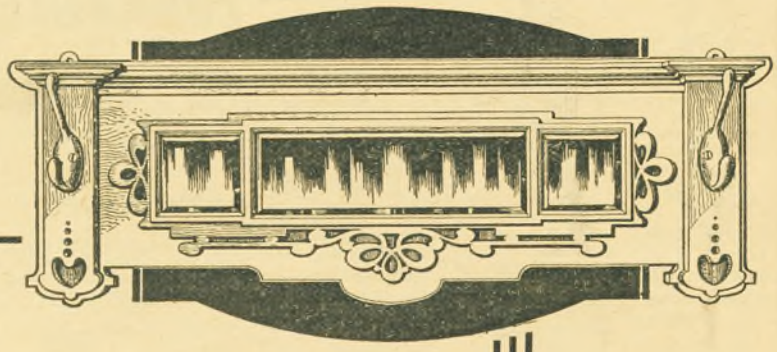
Hobbies WEEKLY



LARGE

HALL RACK DESIGN FREE

How to make a Canoe, etc.

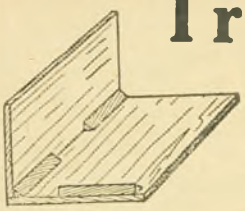
2D

July 24th. 1937

Vol. 84. No. 2179

THE FRETWORKER'S AND HOME CRAFTSMAN'S JOURNAL

Triangular Fillet Strips



These strips are supplied in two-foot lengths and are suitable for blocking pieces in corners of cabinet and carpentry work. They are cut from good quality wood, and can be stained to match any work. Also suitable for forming base strips behind cut-out pictures and calendars.

½-in. Strip ... Price 1d. per Length.
¾-in. „ ... Price 1½d. „ „
1-in. „ ... Price 2d. „ „
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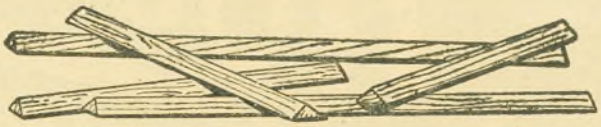

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Petrol Pumps of Esso or Shell. Lights lamp when pumped. 6 ins. high. Complete with battery inside.

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Hobbies WEEKLY

July 24th. 1937 Vol. 84. No. 2179

POSSIBLY one of the most general type of letter I receive is from readers saying—" Your models are wonderful—please let us have more " or " I am always having orders for fretwork brackets—please let us have more ! " You see what I mean ? Every reader is so keen on his own particular kind of work that he wants to do it every week. And in the meantime the other fellow who does not like them would be getting awfully annoyed and send me a bomb by post, or endeavour to rush up the stairs past our worthy sentinel, George, and club me with a knuckle duster in true picture style. It is, as I am frequently saying, heartrending to please everybody. But I do try and ring the changes on the types of design, the articles to be made, and the work to be completed, to make as many happy as possible. If you study the issues for the last six months, say, you will find an amazing range of subjects in the gift design sheet.

IT is, too, I think rather wrong of anyone to specialize too much on one type of article to make. To make only model galleons, for instance, or to turn out nothing but photo frames not only becomes boring in time, but also overloads the market. Your friends will say " Yes, but he only makes frames " (or whatever it is) and not realize you are just as good at, say, models, or inlaid work.

NOBODY can gain a wide experience by constantly doing the same thing. One gets more knowledge certainly by doing something a few times, but to get down to the sheer mass production stage is carrying the point to the obvious loss of interest and enthusiasm. There must be pride and keenness and joy in all you do, and by trying your hand at the various types of work —fretwork, woodwork, model making, inlaid work, ships, etc.—you will be surprised at the greater interest you find. Which, coming back to our original point—is why we are providing designs, patterns and particulars of such a variety for all readers. Don't, then, get annoyed if, say, this week's sheet is not quite what you wanted. Make up your mind to try it and you will be surprised at the joy you get in the making.

AS promised last week I can now give details of last month's Maze Competition. There were quite a lot of entries, but only a few managed to sort out all the articles. From those the neatest entry was selected, and the prize accordingly went to J. Johnstone of Saltcoats, Ayrshire, who is now the possessor of a Gem Machine. The second and third prize went to E. Baker, Totland, I.O.W., and G. W. Pickard of Dunton Green, Sevenoaks, respectively. Special prizes were also awarded E. W. Rowe of Plaistow, J. Parker of Radford, R. Birmingham of Holywood and F. Wheeler, Croydon. As readers may like to check up their own lists I am giving the official one from which the artist drew his parts. The Maze included drawings of Tennis Racquet and stretcher, Golf Driving Club, Putting Club, Bag and ball, Cricket bat, ball, Pad, Cap, Glove, Stump and bail, Fishing Rod and line, Winder with paternoster and sinker, Creel, Gaff, Shrimp net, Croquet Mallet and Hoop, Swimming Costume, Cycle and Rowing Oar.

ANOTHER competition recently closed is the Overseas Coronation Crossword. This time there was only one with a complete correct solution—Joseph Rock of Dublin, I.F.S. There were, however, several who had only one error and a consolation prize has been sent them all. I will try and print the actual solution.

The Editor

CONTENTS

GIFT DESIGN CHART—Hall Rack

Next Week's Design—Small Casket

Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. are on cover iii.

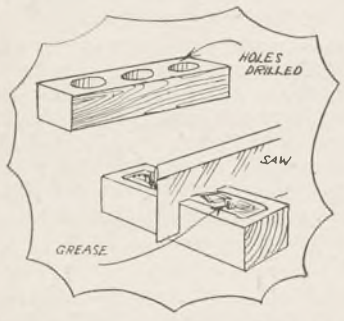
Send your own simple tips to The Editor Hobbies Weekly Dereham, Norfolk Keep them short and add rough pencil sketches if possible.

HINTS AND TIPS WORTH KNOWING

For original Tips published the sender will receive a Hobbies Propelling Pencil and Refills. We cannot acknowledge or print all tips sent in.

Bench Grease Box

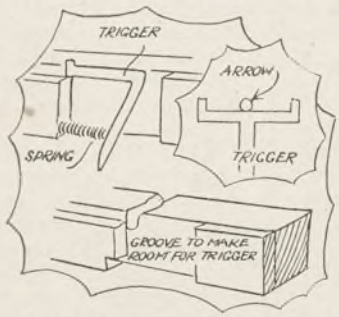
A BOX of grease is always found useful on a bench. A box can easily be made by drilling two or three large holes



in a block of wood as illustrated, then chisel out the waste. Now fill this up with grease and put a sawcut through the middle to run the saw through when the greasing of it is wanted.—(E.S.)

Crossbow Trigger

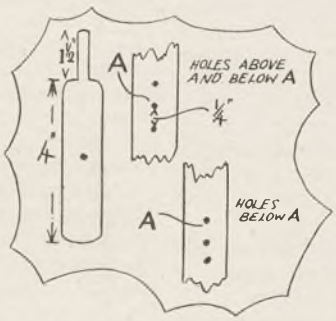
AS I read your article in Feb. 20th issue on how to make a crossbow and archery bow, a tip came into my mind concerning the trigger. I think the string ought to touch the arrow, because when the string is let go from the trigger it might not catch the arrow. I suggest having two



pieces of brass instead of one and then being riveted together and being made into this shape at the top so that the string touches the arrow. This suggestion makes a good alternative form of trigger providing the stock is not cut away too much, so as to weaken it.—(H.C.)

A Simple Trick

THIS novel little bat trick is simple to make and easy to perform and it will prove mysterious to whom it is shown. The bat consists of a strip of wood 5½ins. long, 1in. wide and 3/16in. thick. This is trimmed to the shape shown. Round the handle with a piece of glasspaper. Make a hole exactly in the centre of the bat (marked A) to go right through—the others do not. Make an imitation hole above and below



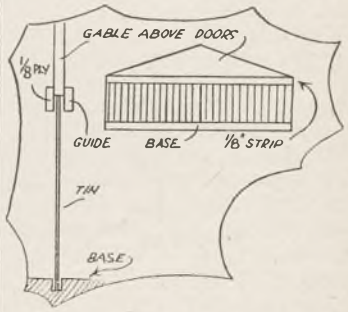
A on one side of the bat and two below A on the other side. Take a match-stick and shape it round to fit the holes. Paint the bat and stick any suitable colour. When dry, push the stick half way through the hole as the trick. Show the people the one side of the bat, when the stick is in the centre hole. Wave it up and down, and whilst doing this turn it round, and it is in the top hole. Wave it up and down, turn it round, and then stick in the centre hole again.—(N.H.)

Handy Camp Holder

MANY campers find difficulty in carrying sugar and tea so that they will both be handy in use. Here's a tip that will help. Solder two coffee tins of the same sizes together, bottom to bottom. Now you have a compartment for sugar and an adjoining one for tea. Paint or scratch "sugar" on one end and "tea" on the other, and there you are.—(G.A.)

Sliding Model Doors

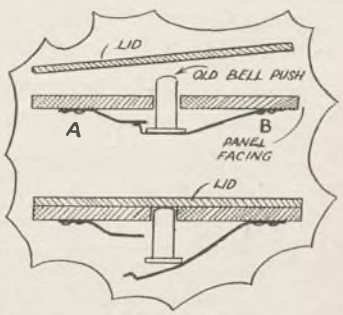
WHENmaking a model garage, often it is impossible to fix hinged doors. Here is a tip for sliding doors. First cut out a slot about 2/10ins. wide, where



the door is to slide. Then obtain four pieces of tin and cut to size needed. Next make a guide with two strips of ¼in. plywood as shown in sketch. Then slightly bend tin to get into guide, as shown, and then your garage doors are complete.—(G. H.)

Wireless Cut Out Switch

I HAVE found this 'dodge' very useful on my portable wireless set, and thought that it may be interesting to other readers. The switch, which is intended for portable sets, cuts off the L.T.



current when the lid is closed, as shown in the sketches. The switch is mounted on the panel-facing of the set in such a position that the lid, when closed, depresses the bell-push knob, so breaking the circuit. One of the leads from the accumulator is broken and the ends connected to the screws A and B.—(H.B.)

The FRETWORKER

A SIMPLE HALL RACK

Made from Design No. 2179

THIS week's large gift design sheet is for the making of a practical piece of work which deserves a place in any home. It is typically modern in style, and quite suitable for the ordinary small hall where a couple of coat hangers are required.

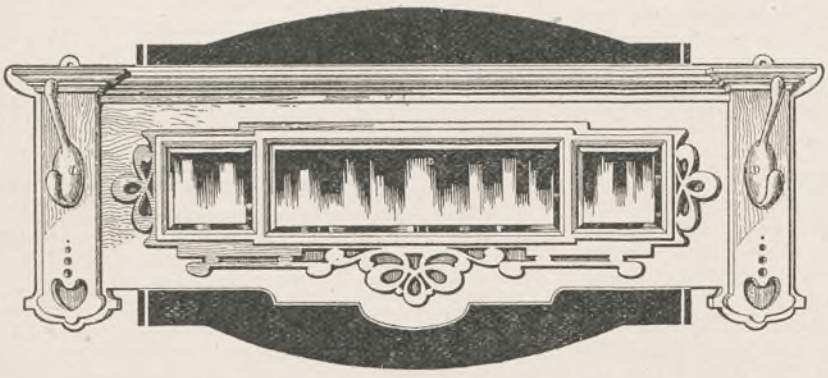
The Hat Rack shown, when completed, is 2ft. 1½ins. long and 8ins. high. It is fitted with an ornamental panel at each end which bear the hat hooks, whilst the centre is decorated with three bevelled mirrors held in place by a simple ornamental overlay.

All the work can be done with a fretsaw, and a parcel of oak is provided complete for 4/6. This parcel not only contains the necessary wood, already planed and in the required thicknesses, but has the fancy moulding which ornaments the top edge. A piece of this moulding is illustrated herewith, and it can be seen how this projecting rail adds considerably to the appearance of the whole thing.

