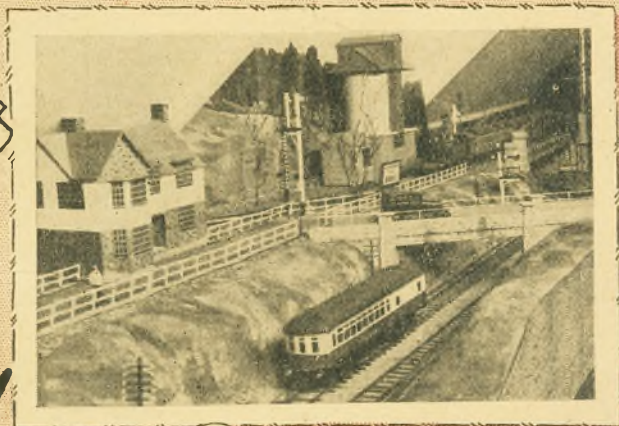


Hobbies

WEEKLY

GAUGE OO
RAILWAY MODELS



*Design for a
Hanging Vase*
FREE!



MODELS
WOODWORK
PHILATELY
ELECTRICITY

January 19th. 1935

2^d

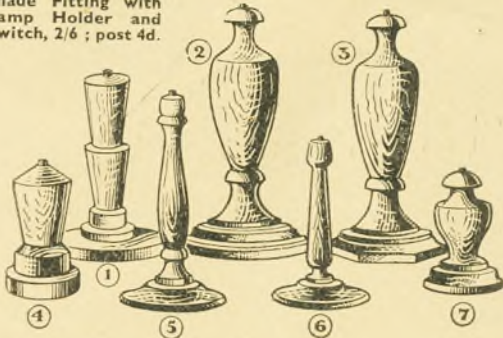
Vol. 79 No. 2048

THE FRETWORKER'S AND
HOME CRAFTSMAN'S JOURNAL

Lamp Standards

Centre and base bored ready for the flex. Fitted with plug to take shade and lamp fitting. Beautifully turned in Oak and Beech. No. 3 has a specially weighted base for use where a large shade is required.

Shade Fitting with Lamp Holder and Switch, 2/6 ; post 4d.



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|--|-----|------------------------------------|-----|
| No. 1 Beech, 9ins. | 2/6 | No. 2 Beech, 10 $\frac{3}{4}$ ins. | 2/6 |
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Big Value in Saws

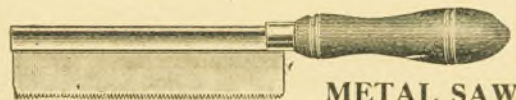
Dependable quality Saws at prices lower than you would expect to pay. A tribute to British sawmakers.



TENON SAWS

Brass Back	6 in.	1/9	7 in.	1/10	9 in.	2/-	Iron Back
	8 in.	2/-	9 in.	2/3	10 in.	2/6	
	10 in.	2/9	12 in.	3/-	12 in.	2/9	

Postage 6d. extra on each.



METAL SAW

The blade is specially hardened and tempered and is 5 ins. long. It is wonderful value at the price.

No. 126. Price 10d.

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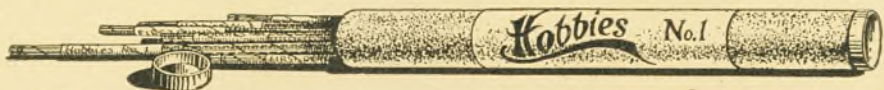


Don't Argue!

It's a waste of time so far as fretsaws are concerned! Take a tip from some of the largest firms in the country who use thousands of grosses of Hobbies fretsaws a year. Why? Because they know from practical experience that Hobbies fretsaws are the sharpest and strongest with the longest life.

HOBBIES BRITISH FRETSAWS

Look for the Coloured Label

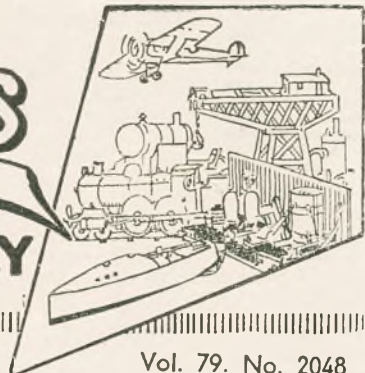


<p>BLUE LABEL Sizes 0 to 4 4$\frac{1}{2}$d. Doz. 4/- Gross Post 1$\frac{1}{2}$d.</p>	<p>YELLOW LABEL Sizes 00 to 6 6d. Doz. 5/6 Gross Post 1$\frac{1}{2}$d.</p>	<p>SILVER LABEL Sizes 0 to 4 9d. Doz. 8/6 Gross Post 1$\frac{1}{2}$d.</p>
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Hobbies

WEEKLY



January 19th. 1935

Letters should be addressed to
The Editor, Hobbies Weekly,
Dereham, Norfolk.

Vol. 79. No. 2048

THE "What's Wrong?" Competition in our Christmas Number brought in a very large number of entries, but only three with the same list as made by the artist. Some found mistakes which were not there! The three main prizes have been forwarded to D. J. Knowles of Letchworth, Russell D. Emmony of Nottingham and S. Hellewell of Tooting Junction, London.

LOOK out next week for an especially novel mechanical football game. I have had one of our experts at work on one some time, and the result is very ingenious and at the same time quite simple. It is after the style of those popular penny-in-the-slot machines and some exciting games can be enjoyed. A large chart of parts is given and complete details on how to make the game up in plywood. It is certainly very intriguing and I am sure you will all want to make it up.

ANOTHER point I want to mention is that gifts are now being given to those who collect the labels off the Hobbies Fretsaw blades they use. The gift can be of your own choice. If you have not seen anything about it ask for a leaflet explaining it, next time you are writing to me or to Hobbies Ltd.

DAWSON of Clapham, Beds., tells me he has been offered £2 for his model of the Lord Mayor's Coach design. I wonder if anybody can beat that?

THERE is an interesting history attached to the model of "Coronation," the ship photographed here. It was built by Isaac Betts of Portsmouth in 1684 for the Duke of York,



who later became King James II, and is the last word in model ships, being exquisitely carved and having every detail. Mr. Max. Williams of New York City is the owner of the ship now and the model is valued at \$20,000.

NOTES of the WEEK

"What's Wrong?" Winners—
Gifts for Saw Labels—A Football Game Next Week—Club Members Wanted—A Valuable Model.

HERE is another request from a reader—this time for other readers in Harringay, Hornsey or Wood Green, London, who would like to band together in the mutual interest of Hobbies. If so will they write to H. Phelps at 122 Roseberry Gardens, Harringay. London, N.4.

D. COWLEY of 51 Norfolk Street, Northampton and F. T. Counsell of 40 Cambridge Mansions, Cambridge Road, Battersea, S.W.11 are also energetic readers who would like to form Hobby Clubs in their respective districts. Will other keen readers get in touch with them please?

READERS who are ardent photographers will be glad of the opportunity to enter a competition run by Johnson and Sons, of Hendon, London, N.W.4. A holiday contest by them had a record number of entries and no doubt some of our own readers were winners. A new "Flashlight" Competition is now running, and closes at the end of February. Readers wishing to enter can obtain all particulars from the address given, if they mention Hobbies Weekly.

ANOTHER of those interesting lessons on the use of fretwork tools is given on page 394 of this issue.

The Editor

For original Tips published the sender will receive one of Hobbies own Pocket Tape Measures. We cannot acknowledge or print all tips sent in.

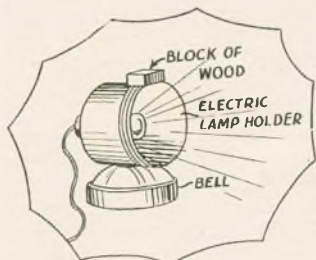
HINTS AND TIPS

WORTH KNOWING

Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible

A Working model Searchlight

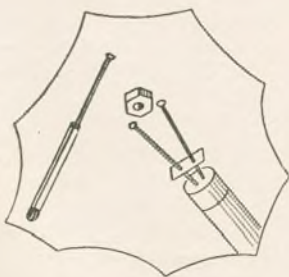
WHEN you have an old acetylene cycle lamp that is no longer in use take the part which is at the bottom holding the china portion. It is usually made



of brass. If a torch bulb is put in the back of this and wired, it will make a realistic little reflector. The best base to mount it on is the part of the electric bell fixed on the wall which unscrews. This will have a hole in it where the bell push used to fit. Pass a bolt through this and through the hole which is to be found in the reflector.

For Inaccessible Places

SOMETIMES you wish your fingers were longer when you are trying to recover a fallen bolt or screw. Stick two large pins in a pencil eraser, and brace by a piece of folded paper. Have a match with another large pin stuck in the end of it, as shown in drawing. To get the inaccessible screw, simply place the two pinheads over it,



push down the paper brace with the pin in the matchstick till the two pins clamp tightly over the screw and then draw it forth.

A Workshop Hint

WHEN filing metal it is often found that small pieces of the metal cling to the file and leave nasty marks on the surface which you are filing. This can be remedied by rubbing the surface of the file with a piece of chalk. Any metal which sticks is now disposed of by simply tapping the file.

Unscrewing a Tight Stopper

THE best way to unscrew a tight stopper is to wrap a small piece of emery paper (business side inwards) round the lid and then round both put a loop of string. Thread one end of the



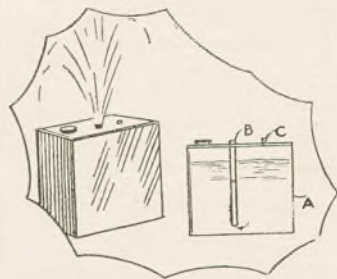
loop through the other and into the former put the end of a small stick. The loop, the emery paper and the stick will together give you a leverage that few lids will be able to resist.

Silver Paper Framing

TO frame a picture with silver paper you obtain coloured silver paper, a piece of glass, clear gum, and stiff backing paper. Stick the silver paper to the back of the picture about a 1/4 in. Then stick the face of the silver paper to the glass, stick the backing to the silver paper only, and finish it with the edging. The silver paper is easily cut with a glass cutter, or a spare piece of glass.

Garden Fountain

OBTAIN an old petrol or oil can (A) and drill a hole 1/8 in in the top. Fix through it a piece of glass tubing (B) about 8 ins. long and drill another hole a few



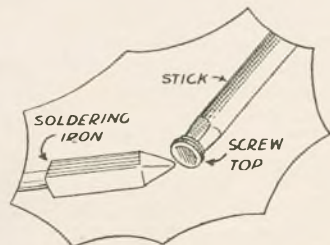
inches away to fit a football valve (C). Almost fill the can with water. Connect a bicycle pump and pump for 25 times. The water will then be forced up the tube, rising to 3ft. Hidden among some ferns in the garden it will work for three or four hours without further attention.

