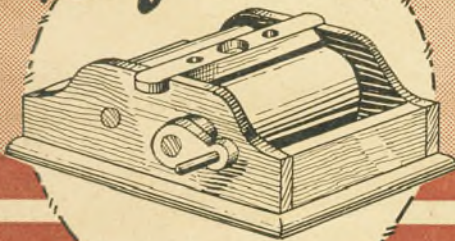


Hobbies

WEEKLY

Sharpener for
Razor Blades



Popular Science
Easter Cards
Jobs in the House
Model Signals
Electricity
Test Tube Holder

Newspaper Rack
Design FREE!



April 20th. 1935

2^D

Vol. 80. No. 2061

THE FRETWORKER'S AND
HOME CRAFTSMAN'S JOURNAL

Some simple designs anyone can make



SMALL CLOCK

No. 1924. Wood and special moulding costs only 10d., post 4d. A reliable 30-hour clock, 5/-, or a cheaper quality 3/6, post 3d.

Let the fretsaw save you money. Make these designs as presents for your friends! This is a definite money-saving proposition to anyone handy with fretwork tools. Designs cost only 2d. each. Get started NOW!



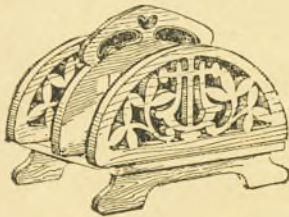
INKSTAND CALENDAR

No. 1876. A panel of Mahogany for all parts, 1/-, post 4d. Perpetual calendar, inkwells and knob, 2/4, post 3d.



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No. 1932. Satin Walnut with four turned columns ready to fit, 1/8, post 3d. Watch Hook and Knob for drawer, 2½d., post 1½d.



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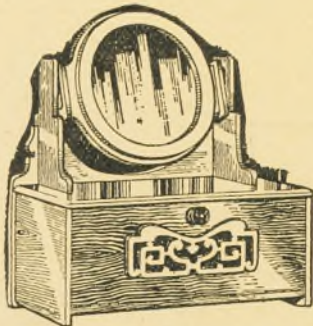
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No. 1946. A parcel of Oak and Padouk, 1/9, post 6d. Mirror, clips and screws, 10d., post 3d. A complete parcel, 3/-, post free.



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No. 1934. Mahogany for main parts with Satinwood overlay wood, 1/3, post 4d. Four fancy metal rosettes, 2d. No postage if ordered with the wood.



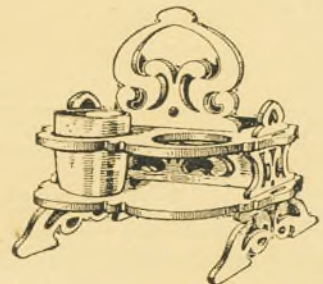
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MOTTO

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EGG STAND

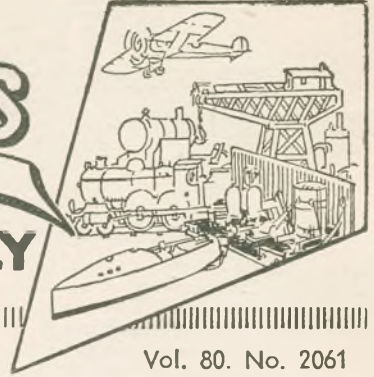
No. 1913. A panel of Mahogany, 1/-, post 3d. Four special Egg-cups, 10d. E.P.N.S. Egg Spoons, 1/- set. A complete parcel, 2/10, post 6d.

Buy your requirements from any Hobbies Branch or Agent, or order direct from Hobbies Limited, Dereham, Norfolk.



Hobbies

WEEKLY



April 20th. 1935

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

Vol. 80. No. 2061

AS this week provides Easter holidays we shall all have more time for our hobbies, and I hope everyone has a particularly good time. Appropriate to Easter, you have in this issue, patterns for cutting some striking cards which form suitable gifts.

and the Fretmachine has gone to G. Cresswell, of Papworth Everard, Cambs. for his figure reading. The Printing (2nd prize) was awarded to Trevor Roberts of Aintree, Liverpool, and a number of books were awarded as consolation prizes.

NEXT week we are publishing the first of our designs in connection with the Jubilee celebrations—the first of several. There will be a splendid Medal and Ribbon which you can wear and keep as a memento. League Members will be particularly interested because it is offered to them free! Make sure to get your copy by asking a newsagent to keep it for you. And every week!

NOTES of the WEEK

An Easter Gift—Our Jubilee
Designs—Cutting Weathervanes
—Competition Results—Traffic
Crossing Models—Index Ready.

HERE also are the names of the winners in two overseas sections of Competitions which closed recently. In the "What's Wrong?" contest no reader had a correct list similar to the artist's original. The nearest was one submitted by Gilbert M. Beale of Lower Hutt, Wellington, New Zealand, who had only two mistakes. The other Competition was the No. 3 Crossword in which the prize was divided between

AN interesting idea for making weathervanes is provided by the picture below. Henry Marx, whom you see, lives in California, and makes his living at it. He started making weathervanes and metal art novelties as a hobby, but it soon developed into a thriving business. He has made and sold thousands of them in a few years and is shown with some unique examples, in which he has combined his art with skill at cutting out metal roosters, owls, witches, ships, and all sorts of characters for roof tops. Some of our readers may be glad of the idea. Sheet metal can, of course, be cut with a special fretsaw blade in an ordinary frame.

Ralph Gibbert of Mount Gambier, South Australia and Arthur Ianham of Buenos Ayres, South America. Prizes have been dispatched to all these fortunate people.

I HAVE had a number of letters from Schoolmasters telling me how their lads are constructing large electric traffic signals so they can practice road crossing and traffic control in the playground. For this the designs published in our issue of December 22nd came in very useful when enlarged. An interesting model run off a pocket battery where red, amber and green lights were operated by a simple hand switch was given.

THERE was a very large number of entries for our recent 'Angles' Competition, but I should like to have seen greater ingenuity and variety. True, there were a number of "Hitlers," dogs, dancers, and houses and other ordinary things. The winners submitted very clever efforts



DON'T forget you can now obtain a complete index of the volume which ended last month for 4½d. post free from me.

The Editor

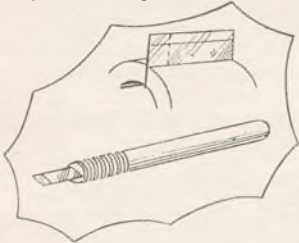
Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.



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

Model-making Chisels

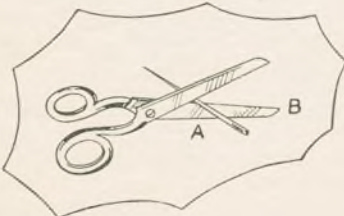
SHARP little chisels for model making can be made from the thicker kinds of razor blades in the following manner. Clamp in a vice, with the piece you do not



want projecting, leaving 1/16in., 1/8in., 3/16in. or a 1/4in. according to the width you require, and snap off. Then fix these in a handle made from a meat skewer or dowel split down the centre for about 1/2in. Bind with twine, grinding and sharpening in the usual way.

Sharpening Scissors

THE difficulty of blunt scissors can easily be overcome by taking a needle and making the



action of "cutting" the needle. Draw it from A to B and continue in a circular movement.

Angle Plates for Boxes

IT is often found when making a box of threeply wood, that the nails do not hold the wood satisfactorily. It is, therefore, found useful to use "Hobbies" angle plates which are 1 1/2ins. in length. The angle plates are affixed to the top of a corner and to the base, so it holds the base and the side. The brackets or angle plates are affixed by means of 4 screws which should be "Hobbies" 3/16in. fretwork screws. If this is done it will be found that the box is a lot firmer than by using nails.

A Glasspaper Substitute

WHEN one is requiring some sandpaper and has used up all glasspaper available, an unused match-box will suffice. On one side of a match-box will be found a medium for striking the matches on, this makes a good glasspaper block when in need of sandpaper.

Firelighters

TO light a fire with paper if wood cannot be had, take one or two strips from sheets of newspaper, and obtain an old knitting needle. Roll the strips of paper on the needle one by one tightly, carefully take the sheets off after they have been rolled separately, then tie them into knots.

A Simple Grease Gun

A USEFUL little grease gun for greasing small pieces of machinery can be made from the metal barrel of an old propelling pencil and a piece of wire. The plunger is bent to a handy shape and a piece of string is bound round one of the ends, the plunger being nicked to hold the string tightly. The pencil barrel is then filled with grease which is squeezed out by pushing home the plunger.

A Five-Minute Teaser!

The strange sequence of letters given below will make a perfectly good sentence merely by the use of one vowel. Put it in various places between the letters and without altering them you have a sentence.

L D P R T F R M P
R T G D F R X F
R D D N S

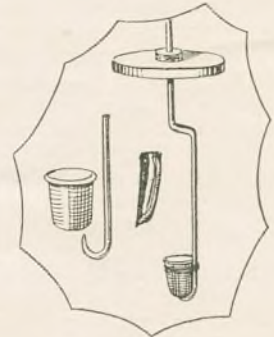
Work it out for yourself and see the answer in next week's issue.

To Remove Ink Stains

THIS is a very quick way of removing ink stains. Put a teaspoonful of salts of lemon into a small bottle and fill with cold water. Apply a little to the stain with a glass rod, and then apply some Parazone Bleach which can be obtained from any grocer. This, however, must not be used on coloured fabrics as it removes the dye.

Deflagrating Spoon

THOSE who do chemistry often need a deflagrating spoon, one can be made easily with very little trouble or expense. Firstly, get a stout piece of copper wire and bend it as shown in the diagram.



Then secure a thimble and bore a small hole in the end, putting the wire through it. Bind these both together with a piece of insulated wire. Now get a tin lid, punch a hole through the centre just large enough to admit a small cork, then push the wire through so the whole thing acts as the lid when in use.

To Make Address Stamps

GET a piece of thick plain cork linoleum and on this carve your name and address backwards. You can do this if you draw on paper first and then retrace it on the block. Now score out the background and mount the block on a piece of wood the same size, first fitting a screw in the wood on which to drive a handle. Your stamp is now ready and a flat piece of rubber and some printer's ink will serve as a printing pad.

FRETWORK



This
Week's
free
design
chart

THE free design sheet given with this week's issue is for another practical piece of work which entails the use of the fretsaw, and proves the ability of the worker. The Newspaper Rack, illustrated, is just the sort of thing to make up for any home, and one which should sell readily at a price which shows an easy profit.

The cost of the wood supplied is only 3/- and those possessing their own boards, can make it even cheaper than that.

One Thickness Wood

As can be seen from the illustration, the Newspaper Rack is intended for hanging on the wall, and is provided with a fretted front standing out $3\frac{1}{2}$ ins. from the back. This allows ample space between for a large number of newspapers, and yet makes them easily accessible by means of the open ends.

All the work is in $\frac{1}{2}$ in. wood and any of the popular varieties is suitable. Oak, mahogany, satin walnut or even whitewood can be used, and all the work can be undertaken with a 12 in. fretsaw because no part is wider than 10 ins. There are only two main patterns to be undertaken, and these are both given full size.

Beyond these, there are six tiny fancy brackets which help to support the lower shelf, and which cannot be seen in the actual illustration. The designs of some of these brackets are shown round and in the pattern of the back, in positions where the waste wood from these parts will come. It is, therefore, quite unnecessary to cut the patterns of the brackets away from the other part; indeed, the whole can be pasted down when they are in place, and then the actual parts can be cut from the waste wood.

Economy in Cutting

The single bracket shown on the left of the back, and the one below the back, can be put in the curve of the waste wood on the opposite side from those shown on the right in their proper position. Thus economy in wood is effected, and virtually means that only three pieces are required.