Moulding and Mirrors

The moulding is in oak and is the Hobbies No. 17 as quoted in the current Handbook. The three mirrors are also supplied as shown in the accompanying fitting list.

Before beginning work we should just study the design sheet to see that we understand how the patterns are fitted up. Owing to the length of the back it has been possible to show only half of that portion, so the first job is to complete the



necessary outline. Cut out the paper pattern shown, therefore, and paste it down on to the wood, allowing another 1¾ins. beyond the centre line marked.

If the wood has one long straight edge, this can be utilised to paste the upper edge of the pattern against so saving the cutting on another straight line. Take a piece of tracing paper and go over the outline of the half pattern shown, then turn the paper over exactly along the centre line marked. Take care that the upper edge is straight, then mark the outline direct on to the wood, or paste the paper and go over the marking with a pencil.

Notice the position of the various dotted lines which show the adjoining parts. A good plan is to make one or two pin holes at the corner where the overlays come, so their position is still indicated when the paper remains have been cleaned off.

The Side Panels

The actual line of the moulding and of the under strip need not be marked on because this comes automatically when the parts are fitted up. Nor is it necessary either to mark the placing of the hanger providing you can remember where it has come.

Having cut and cleaned this main back, the two side overlays can be got out. Here again a duplicate pattern will be needed, and a tracing can be taken as before. These parts are quite simple, and when they have also been cut and cleaned they can be glued with the long straight edge ¼in. inwards from the straight end of the back. Be sure, too, to get the top in line with the top of the back.

These side strips not only add to the appearance, but also strengthen up the whole thing because they cross the grain of the back and so prevent any likelihood of warping. Glue the pieces down firmly, and if necessary add some flat headed screws from behind.

Remember in gluing, it is not the amount of adhesive which you put on, but rather the way in which it is rubbed well into the wood. Only a thin skin is needed, but it should be pressed over the whole surface of the material with the tip of the finger. Leave it until slightly tacky then press it in position. It is a good plan always to mark the position of pieces which are going to be glued. That is, you should lay the overlay in place and just make one or two light pencil marks down the side.

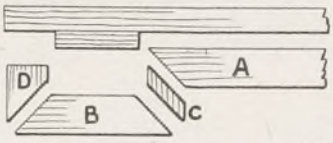
Then, when the glue has been put on, the piece can be laid in its proper place without sliding over

the wood. If you put it in one position then have to push it a little way along, the glue is apt to catch on the wood and show, or have to be thoroughly cleaned off afterwards—an unwanted operation.

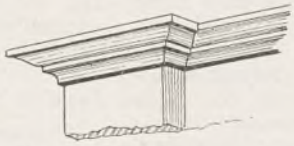
When the overlays are glued, cramp them in place or weight them down firmly with books or some other heavy articles, then proceed with the cutting of the mirror overlays. The position for the three mirrors is formed by the main overlay in 3/16in. wood.

This has the fretted ornamentation on the underside, and the two ends, all of which should be cut before the openings of the mirrors. If you cut the large pieces out first, it is apt to weaken the wood and lead to a breakage or damage in the turning when you are doing the fretted portions.

In cutting these openings for the mirrors, too, it is advisable to have the actual glasses in place. Just lay them in the openings provided and see that when you cut round the space allowed is sufficient. Indeed, a good plan is to lay the mirrors in place and pencil lightly round them so that when you cut out the wood the glass fits in exactly.



How the moulding is fitted round the projecting pieces



This is the type of small moulding required

Mirror Overlays

Each of these mirrors is held in place by a complete overlay, and here again it will be necessary to duplicate the half pattern shown. This piece is only in ⅛in. wood and the actual cutting with the fretsaw is the interior rectangles for the mirrors.

These inner edges, however, have to be chamfered, and this work should be undertaken first before the actual outline of the overlay portion is cut away. This again provides a larger piece of wood for handling and reduces the likelihood of damage which would otherwise occur with such a narrow rim.

Chamfering

The chamfering is done by laying the wood on a cutting table and using a fairly wide file of medium coarseness, running it across the board at a right-angle with a backward and forward movement.

The job is perhaps a tedious one, and care must be taken to maintain the same angle the whole way through. If you find doing this filing makes the wrist tired, give it up for the time being and return to it later, otherwise you will find you are beginning to round the edge off instead of getting a perfectly straight angle across the wood. Take care, too, with the corners that the chamfer runs up to them, then finishes off at an angle of 45 so it may turn round the other direction in the same manner.

The main overlay for the mirror can be glued in place, but it is advisable to leave the glass and further overlay until the moulding has been fitted round the top. Measure off five pieces of moulding to the lengths shown on the sheet. In addition to these we shall require two further pieces ⅜in. long for the inner returned portions. There is, however, sufficient spare wood in the lengths of the other pieces to allow for this.

Returned Moulding

Actually, you see, the moulding has to be returned right round the drop pieces at the end. If you were looking down on it from above you would see the top of the moulding something like the plan in the detail herewith, except, of course, that in this plan the parts have been separated slightly to make them more distinct. In consequence, each piece has to be mitred carefully to fit.

First of all, you can get the long piece which goes along the top edge. This is mitred at 45 degrees inwards as shown at A. Then take one of the 4ins. pieces and mitre it so the front of the moulding projects outwards, as shown at B.

Thus you have a tiny piece about ⅜ins. wide which is mitred parallel as shown at C, whilst on the outside of the overlay—the end of the back comes the 1½in. piece (marked D.) The latter has one flat edge which rests against the back, and one mitred edge which fits up against B.

How to Mitre

This mitring should be done with a small tenon saw and a mitre block to ensure correct angles. You can easily make a block for yourself after the usual style, but, of course, you must have the angles pointing in two directions. See the pieces fit snugly together then glue them in position as shown by the drawing of the finished part herewith.

Below the main piece of moulding is a strip of wood 20ins. long, 1/16in. thick and ⅜in. wide. This forms a little fancy apron when it is glued close up to the underside of the moulding, and tightly between the two end drop overlays.

If you intend staining and polishing the wood, it should be undertaken now before the mirrors are put on. Lay the mirrors in place and back them up behind so they fit closely to the overlay piece which is then glued on. Add the two coat hooks with countersunk screws, and fix the two brass hangers behind so the circular piece projects above with room for screwing to the wall.

MATERIALS SUPPLIED

Fretwood.—For making this design we supply a parcel of oak with sufficient oak moulding (No. 17) 4/6 post free 5/2.

Fittings.—Two bevelled mirrors (No. 5716), one bevelled oblong mirror (No. 5728), two hangers (6176), and two coat hangers (6160), 2/9 the set. Postage 6d.

A complete parcel for 7/6 post paid.

A SIMPLE CANVAS CANOE

THE type of canoe shown is one that can be made up easily, is easily handled and transported. The weight when finished, including paint, is 35lbs. While not so speedy as the long narrow type, this canoe is quite steady and can be handled easily.

Make two of each of stern and bow triangles Fig. 8 and Fig. 9 and two keel battens Fig. 1 and two sheer battens Fig. 2. These battens are 9ft. 2½ins. long and are mitred as shown at Fig. 8 and Fig. 9.

Fasten the sheer batten to the triangles of wood with waterproof glue and brass screws and put in temporary spreaders to get the shape as Fig. 2.

Steaming or soaking in water is as a rule not necessary except for the keel battens. However if the spruce is very dry, soak in water overnight which will prevent any possible breakage in bending. The sheer battens are spread 24½ins. at position marked C in the plan.

The Keel

Make the keel rail assembly in the same way, spreading 21½ins. at frame C. Make bow and stern blocks (Fig. 11 and Fig. 12) which are cut from ¾in. wood. Then fasten with glue and brass screws. The sheer frame to the sheer edge and the keel frame to the keel edge. A side view of this complete is shown at Fig. 1. The frames of ¾in. spruce can now be cut out as shown in the drawing. All the frames are notched to receive the battens. Fig. 3 gives the shape of the frame at A, Fig. 4 gives the shape of the frame at B, Fig. 5 at C, Fig. 6 at D and Fig. 7 at E.

Fitting the Frames

Remove the spreaders at C and insert the frame itself. Mark off the position of the other frames on sheer and keel battens. The distances are measured in the straight line from bow to stern as shown at Fig. 2. All frames are now fitted in and fastened at sheer and keel battens, the latter fitting into the notches provided in the frames.

The notches require to be bevelled slightly, in order to fit close to batten. The fastening of battens to frames can be done with 1½in. brass screws. The remaining three keel battens are now fitted to the frames and bevelled at bow and stern to fit on stern and bow block.

The four pieces for the cockpit frame are now cut out—two (which are the shape Fig. 13) and two 19⅝ins. long, 5ins. by ¾in. thick.

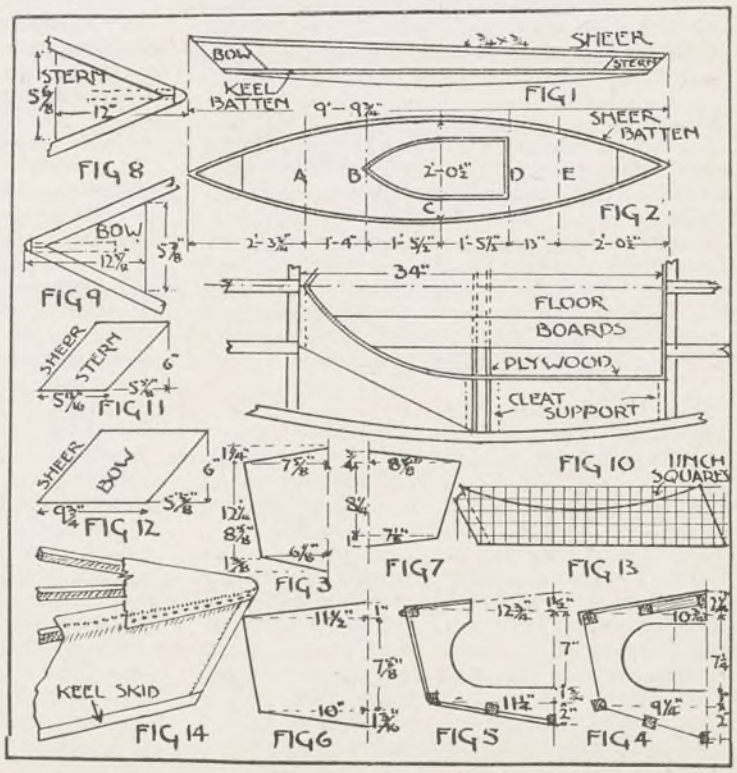
Install the floor boards which are nailed to frame B and C and supported by a cleat at D and fit the ¼in. plywood. Complete the filling in of deck battens which extend from bow to frame B and from stern to frame D.

Deck Battens

These deck battens are bevelled to fit on the top of bow and stern blocks. Sharp edges at sheer and keel, also at bow and stern, should be removed to prevent cutting into the canvas covering.

Then apply one coat of good paint to the complete boat frame.

The canvas is of the heaviest grade, weighing 22ozs. per square yard. It is laid in two pieces, one 48ins. to cover the bottom and sides of the boat, the other to cover the deck.



Stretch the 48in. canvas from end to end of the boat over the bottom, pull up the stem and put a tack at each end. Begin at frame C and pull canvas in a vertical direction and tack along the top of sheer batten, first at one side and then at the other.

Work from frame C towards the bow, pulling up tight a little stretch at a time then tacking. Tacks should be 1in. to 1½ins. apart. Canvas at bow and stern stem is cut, the joint being sealed with a little marine glue and white lead, then tacked firmly to stem blocks.

Deck Canvas

Sponge the canvas with water to make it shrink. This will remove small wrinkles.

The deck canvas is now stretched on and pulled down the sides of the boat Fig. 14, being tacked on the sides of the sheer batten. Fastening of canvas round the cockpit is done by tacking on the edge of the cockpit framing. The overlapping of the deck down the side of the sheer batten is covered with a ⅜in. bead, which is better put on after all the painting has been done.

