HOBBIES WEEKLY

OCTOBER 2nd 1957 VOL. 125 NUMBER 3231

All correspondence should be addressed to the Editor, Hobbies Weekly, Dereham, Norfolk

IN THIS ISSUE

OTHER SPECIAL BIRTHDAY FEATURES

Hobbies

★ FREE DESIGN INSIDE

MODEL WINDMILL

AN IDEAL TOY FOR A YOUNGSTER

1

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

9D

Making the Model Windmill

THE days when the windmill was a chief source of power, particularly to farmers, have long since gone and not many are now to be found in a working condition. You can perpetuate the fading memories of these picturesque landmarks with this design.

The layout should also provide youngsters with many hours of pleasure when used as a toy and is ideal for laying out with small models of farm figures and transport, etc. On our model the sails rotate and the upper portion of the mill can be swung to catch the wind. We shall describe its makeup as a static model and also show how it can be converted for power by using a Mighty Midget motor and flash lamp battery. These items are not included in the kit, but the motor can be obtained separately from Hobbies Ltd.

A movable stockade surrounds the windmill, thus allowing for different layouts, and the keen modeller can also add other farm buildings to the set-up here described. 00-gauge model railway enthusiasts will also note that this layout will blend in admirably with their own schemes.

If it is intended to make a motorised version of the windmill, workers should read through all these instructions very carefully before commencing, as amendments to construction will have to be made to make provision for interior fittings. These are given at the end.

Trace all the parts shown full size on the design sheet and transfer them by carbon paper to their appropriate thicknesses of wood. Note that some of the parts are of balsa strip which are included in Hobbies kit. Cut out all the shapes with the fretsaw and clean up thoroughly.

The first step in construction is to make up the framework of the base as seen in Fig. 1. Note that piece 4 is glued on to piece 3 and is then chamfered in accordance with the slope of pieces 5 and piece 6. Glue all these parts together.

Wrap thin plywood around pieces 1 and 3 and trim to size (Fig. 2.) This plywood is cut in two strips from the sheet given in the kit. String wound round and round this plywood will keep it in place while the glue is setting. The sloping top of this section was made from thin card. The best way to do this is with four pieces of card cut over-size, glued and then trimmed to fit with a razor blade (Fig. 2.)

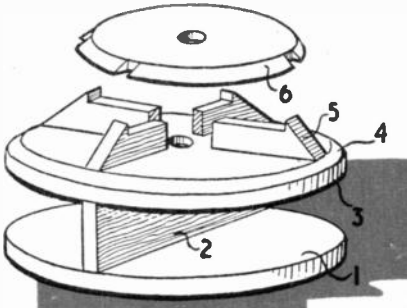


Fig. 1

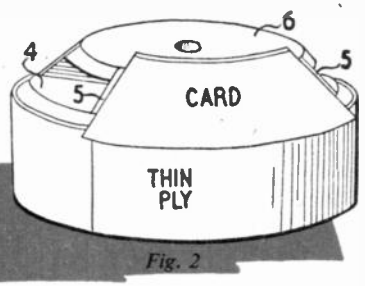


Fig. 2

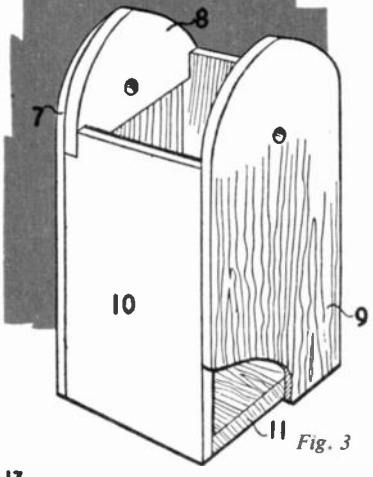


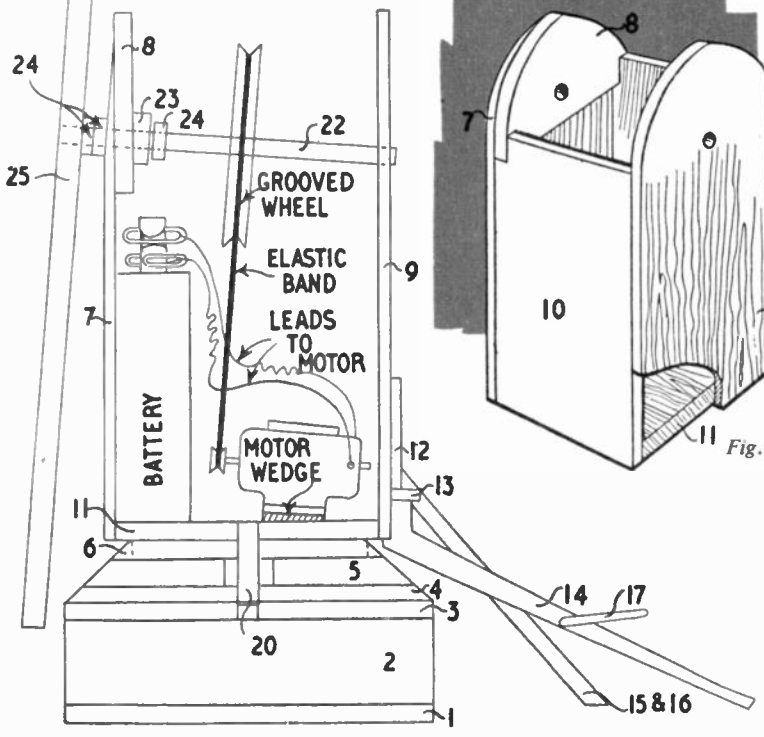
Fig. 3

Now carry on with making the upper portion of the mill, which consists of pieces 7, 8, 9, 10 and 11, glued together as shown in Fig. 3. It will be noticed from the design sheet that piece 7 has to be chamfered at the top as indicated by the section, and that the holes in pieces 7 and 9 must be drilled at an angle in order to give a tilt to the sails. This is made evident in Fig. 4. which shows the axle going through at an angle.

At this stage the doorway (12) and step (13), together with pieces 14 and 17, can be added (Fig. 5.) The stepladder which consists of two sides (pieces 15 and 16) and the steps (18) can also be assembled and glued in place. Glue the spindle (20) into the floor (11), and the spindle is now placed in position in the hole in piece 6.

Now turn to the sails. The arms are made up from pieces 25 which are halved together as shown in Fig. 6. They are then chamfered at an angle as shown on the design sheet and in Fig. 7. The sails are made up from strip balsa (see design sheet). A rectangle of $\frac{1}{16}$ in. square balsa is first made up and glued to the sail

Fig. 4



arm as in Fig. 7. The slats consisting of $\frac{1}{8}$in. by $1\frac{1}{16}$in. balsa placed $\frac{1}{16}$in. apart are chamfered and glued in position as shown on the design sheet. Four complete sails are, of course, required.

At this stage the sail spindle (22) is glued into the hole in the centre of the arms, and with the appropriate washers

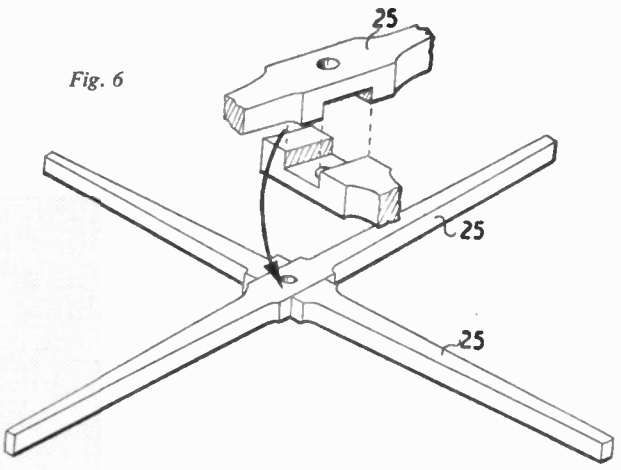


Fig. 6

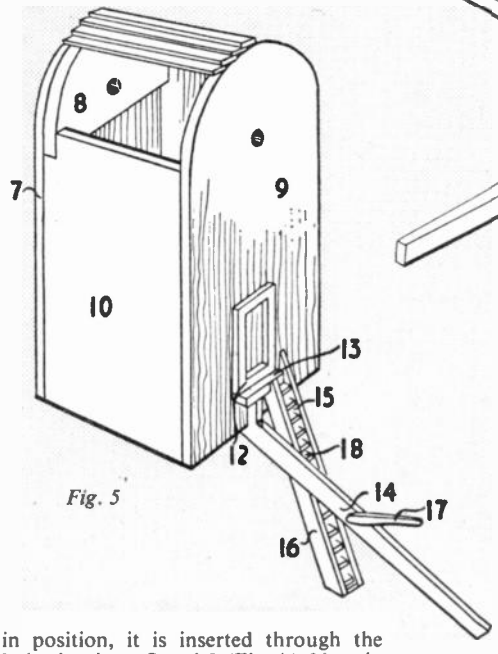


Fig. 5

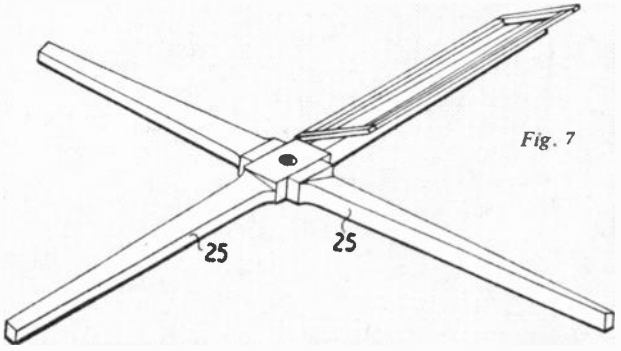


Fig. 7

in position, it is inserted through the holes in pieces 7 and 9 (Fig. 4.). Note in particular that washer (23) is glued to piece 8 with washers 24 between pieces 7 and 25 a loose fit and that the washer 24 behind piece 23 is a tight fit but not glued.

Ensure that the sails revolve easily and finish off the roof by gluing in position the slats which consist of $\frac{3}{16}$in. by $\frac{1}{16}$in. balsa strip. Glue the windows (19) in position on the sides (10) and the door (21) should be shaped and glued to the outside of the base portion. The fencing is made up in sections from $\frac{1}{8}$in. by $\frac{1}{16}$in. balsa strip as shown on the design sheet.

For finish it is suggested that the upper portion should be painted brown with cream window frames. The windows themselves will be black. Sails can be painted white and the base finished with red brick paper or painted black to represent a tar finish. 00-gauge railway modellers can use brick paper for the base. To represent planking on the upper section, the paint work should be ruled in with a hard pencil.

For those making a motorised version of the windmill, the following amendments will have to be observed. Provide a door or doors in one or both sides (pieces 10), measuring about 3ins. high by 2ins. wide in order to allow access to the battery and motor. A grooved wheel of approximately 2ins. diameter should be made from two circles of $\frac{1}{8}$in. wood glued together. The positions of the battery, motor, wheel, elastic band, etc. are shown in Fig. 4. Provision must also be made for on/off switch connected to one of the leads from the battery to the motor. Connections to the battery terminals can be made by means of paper clips.

Two Books to Read

THE PRACTICAL WOOD TURNER

by F. Pain

WITH many small powered lathes becoming available to home craftsmen, wood turning is fast becoming extremely popular. This book by an author of over 50 years' practical experience in wood turning is bound to prove of great help to many enthusiastic hobbyists. The whole subject is covered in an entertaining easy style, which does not, however, disguise Mr. Pain's sure grasp of the technicalities of turning. It is profusely illustrated and should be studied by everyone fortunate enough to possess a lathe.

Published by Evans Brothers Limited, Montague House, Russell Square, London, W.C.1—Price 12/6.

THE CRAFT OF WOOD TURNING

by H. T. Evans

WOOD turning, one of the most ancient of crafts, still possesses a strong appeal to all ages. This book is written to aid those who desire to become experienced successful users of the modern wood turning lathe, and with its lucid informative style helped by numerous illustrations, it cannot fail to do this. They will be well advised to 'read all about it' from the pages of this authoritative work before attempting to explore unaided the thrilling possibilities of this fascinating craft.

Published by The Technical Press Ltd., 1 Justice Walk, Chelsea, London, S.W.3. —Price 16/-.

THE MEN WHO WRITE FOR YOU

WEEK by week we receive many enquiries from readers seeking help in their different problems, and these are largely answered by the contributors whose names appear with such regularity in our columns.

What do these men look like? What are their interests? The other day we received a letter from Ireland from a reader who stated that he knew the names of all our contributors no matter in which guise they were presented — whether the name was spelled out in full or whether we simply gave the initials. One which puzzled him however was 'Mp'. This, in fact, is the designation of our chief draughtsman who is responsible for Hobbies designs, and whose name never appears in full.

Other regular contributors co-operated enthusiastically when approached for a photograph for this feature, and the question was raised as to whether the Editor was also to be included. However, as this was intended purely to present our contributors, the Editor has gracefully declined in this instance!

F. G. Rayer

A recognised authority in the world of radio, he has been a regular contributor to this journal for many years. Has covered most of the circuits in radio work and contributed a special article on the making of a Battery Three set for this special issue (see page 22).

★ ★ ★

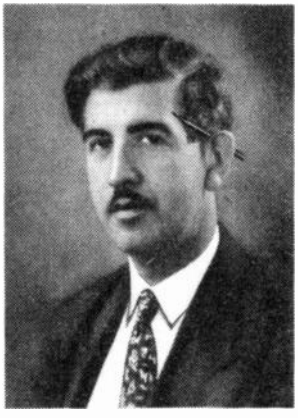
E. G. Gaze

Covers the scene pictorially and submits quality photographs which should be the ultimate for every amateur photographer.

★ ★ ★

T. A. T.

These initials denote a contributor whose articles are read with much interest by schoolboys, and his suggested models have no doubt helped quite a lot in their experimental work in connection with school studies.



Mp

Not a member of our august Houses of Parliament, but in fact gets through an immense amount of work in preparing the designs which are brought out regularly in *Hobbies Weekly*. Probably, like T. S. Richmond, he loses a lot of sleep in thinking up ideas, but readers I am sure, will fully appreciate the result of his efforts.

A. Fraser, M.A.

Well-known contributor on the making of articles of furniture, and also specialises in radio. His Ultra Short-Wave set published July 11th, 1956 proved to be particularly popular among readers.

★ ★ ★

L. P. V. Veale

Keeps us regularly informed in an entertaining way of all that is taking place in the stamp world, and suggests many ways in which to obtain the greatest satisfaction from this fascinating hobby.

★ ★ ★

T. S. Richmond

A 'thinker-up of novelties'. Readers will appreciate that he has lost much sleep in formulating his work for *Hobbies Weekly* as suggested in the central panel of our cartoon (page 7).

EXPERTS IN THEIR OWN FIELD

L. A. F.

These initials denote the name of our regular contributor of articles on chemistry which have proved particularly interesting to readers in their teens.

★ ★ ★

R. T. Armour ('Whipstaff')

His intensive researches into the modelling of old-time ships have been greatly appreciated by readers, and he leaves no stone unturned to obtain authenticity.

★ ★ ★

P. W. Blandford

Designer of the famous range of PBK canoes. Also specially designed the 'Dereham' rowing dinghy for Hobbies Ltd. His other interests include woodwork in general.

Many of our contributors have been writing for this magazine for several years. When approached L. P. V. Veale wrote 'Why inflict torture on your readers by showing my picture? Frankly, I would prefer not to be depicted but I do not like to refuse'. And we have pleasure in printing Mr. Veale's photograph on page 4, so his objection has been editorially overruled.

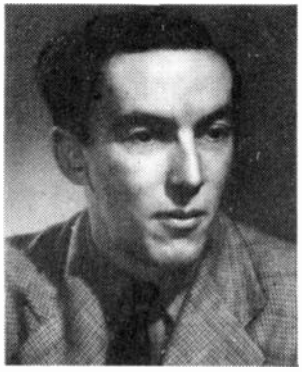
Arthur Sharp has been with us for many years, and although he will soon be 77 he is, as he puts it, 'still going strong'. Apart from his fishing articles he also, of course, contributes those on outdoor activities such as rambling, rock climbing, bird watching, etc. and even at his age he still carries on with most of these pursuits. His main love, however, is angling and all his life he has been an ardent disciple of Izaak Walton.

Photographer E. G. Gaze had to put on a hustle when his photograph was requested, for he found that although his collection included over 1,000 negatives of prints he had taken, there was not one of himself and he had to hand over his camera to supply our needs for this occasion.