The back and front incorporate some excellent

A NEWSPAPER HOLDER

fretwork, and both can be brought into stronger relief by backing up the design with fancy paper. A suitable linen cloth is obtainable from Hobbies Ltd., or the fancy leatherette shown in Hobbies Handbook is particularly applicable. An illustration of it is given and when the outlines have been cut, this fancy paper can be glued behind and trimmed to the same shape as the outline of the actual wood.

The cutting, of course, is the first essential in a piece of work like this, because every piece stands out strongly in the finished article. The construction is very simple, and the principal attention must be paid to the cutting and cleaning. There are also several mortise and tenon joints which are provided to strengthen up the parts, and to form a rigid framework. These joints must be thoroughly tested before they are cut, in order to ensure that they are not made too large or too small.

The Joints

The horizontal ones at A take the projecting tenons found in the two shelves. Cut out the shelf first, and then stand it in place along the pattern of the back, marking off the exact position to ensure the tenons are not too long, and are in the correct position to fit in the mortises yet to be cut. In cutting the mortises, it is advisable to keep on the inside edge of the line because if the aperture is cut too large, no amount of filling can make the tenons a satisfactory joint.

Indeed, this is one of the troubles of a great many competition pieces—that readers will not take sufficient pains with the making of a tenon joint. It is essential in this to keep the back edge of the shelf straight, and the three portions between the tenons in line with each other so they may lie flat and true on the back, whilst the tenons A

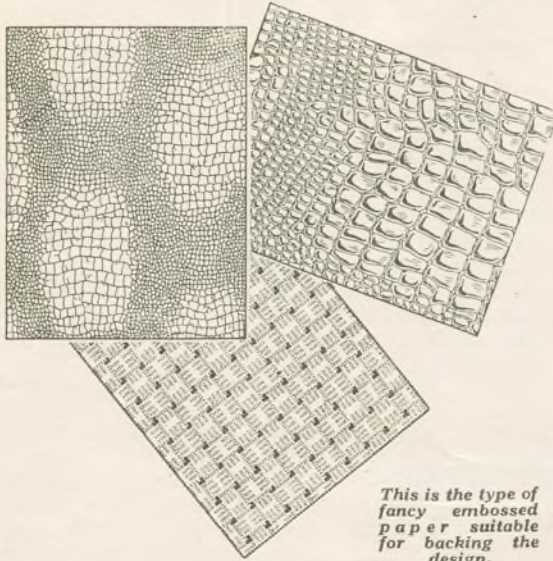


A Newspaper Rack—(continued)

themselves fit snugly into the mortise of the back.

Clean the paper off the shelves before actually fitting in place, and remember to hold the glass-paper flat to the board so that the outer edge of the tenon does not become thinner than the back edge.

These shelves, by the way, are shown to a broken pattern on the design chart, and should be marked



out $3\frac{1}{2}$ ins. wide between the size indicated by the head of the arrows on the actual sheet. Take one edge of a piece of $\frac{1}{4}$ in. stuff not less than 4 ins. wide, and mark across at a point $3\frac{1}{2}$ ins. distant. Run a line the whole length of the wood, showing this dimension, and then lay down that piece of the design pattern containing the tenons A A. This will bring them the correct distance from the opposite edge of the wood, and save cutting out that line. Moreover, there will only be one small piece of paper to clean off after the work.

The Wording

With regard to the fretcutting, the great point of keeping the saw vertical must be remembered. In the case of the word "Newspapers," too, be sure to watch out the cutting as a whole, and notice the curve which fills the bottom edge of each of the letters to make up the shape of the design itself. At the top of the letters, on the other hand, the line is straight, so a watchful eye must be kept on the extent to which the saw goes at this end.

Feather Features

The feathers of the bird also call for careful attention, the fretsaw passing into the same length in each of these on the edge of the wing. The other wavy lines which make a feature of the feathers, can be marked in with a chisel or pen knife, or, better still, with a V tool as used in carving. There is no need to cut this marking right through the wood. The same remarks apply to the neck feathers, and to the eye.

Of course, some who are artistic may like to colour up this bird with paints, and in order to help them, we have reproduced both light and shade effect which can be easily introduced. The leaves and branch effect around the centre panel can also be included as shown.

Covering the Screws

At the top and bottom of this part—the front—dotted lines indicate where the shelf will come at the back of the piece of wood, and three screw holes are shown. These screws, of course, must be flat headed and countersunk so they fit flush with the face of the wood when in position. They pass through the front, and into the edge of the shelf behind when the parts are put together later. The head of the screw is covered by a little fancy circle of wood in the button-like turning supplied in the parcel by Hobbies Ltd.

The back edge of the shelf, as we have already seen, is held in place by the tenons at A. The lower shelf also has its half dozen fancy brackets, the shape of which is also given. Two of these brackets are fitted with a tenon to fit into the back at B, and care must be taken to fit a good joint here, and that the top edge of the projecting bracket rests comfortably on the underside of the shelf.

Fitting the Parts

It is best to fit the two shelves in place first, and then to put in the bracket at B B. The others are merely glued in the rightangle of the shelf, and back, being spaced evenly between the sides and between each other. The spacing is indicated by the dotted lines shown on the design of the back.

All these parts are glued together, and if necessary, strengthening screws can be driven through the back into the edge of the shelf to make a firmer joint.



An idea of the design painted in.

As the whole of the Rack is in wood, it can well be finished off with polish or by staining it down. The edges are undertaken with a fine brush, taking care that none of the stain or polish is drawn off in a thick rib to run down the work. These parts are best stained and polished before being finally put together, and this point must be remembered in the cutting.

A ROLLER SHARPENER for SAFETY RAZOR BLADES

TO overcome the great waste of razor blades (those dispensed with for shaving purposes), we illustrate a particularly useful stropping device by means of which one can easily obtain double life from all standard size three-hole type blades—thus saving a few pence in the process.

The Stropper assimilates a continuous twin spiral roller principle, so that all one needs to do is to insert the blunt blade on its peg holder and turn the handle in the direction required. This procedure rotates both leather-covered rollers, each giving the correct diagonal stroke and automatically stropping the cutting edges at once on one side. The blade is then reversed, and the stropping continued until the "burr" has vanished and the edges consequently made keen and new as ever again.

Made from Odds and Ends

It is thus well worth making this economic little gadget, and as it will be observed from the various diagrams, the work involved is very simple and straightforward throughout. Moreover, being constructed from odds and ends likely to be found about any woodworkers' corner, it is quite inexpensive, too. But in case of difficulty arising, most of the materials could be purchased from Hobbies Ltd.—this being especially in regard to the 1-in. round dowel rod required for the rollers.

The Base Work and Sides

The construction should be commenced by making the main base work as shown in Fig. 2. This is composed of three pieces of 1/4-in. thick birch fretwood, cut and planed to the dimensions as given. The small end pieces are first thinly glued and

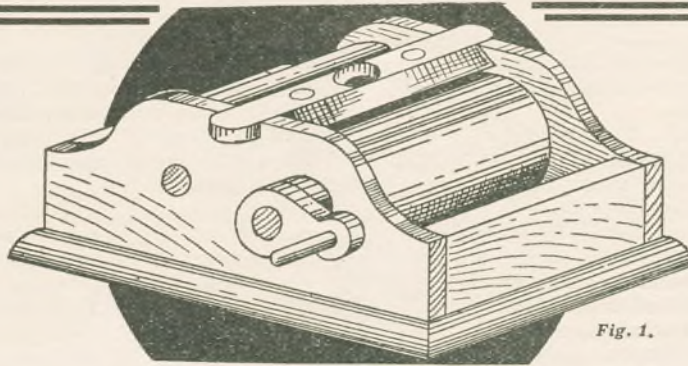


Fig. 1.

nailed to the base piece as shown, and then two adequate lengths of 1/2-in. triangular blocking strip glued to these to give the strength essential.

The side parts (see Fig. 3) are cut from 3/8-in. thick wood to the size and shape as indicated. The curves are obtained with use of the compasses at the points as depicted by the radii lines.

Be extra careful to get these measurements correct, as accuracy is most important if the parts are to work in true collaboration with each other. It is also advisable, by the way, to drill, rather than cut out the 1/4-in. spindle holes with the fretsaw. Of course, if no suitable drill is available, the fretsaw would serve the purpose if the cutting is executed neatly. One of the side pieces is glued and nailed on as shown, the other being nailed temporarily to its side for the meantime.

The Stropping Rollers

It would do well to emphasize care in making the rollers, because if these are the least bit out of true, it is only obvious they would not revolve in the easy-going manner according to plan.

Obtain a 6-in. length of 1-in. diameter dowel rod, and cut off two pieces precisely 1 3/8-in. long, having the ends as square as possible. These must be dead centred and drilled neatly to about 1/2-in. deep or so at each end for the spindle projections (see Fig. 4). To ensure true central positions, mark out an 1-in. circle on thin wood or card, then cut out and set evenly on the ends, the central compass point giving the exact centre to be marked on the dowel end with a nail or compass point.

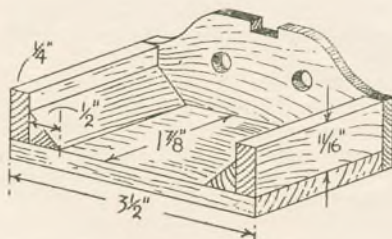


Fig. 2—The base construction.

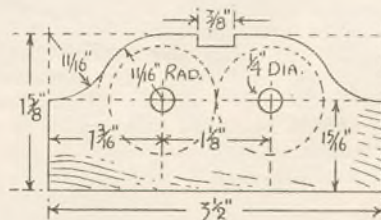


Fig. 3—A detail of the sides.

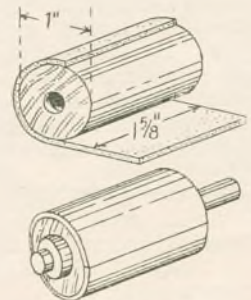


Fig. 4—How the rollers are made up.

Safety Blade Sharpener—(continued)

When the holes have been drilled, obtain a strip of thin flexible tan leather about 8ins. long by $1\frac{3}{8}$ in. wide by $1/16$ in. thick. An old "Valet" auto-strop is more preferable to use if available, as this is the exact width and thickness, the hide being also of the correct quality.

The Leather Covering

Cut the strip evenly in half, and square the ends of each by placing a rule across and trimming same with an old safety blade.

Roll the strips around the circumference of the rollers, and make tiny marks to indicate the joint, then remove the overlap as explained and try in place before eventually gluing the leather round the dowel. Strong twine is wrapped tightly around same to close the joint and hold all in place until the glue has set. The twine is later removed and the roller ends glasspapered neatly, having the paper held in the proper block or wrapped round a piece of wood.

The spindles are made from four pieces of $\frac{1}{4}$ in. round rod approximately 2ins. long, and these are glued into the roller ends as shown at Fig. 4. Four suitable washers $\frac{1}{2}$ in. in diameter are cut from $\frac{1}{4}$ in. thick plywood and glued in position over the spindles. Three of the spindles must be cut to project $\frac{1}{4}$ in. from the washers, the fourth projecting $\frac{3}{8}$ in. for the handle part.

Assembling the Rollers

Before fitting the rollers between the sides, first finely glasspaper them all over to remove excess glue and unevenness, then smooth the leather down with the fingers. If the rollers rotate in close contact with each other, fix permanently the temporarily attached side piece.

To Re-Whiten a Ceiling—(continued from opposite page)

sides of the plaster edges "undercut" or bevelled inwards, as shown in Fig. 3, in part section. This is done to afford a key or grip for the new plaster.