For the painting good lead paint may be used entirely, finish with an enamel-like surface with waterproof varnish.

The paddle is made from straight grained spruce 4ft. 3ins. long, 6ins. by 1¼in. thick, the blade is to ½in. thick and is generally about 24ins. long and from there up the handle is wrought into a round shape. Finish in a natural varnish finish.

PAINTING HINTS

Some practical hints on mixing, applying and removing paint of particular interest to the handyman.

IT is so easy to dip a brush into a paint pot, and spread the colour over the wood that few people even question whether they can really paint well or not.

There are many reasons for this. The first is that no one likes wet paint hanging about too long, and so the average person hurries over it, often laying the paint on thickly, to avoid the necessity of the requisite number of coats. So be patient, and lay on your paint thinly and evenly, applying two or three coats if necessary.

Clean the Work

The second common mistake is that of painting over a dirty surface. If you do this, the new paint fails to harden, and will probably come up in "blobs."

Thirdly, do not buy cheap brushes which come to pieces in the paint. Buy good brushes and look after them, by washing them in turpentine after use, and then thoroughly drying in readiness for the next job. Hang them up. Never leave them standing on their hairs.

Points in Buying

Be careful when you are buying paint. Always open the tin at the shop if possible. Stir it well, and if this reveals that it is hard and glue-like, it shows that the paint has been in stock a long time, and deteriorated with age. Do not buy it.

If you decide to mix your own paint—a plan which is more economical if you have a great deal of painting to do—you will require white lead paste, some pigment, a little patent driers, linseed oil, turpentine, and a little elastic varnish. To a pound of white lead, add an ounce of driers, and enough oil and turps to form a rich creamy fluid.

For the first coat, use two parts of oil and one of turps. For the second coat, equal parts of oil and turps; for the third, one part of oil, two of turps, and half a part of the elastic varnish.

Well mix the ingredients, and strain through muslin. Where only two coats are necessary, use the quantities suggested for the first and third coats.

Removing Paint

If you have occasion to remove old paint, here is an economical method. Make a strong solution of caustic soda, with boiling water. Apply with a stiff scrubbing brush. Use plenty of "elbow grease," and soon, the old paint will work loose, and come away easily.

In corners where the brush will not go, leave the solution to soften the paint, and then get it off with an old knife. Wash your surface with plain hot water and allow to dry.

Please note that when using caustic soda, you should first smear your hands with vaseline, or wear leather gloves.

Here are one or two hints for cleaning up those inevitable paint spots which are always knocking around after the job is done.

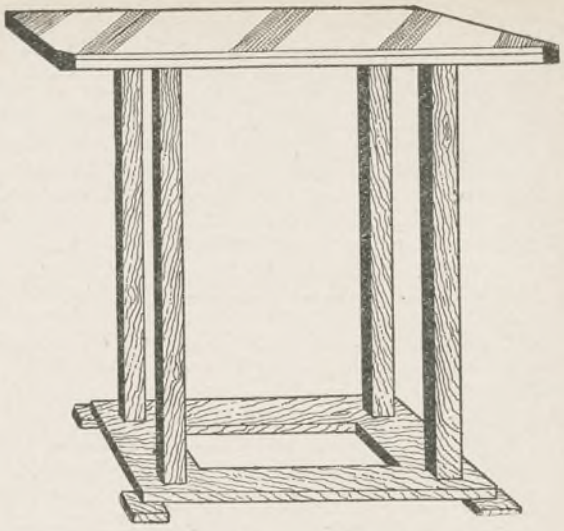
Cleaning Off Spots

Spots on window glass should be removed with a safety razor blade and a little turps on a rag, but be careful not to touch the framework.

Paint spots on polished floors or linoleum should be dabbed up at once with a clean rag—then use furniture polish. If they have hardened, raise them with the tip of your pocket knife.

Spots on clothes should be cleaned with turps as soon as possible, and with specially delicate fabrics a few drops of chloroform will always do the trick, but do it in the open air, and do not breathe the fumes, otherwise you won't keep awake to finish the job!

A MODERN COFFEE TABLE



A COFFEE table is not only an article of furniture these days but also a decorative feature of the general furnishing scheme. It therefore need not be made in a style or colour to match the existing furniture, but can be a direct contrast providing it tones in correctly.

At the same time a coffee table has its useful purpose to serve, so it should be both well made and finished. It is as well to remember that a coffee table is to receive on its surface cups containing hot liquid and often glasses of wine or spirits. These have a derogatory effect on the table's polished surface even with just ordinary use, but if anything happens to be spilled, the polish is more often than not ruined beyond patching up.

So this article describes not a mere decorative feature only, but also something that can be used continuously without fear of spoiling.

Modern and Simple

The features kept to the front are, modern design capable of taking either a high wood polish or a decorative colour finish, a glass top to protect and preserve such finish, a size of top that will be of real use, plus stability and neatness.

The construction is very simple and can be carried out with very few tools. The job can be made up using ½in. plywood for top and base, 1in. squares for the supports and a few ¾in. and 1½in. counter-sunk screws. The glass top may be either plate glass with ground and polished edges or ordinary good quality stout window glass.

The plate glass top is very easily fixed at each corner by using metal corner clips screwed to the edges of the wooden top. These are obtainable at almost any ironmongers.

In the case of the window glass with rough cut edges, this must be framed by using a rebated moulding applied round the edges. This, however, is quite a simple matter as will be explained a little later.

CUTTINGS LIST

1 table top, 21ins. by 16ins. by ½in. ply.
1 base, 15ins. by 10ins. by ½in. ply.
1 under top, 15ins. by 10ins. by ½in. ply.
4 toes, 2ins. by 2ins. by ½in. ply. from waste.
4 uprights, 16ins. by 1in. by 1in. either birch or American Whitewood.

The sizes given are all dead finished sizes ready for assembly.

The under tops are used to fix the uprights in position, so this only needs to be slightly rounded at the corners and edges for neatness.

The position of the legs should be marked out on the underside as shown in Fig. 2. These positions must also be transferred and be absolutely identical on the base. The base should have a cut out centre, which adds greatly to the appearance. Dimensions are given for this in Fig. 2. If the corners and edges are slightly rounded it will give a much neater finish.

The fixing of the legs can be done in two ways (see Figs. 3 and 4). Either is quite practical,

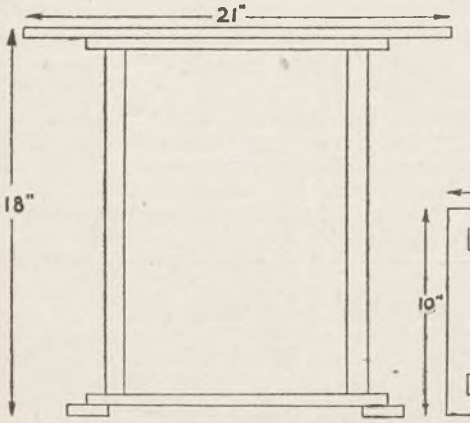


Fig. 1—Side view with overall dimensions

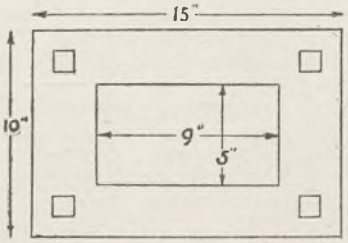


Fig. 2—Under top with position of legs and cut away part of base

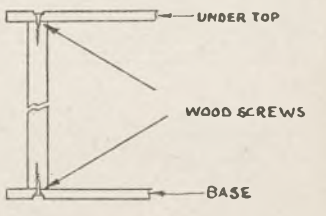


Fig. 3—Section of plain butt and wood screw joint

although Fig. 4, showing through mortise and tenon well wedged, is far stronger than the plain butt joint with glue and wood screw.

If the mortise is decided on, pay special attention to getting the exact position and size of mortise to be cut away in the base and under top. Also it will be necessary to lengthen the uprights by 1in. to allow for the two ½in. tenons. The actual holes can be best cut out using a coarse grade of fretsaw.

After having fixed together the uprights, base, and under top, put the job aside until the glue is thoroughly dry. Next screw the under top to the actual top, using ¾in. by 6 or 8 gauge countersunk screws, and bed the heads just below the surface out of sight. Lastly, the toe should be glued and screwed in place, that is, with an overlap of ¼in. as shown in Fig. 1.

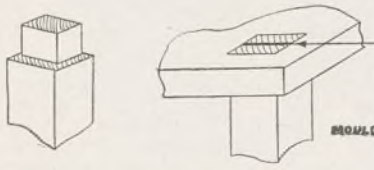


Fig. 4—A mortise and tenon joint showing wedge

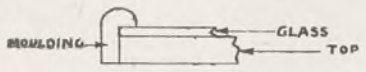


Fig. 5—A section showing fixing of a glass top

Before fixing the glass top the question arises of finish to be used. If a natural wood finish is desired, the staining and polishing is just a straightforward job.

Should it be decided to colour it for decorative purposes it might be as well to consider painting it in two colours, such as a red or green top and base with black glass moulding, legs and toes, or a black top and base with gilt glass moulding, legs and toes, or any other combination to harmonise with the other colours in the room.

If only one colour is to be used carry on as in the case of ordinary wood finishing. For two colours it is very much easier to paint the parts before they are assembled. This prevents any possibility of colour running or overlapping.

If assembly is afterwards carried out carefully, no damage will be done, but be sure the paintwork is absolutely hard.

A Glass Top

If a few extra shillings have been spent on a plate glass top, four chromium plated glass clips can be purchased to fix it in place. If ordinary window glass is to be used, four pieces of rebated moulding will be wanted. Mitre two pieces for the length and two for the width.

Remember, the measurements for the length and width of actual top must be transferred correctly to the inside of the rebates, not the overall or inside lengths. Actual outside measurements cannot be given here as any slight difference in the size of the section of the moulding greatly affects the overall dimensions.

Glue and fine gauge panel pins will hold securely the moulding and glass in their final positions. Fig. 5 gives a section showing moulding in position.

The cost of materials for making up is very cheap but when it is finished, a thoroughly good and useful article will be produced for a few hours' labour.

Beach Toys—(*Continued from opposite page*)

satisfaction, round the shaft with a spokeshave, then glasspaper everything smooth. The spade is best clear varnished, although a coat of enamel would serve.

Making the Boat

A very simple form of boat is detailed at Fig. 5. The true shape can be obtained with the compasses, working from an eccentric point some distance from a central line, that is to say, a line running from bow to stern.

Cut out the base layer from ¾in. or ⅞in. stuff, with the "superstructure" shaped from ½in. wood (see side view). When neatly spokeshaved and glasspapered, glue and nail the upper deck piece in position.

The funnel is made from a piece of 1in. dowelling 2ins. long. It will be observed from the sketch that the top of this has been bored to give the appearance of a cavity. Do this now with brace and bit. Use a ¾in. or ⅝in. centre bit, and have the piece of dowel clamped firmly in a vice or forced into a hole in a scrap piece of wood.

A depth of ¾in. would suffice. A hole (to suit a 1½in. by 6 flathead screw) is drilled right through the funnel. Instead of assembling with a screw, however, you could bore an 1in. hole in the top layer and glue the funnel in place. A small mast (useful for paper sails on occasions) could be fitted. A 7in. length of 3/16in. dowelling tapered to a point serves.

To enamel this item, colour the sides of the boat and tip of the funnel black, with a white border running along the gunwhale. Paint the deck orange, with the upper deck and mast white. The rest of the funnel could be coloured red.