S. H. Longbottom is a keen hobbyist and he says there is no finer training in acquiring self confidence. He has covered many subjects in his articles for *Hobbies Weekly* and he has won trophies in exhibitions with some of his homemade gadgets.

Arthur Sharp

One of our oldest contributors. Lives quite handy to the Trent to enjoy coarse fishing and there is also some trouting to be obtained nearby. Author of many books on the subject of fishing, rambling and the delights of the English countryside.



R. H. Warring

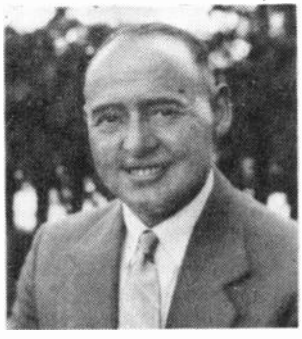
An acknowledged expert in the Aircraft modelling field and all aspects of general workshop practice.

★ ★ ★

Gordon Allen

A comparative newcomer, he has figured prominently in our columns over the past two years. His new feature on aircraft spotting probably indicates one of his keenest interests.

★ ★ ★



S. H. Longbottom

Writes enthusiastically on all types of hobbies — and is interested in quite a few, covering anything from 'How to amaze your pals with the three card trick' to articles on how to beautify the home.

"SPOTS" FOR GRAYLING

By A. Sharp

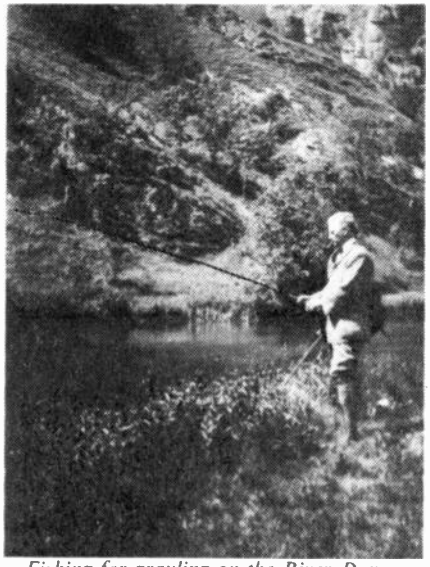
FIFTY years ago W. M. Gallichan wrote in his book on *Fishing in Derbyshire* these words: 'The effects of education upon the Derbyshire grayling are not so marked as upon the trout of this county. Notwithstanding, the grayling of the Wye are very far from unacquainted with the wiles of fishermen. They are much more wary than grayling of the Welsh Dee and the Yore. The grayling of Derbyshire also differ somewhat in their habits from the grayling of Wales and Yorkshire. I doubt whether grayling could be enticed from the Wye, in any numbers, by the method of float-fishing pursued in Yorkshire.' We know the Derbyshire waters — at least in certain stretches here and there — and believe that the grayling therein are no better and no worse since his day. But the rainbow trout have to some extent supplanted the grayling on the Wye since Gallichan wrote. Rainbows were unknown hereabouts when he penned his book — at least he does not mention them. Now the Wye in some lengths swarms with them.

We remember the time when grayling fishing in autumn on this beautiful stream flowing by ancient Haddon Hall afforded good creels of grayling to the fly-fishers, and actually provided better catches than did the trout, taking summer and early autumn together. And doubtless you may catch the silver-blue 'ladies' there to-day if you stay at one of the hotels providing fishing for their guests.

The Derwent holds fine grayling in the reaches above Matlock and Rowsley. October is the month *par excellence* on this water for seeking these fish, when they so often cruise in the quiet glides under the trees, and in the gravelly stretches. Much of the water is in private hands or rented by clubs. All the same, the visitor may find grayling fishing available in autumn by staying at the hotels, such as the Marquis of Granby at Bamford, or the Peacock Hotel at Baslow with four and a half miles of trout and grayling water exclusive to guests staying in the hotel. Lower downstream is that other 'Peacock' hotel, at Rowsley, with good angling on Derwent and Wye available.

Derbyshire is a highly favoured county. She has scenery of no common order, and streams unrivalled for beauty and fishfulness. Anglers come from far and wide to test the quality of its fishing. Anyone walking the banks of the lovely streams can see for themselves that the fish are there, and in numbers.

The Manifold abounds with grayling and good baskets are made by both worm and fly. This sweet companion of



Fishing for grayling on the River Dove, Derbyshire

the Dove is born in the hilly regions of Staffs., and flows through very picturesque country from its source under Axe Hill to its joining up with the Dove below Ilam. Fishing may be had at Longnor (Staffs.) at the Crewe and Harpur Arms, for visitors only, and from the Pack Horse Inn at Crowdecote. A length of the river is National Trust property, day tickets from Wetton Hill Farm, Wetton, Ashbourne, between Hulme End and Wetton. Below the latter place the stream goes underground, appearing again in the grounds of Ilam Hall.

Yorkshire furnishes such rivers and becks as Derwent, Yore, Swale, Costa, Nidd, Pickering beck and other streams, all stocked with grayling. These waters are not so exclusive as those in the south country, and it is possible for the visitor to get some fishing by ticket or by permit. Charges are reasonable.

Further north we have, in Northumberland excellent grayling fishing on the river Till at Chatton and Wooler, tickets from the local angling associations respectively, the Chatton Angling Association and the Wooler and Doddington A.A. at Wooler which preserve a stretch on the Till and a mile of Wooler Water. The Border rivers Tweed and Teviot contain grayling in parts, whilst farther north still we have the Clyde at Carstairs and Lamington, etc., with tickets obtainable from the Hon. Secs. of the local angling Associations.

Grayling thrive in the streams coursing through the alluvial pastoral countryside of Hants and adjoining counties, running to 216 and over.

The important grayling rivers in the south-country include the Kennet, Hampshire Avon, the Anton, Nadder, Wylye, Itchen, and Test. The latter stream is a famous grayling water, and perhaps the best in Britain. Every season a fair number of the 'thyme-scented' fish weighing 2lb. and upwards are recorded. A grayling of 1¾lb. can be reckoned a good specimen. On the Houghton Club waters fine examples are often grassed.

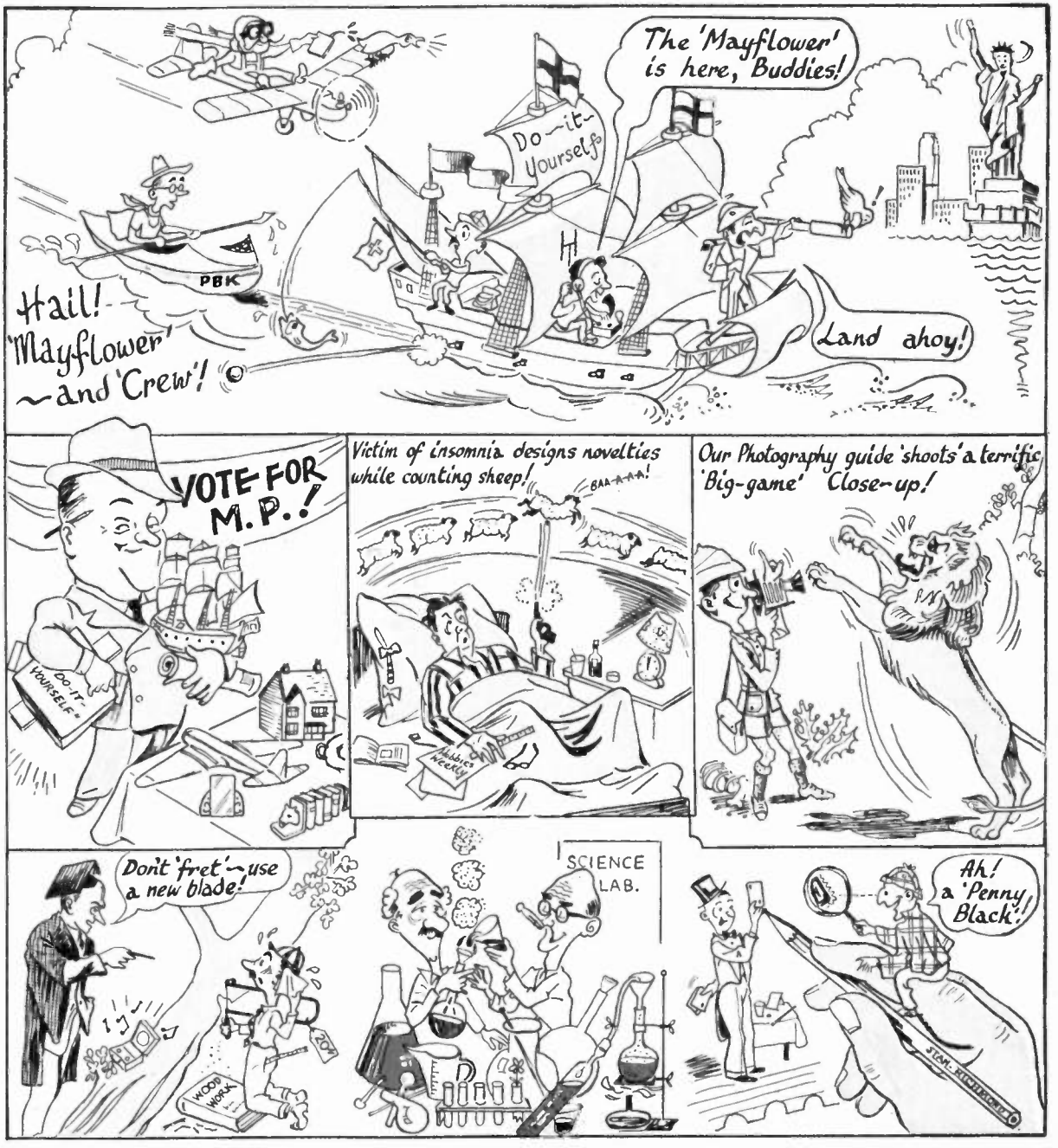
The Itchen is also an excellent grayling water. A very fine specimen was taken from this water some years ago — it weighed 4¼lb. As with the Test, the Itchen is largely preserved, and it is the same on the Wylye at Wilton and Wishford, in Wiltshire. On the Hampshire Avon itself there is good grayling fishing at Downton, Fordingbridge, and other centres. Fishing is good at times, but the fish do not rise so readily to the artificial fly in these particular waters.

In Herefordshire there are grayling in a number of nice little streams as well as in the river Wye at Hay, Hereford, and Ross. The Lugg, Arrow and Pinsley Brook are good waters, but chiefly preserved.

The Teme (Worcs.) is accounted as an excellent grayling river at Tenbury, and at Ludlow, where visitors can obtain tickets from the hotels. Some lengths of the Severn contain good stocks of the 'lady-like' fishes — Stourbridge, Bewdley, Upper Arley, Buildwas, and other centres. Some portions of the Dee in North Wales are well stocked.

Danger—men at work !

Can you identify them ?



Our contributors engaged in their favourite pursuits—as seen by a cartoonist. Pen pictures on pages 4 and 5 will also no doubt help readers to identify their favourite authors.

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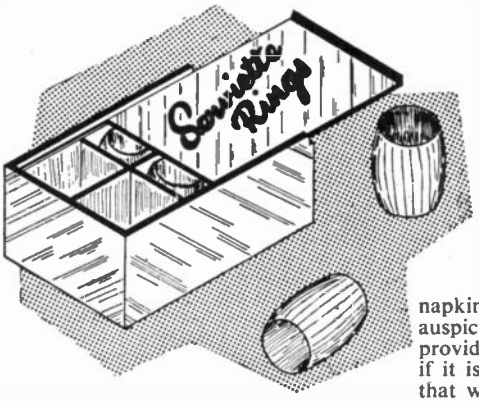
A happy thought

CASE OF SERVIETTE RINGS



Described by

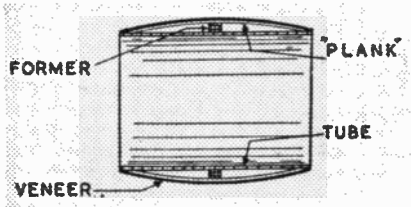
Gordon Allen

AS *Hobbies Weekly* is celebrating its birthday with this issue it is a fitting time for readers to think of birthday presents. Described here is how to construct a case for highly attractive but simply-made serviette rings (or napkin rings — to be strictly 'U' on this auspicious occasion!). They will in fact provide an excellent gift at any time so if it is not a birthday then how about that wedding? And Christmas isn't all that far away!

First, the rings. Each ring is built up round a 'keel' which is a piece of rigid cardboard tube with thin walls, 1⅜ins. outside diameter, 2ins. long. Tubes such as this can be obtained from wholesale stationers or drawing office supply stores. Alternatively the 'core' of a toilet roll may be the right size. Mark on and cut the tube carefully with a very sharp modelling knife. Trim the edges with fine glasspaper and draw a pencil line right round the middle of the tube. This is the position of the former (see Fig. 1).

The former consists of three separate rings of 1/32in. thick balsa or cardboard ⅛in. wide (see Fig. 2). Cut the strips of balsa from a sheet using a knife and straightedge. Wrap a strip round the tube and cut it to form a flush-fitting butt jointed ring. Fix it in the middle of the tube with balsa cement. Complete two other rings in a similar way and cement them together. Form a shallow chamfer on the edges of the former with glasspaper.

The contours of the serviette rings are formed by 'planks' of balsa, laid side by side over the centre former, and they are chamfered slightly at their ends as shown in Fig. 1 and cemented to the ends of the tube.



SECTION THRO. RING

Fig. 1

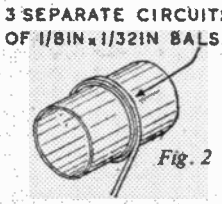
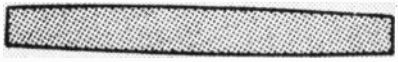


Fig. 2

FORMER WINDING



"PLANK" (FULL SIZE)
24 REQD.

Fig. 3

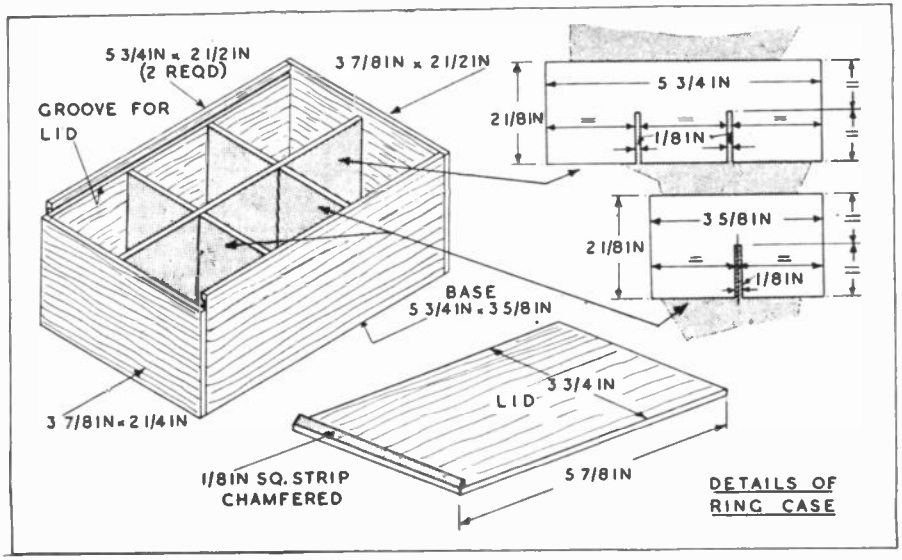


Fig. 4

★★★★★★★★★
★ Next week's free ★
★ design will be for ★
★ a marquetry pic- ★
★ ture tea tray with ★
★ a charming scene ★
★ of country cot- ★
★ tages. ★
★★★★★★★★★

Serviette Rings

Make a template of the 'plank' shape (shown full size in Fig. 3) from thin plywood. Use this to cut 24 identical planks from 1/32in. sheet hard balsa. Form a shallow chamfer at the ends of each on the undersides, with glasspaper. Cement them one at a time to the centre former and the tube ends using the adhesive sparingly. When they are all in place and have set, clean up the outside surface with fine glasspaper.

The outside of each ring is covered with wood veneer — as used in marquetry — and if a different veneer is used for each ring or each pair of rings, the result is highly attractive.

Again 24 'planks' of the veneer are used for each ring and they are cut with the aid of the same template as used for the main planks. Cement them side by side as before and then finish off with glasspaper of flour grade. Round off the edges of the rings and apply white wax polish to the whole surface. Apply two coats of cream enamel to the insides.