The edges of the cracks must be well moistened with clean water and while still wet, the cement is mixed and immediately pressed into the crack with a small "pointing" trowel as shown in Fig. 4.

The cavity should be filled in solid with the plaster; then the trowel is wiped clean, dipped into water and moved over the plaster with a sort of scraping and smoothing motion to make the surface as smooth and flat as possible.

The Plaster Holder

Small quantities of plaster should be mixed as required and may be held on a small wooden plate or "hawk" with a central vertical handle as shown in Fig. 5.

When the plaster is dry, the surface should be rubbed down to make it smooth, with glasspaper.

A length of quarter-round moulding (No. 34 with $\frac{1}{4}$ in. sides) should be mitred and glued around the base as in Fig. 1. A piece of baize or four rubber feet (Hobbies half-round spiked variety) should be attached underneath the base.

The Blade Holder

The size and shape of the blade holder is given at Fig. 5. It is cut from $\frac{1}{4}$ in. thick wood, the top-most side edges being bevelled with a plane to the dotted lines (see Fig. 1). The central hole acts as a finger grip and to also enable the blade to be extracted easily.

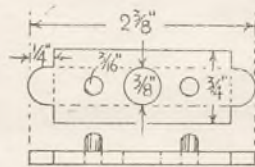


Fig. 5—Size and shape of the blade holder.



Fig. 6—The spindle handle part.

The two extreme end holes require to be plugged with small dowel pegs, these projecting underneath as shown. These are $3/16$ in. in diameter—just the correct size for the holes of the blade to fit neatly over but freely.

Fitting the Handle

A glance at Fig. 6 shows the handle part which is cut from $\frac{1}{4}$ in. thick plywood, this having a $\frac{1}{2}$ in. diameter washer made for the back. Make a small handle by reducing a piece of dowel or other hard wood to $\frac{1}{4}$ in. thick by $\frac{3}{4}$ in. long. This is glued into its relative hole, then the washer and the handle part being glued and inserted over the projecting spindle end as shown at Fig. 1.

This completes the work, and remember that when stropping the blades, to turn the handle so the rollers revolve away from the blade edges—and not the opposite direction. If that should happen, it would be the instigation of cutting the leather of both rollers and thus spoiling the whole work. However, as the article has been designed for the right-handed person, that is not likely to happen with the ordinary user.

The ceiling should now be ready for whitening, but if very old and porous may be "clear-coled" with clean water mixed with a small amount of size and whitening.

How to Work

Ordinary old fashioned whitewash can be used but one of the numerous preparations now on the market are strongly recommended. They only need dilution with clean water to a thin creamy-like consistency, and then applied with an ordinary distemper brush.

Work in broad bands across the ceiling from wall to wall, work towards the light and brush the distemper in all directions, keep it uniform in consistency, and do not leave off until the whole of the ceiling is covered. Apply a second coat if necessary after the first is absolutely dry and hard. Do the cornice with the ceiling, but distemper the frieze last, cutting into the cornice moulding.



Jobs about the House

HOW TO RE-WHITEN A CEILING



SUCCESSFUL re-whitening of a ceiling depends to a very large extent upon the care with which the preliminary work is carried out. This preparatory work consists of two distinct phases, first, the removal of the old and dirty surface, secondly, the restoration of a smooth fair surface.

Before any of this work is undertaken by the handyman, it is essential to prepare the room and cover up all furniture.

Group the Furniture

All the pictures, vases and smaller ornaments should be taken out of the room and duly washed or cleaned; the larger pieces of furniture drawn away from the walls and grouped together.

Leave sufficient clear spaces for the steps or trestles to stand, so that all parts of the ceiling can be reached without having to stop and move the furniture.

If possible, take up the floor coverings, or failing that, cover them thickly with old newspapers or something of the sort to prevent damage by the inevitable drops and splashes, of whitewash.

Cover the furniture with clean dust sheets for a like purpose. Skilled workers may consider such a thorough preparation is unnecessary, but the novice will feel much more confident if it is known that an accidental drop or two of whitewash will not do serious damage.

Wall Protection

Some sort of protection for the walls is desirable, and two admirable plans are sketched in Fig. 1. At the left is seen a movable guard or shelf, hooked on to the picture rail; at the right is seen a dust sheet pinned to the picture rail with large headed

"push pins." Failing dust sheets, a few pieces of newspaper similarly fixed up will answer very well.

The removable guard is as neat and effective as anything, especially when working on the frieze, moreover, it acts as a handy shelf for brushes or a small pot of whitewash or distemper.

The Shelf Bracket

It is made from any odd length of thin board about 9 inches wide and $\frac{1}{2}$ inch thick; a simple wire bracket is fastened at each end by means of screws or staples. The bracket should be hooked at the upper end—as shown in Fig. 2—to catch into the picture rail, the lower end is brought downwards and turned into a large ring at the bottom, where it bears upon the wall surface.

This guard is, of course, moved along as the work proceeds and effectively intercepts any drips from the brush while working on the frieze or cornice.

Now comes the cleaning or "washing off" processes. These are easily described because all that has to be done is to

thoroughly scrub the whole surface with warm water.

A large worn whitewash brush is very effective for this work, but it must be used vigorously and like a scrubbing brush to soften and wash off all the old whitening from the ceiling.

When this has been done, and the ceiling has dried somewhat, it will look much worse than before, but the surface ought to be clean. Now comes the filling up of all cracks and bad places on the ceiling which is usually done with a hard plaster known as "Keen's cement" from any oil shop.

First of all, however, all loose dirt and flakes of plaster must be raked out of the crack, and the

(continued on the opposite page)

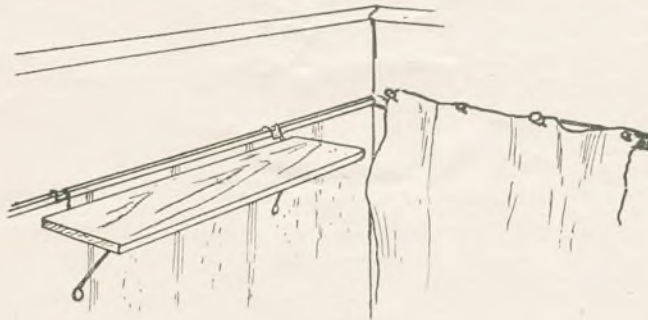


Fig. 1—Protect the walls with curtains and shelf.

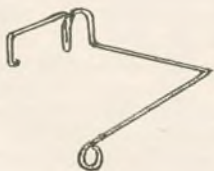


Fig. 2—Wire Brackets

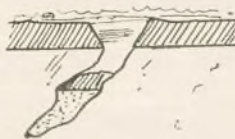


Fig. 3—Section of broken ceiling.

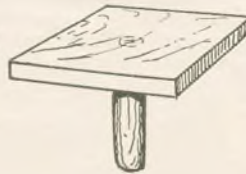


Fig. 5—A Hawk.



Fig. 4—Filling the cracks.

What's going on



A popular Science Feature

Seeing the Invisible !

INFRARED rays (aptly described as a kind of dark light beyond red in the spectrum) are responsible for all manner of apparent miracles with the camera. A United States pilot, for instance, took an aerial view that embraced over 300 miles and actually showed the earth's curvature!

It seems almost incredibly fantastic to photograph objects which are out of sight. The explanation, though, is fairly straightforward.

Usually a good deal of haze hangs about in the atmosphere—due for the most part to tiny particles of suspended water. Now, ordinary daylight is scattered by this haze; so far as we are concerned the distant countryside simply disappears. But infra-red rays (invisible to us) pierce the curtain and reveal the picture to the eye of the camera.

Of course, you can't just do the trick off-hand with any old apparatus. Any camera will serve, certainly, but the rays make no impression at all on ordinary "snapshot" film. So before trying this fascinating branch of photography you must get a specially prepared film and a filter which lets nothing but infra-red light into the lens.

Curiously enough, we can feel the rays. The warmth from a heated flat-iron, for example, is really infra-red radiation. And because of that radiation one could take a picture of the iron in complete darkness.

Probably you think it would be far simpler to 'snap' the thing! And who wants a picture of a flat-iron, anyway? Well, there is rather more in it than that.

Suppose a motor-engine repeatedly runs too hot. Something wrong! Just where, though, often used to be extremely difficult to find out. To-day you need only make a few exposures in a darkened room. All the faulty parts will appear on the resulting prints as though they had been white-hot!

There are also immense medical

possibilities. Doctors can look at disease under our skin.

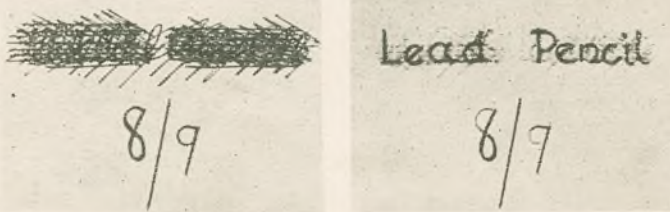
Sometimes, too, the cornea of an eye (that horny, normally transparent front part) becomes milky and opaque. Infra-red photography enables the specialist to examine the eye beneath.

In fact, there seems to be little these amazing rays can't do! They even make it possible for us to read parts of a certain manuscript which were obliterated by the Censors of the Inquisition. These painstaking gentlemen didn't guess that something called Science might reveal the offending words 300 years later!

A Magic Bottle

IS the water in your district "hard"? Then take a peep at the 'innards' of the kitchen boiler next time you get the chance. Coated with any amount of some chippy substance, isn't it? That is because certain salts which cause the "hardness" have crystallised out and joined together.

This scale makes no end of trouble; indeed, unless checked it seriously reduces the boiler's efficiency. Only half-an-inch of scale will increase the fuel bill for heating water by as much as 150%!



How infra-red photography reveals obliterated writing and how the figures have been altered. (By courtesy of Ilford Ltd.)

Recently, though, someone hit upon a remarkably ingenious device to prevent the deposit forming. A Scale Buoy, they call it. Just a glass bulb filled with mercury and gases. But any movement—no matter how minute—produces from it slight electrical discharges which turn the harmful salts into a soft mud, instead of a hard shell. This falls to the bottom of the boiler and can, of course, be easily cleaned out when necessary.

You just place one or more of

these magic bottles in the supply-tank; science does the rest!

Filming Atmosphericics

WE know all about the effects of "atmospherics." But apart from that they are more or less "wrapped in mystery." So experts at the Radio Research Station, Slough, have been studying them in an effort to evolve the ideal interference-free wireless set.

First of all they had to locate the main sources of disturbance. This was done by means of a cathode-ray oscillograph; a marvellous instrument which makes it possible (amongst other things) to see atmosphericics in the form of bright lines upon a screen. Incidentally, this same gadget has played a tremendous part in the development of television.

As you probably know, the source of radio signals (and, in effect, that's what atmosphericics are) can be traced by taking bearings from two or more points. A great deal of complicated apparatus was accordingly installed at Slough and a Northern base. High-speed "movie"

cameras, too, recorded the image of each atmosphericic as it flashed for a fraction of a second across the oscillograph screens.

Come along and watch the films "run-through." Rather astonishing, this. The "screen," for instance, is unlike any other cinema-

screen that you have ever seen. Actually it is a map; a huge affair specially drawn for the purpose.

The films are loaded into a couple of projectors; one alongside the other. Driven by common gearing as well. And in some extraordinary fashion the lines representing atmosphericics appear on that "map-screen" at the same directional angle as the original signals. Their intersection marks the exact spot where the trouble began!