A Non-Slip Ruler

THE ordinary ruler has a habit of slipping on glazed paper. This can be remedied by cutting two small squares or circles of inner-tube rubber and sticking one to each end of the underside of the ruler. A small rubber puncture patch will do equally well. The ruler can now be held in place with one finger.

A Solder Tip

WHEN short of solder, put the screw top of a tooth-paste tube on the end of a sharpened stick, and use as the real



thing. It will be found to solder just as well, and help you out of trouble.

FRETWORK



OUR FREE DESIGN CHART

If you want to undertake a typical piece of fretwork you cannot do better than make up a Hanging Vase Holder from this week's design (No. 2048). Whilst not being terribly intricate, it contains those graceful curves and lines which appeal so much to the real craftsman with a fretsaw. The features of the pattern are of oriental style, and no one can deny the excellence with which it is worked out to make a practicable as well as an attractive piece of work.

The illustration herewith does not do it real justice, because when cut out in fretwood, hung by ornamental chains and decorated with silk tassels, it is one of the most effective pieces of work that could be imagined.

The Wood and Vase

The cost of the wood supplied by Hobbies Ltd. is only 2/-, and all the boards are of clean, nicely grained whitewood which lend themselves to a piece of work like this. In addition to the wood, of course, there is the additional cost of a handsome green ware vase which is supplied for 1/- and fits into the work beautifully.

Now let us look at the design itself before pasting the patterns to their respective boards. It is always advisable to make sure you know the construction of the article before beginning the work because, by realizing how each part fits to other parts you can keep an eye on the joints during cutting.

Here we have two crossing up-rights which are held together by an ornamental platform rim. Little strengthening pieces are also put in the angles at the bottom, and the whole is hung by chains or fancy cords as shown in the picture.

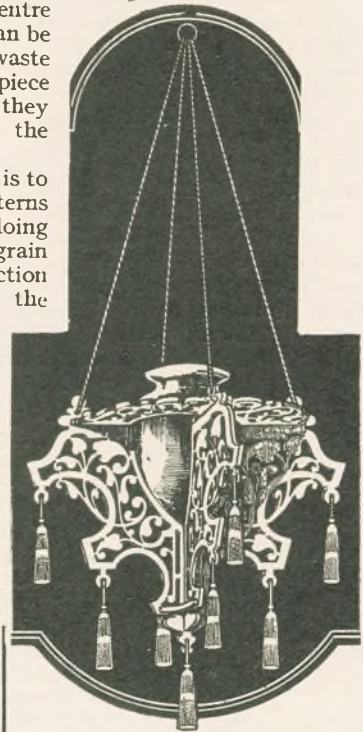
All the work is done in 3/16in. wood, and if the whitewood supplied is not used, endeavour to have a material of a close-grained nature. If an open-grained wood is used, the fretwork is likely to weaken it, and some of the parts become fragile. Beech or satin walnut is the type which should be substituted if whitewood is not used.

The Main Parts

For the two main pieces you require a piece of wood 8½ins. wide and 11½ins. long. Two such pieces are needed. The rim at the top is cut from a piece 8ins. square, whilst the little angle parts

shown in the centre of the pattern can be cut from the waste wood of that piece exactly where they are shown on the design.

The first work is to paste the patterns down, and in doing so, notice the grain runs in the direction indicated by the arrow. This is essential if we are to keep the greatest strength in the various parts. Put the pattern down carefully, pressing it out so there are no air bubbles or wrinkles



A HANGING VASE HOLDER

MATERIALS REQUIRED

For making this design, a parcel of planed whitewood is supplied, costing 2/- or post free 2/6. The greenware vase (No. 6007) is 1/- (post free 1/4). A complete parcel of wood and vase will be sent for 3/6 post paid.

the actual fretted parts. A fine sawblade should be used, and the wood held down firmly to the table to prevent it jumping.

Keep the sawblade running on the cutting line, and watch, not only the part being taken out, but also the adjoining parts as well. This is worth while in order to note the curves which cross the part being cut and to see they run over at a correct angle.

Notice, too, that the design is the same in the corresponding half of the pattern and the exact shape in one half should be exactly noted and followed when the other half is being cut.

It is, indeed, a good plan to cut out a particular

under or in the paper.

The first cutting to be undertaken can be on the two main pieces which halve into each other at A. The outline of the work can be cut first, so reducing the weight of wood and making it easier to turn on the table. The usual care must be taken in cutting

Hanging Vase—(continued)

fret in one half and then to cut the same pattern and piece in the other half immediately. This not only helps to get it correct, but often shows us a better position in which to put the drill hole.

Do not be afraid to put in several drill holes for each piece to be cut out, because these drill holes will allow the saw to turn without having to back a distance. The drill hole is best placed at the widest part of an angle so the blade can be turned in it to go down the other side. An illustration of this is given at Fig. 1.

It will be noted that each of these two pieces has the strengthening bar, and this should be left until the rest of the work has been completed. When cutting the outline the saw should go straight along the top edge of this bar and leave the curve of the vase until later. If the bar illustrated on the pattern is left in, the saw cut will make a last journey along the lines marked X.

It is essential, of course, the two pieces fit nicely together at A A, and care must be taken to get the halving joint of the two parts to slide together fairly easily without undue force.

The cutting of the ornamental rim comes next, and here again care must be taken to see that a good join is made at B and C. These open slots fit over the projecting pieces of the parts already cut, and the inner edge rests on the shelf formed by the straight portion.



Fig. 2—The small angle pieces.

When this platform rim is in place the whole piece of work should be fairly



Fig. 1—The position of drill holes.

rigid, but in order to strengthen at the lower end, four little angle pieces (B) are cut and fitted in to the corners near the bottom. These will serve to strengthen at the halving joint if there is any likelihood of it gaping. Cut the four parts with a true right angle and glue them in where shown on the dotted lines on the pattern and as indicated at Fig. 2. If there is any gaping of the halving joints, a piece of soft string should be put round the article to hold the parts together until the glue of the angle piece is set.

The vase (see Fig. 3) is shaped to fit into the circle and frame work provided, and if it does not bed down comfortably, the inner edge of the wood can be glasspapered down.

If the material used is whitewood, it is not recommended to apply polish as this is liable to cover the feature of the grain and give the material rather a creamy appearance. If the wood is left in its natural state it will be quite effective.

The fancy tassels shown in the picture of the finished article can be made by any needlewoman or can be purchased at most furnishing stores quite cheaply. The hanging is arranged by means of chains or fancy cord. The chain is obtainable at 3d. a yard from Hobbies Ltd., and at the lower end a split ring (3d. per dozen) is required to fit into the hole provided. The four upper ends are fitted into another split ring to provide the proper hanger as illustrated.



Fig. 3—The Vase.

A Small Duplicator

WHEN there are a number of notices or invitations to be made out, it is a toilsome task to have to do all these by hand—and it takes time too.

This is where a handy little duplicator comes in useful.

Not only will it take copies of writing, but small drawings as well, so that notices can be made more attractive and arresting with a little simple decoration.

Made in a most conveniently-sized small tin box 6 by 4 ins., the method of using the duplicator is simple, and it can be used again and again.

Write or draw (or both) on a piece of hard paper with the special pencil provided, damp the

composition in the box, dry it with a cloth, and then press down the paper, the writing face downwards.

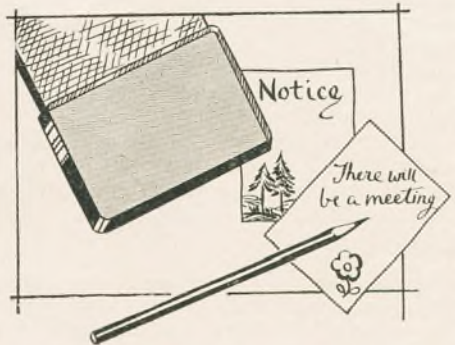
Remove the original and immediately start copying by simply laying plain pieces of paper singly on the negative, and repeating the operation until the number required is done.

It is easy to clean the negative by rubbing over with a damp cloth—and it will clean itself if left for six or seven hours, as the impression left on the composition gradually sinks to the bottom.

The set, complete with

pencil and paper, costs 2/- and is an extremely useful possession both for home, offices or clubs.

The name and address of the firm supplying this duplicator is obtainable on request from the Editor.



Building a Model OO-GAUGE RAILWAY

A continuation of earlier articles which dealt with stations, sheds, bridges, etc. It deals with lineside additions.

THOSE model railway fans who are merely interested in having a circle of track and running trains, have little idea of how much more attractive a layout is if it is made really railway-like.

There is a world of difference between a length of permanent way laid with a few isolated sleepers some inches apart, and with nothing further to give it a finish, and a section of line complete in every detail and really looking its part. It is a matter of little or no expense to do this work in detail and to make the system a thing of beauty, interest and a pleasure to the eye.

A good locomotive and train of rolling stock may be greatly enhanced in their appearance by the expenditure of a little time and thought on permanent way equipment, especially in the smallest gauges.

Lineside Fittings

Some of these lineside details are more or less bound up with the building of the railway itself—retaining walls, ballasting and perfecting the formation, fences, gates and walls, buffer stops, and so forth. Other details are more of the nature of "extras," being a question of adornment, taste and finish. We shall deal with the former first.

Retaining walls consist of representations of masonry or brickwork at points where a portion of the "earthworks" of a railway has to be built back to prevent landslides or collapse. In Fig. 1 are given one or two designs for walls of this type.

In OO-Gauge it is often possible to carry out



Extension lines at station on the North Midland Railway. The metal yard crane and loading gauge can be seen.

the work in stout cardboard reinforced with strip-wood, the latter being used for the projecting piers and pilasters as shown. Or, if preferred, thin fretwood may be called into service, and will, of course, form a more robust finish that will resist warping due to dampness and heat. Where the "earth" formation slopes downwards in parallel with the track, it is often desirable to "step down" the wall in its height to suit the formation.

Merco stone and brick paper, which can be had in a variety of styles, is recommended for the surface finish of these erections, being accurately designed to scale. The paper is simply glued on the surface, and can often be arranged in panels, the piers being first painted a flat-drying concrete colour. This gives the effect of a wall of stone or brick with concrete piers. If it is preferred, strip cardboard may be used in place of wood strip.

Fig. 2 gives a design to scale for OO-Gauge for level-crossing gates. It is not always desirable to make these as working models, but they make for a fine appearance if located at passenger stations and on roadways crossing the line. Their dimensions depend, of course, upon the width and type of the roadway.