The case for the rings is made entirely from ¼in. thick plywood and its construction is shown in Fig. 4. The sides are slotted ⅛in. from their top edges to accommodate the 'slide-in' lid. Draw two lines ⅛in. apart leaving the ¼in. clearance at the top and then chisel out *two* laminations of the plywood between the lines. Make a cut with the chisel along both lines before levering out the unwanted material.

Glue the sides to the box base and then add the two ends. Cut the partitions as shown, glue them together and then glue the assembly inside the box. Cut the lid, try for fit, and glasspaper the edges to provide smooth movement. Add the lid 'handle'.

Fret out the words 'Serviette Rings' from ⅛in. plywood or coloured Perspex and trim in the usual way. Before fixing them in place on the lid, the box should be 'finished'. Staining and polishing, varnishing, enamel painting or veneering all provide suitable finishes, with veneering as first choice if you require a de-luxe model.

Full sized drawing of fretted letters

● **Continued from page 11**

Photographing Historic Places

getting softer negatives. If this cannot be done (there may be subjects on the same film demanding full development), and the negatives are harsh in contrast, a soft grade of printing paper may be tried. In making enlargements from a harsh negative it is often helpful to place a sheet of ground glass between the illuminant and the negative, thereby reducing the effective brilliance of the light and creating softer results.

The photographer interested primarily in historical subjects and oddities, rather than in pictorial work, will find wide scope in old towns. Churches in particular contain many treasures worth recording — fonts, lecterns, carvings, pulpits, and stained glass windows.

Most of these become still more attractive when their stories are known, and most churches today have noticeboards or booklets describing their prized possessions. An examination of these sources of information will, in fact, sometimes draw attention to worthwhile camera subjects which would otherwise be overlooked.

A curiosity seen at York and captured with a camera. Its significance is that the museum contains Dick Turpin souvenirs

When the obvious subjects in an ancient town have been photographed, it is helpful to consult guide books for things of lesser-known historic interest. Photography can often be enlivened by combing works in public libraries, and quite possibly it will be found that, whereas the town seemed to offer few further opportunities for using a camera, in point of fact only the fringe of them has been covered.

An alert eye will probably disclose many unexpected subjects — such as old school buildings, unusual street names, figures and inscriptions on old buildings, statues and memorials, and many other souvenirs of the town's past.

A final point is that some of the subjects are close-up ones, and careful focussing is therefore necessary. The distance between camera and subject should be carefully estimated, or ascertained with the help of a rangefinder, and the lens then set to this distance.

For the photographing of objects in churches it is usually easy to determine the range at which the lens must be set, a length of string marked or knotted at 1ft. intervals serving as a perfectly satisfactory distance meter.

Out with the camera

IN HISTORIC PLACES

THE ancient cities and towns of England are rich in opportunities for the photographer, and many a "bag" of worthwhile pictures is to be obtained in such surroundings, by the camera user who has progressed beyond just the trigger-pressing stage.

Indeed, such historic cities as York and Chester for instance would provide subjects for an almost limitless collection of photographs. Other places with a past, though perhaps less widely-known, nevertheless make excellent hunting grounds for the enthusiastic photographer.

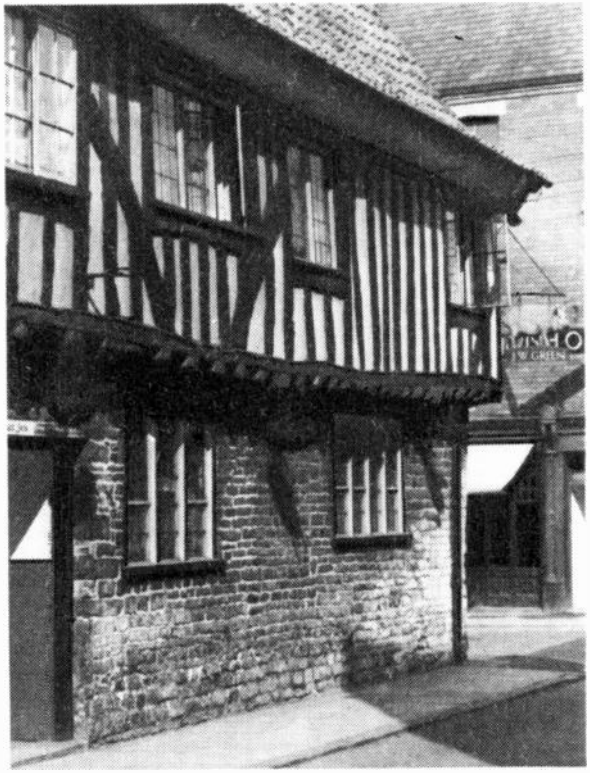
The hobby may be approached from the purely pictorial angle, with the aim of making pleasing pictures, or from the historical angle, subjects relating to history being sought. The number of subjects likely to be found is so great and varied that specialisation may be wise, and attention may be concentrated on such things as old churches and their contents, striking old shop fronts, old buildings, or houses once occupied by celebrities.

The pictorialist will find that quaint corners of old towns often make almost ready-made pictures. This does not mean that the subjects can be photographed haphazardly, for careful choice of viewpoint and good photographic technique are essential. But, given those qualifications, many delightful photographs are obtainable by merely wandering round an ancient town with the camera ready for action.

By A. Nettleton

The twin-lens camera scores here, for the subject can be seen in reasonable size on the focusing screen, but a single-lens instrument with a good eye-level viewfinder will serve well enough. The least suitable type of camera is the one with only a tiny reflecting viewfinder, which gives too small an image for careful composition and which must be used with the camera held at waist-level.

For the historically minded photographer there are many old town treasures to record, such as the ancient clock tower at St. Albans, Herts.



Old world domestic architecture at Grantham, Lincs., typical of the ready-made subjects in England's historic towns

A good plan is to pay repeated visits at different seasons and at different times of day. A subject which looks mediocre on most occasions may be transformed into a real picture by the lighting at a certain time of day, or by a light mist at a particular season. Subjects obscured by foliage in summer may be revealed when the branches are bare.

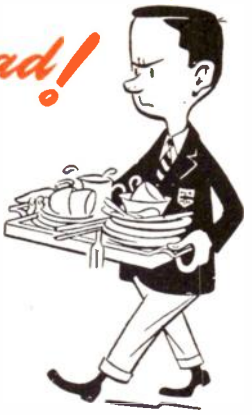
Since there are likely to be heavy shadows in most old-town subjects, the exposure must be adequate, yet it is necessary to avoid over-exposing the highlights. Old black-and-white houses, for instance, are usually attractive as camera subjects, but over-exposure will clog the white parts and give "soot and whitewash" results.

The aim should be to preserve the texture of the white woodwork in the prints, but without under-exposing the shadow parts so seriously that they lack detail. An exposure meter, particularly one of the photo-electric type, is a boon in this work — many experienced photographers would regard it as a necessity.

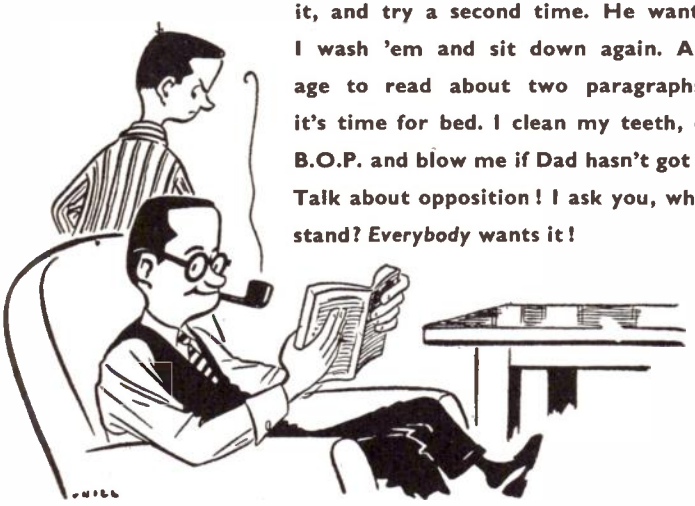
As a further help in avoiding "soot and whitewash" effects, the photographer who develops his own films may reduce the development time by one third, thus

● **Continued on page 10**

The magazine you can trust Dad to read!

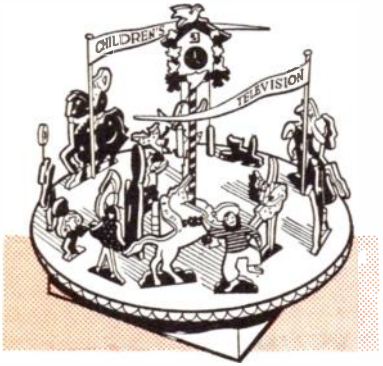


BOY'S OWN PAPER comes but once a month, and when it does—my gosh, do I have to fight for it! I just get settled with it, and Dad says he wants the table cleared. I clear it, and try a second time. He wants the dishes washed. I wash 'em and sit down again. And this time I manage to read about two paragraphs when Dad decides it's time for bed. I clean my teeth, come down to collect B.O.P. and blow me if Dad hasn't got his nose glued into it. Talk about opposition! I ask you, what chance does a chap stand? *Everybody* wants it!



1/- monthly

Boy's Own PAPER



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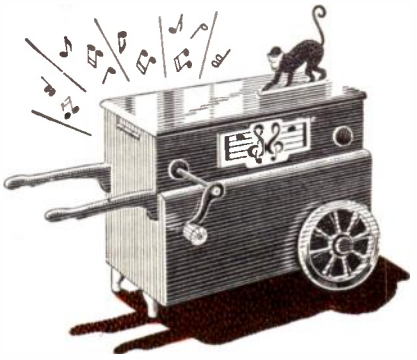

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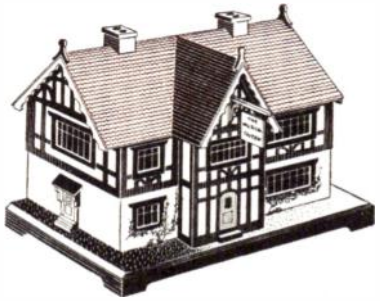
- S Teddy Bear's Picnic

No. 3 Movement (17/6)
- T Clementine
- U Here we go round the Mulberry Bush



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Please send Kit No. .....

Musical Movement (J, K, etc.) .....

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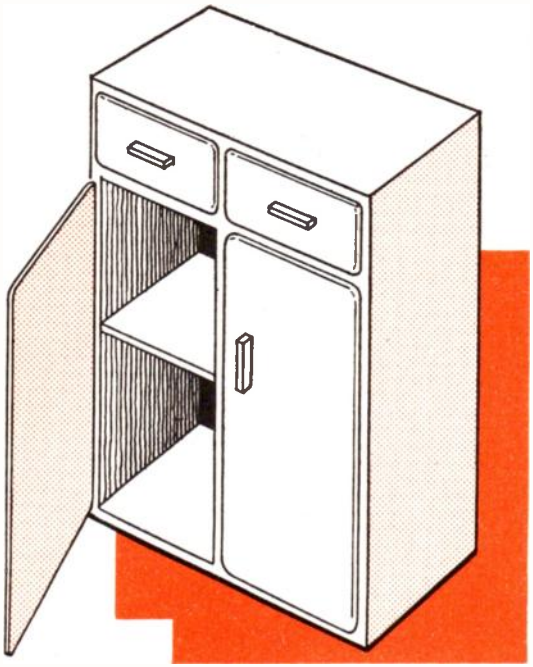


A CABINET FOR YOUR KITCHEN

Neat and Most welcome

says

A. Fraser

EVERY housewife knows that, however spacious the kitchen, there is always a need for somewhere to put things. A neat cabinet, as is shown here, would be a welcome addition to any kitchen. Its usefulness far outweighs the little labour needed to make it.

It is simple to build — any handyman can make it — and the expense is small. Basically, it consists structurally of board strengthened with stripwood. Solid panels would be expensive.

Plywood could be used, but cheaper still is hardboard. A thickness of ¼in. would be strong, but a thickness even down to ⅛in. is feasible, so long as the cabinet is not made too large.

The cabinet described here is 33ins. high by 26ins. wide by 16ins. from back to front. One can alter the dimensions to suit one's own requirements.

In building the cabinet, start first with the sides. Saw out the board (plywood or hardboard) making it 33ins. by 26ins. Draw the shape out correctly first with pencil and T-square. You will need two of these side boards.

Now, strengthen this by nailing and gluing 1in. by 1in. stripwood all round the edge. The stripwood should be flush with the board edge. The corners can be simply butt-jointed, using glue to help. Treat the other board for the other side in the same way.

Next saw off four lengths of 1in. square stripwood, 24ins. long. These are the longitudinal spars of the frame shown as (A), (B), (C), (D) in Fig. 1, and they join the sides together.

Halfway along two of the spars, take out a shallow trench 1in. wide and ¼in. deep. These are to house the ends of the vertical bar dividing the front of the cabinet. See (V), Fig. 1.

Lay aside spars (A), (B), (C), (D) for the moment and turn to the sides just made.

On the inside of the front strip of each side, take out a trench 1in. long and ¼in. deep. (J, Fig. 1 and 2). This is to house the cross spar (S). It should be 7⅛ins. from the top of the side.

Next, saw off a piece of stripwood 15ins. long and 1in. by ½in. section. To one end of this glue and nail a short length of 1in. square stripwood, and fix the whole to the side with glue and nails, as shown in Fig. 2, (R), (P). It should be 7⅛ins. from the top. Fig. 2 is the view from the inside of the cabinet.

Treat the other side similarly.

Now saw out the cross spar (S). This should be 24½ins. long by 1in. square section. Half-way along, in the centre, it should have a piece taken out 1in. by ½in. deep, to accommodate spar (V).

While we are dealing with this level, we can saw off the centre runner for the drawers (R2, Fig. 1). This should be 2ins. by 1in. (or ½in.) and 15ins. long.

Saw off next the vertical bar (V). This will be 31½ins. long by 1in square. 6⅛ins. from the top, take out a section 1in. wide by ½in. deep to accommodate the cross section (S), which lies in here.

Next, prepare the cupboard shelf. This is (F) in Fig. 1. First saw out a rectangle of hardboard or plywood 26ins. wide by 15ins. from back to front. Glue and nail stripwood along all the edges underneath. ½in. or 1in. section will do. Then saw out of the back corners 1in. by 1in. pieces, so that the shelf can fit round the spars at the side backs.

Next make the floor of the cabinet

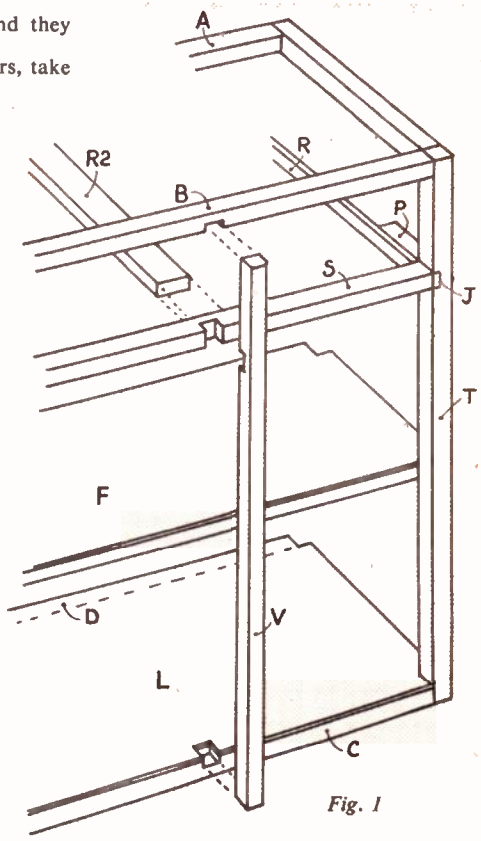


Fig. 1

(L). This should be a rectangle 26ins. by 16ins. 1in. squares should be sawn out at each corner where the corner post must sit. In addition a 1in. square must be cut out of the front edge, half-way along, to make way for the vertical bar of the cabinet front (V).

After this, saw out the board for the cabinet back. This should be 33ins. high by 26½ins. wide.

Leaving the top and doors and drawers yet to be made, proceed with the assembling of the parts already sawn out.

First glue and nail the floor board (L) to the bottom battens on each side. Then add the bottom spars (C) and (D), using glue and nails.

Next, fix in the shelf (F), using glue, and nails through the cabinet sides. The shelf should be about half-way down between (S) and (C).