MATERIAL REQUIRED

2 barrow sides	*22ins. by 10½ins. by ½in. thick.*	*1 dowel handle*	*4½ins. by ½in. diam.*
1 back end	*8ins. by 6ins. by ½in. thick.*	*1 piece wire*	*12ins. long.*
1 front end	*8ins. by 2ins. by ½in. thick.*	*1 piece plywood*	*9ins. by 5ins. by ¼in. thick.*
1 axle piece	*9ins. by 1½ins. by ½in. thick.*	*1 boat bottom*	*10ins. by 4½ins. by ¼in. thick.*
1 bottom	*12ins. by 9ins. by ½in. thick.*	*1 boat top*	*7½ins. by 3½ins. by ½in. thick.*
2 wooden wheels	*5ins. diam. (No. 604).*	*1 funnel*	*2ins. by 1in. diam.*
2 bucket sides	*5ins. by 4½ins. by ½in. thick.*	*1 dowel mast*	*7ins. by 3/16in. diam.*
2 bucket sides	*4ins. by 4½ins. by ½in. thick.*	*1 spade piece*	*18ins. by 2½ins. by ½in. thick.*
1 bottom	*3ins. by 3ins. by ½in. thick.*		

EASILY MADE BEACH TOYS

A novel set of things to make in wood for any youngster

HERE is a selection of beach toys that are small, light and easily carried. You may, nevertheless, be under the impression that the Sand Barrow, at least, is one item that will cause some bother during the journey to and from the seaside. Actually, it only measures 22ins. by 11½ins. by 12ins. overall. It does not take up all that space—even with the other toys packed inside it—and as deal is used, there is really nothing cumbersome or expensive about the whole.

The Barrow

Deal shelving 10¾ins. wide by ½in. thick is used in making the barrow. Two pieces 22ins. long will give you the sides, ends and axle piece, same being cut from the waste. Working from one edge, mark out the 2in. squares and follow the shape accordingly as seen at Fig. 1.

Now, to cut out the shape properly, use a fine keyhole saw and commence operations from the handle end, cutting out all this first before working up to the back. To save the trouble of marking out the other side in squares, true up the shape with a spokeshave and use it as a template to give the shape in reverse, although this would not matter unless you wish to keep the best surfaces to the outside.

Cut and square the end piece detailed in the end elevation. The front piece measures 8ins. by 2ins., with the axle 9ins. by 1½ins. and the bottom piece (which is cut from another piece of wood) 12ins. by 9ins. Glue and nail the sides to the ends with 2in. oval nails, then attach the bottom similarly. The axle should be screwed in position, after which the wheels (No. 604) can be affixed.

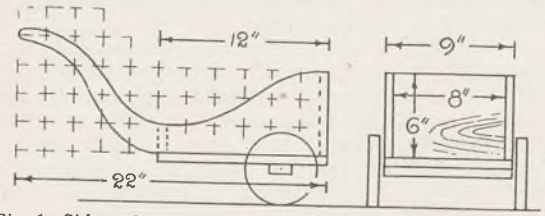


Fig. 1—Side and end view of barrow, with outline in 2in. squares

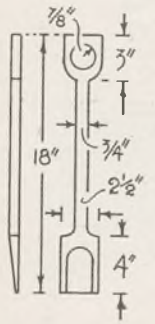


Fig. 4—The spade details

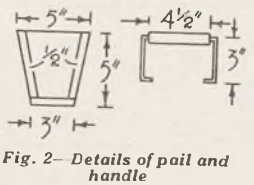


Fig. 2— Details of pail and handle

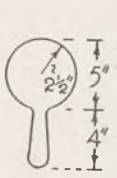


Fig. 3 The bat

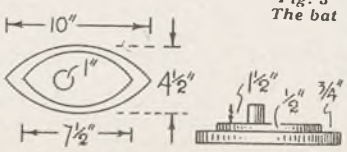


Fig. 5—Plan and side view of boat

These wheels are 5ins. in diameter and cost 7½d. the pair, with 1½d. extra for suitable screws and washers. As a finish, enamel the outside of the toy a bright green colour, with the inside coloured orange or pillar-box red.

The Bucket

The bucket, of course, is a square one, and this makes it rather unique. It is constructed throughout from ½in. stuff as shown at Fig. 2. To get the true shape, work from a centre line, not forgetting to cut two sides less ½in. to permit nailing between the others.

Owing to the slope, you will experience a little difficulty in assembling. Use thick glue and 1½ins. oval nails. Following this procedure, level the top and bottom with a block plane, then attach the bottom piece and level it in alignment with the shape.

The handle is composed of the usual gauge of wire and a piece of ½in. dowelling the length shown. Drill the hole required in same from both ends of the dowel, then insert the wire and bend to shape with the pliers. Two holes are drilled through (or nearly through) the sides of the pail to accept the "lugs" of the handle. Enamel the inside orange or red, with the outside and handle green, or vice versa.

The Spade

The spade is cut and shaped from an 18in. length of ½in. stuff 2½ins. wide as shown at Fig. 4. Having marked out the shape, cut out the circular handle aperture prior to attending to the rest. A fine keyhole saw should be used.

The blade itself could be scooped out in the usual way with an inside-cutting gouge or simply bevelled away almost to a point as indicated by the side view. When this has been done to

(*Continued at foot of opposite page*)

SOME GADGETS FOR THE CAMP

ANYTHING connected with the tent should be as light as possible and as efficient as can be obtained, for the tent is your home when in camp and should be as comfortable as it is possible to make it.

The ordinary type of tent-peg is far from perfect, for whether made of wood or wire it is heavy, bends or splinters easily and does not gain a really firm hold in soft soil. Aluminium pegs made to the pattern suggested are ideal in all respects and can be cast at home with very little trouble.

Cement Pegs

First of all you must make a pattern peg of wood similar to that shown and also make a shallow wooden box in which to make the mould. Make the pattern peg as smooth as possible and then brush it over with paraffin oil two or three times. Make up a mixture of 1 part of cement to 5 parts of clean, dry sand and thoroughly mix the ingredients, then add sufficient water to make a smooth, stiffish cement and nearly fill the box with it, pressing it well down to consolidate it. Place the oiled peg centrally in the cement and press it down firmly, filling up around it with more cement mixture and smoothing all off level. Any cement mixture which spreads over on to the peg must be carefully wiped off so that the surface of the peg is quite clean.

Allow at least twenty-four hours for the cement to harden and then lift out the peg—it will come quite easily if it has been well oiled—you will then have a perfect mould ready for casting any number of pegs. Brush the interior of the mould well with blacklead so that every tiny spot is covered and the mould is completed.

Aluminium melts very easily, so if you obtain some scrap, smash it up as small as possible and place it in an iron ladle in the kitchen fire, it will be in a molten state in no time. Do not overheat it for it crystallises very easily and will weaken your pegs. Skim off the dirt from the surface of the ladle with a piece of stick and quickly pour the metal into the mould. When cool, lift out the peg, again blacklead the mould and continue casting until you have a sufficient number of pegs for your purpose.

Guys may be cast in the same way and are much lighter and hold the ropes better than the wooden type, but do make sure that the holes in them are really smooth or they will fray and wear the ropes in no time.

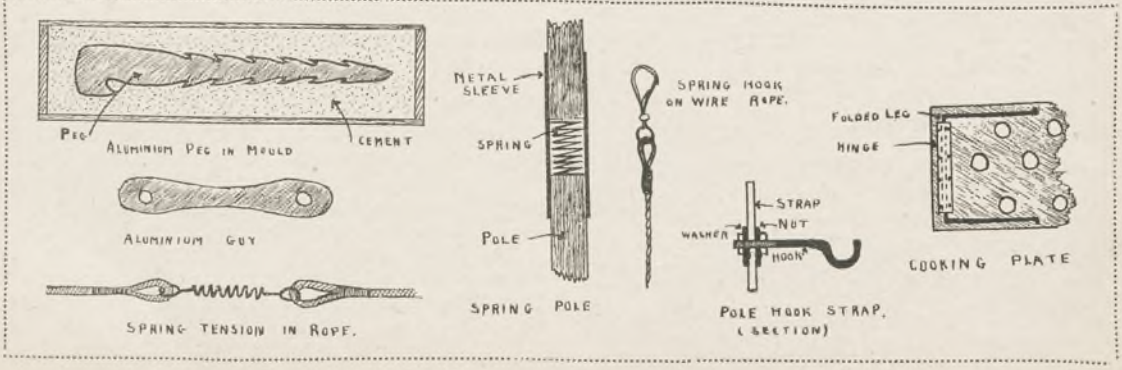
The Use of Springs

Strong coiled springs fitted between the ropes keep the tent taut at all times and also save you the trouble of getting up through the night to loosen them should a sudden squall of rain blow up and bring a sudden risk of the centre pole going through the canvas.

Another gadget for keeping up the tension of the canvas with safety is, to fit a strong spring inside the joint of the centre pole, as shown. You may have to shorten the pole slightly and possibly lengthen the metal socket to accommodate the spring, but it is well worth the little work and trouble caused.

Aerial Wire for Ropes

Ordinary ropes are another nuisance, for they are always fraying and breaking and are pretty awkward things to transport from place to place. Wire rope is much handier in every way, if you get the right kind. Aerial wire, known as 7/22, stranded copper, is just the thing for the job, for it will not fray or break easily, does not stretch with rain and is easily coiled into small compass for carriage. Cut it into the required lengths and fit a spring hook to each end, clipping one hook into a large metal ring ; a big, strong curtain ring answers admirably for the lighter type of



tent ; this slips over the tent peg and is held by the notch. You may fit the wires with springs as suggested or guy them in the ordinary way.

Some place to hang one's clothes in the tent always presents something of a problem, here is a way to solve it. Get a stout leather strap, fitted with a buckle and around the strap at equal intervals, secure a long, strong wire hook.

Clothes Holders

The best plan is to screw the straight end of the hook, run on a nut, then a flat washer and pass the end through the strap, putting on another washer and finally a second nut, adjusting the nuts so that very little of the rod end projects in the inside of the strap.

Now buckle the strap tightly around the pole and the wardrobe is complete. One strap near the top of the pole will take long coats and similar gear, while another lower down answers for shorter garments.

Here is a gadget which has proved of great value in the camp cooking arrangements, when a Primus is used and more than one kettle or pot needed on at the same time. Get a sheet of light galvanised iron, say about 18 inches square and drill a number of holes in it about 1 inch in diameter—a centre-bit will put them through with a little persuasion.

Make two pairs of legs from stout iron wire to the pattern shown and hinge these to the ends of the plate by riveting a strip of sheet iron along the centre portion, so that the legs will fold in flat for packing. If the stand is arranged with the Primus near the centre, the heat will spread all over the plate and allow a number of pots or pans to cook, instead of only one as is the case when the lamp alone is used.

Being a selection from the letters we answer to readers on all kinds of Hobby subjects.

Model Cinema Dimmer

I AM constructing a scale model cinema and wondered if you could tell me how to make a small dimmer for use with 3.5 volt. bulbs, or if there is any wireless component which would serve the same purpose.—(S.R.W.)

YOUR best plan is to use old filament rheostats from out-of-date wireless sets. These can be obtained for a few pence from most wireless junk stores. They should have a resistance of not less than 3 ohms—the general value is 5. If you wish to make them yourself use No. 30 bare resistance wire.

Silvering Glass

COULD you please tell me how mirrors are silvered, and could I do it at home, if so, could you give me a formula ?—(J.H.P.)

GLASS can be silvered on surface to form a mirror as follows. First very thoroughly cleanse the glass, after which the face side must on no account be touched as the slightest trace of grease or dust will spoil the silver deposit. Prepare three solutions as follows :—(A) 90 grs. of nitrate of silver dissolved in 4 ozs. of distilled water. (B) 1 oz. of pure caustic potash dissolved in 25 ozs. of distilled water. (C) ½ oz. of powdered milk sugar dissolved in 5 ozs. of distilled water. Take 2 ozs. of solution A, add ammonia drop by drop until the precipitate first formed is just dissolved, then add 4 ozs. of solution B. Add to this enough ammonia until the solution just becomes clear, then make up to 15 ozs. with distilled water. To this add solution A drop by drop until a greyish precipitate forms which will not re-dissolve. Allow to settle, then add 2 ozs. of solution C and stir well. Set the glass plate exactly level and pour on to it some of the solution, leave it for some hours in warm room free from dust, pour off the liquid,re-level the glass and apply more solution. Repeat several times, allow the chemical to dry, then give a coat of paint or varnish as a protective backing.