They may be made up of 1/16in. wide brass strip, which can be obtained in rolls like wire. The gates are soldered up in pieces quite easily after a little practice with a soldering iron. The uprights are all cut to exact sizes, as also are the horizontals, and are soldered on the corners while held flat on a piece of cardboard or plywood, or other smooth surface.

Do not solder the uprights behind the horizontals, but build them together all on the



Note the track-side equipment in this extension line as part of the West Midland Railway.

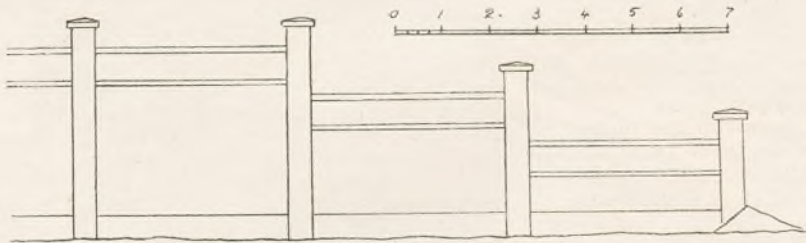
Gauge OO Railway—(continued)

same flat, inserting the uprights *between*. In fitting the diagonals, one of these should run all the way through, and the other may be carried behind the one already fitted. The circular disc may consist of a large metal washer soldered in place and afterwards covered with a thin piece of card, which is painted signal red, the gates being white.

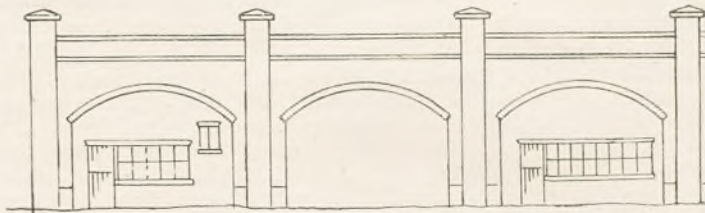
pedestrians have to cross a line in goods yards and elsewhere. This work is carried out by filling in the six-foot and the running way with wood or card strip to the exact height of the rail top, the six-foot way being filled up close to the rail, the running-way having a $1/16$ in. gap left for wheel clearance. Thick roofing felt of the sanded variety can be used.

In Fig. 3 there is shown a method, copied from actual practice, of forming a foot-crossing at a point on a track which has an outer third-rail. Small shaped cardboard safety-boards are set on each side of the conductor rail, and are painted white before fixing.

Designs for simple fences are given in Figs. 4, 5, 6, 7, 8 and 9. Fig. 4 is a plain fence made from wireless busbar wire. The wire is soldered on the uprights of busbar before fixing the fence, and this is not so hard as it looks if the posts are made roughly of greater length than required and



SIMPLE RETAINING WALL



RETAINING WALL WITH OCCUPIED ARCHES

Fig. 1—Two styles of building retaining walls.

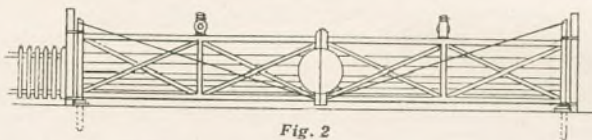


Fig. 2

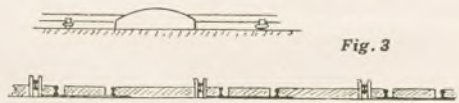


Fig. 3

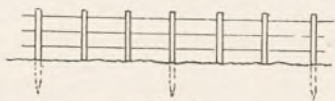


Fig. 4



Fig. 5

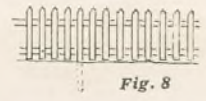


Fig. 8

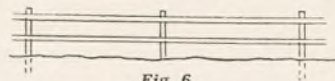


Fig. 6

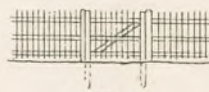


Fig. 7

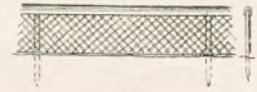


Fig. 9

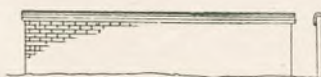
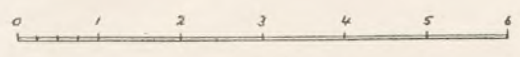


Fig. 10



Figs. 11 and 12

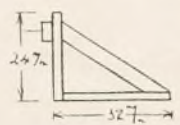
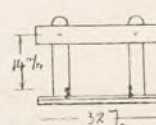
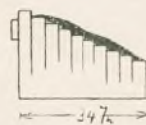
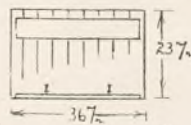


The thin cross-rails are of straightened wire. Brass rod is used for the swivel-posts, which fit into the baseboard; if desired, thick copper telegraph wire may be used. The small lamps are made from tiny OO-Gauge signal lamps, having a small washer soldered on the front. The gates may be made to operate by worm drive and bevel gear, with a turning crank, by fitting these gears under the track.

Footways across tracks are arranged not only at level crossings, but also where vehicles or

afterwards cut off to size when the soldering is finished.

Every third post is left long enough to insert into a hole in the baseboard. Where the earth formation is uneven or undulating, the fence should be arranged accordingly (Fig. 5).



Figs. 13 and 14—Two styles of buffer stops.

Gauge OO Railway—(continued)

If desired, the long posts may be carried right down through the artificial formation to the solid baseboard below, and there forced into holes. This plain fence may also be made from OO-Gauge rail, and a track jig can be used for building it up, the posts being laid in intervening sleeper slots and the two rails being soldered flat down, with a space of $\frac{1}{8}$ in. as in model track.

Or, if $\frac{1}{8}$ -in. is thought too great a distance for spacing the two rails for OO-Gauge fencing, the top rail may be soldered in the jig to the cross pieces, and then the second rail added with the use of a piece of $\frac{1}{8}$ in. strip wood for a gauge. A fence like this is shown in Fig. 6.

Other types, in Figs. 7, 8, 9 respectively, are soldered up (a) from pins in their papers; (b) from strips of very thin brass; (c) from wire gauze having a top rail of discarded umbrella rib, inverted so as to take the edge of the gauze. Gates are represented by adding upright and diagonal strips.

In Fig. 10 there is an idea for making a model brick wall from a strip of cardboard or fretwood. The material is covered with scale brick or stone paper (OO-Gauge), and the wall is capped with a strip of umbrella rib, which is painted concrete colour.

The wall is fixed by attaching it to the ends of buildings, or by fixing it with pins and glue to the baseboard.

Mile posts and gradient signs are an integral part of the railway formation, so to speak, and are easily made to the designs in Figs. 11 and 12. Here, tinsplate and metal are soldered up as required, the mileposts being given a backward rake as indicated. These are painted white and lettered in black.

For fixing and locating mileposts, a given distance—say one yard—may be counted as a mile. The gradient signs may bear correct gradient indications. The last of the track-side fixtures bearing a close connection to the actual track layout are buffer stops.

Two designs for these are given in Figs. 13 and 14. One of these is built up from stripwood and glue, the other from cardboard. The latter forms a kind of box receptacle, which is filled up, after being painted flat black, with plastic wood to represent earth, the surface of which is glued and coated with actual earth, or sand, to give a realistic appearance. In a later article other types, to be made from rail, will be described.

(To be Continued).



Looking down on the Passenger Section of a Station and showing the track-side fittings.

Ship Transfer Suggestions

HAVE you thought how these delightful colour pictures can be used effectively and cheaply on panels of wood? The transfers are brilliantly printed in pairs for right and left hand, and sold 1 $\frac{1}{2}$ in., 3 in., and 6 in. high at 1 $\frac{1}{2}$ d., 3 d. and 6 d. respectively.

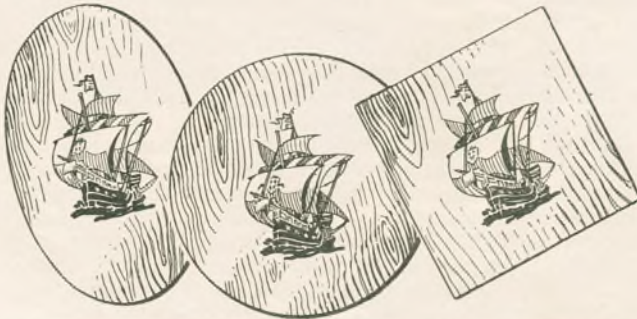
They can be put on little

circular or rectangular pieces of wood as table mats. Or the shapes shown can be used as overlays for doors, box lids or ends of book racks. Again, there is a large size transfer (9 in. at 1/- pair) which would beautify the wardrobe door, with smaller ones on the drawers.

Another suggestion is the

addition of a length of fancy beading below the ship, as seen in the picture, or even a complete frame of the material. The transfers are obtainable from Hobbies Ltd., and are a real cheap picture effect worth having.

The pictures are put on the wood easily and quickly and the board afterwards given a final coat of polish or varnish in the usual way.



How to Learn VENTRILOQUISM

IT is not commonly known that ventriloquism is an art which can be acquired by diligent practice. Most people have the idea that the ventriloquist is endowed with a gift which is denied to them. Yet this is not so, and with patience and a little study, the average person can produce quite passable performances.

Most displays of ventriloquism depend on suggestion for their success. The ventriloquist must so control his actions that the attention of the audience is drawn to the point from which the voice is supposed to radiate. But first of all the beginner must learn how to project his voice.

Voice Control

This process demands much practice, and some persons will be able to achieve the desired results more quickly than others. The voice must be made to sound as though at a distance, and this is done by pressing the tongue against the teeth, thus enclosing a cavity between the left cheek and teeth. The voice is produced in this cavity and has a very limited field of radiation. The ventriloquist must always confine the radiation to as small an area as possible. When speaking in this cavity the breath must be under perfect control and care must be taken that during the actual period of speaking very little breath is expelled.

Make-Believe

As previously mentioned, it is highly important to draw the attention of the audience to the point from which the sound is supposed to come. This can be done by suggestion—for instance, by looking in that direction, or pointing. In some cases direct reference can be made to the direction of the voice, for example "He is over there" or "Are you down in the cellar?"

Distance and Hearing

Much success in ventriloquism depends on the fact that we subconsciously give a direction to the sounds we hear by using our eyes. Thus, if our attention has been drawn to a certain spot, and our ears receive a sound which is as loud as we should expect it for that given distance, then we believe that it has come from that spot even though the original sound was formed much nearer in the ventriloquist's mouth.

Now, supposing the pitch, quality and duration of a sound remain equal, but a graduated reduction is made in the loudness, then we imagine the sound to be arriving from a greater and greater distance. Our estimate of distance is based on memory of a certain sound previously heard, compared with a present perception.

It is easy to realise how simple it is to deceive the

ear by the following example. If a person sitting in a house hears a car approaching, he can only say that it is approaching, passing, or receding, as the case may be, but he cannot tell with certainty whether it is coming from the right or left. But if he turned to the right and concentrated on *imagining* it was approaching in that direction, his ears would tell him that it was.