One can then fix the top spars (A) and (B), driving nails through the corner posts (T) to help the glue. At the same time the cross spar (S), can be attached, in the same way.

Then the vertical bar, (V), can be fitted in, using glue and firming with nails through (B) and (C).

Next, attach the back board, gluing and nailing on to (A), (D) and the back side posts, also the back of the shelf.

Lastly, fix in the central drawer runner (R2) by glue and nails through the back board and through (S). See Fig. 3.

All nails showing on the front and sides of the cabinet should be sunk to hide the heads.

Next, place a sheet of plywood or hardboard on the top of the cabinet and mark off the exact shape, then saw this out.

Attach the top with glue and nails.

Fill in all nail holes with plastic wood, likewise any gaps or cracks in the jointing. When set, glasspaper down the whole cabinet front and sides and top.

Now make the drawers. This can be done by referring to Fig. 4. The sides and back are of ⅜in. or even ¼in. thick board. The bottom is ¼in. or ⅛in. Triangular fillet is glued and pinned to the front edge of the bottom. The front of the drawer is of plywood or hardboard ¼in. thick, and is rounded off at corners and edges. The front is 12ins. by 6¾ins. The sides of the drawers are 5¾in. by 15ins. The back is 11¼ins. by 5¾ins.

The cupboard doors are easily made from plywood or hardboard strengthened with stripwood. Stripwood could be dispensed with if thick strong board is used which would stay rigid on its own. The outer dimensions of each door are 12ins. by 24½ins. The corners and front edges of each door are rounded off in the same way as the drawer fronts.

Each door swings on two or three hinges let into the front corner posts, as shown in Fig. 5.

To keep the doors shut, one can use ball or spring catches, (one or two to each door). These can be fixed either on the centre bar of the front (V) or on the cross sections (S) and (C).

Handles for the doors can be made easily at home from odd bits of wood on hand, or can be bought in various shades and shapes in plastic. The same can do for the handles of the drawers.

The cabinet, before fixing handles, should be well cleaned down with glasspaper and painted. Three coats are advised, glasspapering down the first two coats on drying, then finishing with a high gloss enamel paint. It is customary to paint doors and drawers a contrasting colour to that of the rest of the cabinet. For example, red or emerald green for doors and cream for the body of the cabinet. The handles in this case could be cream.

The top of the cabinet will be improved if it is left unpainted and covered instead with sheet plastic such as Formica or Marleyfilm. Failing this, there are cheaper substitutes which can be cut with scissors and are self-adhesive. These can be bought in several coloured effects and are tough and waterproof. The ease with which they can be applied is a great recommendation.

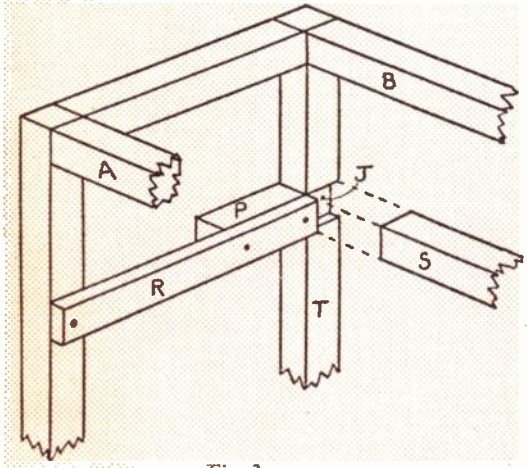


Fig. 2

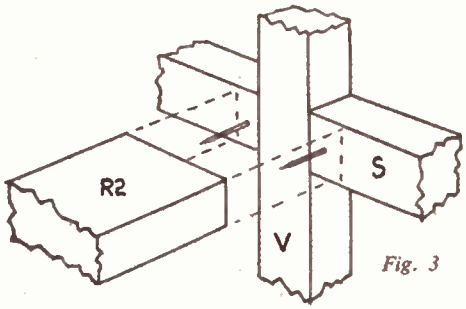


Fig. 3

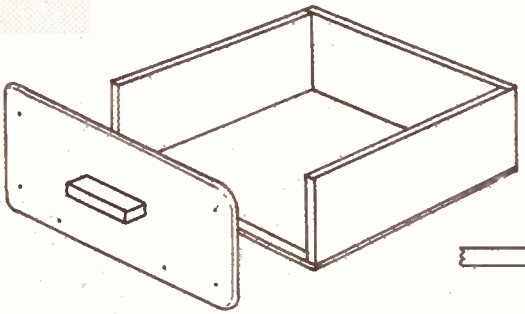


Fig. 4

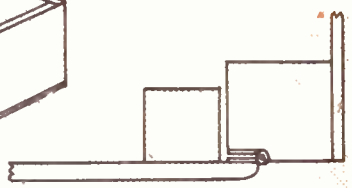


Fig. 5

Replies to Readers
Is this YOUR Problem?

Home-made 'Fridge'

I HAVE a cylindrical metal container (diameter 14ins., depth 16ins.) with lid, which I should like to convert into a cooling device for perishable foodstuffs. I have thought of using the 'ice' of the kind used by ice cream roundsmen, but am at a loss how to obtain it or utilise it. I should be glad of any suggestions. (*L.S.—Chesterton*).

THE 'ice' mentioned is solid carbon dioxide and most ice cream depots will sell this to outside users. It should not be touched with the bare hands or a cold burn will result. It is a solidified gas. As its temperature rises through heat absorption in the refrigerator, it is converted back into the gas carbon dioxide and hence leaves no mess as does ordinary ice. It disappears. To make use of your cylinder as a refrigerator, we suggest you place your food in this and fit this into a wooden box provided with a lid. A space of about 2ins. surrounds the cylinder and this should be packed with pieces of solid carbon dioxide. A good lagging round the box will help keep the carbon dioxide longer.

* * *

'Professional' Finish

I HAVE made several models and wish to know how I can achieve that 'professional' look economically. (*J.S.—Hereford*).

MAY we suggest the following procedure in order to get a more satisfactory finish to your projects. Fill the grain with woodfiller — Polyfilla is suitable — and then give two coats of paint or enamel. Allow to dry thoroughly then rub down with silicon carbide paper used wet. Repeat this operation until a satisfactory finish is obtained, and always remember to use thin coats.

* * *

Jetex Fuel Pellets

CAN you give me a formula for pellets for fitting to Jetex motors? (*M.A.—Grangetown*).

THE active ingredients of Jetex fuel pellets is guanidine nitrate. This is so powerful that it has to be incorporated in a diluent. So far as we have been able to ascertain, the nature of the diluent has not been revealed. Originally developed for propelling target gliders, guanidine nitrate fuel information came off the secret list shortly after the war. Wilmot & Mansour, the makers of Jetex engines, teamed up with I.C.I. to produce a diluted product safe enough for public use. It is highly doubtful if either of the two parties would volunteer further information.

* * *

Invisible Ink

DO you know of a formula for invisible ink? (*N.W.—Brecon*).

GRIND a pinch of starch with cold water to a thin paste, and stir in about a cupful of boiling water. Write with this on white paper, where it will be invisible when dry. Brush on ordinary iodine solution and the writing appears in blue. Starch paste will not keep indefinitely without a preservative, and even with that the sensitivity is ultimately reduced. It is best made fresh monthly.

* * *

Matt-black Finish

I AM building a coffee table in contemporary style. It has white hardwood legs, and I would like to finish them in the smooth matt-black satin-like finish often seen on modern furniture. Could you please advise me how to obtain this effect? (*J.P.—Willesden*).

WOOD finishing has to be done in three stages — filling the grain, staining and polishing. Not all woods need filling, but for your purpose the wood should be treated with a filler, such as 'Brummer', which is rubbed in, then glasspapered off. Use an oil stain, preferably of the wood dye type, as this has a good even penetration — Rustin or Colron are suitable. The stain colours the wood only, and does not provide a hard finish to give resistance to knocks and penetration of dirt. The surface may be varnished or french polished to give a hard surface, then the gloss taken off to get the desired effect. This can be done by scouring with a damp rag and pumice powder or a domestic cleaning powder. The finish is done commercially by spraying with cellulose.

* * *

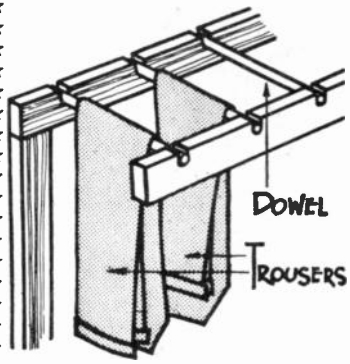
Repairing Cellulose Finish

I HAVE a radiogram with a nasty dig in one side, and it is finished with a hard cellulose. How can I best repair the damage? (*C.B.—Tongham*).

FURNITURE with a cellulose finish is usually stained then sprayed with clear cellulose. If your damage has broken through the stain you should try to match up the colour with an oil or spirit stain, then follow by brushing on cellulose. Clear cellulose for touching up may be bought from some furniture shops and motor sundries firms. Care is needed, and the crack may have to be filled in several layers. It is almost impossible to completely disguise damage, but you can make it less apparent.

* * *

Trousers Rack



This trousers rack can easily be fixed inside a clothes cupboard or recess. Use ½in. dowelling and make rack about 2ft. wide with rods 6ins. apart.

Bleached effect on Wood

I AM interested in the method of obtaining a bleached effect on wood and would like to know what stain to use. (*W.H.—Northampton*).

YOU should moisten the wood all over with meths; then using spirit soluble powder mixed with meths, work the stain in from the edges, using a piece of rag. By adding more powder to the mix, a very dark stain is obtained for the edges. Keep the surface moist all the time and work quickly. Try out on waste wood first.

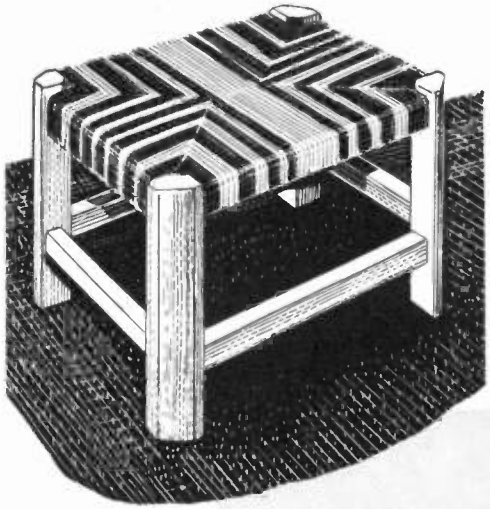
* * *

Waterproof Filler

CAN you recommend a type of woodfiller which when applied to wooden articles of furniture renders them resistant to the effects of stains caused by spilt fluids? (*K.C.—Banff*).

A WELL-KNOWN stopping obtainable from most dealers in paints etc. is 'Brummer' which is obtainable in colours to match various woods and may be had in a waterproof form. This is particularly useful for open-grained woods, such as oak. The stopping is rubbed in and allowed to dry, then glasspapered off, before polishing.

FOR YOUR HOME



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Price 10/6 (postage 1/6)

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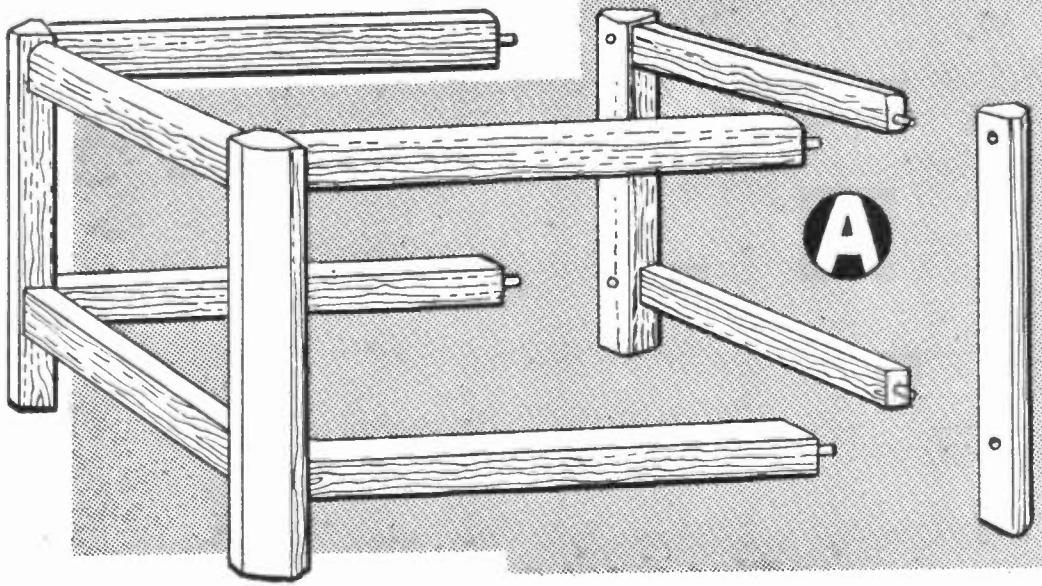
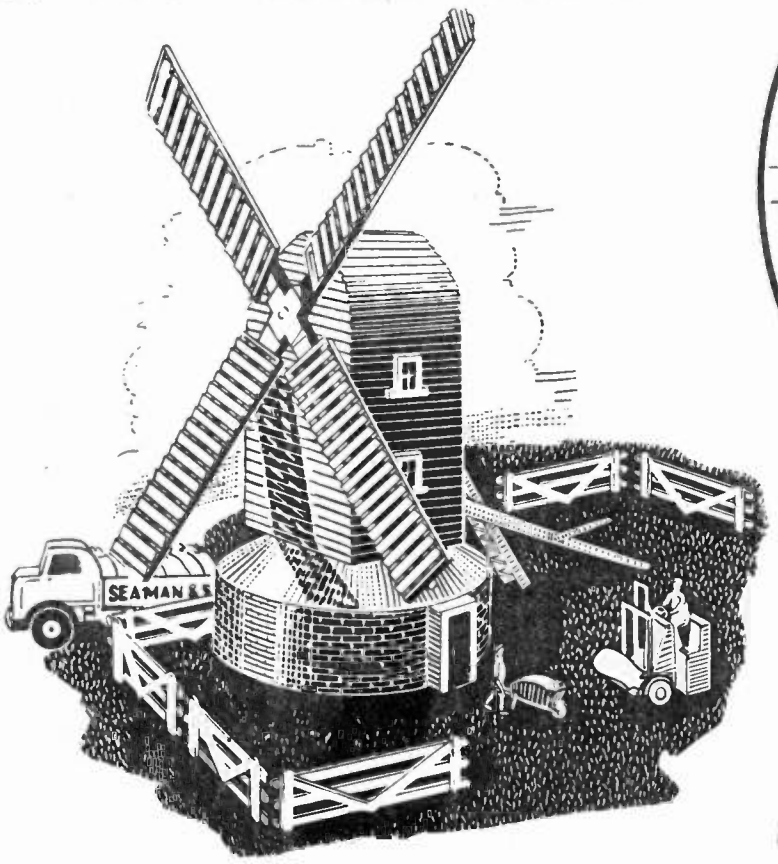