A SIMPLE INK STAND IN FRETWOOD

HERE is an ink stand for two bottles, quite simple to make in fretwood. The very plainness of the article, and the simplicity of its construction makes it at once attractive. The bottles chosen for the stand can be obtained from Hobbies, and when ordering, No. 5661 should be quoted. They are of clear glass with a cap, also of glass, which keeps the ink free from dust. The two handles are of brass (No. 5377), and may be ordered at the same time as the bottles. The special parcel of wood and moulding is No. T.M. 290 and costs 6d. only.

The base of the stand is of solid $\frac{3}{4}$ in. material cut $6\frac{1}{2}$ ins. by $3\frac{3}{4}$ ins., and in setting it out on the wood take care to get all the angles right angles. Cut round the outline with a fretsaw and clean up the edges with coarse and fine glasspaper.

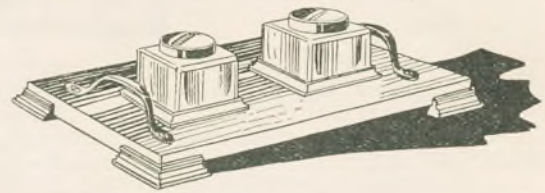
The Corners

After cutting, set out a $\frac{3}{4}$ in. margin all round on the face side of the wood, and then mark off and cut eight pieces of the simple moulding (No. 307). Cut each piece carefully to $1\frac{1}{2}$ in. long, and afterwards, using a small mitre block cut all the ends to an angle of 45° so they fit together as shown in the dotted lines in Fig. 1.

Before actually gluing down the pieces of moulding fit them together carefully and see they form a perfect square. If the mitres do not fit exactly, lay them flat on a piece of fine glass-paper and rub until they make true squares and fit closely at the corners.

Then, make a note where each piece stands, either by lettering or numbering each piece and putting a corresponding symbol on the base piece. Finally glue them on and put in a tiny fret pin where and if necessary.

The feet to the stand are formed from short pieces of small picture moulding (No. 7), and Fig. 2 shows one corner completed. The enlarged diagram shows how the base rests into the rebate of the moulding. Scraps of wood glued into the



angle form between the moulding and the base, strengthen the joints at these parts.

It will be noted from Fig. 2 and again from Fig. 3 that one end of each piece of moulding is cut off square, the other end being, of course, cut to a mitre to fit at the corner.

The finish of the stand will largely depend upon what kind of wood has been used.

If oak, it may be stained lightly and coated with clear varnish, or it may be just stained and rubbed up with a wax polish.

If of mahogany, no better finish could be given than a light coating of mahogany stain with Hobbies Lightning Polish as a surface finish. The moulding would in this case be done with a brush dipped into the polish and applied quickly and evenly.

Colour Finish

An excellent contrast in colours, or rather tone, could be got by having the base left plain oak and the corner moulded feet and the moulding round the inkwells coated with Eggshell Black and then varnished.

The brass handles should be screwed on with roundheaded screws.

Wood, Mouldings and Fittings

- 1 piece oak 7ins. by 4in. $\frac{3}{4}$ in. thick.
- 2 pieces moulding (No. 307) 9ins. long.
- 2 pieces moulding (No. 7) 9ins. long.
- 2 Inkwells No. 5661 (1/6 a pair.)
- 2 Handles No. 5377 (5d. a pair.)

A parcel of the wood and moulding required is in parcel T.M. 290—price 6d. (postage 6d. extra).

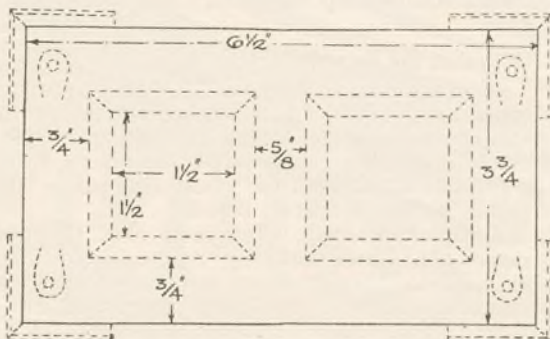


Fig. 1—The base with indications of adjoining parts.

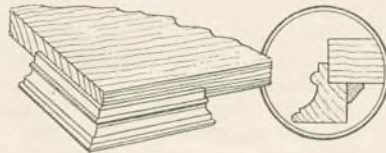


Fig. 2—The fancy corner feet.

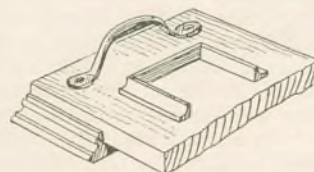


Fig. 3—The handle and holder.

The AMATEUR

ELECTRICIAN



THIS short article is intended to clear up the apparent mystery of two-way or two-point controlled lighting circuits which appear to worry some of our amateur electricians. Readers will understand that it is suitable for both battery and mains installation, but as regards the latter, we cannot recommend it for mains use unless you have had some experience of this work and are fully conversant with the wiring regulations.

The Circuit Explained

The installation has many applications—as on stairs, long corridors, in halls and in such places as garages and out-houses when it is desired to put the light either on or off when going out or coming in.

The circuit consists of two two-way switches and a battery and bulb. The connections are shown in the diagram, and the working is as follows. The light can be controlled from either end and it must be remembered that the switch arms are always left on a contact.

This happens automatically with tumbler switches but on battery sets with simple switch arms it is liable to be forgotten. The arm of each switch is connected in series with a battery and bulb. Or more simply, a wire is taken from the arm of the first switch to one terminal of the battery and then from the other terminal of the battery to one contact on the lamp, the other contact being connected to the arm of the second switch.

The other contacts are connected as, one from the first switch to the similar one on the second and similarly with the other pair. Two or more lights may be connected in parallel, as for a long corridor or a stair-way with several bends, the rest of the circuit remains the same.

Multiple Lights

All materials may be obtained from addresses supplied on request to the Editor or possibly local electricians, and readers might be advised to consult catalogues in order to obtain a good idea of what is available to the amateur electrician.

The battery will depend on the amount of light required, but for a small set it will be found that quite sufficient light can be obtained from a flash-lamp battery and bulb. With a 4.5 volt battery

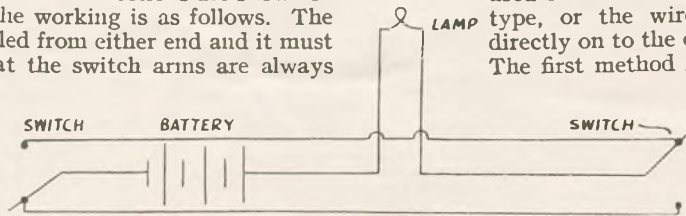
use a 2.5 volt bulb, as this procedure will compensate for the resistance of the wiring.

TWO-WAY SWITCHING

A better installation would consist of three dry cells and a 2.5 volt lamp. Wet cells as Leclanché can also be used. Two standard dry cells priced at 1/3 each, lasted for 18 months on a set using a 2.5 volt lamp, and this will show readers that the cost of installation is negligible when compared with the service and convenience given.

Tumbler switches are the easiest to use and install, but have the disadvantage of costing about 1/6 to 2/-. However, very good results can be obtained from following the instructions given in previous articles for making two-way switches, and installing these instead. A lamp holder can be used of either the batten or pendant type, or the wires can be soldered directly on to the contacts of the bulb.

The first method is to be preferred as when replacements are necessary these can be carried out with a minimum of inconvenience and without the aid of a soldering iron.



The Circuit for two-way switches and lighting.

The wire used may be of almost any type, the thicker the better, although quite good results can be obtained by using ordinary No. 24 D.C.C. The best and most convenient to install is a single and double bell wire of No. 20 gauge. The double wire is run straight from one switch to the other, there being no difficulty with the connections as the two leads are of different colours. The single strand is used to connect up the battery and switch arms, etc.

Concealing the Batteries

Of course, the wiring and batteries must be concealed as much as possible, but instructions for this cannot be given as the installations vary so much. Batteries can generally be placed under stairs and on shelves; the wires being run behind picture rails and skirting boards.

Accumulators will, of course, give the best results, but these can only be considered when charging facilities are cheap and near at hand. In this case motor car head lamps can be used, but a short length of fuse wire must be incorporated in the circuit in case of accidental short circuiting.



Model Railway Accessories

For GAUGE O Systems



STRIPWOOD and the smallest sizes of "dowel rod" as supplied by Hobbies Ltd. either direct, or through their numerous agents, are admirable materials with which to make all kinds of fences, gates and crossing gates as in Fig. 1, suitable for model railway purposes.

The most suitable sizes of "stripwood" are $\frac{1}{4}$ in. by $\frac{1}{4}$ in. and $\frac{3}{8}$ in. by $\frac{3}{8}$ in. for the posts, and $\frac{1}{4}$ in. by $\frac{1}{4}$ in. and $\frac{1}{4}$ in. by $\frac{3}{8}$ in. for the rails. The $\frac{1}{8}$ in. diameter dowel rod is excellent for the rails of some kinds of fences.

The Simplest Kind

The simplest kind of fence and post is shown in Fig. 2 and consists of $\frac{1}{4}$ in. by $\frac{1}{4}$ in. posts about 1 $\frac{1}{2}$ ins. high, and rails made of $\frac{1}{4}$ in. by $\frac{1}{4}$ in. glued and pinned to the faces of the posts.

To save time and trouble when making lengths of this kind of fence, it is an excellent plan to make an "assembly jig" as shown in Fig. 3, which simply consists of a base-board about 12 ins. long, 2 ins. wide and $\frac{1}{2}$ in. thick. Along one edge is glued and pinned a strip of $\frac{3}{8}$ in. square stripwood. Small blocks of wood are glued and pinned to the base—as shown in Fig. 3—to hold the posts in place, and to locate the positions of the rails.

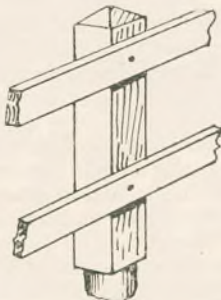


Fig. 2—Post and rails.

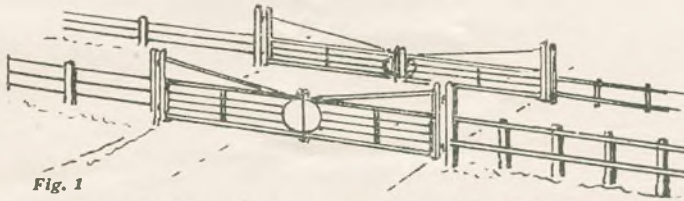


Fig. 1

CROSSING GATES AND FENCES

Posts and rails can be located at any desired distances apart, but something about 3 ins. between the posts will look fairly well for "O" gauge models. The top rail should be about $\frac{1}{4}$ in. below the top of the post, the second rail should come about $\frac{3}{8}$ in. below the top rail.

Making a "Kissing Gate"

This type of simple swing gate can be made as shown in Fig. 4 with $\frac{3}{8}$ in. square posts, $\frac{1}{4}$ in. by $\frac{1}{4}$ in. rails. Note that to ensure strength at the corners, the rails are brought outside the corner posts.

The gate is shown separately in Fig. 5 and consists of $\frac{3}{8}$ in. square uprights notched to receive the cross rails; the diagonal brace is simply bevelled at the ends and glued into place.

The gate is hinged to the fence with simple hooks and eyes, made by twisting short pieces of brass wire (about No. 20 gauge) to shape and fixing them into small holes drilled in

the posts where they hang nicely.

Self-Supporting Fences

A simple but effective fence is quickly made on the lines indicated in Fig. 6, the posts are $\frac{3}{8}$ in. square, 2 ins. long, and drilled for $\frac{1}{4}$ in. diam dowel rods spaced $\frac{1}{2}$ in. apart.

To render this fence "self-supporting" a cross-piece of $\frac{1}{4}$ in. by $\frac{1}{4}$ in. stripwood about 2 ins.