Thus, when our attention is skilfully drawn to a particular spot by the ventriloquist, we actually hear the sound coming from that spot, because the ventriloquist focuses his voice and causes it to sound muffled and indistinct.

Use of the Lips

In order to produce a voice appearing to come from behind a closed door, the mouth is slightly opened and the jaws fixed in this position. The tongue is then rolled back into a ball and the words spoken. The sound is then produced in the pharynx and not in the mouth, as normally. It is very important that the jaws are held rigid.

To obtain the effect of a voice nearer to the ventriloquist (i.e. when the door is opened) no alteration in the pitch is made, but the sound is produced in another part of the mouth. This is done by pressing the lips closely together, drawing one corner of the mouth downwards or towards the ear, and opening this corner only. The words are then "breathed" from this opening, and are not formed distinctly, but expelled in short puffs for each word and as loudly as possible. This causes the illusion that the same voice is heard, but now more closely as the door is opened.

The Imitations

When it is desired to make a voice sound as if at a distance, the words are formed at the back part of the roof of the mouth. The lower jaw is drawn back and held there with the mouth open, causing the palate to be raised and drawn nearer to the pharynx. The manner in which the breath is used to produce the desired effect is most important.

When speaking to the imaginary person the words are expelled with a deep quick breath, but the reply is made with the breath held back and expelled very slowly and the voice will come in a muffled and subdued manner, little above a whisper but clearly distinguishable.

In any imitated voice, the consonants must be scarcely articulated at all, as this will disturb the arrangement of the lips and the cavity of the mouth.

The importance of suggestion cannot be over-emphasised, and the amateur should always be careful that the attention of the audience is drawn to the correct spot, and diverted from himself.

The AMATEUR

ELECTRICIAN



IN an early part of this series, instructions were given for building a tantalum charger for use with accumulators. Since that was written, however, much experimental work has been done on the subject. The chief difficulties to be overcome were the creeping of the acid and the connection to the tantalum strip.

It was found impossible to braze, silver or soft solder this metal so the methods of connecting were a crocodile clip and twisting the two together. But, however much these joints were protected, after about five days use the wires corroded and ultimately fell apart. Various other methods were tried but all failed until the following method was evolved. Since the apparatus was made it has not been necessary to adjust one thing and it is still charging at the maximum rate.

A Motor Generator is for normal charging, but since improving the tantalum apparatus this has been used on six volt cells with great success, and will pass one amp. quite easily.

In a Bottle

Obtain a large wine bottle of about one quart capacity and cut it off near the bottom. This is quite a simple operation if you fill the bottle to a depth of about 2 ins. with thick machine oil and then plunge a red hot poker or iron bar down the neck and into the oil. The bottle will crack round about $\frac{1}{4}$ in. above the oil level. This method rarely fails and has been used successfully to cut down glass

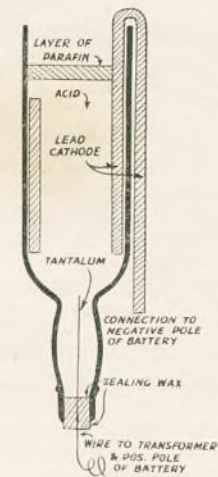


Fig. 1—The Rectifying Unit.

battery boxes about twelve inches square.

Clean any oil from the bottle and obtain a tight fitting rubber stopper for the neck. In this make a longitudinal cut with a razor blade $\frac{1}{4}$ in. deep and force the tantalum strip into it. The connecting wire should have been previously twisted round the strip and the join may be forced into the protruding end of the cork so the maximum amount of tantalum is in the acid. Insert the stopper as hard as possible into the neck of the

bottle and then run a little sealing wax round it both inside and out. The bottle is now filled with water to test the stopper; a cork may be used here if it is soaked for some hours in molten paraffin wax.

The kathode is made in the form of a spiral of pure sheet lead strip about $\frac{1}{4}$ in. wide. This should just fit inside the bottle and the end is taken down the outside for connection to the negative pole of the battery with a flexible lead soldered to it (see Fig. 1).

The Acid

Make a stand similar to a filter funnel rack from $\frac{1}{2}$ in. wood and mount the bottle in it. It only remains to fill with accumulator acid of S.G. 1.250, and the apparatus is completed. A teaspoonful of clean iron filings should be added to each pint of acid and allowed to dissolve before connecting up. A little paraffin (ordinary illuminating oil), is poured to a depth of $\frac{1}{2}$ in. on to the surface of the acid to prevent creeping. Machine oil can be used, but it generally froths.

Charging

The rectifier is now complete and will work continually without attention. For the various circuits reference should be made to the previous article, but for those readers who have not this article, use a transformer with an output of about 10 watts, i.e., about 20 volts on no load. This will allow accumulators of six volts to be charged at 1 amp.

Consumption

The power consumption being only ten watts, the apparatus is very economical to run. Kits of complete parts are on the market at 7/6 and 10/6 and these are very good and have been fully tested by us. The circuit is given in Fig. 2.

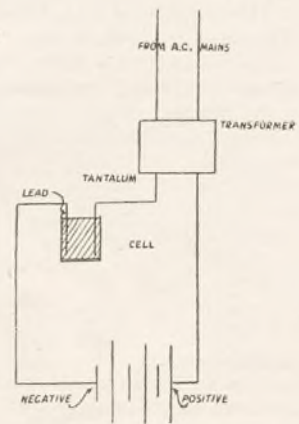


Fig. 2—The Circuit.



CONTINUING our notes about the fretsaw frame, we must not omit to point out to the reader the advantages of the latest type to be produced. It is illustrated at Fig. 1 and is called the Toggle Lever Frame.

The toggle, it may be noted, is the name given to an appliance for transmitting force at right-angles

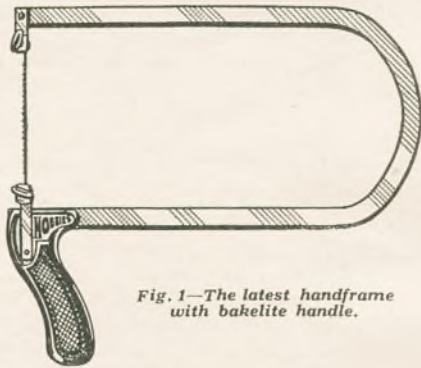


Fig. 1—The latest handframe with bakelite handle.

to its direction and a glance at the illustration shows how this is effected in the use of the frame.

The handle is pivoted (which incidentally allows it to be folded into much smaller compass) at the point marked A. The saw grip (of the spring-open type already described) is also pivoted at B, and in Fig. 2 the angle at which the blade is inserted is shown. This is quite a simple operation for the frame does not have to be sprung as in the ordinary type.

About $\frac{1}{2}$ in. of the blade is inserted in each of the clamps with the saw taut, as shown. It must be put in quite tightly to withstand the tension made by the handle turning to its proper cutting position. It is merely, and easily, pressed downwards to follow the direction indicated by the dotted lines. In so doing, it forces the arms of the frame together and so makes a simple and satisfactory tension on the blade.

The Toggle

This Toggle Frame is certainly an advance on its predecessors because of the ease with which the correct saw tension can be obtained. The ordinary handle is a metal one, but the frame can be obtained with a

handsome and comfortable bakelite handle, as is illustrated at Fig. 1. These are manufactured only by Hobbies Ltd.

A word or two on sizes of frames generally may be helpful. They are given in the catalogues varying from 9ins. to 16ins., and this measurement is the actual distance between the sawblade and the back of the frame at its deepest point.

The third of a new Series—The Handframe Blades to Use—Different Grades—Direction of Cutting—The Proper Pressure—Turning the Blade.

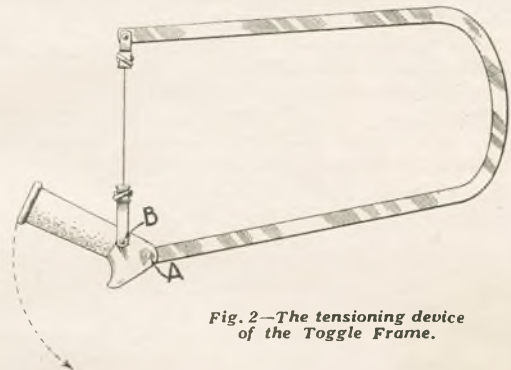


Fig. 2—The tensioning device of the Toggle Frame.

This means that if you have a 12in. frame you can cut a piece of wood just 12ins. long without the necessity for turning or withdrawing. With a 16in. frame you can go 16ins. into a board, and so on.

The Best Size

Now, the most popular size is the 14in. for this will allow cutting all the normal work the beginner is likely to need.

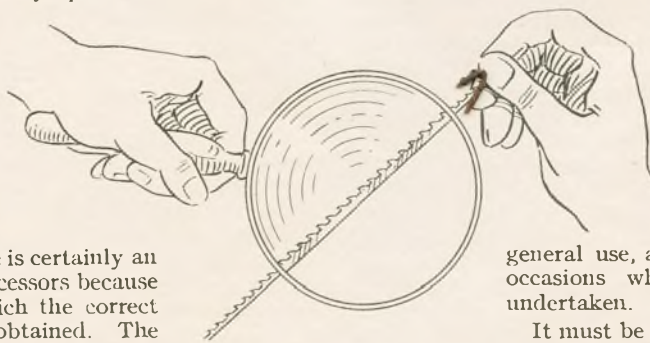


Fig. 3—Note the teeth shape when magnified.

Of course, the larger the frame the heavier its weight, and a good plan is to have two frames,—one for small cutting and one for large work. In that case it is advisable to have a 12in. frame for general use, and a 16in. frame for occasions when large cutting is undertaken.

It must be remembered, too, that although a 12in. frame will cut that distance straight, the saw cannot be

The Art of Fretwork—(continued)

turned because the metal is close up to the wood. A certain distance must be allowed for turning or sweeping, and this, of course, depends on the width of the work.

All the same, it is always possible to compromise because there is the opportunity of cutting from both ends of the work. Having gone as far as possible into the part from one way, the board can be turned and a start made from the opposite way until the cuts join. By this means, it is possible to cut a 20-in. length with a 12-in. frame, allowing a slight amount of turning.

From the handframe, we turn to the saw-

Fig. 4—How to tell the cutting edge of the teeth.

blade itself. Now this is a thin piece of steel on which a number of teeth are cut in the same way as an ordinary tenon saw. Each blade, if properly made, goes through half a dozen different processes before it attains perfection, and visitors to Hobbies Works are always most impressed by the clever and intricate machinery which is needed at each stage.