Hobbies DESIGN No. 3231

A TOY MODEL WINDMILL



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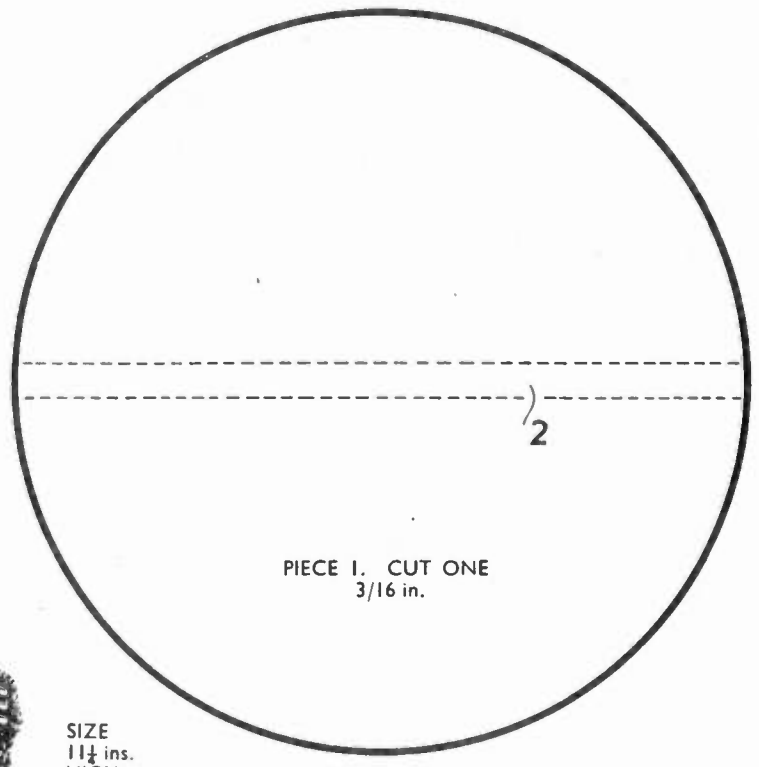
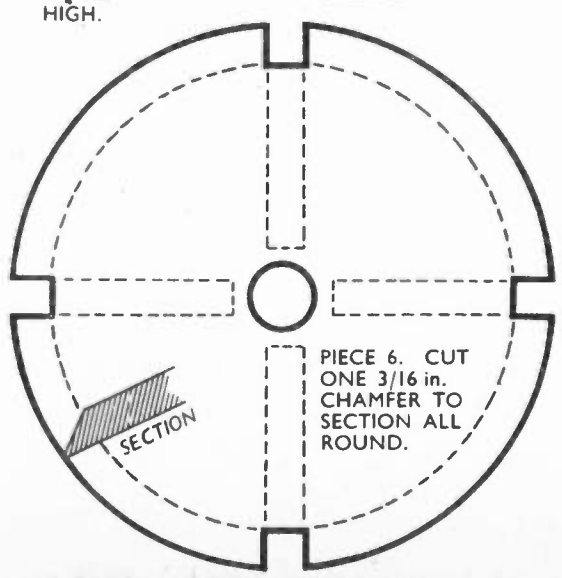


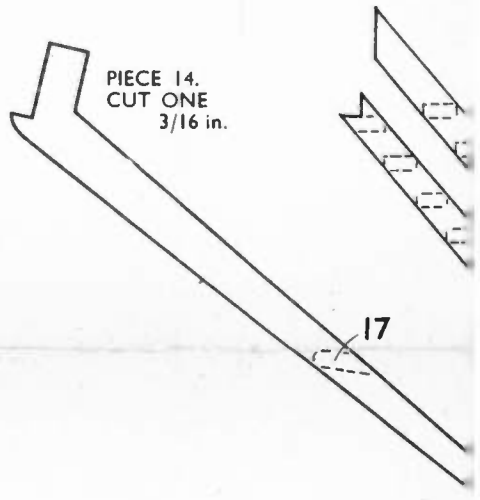
PIECE 1. CUT ONE 3/16 in.

SIZE 11¼ ins. HIGH.



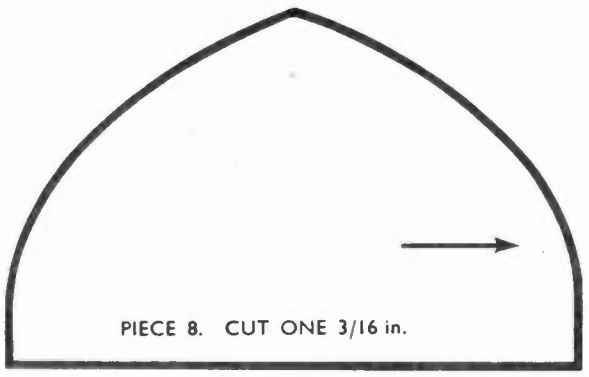
PIECE 6. CUT ONE 3/16 in. CHAMFER TO SECTION ALL ROUND.

PIECE 2. CUT ONE 3/16 in.

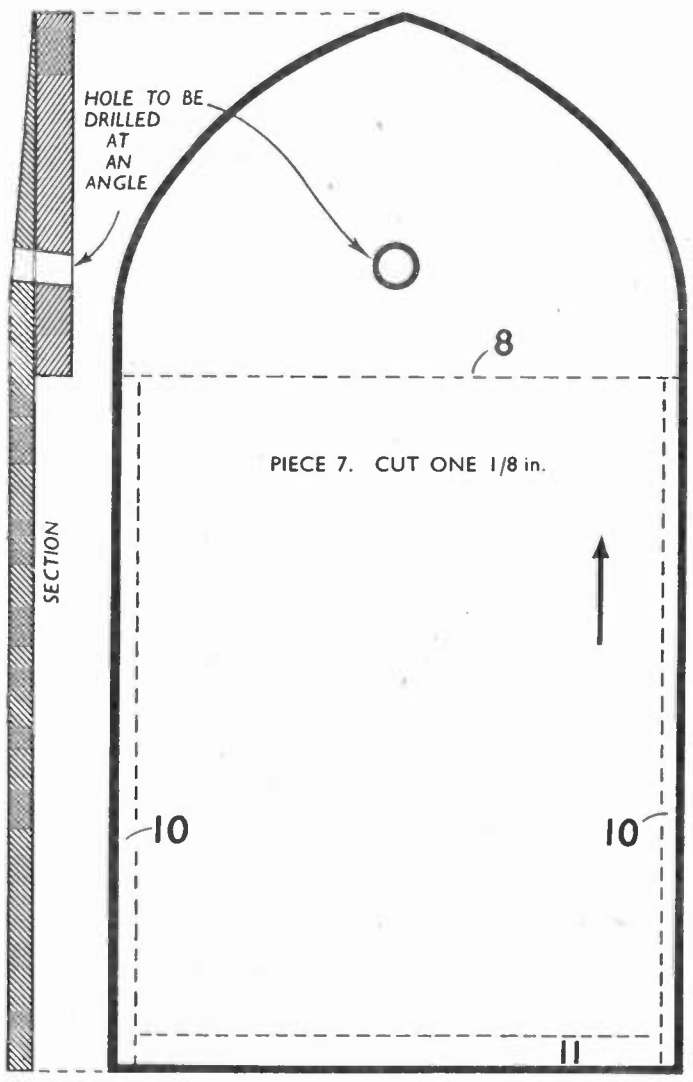


PIECE 14. CUT ONE 3/16 in.

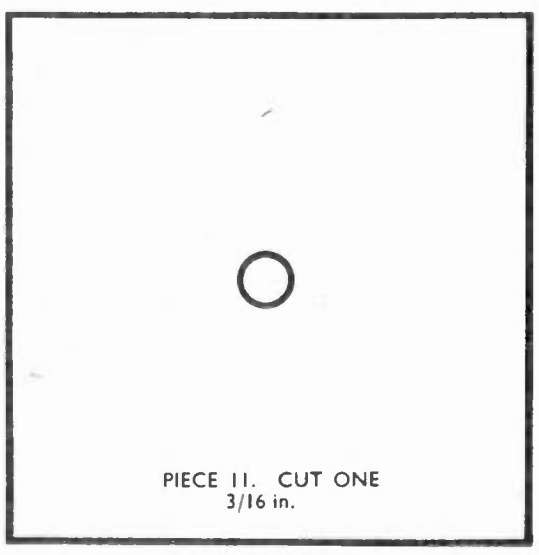
THE ARROWS INDICATE DIRECTION OF GRAIN OF WOOD.



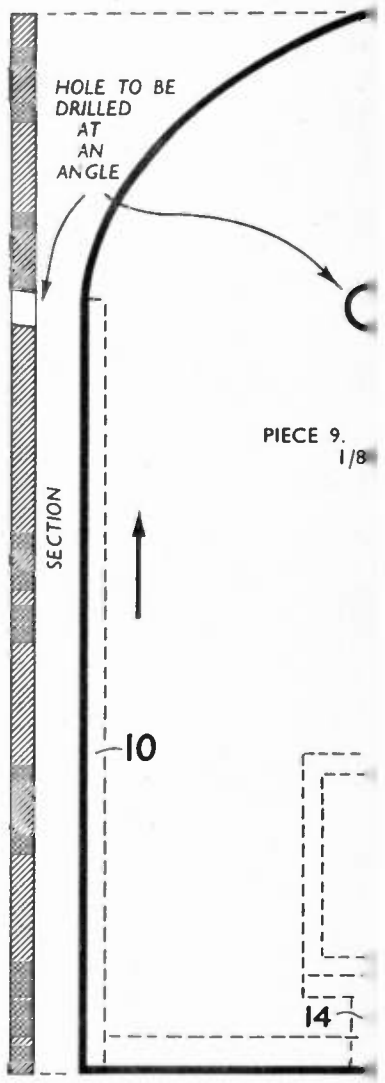
PIECE 8. CUT ONE 3/16 in.



PIECE 7. CUT ONE 1/8 in.



PIECE 11. CUT ONE 3/16 in.



PIECE 9. 1/8

CE 3. CUT ONE
3/16 in.

2

5

5

5

5

SECTION

PIECE 4. CUT
ONE 3/16 in.
CHAMFER TO SECTION
ALL ROUND.

PIECES 5. CUT FOUR
3/16 in.

PIECE 12.
CUT ONE 1/8 in.

PIECE 13.
CUT ONE
1/8 in.

STEPS 18.
CUT TWELVE
FROM 3/16 in. BY 1/16 in.
BALSA STRIP.

LADDER SIDES
15 AND 16.
CUT ONE OF
EACH 1/8 in.

18

15

16

19

19

PIECES 10. CUT TWO 3/16 in.

11

SIDE VIEW

PLAN

1/8 in. BY 1/16 in.

1/16 in. SQUARE.

SAILS. MAKE FOUR
FROM STRIP BALSA.

PIECES 19. CUT
FOUR 1/8 in.

FENCE. MAKE SIX FROM
1/8 in. BY 1/16 in. BALSA STRIP.

CUT ONE
in.

10

12

15

13

11

SECTION

DOOR
PAINTED
ON

PIECE 21.
CUT ONE 3/16 in.
SHAPE TO SECTION.

WASHERS 24.
CUT THREE
1/8 in.

PIECES 25.
CUT ONE OF
EACH FROM 1/4 in. BY
1/2 in. STRIPWOOD.
SHAPE TO SECTIONS.

SECTION

WASHER 23.
CUT ONE 3/16 in.
SHAPE TO SECTION.
GLUE TO PIECE 8.

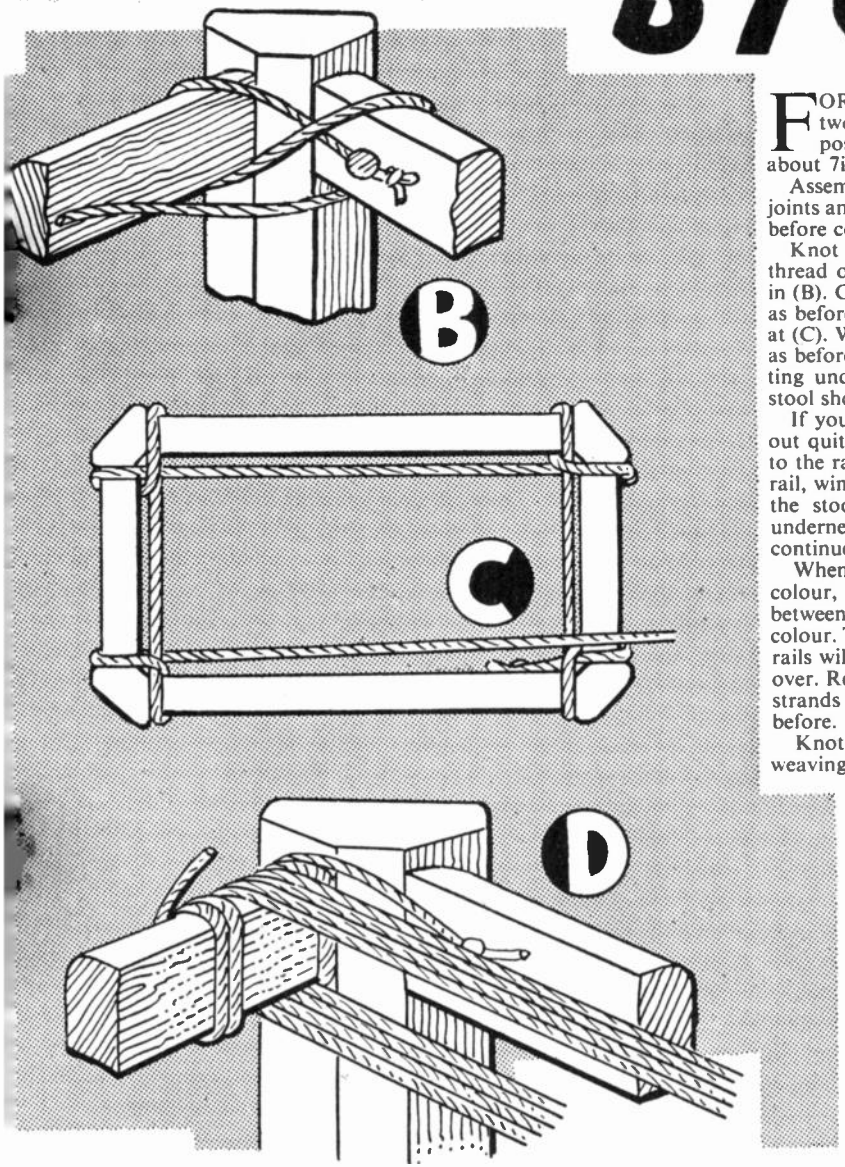
SPINDLE 22. CUT ONE 3/16 in. DIA.
ROUND ROD.

SPINDLE 20.
CUT ONE
1/4 in. DIA.
ROUND ROD.

PIECE 17.
CUT ONE
1/8 in.

PRINTED IN ENGLAND.

A FIRESIDE STOOL



FOR making this stool you require 1 lb. of two colours of seagrass. Wind as much as possible on to a flat piece of wood or card about 7ins. by 2ins.

Assemble the stool as shown in (A), gluing the joints and cramping up until dry. Stain and varnish before commencing to weave.

Knot the end, tack to the inside of the rail and thread over and under, over and under as shown in (B). Cross to opposite rail then over and under, as before. Cross to the opposite rail and repeat as at (C). When you return to the first corner carry on as before. Change colour every five rounds, knotting underneath. The space left in the middle of stool should be filled by making figures of eight.

If you prefer a plain weave this can be carried out quite effectively. Tack the end of the seagrass to the rail as before and take two turns round the rail, wind four complete turns round the length of the stool (D), two turns round the rail, back underneath the opposite rail, two turns here and continue with four more complete turns and so on.

When the weave has been completed in the first colour, the cross strands should be interlaced between the original strands, using a contrasting colour. The gaps caused by the two turns round the rails will enable you to carry the weave under and over. Reverse the order of weaving after every four strands and wind two strands round the rails as before.

Knot off underneath for all joins and also when weaving is finished.

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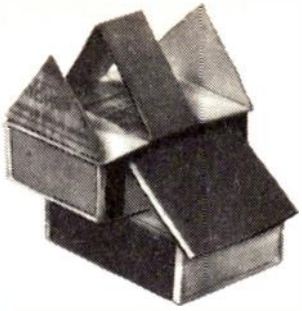

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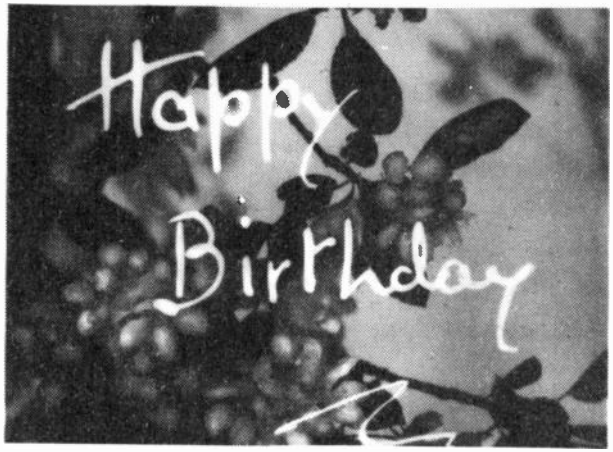
Says S.H.L.



EVERY day is someone's birthday and an appropriate card is the time honoured way of sending greetings. Here is a way to make your own original greetings cards, and while the message may be in the customary form of "Many Happy Returns of the Day" or "Birthday Greetings" there is ample opportunity to devise some really snappy wording. And if for a friend, no doubt you will be able to add a humorous touch.

The illustration at the top of the page shows the simple message in white lettering on a dark photographic background of apple blossom. It will be appreciated that any photograph can be used so long as it provides a dark enough ground to make the white letters clear and legible. Floral pictures, woodland and similar photographs are ideal but, as a novelty, you could use the picture of a group of friends.