Repairing Rubber Boots

THE side seam of my rubber fishing thigh boots has opened. Is there any good way of remedying the trouble ?—(G.F.)

THE best way to repair your thigh boots will be to get some of the special rubber solution supplied for the repair of rubber shoes. There are several brands, one called the " S.R.S." solution is very good. A small quantity could probably be had through the local bootmaker. Then clean the thigh boots by rubbing with glasspaper, similarly prepare a piece of thin sheet rubber. Coat both once with the solution, and allow to dry—apply a second coat of solution to both and when almost dry but just a trifle tacky, place the rubber on the joint and allow to dry while flat and under pressure.

An Epidiascope

IS it possible to make, buy or otherwise procure any machine or instrument, which will project ordinary pictures or photo's upon a screen in the same manner as the magic lantern ?—(J.G.S.)

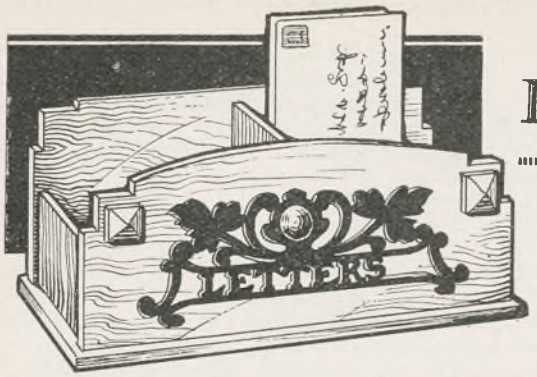
YES, there is an instrument for projecting ordinary photographic prints, etc. on to a screen. It is technically called an epidiascope, but appears under such names as Reflectoscope, etc. Most of the photographic manufacturers produce an Epidiascope. The design for a very simple non-reversing Reflectoscope appeared in Hobbies Weekly for October 17th, 1936, which you might care to study. Copies for 3d. each post free.

Electric Interrupter

WOULD you kindly tell me how I can make an interrupter to work in series with a 4.5v battery and bulb to flash at intervals, and also some means of controlling the time which elapses between the flashes ?—(D.E.W.)

THE interrupter must be made from an alarm clock or other timepiece—it is not possible to make a thermo-interrupter work off 4.5 volts. Connect one wire to the clock frame and arrange another wire so that the seconds finger just touches it once per rev. If you want more flashes per minute, then arrange a wire to touch the teeth of one of the internal cogs.

A TABLE LETTER HOLDER



HERE is a design for a Letter Rack which is a little out-of-the-ordinary, and which therefore should please our home craftsmen. The rack really consists of two distinct shallow pockets with low ends and a higher central division. The sketch clearly shows the make-up.

There is just that amount of fretwork in this rack to make it an interesting summer evening's pastime. The back and front are plain in outline with just the corners shaped and the top curved. There should be a little decoration on the front as suggested in our sketch, and on another page we give the full-size pattern for the overlay shown and also patterns for two more from which to choose, even simpler in design and outline.

These overlays should be cut from 1/16in. wood of some contrasting colour to the other part of the rack.

The Base

The base should first be marked out and cut from ¼in. wood to the measurements shown in Fig. 1, and the edges afterwards taken off with fine glasspaper. The back will next be made, also from ¼in. stuff, 9¾ins. long and 4ins. wide, and with the corners cut away to the shape and dimensions given in A, Fig. 2. The dotted lines on this diagram show where the ends will be glued on ⅛in. in from the two extremes.

Next prepare the front from same length piece of wood but to the outline given in B, Fig. 2. For this, the centre line must be drawn and projected below the lower edge to get the 11in. radius for the top. The corners are cut in a similar manner to the back piece. The dotted lines on this piece B near the centre show how the middle partition is glued slightly out of centre to allow larger envelopes being put into the right hand pocket.

The three uprights are shown in Fig. 1, and these being all ¼in. thick, may be ruled off from one piece of board measuring 7½ins. long by 2¼ins. wide. Take off the burr left after cutting with the fretsaw and round off the top edges of each piece with coarse and fine glasspaper.

Glue the three pieces to the back and then fix on the front, keeping all parts square with each other. Put one or two countersunk screws through the back into the uprights. Finally glue on the base and add a screw or two here for strength.

Overlays

If the rack is made from oak, which is suitable for an article of this nature, the overlay on the front should be cut from some contrasting wood such as padouk or dark oak.

Stick down one of the shapes on page 405 and before cutting out the design, pin a piece of ⅛in. rough plywood to the overlay wood to afford protection while cutting. Do all the interor cutting first, and finish up with the outline.

WOOD REQUIRED

Oak—
1 piece 10½ins. by 3½ins. by ¼in.
2 pieces 10ins. by 4½ins. by ¼in.
1 piece 8ins. by 2½ins. by ¼in.
Padouk—
1 piece 8ins. by 3½ins. by 1/16in.
2 No. 233 ornaments.
1 No. 218 button (oak).

Clean up the surfaces carefully before gluing the overlay on, and then add the shaped button (No. 218 in Hobbies list), and the two square ornaments (No. 233), to the oak front.

Such an article as this hardly needs an elaborate finish, in fact, if it were left clean and just as finished the oak would become rich in colour as time goes on, and the padouk become a soft dark rich red. Just a rubbing with linseed oil would be quite permissible, while a coat of light oak stain finished with a pale varnish would suit a number of our workers.

Such an article as this rack if nicely cut and finished, would sell readily at bazaars and sales of work, and a number should also be made up and offered to fancy shops and small furnishers.

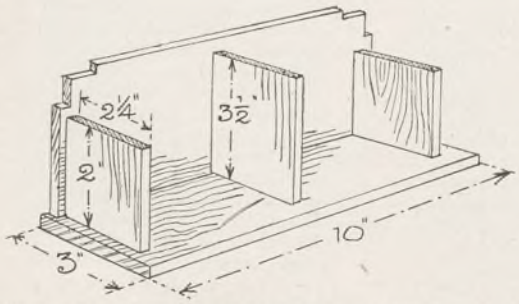


Fig. 1—General constructional details with front removed

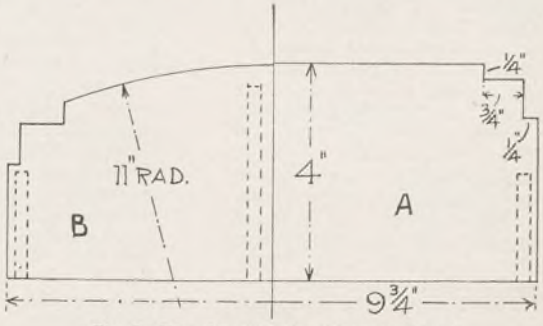


Fig. 2—The shaped ends of front and back

MAKING AND FITTING SMALL DOORS

THERE are so many occasions when the ordinary woodworker has to fit small doors, that a few notes on the subject will be worth bearing in mind. We are dealing more particularly with the small type in cabinets, boxes, etc. such as those found in the designs published in these pages. In all of them the same principle is involved, and there are also many other jobs of a similar nature which the woodworker undertakes.

By doing them correctly, he can save himself quite a lot of trouble and at the same time make a really workmanlike job of it. Nothing looks worse than to see a badly hung or an ill-fitting door, and once it has gone astray in the fitting, it is an irritating matter to attempt to correct it.

A hinge may have thrown it out of place, and immediately you start to plane up one end to get the door to fit, the result is probably that instead of a good fit you have a gap at the wrong point, so that the door has a decided slope which throws it out of true and makes it look unsightly.

Various Types

Doors, too, can be treated in quite a number of ways so far as ordinary fittings are concerned, and in this connection there are many little accessories illustrated in Hobbies Handbook which are worth noting when a job of this kind is being undertaken. A door can be perfectly plain or decorated with simple panelling. On the other hand, it can be decidedly ornamental by the addition of overlays.

Let us take the plain door first and note the general principles of hanging and fitting. Usually it must be hung on a door stile and the hinges are fitted so the wood of both parts come close together and are not forced out with a gap between by the thickness of the hinge itself.

For this reason, each half of the hinge must be recessed into the wood, whilst the knuckle portion projects just sufficiently to allow the door to swing but yet not be unsightly.

Mark off the position of the hinge by laying it in place and pencilling the amount of room it takes up. Then cut out the recess with a chisel, making sure to keep the bottom flat and the edges sharp so the hinge plate beds down into it.

Length of Screws

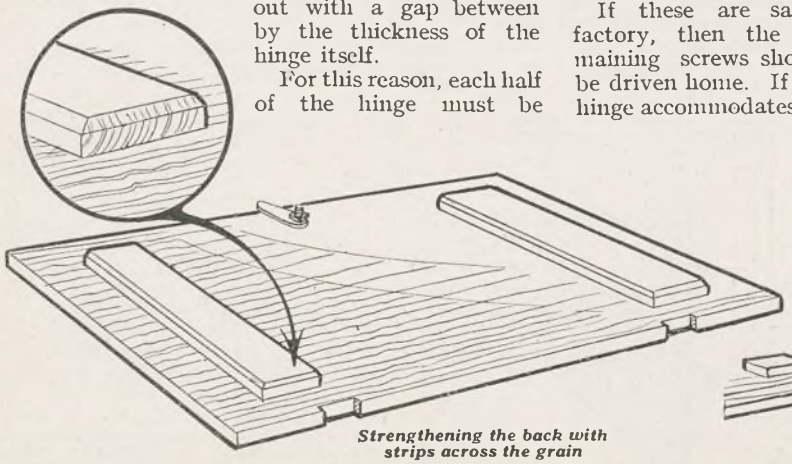
The question of screwing must also be considered. If you are going into a thick door or the edge of the wood, a long screw can be used, but if you are putting it on the face of say $\frac{3}{8}$in. or $\frac{1}{2}$in. material, then the screw must not be so long that it projects through the wood. On the other hand, if the point of the screw does happen to come through a little way, it must be filed off flat with the wood itself.

Get a screw which passes through the holes of the hinge comfortably, yet allows the head to be flat with the plate portion and bed down snugly into the countersunk hole.

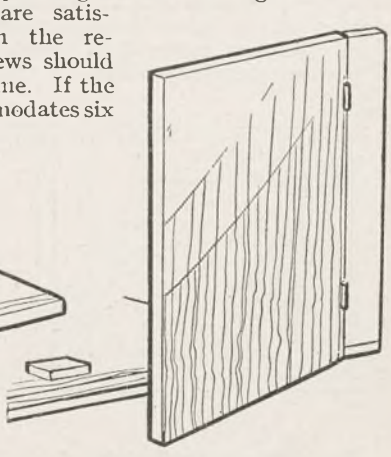
Be sure to get the hinges on to the wood square. Fit one plate of the two hinges on one portion first, then hold the door in place, open up the hinges and mark with a pencil the position of the hole in the other plate.

Be sure, too, to make a hole to take the screw to start with, and get this in the centre. Drive one screw home temporarily, then test the door out to see it fits properly. If it does not, take the screw out and put one in another of the holes as a temporary fitting, and test out again.

If these are satisfactory, then the remaining screws should be driven home. If the hinge accommodates six



Strengthening the back with strips across the grain



A simple block as a stop

screws—three on each plate—two only should be put in at first until a satisfactory fit has been obtained.

At the other edge of the door we have to arrange for something to hold it shut and several suitable catches are illustrated here which can be quite easily used. These catches have a shank which is put through a hole in the door itself, and this hole should be about two thirds of the way up.

It must be so placed that when the handle or knob is turned, the little brass catch behind engages with the door stile or with a suitable recess cut in the wood.

Door Stops

This is a matter of experiment, and is according to the type of door being fitted. If a plain knob is being added, then you must arrange for a suitable stop. Do not, in any case, allow the door to be pushed inwards to strain the hinges. A simple blocking piece can be added to the floor to provide a stop, and another one to the underside of the top. The position of this can be easily obtained in this way.