These actual processes do not matter here, but it is sufficient to say that inferior and foreign blades do not have this attention and in consequence, are frequently of little use. They are made from steel which soon loses its cutting edge or will not stand the tension and soon snap.

Use Reliable Blades

It is, therefore, never worth trying to save money on cheap blades. They do not cut so well, nor do they last so long. In consequence, more have to be bought than would be the case if better blades were purchased in the first instance.

The teeth of the blade are surprisingly sharp and will cut wood up to 1-in. thick. They are properly shaped, and under a magnifying glass look like the illustration at Fig. 3.

As can be seen there, the teeth point in one direction, and although it cannot easily be seen, one can always tell which it is by running the blade along between the finger and thumb (see Fig. 4). The cutting is always done on the down stroke so the blade must be inserted in the frame with the teeth pointing downwards.

The Grade to Use

As previously mentioned, there are various

grades varying from No. 00 to No. 6 in the popular make. These grades are worth noting, for obviously, it is asking for breakages to use a very fine blade (00) on a coarse and thick piece of wood. That size is used on thin and fine work, and a course blade (No. 5 or 6) on rough work.

The best all-round size for general usage is the No. 1 or 2, but the keen worker will have a selection of fine, medium and coarse, so he can accommodate them to the work in hand.

It may seem to the beginner that sawblades are always breaking. He gets a little tired of having them snap, and is apt to believe it a costly and troublesome business.

But that is only because he is a beginner. As he learns the proper tension and pressure, he will reduce his breakages. Very soon he will be able to do quite a lot of work without a single broken blade.

Have Patience

The trouble of the beginner is usually that he is in too much of a hurry. He presses his blade through the wood so it takes the shape shown at Fig. 5. The more he presses forward the greater the strain, until, of course, the saw snaps.

Actually, the blade cuts quite easily and smoothly without being bent in the middle, and the beginner will do well to practise some cutting on waste wood until he has become accustomed to the correct pressure.

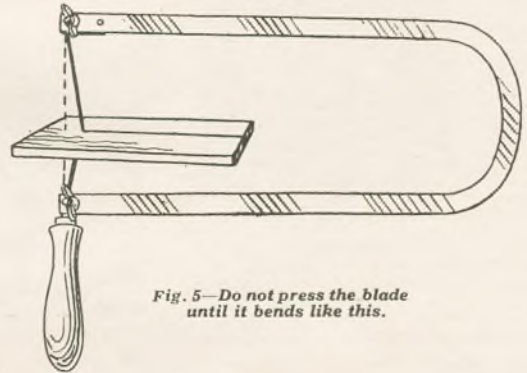


Fig. 5—Do not press the blade until it bends like this.

The cutting is done by a rapid up and down motion. Hold the work firmly to the special cutting table (about which, more later). The actual speed of the motion cannot be explained but it should be fairly rapid, particularly when turning the saw in the wood.

Turning the Blade

That is another cause of breakage—an attempt is made to turn the blade when it is stationary. The depth of the saw from back to front is greater than its width, so it is obviously impossible to turn it without making space. This is done by moving the frame rapidly up and down so the wood turns without actually going forward. That is another useful experience the beginner can practise in his first work.

(To be Continued)

NOTE—The previous articles in this series appeared in our issues dated December 22nd and January 5th.

READERS' SNAPS



THIS Bluebird Model, made by Willie McMurray of Gatehouse, Scotland, carried off a 1st Class Certificate in a Scout Exhibition at Glasgow. A worthy piece of work.



A PICTURE from New Zealand. J. P. Harding of Taranaki has reason to be proud of his accumulated specimens of a variety of popular designs.

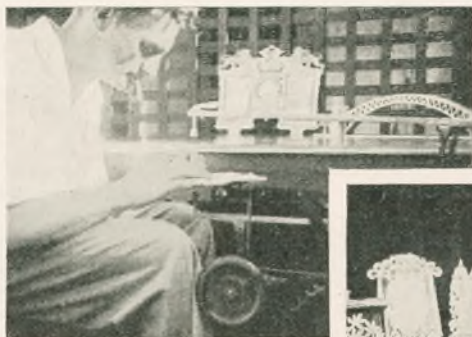


MASTER D. Greenwood of Ipswich took a prize of £1 at an Exhibition with his model of St. Paul's Cathedral, whilst the motto he holds was cut when only 11 years old.



ANOTHER popular model—The Victory—as made by Master W. Clarke of City Road, London. It is an excellent piece of work.

ABOVE is a Doll's House made by Mr. K. A. North of Kingston, Wilts., for his little daughter, whilst the picture on the left is from Eas! Brunswick, Victoria, Australia, where Arnold Turner carries on the good work as a reader of over 20 years.

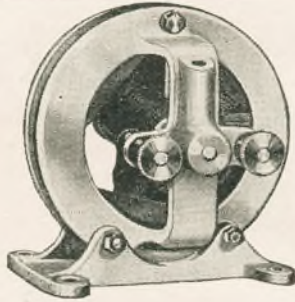


YET Mr. W. G. Galer II (above) of Maida Vale, London, has made and sold 400 articles, will be given shortly in these pages.



A postal order for 2/6 is sent in payment of all photographs used in these pages, although we cannot guarantee to use all sent in.

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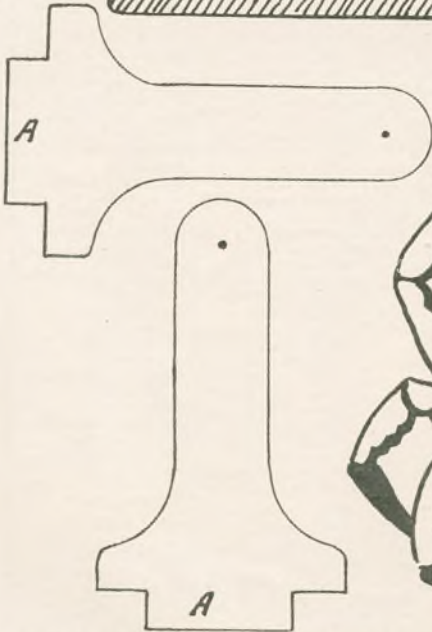
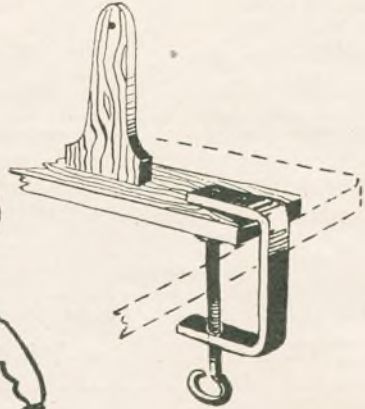
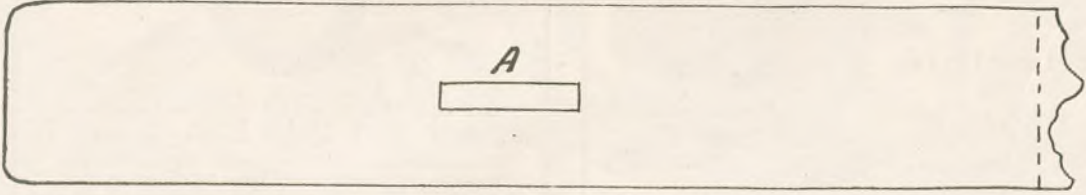
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TELEGRAMS: BENETCOL 61070, SHEFFIELD.



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THE CRAWLING CRABS



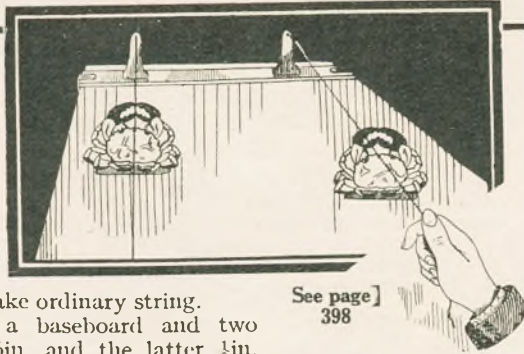
The CRAWLING CRAB GAME

A NOVEL little game can be made very simply from the crab patterns illustrated on the facing page. They are given full size and should be cut out in $\frac{1}{4}$ in. wood. At the point indicated by a dot between the two eyes, a hole should be made large enough to take ordinary string.

A stand is made by a baseboard and two uprights, the former $\frac{3}{16}$ in. and the latter $\frac{1}{2}$ in. thick. Half only of the baseboard is shown, but it is a simple matter to transfer the pattern again on the opposite side of the dotted centre line. The complete base will then be 10 $\frac{1}{2}$ ins. long and just 1 in. wide.

Mortises are cut at A—one in each half, of course. The two uprights have a small hole drilled at the top where shown. Be careful to get the projecting tenon A a good fit into the base, and finally glue it in place there.

Thus, we have two uprights, and these are



steps. The game, of course, is to be the winner out of the two.

The paper of the crabs themselves is left on the wood, and can be coloured up with paints if desired.

On the other hand, all the patterns are cleaned off the stand, and it will be as well to paint these over jet black or some bright coloured enamel.

The base is fixed, as can be seen in the detail, by means of two light fretwork clamps, the position of the table being indicated by the dotted lines.

HOBBIES LEAGUE CORRESPONDENCE CLUB

These Members of Hobbies League would like to get in touch with other readers and so form pen friendships which will undoubtedly prove interesting to all. In this way, one has a wide circle of friends and increased knowledge in people and places, not only in one's own country, but all over the world. Members should write direct to the addresses given, stating their full address and age, and adding any hobbies in which they are interested. Hundreds of members have already taken advantage of this Correspondence Club in this way and others who wish to do so should notify the Registrar with the necessary particulars.

NAME	ADDRESS	WANTS FRIENDS	INTERESTS. Etc.
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Basil Downey.	Brooklands Road, New Plymouth, Taranaki, New Zealand.	British Isles.	Fretwork, Woodwork, Model Aircraft Building.
D. Raja.	Fretworker and Amateur Photographer, Opp. Tangana Hotel, Kilindini Rd., Mombasa, East Africa.	Anywhere.	Anything.
T. E. Karachiwalla.	Philatelic Expert, P.O. Box 196, Kampala, Uganda.	Anywhere.	Fretwork, Carpentry.
H. A. Beaumont.	42 Duke Street, Wisbech, E.W.	Anywhere.	Anything.
T. Sike Shu.	c/o U Po Shan, B-O-C Agent, Thongwa, Hanthawaddy Dist. Burma.	Anywhere.	Anything.
N. Piper.	Ardlui, Shibdon Bank, Blaydon-on-Tyne, Co. Durham.	English Speaking people.	Fretwork, Carpentry, Science, Swimming.
I. S. Kurwa.	"Kurwa Castle," Walkeshwar Road, Malabar Hill, Bombay, India.	Canada.	Anything.
M. Cotton.	Lawhitton Rectory, Launceston, Cornwall.	English Speaking people.	Fretwork, P. Culture, Sport.
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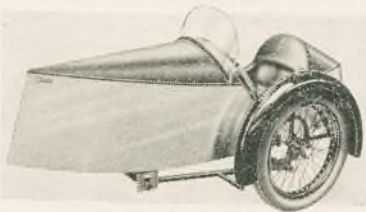
Sidecars

IT is particularly during the winter that our thoughts turn towards comfort and these generally bring them to question. "What about a sidecar"?