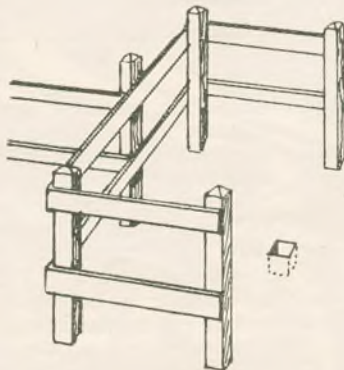


Fig. 4—Arrangement of fences for a Kissing Gate.

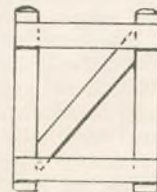


Fig. 5—A simple gate.

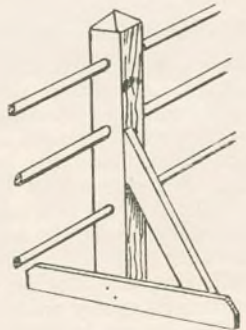


Fig. 6—A self-supporting fence.

Gauge O Railway Accessories—(continued)

long is glued and pinned to the bottom of the post and strengthened by the diagonal strut of $\frac{1}{4}$ in. by $\frac{1}{4}$ in. stripwood which is glued and pinned into place.

How to Fix

This class of fencing should be made up in various lengths, say 24 ins. and can then be placed anywhere required and will stand erect.

Fencing and gate posts for permanent model railways should be fixed by rounding the ends of the posts and sinking them into holes drilled in the

upright as shown in Fig. 9 which also indicates how the gate is hung on wire hooks and eyes.

The intermediate rails can be made of $\frac{1}{4}$ in. diam. dowel rod, the warning disc can be of $\frac{1}{16}$ in. fretwood glued in place. Crossing gates are generally painted white and for this class of model work a white "undercoating" or flat colour is the best and should be applied with a small brush. The warning disc should be red and the straps and hinges black.

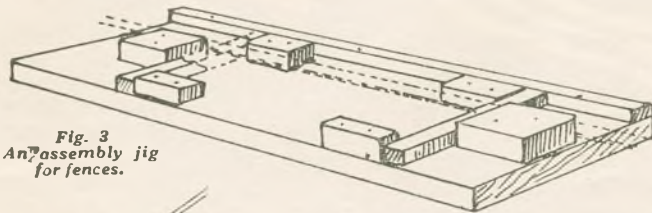


Fig. 3
An assembly jig
for fences.

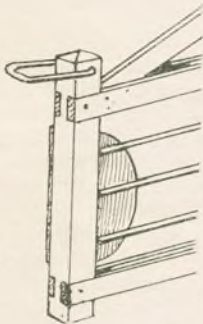


Fig. 8
The fastener end.

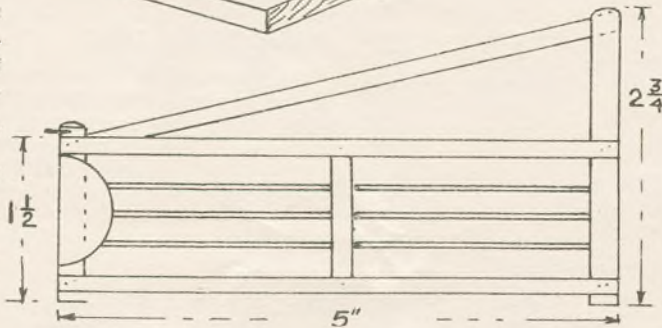


Fig. 7—A complete crossing gate.

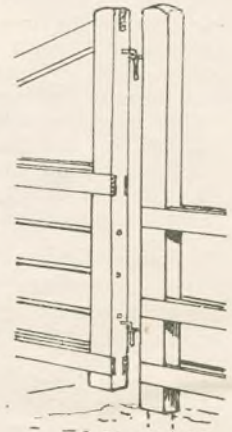


Fig. 9—Hinges and post
for a crossing gate.

baseboard of the railway, they need not be glued into position except such things as the "hanging posts" of crossing gates or other parts that must of necessity be quite rigid.

Crossing Gates}

The general appearance of such gates is shown in Fig. 1 while Fig. 7 gives full details of a simple gate.

Four such gates are required for the normal double road crossing, and should be rather more strongly built, the top and bottom rails being fitted flush into the uprights as in Fig. 8, the single tie being glued and pinned between the rails at the centre and fitted into a slot in the top of the outer

When fixing the gate posts take care that they are perfectly upright, so that the gates turn nicely, also fitting stop blocks to the baseboard to prevent the gates swinging outward and a locking link of wire as shown in Fig. 8, to hold the gates together when closed.

Note that the gate posts must form the corners of a square, that is, their distance apart across the roadway must be the same as their distance apart measured across the railway lines. This is essential to ensure that the gates close properly in either position, that is to, across the road or across the rails. The hooks and eyes forming the hinges must be set out sufficiently to a full 90 degrees of movement.

Two Handy Tools—(continued from the opposite page)

be easily adjusted to suit dowelling from $\frac{3}{8}$ in. to $\frac{1}{2}$ in. in diameter.

Obtain two pieces of $\frac{1}{2}$ in. thick plywood the sizes as shown in Fig. 2. Cut and shape them as shown and then plane the bevelled edges, care being taken to ensure that both pieces are made right and left. Drill and countersink the holes on one side only to take $\frac{3}{8}$ in. long by 6 in. wood screws, and then fix both sides together to ascertain that the bolt, nut, and sloping channel for the V-shaped cutter, fit evenly with each other.

Try the nut in place, which should be a neat fit and easily adjusted with the fingers, and having

done this, unscrew and lightly glue the parts together again. When dry, place the nut into the small slot and screw the bolt in through the square hole into the nut, the end of the former should hold the cutter firmly in place.

Now try the plane on a full length of dowel only, adjusting the cutter to make a small groove about $\frac{1}{16}$ in. deep. Tighten the cutter in place by twisting the bolt with a screwdriver, and now a groove can be planed with no effort.

Most cabinet makers plane an extra groove on the dowels to ensure a good joint in the event of any mishap occurring.

TWO HANDY TOOLS FOR THE AMATEUR WOODWORKER

HERE are two simple, cheap but useful, wood-working implements that can be easily-made by the amateur in an 'idle' evening. The keen enthusiast has great advantage in making them, as they are not commonly known to be advertised by any established tool manufacturers, yet they are useful and well worth making, and can be found in tool kits of all skilled and experienced craftsmen! When once made, they will amply reward one for all the trouble given and will prove to be extremely helpful on the occasions for which they are intended.

The Centre-Finder

As it will be seen from the drawings, these useful devices are comprised mainly of wood, glue and screws, with the exception of the dowel-plate, as shown, which is made from $\frac{1}{4}$ in. thick mild steel bar. Most of the materials can be found about the home or workshop.

The method of construction is in a modified form and so with this procedure no difficulties can possibly arise.

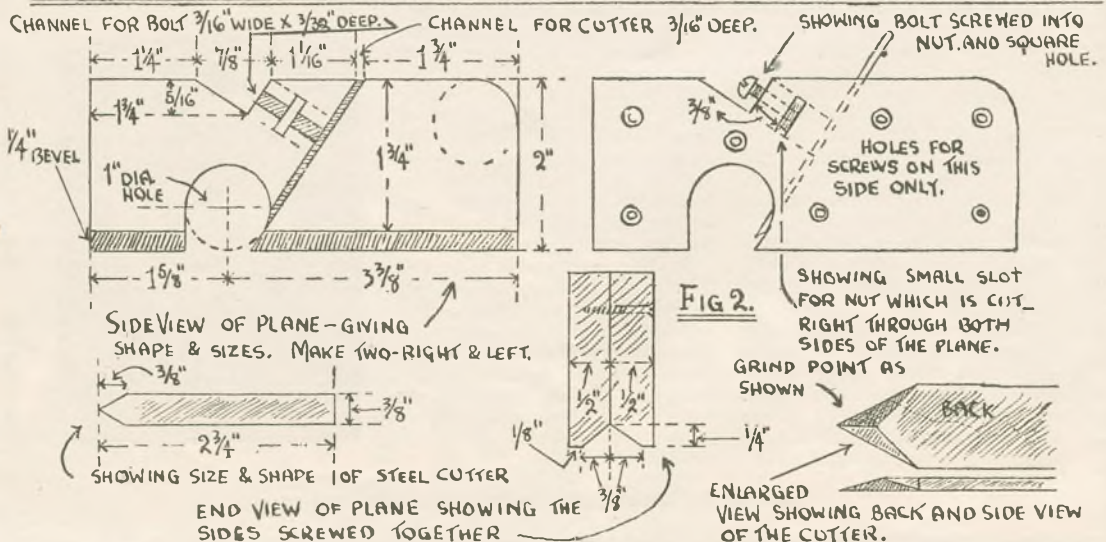
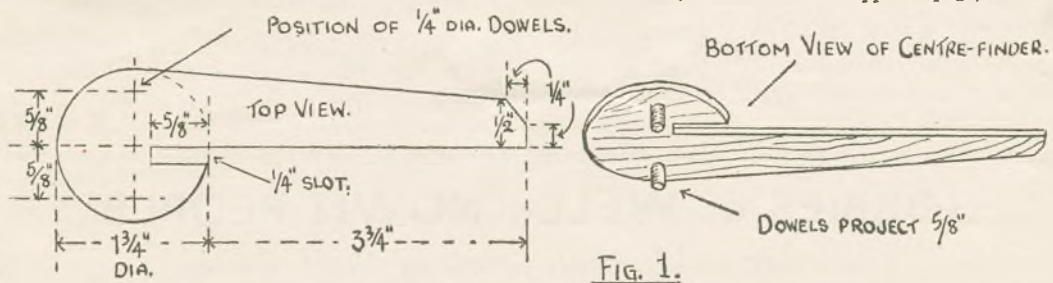
Fig. 1 shows what is chiefly known as the centre-finder, and also comes under the seemingly impossible name of being a round-square!

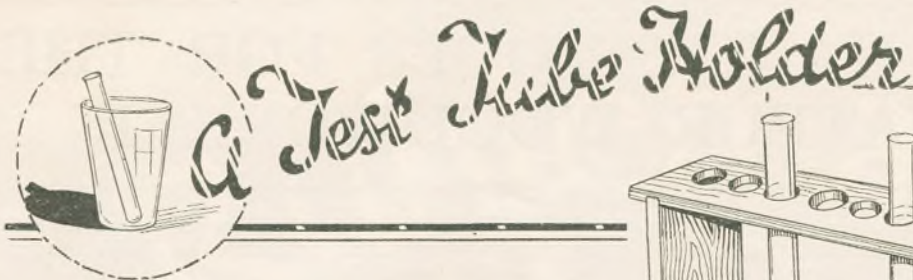
As the name implies, the small dowels when placed like an ordinary square against any complete circular edge, allows a line to be marked, and then by marking another line in X fashion, the exact centre is indicated. This device is used largely in dowelling any cylindrical objects evenly together—especially in turned legs in which the centre mark of the lathe has been cut off. It is made from $\frac{3}{16}$ in. thick plywood and $\frac{1}{4}$ in. diam. dowels.

