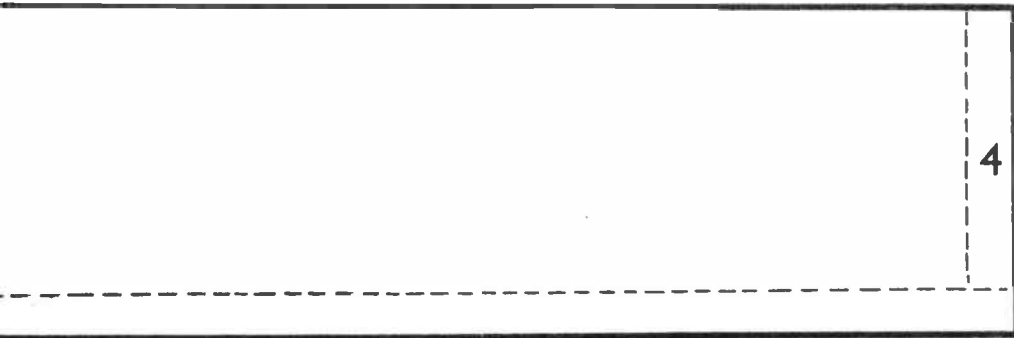


PIECES 4. CUT TEN 1/4 in.

THE ARROWS
INDICATE
DIRECTION
OF GRAIN
OF WOOD.



PIECES 1. CUT FOUR 1/4 in.



PRINTED IN
ENGLAND.