Some say that sidecar outfits overturn. So they do! Anything from a pancake to a Bentley will turn over if you so wish, but when one's ambition is to remain right side up and one's manœuvres are carried out with that aim in view, then the motor cycle sidecar outfit is one of the safest means of locomotion on the road.

When a lot of town driving has to be done in all weathers, the sidecar outfit scores over the solo bike because the fear of skidding is minimized.

The choice of sidecars is wide. 100 m.p.h. models, with less spring in them than the average dance floor, can be attached to bikes that were planned to take grandfather to the bowling green. And veritable taxis can be coupled to machines that use so little petrol they can almost be called teetotalers.



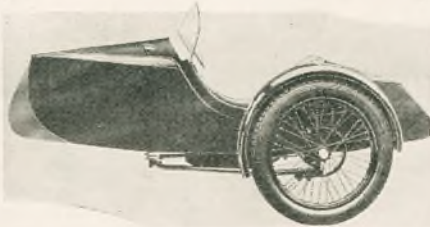
The Watsonian "Schneider Sports."

Most sidecar manufacturers, however, recommend their various models for specified engine sizes, and it is advisable to keep to them.

At first it is a bit tricky driving with a sidecar. The camber of the road tilts the machine so that should one momentarily imagine one is solo, one tries to get balance by steering out of the true course. The writer was teaching a friend the art of sidecar driving and he (the friend) imagined himself solo. So solo, in fact, that both of us paid several painful visits to the local hospital!

Judging the distance of the sidecar wheel from the kerb is a

problem that can be solved by placing the outfit so that the wheel is nearly touching this and then noting the exact position of the machine's wheels.



The Noxall "Comet" Sidecar.

Supposing they are three feet from the kerb, then all that has to be done is remember always to stop the machine with a three-foot clearance on the near side.

Skilled motor cyclists resort to several tricks to aid fast sidecar cornering. When turning to the *left*, accelerate, thereby making the machine travel around the sidecar, as it were. When turning to the *right*, close the throttle, thus allowing the sidecar to swing around by its own inertia.

After a while you will be able to drive along with the sidecar wheel off the ground—an apparently dangerous feat. Actually, there is nothing in it except that the frame gets well tested!

Reducing Weight

ULTRA-MODERN machines are lighter per H.P. than their forerunners. Motor cycle manufacturers are spending a lot to reduce an ounce here and an ounce there, but who can wonder at their being disheartened when they see the extra weight that

This Week's Gadget CHAIN OILER

Inaccessible chains, being difficult to oil, are frequently forgotten until too late. A chain oiler, fixed permanently to the machine ensures silky running. This can be bought from most motor cycle accessory dealers, or from J. Crose, 379, Euston Road, London, N.W.1., for 4/6.

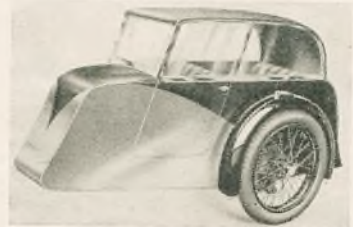
many motor cyclists pile on to their bikes?

When you have a few minutes to spare, try lightening your machine as much as possible. Anything that is not really useful, off with it! Suppose you succeed in "reducing" ten pounds. Your acceleration will be slightly better and hill-climbing improved. Petrol consumption will be a little lower, too. Probably, you will not notice any of these, yet the difference is there, and in tuning of all kinds, it is the little, and apparently unimportant things that count.

Long distance races are often won by split seconds, and who knows what trivial detail the winner attended to in order to get in front of his rival?

The New Rider

HE generally rides with a smile of satisfaction, which turns to a look of apprehension should he accidentally stall his engine; even though he may be travelling along the 8 m.p.h. limit promenade, he wears goggles, and



The Watsonian De Luxe Coupé.

always wears cycling leggings.

Takes a delight in overtaking Austin Sevens, yet pretends not to notice passing O.H.V. Nortons. Insists on the recommended grade of oil, and frequently runs on Aviation Shell. His driving methods are careful in the extreme, although his negotiation of a narrow space causes both himself and others a bit of a thrill. If you do not happen to be a motor cyclist he delights in showing you his driving licence.

Knows the name and history of every T.T. star. His greatest ambition costs £25 down, and one day he will get it, but already he is a true motor cyclist.

MORE COMPLETE PARTS FOR OUR CIRCUS



Fig. 1—The Lion Figure.

WE present our readers this week with the third of our series of Circus designs, and we hope that all those who are making them up will have the patience to tide over the interval that must be made between the several distinct parts that are being published. When the Circus is complete it will make a unique toy, which should give hours of amusement to the younger members of the family.

Three distinct items are included here and they consist of two performing lions and a troupe of lady gymnasts who perform upon the horizontal bar. The latter is a working model, and should give life to the circus programme and prove a strong and popular favourite.

The Animals

To help to fill the "Ring" of the circus we shall need several stand-up models and the two performing lions just mentioned form ideal backings for the working models.

At Fig. 1 we see the animal perched upon two gaily decorated pedestals, and the squared diagram (Fig. 2) should form an adequate guide for enlarging on to the plywood ready for cutting out with the fretsaw. On a piece of 3/16in. plywood 5ins. long by 4 1/2ins. wide, set out in pencil, the 1/2in. squares shown using a ruler and a set square to keep the angles at right angles.

Carefully draw in the outline following each square and when done, line in with a black pencil to give a definite line for cutting. Use a fine saw—too coarse a saw will rip the back layer of the plywood and so spoil the clean edge effect which should be aimed at. Glasspaper the edges carefully ready for painting up.



Fig. 5—Working model acrobats.

A new and popular series for the fretsaw. Other accessories towards the building of a complete circus have already appeared (in our issues dated Dec. 8th and 22nd) and others will be given. A complete parcel of wood is supplied as stated, and full size drawings of the animals will be sent if 1d. is added for postage.

The second performing lion is slightly more elaborate, and there are one or two more internal cuttings to be made in this. It is suggested that the whip the lady trainer is holding be made separately from a piece of harder wood with the grain running lengthways of course, and a waxed cord attached to the upper end to form the lash. Fig. 4 gives a crossed diagram as a guide for enlarging, which is carried out as before advised and cut with a fine saw.

Each of the two cut-outs is fixed into a base so they stand up firmly. These bases are formed from Hobbies grooved moulding (No. 48b). Cut

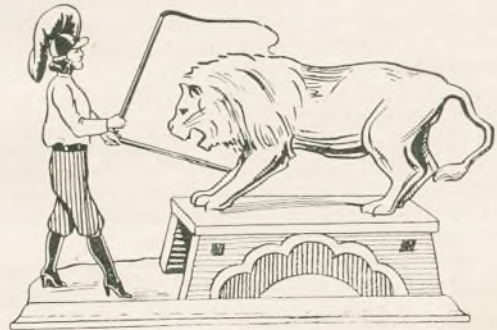


Fig. 3—The Lion and trainer statuette.

off two pieces of the moulding, one 4ins. long, and the other 6ins. long and after gluing in the plywood figures shape off the ends to the same profile as the moulding. This shaping can be done with the fretsaw quite easily.

Mechanical Figures

The working figures are simple in action and revolve about a horizontal bar. This has a pulley at one end round which is an endless cord running to a second pully below. A crank and handle are attached to this lower pulley and by slowly turning it the figures perform in a most realistic manner.

Fig. 5 shows the model complete, and Figs. 6 and 7 the working parts which are to be cut out and assembled. Upon a piece

MATERIALS REQUIRED

Wood: 3/16in. Plywood.

- 1 piece 5ins. by 4 1/2ins.
- 1 piece 7ins. by 5ins.
- 1 piece 5ins. by 4 1/2ins.
- 1 piece 8ins. by 5ins.
- 1 piece 8ins. by 3ins.
- 1 piece 3/16in. dowelling 6ins. long.
- 1 piece Base Moulding, No. 48b, 12ins. long.

Circus Figures—(continued)

of $\frac{3}{16}$ in. plywood again measuring 5ins. by $4\frac{1}{2}$ ins. draw in the $\frac{1}{2}$ in. squares and line in and cut out the figures.



Fig. 2—The lion and pedestal.

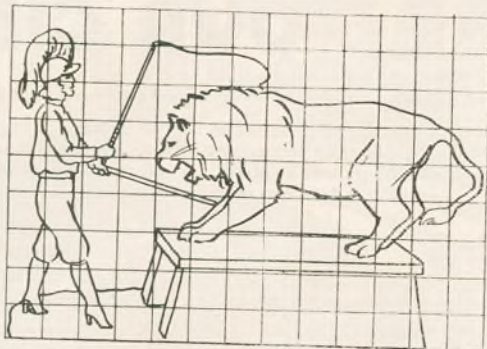


Fig. 4—The outline and features of the performing lion set.

These are attached, it will be observed, to a circle of wood in the middle. This circle of wood should have a small disc of plywood, cut from waste wood glued on each side to form a sufficient fixing for the bar which is a piece of $\frac{3}{16}$ in. dowelling.

Referring now to Fig. 7 the base will be cut first and this is of $\frac{3}{16}$ in. ply cut $3\frac{1}{2}$ ins. long and $2\frac{1}{4}$ ins. wide. At each end of this piece there are to be mortise slots, cut to receive the tenons of the uprights and there will be two of these latter cut from $\frac{3}{16}$ in. plywood to the measurements shown.

First draw one out on the wood and then cut it round and use it as a pattern for marking out the second upright. See that the holes are bored clean and in the correct positions for the crank spindle and for the bar at the top. This bar must turn freely in the two holes. Glue the tenons firmly in the base, and then cut two cross supports to hold the uprights rigid.

Supports and Bar

The shape and measurements for these supports are given in Fig. 7 and they are glued in place with the addition of a pin or two put through for additional fixing. Next cut off a piece of $\frac{3}{16}$ in. dowelling $2\frac{1}{2}$ ins. long and thread it through the holes in the uprights, adding a grooved wheel so it comes immediately inside one of the uprights as shown.

A plain small disc with a $\frac{3}{16}$ in. hole in the centre is added to the other end of the bar to hold it in place and to prevent it from working its way out when connected up with the endless band.