The Dowel Grooving-Plane

This small plane is particularly useful for making a little groove in lengths of dowels, to allow surplus glue and air to freely escape when gluing dowels into the end of wood. The cutter of the plane can

(Continued on the opposite page)





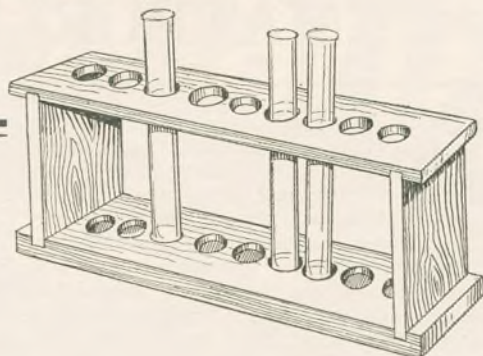
MOST amateur chemists come up against a certain amount of trouble in trying to keep their test tubes in an upright position when performing experiments. Many boys make use of glass tumblers, as shown in the sketch, but that is by no means satisfactory, and by far the best method is to use a proper test tube rack.

Any reader of Hobbies Weekly can make one, or in fact can construct a set of, say, half a dozen at very small cost.

For Nine Tubes

To make a useful rack, capable of holding nine tubes, take a piece of 1in. wood to form the base, which should measure 14ins. by 2½ins. Half an inch from each end cut a ¼in. groove to take the side-pieces, and half an inch again from the insides of these grooves bore nine circular holes, 1in. in diameter, at equal distances. Sink these approximately ¼in. into the base.

Now cut another piece of deal exactly the same size as the base, only this time it need be only ½in. thick instead of 1in. Lay this over the base,



and mark with a sharp pencil nine circles exactly to match the nine holes in the base. This time, however, make circles four and six 1½ins. in diameter; these will take large-sized tubes when required. Carefully cut these circles completely out of the wood.

It is now a simple matter to complete the rack by joining top and bottom by two pieces of ½in. wood, 4ins. by 2½ins. from the grooves of the base to the two similar grooves in the under-part of the top. Sandpaper the edges throughout to provide a finish.

A rack of this kind is invaluable for chemistry experiments. It looks business-like, and adds to the enjoyment of your work.

HOBBIES of WELL-KNOWN PEOPLE

Interesting and Intimate details of Walt Disney

TO make a phrase applicable, some are born gifted; others have gifts thrust upon them. Both things apply to Walt Disney. He was born gifted without a doubt; if you don't believe me, ask Mickey Mouse, and as for gifts being thrust upon him—well, ask Mrs. Disney. They almost need special postmen and carriers to convey to their Californian home the numerous toys and gadgets which are sent to Mickey Mouse from admirers all over the world.

And this vast collection of stuff is not confined to the dead variety—live pets arrive almost daily, and if it were not for the unbreakable rule of the Disneys to return all live stock to the senders with polite note of appreciation, Walt

might have been able to retire and make a living from the entrance fees charged for admission to see the Disney Zoo.

The making of Mickey Mouse cartoons takes a fair slice out of Walt Disney's time as may well be imagined, but still he finds opportunities for motoring in the Beverley Hills with his family, and indoors he amuses himself with his wireless, gramophone and piano.

His library, from the collector's standpoint, is composed almost entirely of fairy story books which he has found in his travels in almost every part of the world. Probably his is the most unique collection of fairy stories in the world. And his whimsical Mickey Mouse makes a good many of them come true!—G.G.



Look out for further people in this popular feature!

EASTER CARDS

IN WOOD OR COMPOSITION

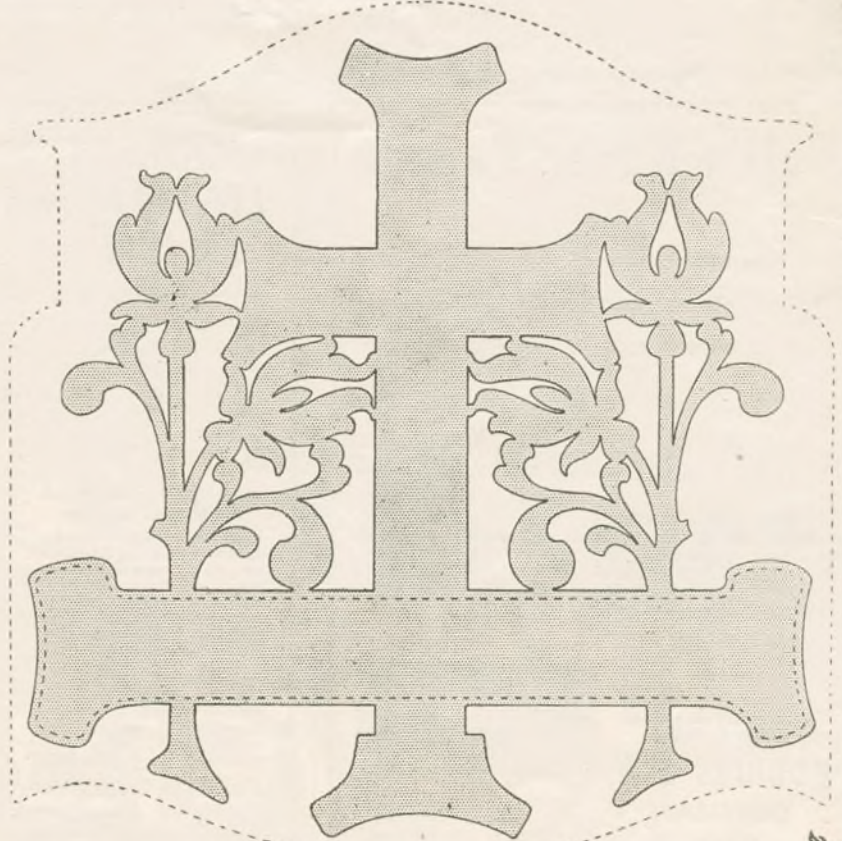
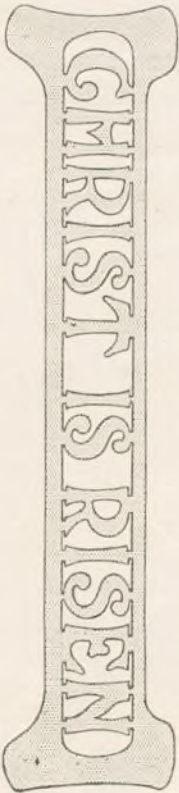
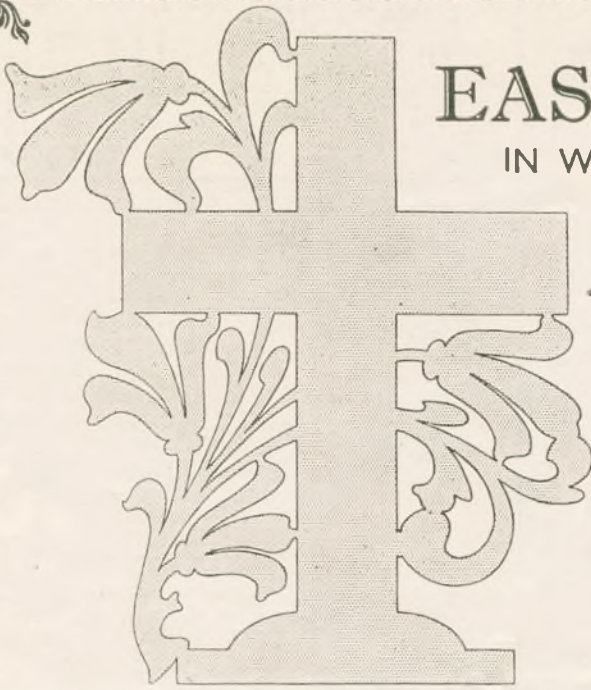
THE patterns shown are particularly appropriate for Easter, and can be cut with the fretsaw in very thin wood, ebonite, ivorine or similar material. The beautiful creamy white of ivorine is particularly suitable.

The outlines are pasted down and cut out with a fine fretsaw blade. If wood is used, it should be plywood not thicker than 1/16in.

Clean up carefully and fix to a thicker piece of wood as a background. A suitable shape for one is given by the dotted line, whilst the overlay of the wording is glued on to the pattern as shown.

These miniature Easter patterns make excellent gifts as cards, and can be sent through the post in envelopes with a board backing. Being in very thin material, several can be cut together, and quite a number made up easily and quickly.

The ivorine mentioned is supplied by Hobbies Ltd. in sheets measuring 12ins. by 6ins. at 1/6 per sheet. It is thin and pliable, easily cut and has a bright glossy surface.



DUST BLOWER for Handframes

Clears the dust away from the cutting line. Clips to top arm of frame.

6d.
Post
1½d.



Hobbies Limited,
Dereham, Norfolk
and Branches.

FRETWORK DRILL POINTS

4 in case 3d. 12 in case 6d.
From any Hobbies Branch or by post
(1½d. extra) from
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Varnish Brushes

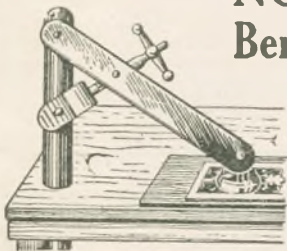
Bristles set in Rubber. These are sound quality Brushes offered at value-giving prices.

Hobbies Ltd., Dereham.



¾ in., 4d. 2 in., 9d.
1 in., 4½d. 2½ in., 1/3
1½ in., 6d. 3 in., 1/6
Post 1½d.

NOVEL Bench Cramp



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

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.
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If you are making a child's cot these are the fittings you will need. They are made specially for the man who likes to build his own cot and are offered at money-saving prices.



CASTERS. No. 6203. Smooth running casters. Just the right size for a cot. Price 9d. set of four, post 4d.

DROP SIDE FITTINGS. No. 6204. The modern cot has a drop side. These fittings are what you need. They cost only 3/6 set, post 9d. Copper bronze finish.

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Nicely printed papers to give realism to your model. Cheap to buy, too!



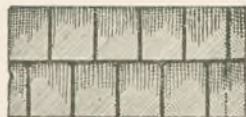
A Wide Range of Patterns



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1½d. per sheet, 1/3 doz.
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Each sheet measures
22ins. by 20ins.

HOBBIES LTD.
DEREHAM
NORFOLK



No. 145. Slate Roof Paper.
A most realistic representation of slates. 1½d. per sheet, 1/3 doz., post 4d.

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for the Amateur

Any woodworker can give his work a highly polished surface with Hobbies Lightning Polish. It is simple to use and results are guaranteed. A 10d. bottle covers a number of jobs and gives a professional finish to any natural wood.

Give your woodwork
a polished surface

A complete Polish Outfit for the amateur, price 2/3 (postage 6d.), contains polish, woodfiller, boxes of stain, sandpaper, rubber and full instructions. A sample bottle with instructions and rubber for 10d. (postage 4d.).

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FREE
A leaflet on Polishing for Amateurs is free on application to Dept. H.1. Hobbies, Ltd. Dereham, Norfolk.



Garden Fountain

I HAVE tried practically every method I can find of making a self-acting fountain for the garden, but to no avail. Could you advise me on the subject?—(C.H.)

SO far, as we are aware, there is no absolutely reliable "self-acting" fountain on the market; many schemes have been projected, the most satisfactory being a motor driven pump. This is simply a small electric motor supplied with electric current from the mains, and driving a small pump. Water is drawn from the fountain basin and forced up through the jet, whence it falls back, and the same water is used repeatedly.

The only practical difficulties with this system are the housing and "weatherproofing" of the motor and pump, which to be effective, must be below the level of the basin; secondly, a stray leaf in the basin will soon find its way into the pipe leading to the pump and will probably cause a stoppage. A gauze filter cap over the outlet pipe helps to prevent such stoppages.

The best natural system is to conceal a large cistern at a height of 10ft. or more above the level of the basin—for example in a tree, in the roof of a summer house or any convenient place near the fountain. A large bore pipe leads from the cistern to the fountain, where a plug cork below the jet allows it to be turned on or off at will. The waste water must be allowed to overflow and discharge into a drain. The cistern will have to be filled either with rain water from the house supply but the use of public supply companies water in this way is to be depreciated as it runs entirely to waste. Taking everything into consideration, the electric motor pump is the best system, and seldom gives trouble if reasonably well cared for.