We next require a piece of celluloid or a piece of old film from which the emulsion has been removed. If you place an old negative into a shallow dish partly filled with undiluted domestic bleach, the emulsion will quickly dissolve, leaving a clean, transparent piece of film. Do not attempt to scrape away the emulsion or rub with any rough material for this will cause scratches that would be revealed later. After immersion in the bleach rinse thoroughly in cold water allowing to dry naturally.

The chosen message is written on this piece of clear celluloid with a fine pen and indian ink. Match the size of your normal negative for ultimately the two are to be used together for printing the card. Write in the words in the centre of the clear piece, and here you will have to judge the size of the lettering for yourself, but as a guide it can be stated that using a 2¼in. square negative for the example shown the writing was approximately half to one-third the size of normal writing.

As we all write differently, sizes vary considerably so that no hard and fast directions may be given, making a trial necessary. If it is found to be too large, remove the writing with a cloth damped in methylated spirits. You may either use printed characters or your own hand-writing, allowing the ink to dry naturally without blotting, for a dense black is essential. Incidentally, it is a good plan to lay the clear celluloid on to a piece of paper ruled with guide lines.

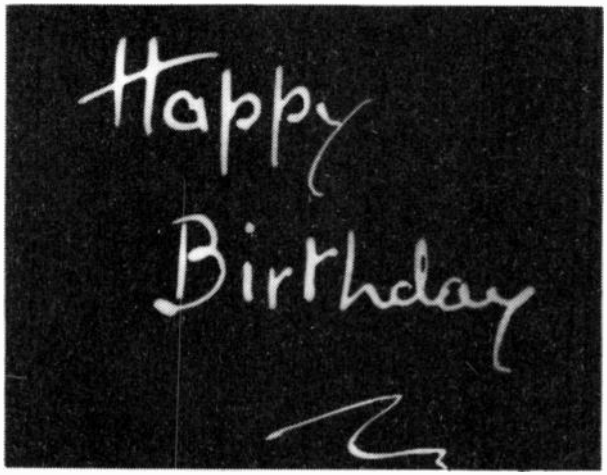


Fig. 1

With the lettered 'negative' prepared, it may be used in conjunction with any normal negative you care to choose and all that is required is either to print directly by contact in a printing frame or by means of the enlarger. For contact printing see that the original is in direct contact with the printing paper, with

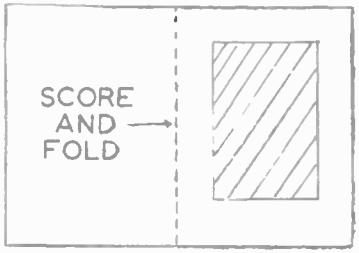


Fig. 2

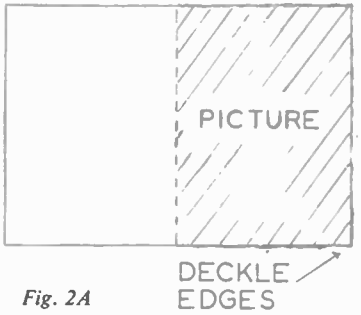


Fig. 2A

the lettered one on top. When enlarging the same principle is followed, i.e. the original is placed so that it is nearest the sensitized paper. The usual procedure is followed in printing and the additional negative only has the effect of preventing light reaching the paper where lettered. Fig. 1 shows the result of making a straight print from the lettered negative, the black area representing the clear parts of the film.

To give a really good finish some type of mount is advisable and it is suggested that you make these from some thin, white, good quality card obtainable from an artists' materials shop. The size of your card will vary with the size of your pictures and the manner in which you decide to mount them, but Figs. 2 and 2a show two different methods.

The first shows a piece of card, scored and folded, with a small picture mounted in the usual fashion on the right half leaving a border. This is suitable for smaller sizes of prints. The alternative is to mount the larger picture without leaving any border whatever, giving a rather attractive appearance. By the way, the mount fulfils the purpose of a support for a picture while allowing the sender to add his name inside along with any other personal message he wishes to convey. You may also like to deckle the edges — merely by tapping lightly with the edge of a ruler. Note that it is the practice to treat only the front half of the cards in this manner.

If you prefer to make black lettering on lighter toned photographs, as for example, across the sky portion of a picture, it will be necessary to proceed a step further. Make the negative as previously described and then a transparency to reverse the order of the tones. To do this, take a piece of unused negative material (you could cut a piece from the end of an ordinary orthochromatic film) making the transparency by contact with the prepared negative. Place the two together in a printing frame, with the emulsion side to the inked side, exposing for a very short time to an electric light. Develop fully to produce a dense, black background, but leaving clear lettering.

Different method

There is also a slight modification in the method of printing for we have first to make an exposure for the picture, overprinting with the message negative by a second exposure. This is probably a little more laborious but an efficient way of printing bold lettering on a white ground. And the same remarks apply whether you make contact or enlarged prints.

You should have no difficulty in making the white lettered negative, but remember that the original and lettered negatives must be of the same size and the former in contact with the sensitized paper. If they are placed the other way round there is a danger that the picture will be blurred.

●Continued from page 21

Chemistry: making Oxides

turns red litmus paper blue. A bulky gelatinous white precipitate of aluminium hydroxide forms.

This is difficult to wash on the filter and it is best done by pouring the whole into a large bottle, such as a Winchester, fitted with a siphon (Fig. 2), filling up with water and shaking well. When the precipitate subsides, run off the water by means of the siphon (to start it, blow down tube A), and fill up again with water. Repeat this washing by decantation until one wash water gives no precipitate when added to a little strontium nitrate solution.

Now filter off the purified aluminium hydroxide and dry it in the oven by opening out the filter paper on a saucer. The bulky hydroxide shrinks greatly during the drying. Put the dried hydroxide into a crucible and heat it strongly until it loses no more weight. Once again it shrinks greatly. The white residue is aluminium oxide.

The aluminium hydroxide you prepared by precipitation is an interesting substance in its own right. It is widely prescribed these days for indigestion, since it neutralises excess acid in the stomach.

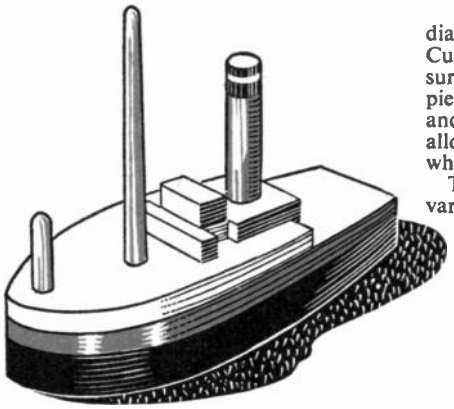
Bismuth oxide you can make from the readily available basic bismuth carbonate (which also is used medically as a stomach sedative). Heat a few grams of it to redness in a crucible for half an hour. A pale yellow residue of bismuth oxide will be left.

Boric oxide is made by a special method. The raw material is boric acid (boracic powder). Heat some of this on a tin lid. It fuses and gives off steam, blowing bubbles and generally behaving like a small mud volcano. Dip the point of a nail in it while it is still puffing and bubbling and draw up the nail. A long thread of the fused oxide comes with it. As the thread cools it grows brittle.

When the whole mass is tranquil and no longer bubbling, let it cool. Boric oxide remains as a glassy brittle mass. This should be kept in a well closed bottle, since it absorbs water from the air, becoming reconverted to boric acid. You can easily tell whether an old specimen of boric oxide is still fit for use by noting if it be opaque or glassy in appearance. If opaque, it has absorbed water and will need reheating to make it revert to boric oxide.

In a further article details will be given for the preparation of a wide range of other useful oxides.

Constructional Toy Tug

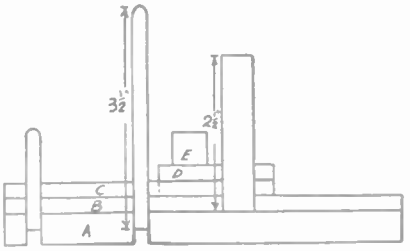


THE tug is made of separate pieces of wood, held together by two masts and a funnel. The toy can be taken to pieces and assembled quite easily. It can also be played with on the floor or table.

Pieces (A), (D) and (E) are cut from ½in. wood and the rest from ¼in. The funnel consists of a piece of ½in. diameter round rod and the masts ¼in. Cut the parts out with a fretsaw, making sure that they all fit together nicely. Glue piece (E) to piece (D). Clean them all up and paint in bright colours. Make allowance for the thickness of paint when cleaning up.

The diagram in Fig.1 shows how the various pieces are assembled. Note that the masts go right through and the funnel goes through (B) and (D) only. (M.p.)

FULL-SIZE PATTERNS ON PAGE 31



CHEMISTRY IN THE HOME

MAKING OXIDES Part 1

AN easy definition of an oxide is that it is a combination of an element with oxygen. Oxides are chemically important and so the home laboratory should have a good supply.

There are various ways of making them. The most common are: burning the element in oxygen or air (one-fifth of which consists of oxygen), heating a carbonate, a nitrate or a hydroxide. Not all of these methods are suitable for any given element and we have to choose the most convenient, that is, to use the cheapest, most direct source and a readily available raw material.

An example of the burning method is the lighting of a strip of magnesium ribbon to produce magnesium oxide, which is the white ash left behind. This is a dear method. To make it cheaply, dissolve about an ounce of magnesium sulphate (Epsom salt) in 250 c.c. (or about half a pint) of boiling water. Add to this a strong solution of sodium carbonate (washing soda) until a drop of the mixture just turns red litmus paper blue.

A white precipitate forms. This is basic magnesium carbonate. Filter it off and wash it well on the filter until a little of one wash water no longer gives a white precipitate when added to strontium nitrate solution. Dry the basic magnesium carbonate in the oven. Now heat this to redness in a crucible for about half an hour. Magnesium oxide will be left as a white powder.

This is an example of the carbonate method.

Lime manufacture is another example of this carbonate method. Limestone is chiefly calcium carbonate. This is strongly heated, when it splits up into carbon dioxide and calcium oxide (lime). Since calcium oxide is so cheap, there is little point in making your own supply of it, but it is an interesting experiment on the small scale. White marble is a purer form of calcium carbonate than limestone and more readily accessible, if you wish to carry out the experiment.

Half fill a crucible with crushed white marble and weigh the whole. Heat up the crucible to bright redness for an hour, let it cool and weigh it again. It will have lost weight. Heat up again for a short time, cool and weigh again. This heating and weighing should be continued until no more weight is lost. The white residue of calcium oxide will grow hot and slake in just the same manner as manufactured lime if you add a few drops of water (Fig. 1).

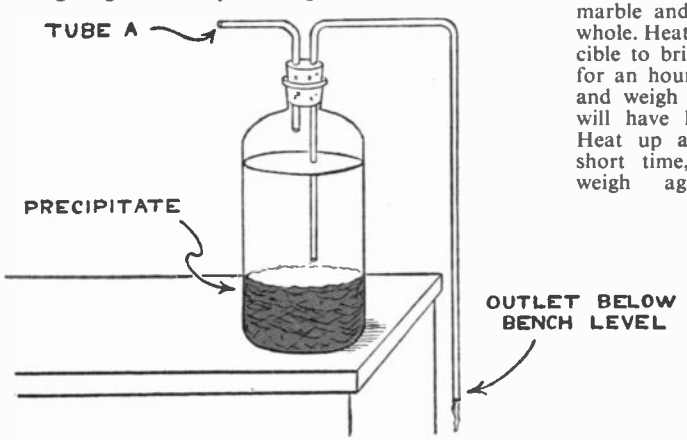


Fig. 1. The action of water on calcium oxide

A metal closely related to calcium is strontium, but strontium oxide is far less common than calcium oxide. It may be prepared by the carbonate heating method, but there is no point in this, since it can be obtained direct from strontium nitrate, which is the usual strontium compound found in the laboratory, whereas the carbonate would have first to be made from this.

Proceed with this experiment as you did for lime, but use a few grams of strontium nitrate instead of marble. Brown fumes of nitrogen dioxide are given off. As these are harmful if breathed in any quantity, work by an open window or in the open air. When no more weight is lost, the residue will be strontium oxide. Add a few drops of water to a small portion of it. It will become hot and slake just like lime.

Lime is not very soluble in water, as you will have found if you have ever made lime water. Strontium oxide is much more soluble. Put the slaked strontium oxide into a test tube and boil it up with a little water. Filter the solution. On cooling, strontium hydroxide separates out in crystals. Slaked calcium oxide (which is calcium hydroxide) will not do this.

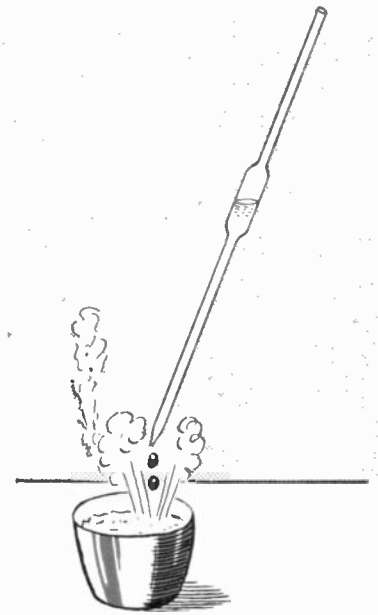


Fig. 2. How to wash aluminium hydroxide

A most interesting example of the hydroxide heating method is seen in the preparation of aluminium oxide. Dissolve an ounce (or about 30 grams) of ordinary alum in a quart of warm water. To this add ammonium hydroxide, stirring well, until a drop of the mixture

●Continued on page 20

For good radio results

ALL-DRY BATTERY THREE

By F. G. Rayer

A circuit of the type used in this receiver can be relied upon to give good results even under unfavourable conditions, as when no earth is available, and only a very short indoor aerial can be used. It is quite small in size, economical in running costs, and requires only dry batteries.

COMPONENTS LIST

Miniature 2-gang ·0005μF tuning condenser.
Two QA11 coils.
QC1 H.F. Choke.
2-bank trimmer.
·0003μF reaction condenser.
1T4, 1S5, and 3V4 valves.
Three B7G valveholders.
50K (50,000 ohm) volume control with switch.
Three ·1μF condensers. ·0001μF, ·0002μF, ·005μF and ·01μF fixed condensers. 25μF Or similar bias condenser.
Two 500 ohm, 20,000 ohm, two 1 megohm, 2·2 megohm, and 3 megohm resistors.
Battery S/Het Chassis.
Output Transformer for battery pentode.
All above available from Osmor Radio Products Ltd., 418 Brighton Road, South Croydon, Surrey.
3½ or similar permanent magnet 2·3 ohm speaker.
Two 1 in. knobs, One 1½in. knob. Bolts, wire, etc.
Coventry Radio, 189 Dunstable Road, Luton, Beds.

In order that no difficulty need arise in construction or obtaining parts, all components have been selected so that they may readily be obtained by post (see component list). This avoids the need for trying to use alternatives, which with items such as the tuning coils would require changes in the wiring.

The circuit is shown in Fig. 1, and uses three B7G miniature valves as H.F. Amplifier, Detector, and Output. Twin-gang tuning, with a pair of medium wave coils, gives more selectivity than does the usual simple battery receiver. A pair of long wave coils, with wavechange switch, can be added later if long waves are required.

The chassis

This must be of metal, and can be obtained ready-made. It is 9½ins. by 4½ins. by 2ins. deep. As the ready-made chassis listed is also suitable for a 4-valve circuit, one of the valve holder holes is ignored.

If a chassis is to be made, aluminium of about 18 SWG will be suitable. The simplest method is to take a piece 9½ins by 8½ins. and bend two 2in. runners upon this, thereby obtaining a chassis of the size mentioned, but without end members. An alternative is to use a piece of aluminium 13½ins. by 8½ins. so as to provide sides all round 2ins. deep, and to leave narrow flanges which can be bolted at the corners.