Close the door and make a pencil mark on the floor. If the door comes flush with the front edge then it is so much easier. Measure the thickness of the door and make a light pencil mark on the floor the same distance as this thickness. A thin block of wood is then cut, and glued to the floor very firmly close to this pencil mark, thus when the door is shut, it comes close to the wood.

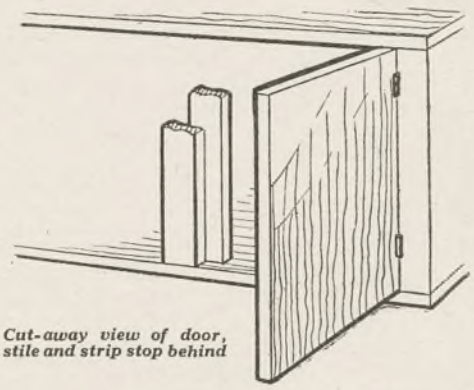
Another form of stop is made by adding a strip of wood behind the door stile, if this is the same thickness as the door itself. This should run the whole length of the door and is glued so that about ⅛in. or 3/16in. projects over the opening.

In this way, when the door is closed the whole of its length butts up against the stop. This is undoubtedly better than a single floor stop because it holds the whole door. Whereas in the case of just the stop on the floor, the door can be pressed inwards at the top and so is apt to wring.

Double Door Treatment

In some cases a pair of doors are required to close together as shown in the detail. In a case such as this it is better to have a door stile between them, as shown, rather than to get the two doors to fit close up to each other. In this way you not only strengthen the framework around the door, but you can arrange for small bolts to be fitted inside one, whilst the other has the catch and knob.

These door stiles should be firmly held between the top and bottom, and if they are not actually part of the constructional detail, then the wooden block should be put behind them, and if possible



Cut-away view of door, stile and strip stop behind

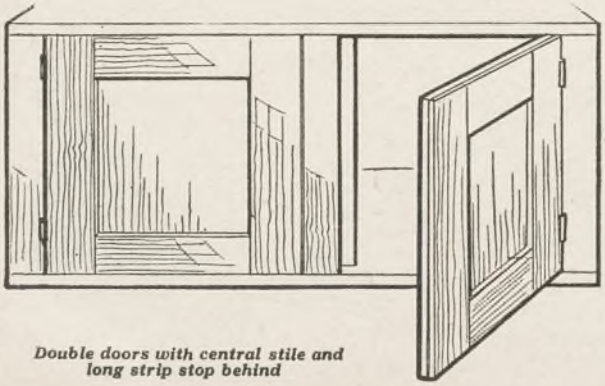
screws driven upwards into the ends to make a solid joint.

In a case like this, too, where the central stile is quite narrow, a door stop strip can be added to operate on both at once. This is done merely by having the strip about ½in. wider than the central stile so that a portion of it can project on either side. The tiny door bolts illustrated are supplied by Hobbies Ltd. and easily affixed inside.

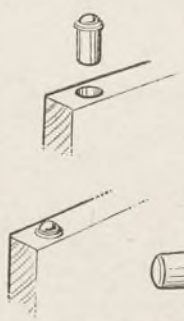
Here again a little trial will soon show their position, and they can be screwed on the inside of the door with a hole made in the floor or the top to accommodate a sliding bar.

Ball and Catch Fixing

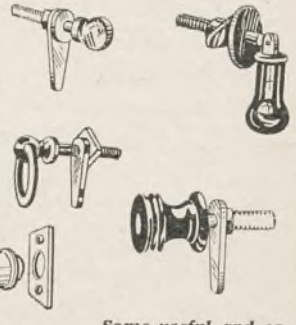
Another popular form of stop is the ball and catch which is also illustrated. With this the door is held in place when closed, but merely by pulling on the knob it will open comparatively easily. This is done by the ball and catch operating on the door itself, and on the framework. The catch portion is a short brass tube in which a ball is fitted with a spring behind. The ball projects slightly beyond the top of the tube, but is easily pressed in and out when the door shuts.



Double doors with central stile and long strip stop behind



A simple ball catch showing fitting



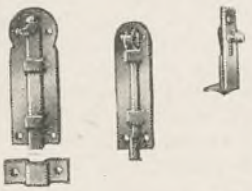
Some useful and ornamental door knobs fitted with a catch.

To fix it in place a hole is bored in the edge of the door of the same diameter as the tube itself. This must be a tight fit and the piece pressed home so the ball portion projects above the edge of the door itself. Then in the receiving side—the framework of the cabinet—is fitted a slightly recessed hole—it can be done with a countersink—around which is fitted a simple brass plate with a hole just large enough to accommodate the ball.

Thus, when the door is pressed shut, the ball is pushed into the tube, but springs out again into the accommodating hole in the cabinet.

Stengthening Struts

So far as the doors themselves are concerned, if they are only of ordinary fretwood there is always the likelihood of twisting or warping. To overcome this it is often a good plan to put on two struts of wood across the grain as shown in the drawing herewith. These can be fairly thick, but should not be too unsightly. Their thickness, too, can be less obvious by planing a chamfer along each edge as shown by the detail.



Three simple small door bolts

These struts, of course, should be firmly glued on equidistant from the edges, and there should be no need for screws if this is done thoroughly.

A Front Panel Frame

Another plan to stiffen up the doors is to put a framework as can be seen in the drawing of the double door cabinet. The actual width of these panelling strips depends on the size of the door. They should not be too wide nor too narrow. The side upright strips should reach the whole length of the door, and the two horizontal pieces come between them.

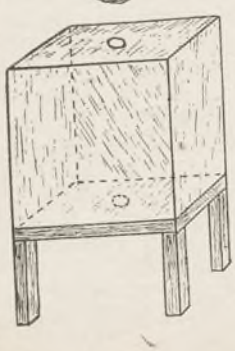
Glue them on so the edges are flush with the edge of the door, and weight the whole thing down very firmly after gluing, to prevent any wring.

Further decoration can be made by the addition of little moulding framework in the edges of the panelling, or a suitable ornament can be glued to the centre from one of the small decorative frets, or from the pressed wood ornaments supplied by Hobbies Ltd.

MAKING SMOKE RINGS

ON a still summer day, when there is very little wind about, you can mystify by sending great rings of smoke far up into the air. People will watch them in amazement, as they shoot into the sky, there to hang until they slowly dissolve away. If the source of the rings and the person operating them is well hidden, this game can be carried on day after day, and the mystery still remain unsolved.

You will need a large cardboard box—one of the big cartons the grocer gets his stores in will answer very well—which must be airtight at the corners and all round, if you are to get the best effects. A lid which can be opened and then closed down quite tight, is necessary, so that you can place the smoke-forming material inside.



Cut a truly circular hole in one side of the box—it should be exactly in the middle and perfectly round. The size will depend upon that of the box you are able to get hold of—the bigger the box, the bigger the hole—but suppose you make it some two inches or so in diameter for an experiment. Now on the opposite side, cut an exactly similar hole, truly round, as before and exactly opposite the first.

The box so made will shoot horizontal rings, but to force them up vertically into the sky it must be mounted on some sort of framework, so that it can be manipulated from the underside. A light stand made from laths will answer quite well, as there is very little weight to be supported. The sketch will show the kind of thing that is required and also the manner in which the rings are emitted.

Get some strong brown paper, crumple it into a ball and light it, then place it inside the box. If you soak the paper in a strong solution of saltpetre and water and allow it to dry, it will give off intense volumes of smoke and never burst into flame.

Making the Ring

When the paper is smoking well and the box appears to be well loaded, strike the bottom hole sharply with the flat of the hand or a piece of flat wood. A great ring of smoke, perfectly circular, will shoot up into the air, gradually growing larger and larger, until it slowly fades from sight. You can send up salvoes of rings by smacking the hole quickly, or send up one big one, fairly slowly with a gentle smack and then shoot another right through it by following it with a quickly driven ring.

Of course, when the paper burns out, the rings stop and you must then light up another piece to keep the smoke magazine well filled. Oilcloth, rags, and a host of other materials may be used instead of paper, but good, thick brown paper is about the handiest thing you can find and it certainly does smoke well.

Both Sides the Atlantic

THE L.M.S. gave us all a pleasant surprise when their "Coronation Scot" train emerged from works a full-blooded streamliner, with smart blue-and-silver livery, making it a worthy rival of the L.N.E.R. "Coronation." Some of you L.M.S. fans, busy thinking about the new Pacifics, may have overlooked the remarkable feat of Stanier 4-6-0 No. 5264, which, recently hauling a light test train from Manchester to St. Pancras, knocked up 91 m.p.h. near Hendon. That was some going for a two-cylinder mixed-traffic engine with mere 6ft. driving wheels!

We mentioned two months ago that the Pennsylvania Railroad, runner of 75 m.p.h. world's fastest steam trains, had begun streamlining their Pacifics, to cut the coal bill. We now show a picture of one of these novel streamliners, at the head of a fourteen-car train.

The Pennsylvania people had a lot of fun testing preliminary models in the wind tunnel at New York University, and they now proudly claim that their 4-6-2 type loco is "the most highly perfected and advanced locomotive design yet produced by aerodynamic science for the reduction of wind resistance." Do you like her better than our streamlined Pacifics?

This is the Season

THE long summer vacation is upon us, and those of you who run permanent outdoor model railway systems, will be settling down to your hobby with extra vigour, just at the season when most fans are about to knock off altogether.

It seems a pity that there are not more model railwayists eager to try their hand at a "temporary" garden railway, in view of the attraction of longer train runs, natural scenery, and the open air. Unless your railway is an elaborate one, with intricate controls and wiring, and copious artificial scenery, there is no reason why you should not take your line outside and lay it in whatever garden space may be available for a period of a few weeks in summer.

Some of you will raise a familiar objection: "My track is not made of brass, and so it would not stand the weather." It is true that brass track is the most suited to outdoor conditions, especially if electric traction is envisaged.

With steam or clockwork trains, however, any kind of steel or tinplate track can be kept free from rust, so long as you paint it with a thick coat of clear varnish. The very slightly increased wheel friction which the varnish causes scarcely makes any difference to train running.

Hints on Track Laying

WHEN setting up an outdoor line just for the holidays, you don't have to be quite so fastidious about the weather-proof quality of your building materials. But it is as well not to expose to the sun and rain, stations or structures of any sort that are not made of good quality wood. Three-ply is best for light work. Any planking used to support the track should be well-seasoned and either painted or creosoted.

When laying the track, beware of inclines involving a rise steeper than one inch for every thirty inches along—the lie of the land outdoors often makes steep gradients a temptation. Even one in forty is quite a stiff grade for a heavy train.

When engaged in "earthwork" construction, such as embankments, be sure to use clay, turf, or well-knit soil entangled with plant roots, so as to make a strong rail bed. If you find the road

A novel U.S.A. streamline locomotive

is still not quite sturdy enough to bear your heaviest loco at speed, drive wooden pegs into the ground at intervals along the centre of the embankment, so that screws can be thrust into the tops of these through the battens or sleepers of the track, making the road firm as can be.

One word of warning! Small-gauge model steam locos, owing to the exposed nature of their external firing, will not work in weather that is appreciably windy. So, unless you have at least one clockwork engine as a standby, be careful of setting a steam-operated line out in the garden!

G.W.R. Turns Teacher

FOR reasons of space, we are compelled to hold over our proposed G.W.R. notes till next month. Meanwhile, though, listen to this—the latest standard "Castle" 4-6-0 out of Swindon Works, No. 5083, carries a nameplate as follows: "Bath Abbey, Castle Class." As if *you* couldn't tell a "Castle" without being told!

High Pressure

Finding wifey in tears 'midst a flood,
Thomas turned not a hair (he's no dud),
But remarked with a smile,
"You stop YOUR leak, and I'll
With FLUXITE nip the PIPE'S in the bud!"