Some of the letters we answer of general interest to readers

Wood for Guitar

I HAVE made an Hawaiian Guitar mainly with plywood but fail to get the required tone. Could you inform me as to what kinds of wood are chiefly used?—(A.D.)

IT is almost impossible to construct any musical instrument unless special suitable wood is used. Most boards have a deadening effect for sound, and usually instrument pine has to be incorporated in such a piece of work as a guitar. Your best plan would be to buy the special parcel of wood supplied by Hobbies Ltd., for making this instrument.

Writing on Celluloid

HOW can you write with ink on celluloid? (L.A.B.)

A LITTLE french chalk spread evenly over the surface of the portion of celluloid on which you wish to write will prevent the ink from running, and you should use a hard steel but fine nib for the purpose.

Making a Speedboat

I AM thinking of building an inexpensive speed-boat, into which I hope to fit a converted motor car engine. Is this possible?—(R.W.C)

A MOTOR car engine can be used for the purpose of driving a simple speedboat. The chief requirements for such work are: (a) the engine must have a clutch or reversing gear. (b) The carburettor must be protected and provided with a drip tray and a shielded drain pipe to convey any loose petrol clear overboard, as the rolling motion of the boat has a tendency to "spill" petrol from the carburettor with the attendant grave risk of fire. (c) All parts of the engine must be shielded from spray and especially the spark plugs and ignition system. (d) Cooling should be by circulation of sea water, forced by a pump driven by the engine, but if it can be arranged successfully, the car "radiator" could be used in conjunction with the existing cooling system.

The relationship of power to speed and size of boat is far too involved and technical to admit of a generalized reply. As a rough guide—a 7 h.p. Austin engine would drive a simple dingy type of boat about 12 to 14 feet long at a speed of about 5 m.p.h.

A more powerful type of hull, something about 20 feet long, would require an engine of 10 to 20 h.p. to drive at a cruising speed of around 10 m.p.h. A fast speed boat, with a single step hull, about 20 feet long, would need anything up to 60 or 80 h.p. to attain a speed of about 30 m.p.h.

From this you will see that it will be necessary for you to come to some decision as to the size and type of hull, number of persons to be carried, and speed desired, before it is practicable to suggest any particular kind of design.

Sandpaper Block and Refills for 10d.

Post 4d.

Hobbies standard 5in. block, with 1 dozen refills. Every woodworker needs one. The metal handle keeps the sandpaper taut.

NOTE—You MUST use the COUPON on page 3 of cover.



As Listed at 1/3

SPECIAL BARGAIN! OFFER!

FOR ONE WEEK ONLY





WHEN the ordinary 'snapshotter' first sees the work of a pictorial photographer he usually reacts to it in one of two ways. Either he regards it in the light of a stunt—"that sort of thing may be all right in its way," he says, "but it doesn't appeal to me, I just snap what interests me," or he 'falls' for it and is from that moment inspired to take his photography more seriously; to see if he too cannot take photographs that are *real* pictures.

Nearly always this type of photographer's first idea is that in order to take pictures he must get right away from his ordinary surroundings. No good picture, he thinks, could be made in the humdrum places where he lives and works. So the town dweller rushes off to the country and the countryman is convinced that only in London can be produced that masterpiece of which he dreams.

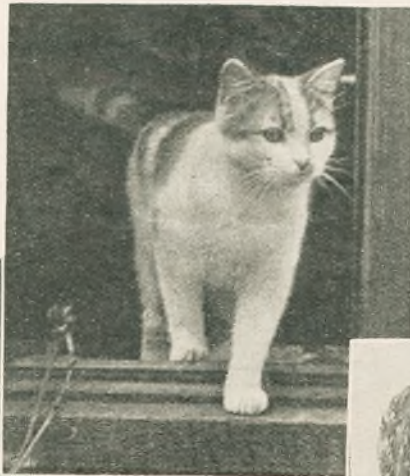
One's first view of a first-rate Exhibition is rather discouraging—the pictures are so much finer than anything one can hope to produce oneself. As one studies them, however, one is gradually struck by the fact that the *subjects* are, as a general rule, just ordinary everyday subjects such as we ourselves take—or at any rate could take—without going a step beyond our daily course.

There may be some few scenes from out of the way places, but the majority of the pictures hung in these shows differ from our own (apart of course from actual size) not in subject but in treatment of the subject.

Most of them conform to the rules of composition, a subject more or less ignored by the snapshotter.

Now there are quite a number of rules of composition and when first one tries to make pictures they are a great help; but it is a fact that when a picture looks right to the eye, it generally *is* right in composition.

The craftsman never binds himself by the rules he uses



EVERYDAY PICTURES and how to take them!



If such aspiring artists would attend the Exhibitions held by their local camera club or, better still, the Exhibitions in London of the Royal Photographic Society and the London Salon of Photography, they would revise their ideas drastically.

them on occasions. But, in time by constant practice, his eye tells him what to take and how to take it.

We propose mentioning one rule only, but if the novice will practise this, he will find his pictures will begin to contain that which perhaps they have missed more than anything; namely, interest.

In a rectangular picture the strongest position

Photography—(continued)

is on an imaginary line one third of the distance across the picture space. If the chief object of a composition is placed on this line, it will automatically command attention, the eye will be drawn to it, will rest there, and when this occurs,



the composition of a picture strikes one as satisfactory. Beginners nearly always place their chief object in the middle of the picture space. This is the weakest spot there is and the object immediately loses significance from its weak position.

Among photographers there is a saying that "the part is greater than the whole." As novices, we are all inclined to include too much in our pictures, which thus suffer from scattered interest. We need to discriminate between the essential and the unessential, and to select only that which is essential. A painter can leave out anything which offends his eye or which strikes him as unnecessary to his effect. The photographer has a perfect drawing instrument in his lens but one which has no discrimination whatever; it draws everything that is put in front of it.

The discrimination has to be used by the photographer when he chooses his view point. He cannot remove unwanted details but he can select a spot from which they will be invisible. When photographing a scene, no time should be considered as wasted which is spent in wandering round looking at the scene from all quarters. Sometimes the alteration of one's stance by a few feet will make all the difference between success and failure in the picture.

An Example

We mentioned earlier the way in which exhibitors treat their very ordinary subjects, to make the picture original, and 'different.' Let us take such a common subject as ploughing and see how different people would approach it.

The beginner would probably see a man with two horses and a plough and would rush on to the field and straightway 'snap' the scene.

The result would very likely be excellent techni-

cally but would differ in no way from thousands of other ploughing pictures. Probably, the team would be so far away and consequently too small to be more than an insignificant feature on an expanse of field. The sky would be blank, and, as he would not have considered the composition, the landscape would be devoid of interest.

Plan your Picture

The old hand, on his part, thinks out his picture first and then plans how to get it. He considers all the items and makes up his mind what he is going to include and where in particular he wishes to have the team. He may have to wait an hour or more before he gets it in that spot but in the end he gets his picture and the main object—the team—will be just where they are needed in the landscape.

On the other hand, he may decide that the team itself is to be the picture and will take it on such a scale as to fill the entire picture space. If he wants to emphasise the size of the horses he may stoop

down in a furrow until they are almost on top of him. He may take them silhouetted against the sky, and he will use colour sensitive plates, you may be sure, so the clouds will all help to make his picture.

Whatever he does, you may take it the picture existed first in his mind and was not the result of a hasty 'snap.'



Three pictures of everyday subjects — interesting and attractive.

Again two photographers dealing with a sunlit house. One will take the whole house, the other will realise that the actual 'picture' is just the corner of the gable where the sun strikes it. He takes this and by eliminating all the unwanted detail, his picture gains in dignity and interest.



No one need despair of picture-making because he lives in a dull part of the country. There are pictures everywhere—in every town, village, street or slum. But we need eyes to see them. The seeing eye is born in some people but can be cultivated by anyone.

It is chiefly a matter of practice, of looking about

Photography—(continued)

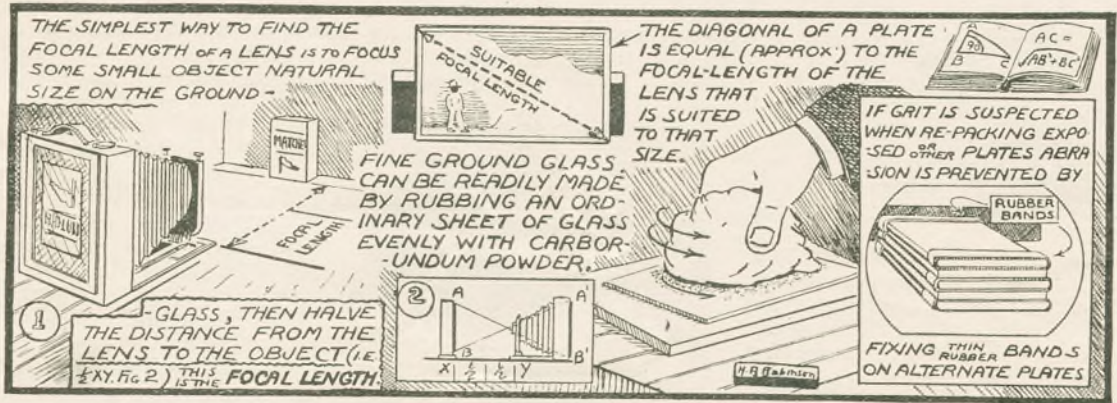
one on all occasions. As we go to and from work we learn to see pictures at every step. It may be a dog basking in the sun ; the rays of the sun striking through the trees on a misty morning ; the shadow of a ladder on a whitewashed wall ; an old tramp on a seat ; a cobweb sparkling with dew ; a reflection in a puddle ; children playing in the gutter.

Every trade and occupation can be made to yield pictures. Do not neglect your own home. A tiny corner of a suburban garden will often give a better result than an imposing expanse in the grounds or park of a famous house. Inside the house it is generally impossible to take a whole room—but one can show a corner with a pretty window, a sunny bit of the kitchen, or even the bathroom may make a picture if properly handled.

Children are to be seen everywhere and no more fascinating subject is to be found. When young enough they are free from all self-consciousness and will pose in the most delightfully natural attitudes. Lastly do not forget the domestic cat. It will provide you with a wealth of pictures.

The enthusiastic picture-maker will use anything that comes his way. And the curious thing is that one never uses up subjects. The more one takes, the more one finds to take. But let us remind you again, it is not the subject that makes the picture but its treatment—its arrangement or composition and its lighting. A scene, dull and without interest, at one time of the day may, on account of certain shadows, be full of loveliness a few hours later.

OUR PICTURE STRIP OF PHOTOGRAPHIC HINTS



Out-of-the-ordinary Easter Eggs

THERE are dozens and dozens of all kinds of 'Shop' Easter eggs—these can be bought—but why not try making something different? A few suggestions may not come amiss, and they can be enlarged upon at will.

First of all eggs will be wanted—real ones, or their shells, hard boil the former, or, in the case of the latter, extract the egg inside by making as small a hole as possible.

These hollow eggs can then be filled with small sweets, minute toys, or such like. The hole at the top is easily closed by means of a gold silver or other coloured paper star, or circle, affixed in position over the opening.

And now, with the eggs all ready prepared, the decorating can proceed, and any of these ideas carried out on either kind.

A splendid effect is obtained by cutting out initials or whole names

from gummed paper, and sticking them firmly on the egg.

Next, with a small piece of sponge or cotton wool, dapple the egg all over with water colour paint—all one colour or several. When the paint is quite dry, peel off the sticking plaster and behold

a cleanly cut initial or name right over the egg—it looks so clever!