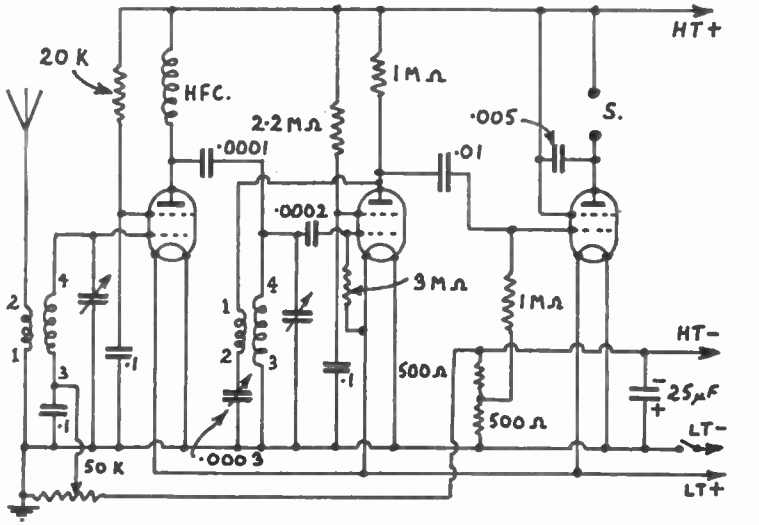
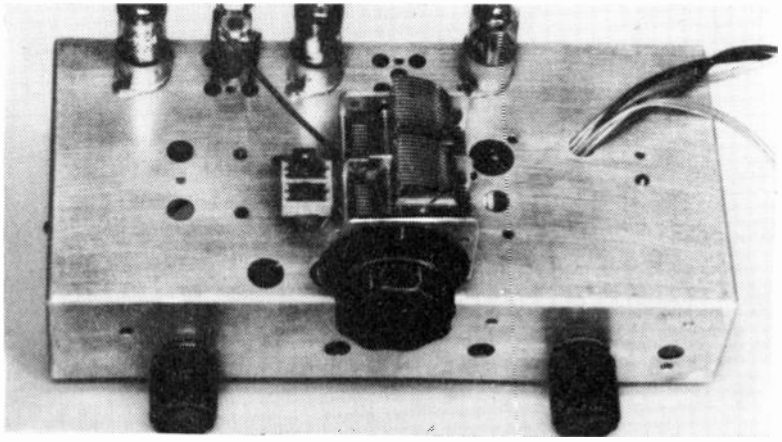


Fig. 1 The circuit

The centre line for the valveholder holes is about ¾in. from the rear edge. The 1T4 holder (Fig. 2) is located with its centre 1½ins. from the end of the chassis, and 2½ins. is allowed between the centres of the other holders. These holes are already present in the ready-made chassis.

For the cabinet which will be described later, the tuning condenser is screwed down with its spindle exactly in line with the centre of the chassis, as shown in Fig. 2. Small holes will need drilling to do this.

Two 50pF trimmers are fitted, one for each section of the tuning condenser, as in Fig. 2. Such trimmers have one fixed and one moving plate. More plates must not be present, or low wavelengths cannot be tuned. One tag on each trimmer is taken to the chassis, at MC. The remaining tags are wired to the gang



Top front view

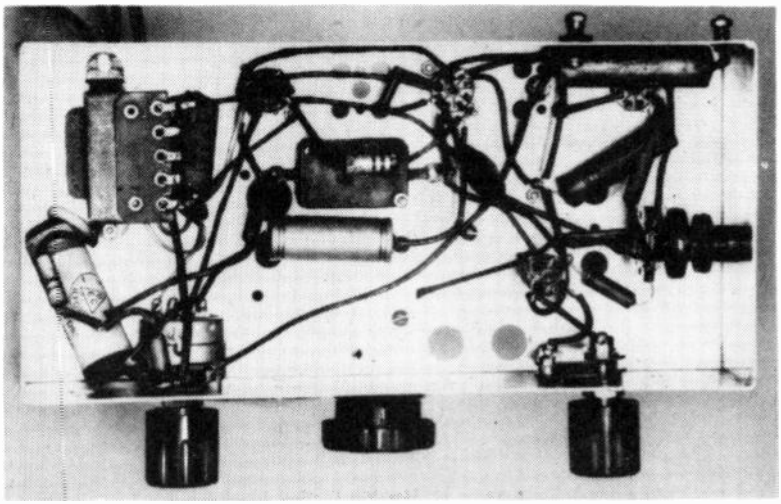
● Continued on page 24

● continued from page 22

condenser as shown. The rear fixed plates are wired to tag 4 on the coil in Fig. 2. The front plates are similarly wired to tag 4 on the sub-chassis coil, the lead passing through a hole at X. The trimmers must be kept clear of the chassis, and this can be done by using a ¼in. or ⅜in. bolt, with a spacing sleeve.

The valveholders are fitted so that the sockets occupy the positions shown. Tags or sockets must on no account touch the metal chassis, or other parts or connections except those to which they are wired.

The specified tuning coils have four tags, with one flat side to the tag end, and this flat side must be positioned as in Figs. 2 and 3, so that connections are correct. The small clips provided may be bolted to the chassis, or holes large enough to accommodate the clips can be drilled. The coils are then pushed into the clips.



Underneath the chassis

Parts under the chassis

These are shown in Fig. 3. The combined On/off switch and volume control and the ·0003*u*F reaction condenser, have their bush centres 2 ins. from the ends of the chassis. The H.F. Choke is threaded at the bottom and can be secured with a small 6 BA bolt. The speaker transformer is similarly bolted down, and the points P—P in Fig. 3 indicate the transformer primary. The secondary leads (of thick, single-strand enamel wire) go to the loudspeaker.

The Earth terminal E is in contact with the metal chassis. So are the earth-return bolts marked MC. The Aerial terminal A is insulated from the chassis by means of two fibre or paxolin washers. In Fig. 3 the rear runner is shown flattened, to make these points clear.

Wiring up

Fairly thin tinned copper wire (22SWG) is easiest to solder, with lengths of insulating sleeving added to prevent short circuits. But any insulated connecting wire will be satisfactory. Joints will solder easily if cored solder is used, and all wires and tags are clean and bright.

The 25*u*F. condenser must have its positive tag or wire taken to chassis, as shown. If the condenser is metal cased, it should be wound with tape or brown-paper, to prevent contact with the chassis.

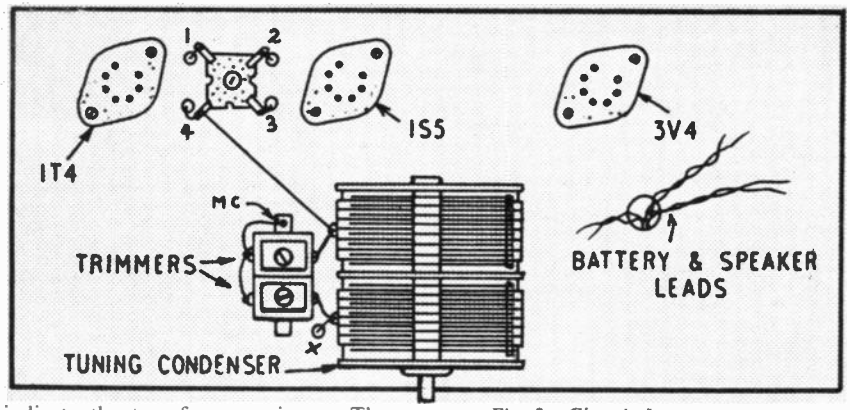


Fig. 2—Chassis Layout

The 50K volume control has an internal on/off switch, with two rear tags. One is taken to LT negative, and the other to the filament and chassis, as indicated. Of the three volume control tags, that at the left also goes to chassis. The centre tag goes to 3 on the aerial coil, and ·1*u*F condenser. The right-hand tag goes to negative on the 25*u*F condenser, 500 ohm resistor, and HT negative.

The moving plates tag of the reaction condenser (·0003*u*F) goes to 3 on the detector coil. The fixed plates are connected to 2 on this coil.

Short lengths of flex provide battery connections, and these must be marked so that they are not confused.

Wiring check

Before trying the set, it is worth checking all connections. Those for the valve holders are as follows, sockets being counted clockwise from the space, with the holders viewed from below.

IT4

1 (fil. negative) to chassis.
2 (anode) to H.F. choke and ·0001*u*F condenser.
3 (screen grid) to 20K resistor and ·1*u*F condenser.
4 and 5, unused.
6 (grid) to 4 on coil.
7 (filament positive) to LT positive

1S5

1 (fil. negative) to chassis.
2 and 3, unused.
4 (screen grid) to 2·2 megohm and ·1*u*F condenser.
5 (anode) to ·01*u*F, 1 on coil, and 1 megohm resistor.
6 (grid) to ·0002*u*F condenser and 3 megohm resistor.
7 (filament positive) to LT positive.

3V4

1 and 7 (filament) to LT positive.
2 (anode) to speaker transformer and ·005*u*F.
3 (screen grid) to HT positive.
4 unused.
5 (filament tapping) to chassis line.
6 (grid) to 1 megohm and ·01*u*F condenser.

A speaker smaller than about 3½ins in diameter is not recommended, in the interests of best results. Larger speakers can be used with complete success, but will require a higher cabinet to accommodate them. If the set is not to be carried about, the speaker can be in a separate cabinet.

The 3½ins. speaker can be mounted to the right of the tuning condenser by cutting the baffle shown in Fig. 4 from 3-ply, and bolting it to the front chassis runner. A piece of art silk covers both ends of this baffle, as indicated, to allow a uniform appearance with the cabinet to be described in a following article. The speaker cannot work at its best until in a cabinet.

If a speaker with transformer is already to hand, then the speaker transformer shown in Fig. 3 is not required. Instead two flexible leads are taken from the ·005μF condenser to the primary of the transformer on the speaker.

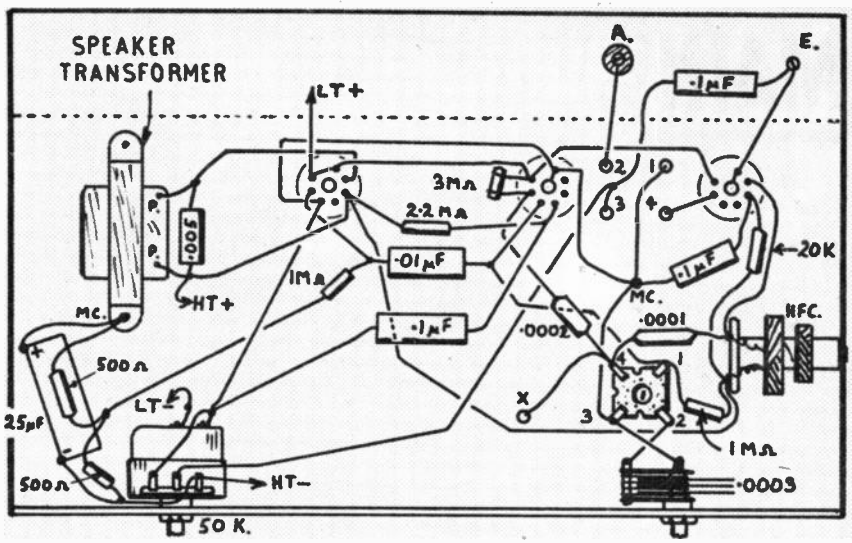


Fig. 3 Wiring plan

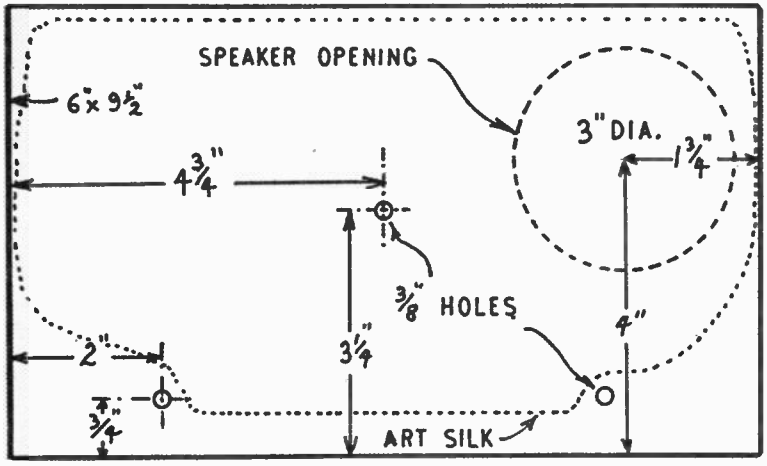


Fig. 4 The baffle

Operating the set

For HT, a 90V. battery such as the Ever Ready B126 is suitable. For LT, a 1½V. battery is required, the AD35 being satisfactory. These batteries stand at each end of the chassis.

Torch or flash-lamp batteries can be used for LT, provided the cells are wired in parallel, to give 1½V. With bare cells, avoid contact between the zinc case (which will be negative) and chassis. More than 1½V. must never be used for filament supply.

The valves are inserted in the positions shown in Fig. 2. A few feet of wire will provide enough signal for the more powerful stations. However, distant stations will be heard better with a reasonably effective aerial, preferably out-of-doors. It need not be very long, but should be clear of walls. For local stations, a few feet of wire placed along the floor, or as convenient, will suffice. Out-of-doors, a short wire may be connected to a spike pushed in the earth, and this used as *aerial*. Indoors, an ordinary earth need not be used, though it will improve volume, if efficient.

The two trimmers should be set about one-half open, and the adjustable coil cores screwed so that they lie about level with the tag end of the coils. An insulated tool, made from a piece of wooden or ebonite rod, *must* be used for these adjustments, as the presence of a metal blade will interfere with tuning.

The reaction condenser should build up volume until oscillation commences. Its setting is of little importance with strong stations, but will greatly influence results when listening to weak stations. The 50K potentiometer acts as volume control in the usual way.

A suitable cabinet of modern style, made from Hobbies panels into which this receiver can be incorporated, will be described next week.

Maximum possible sensitivity will only be achieved when the two tuned circuits are aligned. To do this tune in a high wavelength station, such as North Regional on 434m. or 3rd Programme on 464m. Leave the tuning control untouched, and carefully adjust the coil cores, with the insulated blade, for maximum volume. Then tune in a low wavelength station, such as West Regional on 206m. or Radio Luxembourg on 208m., and adjust the trimmers for maximum volume. This will be quite critical.

The adjustments of cores (high wavelength) and trimmers (low wavelength) should be repeated two or three times, until no further improvement is possible. The positions of the trimmers and cores will also influence the point at which stations tune in, and this should be kept in mind if a station-named dial is fitted. With such a dial, tune to the correct wavelength by the pointer, then make the adjustment described for best volume from the station indicated.

MAINLY for MODELLERS

ATTENTION TO SAILS

By 'Whipstaff'

DURING many years of ship modelling I have been particularly impressed by the number of models that could be improved by a little more attention to the making and setting of the sails. This can make a great difference to the appearance of the model, particularly in the setting of the sails. To see them hanging limply straight down takes all the life from the model, and I propose in this series to suggest ways of making, from simple methods for small models to the more advanced.

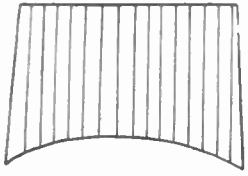
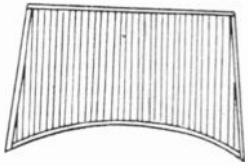


Fig. 1

INCORRECT LINING



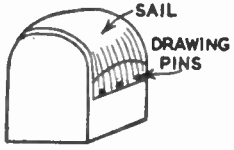
CORRECT LINING

First a few don'ts for galleon makers. Many modellers in making up Hobbies and other kits of these old time ships err in the lining of the sails to represent the joining of the bolts of canvas of which the sails are actually made. In many cases the lines are out of scale — either too far apart or too heavily marked. In many cases they are content merely with vertical lines. In most cases this is for lack of knowledge of the actual layout of the sails. I have met very few modellers who are merely taking the line of least resistance. Most of them, and especially those who read our corner are only too eager to get every possible detail correct, and we are always ready to help.

In Fig. 1 is shown the correct and the incorrect way to line the sails for Hobbies series of old time ships. As a guide to the spacing of the lining for these models, the following will give the scale as near as possible. For the miniature galleons, 'Mary Fortune', etc., space them $\frac{1}{8}$in. apart; for the larger models, 'Elizabeth Jonas', 'Golden Hind', etc., $\frac{3}{16}$in. apart; and for the special designs, 'Ark Royal', etc., $\frac{1}{4}$in. apart.

In making parchment sails for our Old Time Ship kits it adds colour and life to the sails if we give them a weathered appearance and one of the simple methods that is most effective is the following. Having drawn the outline of the sail on the parchment and, if carrying heraldic design, painted the design, commence from each corner with a brown crayon pencil and shade part of the way in towards the centre. The centre is not touched with the pencil, the heaviest pencilling being actually in the corners themselves.

The next operation is to blend the pencil marks by rubbing with the finger. The effect to aim at is to eliminate the pencil lines and get a gradual colouring from the corners towards the centre, gradually getting lighter as we shade towards the centre. This will give the 'weathered' effect shown in Fig. 2.