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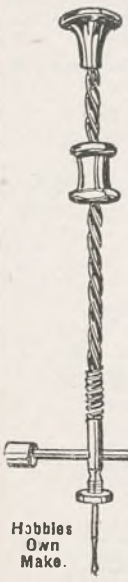
BRITISH-MADE FRETWORK DRILLS



If you do fretwork you need a reliable drill—one which is well made and will last a lifetime. Don't buy cheap inferior tools which soon break and are useless. Get a Hobbies and be satisfied. There is none to equal them and the price is low, too!

The Best you can buy!

These all-metal drills have strong jaw grip and easy running ratchet. The ball weights give added momentum to the speed.

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THE BOY'S DRILL with 2 bits 8d.

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YOU HAVE BEEN WARNED BY RADIO

Professor Hilton, on November 19th, 1936, from the B.B.C., broadcast a warning. The warning was to the effect that while there are many really good and reliable Colleges teaching by correspondence, there are many others which are colleges by name only. He said some so-called colleges rented a couple of rooms in a large building in a well-known street. Some made great promises which they did not intend to fulfil. Some claimed successes they could not prove. In some cases the names of prominent men were quoted who were in no way connected with the working of the College.

NOW BE ADVISED BY ME

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THERE IS NO OTHER COLLEGE IN THIS KINGDOM THAT CAN CLAIM ALL THE ABOVE ADVANTAGES

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If it is your desire to make progress and establish yourself in a good career write to us for free particulars on any subject which interests you, or if your career is not decided, write and tell us of your likes and dislikes, and we will give you practical advice as to the possibilities of a vocation and how to succeed in it. You will be under no obligation whatever. It is our pleasure to help. We never take students for courses unless we feel satisfied they are suitable. Do not forget that success is not the prerogative of the brilliant. Our experience of over 30 years proves that *the will to succeed* achieves more than outstanding brilliancy.

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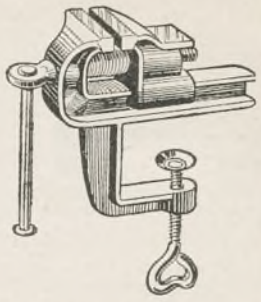

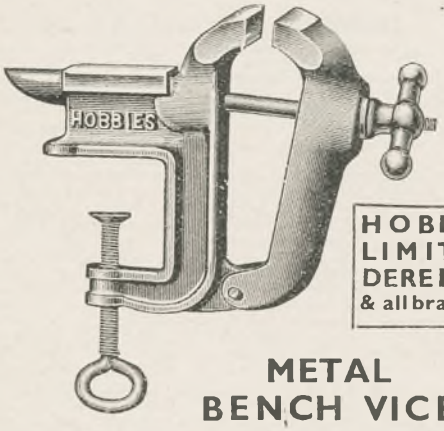

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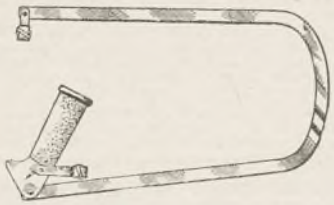
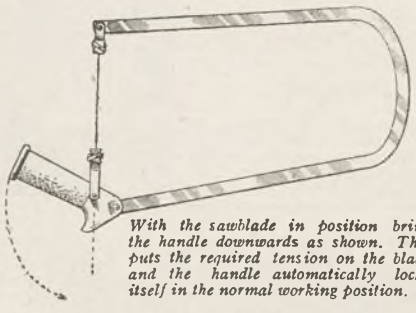
A Lever Frame that is DIFFERENT!



The frame is sent out like this. First turn the handle out of the way and insert the sawblade in top and bottom clamps.



With the sawblade in position bring the handle downwards as shown. This puts the required tension on the blade and the handle automatically locks itself in the normal working position.

Here's a good idea. A lever handframe without a lever! The handle is pivoted to the frame and forms a lever which effectively puts the tension on the sawblade and then automatically locks itself in the normal position for working. Simple, isn't it? Practical, too! Choose either a metal handle or the bakelite handle with its pistol-like grip If possible buy the bakelite. You'll say it's the best frame you've ever used.

THE TOGGLE LEVER FRAME with Bakelite or Metal Handle

WITH BAKELITE HANDLE

(as illustrated)

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Postage 6d. extra on each.

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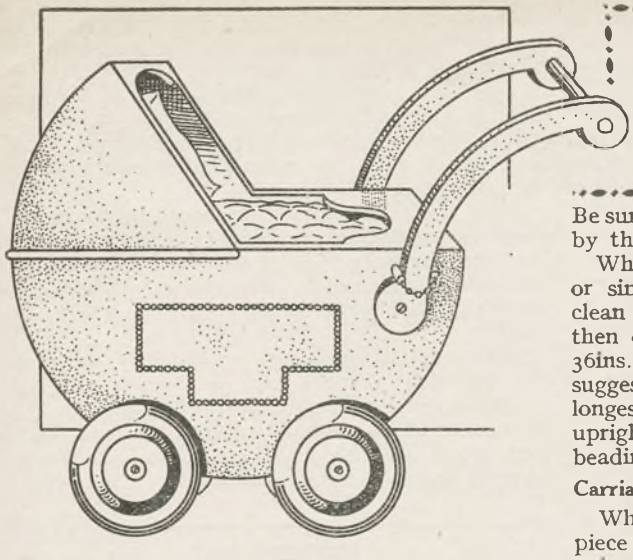


A CHILD'S TOY PRAM

PRIM little thing, isn't it ? Any kiddie would just adore it for old Teddy, or Fluffy or Cuddles—or more appropriately, for Goldenlocks, the best dolly—well, since Christmas.

Seriously though, the likes and dislikes of children in the matter of toys is always uncertain, but this little home-made pram should bring a decision that will remain unaltered for a long time.

" Can I take my pram out today, mummie ? " will be asked more often than anything else, and because it was Father or brother Jack or Uncle Henry who made it, the more—happily and encouragingly enough—will be the attachment.

Even a child can appreciate a kindness, you know, and that and the enjoyment found in building this inexpensive toy, makes it worth while.

The Bodywork

Then, of course, there is the " industrial " side, but we need not dwell upon that here. It will be gathered from the various details provided that the work is quite small and easily made. Plywood —birch or cheap alder wood—is used throughout, same being ⅛in. and ⅜in. thick, i.e., in respect to the bodywork. The axles, carriage crosspiece and hood awning should be cut from ⅜in. fretwood, which, of course, means plain wood.

In order to get a clear idea of the dimension given in the elevation at Fig. 1, same should be struck out actual size ; experienced workers will not find it necessary, as they should be able to judge with the eye and rule. The pram is only for " little women " who can get about on their own quite serenely. It would be very simple, however, to enlarge on the dimensions to suit " Miss Nurse " or " Mrs. Four-year-old."

The sides of the carriage take the shape of a circle. You should be able to mark the diameter given with compasses and a long pencil. An alternative is a piece of string tied to the pencil and *looped* to a central nail, which will take any radius desired according to the length of the string. Be sure to centre the panels of plywood as indicated by the dotted lines.

When marked and cut out with a keyhole saw or similar implement, it would be advisable to clean over the face sides with fine glasspaper and then obtain 1d. lengths of ⅜in. beading (usually 36ins. long) and glue and pin upon the sides as suggested in the picture. As a rough guide, the longest cross pieces are 8ins., and the longest upright pieces, 2½ins. About two lengths of beading would suffice (see Material List).

Carriage Assembly

When neatly panelled with the beading, obtain a piece of ⅛in. plywood measuring (short grained) 39ins. long by 10½ins. wide. Now cut out the awning piece (Fig. 2) and cross piece (Fig. 3) from ⅜in. wood and glue and nail between the sides in their respective order as seen.

It would be more convenient if both were attached to one side first and then to the other, a friend or a support of wood holding them in the centre, that is, the side pieces, until nailed.

The plywood need not be damped in order to bend it. Nail to the cross piece and gradually work around the edges, bending and nailing, and keeping the plywood flush with the sides until the whole circumference has been negotiated to satisfaction. Any over-waste is cut away and the plywood edges trimmed with a plane. Ordinary ¾in. panel pins should serve for nailing, especially if you nail a row along the awning and cross piece before and after bending, if you follow that order.

Lever Assembly

At this juncture, the wheel axles could be affixed to the body to prevent rocking. These measure 11ins. by 1in. by 1in. and are best affixed at the distances shown in the elevation by roundhead screws driven into them from the inside. Mark their position across the body with pencil, drill the screw holes through the plywood, this now making it comparatively simple to attach.

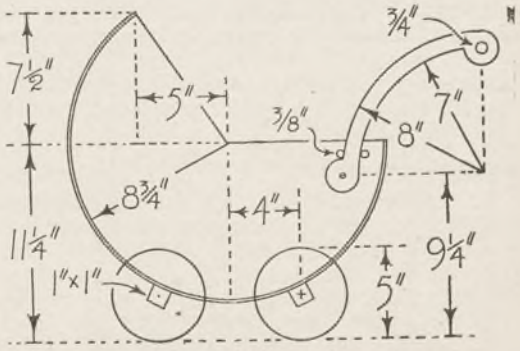


Fig. 1—Front elevation with dimensions

The size and shape of the levers or arms is provided in the elevation. Same are cut from ⅜in. plywood, then drilled for a ¾in. diam. handle and ¾in. by 8 roundhead screw.

When cleaned up with a spokeshave and glass-paper, glue the handle (a piece of ¾in. dowelling 12ins. long) to the levers, same being attached to the sides with single screws. Do not screw tight; the levers are collapsible, this being handy when storing the article in small space.

Collapsible Fitting

The collapsible fitting consists of pieces of ⅜in. dowelling, one (at each side) being permanent

Fig. 2—How to mark out the hanging piece under the hood

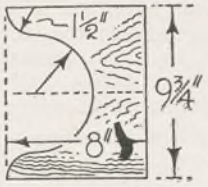


Fig. 3—The flat apron shape

behind the levers, and the other loose and chained. Fix the levers in true position, mark around with pencil, then unscrew and drill the plug holes outside the pencil lines (see elevation).

Glue the ¾in. long dowel stumps to project ⅜in. The plug pieces measure about 1½ins. long and should fit in the holes fairly tight. Screw two (opened) hook-eyes in the centre of the plugs and permanent stop, then insert 4in. lengths of fine picture chain to same and close the eyes with the pliers.

To give a hood effect, pieces of ½in. half-round moulding are nailed around the body. The 5in. diam. wooden wheels (No. 605) are "washered" and affixed with the roundhead screws supplied with them.

As a finish, the bodywork should be enamelled deep blue, with the levers, hood and axles in black. A more "nursery" effect can be obtained with brighter colours, viz.:—Bodywork, primrose or mauve; other parts, green or brown or eggshell blue.

Owing to its diminutive proportions, we have not included a loose seat or floor-boards. It would be quite easy to make a bedding from a cushion or to make one of suitable size and shape from wood fibre and casement cloth. The cross piece in this toy serves as an apron.

MATERIAL LIST

2 pieces plywood, 18ins. by 18ins. by ⅜in. thick.
2 lever pieces, cut from waste of above.
1 piece plywood (S.G.), 39ins. by 10½ins. by ⅛in. thick.
1 piece fretwood, 8ins. by 10ins. by ⅜in. thick.
1 piece fretwood, 10ins. by 3ins. by ⅜in. thick.
1 axle piece, 11ins. by 1in. by 1in. thick.
1 handle dowel, 12ins. long by ¾in. diam.
1 piece dowelling, 6ins. by ¾in. diam.
2 2ft. lengths beading, No. 53, ⅜in. diam., half-round.
4 wooden wheels, No. 605 (5in. diam. with washers).
3 pieces moulding, No. 35, 10ins. long, by ¾in. wide.
4 brass hook-eyes.

The Use of "Bits and Pieces"

NO one knows better than the average reader of Hobbies Weekly that it is amazing what can be done with odds and ends and a little mechanical skill. These pages are always full of valuable information on the art of converting the apparently useless into something useful, and although this often applies to small things, there is no reason why we may not embark upon more ambitious schemes.