Another easy idea is to use transfers, but avoid too large ones. Butterflies are effective, so also are flowers.

Spots can be cut from coloured paper or tinfoil and fixed on. Scarlet, black, royal blue and gold is a rich looking mixture.

Coloured crayons are very easy to work with on eggshells, and you do not need to be an expert to write a name in large handwriting. "Daisy" looks charming inscribed in blue with small pink and green flowers if necessary over the shell.

A simple floral pattern such as the one on the left is easily done with crayons. Notice the pattern connecting the flowers is pure scribble—yet how effective!

If you can draw only a little, small landscapes look nice.



Binding Cases for Hobbies Weekly

Why not have your copies of *Hobbies Weekly* bound into a handsome volume? We supply the binding case in red, embossed in gold—a real attractive and durable case—for only 1/8 post 2d. Your local newsagent or stationer will be glad to quote you for binding.

Index to Vol. 79

Oct. 6th, 1934 to Mar. 30th, 1935

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Hobbies Weekly, Dereham, Norfolk

There was a young housewife named Pam
She just craved for a Radio-Gram!
So Sam did his duty—
And built her a beauty—
He used FLUXITE—of course—clever Sam!



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Ask to see the FLUXITE SMALL SPACE SOLDERING SET—compact but substantial—complete with full instructions—7/6.

Ask also for Leaflet on CASE HARDENING STEEL and TEMPERING TOOLS with FLUXITE.

THE FLUXITE GUN

is always ready to put "Fluxite" on the soldering job instantly. A little pressure places the right quantity on the right spot and one charging lasts for ages.

The Gun also serves for grease as an oil can does for oil. Price 1/6.



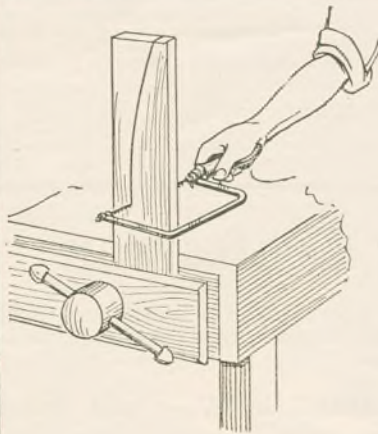
ALL MECHANICS WILL HAVE

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The only possible Saw
for some jobs

A necessity to the
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With special features of
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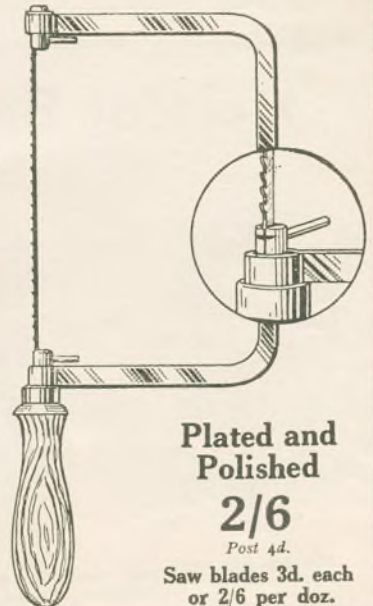
AN IMPROVED PATTERN

COPING SAW

There are some jobs of work where the only tool to do it is the coping saw or pad saw. It is useful in cutting long boards, because by an ingenious and simple method the blade can be turned at an angle to the frame itself, as shown in the illustration. The blades (foreign made) are 6½ in. long, and fitted with a cross pin at each end, by which they are easily dropped into slots in the frame, and tightened up by turning the handle. The frame is plated and polished and the handle is comfortably shaped of polished hardwood

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Plated and
Polished

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Post 4d.

Saw blades 3d. each
or 2/6 per doz.

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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 £1/1/1/6 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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BAND GUIDE free. Drums, Flutes, Bugles.—"Potters," 36 West Street, London, W.C.2.

SELECT your own free gift! I allow you to pick 2/- worth of Stamps, absolutely free! Request approvals.—J. F. Smith, 19 Rougemont Avenue, South Morden, Surrey.

MINIATURE BOWLS. Play on the lawn or indoors. Set of four hardwood bowls, 3in., with jack and full instructions costs only 4/6, post 6d.—Hobbies Ltd., Dereham.

1,000 ASSORTED STAMPS. 2/6 post paid. All good.—Marina Bargain Stores, 58 Halkett Place, St. Heliers, C.1.

YOU CAN GET THOSE SMALL WOOD SCREWS FROM HOBBIES. All sizes from 1/8in. round or flat head.—Hobbies Ltd., Dereham.

100 Different Stamps Free to applicants for 1/2d. approvals. Big discount.—Cox, 21, Dennis Mansions, Westcliff.

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MOVIES AT HOME. How to make your own Cinema Projector. Particulars free.—Moviescope (H), 110 Brecknock Road, London, N.7.

SMOOTHING PLANE, 5/6, post 9d. A real practical tool with 2in. double, iron. Big value.—Hobbies Ltd., Dereham.

500 World-wide Stamps, 6d.—Way, Cheadle-Hulme, Cheshire.

DOLL'S HOUSE PAPERS, from 1 1/2d. sheet. Send for list—Hobbies Ltd., Dereham.

TRAY HANDLES from 3d. pair.—Hobbies Ltd., Dereham.

NOTICE.—Our Deposit System: is probably of use to those desirous of seeing the goods before they buy. The would-be Buyer sends us his money and we write the Advertiser and give him the address of the person who wishes to buy. The goods are sent by the Advertiser to the Buyer on approval and when the purchaser gives us his consent we will forward the money to the Advertiser in payment of the goods which the purchaser will keep. In addition to the value of the goods, a Deposit Fee of 1/- must be enclosed to cover cost of our correspondence. Each party in the transaction will pay carriage one way. We cannot accept goods for exchange, nor any money for goods valued less than 5/-. All money should be sent by Registered Letter, but we cannot be responsible for any damage or loss incurred. All letters to be addressed to the Advertisement Manager, Hobbies Ltd., Dereham, Norfolk.

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You can buy these books from any Hobbies Branch or Agent. Orders by post should be sent to Hobbies Ltd., Dereham, Norfolk.

Three books which should be on every bench. Written in non-technical language, by an expert on the subject. Well illustrated.

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BY AIR TO SINGAPORE

The second article of our journey to the East through the pages of our Stamp Album.

In our last article we flew by land plane but now must continue by seaplane to get across the Mediterranean to Egypt.

Having crossed the Mediterranean, the next stopping place will be Alexandria, and we may see an illustration of this town on the 3 mils of the 1914 issue of Egypt. We only stop here in order to refuel, but that should give us sufficient time to look around and observe closely some of the curious craft which are shown on the 1 mil. stamp of the same issue.

Taking off from Alexandria we soon reach Cairo, and here we shall stop for the night having accomplished just over 1,000 miles in the day and nearly 2,500 miles since we left Croydon.



In Cairo.



Nile Ships.

During the short stay at Cairo we shall not have much time for sight-seeing. Nevertheless, we shall gain a general impression of buildings such as are seen on the 50 mils. stamp of the 1914 issue of Egypt, which shows the Citadel Cairo.

The next stage of the journey will be over part of the Syrian desert so we cannot continue in



A picture of the Pyramids.

the same flying boat, but must travel in an aeroplane similar to the one in which we started. The new aeroplane will be carrying more mail than before, so accommodation is for 24 passengers instead of 38.

The first famous view will be

that of the Pyramids, Egypt (1933 issue). The 1 mil value shows a view of the famous Gizh group, the largest of which is over 450 feet in height. It is said that it took 100,000 men twenty years to build, and as some of the stones weigh as much as fifty tons each, this can be understood. Also some idea of the height may be gained by remembering that the tallest building in England is Salisbury Cathedral, the spire of which is 404 feet high so that the pyramid is nearly 50 feet higher than that!

Our route now lies more to the east and we pass over Gaza and fly fairly close to Jerusalem, a view of which we may see on the 5 millimes of the 1927 issue of Palestine.



Jerusalem.

Continuing the journey we shall pass over the northern end of the Dead Sea, the surface of which is 1,300 feet below the sea level—the lowest sheet of water on the face of the earth. Unfortunately, the stamp album will not provide us with a view of this precise region, but by looking at the 20m. of the



The Arch of Ctesiphon.

1933 issue of Trans Jordan we see a view of the Allenby Bridge over the river Jordan which flows into the Dead Sea.

This gives some idea of the rift valley through which the river flows, though, of course, the shore of the Dead Sea will not be clothed with the vegetation which is seen on this stamp. The saltiness of the sea prevents such growth.

The flight is now across the Syrian desert, a lonely region which does not lend itself to the



Flying over the Desert.

composition of a stamp design, so that until we fly over the river Euphrates we must rest.

One of the stamps of Syria, the 2 pi of the 1931 issue shows a view of the river Euphrates with an aeroplane above it. That is what the aeroplane and the river look like from one of the banks, and you must use your imagination to realise what it would look like from the air.

Soon after passing over the river Euphrates we shall see the river Tigris and land at Bagdad. On the 6 anna of the 1923 issue of Iraq we shall find a view of the El Khadamain mosque, the second largest Mohammedan mosque in the world. Its two domes and four minarets are covered with sheet gold, so that in the light of the setting sun the view will be one which will not be easily forgotten.

Bagdad is the stopping and sleeping place after Cairo, and the next morning on leaving Bagdad and flying down the river Tigris we soon come in sight of the Arch



Craft on the Tigris.

of Ctesiphon which is all that remains of the Great Hall of King Chosroes the Blessed (A.D. 563-579).

Here it was, too, that General Townsend fought an engagement with the Turks after which he had to retire to Kut. In the 1923 set of Iraq the 3 anna gives a very good view of these ruins, while the 1 anna of the same set shows some of the curious craft used for transport on the river Tigris.

(To be continued)

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Design No. 1825 with Wood, Strings and Pegs.

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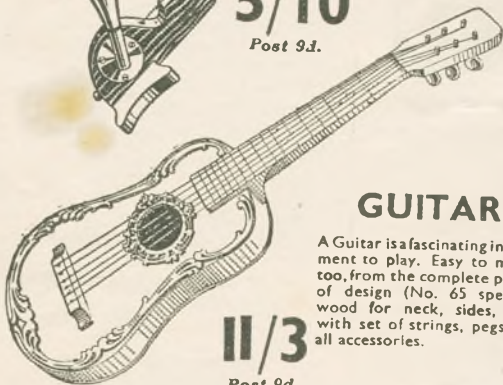
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ONE STRING FIDDLE

A very popular instrument. Easily made from Design 1842 with shaped neck, knee support, horn, reproducer, etc. Complete parcel.

5/10

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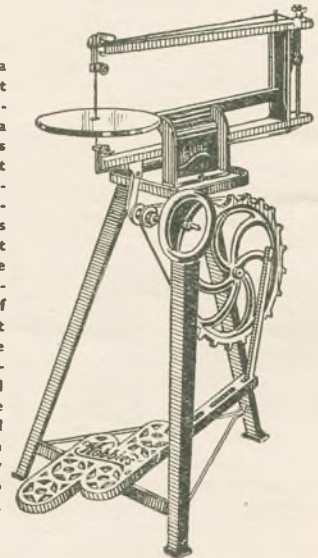
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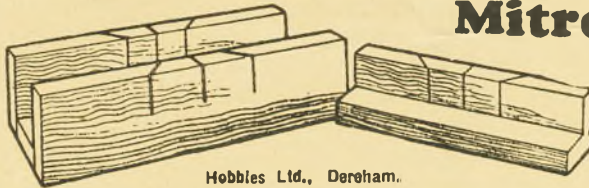
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