The grooved wheel at the top with that required for the handle spindle at the bottom, can be easily made from $\frac{3}{16}$ in. plywood and a groove filed with either a small round or a triangular file. The top pulley should be $1\frac{1}{4}$ ins. in diam. and the lower one $\frac{7}{8}$ ins.

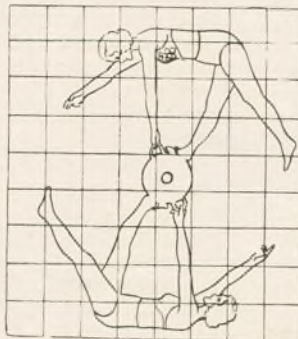


Fig. 6—How to draw the ladies.

The crank piece with the handle attached is shaped up from $\frac{3}{16}$ in. plywood with a piece of dowelling glued in for the handle. A short piece of $\frac{3}{16}$ in. rod is cut off and the crank glued on it and this then pushed through the hole and a plain disc with a $\frac{3}{16}$ in. hole in the centre finally glued on close up against the upright, but having sufficient clearance to allow for free turning of spindle and crank.

The diagram Fig. 7 shows how the band will pass over the two pulleys, fine cord answering for this with as little as possible for smooth

a knot made as small running.

Colouring

Much will depend upon the painting and how it is applied to make these circus units look attractive. Brilliant colours should always be used and the edges coated over. A very good enamel known as Crusoe enamel and sold at 2d. a tin in various colours by Hobbies Ltd. is highly suitable for this kind of work and can be obtained in a variety of tints.

Full size Drawings

As in the case of the other figures we shall be pleased to let any reader have full size drawings of the circus figures, ready to paste to the wood. This will save drawing to the squared diagrams. Write to the Editor and be sure to enclose a stamp for $1\frac{1}{2}$ d. to cover return postage.

Hobbies Ltd. make up a special parcel containing the given parts, Ask for Parcel No. 274 ; it costs only 6d. or, sent by post, 1/-.

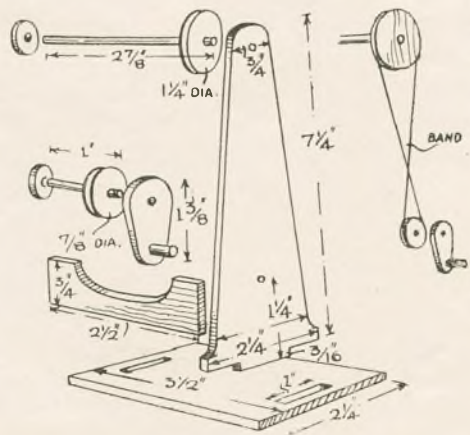


Fig. 7—An enlarged detail of the mechanism of the acrobats.



THE first point to emphasise to anyone who wishes to get really good results with guinea pigs is that they must be kept in very dry quarters indeed. This must always be remembered, for if they overturn their pan of drinking water (as sometimes occurs), the whole of the bedding must be taken out, and fresh dry litter put in at once.

Keep all your guinea pigs, of whatever breed they may be, nice and warm throughout the winter. If you do not, your losses are certain to be severe, and your worries will be many. All guinea pigs which you have, should be kept much cleaner than any of those you see kept by your friends, if you want to get really good results. Dirt is the great enemy of the domesticated guinea pig.

Do not regard guinea pigs as hardy, or being able to take care of themselves as your rabbits are. If you do, you will lose many of them each winter. For this reason it is best to house all guinea pigs in hutches indoors throughout the year, except perhaps for a couple of months during the hottest of our summer weather.

Fresh and Sweet

Feeding is obviously of vast importance if you want to get good results. Offer some really sweet and very fresh meadow hay to start each morning with, and also again in the evening. Place all hay in a rack, to keep it perfectly clean and nice while it is being eaten, and until it is finished.

All food racks must be placed well within easy reach, instead of really being just out of comfortable reach. Otherwise your guinea pigs, like other people's pets, will have to try and climb to get what they want.

Bread and milk, if the bread is well drained from excess of milk, makes a good breakfast for most animals. Try it for yours, warm, two or three times a week

this winter. Whole oats of the heavier and better class kinds may be fed with the bread and milk. Many kinds of green food are very much liked by most guinea pigs, if they are in good health. Let them have some, therefore, each day.

Greenstuffs

Plantain leaves may be fed regularly, and these are nearly always readily obtainable. Watercress, if fresh and not wet, is useful, if you grow your own or are living reasonably near to commercial beds of it. Carrot tops will be found to be readily eaten, and are quite safe, unless very large amounts are fed at a time. Carrots themselves are usually relished, especially in the winter if given warm. They are perfectly safe.

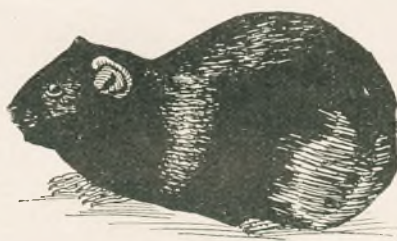
Parsley, if you have any excess of it in your own garden, may be given in moderate quantities as a green food. It is best to mix it with other similar foods. Dandelion leaves are a very useful green food all the year round, and are one of the easiest of these foods to obtain. Chicory tops can well be fed from time to time, especially if you yourself cultivate the plant.

Comfrey is one of the most useful crops to grow for guinea pig green food, and you will never regret sowing some seed of it, if you have a garden large enough of your own. Broccoli leaves are one of the best green foods for guinea pigs in the winter months, and should be fed as dry as possible but not in a flabby withered state.

Cauliflowers

Cauliflower leaves, (free from rain or dew), are another useful type of green food for guinea pigs, especially if fed during the autumn months.

Now what about bedding and general comforts? Well, for Peruvian guinea pigs, use quite long and



3/- Pair of Brushes for 2/-

Hat and coat brushes you will be proud to own. Good quality bristles, polished backs with plated hooks and eyes for hanging. Postage 3d. extra.

For One Week Only

You **MUST** use the **COUPON** on page 3 of cover.

SPECIAL BARGAIN OFFER!

Keeping Guinea Pigs—(continued)

perfectly dry, as well as absolutely fresh, wheat straw. The use of this for their bedding tends to keep their coats cleaner and drier than other much recommended materials, staining of the lighter coloured coats rarely being troublesome when it is employed. Bed your Abyssinian guinea pigs on peat moss, however, as you will find that they like it, and keep quite well on it.

For all the cheaper types of guinea pigs, which you are not intending to exhibit at the shows, fresh clean and well dried sawdust is a very safe and satisfactory bedding material.

Some of your friends who also keep guinea pigs, will probably advise you to use bran as a food for yours. Are you to do so?

Bran Food

Yes, certainly ! Bran may be given slightly moistened with warm water as a winter evening feed as well as hay. Bran, it must be remembered, however, usually acts as an aperient in the case of guinea pigs, just as it does with many other types of small livestock. If this effect is not wanted, it must be well mixed with other foods.

The Mixture

For full sized guinea pigs, bran may be mixed with twice or thrice its own bulk of oats or barley, and the combination scalded with water to soften the grain, and then drained. Bran may also, with very great advantage, be mixed with boiled rice, and in this form is a fattening food for thin and ailing guinea pigs during periods of cold

winter weather, especially if fed warm.

If any of your guinea pigs which ordinarily live together start eating each other's coats, what are you to do? Do not let this worry you. Remember they will not nibble their own coats, so if they are each put in a hutch of their own for a few weeks, the trouble is automatically terminated.

Separate Housing

In any case each guinea pig which you intend to show should always have a hutch of its own, and this should never be used by any other guinea pig, even for an hour. Water should always be within reach of each animal. It must be renewed daily, or oftener if the pan gets fouled, and not merely freshened up by pouring in more water.

For the Show

As to Show points, remember the following :—

Twenty points are usually given for texture of the coat in the case of Peruvian guinea pigs.

Thirty points are usually given for this same feature in the case of Abyssinian guinea pigs.

Twenty points are generally allowed for colour in the case of English guinea pigs.

Fifteen points each are, as a rule, the custom for size and shape of the English types.

Feed these pets regularly, i.e., at the same hours each day, just as you do with your other small livestock, instead of giving them something more to eat whenever you think they look hungry.

Lastly, do not try doctoring guinea pigs yourself when they are ill. Call in a qualified vet.

HOBBIES of WELL-KNOWN PEOPLE

Interesting and Intimate details of Sir Herbert Austin

SIR Herbert Austin has appropriately been called the Father of the Baby Car. Like so many other great men, he was not born, or brought up in the atmosphere which has made him famous. He was a farmer's son who sang in the local church choir until a relative took him to Australia. Here, at an early age, we see his first entry into prominence in mechanical matters. It took the form of something new and most useful in sheep-shearing. For this to happen in Australia clearly shows Sir Herbert's ready adaptability to circumstances because everyone knows that this country is noted for its sheep-farming. Then the young inventor returned to England.

Sir Herbert's time—leisure and

otherwise—is mostly divided between his fine old mansion in Worcestershire and the Longbridge factory—the scene of so many of his business triumphs. At home, we find the Artist and the Choir boy. He is never tired of looking with pride at his priceless ivories, china and jade, and will tell you with boyish enthusiasm about the pieces of antique furniture he has picked up in odd corners of the world. And no matter how many people write to the B.B.C. complaining about the 'overdose' of highbrow music, Sir Herbert Austin will never do so. He loves all good music, and especially Grand Opera—the Choir Boy lives again.

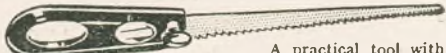
Sir Herbert is also a keen gardener and his well-kept grounds

and gardens at Lickey Grange, reveal something of his understanding and love of natural beauty.—G.G.



Look out for further people in this popular feature !

A Keyhole Saw for 9d. Post 3d.

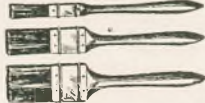


Separate Blades.
4d. each.
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A practical tool with good quality blade. Handle shaped for comfort.

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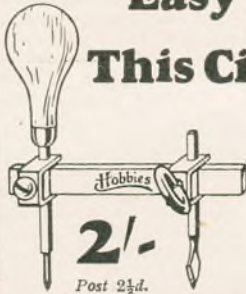


Bristles set in Rubber. These are sound quality Brushes offered at value-giving prices.

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½ in., 4d. 2 in., 9d.
1 in., 4½d. 2½ in., 1/3
1½ in., 6d. 3 in., 1/6
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Easy! Quick! This Circle Cutter



2/-
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A handy tool for cutting circles in thin wood. The cutter is adjustable to cut out a circle up to 5 ins. in diameter.