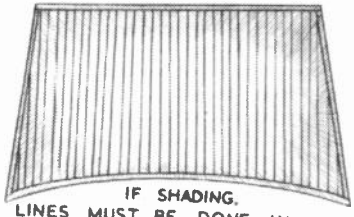


Fig. 2

Now to the set of these sails. It is difficult with paper or parchment sails to get that setting that depicts the natural 'bellying' out of the sails of a ship sailing with the wind filling her sails. Without that effect the model loses a lot of its appeal.

With miniature models, such as the waterline type at, say, 50ft. to 1in., I find cream laid note paper is most useful for making the sails. Gently roll them as one would for making a cigarette, then open them out and give them a coat of shellac and they will have sufficient of a 'bellying' effect for this small scale.

However, for the parchment sails of the larger models this is not effective. In fact if one tries to roll the parchment sufficiently to obtain a permanent curve it is liable to be covered with many small cracks.

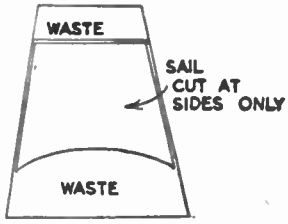


Fig. 3

The most effective way with parchment is as follows. Make a block of softwood carved to a curve as in Fig. 3. Then cut out the sail from the parchment at the sides only, leaving the waste for pinning to the block. The sail is then bent over the curve of the block with drawing pins, given a coat of shellac and left to dry. It is also given a coat of shellac on the reverse side when removed from the block. When dry, cut away the waste and it will then retain its shape when mounted on the model.

If preferred, clear cellulose can be used instead of shellac. It is less subject to atmospheric changes.

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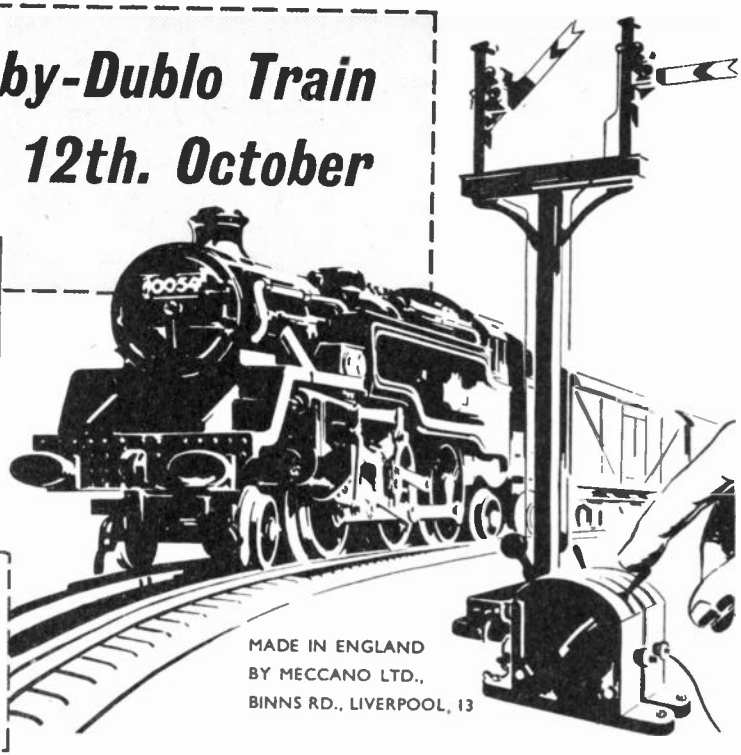

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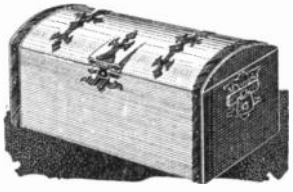

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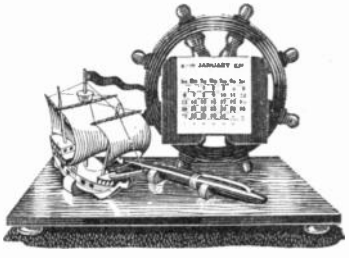

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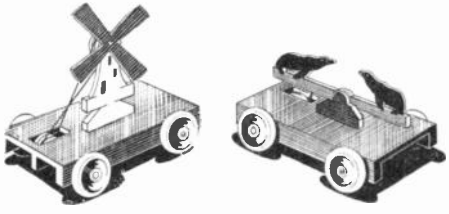

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ROYAL ISSUES

By L. P. V. Veale

WE all take it for granted that the stamps of Great Britain and also those of the Commonwealth countries will bear the portraits of the reigning monarch. We also know that we may expect to find many stamps with portraits of earlier monarchs, such as King George VI, King Edward VIII, and back to Queen Victoria, but if you were asked to name a stamp on which one could see a picture of King James I or, say, King Charles I, would you be able to do so?

We certainly cannot say that all the kings and queens of England have appeared on our stamps — we have to remember that the adhesive stamp only appeared just after Queen Victoria came to the throne, so that we cannot really expect that others should be shown. Although the first adhesive stamp appeared in Queen Victoria's reign yet there is a stamp bearing the likeness of a king who reigned over 600 years before that, for Cyprus on her 18 piastres stamp of 1928 shows a picture of the statue of King Richard I, one of the many his toric monuments of London.

At the Crusades

It is not to be wondered at that there should be some recognition of King Richard I on the stamps of Cyprus for he spent quite a lot of his time away on the Crusades and it was whilst he was on his way to one of these that he captured Cyprus.

Quite a long period of time must elapse and many kings ascend the throne before the stamp collection yields another example of an English King. King Henry VII reigned from 1485 to 1509 and his portrait appears among the Royal Portrait Gallery of Newfoundland. He appears on the 60c of the 1897 issue, the issue which was made to celebrate the 400th anniversary of the discovery of Newfoundland, and as one would anticipate from the date, it also celebrates the 60th anniversary of Queen Victoria's coming to the throne. But the 400th anniversary of the discovery coming in 1897 means that the colony was discovered in the middle of the reign of King Henry VII, and the stamp bears the inscription 'Henry VII who granted the Charter to Cabot to discover new lands' and the dates 1497 — 1897. So one can very easily understand why his portrait appears on the stamps of Newfoundland.

The same country, Newfoundland, brought out an issue in 1933 which commemorated the 350th anniversary of the annexation of the colony by Sir Humphrey Gilbert, so that it was during the reign of Queen Elizabeth that Sir Humphrey Gilbert received his commission to sail the seas and seize for England any lands he might find. Two stamps of this issue show us pictures of the Queen. The 24c has a portrait while the 7c shows Sir Humphrey Gilbert kneeling at the feet of his queen to receive his commission.

Twenty-three years before this, in 1910, Newfoundland had issued a set the first stamp of which showed a portrait of King James I. He reigned from 1603 — 1625, and in 1610 he had granted a charter to John Guy who was credited with establishing the first permanent colony. This may seem a little confusing, as we have Cabot, Humphrey Gilbert and Guy all concerned with having done something towards making Newfoundland. Perhaps the second value of the 1897 issue will help to clear matters. This is inscribed 'Hym that found the New Isle' and the picture is that of Cabot.

Barbados and Jamaica

For the next King's portrait we shall have to turn to the stamps of Barbados, and in 1927 they issued just one stamp the value of which was one penny, and it was to commemorate the 300th anniversary of the settlement. The stamp shows portraits of King Charles I and King George V and twelve years later came the tercentenary of the Barbados General Assembly and this was commemorated by the five stamps showing the portraits of King George VI and King Charles I in medallions with the assembly chamber and the mace.

King Charles II, 1649 — 1685, is shown on the twopenny value of the New Constitution set of Jamaica which took effect in 1944, although the stamps did not come out till later. The reason for the portrait of King Charles II is because he was the monarch who was on the throne of England when the first House of Assembly was constituted in 1664.

We have a gap of over two hundred years during which William III, Mary, Anne and the four Georges sat on the throne and the next monarch to appear is William IV, and he appears as one of the four monarchs on the 1934 issue from St. Helena. Five values of this set show the portraits surrounding — a map of the island on the 1½d. and views on the 1d., 2d., 6d., and 10s. 0d. values. This set was issued to commemorate the centenary of British Colonisation.

Thereafter each of the monarchs, Queen Victoria, King Edward VII,

●Continued on page 30

HOBBIES PRIZE CROSSWORD

Senior Award

Junior Award

Solve the puzzle and—

WIN A WATCH !

FOR our special birthday number we have devised a crossword puzzle, which should not prove too hard for regular readers to solve. Touching on hobbies in general, you will find the names of some of the advertisers in this issue featured among the answers.

Fill in the solution neatly and send it to: Competition Editor, *Hobbies Weekly*, Dereham, Norfolk, to arrive by October 16th. For the first correct solution opened after this date, submitted by a senior (16 years of age and over), the Editor will award a wrist watch, and there will be six runner-up prizes of ball-point pens. There is also a junior section (aged 15 and under) for which a watch and pens will be similarly awarded for solving the same puzzle.

No claims are necessary and winners will be notified and prizes despatched by October 30th. The correct solution will be published in a subsequent issue.

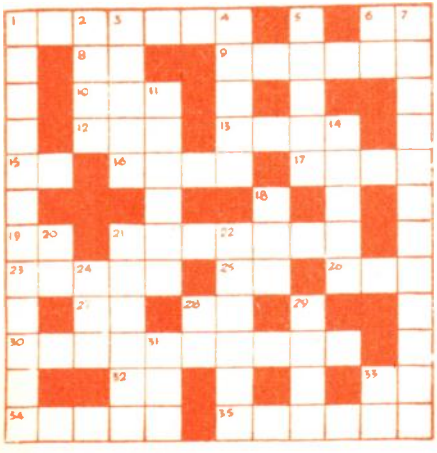
The name, full address and age of the competitor must accompany the entry.

The judges' decision is final and no correspondence can be entered into.

ACROSS:

1. An early cause of 'fretting' (7).
6. Golden in heraldry (2).
8. Hesitation initially queenly (2).
9. This modelling cement has spirit (6).
10. One of the Dodecanese Islands (3).
12. Buy it from Hobbies or get it free in barracks! (3).
13. A member of Scotland Yard is sour — read 'Chemistry in the Home' (4).
15. Doubled, it would become extinct (2).
16. The copper in the song makes her of high rank (4).
17. Give a penny to the Institutes — and make half (4).
19. Only part of an egg, for example (2).
21. The sacred city adds a firm negative (7).
23. Refusal for little Edward (5).
25. This set would be disturbed (2)
26. Initially this magazine belongs to Junior (3).
27. A Cockney might say the fire was this (2).
28. The reverse of colloquial gratitude (2).
30. A meeting of kings? (5) (5).
32. The definite article goes to Paris (2).
33. Double this and find an Egyptian goddess (2).
34. Covers a period of time (5).
35. Their literature is by no means confined to the subject of fencing (6).

Note: Figures in parentheses denote the number of letters in the words required.



DOWN:

1. A high ranking soldier and his office (2) (3) (7).
2. Here, without call (4).
3. Make very hot (5).
4. An upset afterthought precedes the beam of light (5).
5. The French king joins Civil Defence (5).
6. A distinguished decoration (2).
7. Sir Walter's newspaper? (7) (5).
11. The little saint joins a diminutive Edward (6).
14. What a conscript awaits (5).
18. A dance for a backward Irishman (3).
20. Proceed (2).
21. A chemistry article has shown how to make them. This should put you on your singular of this by the sound of it (6).
22. With the proverbial shilling? (3) (3).
24. Make this for a child from a Hobbies Design (3).
28. Certainly not an ordinary seaman (2).
29. For transporting drinks (4).
31. A fish is upset (3).
33. That is the answer (2).

●Continued from page 29

Royalty on Stamps

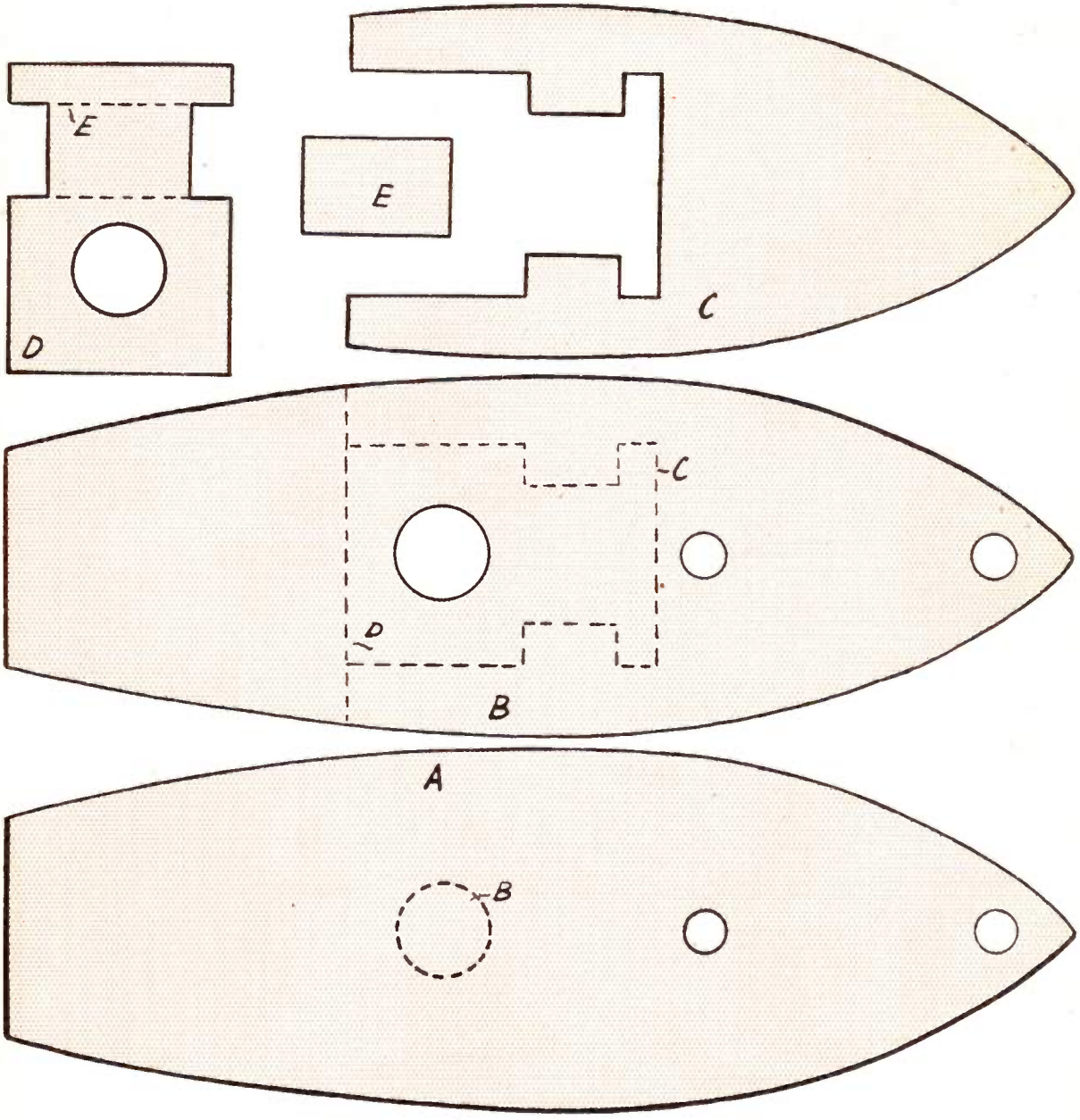
King George V, King Edward VIII, King George VI, and Her Majesty Queen Elizabeth II have appeared, and each collector has his or her favourite portrait chosen from a very large selection, that is, of course, with the exception of King Edward VIII.

Britain's oldest colony has by far the best royal portrait gallery. Already we have mentioned Henry VII and King James I, and if we turn to the ten cents of the 1866 issue we have a portrait of the Prince Consort while the 1911 set gives us portraits of the family of King George V. This colony is also responsible for the earliest portrait of Her Majesty Queen Elizabeth II as one of the 1932 set.

Australia gave us a much later picture of the Duke and Duchess of Gloucester, to commemorate their visit there in 1945. Australia and New Zealand have both given us portraits of H. M. Queen Elizabeth II and the Duke of Edinburgh, and New Zealand was responsible for that striking picture of Her Majesty as she appears at the Trooping of the Colour. Prince Charles and Princess Anne both appeared on the Health Stamps of 1952.

See page 20

PATTERNS FOR TOY TUG



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