Not long ago, two cabinetmakers at Ipswich spent their spare time building a steam launch. Now, as everyone knows, boat-building is a craft which requires a good deal of skill, yet these two men, without any expert advice on the matter, built a smart craft thirty-eight feet long, with a saloon that will hold a dozen people. Such a vessel ordered from a builder would cost hundreds of pounds.

A Back-yard Boat

A Cornishman too has built a twenty-foot boat in his back yard at Penzance. This was made from odd pieces of wood, mainly orange boxes. The only cost was that of the nails and fittings. Naturally he thinks nothing of the time he spent on it, because for one thing it was done in the evenings when his day's work was over, and so interested was he in the job, that he was only too pleased to be able to do it. Now he uses it every day for fishing.

A few amateurs at Leek got together recently, and built for themselves an aeroplane of the "Flying Flea" type. They took the engine from an old motor-cycle, bought paint and wing 'dope,' fabric, and some wheels, and now they have a model worth at least £60.

A House Costing £3

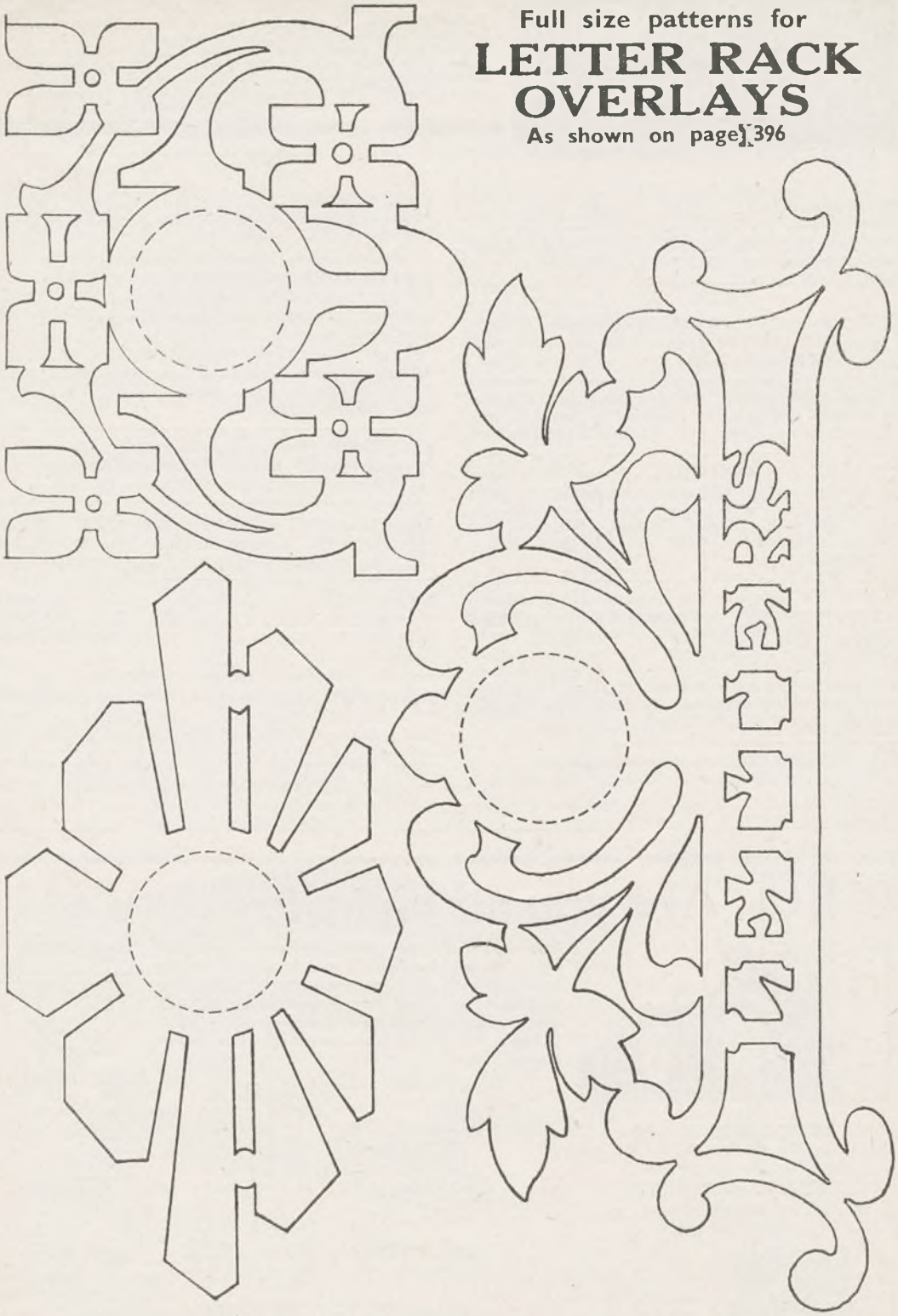
From America comes a rather amazing story of a labourer who was tricked into spending all his savings on a plot of land. After the money had been paid over, the man discovered that unless a house was erected on the land within six months, his purchase would be forfeit. The man had no further money with which to build the house demanded in the clause, but being a builder's labourer, he asked his employer if he might pick up the rubbish and odds and ends stored in the yard at the works.

His employer gave him permission, and within three months, the labourer, with the assistance of his two boys, had erected a bungalow twenty-feet square, having several good rooms, with bunks built against the walls, and surrounded by an excellently laid out garden and wooden fence. It had cost the man just £3!

Full size patterns for

LETTER RACK OVERLAYS

As shown on page 396



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NEW ISSUE NOTES (continued)

CONTINUING our talk on the interesting new series of animal sets from Mozambique we find further excellent specimens for the album. The python was last illustrated.

The python female often coils herself about a clutch of eggs which may number over a hundred, and then curiously enough her body temperature rises above that of the surrounding air. This is curious, because snakes are cold blooded, which of course means that the temperature of the blood is very little higher than that off the habitat.

The next triangular zoo stamp is the 40 cent and this shows the rhinoceros. This animal is being very rapidly destroyed, largely owing to the fact that hearing and sight are both deficient. live about fifteen years in captivity, the Asiatic about twice as long.

The chief point to be mentioned about the next animal stamp is that it is the best picture of a lion we have in the stamp album. It seems curious that this, the king of beasts, should appear so little as an illustration.

The majesty of the lion has been very much exaggerated for the fine picture of the heavily maned monarch of the forest gazing with head uplifted is rarely seen outside of a menagerie. Usually the lion is a skulking brute, carrying his head low beneath the shoulders and is very little feared by settlers in Africa.

Despite this, however, one cannot help feeling that a picture of a lion in a skulking position

Sir E. Tennant's book on Ceylon he notes that these beasts are particularly attracted by smallpox patients.

The 80c. shows two of the hippopotamus tribe, which species were described at the same time as the animals mentioned before.

There is one more triangular zoo stamp in this set, the two escudos. Here we see one of the kudus, a type of antelope, easily recognised by the spirally twisted horns. There are two species the Greater Kudus, and the Lesser Kudus. The former has enormous horns, and a length of half an inch short of six feet—measured along the outside curve—has been noted. Fancy this for an animal standing five feet high !

The Lesser Kudu has much smaller horns, the record being three feet for an animal standing

The Rhinoceros

His Majesty the Lion

Crocodile or Alligator ?

There are two chief types of rhinoceros, the Asiatic and African. The former is distinguished from the latter by having one horn instead of two.

Then there are two species of the African, one called white and one black, though actually they are both a dirty brown. The most surprising point about these animals is the length of the horn. The record length for the Asiatic is 1ft. 9ins. while for the African the record is 5ft. 1½ins.

A curious difference between the white and the black is that the calf of the former always walks in front of the mother, the calf of the latter walks behind. Stalking a rhinoceros should on first thoughts be a simple matter since they are deficient in sight and hearing. But this is not really the case, because of the Rhinoceros Birds which swarm on the animals eating the ticks with which they are infested. These birds rise on the approach of man and so warn the rhinoceros.

The African specimen should would be out of place on a stamp. By the way, the food bill for a lion in a menagerie must be a heavy item for they like about 100lbs. of raw meat per week.

A little while ago we had some notes on crocodiles and alligators and the way to tell between these two, so there is no need to repeat them here. Sufficient to say the 50 cent (also triangular) has a picture of one of these on it—which of them is it ?

The 60c. has a very clear picture of a leopard, but why did they print this stamp in blue ? One cannot very well admire the leopard, because of its characteristic of killing for the sake of killing, and not as most beasts of prey in order to provide itself with food.

At home either on the ground or in the trees, its food consists of small animals and birds, but it is a dangerous beast to hunt, being very wary and very courageous. Normally it does not hunt large animals nor man, but there have been man-eaters known. In just over three feet high.

The other designs of the stamps of this set are a group of native huts, and a boat with a curious triangular sail. They seem fond of the triangular element, don't they ?—and the sail in this case seems to be out of proportion for the size of the boat. Certainly not a sail to set unless you know something about the art of sailing.

Then there are two groups of ruins and two stamps with native types depicted thereon. A charming picture of a number of palms is on one of the high value stamp and then on the 5 escudos there is a picture of the longest bridge in the world. You will recall that in August 1935 we showed a picture of a new issue which was to commemorate the opening of this bridge, and now the same design comes on one of these stamps.

Talking of the same design coming on a stamp, brings us to the description of another set of stamps, but this is also a large set and so it must be left for another day.

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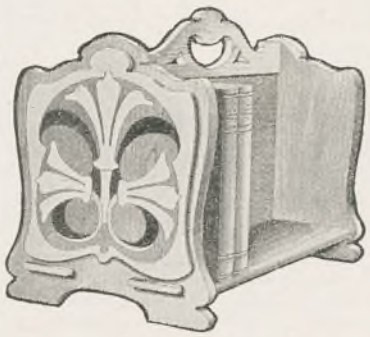

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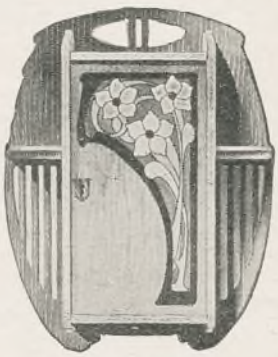

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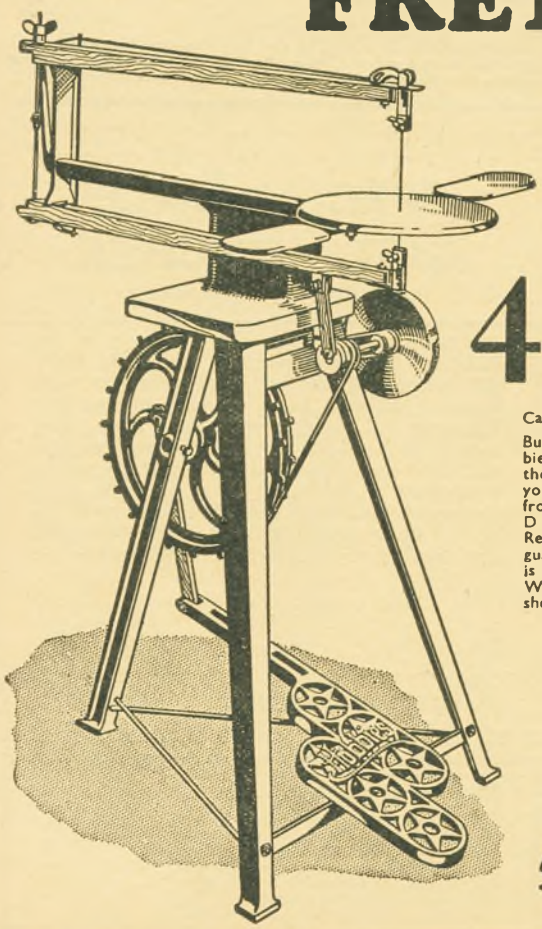

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