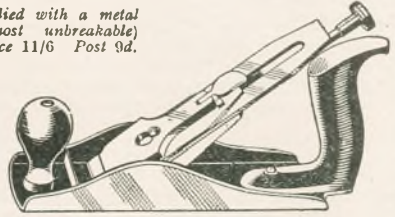
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Handyman's PLANE

Also supplied with a metal alloy (almost unbreakable) body. Price 11/6 Post 9d.

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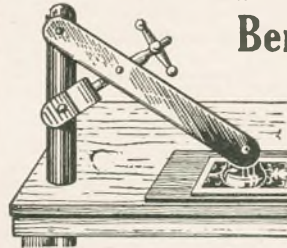
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You'll like the "feel" of this plane. It has a cast-iron body with comfortable handles and a speedy and simple adjustment to the blade. Should be in every tool-kit.

NOVEL Bench Cramp



Bore a ¾ in. hole in your bench, insert this cramp as shown, and you have a tool which you will treasure for its all-round usefulness! It holds work flat for sandpapering, gluing, polishing, etc. For wood-carving it is an invaluable tool. Price 2/6 Post 6d.

Buy from your nearest Hobbies Branch, or order direct from Hobbies Ltd., Dereham.

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DESIGNS

With booklet of instructions.

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Designs for a modern Doll's House with garage and 26 pieces of furniture. All planned to a scale of 1 in. to a foot. Ask for Hobbies new Doll's House Wallet of designs. It is a big bargain!



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MISCELLANEOUS ADVERTISEMENTS

The small "to sell" or "wanted" announcements appearing below are accepted from readers who want to sell anything except fretwork goods, or from usual advertisers of bargains of interest. The advertisements are inserted at the rate of 2d. per word. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Orders and Stamps must accompany the order. We cannot guarantee any date for these to appear, but they will be inserted in the earliest issue.

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TOY CASTING MOULDS for lead soldiers, novelties—Experience unnecessary. Illustrated catalogue, stamp. J. Toymoulds, 18, Kenyon Street, Birmingham.

GUNS, CYCLES and TENTS. Easy monthly payments. Catalogues free.—J. G. Thompson, Swansea Road, Norwich.

AMAZING OFFER! 105 different stamps including India Air-Mail, Mint Tunis, Algeria, etc. Absolutely free to genuine approval applicants.—D. H. Scott, 9 Church Road, London, S.E.23.

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BARGAINS. Exceptional value, mains transformers for models, etc., input 220/250 v. A.C. output 0-8 v. 1 amp. with controlling rheostats 1/3; $\frac{1}{4}$ mile reels insulated instrument wire S.W.G. 36 1/-, 8 m.f.d. condensers 1/-; powerful electric magnets 1/-; complete universal electric motor kits, easily assembled 4v. A.C./D.C. speed 6,000 r.p.m., 1/-. All post paid. Rare laboratory chemicals, cheap, stamp particulars.—J. K. M. Holmes, Dept. H., "Vizcaya," Wolvelceigh, Gosforth, Northumberland.

RETIRAL SALE. Sheets $\frac{1}{2}$ d. to 1/-. 100 different free over 3/- worth, includes Confederate States, Sierra Leone, St. Helena.—H. McAuslan, Stepps, Glasgow.

BUTLERS for First-class model Petrolmotor Castings, $\frac{1}{2}$ h.p.. Part Machined 9/9.—Below.

BUTLERS for Tip-top Charging Dynamos, Ball bearing, D Carbon Brushes. 12v., 8a., 16/-; 12 to 30 v., 10 amp., 25/- 1935 catalogue 3d.—Wade Street Factory, Little-over, Derby.

MODERN MAGIC, 1,000 2/6 books to clear, 6d. each; slight printer's errors.—Regal Supply Co., 157 Langstone road, Portsmouth.

A New Bench Machine

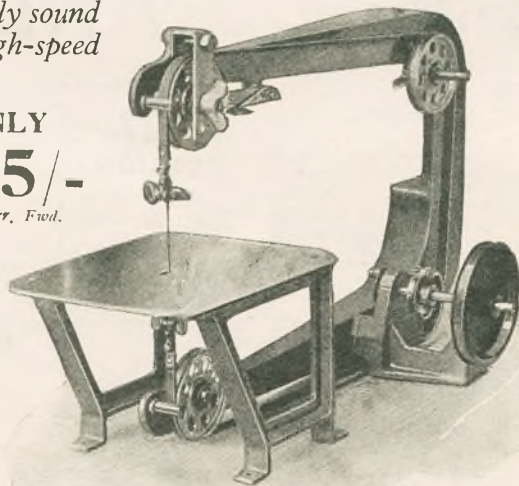
A machine of unconventional yet thoroughly sound design. It has proved itself a sturdy, high-speed bench machine for general fret-cutting.

Unlike the ordinary fretmachine, this one has no moving arms. Instead, there is a flexible band working over ball-bearing pulleys which are made to oscillate by means of the "anchor" movement. The weight of the moving parts is small, which combined with the "anchor" movement gives remarkably smooth running.

Built for High Speed

Due to the small weight of the moving parts, this machine may be run at higher speeds than the ordinary machine. The table is mounted as a separate fitting to the machine itself. It is practically vibration-free! The mechanism is accessible and no delicate adjustments are necessary to keep it "in tune."

ONLY
75/-
Carr. Fwd.



FREE An interesting leaflet about this machine and a larger one (the "Anchor Major") will be sent post free on application to Hobbies Limited, Dereham, Norfolk.



CONTINUING the previous article on air stamps we come to more up-to-date news, though doubtless in a few years time this will be in the nature of ancient history.

A marvellous modern performance is depicted on one of the air mail stamps from Australia, which commemorates the World flights of Sir Charles Kingsford Smith. The previous issue to the stamp illustrated has the words 'Kingsford Smith's World Flights' in the panel at the bottom instead of 'Air Mail Service.' Otherwise the design is the same.



An Australian Stamp.

There were three values 2d., 3d. & 6d. and of these only the last was an air stamp the 2d. and 3d. being commemoratives. The aeroplane above the two hemispheres is "The Southern Cross."

Another reminder of an achievement is depicted on a stamp from Belgium which shows the balloon used by Professor Picard in his ascent into the stratosphere. According to the Press, Professor Picard intends to make a further ascent next year, when he hopes to reach a height of nearly 20 miles—roughly seven miles higher than the record held by the Soviet balloon. He has already ordered a new 'bag' from a firm in Warsaw.

Spain has given us a very beautiful map route of the famous Madrid to Manila flight. It is a red cross stamp as is shown by looking at the bottom left-hand corner. This stamp was issued in 1926, and the complete set was of ten stamps—five being of the design shown and the other five in commemoration of the Transatlantic flight.

Messrs. Waterlow & Sons were the printers and they produced a

stamp which begs for much closer study with a magnifying glass. From this stamp one can follow a considerable part of the route taken by the planes in the recent

AIR STAMPS

Continued from our issue dated December 29th.

England to Melbourne race.

A similar type of design is the 1933 Aerospresso Company's



A Flight from Spain.

issue from Greece. This stamp was recently printed by Bradbury Wilkinson & Co. Ltd., and shows the Italy-Greece-Turkey-Rhodes air route. Again a magnifying glass is essential to obtain the best out of this stamp—when you will see even the buildings which are marked at each of the stopping places.

Russia has issued a great number of air stamps, starting in the



A Stamp to Examine.

middle of 1922 with a set which were for official use only, then she issued an interesting stamp in 1927 to commemorate the First International Air Post Congress which was held at Moscow. Russia



A Balloon Ascent Stamp.

seems to have tried to make people realise by means of stamps that aircraft can travel where other means of transport fail.

For instance on one stamp there is a picture of an airship above a camel in one corner and a reindeer in another, obviously with the intention of showing that either region is equally accessible by air.

Another stamp, this time commemorating the Franz Joseph's Land to Archangel flight, has a map of the Polar regions thereon. The Russian stamp shown below depicts a polar bear looking at an airship above the icebreaker Malygin, again showing the superiority of air transport. This stamp is one of the 'Graf Zeppelin' North Pole Flight issue of 1931.

So far the illustrations have shown stamps which have been issued solely for franking correspondence intended to be conveyed by air. All countries of the World do not however have special stamps prepared for this service.

Great Britain is one of these countries. If we wish to send a letter by air mail we use the ordinary stamps, as sold over the counter for an inland letter, the only difference between the posting being is that we have to attach a blue air mail label in addition to the extra postage.

The Imperial Airways who



A Russian Stamp.

carry mails for this country issue special envelopes if required. The writer, has, for example, an envelope used for the London to Cape Town Xmas Flight, 1931, which shows the actual time taken.

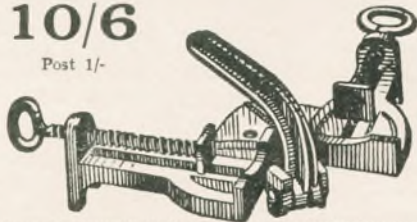
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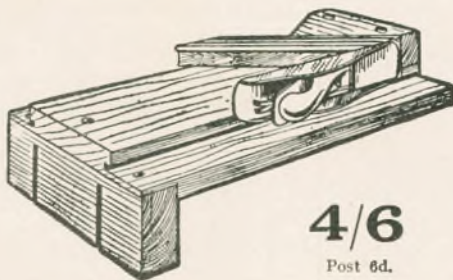
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4/6

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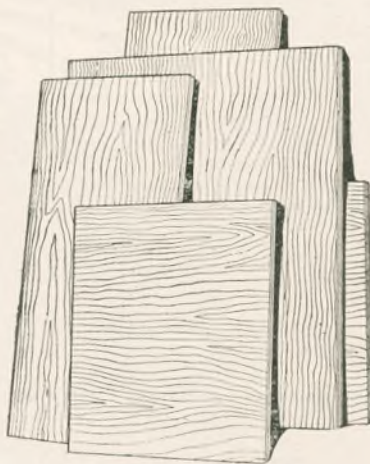
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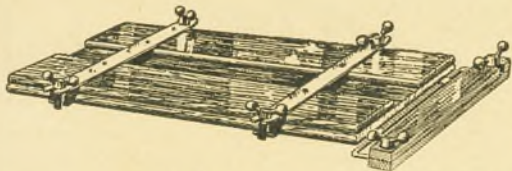
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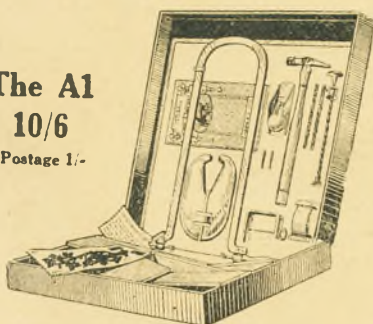
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